THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY WITH ALLIED HEALTH DEANS

BY

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“Prediction is very difficult, especially about the future.”
-Niels Bohr (Bohr, n.d., p. 314)

TABLE OF CONTENTS

ACKNOWLEDGEMENT 2
DEDICATION 4
LIST OF TABLES 13
LIST OF FIGURES 17
ABSTRACT 18
I. INTRODUCTION 20
- Background 20
- Research Problem 21
- Research Subproblems 22
- Hypotheses 22
- Definition of Terms 23
- Delimitations 31

II. REVIEW OF THE LITERATURE 32
- Introduction 32
- Bibliographic Methods 32
- Review of the Literature 34
  - The Evolution of Clinical Education 34
    - Clinical Education in Medicine 35
    - Clinical Education in Nursing 37
    - Clinical Education in Allied Health 39
      - Association of Schools of Allied Health Professions 42
      - Allied Health
  - Defined 43
  - Clinical Education Definition, Goals, and Models 44
    - Definition of Clinical Education 44
    - Goals of Clinical Education 48
    - Clinical Education Models 52
      - Theoretical Clinical Education Models 52
      - Traditional Clinical Education Models 53
      - Interdisciplinary Collaboration Clinical Education Models 57
      - No Formal or Universal Clinical Education Models 58
    - Value of Clinical Education 59
      - Clinical Education and Workload 60
      - Monetary Benefits of Clinical Education 60
  - History and Role of Accreditation 61
    - Health Professions Accreditation 61
    - Institutional and Specialized Accreditation 63
    - Committee of Allied Health Education and Accreditation 64
    - Commission on Accreditation of Allied Health Education Programs 64
    - Association of Specialized and Professional Accreditors 65
    - Allied Health Deans 65
    - Student Education 67

- Clinical Education 67
- History and Role of Regulation 70
  - Federal Regulations……………………………………………………………..…………………71
    - Aging Population..74
    - Primary Healthcare Professionals 75
    - Allied Health Reimbursement..76
    - Funding of Allied Health Education 78
    - Allied Health Professions Political Action Committee 79
  - State Regulations 79
    - Distance Learning and Online Education 79
    - Clinical Education 81
    - Student Clinical Placement 81
    - Scope of Practice..83
  - Reimbursement Guidelines..85
- Role of Health Professions Education Institutions 87
  - Healthcare System Consolidation 88
  - Health Professions Education Costs and Benefits 89
  - Quality Education 90
  - Health Professions Education Institutional Value of Clinical Education 91
  - Clinical Education 91
  - Clinical Placement Site Availability 92
  - Student Recruitment and Retention 93
- Role of the Allied Health Dean 94
- Factors Impacting Allied Health Clinical Education Conceptual Model 98
- Key Factors Impacting Allied Health Clinical Education 100
  - Volunteer Clinical Preceptors..101
  - Faculty Clinical Preceptors 105
  - Student Satisfaction 107
  - Technology 113
    - Telehealth 114
    - Simulation, Standardized Patients, and Assisted Learning........................116
  - Clinical Placement Locations 124
  - Interprofessional Education 130
- Future of Allied Health Clinical Education 137

The Delphi Technique...140
- The Delphi Design 143
- Delphi Technique in Healthcare Research 145
- e-Delphi 148
- Expert Selection, Sample Size, and Response Rate..151
- Advantages and Limitations of the Delphi Technique...152
- Agreement 156
- Reliability and Validity 159

Significance of the Study 161

III. METHODOLOGY 163

- Research Design 163
- Expert Population Selection and Recruitment..164
  - Definition of Experts..164
- Assumptions...165

Allied Health Dean Expert Population ... 165
    Population Response Rate ... 165
Delphi Survey Development and Implementation ... 166
    Delphi Survey Development ... 166
    Pilot Testing of Survey Instrument ... 166
        Pilot Test of Round 1 ... 167
        Pilot Test of Round 2 ... 168
        Pilot Test Analysis ... 169
        Delphi Survey Modifications ... 170
Three-Round Delphi Survey ... 172
    AH Dean Recruitment and Consent ... 173
    Round 1 ... 175
        Development of Round 1 ... 175
        Administration of Round 1 ... 183
        Round 1 Responses and Analysis ... 183
    Round 2 ... 184
        Development of Round 2 ... 184
        Administration of Round 2 ... 188
        Round 2 Responses and Analysis ... 189
    Round 3 ... 191
        Development of Round 3 ... 191
        Administration of Round 3 ... 192
        Round 3 Responses and Analysis ... 193
    Kendall's tau (τ) Correlations ... 195
    Demographic Analysis ... 196
    Non-Responder Analysis ... 196
Data Collection ... 197
Data Analysis ... 197
    Subproblem 1 ... 198
    Subproblem 2 ... 199
    Subproblem 3 ... 199
    Subproblem 4 ... 201
    Subproblem 5 ... 201
Reliability and Validity ... 202
Limitations ... 204

IV. RESULTS ... 206

Delphi Study Enrollment and Response Rate ... 206
Subproblems 1 and 2 ... 207
    Definition of Clinical Education ... 207
    Goals of Clinical Education ... 211
Key Factors Impacting Clinical Education ... 213
    Round 1 Survey Results ... 213
    Rounds 2 and 3 Survey Results ... 221
        Key Factors Identified in Rounds 2 and 3 ... 227
            Clinical Education Models ... 230
            Regulation ... 240
            Health Professions Education Institutions ... 251
            Clinical Placement Location ... 258
            Population Health ... 264

Technology 271
Clinical Preceptors 277
Interprofessional Education..282
Accreditation 288
Allied Health Deans...292
Student Satisfaction 297
Clinical Education Costs 302
Faculty Clinical Preceptors...307
Summary of Key Factors with Opportunities and Challenges..........................309
Kendall's tau Correlations of Importance and Impact 313
Round 3 Survey: Preferred and Realistic Futuristic Case Scenarios 321
Demographic Data..323
Non-response Bias Survey 337

V. DISCUSSION 339

The Delphi Process 340
Participation and Response Rate...340
Subproblems 1 and 2 342
Definition of Clinical Education...342
Goals of Clinical Education 343
Subproblems 3 and 4 344
Clinical Education Opportunities and Challenges...345
Opportunities for AH Deans *Venn* Diagram 345
Opportunities by Clinical Education Category 347
Opportunities with Clinical Education Models...359
Opportunities with Regulation 364
Opportunities with Health Professions Education Institutions 365
Opportunities with Clinical Placement Location 368
Opportunities with Population Health 370
Opportunities with Educational Technology...372
Opportunities with Clinical Preceptors (faculty and volunteer) 375
Opportunities with Interprofessional Education (IPE)...............................377
Opportunities with Accreditation...380
Opportunities with Allied Health Deans 381
Opportunities with Student Satisfaction...383
Opportunities with Clinical Education Costs 385
Challenges by Clinical Education Category...387
Challenges with Clinical Education Models 392
Challenges with Regulation...394
Challenges with Health Professions Education Institutions 397
Challenges with Clinical Placement Location 398
Challenges with Population Health...399
Challenges with Educational Technology 400
Challenges with Clinical Preceptors (faculty and volunteer) 400
Challenges with Interprofessional Education...401
Challenges with Accreditation 402
Challenges with Student Satisfaction 403
Challenges with Clinical Education Costs...405
Subproblem 5 407
Analysis of Futuristic Case Scenarios 407

"Most & Least Preferred" and "Most & Least Realistic" Case Scenarios 409
Clinical Education Conceptual Models 411
Opportunities that Individual Deans' Impact Conceptual Model........413
Opportunities that Collective Deans' Impact Conceptual Model 415
Shared Opportunities that Both Individual and Collective Deans' Impact Conceptual Model........417
Agreement on the Future of Clinical Education 419

VI. SUMMARY AND CONCLUSIONS 421

Implications for Allied Health Deans 421
Implications for Clinical Education Models 422
The Future of Clinical Education 423
Strengths and Limitations of the Study 424
Strengths 425
Recruitment Goal and Response Rates 425
Pilot Testing 425
Delphi Design 426
Question Format 426
Likert Scales 427
Level of Agreement 427
Futuristic Case Scenarios 428
Limitations 428
AH Dean Population 429
Vision of Healthcare Video 429
Question Format 430
Futuristic Case Scenarios 430
Implications for Research 431
Key Factors Impacting Clinical Education 432
Clinical Education Models 432
Regulation........432
Clinical Placement Location 433
Educational Technology........433
Clinical Preceptors (faculty and volunteer) 433
Accreditation 434
Student Satisfaction........434
Clinical Education Costs 434
Correlation of Importance and AH Deans' Impact 435

Summary and Conclusion 436

REFERENCES 438

APPENDICES 490

A. ADDITIONAL OPERATIONAL DEFINITIONS 491

B. DESCRIPTION OF LITERATURE SEARCH 498

C. DESCRIPTION OF LITEREATURE SEARCH TERMS 499

D. MODELS OF CLINICAL EDUCATION IN ALLIED HEALTH, MEDICINE, AND NURSING……………………………………………..………………....502
E. PERMISSION TO USE “THE TRIAD” FIGURE 518
F. KEY FACTORS IMPACTING ALLIED HEALTH CLINICAL EDUCATION 519
G. PERMISSION TO USE THE USE THE “FIDELITY IN THE DESIGN OF INSTRUCTIONAL SIMULATION” FIGURE 536
H. DELPHI STUDIES IN ALLIED HEALTH, MEDICINE, AND NURSING RESEARCH 537
I. UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY (UMDNJ) NEWARK INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL OF “THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS.. 553
J. RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY, NEWARK INSTITUTIONAL REVIEW BOARD APPROVAL OF THE CONTINUING REVIEW OF “THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS”………………..……………………….......................................554
K. ASSOCIATION OF SCHOOLS OF ALLIED HEALTH (ASAHP) MEMBERSHIP DIRECTORY - JUNE 2013 INSTITUTIONAL MEMBER LISTING 555
L. UMDNJ INSTITUTIONAL REVIEW BOARD APPROVAL OF THE PILOT TEST FOR THE DELPHI ROUND 1 AND 2 SURVEYS, RESEARCH PROBLEM AND ALLIED HEALTH DEAN DEMOGRAPHIC FORM……………………………………………………………………………563
M. PILOT TEST INVITATION AND PARTICIPANT CONSENT USED FOR E-MAIL RECRUITMENT, ONE WEEK NON-RESPONDER E-MAIL RECRUITMENT AND TWO WEEK NON-RESPONDER PHONE RECRUITMENT 564
N. PILOT TEST ROUND 1 SURVEY 566
O. PILOT TEST OF ALLIED HEALTH DEAN DEMOGRAPHIC FORM…...576
P. PILOT TEST OF THE DISSERTATION RESEARCH PROBLEM 579
Q. PILOT TEST ROUND 1 SURVEY FEEDBACK FORM.......................... 580
R. PILOT TEST ROUND 1 SURVEY E-MAIL REMINDER......................... 583
S. PILOT TEST ROUND 1 SURVEY FINAL E-MAIL REMINDER 585
T. PILOT TEST ROUND 1 SURVEY PHONE SCRIPT REMINDER.......... 586
U. PILOT TEST ROUND 2 SURVEY 587
V. PILOT TEST ROUND 2 SURVEY FEEDBACK FORM.......................... 602

W. PILOT TEST ROUND 2 SURVEY E-MAIL REMINDER........................ 607
X. PILOT TEST ROUND 2 SURVEY FINAL E-MAIL REMINDER 609
Y. PILOT TEST ROUND 2 SURVEY PHONE SCRIPT REMINDER.......... 611
Z. FORMER AH DEANS OF ASAHP PARTICIPATING IN THE PILOT PROGRAM AND WHO AGREED TO HAVE THEIR NAME RELEASED FOR PUBLICATION / PRESENTATION…………………………..………………..612
AA. PILOT STUDY FEEDBACK ON ROUND 1 SURVEY, ALLIED HEALTH DEAN DEMOGRAPHIC FORM, AND RESEARCH PROBLEM...................... 613
BB. MODIFICATIONS TO THE DELPHI POST PILOT FEEDBACK 623
CC. FLYER ANNOUNCING DELPHI STUDY... 628
DD. DELPHI LETTER OF INTRODUCTION AND CONSENT...................... 630
EE. DELPHI INTRODUCTION WITH PARTICIPANT CONSENT E-MAIL REMINDER 633
FF. DELPHI INTRODUCTION AND PARTICIPANT CONSENT PHONE SCRIPT REMINDER.. 636
GG. DELPHI INTRODUCTION AND PARTICIPANT CONSENT FINAL E-MAIL REMINDER.. 638
HH. PARTICIPATING AH DEANS WHO AGREED TO HAVE THEIR NAME RELEASED FOR PUBLICATION / PRESENTATION..................................... 641
II. ROUND 1 SURVEY.. 645
JJ. ROUND 1 SURVEY COVER LETTER 664
KK. ROUND 1 SURVEY E-MAIL REMINDER 667
LL. ROUND 1 SURVEY PHONE SCRIPT REMINDER 669
MM. ROUND 1 SURVEY FINAL E-MAIL REMINDER 670
NN. ROUND 2 SURVEY.. 672
OO. ROUND 2 SURVEY COVER LETTER 696
PP. ROUND 1 SURVEY RESULTS 698
QQ. ROUND 2 SURVEY E-MAIL REMINDER 731
RR. ROUND 2 SURVEY PHONE SCRIPT REMINDER 733
SS. ROUND 2 SURVEY FINAL E-MAIL REMINDER 734
TT. ROUND 3 SURVEY.. 736
UU. ROUND 3 SURVEY COVER LETTER 745
VV. ROUND 2 SURVEY RESULTS 747
WW. ROUND 3 SURVEY E-MAIL REMINDER 758
XX. ROUND 3 SURVEY PHONE SCRIPT REMINDER 760

YY. ROUND 3 SURVEY FINAL E-MAIL REMINDER 761

ZZ. KEY FACTORS NOT REACHING HIGH AGREEMENT ON IMPORTANCE……………………………………………………………….…………763

AAA. ROUND 2 SURVEY CASE SCENARIO RANKING………………………………………………………………………………787

BBB. ROUND 2 SURVEY SCENARIO RANKING RESULTS.............. 788

CCC. NON-RESPONSE BIAS SURVEY 789

DDD. NON-RESPONDER SURVEY RESULTS FOR OPPORTUNITIES 792

EEE. NON-RESPONDER SURVEY RESULTS FOR CHALLENGES . 803

LIST OF TABLES

Table 1. Operation Definitions…………………..................................23

Table 2. Clinical Education Definitions in the Healthcare Literature…………………………..…………………………………47

Table 3. Clinical Education Goals in the Healthcare Literature………....51

Table 4. Agreement Rating Scale…………………………..…………176

Table 5. Futuristic Case Scenarios……………………………...........179

Table 6. Importance Rating Scale………………………..…………….187

Table 7. Impact Rating Scale…………………………..……………….187

Table 8. Response Rate by Delphi Round………...……………………..207

Table 9. Definition of Clinical Education………………………………….210

Table 10. Goals of Clinical Education…………………………..……….212

Table 11. Example of Round 1 Coding…......………………..…………....215

Table 12. Frequency of Key Factors Within Categories by Futuristic Case Scenarios……………………………………….…………………….217

Table 13. Round 1 Frequency of Responses by Category……………….220

Table 14. Futuristic Case Scenarios Key Factors by Category Reaching High Agreement…………………………………………………… 222

Table 15. Key Factors by Clinical Education Category Reaching High Agreement of Importance………………………………….…………..225

Table 16. Round 2 and 3 Survey Results: How to Interpret Key Factors with High Agreement of Importance and Impact Data Tables…………………………………….........……………….....228

Table 17. Clinical Education Models: Key Factors with High Agreement on Importance and Impact…………………….……………..………....233

Table 18. Regulation: Key Factors with High Agreement on Importance and Impact…………………….………………….….……...…………243

Table 19. Health Professions Education Institutions: Key Factors with High Agreement on Importance and Impact………………..………………254

Table 20. Clinical Placement Location: Key Factors with High Agreement on Importance and Impact……………...………………….……………260

Table 21. Population Health: Key Factors with High Agreement on Importance and Impact………………….……………………….…………266

Table 22. Technology: Key Factors with High Agreement of Importance and Impact……………………….…………………….…………….…………273

Table 23. Clinical Preceptors: Key Factors with High Agreement on Importance and Impact…………………….………………….………...279

Table 24. Interprofessional Education: Key Factors with High Agreement on Importance and Impact…………….…………..……..............284

Table 25. Accreditation: Key Factors with High Agreement on Importance and Impact…………………………….…………………………290

Table 26. Allied Health Deans: Key Factors with High Agreement on Importance and Impact………………….………………………………294

Table 27. Student Satisfaction: Key Factors with High Agreement on Importance and Impact……………………….………………………299

Table 28. Clinical Education Costs: Key Factors with High Agreement on Importance and Impact………………………….….……………304

Table 29. Faculty Clinical Preceptors: Key Factors with High Agreement on Importance and Impact……………..……………..……............308

Table 30. Opportunities and Challenges by Clinical Education Category……………………………………………………………….310

Table 31. Kendall's tau Correlations of Importance and Impact..…….314

Table 32. Kendall's tau Correlations of Importance with Individual Deans' Impact………………………………………………………….....318

Table 33. Kendall's tau Correlations of Importance with Collective Deans' Impact…………………………………………………………..320

Table 34. Futuristic Case Scenarios Preferred and Realistic Ratings..……………………...…........... 322

Table 35. Years of AH Dean Experience and Years in Academia..….324

Table 36. AH Dean Educational Profile and Credential / Licensure Characteristics………………………………………………...........326

Table 37. AH Deans Serving on an ASAHP Committee or Task Force…………………………………………………………….328

Table 38. AH Deans Serving on Additional Allied Health Organizations…………………………………………………..332

Table 39. Institutional Demographic Profile…………………………....335

Table 40. Clinical Education Opportunities……………………………....348

Table 41. Clinical Education Challenges…….………………..……………388

LIST OF FIGURES

Figure 1. "The Triad" model……………………………………………………71

Figure 2. Key Factors Impacting Allied Health Clinical Education Model..100

Figure 3. The Hypothesized Relationship Between Level of Learner and Degree of Fidelity……………………………….……………………………120

Figure 4. Timeline of Delphi Recruitment, Survey Development, and Implementation…………………………………………………...….164

Figure 5. Delphi Recruitment and Administration Protocol...……………...175

Figure 6. Summary of Delphi Administration and Methodology...………..195

Figure 7. Opportunities for Deans' Impact *Venn* Diagram……...………346

Figure 8. Key Factors in Allied Health Clinical Education: Opportunities that Individual Deans' Impact….………………….……………..………..415

Figure 9. Key Factors in Allied Health Clinical Education: Opportunities that Collective Deans' Impact…………………..…………………416

Figure 10. Key Factors in Allied Health Clinical Education: Shared Opportunities that Both Individual and Collective Deans' Impact……………………………………………………………..418

ABSTRACT

THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY WITH ALLIED HEALTH DEANS

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Chair: Dr. Julie O'Sullivan Maillet

This research used a three-round Delphi technique to attain agreement on the purposes of clinical education, the key opportunities and challenges impacting clinical education, and the future (2018-2023) of clinical education. The Delphi panel consisted of 61 deans whose institution was a 2013 member of the Association of School of Allied Health Professions. Over eight months, from July 2013 to February 2014 and through 3 rounds, the AH deans expressed opinions about clinical education and its future. High agreement was achieved on the purposes of clinical education resulting in a comprehensive definition and goals of clinical education. For each Delphi round, AH dean responses were collected, coded, and analyzed; items were accepted as key factors, re-rated until agreement was achieved, or the study concluded. Agreement was achieved on key factors that could be identified as opportunities (*n* = 107) or challenges (*n* = 52) for AH clinical education. The Delphi research supported the clinical education categories identified in the *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100). Based on the results, an additional clinical education category of Population Health was added to the model and explicitly added in Clinical Education Models and AH deans.

The AH deans categorized the key factors they could impact individually and/or collectively. The relationship the most realistic and most preferred case scenarios had on the key factors provided a deeper analysis into the future. Further prioritization of the key factors is the suggested next step.

Chapter I

INTRODUCTION

Background

Higher education deans are faced with a number of challenges including: administrative activities, budget planning, curriculum and program development, faculty personnel issues, strategic forecasting and tactical implementation, enrollment and student/alumni services, and institutional diversity (Hunnicutt, 2008). In addition, allied health (AH) deans are responsible for the unique challenges of clinical education, professional accreditations, federal and state regulations, and offsite clinical placement locations (Baker, Morrone, & Gable, 2004).

The call for healthcare reform, which includes the education of healthcare professionals, has been at the center of public and political debate for years (Derickson, 2005; Goodwin Simon Strategic Research, 2010; O'Neil & PEW Health Professions Commission, 1998; Ridenour & Trautman, 2009; Wray & McCall, 2009). The mandate for accountability and the growing demand for reforming health professions education requires AH deans to be adept at balancing a multitude of opportunities and challenges (Layman, Bamberg, Campbell, & Wark, 2010), building accord among many stakeholders, and often acting as arbitrators in order to secure necessary resources in an ever increasingly competitive market (Frazer, 2011; Geiger, 1989). AH deans are regarded by the administration, faculty, students, and stakeholders as the central figurehead responsible for setting the vision for quality didactic and clinical education (Hunnicutt, 2008). AH deans should be future-oriented to ensure the continued evolution of AH professionals to meet the needs of the professions (Hunnicutt, 2008).

The purpose of this research was to study, from the AH deans' perspective, the future of clinical education. Utilizing a three-round Delphi technique, AH deans listed in the June 2013 Association of Schools of Allied Health Professions (ASAHP) Institutional Membership Directory served as the Delphi expert panel. The AH deans were chosen because, by virtue of their position, they are able to provide ideas and opinions regarding AH clinical education. These AH deans were asked to define clinical education and its goals, establish agreement on the key factors impacting future clinical education, and explore the future of clinical education. To date, there is no Delphi research examining the future of AH clinical education.

Research Problem

Based on opportunities and challenges in clinical education and key factors impacting AH clinical education, this study was designed to answer the question "where is there agreement among AH deans on the future (2018-2023) of AH clinical education?"

Research Subproblems

The following subproblems were studied:

1. How is clinical education defined?
2. What are the goals of clinical education?
3. Where is there agreement on the key opportunities that impact future AH clinical education?
4. Where is there agreement on the key challenges that impact future AH clinical education?
5. Where is there agreement on the future (2018-2023) of AH clinical education?

Hypotheses

A high level of agreement will be achieved on:

1. the definition of clinical education.
2. the goals of clinical education.
3. the key opportunities impacting future AH clinical education.
4. the key challenges impacting future AH clinical education.
5. suggestions for the future of AH clinical education.

Definition of Terms

Table 1 lists the key operational definitions used in this proposal. Appendix A provides additional operational definitions used in this Delphi research.

Table 1

Operational Definitions

Agreement	The definition of agreement is a “harmony of opinion, action, or character” (Merriam-Webster Online Dictionary, 2013). For the purpose of this study, the level of agreement that AH deans perceived regarding the purposes of clinical education, and the degree of importance and impact regarding the key factors impacting AH clinical education and its future were examined. A high level of agreement was defined where 80% of respondents’ were within one integer of the median. Levels of moderate and low agreement were beyond the scope of this study.
Allied Health (AH) Professional	An allied health professional as defined in section 799B(5) of the Public Health Service Act (42 U.S.C. 295, p.5) is one who: “(A) has graduated and received an allied health professions degree or certificate from

	an institution of higher education; and (B) is employed with a Federal, State, local or tribal public health agency, or in a setting where patients might require health care services, including acute care facilities, ambulatory care facilities, personal residences, and other settings located in health professional shortage areas, medically underserved areas, or medically underserved populations, as recognized by the Secretary of Health and Human Services" (Federal Code of the United States, 2012). For this research, the term allied health is used to describe those specialties in the field of medical science not represented in the areas known as Dentistry, Medicine, Nursing, Osteopathy, Optometry, Pharmacy, Podiatry, and Public Health (Collier, 2012). AH disciplines specifically involved in direct patient care are the focus of this AH clinical education Delphi study.
Allied Health Dean (AH dean)	Allied Health Dean, defined as the "chief administrator of the total allied health unit" and "in some institutions this person may be called a division director or department head or chairman" (ASAHP, 2011-12).
Allied Health (AH) Dean Expert	For the purposes of this research, an AH dean affiliated with Association of Schools of Allied Health

	Professions (ASAHP) in 2013 was an AH Dean expert.
Association of Schools of Allied Health Professions (ASAHP)	The Association of Schools of Allied Health Professions (ASAHP) is the principal membership organization representing and promoting the schools and colleges of allied health. The ASAHP mission is to improve health through excellence in education, interprofessional collaboration, leadership, research, and advocacy (ASAHP Strategic Plan, 2013 - 2015).
Category	The definition of category is “any of several fundamental and distinct classes to which entities or concepts belong a division within a system of classification” (Merriam-Webster Online Dictionary, 2015a). For the purposes of this research, qualitative data was categorized into key factors in clinical education categories.
Challenge	The definition of challenge is “ to arouse or stimulate especially by presenting with difficulties” (Merriam-Webster Online Dictionary, 2012a). For the purposes of this research, clinical education challenges are key factors achieving high agreement on importance, but lacking high agreement on individual and collective deans' impact.
Clinical Education	Clinical education is defined as the “practice of

	assisting a student to acquire the required knowledge, skills, and attitudes in practice settings to meet the standards as defined by a professional accrediting / licensing board" (Rose & Best, 2005, p. 3). Clinical education provides the student with a higher achievement of clinical competence in patient evaluation, program planning, treatment implementation, professional behavior, records and documentation, communication, and management skills (DeClute & Ladyshewsky, 1991).
Delphi Technique	A survey method used with content experts that is "an iterative multistage process, designed to transform opinion into group consensus which is considered 'more valid and reliable than individual opinion'" (Hasson, Keeney, & McKenna, 2000; Keeney, Hasson, & McKenna, 2011). Results from each round of Delphi surveys are summarized by the researcher(s) and returned to the expert panel for comment and/or rating. The survey was anonymous to minimize group bias, and feedback was controlled by the researcher(s) to guide the direction of the survey rounds towards agreement or consensus (Keeney, Hasson, & McKenna, 2001). For the purposes of this research, the

	Delphi technique employed a three-round criteria.
Demographic	Demographic is defined as “the statistical characteristics of human populations (as age or income) used especially to identify markets” (Merriam-Webster Online Dictionary, 2012b). For the purpose of this research, AH dean’s demographic data included: gender, years of AH dean experience, years in academia, credentialing / licensure in a specific health professions discipline (if applicable), highest degree of education, ASAHP committee positions held in the past five years, other allied health organizational positions, and institutional demographic data including: institutional profile, type of sponsoring institution, number of allied health programs, size of yearly budget, and school website.
Expert Panel	In the context of the Delphi technique, an expert panel is defined as a group of ‘informed individuals’ (McKenna, 1994a) and ‘specialists’ in their field (Goodman, 1987), or someone who has knowledge about a specific subject (Green, Jones, Hughes, & Williams, 1999). In this study, experts included in the panel were defined as employed AH deans whose institution was a 2013 ASAHP member.

Factor	The definition of factor is “one that actively contributes to the production of a result” (Merriam-Webster Online Dictionary, 2012c). For the purposes of this research, key factors were the opportunities and challenges impacting future AH clinical education.
Future	For the purpose of this research, future was defined as “existing or occurring at a later time” (Merriam-Webster Online Dictionary, 2012d). The three-round Delphi survey examined the future of AH clinical education in the next five to ten years (2018-2023).
Goal	For the purpose of this research, goal was defined as “the end toward which effort is directed” (Merriam-Webster Online Dictionary, 2014). The five goals central to the nursing clinical education experience are defined as: authenticating student knowledge; interpreting theoretical and applied knowledge; developing and refining skills; familiarizing students with the workplace; and developing problem- solving and time management skills (Mannix, Faga, Beale, & Jackson, 2006). The definition by Mannix et al. (2006) was used to guide the dean feedback on AH clinical education in this research.
Impact	Impact is defined as “to have a direct effect or impact

	on: impinge on" (Merriam-Webster Online Dictionary, 2012e). For the purpose of this study, the degree of impact that AH deans, either individually, or collectively as a group, or both, was studied. The degree of impact for individual and collective deans was evaluated using median derived from a 5-point ordinal scale.
Important	Important is defined as "marked by or indicative of significant worth or consequence**:** valuable in content or relationship" (Merriam-Webster Online Dictionary, 2012f). For the purpose of this study, the degree of importance that AH deans perceived regarding the key factors impacting AH clinical education and its future was examined. The degree of importance was evaluated using median derived from a 5-point ordinal scale.
Key	The term key is defined as "something that gives an explanation or identification or provides a solution" (Merriam-Webster Online Dictionary, 2012g). Factors reaching high agreement on importance with a median rating of '4' or '5' on a 5-point ordinal scale were considered key to the future of AH clinical education.
Key Factors Impacting Allied Health (AH) Clinical Education	The O'Sullivan Maillet and Romig (2011 - 2013) *Key Factors Impacting Allied Health Clinical Education*

Conceptual Model	conceptual model (p. 100) provided the research foundation for the exploration of agreement on the key factors impacting AH clinical education, and the future of AH clinical education. Only direct patient care AH disciplines are reflected in this model.
Opportunity	The definition of opportunity is “a good chance for advancement or progress” (Merriam-Webster Online Dictionary, 2012h). For the purposes of this research, clinical education opportunities were key factors achieving high agreement on importance with high agreement on individual and/or collective deans’ impact.
Shared	The definition of shared is “to have in common” (Merriam-Webster Online Dictionary, 2015b). For the purposes of this research, if a key factor was identified as an opportunity where individual deans and collective deans could impact, it was defined as a shared opportunity.

Delimitations

This study was limited to invited AH deans whose institution was a June 2013 member of the Association of Schools of Allied Health Professions (ASAHP) within the United States. For study inclusion, AH deans had a valid university/college e-mail address. The AH professions were limited to those disciplines in the category defined as direct patient care.

Chapter II

REVIEW OF THE LITERATURE

Introduction

This literature review is organized around four topics that support the significance of this research on allied health (AH) clinical education. First, it provides a historical review of the evolution of clinical education, clinical models, and their use in the field of allied AH, medicine, and nursing. Second, the literature review presents the history and role of accreditation and regulation, followed by the role of health professions education institutions and AH deans. Third, the conceptual model of key factors impacting AH clinical education that serves as the foundation for this research is presented. The conceptual model is accompanied by a description of each key factor by category with a discussion of pertinent opportunities and challenges specific to AH clinical education. Fourth, the Delphi technique is described and its rationale and importance in this research.

Bibliographic Methods

Over 500 references obtained for these literature reviews were identified via a comprehensive investigation of the clinical education, AH, medicine, and nursing literature. Electronic databases searched included: ERIC (1980 to present), Cumulative Index to Nursing and Allied Health Literature (CINAHL)

(1980 to present), Google Scholar, and Pro Quest Dissertation (1980 to present). Due to the topic relevance, The *Journal of Allied Health* (JAH; 2006 to present) was searched separately via the Ingentaconnect^{tm} web-based search engine. Additionally, the Association of Schools of Allied Health Professions (ASAHP) *Trends* newsletter, ASAHP biweekly e-mail communications, and ASAHP meeting presentations and posters were reviewed for AH topics of relevance. AH, medical, and nursing organization publications on clinical education produced several references in the United States, Australia, Canada, and England. The main search terms of clinical education and Delphi and/or case scenarios were combined with AH, medical, and nursing, respectively. In addition, searches for clinical education in combination with benefits, issues, opportunities and challenges were investigated. Other terminology was searched for relevance to the research topic of clinical education and was paired with: measurement instruments of effectiveness, productivity outcomes, research, reform, and healthcare reform that were mapped to their medical subject headings (MeSH) or CINAHL terms. Phrase searching with truncation was conducted as appropriate. Specific AH disciplines with direct patient care responsibility included in the literature search were: dental hygiene, dietetics, medical imaging, occupational therapy, physical therapy, physician assistant, psychiatric and rehabilitation medicine, respiratory therapy, and speech-language pathology and audiology. Referenced citations in topically related articles were examined for relevance to the principal clinical education research question. Refer to Appendix B for a description of the search engines and literature sources and Appendix C for a list of the literature search terms used. Refer to the dissertation bibliography for the full citation of the supporting references used in this research and manuscript preparation.

Original and review articles that featured current and desired future clinical education practice and opportunities for reform were identified to enhance the robustness of the research tool. While there was current literature on medicine and nursing clinical education, published information on AH clinical education had decreased from the 1980s to present day. Current AH clinical education research was limited. Except for the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100), the literature search failed to find additional conceptual models of clinical education. Therefore, it was decided to use the O'Sullivan Maillet & Romig model as the foundation to explore the future of clinical education.

Review of the Literature

The Evolution of Clinical Education

A review of medical and nursing education over the past century and AH clinical education over the past 30 years provides valuable insight into the past, present, and future of health care professionals' education (Weidner & Henning, 2002). Clinical education occurs at a clinical site where a student learns the specifics of the profession from practicing professionals. Pioneer medical educator Dr. William Osler wrote, “by what may be called the natural method of teaching, the student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools, as means to an end” (Osler, 1928, p. 121). Over the past century, this pedagogy has guided healthcare clinical education with students acquiring clinical skills at the patient's side, usually in a hospital or outpatient-based clinical affiliation. This combined approach of mastering clinical skills by applying basic science knowledge, procedural knowledge, and clinical knowledge (Michels, Evans, & Blok, 2012) is endorsed by educators as an effective clinical educational model (Packman, 1993).

Clinical Education in Medicine

Progression of medical clinical education from an apprenticeship model to a competency-based instruction and evaluation model was not without challenges. In the 19th century, there was a lack of consistency in student clinical instruction and training provided by the clinical instructors and preceptors (Kaufman, 1976). At the 1847 National Medical Convention, a subcommittee review of medical education recognized the need for improvement of the preceptor training system. This resulted in uniform medical education guidelines where the clinical preceptor became responsible for the medical student training. Only through this preceptor supervision and hospital training could medical students acquire the essential knowledge and experience necessary for effective clinical practice (Kaufman, 1976).

In the early 1800s, the hallmark of medical school education was didactic education comprised of basic science instruction and advanced therapeutic knowledge (Ludmerer, 1985). After the Civil War (1862-1865), individualized student instruction in patient care at the hospital supplemented medical lectures and training. Previously, groups of students observed patient care, but direct participation in the medical care and the principle of “learning by doing” was not employed. Students did not become an active part of patient healthcare until the clerkship model evolved to where students experienced rather than observed the conditions of medical practice (Osler, 1928). In the late 19th century, many medical schools secured better clinical facilities, built hospitals of their own, or established affiliations with existing community hospitals, in order to provide supervised clinical teaching without the threat of outside interference (Ludmerer, 1985). Using traditional clinical block rotations, medical students worked in hospitals rotating from one specialty clinical training location to another location every several weeks. However, the clinical training rotation schedule made it challenging for the medical students to acquire an in-depth knowledge of the patients’ medical history and provide continuity of care. In 1910, educator Abraham Flexner published a report that revolutionized the structure of medical education over the past century. The Flexner Report (1910) provided a foundation for medical educational standards, curriculum assessment, and program review. Transitions in medicine as a result of this report included: use of the scientific method and research protocols, clinical instruction in the hospitals, and up to eight years of post-secondary formal education and clinical-clerkship training in a university setting. Today, clinical-clerkships are still considered critical to the clinical education model (Hirsh, Gaufberg, Ogur, Cohen, Krupat, Cox et al., 2012; Lippard, 1974; Ogur, Hirsh, Krupat, & Bor, 2007).

While clinical-clerkship and integrated clerkship models have been around in various forms for decades, increasingly, medical schools are offering a longitudinal integrated clerkship option to promote patient-centered care (Ogur, et al., 2007). Instead of studying different specialties in block rotations, students work with physicians in core specialties continuously throughout a year while simultaneously following a group of patients representing a wide spectrum of medical conditions. Students follow patients on inpatient stays and outpatient appointments for an entire year. This model allows students to provide continuous care while experiencing healthcare through the patient's perspective. The challenges of this model include complicated scheduling; students are required to balance the responsibility of their education, patients' needs and preceptors' needs. An additional challenge may include finding a clinical placement that can accommodate students for a prolonged period. In summary, medical educators continue to seek better ways to clinically educate and train the next generation of physicians (Krupa, 2011). While patient care has changed significantly, clinical training overall has remained the same, even though most patient care has moved from the inpatient to the outpatient setting (Krupa, 2011).

Clinical Education in Nursing

The timeline of nursing history reveals an evolution from the delivery of nursing-like service from religious orders and the military to modern day nurses executing the "orders" of other healthcare professionals while charged with their own patient care tasks (Bloy, 2012). In the late 1870s, the medical profession and society at large considered the untrained women attending to bedside care at urban hospitals to be of low economic status and working class (Quinn, 2010). During the autonomous, nursing-controlled, Nightingale era, nursing schools provided students one year of training in the classroom and at the patient bedside; the Nightingale model shaped the field of nursing into an evolving healthcare profession (Kalisch & Kalisch, 1995). In the early 1920s, the nursing profession rapidly advanced as larger hospitals created nursing schools which offered formalized training and employment to women with middle-class and working-class backgrounds (Moore, 1933). Hospitals used student nurses as inexpensive labor and, as a result, clinical learning and patient care was prioritized over didactic education. In the late 1920s, women working in the U.S. health care system included 294,000 trained nurses, 150,000 untrained nurses, 47,000 midwives, and 550,000 other hospital workers (Moore, 1933).

Today, nursing clinical education involves the application of classroom learning in a supervised clinical setting. Sepples, Goran, & Zimmer-Rankin (2013, p. 401) defined clinical education as “the defining experience of nursing school. Classroom, laboratory, and simulation experiences provide the needed preparation, but exposure to an authentic nursing experience is of the most value to students and, ultimately, to employers.” During supervised clinical education, student nurses are assigned to patients, and they work side by side with nurses, instructors, doctors, and other healthcare providers to learn about patient care.

Nursing students typically rotate through a variety of clinical settings, such as intensive care units and outpatient clinics, thus providing interaction with a wide variety of patients and exposure to a wide range of healthcare conditions (Baird, Bopp, Schofer, Langenberg, & Matheis-Kraft, 1994; Gross, Aysee, & Tracey, 1992). Today, nearly 50% of nursing education is comprised of clinical education experiences (Conjecture Corporation, 2013) which may include complementary experiences such as nursing rounds, written assignments, online instruction and simulation technology (Billings & Halstead, 2009). Within the practice-focused profession of nursing, the importance of experiential learning and patient care in the clinical environment is considerable. Nursing clinical education research by Budgen and Gamroth (2008) supported the goal of preparing graduates with the knowledge and skills necessary for real world practices. In nursing clinical education today, learning to become a nurse is a multidimensional process that requires a supportive supervisory relationship coupled with significant time providing patient care (Warne, Johansson, Papastavrou, Tichelaar, Tomietto, Van den Bossche et al., 2010).

Clinical Education in Allied Health

Historically, clinical education in the AH professions evolved from the apprenticeship medical-education paradigm used to train physicians (Douglas, 2003; Weidner & Henning, 2004). During the 20th century, AH professional education further progressed to a hospital-based, college model (Douglas, 2003). Upon completion of the apprenticeship, which did not include uniform standards or competence certification, the AH student could practice as an independent healthcare practitioner. As clinical education continued to develop and improve, the groundwork was established to formalize AH education (Weidner & Henning, 2002). After the medical education recommendations provided by the Flexner Report (1910), AH education and training became more formalized. In the 1930s, the American Medical Association (AMA) formed relationships with various AH disciplines and established accreditation standards for various health professions such as occupational therapy (Douglas, 2003; Gupta & Hedrick, 1990).

After World War II (1939-1945), the growth of graduate medical education served to define and advance the AH professions (Douglas, 2003). New AH hospital-based education programs emerged to support physicians in the management of patient care and improvement of patient services. In the 1960s, the U.S. government supported vocational education efforts to develop and expand careers opportunities in the health fields. Soon thereafter, colleges began to offer AH education programs. Technological advances and specialized use of technology in healthcare increased the demand for new types of AH professionals and the need for more formal didactic education and advanced clinical education (Douglas, 2003).

Since the mid-1960s, AH fields have made progress in educating the public about their role in healthcare, the importance of AH and the future of the professions (Douglas, 2003). Health services is one of the largest industries in the country, and the AH professions are the single largest body of workers in the U.S. healthcare delivery system (National Commission on Allied Health, 1995, p. 25). In 1993, the AMA discontinued its direct involvement in AH accreditation. In

1994, the Commission on Accreditation of Allied Health Education Programs (CAAHEP) was established with the mission to coordinate the accreditation of AH educational programs (CAAHEP, 2015).

In recent decades, AH clinical training has become more structured and organized with focused learning experiences on prescribed competencies and proficiencies. McAllister (1997, p. 3) described the AH clinical education environment as the “development of clinical reasoning, professional socialization, and life-long learning.” Clinical education was defined as the “practice of assisting a student to acquire the required knowledge, skills, and attitudes in practice settings to meet the standards as defined by a professional accrediting / licensing board” (Rose & Best, 2005, p. 3). Another example provided by Hoang (2009) described physical therapy clinical education as a collaborative effort between the university, clinical site, and student. He stated that the goal was to integrate didactic and clinical learning into real world experiences in order to fully prepare graduates as competent practitioners. A focused approach to AH clinical education included: validated standards and criteria for student evaluation, assessment of preceptor training and supervision, and the selection of clinical placement locations (Barr, Gwyer, & Talmor, 1982; Dunfee, 2008; Huang, Reynolds, & Candler, 2007). Responsibilities of the student, clinical instructor, and clinical education setting have become more clearly understood and delineated (Weidner & Henning, 2002). Effective and efficient administrative policies and procedures, adequate number of well trained clinical preceptors (faculty and volunteer), and a positive work environment are all important components in supporting the clinical education setting in a variety of AH disciplines including, but not limited to: physical therapy, occupational therapy, and clinical laboratory science (American Physical Therapy Association, 2004, 2014; Cleary & Howell, 2003; Laudicina & Beck, 2000).

Association of Schools of Allied Health Professions

Chartered in Washington, D.C. in September 1967, the Association of Schools of Allied Health Professions (ASAHP) was established as a not-for-profit national AH professional association for administrators, educators, and others interested in the education of AH practitioners (ASAHP, n.d.-b). The purpose of ASAHP was to establish an interdisciplinary and interagency association focused on improving the quality and quantity of AH occupations and professions. The passage of the Allied Health Professions Personnel Training Act (1966) brought about a new concept of unifying all the various disciplines that comprise AH into academic units with a single administration (Allied Health Professions Personnel Training Act, 1966). Several major multi-year grants by the W.K. Kellogg Foundation stabilized the ASAHP organization and supported the establishment of new schools of AH professions on university and community college campuses (ASAHP, n.d.-a). In 1973, ASAHP reorganized as a unifying organization to represent the totality of AH education and practice in the United States. In 2013, ASAHP's membership consisted of 111 institutional members, two professional associations, and approximately 200 individual members (ASAHP, n.d.-a). Its mission is to improve health through excellence in education, interprofessional collaboration, leadership, research, and advocacy (ASAHP Strategic Plan, 2013 - 2015).

Allied Health Defined

The overall term, AH professions, is frequently described by exception. Often, when listing the fields that comprised allied health professions, wording is added to state health professionals except those in “medicine, dentistry, nursing, pharmacy, optometry, podiatry, and public health” (Collier, 2012, p. 1, para. 2). ASAHP defines AH professionals as:

> the segment of the workforce that delivers services involving the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management. Allied health professionals include dental hygienists, diagnostic medical sonographers, dietitians, medical technologists, occupational therapists, physical therapists, radiographers, respiratory therapists, and speech language pathologists. Allied health professionals comprise nearly 60% of the healthcare workforce.
> (ASAHP, 2015)

The Center for the Health Professions at the University of California at San Francisco (2011) estimates that as much as 60% of the U.S. healthcare workforce can be classified as allied health. AH educational programs range from short-term post-secondary training through doctoral preparation. Approximately one-third of the U.S. healthcare workforce are AH professionals prepared at the associate degree level or higher (Collier, 2012). Some categories of AH professions have sub fields within their own overall profession (Collier, 2012). For example, clinical laboratory science programs are comprised of: clinical assistant, cytogenetic technology, diagnostic molecular science, histotechnology, medical laboratory science, pathology assistant, and phlebotomy (National

Accreditating Agency for Clinical Laboratory Sciences, n.d.). Imaging science programs are comprised of: cardiovascular technology, nuclear medicine, radiography, sonography, and ultrasound (CAAHEP, n.d.).

Interestingly, some AH graduate level professions may reject the AH designation and consider their field to be “full and independent professions in their own right” (Collier, 2012, p. 1, para. 3). Examples of such fields include: “rehabilitation areas of physical therapy, occupational therapy, and speech-language pathology” (Collier, 2012, p. 1, para. 3). In the early 2000’s, physician assistant, health information management, ophthalmic medical technician/technologist, and athletic training groups, left the CAAHEP system and formed their own, profession-specific accrediting agencies (CAAHEP, 2015; Donini-Lenoff, 2008). While the motivation was for greater professional visibility and autonomy, the result was disruptive to AH representation. According to Mase, author of the classic paper titled “Allied Health-Today and Tomorrow” published in 1973 in the Journal of Allied Health (JAH) on AH today and for the future, there is a “need to address the proliferation and terminology of the over 125 health occupations and professions with some 250 alternate titles” (p. 314).

Clinical Education Definition, Goals, and Models

Definition of Clinical Education

An extensive review of the literature found limited useful definitions related to clinical education and allied health. In 1997, McAllister proposed the following definition of clinical education, “Clinical education occurs in an environment supportive of the development of clinical reasoning, professional socialization, and life-long learning” (p. 3). Dr. Miranda Rose, a Ph.D. speech pathologist, and Dr. Dawn Best, a senior fellow in physiotherapy, in their book, *Transforming Practice Through Clinical Education, Professional Supervision and Mentoring,* expanded McAllister’s definition to include “required knowledge, skills and attitudes in practice settings” (Rose & Best, 2005, p. 3). Written by two Australian educators and AH professionals, their work centered on quality and innovation in clinical education linked to the specific roles of the clinical educators, professional supervisors and mentors in developing students’ clinical skills. In addition, the Rose & Best definition focused on key factors such as accreditation, health professions education institutions, and regulation with the inclusion of meeting “standards defined by a university degree structure or professional accrediting/licensing board” (Rose & Best, 2005, p. 3).

While nursing is not considered an AH profession, a more recent (2013) definition of clinical education from the nursing literature (Sepples, Goran, & Zimmer-Rankin, 2013) provides some valuable insight into current trends in clinical education. The definition states “exposure to an authentic nursing experience is of the most value to students and, ultimately, to employers” (Sepples, et al., 2013, p. 401). This definition stresses that classroom, laboratory, and simulation experiences are providing a significant amount of the clinical experiences (Boulet, 2011; Clabo, Giddens, Jeffries, McQuade-Jones, Morton, & Ryan, 2012; Jeffries, 2007; Jeffries, 2009).

A 2012 survey of executive directors of specialized accreditation agencies reported that “clinical education” was largely left to the academic programs and typically included supervised, applied patient care experiences, and competency assessment performed by site preceptors. Clinical education was further defined by several executive directors as performing procedures “on a patient, not a mannequin or device” or as “post-didactic supervised clinical experience” (Romig, O'Sullivan Maillet, Chute, & McLaughlin, 2012, p. 152). The most common model for clinical education across AH disciplines included supervised practice with real-life experiences that achieved the goal of developing students into confident and competent practitioners that meet workplace demands upon graduation (Romig, et al., 2012). Table 2 provides the definitions of clinical education found in the healthcare literature.

Table 2

Clinical Education Definitions in the Healthcare Literature

Year	Reference	Discipline; Origin	Definition of Clinical Education
1997	L. McAllister, (1997) (cited by Rose & Best, p. 3)	Speech Pathology; Australia	Clinical education occurs in an environment supportive of the development of clinical reasoning, professional socialization, and life-long learning.
2005	Rose & Best (2005)	Allied Health and Nursing; Australia	Clinical education is a term denoting the practice of assisting a student to acquire the required knowledge, skills and attitudes in practice settings (such as the health service clinics, field work sites) to meet the standards defined by a university degree structure or professional accrediting/licensing board.
2013	Sepples, Goran & Zimmer-Rankin (2013)	Nursing; United States	Clinical education is the defining experience of nursing school. Classroom, laboratory, and simulation experiences provide the needed preparation, but exposure to an authentic nursing experience is of the most value to students and, ultimately, to employers.

Goals of Clinical Education

Clinical education is the hallmark of AH education. While AH is comprised of diverse healthcare disciplines, the current focus of clinical practice, regardless of discipline, is the establishment of quality, effective, and efficient evidence-based practice (Kronenfeld, Stephenson, & Nail-Chiwetalu, 2007). Research on AH clinical education provides insight into the manner in which clinical education is conceptualized and delivered across disciplines and professions. This includes variations in the length and the variety of accepted standards and outcomes (Lekkas, Larsen, Kumar, Grimmer, Nyland, & Chipchase, 2007; Romig, et al., 2012). Healthcare curricula aim not only to produce clinically competent healthcare professionals, but professionals who are competent in interpersonal skills, team building, resource allocation, ethical practice and responsive to changing social expectations and technological advancements (Murray, Gruppen, Catton, Hays, & Wolliscroft, 2000). The majority of AH professions include clinical education within their formal curriculum.

The goals of clinical education used in this research were based on the work of Mannix et al. (2006) as reported in *Towards Sustainable Models for Clinical Education in Nursing: An On-Going Conversation*. The clinical education purposes outlined in the Mannix et al. (2006) research were the result of an on-going series of conversations among Australian nursing educators who possessed diverse backgrounds and experiences in practice, research, administration, and teaching. The conversations focused on clinical education and the best methods to deliver this experience and training to undergraduate nursing students. Mannix et al. (2006) explored alternative pathways that focused on the “development of sustainable strategies for quality clinical education” (p. 4). Their research emphasized the importance of providing students meaningful and relevant clinical education experiences so they are fully prepared for the opportunities and challenges of delivering quality patient care. As defined by Mannix et al. (2006, p. 4), the five goals of clinical education are:

1. Applying theory and didactic learning to clinical practice
2. Authenticating the application of student knowledge in a clinical setting
3. Orienting students with the clinical workplace
4. Honing and refining clinical skills
5. Developing problem-solving and time management skills in the clinical setting

While these five goals are central to the clinical education experience, the manner in which clinical education is conceptualized varies across disciplines and professions (Lekkas, et al., 2007). Clinical practice placement is a routine component of pre-licensure curricula and involves opportunities for students to apply and develop their learning in the workplace. Clinical education is the ‘real’ setting that provides the student with experience in clinical, moral and ethical decision making (Health Professions Council of Australia, 2004) and is the bridge between higher education and the reality of the workplace (Myrick & Yonge, 2001).

Budgen & Gamroth’s (2008) clinical goal for nursing education focused on preparing graduates with the knowledge and skills for the real world. According to Warne et al. (2010), the importance of experiential learning and patient care in the clinical environment is considerable. Learning to become a nurse is a multidimensional process that requires a supportive supervisory relationship coupled with significant time working on patient care. From an AH perspective, Hoang (2009) presented clinical education goals specific to the physical therapy discipline. The goals included the integration of didactic and laboratory coursework into a real clinical practice setting and the development of student cognitive, psychomotor, and affective skills in order to establish a competent entry-level physical therapist. Clinical education research supports the need to provide appropriate education to students and clinical supervisors related to the improvement of clinical education goals. The research found that essential to improving clinical education learning experiences, there must be a focus on understanding different learning styles, planning learning experiences prior to students' arrival, giving feedback, and assessing student skills based on established learning goals (Rogers, Lautar, & Dunn, 2010). Nursing provided most of the research focused on clinical education goals; there was limited research related to AH. Table 3 provides the goals of clinical education found in the healthcare literature.

Table 3

Clinical Education Goals in the Healthcare Literature

Year	Reference	Discipline; Origin	Goals of Clinical Education
2006	Mannix et al. (2006)	Nursing; Australia	The five goals central to the nursing clinical education experience are: authenticating student knowledge; interpreting theoretical and applied knowledge; developing and refining skills; familiarizing students with the workplace; and developing problem-solving and time management skills
2008	Budgen & Gamroth (2008)	Nursing; Canada	The goal of clinical education is to facilitate the acquisition of knowledge and nursing skills that prepare graduates for the real world.
2009	Hoang (2009)	Allied Health (Physical Therapy); United States	Clinical education is an essential component in the physical therapy curriculum. Clinical affiliations provide the integration of the student's didactic and laboratory coursework into a real clinical practice setting. The student will integrate his/her cognitive, psychomotor, and affective skills in an environment that facilitates them to develop and become a competent entry-level physical therapist. It is through a cooperative effort between the University, clinical site, and student that the clinical education program meets its goal of ensuring quality full-time clinical experiences for our students.

Clinical Education Models

While a review of the AH, medicine and nursing literature revealed several theoretical and workplace assessments of clinical education models, there is no formally established or universally recognized clinical education model (Appendices D1, D2, and D3, respectively). A common theme among the majority of clinical education models was the importance of developing students into confident and competent healthcare practitioners (Anderson, 1998; Burnard, 1995; Cox, 1993). Mandy (1989) advocated the importance of providing current and relevant didactic courses to assist the student in acquiring a deep understanding of the knowledge and skills required for optimal clinical performance. Clinical education provides the student with opportunities to achieve clinical competence in patient evaluation, care planning and implementation, professional behavior, appropriate record documentation, communication, and management skills (DeClute & Ladyshewsky, 1991).

Theoretical Clinical Educational Models

Several clinical education theoretical models (Appendix D1) focused on the importance of an engaged and supportive clinical supervisor who is responsible for directing the clinical education process and facilitating student learning (Anderson, 1998; Burnard, 1995; Cox, 1993; Hagler & McFarlane, 1992; Higgs, 1992; Higgs, 1993). Anderson's model of "dynamic supervision" (1998) described three stages in the clinical education continuum: evaluation-feedback, transitional period, and the final self-supervision stage. Theoretical models support the need to provide consistent and reliable student assessment

(Oldmeadow, 1996) using goal setting, reflection on clinical experiences and debriefing (Radtke, 2008). Clinical instruction can be individualized according to the student's readiness or maturity for a particular task (Higgs, 1992; Higgs, 1993). In rehabilitation counseling, the Hagler & McFarlane Coaching Model (1991) demonstrated that rehabilitation students achieve maximum potential when the clinical supervisor takes on a coaching versus supervisory role. Student independence, creativity and self-supervision were positively impacted using the coaching model (Hagler & McFarlane, 1992). Student pairing with one clinical instructor for a nursing practicum experience produced positive outcomes for students in regard to a sense of belonging, reducing anxiety, and enhancing learning (Gross, et al., 1992; Kirkpatrick, Byrne, Martin, & Roth, 1991). The numerous theoretical models of clinical education in AH, medicine and nursing are summarized in Appendix D1.

Traditional Clinical Education Models

Several clinical education models assessed in the AH, medicine and nursing workplace (Appendix D2) show the Traditional Clinical Education Model (one student paired with one instructor) to be restrictive in the development of student competencies and clinical course outcomes, especially when clinical preceptor time is inadequate, clinical resources are reduced, and the availability of placements sites is challenging (Gubrud-Howe & Schoessler, 2001; Ogur, et al., 2007; Weidner & Henning, 2004). Referred to as "education by random opportunity" (LeFlore, Anderson, Michael, Engle, & Anderson, 2007), ensuring that students receive a planned experience with a variety of patients can be challenging with the traditional clinical education model.

More recent AH clinical education utilizing the Two-to-One (two students to one clinical preceptor) Collaborative Clinical Education Model has been shown to increase placement capacity, improve student learning and skill development, and increase faculty clinical knowledge and management skills (Briffa & Porter, 2013; Dawes & Lambert, 2010; DeClute & Ladyshewsky, 1991; Ladyshewsky, Barrie, & Drake, 1998; Roberts, Brockington, Doyle, Pearce, Bowie, Simmance et al., 2009; Triggs & Shepard, 1996). A systematic review of collaborative clinical education models in speech-language pathology by Briffa & Porter (2013) reported the advantages of student peer learning including: higher clinical competence scores, increased student reflection, and increased student satisfaction. While this model provided valuable learning opportunities, it increased the clinical educators administrative workload in the areas of placement site organization and student evaluations.

The Multiple Mentoring Model (Nolinske, 1995), expands the Collaborative Model and involves multiple clinicians supervising students in their clinical education. Nolinske (1995) reported improved rapport and positive professional and emotional connections by the occupational therapy students that participated in this model. Warne et al. (2010) used a composite and comparative study to examine the clinical learning environment of nursing students in nine European countries. His research found that the students are generally satisfied with their clinical placements and advocate the Multiple Mentoring Model.

Setting standards for the clinical education experiences may include: the number and variety of experiences, specific skills learned, the time in clinic, and required funding for training (Dunfee, 2008). Longer clinical experiences in one setting may improve the depth of clinical training, but this method may reduce exposure to complex and variable medical conditions found in a specialty practice environment (Gwyer, Odom, & Gandy, 2003). To reduce limited exposures, the Harvard Medical School-Cambridge instituted the Cambridge Integrated Clerkship (CIC) Model, a one-year principal clinical training year that fostered student learning in close and continuous contact with cohorts of patients from multiple venues of care (Ogur, et al., 2007). Each student had a team of experienced educators that facilitated didactic and clinical learning experiences, supervised student development and benchmark achievements, and provided collaborative and supportive relationships. A 2012 update provided by the authors reported random assignment was used to place students with their CIC as first preference as more students requested this placement than could be accommodated. The authors also found that the longitudinal integrated clerkship continued to demonstrate higher student satisfaction with the learning environment, equal or better content knowledge and clinical skills than their traditionally trained peers, more confidence in dealing with numerous domains of patient care, and a stronger sense of patient-centeredness (Hirsh, et al., 2012).

Traditional models may use a blended learning approach, capitalizing on technological advances, or a coaching approach, using student peers, to support student education and clinical training. The blended learning model, a combination of web-based and face-to-face teaching/learning methods, is an accessible and convenient learner-centered educational method (Brandt, Quake-Rapp, Shanedling, Spannaus-Martin, & Marting, 2010). This hybrid educational platform offers competency-based education with flexible delivery using: online, classroom, laboratories, simulated experiences, and experiential education. While blended-learning has been shown to bridge the gap between theory and practice while improving clinical competencies in therapeutic technique and clinical laboratory skills, few studies using the blended learning methodology exist in the clinical education arena (Rowe, Frantz, & Bozalek, 2012).

Ladyshewsky (2010), in a cohort, longitudinal research study, evaluated the Peer Coaching and Supervision Model which was comprised of an eight-stage structured and formal AH student pairing model in management education to supplement clinical instructor efforts. The Peer Coaching and Supervision was defined as a “planned and systematic approach to build competence and practice” (Ladyshewsky, 2006, p. e78). It structured the student learning experience around several clinical components of clinical competency: recognition of needed support in applying techniques; training with the demonstration of the new practice behaviors; opportunity for practice; non-evaluative feedback and questioning; and self-assessment. The peer coaching approach enhanced learning for novice AH students including: clinical competence, communication skills, ability to give and receive constructive feedback, problem solving skills, critical thinking, professionalism, and stress management. Ladyshewsky (2006) found that academic programs that used a high-quality cooperative learning system of the Peer Coaching and Supervision Model prepared student learners to carry these cooperative behaviors and team skills into the clinical environment and professional workplace upon graduation.

The Clinical Teaching Nursing Model, using staff nurses to assist faculty members in the direct clinical supervision of students, showed that students and faculty benefit from increased contact time between students and preceptors, better usage of faculty time, and instruction of students by clinical experts (Baird, et al., 1994). Students scored higher in integration of theory into practice, realistic perception of work environment, and use of evidence-based practice (Jackson, 1986; Shah & Pennypacker, 1992) when this model was used. Similarly, faculty instructor benefits included more time available for scholarly activities as a result of the joint involvement with staff nurses in academic and clinical setting. The model's limitation was that fewer nursing students received individual or one-to-one preceptor support due to the emphasis on student team training.

Interdisciplinary Collaboration Clinical Education Models

Interdisciplinary Collaboration Clinical Education models, summarized in Appendix D2, illustrate that clinical education is optimized when multi-discipline student learning occurs in a supportive and student-centered approach rather than being confined to a traditional single discipline model (Scarvell & Stone, 2010). Roberts et al. (2009) found in dietetic education there is a potential for greater depth and range of learning by employing several supervisors from different professional backgrounds. The Interdisciplinary Teamwork Model demonstrates the positive impact that AH professional team integration has on patient health and the determination of patient healthcare goals. In a simulation-based workshop designed to teach healthcare students about various health professions, AH and medical students coordinated patient care using shared learning, interaction and collaboration (Buelow, Rathsack, Downs, Jorgensen, Karges, & Nelson, 2008). Positive student feedback supported the use of the interdisciplinary workshop model in didactic-based teachings, simulation-based learning and clinical experiences. Another interdisciplinary model of clinical education was successfully used in the clinical rehabilitation setting with physical therapy (PT), occupational therapy (OT), and speech-language pathology (SLP) students and clinicians (Cox, Beaton, & Bossers, 1999). Clinical instructors supervised discipline-specific learning activities related to: clinical reasoning, interviewing techniques, professionalism, and communication skills for team reporting. Themes related to the clinical experience included the development of interdisciplinary skills and the need for discipline-specific learning. The literature suggests that healthcare students educated in an interdisciplinary team environment may be more likely to collaborate in the professional workplace (Buelow, et al., 2008; Scarvell & Stone, 2010).

No Formal or Universal Clinical Education Models

A critical review of the clinical education literature produced several research articles that revealed there is no formal or universal clinical model with predictable evidence-based practices or established outcomes. For example, Ladyshewsky (1998) in a review of physical therapy clinical education models found no difference in productivity between the one-preceptor to one-student model versus the one preceptor to the two-student model. In occupational therapy, one year of field experience is required in student clinical training. However, as the clinical model failed to successful teach students the relationship between theory and clinical practice, the authors concluded that additional clinical experiences were warranted (Cohn & Frum, 1998). For mental health disciplines, clinical education utilized discussion, role-play and feedback, but no overriding model or competency-based training exist (Getz, 1999). Lekkas et al. (2007) conducted a systematic review of the clinical education literature and found no evidence that there is a ‘gold standard’ or superior model of clinical education model (Lekkas, et al., 2007). Appendix D3 provides a summary of reviewed AH, medicine, and nursing clinical education models.

Value of Clinical Education

A review of AH literature found descriptions of the benefits and value of student clinical education (Buelow, et al., 2008; Cavallero & Richter, 2004; Conklin, 1990; Dieruf, 2004; Dillon, Tomaka, Chriss, Gutierrez, & Hairston, 2003; Rindflesch, Dunfee, Cieslak, Eischen, Trenary, Calley et al., 2009; Rodger, Stephens, Clark, Ash, Hurst, & Graves, 2012). The clinical education evidence shows that AH students are spending a greater portion of their educational preparation in the clinical environment (Wetherbee, Peatman, Kenney, Cusson, & Applebaum, 2010), and this trend reinforces the concept that longer clinical experiences may improve the depth of clinical training (Gwyer, et al., 2003). AH clinical education associated with safe and effective practice provides benefits to the AH preceptors including: enjoyment and satisfaction, professional development, increased productivity, knowledge of healthcare advances, new ideas to practice and thinking, improvements in recruitment, and connection with tertiary institutions (Dunfee, 2008).

Clinical Education and Workload

AH clinical education research by Dillon et al. (2003) showed that clinicians saw more clients when accompanied by a student. Even students in their first clinical placement made a positive difference in an acute clinical care setting (Dillon, et al., 2003). Although clinicians spend time supervising students, students assume some of the clinical workload enabling more patients to be seen. More recent occupational therapy and nutrition/dietetics clinical education research showed a net exchange in output; while more time was spent in patients’ consultations for the purpose of training students, the number of patients seen was maintained (Rodger, et al., 2012). The benefit of students in the clinical arena has been identified in nutrition, occupational therapy, physiotherapy, and social work (Australian Capital Territory Health, 2007).

Monetary Benefits of Clinical Education

Equitable cost sharing between the health professions educational institutions and affiliated agencies for clinical education may present opportunities that may also positively impact the healthcare employer (Chung, Spelbring, & Boissoneau, 1980; Oliver, 2012). In general, the AH literature supports the overall benefits of student clinical education when compared to facility and institutional costs (Chung, et al., 1980; Conklin & Simko, 1994).

Research conducted by Chung et al. (1980) showed that a fieldwork education program with first and second year occupational therapy students resulted in revenue-producing activities. The financial benefits of student clinical education outweighed, or at least balanced, the associated clinical costs. As student training primarily occurred during staff downtime, the clinical staff time devoted to fieldwork education had a near zero economic or opportunity cost. At the 2012 ASAHP Spring meeting, presenter Dr. Richard Oliver from the University of Missouri stated that student clinical education offered employers the benefit of gaining familiarity with potential hires and may “save up to 25% of the first year salary if they hire a student who did an internship in their facility” (Oliver, 2012, p. 4). Monetary costs and benefits may have an important role in the quality and the quantity of student clinical training and patient outcomes. However, cost benefit and cost effectiveness analyses have had limited success in identifying fiscal metrics for clinical education (Chung, et al., 1980; Oliver, 2012).

History and Role of Accreditation

Heath Professions Accreditation

AH accreditation continues to evolve with a plethora of transitions over the years. From 1914-1935, a multitude of education standards were created across a variety of healthcare disciplines including: dentistry, dietetics, occupational therapy, podiatry, pharmacy and nursing (Baker, 2001). For example, discussions between the AMA and the American Occupational Therapy

Association (AOTA) discussions in the early 1930s led to the publication of minimum acceptable standards in occupational therapy. AOTA and AMA collaborative initiatives resulted in the development of a long succession of AH educational guidelines and the creation of specialized accreditation including, but not limited to: physical therapy in 1936; health information administrator in 1943; radiologic technologist in 1944; and respiratory therapist in 1962 (Baker, 2001).

Since the 1970s, accredited institutions of higher education have been accountable to define measurable outcomes for students at each level of the educational process (Gandy, 1977). Accreditation “is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards” (Commission on Accreditation of Allied Health Education Programs, 2013). Accrediting agencies are organizations or associations that evaluate predetermined criteria and operating standards for educational or professional institutions and programs, determine the extent to which the established standards are met, and publicly announce their conclusions (Baker & Dunn, 2006). Accreditation standards translate into graduates gaining admission to reputable institutions of higher learning or achieving credentials for professional practice. Accrediting agencies, which are independent educational associations of regional or national scope, develop evaluation criteria and conduct peer evaluations to assess whether or not accreditation criteria are met. Institutions and/or programs that request an agency's evaluation and that meet an agency's criteria are then "accredited" by that agency (Office of Postsecondary Education, 2011). Thus, the process of accreditation recognizes educational institutions and professional programs as meeting standards set by the accrediting body.

Institutional and Specialized Accreditation

There are two fundamental types of educational accreditation: “institutional” and “specialized”. Institutional accreditation normally applies to an entire institution, indicating that each of an institution’s parts is contributing to the achievement of the institution’s objectives, although not necessarily all at the same level of quality. Generally, institutional accreditation is controlled by the educators from multiple disciplines whereas specialized accreditation is often regulated by educators from within the discipline (Kells, 1982). Specialized accreditation typically applies to the evaluation of discipline-specific programs, departments, or schools in postsecondary institutions. While a few hospital-based agencies exist, most of the specialized accrediting agencies review units within a postsecondary institution that are accredited by one of the regional accrediting commissions. Some specialized accrediting agencies accredit freestanding professional schools and others accredit specialized, vocational or other postsecondary institutions. The specialized accreditation movement is a voluntary self-regulation effort towards validation of program quality in order to: attain the minimum standards established by the accrediting agency, determine student eligibility to sit for the licensing examination, and protection of the public (Baker, 2001). The globalization of higher education has accreditation agencies expanding their role to encompass U.S. institutions and those operating abroad with the goal of greater alignment of standards and partnership across multiple nations (Higher Education Amendments, 1992).

Committee on Allied Health Education and Accreditation

In 1976, the AMA created the Committee on Allied Health Education and Accreditation (CAHEA). CAHEA was composed of representatives of AH professions, medicine, the Council on Medical Education, and the public. Delegated with the responsibility and authority for health sciences education accreditation, the specialized accreditation services provided by CAHEA contributed to educational effectiveness and quality assurance (Gupta & Hedrick, 1990). CAHEA was charged with the evaluation and accreditation of AH educational programs and reviewing essential guidelines with accreditation procedures (Accreditation Review Commission on Education for the Physician Assistant, n.d.).

Commission on Accreditation of Allied Health Education Programs

In 1992, the Higher Education Amendments of 1992 provided federal regulations that required accreditation agencies to aggressively examine an increasing body of evidence substantiating educational quality and institutional compliance (Higher Education Amendments, 1992). In 1995, the AMA replaced CAHEA with the Commission on Accreditation of Allied Health Education Programs (CAAHEP), a freestanding accrediting agency for AH (CAAHEP, n.d.). In the United States, CAAHEP is the largest programmatic and specialized accreditor responsible for over 2,200 programs across 1,300 sponsoring institutions in 23 health science fields (CAAHEP, 2015).

Association of Specialized and Professional Accreditors

Created in 1993, the Association of Specialized and Professional Accreditors (ASPA) promotes specialized and professional accreditation practices and serves as a resource to the specialized community (Gelmon, O'Neil, Kimmey, & The Task Force on Accreditation of Health Professions Education, 1999). With approximately 60 member agencies, ASPA provides a collaborative forum and collective voice that supports the importance of U.S. specialized and professional accreditation in higher education programs and schools. ASPA communicates the value of accreditation as a means of enhancing educational quality and advancement in knowledge, skills, good practices, and ethical commitment. Educational issues facing institutions of higher education, governments, students, and the public are ASPA membership priorities (ASPA, n.d.).

Allied Health Deans

AH deans and program directors generally support the purpose, process, and effectiveness of accreditation and specialized accreditation for assuring quality in higher education (Baker, et al., 2004). Each institution is responsible for the accreditation review costs and fees where approximately 90% of the expenses are associated with costs in time, human and fiscal resources (Kennedy, Moore, & Thibadoux, 1985). Reducing costs by reduced frequency and intensity between on-site accreditation evaluations has been suggested (Elwood, 1994). Once accredited, the health professions education institution and its accompanying program typically complete a yearly operational report to maintain accreditation status. A comprehensive re-evaluation and site visit occur approximately every three to ten years, depending on the accreditation agency (Baker, 2001). Research has demonstrated that AH Deans prefer outcome-oriented accreditation standards rather than process-oriented accreditation (Davis, 1985).

A common theme among specialized accreditation agencies is that clinical education decisions are under the auspices of the health professions education institutions and their educational programs, as long as students are able to demonstrate specified competencies as per the standards in each field (Romig, et al., 2012). Most specialized accreditation agency executive directors acknowledge the need to accommodate changes in clinical education methodology and some discussed their flexibility with program accreditation requirements. For example, the Accreditation Council for Education in Nutrition and Dietetics (ACEND), formerly known as the Commission on Accreditation for Dietetics Education (CADE), recommends that faculty of dietetics educational programs continue to implement a variety of innovative quality education models (Commission on Accreditation for Dietetics Education, 2010). Healthcare students need to be prepared for their professional requirements, including the substantial time commitment and required financial resources (Bollag, 2007). Accreditation agencies should provide the professional and educational expectations that underlie the movement to a higher degree with clear identification of accreditation standards and requirements (Association of Schools of Allied Health Education Committee, 2008).

Student Education

The value of accreditation is a vital component in AH education programs (Bonner, 2012). The concept of education as a worthwhile investment providing long term benefits for students and society motivates some parents to make great sacrifices to pay for their children’s education (Baum & Schwartz, 2012). When students graduate from an accredited program, this fiscal rationale provides families with quality reassurance (Scearse, 1989). It is expected that students graduating from an accredited educational program have the knowledge and skills, ensured by a standardized curriculum and education, to safely and effectively handle the patient healthcare needs required for success in their profession (Bonner, 2012). The reputation of the academic institutions, the specialized professions, and patients are assured by the accreditation process that provides a continuous flow of graduates who are prepared to enter the healthcare workplace as competent and skilled clinicians (Bonner, 2012).

Clinical Education

Clinical education issues associated with specialized accreditation requirements include: attaining the minimum required clinical hours; having sufficient clinical placement sites and access to required specialty rotation sites; faculty shortages; and whether or not accreditation standards will incorporate web-based courses and simulation hours as an added component to clinical education standards and requirements (Romig, et al., 2012). Academic administrators and clinical faculty often state that periodic accreditation site visits, for demonstration of institutional and program documentation of adherence to standards, are an inflexible and time-consuming process (Bonner, 2012; Scearse, 1989). The initiation of coordinated events between regional and specialized accrediting agencies might increase the productivity of institutional and program reviews while reducing the administrative burden and other associated expenses (Burd, 1998a).

There are inconsistencies in specialized accreditation requirements and standards for student supervision across universities and colleges and within AH disciplines (Romig, et al., 2012). Tighter supervisory requirements such as “line of sight” or “direct supervisory” of the clinical instructor may be more prevalent in disciplines such as physical and occupational therapy (Dunfee, 2008; Gwyer, et al., 2003; Kirsch, 2014). While the benefit of students in the clinical arena has been identified in nutrition, occupational therapy, physical therapy, and social work (Australian Capital Territory Health, 2007), changes in program guidelines, accreditation requirements and reimbursement policies have impeded this advantage (Gwyer, et al., 2003; Kirsch, 2014). Further research is warranted on accreditation standards and their impact on overall clinical education outcomes (Mathews, Smith, Hussey, & Plack, 2010).

The ASAHP Clinical Education Task Force recently completed research titled, “Clinical Education from a Specialized Accreditation Viewpoint: A Report of the ASAHP Clinical Education Task Force” where interviews with 14 executive directors of specialized accreditation provided further insight into the dynamics of accreditation and clinical education (Romig, et al., 2012). This report supported a recent trend where accreditation directors encourage institutional and program flexibility in determining the structure and content of the educational curriculum and clinical requirements. Executive directors of accreditation agencies were asked to use a five-point Likert scale to rate the importance of clinical education. All 14 executive directors rated clinical education as "*very important*" to competency and certification, a mean ranking of 5 "*very important*" on a 5-point Likert scale (Romig, et al., 2012). A common theme was that clinical education decisions are under the auspices of the education programs as long as students are able to demonstrate specified competencies as per the standards in each field. Most executive directors acknowledged the need to accommodate changes in clinical education methods and some discussed related changes in accreditation requirements (Romig, et al., 2012). A practical example would be the accreditation agency endorsement of a program raising or exceeding the minimum clinical education requirements (Phelps & Gerbasi, 2009). Based upon the ASAHP Clinical Education Task Force research (2012), executive directors of specialized accreditation: are on target to manage the educational system to ensure academic rigor coupled with sensible economics; understand clinical education and support models of transformation in response to the evolving healthcare environment; and encourage a continued partnership among accreditation agencies and educational institutions in the development of healthcare education. The ASAHP Clinical Education Task Force endorses clinical education experiences; encourages innovation in methodology to continue training well prepared students; supports a partnership between accreditation agencies and academic institutions; and encourages student feedback (Association of Schools of Allied Health Clinical Education Task Force, 2012).

History and Role of Regulation

Higher education, with its significant contributions to the national economy and its impact on future growth through learning and innovation, is the lynchpin of the U.S. economy and society (National Research Council, 2012). Through forward-looking and purposeful federal and state policies, American universities have developed into a national asset (National Research Council, 2012). During the Civil War, the Morrill Act of 1862 founded a partnership between the federal government and the states to create universities that would teach agriculture, engineering, and military professions (Morrill Act, 1862).

The triad concept, developed Post World War II, was established to strengthen communication, coordination, and enforcement between education, accreditation and regulation. Within the triad, the federal government is delegated with funding educational eligibility; the state government is responsible for establishing institutions and credentialing through certification or licensure; and voluntary institutional membership is needed for accreditation (Baker, 2001). Figure 1 illustrates “The Triad” between the U.S. Department of Education, state governments, and accreditors on the institutions and educational programs (McKitrick, 2012).

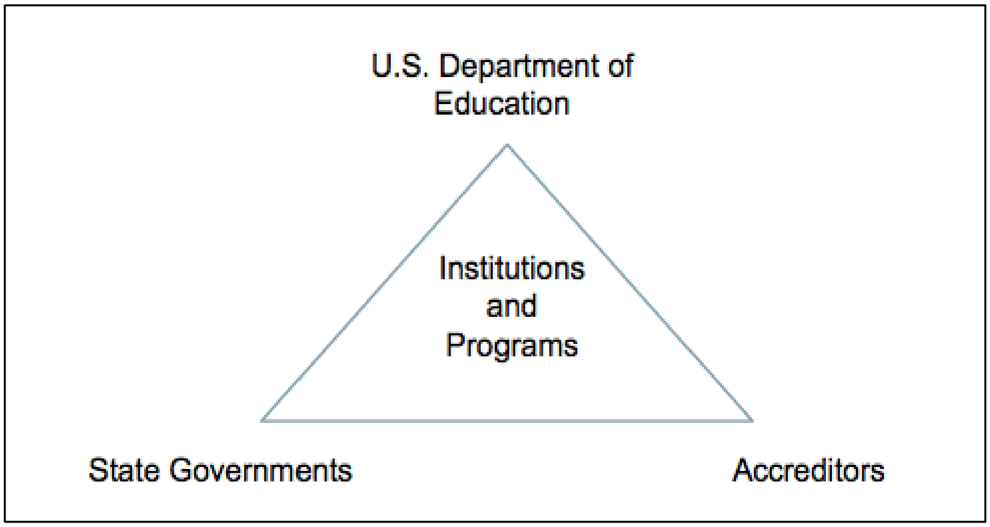


Figure 1. “The Triad”, McKitrick Accreditation Presentation, Association of Schools of Allied Health Professions Spring Meeting, March 23, 2012. Adapted with permission (Appendix E).

Federal Regulations

In the 1950s and 1960s, government and higher education institutional collaboration resulted in innovation across many areas important to America’s future including: national defense and homeland security, health and medicine, education, energy, and economic development (National Research Council, 2012). Title IV of the Higher Education Act (Higher Education Act: Student Aid Regulations, 1965) provides assurance that eligible taxpayer funds are utilized for individual and societal well-being, economic efficiency, workforce advancement, and civic contribution (National Advisory Committee on Institutional Quality and Integrity, 2011). The link between accreditation as the reliable authority on the quality of education and Title IV eligibility is an important factor in the governance of student financial aid (Harris, 2012; Higher Education Amendments, 1992).

Medicare, approved under the Title XVIII of the Social Security Act (1965), provides health insurance to people age 65 and older, regardless of income or medical history. The Act and accompanying expansion of elderly healthcare coverage has impacted the education and training of healthcare professionals. Since Medicare's inception in 1965, the program has reimbursed certain educational costs for AH, medicine, and nursing based on the belief that healthcare educational activities enhance the quality of care in an institution and that Medicare has a responsibility to share in these costs. Therefore, the costs associated with student training were recognized as an allowable expense. The *Federal Register* (Federal Register, 1966) published the first federal regulation to address the Health Care Financing Administration's (HCFA; known today as the Centers for Medicare & Medicaid Services) obligation to share in the costs of AH and nursing education. At that point in time, most training for non-physician health professionals was hospital-operated (Elwood, 2009). When HCFA implemented the prospective payment system (PPS) for inpatient hospital services in 1983, funding for healthcare education was paid for separately via an education "pass-through." The members of Congress considered that hospitals benefited from participating in clinical training through services provided by trainees, potential recruitment of trainees, and lower training costs for new employees when trainees were hired. According to Elwood (2009, p. 149), "Total current pass-through payments for allied health and nursing are in the range of $260 million annually. This amount contrasts with overall Medicare program spending, which was $216 billion in the fiscal year 2000. While the portion spent on allied health and nursing pales in comparison with these overall expenditures, this money continues to be of vital importance to many providers” (Elwood, 2009, p. 149).

Interestingly, most U.S. regulations and subsidies pertain to physicians, even though approximately 60% of the healthcare services are delivered by other healthcare professionals (O'Neil, 1993). According to the ASAHP (ASAHP, n.d.-b), the term AH became popularized as a result of deliberations that led to the passage of the Allied Health Professions Personnel Training Act (1966). Under the Allied Health Professions Personnel Training Act of 1966, Congress appropriated $3.735 million to expand the number of AH personnel and build upon AH teaching and training. While Congress appropriated more than $276 million between 1966 and 1979, appropriations were zeroed out in 1980, reinstated in 1990 and again in 2005, and were subsequently zeroed out in 2006 (Gale, 2011). Overtime, the shift from institution-centered care to community-based services in the AH arena (Scaffa, 2001) has resulted in a concomitant reduction in AH educational funds traditionally sponsored by the federal government via in-hospital services (Vardemann, 1992).

The passage of the Balanced Budget Act of 1997 and the Medicare Prospective Payment System, with its associated cost containment measures impacting skilled nursing facilities and home health agencies, had an undesirable impact on certain AH professional employment opportunities (Brachtesende, 2005). For instance, the eight percent decline in employment for occupational therapists (OT) from 1990 to 1996 was followed in 1998 by a further decline in

OT employment opportunities (Scaffa, 2001) and a dramatic drop in student enrollment (Brachtesende, 2005). Cost containment initiatives shifted patient care from institution-centered to community-based services where OTs have a primary role (Scaffa, 2001). However, the cost containment policies instigated tighter reimbursement policies and decreased availability of AH employment at hospitals, skilled nursing facilities, and home health agencies (Reiss, 2002). There was a shift from full-time to hourly or per diem employment with decreasing benefits which discouraged potential students and resulted in a simultaneous decline in AH student enrollment (Brachtesende, 2005).

Aging Population

Driven by a growing and aging population, healthcare in the 21st century has rapidly changed with disease burdens shifting from acute disorders to chronic disease and disability (Kacmarek, Durbin, Barnes, Kageler, Walton, & O'Neil, 2009; Ridenour & Trautman, 2009; Wieck, 2003). The U.S. Census Bureau projects that the U.S. population will exceed 350 million people by 2025, and all states will have more people and more elderly as the baby boomers age (Campbell, 1997). The aging of the population and the rising cost of health care is projected to cause an increase in spending on the major health care programs and Social Security from more than 10% of Gross Domestic Product (GDP) in 2012 to almost 16% of GDP 25 years from now; a combined spending equivalent to about $850 billion (Congressional Budget Office, 2012a). In contrast, the past 40 years of spending on total federal government programs and activities averaged about 18.5% of GDP (Congressional Budget Office, 2012a).

In response to the changing demands in national healthcare, structural changes to U.S. policy now focuses on meaningful quality healthcare with reduced costs. For example, the comprehensive prevention agenda of Healthy People in 2020 (United States Department of Health and Human Services, 2013), provides science-based, 10-year national objectives for improving the health of Americans with its emphasis on alternative and managed models of care for wellness and disease prevention (Baum, 2000). Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes (PricewaterhouseCoopers Health Research Institute, 2010). Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality, and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures (*Healthcare delivery in 2019*, n.d., paragraph 5-8). Creating efficient and collaborative healthcare models with quality patient care is essential for the favorable characterization of healthcare reform (Center for the Health Professions at UCSF, 2011; Rogers & Nunez, 2013).

Primary Healthcare Professionals

Reported by Brachtesende (2005), the U.S. healthcare system is facing a significant shortage of primary healthcare professionals because of America’s baby boom generation aging and increased focus on long-term care. The Patient

Protection and Affordable Care Act (PPACA; 2009) provided a 15% increase in the number of graduate medical education positions and other primary healthcare providers targeted for expansion such as nurse practitioners and physician assistants to meet the healthcare demand (Elwood, 2012c; Hooker, 2010; Patient Protection and Affordable Care Act, 2009). The rationale for investing in medical education stems from the belief that there will be a positive effect on healthcare delivery, such as improving healthcare in underserved areas or increasing the number of primary care practitioners (Murray, et al., 2000). As the number of clinically active physician assistants (PAs) is projected to increase by almost 72% in 15 years, expansion goals should include about a 34% presence of primary care PAs (Hooker, Cawley, & Everett, 2011). According to a report from the Georgetown University Center on Education and the Workforce, almost 30% more healthcare professionals will be needed by 2020 in order to meet the demand for healthcare services (Carnevale, Smith, & Strohl, 2010). With an estimated 5.6 million healthcare job vacancies between 2010 and 2020, the potential that the healthcare industry will provide millions of new, high-quality jobs over the next decade appears promising. Advances in medications, technology, and healthcare practices, coupled with demand for care in the aging population, supports the positive job growth and employment outlook for all healthcare occupations (Carnevale, et al., 2010).

Allied Health Reimbursement

Specific to AH, the PPACA (2009) defined AH professionals as follows:

> The term "allied health professional" means an allied health professional as defined in section 799B(5) of the Public Health Service Act (42 U.S.C.

> 295, p.5) who—(A) has graduated and received an allied health professions degree or certificate from an institution of higher education; and (B) is employed with a Federal, State, local or tribal public health agency, or in a setting where patients might require health care services, including acute care facilities, ambulatory care facilities, personal residences, and other settings located in health professional shortage areas, medically underserved areas, or medically underserved populations, as recognized by the Secretary of Health and Human Services.
> (Federal Code of the United States, 2012, p. 1245)

For AH professionals, the PPACA (2009) contains provisions including: loan forgiveness, recruitment/retention of students, and mid-life career training programs (ASAHP, 2011). Under the new rules, U.S. Congress capitated payments on federal student loans at 10% of the “discretionary” income and forgave any outstanding debt past 20 years (Mitchell & Ensign, 2012). The PPACA expansion into health education centers and geriatric education training also includes AH participation (ASAHP, 2011).

This healthcare legislation was a positive move forward in addressing healthcare professional staff shortages since the Balanced Budget Act of 1997 placed a cap of the number of graduate medical education (GME) programs available nationwide. States such as New Jersey have increased the number of medical students by 50%. However, due to the insufficient number of GME slots, the State will be 2,800 physicians short in 2020 to meet its growing healthcare needs (Cavalieri, 2011). While the U.S. Senate bill titled the Resident Physician Shortage Reduction Act of 2011 (Resident Physician Shortage Reduction Act, 2012), would have increased the number of Medicare-supported training positions for medical residents by 15% (~15,000 positions) over five years, this legislation was not enacted. Other federal legislation that addressed the shortage of primary care healthcare providers is the Medicare Hospice Care Access Act (Medicare Hospice Care Access Act, 2011), which expanded physician assistant reimbursable duties to cover the treatment of hospice patients. This legislation was not passed. The full impact of national healthcare legislation and federal and state regulations on AH professions, student education and the supply of clinical placement slots remains unknown (Mathews, et al., 2010).

Funding of Allied Health Education

While federal and state governments allocate and fund teaching and research from billions of taxpayer dollars, federal funds have been unstable and declining, and state funding has been eroded over the past two decades (American Council on Education, 2012b; National Research Council, 2012). The AH professions typically are dependent upon state-subsidized education which is likely to remain scarce (O'Neil, 2011). Historically, graduation rates, time to degree, and cost per credit have been the one-dimensional measurement tools used to assess institutional performance (National Research Council, 2012). However, in the present environment of rising tuition and decreasing public funds, there is a sense of urgency regarding university and college accountability to define and assess performance and productivity to improve cost controls while not compromising quality or accessibility (National Research Council, 2012).

Allied Health Professions Political Action Committee

In 2014, the Allied Health Professions Political Action Committee (AHP PAC), a nonpartisan, nonprofit political action committee, was created to support elected Congressional leaders from both parties who advocate for AH (Allied Health Professions Political Action Committee, 2015). The AHP PAC is the only political action committee that supports the collective interests of all AH education and professions from national and federal levels. Taking an active role in the political process, the charge is the AHP PAC is committed to raising the awareness of critical issues impacting AH with Congress.

State Regulations

Distance Learning and Online Education

In 2010, the U.S. Department of Education, under the Program Integrity Issues, provided regulatory guidance for universities and colleges that participate in Title IV funding and operate in multiple states via distance learning (Federal Register, 2010). Effective July 2011 with a 2014 extension, all Title-IV eligible universities and colleges, whether public, private or for-profit, two- or four-year, regionally or nationally accredited, were to comply with each state's authorization regulations. Specifically, institutions must be authorized to conduct business in a state and are not exempt from these requirements on the basis of accreditation or years in operation. Institutions offering distance education to students in a state where they are not physically located must meet that state's requirements. All institutions must be licensed in any state where they do business and provide clinical education. Institutions must be able to document compliance to the federal government upon request (Williamson & Koebel, 2012). After legal rulings, the Department of Education stated that, for now, higher education institutions that provide distance learning online may not be required to explicitly comply with the state authorization rules in other states; still, many states have adopted new regulations for institutions operating distance-education programs within their borders (Bidwell, 2013; Williamson & Koebel, 2012).

The Commission on the Regulation of Postsecondary Distance Education, a group comprised of higher-education leaders, accreditors, and policy experts, is working on a national framework to provide reciprocity for institutions operating across state lines (Bidwell, 2013). State regulation of the standards and costs of online programs continues to present problems for both for-profit and nonprofit colleges seeking to enroll students across the country (Kelderman, 2012). Thus, the commission stated that this framework would establish nationwide performance guidelines agreed to by participating states, reduce state-authorization costs and inefficiencies, and streamline distance-education making nationwide student enrollment more affordable. This legislative initiative addresses the high distance learning fees that institutions pays to educate student across a number of states and may alleviate colleges turning away students in order to avoid authorization costs. The commission goal is to develop recommendations on how to make the state-authorization process less costly and more efficient while maintaining consumer protections and ensuring quality education (Kelderman, 2012). Going forward, compliance with state-by-state laws and regulations for distance learning and other online educational innovations may be costly, time consuming, and place these higher education programs at risk (Brandt, et al., 2010).

Clinical Education

States laws and regulations are routinely passed and amended. A recent trend is requiring higher education healthcare institutions to obtain state authorization for the clinical experience, including field experiences, clinical practice and student teaching of a program (Williamson & Koebel, 2012). While the institutional physical presence criteria differ from state-to-state, many states' regulations and licensing prompts include clinical experiences. There are national and regional efforts to propose recommendations such as state reciprocity. In the meantime, compliance with state-by-state laws and regulations for clinical education and institutional physical presence is another time consuming and potentially costly legislative issue that higher education healthcare programs are facing (Brandt, et al., 2010).

Student Clinical Placement

The complexity of appropriate student clinical placements is another important issue in the clinical education arena. Alignment of clinical practice for healthcare staff and clinical education and training for students with current policies and regulations from The Joint Commission (TJC) and Centers for Medicare and Medicaid (CMS) is time-consuming and costly process (Strader & Di Giacomo-Geffers, 2013). At the legislative level, there is considerable variability in the responsibilities that different states assume in educational quality assurance (National Advisory Committee on Institutional Quality and Integrity, 2011). Clinical rotations may be highly regulated due to a combination of federal and state requirements. The *Comprehensive Accreditation Manual for Hospitals (CAMH)* requires job descriptions, background checks, primary source verification of licensure, orientation, competence assessments, and performance evaluations (Comprehensive Accreditation Manual for Hospitals, 2012; Strader & Di Giacomo-Geffers, 2013). At the institutional level, the clinical rotation paperwork process, including background checks, drug testing, probationary procedures and other mandated items, are associated with an increasing burden of clinical placement for the health professions education institution, clinical facility, and the clinical faculty (Bender, 2012). As patient safety and reducing medical errors are a priority, the complexity of placement remains an important issue in the clinical education arena (Kohn, Corrigan, & Donaldson, 2000). Increasingly important to student clinical education and appropriate clinical placement settings will be the various forms of professional credentialing, such as licensure, registration and certification, that provide a mechanism for quality assurance, patient safety and reduced employer liability (Collier, 2012).

Legislation has significant impact on the development, implementation and sustainability of clinical and collaborative education and practice (Casares, Bradley, Jaffe, & Lee, 2003). According to Casares et al. (2003), regulatory changes have negatively impacted job security, reimbursement, and patient quality of care. Meanwhile, productivity and paperwork have increased in the occupational environment according to feedback from clinical fieldwork educators and academic fieldwork coordinators. Specific to occupational therapy (OT) student fieldwork and clinical education, reduced reimbursement allocations have negatively or neutrally impacted student services and the ability of fieldwork sites to accept student placements. Important clinical education program objectives may be at risk when annual budgets are a concern. The AH literature does not offer any specific predictions or solutions on how to prepare for potential regulatory challenges in the clinical education setting. “Allied health lacks the visibility, economic muscle, and political clout of other contenders for the public wallet” (Elwood, 2009, p. 3), thus “federal support for allied health initiatives remains a strong desire and a most elusive goal” and a continuing regulatory challenge for AH education (Elwood, 2009, p. xi).

Scope of Practice

The Federal Trade Commission (FTC), responsible for supporting access and choices in a competitive healthcare market, has recently responded to pending state legislation and proposed state regulations that impact the scope of practice policies and impede patient access to healthcare (Elwood, 2012b). If enacted, state-level proposed actions would restrict the practice of some licensed, qualified healthcare professionals from performing the full range of services that they are educated and clinically prepared to deliver and restrict patient access to their services. These scope of practice restrictions “limit competition, impair free markets for healthcare services, risk additional cost increases to an already costly health system, and fail to improve patient safety” (Elwood, 2012b, p. 8). Restrictive scope of practice measures may also discourage interprofessional cooperation. For example, the Illinois State Dental Society is advocating that dentists be allowed to provide immunizations, but the Illinois State Medical Society opposes this option because patient care should remain under the coordinated and continuous care of the "medical home" (Elwood, 2013b). However, a recent state-level success is with Certified Registered Nurse Anesthetists (CRNAs) where 17 states that have opted out of the federal scope of practice requirement in order to provide improved access to safe, cost-effective anesthesia care, especially in medically underserved areas (Elwood, 2012a). Additionally, Alaska became the first state to permit mid-level dental providers, also known as dental therapists or registered dental practitioners (RDPs), to provide basic services for the poor and in rural areas (Elwood, 2012a). Scope of practice policies that match student clinical training and licensure for the delivery of the full range of healthcare services is essential for a cost-effective, team-based healthcare model (Elwood, 2012b).

Meanwhile, the state-by-state laws vary with respect to the process of dispute resolution and the scope of practice (Elwood, 2013b). While different professional groups seek to expand the types and kinds of healthcare services that can be legally provided, there is not a consistent ruling across the states and the legislative boards. While dental hygienists lobby for independent practice of routine services, the State of New Jersey, only permits administration of nitrous oxide under the direct supervision of the dentist (Elwood, 2013b). Healthcare professions, including AH disciplines, that are involved in attempts either to expand scope of practice or resist such expansion include:

> Ophthalmologists versus Optometrists
> Psychiatrists versus Psychologists
> Anesthesiologists versus Nurse Anesthetists
> Allopathic and Osteopathic Physicians versus Naturopathic Doctors
> Allopathic and Osteopathic Physicians versus Chiropractic Doctors
> Allopathic and Osteopathic Physicians versus Podiatric Doctors
> Dentists versus Dental Hygienists
> Chiropractors versus Physical Therapists
> Physical Therapists versus Athletic Trainers.
> (Elwood, 2013, p. 4)

Many state legislatures are redefining the scope of practice parameters in anticipation of a shortage of primary care practitioners to meet the increased healthcare needs of the aging population and patient additions from insurance expansion. Demands for healthcare services and the future of what a health professional can and cannot do for patient care will continue to be a heated topic (Elwood, 2013b).

Reimbursement Guidelines

Reimbursement guidelines and requirements for healthcare provider payment have become much stricter and no longer can any patient be selected and treated to encourage student learning through active patient care (Gwyer, et al., 2003). Student caseloads, including Medicare and third-party payer requirements, mandate “line of sight” or “direct supervision” by the clinical instructor in some professions (Dunfee, 2008). Some institutions and programs have created guidelines and strategies for Medicare supervision in the clinical environment (Buccieri, 2011; Yap, 2002). For AH, the uncertain impact of regulatory changes with an “anticipated 31% cut in rehabilitation reimbursement affecting physical therapy, occupational therapy and speech-language pathology”

(Frazer, 2011, p. 2) may cascade over to clinical education availability and funding. While policy changes with Medicare payment reductions for physicians, physical therapists, and other health care professionals were anticipated in 2012-2013 (Congressional Budget Office, 2012b), the Protecting Access to Medicare Act of 2014 prevented Medicare payment reductions through March 31, 2015. On April 16, 2015, regulatory uncertainties on potential Medicare payment reductions were halted with the passage of the Medicare Access and CHIP Reauthorization Act of 2015. This legislation permanently replaced Medicare's sustainable growth rate (SGR) formula, increased Medicare provider annual payment with a 0.5% increase through 2019, and will transition Medicare to an incentive-based payment system designed to encourage participation in alternative payment models. The Congressional Budget Office (2014) projects that in 2023, total Medicare spending will reach $1.079 trillion and Medicaid spending will reach $572 billion with 12 million new Medicaid beneficiaries by 2022. The uncertainties of healthcare reform and associated increases in healthcare expenditures are anticipated to impact the clinical education landscape (Frazer, 2011).

In summary, U.S. colleges and universities are extremely regulated; education is the only industry regulated by every federal agency (American Council on Education, 2012b). For instance, the Higher Education Opportunity Act of 2008 added over 100 new and complex regulations which add to the administrative burden and operative costs of higher institutions (American Council on Education, 2012b). According to Senator Lamar Alexander (2005), over 7,000 federal regulations govern our nations’ colleges and universities

(Broad, 2012). While there are recommendations to remove regulations and streamline policies in order to decrease expenses while improving the quality and productivity of our educational institutions, the implementation is yet to be seen (National Research Council, 2012). Further research is warranted with respect to federal, state and local laws and the corresponding impact on clinical education (Mathews, et al., 2010).

Role of Health Professions Education Institutions

American colleges and universities, recognized worldwide for centuries for their central characteristics in diversity, institutional autonomy and academic freedom, provide an enormous opportunity for superior education and dynamic innovation for all students (American Council on Education, 2012a). However, the world of higher education is changing and the international dimension of higher education is becoming increasingly important (Knight, 2004). The educational leadership of U.S. universities and colleges, with somewhat outdated institutional policies and practices, burdensome federal and state regulatory and reporting requirements, and unstable funding from government and industry, is now confronted with competition from international universities (The National Academies Press, 2012). Global competition over resources, students, and faculty is driving universities worldwide to launch strategic plans including brand differentiation and marketing campaigns (Drori, 2013). The concept of internationalization, defined as “the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education” (Knight, 2003, p. 2), has become increasingly important. Health professions education colleges and universities, both private and public, are being transformed from guild-like professional institutions of research and learning into an academic branded, modern organizations and institutional market players (Drori, 2013). Many factors, such as accessible global travel and rapid technological advancements, have contributed to an increasingly connected world (Pechak, 2012b). As the health professions education literature suggests, the present use of international education may be growing and further investigation and professional dialogue is warranted (Pechak, 2012b).

Healthcare System Consolidation

According to Helwick (2010), a growing impact on health professions education institutions is the competitive healthcare arena filled with mergers, acquisitions and joint ventures over the past decade. Health reform legislation, coupled with the $155 billion Medicare payment reduction and reimbursement models with payment bundling, has forced the medical model away from traditional private practice and into newly created hospital-physician partnerships better equipped to handle the challenges with reimbursement changes, quality metric concerns and technological improvements (Bosker, 2012; PricewaterhouseCoopers Health Research Institute, 2010). In 2010, hospital mergers and acquisitions increased by 25% to 30% as health systems acquired single practices and multi-specialty groups, facilities, alternative-site facilities, and hospitals (Helwick, 2010). Healthcare systems and reimbursement alterations have impacted higher education with cost-containment challenges and the focus on community resources beyond institutional boundaries (Jones, 1999). As clinical facilities and health science educational programs have limited resources, their need for each other is reciprocal, and a joint effort to ensure successful clinical productivity and student training is warranted for the present and the future (Collier, 2012).

Health Professions Education Costs and Benefits

Higher education faces increased scrutiny from regulatory agencies and the public regarding the costs versus the benefits of the national education system. This has resulted in institutions and colleges struggling to justify the importance of quality education and training (American Council on Education, 2012b; Burd, 1998b; Clabo, et al., 2012). There is significant pressure for universities and colleges to reduce the cost of higher education, implement technology driven changes for the delivery of education and move from traditional, campus-based programs towards all-online and mixed modality programs (Collier, 2012). Meanwhile, most AH education remains on a traditional, campus-based setting with the clinical component of the education emphasized in the latter stage of the overall program (Collier, 2012). By increasing cost-effectiveness and productivity, U.S. health professions education institutions will be able to honor their commitment to providing a quality education while also addressing other priorities such as constraining tuition increases, increasing student financial aid, and launching new educational programs (The National Academies Press, 2012).

Quality Education

Opportunities to lead in innovation, early application and adoption, and the delivery of new knowledge may have been missed by academic leadership lacking health professions education institutional clear direction (Moses, Thier, & Matheson, 2005). Interviews conducted by Moses et al. (2005) found that 75% of the academic medical center professions affirmed a concern for clinical quality and the need to revise the undergraduate and graduate curricula. Institutional commitment to delivering quality education is vital at the intersection of higher education and healthcare (Layman, et al., 2010). Historically, however, there is often a notable lag in the evolution of change in healthcare education as compared to higher education that may give rise to the existing challenges in AH clinical education (Collier, 2012). Health professions education institutions are responsible for the provision of work-integrated learning, an essential component of AH programs and student training (Rose & Best, 2005). According to Rodger, Webb, Devitt, Gilbert, Wrightson & McMeeken (2008),existing clinical education challenges including: program quality, clinical educator staffing, and clinical placement availability, require swift institutional attention and resolution. Common health professions education institutional challenges may include clinical faculty recruitment and retention of nurse practitioners, physician assistants and other key healthcare professionals (Orcutt, 2007). When health professions education institutional direction is properly implemented, positive outcomes may include quality clinical education, successful student learning, and clinical faculty job satisfaction (Wyatt & Ramos, 2010).

Health Professions Education Institutional Value of Clinical Education

Health professions education institutional recognition of clinical education as a valued professional activity displays commitment to the educational process, promotes professional development of clinical staff, and is a positive public service (C. A. Silkowski, personal communication, August 25, 2011). Yet, faculty efforts in the clinical education arena may appear negligible in comparison to the higher level of institutional appreciation and recognition of research pursuits (Watson, 2003). Clinical educators may receive fewer financial rewards. Instead, nonmonetary incentives such as sabbaticals, and public or professional acknowledgement with awards and publications may be offered. How far the lack of appreciation and recognition impacts critical factors such as student learning, clinical placement opportunities, AH program productivity and substantiality is unknown (J. O’Sullivan Maillet, personal communication, July 20, 2012).

Clinical Education

Health professions education institutions and their clinical educators generally consider how a positive and welcoming environment is conducive to a quality student learning experiences and future student recruitment opportunities (Rodger, Fitzgerald, Davila, Millar, & Allison, 2011). While several AH studies have captured qualitative and quantitative data identifying monetary and non-monetary costs and benefits associated with clinical education, the empirical research of the effectiveness and productivity of AH clinical education is dated and sparse across AH disciplines (Abercrombie, 1982; Chung, et al., 1980; Conklin, 1990; Giancola, 2003; Granick, 1989; Kling, 1980; Lindeblad, 1998). While the cost of student training includes: clinical instructor supervision, staff support and use of the equipment and supplies, students demonstrated efficient and effective resource utilization (Abercrombie, 1982). In addition, students positively contribute to increased AH clinical workplace productivity (Abercrombie, 1982; Conklin, 1990; Dawes & Lambert, 2010; Dillon, et al., 2003; Ladyshewsky, 1995; Meyers, 1990) and contribute to the net financial gain for the program and institution (Lopopolo, 1984). Overall student productivity may decrease in more intensive supervision settings such as: acute care, pediatrics, psychology and rehabilitation (Australian Capital Territory Health, 2007; Granick, 1989).

Clinical Placement Site Availability

One of the greatest concerns to health professions education institutions is the availability of clinical sites; AH programs need a sufficient number of appropriate clinical sites for its students (Collier, 2012). The emergence of large healthcare systems has resulted in competition between universities and colleges for clinical sites (Bender, 2012; Health Professions Network, 2010). For example, the Mayo Schools of Health Science is experiencing internal and external competition for clinical rotation sites with all types of students including AH disciplines and medical school, residency, and fellowships (Bender, 2012). Competition is increasing between “for-profit” institutions that have the ability to pay for clinical education placement versus the public institutions that typically do not pay for clinical sites (Health Professions Network, 2010). However, to retain clinical education rotations, financial arrangements with the large health networks may be an appropriate option (Smith, 2012). Benefits of a financial and contractual arrangement for clinical site placement is the guarantee of clinical site availability, the tracking of rotation data to support program and accreditation requirements, and a reduction in the number of affiliation agreements (Smith, 2012).

Student Recruitment and Retention

At the ASAHP 2012 Spring meeting, the Mayo Schools of Health Science reported a 90% retention rate of their AH students as employees (Bender, 2012). Healthcare institutions and employers that hire a student graduate who completed an internship at their facility save on recruitment and orientation expenses which may add up to 25% of the first year salary (Oliver, 2012). When institutional hiring costs amount to more than $150,000 in the first year, the opportunity to recruit and retain more than half of the students educated at the institutional system who possess an understanding of the culture, electronic health record (EHR) system and teamwork is greatly valued in performance and productivity (Pagel, 2012). Institutions recognize the value of identifying top performing students in clinical training as a recruitment pool opportunity (Laudicina & Beck, 2000).

Healthcare employers are concerned with the challenges of integrating new student graduates into the work environment when they are not prepared for the highly specialized tasks required. One Florida hospital system estimates the fiscal impact in orientation and training costs for its 2,400 new yearly hires totals over $7 million dollars (Dodds, 2012). Collaborative solutions on the institutional end may include an increase in didactic learning and clinical training with relevant clinical experiences within the scope of practice in order to meet the clinical needs of the healthcare employers. From the employer perspective, the identification of clinical training deficiencies with new graduate hires will enable higher education healthcare institutions to identify and address clinical training issues prior to student graduation and credentialing (Dodds, 2012). Effective partnerships between health professions education institutions and employers could positively impact the culture of both organizations, permit synergy in the hiring of new student graduates, reduce clinical workload and improve patient care (Dodds, 2012).

Role of Allied Health Deans

Changes in healthcare are constant, which explains why AH leadership that embraces and proactively manages change is a priority (Mase, 1973). In times of change and fiscal constraints, AH schools require leaders to ensure that their educational and resource requirements are satisfied (Bamberg & Layman, 2004). Surviving the challenging times of higher education and healthcare correlates to schools of AH producing and sustaining high quality leadership (Lynn, 2001). An AH dean is defined as the chief administrator of the total AH unit, and, in some institutions, this person may be called a division director or department health or chairman (ASAHP, 2011-12). The primary duties of the AH dean include but are not limited to: the assurance of adequate personnel and facilities for effective instruction, the provision of education in accordance with the degree requirements and accreditation standards, the fostering of a scholarly environment supportive of research and other scholarly activity, and the effective leadership for planning, growth, and improvement of the health science programs (Austin Community College, 2012; Panola College, 2012). Most AH deans view operational knowledge and practical experience as the most effective method of acquiring the essential leadership competencies and skills (Bamberg & Layman, 2004). The financial accountability and responsibilities of AH deans may differ greatly. Various leadership models range from a dean with financial and academic accountability to models where the dean is solely accountable for academics (Hunnicutt, 2008). The AH dean has an influential role in shaping the health professions education institutional core values and scholarly activities of the educational environment (Bamberg & Layman, 2004).

Many deans of AH schools would subscribe to the belief that healthcare is a common good and something to which the general public should have access. A corollary belief of many AH deans is that because healthcare is a common good, government at all levels has a responsibility for ensuring that quality healthcare is available (Elwood, 2009). AH deans depend upon collegiate collaboration from their health professions education institutional colleagues including: associate / assistant dean, programs directors, and faculty, to support and communicate the common good along with the institutional vision (Bamberg & Layman, 2004). Strategic forecasting and planning skills are important for AH deans (Bamberg & Layman, 2004; Bamberg, Layman, & Jones, 2000), especially when considering the immense amount of internal information from sources within the organization, and external information from sources outside the organization (Holmes & Scaffa, 2009). With the abundance of information, AH deans appear to have greater assurance with the use of internal information in the decision making process and more uncertainty with the combined use of internal and external information (Daft, Sormunen, & Parks, 1988). Deans must proactively utilize information cues for strategic planning and forecasting (Bamberg & Layman, 2004).

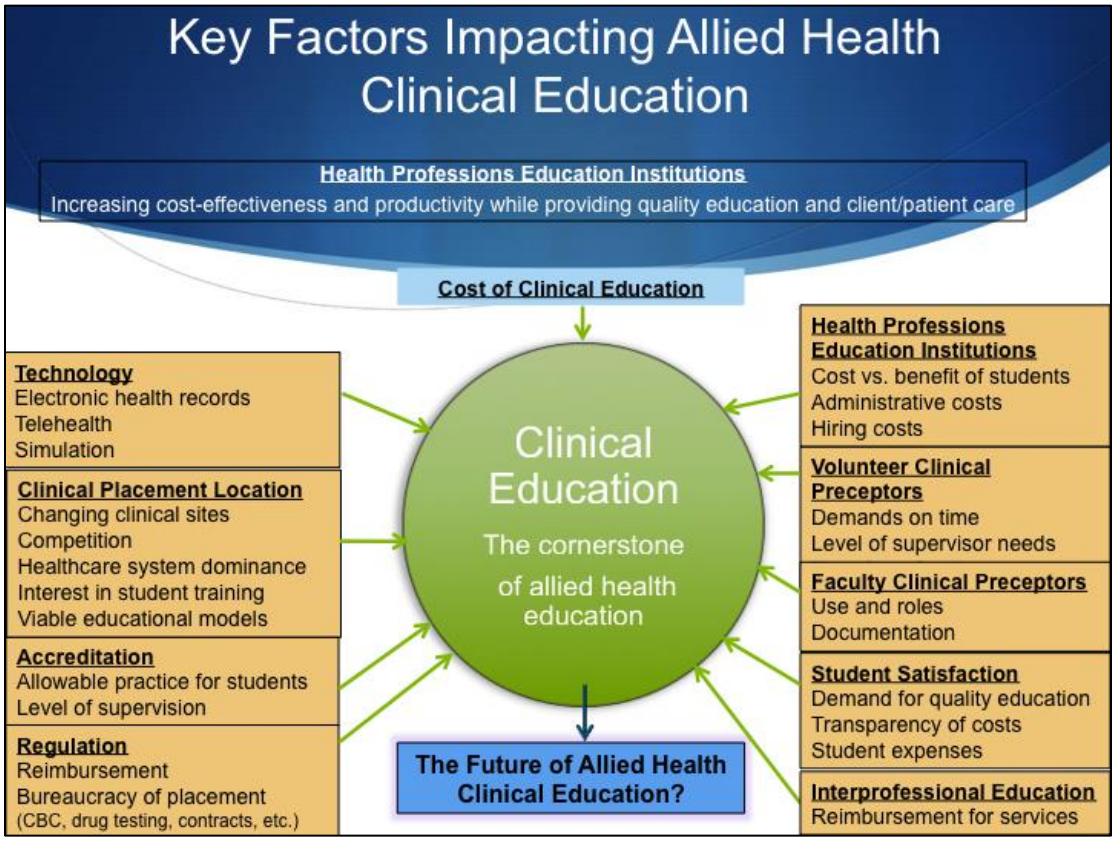
Using their leadership and visionary efforts in value-based and collaborative initiatives, deans and chairs use the necessary resources to build their schools into optimal learning organizations (Clark & Tugwell, 2004). A key part of the AH dean role of leadership is to selectively process and interpret an abundance of information to make effective decisions and determine an appropriate course of action to align the organization with its environment (Correia & Wilson, 1997; Daft, et al., 1988). Most AH deans are generally interested in and motivated to assess the key factors impacting health professions education including the opportunities and challenges for reshaping the future of AH education (Layman, et al., 2010). AH literature supports the identification of AH deans as experts and leaders in higher education, including health science education and clinical education (Bamberg & Layman, 2004; Hunnicutt, 2008; Layman, et al., 2010). AH dean cognitive aptitude and proficient leadership is crucial at “the intersection of two turbulent environments, higher education and healthcare” (Layman, et al., 2010, p. 18).

A report by Goodwin Simon Strategic Research (2010) discusses the popularity of AH training programs in the State of California; most likely due to the success of its graduates in securing employment in their field of training. The AH programs are not able to keep up with student demand due to five limiting factors: budget cuts, too few partnerships with healthcare providers for training and internships, lack of funding to hire instructors, limited affordable clinical space, and reduced student financial aid (Goodwin Simon Strategic Research, 2010). Specific to clinical education, the majority (53%) of deans sampled from the California AH colleges stated that there is a lack of affordable clinical space for required AH student training. Budgetary reductions are the primary reason AH deans eliminated programs or reduced the number of student slots. The limited number (27%) of AH deans who reported an increase in their capacity to train AH workers stated it was due to additional grant funding (Goodwin Simon Strategic Research, 2010). Given the future economic uncertainty of the State of California, most AH deans will not launch new programs and doubt that existing programs will be expanded. AH training is anticipated to be positively impacted by federal healthcare reform increasing the demand for AH workers; however, AH deans in the State of California see no relief in sight for their budget-strapped, resource-limited AH colleges (Goodwin Simon Strategic Research, 2010).

The movement to proactively address the issues of coherence and structure of the U.S. higher education may be intensifying. The future of higher education and healthcare education is important but also unknown. While external factors are beyond the institutional control, internal factors may be significantly influenced by the academic leadership and visionary foresight (Lundquist, 2012). Higher education leadership that will effectively address issues of access, affordability, curriculum, and pedagogy to accommodate our future needs will require collaboration, risk taking, and care (Lundquist, 2012).

Factors Impacting Allied Health Clinical Education Conceptual Model

A review of historic and current clinical education literature failed to produce an illustrative model of factors impacting AH clinical education. As a result, O’Sullivan Maillet and Romig developed the framework of the key factors impacting AH clinical education. Shown in Figure 2 (p. 100), the *Key Factors Impacting Allied Health Clinical Education* conceptual model, updated with slight revisions from 2011 through 2013, describes clinical education today (2011-2014) and serves as the foundation to guide this Delphi research (O'Sullivan Maillet & Romig, 2011-2013). AH deans are responsible for processing and acting upon substantial volumes of information from internal and external environments (Layman, et al., 2010). There are a variety of key factors in categories that impact the AH environment including: clinical and faculty preceptors, health professions education institutions and student satisfaction. Other key factors in categories impacting AH clinical education include: accreditation, offsite clinical placement locations, regulation and technology. Changes anticipated to impact clinical education include but are not limited to: healthcare regulations, clinical models, clinical placement locations, and interprofessional education. Inherent in the clinical education model is the assumption that there are costs associated with all of the key factors impacting the future of AH clinical education. The one-way directional arrows seen in Figure 2 are used to illustrate the key impacting AH clinical education. Each of the key factors, and its category, has been found in the literature to be important to current and future AH clinical education.



Key Factors Impacting Allied Health Clinical Education

Health Professions Education Institutions
Increasing cost-effectiveness and productivity while providing quality education and client/patient care

Cost of Clinical Education

Technology
Electronic health records
Telehealth
Simulation

Clinical Placement Location
Changing clinical sites
Competition
Healthcare system dominance
Interest in student training
Viable educational models

Accreditation
Allowable practice for students
Level of supervision

Regulation
Reimbursement
Bureaucracy of placement
(CBC, drug testing, contracts, etc.)

Clinical Education
The cornerstone of allied health education

The Future of Allied Health Clinical Education?

Health Professions Education Institutions
Cost vs. benefit of students
Administrative costs
Hiring costs

Volunteer Clinical Preceptors
Demands on time
Level of supervisor needs

Faculty Clinical Preceptors
Use and roles
Documentation

Student Satisfaction
Demand for quality education
Transparency of costs
Student expenses

Interprofessional Education
Reimbursement for services

Figure 2. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20, and June 26, 2012; April 19, 2013.

Key Factors Impacting Allied Health Clinical Education

The collective examination of key factors impacting AH clinical education was used as the foundation of this Delphi research. The key factors and the clinical education categories deemed relevant to AH clinical education include, but are not limited to: health professions education institutions, clinical preceptors, clinical faculty preceptors, student satisfaction, technology, clinical site location, accreditation, regulations and interprofessional education

(O'Sullivan Maillet & Romig, 2011-2013). Appendix F provides a summary of the key factors by category impacting AH clinical education that are discussed and deemed relevant to this research.

Volunteer Clinical Preceptors

A volunteer clinical preceptor is generally a full-time healthcare employee in a healthcare organization who serves as a part-time unpaid volunteer to supervise students in clinical education (Australian Capital Territory Health, 2007). Leaders of health professions education institutions can demonstrate commitment to clinical educators by providing time, training, and incentives; this assurance facilitates clinical preceptors to excel in their preceptor role and ensures quality student training (Australian Capital Territory Health, 2007; Dunfee, 2008; McAllister, 2005; Strohschein, Hagler, & May, 2002). Especially in the complex and challenging clinical education setting, feedback and problem solving are critical to providing quality student education and training (Cole & Wessel, 2008; Croxon & Maginnis, 2009; Hagler & McFarlane, 1992). An effective learning environment requires adequate time required for feedback and reflection from instructor to student (Burnard, 1995; Meyers, 1990; Musolino, 2006; Radtke, 2008). Additional factors impacting clinical preceptors efficiencies include: the potential impact of student presence on clinical productivity, the quality of the learning experience, and the quality of patient care (Huddleston, 1999). Research by Laudicina and Beck (2000) showed that clinical laboratory managers reported that student training did not impact workforce productivity. Additionally, the clinical staff appreciated the importance of student clinical education for recruitment, new employee orientation, and staff professionalism (Laudicina & Beck, 2000).

Given that assessment drives learning, clinical educators are confronted with the challenge of identifying robust and feasible assessment tools to measure student skills and competency across the clinical and educational continuum (Murray, et al., 2000). Because assessment of student performance in the clinical setting is a complex task, clinical preceptor training on accurately assessing competencies and skills and providing methods for constructive feedback may enhance the allied healthcare learning environment. Clinical instructor feedback on development and preceptor training in teaching and learning coupled with student post clinical feedback has shown that there is a positive impact on student instruction and student performance (Rindflesch, et al., 2009; Vendrely & Carter, 2004). Vendrely and Carter’s (2004) physical therapy research showed that clinical preceptor training programs that prepare the clinical instructor for the multifaceted role involving student teaching, assessment, and supervision are valuable to student performance. Rindflesch et al. (2009) found that time, effort, and experience further developed clinical instructor coordination, supervision and education of students using the physical therapy and occupational therapy collaborative clinical model. Academic and clinical faculty may not always concur on the need to standardize length, breadth, and credentials for clinical preceptors. Therefore, the use of clinical competencies was suggested as an outcome assessment for clinical education instructor performance (Wetherbee, et al., 2010). Educators should continue to improve their ability to measure students' clinical competencies, global awareness, and community involvement (Eckher, 2006). These results may encourage clinical educators and instructors to remain current on healthcare knowledge and clinical procedures (C. A. Silkowski, personal communication, August 25, 2011).

Cost reductions, reimbursement changes, and increased productivity demands have reduced the amount of time clinical preceptors can devote to clinical education (Casares, et al., 2003; Kirsch, 2014). When limited by the Medicare and private insurances to “observation only” placements, offering students a robust clinical education experience may be challenging and time consuming to many clinical instructors (Gwyer, et al., 2003). Volunteer clinical faculty can be expensive to the healthcare facility in terms of decreased productivity of the clinical preceptor relative to patient care (Jarvis, 1983). This is further compounded by the increased competition between colleges and institutions for adequate numbers of clinical sites (Smith, 2012). To recruit and retain clinical preceptors and keep or add clinical sites, AH programs may consider offering tangible and/or intangible benefits. These benefits can include: economic incentives, in-service and continuing education opportunities, adjunct faculty appointment for clinical preceptors, and recognition of the importance that clinical education offers the clinical placement sites (Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey, 2013). When community-based healthcare educators and role models provide interprofessional and population health student education and clinical training experiences, the U.S. Department of Health and Human Services Advisory Committee on Interdisciplinary Community-Based Linkages (ACICBL; 2014) endorses the use of an incentive and recognition system to recruit and retain their involvement.

While AH disciplines do not typically pay their clinical preceptors, a new trend towards financial compensation may be emerging. For example, 6 - 8% of physician assistant programs now pay for clinical site rotations (Smith, 2012). The American Academy of Physician Assistants (AAPA) is recommending an additional $1,000-$1,500 in tuition per clinical curriculum to be used for preceptor and clinical site payment similar to medical student fees which guarantee student clinical placement (Giannelli, 2011). The Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey reported that 20% of physician assistant (PA) community-based sites are financially compensated for student training with funding sources from budget reallocation and/or increased tuition. While there is pressure to use financial compensation, top incentives offered for PA student training included: library access, educational credits, faculty positions, and public recognition (Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey, 2013).

Volunteer clinical preceptor retention may also benefit by providing in-service training at the clinical site (Smith, 2012). Continuing education courses at no cost to the preceptor, payment for continuing education at professional meetings, adjunct faculty title and offering library privileges are all possible recruitment and retention tools (Smith, 2012). The Advisory Committee on

Interdisciplinary Community-Based Linkages (ACICBL; 2014) recommends continued faculty development and team-based training for healthcare leaders in interprofessional and population-based education. As reported at the American Council of Academic Physical Therapy (ACAPT) Clinical Education Summit (2024), creating a culture of innovative learning and training for clinical preceptor development is important to cultivate and sustain a highly qualified pool of educators (American Council of Academic Physical Therapy Clinical Education Summit, 2014). Still in an effort to improve the balance between personal and work obligations, some volunteer clinical preceptors work part-time or job share, which may pose credentialing concerns with part-time vs. full-time clinical preceptor status and continuity issues with respect to student training (Dunfee, 2008).

Faculty Clinical Preceptors

A faculty clinical preceptor is generally defined as a faculty preceptor paid position at an academic health science institution who is employed to support student training in clinical education (Huddleston, 1999). Salaried clinical faculty are typically appointed to health professions educational programs subject to professional accreditation that require clinical teaching, clinical supervision, and clinical direction (University of Iowa College of Liberal Arts & Sciences, n.d.). Typically, the rank and title of salaried clinical-track faculty are Clinical Instructor, Clinical Assistant Professor, Clinical Associate Professor, and Clinical Professor. The standard expectation for salaried faculty clinical positions is that 60% of effort is devoted to clinical teaching and supervision, with the 40% remainder divided equally among professional productivity and institutional and professional service. The typical clinical faculty salary plan features a fixed and variable base salary with incentives to receive additional salary payments for outstanding performance (Virginia Commonwealth University, 2002).

Clinical faculty are ordinarily expected to have the following qualification: a doctorate or master's degree in the discipline; current certification and/or licensure; experience in clinical or other professional practice; and excellence in teaching and in clinical supervision (University of Iowa College of Liberal Arts & Sciences, n.d.). A review of clinical faculty performance and teaching and training outcomes may be routinely reviewed, including: student evaluations, assessment of training/instructional materials, and observation of delivery of training or instruction (Wayne State University Office of the Provost, 2006). University policy typically requires that clinical faculty demonstrate professional productivity and service beyond clinical service. This productivity may be demonstrated in a variety of ways, such as: curriculum and program development; presentations at professional meetings; clinical workshops; professional consultation; outreach activities to service organizations and civic groups; publications that discuss clinical techniques/practice, methods of standards in clinical supervision, or standards of practice; editorial review for professional journals; and service on state or regional licensing/certification boards (University of Iowa College of Liberal Arts & Sciences, n.d.).

Specific to clinical education, the use of faculty clinical preceptors may eliminate many clinical education challenges such as: the quality of the learning experience, the potential impact of student presence on clinical productivity, the quality of patient care (Huddleston, 1999). Due to the primary focus on student clinical training, the faculty level of clinical supervision may provide better alignment with the tighter supervisory requirements necessary during clinical education (Dunfee, 2008; Gwyer, et al., 2003; Northern Plains Clinical Education Consortium, 2010). Similar to volunteer clinical faculty, faculty clinical preceptors value the opportunity to give back to their profession with the sharing of knowledge, advice and encouragement when a student needs assistance in mastering a clinical skill (Pagel, 2012).

Student Satisfaction

The clinical setting is an authentic workplace in which to learn disease prevention, health promotion, and quality patient care. An established clinical workload and a positive learning climate is beneficial for student learning (Gordon, Hazlett, ten Cate, Mann, Kilminster, Prince et al., 2000). A welcoming clinical environment, coupled with a quality clinical education experience filled with structured modeling and structured learning experiences, is a priority for healthcare students (Gallagher, Carr, Wang, & Fudakowski, 2012; Rodger, et al., 2011). Several researchers studied the impact of clinical education on student learning (Black, Jensen, Mostrom, Ritzline, Hayward, & Blackmer, 2010; Cole & Wessel, 2008; Gallagher, et al., 2012; Papp, Markkanen, & von Bonsdorf, 2003).

Based upon the research, several important conclusions were made. First, a longitudinal study of first year, novice physical therapy students reported that their confidence and performance in a professional role was positively impacted by the clinical education learning experience and social interaction of the clinical environment (Black, et al., 2010). In another study, students reported positive learning when challenged to expand thinking and reasoning, theory was linked to practice and feedback was provided on skills and patient conduct (Cole & Wessel, 2008). Optimized clinical learning exists when students have an adequate supply of educational resources (Papp, et al., 2003) coupled with the opportunity to have direct clinical exposure and active participation with supervised patient care (Gallagher, et al., 2012; Stark, 2003).

In a complex and rapidly changing healthcare environment, AH students must develop effective and efficient critical thinking with self-reliant problem solving skills in order to transition from a novice to a competent practitioner (Anderson, 1998; Burnard, 1995; Cox, 1993; Hagler & McFarlane, 1992; Higgs, 1992; Higgs, 1993). With increasing clinical experiences, students develop increased self-confidence and are more likely to achieve their clinical goals and utilize their clinical skills (Clark, Owen, & Tholcken, 2004; Lundberg, 2008). Student satisfaction occurs when experienced supervisors use effective teaching strategies and model clinical techniques (Buccieri, Pivko, & Olzenak, 2011; Rodger, et al., 2011). Students desire a favorable learning environment, with mutually respectful relationships, open and honest communication, coupled with timely, constructive feedback (Gallagher, et al., 2012; Rodger, et al., 2011; Stark, 2003).

Other researchers found a variety of factors that negatively affected the clinical education of students (Acharya, Cox, West, & Anderson, 2012; Healey, 2008; Sarikaya, Civaner, & Kalaca, 2006; Tully, 2004). For example, research conducted on third-year undergraduate medical radiation sciences students, which included diagnostic radiography, radiation therapy and nuclear medicine technology disciplines, showed that student learning needs took a secondary role compared to the priority of patient care (Acharya, et al., 2012). All too often, students and clinical preceptors report heavy workloads and a fast paced work environment with limited time for reflection interfered with in-depth learning approaches (Healey, 2008). The lack of support from the clinical staff, fear of failing, hurtful criticism and lack of feedback may all contribute to student stressors in the clinical environment (Acharya, et al., 2012; Lofmark & Wikblad, 2001; Tully, 2004). Fear of making mistakes, harming patients, not fully grasping clinical procedures and administering incorrect treatments were identified stressors for medical students (Sarikaya, et al., 2006). It is reasonable to equate these stressors to AH clinical training with the heavy emphasis on patient care (Acharya, et al., 2012). Additional factors contributing to student dissatisfaction and stress may include: communication and operational issues between the institution and clinical sites, feelings of not being valued, and unmet expectations. These significant issues contribute to student attrition during a time when healthcare workers are at a premium (Last & Fulbrook, 2003). The limited amount of literature and the potential for different stressors to impact student learning in the clinical environment warrants further research (Acharya, et al., 2012). The opportunity to collect student and graduate feedback on clinical experiences and educational preparedness may provide valuable outcome assessment information for schools of AH and other healthcare professions (Richter & Ruebling, 2003).

The investment in health professions education, including clinical education, requires significant financial obligations. Under a mandate from the Higher Education Opportunity Act of 2008, the U.S. Department of Education is responsible for publishing college costs to provide families with more information about the actual price of college and financial aid (Higher Education Opportunity Act, 2008). While future earnings may be sufficient to fund the educational investment for most students, some students require parental subsidies and/or financial aid (Baum & Schwartz, 2012). Student borrowers graduating into a sluggish economy, with high debt and limited job prospects, struggle. One out of five borrowers will default on their federal loan for undergraduate education (Mitchell & Ensign, 2012). Many community college nursing students decide to remain at a lower level associate degree, opting out of full-time bachelor’s degree programs, due to financial concerns, time constraint, work obligations, and family priorities (Munkvold, Tanner, & Herinckx, 2012). Student satisfaction is closely correlated with a detailed orientation and disclosure of educational expectations coupled with a comprehensive account of financial obligations (Rodger, et al., 2011).

There is a trend towards adjusting the professional curriculum and increasing clinical hours for licensing and certification (N. Kirsch, personal communication, February 11, 2011; Wetherbee, et al., 2010). Many professional associations, including pharmacy, physical therapy, and audiology, have experienced “degree inflation”. The programs advocate raising degree requirements to the clinical doctorate level due to the rapid growth of knowledge and new professional standards which may result in increased student workload and financial contributions for the advanced degree fulfillment (Bollag, 2007). Healthcare students need to be knowledgeable about their professional curriculum requirements and clinical expectations, including the substantial time commitment and required financial resources (Bollag, 2007). In turn, health professions education institutions and colleges are at risk of losing public trust and student affordability if educational costs continue its exponential increases (Burd, 1998b). Health professions education institutions should strive to limit cost escalation of academic and clinical activities using modern instructional methods and technological advances, such as online learning and simulation, to provide quality, cost effective learning and improved efficiency and productivity (The National Academies Press, 2012).

The process of selecting a clinical site is a challenging and time-consuming process for many AH students and their clinical education coordinators (Gangaway & Stancanelli, 2007). When selecting a clinical training sites, physical therapy and occupational therapy students stated that financial concerns were of primary importance, followed by clinical requirements, specialty program offerings, and clinical facility reputation (Gangaway & Stancanelli, 2007). Interestingly, research by Gangaway and Stancanelli (2007) showed that there was no correlation with financial concerns and the availability of free or low cost student housing at the clinical site. Subsidized housing for clinical rotation sites may be more of a college and university concern with maintaining affordable housing, with a geographically convenient location, providing student insurance, and covering utilities and other expenses (Smith, 2012). ASAHP Clinical Task Force interviews with Executive Directors of Specialized Accreditation support these findings that supplemental expenses (room, board, gas, and travel to clinical site) can be a significant financial burden to AH students (Romig, et al., 2012).

At the ASAHP 2012 Spring meeting, the Mayo School of Health Sciences faculty stated that a clinical rotation coordination fee, based upon the length of the clinical rotation, is often absorbed by the clinical affiliate or added to student charges (Bender, 2012). Mayo School of Health Sciences students are responsible for administrative costs including: affiliation agreement, application and tracking fees, background check, immunizations and drug screens, access to Mayo resources (Electronic Medical Records, facilities, etc.), orientation (Electronic Medical Records training, Health Insurance Portability and Accountability [HIPAA, 1996] , and other policies, badge, parking and building access, and exit processing (Bender, 2012). The future state of tuition and education has the Mayo School of Health Sciences sharing a minimal portion of the tuition to assist in the administrative costs of student education.

Technology

Technological advances are exploding across the healthcare arena (Heller, Oros, & Durney-Crowley, 2000). When technology can be leveraged to prevent medication errors, avoid patient injuries and death, and increase healthcare workforce productivity, the value of innovation is impressive (Stroud, 2012). Future healthcare professionals are expected to be prepared and skilled in basic skills, knowledge, and competencies required in technology utilization, including but not limited to simulation, biomedical equipment, computer software advancements, and electronic health records. Healthcare technology is used to document, store, and access patient records; diagnose, monitor and treat patients; provide immediate access to healthcare information; and serve as an educational medium (Valdez, 2008), all of which is important information to correlate with student learning in the clinical environment. In nursing research, approximately half of undergraduate nursing programs reported that students are required to be proficient in word processing and e-mail (McNeil, Elfrink, Bickford, Pierce, Beyea, Averill et al., 2003). There is growing research on the impact of simulation and alternative solutions, such as telehealth, electronic health records, health insurance portability and accountability, in clinical education and the impact on key factors such as student learning, clinical placement and program productivity (Chang & Trelease, 2001; Harder, 2010; Issenberg, McGaghie, Petrusa, Lee Gordon, & Scales, 2005; Nestel, Groom, Eikeland-Husebo, & O'Donnell, 2011).

Telehealth

According to Congdon (2012), the focus on improving healthcare outcomes and streamlining its delivery spurred the demand for telehealth and remote patient monitoring technologies, largely because of the influx of newly insured patients expected under healthcare reform. The U.S. telehealth market comprises nearly 75% of the worldwide patient population and within the next five years is expected to increase considerably (Congdon, 2013). Telehealth is defined as “the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances” (Mosby's Medical Dictionary, 2009). The term "telehealth” is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012). Closely associated with telehealth is telemedicine, defined as the use of medical information exchanged from one site to another via electronic communications to improve patients' health status (American Telemedicine Association, 2012). Telemedicine services include: specialist referral, patient consultations, remote patient monitoring, medical education, and consumer medical and health information. By leveraging telemedicine and telehealth to care for patients virtually or monitor chronically ill patients from home or a local venue, healthcare providers can maximize the number of patients seen per day and accommodate increased patient volume (Congdon, 2012). Telehealth has been shown to reduce inpatient readmissions and results in fewer home care visits, all which serve to mitigate costs (Congdon, 2013).

Collaboration on a telehealth system in clinical education between the Schools of Nursing and Medicine at the University of California showed positive feedback from students, faculty and staff (Chang & Trelease, 1999). The telehealth project start up development and construction costs of $24,000 included two clinics with workstations, software, peripherals (e.g. ENT scope, illumination system, camera, speakers, optional cart) and one year in maintenance. Student feedback was positive regarding expanded access to patients and the enhanced learning of healthcare information. Student feedback was lowest in the area of learning opportunity from telehealth compared to the actual clinic environment (Chang & Trelease, 1999). Another nursing study supports with the University of California findings; the students had a positive view of the use of real-time videoconferencing technology for the ease of access to a wider range of patients, but preferred the clinical environment over televideo exchanges (Hawkins, 2012). Similarly, John Hopkins University’s use of mobile technology in their mHealth Global Initiative for training and clinical care support of healthcare workers in resource-limited areas (Intel Healthcare Innovation Summit, 2012) is a practical example of telehealth technology. As healthcare delivery increasingly mandates timely information for effective patient care decision-making, information technology must be integrated into the healthcare curricula for clinicians, educators and students (McNeil, et al., 2003).

An important goal for telehealth is the expansion of healthcare coverage (Trends, December 2012 - January 2013). Current medical and legal practices dictate that the location of the patient determines the state in which the healthcare provider practitioner must be licensed, unless the state has exemption provisions within its licensure laws. The Service Members Telemedicine & E-Health Portability Act (2011) was created to amend the United States Code, Title 10, in order to expand the state licensure exception for certain health-care professionals (Service Members Telemedicine & E-Health Portability Act, 2011). The legislation permits the Department of Defense healthcare providers to treat members across state borders and improve access to service members living in rural areas. There is a concurrent push for nationwide medical licensure reform to ensure that healthcare providers can optimize the use of telehealth technologies to address misdistribution of the providers and care for patients living in rural areas (Hacias, 2012). From an AH perspective, legislative and regulatory language and policies vary by state for many AH professions. For example, 14 states and the District of Columbia overseeing speech-language pathology and audiology have a provision, statute, regulation, or policy, regarding the use of telehealth (American Speech-Language-Hearing Association, 2011). This positive momentum with inter-state coordination and legislative mandates for telehealth-provided services offers healthcare coverage for millions of patients (Trends, December 2012 - January 2013).

Simulation, Standardized Patients, and Assisted Learning Technology

Healthcare professionals of the 21st century are required to be adept at using a variety of sophisticated technology that stimulates critical thinking and skill acquisition in a safe and user-friendly environment (Heller, et al., 2000). Simulation, defined as a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012). Simulation facilitates patient safety via education, assessment, research, and health system integration. Student clinical training often includes the use of standardized patients which mimic a real patient in order to simulate a set of symptoms or problems and provide a safe and supportive environment conducive for learning (Association of Standardized Patient Educators, 2012). A standardized patient is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Baerheim & Malterud, 1995). Assisted learning technologies, defined as techniques that can replace or amplify real clinical experiences with guided experiences, are increasingly being used by healthcare educators to supplement student learning in AH, medicine, and nursing (Gaba, 2004).

There is growing interest in healthcare simulation and the First Research Consensus Summit of the Society for Simulation in Healthcare recently convened (Dieckmann, Phero, Issenberg, Kardong-Edgren, Ostergaard, & Ringsted, 2011). However, simulation, standardized patients and assisted learning technology research is lacking in its methodological approach in the creation of a conceptual framework and the development of validated measurement tools for mutual simulation and clinical performance evaluation (Harder, 2010; Sanford, 2010). In addition, there is an infrequent extrapolation of assessment results to practice performance or training advancement (Hatala, Issenberg, Kassen, Cole, Bacchus, & Scalse, 2008; Wenghofer, Klass, Abrahamowicz, Dauphinee, Jacques, & Smee, 2009). Thus, the challenge for healthcare research to explore assisted learning technology, find an alignment with educational theory, identify validated measurement tools, create accurate assessment and outcome metrics, and establish simulation learning as a viable option to supplement real life patient management (Harder, 2010). Results from an integrative review of high-fidelity simulation and safety found that simulation-enhanced clinical experiences may reduce medication errors, but any evidence about perceived improvement in safer communication has not be translated into practice (Harder, 2010). Additional comparative research to support theoretical models of simulation are warranted (Shearer, 2013). Future simulation research should consider provisions for instructional design, well-developed methodology, validated measurement tools, clinical reasoning and competency assessment with curricular integration to illustrate the educational benefits and learning to improved patient care (Cook & Triola, 2009).

Assisted learning technology has proven to be a valuable supplement to clinical education and can prepare students for clinical education in a safe learning environment where errors can occur with the opportunity for self-reflection and learning (American Physical Therapy Association, 2007; Barnes, Kacmarek, Kageler, Morris, & Durbin, 2011). Manikins, simulated patients, and anatomic simulators were the most common technology used in the healthcare arena based upon a recent literature search (Nestel, et al., 2011). “Role-playing, task trainers (e.g., plastic arm on which to practice inserting intravenous catheters), standardized patients using actors, human patient simulators (e.g., SimMan®), and virtual simulation (e.g., Second Life®)” are commonly reported nursing simulation learning tools” (Richardson, Gilmartin, & Fulmer, 2012, p. 227). The use of virtual patients with realistic scenarios who are responsive to user interaction and provide assessment feedback is relevant to clinical reasoning skill development (Cook & Triola, 2009). Instruction using simulation-based technology can develop skills and clinical competencies, shape clinical practice strategies, build student self-confidence (Thomas & Mackey, 2012), and advance team building and interprofessional training (American Physical Therapy Association, 2007; Barnes, et al., 2011; Buelow, et al., 2008; Butina, Brooks, Dominguez, & Mahon, 2013; Kenaszchuk, MacMillan, van Soren, & Reeves, 2011; School of Health Related Professions Clinical Education Task Force, 2011). High-fidelity patient simulators create real-life clinical situations; now the possibility exists that students can substitute the high-fidelity simulation experience for equally valuable clinical learning (Richardson, et al., 2012).

When the economics of simulation are considered, careful attention is required to select the appropriate technology for the intended learning environment and suitable level of fidelity desired (Alessi, 1988). In general, novice students engage in a meaningful learning experience with less sophisticated technology, such as computer-aided instruction or virtual patients. Human patient simulation (HPS), used for critical events and team training, is a more costly high-fidelity technology (Association of American Medical Colleges, 2007). A high-fidelity virtual patient ranges from $10,000 to $50,000 per case with an average 16-month production time and added expenses for system maintenance (Huang, et al., 2007). Figure 3 illustrates the relationship between levels of learning: novice, experienced, and expert, in relationship to fidelity (Alessi, 1988).

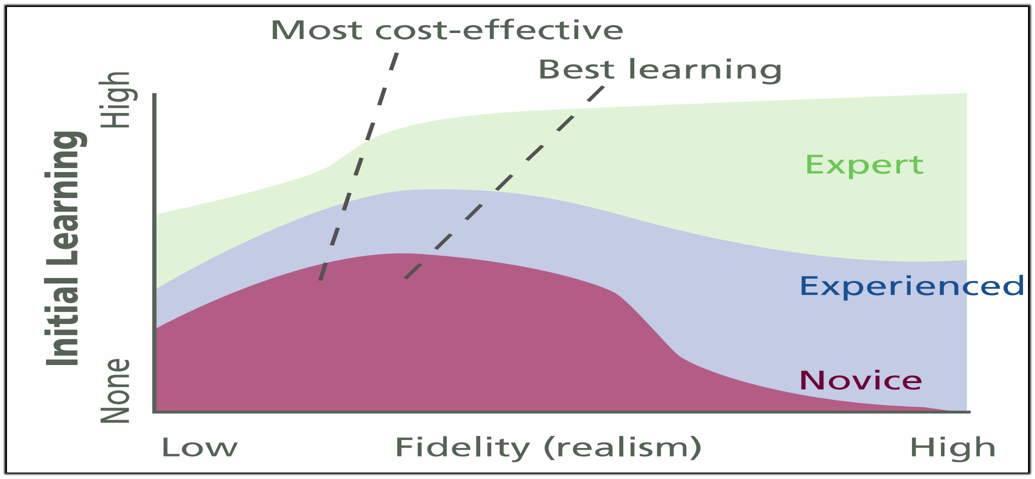


Figure 3. The hypothesized relationship beween level of learner and degree of fidelity. This diagram suggest that the optimal level of fidelity may change with the learner's level of experience. Diagram adapted from Alessi S. Fidelity in the design of instructional simulations. *Journal of Computer-Based Instructions*.1988;15: 40-47. Reprinted with permission (Appendix G).

Faculty use of simulation, especially with advanced high-fidelity technology such as human patient simulation, requires competency-based training and certification (Cook & Triola, 2009). The Association of American Medical Colleges (2007) promotes certified training with simulator operations to identified health clinicians including medicine, specialized nursing, and physical and respiratory therapy among other disciplines. The National League for Nursing (2005) endorses nursing instructors implementing advanced technologies in the core competency learning process including critical thinking and student self-reflection. Faculty must be adequately prepared in the technical procedures to effectively use the technology and have a clearly developed learning curriculum with evaluation criteria in the facilitation of student learning and assessment (School of Health Related Professions Clinical Education Task Force, 2011).

Simulation-based assessment activities that can link learning to real-life situations may provide the evidence for inclusion in health care accreditation standards. Medicine, dentistry and nursing are all using or considering the use of simulation-based certification assessment (Holmboe, Rizzolo, Sachdeva, Rosenberg, & Ziv, 2011). The Institute of Medicine report titled *The Future of Nursing Leading Change, Advancing Health* (Future of Nursing, 2011) supports the development and sharing of simulation scenarios and use in nursing assessment. The National League for Nursing began the use of simulation-based assessment in 2010 prelicensure Registered Nurse programs (National League for Nursing, 2010). While implementation of simulation in nursing education started slowly, 16 states allow real clinical time to be accounted for through the use of simulation and 17 states may consider regulation changes concerning high-fidelity patient simulation in the future (Nehring, 2008). Such findings have implications for alterations in the prelicensure nursing curriculum that could examine patient safety and quality concerns addressed by the public and leading health and nursing organizations. With a nursing faculty shortage, New York College of Nursing instituted a unique clinical teaching model substituting high-fidelity human patient simulation for up to half of the clinical experience. Assessment of this learning showed positive student outcomes on skill practice and critical thinking in a safe and controlled environment involving communication and teamwork (Richardson, et al., 2012). Based on evidence and quality outcomes, simulation could eventually be used for a significant proportion of the nursing education clinical time (Jeffries, 2009).

Recent simulation research from the National Council of State Boards of Nursing (NCSB, 2014) demonstrated that up to 50% simulation can be effectively substituted for traditional clinical experience in prelicensure core nursing courses. A high-quality simulation preclinical nursing program mandates best practices in: terminology, equipment and supplies, dedicated and formally trained faculty and staff, experts in theory-based pedogue and debriefing to create a realistic environment (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). From an allied health perspective, the American Council of Acadamic Physical Therapy (ACAPT) Clinical Education Summit (2014) recommendations include the use of tiered clinical experiences, with technology and simulation, to achieve clinical competencies that meet accreditation requirements and result in safe, effective, and efficient patient care. The fundamental goal in the near future is the incorporation of validated simulation-based technology into accreditation and regulatory assessment when proven to achieve healthcare quality and patient safety (Holmboe, 2011; Issenberg, 2005). The advancing use of various forms of simulation for clinical experiences is a significant trend across the AH and many other health professions (Collier, 2012).

The future promises more technological advances with great learning potential to be integrated into the AH education (Triola, Huwendick, Levinson, & Cook, 2012). In order to capture the present day utilization of virtual reality learning models in AH education, the ASAHP Virtual Learning Task Force conducted an exploratory online survey (Butina, et al., 2013). The research focus was on virtual learning, defined as “an interactive and self-contained computer-generated environment mimicking real life” (Butina, et al., 2013, p. e7). The ASAHP survey results show that 40% (17 out of 42) of the ASAHP survey respondents, comprised of deans, assistant/associate deans, department chairs, and/or program directors/coordinators from 25 different member institutions, use some form of virtual technology. Some of the reported pros of using a virtual learning environment include: builds student confidence, allows for more efficient use of clinical sites, improves student preparation for clinical/rotation phase, can promote interprofessional experiences and provides an environment free of harming patients. Some of the reported cons of using a virtual learning environment include: limited flexibility of curriculum to incorporate these experiences, lack of faculty time to develop virtual experiences, faculty prefer a hands-on experiences, lack of faculty interest, student orientation time, student value of direct patient experiences, lack of practicing manual motor skills, accreditation standards require real life patient experiences, virtual environment costs, cost of instructional development, lack of technological infrastructure and physical space. In conclusion, the ASAHP virtual learning survey results demonstrates the future potential that virtual learning may provide to AH education (Butina, et al., 2013).

Despite the technological advancements, assisted learning technology may not be favorably positioned to replace AH clinical practice and learning (Lowe, 2007). The ASAHP Clinical Education Task Force conducted interviews with 14 executive directors of specialized accreditation, in part, to obtain an AH perspective on the incorporation of technology-learned hours as an added component to clinical education standards and requirements (Romig, et al., 2012). According to several accreditation directors, simulation and standardized patients are not always acceptable options to replace the hands-on patient care experience obtained in the clinical education (Romig, et al., 2012). While 10 of the 14 disciplines permitted the use of simulation, the degree of acceptance reflected a full range of acceptable options. For instance, nine directors stated that simulation hours could be substituted for clinical hours, but this is not specifically addressed in accreditation standards (i.e., neither encouraged nor prohibited). Two directors noted that simulation was excellent for pre-clinical training, labs and examinations. One director stated that simulation could be used for most of the training, and another director mentioned that simulation was allowed when exposure to a particular procedure was challenging (Romig, et al., 2012). Whether accreditation standards and federal and state laws will endorse assisted learning technology to substitute for required hours of AH clinical practice and learning is unknown (Lowe, 2007).

Clinical Placement Locations

Clinical education provides students hands-on educational experiences, typically ranging from acute care to community settings within health, education and human service sectors, including public, private and not-for-profit organizations (Rodger, Webb, Devitt, Gilbert, Wrightson, & McMeeken, 2008). There is variation in the total number of required clinical experiences and hours among the AH professional disciplines. When some courses necessitate that up to a third of the training occurs in clinical or field work experiences, this puts stress on obtaining sufficient student clinical placements (Rose & Best, 2005). In occupational therapy training, for example, accreditation requirements encompass 1,000 hours of fieldwork in acute, chronic, congenital, and acquired conditions while focusing on the patient with occupational and environmental needs (World Federation of Occupational Therapists, 2002). AH clinical placements have been generally impacted by the inflexibility around the traditional direct supervision model of clinical education which is the primary source of clinical education occurring in the hospital or clinic areas (Scarvell & Stone, 2010). The rigidity in clinical placement criteria challenges faculty, facilities, course outcomes and competency development (Gubrud-Howe &

Schoessler, 2001; Ogur, et al., 2007; Weidner & Henning, 2004). To increase student placement capacity and improve departmental productivity, increased student to clinical instructor ratios of two to one or three to one are being used more frequently at some clinical sites (Dawes & Lambert, 2010; DeClute & Ladyshewsky, 1991; Ladyshewsky, et al., 1998; Roberts, et al., 2009; Triggs & Shepard, 1996). Recent occupational therapy literature shows faculty and student support for the two to one clinical model with the benefit of novice student learning and peer collaboration whereas the one to one clinical model was favored in more advanced, later stage of clinical experiences to demonstrate individual autonomy (O'Connor, Cahill, & McKay, 2012). Clinical placement site capacity and shortage issues are a real concern in providing the increasing number of physician assistant students with solid, hands-on, patient-based experiences (Dehn, 2011; Orcutt, 2007). In response to limited clinical placement sites, discussions at the 2011 American Academy of Physician Assistants (AAPA) meeting revolved around increasing the student to clinical instructor ratio from three to one up to a six to one clinical education model (Giannelli, 2011).

In conjunction with changing student to faculty ratios, new clinical placement sites are increasingly being used (Gubrud-Howe & Schoessler, 2001; Weidner & Henning, 2004). More clinical placements are occurring in tertiary hospital settings, regional and rural hospitals and community settings (Mak & Miflin, 2012; Roberts, et al., 2009). The trend today is away from centralized academic health centers and towards decentralized academic health networks (Knettel, 2012). There has been movement from the traditional placement sites to alternative locations such as: acute and rehabilitation facilities, federal, state, and local government healthcare services, county health departments, educational systems, and public or private healthcare companies (Rose & Best, 2005). Alternative clinical sites, the reduction in number of acute care inpatient beds, and increased outpatient patient care at new locations, has challenged clinical education direct patient care training opportunities for AH disciplines (Romig, et al., 2012). Medicare and private insurance rules and regulations regarding “observation only” clinical experiences has also contributed to requiring clinical hours at off-site clinical rotations (Gwyer, et al., 2003; Scaffa, 2001). While reduced funding, healthcare system mergers, new models of patient clinical care, managed care and reimbursement and many other factors have challenged AH clinical placements, flexibility and creativity may provide acceptable alternative models for the future of clinical education (Rodger, et al., 2008).

Community service learning settings provided an opportunity for AH students to develop a positive perception of their knowledge, skills, and confidence in their abilities to provide patient services. This was observed with occupational therapy students providing services to adults with neurological conditions (Atler & Gavin, 2010). Creativity in placements and scheduling have been successful in expanding clinical slots (Health Professions Network, 2010) and have provided a positive growth in the capacity of clinical education training sites (Gwyer, et al., 2003). Securing a suitable AH clinical placement site can include a variety of options such as: private practitioners offices (Doubt, Paterson, & O'Riordan, 2004; Kacmarek, et al., 2009), patient homes (Kacmarek, et al., 2009), nursing homes (Kantor, 2012), student-run free clinics (Gonsalves, 2011) and the creation of an underserved community clinic (Rosenwax, Gribble, & Margaria, 2010). When traditional clinical placement sites are not available, the use of interprofessional, specialist, and project placements (Sheepway, Lincoln, & Togher, 2011) or an international pro bono clinical experience (Sawyer & Lopopolo, 2004) are reported as valuable options. The AH and medicine literature provides many examples where the rural and underserved community settings provide student access to clinical training (Australian Capital Territory Health, 2007; Brockwell, Wielandt, & Clark, 2009; Lowe, 2007; Mak & Miflin, 2012).

The movement to community-based and contractual patient care has further challenged preceptor-student education and supervision due to the increased amount of time spent driving to clinical location sites (Casares, et al., 2003). Clinical education placement difficulties may decrease clinical preceptor interest in student training, especially if the preceptor’s perception is that student training is not a priority or part of the educational core business (Health Professions Network, 2010).

Consideration for web-based learning, simulation, and other assisted learning technology may provide solutions to future clinical education placement challenges (Romig, et al., 2012). Nursing education, for example, has implemented supplemental use of simulation in order to provide maternal/newborn obstetric experiences to alleviate the shortage of clinical practice sites (Howell & James, 2012). In response to a reduction of clinical placement sites for dietetic students, dietetics educators are using standardized patients in a nutritional counseling courses to enhance student clinical training (Hampl, Herbold, Schneider, & Sheeley, 1999).

Most AH clinical sites do not normally receive payment for student training. Costs associated with training are borne by the healthcare institution (Rindflesch, et al., 2009). Furthermore, clinical placement sites can be impacted by contractual and administrative issues with the healthcare institution and its discipline-specific programs (School of Health Related Professions Clinical Education Task Force, 2011). Faculty working to secure clinical placement sites have found that the contractual process is optimum when there are existing relationships and healthcare facility is committed to the community (Health Professions Network, 2010; School of Health Related Professions Clinical Education Task Force, 2011). Many faculty gain experience administering contracts “on the job”, since no formal training on the contractual process is typically provided (School of Health Related Professions Clinical Education Task Force, 2011). AH programs may not be able to keep up with student demand due too few partnerships with healthcare providers and clinical placement sites for training and internships (Goodwin Simon Strategic Research, 2010; Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey, 2013). Clinical placement coordinators should be encouraged to investigate contractual opportunities with teaching nursing homes (Kantor, 2012) since the United States has over 15,690 nursing homes with an overall bed occupancy rate of about 85% (National Center for Health Statistics, 2010). When local programs utilize out-of-region clinical placement sites, the unknown factor is whether or not students are receiving the education to meet credentialing and employer requirements and standards (Performance Design Group, 2010). As the widening variety of clinical education sites produce AH students who can effectively demonstrate the skills and competencies necessary for graduation, health professions education institutions and accreditation may allow more flexibility, as long as these clinical outcome measures can be guaranteed (Collier, 2012).

International clinical education opportunities are increasing across AH, medicine, and nursing (Pechak, 2012b). Specific to physical therapy, international clinical education is defined as “an educational opportunity that a student participates in, outside of the country where the physical therapist education program is situated, for which he/she obtains clinical education credit” (Pechak, 2012a, p. 70). Physical therapy students who completed a 1-week international, pro bono clinical education experience reported an expanded world view, broader understanding of physical therapy, and improved critical thinking (Sawyer & Lopopolo, 2004). A recent 2009 survey of U.S. based physical therapy programs reported that most international clinical programs were 6 to 8 weeks in length and occurred in outpatient and hospital settings located in middle or higher income nations (Pechak, 2012b). The international component of higher education and clinical education is becoming a viable clinical education opportunity (Knight, 2004; Pechak, 2012b; Sawyer & Lopopolo, 2004).

Interprofessional Education

In the complex and rapidly evolving world of healthcare, it is not realistic or prudent to expect a solitary healthcare professional or profession to manage the multifaceted needs of patients and population health (Institute of Medicine, 2012). The World Health Organization (WHO) identified interprofessional collaboration in education and practice as an innovative strategy to alleviate the global health workforce crisis (World Health Organization, 2010). Interprofessional education (IPE) occurs when healthcare professionals from two or more disciplines learn, from and with each other, to enable effective collaboration and positively improve health outcomes of individuals and communities (World Health Organization, 2010). Each healthcare profession provides a specialized foundation of knowledge, skills, and abilities that can complement the roles of other health professions in the collaboration of continuous improvement in patient care and health outcomes (Institute of Medicine, 2012). The establishment of an interprofessional educational structure, with a clear definition of the discipline and range of responsibilities, is expected to create a collaborative healthcare environment that contributes to a healthier society (Hall, 2005; Scarvell & Stone, 2010). Interprofessional education and collaborative practice is important for all healthcare professionals when providing patient-centered care and cost-effective healthcare delivery, and while tackling inequitable distribution of social health determinants (D'Amour & Oandasan, 2005; Knettel, 2012; World Health Organization, 2010).

A review of U.S. healthcare interdisciplinary education research showed that effective collaboration can improve the quality of care delivered to patients

(Schmitt, 2001), improve patient safety (Institute of Medicine, 1999), create a more innovative and satisfying work environment (Scarvell & Stone, 2010), address healthcare staffing issues such as enhanced recruitment/retention, and absenteeism (Iles & Sunderland, 2001). In AH, factors such as shared learning, positive interaction and collaboration, greater productivity, and more satisfied health care professionals are documented as positive results from an interprofessional learning environment (Buelow, et al., 2008; Cox, et al., 1999; Dubouloz, Savard, Burnett, & Guitard, 2010; Rindflesch, et al., 2009). Healthcare professionals participating in multi-disciplinary and interprofessional collaborative practices require clear guidance to define professional roles, use structured protocols, and create shared operating procedures (D'Amour & Oandasan, 2005). Institutional mechanisms have the opportunity to positively shape a healthcare teams' collaborative and synergistic work (D'Amour & Oandasan, 2005).

Progress in creating a collaborative, productive interprofessional relationship can be problematic due to institutional barriers, protectionist attitudes, separation of health professional curricula by discipline, logistical and geographic issues, and limited communication (Oandasan & Reeves, 2005). In most higher education institutions, AH, medicine and nursing students are trained separately or have minimal interaction with students from other disciplines; this lack of socialization may result in IPE avoidance and resistance (Drinka & Clark, 2000). This division in education contributes to a lack of understanding of others healthcare professional roles and may foster poorly coordinated teamwork (Hall,

2005) relating to power and hierarchy, interprofessional conflict, and barriers in policy and legislation with respect to issues of liability (Lahey & Currie, 2005). Breaking down these barriers can be challenging but are rewarding when creative, collaborative, and productive efforts produce innovative clinical education strategies (Hall, 2005; Scarvell & Stone, 2010). Presented in the Journal of Allied Health classic paper titled, Allied Health–Today and Tomorrow, Mase stated, “We (allied health) must accomplish intradisciplinary cooperation, coordination, and communication before we can expect to accomplish these elements in interdisciplinary relations” (Mase, 1973).

Reducing role ambiguity begins with an improved understanding of and the establishment of roles and responsibilities for all healthcare professionals and student involvement in interprofessional education and training (Arndt, King, Suter, Mazonde, Taylor, & Arthur, 2009; Blue, Mitcham, Koutalos, Howell, & Leaphart, 2014). Clinicians, researchers and policymakers attract students to IPE by appealing to the broad motivations of students: improving patient care, advancing their careers, and curiosity about IPE and other healthcare reform initiatives (Hoffman, Rosenfield, & Nasmith, 2009). Even prior to being exposed to a clinical collaborative environment, most students have formed an understanding that “interprofessional collaboration” means “different professionals working together”, “towards a common goal” and “optimal patient care” (Broers, Poth, & Medves, 2009, p. 7). AH, nursing, medicine and healthcare administration students reported an increased understanding of the knowledge and skills, roles and duties of the other professions as a valued benefit with IPE programs (Carpenter, 1995; Dubouloz, et al., 2010; Gonsalves, 2011; Neill, Hammer, & Linnstaedter, 2012). Across professions, the positive attitudes of faculty and students suggests an acceptance and engagement in IPE principles and practice (Giordano, Umland, & Lyons, 2012), even with relatively short IPE educational interventions (Wellmon, Gilin, Knauss, & Inman, 2012). Whenever possible, students should be included as members of the interprofessional clinical team, be assigned an appropriate level of responsibility, and be actively included in team education and review activities (Arndt, et al., 2009). Use of technology, such as simulation (Riesen, Morley, Clendinneng, Ogilvie, & Murrar, 2012) and videoconferencing (Britt, Hewish, Rodda, & Eldridge, 2012; Chang & Trelease, 1999), demonstrated an increase in student IPE competence and performance while providing a positive clinical experience.

In the 1990s, one of the most significant recommendations in healthcare reform was the need for the health professions to incorporate interdisciplinary teams into the curriculum and practice (O'Neil & PEW Health Professions Commission, 1998). Several notable IPE initiatives have since followed such as the formation in 2011 of the Interprofessional Education Collaborative Expert Panel (IPEC) and its publication (Interprofessional Education Collaborative, 2011). Concomitantly in 2011, a team-based competency report (Team-based Competencies, 2011) that included medicine, nursing, and pharmacy representation in the discussion of interprofessional collaboration in the clinical education setting was published. AH leadership at ASAHP was recently invited to join future IPEC initiatives. The International Association of Medical Science

Educators (IAMSE), a nonprofit international society for basic science and clinical medical science educators, focused their Winter 2012 IAMSE Faculty Development Series on collaborative practice and interprofessional implementation in the health sciences arena (*Interprofessional Education in the Health Sciences*, 2012). More than 200 AH professions constitute over two-thirds of the entire U.S. workforce, therefore AH involvement in future interprofessional initiatives is logical (Elwood, 2009).

The Liaison Committee on Medical Education (LCME), the accrediting authority for U.S. and Canadian medical education programs, recently proposed a new IPE standard for medical student training. The new LCME accreditation standard (LCME, 2012) stipulates:

> The core curriculum of a medical education program must prepare medical students to function collaboratively on health care teams that include other health professionals. Members of the health care teams from other health professions may be either students or practitioners.

Feedback from the recent LCME annual survey showed that interprofessional experiences are already included in a majority of medical education programs (LCME, 2012). The Commission on Accreditation of Allied Health Programs (CAAHEP), whose membership consists of over 2,000 educational programs in 24 health science occupations (CAAHEP, 2015), has communicated the advantages of IPE. In 2012, the CAAHEP Webinar series highlighted the benefits of effective IPE faculty development (Rokusek, 2012). The primary message from the IPE presentation was the importance of educating students to work in a new and developing comprehensive, collaborative, coordinated, and continued system of health care delivery. Specific to clinical education, the recommendation was that from day one, students across disciplines should communicate as professionals and work together. The impact of these recent LCME accreditation standards and CAAHEP initiatives on AH student IPE training and clinical education remains to be seen.

Government endorsement can be a powerful accelerant in the operationalization of IPE initiatives (Oandasan & Reeves, 2005). Under the Affordable Care Act, CFDA Number 93.622, the U.S. Health Resources and Services Administration (HRSA) is charged with the creating a new national Center for Interprofessional Education and Collaborative Practice (Department of Health & Human Services, 2012). The purpose of the coordinating center for interprofessional education and collaborative practice is to establish a national infrastructure to provide leadership and expertise in interprofessional collaboration while improving IPECP’s coordination and capacity building among health professions, particularly in medically underserved areas. Research regarding interprofessional education and documenting best practices sharing will spur the success of high-quality, coordinated, team-based care among health professions. The collective efforts of the World Health Organization (2010) and IPEC (2011) further established a defined interprofessional system, provided definition and scope of each discipline, and ensured a positive learning environment that will forage a collaborative and effective healthcare environment that promotes a healthier society. In the 13th Annual Report of the Advisory Committee on Interdisciplinary, Community-Based Linkages (ACICBL) to the

Department of Health and Human services and Congress, healthcare education must include “high quality clinical experiences in community practices that utilize an interprofessional approach when providing health care services” (Advisory Committee on Interdisciplinary Community-Based Linkages, 2014, p. 9). Healthcare students should receive innovative learning experiences in interprofessional education, population health, and patient care, from a variety of healthcare disciplines in academic and community-based clinical practices, in preparation for professional practice in the healthcare system of the future (Advisory Committee on Interdisciplinary Community-Based Linkages, 2014). More rigorous, evidenced-based IPE research is need to further demonstrate the impact of IPE on collaborative professional practice and patient healthcare outcomes (Reeves, Zwarenstein, Goldman, Barr, Freeth, Hammick et al., 2008).

A recent interprofessional education (IPE) dissertation study conducted with 72 ASAHP affiliated colleges and universities showed that over 94% of AH deans and 90% of IPE faculty are either moderately or extremely interested in IPE (Farnsworth, 2013). Deans and IPE faculty reported only moderate progress and success in implementing IPE at their health professions education institution. According to Farnsworth (2013), the divergence between IPE interest and performance indicated opportunities for IPE enhancement.

The Future of Allied Health Clinical Education

While the health burden, poverty, globalization, and innovation are all expanding, academic medicine appears to be falling short of its potential and obligations to the public health (Awasthi, Beardmore, Clark, Hadridge, Madani, Marusic et al., 2005). In the United States, the increasing pressure for improved quality and reduced costs are compounded by higher expectations of healthcare professionals (Knettel, 2012). The complex and rapidly changing healthcare environment, workplace productivity pressures, and staffing shortages demand that new graduates of AH, medicine and nursing programs be prepared to function at a high level upon entering the workforce (Hooker, 2010; Strohschein, et al., 2002).

The healthcare environment calls for cost containment and reform to address the public need for greater access to primary care. The majority of clinical training is still using the “traditional apprentice” model, pairing one clinical instructor with students, and often only one student (Clabo, et al., 2012). Despite the call for collaborative practice and the touted value of interprofessional initiatives (Institute of Medicine, 2012; Interprofessional Education Collaborative, 2011; World Health Organization, 2010), most clinical education exists in a silo (Clabo, et al., 2012). In this challenging time of reduced resources, clinical faculty shortages, and substantial competition between AH, medicine, and nursing for clinical sites, the one-on-one clinical preceptorship model is not feasible (Clabo, et al., 2012). The cost of clinical education coupled with the insufficient supply of suitable clinical placements sites is approaching a crisis level (Kirsch, 2014; Tanner, 2012). As stated by Clabo et al. (2012) in a Guest Editorial in the *Journal* *of Nursing Education*, there is not yet a coordinated local, regional or national initiative designed to address the emerging chaotic state of clinical education. A call for bold collaborative action between health professions education institutions and clinic placement sites to build a constructive transformation process (Clabo, et al., 2012). A shared vision for best practices in clinical education coupled with critical thinking, new perspective, and innovative solutions to implement these changes will create a collaborative culture for the future (American Council of Academic Physical Therapy Clinical Education Summit, 2014). Opportunities for clinical education reform may include the adoption of novel clinical models, incorporating interprofessional education into the clinical curriculum, and taking advantage of innovation in simulation, standardized patients, and other assisted learning technology (Buelow, et al., 2008; Cant & Cooper, 2010; Gaba, 2004; Pechak, 2012b).

Individually and collectively, the AH professions and their educational agenda are in a state of flux due to cost containment, public accountability, legislative changes, and interprofessional initiatives (Elwood, 2009). AH clinical education has been confronted with challenges resulting from the needed to train more students with fewer preceptors, less diversity of clinical practice settings and further demands in a changing healthcare system (Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey, 2013; Kirsch, 2014; Sheepway, et al., 2011). The AH educational establishment strives to increase the quality of clinical education experience while concurrently meeting organizational service needs and accommodating shifts in practice due to regulatory and accreditation requirements (Lowe, 2007). As the cornerstone of AH education, the depth and breadth of the clinical experience requires strength, flexibility, and standardization to fully prepare AH students for real world practice. Identification and publication of AH clinical education best practices supports the development of effective, evidence-based practitioners.

AH dean leadership and management is crucial at “the intersection of two turbulent environments, higher education and healthcare” (Layman, et al., 2010, p. 18). While healthcare reform and further change is inevitable, the unknown is what priorities the dean leadership will identify and embrace in advancing the future of AH education. Utilizing the Delphi technique, the goal of this study is to capture the expertise, vision, and opinions of AH deans by exploring key factors impacting the future of AH clinical education.

The Delphi Technique

The Delphi technique takes its name from the Greek god Apollo Pythios who was a celebrated master of Delphi, because of his ability to predict the future. Delphi methodology was developed at the end of the Cold War to provide military forecasts and to forecast future technological capabilities for the US Air Force (Custer, 1999). Project RAND (1950-1960s) employed the Delphi technique to achieve agreement among experts regarding possible enemy military attacks (Dalkey & Helmer, 1963). “The development of methods to obtain, refine, and communicate the informed judgments of knowledgeable people is one of the most crucial problems in planning and decision-making" (Linstone & Turoff, 1975, p.97). The central idea of Delphi methodology is the based on the assumption that group opinion (n + 1) is more valid than individual opinion. The Delphi methodology is an iterative multistage group facilitation technique designed to combine expert opinion into group consensus (McKenna, 1994a). This specific technique is notably useful where subjective and complex judgments are preferred versus exact quantitative results (Eto, 2003). Over the decades, the usefulness of the Delphi methodology in decision-making has expanded its use into business, education, health and social care, and policy development (de Meyrick, 2003; Goodman, 1987; Hasson, et al., 2000; Keeney, et al., 2011).

Today, the Delphi methodology is commonly used to identify healthcare research priorities and gain agreement from experts in a wide range of disciplines including AH, medicine, and nursing research (Bramwell & Hykawy, 1999; Green, et al., 1999; Hasson, et al., 2000; Keeney, et al., 2001; Keeney, Hasson, & McKenna, 2006; McKenna, 1994a, 1994b). A number of examples of Delphi agreement building include but are not limited to: advance-level practice in clinical nutrition (Brody, Byham-Gray, Touger-Decker, Passannante, & O'Sullivan Maillet, 2012), an honor statement for university student (Randall, Hoppes, & Bender, 2008), interdisciplinary health research (Gebbie, Meier, Bakken, Carrasquillo, Formicola, & Aboelela, 2008), and physical therapy skill set and competency analysis (Sizer, Flstehausen, Sawyer, Dornier, Matthews, & Cook, 2007). Examples of using the Delphi technique in nursing to build agreement include but are not limited to: midwifery duties the Northern Ireland nursing community structure and function (Hasson, 2000), smoking cessation in pregnancy guidelines (Keeney, 2000), and an examination of cancer nursing research priorities (McIlfatrick & Keeney, 2003).

The original Delphi advocates, Dalkey and Helmer (1963), defined the Delphi technique as “a method used to obtain the most reliable consensus of opinion of a group of experts by a series on intensive questionnaires interspersed with controlled feedback” (p.458). Linstone and Turoff (1975, p.3) offered the definition:

> Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem.” They continue by adding that to “accomplish this ‘structured communication’ there is provided: some feedback of individual contributions of information and knowledge; some assessment of the group judgment or view; some opportunity for individuals to revise views; and some degree of anonymity for the individual responses.

The Delphi technique has been defined as a multi-stage survey which attempts ultimately to achieve agreement of experts on an important issue (McKenna, 1994a). However, the Delphi’s intended outcome “may include any or all of the following: identifying the degree of consensus or dissensus, specifying the range of different positions, and revealing the rationales which lie behind the judgments” (Critcher & Gladstone, 1998). Delphi experiments tend to produce convergence of opinion not just towards the mean, but towards the true value

(Helmer, 1983). While the Delphi produces quantified outcomes within a positivist tradition, the definition of the problem and the solutions to it by the expert panel place this technique close to constructivist positions (Mullen, 2003).

The Delphi Design

The Delphi methodology has been identified as research appropriate in the following areas: exploring judgments; generating or correlating informed judgments and exploring diverse views (Turoff, 1970). Over 2,500 health-related Delphi studies are documented making the Delphi technique a recognized reputable research methodology (NHS Institute for Innovation and Improvement, 2008). In healthcare research, the Delphi technique is commonly used to set priorities and to gain agreement (de Meyrick, 2003; Keeney, et al., 2006). While the classical, original, the Delphi technique consists of four rounds, a two or three rounds protocol is commonly used to retain a high response level among the expert panel members (Green, et al., 1999). Linstone and Turoff (1975) support a three round Delphi survey as sufficient in stability of response and state that further rounds reach a point of diminishing return showing little change in response and participant irritation resulting from excessive repetition. The Delphi process typically consists of a three round distribution of self-completion questionnaires that are sent to the expert participants. Data is collected, and the cycle is repeated until a systematic emergence of a concurrence of opinion or agreement is reached (Green, et al., 1999). Pilot testing of the Delphi first round survey is recommended to eliminate ambiguities while increasing the validity of questions that are the basis for subsequent rounds (Hassan & Barnett, 2002). The Delphi survey, which may be structured or relatively unstructured, is used to obtain feedback from the respondents, who are usually called an “expert panel” (Mullen, 2003).

Delphi design commonly uses an ordinal, Likert scale to capture panelist opinions. Empirical studies have generally concurred that reliability and validity are improved by using 5- to 7-point scales based upon clarity, ease of use, and reduction of time to complete (Clibbens, Walters, & Baird, 2012; Colman, Norris, & Preston, 1997; Dawes, 2007). In a Delphi study, the participants do not directly interact with one another, the survey responses are anonymous, the group outcomes are provided in statistical terms of means, medians or standard deviations, and participants are permitted the chance to reconsider their answer after the group feedback is provided.

The Delphi design may include case scenarios to highlight central elements of a possible future and to focus attention with creative options on the important factors that will drive future developments (Kosow & Gabner, 2008). Case scenario planning uses the instabilities of the known present, coupled with forecasted drivers of the imminent future, to generate a creative exchange of ideas about plausible, but different, futures (Awasthi, et al., 2005; Institute for Alternative Futures, 2012b). The case scenarios elicit deeper thinking and expanded insight into present and future issues that may provide value in short-term pragmatic decision-making and long-term strategic planning (The Joint United Nations Programme on HIV and AIDS, 2005). Delphi applications with case scenario techniques have been instrumental in business and public policy decisions as long range planning tools (Bradfield, Wright, Burns, Cairns, & Van Der Heijden, 2005). While case scenario planning can look forward to any length of period in the future, there is a delicate balance between restricting the evaluation period to the inevitable of next year versus the 100-year fantasy forecast (Awasthi, et al., 2005). When using a case scenario exchange, emotionally charged issues may be easier to discuss, and provide a deeper understanding and broader thinking of the present conflict (Awasthi, et al., 2005). The Institute of Alternative Futures case scenarios, created with “a bias towards successful futures to counter the human tendency to emphasize the futures we fear”, encourage “strategies oriented towards the images of success described by these scenarios (Institute for Alternative Futures, 2012b, p. 3). A review of pivotal case scenario literature was used to develop the futuristic (2018-2023) case scenarios used in the Delphi Round 1 survey tool for this clinical education research (Bishop, Hines, & Collins, 2007; Goodwin, 2001; Hewitt, 2012; Institute for Alternative Futures, 2012b; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008).

The Delphi round one survey, referred to as the ‘exploration phase’ (Ziglio, 1996) is used to generate ideas and comments from panel members about an idea. The Delphi round one survey often includes the ranking of opinions and open-ended question sets. The Delphi rounds two and three survey tools typically take the form of structured questionnaires incorporating feedback to each panel member. The use of the structured questionnaire facilitates the efficient and timely collection of expert opinions while controlling the feedback (Buck, Gross, Hakim, & Weinblatt, 1993). The Delphi rounds two and three are considered the ‘evaluative’ phase with expert feedback being used to identify areas of agreement and discord (Ziglio, 1996). The research team employs a thorough analysis of expert feedback and responses at each Delphi round. The Delphi technique necessitates continued commitment from participants being repeatedly questioned about the same topic using slightly modified questionnaires each round (Hasson, et al., 2000). The final Delphi round produces areas of acceptance of ideas or consensus while areas with difference are rejected (Linstone, 1975). As these Delphi rounds are analyzed and recirculated, panel member involvement and motivation to participate elevate (Walker & Selfe, 1996). Response rates to the Delphi rounds may be enhanced using recruiting letters, face-to-face interview, and other personal touches (McKenna, 1994b).

Delphi Technique in Healthcare Research

Since the introduction of the Delphi technique as a research approach in the late 1940s, there have been over 1000 published research articles (McKenna, 1994a). Landeta (2006) reviewed the Delphi literature and found 414 related articles had been published during 1995 and 1999, and 667 between 2000 and 2004, and noted a growing application in doctoral research studies. While the field of social policy was first to use the Delphi technique, a review of contemporary healthcare literature suggests that it is becoming a popular choice among AH, medicine, and nursing researchers. Among nursing researchers, there was a steady increase in Delphi studies from 1982 to a peak of 50 citations in 1994 (Bowles, 1999). From 2001-2010, there were a total of 14 Delphi studies on clinical nursing research priorities (Keeney, et al., 2011). In general, health-related Delphi research has increased over time: from 300 between 1981 and 1989 (Bowles, 1999), to at least a 1000 from the 1940s to 1994 (McKenna, 1994a), to 1400 from 1969 to 2005 (Thangaratinam & Redman, 2005), to 2500 published studies (date range unknown) (NHS Institute for Innovation and Improvement, 2008), signifying the scientific establishment of Delphi in healthcare arena.

The Delphi method is useful in situations where judgment is required but empirical evidence to provide a practical decision does not exist. Delphi research has been used to gain consensus on healthcare role definition, competencies, and practice (Chang, Gardner, Duffield, & Ramis, 2010; Duffield, 1993; Griffen, 2002; Hemming, Lordly, & Glanville, 2011; Holmes & Scaffa, 2009; Ito, Ota, & Matsuda, 2011; Janse, Rasekaba, Presnell, & Holland, 2012; Kennedy, 2004; McKenna & Hasson, 2003; Roberts-Davis & Read, 2001), education and training (Bramwell & Hykawy, 1999; de Villiers, de Villiers, & Kent, 2005; Last & Fulbrook, 2003; Mitchell, 1998), management, leadership, and professional behavior (Bartlett, Lucy, & Bisbee, 2006; Lopopolo, Schafer, & Nosse, 2004; Randall, et al., 2008), recruitment and retention management (DeWolfe, Laschinger, & Perkins, 2010; Wieck, 2003), and healthcare and interdisciplinary research (Gebbie, et al., 2008; McIlfatrick & Keeney, 2003). Additionally, Delphi studies are used to create standards in quality assessment, components of diagnosis, and refinement of treatment (Cook, Brismee, Fleming, & Sizer, 2005; Sizer, et al., 2007). Long range Delphi research attempts to provide 10 to 30 to 50 years of visionary feedback with consensus (Bramwell & Hykawy, 1999; Mitchell, 1998; Parente & Anderson-Parente, 2011). Delphi dissertations in health-related topics of interest include: accreditation site visits (Christian, 2003), the future of the clinical laboratory science profession (Kirby, 2008), emergency medicine and nursing educational priorities (Valdez, 2008; Wang, Dyne, & Hongyan, 2011), healthcare service mergers and acquisitions (Handler, 2006), advanced-level practice (ALP) in clinical nutrition (Brody, 2010), occupational medicine (Holmes, 2005), and universal healthcare (Ford, 2002). The studies cited in this section are in no way an exhaustive list of the future-oriented Delphi studies aimed at goal setting in healthcare; however, they are representative of the general application of this technique in the healthcare environment. As was noted in the introduction to this paper, there are no future-oriented Delphi applications broadly looking at AH clinical education. Appendix H highlights Delphi research in AH, medicine, and nursing research.

e-Delphi

In the twentieth century, the three most significant advances in survey technology are the telephone, random sampling, and electronic surveys (Dillman, 2000). As the utilization of Delphi technique has increased in recent years, so has the popularity of Internet-based research tools (Donohoe, Stellefson, &

Tennant, 2012). More people are communicating using e-mail, text message, or text-based Internet chat compared to handwritten narrative script (Archer, 2007) and the technology bridges geographical, fiscal, and social gaps (Wright, 2005). Web-based surveys have been found to be 38% less expensive than mail surveys primarily due to savings on printing and mailing expenses (Schleyer & Forrest, 2000). Research data collected and simultaneously managed in real time via e-mail or an e-survey is accepted as a rapid, simple, and lower cost option that can be easily imported into data analysis programs (Dillman, 2000; Schmidt, 1997). The Delphi design, developed to encourage high quality and a quantity of responses, may include a mixed-method of electronic mail, survey, and phone contact to recruit and reinforce expert panel participation (Dillman, Smyth, & Christian, 2009). The computerized Delphi design, commonly referred to as e-Delphi, capitalizes on the technological methodology to capture geographically widespread and diverse group opinions while providing optimal data management with convenience, reduced response times, and cost savings (de Villiers, et al., 2005; Donohoe, et al., 2012; MacEachren, Pike, & Yu, 2006). Donohoe et al. (2012) reported 46 e-Delphi publications from 1988 and 2010 using the Internet to support, facilitate, or enable Delphi research and a positive linear progression for e-Delphi utilization during the time period from 1997 to 2012.

While the e-Delphi offers a new and exciting research methodology, access to the Internet is required and technological difficulties with potential respondents with limited computer literacy or other unforeseen challenges

(Dillman, 2000). Providing the Delphi expert panelists with a unique and secure hyperlink with password protection on an e-survey software or service provider such as SurveyMonkey® (2013) is recommended to enhance research control of confidentiality, security, and alleviate any Internal Review Board (IRB) concerns (Donohoe, et al., 2012). The ‘page flipping’ and hard copy convenience advantage of the paper Delphi design is not present with the electronic version (Donohoe, et al., 2012) and e-mail surveys have produced lower response rates than traditional pen and pencil surveys (Crawford, Couper, & Lamias, 2001) as the decision to not respond is likely to be made more quickly (Dillman, 2000). However, web-based survey mechanical error disadvantages can be reduced by using a comparable design to a paper questionnaire and pilot tested for ease of use and participant understanding (Duffy, 2002). When appropriately utilized, the e-Delphi presents a viable, time saving, and cost effective option for consensus building research (Donohoe, et al., 2012; Duffy, 2002).

Expert Selection, Sample Size, and Response Rate

The first stage of the Delphi process involves the formation of the expert panel, which is considered the “lynchpin of the method” (Green, et al., 1999). The defining characteristic of a Delphi study is the use of a “panel of informed individuals” identified as “experts” (Hasson, Keeney, McKenna, 2000, p. 1010). Clear inclusion criteria defining the expert panel and recruitment techniques should be established prior to the Delphi study initiation (Rowe, Wright, & Bolger, 1991). Defining the expert panel provides more definitive information about the specific qualifications, areas of experience, and willingness and ability to participate (Rowe, et al., 1991). A Delphi panel of experts has been defined as a group of informed individuals (McKenna, 1994a) consisting of specialists in their field (Goodman, 1987; Hasson, et al., 2000; Keeney, et al., 2011). According to Adler and Ziglio (1996), four requirements for expertise include:

1. Knowledge and experience with the issues under investigation
2. Capacity and willingness to participate
3. Sufficient time to participate
4. Effective communication skills

While there remains considerable debate and no single answer about how a panelist attains expert status (Hasson, et al., 2000), the literature suggests that the panelists should be decision makers who will utilize the outcome of the Delphi study (Hsu & Sanford, 2007b). Finally, it is the responsibility of the researcher to select the most appropriate group of experts and defend that choice (Green, et al., 1999).

The expert panel sample size depends upon the purpose of the project, design selected and the data collection time frame (Goodman, 1987; Green, et al., 1999; McKenna, 1994a). There is no set standard on the number of people required to constitute a targeted population, and the Delphi panel size varies considerably, from under 15 to 15-100, to hundreds, to thousands (Keeney, et al., 2011). Sample sizes from healthcare related Delphi studies with similar topics range from 71 to 100 experts (Akins, Tolson, & Cole, 2005; Jones & Twiss, 1978). McKenna (1994) used the entire Ireland population of long-stay psychiatric ward nurse managers as Delphi experts. Delphi methodology experts suggest that instead of focusing on a set number of panel experts, the initial question should focus on how many varieties of experts are necessary to ensure that all of the pertinent viewpoints are incorporated (Hsu & Sanford, 2007a; Sackman, 1974; Turoff, 2006). Generally, sound results for a homogenous sample are achieved with a small sample size (Ziglio, 1996) whereas heterogeneous panels may necessitate larger sample to assure validity (Baker, Lovell, & Harris, 2006).

Population response rates are typically defined as the ratio of the survey responses after data is collected to all in the population who should have responded; population non-response rates are typically defined as the ratio of survey non-responses after data is collected to all in the population who should have responded (United States Census Bureau, 2013). While the average survey response rate is 41.21% for a sample size of less than 1000 recipients, internal surveys (i.e., employee surveys) generally have response rates ranging from 25% to 62% (PeoplePulse, 2012). While up to 30% attrition can be anticipated throughout each Delphi round (Turoff & Hiltz, 2008; Ziglio, 1996), overall response rates and continued participation in the Delphi survey can be enhanced by mixed survey methods and frequent communication with the expert population (Dillman, et al., 2009).

Advantages and Limitations of the Delphi Technique

Proponents of Delphi technique state that this non-traditional scientific approach is useful in the analysis of soft data, such as attitudes, opinions and surveys (Cambridge Dictionaries Online, 2014; Helmer, 1977; Mullen, 2003). The standard operations-research methodology is augmented by judgmental information, and it should be duly noted that the Delphi inquiry is a polling of experts, not an opinion poll (Helmer, 1977). The probability that the participants on the expert panel will provide a reasoned, independent and well-defined opinion to the Delphi survey is higher due to the lack of the “persuasively stated opinion of others” (Helmer, 1977, p. 459) is a significant Delphi advantage. Anonymity eliminates the influences of status, controlling and powerful personalities and peer pressure (Mullen, 2003). Instead, the Delphi technique encourages group problem solving and consensus but without the direct contact and potential abrasiveness of varying viewpoints or peer pressure (Pill, 1971; Stokes, 1977). The benefit of Delphi research is that the judgment of the knowledgeable individual is expanded by the summation of the expert group outcomes. An open-ended the Delphi round 1 questionnaire is ideal as the series of open-ended questions inviting panelists to brainstorm (Iqbal & Pipon-Young, 2009). A quantitative ‘tick-box’ style format may also be used, but since the Delphi method sets out to generate new ideas, a quantitative Delphi round 1 survey seems to defy this purpose. The Delphi technique offers flexibility in the analysis of the expert feedback; quantitative analysis, such as scaling techniques and forced ranking, and/or qualitative coding methods can be used to answer the research question over the series of Delphi rounds (Linstone & Turoff, 1975). The feedback between Delphi rounds can widen knowledge and encourage new ideas and in itself be inspiring (Mullen, 2003) and educational (Pill, 1971) for the panelists. Thus, the Delphi technique is particularly useful when the research requires the generation of value and subjective judgment rather than precise factual or statistical analysis (Linstone & Turoff, 1975).

Delphi methodological advantages include the capacity to gather agreement on a topic by surveying a number of geographically diverse experts (Keeney, et al., 2001, 2011). Logistical reasons, such as when cost and time make frequent meetings impracticable, are a clear advantage of Delphi (Linstone & Turoff, 1975). Delphi has been explained as effective (Everett, 1993), inexpensive (Jones, Sanderson, & Black, 1992), and a resourceful method in combining the aptitudes and knowledge of an expert group (Lindeman, 1975). With technological advantages such as e-mail and the Internet, Delphi is an exceedingly efficient and adaptable research methodology.

Limitations of the Delphi technique include the lack of universally acknowledged scientific or professional guidelines or methodology (Keeney, et al., 2011) and, in particular, the lack of psychometric validity (Sackman, 1975). The Delphi methodology is a less efficient means of generating or testing new knowledge and theories (Iqbal & Pipon-Young, 2009). With the lack of established rules to guide Delphi studies (Turoff, 1970), the widespread technique has led to numerous variations in format and implementation and inconsistency in developing a single standard approach (Linstone & Turoff, 1975). Delphi technique generalizations may be limited: another panel may find different conclusions, and it cannot be concluded that the only or correct issues have been identified (Iqbal & Pipon-Young, 2009). The Delphi process requires a researcher to acquire ample resources, including competencies and skills, significant design and methodology preparation time, and financial commitment, in order to produce a successful outcome (Linstone & Turoff, 1975). Nevertheless, while the adaptability of the Delphi technique allows flexibility that can accommodate many variations and applications, this has serious consequences for the method's scientific respectability (Iqbal & Pipon-Young, 2009).

There is controversy about the operational definition of expert, and it is difficult to find current psychometric or social science literature defining ‘experts’ (Sackman, 1975). Scholars in the same discipline tend to think in a similar fashion which may result in agreement of opinion without regard to all of the relevant issues (Boehm, 1970). Additionally, there is little agreement about the size of the expert panel, the relationship of the panel to the larger population of experts and the sampling method used to select such experts (Williams, 1994; Williams & Webb, 1994).

Even with a set deadline for participant response, the expert panel may present challenges about bias resulting from low response rates and high attrition rates (Mullen, 2003). In order to address lower response rates found with the classic four Round Delphi survey, a two or three Round Delphi survey is typically used (Green, et al., 1999). Having a Delphi topic of great interest to the expert panel members or a reward in other ways may combat the threat of attrition (Keeney, et al., 2001). Endorsement of an influential individual or organization or use of personal relationships in requesting Delphi participation may motivate and maintain a high response rate (Hsu & Sanford, 2007b). A multiple follow-up strategy using mailings, e-mails, and phone calls is one of the most impactful response-rate improvements (Dillman, 1991; Hsu & Sanford, 2007b). For example, additional follow-up mailings can increase returns by approximately 12 to 15 percent (Heberlein & Baumgartner, 1978).

The promise of anonymity encourages the respondents to be open and honest with their opinions and view about the issues. However, Linstone and Turoff (1975) note that one common reason for Delphi design failure is overlooking and not exploring divergences of expert opinion. However, the complete anonymity of Delphi technique may result in a lack of accountability that may lead to a hasty or reckless judgment (Goodman, 1987). If the expert participants are not skilled in written communication, lack motivation, or drop out, the Delphi and its statistical outcomes may be faulty. A review of the Delphi literature shows that there is no universal agreement on what the level of agreement for a Delphi study should be or how the level of agreement should be determined (Keeney, et al., 2011). Other common drawbacks to the Delphi technique include unclear evaluation scales and poor techniques in result analysis and interpretation (Linstone & Turoff, 1975).

Agreement

While not all Delphi studies seek consensus, achieving the most reliable agreement of opinion of a group of experts tends to be the primary research aim

(Dalkey & Helmer, 1963). The concepts of agreement or consensus could also be labeled as ‘collective agreement’, which usually involves collaboration rather than compromise (Keeney, et al., 2011). The feedback provided to the expert panel, coupled with anonymity, encourages panel members to consider the group response, contemplate a change or modification to their individual response, resulting in the movement of the panel opinion towards agreement (Rowe, Wright, & McColl, 2005). While there are no strict guidelines on the correct number of rounds required to achieve agreement, healthcare Delphi research proves the demonstration of consensus typically in a two round using a 75% agreement requirement (Hasson, 2000) to four round approach using a 70% agreement requirement (Keeney, 2000). In a Delphi study, the a priori level of agreement of experts is determined by the researchers (Keeney, et al., 2001) and is influenced by the research objectives, sample size, and available resources (Hasson, et al., 2000).

Prior to initiation of the Delphi research, the researcher should stipulate a pre-determined level of agreement which is fundamental in determining whether to retain or discard information between rounds (Keeney, et al., 2006). Statistical analyses, such as measures of central tendency (Hasson, et al., 2000; Murray & Jarman, 1987) have been used to determine the expert panel collective judgments. Common statistical measures used to identify agreement between iterations of Delphi rounds are mean or median ratings or rankings with mode for directionality sizes (Hsu & Sanford, 2007a; Schiebe, Skutsch, & Schofer, 1975), standard deviation with analysis of category data using Chi square or continuous data via ANOVA (de Meyrick, 2003). In addition, interquartile range and deviations and percentage ratings are useful statistical options according to de Meyrick (2003). Use of Cronbach’s alpha can quantity the homogeneity or consistency of expert opinion (Graham, Regehr, & Wright, 2003). Scheibe et al. (1975) promotes the importance of measuring the stability of the responses over the successive rounds of Delphi surveys. The Delphi literature presents a wide range of what constitutes an acceptable level of consensus including: 51% level (McKenna, 1994a), 66% level (Boyce, 1993), 70% or higher (Green, 1982) and 80% (Ulschak, 1983). Keeney et al. (2006) recommends the use of confidence levels in determining an appropriate cut-off point. While there is no obvious scientific rationale, 75% appears to be the minimal level of accepted consensus in Delphi healthcare literature (Keeney, et al., 2006). When agreement is achieved on a particular issue, the conclusion is that the expert panel has reached a broad level of accord, not that the correct answer, judgment, or opinion has been found (Hasson, et al., 2000). The correlation of responses and the level of agreement in Delphi research can be evaluated using statistical tests such as the Kendall’s tau (τ) coefficient sizes (Heikkilä, 2010; von der Gracht, 2012). Scheibe (1975) advises that agreement should not be the stopping criterion, and the stability of the respondents’ vote distribution curve over successive rounds of the Delphi survey preserves any existing well-defined agreement and disagreement. While not a replacement for original research or rigorous scientific review, the consensus and dissensus process of the Delphi design is a valuable technique for the prediction of future events.

Reliability and Validity

Reliability refers to consistency in measurement or repeatability (Portney & Watkins, 2009c). According to Delphi researcher Keeney *et al*. (2011, p. 96), reliability refers to “an examination of stability and equivalence of the research conditions and procedures”. The Delphi methodology fosters reliability with the use of an anonymous panel, which avoids group bias and peer influence. Reliability increases as the size of the panel and respondent group increases with the expansion of Delphi rounds (Keeney, et al., 2011; Powell, 2003). The test-retest method, a common indicator of reliability, shows some consistency within a panel (Uhl, 1975). For example, one study of two groups of front line registered nurse managers showed 93% agreement of the competencies identified, leading claims of the expert panels reliability (Duffield, 1993). However, the overall evidence is sparse when examining two different expert panels provided with the same Delphi design and producing reliability in the process and outcomes (Kastein, Max Jacobs, van der Hell, Luttik, & Touw-Otten, 1993; Williams, 1994). Variances such as personal and situation-bias and limitations in phrasing of questions, different ways of obtaining data, and large or undetected error variances are all suspect given the flexibility of the Delphi methodology (Keeney, et al., 2011). Thus, optimum Delphi methodology includes an appropriate and well defined problem, selection of an suitable expert panel, clear and concise data collection procedures, justification of consensus, and process of dissemination and execution (Powell, 2003).

Validity is the “best available approximation to a given proposition, inference, or conclusion” (Trochim & Donnelly, 2008), and the implication that a measurement is relatively free from error translates to a test that is also reliable (Portney & Watkins, 2009d). To enhance the validity of Delphi research, strategies such as: pilot testing, integration of focus groups or interviews as methods of tandem testing, choosing an suitable expert panel, and comparing the outcomes to current, validated literature are implemented (Keeney, et al., 2011). Content validity is improved by selecting appropriate expert participants with knowledge and interest in the topic (Goodman, 1987) whereas concurrent validity is enhanced via successive Delphi survey rounds (Hasson, et al., 2000). While the Delphi technique does not conclude any definitive right or wrong answer, the technique provides valid expert opinion and can be markedly impacted by the participant response rate (Hasson, et al., 2000). The use of the word ‘expert’ demonstrates the main premise of the Delphi methodology, that group opinion is considered more ‘valid’ and ‘reliable’ than individual opinion. Appropriate wording of the questionnaire can further ensure the content validity of the Delphi design. Despite the debate surrounding the validity of scoring methods and aggregation over respondents, few Delphi researchers view this feature as problematic (Mullen & Spurgeon, 2000). In the proposed study, the application of the Delphi technique is justified and is essential in generating information where little exists and in the identification of opportunities to reshape AH clinical education.

Significance of the Study

The call for healthcare reform has been at the center of public and political debate for years (Derickson, 2005). The necessity of health professions education schools to achieve accreditation promotes to their students that their education and training includes the required competencies and skills necessary for credentialing and the demonstration of quality patient care. The mandate for accountability and the growing demand for healthcare reform require AH deans to be adept at balancing a multitude of tasks including: balancing internal and external influences, obtaining essential resources in an increasingly competitive market, and building consensus among a variety of stakeholders (Layman, et al., 2010). The use of a three-round Delphi technique is appropriate for this research focus of identifying the key factors impacting the future of AH clinical education. First, as the subjective questions presented involve value judgments, the process will not involve a strictly statistical analysis for outcome evaluation. Secondly, since the expert panel consists of AH deans located geographically across the United States, the use of the technique allows for input from highly qualified individuals without the cost and need of travel and with less time commitment to complete the three rounds of the Delphi survey. Finally, AH deans are judged to be effective communicators, adept writers, and likely motivated to provide ideas and opinions on the topic of clinical education and its future. AH deans of ASAHP should be future-oriented to ensure the continued evolution of the AH professionals to meet the needs of the profession. While the research outcomes will represent this specific population of institutional members of ASAHP, the agreement of opinion of the experts should be of interest to those who are charged with planning for future clinical educational programs for AH.

Chapter III

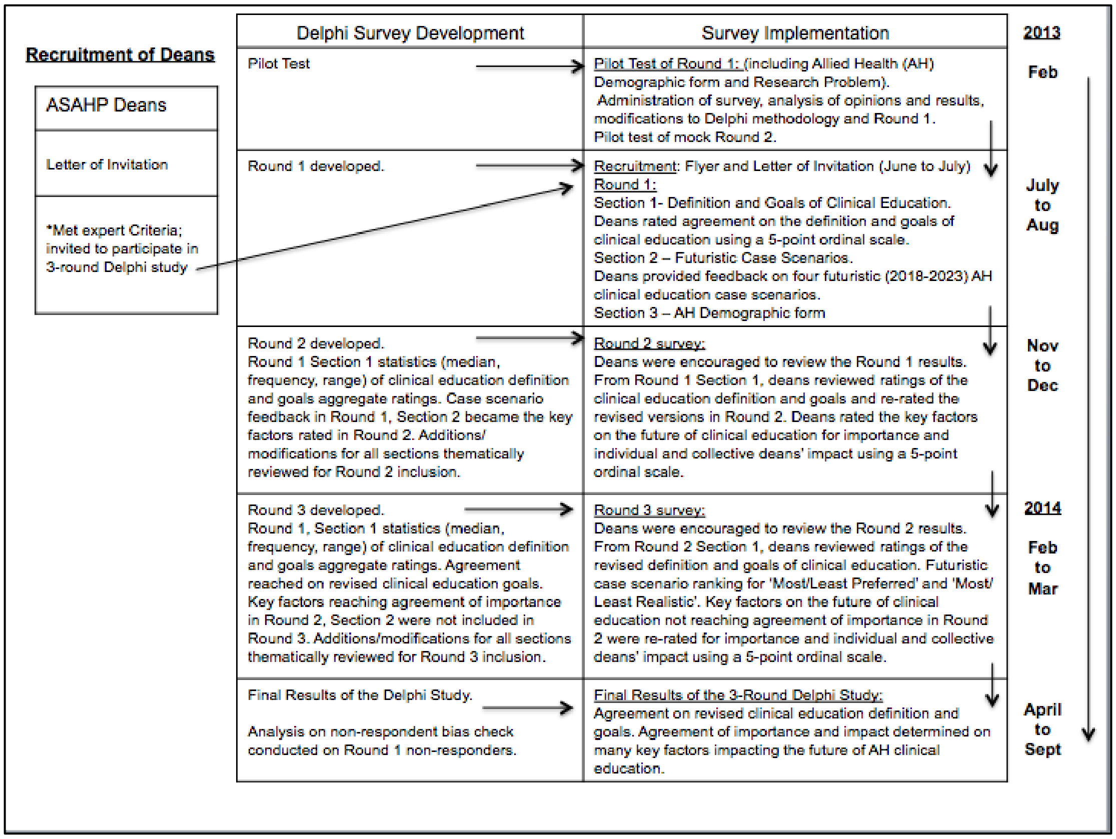
METHODOLOGY

Research Design

This study was designed to determine agreement among Association of Schools of Allied Health Professions (ASAHP) allied health (AH) deans on the future of AH clinical education. A three-round Delphi survey was utilized to solicit opinions on projected future opportunities and challenges impacting AH clinical education and obtain suggestions for future clinical education.

The research was approved via an expedited review from the Institutional Review Board (IRB) of the University of Medicine and Dentistry of New Jersey (UMDNJ), Newark in June, 2013 (Appendix I) and renewed by the Institutional Review Board (IRB) of Rutgers University, The State University of New Jersey, Newark in May, 2014 (Appendix J).

The timeline of the Delphi study design and process, including the recruitment, survey development, and implementation is depicted in Figure 4.



Recruitment of Deans

ASAHP Deans

Letter of Invitation

*Met expert Criteria; invited to participate in 3-round Delphi study

Delphi Survey Development	Survey Implementation	**2013**
Pilot Test	Pilot Test of Round 1: (including Allied Health (AH) Demographic form and Research Problem). Administration of survey, analysis of opinions and results, modifications to Delphi methodology and Round 1. Pilot test of mock Round 2.	**Feb**
Round 1 developed.	Recruitment: Flyer and Letter of Invitation (June to July) Round 1: Section 1- Definition and Goals of Clinical Education. Deans rated agreement on the definition and goals of clinical education using a 5-point ordinal scale. Section 2 – Futuristic Case Scenarios. Deans provided feedback on four futuristic (2018-2023) AH clinical education case scenarios. Section 3 – AH Demographic form	**July to Aug**
Round 2 developed. Round 1 Section 1 statistics (median, frequency, range) of clinical education definition and goals aggregate ratings. Case scenario feedback in Round 1, Section 2 became the key factors rated in Round 2. Additions/ modifications for all sections thematically reviewed for Round 2 inclusion.	Round 2 survey: Deans were encouraged to review the Round 1 results. From Round 1 Section 1, deans reviewed ratings of the clinical education definition and goals and re-rated the revised versions in Round 2. Deans rated the key factors on the future of clinical education for importance and individual and collective deans' impact using a 5-point ordinal scale.	**Nov to Dec**
Round 3 developed. Round 1, Section 1 statistics (median, frequency, range) of clinical education definition and goals aggregate ratings. Agreement reached on revised clinical education goals. Key factors reaching agreement of importance in Round 2, Section 2 were not included in Round 3. Additions/modifications for all sections thematically reviewed for Round 3 inclusion.	Round 3 survey: Deans were encouraged to review the Round 2 results. From Round 2 Section 1, deans reviewed ratings of the revised definition and goals of clinical education. Futuristic case scenario ranking for 'Most/Least Preferred' and 'Most/ Least Realistic'. Key factors on the future of clinical education not reaching agreement of importance in Round 2 were re-rated for importance and individual and collective deans' impact using a 5-point ordinal scale.	**2014** **Feb to Mar**
Final Results of the Delphi Study. Analysis on non-respondent bias check conducted on Round 1 non-responders.	Final Results of the 3-Round Delphi Study: Agreement on revised clinical education definition and goals. Agreement of importance and impact determined on many key factors impacting the future of AH clinical education.	**April to Sept**

Figure 4. Timeline of Delphi recruitment, survey development, and implementation.
^{a}Eligibility for study inclusion was confirmed in the Delphi Introduction with Participant Consent.

Expert Population Selection and Recruitment

Definition of Experts

The Delphi expert panel was comprised of AH deans whose institution was a 2013 institutional member of ASAHP. The deans were responsible for clinically based, direct patient care AH programs.

Assumptions

Assumptions for this research included the following: ASAHP is the predominant professional association to include the broad spectrum of AH education programs. Utilizing AH deans whose institutions are members of ASAHP as the expert panel provided the opportunity to attain agreement across a multitude of AH disciplines. AH deans are interested in and motivated to explore the topic of clinical education, therefore they will continue to participate in all three rounds of the Delphi study.

Allied Health Dean Expert Population

The list of AH deans (*N* = 111) was obtained from the ASAHP Membership Directory using the June 2013 Institutional Member Listing (Appendix K). The AH deans were excluded if they no longer served as dean. The Primary Investigator's (PI) Dissertation Committee Chair, an AH dean from the School of Health Related Professions at Rutgers University, The State University of New Jersey (formerly the University of Medicine and Dentistry of New Jersey), and one initial Dissertation Committee member, an AH dean from a U.S. university, were excluded from the study. An additional two AH deans were excluded because their universities are located outside the United States.

Population Response Rates

From the June 2013 Institutional Member Listing, all eligible AH deans or designated voting representatives (*N* = 111) were recruited for study participation. Because this expert panel represented a population of AH deans, population response rates applied. With a population size of 111 AH deans and projected response rate of 50%, 54 AH deans were needed to complete the Delphi survey for a 90% confidence level with a corresponding 8% error level (CustomInsight, 2013).

Delphi Survey Development and Implementation

Delphi Survey Development

Presented in Chapter II, the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100) described key factors by category impacting clinical education and served as the foundation to guide this Delphi research study. The conceptual model related to specific AH disciplines involved in direct patient contact and care including, but not limited to: dental hygiene, dietetics, medical imaging, occupational therapy, physical therapy, physician assistant, psychiatric and rehabilitation medicine, respiratory therapy, and speech-language pathology and audiology.

Pilot Testing of Survey Instrument

Following UMDNJ IRB approval (Appendix L), a pilot study was initiated. The AH deans invited to participate in the pilot study came from a purposive sample of 11 former AH deans. Former AH deans were used so as to not decrease the pool of ASAHP deans selected for the Delphi study.

Pilot Test of Round 1

An introductory e-mail invitation and letter of consent (Appendix M) were sent to the former AH deans asking if they would be willing to participate in the Delphi pilot study. The AH deans were asked to confirm their consent and provide their contact information (name, preferred e-mail address). The nine consenting AH deans were sent several unique and Secure Sockets Layer (SSL) encrypted hyperlinks via the SurveyMonkey's® Email Invitation Collector (SurveyMonkey®.com, 2013). Access to Round 1, the AH Dean Demographic form, and the Pilot Program Participant Feedback form was available for three weeks following the receipt of the survey hyperlinks. After one week, the PI resent the introductory e-mail invitation and letter of consent (Appendix M) to non-responders to encourage pilot test participation. After two weeks, the PI telephoned non-responders to encourage pilot test participation (the verbal script is provided in Appendix M). If a participant did not answer the phone, a voice message was left. In the case where there was no option to leave a message, one additional attempt was made to speak to the dean or leave a message. After three weeks, the introductory e-mail invitation and letter of consent (Appendix M) was resent via the SurveyMonkey's® Email Invitation Collector as a final e-mail reminder to the nonresponders. The option of receiving a hardcopy PDF version of the survey was offered; seven of nine pilot participants requested this option.

Over three weeks and via e-mail and SurveyMonkey® surveys, followed by brief phone interviews, comments and feedback were collected from the pilot test participants. To improve the face and content validity of the Round 1 survey, pilot test participants were instructed to complete the Round 1 survey (Appendix N) and the AH Dean Demographic form (Appendix O), and to read and comment on the Research Problem (Appendix P). The AH deans were asked to complete the Pilot Test Round 1 Survey Feedback form (Appendix Q) that accompanied the survey. The Feedback form asked for suggestions on content clarity, consistency, appropriateness, and ease of use of the survey tool (SurveyMonkey®.com, 2013). The pilot program reminder procedure used in the Round 1 survey included e-mail reminders sent to the AH deans in week one and three (Appendix R and S), and in week two, a phone reminder was used (Appendix T). Once the PI received and reviewed the Round 1 pilot data, three AH deans voluntarily participated in a brief phone interview to clarify any comments and suggestions. All data was analyzed and based upon the results of Round 1, the survey tools for the pilot of Round 2 were developed.

Pilot Test of Round 2

To improve face and content validity of Round 2, the pilot test included an analysis of the second round survey tool, its administration, data collection methods, data coding and the data analysis that was to be used in the actual study: “The Future of Clinical Education: A Delphi Study With Allied Health Deans”. Pilot test deans were instructed to complete Round 2 (Appendix U) and to complete the Pilot Test Round 2 Feedback form (Appendix V) that accompanied the Round 2 survey. The feedback form asked for suggestions regarding content clarity, consistency, appropriateness, and ease of use of the survey. The pilot program reminder procedure used in Round 1 was replicated in Round 2: e-mail reminders were sent in weeks one and three (Appendix W and X), and in week two, a phone reminder was used (Appendix Y). The option of mailing of a hardcopy version of the survey and feedback form was available upon request; eight of the nine AH deans requested a PDF version of Round 2. Once the PI received and reviewed the Round 2 pilot test feedback, the deans were invited to participate in a brief telephone interview to clarify final comments; no deans responded.

Pilot Test Analysis

The Pilot Test of Rounds 1 and 2 concluded on May 26, 2013. PI analysis of the results from the pilot test was performed from March through May 2013. The feedback from the pilot test of Rounds 1 and 2 was used to assess and revise the question design and strengthen the content validity prior to the commencing the actual study titled “The Future of Clinical Education: A Delphi Study With Allied Health Deans”.

Nine former AH deans consented to participate. Seven of nine (77.8%) pilot participants provided feedback for Round 1, and four of nine (44.4%) pilot participants provided feedback for Round 2. One consenting AH dean did not participate in either Round. Appendix Z provides the names of the former dean members of ASAHP who provided their time and expertise in the pilot program and agreed to have their name released for publication /presentation as a pilot participant.

Password protected, qualitative software Dedoose (Dedoose, 2013) was used for coding the qualitative data from the Round 1. Dedoose descriptor fields, based upon the key factors impacting AH clinical education delineated in the *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100), were used in the qualitative analysis (Dedoose, 2013). Password protected, quantitative software SPSS (IBM Corporation, 2013) was used for statistical interpretation of median and mode in Round 1 where the deans were asked to rate the definition and goals of clinical education, and in Round 2 where the deans ranked the importance and impact of the key factors identified for AH clinical education. The pilot program responses and results, including questionnaires and the corresponding statistical analysis, were evaluated to improve the Round 1 and 2 surveys, recruit participants, administer the surveys, and use of qualitative software and statistical tests. Only aggregate data from the pilot test results was provided to the dissertation committee for analysis and review, not individual identifiable responses.

Delphi Survey Modifications

Based on the results of the pilot study, modifications were made to the study title, definition of terms, conceptual model, the definition and goals of clinical education, and futuristic case studies. Pilot study comments and feedback from the Round 1 pilot test evaluation form and interviews are summarized in Appendix AA. Based upon the results of the Round 1 pilot program, the following modifications occurred:

1. the dissertation title was changed from “The Future Delivery of Allied Health Clinical Education” to “The Future of Allied Health Clinical Education”,
2. the word “delivery” was removed from the Delphi surveys,
3. four definition of terms were updated,
4. a detailed version of the *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100) was provided in the Delphi Round 1 survey,
5. the definition and goals of clinical education were revised, and
6. the four futuristic (2018-2023) case scenarios revised.

Refer to Appendix BB for a complete report of the modifications. Following the analysis of the Pilot Test Round 2, it was determined that no modifications were required for Round 2.

The pilot test analysis revealed that modifications were needed for administration of the Delphi Survey for both Rounds 1 and 2. The modifications included the following: for each Delphi round, AH deans would be e-mailed a cover letter with general instructions, an executive summary with appendices of the previous round results, if applicable, a PDF of the Delphi Round survey, and instructions on how to access to the survey through the SurveyMonkey® collector hyperlink. While the use of the SurveyMonkey’s® Email Invitation Collector (SurveyMonkey®.com, 2013) would remain the preferred method of survey administration, the AH deans would have the option of completing the hardcopy PDF version of the survey and e-mailing or mailing their responses to the PI for analysis.

The appropriateness of using Dedoose (Dedoose, 2013) for the qualitative analysis of a small scale pilot program was acceptable. It was designed to facilitate collaborative qualitative and mixed method research and provide the features and data analysis capabilities related to the management, processing, analysis, and presentation of data to conduct the three-round Delphi survey research. The research protocol provided a detailed account of the plan to use Dedoose for qualitative data analysis of the case scenarios feedback and open-ended comments over the three-round Delphi study. However, the use of Dedoose for the qualitative analysis of a larger scale dissertation research would have been considered a study limitation. While the Dedoose server can handle sizeable amounts of data, there are maximum limits for descriptor field sets including: 10 per project, 50 per set, 5000 total descriptors per project, and 5000 resources per project. Therefore, it was decided not to use Dedoose, and the PI developed a coding schema for the qualitative analysis. The success of the pilot study resulted in improvements in the overall design and methodology of the actual 3-round study titled “The Future of Clinical Education: A Delphi Study With Allied Health Deans”.

3-Round Delphi Survey

AH Dean Recruitment and Consent

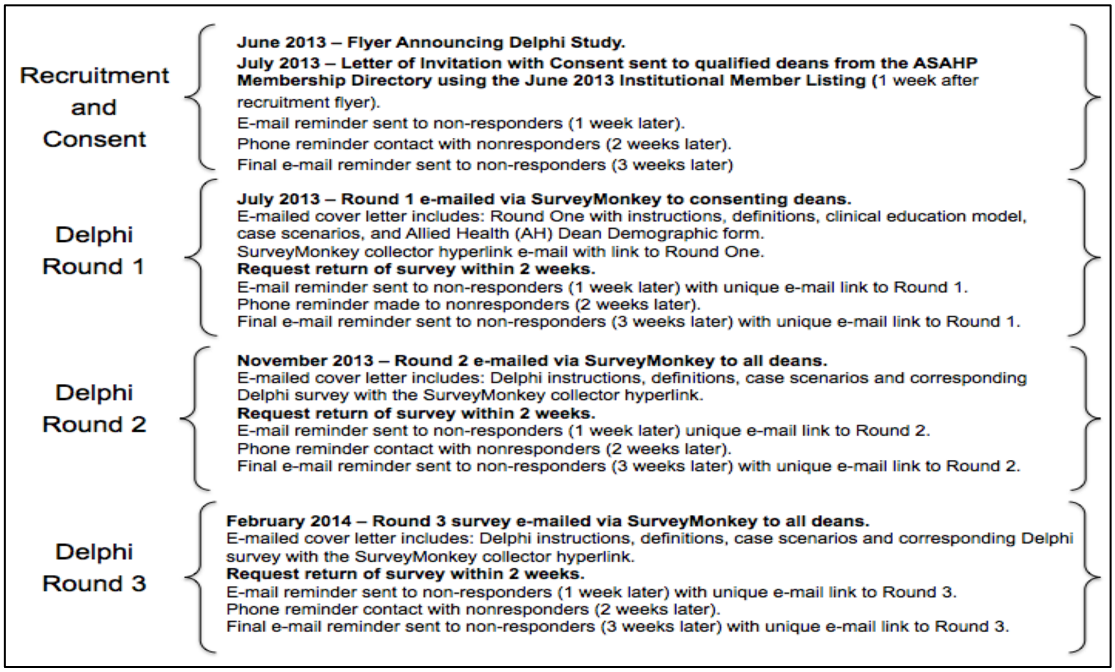
University/college electronic mail (e-mail) addresses for AH deans (*N* = 111) were obtained from the ASAHP Membership Directory using the June 2013 Institutional Member Listing (previously noted as Appendix K). Because all ASAHP AH deans had valid university/college e-mail addresses, this research used e-mail as the primary method of communication. A recruitment flyer announcing the Delphi study (Appendix CC) was sent from Dr. O'Sullivan Maillet on June 28, 2013 to all qualifying AH deans informing them of the upcoming Delphi study. A hyperlink to the Futurist Jim Carroll's YouTube video on his vision of healthcare in the year 2020 (Carroll, 2009) was provided to stimulate the interest of the AH deans on the future of clinical education.

A Delphi Introduction with Participant Consent e-mail (Appendix DD) was sent from Ms. Romig and Dr. O'Sullivan Maillet on July 9, 2013 to all qualifying AH deans. The Delphi Introduction with Participant Consent explained the study and detailed its importance, the timeframe, how and why the recruitment was limited to ASAHP deans or designees, and the intent to administer three rounds of Delphi surveys. In order to stimulate the interest of the AH deans in the clinical education study, the hyperlink to the Futurist Jim Carroll's YouTube video on his vision of healthcare in the year 2020 (Carroll, 2009) was again included in the Letter of Introduction and Consent e-mail (Appendix DD) and the two e-mails reminders.

The Delphi Introduction with Participant Consent e-mail contained the required elements of consent covering participation in all three Rounds. It also stated that the study was consistent with ASAHP’s strategic plan regarding clinical education and that the results would be shared with the ASAHP organization and its members. A request for ASAHP endorsement was sent to its Board of Directors. However, the organization no longer provides dissertation endorsement, therefore, the request was denied.

Using the SurveyMonkey’s® Email Invitation Collector, a reminder Delphi Introduction with Participant Consent e-mail (Appendix EE) was sent to non-responders one week after the initial invitation e-mail. After two weeks, the PI telephoned non-responders to determine if they planned to participate in the study (Appendix FF). In the event the AH dean was not reached, one additional contact attempt was made. After three weeks, the PI sent non-responders a final invitation e-mail to ask whether they would participate in the study (Appendix GG). The recruitment period lasted for three weeks.

The AH deans who agreed to participate were asked to provide their preferred contact information, and to confirm they currently served as an AH dean. Participation and consent to take part in the study was acknowledged by providing their contact information. Appendix HH provides the names of the participating ASAHP deans who provided their time and expertise in the Delphi study and agreed to have their name released for publication / presentation. Figure 5 illustrates the Delphi recruitment and administration protocol.



Recruitment and Consent

June 2013 – Flyer Announcing Delphi Study.
July 2013 – Letter of Invitation with Consent sent to qualified deans from the ASAHP Membership Directory using the June 2013 Institutional Member Listing (1 week after recruitment flyer).
E-mail reminder sent to non-responders (1 week later).
Phone reminder contact with nonresponders (2 weeks later).
Final e-mail reminder sent to non-responders (3 weeks later)

Delphi Round 1

July 2013 – Round 1 e-mailed via SurveyMonkey to consenting deans.
E-mailed cover letter includes: Round One with instructions, definitions, clinical education model, case scenarios, and Allied Health (AH) Dean Demographic form.
SurveyMonkey collector hyperlink e-mail with link to Round One.
Request return of survey within 2 weeks.
E-mail reminder sent to non-responders (1 week later) with unique e-mail link to Round 1.
Phone reminder made to nonresponders (2 weeks later).
Final e-mail reminder sent to non-responders (3 weeks later) with unique e-mail link to Round 1.

Delphi Round 2

November 2013 – Round 2 e-mailed via SurveyMonkey to all deans.
E-mailed cover letter includes: Delphi instructions, definitions, case scenarios and corresponding Delphi survey with the SurveyMonkey collector hyperlink.
Request return of survey within 2 weeks.
E-mail reminder sent to non-responders (1 week later) unique e-mail link to Round 2.
Phone reminder contact with nonresponders (2 weeks later).
Final e-mail reminder sent to non-responders (3 weeks later) with unique e-mail link to Round 2.

Delphi Round 3

February 2014 – Round 3 survey e-mailed via SurveyMonkey to all deans.
E-mailed cover letter includes: Delphi instructions, definitions, case scenarios and corresponding Delphi survey with the SurveyMonkey collector hyperlink.
Request return of survey within 2 weeks.
E-mail reminder sent to non-responders (1 week later) with unique e-mail link to Round 3.
Phone reminder contact with nonresponders (2 weeks later).
Final e-mail reminder sent to non-responders (3 weeks later) with unique e-mail link to Round 3.

Figure 5. Delphi recruitment and administration protocol.

Round 1

Development of Round 1

The Round 1 survey (Appendix II) was framed around the *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100). In addition to the Round 1 survey instructions, a glossary of definitions was provided to increase the clarity and understanding of key terminology. The Round 1 survey was organized into two sections using pre-established, closed and open-ended statements. Demographic data was collected in Round 1.

In Round 1, the AH deans ranked the extent of agreement with the definition of and the goals for clinical education using a five-point Likert scale anchored by the endpoints ‘*strongly disagree’* (1) and ‘*strongly agree’* (5). Responses with median ratings either greater or less than 3 on the 5 point ordinal scale indicate the trend in agreement (<3; trending to ‘*strongly disagree’*; >3; trending to ‘*strongly agree’*). The midpoint and predetermined cut point (=3) permitted respondents to select a ‘middle’ option of ‘*neither agree nor disagree*’ to not force a side selection (Dalkey & Helmer, 1963). While there is no agreement on the ideal number of choices in an ordinal scale, an odd numbered scale allows AH deans who do not have a strong opinion to select a middle option. A comments section was provided, and the AH deans were asked to recommend, comment, and refine the definition and goals of clinical education. This methodology facilitated the generation of new ideas and opinions while building agreement. Table 4 provides the Agreement Rating Scale for the definition and goals of clinical education.

Table 4

Agreement Rating Scale

Likert Scale	Definition
1	Strongly disagree
2	Disagree
3	Neither agree nor disagree
4	Agree
5	Strongly agree

Round 1 was designed to gather AH deans' opinions on the future (2018-2023) of AH clinical education. Their opinions were structured from the *Key Factors Impacting Allied Health Clinical Education* model (O'Sullivan Maillet & Romig, 2011-2013, p.100) and futuristic clinical education case scenarios that were created to encourage creativity and explore the AH deans' opinions on the future of AH clinical education.

The AH deans were instructed to read and assess four case scenarios that described possible alternatives for clinical education. The format for the case scenarios was based upon recommendations from pivotal case scenario literature (Bishop, et al., 2007; Goldstein, 1975; Goodwin, 2001; Hewitt, 2012; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008; Ziglio, 1996). The content for the case scenarios was based upon recommendations from the reports (*Healthcare delivery in 2019*, n.d., paragraph 5-8; Institute for Alternative Futures, 2012a, 2012b; The Joint United Nations Programme on HIV and AIDS, 2005) and the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100). The four scenarios, titled “Conventional Conditions”, “Tough Times”, “Inspirational Opportunities”, and “Culture of Collaboration” (Table 5, p. 179), presented variations of global conditions and how key factors may impact future clinical education. The AH deans were asked to assess the global environment and describe how the key factors in each scenario would impact the future of clinical education, suggest other major categories that may impact AH clinical education and should be included in the scenario, and offer suggestions on what was not explained or was thought to be inaccurate. The AH deans’ Round 1 responses were used to build the factors to be rated in subsequent Delphi rounds. Rounds 2 and 3 evolved from the compilation and analysis of the deans’ responses from each previous survey. The AH deans’ responses were used to determine agreement and a shared vision for the future AH clinical education.

Table 5

Futuristic Case Scenarios

Case Scenario Title	Scenario Description
Conventional Conditions	The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operates with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes. Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in-home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs when clinical training expands across state borders. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. There is increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college / university / technical school classroom, lab, and simulation experiences, leaving only those essential items that need to be addressed in the actual clinical practice setting. The demand for interprofessional education and

Case Scenario Title	Scenario Description
Conventional Conditions (continued)	clinical practice places an increasing burden on resources such as placement sites, practice coordinators and faculty. Health professions education institutions deal with a manageable shortage of qualified clinical faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford an allied health education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.
Tough Times	Defined as long lasting recession, the gloomy economic picture includes a burdened healthcare system weighted down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates challenges the educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded health professions education institutions are limited to clinical education placements in predominately poverty stricken and disease ridden urban locations. Other health professions education institutions compete for clinical education through payment options. Additional competition from for-profit educational institutions and international educational institutions further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to the rapidly rising financial burden of education coupled with scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the

Case Scenario Title	Scenario Description
Tough Times (continued)	future of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.
Inspirational Opportunities	The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have dramatically reduced fraud and waste resulting in a fiscally beneficial environment for healthcare and higher education. An abundance of resources exist to support allied health program funding, novel degree programs that address workforce gaps, and provide sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Health professions institutional prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). In addition to the conventional clinical settings, global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to provide continuous worldwide access to medical care. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

Case Scenario Title	Scenario Description
Culture of Collaboration	A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Collaborative efforts between allied health deans and accreditation directors resulted in accreditation standards broadly defining the scope of practice in allied health disciplines. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. Health professions education collaborative best practices abound. Interprofessional education standards of excellence include collaborative practice among all healthcare professionals and clinical faculty, collaborative clinical practice in healthcare professional student training, accreditation support of interprofessional education in medicine, nursing and allied health programs, and the use of technology and simulation to support interprofessional education across the globe. Higher education governance instructs its faculty and students to actively promote the benefits of public health and holistic well-being (eat, pray, love) for all age groups at a variety of clinical placements sites including community health fairs and fundraisers, pharmacy health initiatives, and “mom and pop” grocery stores. Allied health students, trained by geriatric specialty care specialists, social workers, and other allied health disciplines, embrace caring for the elderly. The elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and geriatric specialty clinical training. A positive culture of working together for health benefits, patient and student is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future of clinical education in a widening variety of settings.

Administration of Round 1

All consenting AH deans were e-mailed a cover letter with the Round 1 survey instructions, definitions, clinical education model, and case scenarios (Appendix JJ) for references while completing Round 1 (previously noted as Appendix II). All consenting AH deans were provided a unique and SSL encrypted hyperlink via the SurveyMonkey's® Email Invitation Collector (SurveyMonkey®.com, 2013) to access and complete the survey. Round 1 was available on SurveyMonkey® on July 23, 2013 with a completion date of three weeks later. AH deans were able to request a hardcopy PDF version of Round 1 and the option to return it via e-mail, mail, or fax.

To increase the Round 1 response rate and maintain participation over subsequent rounds while reducing sampling and non-response bias, e-mail and phone reminders were added to the overall recruitment process. Maximizing the Round 1 response rate is crucial as the iterative nature of the Delphi can result in attrition in expert participation over the subsequent rounds. To secure AH dean participant retention, non-responders were contacted three times during Round 1 (Figure 5, p. 175). Reminders were sent to Round 1 non-responders as follows: a week one e-mail reminder (Appendix KK), a week 2 telephone reminder (Appendix LL), and a week 3 final e-mail reminder (Appendix MM).

Round 1 Responses and Analysis

All Round 1 comments related to the definition and goals of clinical education were reviewed; items attaining agreement were summarized. The PI used the SurveyMonkey’s® Data Collector (SurveyMonkey®.com, 2013) to create the SPSS files for interpretation of the quantitative data using the SPSS statistical software (IBM Corporation, 2013); the same procedure was implemented for the Microsoft Excel files (Microsoft Excel for Mac, 2011). The PI evaluated comments reflective of group opinion on the definition and goals of clinical education that were suggested by Round 1 participating AH deans. It was decided to revise the definition and goals for Round 2.

Guided by the *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100), the PI developed a coding schema for the case scenario analysis. Open-ended comments and feedback from the Round 1 case scenarios were reviewed, coded, and analyzed for content and thematic relevance and inclusion into the Round 2. Every effort was made to synthesize the AH deans’ opinions and suggestions in order to reflect the group responses throughout the Delphi study. Per Delphi research protocol, the AH deans' responses from the four futuristic case scenarios became the key factors for the Round 2 ratings.

Round 2

Development of Round 2

Round 2 (Appendix NN) was based upon the Round 1 responses. Round 2 provided the revised definition and goals of clinical education. The identical

Agreement Likert scale and data collection process used in Round 1 was used in Round 2 to collect the AH deans' ratings.

From the four futuristic case scenarios, the AH deans' Round 1 responses became the key factors to be rated in Round 2. Organized by case scenario, the key factor responses were placed into a clinical education category guided by the *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100). Next, the key factor responses were collapsed into common themes that consisted of a key factor with detailed subthemes when applicable. After a review of the Round 1 responses and the frequency of comments on quality patient care and health outcomes, the category Population Health and its key factors emerged as important to clinical education; these were added into the Round 2 case scenario key factor ratings and included in future versions of the conceptual model (p.100).

To facilitate ease of response, the key factors of each individual case scenario were presented by most frequent to least frequent responses with the most frequent provided in bold font. Key factors that comprised over 95% of the Round 1 total responses were placed in bold font. As the overall and original intent was to focus on the most frequently mentioned key factors that were central to the Delphi research, the AH deans were asked to at least read and rate all boldfaced statements, and if they desired, to read and rate the remaining items.

For the Round 2 key factors, a sample question and response was provided to illustrate the proper rating procedure for each statement. The AH deans rated the importance of each clinical education statement using a five-point Likert scale anchored by endpoints '*not important*' and '*very important*' (Table 6, p. 187). Following the ratings of importance and using a five-point Likert scale anchored by endpoints '*low degree of impact*' and '*high degree of impact*' (Table 7, p. 187), the AH deans rated statements on the degree of impact an AH dean has on the key factors related to clinical education.

For clarity, the decision was made to ask the AH deans to rate the degree of impact on key factors from two different perspectives. Using the same scale, impact was rated for two categories: individual dean's impact and collective deans' impact. Therefore, AH deans ranked key factors on 1) the importance of each clinical education statement (Table 6, p. 187), 2) the degree of impact an individual AH dean has on each clinical education statement and 3) the degree of impact AH deans collectively have on each clinical education statement (Table 7, p. 187).

Table 6

Importance Rating Scale

Likert Scale	Definition
1	Not important to allied health clinical education
2	Low importance to allied health clinical education
3	Neither important nor unimportant to allied health clinical education
4	Important to allied health clinical education
5	Very important to allied health clinical education

Table 7

Impact Rating Scale

Likert Scale	Definition
1	Low degree of impact
2	Minimal degree of impact
3	Neither has nor does not have impact
4	Moderate degree of impact
5	High degree of impact

Note. Scale used for individual and collective deans’ impact ratings.

The third section of Round 2 asked the AH deans to select, based upon experience and perception as an AH dean, the "Most & Least Preferred" and "Most & Least Realistic" Case Scenario from the four futuristic (2018-2023) Clinical Education Case Scenarios. Round 2 provided a section for open-ended comments at the end of each of the four case scenarios and a final comments section at the end of the survey for general feedback.

Administration of Round 2

In the Round 2 survey administration, the AH deans were e-mailed a cover letter with instructions (Appendix OO) and a summary of the Round 1 results (Appendix PP). They were asked to complete the Round 2 survey (previously noted as Appendix NN) through the SurveyMonkey® collector hyperlink. Prior to beginning Round 2, the AH deans were asked to review a Round 1 Executive Summary and two Appendices with the Round 1 detailed responses. The AH deans were asked to re-rate the revised definition and goals of clinical education. Next, they were asked to review the four futuristic case scenarios and rate key factors that emerged from the Round 1 case scenario responses.

The AH deans were encouraged to participate in Round 2 even if they did not participate in Round 1. While a three-week response window was available, the AH deans were asked to complete Round 2 within two weeks. Subsequent reminders were sent to Round 2 non-responders (refer to Figure 5, p. 175) as follows: a week one e-mail reminder (Appendix QQ), a week 2 telephone reminder (Appendix RR), and a final week 3 e-mail reminder (Appendix SS). For the telephone call reminder, if an AH dean did not answer the phone, a voice message was left. In the case where there was no option to leave a voice message, one additional telephone call was made to speak to the AH dean or leave a message. At each reminder, the AH deans were encouraged to complete Round 2 electronically via SurveyMonkey®. If requested, the study was available through a hardcopy PDF version with the option to return by e-mail, fax, or mail. With the Round 2 final e-mail reminder and at the request of several of the deans, instructions were provided on how to save responses in order to complete the survey at a later time.

Round 2 Responses and Analysis

In Round 2, the AH deans ranked the extent of the agreement with the revised definition of and the revised goals for clinical education using a five-point Agreement Likert scale. All Round 2 comments related to the definition and goals of clinical education were reviewed; items attaining agreement were summarized. SPSS statistical software (IBM Corporation, 2013) and Microsoft Excel (Microsoft Excel for Mac, 2011) were used to interpret the quantitative data. Newly generated statements on the definition and goals of clinical education that were suggested in Round 2 by the AH deans were reviewed by the PI for inclusion in Round 3.

Four futuristic (2018-2023) case scenarios were used to encourage AH deans’ feedback on the key factors impacting the future of clinical education.

Collective case scenario ratings of the key factors were grouped into agreement categories. High agreement included the combination of “important” to “very important” ratings. The Round 2 rating results of the key factors with “high importance”, for each individual case scenario, were listed in order of total responses with the highest denominator of “importance”, followed by highest percentage of “importance”, followed by highest percentage of “individual dean’s impact”, and lastly highest percentage of “collective deans’ impact”. The frequency, median and range are reported for key factors attaining “high agreement” of importance along with the corresponding impact rating data. Median was used to measure the group’s aggregate rating along with the range and frequency of the AH deans’ response to each statement. The number and percentage of key factors attaining agreement of importance with corresponding individual and collective deans’ impact ratings were reported for Round 2. The data was analyzed for areas of agreement of importance, the primary research objective. The PI evaluated comments reflective of group opinion on factors not attaining agreement for relevance and possible inclusion in Round 3.

In Round 2, the AH deans were asked, based upon experience and perception as an AH dean, to select the "Most & Least Preferred" and "Most & Least Realistic" Case Scenario from the four futuristic (2018-2023) Clinical Education Case Scenarios. Several Round 2 AH deans’ questioned the wording of the question and challenges with the question format ensued. The results appeared inconsistent with logical expectations, e.g., Tough Times was rated as the “Most Preferred” scenario. The decision was made to revise this question for Round 3.

The AH dean scenario ratings were used to examine the key factors identified in the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p. 100). In Round 2, there were no new clinical education categories or related factors identified as important for the future of AH clinical education. The category Population Health and its factors, identified as important in Round 1, were included in the Rounds 2 and 3 case scenario factor ratings and remained a consideration for inclusion in future versions of the conceptual model.

Round 3

Development of Round 3

The AH dean responses from Round 2 were analyzed for areas of agreement and impact, the primary research objective. A statistical summary of the groups’ responses and the AH deans’ individual responses for each of these statements were presented in order of frequency. Round 3 (Appendix TT) was developed from the AH deans’ importance and impact ratings, and accompanying feedback from Round 2.

From the Round 2 ratings of key factors, 60 factors did not reach “high agreement” of importance”. For Round 3, these 60 factors from four individual scenarios were collapsed into categories listed by least frequent to most frequent category using the reverse ordering of responses from the Round 1 feedback.

The Round 3 design objective of reverse ordering was implemented in order to have the AH deans' rate the categories having fewer statements first. Using this methodology provided the chance for a rapid progression through the initial part of the survey and the possibility to build momentum for rating multiple key factors placed at the end of the survey. Next, the ratings of the factors were listed in order of highest percentage by importance, followed by individual dean's impact, and lastly, collective deans' impact. As the primary goal of this study was to examine the degree of importance that AH deans perceived regarding the key factors impacting AH clinical education, importance was placed first, followed by impact. Per the Delphi protocol, the AH deans had the opportunity to re-rate factors not reaching agreement in Round 2.

Open-ended comments and feedback from Round 2 were reviewed and analyzed for content and thematic relevance and inclusion into Round 3. Verbatim wording was used whenever possible to maintain the intent of the deans' opinions and suggestions while minimizing researcher bias. There were no additional statements added into Round 3.

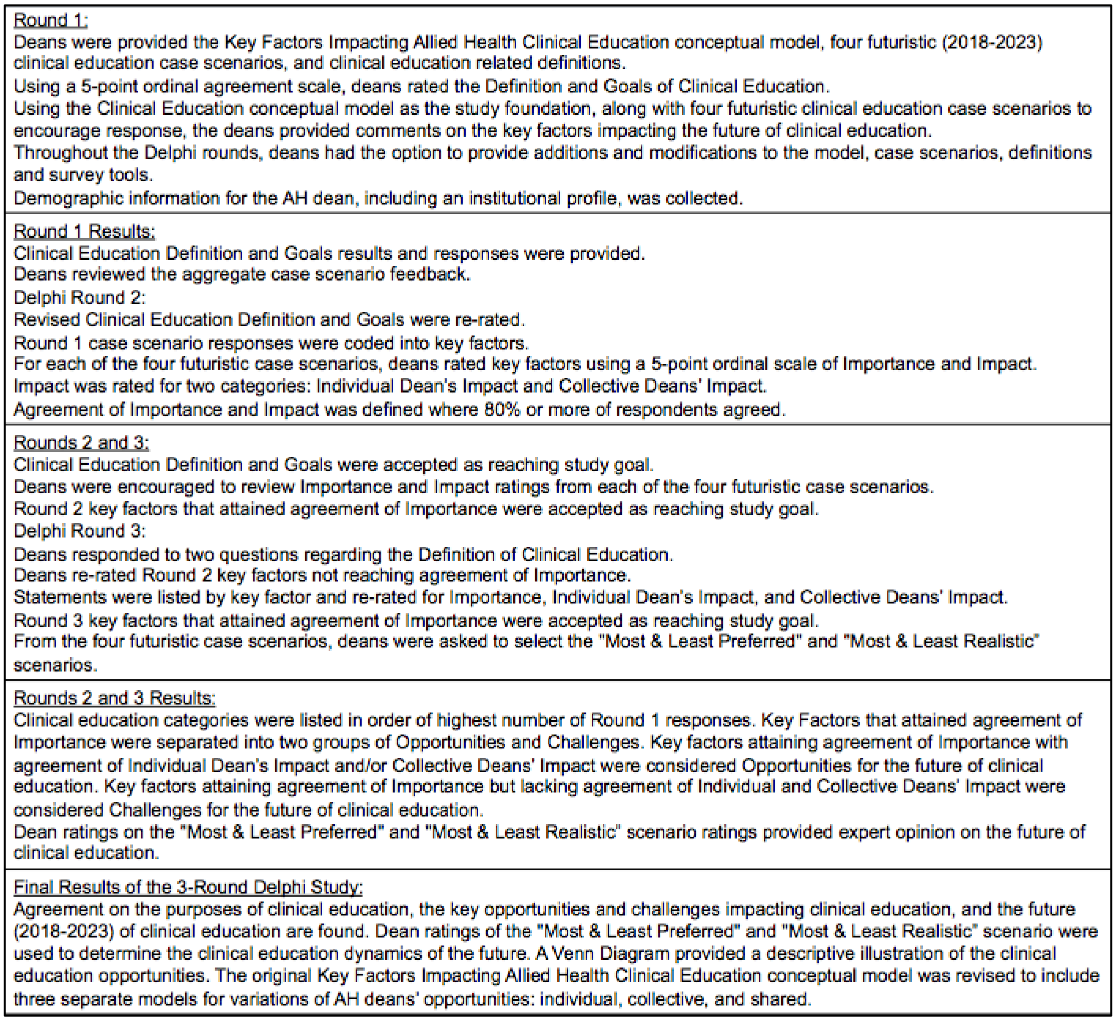
Administration of Round 3

In the final Round 3 survey administration, the AH deans were e-mailed a cover letter with instructions (Appendix UU) and a summary of the Round 2 results (Appendix VV), and were asked to complete the Round 3 survey (previously noted as Appendix TT) through the SurveyMonkey® collector hyperlink. The AH deans were instructed to reflect on their Round 2 responses in relationship to the overall group response, group comments, and the frequencies listed under the statements in each survey section. The Round 3 survey utilized the same Likert scales and data collection process as was used in Round 2. The AH deans were encouraged to participate in Round 3 even if they did not participate in Rounds 1 or 2. The final Round 3 survey utilized the same participant reminder protocol as in the previous Rounds (refer to Figure 5, p. 175). While a three-week response window was available, the AH deans were asked to complete Round 3 within two weeks. Subsequent reminders were sent to Round 3 non-responders as follows: a week one e-mail reminder (Appendix WW), a week 2 telephone reminder (Appendix XX), and a final week 3 e-mail reminder (Appendix YY). For the telephone call reminder, if an AH dean did not answer the phone, a voice message was left. In the case where there was no option to leave a voice message, one additional telephone call was made to speak to the AH dean or leave a message. At each reminder, the AH deans were encouraged to complete Round 3 electronically via SurveyMonkey®. If requested, the study was available through a hardcopy PDF version of the Round 2, with the option to return by e-mail, fax, or mail.

Round 3 Responses and Analysis

In Round 3, the AH deans responded to two “yes or no” questions on the revised definition of clinical education. Next, the AH deans re-rated the "Most & Least Preferred" and "Most & Least Realistic" case scenarios from the four futuristic (2018-2023) Clinical Education Case Scenarios. The AH deans were asked to assign each of the Futuristic (2018-2023) Clinical Education Case Scenarios a "Preferred" or "Realistic" ranking. The AH deans had the opportunity to re-rate the 60 factors not reaching agreement in Round 2. The AH dean ratings from Round 3 were analyzed for areas of agreement and impact, the primary research objective. A statistical summary of the groups’ responses and the AH deans’ individual responses for each of these statements were presented in order of frequency.

At the end of the survey in Round 3, AH deans were given the opportunity to provide final comments and general feedback on the key factors impacting clinical education, the case scenarios, and the future of AH clinical education. Eleven comments from Round 3 were reviewed and analyzed for content, thematic relevance, and inclusion into the final 3-round Delphi results. There were no new factors identified as important for the future of AH clinical education that were not included in the *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100). Figure 6 provides the Delphi administration and methodology protocol.



Round 1:
Deans were provided the Key Factors Impacting Allied Health Clinical Education conceptual model, four futuristic (2018-2023) clinical education case scenarios, and clinical education related definitions.
Using a 5-point ordinal agreement scale, deans rated the Definition and Goals of Clinical Education.
Using the Clinical Education conceptual model as the study foundation, along with four futuristic clinical education case scenarios to encourage response, the deans provided comments on the key factors impacting the future of clinical education.
Throughout the Delphi rounds, deans had the option to provide additions and modifications to the model, case scenarios, definitions and survey tools.
Demographic information for the AH dean, including an institutional profile, was collected.

Round 1 Results:
Clinical Education Definition and Goals results and responses were provided.
Deans reviewed the aggregate case scenario feedback.
Delphi Round 2:
Revised Clinical Education Definition and Goals were re-rated.
Round 1 case scenario responses were coded into key factors.
For each of the four futuristic case scenarios, deans rated key factors using a 5-point ordinal scale of Importance and Impact.
Impact was rated for two categories: Individual Dean's Impact and Collective Deans' Impact.
Agreement of Importance and Impact was defined where 80% or more of respondents agreed.

Rounds 2 and 3:
Clinical Education Definition and Goals were accepted as reaching study goal.
Deans were encouraged to review Importance and Impact ratings from each of the four futuristic case scenarios.
Round 2 key factors that attained agreement of Importance were accepted as reaching study goal.
Delphi Round 3:
Deans responded to two questions regarding the Definition of Clinical Education.
Deans re-rated Round 2 key factors not reaching agreement of Importance.
Statements were listed by key factor and re-rated for Importance, Individual Dean's Impact, and Collective Deans' Impact.
Round 3 key factors that attained agreement of Importance were accepted as reaching study goal.
From the four futuristic case scenarios, deans were asked to select the "Most & Least Preferred" and "Most & Least Realistic" scenarios.

Rounds 2 and 3 Results:
Clinical education categories were listed in order of highest number of Round 1 responses. Key Factors that attained agreement of Importance were separated into two groups of Opportunities and Challenges. Key factors attaining agreement of Importance with agreement of Individual Dean's Impact and/or Collective Deans' Impact were considered Opportunities for the future of clinical education. Key factors attaining agreement of Importance but lacking agreement of Individual and Collective Deans' Impact were considered Challenges for the future of clinical education.
Dean ratings on the "Most & Least Preferred" and "Most & Least Realistic" scenario ratings provided expert opinion on the future of clinical education.

Final Results of the 3-Round Delphi Study:
Agreement on the purposes of clinical education, the key opportunities and challenges impacting clinical education, and the future (2018-2023) of clinical education are found. Dean ratings of the "Most & Least Preferred" and "Most & Least Realistic" scenario were used to determine the clinical education dynamics of the future. A Venn Diagram provided a descriptive illustration of the clinical education opportunities. The original Key Factors Impacting Allied Health Clinical Education conceptual model was revised to include three separate models for variations of AH deans' opportunities: individual, collective, and shared.

Figure 6. Summary of Delphi administration and methodology.

Kendall's tau (τ) Correlations

The Kendall's tau (τ) correlation coefficient, a non-parametric correlation test also known as Kendall's tau-b, was selected to examine the correlation between key factors in Rounds 2 and 3 that rated with high agreement of importance with impact. Kendall's tau correlations were used to explore the bivariate relationship of importance and degree of impact an individual AH dean and collective AH deans have on key factors impacting AH clinical education. The correlation between individual and collective deans' impact ratings was also evaluated. Kendall's tau statistic provided an intermediate value of the degree of concordance between ranked ordinal scale variables, effectively handled tied ranks, and delivered a better estimation of population parameters with a more accurate *p*-value with small sample sizes (Field, 2009).

Demographic Analysis

AH dean demographic data and institutional profile information was collected in Round 1 (previously noted as Appendix II). The PI used the SurveyMonkey's® Data Collector (SurveyMonkey®.com, 2013) to create the Excel files (Microsoft Excel for Mac, 2011) for the categorical interpretation of the demographic quantitative data (N, %).

Non-Responder Analysis

Upon conclusion of the three-round Delphi survey, a non-responder bias check was performed to determine whether non-responder deans differ in key findings from the responders. To investigate non-response error, a random sample of the AH dean non-responder population (*n* = 30) was contacted via e-mail with a SurveyMonkey® Web Link Collector to explore the deans' reasons not to participate and to determine if they agreed with the key findings of the

Delphi study. Seventeen percent (five of 30) deans contacted participated in the non-responder survey.

Data Collection

At the beginning of the Round 1 survey and for each subsequent round, AH dean responses were documented and recorded in SurveyMonkey® using the participant e-mail address. Each AH dean was assigned a unique identifier. This data recording process permitted the AH deans to answer study questions without entering any further identifying information. Unique identifiers were stored with contact information on a password protected Excel spreadsheet located on the PI's personal computer. The participant coding of the Delphi survey used the unique identifier to maintain confidentiality, track responses for each round, and permit contacting non-responders with e-mail and phone reminders. After the conclusion of the study, when all data had been entered into a computer file, and the study data had been checked for accuracy and consistency, the unique identifier code sheet was destroyed.

Data Analysis

For each Delphi round as well as cumulatively for all three rounds, the number and percentage of AH deans contacted and agreeing to participate in the study was recorded and analyzed. Demographic data of the AH deans' background and institutional profile were collected. An extensive secondary analysis was not conducted because a high level of agreement was found among the AH deans throughout the study.

Subproblem 1

How is clinical education defined?

Round 1 definition of clinical education was rated on a five-point ordinal scale of agreement bounded on opposite ends of the scale with the terms '*strongly disagree*' and '*strongly agree*' and described using measures of central tendency (Table 4, p. 176). A high level of agreement was defined where 80% of respondents' were within one integer of the median. Levels of moderate and low agreement were beyond the scope of this study. The number and percentage of responses for high agreement on the definition of clinical education was reported by section and by round. The PI assessed the content and thematic relevance of new items brought forth from the AH deans' responses. Modifications to the definition of clinical education were made in order to accurately reflect the AH deans' responses and the revised definition was included in the Round 2 survey.

The median was utilized to measure the group's aggregate rating as well as the frequency (*n* and %) of AH deans' response. The distribution of responses (ratings from 1 to 5) was numerically presented for the definition of clinical education to foster the interpretation of discordance (i.e., bimodal or flat distributions) (Portney & Watkins, 2009d; Schiebe, et al., 1975; Trochim & Donnelly, 2008). For each Delphi round and cumulatively, summary statistics (*n* and %) were used to document the number of statements generated and comments rendered by the experts.

Subproblem 2

What are the goals of clinical education?

Round 1 survey goals of clinical education were rated on a five-point ordinal scale of agreement bounded on opposite ends of the scale with the terms '*strongly disagree*' and '*strongly agree*' (refer to Table 4, p. 176) and described using measures of central tendency. For the purposes of determining the level of agreement on the goals of clinical education, the criteria outlined for the definition of clinical education was used. Per this research protocol, the same process used to analyze and report Subproblem 1 results were replicated for Subproblem 2.

Subproblem 3

Where is there agreement on the key opportunities that impact future AH clinical education?

Key opportunities impacting future AH clinical education that achieved agreement were described in relationship to the *Key Factors Impacting Allied Health Clinical Education* model (O'Sullivan Maillet & Romig, 2011-2013, p.100). Using the Round 1 survey case scenario feedback, the Round 2 and 3 surveys were developed. Open-ended comments and feedback from the Round 1 clinical education futuristic case scenarios were reviewed, coded, and analyzed for relevance and inclusion into the Round 2 survey. Based on the key factors impacting the future of AH clinical education, the PI's systematic coding schema of the AH deans' feedback guided the content and thematic analysis. The AH deans' responses in the four case scenarios became the key factors for the future of clinical education for the Round 2 and 3 survey ratings (Hasson, et al., 2000). Key factors identified as important for clinical education that were not included in the conceptual model (p. 100) were proposed as a modification to the existing model.

In Rounds 2 and 3, the AH deans rated each clinical education factor on: importance (Table 6, p. 187), the degree of impact an individual dean has on each factor, and the degree of impact deans collectively have on each clinical education factor (Table 7, p. 187). These ratings were used to explore the level of agreement of importance and impact that AH deans perceived regarding the key factors. A high level of agreement was defined where 80% of respondents' were within one integer of the median. The number and percentage of key factors attaining high agreement from the Likert Importance and Impact scales were reported for the Round 2 and 3 surveys. The median was utilized to measure the group's aggregate rating as well as the frequency (*n* and %) of deans' response to each statement. For each Delphi round and cumulatively, summary statistics (*n* and %) were utilized to document the number of statements generated and comments rendered by the deans. Throughout the Delphi, key factors were evaluated using median, frequency and range to explore directionality in agreement (Hsu & Sanford, 2007a; Schiebe, et al., 1975; Trochim

& Donnelly, 2008). A summary of the AH deans’ responses to the key factors was provided for each Delphi round; suggested modifications were considered for relevance and inclusion into the subsequent rounds. For the purposes of this research, clinical education opportunities are key factors achieving high agreement on importance and high agreement on individual and/or collective deans’ impact.

Subproblem 4

Where is there agreement on the key challenges that impact future AH clinical education?

Key challenges impacting future AH clinical education that achieved agreement were described in relationship to the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100). Using the Round 1 survey case scenario feedback from the pre-established, open-ended statements framed around the conceptual model, the Round 2 and 3 surveys were developed. The same process used to analyze and report Subproblem 3 results was replicated for Subproblem 4. For the purposes of this research, clinical education challenges are key factors achieving high agreement on importance but lacking high agreement on both individual and collective deans’ impact.

Subproblem 5

Where is there agreement on the future of AH clinical education?

Where key factors attained agreement on importance with individual and/or collective deans' impact, agreement on the future opportunities for AH clinical education was determined. Where key factors attained agreement on importance, but lacked agreement on individual and collective deans' impact, agreement on the future challenges for AH clinical education was determined. The relationship the futuristic case scenarios had on the key factors was also reviewed for the most realistic and preferred scenarios. Key factors identified as important to the future of AH clinical education that were not included in the conceptual model were proposed as modifications to the existing model. In order to illustrate the similarities and differences of responses between importance and individual and collective deans' impact responses, three separate clinical education conceptual models were developed.

Reliability and Validity

The Delphi methodology included an appropriate and well defined problem on the future of clinical education, selection of suitable expert panel of AH deans, clear and concise data collection procedures, justification of agreement, and processes of dissemination and execution (Powell, 2003). The use of the Delphi technique is justified with the generation of information where little exists in the AH deans' identification of key factors impacting clinical education and the future of AH clinical education. The use of a Delphi study consisting of three rounds provided a suitable balance for the exploration of AH dean opinion while minimizing participation time and reducing fatigue (Dillman, et al., 2009). High response rates and low attrition rates of the AH deans between Delphi rounds demonstrate that the iterative process was relatively unbiased in response (Keeney, et al., 2006; Mullen, 2003). The Delphi methodology fostered reliability with the use of an anonymous panel of AH deans, which avoided group bias and peer influence. The validity of the Delphi study improved with implementation strategies such as: pilot test using former AH deans, selection of an suitable expert panel of AH deans, and comparison of outcomes to current, validated literature (Keeney, et al., 2011). Content validity was enhanced by selecting AH deans with knowledge and interest in the topic of clinical education (Goodman, 1987). Concurrent validity in this study was improved using pilot testing of former AH deans to achieve appropriate wording of the Rounds 1 and 2 surveys and in the successive three-rounds (Hasson, et al., 2000). Internal validity in this study was improved using clearly defined steps for the justification of the Delphi administration and methodology with a priori determination of the level of agreement (Keeney, et al., 2006). While the Delphi technique does not conclude any definitive right or wrong answer, the reliability of the study improved with the AH dean panel size, expert opinions of AH dean leaders, response rates, and the expansion of Delphi rounds (Hasson, et al., 2000; Keeney, et al., 2011). Despite the debate surrounding the ambiguous methodology of building and measuring consensus using expert opinion (Mullen & Spurgeon, 2000), the Delphi technique provided an acceptable balance of scientific rigor and practical relevance.

Limitations

The Delphi methodology used in this study was an iterative multistage group facilitation technique designed to combine AH deans' opinions into group consensus (McKenna, 1994a). The formation of the expert panel is considered the "lynchpin" and the defining characteristic of a Delphi study (Green, et al., 1999; Hasson, et al., 2000). The expert panel consisted of AH deans or designated voting representative with institutional membership of ASAHP, the research outcomes represent this specific population of AH deans. The Delphi methodology is limited in its reflection of the expert opinions and interpretation of results for that particular research and specific participant population (Hasson, et al., 2000). Thus, the strength or weakness of the results corresponds to the quality responses of the panel of AH dean experts. The use of a Delphi study consisting of three rounds provided a suitable balance for the exploration of AH dean opinion while minimizing participation time and reducing fatigue (Dillman, et al., 2009). The high response rates and low attrition rates of the AH deans between Delphi rounds showed that the iterative survey process was unbiased in response (Keeney, et al., 2006; Mullen, 2003). The mixed modality of the e-mail and survey process could have resulted in the lack of engagement and the exclusion of some potential participants (Donohoe, et al., 2012). While participants with a vested interest in AH clinical education may be more likely to participate in the Delphi and this phenomenon may strengthen the expert panel, it may also bias the results if impartiality is not exhibited (Hasson, et al., 2000). ASAHP endorsement of the Delphi research could have provided a positive catalyst for AH dean participation however, the request was denied. The use of the Futurist Jim Carroll’s YouTube video on his vision of healthcare in the year 2020 (Carroll, 2009) in the flyer announcing the Delphi study and the Invitation to Participate letter (Appendix L) and Letter of Introduction and Consent (Appendices M, N, and P) and Phone Script (Appendix O) was used to stimulate the interest of the AH deans, but may influence the feedback on the future of clinical education. The four clinical education case scenarios may influence the feedback and results on the future of clinical education. Finally, the many modalities of Delphi methodology may cloud the rationale behind the responses and the intended outcome of agreement (Critcher & Gladstone, 1998).

Chapter IV

RESULTS

The purpose of this research was to study, from the allied health (AH) deans' perspective, agreement on the future of AH clinical education. Five research subproblems were studied:

1. How is clinical education defined?
2. What are the goals of clinical education?
3. Where is there agreement on the importance of key opportunities that impact future AH clinical education?
4. Where is there agreement on the importance of key challenges that impact future AH clinical education?
5. Where is there agreement on the future of AH clinical education?

Delphi Study Enrollment and Response Rate

All 111 eligible AH deans or designated voting representatives, from the June 2013 Association of School of Allied Health Professions (ASAHP) Membership Directory Institutional Member Listing, were recruited for study participation. A total of 61 of the 111 (54.9%) eligible AH deans consented to participate in the Delphi study. Of the 61 AH deans invited to participate in Rounds 1, 2 and 3 surveys, 51 (83.6%) participated in Round 1, 42 (63.9%) in Round 2 survey, and 39 (47.5%) in Round 3. Twenty-nine of the 61 (48%) consenting AH deans participated in all three rounds and 58 (95.1%) completed at least one round. Three of the 61 (5%) consenting AH deans did not participate in any Delphi Rounds. The study goal of 50% participation was met; as noted, 58 of the 111 eligible AH deans participated in the study. Table 8 presents the response rates by Delphi round.

Table 8

Response Rate by Delphi Round

Delphi Round	Eligible Survey Participants (*n*)	Response Rate by Round (*n*, %)	
Round 1	61	51	83.6
Round 2	61	42	68.8
Round 3	61	39	63.9
Participation in All Rounds		29	47.5
Participation in At Least One Round		58	95.1

Subproblems 1 and 2

How is clinical education defined and what are its goals?

Definition of Clinical Education

In the Round 1 Survey, AH deans were given a definition of clinical education and asked to rate the extent to which they agreed or disagreed with the definition, suggest modifications to the wording of the definition, and/or provide a reason for their rating. From Round 1, there was “high agreement” on the definition of clinical education, defined as 80% or more of respondents agreeing to the definition. A majority (80.4%) of the AH deans “strongly agreed” or “agreed” with the definition of clinical education, while 3.9% of the AH deans selected a neutral rating of “neither agree or disagree” and 15.7% of the AH deans selected “disagreed” or “strongly disagreed” with the definition. Twenty-eight comments were provided with the majority of comments focused on expanding the definition of Clinical Education by:

1. Adding “primarily” in the clinical / patient care setting
2. Acknowledging the diversity of clinical education settings
3. Broadening the setting beyond clinical to include community-based health promotion / wellness settings

While a high level of agreement among the AH deans occurred in Round 1, the suggested modifications were deemed important enough to revise the definition and re-rate the revised definition in Round 2. Therefore, the original Round 1 definition,

> Clinical education takes place in the clinical/patient care setting. It provides students with the education and experience necessary to develop and refine clinical skills, knowledge, and values required to provide quality patient care.

was modified as follows:

> Clinical education takes place in a variety of settings including, but not limited to, the classroom, the use of simulation and standardized patients, and within clinical/community/patient care settings. It provides students with the education and experiences necessary to develop and refine clinical skills, knowledge, attitudes, and values required to provide quality patient and client care.

In the Round 2 survey, 90.4% of the AH deans “strongly agreed” or “agreed” with the revised definition of clinical education, while 2.4% of the AH deans selected a neutral rating of “neither agree or disagree” and 7.2% of the AH deans “disagreed” or “strongly disagreed” with the definition. Nine comments were provided. Based on the Round 2 results, the definition of clinical education was accepted as achieving “high agreement”. In Round 3, the deans were asked two “yes or no” questions on the revised definition of clinical education. The first question followed-up on comments from the AH deans regarding whether “classroom” should be removed from the revised definition of clinical education. Thirty of 38 (78.9%) of the AH deans responded that “classroom” should not be removed from the definition of clinical education; therefore, it remained in the definition. The second question asked if "allied health" could be included in the title of the definition of clinical education. Thirty-six of 39 (92.3%) of the AH deans responded that "allied health" clinical education was acceptable. Table 9 provides the percentage of AH deans who agreed on the original definition, the revised definition, and the follow-up questions.

Table 9

Definition of Clinical Education

Definition of Clinical Education	High Agreement (%, n^1)	
Round 1 Original Definition: Clinical education takes place in the clinical/patient care setting. It provides students with the education and experience necessary to develop and refine clinical skills, knowledge, and values required to provide quality patient care.	80.4% (44/51)	
Round 2 Revised Definition: Clinical education takes place in a variety of settings including, but not limited to, the classroom, the use of simulation and standardized patients, and within clinical/community/patient care settings. It provides students with the education and experiences necessary to develop and refine clinical skills, knowledge, attitudes, and values required to provide quality patient and client care.	90.4% (38/42)	
Round 3 Questions:	Yes	No
Should "classroom" be removed from the Definition of Clinical Education?	21.1% (8/38)	78.9% (30/38)
Can the revised Definition of Clinical Education be used to describe "Allied Health" Clinical Education?	92.3% (36/39)	7.7% (3/39)

Note. Definition of clinical education was adapted from Rose & Best, 2005, p. 3.
n^1 = # of AH deans responding High Agreement or Agreement / Total Agreement Respondents.
High agreement is defined as where 80% or more of respondents agreed.

Goals of Clinical Education

Five distinct goals of clinical education were presented and the AH deans rated their level of agreement for each goal. The AH deans were invited to suggest revisions to the goals and/or include a reason for their rating. Twenty-seven comments were provided. In Round 1, a majority (90.2% to 96.1%) of the AH deans “strongly agreed” or “agreed” with each of the five goals of clinical education. The AH dean responses suggested that using terminology such as "refining" or "expanding" would make the goals clearer. Additional AH deans’ responses included the need to distinguish didactic education from student learning in the clinical setting. Specific feedback on the individual goals of clinical education included:

> Goal 1 feedback: Goal 1 is too similar to Goal 2
> Goal 2 feedback: Provide clarity on the term "authenticating"
> Goal 5 feedback: Use explicit terms such as: "higher order thinking", "critical thinking"

While a high level of agreement occurred in Round 1, it was felt that the recommendations were important enough to modify the goals as suggested and ask the AH deans to re-rate the modified goals in Round 2. Therefore, the goals were modified as follows:

1. Combining Goals 1 and 2
2. Revising Goal 4 to state "professional, interpersonal communication" and "functioning within a team to provide patient/client care"
3. Revising Goal 5 to include "critical thinking"

Table 10 shows the percentage of agreement for five original goals and the four revised goals of clinical education. The Round 2 results show that an overwhelming majority (90.8%) of the AH deans “strongly agreed” or “agreed” with each of the four revised goals. Seven comments were provided. Based upon the Round 2 results, the refined goals of clinical education were accepted as achieving “high agreement”.

Table 10

Goals of Clinical Education

Round 1		Round 2	
Five Goals of Clinical Education:	High Agreement (%, n^1)	Four Goals of Clinical Education:	High Agreement (%, n^1)
Goal 1. Application of theory and didactic learning into applied clinical practice	96.1% (49/51)	Goal 1. Applying theory and didactic learning, coupled with practicing clinical skills and professionalism, into evidence-based, applied clinical practice	92.7% (38/41)
Goal 2. Authenticating the application of student knowledge in a clinical setting	90.2% (46/51)		
Goal 3. Orienting students with the clinical workplace	90.2% (46/51)	Goal 2. Orienting students to professional behaviors and attitudes within the clinical workplace	90.2% (37/41)
Goal 4. Honing and refining clinical skills	96.1% (49/51)	Goal 3. Developing professional, interpersonal communication skills and functioning within a team to provide patient/client care	90.2% (37/41)

Round 1		Round 2	
Five Goals of Clinical Education:	High Agreement	Five Goals of Clinical Education:	High Agreement
Goal 5. Developing problem-solving and time management skills in the clinical setting	96.1% (49/51)	Goal 4. Developing critical thinking, problem-solving and time management skills in the clinical setting	90.3% (37/41)
Average across all goals of clinical education:	93.7%		90.8%

Note. Goals of clinical education adapted from Mannix, Faga, Beale & Jackson, 2006.
n^1 = # of AH deans responding High Agreement or Agreement / Total Agreement Respondents.
High agreement is defined as where 80% or more of respondents agreed.

Key Factors Impacting Clinical Education

Round 1 Survey Results

Guided by the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100), four futuristic (2018-2023) case scenarios were developed. The scenarios titled, “Conventional Conditions”, “Tough Times”, “Inspirational Opportunities”, and “Culture of Collaboration”, presented variations of how key factors may impact future clinical education (case scenario descriptions previously presented in Table 5, p. 179). The AH deans were asked to read the case scenarios and respond to three pre-established, open-ended questions:

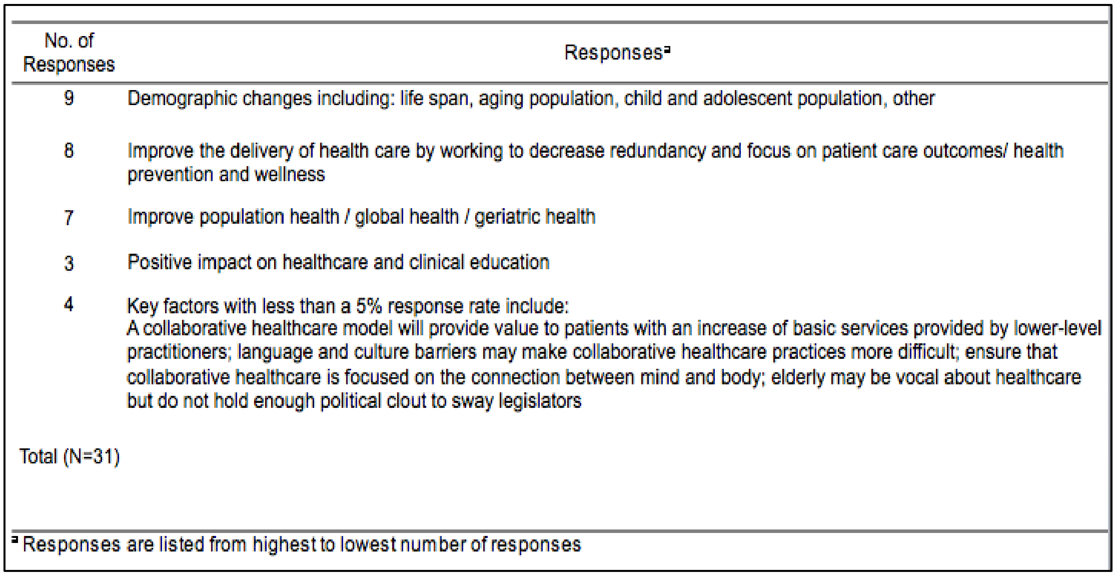
1. Describe how the case scenario will impact the future (2018-2023) of clinical education.
2. What other key factors impacting allied health clinical education should be included in the case scenario?
3. In the case scenario, what is not explained or is seen as incorrect?

For each of the four futuristic case scenarios, the AH deans' responses were coded according to the key factor categories. Organized by case scenario, the Round 1 responses were individually evaluated for inclusion into one of 13 clinical education category guided by the *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100); the category Population Health and its key factors emerged as important to clinical education and were added for consideration in the subsequent Delphi rounds. Organized by case scenario in their respective clinical education category, Round 1 responses were collapsed into common themes that consisted of a key factor with subtheme extensions where related to clinical education. Following the review, each response was coded and analyzed for similarities, relevance, and inclusion into the following Delphi rounds. The 1,000 responses were condensed into 208 key factors relevant to future of AH clinical education; key factors with repeating themes were collapsed into one item. Every effort was made to synthesize the AH deans' responses in order to reflect the group judgment throughout the Delphi study. Table 11 provides an example of the

Round 1 coding of AH deans’ responses from the Culture of Collaboration case scenario with the category of Population Health.

Table 11

Example of Round 1 Coding: Culture of Collaboration with Population Health



No. of Responses	Responses[a]
9	Demographic changes including: life span, aging population, child and adolescent population, other
8	Improve the delivery of health care by working to decrease redundancy and focus on patient care outcomes/ health prevention and wellness
7	Improve population health / global health / geriatric health
3	Positive impact on healthcare and clinical education
4	Key factors with less than a 5% response rate include: A collaborative healthcare model will provide value to patients with an increase of basic services provided by lower-level practitioners; language and culture barriers may make collaborative healthcare practices more difficult; ensure that collaborative healthcare is focused on the connection between mind and body; elderly may be vocal about healthcare but do not hold enough political clout to sway legislators
Total (N=31)	

[a] Responses are listed from highest to lowest number of responses

Table 12 presents the Round 1 aggregate responses. The table illustrates the frequency of key factors within categories for each case scenario. Of the four case studies, the Conventional Conditions scenario received the highest number of responses, followed by Inspirational Opportunities, then Tough Times, and finally Culture of Collaboration. For Conventional Conditions, most of the key factors could be placed within the categories: Clinical Placement Location, Regulation, Clinical Education Models and Health Professions Education Institutions. For Tough Times, most of the key factors were placed in the categories: Health Professions Education Institutions, Regulation, Clinical Placement Location, and Clinical Education Models. For Inspirational Opportunities, most of the key factors were placed in the categories: Clinical Education Models, Health Professions Education Institutions, Regulation, and Population Health. For Culture of Collaboration, most of the key factors were placed in the categories: Clinical Education Models, Population Health, Regulation, and Interprofessional Education. Across all scenarios, key factors identified less frequently were those in the categories: Technology, Clinical Preceptors, Population Health, Interprofessional Education, Accreditation, and Student Satisfaction. Two of 13 categories that had the least number of key factors were Clinical Education Costs and Faculty Clinical Preceptors.

Table 12

Frequency of Key Factors Within Categories[a] *by Futuristic Case Scenarios*

Conventional Conditions		Tough Times		Inspirational Opportunities		Culture of Collaboration	
Category	*n*	Category	*n*	Category	*n*	Category	*n*
Clinical Placement Location	66	Health Professions Education Institutions	40	Clinical Educational Models	39	Clinical Educational Models	33
Regulation	42	Regulation	35	Health Professions Education Institutions	38	Population Health	31
Clinical Education Models	41	Clinical Placement Location	27	Regulation	30	Regulation	22
Health Professions Education Institutions	40	Clinical Educational Models	25	Population Health	25	Interprofessional Education	17
Technology	33	Population Health	21	Technology	25	Allied Health Deans	13
Clinical Preceptors	23	Student Satisfaction	16	Allied Health Deans	14	Accreditation	13
Population Health	23	Technology	14	Clinical Preceptors	12	Clinical Placement Location	12
Interprofessional Education	21	Allied Health Deans	13	Interprofessional Education	12	Clinical Preceptors	11

Conventional Conditions		Tough Times		Inspirational Opportunities		Culture of Collaboration	
Category	*n*	Category	*n*	Category	*n*	Category	*n*
Accreditation	18	Clinical Education Costs	12	Clinical Placement Location	10	Health Professions Education Institutions	9
Student Satisfaction	15	Clinical Preceptors	11	Accreditation	7	Student Satisfaction	9
Clinical Education Costs	15	Accreditation	11	Clinical Education Costs	6	Clinical Education Costs	9
Faculty Clinical Preceptors	10	Interprofessional Education	5	Student Satisfaction	4	Technology	7
Allied Health Deans	8	Faculty Clinical Preceptors	3	Faculty Clinical Preceptors	2	Faculty Clinical Preceptors	2
Total Responses	355		233		224		188

Note. n = Total number of Round 1 survey responses by key factor.
[a] Categories are listed according to frequency of responses: highest to lowest.

Table 13 provides the Round 1 cumulative responses, listed by highest to lowest frequency, for each of the categories for the four case scenarios combined. The AH deans' frequency of response for the 13 categories across all case scenarios was used to determine the sequential ordering of the categories in Round 2 and 3 surveys. Clinical Education Models and Regulation had the highest number of responses and were rated among the top five categories across all four scenarios. Health Professions Education Institutions was rated at the top for three scenarios; the exception was the Culture of Collaboration. There was a middle range of responses for the categories of Allied Health Deans, Clinical Placement Location, Population Health, and Technology. Of the 13 categories, several were identified least frequently across all four futuristic case scenarios. In three of four scenarios Clinical Preceptors, Clinical Education Costs, Interprofessional Education, Accreditation, and Student Satisfaction were below 50% of the total key factor responses. Faculty Clinical Preceptors had the lowest number of responses across all four scenarios. For the case scenario responses and data coding, refer to the Round 1 survey results in Appendix PP.

Table 13

Round 1 Frequency of Responses by Category

Key Category[a]	No. of Responses
Clinical Education Models	138
Regulation	129
Health Professions Education Institutions	127
Clinical Placement Location	115
Population Health	100
Technology	79
Clinical Preceptors	57
Interprofessional Education	55
Accreditation	49
Allied Health Deans	48
Student Satisfaction	44
Clinical Education Costs	42
Faculty Clinical Preceptors	17
Total Key Factors	1,000

Key factor categories are listed from highest lowest number of Round 1 collective scenario responses.

Round 2 and 3 Surveys Results

The Round 2 and 3 surveys were developed from the Round 1 futuristic case scenario feedback. In the Round 2 survey, AH deans were asked to re-read the four futuristic case scenarios (Table 5, p. 179) and rate the 208 key factors that were developed from the Round 1 case scenario responses. Key factors were rated on importance (Table 6, p. 187), and impact by individual and collective deans (Table 7, p. 187). In Round 2, 148 of 208 (71%) key factors reached a high agreement on importance, defined as 80% or more of respondents in agreement. Round 2 factors that did not reach high agreement on importance (*n* = 60) were included in Round 3 and re-rated. A total of 11 more key factors attained high agreement on importance. Table 14 provides the Rounds 2 and 3 cumulative key factors reaching high agreement on importance by case scenario. The Conventional Conditions scenario had the highest number of key factors reaching agreement on importance (*n* = 51), followed by Inspirational Opportunities (*n* = 40), then Tough Times (*n* = 39), and finally Culture of Collaboration (*n* = 29). In the Conventional Conditions, Tough Times and Inspirational Opportunities scenarios, the highest number of key factors reaching high agreement on importance related to Regulation. Across all scenarios, there was a middle range of responses related to the key factors in the categories of Clinical Preceptors, Clinical Education Costs, and Accreditation. Across all scenarios, the category of Faculty Clinical Preceptors had the lowest number of key factors reaching high agreement.

Table 14

Futuristic Case Scenarios Key Factors by Category Reaching High Agreement[a]
(n = 159)

Conventional Conditions		Tough Times		Inspirational Opportunities		Culture of Collaboration	
Category	*n*	Category	*n*	Category	*n*	Category	*n*
Regulation	9	Regulation	7	Regulation	7	Clinical Educational Models	7
Clinical Placement Location	7	Clinical Education Models	5	Technology	6	Interprofessional Education	6
Health Professions Education Institutions	6	Health Professions Education Institutions	4	Clinical Educational Models	5	Population Health	4
Clinical Educational Models	5	Clinical Placement Location	4	Health Professions Education Institutions	4	Student Satisfaction	3
Technology	5	Allied Health Deans	4	Population Health	4	Clinical Education Costs	3
Clinical Preceptors	4	Population Health	3	Allied Health Deans	4	Regulation	2
Interprofessional Education	4	Technology	3	Clinical Preceptors	3	Accreditation	2

Conventional Conditions		Tough Times		Inspirational Opportunities		Culture of Collaboration	
Category	*n*	Category	*n*	Category	*n*	Category	*n*
Population Health	3	Clinical Education Costs	3	Clinical Placement Location	2	Clinical Placement Location	1
Accreditation	2	Interprofessional Education	2	Interprofessional Education	1	Allied Health Deans	1
Allied Health Deans	2	Student Satisfaction	2	Accreditation	1	Health Professions Education Institutions	0
Student Satisfaction	2	Clinical Preceptors	1	Student Satisfaction	1	Technology	0
Clinical Education Costs	1	Accreditation	1	Clinical Education Costs	1	Clinical Preceptors	0
Faculty Clinical Preceptors	1	Faculty Clinical Preceptors	0	Faculty Clinical Preceptors	1	Faculty Clinical Preceptors	0
Total Responses	51		39		40		29

Note. *n* = Total number of Key Factors reaching high agreement in Round 2 and 3 surveys.
[a] Key Factors are listed by scenario from highest to lowest number of statements.
High agreement was defined as where 80% or more of respondents agreed.

At the completion of the Delphi study, 22 of 27 (82%) key factors related to Clinical Education Models reached high agreement on importance, followed by 14 of 16 (88%) Population Health factors, 14 of 16 (87.5%) Technology factors, all eight (100%) Clinical Preceptors factors, 13 of 16 (81%) Interprofessional Education factors, and all eight (100%) Student Satisfaction factors. Additional results for key factors reaching high agreement on importance included: 25 of 40 (62%) Regulation factors, 14 of 20 (70%) Health Professions Education Institutions factors, 14 of 19 (74%) Clinical Placement Locations factors, six of nine (66.7%) Accreditation factors, 11 of 15 (73%) Allied Health Deans factors, eight of 11 (73%) Clinical Education Costs factors, and two of three (67%) Faculty Clinical Preceptors factors. There were no new factors that reached high agreement on importance in Round 3 related to the categories of Health Professions Education Institutions, Clinical Placement Locations, Accreditation, Allied Health Deans, and Student Satisfaction. By the end of Round 3, 159 of 208 (76%) key factors reached high agreement on importance in clinical education; the remaining 49 of 208 (28%) factors did not reach high agreement on importance (refer to Appendix ZZ). Table 15 provides the Round 2 and 3 surveys cumulative numbers of key factors reaching agreement on importance related to each clinical education category.

Table 15

Key Factors by Clinical Education Category Reaching High Agreement on Importance

Clinical Education Category	Round 2 Rated Factors (*n*)	Round 2 Key Factors Reaching High Agreement on Importance (*n*)	Round 3 Re-rated Factors (*n*)	Round 3 New Key Factors Reaching High Agreement on Importance (*n*)	Total Key Factors Reaching High Agreement on Importance (*n*, %)
Clinical Education Models	27	21	6	1	22 (82%)
Regulation	40	21	19	4	25 (62%)
Health Professions Education Institutions	20	14	6	0	14 (70%)
Clinical Placement Location	19	14	5	0	14 (74%)
Population Health	16	13	3	1	14 (88%)
Technology	16	13	3	1	14 (88%)
Clinical Preceptors	8	8	0	0	8 (100%)

Clinical Education Category	Round 2 Rated Factors (*n*)	Round 2 Key Factors Reaching High Agreement on Importance (*n)*	Round 3 Re-rated Factors (*n*)	Round 3 New Key Factors Reaching High Agreement on Importance (*n*)	Total Key Factors Reaching High Agreement on Importance (*n*, %)
Interprofessional Education	16	11	5	2	13 (81%)
Accreditation	9	6	3	0	6 (67%)
Allied Health Deans	15	11	4	0	11 (73%)
Student Satisfaction	8	8	0	0	8 (100%)
Clinical Education Costs	11	7	4	1	8 (73%)
Faculty Clinical Preceptors	3	1	2	1	2 (67%)
Total Key Factors Reaching Agreement of Importance	208	148	60	11	159 (76%)

Note. [a]Key Factors are listed using Round 1 highest to lowest number of collective responses.
n = # of key factor statements.
High agreement was defined as where 80% or more of respondents agreed.

The Principal Investigator reviewed the Round 2 results for similarities, relevance, and inclusion, including nine comments from the case scenarios, and eight general comments on clinical education. There were no new key factors or comments in Round 2 that were considered of practical value for addition to the Round 3 survey. Using the same review process, the PI did not identify any new key factors from the Round 2 responses to consider as important for clinical education that were not originally included in the conceptual model (p.100).

Key Factors Identified in Rounds 2 and 3

The collective results for each of the identified key factors from Rounds 2 and 3 surveys that attained “high agreement” on importance are presented in Tables 16 through 28 across all futuristic case scenarios and then for each individual scenario. Collective case scenario ratings of the key factors were rated “important” or “very important” were grouped as high agreement. The Round 2 and 3 survey rating results of the key factors, for each individual case scenario, are listed by highest percentage of agreement on importance in order of total responses, followed by highest percentage of “individual dean’s impact”, and lastly highest percentage of “collective deans’ impact”. The frequency, median and range of importance and impact are reported for the 159 key factors. Table 16 provides an example of how to interpret the Round 2 and 3 results of the key factors achieving high agreement on importance and agreement of impact by the deans, individually and collectively.

Table 16

Round 2 and 3 Results: How to Interpret Key Factors with High Agreement on Importance and Impact (n = 1)

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Example Key Factor:	CC; TT; IO; CoC	Percentage; *n* = # of respondents ranking a key factor as Important or High Importance Respondents / Total Importance Respondents	Mdn	1-5	Percentage; *n* = # of deans responding High or Moderate INDV Dean's Impact / Total INDV Dean's Impact Respondents	Mdn	1-5	Percentage; *n* = # of deans responding High or Moderate COLL Deans' Impact / Total COLL Deans' Impact Respondents	Mdn	1-5
1. Use clinical education resources	CC R3	**100.0%** (25/25)	5	4-5	**96.0%** (24/25)	4	2-5	60.8% (14/23)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Clinical Education Models

Twenty-two of 27 (81.4%) key factors related to Clinical Education Models reached high agreement on importance (Table 17). Of these 22 key factors, the AH deans agreed that they could individually impact 17 of 22 (77.3%) factors and collectively could impact 10 of 22 (45.4%) factors. These key factors are numbered and grouped according to each case scenario. For example, Factors 1 through 5 relate to Conventional Conditions, Factors 6 through 10 relate to Tough Times, Factors 11 through 15 relate to Inspirational Opportunities, and Factors 16 through 22 relate to Culture of Collaboration.

Clinical Education Models Results by Case Scenario

In Conventional Conditions, five key factors reached high agreement on importance to the future of clinical education. The AH deans identified two key factors they could impact both individually and collectively: Factor 1 focused on efficient and cost-effective clinical education models, and Factor 3 focused on clinical education models that use advances in technology. Factor 2 presented the use of creative clinical models and reached high agreement on importance and high agreement on individual dean’s impact only. The key factors “balancing the future of healthcare and clinical education with patient access, quality healthcare and affordability” (Factor 4), and “use of clinical practice models that educate allied health professionals at the top of their certification and licensure requirements” (Factor 5), attained high agreement on importance but did not reach high agreement on individual and collective deans’ impact.

In Tough Times, the AH deans agreed that three of five key factors were important and were factors they could individually impact. These factors focused on evidence-based practice outcomes (Factor 6), efficient and cost-effective models (Factor 7) and collaborative partnership clinical education models (Factor 9). Two factors attained high agreement on importance but not high agreement on individual and collective deans' impact: Factor 8 which focused on re-examination of the curriculum and clinical experiences for expedient graduation, and Factor 10 which supported a diversity of clinical education models.

Three Inspirational Opportunities key factors attained high agreement on importance and high agreement on both individual and collective deans' impact. These factors focused on creative clinical education opportunities (Factor 11), training faculty and preparing students with knowledge, skills and aptitude, and efficiency (Factor 12); and standardization and outcome measurements for clinical education models (Factor 14). Factor 13, "foster a successful clinical education model by providing ample clinical and financial resources", attained high agreement on importance and high agreement on individual dean's impact, but not collective deans' impact. Factor 15, "support institutional and state government demonstration projects for clinical model development and testing", attained high agreement of importance, but not high agreement on individual and collective deans' impact.

Seven Culture of Collaboration key factors reached high agreement on importance. This scenario had the highest number (five of seven; 71.4%) of key factors attaining agreement on importance and high agreement on both individual and collective deans' impact that were related to Clinical Education Models. These were Factors 16, 17, 18, 20, and 21. These five factors focused on clinical education models with strong link between didactic and clinical education (Factor 17), and included shared strategies for teaching content, approaches and assessment (Factor 21), diverse clinical best practices (Factor 20), the use interprofessional and collaborative models (Factor 18), and individual accountability and teamwork (Factor 16). Five of seven (71%) of the key factors relating to Clinical Education Models included the word "collaborative." Factor 19, "collaborative clinical education model with ample interaction between students, faculty and clinical faculty", and Factor 22, "collaborative clinical model with shared resources (space and teaching areas)", attained high agreement on importance and high agreement on individual dean's impact only.

Table 17

***__Clinical Education Models__**: Key Factors with High Agreement on Importance and Impact (n = 22)*

Key Factor	Case Scenario (CS)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Use clinical models that provide students best practices of efficient and cost-effective healthcare	CC	**100.0%** (25/25)	5	4-5	**96.0%** (24/25)	4	2-5	**83.4%** (20/24)	4	2-5
2. Use creative clinical models that are receptive to collaboration, critical thinking, innovation and mentorship	CC	**100.0%** (25/25)	5	4-5	**88.0%** (22/25)	4	2-5	79.2% (19/24)	4	2-5
3. Redesign the curricula and clinical education model to match advances in technology	CC	**96.0%** (24/25)	5	3-5	**92.0%** (23/25)	4	1-5	**83.4%** (20/24)	4	2-5
4. Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability	CC	**92.0%** (23/25)	5	3-5	60.0% (15/25)	4	2-5	62.5% (15/24)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	Case Scenario (CS)	(%, n^{a})	Mdn	RNG	(%, n^{b})	Mdn	RNG	(%, n^{c})	Mdn	RNG
5. Use clinical practice models that educate allied health professionals at the top of their certification and licensure requirements	CC R3	**91.2%** (31/34)	4	2-5	78.8% (26/33)	4	1-5	69.7% (23/33)	4	1-5
6. Support evidence-based practice outcomes that identify essential factors for the clinical experience	TT	**100.0%** (24/25)	5	4-5	**82.6%** (18/22)	4	2-5	73.9% (17/23)	4	2-5
7. Provide efficient, cost-effective models that deliver mastery of clinical education competencies and student outcomes	TT	**100.0%** (24/25)	5	4-5	**81.8%** (18/22)	4	2-5	66.7% (14/21)	4	2-5

Key Factor	Case Scenario (CS)	Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
		%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
8. Re-examine the didactic and clinical curricula to ensure that students receive the educational curriculum and clinical experiences necessary for expedient graduation	TT	**87.5%** (21/24)	5	2-5	78.2% (16/22)	4	2-5	60.8% (14/23)	4	1-5
9. Promote collaborative partnerships that provide coordinated opportunities and incentives for clinical education	TT	**91.3%** (21/23)	5	3-5	**86.4%** (19/22)	4	2-5	72.8% (16/22)	4	2-5
10. Support a diversity of clinical education models including but not limited to: “by the book”, alternative models, innovative teaching materials and pedagogies, and self-paced learning	TT	**87.0%** (20/23)	5	2-5	72.7% (16/22)	4	2-5	72.8% (16/22)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
11. Foster a successful clinical education model by providing ample clinical and financial resources	IO	**95.4%** (21/22)	5	2-5	**81.8%** (18/22)	4.5	3-5	54.6% (12/22)	4	2-5
12. Integrate creative and innovative clinical education opportunities into the healthcare system	IO	**100.0%** (22/22)	5	2-5	**90.9%** (20/22)	4	3-5	**86.4%** (19/22)	4	2-5
13. Assure a successful clinical education model by training faculty and preparing students with knowledge, skills and aptitude	IO	**95.5%** (21/22)	5	3-5	**95.4%** (21/22)	4	2-5	**80.9%** (17/21)	4	2-5
14. Support the need for continual improvement in the efficiency, standardization and outcome measurements for clinical education experiences	IO	**90.9%** (20/22)	5	3-5	**90.5%** (19/21)	4	2-5	**85.5%** (18/21)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	Case Scenario (CS)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
15. Support institutional and state government demonstration projects for clinical model development and testing	IO	**81.0%** (17/21)	4	2-5	66.7% (14/21)	5	2-5	71.4% (15/21)	4	2-5
16. Establish a clinical education model that prioritizes individual accountability and teamwork	CoC	**100.0%** (21/21)	5	4-5	**100.0%** (21/21)	4	4-5	**95.2%** (20/21)	4	2-5
17. Support a collaborative healthcare model that impacts clinical education with a strong link between clinical education and the didactic education	CoC	**100.0%** (21/21)	5	4-5	**95.2%** (20/21)	4	2-5	**100.0%** (21/21)	4	4-5
18. Establish interprofessional and collaborative clinical care models	CoC	**95.3%** (20/21)	5	3-5	**95.3%** (20/21)	4	3-5	**95.0%** (19/20)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
19. Establish collaborative clinical education model(s) that provide ample interaction between students, faculty and clinical faculty	CoC	**95.3%** (20/21)	5	3-5	**85.7%** (18/21)	4	2-5	76.2% (16/21)	4	3-5
20. Promote opportunities to initiate diverse clinical education best practices	CoC	**95.2%** (20/21)	4	1-5	**100.0%** (21/21)	4	4-5	**90.5%** (19/21)	4	3-5
21. Promote effective collaborative clinical education model and curricula with shared strategies (teaching content, approaches and assessment measures)	CoC	**90.5%** (19/21)	4	3-5	**100.0%** (21/21)	4	4-5	**85.0%** (15/21)	4	2-5
22. Create effective collaborative clinical model with shared resources (space and teaching areas)	CoC	**100.0%** (20/20)	5	4-5	**100.0%** (20/20)	4	4-5	75.0% (15/20)	4	2-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Regulation

Twenty-five of 40 (62.5%) key factors related to Regulation reached high agreement on importance (Table 18). The AH deans agreed that they could collectively impact six of 25 (24.0%) key factors. Across the four scenarios, the AH deans identified only one key factor they could individually impact. Most factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses.

Regulation Results by Case Scenario

In Conventional Conditions, seven of nine (77.8%) key factors (2,3,4,5,7,8, and 9) reached high agreement on importance but did not reach high agreement on individual or collective deans' impact. The AH deans identified Factor 1, which focused on minimizing the impact of state barriers in distance education, as a key factor that they could collectively impact. Conventional Conditions was the only scenario to have a key factor attaining high agreement on importance and high agreement on individual dean's impact; Factor 6 was "develop exclusive agreements with local clinical sites to maximize site usage and reduce the impact of interstate regulatory fees on clinical education."

In Tough Times, the AH deans agreed that all seven key factors were important but they could not individually or collectively impact any of the seven factors. Three factors focused on reimbursement of AH services (Factors 10, 13, 14), more specifically tied to patient outcomes (Factor 13), and rehabilitation and elderly care (Factor 10). Factor 11 focused on student access to federal and/or major lending agency education loans. The remaining Regulation key factors described the “unknown impact” of the Accountable Care Act (ACA) (Factor 12), an increase in demand for health services (Factor 15), and support for AH independence (Factors 14 and 16).

In Inspirational Opportunities, four of seven (57.1%) factors attained high agreement on importance and high agreement on collective deans’ impact, the most of all four case scenarios. Two of these key factors focused on clinical education costs supported by federal, state and local government policies (Factor 18) or a Medicare pass thru (Factor 20). The other key factor related to access to clinical education not being restricted by state boundaries or payment requirements (Factor 22). The final factor supported the creation of an AH legislative voice in the healthcare regulatory discussion (Factor 23). There were no factors that attained high agreement on importance and high agreement on individual dean’s impact. AH deans agreed that three of seven (43%) of the key factors were important but they could not individually or collectively impact the factors. Factor 17 focused on managing government funds directed towards AH clinical education, and Factors 19 and 21 focused on managing regulatory change with government collaboration.

Two key factors related to Culture of Collaboration attained high agreement on importance. Factor 24, which stated, “promote healthcare regulations that reimburse collaborative clinical practices and team-based care”, attained high agreement on importance, but not high agreement on individual and collective deans’ impact. Factor 25 stated, “support healthcare regulations that accept a diversity of supervising clinical faculty", was rated with high agreement on importance and they could collectively impact.

Over Rounds 2 and 3, AH deans commented on the "legislative lobbying power" and "Advisory Committee input" as prospective action items in a future with a collaborative healthcare climate. In Round 2, three AH deans commented on Regulation issues including:

> "The federal government and Congress will have the greatest impact on the future. I would love to see a government that actually asks ALL healthcare providers what would be best and not just their political appointees",
>
> "We need find or place regulations in order to keep clinical rotations and experiences on a fair level. Paying for clinical rotations will put institutions that can't afford to pay at a disadvantage", and
>
> "I find it hard to believe that funding, through reimbursement for student services and patient care, will ever happen. We only have one profession, PA (physician assistant), that qualifies for Medical Comp funding for loan forgiveness."

In Round 3, two AH deans commented on the regulatory impact on the future of clinical education including:

> "Changing license laws is expensive and dangerous. Once legislature views the law there are lobbyists to push them to eliminate the laws" and "state vs. federal regulations, etc. is always a challenge, as we know the political climate will certainly derail even the most preferred and realistic approaches to these very complex issues."

Table 18

***<u>Regulation</u>**: Key Factors with High Agreement on Importance and Impact (n = 25)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Influence institutional authorization of distance education in order to minimize the impact of state barriers	CC R3	**94.3%** (33/35)	5	2-5	67.6% (23/34)	4	1-5	**82.4%** (28/34)	4	2-5
2. Influence institutional authorization of interstate clinical rotations in order to minimize the impact of state regulations	CC R3	**94.3%** (33/35)	5	1-5	67.6% (23/34)	4	1-5	79.4% (27/34)	4	2-5
3. Minimize bureaucracy of placement issues in clinical education	CC R3	**91.4%** (32/35)	5	1-5	52.9% (18/34)	4	1-5	58.8% (20/34)	4	1-5
4. Assess the impact of federal funding cutbacks and decreased reimbursement on clinical education	CC	**90.0%** (27/30)	4	1-5	53.3% (16/30)	4	1-5	70.0% (21/30)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
5. Manage the unknown impact of the Accountable Care Act (ACA) on healthcare delivery and funding mechanisms	CC	**86.7%** (26/30)	4	2-5	43.4% (13/30)	4	1-5	56.6% (17/30)	3.5	1-5
6. Develop exclusive agreements with local clinical sites to maximize site usage and reduce the impact of interstate regulatory fees on clinical education	CC	**80.0%** (24/30)	4	2-5	**80.0%** (24/30)	4	2-5	63.3% (19/30)	4	1-5
7. Develop exclusive agreements with local clinical sites to minimize the impact of distance education regulations	CC	**80.0%** (24/30)	4	1-5	73.3% (22/30)	4	2-5	60.0% (18/30)	4	1-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
8. Obtain sufficient state funding of public institutions to support broad based allied health programs	CC	**86.2%** (25/29)	4	1-5	62.0% (8/29)	4	1-5	58.6% (17/29)	4	1-5
9. Prepare for regulatory changes regarding scope of practice issues	CC	**86.2%** (25/29)	4	2-5	55.1% (16/30)	4	1-5	72.4% (21/29)	4	1-5
10. Support regulatory reimbursement for allied health healthcare services (e.g. rehabilitation/elderly care)	TT	**91.7%** (22/24)	5	3-5	47.8% (11/23)	3	1-5	69.6% (16/23)	4	1-5
11. Promote increasing student access to federal and /or major lending agency educational loans	TT R3	**91.2%** (31/34)	5	2-5	51.5% (17/33)	4	1-5	63.6% (21/33)	4	1-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
12. Adopt flexible tactics to address the unknown impact of the Accountable Care Act (ACA) on clinical education funding and the greater need for allied health professionals	TT	**87.0%** (20/23)	5	3-5	68.2% (15/22)	4	2-5	76.2% (16/21)	4	2-5
13. Support regulatory reimbursement for allied health healthcare services tied to patient outcomes	TT	**87.0%** (20/23)	5	3-5	40.9% (9/22)	3	1-5	63.7% (14/22)	4	1-5
14. Support greater independence for allied health professionals with direct reimbursement for allied health services performed	TT	**82.6%** (19/23)	4	3-5	50.0% (11/22)	4	1-5	68.4% (15/22)	4	1-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, n^{a})	Mdn	RNG	(%, n^{b})	Mdn	RNG	(%, n^{c})	Mdn	RNG
15. Identify how the movement to a single federal payor system has the potential to offer more patients access to healthcare and increase the demand for health services which may result in an increase in health professions employment opportunities	TT	**82.6%** (19/23)	5	2-5	40.9% (11/22)	3	1-5	63.6% (14/22)	4	1-5
16. Support legislation that will enable allied health professionals to practice more independently and allow direct access for treatment	TT	**86.4%** (19/22)	4.5	1-5	61.9% (13/21)	4	1-5	76.2% (16/21)	4	1-5
17. Effectively manage government funds directed to allied health clinical education opportunities	IO	**95.5%** (21/22)	4	2-5	66.7% (14/21)	4	1-5	71.4% (15/21)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
18. Support federal, state, and local government policies that reinforce quality clinical education at reduced cost	IO	**90.9%** (20/22)	5	2-5	72.7% (16/22)	4	2-5	**86.3%** (19/22)	5	2-5
19. Effectively manage changes in healthcare regulation resulting from government collaboration	IO	**86.4%** (19/22)	4	1-5	57.1% (12/21)	4	1-5	75.1% (15/21)	4	2-5
20. Lobby for federal support of a Medicare pass thru for allied health professionals to assist with clinical education cost	IO	**81.8%** (18/22)	4.5	2-5	66.7% (14/21)	4	1-5	**86.4%** (19/22)	5	2-5
21. Effectively manage changes in clinical education regulation resulting government collaboration	IO	**81.8%** (18/22)	4	1-5	57.1% (12/21)	4	1-5	76.2% (16/21)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
22. Lobby for access to clinical education that is not be restricted by state boundaries or payment requirements	IO	**95.2%** (20/21)	5	3-5	66.6% (14/21)	4	2-5	**95.2%** (20/21)	4	1-5
23. Create an allied health legislative voice in healthcare regulatory discussions	IO	**90.0%** (18/20)	4	2-5	55.0% (11/20)	4	2-5	**95.0%** (19/20)	4	2-5
24. Promote healthcare regulations that reimburse collaborative clinical practices and team-based care	CoC	**88.9%** (16/18)	5	2-5	50.0% (9/18)	3.5	2-5	77.8% (14/18)	5	2-5
25. Support healthcare regulations that accept diversity of supervising clinical faculty	CoC	**83.3%** (15/18)	4	2-5	55.6% (10/18)	4	2-5	**88.9%** (16/18)	4	3-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Health Professions Education Institutions

Fourteen of 20 (70.0%) key factors related to the category of Health Professions Education Institutions attained high agreement on importance (Table 19). The AH deans agreed that they could individually impact 11 of 14 (78.6%) key factors and collectively could impact three of 14 (21.4%) key factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses. There were no key factors in the scenario Culture of Collaboration to evaluate.

Health Professions Education Institutions Results by Case Scenario

In Conventional Conditions, four of six (66.7%) key factors for Health Professions Education Institutions reached high agreement on importance and high agreement on individual dean's impact. These factors focused on "partnership between academic institution and clinical sites" (Factor 1) with "prioritizing clinical resources" (Factor 3) and "addressing costs" (Factor 4) to "support high quality clinical education experiences" (Factor 2). Factors 5 and 6, presenting a "diminishing quantity" or "diminishing quality" of student applicants, respectively, attained high agreement on importance but did not reach high agreement on individual and collective deans' impact. None of the six key factors reached high agreement on collective deans' impact.

In Tough Times, the AH deans agreed that three of four (75.0%) key factors were important and were factors they could individually impact. These factors focused on: not-for-profit and for-profit institutional competition for clinical sites (Factor 8); budget reductions with the potential to close or consolidate AH programs (Factor 7); and business and industry working together to attain better funding and clinical facilities (Factor 9). Factor 10, presenting “the shortage of healthcare workers resulting from allied health program closures”, attained agreement on importance and collective deans’ impact.

In Inspirational Opportunities, two of four (50.0%) key factors reached high agreement on importance and high agreement on individual and collective deans’ impact. Factor 11 supported “developing collaborative partnerships to achieve excellence in patient care and clinical education outcomes” and Factor 12 focused on “the overall positive return on investment (ROI) of student clinical training to key stakeholders.” The two remaining factors attained high agreement on importance and high agreement on individual dean’s impact. Factor 13 focused on admitting under-represented students who have strong academic and clinical preparation and Factor 14 focused on the institutional commitment to student clinical training and graduate employment placement.

AH deans’ comments directed towards Health Professions Education Institutions issues impacting clinical education were: “Programs should not need to pay facilities for clinical education experiences or burden for clinical education should rest wholly with institutions of higher education”; Proliferation of programs without increasing number of clinical sites is a critical issue”; and “Deal with increasing competition.” An additional reference to the proliferation of health professions programs was mentioned by second AH dean who wrote “Another factor that needs to be controlled at some level (institutional, accrediting bodies, professions) is the proliferation of programs causing a lack of clinical opportunities for students. This factor could derail every other aspect of health programs with clinical components." In the Round 3 general feedback, one AH dean commented, "Some of these answers are very dependent on the context of the unit. For example, it is in an academic medical center, in a school without a med center, etc."

Table 19

Health Professions Education Institutions*: Key Factors with High Agreement on Importance and Impact (n = 14)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
1. Develop a stronger partnership between academic institution and clinical sites	CC	**100.0%** (27/27)	5	4-5	**85.2%** (23/27)	5	2-5	65.4% (17/26)	4	1-5
2. Support high quality clinical education experiences	CC	**100.0%** (26/26)	5	4-5	**88.4%** (23/26)	5	2-5	72.0% (18/25)	4	2-5
3. Prioritize use of clinical education resources to maximize operational efficiencies	CC	**96.1%** (25/26)	4	3-5	**80.7%** (21/26)	5	2-5	56.0% (14/25)	4	2-5
4. Focus on allied health program profits while addressing costs, such as administrative costs	CC	**84.6%** (22/26)	4	2-5	**85.5%** (23/26)	4	2-5	52.0% (13/25)	4	2-5
5. Manage the diminishing quantity of student applicant pool	CC	**84.6%** (22/26)	4	2-5	65.4% (17/26)	4	2-5	56.0% (14/25)	4	1-5
6. Manage the diminishing quality of student applicant pool	CC	**84.6%** (22/26)	4	1-5	53.8% (14/26)	4	2-5	52.0% (13/25)	4	1-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
7. Address budget reductions with the potential to close or consolidate allied health programs	TT	**96.0%** (24/25)	5	3-5	**87.0%** (20/23)	4	2-5	47.8% (11/23)	4	2-5
8. Plan for competition between non- and for-profit institutions for clinical education sites	TT	**96.0%** (24/25)	5	2-5	**86.9%** (20/23)	4	3-5	73.9% (17/23)	4	1-5
9. Establish a working relationship with business and industry to attain better funding and clinical facilities	TT	**100.0%** (24/24)	5	4-5	**100.0%** (22/22)	4.5	4-5	54.5% (12/22)	4	1-5
10. Acknowledge the shortage of healthcare workers resulting from allied health program closures	TT	**87.5%** (21/24)	4	3-5	68.2% (15/22)	4	2-5	**81.8%** (18/22)	5	2-5
11. Develop collaborative partnerships among key stakeholders to achieve excellence in patient care and clinical education outcomes	IO	**100.0%** (22/22)	5	4-5	**95.5%** (21/22)	4	2-5	**81.0%** (17/21)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
12. Communicate the overall positive return on investment of student clinical training to key stakeholders, e.g., Health Professions Education Institutions, clinical placement locations, clinical faculty, and students	IO	**95.4%** (21/22)	5	2-5	**95.4%** (21/22)	4	3-5	**100.0%** (22/22)	5	4-5
13. Admit allied health students, especially under-represented students, who have strong academic and clinical preparation	IO	**95.4%** (21/22)	5	3-5	**86.4%** (19/22)	4	3-5	52.3% (11/21)	4	1-5
14. Illustrate institutional commitment to student clinical training and graduate employment placement	IO	**81.9%** (18/22)	4	1-5	**90.9%** (20/22)	5	3-5	68.2% (15/22)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Clinical Placement Location

Fourteen of 19 (73.7%) key factors related to Clinical Placement Location attained high agreement on importance (Table 20). The AH deans agreed that they could individually impact three of 14 (21.4%) key factors and collectively could impact three of 14 (21.4%) key factors.

Clinical Placement Location Results by Case Scenario

In Conventional Conditions, the AH deans rated seven key factors with high agreement on importance for the future of clinical education. Factor 1 supported maintaining “established clinical sites to ensure clinical education access”, this factor reached high agreement on importance and high agreement on both individual and collective deans’ impact. Six factors reached high agreement on importance but did not reach high agreement on individual or collective deans’ impact. These key factors concentrated on “institutional financial payments” (Factor 6) or “fees or accepted payment for student training” (Factor 5) to ensure clinical sites and the use of alternative sites (Factors 2, 3 and 7) with more diverse patient populations (Factor 4).

In Tough Times, the AH deans agreed that two of four (50.0%) key factors were important and they could individually impact: Factor 8 concentrated on monitoring that clinical education sites to meet program curricular needs and Factor 10 focused on providing a safe environment for student learning. The AH deans agreed that the remaining two key factors were important, but they could not impact either individually or collectively; Factor 9 supported the use of alternative and diverse clinical sites, and Factor 11 promoted a higher level of student clinical preparedness.

Two Inspirational Opportunities key factors attained high agreement on importance and high agreement on individual and collective deans' impact. These factors focused on managing competition for clinical placement sites (Factor 12) and increasing the number and diversity of clinical education sites (Factor 13).

One Culture of Collaboration key factor reached high agreement on importance and high agreement on individual dean's impact. Factor 14 supported the expansion of clinical education sites to alternatives sites.

Table 20

<u>Clinical Placement Location</u>: *Key Factors with High Agreement on Importance and Impact*
(*n* = 14)

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Maintain established clinical sites to ensure clinical education access	CC	**100.0%** (31/31)	5	4-5	**86.4%** (26/30)	4	3-5	**80.0%** (24/30)	4	1-5
2. Support the use of alternative clinical placement sites to address shortages	CC	**96.7%** (30/31)	5	2-5	76.7% (23/30)	4	2-5	73.4% (22/30)	4	2-5
3. Increase clinical education at medical home and accountable care settings	CC	**96.6%** (29/31)	5	3-5	70.0% (21/30)	4	2-5	76.6% (23/30)	4	2-5
4. Provide richer student clinical learning with more diverse patient populations	CC	**96.3%** (29/31)	5	3-5	63.4% (19/30)	4	2-5	53.3% (16/30)	4	2-5
5. Assess if diminishing profit margins at clinical placements sites increases the site's need to use fees or accept payment for student training	CC	**90.3%** (28/31)	5	2-5	70.0% (21/30)	4	2-5	73.4% (22/30)	5	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^{a})	Mdn	RNG	(%, n^{b})	Mdn	RNG	(%, n^{c})	Mdn	RNG
6. Provide institutional financial payments necessary to secure clinical placements sites	CC	**80.7%** (25/31)	4	2-5	66.7% (20/30)	4	2-5	76.7% (23/30)	4	1-5
7. Increase clinical education at community-based and in home care settings	CC	**96.7%** (29/30)	5	3-5	68.9% (20/29)	4	2-5	79.3% (23/29)	4	2-5
8. Monitor that clinical education sites meet program curricular needs	TT	**100.0%** (24/24)	5	4-5	**86.9%** (20/23)	4	2-5	52.2% (12/23)	4	1-5
9. Support the use of alternative, diverse, non traditional clinical placement sites	TT	**95.8%** (23/24)	5	3-5	73.9% (17/23)	4	2-5	69.6% (16/23)	4	1-5
10. Monitor that clinical education sites provide a safe environment for student learning	TT	**100.0%** (23/23)	5	4-5	**81.9%** (18/22)	4	2-5	45.4% (10/22)	3	1-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
11. Promote the higher level of clinical preparedness in knowledge, skills and attitudes achieved when clinical education experiences occur in medically underserved areas	TT	**86.4%** (19/22)	4	2-5	76.2% (16/21)	4	2-5	61.9% (13/21)	4	1-5
12. Manage the increased competition for clinical placements and pressure on clinical sites	IO	**95.3%** (20/21)	5	1-5	**90.5%** (19/21)	4	3-5	**85.7%** (18/21)	4	2-5
13. Increase the number and diversity of clinical education sites to facilitate prevention and health promotion	IO	**95.0%** (19/20)	5	3-5	**81.0%** (17/21)	4	2-5	**81.0%** (17/21)	4	3-5
14. Expand clinical education placement sites to include: community settings, alternative practice settings, campus labs and hospitals	CoC	**90.0%** (18/20)	5	3-5	**80.0%** (16/20)	4	3-5	75.0% (15/20)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Population Health

Fourteen of 16 (87.5%) key factors related to Population Health reached high agreement on importance (Table 21). The AH deans agreed that they could individually impact four of 14 (28.6%) key factors and collectively could impact three of 14 (21.4%) key factors. Most key factors showed a wide range of ratings on individual and collective deans’ impact reflecting a diversity of responses.

Population Health Results by Case Scenario

In Conventional Conditions, the AH deans rated three key factors important to the future of clinical education but none reached high agreement on individual and collective deans’ impact. Factor 1 supported utilizing “clinical sites with diverse patient populations”, Factor 2 centered on solving global healthcare problems, and Factor 3 focused on including “population health and wellness in clinical training.”

AH deans rated three Tough Times key factors as important but with varying agreement on ratings for individual and collective deans’ impact. Factor 4, supported the offering of “student clinical training with a diversity of patient populations”, and attained high agreement on importance and high agreement on both individual and collective deans’ impact. The AH deans agreed that Factor 5 was important but they could not individually and collectively impact; this factor focused on managing workforce shortages. Factor 6 presented the increasing demands for healthcare quality and safety, wellness and prevention, and patient satisfaction; this factor attained high agreement on importance and high agreement on collective deans’ impact.

In Inspirational Opportunities, one of four (25.0%) key factors attained high agreement on importance and high agreement on both individual and collective deans’ impact. Statement 7 supported positive change and adaptability to improve patient health outcomes. Three of four (75.0%) key factors reached high agreement on importance but not high agreement on both individual and collective deans’ impact. These three factors supported patient access to health data / health literacy (Factor 7), and the preparation for population demographic shifts (Factors 9 and 10).

In Culture of Collaboration, three key factors attained high agreement on importance and high agreement on individual dean’s impact. These three factors concentrated on “clinical education training with a focus on healthcare over the life span” (Factor 11), the establishment of “collaborative clinical education” facilities that focus on “patient care outcomes, health prevention and wellness” (Factor 12), or a model that includes “a diversity of patient demographics” (Factor 13). Factor 14 promoted “the development of student knowledge, skills, and aptitudes in global healthcare”; this factor attained high agreement on importance but not high agreement on individual and collective deans’ impact.

Table 21

***<u>Population Health</u>**: Key Factors with High Agreement on Importance and Impact (n = 14)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*^{a})	Mdn	RNG	(%, *n*^{b})	Mdn	RNG	(%, *n*^{c})	Mdn	RNG
1. Utilize clinical sites with diverse patient populations	CC	**100.0%** (26/26)	5	4-5	76.9% (20/26)	4	2-5	44.0% (11/25)	3	1-5
2. Include population health and wellness in clinical training	CC R3	**91.9%** (34/37)	4	2-5	77.8% (28/36)	4	2-5	55.6% (20/36)	4	1-5
3. Emphasize solving health care problems from a global perspective in clinical training	CC	**80.8%** (21/26)	4	1-5	65.4% (11/26)	4	1-5	44.0% (11/25)	4	1-5
4. Offer student clinical training with a diversity of patient populations	TT	**100.0%** (23/23)	5	4-5	**85.7%** (18/21)	4	2-5	**80.9%** (17/21)	4	1-5
5. Manage the possibility of not having enough workforce to meet the needs of the growing population of healthcare consumers	TT	**86.9%** (20/23)	4	1-5	63.6% (14/22)	4	1-5	61.9% (13/21)	4	1-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
6. Implement the increasing demands for healthcare quality and safety, wellness and prevention, and patient satisfaction in student clinical training	TT	**95.4%** (21/22)	5	3-5	71.4% (15/21)	4	1-5	**84.6%** (19/22)	4	1-5
7. Document the positive change and adaptability as allied health professions improve patient health outcomes	IO	**95.5%** (17/22)	4	3-5	59.1% (13/22)	4	2-5	**81.9%** (18/22)	4	2-5
8. Foster patient access to health data / health literacy to support prevention and wellness	IO	**81.8%** (18/22)	5	3-5	47.6% (18//19)	3	2-5	75.0% (15/20)	4	1-5
9. Prepare for population demographics that shift clinical education placement locations to home care and medical home settings	IO	**95.4%** (19/21)	4	3-5	66.5% (14/21)	4	2-5	71.4% (15/21)	4	1-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
10. Prepare for changing population demographics that may shift clinical education to focus on the elderly, uninsured patients with chronic illness, and immigrants	IO	**90.5%** (19/21)	4	2-5	76.2% (10/21)	4	2-5	71.4% (15/21)	4	2-5
11. Support clinical education training with a focus on healthcare over the life span	CoC	**95.0%** (19/20)	5	4-5	**84.2%** (16/19)	4	1-5	73.3% (14/19)	4	2-5
12. Establish collaborative clinical education training facilities focusing on patient care outcomes, health prevention and wellness	CoC	**100.0%** (19/19)	5	3-5	**84.2%** (16/19)	4	2-5	73.7% (14/19)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
13. Establish collaborative clinical education model that includes a diversity of patient demographics, i.e., aging population, children and adolescent population, other groups	CoC	**94.8%** (18/19)	5	4-5	**84.2%** (16/19)	4	2-5	79.0% (15/19)	4	2-5
14. Promote the development of student knowledge, skills, and aptitudes in global healthcare	CoC	**89.5%** (17/19)	4	2-5	73.7% (14/19)	4	2-5	73.7% (14/19)	4	2-5

Tables continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Technology

Fourteen of 16 (87.5%) key factors related to Technology attained high agreement on importance (Table 22). The AH deans agreed that they could individually impact 12 of 14 (85.7%) key factors and collectively could impact eight of 14 (57.1%) key factors. Across three case scenarios, seven of fourteen (50.0%) key factors attained high agreement on importance and high agreement on both individual and collective deans' impact. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses. There were no key factors in the scenario Culture of Collaboration to evaluate.

Technology Results by Case Scenario

In Conventional Conditions, the AH deans rated four of five (80.0%) key factors as important and they could individually impact. Three of these factors focused on the use of simulation and standardized patients (SP) in providing clinical competencies in programs without sufficient clinical sites (Factor 1), simulation and SP experiences to be aligned with clinical education experiences (Factor 3), and initiating "university-wide collaboratives to fund simulation and technology" (Factor 4). Factor 5 related to distance learning, telehealth, and online education to support clinical education. Factor 2 supported the need to "validate simulation model outcomes to real world experiences" and reached high agreement on importance and high agreement on both individual and collective deans' impact.

In Tough Times, two of three (66.7%) key factors reached high agreement on importance and high agreement on both individual and collective deans' impact. These two factors focused on the "evaluation of simulation and its support of clinical competencies" (Factor 7), and the "support of research to quantify the outcomes of simulation student training on clinical competencies" (Factor 8). Factor 6 focused on multiple topics including: simulation, simulated patients, online supervision, distance learning, and interactive videos (Skype, FaceTime); this key factor reached high agreement on importance and high agreement on individual dean's impact.

In Inspirational Opportunities, four of six (66.7%) key factors reached high agreement on importance and high agreement on both individual and collective deans' impact. These four factors focused on: using educational technologies in clinical education (Factors 9 and 10), technology that decreases the cost of clinical education (Factor 13), or technology that supports patient wellness and prevention (Factor 14). Factor 11 supported optimizing "the use of technological advances to test clinical education to develop best practices for future healthcare delivery"; this key factor reached high agreement on importance and high agreement on collective deans' impact. Factor 12 supported technology that decreases the cost of direct patient care; this factor reached high agreement on importance, but did not attain high agreement on individual and collective deans' impact.

Table 22

***<u>Technology</u>**: Key Factors with High Agreement on Importance and Impact (n = 14)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Use simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites	CC	**100.0%** (25/25)	4	4-5	**88.0%** (22/25)	4	2-5	79.1% (19/24)	4	1-5
2. Validate simulation model outcomes to real world experiences	CC	**100.0%** (25/25)	5	4-5	**80.0%** (20/25)	4	2-5	**83.4%** (20/24)	4	1-5
3. Align simulation or standardized patient experiences with clinical education experiences in healthcare settings	CC	**92.0%** (23/25)	5	1-5	**84.0%** (21/25)	4	2-5	62.5% (15/24)	4	2-5
4. Initiate university-wide collaboratives to fund simulation and technology	CC R3	**89.2%** (33/37)	4	2-5	**83.3%** (30/36)	4	1-5	55.6% (20/36)	4	1-5
5. Use distance learning, telehealth and online education to support clinical education	CC	**80.0%** (20/25)	4	1-5	**80.0%** (20/25)	4	1-5	54.8% (14/24)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
6. Deliver clinical education virtually via simulation, simulated patients, online supervision, distance learning, interactive video (Skype, FaceTime)	TT	**86.9%** (20/23)	4	3-5	**86.4%** (19/22)	4	2-5	76.2% (16/21)	4	3-5
7. Evaluate simulation and its support of clinical competencies	TT	**100.0%** (22/22)	5	4-5	**95.2%** (20/21)	5	3-5	**80.9%** (17/21)	4	2-5
8. Support research to quantify the outcome of simulation student training on clinical competencies	TT	**100.0%** (22/22)	5	4-5	**90.5%** (19/21)	4	3-5	**90.5%** (19/21)	5	3-5
9. Refine the clinical education curricula to incorporate emerging healthcare technological advances	IO	**100.0%** (22/22)	5	4-5	**90.9%** (20/22)	4	3-5	**86.3%** (19/22)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
10. Optimize the use of technology including: telemedicine, health informatics, alternative mechanisms, distance learning, simulation, computer education, EHR and EHR simulation software	IO	**95.5%** (21/22)	5	4-5	**100.0%** (21/21)	5	4-5	**85.7%** (18/21)	4	3-5
11. Optimize the use of technological advances to test models of clinical education to develop best practices for future healthcare delivery	IO	**95.5%** (21/22)	5	1-5	77.2% (17/22)	4	1-5	**80.9%** (17/22)	4	1-5
12. Endorse healthcare instructional technology that decreases the cost of direct patient care	IO	**86.4%** (19/22)	4.5	1-5	71.4% (15/21)	4	1-5	71.4% (15/21)	4	1-5
13. Endorse healthcare instructional technology that decreases the cost of clinical education	IO	**95.2%** (20/21)	5	1-5	**85.7%** (18/21)	4	1-5	**85.7%** (18/21)	5	1-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
14. Provide student and faculty training on the use of technology to support patient wellness and prevention	IO	**100.0%** (20/20)	5	4-5	**100.0%** (20/20)	4	4-5	**80.0%** (16/20)	4	2-5

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.
There were no key factors in the Culture of Collaboration to evaluate.

Clinical Preceptors

Across all scenarios, all eight key factors related to Clinical Preceptors attained high agreement on importance (Table 23). The AH deans agreed that they could individually impact five of eight (62.5%) key factors and collectively could impact three of eight of 14 (37.5%) key factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses. There were no key factors in the scenario Culture of Collaboration to evaluate.

Clinical Preceptors Results by Case Scenario

In Conventional Conditions, the AH deans rated one of four (25.0%) key factors as important and they could individually and collectively impact. Factor 2 supported the need to provide a sufficient number of clinical preceptors for student training. Factor 1 focused on the need for better training and resources for clinical preceptors; this key factor reached high agreement on importance and high agreement on individual dean's impact. Factors 3 and 4 reached high agreement on importance and high agreement on collective deans' impact. Factor 3 focused on giving clinical preceptors time to train students and provide feedback. Factor 4 presented the shortage of clinical preceptors in some AH disciplines.

In Tough Times, one key factor reached high agreement on importance, but not high agreement on individual and collective deans' impact: Factor 5. This factor offered the potential need to manage "volunteer clinical faculty shortages resulting from decreased clinical education resources."

In Inspirational Opportunities, three key factors reached high agreement on importance and high agreement on individual dean's impact: Factors 6, 7, and 8. The three factors supported additional AH programs and the growing student body (Factor 6), innovative approaches to clinical education (Factor 7), and well-prepared and sufficient numbers of faculty (Factor 8).

AH deans' comments on payments to clinical preceptors were:

> "Based on my own experience, payment of preceptors to provide clinical supervision has been the most effective way to complete the legal agreement with a preceptor but also is most destructive to the spirit of collaboration between institutions and eventually to the institution and clinical education as the payment amount escalates each year", and
>
> "It would be great to prepare a multi-credential rehabilitation profession, i.e.. OT/PT, PT/ST, etc., but I would resist any payment."

Table 23

***__Clinical Preceptors__**: Key Factors with High Agreement on Importance and Impact*
(n = 8)

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
1. Provide better training and resources for the clinical preceptors on current curriculum and clinical practices to match student didactic and clinical training	CC	**100.0%** (24/24)	5	4-5	**87.5%** (21/24)	4	1-5	79.1% (19/24)	3.5	1-5
2. Provide a sufficient number of clinical preceptors for student training	CC	**100.0%** (24/24)	5	4-5	**83.3%** (20/24)	4.5	1-5	**80.9%** (17/21)	4	1-5
3. Give clinical preceptors the time to train students and provide timely and sufficient feedback	CC	**100.0%** (24/24)	4	4-5	50.0% (12/24)	3.5	1-5	**83.4%** (20/24)	3	1-5
4. Manage the shortage of credentialed (doctorally trained) clinical preceptors in some allied health disciplines	CC	**87.5%** (21/24)	4	2-5	50.0% (12/24)	3.5	2-5	**90.5%** (19/21)	3	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
5. Manage the potential of volunteer clinical faculty shortages resulting from decreased clinical education resources	TT	**87.0%** (20/23)	4	2-5	68.2% (15/22)	4	2-5	57.1% (12/21)	4	1-5
6. Plan that additional allied health programs and the growing student body will require additional clinical preceptors	IO	**100.0%** (22/22)	5	4-5	**100.0%** (22/22)	4	4-5	77.2% (17/22)	4	2-5
7. Support faculty engagement in developing innovative approaches to clinical education	IO	**100.0%** (22/22)	5	4-5	**100.0%** (22/22)	5	4-5	77.2% (17/22)	4	2-5
8. Foster faculty being well prepared and adequate in number to support clinical education and patient care	IO	**95.5%** (21/22)	5	4-5	**95.4%** (21/22)	4	4-5	77.2% (17/22)	4	2-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Interprofessional Education (IPE)

Thirteen of 16 (81.2%) key factors related to Interprofessional Education attained high agreement on importance (Table 24). The AH deans agreed that they could individually impact 10 of 13 (76.9%) key factors and collectively could impact seven of 13 (53.8%) key factors. Most key factors showed a wide range of ratings on collective deans' impact reflecting a diversity of responses.

Interprofessional Education (IPE) Results by Case Scenario

In Conventional Conditions, the AH deans rated three of four (75%) IPE key factors as important and they could individually impact. These key factors related to student training to function in teams (Factor 1), student awareness of AH professional contributions and values of all healthcare team members (Factor 2), and incorporating curriculum competencies so students are clinically prepared with IPE "ready" skills (Factor 3). Factor 4, supporting the use of "IPE experiences to supplement the clinical experience", reached high agreement on importance but not high agreement on individual and collective deans' impact.

In Tough Times, Factor 5 focused on the need to "prioritize IPE for institutional leadership" and reached high agreement on importance and high agreement on individual dean's impact. Factor 6 proposed the need to "prioritize IPE for student recruitment" and reached high agreement on importance and high agreement on individual and collective deans' impact.

In Inspirational Opportunities, the AH deans agreed that they could individually and collectively impact Factor 7. This key factor supported "increasing IPE and team-based clinical education models with medicine, nursing, and other healthcare professionals."

AH deans identified four of six (66.7%) Culture of Collaboration key factors as important and they could individually and collectively impact. Two key factors related to IPE models that increased the quality of the student clinical education (Factor 8), or provided opportunities for evidence-based assessment and intervention strategies (Factor 12). The other two key factors proposed the establishment of an IPE model across healthcare student training (Factor 11), and institutional leadership prioritizing IPE (Factor 13). Factor 10, "expand healthcare reimbursement to include interprofessional practice", reached high agreement on importance and high agreement on collective deans' impact. IPE Factor 9, "verify that clinicians known their role and the roles of their colleagues (cross-training)", reached high agreement on importance but not high agreement on individual and collective deans' impact.

Table 24

***Interprofessional Education (IPE)**: Key Factors with High Agreement on Importance and Impact (n = 13)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
1. Provide student clinical education training to function in teams	CC	**100.0%** (25/25)	5	4-5	**80.0%** (20/25)	4	2-5	50.9% (12/24)	3.5	1-5
2. Create student awareness of allied health professional contributions and values of all healthcare team members	CC	**96.0%** (24/25)	5	3-5	**84.0%** (15/22)	4	1-5	70.9% (17/21)	4	1-5
3. Incorporate curriculum competencies so students are clinical prepared with IPE "ready" skills, e.g., management, leadership, team-oriented, and patient-centered	CC	**92.0%** (23/25)	5	3-5	**84.0%** (21/25)	4	2-5	54.2% (13/24)	4	2-5
4. Use IPE experiences to supplement the clinical experience	CC	**87.5%** (21/24)	4	2-5	74.4% (18/24)	4	2-5	47.8% (11/23)	3	1-5
5. Prioritize IPE for institutional leadership	TT R3	**81.1%** (30/37)	4	1-5	**83.8%** (31/37)	4	2-5	69.4% (25/36)	4	1-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
6. Prioritize IPE for student recruitment	TT	**81.0%** (17/21)	4	2-5	**85.0%** (17/20)	4	3-5	**85.0%** (17/20)	4	2-5
7. Increase IPE and team-based clinical education model with medicine, nursing, and other healthcare professionals	IO	**95.3%** (20/21)	5	3-5	**95.2%** (20/21)	5	3-5	**81.8%** (17/21)	4	2-5
8. Promote an IPE model that increases the quality of student clinical education	CoC	**90.0%** (18/20)	5	3-5	**90.0%** (18/20)	4	3-5	**95.0%** (19/20)	4.5	3-5
9. Verify that clinicians know their roles and the roles of their colleagues (i.e., cross-training)	CoC	**90.0%** (18/20)	4	3-5	68.4% (13/19)	4	3-5	57.9% (11/19)	4	1-5
10. Expand healthcare reimbursement to include interprofessional practice settings	CoC	**90.0%** (18/20)	5	2-5	47.4% (9/19)	3	2-5	**84.2%** (16/19)	4	2-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
11. Establish IPE across institutional healthcare student training, e.g., allied health, medicine, nursing, pharmacy	CoC	**87.9%** (18/19)	5	3-5	**94.7%** (18/19)	4	3-5	**84.2%** (16/19)	4	1-5
12. Support an IPE model that provides opportunities for new evidence-based assessment and intervention strategies	CoC	**87.9%** (18/19)	5	3-5	**89.5%** (17/19)	4	3-5	**94.7%** (18/19)	4	3-5
13. Gain higher education healthcare institutional commitment to IPE	CoC R3	**86.1%** (31/36)	4	2-5	**85.7%** (30/36)	4	2-5	**80.0%** (28/35)	5	1-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n[a] = # of AH deans responding High Importance or Important / Total Importance Respondents.
n[b] = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n[c] = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Accreditation

Six of nine (67%) key factors related to Accreditation attained high agreement on importance (Table 25). The AH deans agreed that they could individually impact one of six (16.7%) key factors and collectively impact five of six (83.3%) key factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses.

Accreditation Results by Case Scenario

In Conventional Conditions, the AH deans agreed Factor 1, "accreditation flexibility in clinical hours and skill requirements", was important and they could collectively impact. Factor 2 supported greater institutional discretion in determining the appropriate clinical experiences; this factor reached high agreement on importance but not high agreement on individual and collective deans' impact.

In Tough Times, the AH deans agreed Factor 3 was important and they could collectively impact. This key factor focused on adjusting "accreditation requirements allowing clinical education training to include simulation and other clinical instruction technology."

In Inspirational Opportunities, AH deans agreed that Factor 4 was important and they could individually and collectively impact. This key factor focused on gaining "the support of accreditation agencies to accommodate changes to improve allied health clinical education."

Both Culture of Collaboration key factors reached high agreement on importance and high agreement on collective deans' impact. Factor five related to “revising accreditation standards to support greater collaboration across disciplines” and Factor 6 focused on accreditation agencies “standards to support interprofessional education.”

Table 25

Accreditation: *Key Factors with High Agreement on Importance and Impact (n = 6)*

Key Factor	CS	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Endorse accreditation flexibility in clinical education hours and skill requirements, i.e., clinical competency and skill checklist may no longer suffice	CC	**92.6%** (25/27)	5	3-5	51.8% (14/27)	4	1-5	**84.7%** (22/26)	3	2-5
2. Allow for greater institutional discretion in determining the appropriate clinical experiences	CC	**88.9%** (24/27)	4	2-5	55.5% (15/27)	4	1-5	69.3% (18/26)	4	1-5
3. Adjust accreditation requirements allowing clinical education training to include simulation and other clinical instruction technology	TT	**100.0%** (22/23)	5	4-5	68.2% (15/22)	4	2-5	**90.5%** (19/21)	5	2-5
4. Gain the support of accreditation agencies to accommodate changes to improve allied health clinical education	IO	**95.0%** (19/20)	5	2-5	**80.0%** (16/21)	4	2-5	**95.0%** (17/21)	5	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
5. Promote revision of accreditation standards to support greater collaboration across disciplines	CoC	**100.0%** (20/20)	5	4-5	61.1% (11/18)	4	3-5	**94.5%** (17/18)	5	1-5
6. Encourage accreditation agencies to incorporate standards to support interprofessional education	CoC	**94.7%** (19/20)	5	3-5	57.8% (11/19)	4	2-5	**84.2%** (16/19)	5	2-5

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Allied Health Deans

Eleven of 15 (73.3%) key factors related to Allied Health Deans reached high agreement on importance (Table 26). The AH deans agreed that they could individually impact nine of 11 (81.8%) factors and collectively could impact 5 of 11 (45.4%) factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses.

Allied Health Deans Results by Case Scenario

In Conventional Conditions, AH deans agreed that Factor 1 was important and they could individually and collectively impact. This key factor focused on constructing "clinical education experiences that meet student, faculty and higher education healthcare needs". Factor 2 related to the development of "strategic thinking and competitive leadership" in clinical education; this factor reached high agreement on importance and high agreement on individual dean's impact.

In Tough Times, the AH deans rated two of four (50.0%) key factors as important and they could individually impact. These two factors focused on providing "the appropriate clinical knowledge, skills and aptitudes for successful student graduation" (Factor 3) and developing "clinical education partnerships with large medical centers and key practices" (Factor 6). The remaining two key factors reached high agreement on importance with high agreement on collective deans' impact. Factor 4 focused on "coordination with accreditation agencies to assure quality clinical education", and Factor 5 focused on collaboration "across disciplines to strengthen allied health as professions." In this scenario, AH deans' comments included the importance of AH dean networking.

In Inspirational Opportunities, the AH deans rated two of four (50.0%) key factors as important and they could individually and collectively impact. Factor 7 focused on AH deans taking charge “to ensure that health professions education institutions provide relevant and meaningful clinical education”, and Factor 10 focused on AH deans taking responsibility “towards working towards a common goals in concert with the healthcare community and team members.” The AH deans rated the remaining two key factors as important and they could individually impact. These key factors documented the need for AH dean accountability for “institutional support of clinical education” (Factor 8), and for “creative leadership to the allied health school, faculty and students” (Factor 9).

In Culture of Collaboration, there was one key factor that attained high agreement on importance and high agreement on individual dean’s impact. This factor offered, “Commit to interprofessional education and interdisciplinary approaches within your institution.”

Table 26

***Allied Health Deans**: Key Factors with High Agreement on Importance and Impact*
(n = 11)

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
1. Construct clinical education experiences that meet student, faculty and higher education healthcare institutional needs in the changing healthcare arena	CC	**100.0%** (27/27)	5	4-5	**96.3%** (26/27)	4	3-5	**84.6%** (22/26)	4	2-5
2. Develop strategic thinking and competitive leadership in clinical education	CC	**100.0%** (27/27)	4	1-5	**92.5%** (25/27)	4	1-5	79.2% (19/24)	4	1-5
3. Provide the appropriate clinical knowledge, skills and aptitudes for successful student graduation	TT	**100.0%** (27/27)	5	4-5	**90.0%** (18/20)	4	3-5	65.0% (13/20)	4	2-5
4. Coordinate with accreditation agencies to assure quality clinical education	TT	**95.4%** (21/22)	5	2-5	66.6% (14/21)	4	2-5	**85.7%** (18/20)	4.45	2-5
5. Collaborate across disciplines to strengthen allied health as professions	TT	**90.5%** (19/21)	5	1-5	75.0% (15/20)	4	2-5	**95.0%** (19/20)	4.5	3-5

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
6. Develop clinical education partnerships with large medical centers and private practices	TT	**86.4%** (19/22)	4.5	1-5	**85.7%** (18/21)	4.5	1-5	60.0% (12/20)	4	1-5
7. Take charge, as allied health deans, to ensure that Health Professions Education Institutions provide relevant and meaningful clinical education experiences	IO	**100.0%** (22/22)	5	4-5	**100.0%** (22/22)	5	4-5	**81.8%** (18/22)	4.5	2-5
8. Be accountable, as an allied health dean, for institutional support of clinical education	IO	**100.0%** (22/22)	5	2-5	**100.0%** (22/22)	5	4-5	72.8% (16/22)	4	1-5
9. Provide creative leadership to the allied health school, faculty and students	IO	**100.0%** (22/22)	5	2-5	**100.0%** (22/22)	5	4-5	68.2% (15/22)	4	1-5
10. Take responsibility, as allied health deans, towards working towards common goals in concert with the healthcare community and team members	IO	**95.5%** (21/22)	5	3-5	**90.9%** (20/22)	5	4-5	**80.9%** (17/21)	5	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
11. Commit to interprofessional education and interdisciplinary approaches within your institution	CoC	**95.0%** (21/22)	5	3-5	**100.0%** (20/20)	5	4-5	57.9% (11/19)	4	1-5

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Student Satisfaction

Across all scenarios, all eight key factors related to Student Satisfaction reached high agreement on importance (Table 27). The AH deans agreed that they could individually impact four of eight (50.0%) factors and collectively could impact three of eight (37.5%) factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses.

Student Satisfaction Results by Case Scenario

AH deans rated the two Conventional Conditions key factors important but not with high agreement on individual and collective deans' impact. Factor 1 focused on assistance of "minority or underserved student in "obtaining financial resources to pay for clinical education", and Factor 2 presented the need for "affordable allied health education opportunities."

In Tough Times, the AH deans rated one of two (50.0%) key factors as important and they could individually and collectively impact: Factor 3 focused on increasing "student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security." Factor 4, which concentrated on addressing "student dissatisfaction resulting from increased tuition costs, direct pass through for clinical rotation cost and corresponding educational debt", reached high agreement on importance and high agreement on individual dean's impact.

In Inspirational Opportunities, AH deans rated the one key factor as important and they could individually impact. This key factor offered the need to "monitor student feedback to improve satisfaction with allied health clinical education experiences."

In Culture of Collaboration, Factor 6 focused on collaborative models that increased student satisfaction reached high agreement on importance but not high agreement on individual and collective deans' impact. The AH deans agreed using IPE (Factor 7) was important and that they could individually and collectively impact. Factor 8, decreasing educational costs was important to AH deans and they could collectively impact.

Table 27

<u>Student Satisfaction</u>*: Key Factors with High Agreement on Importance and Impact (n = 8)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
1. Assist minority or underserved students in obtaining the financial resources to pay for clinical education	CC	**96.3%** (26/27)	5	3-5	77.8% (21/27)	4	2-5	61.6% (16/26)	4	2-5
2. Provide students with affordable allied health education opportunities	CC	**96.3%** (26/27)	5	3-5	70.3% (19/27)	4	2-5	42.3% (11/26)	3	1-5
3. Increase student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security	TT	**100.0%** (23/23)	4	4-5	**86.4%** (19/22)	4	2-5	**90.9%** (20/22)	4	2-5
4. Address student dissatisfaction resulting from increased tuition costs, direct pass through for clinical rotation cost and corresponding educational debt	TT	**91.0%** (20/22)	4	2-5	**85.7%** (18/21)	4	2-5	61.9% (13/21)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
5. Monitor student feedback to improve satisfaction with allied health clinical education experiences	IO	**100.0%** (21/21)	5	4-5	**81.0%** (17/21)	4	2-5	47.6% (10/21)	3	1-5
6. Promote a collaborative models that increase student satisfaction	CoC	**80.0%** (16/20)	4	2-5	68.4% (13/19)	4	2-5	52.7% (10/19)	4	1-5
7. Endorse a collaborative model that increases student satisfaction by using IPE models	CoC	**94.8%** (18/19)	5	3-5	**89.5%** (17/19)	4	3-5	**84.2%** (16/19)	4	1-5
8. Support a collaborative model that increases student satisfaction by decreasing educational costs	CoC	**84.2%** (16/19)	4	3-5	63.2% (12/19)	4	2-5	**84.2%** (16/19)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Clinical Education Costs

Eight of 11 (72.7%) key factors related to Clinical Education Costs attained high agreement on importance (Table 28). The AH deans agreed that they could individually impact three of eight (37.5%) key factors and collectively could impact four of eight (50.0%) key factors. Most key factors showed a wide range of ratings on individual and collective deans' impact reflecting a diversity of responses.

Clinical Education Costs Results by Case Scenario

In Conventional Conditions, AH deans agreed that Factor 1 reached high agreement on importance, but it did not reach high agreement on individual and collective deans' impact. This key factor concentrated on the need for "adequate institutional revenue to support quality clinical education."

In Tough Times, the AH deans rated one of three (33.3%) key factors as important and they could individually and collectively impact: Factor 2. This key factor focused on "higher education and clinical metrics, e.g., cost-benefit analysis, return on investment." Factor 3 emphasized planning for "domestic and global economic pressures impacting clinical education" and reached high agreement on importance and high agreement on collective deans' impact. Factor 4, which promoted "ROI (return on investment) in healthcare education with positive employments opportunities", reached high agreement on importance, but not high agreement on individual and collective deans' impact.

In Inspirational Opportunities, the AH deans rated the one key factor as important and they could individually and collectively impact. This key factor emphasized providing “cost-effective clinical education using partnerships and collaborative efforts.”

In Culture of Collaboration, the AH deans rated one of three (33.3%) key factors as important and they could individually impact: Factor 6. This key factor presented “the benefits of a collaborative culture in adequate clinical placement sites and available funding.” Factor 7 stated, “verify the financial benefits of a collaborative culture on the future of clinical education”, and reached high agreement on importance and high agreement on collective deans’ impact. Factor 8 stated, “control collaborative clinical training tuition costs to ensure student affordability”, and reached high agreement on importance but not high agreement on individual and collective deans’ impact.

Table 28

Clinical Education Costs: *Key Factors with High Agreement on Importance and Impact (n = 8)*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Provide adequate institutional revenue to support quality clinical education	CC	**92.6%** (25/27)	4	1-5	77.7% (21/27)	4	2-5	46.1% (12/26)	3	1-5
2. Create higher education and clinical education metrics, e.g. cost-benefit analysis, return on investment	TT	**95.7%** (22/23)	4	1-5	**81.0%** (17/21)	4	2-5	**84.6%** (19/22)	4	2-5
3. Plan for domestic and global economic pressures impacting clinical education	TT	**81.8%** (18/22)	4	2-5	76.1% (16/21)	4	2-5	**80.9%** (17/21)	4	2-5
4. Promote ROI in healthcare education with positive employment opportunities	TT	**81.8%** (18/22)	4	1-5	71.4% (15/21)	4	1-5	71.7% (15/21)	4	1-5
5. Provide cost-effective clinical education using partnerships and collaborative efforts between universities, business and government	IO	**95.3%** (20/21)	5	2-5	**90.5%** (19/21)	4	2-5	**90.5%** (19/21)	4	2-5

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	CS	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
6. Support the benefits of a collaborative culture that provides an adequate number of clinical education placement sites and available funding	CoC	**94.7%** (18/19)	5	3-5	**84.2%** (16/19)	4	3-5	79.0% (15/19)	4	2-5
7. Verify the financial benefits of a collaborative culture on the future of clinical education	CoC	**94.7%** (18/19)	5	3-5	73.7% (14/19)	4	2-5	**89.5%** (17/21)	4	2-5
8. Control collaborative clinical training tuition costs to ensure student affordability	CoC R3	**88.6%** (31/35)	5	2-5	79.4% (27/34)	4	2-5	73.5% (25/34)	4	2-5

Table continues.

Table continued.

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Faculty Clinical Preceptors

Two of three (66.6%) key factors related to Faculty Clinical Preceptors reached high agreement on importance (Table 29). AH deans agreed that they could individually impact two key factors and collectively impact one key factor. There were no key factors in scenarios Tough Times or Culture of Collaboration to evaluate.

Faculty Clinical Preceptors Results by Case Scenario

In Conventional Conditions, the AH deans rated Factor 1, supporting “grow our own faculty”, as important and they could individually and collectively impact.

In Inspirational Opportunities, the AH deans rated Factor 2, supporting “clinical faculty engagement in clinical education models”, as important and they could individually impact.

One AH dean remarked, “Encourage clinical faculty to be positive role-models in their professional arena. If they don't like what they do, don't take it out on the students in training. Students need and deserve sound and substantive education while they are completing their clinical rotations.”

Table 29

***Faculty Clinical Preceptors**: Key Factors with High Agreement on Importance and Impact*
(n = 2)

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	CS	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
1. Support the "grow our own" faculty to address clinical preceptor shortage	CC R3	**80.0%** (28/35)	4	2-5	**85.3%** (29/34)	4	2-5	79.4% (27/34)	4	2-5
2. Support clinical faculty engagement in the design, implementation, and evaluation of clinical education models	IO	**100.0%** (21/21)	5	4-5	**85.8%** (18/21)	4	2-5	**80.9%** (17/21)	4	2-5

Note. Key Factors are listed by case scenario with highest percentage of Importance in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
All key factors reached agreement high agreement on importance in Round 2 except where noted in the case scenario (CS) column as Round 3 (R3).
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Summary of Key Factors with Opportunities and Challenges

From the 13 clinical education categories, 159 of 208 (76.4%) key factors reached high agreement on importance. For the purposes of this research, clinical education opportunities were key factors achieving high agreement on importance with high agreement on individual and/or collective deans' impact. Conversely, clinical education challenges were key factors achieving high agreement on importance, but lacking high agreement on both individual and collective deans' impact. Table 30 provides a summary of the opportunities and challenges within each clinical education category. The key factors are listed in order from most to least frequent number of responses based on the Round 1 collective and combined responses. Of the 159 key factors, 107 (67.0%) were identified as opportunities and 52 (33.0%) as challenges. Of the 107 opportunities, the AH deans reported that they could individually impact 46 (43.0%) factors, collectively impact 22 (20.6%) factors, and shared the opportunity to impact 39 (36.4%) factors. Clinical Education Models had the largest number of opportunities (*n* = 17) and Regulation had the largest number of challenges (*n* = 18). The AH deans did not identify any challenges for the category of Allied Health Deans.

Based on the AH deans' responses, changes to the clinical education categories included: the addition of Population Health, including "Educational" in the title of Technology, and combining the categories of Clinical Preceptors and Faculty Clinical Preceptors into one group.

Table 30

Opportunities and Challenges by Clinical Education Category

Key Factor[a]	Opportunities (*n*)			Challenges (*n*)	Total Statements (*n*)
	Impact Ratings				
	INDV Deans Only	Shared Deans	COLL Deans Only	Neither INDV or COLL Deans	
Clinical Education Models	7	10	0	5	22
Regulation	1	0	6	18	25
Health Professions Education Institutions	9	2	1	2	14
Clinical Placement Location	3	3	0	8	14
Population Health	3	1	2	8	14
Technology	5	7	1	1	14
Clinical Preceptors	4	1	2	1	8
Interprofessional Education	4	6	1	2	13
Accreditation	0	1	4	1	6

Key Factor[a]	Opportunities (*n*)			Challenges (*n*)	Total Statements (*n*)
	Impact Ratings				
	INDV Deans Only	Shared Deans	COLL Deans Only		
Allied Health Deans	6	3	2	0	11
Student Satisfaction	2	2	1	3	8
Clinical Education Costs	1	2	2	3	8
Faculty Clinical Preceptors	1	1	0	0	2
Summation for Opportunity Groups	46	39	22		
Total Key Factors	**107** (67.0%)			**52** (33.0%)	**159**

Table continues.

Table continued.

Note. [a]Key Factors are listed from Round 1 highest to lowest number of collective responses by scenario.
INDV = Individual; COLL = Collective.
Opportunities were defined as key factors achieving high agreement on importance with high agreement on individual and/or collective deans' impact.
Challenges were defined as key factors achieving high agreement on importance, but lacking high agreement on both individual and collective deans' impact.
INDV Deans Only = a key factor identified as an opportunity where only deans individually could impact.
Shared Deans = a key factor identified as an opportunity where individual and collective deans could impact.

Kendall’s tau Correlations of Importance and Impact

This Delphi study used the Kendall’s tau (τ) coefficient to examine the AH deans’ impact ratings in an attempt to establish a correlation in the level of agreement on importance between individual dean impact and collective deans impact. From the 13 Clinical Education categories, 159 of 208 (76.4%) key factors reached high agreement of importance in Rounds 2 or 3. For each of these key factors, the Kendall’s tau (τ) correlation coefficient was computed to assess the relationship between importance with individual deans’ impact and the relationship between importance with collective deans’ impact. The Kendall’s tau (τ) correlation data did not result in statistical significance in the determination of the magnitude of the relationship between importance and impact due to the lower level of dean responses coupled with the narrow range of scores (5-point Likert scales of Importance and Impact). While the correlation data did not reflect a statistically significant relationship between importance and deans’ impact, the results were considered meaningful for the future exploration of deans’ impact on key factors impacting AH clinical education. Table 31 provides four examples from the correlation analysis where the key factor reached high agreement with all three ratings of 1) importance, 2) individual deans’ impact, and 3) collective deans’ impact, but lacked significant Kendall’s tau (τ) correlation coefficients.

Table 31

Kendall's tau Correlations of Importance and Impact

Key Factor	CS; R	Ratings			Correlations			
		Agreement of IMP and Impact			IMP with INDV Dean's Impact		IMP with COLL Deans' Impact	
		IMP (%, *n^a*)	INDV Dean's Impact (%, *n^b*)	COLL Deans' Impact (%, *n^c*)	τ	Sig.	τ	Sig.
Clinical Education Models: Establish a clinical education model that prioritizes individual accountability and teamwork	CoC, R2	**100.0%** (21/21) Mdn = 5	**100.0%** (21/21) Mdn = 4	**100.0%** (21/21) Mdn = 4	.224	.317	.343	.118
Clinical Placement Location: Manage the increased competition for clinical placements and pressure on clinical sites	IO, R2	**95.3%** (20/21) Mdn = 5	**90.5%** (19/21) Mdn = 4	**85.7%** (18/21) Mdn = 4	.219	.303	.240	.253
Technology: Support research to quantify the outcome of simulation student training on clinical competencies	TT, R2	**100.0%** (22/22) Mdn = 5	**90.5%** (19/21) Mdn = 4	**90.5%** (19/21) Mdn = 5	.321	.138	.052	.808

Key Factor	CS; R	Ratings			Correlations			
		Agreement of IMP and Impact			IMP with INDV Dean's Impact		IMP with COLL Deans' Impact	
		IMP (%, n^a)	INDV Dean's Impact (%, n^b)	COLL Deans' Impact (%, n^c)	τ	Sig.	τ	Sig.
Technology: Refine the clinical education curricula to incorporate emerging healthcare technological advances	IO, R2	**100.0%** (22/22) Mdn = 5	**90.9%** (20/22) Mdn = 4	**86.3%** (19/22) Mdn = 4	.016	.939	.087	.676

Table continues.

Table continued.

Note. Key Factors attained High Agreement of Importance and Impact, but lacked significant Kendall’s tau Correlations.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
n^a = # of deans responding High Importance or Important / Total Importance Respondents.
n^b = # of deans responding High or Moderate Individual Dean’s Impact / Total Individual Dean’s Impact Respondents.
n^c = # of deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Round = R, Round 2 = R2, Round 3 = R3.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.
*$p < 0.05$ level, two-tailed. **$p < 0.01$ level, two-tailed.

Examination of the Kendall’s tau (τ) coefficient provided a mechanism for prioritizing the broad range of key factors on which agreement of importance with impact was reached. Key factors are highlighted where there was strong association between importance with individual deans’ impact or collective deans’ impact. These key factors identified potential target areas where change for the future of clinical education may be accomplished. The emphasis of the correlation analysis and prioritization was on the Kendall’s tau (τ) coefficient with the highest correlation values (ranging from 0.70 - 1.00). There were more key factors identified for individual dean's impact versus collective deans' impact. Table 32 provides the 10 key factors with a high correlation between the Kendall’s tau correlations of importance with individual deans’ impact. Table 33 provides the two key factors with a high correlation between the Kendall’s tau correlations of importance with collective deans’ impact.

Table 32

Kendall's tau Correlations of Importance with Individual Deans' Impact (n = 10)

Clinical Education Category	Key Factor	IMP with INDV Dean Impact	
		τ	Sig.
Clinical Education Models	Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability	.728**	.000
Clinical Education Models	Use clinical models that educate AH professional at the top of their certification and licensure requirements	.703**	.000
Health Professions Education Institutions	Communicate the overall positive return on investment of student clinical training to key stakeholders	.713**	.001
Technology	Use distance learning, telehealth, and online education to support clinical education	.741**	.000
Clinical Preceptors	Support faculty engagement in developing innovative approaches to clinical education	.821**	.000
Interprofessional Education (IPE)	Prioritize IPE for institutional leadership	.736**	.000

Clinical Education Category	Key Factor	IMP with INDV Dean Impact	
		τ	Sig.
Allied Health Deans	Provide appropriate clinical knowledge, skills, and aptitudes for successful student graduation	1.00**	0.00
Allied Health Deans	Commit to IPE and interdisciplinary approaches within your institution	.875**	.000
Allied Health Deans	Take responsibility to work towards common goals with the healthcare community and team members	.744**	.000
Student Satisfaction	Promote a collaborative model that increases student satisfaction	.804**	.000

Note. Key Factors that attained High Agreement of Importance and Kendall's tau Correlations between 0.7-1.0.
IMP = Importance; INDV = Individual.
**p < 0.01 level, two-tailed.

Table 33

Kendall's tau Correlations of Importance with Collective Deans' Impact (n = 2)

Clinical Education Category	Key Factor	IMP with COLL Deans Impact	
		τ	Sig.
Regulation	Identify how the movement to a single payor system has the potential to offer more patients access to healthcare and increase demand and employment for the AH professions	.709**	.000
Student Satisfaction	Promote a collaborative model that increases student satisfaction	.724**	.000

Note. Key Factors that attained High Agreement of Importance and Kendall's tau Correlations between 0.7-1.0.
IMP = Importance; COLL = Collective.
**$p < 0.01$ level, two-tailed.

Round 3 Survey Preferred and Realistic Futuristic Case Scenarios

In Round 3, the AH deans were asked, based upon experience and perception as an AH dean, to select the "Most & Least Preferred" and "Most & Least Realistic" case scenario from the four futuristic (2018-2023) Clinical Education Case Scenarios. Almost 68% of the AH deans selected “Culture of Collaboration” as the “Most Preferred” scenario and the remaining 32% selected “Inspirational Opportunities”. Almost 84% of the AH deans selected “Tough Times” as the “Least Preferred” scenario and the remaining 16% selected “Conventional Conditions”. The “Most & Least Realistic” scenario ratings showed a diversity of response, 54% of the AH deans rated “Conventional Conditions” as the “Most Realistic” scenario and 46% of the AH deans rated “Inspirational Opportunities” as the “Least Realistic” scenario. The Round 3 Case Scenario "Preferred" and "Realistic" questions are provided in the Round 3 survey (previously noted as Appendix TT). Table 34 provides the Round 3 Case Scenario results.

The "Most & Least Preferred" and "Most & Least Realistic" Case Scenario question was re-rated in the Round 3 survey. In Round 2, AH deans’ comments on the question wording, technical challenges with the question format, and inconsistent ratings with logical expectations, e.g., Tough Times was rated as the “Most Preferred” scenario precipitated this Dissertation Committee decision. The Round 2 Case Scenario "Preferred" or "Realistic" questions are provided in Appendix AAA and the ranking results are provided in Appendix BBB.

Table 34

Futuristic Case Scenarios Preferred and Realistic Ratings

Futuristic Case Scenarios:	Most Preferred (%, *n*)	Least Preferred (%, *n*)	Most Realistic (%, *n*)	Least Realistic (%, *n*)
Scenario 1. Conventional Conditions	0% (0)	16.2% (6)	**54.1%** (20)	16.2% (6)
Scenario 2. Tough Times	0% (0)	**83.8%** (31)	5.4% (2)	10.8% (4)
Scenario 3. Inspirational Opportunities	32.4% (12)	0% (0)	24.3% (9)	**46.0%** (17)
Scenario 4. Culture of Collaboration	**67.6%** (25)	0% (0)	16.2% (6)	27.0% (10)
Total Respondents (*n*)	37	37	37	37

Note. *n* = # of Respondents; Round 3 survey ratings.
For each category, the largest percentage rating is provided in boldface.

Demographic Data

AH dean demographic characteristics are reported for the 46 of 51 (90.2%) AH deans who completed the demographic survey collected in the Round 1 survey. There were slightly more female AH deans (56.5%, *n* = 26 of 46) than male AH deans (41.3%, *n* = 19 of 46); one AH dean did not respond to this question. Table 35 provides the years of AH dean experience and years in academia for the AH dean panel. Fifteen (32.6%) of AH deans had between six and ten years of experience, 14 (30.4%) with one to five years of experience, and eight (17.4%) with 16-20 years of experience. For the remaining three groups: four (8.7%) of AH deans had between 11-15 years of experience, four AH deans (8.7%) with over 20 years of experience, and one AH dean (2.2%) had less than one year of experience. Five AH deans did not respond to the years of AH experience and years in academia questions.

Table 35

Years of AH Dean Experience and Years in Academia (n = 46)

Years	Less than 1 year (*n*, %)	1 - 5 years (*n*, %)	6 - 10 years (*n*, %)	11 - 15 years (*n*, %)	16 - 20 years (*n*, %)	Over 20 years (*n*, %)
Years of Dean experience	1 (2.2%)	14 (30.4%)	15 (32.6%)	4 (8.7%)	8 (17.4%)	4 (8.7%)
Years In Academia	0	0	2 (4.4%)	5 (10.9%)	5 (10.9%)	34 (73.9%)

Note. *n* = # of AH Dean Respondents.

Table 36 displays the AH dean educational profile and credential / licensure characteristics of the deans. The majority of respondents (*n* = 34, 73.9%) reported a Ph.D. degree as the highest degree of education. Seventeen percent (17.4%, n = 8) of the AH deans held an Ed.D. degree, one (*n* = 1, 2.2%) held a J.D. degree, and three AH deans responded to the “Other” category. Five AH deans did not respond to this question. Of the total sample (*n* = 46) of AH dean respondents, 58.7% (*n* = 27) of the AH deans were credentialed or licensed as an AH provider; five AH deans did not respond to this question. Of the twenty-nine AH deans who reported their specific discipline, 31.0% (*n* = 9) were physical therapy, followed by 10.3% (*n* = 3) in clinical laboratory science. Other areas of discipline reported included: speech-language pathology (*n* = 2), occupational therapy (*n* = 2), physician assistant (*n* = 1), and radiography (*n* = 1). The “Other” category (*n* = 11) is comprised of the following practice areas: nursing, athletic training, audiology, healthcare administration, and orientation and mobility.

Table 36

AH Dean Educational Profile and Credential / Licensure Characteristics

AH Dean Characteristics	Total (*n*)	*n*	%
<u>Highest Degree</u>	46		
Ph.D.		34	73.9%
Ed.D.		8	17.4%
Other		3	6.5%
J.D.		1	2.2%
<u>Discipline of credentials/licensure</u>	29		
Physical Therapy		9	31.0%
Clinical Laboratory Science		3	10.3%
Speech-Language Pathology		2	6.9%
Occupational Therapy		2	6.9%
Physician Assistant		1	3.4%
Radiography		1	3.4%
Other:		11	37.9%
Nursing	6		
Athletic Training	2		
Audiology	1		
Healthcare Administration	1		
Orientation and Mobility	1		

Note. *n* = # of AH Dean Respondents.

Table 37 provides a summary of the AH deans serving on an ASAHP Committee or Task Force in the past five years. A majority of the AH deans who responded to the demographic question did not participate in any ASAHP Committee or Task Force. AH dean membership was the greatest in the following ASAHP categories: eight of 38 (21.0%) AH deans were on the Interprofessional Education Task Force, six of 36 (16.7%) of the AH deans were on the Accreditation Committee (*n* = 6 of 36, 16.7%), and six of 36 (16.7%) AH deans were on the Research Committee. From the list of ASAHP Committees and Task Forces, six AH deans were Committee Chairperson and two AH deans were Vice-Chairperson. In response to whether AH deans had served on the ASAHP Board of Directors in the last five years, five of 42 (12.0%) of the AH deans had served on the Board: one member had served on the Board in the capacity as both Secretary and Treasurer.

Table 37

AH Deans Serving on an ASAHP Committee or Task Force

ASAHP Committee or Task Force	Chairperson (*n*, %)	Vice-Chairperson (*n*, %)	Member (*n*, %)	Not Applicable (*n*, %)	Total Responded (*n*)
Accreditation Committee	1 (2.8%)	0	6 (16.7%)	29 (80.6%)	36
Centralized Application Service Advisory Committee	0	0	2 (5.4%)	35 (94.6%)	37
Clinical Training Sites Task Force	0	1 (2.7%)	2 (5.4%)	34 (91.9%)	37
Constitution & Bylaws Committee	0	0	2 (5.4%)	35 (94.6%)	37
Education Committee	1 (2.6%)	0	7 (18.4%)	30 (79.0%)	38
Finance Committee	1 (2.8%)	0	2 (5.6%)	33 (91.7%)	36
Health & Education Policy and Governance Relations Task Force	1 (2.6%)	1 (2.6%)	3 (7.7%)	34 (87.2%)	39

ASAHP Committee or Task Force	Chairperson (*n*, %)	Vice-Chairperson (*n*, %)	Member (*n*, %)	Not Applicable (*n*, %)	Total Responded (*n*)
International Policies / Partnerships Task Force	0	0	4 (10.8%)	33 (89.2%)	37
Interprofessional Education Task Force	0	0	8 (21.1%)	30 (79.0%)	38
Leadership Development Program Committee	0	0	2 (5.6%)	34 (94.4%)	36
Nominations & Elections Committee	1 (2.6%)	0	2 (5.3%)	35 (92.1%)	38
Research Committee	0	0	6 (16.7%)	30 (83.3%)	36
2013 Annual Conference Planning Committee	0	0	3 (8.1%)	34 (91.9%)	37
2014 Spring Meeting Planning Committee	1 (2.7%)	0	1 (2.7%)	35 (94.6%)	37
Other Committees / Task Force positions:					8

Table continues.

Table continued.

Note. Other Committees / Task Force positions includes: Taskforce on Allied Health Branding, Alpha Eta Honor Society, ASAHP Leadership Academy, Journal of Allied Health International Features editor
n = # of AH Dean Respondents.

The AH deans identified additional AH organizational positions held in the past five years. Specifically, two of 39 (5.1%) AH deans participated as ASAHP Representatives in the Association of Specialized & Professional Accreditors (ASPA). Three of 39 (7.7%) AH deans participated in the Commission on Accreditation of Allied Health Education Programs (CAAHEP): two AH deans participated as both Board members and ASAHP Representatives, and the remaining AH dean participated as a Board member only. Five of 38 AH deans participated in the Journal of Allied Health (JAH): three (7.9%) as Board Members and two (5.3%) as ASAHP Representatives to the journal. There were no AH deans who responded to having an involvement with the Federation of Associations of Schools of the Health Professions (FASHP). Table 38 provides the number and percentages of the additional AH organizational positions held.

Table 38

AH Deans Serving on Additional Allied Health Organizations

Allied Health Organizational Positions	Board Member (*n*, %)	ASAHP Representative (*n*, %)	Not Applicable (*n*, %)	Total Respondents (*n*)
Association of Specialized & Professional Accreditors (ASPA)	0	2 (5.1%)	37 (94.9%)	39
Commission on Accreditation of Allied Health Education Programs (CAAHEP)	3 (7.7%)	2 (5.1%)	36 (2.3%)	39
Federation of Associations of Schools of the Health Professions (FASHP)	0	0	36 (100.0%)	36
Journal of Allied Health (JAH)	3 (7.9%)	2 (5.3%)	33 (86.8%)	38

Note. *n* = # of AH Dean Respondents.

Table 39 provides the institutional demographics including: institutional profile, type of sponsoring institution, number of AH programs, size of yearly budget, and school website. Forty-three of 51 AH deans responded to the institutional profile question collected in the Round 1 survey. Of the 43 respondents, 24 (55.8%) of the AH deans reported their institution as public, followed by 18 (41.9%) AH deans for private, and one (2.3%) AH dean for the "Other" category. Two comments provided further described the institutional profile as military or private faith-based institutions. Three AH deans did not respond to this question. Twenty-six of 44 (59.1%) AH deans reported their institution as a four-year college/university, followed by 15 (34.1%) AH deans for academic health center/medical school (AH) and three (6.8%) AH deans for 'Other'. There were no responses for the post high school technical school category. Four AH dean comments described the sponsoring institutional profile as military education and training, health professions graduate school, graduate university of healthcare professions and university focused only on health professions and sciences. Three AH deans did not respond to this question and one institution was recorded twice as the responding AH dean selected an institutional profile for both a 'four year college/university' and an 'academic health center/medical school (AH)'. Of the 44 respondents, 47.7% (n = 21) of the AH deans responded that they were responsible for five to ten AH programs, followed by 15.9% (*n* = 7) responsible for less than five programs, and 15.9% (*n* = 7) responsible for 11 - 15 programs. Six AH deans were responsible for over 20 programs and three for 16 - 20 programs. Two AH deans did not respond to this question. Of the 43 respondents, 39.5% (*n* = 17) of the AH deans reported that their institutional yearly budget ranged from $5 - $10 million. Almost twenty-one percent (*n* = 9) of the AH deans responded that their budget ranged from $11 - $15 million, followed by 16.3% (*n* = 7) over $20 million, followed by 11.6% (*n* = 5) for $16 - $20 million, and 11.6% (*n* = 5) for less than $5 million. Three AH deans did not respond to this question.

Table 39

Institutional Demographic Profile

Institutional Demographics	Total (*n*)	*n*	%
Institutional Profile	43		
Public		24	55.8%
Private		18	41.9%
Other		1	2.3%
Sponsoring Institution[a]	44		
Four year college/university (UC)		26	59.1%
Academic health center / medical school (AH)		15	34.1%
Post high school technical school		0	0.0%
Other		3	6.8%
Number of Allied Health Programs	44		
Less than 5 programs		7	15.9%
5 - 10 programs		21	47.7%
11 - 15 programs		7	15.9%
16 - 20 programs		3	6.8%
Over 20 programs		6	13.6%

Institutional Demographics	Total (n)	N	%
Yearly Budget[b]	43		
Less than $5		5	11.6%
$5 - $10		17	39.5%
$11 - $15		9	20.9%
$16 - $20		5	11.6%
Over $20		7	16.3%

Note. *n* = # of AH Dean Respondents.
[a] One sponsoring institution was recorded twice; a response was recorded for both a four year college/university and an academic health center/medical school (AH).
[b] Yearly budget in millions of dollars.

As there was a moderate to high level of agreement of AH deans' responses throughout the Delphi three-round study, an extensive secondary analysis of AH deans' primary disciplines and university/college demographic data was not conducted.

Non-response Bias Survey

Upon conclusion of the three-round Delphi survey, a non-responder bias check was performed to determine whether non-responders differed in key findings from the responders (Appendix CCC). To explore the reasons for non-response and to determine if they agreed with the key findings of the Delphi study, a random sample of the AH dean non-responder population (*n* = 30) were contacted using a personalized e-mail including a SurveyMonkey® Web Link Collector to explore the reasons for non-response and if they agreed with the key findings of the Delphi study. Five of 30 (17%) AH deans participated in the non-responder survey. The years of experience for the five non-responders were: two AH deans with one to six years of experience, two AH deans with 11-15 years of experience, and one AH dean with 16-20 years of experience; these demographics are similar to the participant demographics in the study. In response to the number of AH programs the AH deans managed: two AH deans had less than five programs, two AH deans had 5-10 programs, and one AH dean had over 20 programs; these demographics are similar to the AH dean demographic profile in this study.

The Fisher's Exact test was used to explore and analyze non-responder bias. While the statistics revealed no significant differences in agreement for the revised Definition of Clinical Education between Round 2 survey responders (*n* = 61) and non-responders (*n* = 5) (*p* = 0.3725), the definition of clinical education non-responder ratings achieved high agreement. Similarly, no statistically significant differences were found between Round 2 responders and non-responders for the revised Goals of Clinical Education (Goals 1 through 4; *p* = 1.00) and the Goals of Clinical Education non-responder ratings achieved high agreement.

Thirteen key factors, identified as opportunities and challenges, were selected from the four case scenarios and a variety of clinical education categories to be included in the non-responder survey. The Fisher's Exact Test was used to explore and analyze non-responder bias (Portney & Watkins, 2009a). Two of five (40.0%) AH deans rated the key factors for importance and impact. There were no statistically significant differences between the responders and non-responders identified by the Fisher's Exact Test results. The non-responder ratings and Fisher's Exact Test results are provided in Appendix DDD for opportunities (*n* = 10) and Appendix EEE for challenges (*n* = 3).

Chapter V

DISCUSSION

This study resulted in the acceptance of a modified definition and goals of clinical education and verified the existing key factors impacting allied health (AH) clinical education published in healthcare literature (Dillon, et al., 2003; Dunfee, 2008; Institute of Medicine, 2012; Wetherbee, et al., 2010). It supported the O'Sullivan Maillet & Romig *Key Factors Impacting Allied Health Clinical Education* conceptual model (2011-2013, p. 100) which identified factors in 12 key categories that impact current clinical education. The research provided a foundation to gather AH deans' opinions and explore agreement on the purposes of clinical education, the key factors impacting clinical education, and the future of AH clinical education. The Delphi results found that AH deans are responsible for: health professions education institutions, clinical education costs, clinical preceptors (faculty and volunteer), and student satisfaction. Key factors impacting AH clinical education where AH deans have an impact include: accreditation, clinical placement locations, and regulation. Finally, changes anticipated to impact clinical education include: clinical education models, educational technology, and interprofessional education. Population health emerged as a new category impacting AH clinical education. In summary, factors within a total of 13 key categories were identified as important to the future of AH clinical education.

The Delphi Process

The Delphi methodology proved to be a useful research technique to study AH deans' opinions and areas of agreement on clinical education. Over three rounds, the AH deans who participated in this study reached high agreement on the definition and goals of clinical education and agreement of importance on 159 of 208 (76.4%) key factors. Opportunities and challenges regarding the future of clinical education were identified. The opinions supported and refined the clinical education categories identified in the conceptual model (p. 100).

Participation and Response Rate

While this study recruited the entire population of eligible Association of Schools of Allied Health Professions (ASAHP) deans, ultimately the consenting participants were self-selected. Therefore, this Delphi study utilized a non-probability, convenience sample of deans or their designated representative to explore the future of clinical education (Ary, Jacobs, Sorensen, & Razavieh, 2010).

This study's participation and retention meets the norm of related Delphi research with similar sample sizes (Handler, 2006; Ito, et al., 2011; Mitchell, 1998). The response rate of this Delphi study was consistent with AH, medicine, and nursing Delphi research conducted on related topics with samples sizes ranging from 33 to 82 experts (Handler, 2006; Ito, et al., 2011; Lopopolo, et al., 2004; Mitchell, 1998; Valdez, 2008; Wang, et al., 2011). A total of 61 consenting AH deans was considered an adequate sample to provide a heterogeneous group with a range of opinions without an excess overlap of ideas (Turoff & Hiltz, 2008). The sample size of this Delphi study (*n* = 61) was slightly lower than the sample size (*n* = 72) of an interprofessional education (IPE) dissertation study that included a similar population of AH deans currently employed at ASAHP affiliated colleges and universities as well as an IPE oriented faculty member from each institution (Farnsworth, 2013). Conducted in late 2012 and early 2013, the Farnsworth (2013) IPE 42-item Likert survey was not a Delphi study.

The topic, case scenarios, and Delphi process was highly regarded by the majority of AH deans as evidenced by the positive open-ended comments throughout the three-round study. Many of the AH deans wrote that they appreciated the opportunity to participate in the clinical education research. Descriptors of the process included: ‘enjoyed fantasizing through some of the models and scenarios’, ‘explored clinical education in great detail’, ‘always good to be reading that crystal ball’, ‘many items on a wish list’, and ‘complex issues’. However, one AH dean stated that it was hard to decide how to respond to some key factors as they were “stated only in positive terms that I did not perceive as positive.” During the Round 2 phone reminders, three AH deans commented that the process was time consuming. In the Round 2 open-ended comment box, two AH deans responded that the “number of questions” and the “time and attention” needed to complete the survey was excessive. Despite the length of the surveys and time commitment required of the AH deans over the three rounds, their overall feedback suggests that the Delphi technique was an appropriate and positively accepted methodological choice.

Subproblems 1 and 2

Definition of Clinical Education

After an extensive review of AH, nursing, and medicine literature, the definition of clinical education used in this research was based on the work of Rose & Best (2005) as reported in *Transforming Practice Through Clinical Education, Professional Supervision and Mentoring*. The use of an adapted definition of clinical education was confirmed by a pilot study of former AH deans. In this research, the first round revealed acceptance of the clinical education definition. However, due multiple comments from the AH deans, the definition was revised and the AH deans were asked to re-rate it in Round 2; disagreement of the modified definition dropped from 15.7% in Round 2 to 7.2% in Round 3. In Round 3, the AH deans stated the clinical education definition could describe "allied health" and that the word "classroom" should remain in the definition. The hypothesis that AH deans will agree upon the definition of clinical education was supported by this study's findings. This study provides a revised definition of clinical education specific to AH and can be added to the list of clinical education definitions found in the healthcare literature (refer to Table 2, p. 47).

The differences in the definitions of clinical education reflect the rapidly changing healthcare environment. While the foundation of clinical education centers on the advancement of clinical reasoning and skills development, more recent definitions expand upon the core definition to include the use of alternative clinical placement locations, accreditation and licensing requirements, and educational technology experiences. Reported in this study and documented in the literature, is the importance of providing quality student clinical training and the assurance of competent AH practitioners to deliver quality patient care now and in the future.

Goals of Clinical Education

After another extensive review of the literature, the goals of clinical education used in this research were based on the work of Mannix et al. (2006) as reported in *Towards Sustainable Models for Clinical Education in Nursing: An On-Going Conversation*. In this research, Round 1 revealed acceptance of the clinical education goals; a majority (90.2% to 96.1%) of the AH deans agreed with the goals. However, due multiple comments from the AH deans, the goals were revised and the AH deans were asked to re-rate them in the next round. In Round 2, the percentage of agreement remained above 90%; while a majority (90.2% to 92.7%) of the AH deans agreed with the goals, the slight dip in agreement may be attributed to the lower response rate in Round 2 versus Round 1. The hypotheses that AH deans will agree with the goals of clinical education were supported by this study’s findings. The revised goals of clinical education can be added to the list of clinical education goals found in the healthcare literature (refer to Table 3, p. 51).

The variations in the goals of clinical education also reveal the impact of the changing healthcare environment. The emphasis of clinical education and its goals focus on the alignment of didactics with theoretical and practical knowledge, the refinement of clinical skills, and the development of problem solving and time management skills in the workplace. Additional clinical education goals emphasize evidence-based practice, collaborative models using interdisciplinary and interprofessional teams, and acquiring professional behavior for real world practice. Reported in this study and documented in the literature, is the importance of cooperative efforts among the key stakeholders to assure that the clinical education program meets its goal of ensuring quality full-time clinical experiences for its student now and in the future.

Subproblems 3 and 4

Where is there agreement on the key opportunities and challenges that impact future AH clinical education?

The hypotheses that AH deans will agree on the key opportunities and challenges that impact future AH clinical education were supported by this study’s findings (Table 30, p.310). Based on the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O’Sullivan Maillet and Romig, p. 100), four (2018-2023) futuristic case scenarios, entitled Conventional Conditions, Tough Times, Inspirational Opportunities, and Culture of Collaboration, described plausible future states of clinical education. These scenarios served as the catalyst for the AH deans’ identification of key factors in Round 1, and the rating of importance and individual and collective deans’ impact in Round 2. Of the 208 key factors identified by the AH deans, 159 (76.4%) reached high agreement on importance. All key factors reaching high agreement on importance in Rounds 2 and 3 were rated as to whether or not the deans agreed they could individually and collectively impact the key factors. Based on the ability to impact, key factors were identified as either clinical education opportunities or challenges. As a result, 107 of 159 (67.3%) key factors were identified as clinical education opportunities, i.e., key factors achieving high agreement on importance and high agreement on individual and/or collective deans' impact. The remaining 52 of 159 (32.7%) key factors were identified as clinical education challenges, i.e., key factors achieving high agreement on importance, but lacking high agreement on both individual and collective deans' impact.

Clinical Education Opportunities and Challenges

This study explored the categories of clinical education found in the current healthcare literature, delineated in the O'Sullivan Maillet and Romig Clinical Education conceptual model (2011-2013, p.100), and identified in this research. As presented in the Opportunities and Challenges by Key Factor Category table (Table 30, p. 310), the AH deans agreed that all 13 clinical education categories were important to the future of clinical education.

Opportunities for AH Deans Venn Diagram

The *Venn* diagram titled "*Key Categories in Allied Health Clinical Education: Opportunities for Deans*" (Figure 7) provides a visual illustration of the relationships of the agreement on importance and deans' impact for the 13 categories identified as opportunities. At the intersection of individual and collective deans impact are 12 categories of shared opportunities: Clinical

Education Models, Health Professions Education Institutions, Clinical Placement Location, Population Health, Educational Technology, Clinical Preceptors (faculty and volunteer), Interprofessional Education (IPE), Accreditation, Allied Health Deans, Student Satisfaction, and Clinical Education Costs. For the category of Regulation, AH deans identified opportunities where an individual dean or collective deans could provide impact, but there were no shared opportunities.

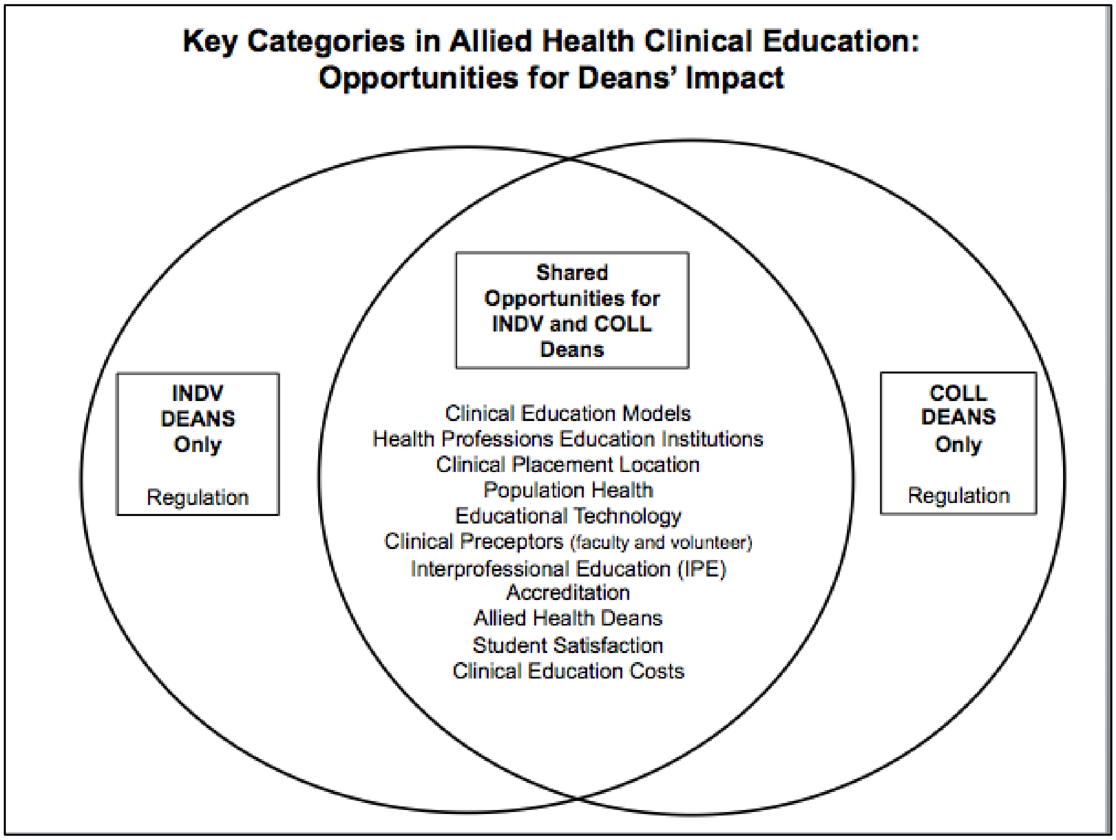

Key Categories in Allied Health Clinical Education:
Opportunities for Deans' Impact
Shared Opportunities for INDV and COLL Deans
INDV DEANS Only
Regulation
COLL DEANS Only
Regulation
Clinical Education Models
Health Professions Education Institutions
Clinical Placement Location
Population Health
Educational Technology
Clinical Preceptors (faculty and volunteer)
Interprofessional Education (IPE)
Accreditation
Allied Health Deans
Student Satisfaction
Clinical Education Costs

Figure 7. Key Categories in Allied Health Clinical Education: Opportunities for Deans' Impact Venn diagram.
Clinical education opportunities were defined as key factors achieving high agreement on importance and high agreement on individual and/or collective deans' impact.

IMP = Importance, INDV = Individual; COLL = Collective.
INDV Deans Only = a key factor identified as an opportunity where only deans individually could impact.
Shared Deans = a key factor identified as an opportunity where individual and collective deans could impact.
COLL Deans Only = a key factor identified as an opportunity where only deans collectively could impact.

Opportunities by Clinical Education Category

As noted, 107 of 159 (67.3%) key factors were identified as clinical education opportunities. Of these, 46 (43.0%) were clinical education opportunities that only individual deans' impact. These 46 opportunities were located in 12 of 13 clinical education categories; Accreditation did not have opportunities that only individual deans' impact. There were 39 (36.4%) shared opportunities that both individual and collective deans' impact. These shared opportunities were located in 12 of 13 clinical education categories; Regulation was the only category not having a shared opportunity. There were 22 (20.6%) opportunities that only collective deans' impact. These 22 opportunities were located in 10 of 13 clinical education categories; Clinical Education Models, Clinical Placement Location, and Faculty Clinical Preceptors did not have opportunities that AH deans collectively impact. Table 40 provides a summary of the clinical education opportunities identified in this research. For each category, the key factors are arranged by impact for: the individual dean, followed by shared deans, and finally collective deans.

Table 40

Clinical Education Opportunities

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Clinical Education Models	Use clinical models that creatively promote: • mentorship to support collaboration, critical thinking, and innovation • support evidence-based practice • provide efficient, cost-effective models • promote incentives for clinical education • provide ample clinical and financial resources and share resources • strengthen interactions among students, faculty, and clinical faculty	Create clinical models that: • are efficient and cost-effective • redesign clinical curriculum to match technology • create innovative opportunities • train faculty to educate on knowledge, skills and aptitude • continually improve efficiency, standardization, and outcome measurements • prioritize individual accountability and teamwork • link clinical and didactic education • establish interprofessional collaboratives	No high impact factors

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Clinical Education Models (continued)		Create clinical models that: • initiate diverse clinical education best practices • shared strategies of teaching content, approaches, and assessment measures	
Regulation	Develop clinical agreements to: • maximize site usage • reduce the impact of interstate regulatory fees	No high impact factors	Support regulatory policies that: • reinforce quality and cost effective clinical education • offer a Medicare pass thru for AH • open interstate access to clinical education • open interstate access to distance education • create an AH legislative voice • accept a diversity of clinical faculty

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Health Professions Education Institutions	Prioritize institutional policies that: • support partnerships between the institution and clinical sites • support high quality clinical experiences • maximize clinical education resources • focus on AH program profits and costs • address budget reductions and AH program consolidation • plan for competition between non- and for-profit institutions • establish a relationship with business and industry to attain better funding and clinical facilities	Prioritize institutional policies that: • develop partnerships among key stakeholders • communicate the return on investment of student clinical training	Support institutional policies that: • acknowledge the impact of program closures on healthcare worker shortages

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Health Professions Education Institutions (continued)	Prioritize institutional policies that: • admit AH students, especially under-represented students, who have strong academic and clinical preparation • commit to student clinical training and employment		
Clinical Placement Location	Support clinical sites that: • meet curricular needs • provide a safe learning environment • include alternative sites	Monitor clinical sites to: • maintain access to clinical education • manage competition for clinical site placements • increase the number and diversity of sites	No high impact factors

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Population Health	Offer clinical education that: • focus on healthcare over the life span • focus on patient care outcomes, health prevention, and wellness • use a diversity of patient demographics	Provide clinical education that: • include a diversity of patient populations	Support clinical training that: • offer healthcare quality and safety, wellness and prevention, and patient satisfaction • show AH impact on patient care
Educational Technology	Use technology with clinical education to: • provide "basic" competencies in programs without sufficient sites • align simulation or standardized patient with clinical experiences • use distance learning, telehealth and online education to support clinical education	Use technology with clinical education to: • validate simulation outcomes to real world experiences • support clinical competencies • quantify simulation outcomes on clinical competencies • refine the clinical curricula to include technology	Optimize technological advances to: • develop best practices for future healthcare delivery

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Educational Technology (continued)	Use technology with clinical education to: • instruct virtually via simulation, simulated patients, online supervision, distance learning, interactive video (Skype, FaceTime) • initiate university-wide funding of technology	Use technology with clinical education to: • optimize technology using telemedicine, health informatics, alternative mechanisms, distance learning, simulation, computer education, EHR and EHR simulation software • decrease the cost of clinical education • support patient wellness and prevention	
Clinical Preceptors (volunteer)	Support clinical preceptors by: • providing better training and resources • planning for additional preceptors to accommodate AH program growth • encouraging innovation in clinical education	Support clinical education by: providing for a sufficient number of clinical preceptors	Support clinical preceptors by: • giving time to train and provide feedback to students • managing the shortage of credentialed clinical preceptors

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Clinical Preceptors (volunteer) (continued)	Support clinical preceptors by: • fostering an adequate number of well prepared faculty		
Clinical Preceptors (faculty)	Support clinical education that: • educate a sufficient number of faculty for clinical instruction	Support of clinical education that: • engage clinical faculty in clinical model design, implementation, and evaluation	No high impact factors
Interprofessional Education (IPE)	Prioritize IPE for institutional leadership that: • provide training to function in teams • create awareness of AH contribution and value in healthcare team • deliver clinical prepared students	Support IPE with institutional commitment that: • prioritize student recruitment • increase team-based clinical education model • establish across institutional healthcare student training	Support IPE use that: • offer healthcare reimbursement

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Interprofessional Education (IPE) (continued)		Support IPE with institutional commitment that: • establish across institutional healthcare student training • increase the quality of clinical education • provide evidence-based assessment and intervention strategies	
Accreditation	No high impact factors	Gain accreditation agency support to: • accommodate changes in AH clinical education	Gain accreditation agency flexibility in: • clinical education hours and skill requirements • allowing instructional technology in clinical training • standards to support interdisciplinary and interprofessional collaboration

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
AH Deans	Use AH dean governance to: • advance strategic thinking and competitive leadership • provide the right clinical knowledge, skills and aptitudes for student graduation • develop clinical education partnerships • be accountable for institutional support of clinical education • provide creative leadership to the AH school, faculty and students • commit to IPE and interdisciplinary approaches	Use AH dean governance to: • construct clinical experiences that meet student, faculty and higher education healthcare institutional needs • ensure that Health Professions Education Institutions provide relevant and meaningful clinical education experiences • work towards common goals in concert with the healthcare community and team members	Use AH dean governance to: • coordinate with accreditation agencies to assure quality clinical education • collaborate across disciplines to strengthen AH as professions

Category	Impact Ratings		
	INDV Deans Only	Shared Deans	COLL Deans Only
Student Satisfaction	Improve student satisfaction by: • address tuition costs, direct pass through for clinical rotation cost, and educational debt • monitor student satisfaction on clinical experiences	Build student satisfaction by: • increasing student interest in an AH degree • endorsing an IPE clinical education model	Increase student satisfaction by: • using a collaborative clinical model coupled with decreasing educational costs
Clinical Education Costs	Support clinical education that: • provide an adequate number of placement sites and available funding	Provide cost-effective clinical education by: • creating higher education and clinical metrics • using partnerships and collaborative efforts	Support the future of clinical education that: • plan for domestic and global economic pressures • verify the financial benefits of a collaborative clinical culture

Table Continues.

Table continued.

Note. Clinical Education Opportunities were defined as Key Factors with High Agreement on Importance and Individual Dean's and/or Collective Deans' Impact.
IMP = Importance; INDV = Individual; COLL = Collective; AH = allied health.
INDV Deans Only = a key factor identified as an opportunity where only deans individually could impact.
Shared Deans = a key factor identified as an opportunity where individual and collective deans could impact.
COLL Deans Only = a key factor identified as an opportunity where only deans collectively could impact.

Opportunities with Clinical Education Models

The AH deans supported, both individually and collectively, the use of a clinical model that linked didactic and clinical education. The shared opportunities of using a combined curricula with a clinical model offer uniformity in teaching content, clinical approaches, and comprehensive competency assessment. Shown in the literature and supported by this research, student didactic learning is central to clinical learning and skill development (Mandy, 1989; Mannix, et al., 2006). AH theoretical model research by Anderson (1998) and Cox (1993) confirmed the main goal of clinical education is to develop students into confident and competent practitioners who can self-direct in practice and provide quality patient care. The deans were optimistic in their shared ability to connect didactics with the clinical education models of the future.

The use of a collaborative clinical model was a recurrent theme that was associated with opportunities for the future. The AH deans, individually and collectively, supported a clinical model that prioritized individual accountability, teamwork, with interprofessional and collaborative clinical care. The AH deans stated that individual deans were best situated to develop collaborative partnerships that pooled clinical and financial resources, provided excellence in patient care and clinical outcomes, and offered incentives. Individually, the AH deans noted the opportunity to support collaborative interactions between students, faculty and clinical faculty. Reinforced by the literature (Dawes & Lambert, 2010; DeClute & Ladyshewsky, 1991; Ladyshewsky, et al., 1998; Roberts, et al., 2009; Triggs & Shepard, 1996), the benefits of collaborative clinical models included: increased placement capacity, improved student learning and skill development, and improved departmental productivity. Buelow et al (2008) and Cox et al. (1999) reported the positive impact of the Interdisciplinary Teamwork Model, in didactic-based teachings, simulation-based learning, and clinical experiences, on AH professional team shared learning, interaction, and collaboration in the determination of patient healthcare goals.

There was a shared opportunity for AH deans to support clinical faculty engagement in the design, implementation and evaluation of clinical education models. Today’s clinical educators are charged with the identification of effective assessment tools to measure student skills and competency across the clinical and educational continuum (Murray, et al., 2000). As reported by Pagel (2012), faculty clinical preceptors appreciated the chance to engage their students in the sharing of knowledge, skills and aptitude in the clinical environment. When clinical educators and instructors are up-to-date on healthcare knowledge and clinical procedures, they improved their ability to measure students’ clinical competencies and evaluate the effectiveness of the clinical education models (Eckher, 2006). AH deans, responsible for fostering a scholarly environment and the assurance of effective instruction, have an opportunity to provide governance to the clinical faculty in the determination of the optimal clinical education models for their health science programs (Austin Community College, 2012; Panola College, 2012).

Creative clinical models that are receptive to collaboration, critical thinking, innovation, and mentorship were opportunities for the individual deans. Research by Clark et al. (2004) and Lundberg (2008) presented the benefits of increasing nursing student clinical experiences to support critical thinking and clinical learning. The literature and the Delphi results show that a successful clinical model starts with well-trained clinical faculty and prepared students (Buccieri, et al., 2011; Rodger, et al., 2011; Rose & Best, 2005). As stated by Kronenfeld et al. (2007), AH clinical practice is evolving towards the establishment of quality, effective, and efficient evidence-based practice. Found in this research and important to the future of clinical education is the opportunity to provide AH clinical models of excellence that support the development of effective, evidence-based practitioners. In the framework of clinical education models, mentorship was identified as an opportunity where individual deans could impact. AH research by Nolinske (1995) confirmed the benefits of mentorship with positive professional and emotional connections and improved relationships, and Warne et al. (2010) showed positive student feedback with multiple clinicians supervising nursing students using the Multiple Mentoring model. While the literature documents the benefits of collaborative and mentorship relationships from the clinical faculty and student perspectives, future research specific to the AH deans' roles and reponsibilites in the mentorship process will be important to examine.

Found in this research and important to the future of clinical education is the opportunity to provide AH clinical models of excellence that support the development of effective, evidence-based practitioners. AH research by Wyatt & Ramos (2010) on physician assistant students documented the positive outcomes of health professions education institutional direction, with dean guidance and leadership, in achieving quality clinical education, successful student learning, and clinical faculty job satisfaction. As stated by Kronenfeld et al. (2007), AH clinical practice is evolving towards the establishment of quality, effective, and efficient evidence-based practice. Given the growing body of literature supporting the benefits of collaborative and cost-effective models to increase student proficiencies and skills while maximizing resources (Briffa & Porter, 2013; Dawes & Lambert, 2010; DeClute & Ladyshewsky, 1991; Ladyshewsky, et al., 1998; Roberts, et al., 2009; Triggs & Shepard, 1996), the evolution of clinical education models and accompanying best practices will be important to examine in the future.

The AH deans noted a shared opportunity to redesign the clinical curricula and model to match educational technology advances. Research by Harder (2010) and Triola et al. (2012) reported the benefits of educational technology with enhanced innovative learning. AH research by Butina et al. (2013) reported the successfully integrated of educational technology, such as simulation and standardized patients, into the curriculum and clinical education. The category of Educational Technology discussed later provides additional insight into educational technology opportunities where deans could impact.

While the AH deans supported innovative clinical education models that support student learning and patient-centered care, a potential opportunity not found in this research is the wide variation of clinical education models used in today’s healthcare arena. For example, there were no specific AH deans’ responses related to the use of longitudinal integrated clerkships. Longitudinal research by Ogur et al. (2007) with the extension study by Hirsh et al. (2012) reported the benefits of the integrated clerkship model with continuity of patient care, exposure to a wide spectrum of medical conditions, and multiple venues of care to be an important experience in student learning and clinical training. Gwyer et al. (2003) reported that longer clinical experiences might improve the depth of clinical training. Additionally, there were no AH deans' responses that included international clinical experiences to support the clinical education model. AH research by Sawyer & Lopopolo (2004) supported the benefits of an international clinical experience to foster physical therapy students understanding of global healthcare and exposure to patient diversity and develop critical thinking. Identification of these clinical education models may be more familiar to faculty and/or program directors that are directly involved with clinical placement locations.

Opportunities for Regulation

The AH deans identified numerous factors in the category of Regulation as important with only a few opportunities for deans' impact, mostly for the deans collectively. For instance, the creation of an AH legislative voice in healthcare regulatory discussions was important and an opportunity for deans collectively. Recently established in 2014, the Allied Health Professions Political Action Committee (AHP PAC) provides AH representation and leadership in raising the awareness of critical issues impacting its cooperative interests with Congress (Allied Health Professions Political Action Committee, 2015). In alignment with the Association of Schools of Allied Health Professions' (ASAHP) mission to advance and advocate for the AH professions (Association of Schools of Allied Health Board of Directors, 2010), AH deans also have an opportunity to take a leadership role in healthcare regulatory discussions and other educational interests of the AH professions (ASAHP Strategic Plan, 2013 - 2015). For example, the AH deans in this study reported that their collective efforts could impact federal, state, and local government policies that reinforce quality clinical education at a reduced cost. This included the opportunity for AH deans to lobby for a Medicare pass thru to reduce costs for the AH professions. The use of partnerships and collaborative efforts between universities, business, and government to support clinical education was an opportunity for dean management and leadership, individually and collectively. Collier (2012) discussed beneficial partnerships between clinical facilities and health science educational programs. Helwick (2010) reported that healthcare reform legislation, coupled with Medicare payment reduction and reimbursement models with payment bundling, is creating a need for healthcare partnerships that are better equipped to handle cost-controlling challenges. However, the literature provides limited evidence of AH clinical education initiatives between universities, business, and government.

The opportunity to influence the impact of state boundaries, barriers, or payment requirements on clinical education and distance education was an opportunity where AH deans could impact collectively. In addition, reducing the impact of interstate regulatory fees on clinical education using the development of exclusive agreements with local placement sites was reported as an opportunity for deans individually. An individual AH dean is likely informed and involved in their state and local legislative processes. Williamson & Koebel (2012) discussed the recent trend of requiring higher education healthcare institutions to obtain state authorization for the clinical experience, including field experiences, clinical practice, and student teaching of a program. Brandt et al. (2010) and Kelderman et al. (2012) confirmed the potential costs, time, and risks associated with state-by-state laws and regulations for clinical education and distance learning; the AH deans in this research reported that there was opportunity to provide positive impact in the educational arena. As there is limited information on individual and/or collective AH deans involvement in interstate legislative initiatives, this may offer a promising research opportunity for leaders of ASAHP (Collier, 2012).

Opportunities with Health Professions Education Institutions

As the primary leader in AH education, there was an opportunity where the individual deans could develop partnerships between the academic institution and clinical placement sites and with healthcare stakeholders for funding and access to clinical training facilities. The individual dean had an opportunity to effectively plan for competition between non- and for-profit health professions education institutions for clinical education sites. The Health Professions Network Educator’s Summit report (2010) showed that competition for clinical placement sites is increasing between “for-profit” and public institutions that typically do not pay for clinical sites. Smith (2012) reported not-for-profit institutional success in retaining clinical sites by using financial and contractual arrangements with large health networks. Research on AH dean involvement in healthcare partnerships and competitive tactics is sparse.

In this study, supporting high quality clinical education experiences was an opportunity where individual deans could impact. From a health professions education institutional perspective, the individual dean is charged with managing AH programs, including prioritizing the use of clinical education resources, while maximizing operational efficiencies. Cost containment and budget reductions with the potential to close or consolidate AH programs were considered an individual dean's responsibility and an opportunity for effective control of clinical education priorities. The AH deans in this study stated that individual dean leadership and dedicated involvement was also important in providing quality clinical training and successful graduate employment. In this study, the admission of AH students, especially under-represented students, who have strong academic and clinical preparation, was another opportunity for the individual dean to demonstrate commitment to quality education. As stated by Layman et al. (2010), AH dean leadership and management are essential in higher education and healthcare. When health professions education institutional direction is properly implemented, positive outcomes may include quality clinical education, successful student learning, and clinical faculty job satisfaction (Wyatt & Ramos, 2010). However, the healthcare literature does not offer an established and proven tactical plan guaranteed to deliver high quality clinical education today or in the future.

The AH deans responded that there was a shared opportunity to develop collaborative healthcare partnerships to achieve excellence in patient care and clinical education outcomes. In this research, the AH deans indicated, both individually and collectively, that they have a shared opportunity to communicate an overall positive return on investment of student clinical training to key stakeholders identified as: health professions education institutions, clinical placement locations, clinical faculty, and students. AH research by Rodger et al. (2012) and Dillon et al. (2003) showed a favorable net exchange in patient care productivity; while student training involved more time discussing patient care, the number of patients seen was maintained. While the benefit of students in the AH clinical arena has been identified in nutrition, occupational therapy, physiotherapy, and social work (Australian Capital Territory Health, 2007), AH deans may consider monitoring the impact of recent changes and future predictions in program guidelines, accreditation requirements, and reimbursement policies.

AH deans stated, as a collective group, that they could address the shortage of healthcare workers resulting from AH program closures. According to Elwood (2009), more than 200 AH professions constitute over two-thirds of the entire U.S. workforce; therefore, AH dean involvement in workplace productivity pressures and staffing shortages is essential. In the complex and rapidly changing healthcare environment, AH dean leadership is well positioned to command that new graduates of AH programs be prepared to function at a high level upon entering the workforce (Hooker, 2010; Strohschein, et al., 2002).

Recognizing specific opportunities that collective deans' impact regarding healthcare workforce shortages and program closures may ensure that AH programs deliver high quality clinical education now and in the future.

Opportunities with Clinical Placement Location

Monitoring clinical placement locations to ensure that a safe learning environment and curricular needs are met was an opportunity where individual deans could impact. Research by Dunfee (2008) reported the benefits of safe and effective clinical practice to students and the workforce. As the use of alternative clinical placement sites expands, inspection of out-of-region clinical placement sites is necessary to ensure that these locations meet credentialing requirements, institutional academic and clinical standards, and employer standards (Performance Design Group, 2010). There is growing number of AH students who can effectively demonstrate the skills and competencies necessary for graduation, even with their clinical experiences occurring in a widening variety of placements sites. As long as these clinical outcome measures can be guaranteed, health professions education institutions and accreditation may allow more flexibility (Collier, 2012).

The AH deans marked, individually and collectively, that they have an opportunity to maintain established clinical sites and managing competition. While the emergence of large healthcare systems has resulted in clinical site competition between universities (Bender, 2012; Health Professions Network, 2010), the AH deans reported a shared opportunity to maintain established clinical placement sites. However, AH deans representing "for-profit" institutions that have the ability to pay for clinical education placements may have an advantage (Health Professions Network, 2010). Internal competition for clinical sites within a health professions education institution exists between the students of all types, including the AH disciplines and medical school residences and fellowships (Bender, 2012). Smith (2012) provided tactical ideas to address clinical site competition by using financial and contractual arrangements with the large health networks to guarantee clinical placement sites in order to retain clinical education rotations. She also discussed offering tangible and/or intangible benefits, directed primarily towards the clinical faculty, in an effort to secure collaborative clinical partnerships (Smith, 2012). As reported by the Joint Report of the 2013 Multi-Discipline Clerkship/Clinical Training Site Survey (2013), tangible and intangible benefits have included: economic incentives, in-service and continuing education opportunities, adjunct faculty appointment for the clinical preceptor, and recognition of the importance that clinical education provides to the clinical site. According to Dehn (2011), Orcutt (2007), and Smith (2012), clinical placement site capacity and shortage issues are a real concern, and the shared attention of the deans is necessary to ensure that AH students receive solid, hands-on, patient-based experiences.

The AH deans stated that supporting a collaborative culture that provides an adequate number of clinical education placement sites and available funding was an opportunity where individual deans could impact. Healthcare research by Goodwin Simon Strategic Research (2010) reported that AH leadership might not be able to meet student demand due too few clinical partnerships with healthcare providers and clinical placement sites for training and internships. The expansion of clinical education placement locations to include alternative sites was an opportunity where individual deans could impact. The healthcare literature supports the use of alternative clinical sites including: community settings, alternative practice settings, campus labs and hospitals (Gubrud-Howe & Schoessler, 2001; Mak & Miflin, 2012; Weidner & Henning, 2004). Increasing the number and diversity of clinical sites to facilitate disease prevention and health promotion was a shared opportunity for the AH deans. The literature provides several examples where the rural and underserved community settings offer student clinical experiences (Australian Capital Territory Health, 2007; Brockwell, et al., 2009; Lowe, 2007; Mak & Miflin, 2012). Research by Rodger et al. (2008) showed hands-on educational experiences in locations ranging from acute care to community settings within health, education and human service sectors, including public, private and not-for-profit organizations. AH deans have an opportunity to share best practices for securing traditional and alternative clinical placement sites.

Opportunities with Population Health

In this study, the AH deans identified the category of Population Health and its emerging key factors as important to clinical education. The AH deans reported, collectively, that they could impact the increasing demands in healthcare such as: quality and safety, wellness and prevention, and patient satisfaction in student clinical training. Important for the future of healthcare, is agility and adaptability as AH professions improve patient care, wellness, and other healthcare metrics. According to the Institute of Medicine (2012), unified representation of all healthcare professions is necessary in the management of the multifaceted health and wellness needs of patients and the population. Innovative strategies and collaborative efforts in education and practice between organizations, such as the World Health Organization and ASAHP representing AH deans as a collective group, can offer the direction and leadership for future improvements in patient safety, disease prevention, and population health.

The AH deans stated that they have a shared opportunity to offer student clinical training with a diversity of patient populations. The establishment of collaborative clinical education training focused on patient care outcomes, health prevention and wellness, and healthcare over the life span was an opportunity where individual deans could impact. In this study, the collaborative clinical model was comprised of a diversity of patient populations: the aging population, adolescents, children, and other groups. Healthcare in the 21st century has rapidly changed with disease burdens shifting from acute disorders to chronic disease and disability (Kacmarek, et al., 2009; Ridenour & Trautman, 2009; Wieck, 2003). The U.S. Department of Health and Human Services Advisory Committee on Interdisciplinary Community-Based Linkages (ACICBL; 2014) urges community-based healthcare educators to provide interprofessional and population health student education and clinical training experiences. The American Council of Acadamic Physical Therapy (ACAPT) Clinical Education Summit recommendations supported building upon the current clinical model with guiding principles of community-centered services that integrate the core value of social responsibility with the “Triple Aim, culture competence, advocacy, health continuum, and person-centered” care (American Council of Academic Physical Therapy Clinical Education Summit, 2014, p. 12). While the literature supports population health initiatives, it provides little evidence on the role of the AH deans. As research by Carnevale et al. (2010) projects that a 30% increase in healthcare professionals will be needed by 2020 in order to meet the population health demands, the involvement of the AH professions in disease prevention and health promotion will likely be a priority.

Opportunities with Educational Technology

As a collective group, the AH deans reported the opportunity to study the use of educational technology to develop clinical education models that provide relevant clinical education training and offer excellence in healthcare that can be expanded into best practices for future healthcare delivery. ASAHP and the Journal of Allied Health (JAH) provide a mechanism for AH deans to research and communicate educational technology improvements that result in clinical education innovations. For example, the ASAHP Simulation Task Force provided an in-depth analysis of the integration and utilization of simulation and other advanced technologies in AH education (Butina, et al., 2013). Additional research is needed to confirm AH student learning and quality clinical experiences using educational technology.

The AH deans stated that they have a shared opportunity to research and evaluate simulation and emerging educational technologies in healthcare to support and refine clinical curricula and competencies. The AH deans reported that the individual dean was better positioned to align simulation or standardized patient experiences with clinical education experiences in healthcare settings, use distance learning, telehealth and online education to support clinical education. Educational technologies identified in this research and in the healthcare literature included: simulation, simulated patients, alternative mechanisms, EHR and EHR simulation technology, computer education and health informatics, online supervision, telehealth / telemedicine, interactive videos (Skype, FaceTime), distance learning, alternative mechanisms, health informatics, and computer education. The literature provides substantial data on the use of innovation in simulation, standardized patients, and other assisted learning technology to supplement clinical education experiences (Buelow, et al., 2008; Cant & Cooper, 2010; Gaba, 2004; Pechak, 2012b). Telehealth offers the expansion of healthcare coverage as long as the healthcare provider practitioner is licensed in the state where the patient resides or the state has exemption provisions within its licensure laws (Trends, December 2012 - January 2013). As reported by Bidwell (2013), the Commission on the Regulation of Postsecondary Distance Education is developing a national framework that would stipulate reciprocity for institutions providing distance learning across state lines. However, there is little published information on computer education and health informatics, EHR and simulation software, and distance learning in the clinical environment.

The AH deans in this research considered the validation of simulation model outcomes to real world experiences important. Prevalent in the literature is the deliberation over the lack of a conceptual framework and validated measurement tools for educational technology, including simulation and clinical performance evaluation (Harder, 2010; Sanford, 2010). While educational technology is used in clinical education, there is little information on the roles and responsibilities of the individual and/or collective AH deans.

The AH deans identified, both individually and collectively, that they could impact student and faculty training on the use of educational technology to support disease prevention and patient wellness. According to a report from Rutgers, The State University of New Jersey, School of Health Related Professions Task Force (2011), faculty must be adequately prepared in the technical procedures to effectively use educational technology and have a clearly developed learning curriculum with evaluation criteria in the facilitation of student learning and assessment. An integrative review of high-fidelity simulation and safety conducted by Harder (2010) reported that simulation-enhanced clinical experiences may reduce medication errors, but noted that specific evidence translating improvements in clinical practice warrants further investigation.

The AH deans, as a collective body, considered their position to endorse educational technology that decreased the cost of clinical education an opportunity to provide a meaningful impact. As reported by Alessi (1998), purchasing and maintaining the appropriate educational technology for the projected learning environment and suitable level of fidelity can be expensive. Initiation of university-wide collaboratives to fund simulation and technology was an opportunity for the individual AH dean to support the future of clinical education. With the exception of the Mayo School of Health Sciences programs and its health science students cost sharing of EHR and other administrative expenses (Bender, 2012), there is little published information about institutional collaboratives to fund educational technology in AH clinical education.

The AH deans identified a shared opportunity to provide the necessary resources in order to meet the demand for a diversity of clinical education placement sites, distance learning, simulation and telehealth, and interprofessional education initiatives. An opportunity for the individual dean was the use of simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites. Consideration for web-based learning, simulation, and other assisted learning technology may provide solutions to meet the demand for clinical sites and address potential shortages (Romig, et al., 2012).

Opportunities with Clinical Preceptors (faculty and volunteer)

An adequate number of well-trained clinical faculty to support clinical education instruction was an opportunity for the individual deans. AH research by Bender (2012), Oliver (2012), Pagel (2012), and Rodger, et al. (2011) reported the benefits of having an adequate number of qualified and trained faculty to educate students. As the spearhead of AH institutional education, AH deans are primarily responsible for the assurance of adequate personnel and facilities for effective instruction (Austin Community College, 2012; Panola College, 2012). Collectively, the AH deans marked that they could make a difference in the management of the shortage of credentialed (doctorally prepared) clinical preceptors in some AH disciplines. In support of AH program growth and the rising student population, AH deans should consider the potential need for additional clinical preceptors, both faculty and volunteer. In this research and in the literature, providing a sufficient number of qualified and trained clinical educators is a priority for AH dean leadership.

The AH deans stated that their collective support of healthcare regulations offering the acceptance of a diversity of supervising clinical faculty was an opportunity. Clinical faculty are typically expected to earn a doctorate or master's degree in their discipline; possess current certification and/or licensure; have experience in clinical or other professional practice; and receive excellence in both teaching and clinical supervision (University of Iowa College of Liberal Arts & Sciences, n.d.). Institutional and programmatic requirements, coupled with regional and specialty accreditations guidelines, support the expectation that faculty be at or above the level they are teaching (Clement, 2005; Phelps & Gerbasi, 2009). The AH literature is limited in the discussion of health professions education institutions with AH dean leadership proactively employing a diversity of clinical faculty in student training and supervision.

Providing clinical preceptors with training and resources to match the didactic and clinical program needs was an opportunity where individual deans could impact. The individual AH dean has the opportunity to support faculty engagement in developing innovative approaches to clinical education. AH deans are primarily responsible for the provision of high quality education, effective didactic and clinical instruction, and adherence to health science degree program requirements; AH dean priorities for today and the future (Austin Community College, 2012; Panola College, 2012).

Opportunities with Interprofessional Education (IPE)

The AH deans stated that they had a shared opportunity to advance higher education healthcare institutional commitment to IPE. Correia & Wilson (1997) and Daft et al. (1998) discussed the importance of AH dean leadership role in determining effective decisions and appropriate course of action for the health education professions institution. The AH deans reported, individually and collectively, that their leadership and visionary efforts support excellence in learning. The literature supports the visionary leadership of deans and chairs in assessing key factors, building on opportunities while minimizing challenges, to accomplish the mission of providing excellence in health science education (Bamberg & Layman, 2004; Clark & Tugwell, 2004; Hunnicutt, 2008; Layman, et al., 2010).

Institutional leadership that prioritizes IPE was an opportunity where individual deans could impact. Offering teamwork as a component of student clinical education training, including incorporating curriculum competencies so students are clinical prepared with IPE "ready" skills, e.g., management, leadership, team-oriented, and patient-centered, was a specific opportunity that only individual AH deans could impact. With IPE training, the individual AH dean may be better situated to generate student awareness of the professional contributions and value of all healthcare team members (Dubouloz, et al., 2010; Hoffman, et al., 2009; Reeves, et al., 2008). The literature suggests that healthcare students educated in interdisciplinary teamwork may be more likely to collaborate in the professional workplace (Buelow, et al., 2008; Scarvell & Stone, 2010). Research by Hoffman et al. (2009) supported the benefits of IPE in student training. While the role of AH deans in supporting IPE collaborative clinical education models is not specifically mentioned in the healthcare literature, AH deans are charged with the identification and implementation of value-based initiatives to build their schools into optimal learning organizations (Clark & Tugwell, 2004).

In this research, the AH deans reported a shared opportunity to promote an IPE model that increases the quality of student clinical education. The AH deans, individually and collectively, supported an IPE model that provided new evidence-based assessment and intervention strategies. Supported by the Institute of Medicine (2012), the goal of interprofessional education is to create capable and skilled graduates who can effectively participate in collaborative interprofessional practice. The use of a team-based IPE clinical education model across institutional healthcare student training (e.g. AH, medicine, nursing, pharmacy) supports this opportunity (Carpenter, 1995; Dubouloz, et al., 2010; Gonsalves, 2011; Neill, et al., 2012). When IPE clinical models include educational technology, such as simulation (Riesen, et al., 2012) and videoconferencing (Britt, et al., 2012; Chang & Trelease, 1999), students increased their IPE competencies and performance. The Commission on Accreditation of Allied Health Programs (CAAHEP) supports the advantages of IPE in demonstrating improvements in patient outcomes and enhanced safety and quality of care (CAAHEP, 2015). Important to the future of the clinical education model is the AH deans' recognition of the additive value of IPE integration for enhanced student learning and skill development and improved knowledge of the roles and duties of other healthcare professionals.

Prioritizing IPE to promote student recruitment was a shared opportunity for the AH deans, individually and collectively. Research by Hoffman et al. (2009) showed that IPE appeals to the general motivations of students including: improving patient care, advancing their careers, and curiosity about IPE and other healthcare reform initiatives. With the healthcare focus shifting to a collaborative, team-based care model to support patient safety and quality healthcare (Institute of Medicine, 2012), student demonstration of IPE standards and practices align with opportunities for student recruitment and hiring. According to research by Laudicina & Beck (2000) and Pagel (2012), institutional leadership recognizes the value of identifying top performing students, who understand the culture, policies and procedures, and teamwork, as a recruitment pool opportunity. AH Deans may be fiscally motivated to work with their clinical staff and program directors to prioritize student recruitment, especially when institutional hiring costs amount to more than $150,000 in the first year of employment (Pagel, 2012).

The expansion of healthcare reimbursement to include interprofessional practice settings was an opportunity where collective deans could impact. Research by Farnsworth (2013) showed that while AH deans and faculty were interested in IPE, there has been only moderate success in implementing IPE initiatives at their health professions education institutions. The healthcare literature is sparse on the topic of reimbursement for IPE collaboratives. Regardless of reimbursement, government endorsement can be a powerful accelerant in the operationalization of IPE initiatives (Oandasan & Reeves, 2005).

Opportunities with Accreditation

The AH deans reported, as collective group, that they have several opportunities to partner with specialized accreditation to ensure quality clinical education in the future. The AH deans, collectively, could expand accreditation accommodations to impact specific areas of clinical education. For example, flexibility in clinical education hours and skill requirements, simulation and other clinical instruction technology, and collaboration across disciplines, including interprofessional education was an opportunity where collective deans could impact. Research by Romig et al. (2012) documented specialized accreditations' overall support for flexibility with clinical education training and advances in technologies, as long as students are able to demonstrate specified competencies as per the standards in each AH field. However, the incorporation of web-based courses and simulation hours as an added component to clinical education standards and specialized accreditation requirements is likely to be determined by the specified competencies required in each AH discipline (Romig, et al., 2012). According to Baker et al. (2004), AH deans generally support the purpose, process, and effectiveness of accreditation and specialized accreditation for assuring quality in higher education. Research by Davis (1985) showed that AH deans prefer outcome oriented accreditation standards.

The AH deans in this study marked a shared opportunity to gain the support of accreditation agencies to accommodate changes to improve AH clinical education. However, there were no identified opportunities in category of Accreditation where individual deans could impact.

Opportunities with Allied Health Deans

Thirteen clinical education categories and accompanying key factors have been identified as areas for AH deans' management and leadership. Research by Layman et al. (2010) and Hunnicutt (2008) documented the importance of AH deans' guidance and accountability, both individually and collectively, with the key factors impacting higher education and healthcare. As the central leader of health professions education institutions, AH deans are responsible for providing and maintaining quality education and clinical training (Hunnicutt, 2008). The opportunity for AH deans, individually and collectively, to network and collaborate with key stakeholders in the healthcare community was reflected throughout the study. The AH deans, coupled with institutional support, have the opportunity to be instrumental in the creation of collaborative and interprofessional education models that meet needs of institution, faculty and students.

In this research, the AH deans reported that strategic thinking and competitive leadership in clinical education was an opportunity where individual deans could impact. Specific responsibilities of the AH dean involved: institutional support of clinical education, providing the appropriate clinical knowledge, skills and aptitudes for successful student graduation, and committing to interdisciplinary and interprofessional education. Individual dean's leadership can be instrumental in the development of clinical education partnerships with medical center/large practices and other clinical education placements locations. Additional AH dean responsibilities included: the provision of quality education, fostering a scholarly environment, and providing effective leadership for planning, growth, and improvement of the health science programs; priorities for today and the future (Austin Community College, 2012; Panola College, 2012).

The AH deans, individually and collectively, stated they could make a difference in providing relevant and meaningful clinical education experiences that meet student, faculty, health professions education institutions needs in the changing healthcare arena. Working towards common goals in concert with the healthcare community was a shared opportunity that both individual and collective deans' impact.

The AH deans reported, as a collective group, that they have the opportunity to collaborate across disciplines to strengthen AH as professions and to create an AH regulatory voice. The AHP PAC, created in 2014, offers a unified legislative voice supporting the federal interests of all AH professions (Allied Health Professions Political Action Committee, 2015). ASAHP strategic planning and accompanying clinical education initiatives may also offer AH deans opportunities in regulation, reimbursement, and the possibility of a coordinated clinical education system among business, government, and community (ASAHP Strategic Plan, 2013 - 2015). As previously mentioned in the category of

Accreditation, coordination with accreditation agencies to assure quality clinical education was an opportunity where collective deans could impact.

In this research, the AH deans identified shared opportunities for deans, individually and collectively, to influence the future of clinical education. The call to action for AH deans to lead, commit, develop, take charge, collaborate, coordinate, and take responsibility was marked as important to the future of clinical education. While healthcare reform and further changes are inevitable, the AH deans identified priorities to embrace, individually and collectively, where their leadership offers advancement for the future of AH clinical education.

Opportunities with Student Satisfaction

In this research, the AH deans reported that monitoring student feedback to improve satisfaction with AH clinical education experiences was an opportunity where individual deans could impact. Research by Gallagher, et al. (2012), Gordon, et al. (2000), and Rodger, et al. (2011) found that student priorities for a quality clinical experience included: a positive learning climate, an established workload, and structured modeling and learning experiences. The AH deans stated, individually and collectively, that they could increase student interest in an AH degree, e.g., satisfaction with employment opportunities and job security. Research by Romig et al. (2102) identified accreditation and program director monitoring of student feedback post graduation, along with graduation and certification rates by discipline, important metrics in the assessment of student satisfaction. However, a detailed account of the AH deans’ role in monitoring student feedback and support of employment opportunities and job security is not widely established in the healthcare literature.

The AH deans stated that endorsement of a collaborative clinical education model with interprofessional education (IPE) to increase student satisfaction was an opportunity where individual deans could impact. Research in AH disciplines documented the positive results of an IPE learning environment including: shared learning, positive interaction and collaboration, greater productivity, and more satisfied health care professionals (Buelow, et al., 2008; Cox, et al., 1999; Dubouloz, et al., 2010; Rindflesch, et al., 2009).
However, IPE research shows that opportunities may be limited by institutional barriers, protectionist attitudes, separation of health professional curricula by discipline, logistical and geographic issues, and limited communication (Drinka & Clark, 2000; Hall, 2005; Oandasan & Reeves, 2005; Scarvell & Stone, 2010). While there may be obstacles to the inclusion of IPE in the clinical education model, the benefits of increased student satisfaction today make this a noteworthy agenda for the future.

This research identified a link between the categories of Student Satisfaction and Clinical Education Costs where dean leadership, as a collective group, could impact. The AH deans rated supporting collaborative clinical models that increased student satisfaction by decreasing educational costs as an opportunity where collective deans could impact. The AH deans reported that the individual AH dean was best suited to address tuition costs, clinical rotation costs, and educational debt to positively impact student satisfaction. Research by

Bollag (2007) and Rodger, et al. (2011) showed that student satisfaction is closely correlated with the detailed disclosure of their professional curriculum requirements and clinical expectations combined with a comprehensive account of financial obligations. AH clinical rotation fees and administration costs are often paid by the clinical affiliate or added to student charges (Bender, 2012). With rising tuition and decreasing public funding, health professions education institutions and higher education leadership commitment to effectively managing performance, maintaining quality education, and improving cost controls (National Research Council, 2012) will be important objectives to achieve.

Opportunities with Clinical Education Costs

Commitment to efficient and cost-effective best practices where standardization and outcomes measurements support the value of the clinical education experiences was a shared opportunity for the AH deans. Cost containment and budget reductions with the potential to close or consolidate AH programs were considered an individual deans' responsibility and an opportunity for effective control of clinical education priorities. The AH deans stated that the individual dean had the best opportunity to foster a successful a collaborative clinical education model with shared resources (space and teaching areas) and provide sufficient clinical and financial resources. However, research by Chung et al. (1980) and Oliver (2012) presented the difficulties in documenting the economics of costs versus benefits of clinical education.

Providing cost-effective clinical education using partnerships and collaborative efforts between universities, business, and government was a shared opportunity where both individual and collective deans could impact. The creation of higher education and clinical education metrics, such as cost-benefit analysis and return on investment, was a shared focus for AH deans individually and collectively. To date, cost-benefit and cost-effectiveness analyses have had limited success in identifying and capturing the economic details of clinical education return on investment (Chung, et al., 1980; Oliver, 2012). AH dean leadership, individually and collectively, may be well positioned to document the effectiveness of collaborative, cost effective innovations that are amenable to key stakeholders for the future of clinical education.

The AH deans stated that, as a collective group, they could impact two areas of clinical education costs: verification of the financial benefits of collaborative education and planning for future economic pressures in healthcare education. With rising tuition and decreasing public funding, health professions education institutional leadership is striving to attain top performance, maintain quality, and improve cost controls (National Research Council, 2012). Kronenfeld et al. (2007) reported that AH clinical practice continues to move towards the establishment of quality, effective, and efficient evidence-based practice. While dean leadership and strategic initiatives are value-based and collaborative endeavors (Clark & Tugwell, 2004), the roles and responsibilities of the AH dean may be somewhat removed from routine clinical education financial tasks when institutional priorities mandate attention and accountability at higher levels of healthcare education.

Challenges by Clinical Education Category

The *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100) provided the research foundation for the exploration of agreement on the key factors impacting clinical education, including its challenges. Where AH deans rated key factor statements with high agreement on importance, but high agreement on impact for individual dean impact and collective deans’ impact was not reached, these key factors were considered challenges for the future of clinical education. Eleven of 13 (84.6%) key factor categories had challenges; the categories of Allied Health Deans and Faculty Clinical Preceptors were not associated with specific challenges. Table 41 provides the 52 challenges identified in this research by clinical education category.

Table 41

Clinical Education Challenges

Category (*n* = 52)	Importance with Limited Individual or Collective Deans' Impact
Clinical Education Models (*n* = 5)	1. Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability 2. Re-examine the didactic and clinical curricula to ensure that students receive the educational curriculum and clinical experiences necessary for expedient graduation 3. Support a diversity of clinical education models including: "by the book", alternative models, innovative teaching materials and pedagogies, and self-paced learning 4. Support institutional and state government demonstration projects for clinical model development and testing 5. Use clinical practice models that educate AH professionals at the top of their certification and licensure requirements
Regulation (*n* = 18)	1. Assess the impact of federal funding cutbacks and decreased reimbursement on clinical education 2. Manage the unknown impact of the Accountable Care Act (ACA) on healthcare delivery and funding mechanisms 3. Develop exclusive agreements with local clinical sites to minimize the impact of distance education regulations 4. Obtain sufficient state funding of public institutions to support broad based AH health programs 5. Prepare for regulatory changes regarding scope of practice issues 6. Support regulatory reimbursement for AH healthcare services 7. Adopt flexible tactics to address the unknown impact of the ACA on clinical education funding and the greater need for AH professionals 8. Support regulatory reimbursement for AH healthcare services tied to patient outcomes

Category	Importance with Limited Individual or Collective Deans' Impact
Regulation (continued)	9. Support greater independence for AH professionals with direct reimbursement for services performed 10. Identify how the movement to a single federal payor system has the potential to offer more patients access to healthcare and increase the demand for health services which may result in an increase in health professions employment opportunities 11. Support legislation that will enable AH professionals to practice more independently and allow direct access for treatment 12. Effectively manage government funds directed to AH clinical education opportunities 13. Effectively manage changes in healthcare regulation resulting from government collaboration 14. Effectively manage changes in clinical education regulation resulting government collaboration 15. Promote healthcare regulations that reimburse collaborative clinical practices and team-based care 16. Influence institutional authorization of interstate clinical rotations in order to minimize the impact of state regulations 17. Minimize bureaucracy of placement issues in clinical education 18. Promote increasing student access to federal and /or major lending agency educational loans
Health Professions Education Institutions (*n* = 2)	1. Manage the diminishing quantity of student applicant pool 2. Manage the diminishing quality of student applicant pool

Category	Importance with Limited Individual or Collective Deans' Impact
Clinical Placement Location (*n* = 8)	1. Support the use of alternative clinical placement sites to address shortages 2. Increase clinical education at medical home and accountable care settings 3. Provide richer student clinical learning with more diverse patient populations 4. Assess if diminishing profit margins at clinical placements sites increases the site's need to use fees or accept payment for student training 5. Provide institutional financial payments necessary to secure clinical placements sites 6. Increase clinical education at community-based and in home care settings 7. Support the use of alternative, diverse, non traditional clinical placement sites 8. Promote the higher level of clinical preparedness in knowledge, skills and attitudes achieved when clinical education experiences occur in medically underserved areas
Population Health (*n* = 8)	1. Utilize clinical sites with diverse patient populations 2. Emphasize solving health care problems from a global perspective in clinical training 3. Manage the possibility of not having enough workforce to meet the needs of the growing population of healthcare consumers 4. Foster patient access to health data / health literacy to support prevention and wellness 5. Prepare for population demographics that shift clinical education placement locations to home care and medical home settings 6. Prepare for changing population demographics that may shift clinical education to focus on the elderly, uninsured patients with chronic illness, and immigrants 7. Promote student knowledge, skills, and aptitudes in global healthcare 8. Include population health and wellness in clinical training

Category	Importance with Limited Individual or Collective Deans' Impact
Educational Technology (*n* = 1)	1. Endorse healthcare instructional technology that decreases direct patient care costs
Clinical Preceptors (volunteer) (*n* = 1)	1. Manage the potential of volunteer clinical faculty shortages resulting from decreased clinical education resources
Interprofessional Education (IPE) (*n* = 2)	1. Use IPE experiences to supplement the clinical experience 2. Verify that clinicians know their roles and the roles of their colleagues
Accreditation (*n* = 1)	1. Allow for greater institutional discretion in determining the appropriate clinical experiences
Student Satisfaction (*n* = 3)	1. Assist minority or underserved students in obtaining the financial resources to pay for clinical education 2. Provide students with affordable allied health education opportunities 3. Promote collaborative models that increase student satisfaction
Clinical Education Costs (*n* = 3)	1. Provide adequate institutional revenue to support quality clinical education 2. Promote ROI in healthcare education with positive employment opportunities 3. Control collaborative clinical training tuition costs to ensure student affordability

Note. Challenges were defined as Key Factors with High Agreement on Importance but lacking both Individual and Collective Deans' Impact.

Challenges with Clinical Education Models

While the AH deans supported the importance of using diverse clinical education models, when additional requirements were included, e.g., structured models, alternative models, innovative teaching resources and pedagogies, and self-paced learning, the AH deans stated that they had limited impact. Similarly, the AH deans agreed on the importance of linking didactic and clinical curricula with clinical experiences. However, when joint didactic and clinical objectives included professional education at the top of the certification and licensure requirements or expedient student graduation, the deans reported that they had a limited impact. The primary goal of clinical education is to develop students into confident and competent practitioners who can self-direct in practice and provide quality patient care (Anderson, 1998; Burnard, 1995; Cox, 1993). The clinical preceptor or other stakeholders typically responsible for managing the clinical education process may have more impact than the AH dean (Anderson, 1998; Burnard, 1995; Cox, 1993; Hagler & McFarlane, 1992; Higgs, 1992; Higgs, 1993). The challenge is the comparison of the clinical effectiveness across AH disciplines given the number of clinical models (Tanner, 2006). Research by Niederhauser et al. (2012) presented the value of seven student nursing clinical education projects, but noted the challenge of obtaining effectiveness and outcome metrics on communication and collaboration between nursing academics and nursing practice. Clinical education challenges associated with scope of practice, certification and licensure necessitate AH deans governance to ensure that clinical education training and experiences meet the advancements of AH professional standards (Elwood, 2012b). The issues concerning effective and productive clinical models issues will likely be a continued challenge for AH deans in the future.

The AH deans reported that supporting institutional and state government demonstration projects for clinical model development and testing was a challenge. The AH literature supports the use of student-run free clinics (Gonsalves, 2011) and underserved community clinics (Rosenwax, et al., 2010) as suitable clinical education models for the future of AH clinical education. Traditional clinical education models are evolving and alternative, diverse models may include the use a blended learning approach (Brandt, et al., 2010), coaching approach (Ladyshewsky, 2010), interdisciplinary (Buelow, et al., 2008; Scarvell & Stone, 2010), or capitalize on technological advances (Harder, 2010). While healthcare has changed significantly this past decade, the methodology to clinically educate healthcare students has minimally evolved (Tanner, 2006). While clinical education models generally employ a varied, unsystematic approach to student instruction as clinical experiences typically rely on the clinical unit and prevailing patient population (Niederhauser, Schoessler, Gubrud-Howe, Magnussen, & Codier, 2012), the use of a longitudinal integrative clerkship model has demonstrated higher student satisfaction with the learning environment, equal or better content knowledge and clinical skills, and more confidence in caring for patients in a variety of healthcare settings (Hirsh, et al., 2012). Continued innovation is needed in order to enhance the effectiveness and efficiency of clinical education and to better prepare students for today's healthcare environment (Niederhauser, et al., 2012); thus remains the challenge for AH deans in their pursuit of the development of quality clinical education models.

While patient access, quality healthcare, and affordability were important key factors for population health, the AH deans rated their ability to balance future healthcare goals in combination with an effective AH clinical education model as limited. Knettel (2012) documented the increasing pressure for improved quality and reduced costs are compounded by higher expectations of healthcare professionals. In the complex and rapidly evolving healthcare environment, proactive dean leadership is required to ensure workplace productivity, manage staffing shortages, and provide competent healthcare graduates (Clabo, et al., 2012; Hooker, 2010; Strohschein, et al., 2002). Shown in this research and supported by the healthcare literature, AH deans acknowledge the importance of their guidance in effectively balancing a multitude of opportunities and challenges (Layman, et al., 2010), including supporting cost-effective, quality clinical education models (Frazer, 2011; Geiger, 1989).

Challenges with Regulation

The numerous Regulation key factors identified as important were challenges to the AH deans, individually and collectively. The uncertainty of federal policies, such as the Patient Protection and Affordable Care Act (PPACA; 2009) was linked to challenges with funding, reimbursement, and opportunities for the AH professions. The AH deans stated that managing the regulatory impact on healthcare delivery, federal funding cutbacks and decreased reimbursement, and the greater need for AH professionals were challenges. Though the literature shows that a single federal payor system has the potential to offer more patients access to healthcare and increase the demand for health services and employment opportunities (Carnevale, et al., 2010), the AH deans were less optimistic. While the PPACA expansion of health education centers and geriatric education training included AH participation (ASAHP, 2011), the AH deans indicated that it will be problematic to change. The AH deans stated that it would be difficult to effectively manage change of healthcare regulation and clinical education regulation resulting government collaboration. Government funds directed to AH clinical education opportunities and increasing student access to federal and /or major lending agency educational loans were considered challenges. While this research supported dean management of regulatory change in clinical education, the AH deans reported that they have limited impact. According to the American Council on Education (2012b) and the National Research Council (2012), federal and state educational funding has been unstable and will continue to decline. The future effect of U.S. healthcare legislation and state regulations on healthcare, the AH professions, and student education is uncertain (Mathews, et al., 2010).

The AH deans identified challenges with regulatory reimbursement of AH services performed, rehabilitation/elderly care, collaborative clinical practices and team-based care, and patient outcomes. According to Gwyer et al. (2003) reimbursement guidelines and requirements for healthcare provider payment have become much stricter. For AH, there is ambiguity surrounding regulatory cuts impacting rehabilitation reimbursement (Frazer, 2011) that may carryover to clinical education availability and funding. With the passage of the Protecting Access to Medicare Act of 2014, federal policy changes with Medicare payment reductions for physicians, physical therapists, and other health care professionals were on hold. With the passage of the Medicare Access and CHIP Reauthorization Act (2015), annual Medicare payments were slightly increased through 2019.

The AH deans reported that they had limited impact on state regulations that concern the funding of AH programs in public universities, institutional authorization of interstate clinical rotations, and the distance education. Over the past two decades, state funding for teaching and research has eroded (American Council on Education, 2012b; National Research Council, 2012). According to O'Neil (2011), the scarcity of state-subsidized funding for AH education will likely continue in the future. State regulation of the standards and costs of online programs are current problems for both for-profit and nonprofit educational institutions seeking to enroll students across the country (Kelderman, 2012). The Commission on the Regulation of Postsecondary Distance Education is working to create national guidelines on state authorization of distance education to ensure quality education and affordability (Bidwell, 2013; Kelderman, 2012). Continued AH deans' involvement in state regulations and impact student access to distance learning and clinical education is warranted (Mathews, et al., 2010).

The AH deans supported scope of practice legislation that would permit AH professionals to practice more independently and allow patients direct access for care. Reported by Elwood (2013b), there is a variation among state-by-state laws with respect to scope of practice standards. Elwood (2012b) revealed that proposed state regulations would restrict some licensed, qualified healthcare professionals from performing the full range of services that they are educated and clinically prepared to deliver. Scope of practice restrictions “limit competition, impair free markets for healthcare services, risk additional cost increases to an already costly health system, and fail to improve patient safety” (Elwood, 2012b, p. 8). In this study, AH scope of practice issues was important to the AH deans and further examination of prospects for AH dean leadership is warranted.

The AH deans indicated that they had limited impact on state regulations associated with the increasing bureaucracy of clinical placement. Mandatory clinical rotation paperwork such as background checks, drug testing, probationary procedures and other required items, are associated with an increasing burden of clinical placement for the health professions education institution, clinical facility, and the clinical faculty (Bender, 2012). According to Bender (2012), educational and administrative costs associated with student education and clinical education rotations will continue to be a primary burden of the student. Kohn et al. (2000) reported that the complexity of placement will remain an important issue in the clinical education arena.

Challenges with Health Professions Education Institutions

The AH deans identified challenges with managing the diminishing quantity and quality of student applicant pool. Research by Drori (2013) documented the global competition in the high education arena over resources, students, and faculty. A report from Goodwin Simon Strategic Research (2010) stated that California-based AH programs were not able to meet student demand due to limited resources, however there was no mention of the quality of the student applicants. While there is data on AH student education, references that mentioned AH dean appraisal of student applicant qualifications were not found.

Challenges with Clinical Placement Location

The use of alternative, diverse, non-traditional clinical placement locations to provide students with a richer clinical learning, exposure to diverse patient population, and address clinical sites shortages, was a challenge identified by the participating AH deans. Alternative clinical sites mentioned in this research included: accountable care and medical home settings, community-based and in home care settings, and medically underserved areas. There are a variety of suitable AH clinical placement site options mentioned in the health care literature such as: private practitioners offices (Doubt, et al., 2004; Kacmarek, et al., 2009), patient homes (Kacmarek, et al., 2009), nursing homes (Kantor, 2012), student-run free clinics (Gonsalves, 2011), and underserved community clinics (Rosenwax, et al., 2010; Sheepway, et al., 2011). More clinical placements are occurring in alternative clinical settings: tertiary hospital settings, regional and rural hospitals and community settings (Mak & Miflin, 2012; Roberts, et al., 2009). While alternative and diverse sites provide clinical education options, out-of-region clinical placement sites may not meet the credentialing and employer requirements and standards (Performance Design Group, 2010). Research by Dehn (2011) and Orcutt (2007) found that clinical placement site capacity and shortage issues are a growing concern in providing the rising number of AH students with quality clinical experiences.

In this research, the AH deans identified several financial challenges associated with clinical placement sites including: institutional payments to secure the clinical placement location and requiring fees or payments for student training in order to meet profit margins. One of the greatest concerns to health professions education institutions is the availability of clinical sites; AH programs need a sufficient number of appropriate clinical sites for its students (Collier, 2012). Rodger et al. (2008) reported that reduced funding, healthcare system mergers, new models of patient clinical care, managed care and reimbursement, and many other factors have challenged AH clinical placements. Bender (2012) reported that the Mayo School of Health Sciences charges the students for a portion of the administration and clinical expenses. As stated by Collier (2012), health science educational programs and clinical sites have limited resources; thus their need for each other is reciprocal, and cooperative initiatives that results in clinical productivity and quality training is necessary for today, and the future (Collier, 2012).

Challenges with Population Health

Evaluation of the Round 1 responses identified Population Health as a category important to clinical education. While the AH deans recognized the importance of population health, their challenges were: student training with an emphasis on population health and wellness, the use of alternative clinical placement location (home care and medical home settings), the limited healthcare workforce to meet the population needs, and patient access to healthcare information to support prevention and wellness. Research shows the educational benefits of student clinical training with an aging patient population with chronic disease and disability (Kacmarek, et al., 2009; Ridenour & Trautman, 2009; Wieck, 2003) and in a rural and underserved community settings (Australian Capital Territory Health, 2007; Brockwell, et al., 2009; Lowe, 2007; Mak & Miflin, 2012). Carnevale et al. (2010) reported that the demand for care of the aging and underserved populations supports the positive job growth and employment outlook for all healthcare occupations. Given the limited references supporting population health inclusion in didactic and clinical education, further research is warranted.

Challenges with Educational Technology

The AH deans supported healthcare instructional technology that decreased the cost of direct patient care. According to the results from an integrative review of high-fidelity simulation and safety by Harder (2010), simulation-enhanced clinical experiences may reduce medication errors, but any evidence about perceived improvement in safer communication has not be translated into practice. As reported by Triola et al. (2012), the future offers technological innovations with significant learning potential. How AH deans integrate these advances into AH education and patient care is yet to be determined.

Challenges with Clinical Preceptors (faculty and volunteer)

The AH deans stated that the management of volunteer clinical faculty shortages resulting from decreased clinical education resources was a challenge. Clabo et al. (2012) discussed the impact that overall clinical faculty shortages have on the healthcare arena, but research specific to volunteer clinical faculty is limited. As volunteer clinical faculty do not typically receive financial compensation for student training, efforts to maintain clinical preceptor retention may include incentives and perks (Smith, 2012). According to Dunfee (2008), some clinical preceptors work part-time or job share to improve the balance between personal and work obligations. Additional research on the challenges AH deans encounter with limited resources and the need to safeguard volunteer clinical preceptor employment and retention is warranted.

Challenges with Interprofessional Education (IPE)

The AH deans supported IPE initiatives to supplement clinical experiences, but they reported that they had minimal impact to accomplish this task. Research by Giodano et al. (2012) and Wellmon et al. (2012) supported the use of IPE in conjunction with clinical experiences to provide students with management, leadership, team-oriented, and patient-centered training. Research by Hall (2005) and Scarvell & Stone (2010) documented that a well-defined IPE structure created an collaborative healthcare environment with established healthcare team responsibilities and contributed to a healthier society (Hall, 2005; Scarvell & Stone, 2010). However, IPE research on AH deans' involvement in IPE practices and its use in clinical education is limited.

In this research, the AH deans reported that they had limited ability to verify that clinicians know their roles and the roles of their colleagues (i.e., cross-training). According to Arndt et al. (2009), IPE reduced role ambiguity with an enhanced understanding of the roles and responsibilities of the healthcare team. AH and other healthcare students reported an increased understanding of the knowledge and skills, roles and duties of the other professions as a valued benefit with IPE programs (Carpenter, 1995; Dubouloz, et al., 2010; Gonsalves, 2011; Neill, et al., 2012). AH dean leadership and visionary efforts (Hunnicutt, 2008) may make a difference using IPE and other clinical education models by using a diversity of qualified clinical faculty. However, AH dean attention may be focused on value-based and collaborative initiatives (Clark & Tugwell, 2004) with a higher level of concentration on the collective value of IPE utilization in patient-centered care and cost-effective healthcare delivery (Institute of Medicine, 2012; Knettel, 2012; World Health Organization, 2010).

Challenges with Accreditation

The AH deans stated that greater health professions education institutional discretion is needed in the determination of appropriate clinical experiences, but this was a challenge for AH deans, both individually and collectively. Three areas where specialized accreditation may consider greater institutional discretion in clinical experiences involved clinical placement locations, IPE, and assisted learning technologies. According to Collier (2012), if the diversity of clinical education sites produce AH students who can effectively demonstrate the skills and competencies required for graduation and certification, health professions education institutions and accreditation may permit greater flexibility. With respect to IPE, research supports the benefits of interprofessional education in student clinical training with increased knowledge and skills and greater understanding of the roles and duties of the other healthcare professions (Carpenter, 1995; Dubouloz, et al., 2010; Gonsalves, 2011; Neill, et al., 2012). The Commission on Accreditation of Allied Health Programs (CAAHEP) initiatives communicated the advantages of IPE including demonstrated improvements in patient outcomes and enhanced safety and quality of care (CAAHEP, 2015). According to Holmboe (2011) and Issenberg (2005) validated simulation-based technology that links learning to real-life situations and demonstrates quality healthcare with patient safety will be endorsed by accreditation and incorporated into its guidelines in the near future. In AH, accreditation standards vary by discipline and in the degree of technology acceptable in clinical education (Romig, et al., 2012). The unknown challenge for the future of clinical education is whether accreditation standards will permit greater institutional flexibility in clinical education.

Challenges with Student Satisfaction

In this research, the AH deans supported the use of collaborative models that increase student satisfaction, but they indicated that their impact was limited. Based upon student priorities, a quality collaborative clinical experience included a welcoming learning environment, an established workload, and structured learning experiences (Gallagher, et al., 2012; Gordon, et al., 2000; Rodger, et al., 2011). Last and Fulbrook (2003) reported student dissatisfaction and stress resulting from communication and operational issues between the institution and clinical sites, feelings of not being valued, and unmet expectations. The lack of support from the clinical staff, fear of failing, hurtful criticism and lack of feedback may all contribute to student stressors in the clinical environment (Acharya, et al., 2012; Lofmark & Wikblad, 2001; Tully, 2004). Broers et al. (2009) reported that the IPE clinical collaboration environment has been associated with increased student satisfaction from working with different professionals towards a common goal of quality patient care. IPE collaborative efforts and student satisfaction may be impacted when institutional barriers, protectionist attitudes, separation of health professional curricula by discipline, logistical and geographic issues, and limited communication occur (Drinka & Clark, 2000; Hall, 2005; Oandasan & Reeves, 2005; Scarvell & Stone, 2010). Given the sparse healthcare literature, further research on student satisfaction in the clinical environment is justified (Acharya, et al., 2012). AH deans should prioritize the collection of student and graduate feedback on clinical experiences and educational preparedness; this information may prove valuable in the assessment of student satisfaction and educational performance (Richter & Ruebling, 2003).

While providing students with affordable AH education opportunities was important, the AH deans marked their limited ability to influence this financial challenge. Providing minority or underserved students assistance in obtaining the financial resources to pay for clinical education was viewed as problematic by participating deans. Research by Rodger et al. (2011) showed that student satisfaction is closely correlated with a detailed orientation and disclosure of educational expectations coupled with a comprehensive account of financial obligations. Bender (2012) reported that AH clinical rotation fees and administration costs are often added to student charges. Smith (2012) discussed institutional support of subsidized housing for clinical rotation sites, providing student insurance and covering utilities and other expenses to decrease the financial burden of students. The healthcare literature did not specifically refer to financial challenges in clinical education faced by minority or underserved students. Today and in the future, clinical education costs are expected to impact AH student satisfaction and educational affordability (J. O'Sullivan Maillet, personal communication, July 20, 2012).

Challenges with Clinical Education Costs

The AH deans in this study identified three clinical education challenges associated with clinical education costs: institutional revenue to support quality clinical education, controlling tuition costs to ensure student affordability, and a favorable return on investment (ROI) with a healthcare education resulting in positive employment opportunities. While quality clinical education, reducing tuition costs, and graduate employment were important clinical education topics, the AH deans reported that they could not provide considerable impact. There is limited data from the historical past (1980s and 1990s) with great variety in clinical education cost analysis methodology. In recent times, the National Research Council (2012) urged higher education accountability in defining performance and productivity, providing educational quality and accessibility, while reducing cost. Elwood (2009) reported that the AH professions and their educational agenda are in a state of flux due to cost containment, public accountability, legislative changes, and interprofessional initiatives. Chung et al. (1980) and Oliver (2012) noted the limited success of cost-benefit and cost-effectiveness analyses in identifying and capturing the economics of clinical education. Improving health professions education institution and departmental cost effectiveness may require AH deans to conduct further examination of cost and productivity. Cost analysis may include: the cost of supervision, staff time devoted to student education, and student use of equipment and supplies. Clinical education productivity can be explored using measures of the capacity to provide patient care, departmental course sharing and clinical contributions, and other methodologies. AH deans also have the challenge of assuring student educational affordability, transparency of costs, and meeting student demands for quality education (Rodger, et al., 2011). Tanner (2012) reported the cost of clinical education coupled with the insufficient supply of suitable clinical placements sites is approaching a crisis level. Bender (2012) reported that more of the educational and clinical costs are being passed on to the student in the form of rising tuition and clinical fees. In an effort to support the AH professions, the Patient Protection and Affordable Care Act (2009) funded loan forgiveness, recruitment/retention of students, and mid-life career training programs (ASAHP, 2011). Mitchell & Ensign (2012) discussed capitated payments on federal student loans at 10% of the “discretionary” income and loan forgiveness on any outstanding debt past 20 years. On a bright note, the next decade appears promising for positive job growth and employment opportunities for all healthcare occupations (Carnevale, et al., 2010). Research by Carnevale et al. (2010) forecasted a 30% increase in healthcare professionals would be needed by 2020 in order to meet the population health demands. These challenges will likely persist for AH deans in their pursuit of quality and cost effective clinical education models.

Subproblem 5

Where is there agreement on the future of AH clinical education?

The hypotheses that the AH deans will agree on the future of AH clinical education was guided by the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100), four futuristic (2018-2023) case scenarios, and supported by current healthcare literature.

Analysis of Futuristic Case Scenarios

Awasthi et al. (2005) and the Institute for Alternative Futures (2012b) documented the use of case scenario planning to describe the uncertainties of the known present, coupled with predicted drivers of the impending future, to inspire a creative exchange of ideas about reasonable, but diverse, futures. The AH deans were provided four futuristic (2018-2023) case scenarios that described possible alternatives for AH clinical education. A general description of the four futuristic case scenarios is provided below:

Scenario 1. Conventional Conditions presented the known and expected trend of increasing pressure and demands on the healthcare system, in part due to government regulations. Expansion of clinical education placement sites has the potential to increase student expenses.

Scenario 2. Tough Times presented a gloomy economic picture and a burdened healthcare system weighted down with decreasing patient care. The quality and availability of clinical education was threatened.

Scenario 3. Inspirational Opportunities offered an inspiring future with an efficient healthcare system coupled with excellence in patient care and health innovation. Qualified clinical preceptors and assisted learning technologies improved clinical education and student learning.

Scenario 4. Culture of Collaboration offered a positive shift in teamwork and accountability that invigorates the progress towards a healthcare culture of health and wellness. Clinical education is an integral part of patient care as students and practitioners practice at the top of their scope of practice.

The futuristic case scenarios were designed to broaden the AH deans consideration of the key factors impacting the future of clinical education that were identified in this research. Factors in thirteen clinical education categories emerged as important to each future of clinical education: Clinical Education Models, Regulation, Health Professions Education Institutions, Clinical Placement Location, Population Health, Technology, Clinical Preceptors, Interprofessional Education (IPE), Accreditation, Allied Health Deans, Student Satisfaction, Clinical Education Costs, and Faculty Clinical Preceptors. There was a noted shift in the clinical education categories based upon the AH deans responses to the global conditions and the key factors in the scenarios. Based on this research, Population Health was added as a clinical education category, “Educational” was added to the title of Technology, and the categories of Clinical Preceptors and Faculty Clinical Preceptors were combined.

"Most & Least Preferred” and "Most & Least Realistic" Case Scenarios

A review of the Round 3 "Most & Least Preferred" and "Most & Least Realistic" Clinical Education Case Scenario ratings (Table 34, p. 322) provided insight into the AH deans’ assessment of varying futuristic healthcare environments and the impact on clinical education.

In the Round 3 “Most & Least Preferred” scenario ratings, 67.6% (25 of 37) of the AH deans selected “Culture of Collaboration” as the “Most Preferred” scenario and the remaining 32.4% (12 of 37) selected “Inspirational Opportunities”. In the selection of the “Most Preferred” scenario, the deans chose a stable healthcare environment prioritizing teamwork and accountability, i.e., a culture of collaboration. In this study, the AH deans identified with a healthcare culture prioritizing health and wellness coupled with several prospects for stimulating a successful clinical education environment. Of interest are several Culture of Collaboration Population Health statements which demonstrated this positive synergy: “establish collaborative clinical education training facilities focusing on patient care outcomes, health prevention and wellness” and “include population health and wellness in clinical training” (Table 21, p. 266). One AH dean commented on how this collaborative culture was beneficial in the creation of “facility partnerships” to secure clinical placement locations for student clinical experiences. With healthcare priorities focused on patient-centered care and cost-effective care delivery using interprofessional education (D'Amour & Oandasan, 2005; Knettel, 2012; Schmitt, 2001), the AH deans’ selection of the Culture of Collaboration as the “Most Preferred” scenario is supported by the current healthcare literature.

The Inspirational Opportunities scenario, rated the “Most Preferred” scenario by 32.4% (12 of 37) of the AH deans, described ‘utopia’ in healthcare and clinical education setting. In Rounds 2 and 3, the Inspirational Opportunities scenario resulted in the generation of the largest number of key factor statements reaching high agreement of importance in the categories of Regulation, Technology, Clinical Education Models, and Health Professions Education Institutions. However, many AH deans (46%, *n* = 17) considered the Inspirational Opportunities scenario to be too unrealistic. The rating of Inspirational Opportunities as the “Least Realistic” scenario supported this conclusion. Thirty-one of 37 (83.8%) of the AH deans selected “Tough Times” as the “Least Preferred” scenario and the remaining six (16.2%) selected “Conventional Conditions”. Both the Tough Times and Conventional Conditions scenarios presented varying degrees of demands on the healthcare system, including burdening healthcare regulations (Elwood, 2012b, 2013a; Mathews, et al., 2010; Rodger, et al., 2008) and clinical education competition among key stakeholders (Bender, 2012; Health Professions Network, 2010; Smith, 2012).

The “Most & Least Realistic” scenario ratings showed a greater diversity of deans’ responses. Twenty of 37 (54.1%) of the AH deans rated “Conventional Conditions” as the “Most Realistic” scenario. The Conventional Conditions scenario presented the known and expected trends in healthcare; therefore, it is logical that the AH deans prefer what they are currently accountable and responsible for specific to AH clinical education. In Round 2, the AH deans made several statements about the future state of AH clinical education. For Regulation and Health Professions Education Institutions issues, they stated: “paying for clinical rotations will put institutions that can’t afford to pay at a disadvantage”, the “burden for clinical education should rest wholly with institutions of higher education”, the “proliferation of programs without increasing the number of clinical sites is a critical issue”, and “deal with increasing competition.” These responses are consistent with today’s healthcare literature (Collier, 2012; Drori, 2013; Helwick, 2010). Offering encouragement towards achieving a positive future of clinical education, one dean stated, “We need to more creative in solving problems and not look at the glass as being half empty.” Seventeen of 37 (46.0%) of the AH deans rated “Inspirational Opportunities” as the “Least Realistic” scenario. While this inspiring future offered an efficient healthcare system, an abundance of health innovation resources, and quality patient care outcomes, as noted by one dean, the Inspirational Opportunities scenario appeared to be “too good to be true.”

Clinical Education Conceptual Models

In this study, AH deans identified broad categories as important to the future of AH clinical education. For each category, key factors identified areas of opportunity for deans’ impact, individually and/or collectively. Some key factors were included in one clinical education category, but the Principle Investigator (PI) saw a better fit with another category; these opportunities were redistributed into the more relevant category. The AH deans' impact ratings varied by category: Accreditation and Clinical Education Costs were not categories that only individual deans' impact; Clinical Placement Location was not a category that only collective deans' impact; and Regulation and Clinical Education Costs were not categories where both individual and collective deans' impact. Based upon these variations of deans' impact, the original *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100) was revised and three separate AH models were created:

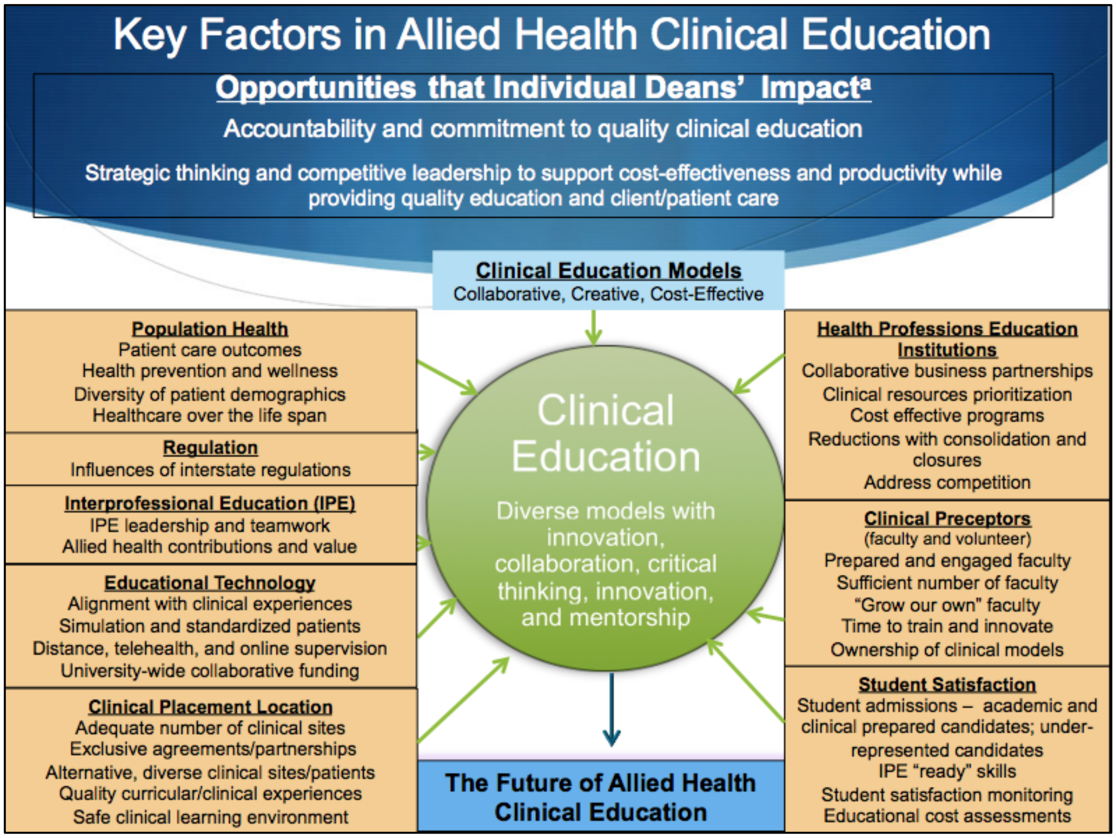
1.) Individual Dean Impact,
2.) Collective Deans Impact, and
3.) Shared Deans Impact

Intended for AH dean reflection and future planning, the three models illustrate the key factors by clinical education category, including the category of AH deans, where deans have a potential opportunity to provide impact. The clinical education categories provide AH deans actionable key factors to consider for the future of clinical education. Slight modifications in the three updated *Key Factors Impacting Clinical Education* conceptual models included a subtitle to distinguish the three AH dean groups (individual dean, collective deans, or both individual and collective deans), and, beneath the impact subtitle, a description of the charge for the AH dean. Other updates included: the addition of the clinical education category Population Health, revising the Technology title to include

“Educational”, and combining the categories of Clinical Preceptors and Faculty Clinical Preceptors into one group. Inherent in all three clinical education models is the assumption that there are costs associated with all of the clinical education categories with key factors impacting the future of AH clinical education.

Opportunities that Individual Deans’ Impact Conceptual Model

Based upon the ratings of agreement of importance and impact, the original clinical education conceptual model evolved into a separate model to reflect opportunities where AH deans individually were considered the best situated to impact the future of clinical education. Intended for AH dean reflection and future planning for the individual dean, Figure 8 shows the *Key Factors In Allied Health Clinical Education: Opportunities that Individual Deans’ Impact* conceptual model for key factors that attained high agreement of importance with individual dean impact. The model identified 10 clinical education categories, including the category of AH Deans, where deans reported they could make a difference individually: Clinical Education Models, Clinical Placement Location, Clinical Preceptors (faculty and volunteer), Educational Technology, Health Professions Education Institutions, Interprofessional Education (IPE), Population Health, Regulation, and Student Satisfaction. When opportunities were redistributed into the more relevant category in order to accurately depict the AH deans’ responses in the Individual Deans’ Impact conceptual model development, a key factor from Clinical Education Costs was considered as an opportunity for the category of Clinical Placement Location. Thus, the categories of Accreditation and Clinical Education Costs were not identified with opportunities where individual deans could impact. While AH deans are responsible for the unique challenges of clinical education and professional accreditation (Baker, et al., 2004), the AH deans stated that, individually, they have less assurance in the impact of their decision making processes with external information regarding specialized accreditation policies and procedures and internal control of clinical education costs (Daft, et al., 1988).



Key Factors in Allied Health Clinical Education

Opportunities that Individual Deans' Impact[a]

Accountability and commitment to quality clinical education

Strategic thinking and competitive leadership to support cost-effectiveness and productivity while providing quality education and client/patient care

Clinical Education Models
Collaborative, Creative, Cost-Effective

Population Health
Patient care outcomes
Health prevention and wellness
Diversity of patient demographics
Healthcare over the life span

Regulation
Influences of interstate regulations

Interprofessional Education (IPE)
IPE leadership and teamwork
Allied health contributions and value

Educational Technology
Alignment with clinical experiences
Simulation and standardized patients
Distance, telehealth, and online supervision
University-wide collaborative funding

Clinical Placement Location
Adequate number of clinical sites
Exclusive agreements/partnerships
Alternative, diverse clinical sites/patients
Quality curricular/clinical experiences
Safe clinical learning environment

Clinical Education

Diverse models with innovation, collaboration, critical thinking, innovation, and mentorship

The Future of Allied Health Clinical Education

Health Professions Education Institutions
Collaborative business partnerships
Clinical resources prioritization
Cost effective programs
Reductions with consolidation and closures
Address competition

Clinical Preceptors
(faculty and volunteer)
Prepared and engaged faculty
Sufficient number of faculty
"Grow our own" faculty
Time to train and innovate
Ownership of clinical models

Student Satisfaction
Student admissions – academic and clinical prepared candidates; under-represented candidates
IPE "ready" skills
Student satisfaction monitoring
Educational cost assessments

Figure 8. Key Factors in Allied Health Clinical Education: Opportunities that Individual Deans' Impact.

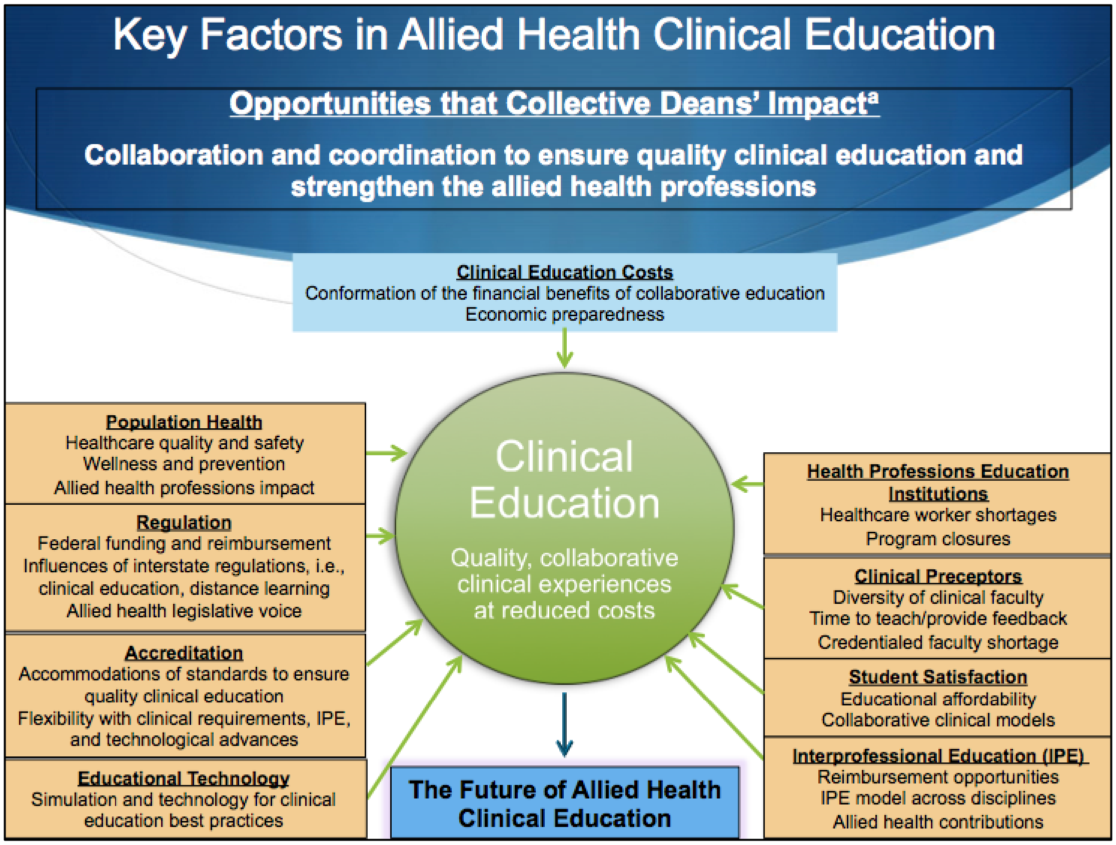
Clinical Education Opportunities[a] were key factors achieving high agreement on importance with high agreement of individual deans' impact.

Inherent in the model is the assumption that there are costs associated with all of the key factors impacting the future of AH clinical education.

Accreditation and Clinical Education Costs did not have opportunities that deans' individually impact.

Opportunities that Collective Deans' Impact Conceptual Model

Based upon the AH deans' ratings of agreement of importance and impact, the original clinical education conceptual model evolved into a separate model to reflect opportunities where AH deans collectively were identified to better situated to impact the future of clinical education. Intended for AH dean reflection and future planning for deans as a collective group, Figure 9 shows the updated *Key Factors Impacting Allied Health Clinical Education: Opportunities that Collective Deans' Impact* conceptual model. The model identified 11 clinical education categories, including the category of AH Deans, where deans reported they could make a difference collectively: Accreditation, Clinical Education Costs, Clinical Education Models, Clinical Preceptors (volunteer), Educational Technology, Health Professions Education Institutions, Interprofessional Education (IPE), Population Health, Regulation, and Student Satisfaction. When opportunities were redistributed into the more relevant category in order to accurately depict the AH deans' responses in the Collective Deans' Impact conceptual model development, a key factor from the category of Regulation was considered an opportunity for the category of Clinical Education Models. The clinical education category of Clinical Placement Location was not identified with an opportunity where AH deans, as a collective group, could impact. While opportunities associated with the category of Clinical Preceptors, Faculty Clinical Preceptors did not identify with specific opportunities. Reported in the healthcare literature and found in this study, the AH deans stated that, as a collective group, they have less assurance in the impact of their decision making processes with the use of internal educational information (Daft, et al., 1988), such as uncertainties with clinical placement locations.



Key Factors in Allied Health Clinical Education

Opportunities that Collective Deans' Impact[a]

Collaboration and coordination to ensure quality clinical education and strengthen the allied health professions

Clinical Education Costs
Conformation of the financial benefits of collaborative education
Economic preparedness

Population Health
Healthcare quality and safety
Wellness and prevention
Allied health professions impact

Regulation
Federal funding and reimbursement
Influences of interstate regulations, i.e., clinical education, distance learning
Allied health legislative voice

Accreditation
Accommodations of standards to ensure quality clinical education
Flexibility with clinical requirements, IPE, and technological advances

Educational Technology
Simulation and technology for clinical education best practices

Clinical Education

Quality, collaborative clinical experiences at reduced costs

Health Professions Education Institutions
Healthcare worker shortages
Program closures

Clinical Preceptors
Diversity of clinical faculty
Time to teach/provide feedback
Credentialed faculty shortage

Student Satisfaction
Educational affordability
Collaborative clinical models

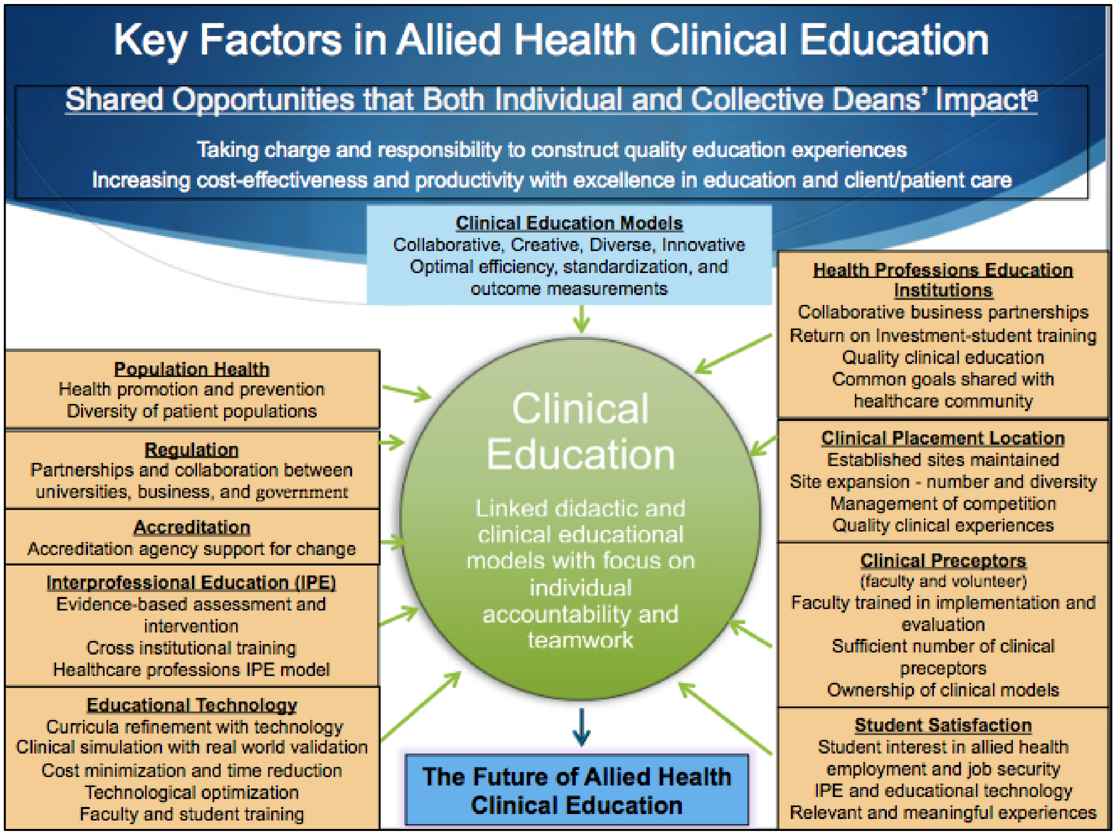
Interprofessional Education (IPE)
Reimbursement opportunities
IPE model across disciplines
Allied health contributions

The Future of Allied Health Clinical Education

Figure 9. Key Factors in Allied Health Clinical Education: Opportunities that Collective Deans' Impact.
Clinical Education Opportunities[a] were key factors achieving high agreement on importance with high agreement of collective deans' impact.
Inherent in the model is the assumption that there are costs associated with all of the key factors impacting the future of AH clinical education.
Clinical Placement Location and Faculty Clinical Preceptors did not have opportunities that deans' collectively impact.

Shared Opportunities that Both Individual and Collective Deans' Impact Conceptual Model

Intended for AH dean reflection and future planning for both individual and collective deans, Figure 10 shows the updated *Key Factors In Allied Health Clinical Education: Shared Opportunities that Both Individual and Collective Deans' Impact* model. Twelve clinical education categories, including the category of AH Deans, identified with shared opportunities for AH deans, individually and collectively, to impact: Accreditation, Clinical Education Models, Clinical Placement Location, Clinical Preceptors (faculty and volunteer), Educational Technology, Health Professions Education Institutions, Interprofessional Education (IPE), Population Health, and Student Satisfaction. The category of Regulation was not identified as a shared opportunity, where both individual and collective deans could impact. When opportunities were redistributed into the more relevant category in order to accurately depict the AH deans' responses in the Shared Deans' Impact conceptual model development, the key factors from Clinical Education Costs were considered as opportunities for the categories of Clinical Education Models and Health Professions Education Institutions. Thus, the category of Clinical Education Costs was not identified with specific shared opportunities. Reported in the healthcare literature and found in this study, AH deans have less assurance in the impact of their decision making processes with the use of external information (Daft, et al., 1988), such as with regulatory policy uncertainties and clinical education costs.



Key Factors in Allied Health Clinical Education

Shared Opportunities that Both Individual and Collective Deans' Impact[a]

Taking charge and responsibility to construct quality education experiences
Increasing cost-effectiveness and productivity with excellence in education and client/patient care

Clinical Education Models
Collaborative, Creative, Diverse, Innovative
Optimal efficiency, standardization, and outcome measurements

Population Health
Health promotion and prevention
Diversity of patient populations

Regulation
Partnerships and collaboration between universities, business, and government

Accreditation
Accreditation agency support for change

Interprofessional Education (IPE)
Evidence-based assessment and intervention
Cross institutional training
Healthcare professions IPE model

Educational Technology
Curricula refinement with technology
Clinical simulation with real world validation
Cost minimization and time reduction
Technological optimization
Faculty and student training

Clinical Education
Linked didactic and clinical educational models with focus on individual accountability and teamwork

The Future of Allied Health Clinical Education

Health Professions Education Institutions
Collaborative business partnerships
Return on Investment-student training
Quality clinical education
Common goals shared with healthcare community

Clinical Placement Location
Established sites maintained
Site expansion - number and diversity
Management of competition
Quality clinical experiences

Clinical Preceptors
(faculty and volunteer)
Faculty trained in implementation and evaluation
Sufficient number of clinical preceptors
Ownership of clinical models

Student Satisfaction
Student interest in allied health employment and job security
IPE and educational technology
Relevant and meaningful experiences

Figure 10. Key Factors in Allied Health Clinical Education: Shared Opportunities that Both Individual and Collective Deans' Impact.
Clinical Education Shared Opportunities[a] were key factors achieving high agreement on importance with high agreement of both individual and collective deans' impact.
Inherent in the model is the assumption that there are costs associated with all of the key factors impacting the future of AH clinical education.
Regulation and Clinical Education Costs did not have shared opportunities that deans' impact.

Agreement on the Future of Clinical Education

AH literature supported the identification of AH deans as experts and leaders in higher education, including health science education and clinical education (Bamberg & Layman, 2004; Hunnicutt, 2008; Layman, et al., 2010). AH deans are responsible for processing and acting upon substantial volumes of information from internal and external educational environments (Layman, et al., 2010). Confirmed by the literature and shown in this study, AH deans are interested in and motivated to assess internal and external key factors impacting health professions education, including the opportunities for reshaping the future of AH clinical education (Layman, et al., 2010). The AH clinical education environment is impacted by key factors as illustrated in the Figures 8-10 conceptual models.

Noted by the futuristic case scenario results, the AH deans' responses shifted based upon the global conditions and key factors in the scenario. Across all scenarios, AH deans' aggregate Round 1 responses reported Clinical Education Models and Regulation as top clinical education categories. Across all scenarios, AH deans' aggregate Round 1 responses identified Faculty Clinical Preceptors as a bottom clinical education category; this category was merged with the category of Clinical Preceptors (volunteer) in order to minimize redundancy. The Conventional Conditions scenario, presenting the known and expected trends in healthcare, recorded the highest frequency of responses and was rated in Round 3 as the “Most Realistic” scenario. The Culture of Collaboration, with a stable healthcare environment prioritizing teamwork and accountability, reported Interprofessional Education (IPE) as a top clinical category and was rated in Round 3 as the “Most Preferred” scenario. In the Inspirational Opportunities and Culture of Collaboration scenarios, the clinical category of Population Health and its key factors emerged as important to the future of clinical education.

This study established the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p. 100) and provided a foundation for AH deans’ exploration of agreement on the purposes of clinical education, the key factors impacting clinical education, and the future of AH clinical education. The original clinical education conceptual model evolved into three independent models to reflect variations in deans’ impact: individual, collective, and shared. Reported in the healthcare literature and confirmed in this study, 13 clinical education categories impact the AH environment. The AH deans identified 107 opportunities that they could impact, individually and/or collectively, and 52 challenges that they have limited impact. These 159 key factors indicated where there is agreement for the future (2018-2023) of clinical education.

Chapter VI

SUMMARY AND CONCLUSIONS

The *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100) provided the foundation for this research. This study resulted in agreement among the AH deans on: the definition and goals of clinical education, key opportunities and challenges, and the future (2018-2023) of AH clinical education. Agreement of impact was analyzed in three areas: individual dean, collective deans, and both individual and collective deans. Suggestions for the future impact of these factors on the AH clinical education were provided.

Implications for Allied Health Deans

The Association of Schools of Allied Health Professions (ASAHP) is the primary organization uniting stakeholders on AH strategic planning and creative leadership for: higher education, clinical education, and healthcare priorities (ASAHP Strategic Plan, 2013 - 2015). Stated by Mase (1968, p. 314) and accurate today, "Health care systems are changing rapidly as a result of technological developments, automation, improved communication, and transportation efficiency"; he advised the ASAHP membership to demonstrate leadership in healthcare, education, and with social change. At the ASAHP Spring, 2012 meeting Knettel remarked that, "The trend towards evidence-based and population-based reimbursement will force health systems to focus on social (not just medical) determinants of health”. There is an opportunity for ASAHP to work with other health professions to promote this vision on the healthcare future (Knettel, 2012). Throughout the study, the AH deans reported opportunities to collaborate across disciplines to strengthen the AH as professions, to create an AH regulatory voice, and to network and collaborate with key stakeholders. ASAHP leadership has an opportunity to strengthen its clinical education agenda, identify and implement best practices, and enhance academic excellence. AH deans, collectively, have an opportunity to examine, forecast, and strategize to reduce the potential impact that healthcare workforce shortages and program closures may have on AH programs and education. Even in the changing healthcare arena, the AH deans were committed to providing relevant and meaningful clinical education experiences that meet student, faculty, health professions education institutional needs. AH deans, individually, were charged with managing AH programs, maximizing operational efficiencies, and prioritizing resources; the sharing of best practice might offer innovation that supports the future of clinical education.

Implications for Clinical Education Models

In this study, the AH deans were optimistic in their ability to connect didactics with the AH clinical education models of the future and to support collaborative and innovative models that prioritize individual accountability, teamwork, and interprofessional clinical care. While the AH deans supported novel and diverse clinical education models that enhance student learning and patient-centered care, the AH deans indicated that their ability to impact any one specific requirement in the AH clinical model was limited. As AH clinical education continues to evolve, the continuation of research, writing, and speaking on the topic of AH clinical education and its vital role in the development of AH students into effective, evidence-based practitioners is necessary. The focus of importance remains on excellence in AH student education that leads to graduation and certification and ultimately, quality patient care and optimum health outcomes. Clinical education, now and in the future, is the foundation of the AH curriculum and key component of the educational experience.

The Future of Clinical Education

In the complex and rapidly changing healthcare environment, there is increasing pressure on AH deans to deliver excellence in education with reduced costs compounded by higher expectations of healthcare professionals, workplace productivity pressures, and staffing shortages. As the primary leader in AH education, the AH deans recognized the strategic importance of achieving institutional priorities and providing quality didactic and clinical education while managing regulatory and accreditation requirements (Lowe, 2007). In this study, the opportunities for AH deans to lead, commit, develop, take charge, collaborate, coordinate, and take responsibility was marked as important to the future. Clinical education, now and in the future, requires strength, flexibility, and standardization in order to fully prepare AH students for real world practice. While healthcare reform and further changes are inevitable, AH deans are charged with the identification and implementation of value-based initiatives to build the AH schools into optimal learning organizations, a priority for the future of clinical education.

Strengths and Limitations of the Study

When reviewing this Delphi research, there are important factors to consider:

1. There is minimal literature on AH deans and AH clinical education.
2. The Delphi technique was selected as appropriate for its approach on reaching agreement on AH clinical education and its future.
3. The expert panel, composed of population of AH deans from a variety of professions, titles, and years of experience, offers the breadth and depth of knowledge and opinions on the topic.
4. The contribution of the AH deans' opinions on clinical education provides an established definition and goals of clinical education, identification of the opportunities and challenges impacting clinical education, and agreement on the future of clinical education accompanied by three conceptual model(s) for individual, collective, and shared deans impact.
5. The emphasis of this study originates from the AH deans' knowledge, ideas, and opinions rather than the researcher's data analysis.

Strengths

Recruitment Goal and Response Rates

This 3-round Delphi study utilized a personalized pre-notice recruitment e-mail sent by the Dissertation Chair, personalized survey materials and e-mails, and frequent reminders to recruit and maximize AH dean participation. Recruitment goals were achieved with 54.9% (61 of 111) deans participating in the 3-round Delphi study. With 61 AH deans enrolled, the number of participant comments and achievement of agreement throughout the study provided evidence of achieving an adequate range of opinions. The use of the e-Delphi technique provided AH deans convenience in accessing the survey and permitted AH deans from geographically dispersed locations to participate. The iterative survey process did not lead to a high rate of attrition and response bias is assessed to be minimal. Of the 61 AH deans who enrolled in the study, 95.1% completed at least one round and 47.5% completed all rounds demonstrating a highly committed expert population.

Pilot Testing

In combination with an extensive literature review, rigorous pilot testing of the survey measurement tools, administration, methods and data coding and analysis enhanced the content validity of the study. The use of a pilot test supported the Delphi survey development and provided a reliable technique to evaluate administration, measurement and analytic methodology, and define agreement in the successive rounds. Pilot testing of the pre-established questions supported face and content validity of the actual study. Pilot testing of

Rounds 1 and 2 confirmed that a combination of open-ended and closed-ended questions was the optimal methodology to use in order to ascertain information on the future of clinical education.

Delphi Design

The Delphi technique was appropriate and proved suitable in generating information where little exists specific to AH deans and AH clinical education. Using a three-round Delphi provided the AH deans the opportunity to rate the original and revised definition of clinical education over three rounds, the original and revised goals of clinical education over two rounds, and the key factors for agreement of importance and deans' impact over two rounds. Throughout the three-round Delphi, the AH deans were encouraged to provide responses and contribute opinions. While the 148 of 208 (71.2%) of key factors reached agreement in Round 2, there were 11 of 208 (5.3%) key factors that did not meet agreement of importance in Round 2 that would not have been discovered if Round 3 was not conducted.

Question Format

In Rounds 1 through 3, closed-ended questions permitted the AH deans to rate the original and revised purposes of clinical education. In Round 1, the *Key Factors Impacting Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p.100) and four futuristic (2018-2023) case scenarios guided the open-ended responses and generation of new ideas for the future of clinical education. Bias was kept to a minimum, as every attempt to use the AH deans' feedback verbatim was used to keep the integrity of the responses throughout the 3-round Delphi. Round 1 case scenario responses from the AH deans became the key factors (closed-ended questions) rated on importance and impact in Rounds 2 and 3. The use of closed-ended items in the Rounds 2 and 3 rating of the key factors reduced the time for the completion of the survey and likely improved response rates.

Likert Scales

This study used a five-point Likert scale of agreement, importance and impact. All Likert scales were pilot tested by former AH deans to ensure that the scales and labels were comprehensive and understandable. The Likert scale, with the use of a median score, frequency and range, were used to reflect the convergence of the AH deans’ responses over the Delphi rounds. The odd numbered scale with a midpoint and predetermined cut point (=3) permitted the AH deans who did not have a strong opinion to select a middle option.

Level of Agreement

The Delphi process contributed to the establishment of a definition of agreement and reported the median, range, and frequency for all results. A high level of agreement was defined where 80% of respondents were within one integer of the median; levels of moderate and low agreement were beyond the scope of this study. This study used measures of variance to interpret the movement towards agreement between successive rounds and determine high agreement (Hsu & Sanford, 2007a; Portney & Watkins, 2009b; Schiebe, et al., 1975).

Futuristic Case Scenarios

The content and format of the four futuristic (2018-2023) case scenarios were based upon a recommendation of pivotal case scenario literature, the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100), and input from the pilot test of former AH deans. The ordering of the scenarios was intentional. Having the known, predictable, present day Conventional Conditions scenario positioned first would lend towards dean comfort with the clinical education categories and accompanying key factors and was expected to yield more participant responses (A. H. Hewitt, personal communication, August 15, 2014). The most challenging scenario of Tough Times was purposely placed second, followed by the most optimistic scenario, and the final collaborative scenario.

Limitations

The Principal Investigator (PI) made some determinations based upon the familiarity with the clinical education literature: asking whether the definition of clinical education could also apply directly to AH clinical education, rating key factors for both individual and collective deans impact, assuming clinical education costs as inherent to conceptual model, and adding the clinical education category of Population Health to the three revised conceptual models. The use of the four futuristic (2018-2023) case scenarios may have influenced the AH deans' responses. For example, international clinical education models and global key factors were not identified in the scenarios and in the study.

AH Dean Population

As the expert panel consisted of AH deans or designated voting representatives from the June 2013 Association of School of Allied Health Professions (ASAHP) Membership Directory Institutional Member Listing, the research outcomes represent this specific population of AH deans. The influence of subject bias exists; AH deans with a noted interest in AH clinical education may have been more likely to partake in the study. While this may have strengthened the expert panel, personal and professional opinion may have biased the results if impartiality was not exhibited. In 2012 to 2013, there was some turnover of ASAHP Institutional member deans that continued from 2013 into 2014. While this turnover was not extensive, over the past two to three years the cumulative turnover is important to note and may have contributed to a lower overall response rate over the 3-round Delphi study.

Vision of Healthcare Video

The Futurist Jim Carroll's YouTube video (Carroll, 2009), with his vision of healthcare in the year 2020, was used in the recruitment flyer announcing the Delphi study (previously noted as Appendix CC) and the Delphi Introduction with Participant Consent e-mail (previously noted as Appendix DD) and two reminder e-mails (previously noted as Appendices EE and GG) to stimulate the interest of the AH deans in the research. The inclusion of the video may have influenced the feedback in the Delphi study.

Question Format

The use of closed-ended statements in the Rounds 2 and 3 may have introduced researcher bias into the study. While an exhaustive coding and review of the Round 1 AH deans' responses was conducted to develop the Round 2 and 3 key factors, the use of pre-formatted statements, even though most were verbatim per AH deans' responses, may have limited the idea generation and creativity of the AH deans. The use of the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100) was instrumental in the identification of key factors that were used to explore opportunities and challenges for the future of clinical education, including key factors that may not have 'fit' within the model. Similarly, bias may have occurred when thematically coding open-ended responses, although the PI methodically coded the data and the results were thoroughly reviewed with the dissertation chair.

Futuristic Case Scenarios

The four futuristic case scenarios may have influenced the deans' feedback and comments on the future of clinical education. Of the four scenarios, the Conventional Conditions scenario had the highest number of responses (n = 355), followed by Inspirational Opportunities (n = 224), then Tough Times (n = 222), and finally Culture of Collaboration (n = 188). The length of the survey and the amount of time to review the four scenarios and provide feedback on the key factors impacting clinical education may have resulted in AH dean fatigue, thus impacting the response rates over the 3-round Delphi.

Implications for Future Research

AH dean leadership and management is essential in providing an adequate educational infrastructure that produces knowledgeable and skilled healthcare practitioners that are competent and prepared to provide quality patient care (Elwood, 2009). The study resulted in agreement of AH deans on the purposes of clinical education and identified key factors impacting clinical education. In order to more thoroughly examine the impact of AH deans, individually and collectively, along with the opportunities and challenges for clinical education and its future, the need exists for conducting additional research with AH deans and other stakeholders.

The next steps are to share the research results with key stakeholders. Presentation of the Delphi study is being coordinated with the Association of Schools of Allied Health (ASAHP) and its Board of Directors, the ASAHP Clinical Education Task Force, and the ASAHP membership at the 2015 Fall Conference. In order to convey the research results to a wider audience of AH professions, future publications are planned with the *Journal of Allied Health* and other pertinent literary sources. Topics of interest may include a review of clinical education models, the purposes of clinical education, clinical education conceptual models, discussion of AH deans’ impact: individually, collectively, and shared, and the use of the futuristic case scenarios. Further dissemination of dissertation results will be provided to AH Dean participants and pilot program participants upon request.

Key Factors Impacting Clinical Education

Further study of AH deans, individually and collectively, and their supporting roles and responsibilities in clinical education are warranted. Additional exploration of the 13 clinical education categories with the key factors impacting AH clinical education is necessary. With the limited time and resources available to AH deans, future research should concentrate on clinical education models, regulation, clinical placement location, accreditation, educational technologies, clinical preceptors (faculty and volunteer), student satisfaction, and clinical education costs:

Clinical Education Models

Further research on AH deans' involvement, individual and collectively, in the evolution of innovative and collaborative clinical education models, including the use of educational technology and interprofessional education (IPE) initiatives, is merited. The establishment of clinical education that focused on quality and safety, patient health outcomes, health prevention and wellness, and support healthcare over the life span with a diversity of patient populations is important for the future. Future research using other AH groups such as: clinical faculty, clinical coordinators, and program directors, may offer more specific information on the opportunities and challenges in clinical education.

Regulation

The AH deans reported that ASAHP offers its membership the benefits of a united AH voice in the federal regulatory environment and that the deans, collectively, have the best opportunity to impact federal and state funding sources and reimbursement of AH healthcare services, collaborative care and interprofessional education. As the AH deans, individually, were informed and involved in the legislative processes of their specific state or region, further study of local and regional initiatives may be of interest. As the literature on AH dean involvement in regulatory issues is scant, this is a promising area for future research.

Clinical Placement Location

The use of a widening variety of alternative clinical placement sites is increasing and these locations should be monitored to ensure that students are provided a safe learning environment and that curricular needs are met. The AH deans, in conjunction with other stakeholders, should confirm that these clinical sites meet credentialing requirements, institutional academic and clinical standards, and employer standards.

Educational Technology

While educational technology, including simulation and standardized patients, are important tools to enhance fundamental clinical skills, there is a need for validation of their effectiveness in increasing student knowledge, skills, and aptitudes. While the use of educational technology was reported in the Delphi and is evident in the healthcare literature, further exploration of the AH deans’ roles and responsibilities in advocating the use and types of educational technology is merited.

Clinical Preceptors (faculty and volunteer)

AH dean commitment to the health science clinical faculty is demonstrated by: assuring that a sufficient number of instructional faculty, providing training and adequate resources, and offering the time to train and provide feedback to their students. Future research with AH program directors or clinical preceptors may provide additional viewpoints on the opportunities and challenges impacting clinical preceptors.

Accreditation

AH deans and executive directors of specialized accreditation have been largely overlooked in the published healthcare literature. A collaborative approach between AH deans and specialized accreditation agencies can reinforce consistency in didactic and clinical training while providing flexibility in practical competencies, clinical skills, and professional judgment necessary for quality patient care.

Student Satisfaction

The AH deans in this study reported that they can provide greater transparency of resources and costs in an effort to be more responsive to the academic and financial needs of its students. Further research on AH deans, and their clinical staff, in the evaluation of cultural and socioeconomic considerations impacting student participation in clinical education is warranted.

Clinical Education Costs

Standards of measurement of productivity, staff and departmental efficiency, and the comprehensive effect on patient care require further definition. AH dean leadership can support quality and cost effective AH clinical education models that continue to provide excellence in student learning and clinical training.

Correlation of Importance and AH Deans' Impact

While the Kendall's tau (т) correlation data did not result in statistical significance, the correlation data does provide practical significance with the AH deans' responses and in the identification of key factors impacting clinical education. The resulting associations between individual, collective and shared deans' impact are meaningful and warrant further investigation. While not a replacement for original research or rigorous scientific review, the consensus and dissensus process of the Delphi design is a valuable technique for the prediction of future events. This study used a static conceptual model representing current (2011-2014) clinical education, the *Key Factors Impacting Allied Health Clinical Education* conceptual model (O'Sullivan Maillet & Romig, 2011-2013, p. 100), for encourage the AH deans' identification of key factors for the future of clinical education. In a rapidly changing world of healthcare, focusing on a specific clinical education category and using the three conceptual models of varying deans' impact may be useful in analyzing importance and impact correlations with intervening variables in AH clinical education.

SUMMARY AND CONCLUSIONS

This study used a 3-round Delphi technique to achieve AH dean agreement on the purposes of clinical education, the key opportunities and challenges impacting clinical education, and the future (2018-2023) of clinical education. The *Key Factors Impacting Clinical Education* conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100) described clinical education today (2011-2014) and served as the foundation to guide this Delphi research (O'Sullivan Maillet & Romig, 2011-2013). Sixty-one AH deans expressed opinions about clinical education and its future; data was collected from July 2013 to February 2014. For each Delphi round, the AH deans’ responses were collected, coded and analyzed; items were brought forth for the deans to re-rate until agreement was achieved or the study concluded. Agreement was reached on the purposes of clinical education resulting in a comprehensive definition and goals of clinical education. Based upon the AH deans’ ratings of importance and impact, 13 clinical education categories and 159 key factors were identified as important for the future of clinical education. Agreement was achieved on the opportunities (*n* = 107) and the challenges (*n* = 52) in AH clinical education. Slight modifications to the original conceptual model (p.100) were proposed and separate three models were created for AH deans impact: individual dean, collective deans, and shared deans.

The research was significant because the results: 1) provided timely data regarding AH clinical education; 2) supported the *Key Factors Impacting Clinical*

Education conceptual model (O’Sullivan Maillet & Romig, 2011-2013, p.100); 3) agreement was reached on the purposes of clinical education; 4) agreement was reached on 107 opportunities and 52 challenges impacting clinical education; 5) agreement on the future of AH clinical education; 6) added to the body of knowledge regarding AH deans’ opinions on clinical education; 7) provided background for further research on AH deans and clinical education; and 8) provided additional relevant data for future consideration and contemplation by health professions education institutions and other key stakeholders.

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Appendices

Appendix A

Additional Operational Definitions

Operational Term	Definition
Accreditation	Accreditation “is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards” (Commission on Accreditation of Allied Health Education Programs, 2013).
Case Scenario	A case scenario is defined as “a description of a possible future situation, including the path of development leading to that situation” (Kosow & Gabner, 2008). Scenarios are fundamentally different future states of an organization's environment where possible developments of relevant interdependent factors are considered (Brauers & Weber, 1988).
Clinical Placement Location Sites	Clinical placement location sites may include but are not limited to hospitals, medical centers, outpatient clinics, and nursing homes (Bender, 2012; Health Professions Network, 2010). Clinical education placement sites provide students hands-on educational experiences, typically ranging from acute care to community settings within health, education and human service sectors, including public, private and not-for-profit organizations (Rodger, Webb, Devitt, Gilbert, Wrightson, & McMeeken, 2008). While the total number of required clinical experiences and hours among the allied health professional disciplines varies, some professions require up to a third of the overall training occurs in clinical or field work experiences (Rose & Best, 2005).

Operational Term	Definition
Direct Patient Care	Healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012). Direct patient care allied health professionals include but are not limited to: dental hygienists, diagnostic medical sonographers, dietitians, medical laboratory scientists, occupational therapists, physical therapists, physician assistants, radiographers, respiratory therapists, and speech-language pathologists” (ASAHP, 2015).
Electronic Health Record (EHR)	The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters and other care-related activities over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012). EHR information typically includes patient demographics, chart notes, health issues, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports (Healthcare Information and Management Systems, 2012).
External	External is defined as “of, relating to, or connected with the outside or an outer part” (Merriam-Webster Online Dictionary, 2012a). For the purposes of this research, external exists outside of the allied health college / university or post high school technical setting or allied health dean control.

Operational Term	Definition
Faculty Clinical Preceptor	Faculty Clinical Preceptor is defined as a preceptor paid position at an academic institution who is employed to support student training in clinical education (Huddleston, 1999). Due to the primary focus on student clinical training, faculty clinical supervision may provide better alignment with the tighter supervisory requirements necessary during clinical education (Dunfee, 2008; Gwyer, Odom, & Gandy, 2003; Northern Plains Clinical Education Consortium, 2010). Similar to volunteer clinical faculty, clinical faculty preceptors value the opportunity to give back to their profession with the sharing of knowledge, advice and encouragement when a student needs assistance in mastering a clinical skill (Pagel, 2012).
For-profit Healthcare Educational Institutions	For-profit healthcare educational institutions are private institutions, without a 501(c)(3) designation, typically having the ability to pay for clinical education placement (Health Professions Network, 2010). Relevant to this research is the increasing competition between “for-profit” institutions that have the ability to pay for clinical education placement versus the public institutions that typically do not pay for clinical sites (HPN, 2010).
Health Professions Education Institutions	Health professions education institutions are defined as college, university, and post high school technical schools where undergraduate and graduate education occurs, including allied health clinical education (Bender, 2012; Health Professions Network, 2010). Institutional demographic information collected in this study include: institutional profile, type of sponsoring institution, number of allied health programs, size of yearly budget, and school website.

Operational Term	Definition
Internal	Internal is defined as “of, relating to, or occurring on the inside of an organized structure” (such as a health professions education institution) (Merriam-Webster Online Dictionary, 2012b). For the purposes of this research, internal exists inside the allied health college / university or post high school technical setting and in the control of the allied health dean.
Interprofessional Education	Interprofessional education (IPE) occurs when “students from two or more professions learn about, from and with each other, to enable effective collaboration and improve health outcomes” (World Health Organization, 2010, p. 7).
Likert Scale	This research used a five-point ordinal Likert scale was selected because of its methodological balance between variability of responses and ease of use, clarity, and efficiency (Clibbens, Walters, & Baird, 2012; Dawes, 2007). In the Delphi literature, the use of Likert scale, with a median score to reflect the convergence of opinion over Delphi rounds, is preferred (Hsu & Sanford, 2007). Equally important is to estimate the response frequency (Moseley & Mead, 2001).
Non-profit Healthcare Educational Institutions	Non-profit healthcare institutions are public institutions, with a 501(c)(3) designation, typically having a limited ability to pay for clinical education placement (Health Professions Network, 2010).

Operational Term	Definition
Pilot Test	The use of a pilot test provides a reliable technique to test administration, measurement and analytic methodology and define agreement in the successive rounds (Clibbens, et al., 2012). In this research, pilot test feedback was used to assess the survey tools, administration, methods and data coding and analysis that was used in the actual study titled “The Future of Clinical Education: A Delphi Study of Allied Health Deans”.
Population Response Rate	Population response rates are typically defined as the ratio of the survey responses after data is collected to all in the population who should have responded; population nonresponse rates are typically defined as the ratio of survey nonresponses after data is collected to all in the population who should have responded (United States Census Bureau, 2013).
Reliability	Reliability refers to consistency in measurement or repeatability (Portney & Watkins, 2009a). Using Delphi, reliability can be increased by the “inclusion of a clear decision trail that defends the appropriateness of the method to address the problem selected, choice of expert panel, data collection procedures, identification of justifiable consensus levels and means of dissemination and implementation” (Powell, 2003, p.380).
Simulation	Simulation, defined as a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Operational Term	Definition
Specialized Accreditation	Accreditation in specialized areas of allied health education ensure quality and accountability based on compliance with professional accreditation standards determined by self-evaluation, peer review, and agency recognition (The Association of Specialized and Professional Accreditors, 2011).
Standardized patient (SP)	A standardized patient is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Baerheim & Malterud, 1995). Standardized patients mimic a real patient in order to simulate a set of symptoms or problems and provide a safe and supportive environment conducive for learning in student clinical training (Association of Standardized Patient Educators, 2012).
Telehealth	Telehealth is defined as “the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances” (Mosby's Medical Dictionary, 2009). The term "telehealth” is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012).
Validity	Validity is the “best available approximation to a given proposition, inference, or conclusion” (Trochim & Donnelly, 2008). Validity implies that a measurement is relatively free from error and, in accordance, the test is also reliable (Portney & Watkins, 2009b).

Operational Term	Definition
Volunteer Clinical Preceptor	Volunteer Clinical Preceptor is generally employed full-time in a clinical facility and serves as a part-time volunteer clinical educator (Australian Capital Territory Health, 2007). Clinical preceptors provide students hands-on educational experiences, assess student competencies, skills and problem solving techniques, and deliver feedback with time for reflection to provide quality student education and training (Cole & Wessel, 2008; Hagler & McFarlane, 1992; Murray, Gruppen, Catton, Hays, & Wolliscroft, 2000; Rose & Best, 2005).

Appendix B

Description of Literature Search

Literature Source	Source Type	Date Range
CINAHL	Search Engine	1980 - present
ERIC	Search Engine	1980 - present
Google Scholar	Search Engine	1980 - present
ProQuest Dissertation	Search Engine	1980 - present
Journal of Allied Health	Online journal	2006 - present
Trends	Online Journal	2009 - present
Association of Schools of Allied Health Professions (ASAHP)	ASAHP: The Week in Review (Biweekly E-mail Communications)	2009 - present
Association of Schools of Allied Health Professions (ASAHP)	Meetings Presentations and Posters	2009 - present

Appendix C

Description of Literature Search Terms

Primary Search Term		Secondary Search Term
Clinical Education		Allied Health Medicine Nursing
Clinical Education	With Allied Health Disciplines:	
		Dental Hygiene Dietetics Medical Imaging Occupational Therapy Psychiatric and Rehabilitation Medicine Physical Therapy Physician Assistant Respiratory Therapy Speech-Language Pathology and Audiology

Primary Search Term	Secondary Search Term
Clinical Education	Framework
	Healthcare Reform
	Reform
	Benefits
	Challenges
	Issues
Clinical Education Measurements	Efficiency
	Outcomes
	Productivity
Delphi technique	Healthcare
	Allied Health
	Medicine
	Nursing

Primary Search Term	Secondary Search Term
Case Scenarios	Healthcare
	Allied Health
	Medicine
	Nursing

Appendix D

Models of Clinical Education in Allied Health, Medicine, and Nursing

Table D1

Theoretical Models of Clinical Education in: Allied Health, Medicine, Nursing

Model	Description	Evaluation	Discipline	Reference
Burnard Model	Clinical education model focuses on development of the learner including self-assessment, self- negotiation and the facilitation of personalized growth through individualized critique.	Critically important for individuals to develop into reflective practitioners who examine their own practice and make changes to improve. The model goal is for practitioners to be confidant, competent, and sensitive to the needs of their patients.	Nursing	Burnard P. (1995). *Learning human skills: An experiential and reflective guide for nurses*. (3rd ed.). Stockholm: Butterworth-Heinemann.
Coaching Model	Interdisciplinary model of clinical supervision derived from ideas in business using the term “coach” rather than “supervisor”.	5 coaching roles are: educator, coach, sponsor, counselor, and confronter. This model assisted the learner in becoming independent, creative, and self-supervising.	Rehabilitation	Hagler, P., & McFarlane, L. (1992). Achieving maximum student potential: The supervisor as coach. *Canadian Journal of Rehabilitation, 5*(1), 5-16.

Model	Description	Evaluation	Discipline	Reference
Continuum of Supervision	A model of “dynamic” supervision in which change takes place in the roles of students and clinicians.	3 stages moving from evaluation-feedback stage, through the transitional stage, to the self-supervision stage.	Speech-Language Pathology and Audiology	Anderson, J. (1988). *The supervisory process in speech-language pathology and audiology*. Toronto, Ontario, Canada: Little Brown & Co.
Cox Model	The model is geared toward the development of self-direction through the development of 2 components: experience and explanation. The experience cycle occurs when the student engages in clinical hands-on education. The explanation cycle occurs when the student reflects on clinical education experiences.	The model emphasizes the importance of having a foundational knowledge prior to clinical experiences to eliminate student conflict and confusion. The ultimate goal of the Cox’s model is self-direction. Clinical instructors should design closely supervised experiences that eventually become more autonomous.	Athletic Training	Cox, K. (1993). Planning bedside teaching: Debriefing after clinical interaction. *Medical Journal of Australia, 158*(1), 571-572.

Model	Description	Evaluation	Discipline	Reference
Educator-Manager / Self-Directed Learner	Conceptual, transdisciplinary model encompasses entire process of clinical education planning, implementation, and evaluation with contributions from academic educators, clinical educators, students, and professional bodies.	Facilitation is dynamic and individualized depending upon the student's "learner task maturity" or readiness for a particular task. Based upon CHIPP model: context, input, process, and product (Stufflebeam, 1983).	Physical Therapy	Higgs, J. (1992). Managing clinical education: The educator-manager and the self-directed learner. *Physiotherapy, 79*(3), 239-246.
			Physical Therapy	Higgs, J. (1993). Managing clinical education: The programme. *Physiotherapy, 79*(4), 239-246.
Mandy Model or Reflective Model	Five steps a student should go through when engaging in clinical education: pre-observation, observation, analysis and strategy building, reflection on action, and then reflection for future action.	Opportunity for "reflection in action". Clinical practice should relate to what is current and relevant in didactic courses with student connections both within and outside of the classroom. This deep understanding of knowledge and skills is central to transfer of learning.	Speech-Language Pathology and Audiology	Mandy, S. (1989). Facilitating student learning in clinical education. *Australian Journal of Human Communication Disorders, 17*, 83-89.

Model	Description	Evaluation	Discipline	Reference
Mastery Pathway Framework	Framework provides a pathway to guide, monitor, and evaluate clinical competence in clinical education. The Framework can assist clinicians with clinical process organization to improve consistency and reliability of supervisory assessment of students.	Progress from dependent to independent practice monitored via SOAPE system: subjective, objective, analysis, action, plan, and education. The model attempts to bridge the theory to practice gap, enhances student self-evaluation, and provides quality assurance evaluation.	General Healthcare (Adopted by Physical Therapy)	Oldmeadow, L. (1996) Developing clinical competence: A mastery pathway. *Australian Journal of Physiotherapy*, *42(1)*, 37-44.
Multiple Mentoring Model	Theoretical models of supervision that involves several clinicians in the course of a student's placement. This model expands on the Collaborative Model (refer to pg. 273).	No single clinician has sole responsibility for the students' development. Information peers, who are primary sources of information, collegial peers, who provide encouragement and support in both personal and professional areas, and special peers, with whom rapport and emotional connections are established.	Occupational Therapy	Nolinske, T. (1995). Multiple mentoring relationships facilitate learning during fieldwork. *American Journal of Occupational Therapy, 49*(1), 39-43.

Model	Description	Evaluation	Discipline	Reference
Paired Model	Student and staff nurse are paired for a practicum experience.	Used in combination with the traditional model and a variation of Preceptorship model design. Positive outcomes for students on sense of belonging in clinical environment, lower anxiety, and enhanced learning.	Nursing	Gross, J., Aysee, P. & Tracey, P. (1992). A creative clinical education model. *Three Views*, *41*(4), 156-159.
Preceptor or Role Model	Student paired one on one with nurse supervisor and complete clinical rotations under the supervision of a practicing staff nurse who serves as a role model.	Model attempts to bridges the gap between theory and practice while creating a positive clinical environment in nursing student teaching and training. Best used for senior-level students and graduate students in advanced practice roles. Limited empirical data on effectiveness.	Nursing	Kirkpatrick, H., Byrne, C., Martin, M.-L., & Roth, M. L. (1991). A collaborative model for clinical education of baccalaureate nursing students. *Journal of Advanced Nursing, 16*(1), 101-107.
Radtke Model	Six-step model involves: selection of appropriate clinical instructors, student training, goal setting, clinical experiences, reflection, and debriefing. Each clinical experience used the model for implementation.	This model is similar to Mandy and Cox models where a partnership between the clinical instructor and the student is encouraged. One-on-one interaction with mutual respect and values, and focus on student clinical goals.	Athletic Training	Radtke, S. A. (2008). Conceptual framework for clinical education in athletic training. *Athletic Training Education Journal, 2*(2), 36-42.

Model	Description	Evaluation	Discipline	Reference
Traditional Clinical Education Model	The traditional model correlates the clinical experience with course outcomes and competency development.	The traditional clinical education model is taxing faculty, facilities, students, and staff, and increasingly relies on the availability of clinical placements. This makes it difficult to ensure that students get a planned experience with a variety of patients. The traditional model of clinical education has been referred to as “education by random opportunity” (LeFlore, 2007, p. 170).	Nursing	Gubrud-Howe, P., & Schoessler, M. (2001). From random access opportunity to a clinical education curriculum. *Journal of Nursing Education, 47*(1), 3-4.
			Athletic Training	Weidner, T.G., & Henning, J.M. (2004). Development of standards and criteria for selection, training, and evaluation of clinical instructors. *Journal of Athletic Training*, *39*(4), 355-343.

Table D2

Clinical Education Models Assessed in the Healthcare Workplace

Model	Description	Evaluation	Discipline	Reference
Blended Learning or Hybrid Learning Model	Combination of face-to-face and web-based learning methods. Instructor delivers basic knowledge via online lectures and students demonstrate critical competencies in face-to-face setting. Best practice from University of Minnesota with a 4-year assessment of allied health teaching and learning.	Student to instructor face-to face time equaled 20% or more with this learning experience. This model provides an accessible and convenient pathway for student learning. Longitudinal evaluation comparing the traditional learning model to the hybrid model is underway.	Allied Health	Brandt, B.F., Quake-Rapp, C., Shanedling, J., Spannaus-Martin, D., & Marting, P. (2010). Blended learning: Emerging best practices in allied health workforce development. *Journal of Allied Health*, *39*(4), e167-172.

Model	Description	Evaluation	Discipline	Reference
Clerkship Model	The Harvard Medical School–Cambridge Integrated Clerkship (HMS–CIC) redesigned the 1-year principal clinical year to foster students' learning from close and continuous contact with cohorts of patients in multiple venues of care (disciplines of internal medicine, neurology, obstetrics–gynecology, pediatrics, and psychiatry).	Clerkship students scored higher than students in the traditional learning setting on the year-end comprehensive clinical skills self- assessment examination. The outcome suggests that CIC students have an improved retention in content knowledge. From surveys, CIC students were more likely to see patients before diagnosis and after discharge as well as to receive feedback and mentoring from experienced faculty. CIC students were more satisfied with the curriculum and were better prepared handle patient care: caring, patient involvement in decisions, and understanding social context effects on patients.	Medicine	Ogur, B., Hirsh, D., Krupat, E., & Bor, D. (2007). The Harvard Medical School-Cambridge integrated clerkship: An innovative model of clinical education. *Academic Medicine*; *83*(4), 397-404.

Model	Description	Evaluation	Discipline	Reference
Clerkship Model (continued)		A 2012 update provided by the authors reported random assignment was used to place students with their CIC as first preference as more students requested this placement than could be accommodated. The longitudinal integrated clerkship continues to demonstrate higher student satisfaction with the learning environment, equal or better content knowledge and clinical skills than their traditionally trained peers, more confidence in dealing with numerous domains of patient care, and a stronger sense of patient-centeredness.	Medicine	Hirsh, D., Gaufberg, E., Ogur, B., Cohen, P., Krupat, E., Cox, M., Pelletier, S., & Bor, D. (2012). Educational outcomes of the Harvard Medical School–Cambridge Integrated Clerkship: A way forward for medical education. *Academic Medicine, 87*(5), 643-650.

Model	Description	Evaluation	Discipline	Reference
Clinical Teaching Model (CTA)	Staff nurse collaborates with a designated faculty member and instructs a specified number of students in a clinical area.	Model evaluation revealed several benefits for students and faculty members including: increased contact time between students and preceptors, better usage of faculty time, and instruction of students by clinical experts. A model limitation was that fewer nursing students received individual or 1:1 preceptor's support.	Nursing	Baird, S., Bopp, A., Schofer, K., Langenberg, A., & Matheis-Kraft, C. (1994). An innovative model for clinical teaching. *Nursing Educator, 19*(3), 23-25.
Clinical Teaching Partnership	Collaborative model shared by service and academia settings. The service institution shares a clinical nurse specialist (CNS) and the university of faculty member. The CNS serves as an adjunct faculty member who provides client assignments while the academic faculty member schedules the experiences.	Communication is reciprocal and essential to model success. Clinical Nurse Specialist benefits by joint involvement with academic and clinical setting and faculty has direct link with clinical staff and more time for scholarly activities. Student scored higher in integration of theory into practice, realistic perception of workplace, and use of nursing research.	Nursing	Shah, H., & Pennypacker, D. (1992). The clinical teaching partnership. *Nurse Educator*, *17*(2), 10-12. Jackson, N. (1986). Part-time faculty suggestions for policy. *Nurse Education*, *13*(1), 36-40.

Model	Description	Evaluation	Discipline	Reference
Collaborative Clinical Education Model	Comparison of a traditional (1:1) clinical placement model to a collaborative (2:1) clinical model.	The ratio of 2 students to 1 Clinical Instructor suggested higher achievement of clinical competence in patient evaluation, program planning, implementation of treatment, communication, management skills, professional behavior, and documentation via collaborative learning.	Physical Therapy	DeCLute, J., & Ladyshewsky, R. (1991). Enhancing clinical competence using a collaborative clinical education model. *Physical Therapy, 73*(10), 683-689.
		Triggs & Shepard's qualitative study of 3 collaborative placements found that clinical educators experienced less stress in collaborative placements. Educators increased clinical knowledge and management skills.	Physical Therapy	Triggs, N. M., & Shepard, K. F. (1996). Physical therapy clinical education in a 2:1 student-instructor education model. *Physical Therapy, 76*(9), 968-981.

Model	Description	Evaluation	Discipline	Reference
Collaborative Clinical Education Model (continued)		Briffa & Porter's systematic review of collaborative clinical education models in speech-language pathology reported the advantages of student peer learning including: higher clinical competence scores, increased student refection, and increased student satisfaction. While this model provided valuable learning opportunities, it increased the clinical educators administrative workload in the areas of placement site organization and student evaluations.	Allied Health Speech-language pathology	Briffa, C., & Porter, J. (2013). A systematic review of the collaborative clinical education model to inform speech-language pathology practice. *International Journal of Speech-Language Pathology, 15*(6), 564-574.
Peer Coaching and Supervision Model	Structured and formal student pairs enhance the learning experience. Supplements the efforts of the clinical supervisor in the learning process.	Uses coaching skills of "who, what, where, and how" for peer observation and feedback. Peer-to-peer development strategy builds competence and communication skills for novice allied health students.	Allied Health	Ladyshewsky, R.K. (2010). Building competency in the novice allied health professional through peer coaching. *Journal of Allied Health*, *39*(2), e77-82.

Model	Description	Evaluation	Discipline	Reference
Interdisciplinary (IPE) Teamwork Model	Health care students educated in interdisciplinary setting with multiple health disciplines	Shared learning, interaction, and collaboration via simulation-based workshop. Workplace may foster greater productivity and satisfied health care professionals.	Allied Health	Buelow, J.R., Rathsack, C., Downs, D., Jorgensen, K., Arges, J.R., & Nelson, D. (2008). Building interdisciplinary teamwork among allied health students through love clinical case simulations. *Journal of Allied Health*, *37*(2), e109-23.
	Qualitative project evaluated planning, implementation, and outcome of clinical education with IPE model with intermediate + senior physiotherapy (PT), occupational therapy (OT), and speech-language pathology (SLP) students.	Students gained insights into developing interdisciplinary skills, although some discipline-specific needs were not met. The instructors were less enthusiastic due to advanced planning and communication.	Allied Health	Cox, P. D., Beaton, C., & Bossers, A. (1999). Interdisciplinary pilot project in a rehabilitation setting. *Journal of Allied Health, 28*(1), 25-29.

Model	Description	Evaluation	Discipline	Reference
Interdisciplinary (IPE) Teamwork Model (continued)	Dietetic students educated in interdisciplinary setting with supervisors from multiple health disciplines employing a variety of clinical education models.	There is potential for greater depth and range of learning when using supervisors from different professional backgrounds with a variety of clinical education models. \	Dietetics	Roberts, N. J., Brockington, S., Doyle, E., Pearce, L. M., Bowie, A. J., Simmance, N., Evans, S., & Crowe, T. (2009). Innovative model for clinical education in dietetics. *Nutrition & Dietetics, 66*(1), 33-38.

Table D3

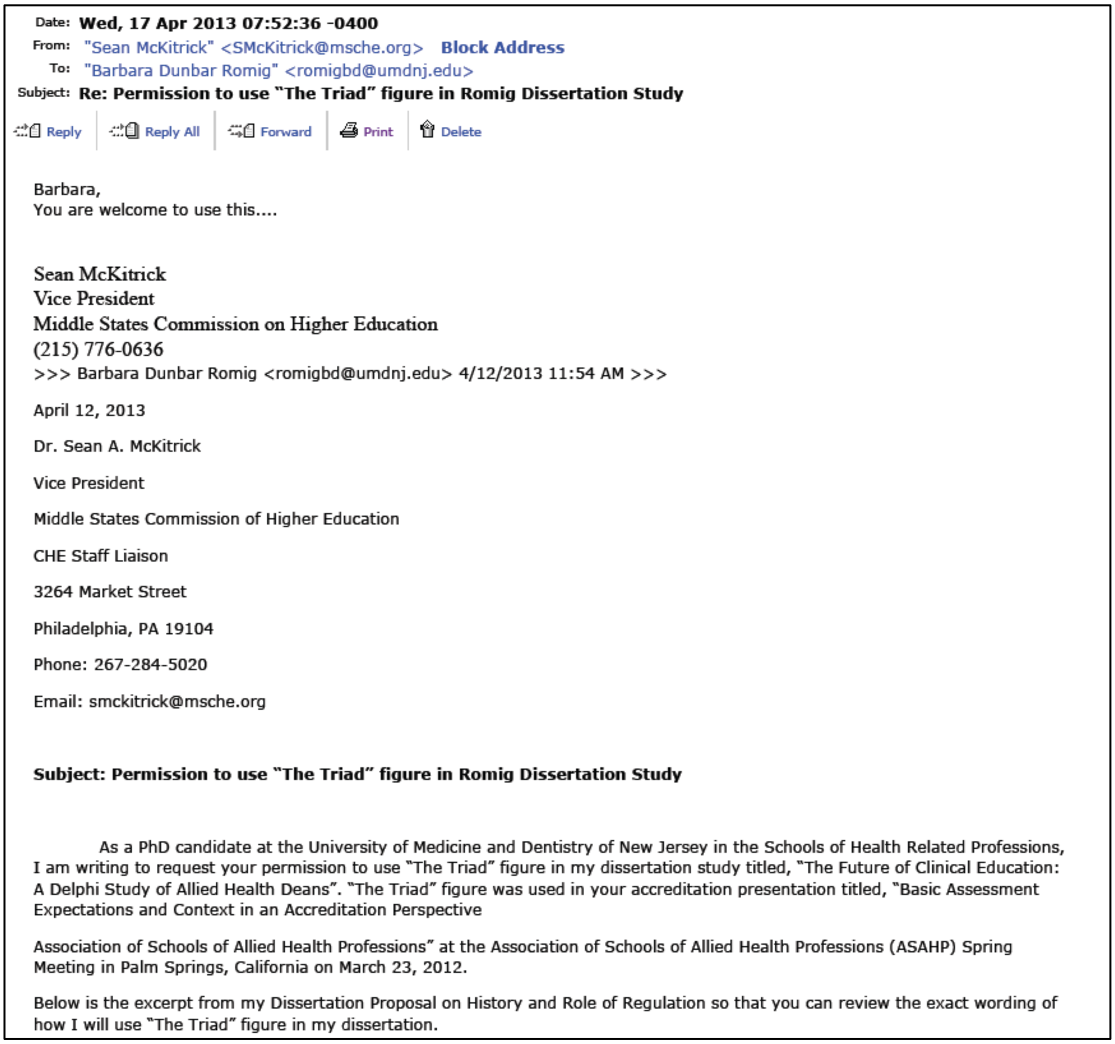
No Formal Clinical Education Model(s) Superior in the Healthcare Workplace

Model	Description	Objective	Discipline	Reference
Getz Model	No formal model or training existed. Getz proposed a competency-based supervision model.	Discussion, role-play, feedback	Mental Health	Getz, H.G. (1999). Assessment of clinical supervisor competencies. *Journal of Continued Development*, *77*(4), 491-498.
No formal model or training	While there was no formal model or training, one year of fieldwork occupational therapy experience required.	Occupational therapy clinical experience was lacking in its ability to teach the relationship between theory and practice.	Occupational Therapy	Cohn, E.S., & Frum, D.C. (1998). Fieldwork supervision: More education is warranted. *American Journal of Occupational Therapy*, *42*, 325-327.

Model	Description	Objective	Discipline	Reference
Collaborative Clinical Education Model	Comparison of a traditional (1:1) clinical placement model to a collaborative (2:1) clinical model.	Ladyshewsky (1998) found no differences in productivity between the 1-student and 2-student models. Researchers reported higher learning outcomes in collaborative vs. traditional placements.	Physical Therapy	Ladyshewsky, R.K., Barrie, S.C., & Drake, V.M. (1998). A comparison of productivity and learning outcome in individual and cooperative physical therapy clinical education models. *Physical Therapy*, *78*, 1288-1301.
No Model is Superior to Another	Comparison of physical therapy clinical education models including: 1:1, 1:2, 2:1, 2:2, non-discipline specific educator, and student as educator.	Literature review of 61 formally reviewed articles showed that no model was superior or a gold standard. Model goal is to build placement capacity. Majority of studies failed to identify positive model outcome.	Physical Therapy	Lekkas, P., Larsen, T., Kumar, S., Grimmer, K., Nyland, L., Chipchase, L., et al. (2007). No model of clinical education is superior to another: A systematic review. *Australian Journal of Physiotherapy*, *53*, 9-28.

Appendix E

Permission to use “The Triad” Figure



Date: **Wed, 17 Apr 2013 07:52:36 -0400**
From: "Sean McKitrick" <SMcKitrick@msche.org>
To: "Barbara Dunbar Romig" <romigbd@umdnj.edu>
Subject: **Re: Permission to use "The Triad" figure in Romig Dissertation Study**

Barbara,
You are welcome to use this....

Sean McKitrick
Vice President
Middle States Commission on Higher Education
(215) 776-0636
>>> Barbara Dunbar Romig <romigbd@umdnj.edu> 4/12/2013 11:54 AM >>>

April 12, 2013

Dr. Sean A. McKitrick

Vice President

Middle States Commission of Higher Education

CHE Staff Liaison

3264 Market Street

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Subject: Permission to use "The Triad" figure in Romig Dissertation Study

As a PhD candidate at the University of Medicine and Dentistry of New Jersey in the Schools of Health Related Professions, I am writing to request your permission to use "The Triad" figure in my dissertation study titled, "The Future of Clinical Education: A Delphi Study of Allied Health Deans". "The Triad" figure was used in your accreditation presentation titled, "Basic Assessment Expectations and Context in an Accreditation Perspective

Association of Schools of Allied Health Professions" at the Association of Schools of Allied Health Professions (ASAHP) Spring Meeting in Palm Springs, California on March 23, 2012.

Below is the excerpt from my Dissertation Proposal on History and Role of Regulation so that you can review the exact wording of how I will use "The Triad" figure in my dissertation.

Appendix F

Key Factors Impacting Allied Health Clinical Education

Key Factor	Issues	Outcomes
Value of Clinical Education	Cost vs. benefit of clinical education	Limited cost analysis data from historical past with notable methodological variety (Abercrombie, 1982; Chung et al., 1980; Conklin, 1990; Giancola, 2003; Granick, 1989; Kling, 1980; Lindeblad, 1998). Students positively contribute to increased allied health workplace productivity (Abercrombie, 1982; Conklin, 1990; Dawes & Lambert, 2010; Dillon et al. 2003; Ladyshewsky, 1995; Meyers, 1990). Productivity decrease in more intensive supervision settings such as: acute care, pediatrics, psychology and rehabilitation (ACT Health, 2007; Granick, 1989). While the cost of student training includes the cost instructor supervision, staff support and use of the equipment and supplies, students demonstrated effective resource utilization (Abercrombie, 1982). Students contribute to the net financial gain (Lopopolo, 1984). Practice educators and students considered a positive and welcoming organizational environment conducive to quality learning experiences and future recruitment (Rodger et al. 2011).

Key Factor	Issues	Outcomes
Health Professions Education Institutions	International Competition	The educational leadership of U.S. universities and colleges, with somewhat outdated institutional policies and practices, is now challenged by international universities from abroad (The National Academies Press, 2012).
	Healthcare System Competition	The emergence of large healthcare systems has resulted in competition between universities and colleges for clinical educational locations (Bender, 2012; HPN, 2010). Reduction in number of acute care inpatient beds reduces direct patient care training opportunities (Romig et al., 2012). As clinical facilities and health science educational programs have limited resources, their need for each other is reciprocal, and a joint effort to ensure successful clinical productivity and student training is warranted for the present and the future (Collier, 2012).
	Public vs. Private	Competition is increasing between schools with private institutions with “for profit” programs typically having with ability to pay for clinical education placement versus the public institutions (HPN, 2010). Mayo Schools of Health Science is experiencing competition for the clinical rotation sites with all types of students including allied health disciplines and medical school, residency, and fellowships (Bender, 2012).

Key Factor	Issues	Outcomes
Health Professions Education Institutions (continued)	Public vs. Private	In order to retain clinical education rotations, financial arrangements with the large health networks may be an appropriate option. A benefit of this arrangement is that it may facilitate the tracking of clinical education rotation data and provide the added benefit of reducing the number of affiliation agreements (Smith, 2012).
	Institutional Recruitment and Retention	Institutions recognize the value of identifying top performing students in clinical training as a recruitment pool opportunity (Laudicina & Beck, 2000; Silkowski, 2011). When properly implemented, an increase in institutional recruitment and retention efforts can meet future student training demands and offset faculty “burnout’ (Wyatt & Ramos, 2010). Mayo Schools of Health Science reported a 90% retention rate of their allied health students (Bender, 2012). When institutions and employers hire a student who completed an internship at their facility, they save up to 25% of the first year salary (Oliver, 2012). Common institutional challenges may include faculty recruitment and retention of clinical staff such as nurse practitioners, physician assistants and other key healthcare professionals (Orcutt, 2007).

Key Factor	Issues	Outcomes
Health Professions Education Institutions (continued)	Institutional Recruitment and Retention	When institutional hiring costs amount to more than $150,000 in the first year, the opportunity to recruit and retain more than half of the trained students educated and competent in the institutional system with an understanding of the culture, electronic health record (EHR) system and teamwork is greatly valued (Pagel, 2012).
	Integration into Work Environment	Effective partnerships between institution and employer may positively impact the culture of both organizations, permit synergy in the hiring of new student graduates, reduce clinical workload and improve patient care (Dodds, 2012).
	Acknowledgment of Clinical Education Value	Institutional acknowledgment of clinical education as a valued professional activity displays commitment to the educational process, promotes professional development of staff, and is a good public relations service for faculty (Silkowski, 2011).
Allied Health Dean	Leadership Role in Education and Clinical Education	Allied health research supports the identification of allied health deans as experts and leaders (Bamberg & Layman, 2004; Hunnicutt, 2008; Layman et al., 2010). The allied health dean has an influential role in shaping the institutional core values and scholarly activities of the educational environment (Bamberg & Layman, 2004). Most allied health deans are generally interested in and motivated to explore the key factors impacting higher education and the future of allied health education (Layman et al., 2010).

Key Factor	Issues	Outcomes
Allied Health Dean (continued)	Leadership Role in Education and Clinical Education	Allied health dean cognitive aptitude and proficient leadership is crucial at “the intersection of two turbulent environments, higher education and healthcare” (Layman, et al., 2010, p. 18).
	Clinical Education Funding	Deans who reported an increase in their capacity to train allied health workers, the result was due to additional grant funding (Goodwin Simon Strategic Research, 2010). Allied health training is anticipated to be positively impacted by federal healthcare reform increasing the demand for allied health workers; deans in the State of California see no relief in sight for their budget-strapped, resource-limited allied health colleges (Goodwin Simon Strategic Research, 2010).
Clinical Preceptors	Demands on Time	Factors impacting clinical preceptors includes: the potential impact of student presence on clinical productivity, the quality of the learning experience and the quality of patient care (Huddleston, 1999). Cost reductions, reimbursement changes, and increased productivity demands have reduced the number of clinical instructors (Casares et al., 2003). To better balance personal and work obligations, some clinical instructors work part-time or job share which may pose credentialing issues (part-time vs. full-time clinical instructor status) with respect to student training (Dunfee, 2008).

Key Factor	Issues	Outcomes
Clinical Preceptors (continued)	Time for reflection	Adequate time is needed for feedback and reflection from instructor to student (Burnard, 1995; Meyers, 1990; Musolino, 2006; Radtke, 2002).
	Student Assessment Tools	Given that assessment drives learning, clinical educators are confronted with the challenge of identifying robust and feasible assessment tools to measure student skills and competency across the clinical and educational continuum (Murray et al., 2000).
	Training and Personal Development	Clinical preceptor training positively impacts instruction and student performance (Rindflesch et al., 2009; Vendrely & Carter, 2004) and encourages clinical staff to remain current on procedures (Silkowski, 2011). Physical therapy research showed that clinical preceptor training programs that prepare the clinical instructor for the multifaceted role involving student teaching, assessment, and supervision may be valuable to student performance (Vendrely & Carter, 2004). Instructor retention may be an added benefit of providing in-servicing and training at the clinical site (Smith, 2012). Continuing education courses at no cost to the preceptor, payment for continuing education at professional meetings, adjunct faculty title and offering library privileges are all possible recruitment and retention tools (Smith, 2012).

Key Factor	Issues	Outcomes
Clinical Preceptors (continued)	Clinical Preceptor and Site Payment	Most clinical preceptors do not receive payment for student training so funding is at the institutional level (Rindflesch, 2009). The American Academy of Physician Assistants (AAPA) recommends additional tuition per clinical curriculum to be used for preceptor and clinical site payment (Giannelli, 2011). For example, 6 - 8% of the physician assistant programs now pay for clinical site rotations (Smith, 2012).
Faculty Clinical Preceptors	Use and roles	Definition of faculty educators by AH discipline varies. Full-time faculty preceptors may eliminate may clinical education challenges such as: the quality of the learning experience, the potential impact of student presence on clinical productivity, the quality of patient care (Huddleston, 1999).
	Level of Supervision	Similar to volunteer clinical faculty, full-time faculty clinical preceptors value the opportunity to give back to their profession with the sharing of knowledge, advice and encouragement when a student needs assistance in mastering a clinical skill (Pagel, 2012). Full-time faculty may align better with tighter supervisory requirements necessary during clinical education (Dunfee, 2008; Gwyer, et al., 2003; Northern Plains Clinical Education Consortium, 2010).

Key Factor	Issues	Outcomes
Faculty Clinical Preceptors (continued)	Faculty Cost	The full-time clinical faculty preceptor level of clinical supervision is expensive to the healthcare facility in terms of decreased productivity of the clinical preceptor relative to patient care (Jarvis, 1983).
Clinical Site Placement Locations	Changing Sites	New clinical placement sites are increasingly being adapted (Gubrud-Howe & Schoessler, 2001; Weidner & Henning, 2004) with an evolution to tertiary hospital settings, regional and rural hospitals and community settings (Roberts et al., 2009). The trend today is away from centralized academic health centers and towards decentralized academic health networks (Knettel, 2012). Shortage of clinical sites and site capacity is a concern when providing increasing numbers of PA students with a solid, hands-on, patient-based experience (Dehn, 2011; Orcutt, 2007).
	Competition	Mayo Schools of Health Science is experiencing competition for the clinical rotation sites with all types of students including allied health disciplines and medical school, residency, and fellowships (Bender, 2012).
	Interest in Student Training	Clinical education placement difficulties may decrease faculty interest in student training due to the perception that student training is not a priority or part of the educational core business (HPN, 2010).

Key Factor	Issues	Outcomes
Student Satisfaction	Demand for Quality Education	In addition to a welcoming clinical environment, quality of the clinical experience filled with a robust involvement in modeling and practice with a graded program of learned experiences is a priority for students (Rodger et al., 2011). Students reported positive learning when challenged to expand thinking and reasoning, theory was linked to practice, feedback was provided on skills and patient conduct (Cole & Wessel, 2008). Students develop effective and efficient critical thinking with self-reliant problem solving skills in order to transition from a novice to a competent practitioner (Anderson, 1998; Burnard, 1995; Cox, 1993; Hagler & McFarlane, 1992; Higgs, 1992; Higgs, 1993). Student satisfaction occurs with experienced supervisors illustrating effective teaching strategies and clinical techniques (Buccieri et al., 2011; Rodger et al., 2011).
	Financial Concerns	Student satisfaction is closely correlated with a detailed orientation and disclose of expectations coupled with the full disclosure of financial obligations (Rodger et al., 2011). While students desire a quality clinical education experience, financial concerns were of the primary importance followed by type of specialty offered by the facility, fulfilling program requirements, and reputation of the facility (Gangaway & Stancanelli, 2007).

Key Factor	Issues	Outcomes
Student Satisfaction (continued)	Financial Concerns	Subsidized housing for clinical rotation sites may be more of a college and university concern with maintaining affordable housing, with a geographically convenient location, providing student insurance, and covering utilities and other expenses (Smith, 2012). Supplemental expenses (room, board, gas, and travel to clinical site) are a financial burden to students (Romig et al., 2012). Mayo Schools of Health Science stated that an addition of clinical rotation coordination fee, based upon the length of the clinical rotation, will be absorbed by the clinical affiliate or added to student charges (Bender, 2012). Mayo School of Health Science students are responsible for administrative costs including: affiliation agreement, application and tracking, background check, immunizations and drug screens, access to Mayo resources, orientation and training (Electronic Medical Records, HIPAA, and other policies), badge, parking, and building access, and exit processing (Bender, 2012).
Educational Technology	Virtual Learning	Instruction using simulation-based technology can build skills and clinical competencies, practice strategies, and used to advance team building and interprofessional training (APTA, 2007; Barnes et al., 2011; Brooks et al., 2011; Buelow et al., 2008; Kenaszchuk et al., 2011; School of Health Related Professions Clinical Education Task Force, 2011).

Key Factor	Issues	Outcomes
Educational Technology (continued)	Virtual Learning	When economics of simulation are considered, careful attention is required to select the appropriate technology for the intended learning environment and suitable level of fidelity desired (Alessi, 1988). Faculty use of simulation, especially with the advanced high-fidelity technology such as human patient simulation, requires competency-based training and certification (Cook & Triola, 2009). ASAHP Virtual Learning Task Force survey results will provide insight into a rapidly developing modality of simulation instruction, its role within the allied health field, and its influence upon higher education (Brooks et al., 2011). Simulation is not viewed as a viable option to replace the clinical experience (Romig et al., 2012).
	Alternative Solutions	According to one executive director of specialized accreditation, there have been a limited number of security breaches by students with respect to unauthorized access to patient records (Romig et al., 2012). As technological advances become routine in the healthcare clinical setting, security of records on computers and software, cell phones, PDAs (personal data assistant), and other electronic devices are security concerns (Jansen & Scarfone, 2008).

Key Factor	Issues	Outcomes
Educational Technology (continued)	Electronic Medical Records (EMR)	Additional ~$100 cost to add students with a fixed and limited clinical education placement into the EHR creates a fiscal barrier (Wood, 2011).
		Cost sharing between program and students for administrative costs including: affiliation agreement, application and tracking, background check, immunizations and drug screens, access to program resources (EMR, facilities, etc.), orientation (EMR training, HIPAA and other policies, badge, parking and building access, and exit processing (Bender, 2012).
		Students being banned from EMR due to patient privacy concerns, having difficulties in accessing the EHR system, or being unable to provide EMR documentation due to program policies or technical issues (Romig et al., 2012).
Interprofessional Education (IPE)	Viable educational model	Effective collaboration can improve the quality of care delivered to patients (Schmitt, 2001), improve patient safety (Institute of Medicine, 1999), create a more innovative and satisfying work environment (Scarvell & Stone, 2010), address health human resource issues such as enhanced recruitment / retention and reduce staff absenteeism (Lies, 2001).
		Interprofessional education and collaborative practice is important to patient-centered care, cost-effective healthcare delivery and effectively addressing social health determinants (Knettel, 2012).

Key Factor	Issues	Outcomes
Interprofessional Education (continued)	Viable educational model	Allied health, nursing and medicine students reported an increased understanding of the knowledge and skills, roles and duties of the other profession as a valued benefit with IPE (Carpenter, 1995; Dubouloz et al., 2010; Gonsalves, 2011). The collective IPE efforts of the World Health Organization and Interprofessional Education Collaborative Expert Panel aim to further establish a defined interprofessional system, provide definition and scope of each discipline, and ensure a positive learning environment that will forage a collaborative and effective healthcare environment that promotes a healthier society (Team-based Competencies, 2011; World Health Organization, 2010).
Accreditation	Process	Accreditation is a vital component in AH education programs. Students graduating from an accredited educational program have the knowledge and skills, ensured by a standardized curriculum and training, to safely and effectively handle the patient healthcare needs required for success in their profession (Bonner, 2012). A survey of AH deans and program directors affirmed the role of accreditation and the purposes of specialized accreditation as an effective system for assuring quality in higher education (Baker et al., 2004). A comprehensive reevaluation and site visit occur every 3-10 years depending on the accreditation agency (Baker, 2001).

Key Factor	Issues	Outcomes
Accreditation (continued)	Process Costs	Each institution is responsible for the accreditation review costs and fees where approximately 90% of the expenses are associated with costs in time and human and fiscal resources (Kennedy et al., 1985). Reducing costs by lengthening the interval cycle between on-site accreditation evaluations has been suggested (Elwood, 1994). The initiation of coordinated events between regional and specialized accrediting agencies could increase the productivity of institutional and program reviews while reducing the administrative burden and other associated expenses (Burd, 1998).
	Allowable practice for students	Clinical education issues associated with accreditation requirements include attaining the minimum required clinical hours, having sufficient clinical placement sites, and access to required specialty rotation sites, faculty shortages, whether or not accreditation standards will incorporate web-based courses and assisted learning technology hours as an added component to clinical education standards and requirements, and other concerns (Romig, et al., 2012).
	Scope of Practice	The primary rationale for elevating the entry-level practice requirements to a clinical doctoral degree requirement is the scope of practice changes related to increased patient care responsibility and/or independence of practice (Phelps & Gerbasi, 2009).

Key Factor	Issues	Outcomes
Accreditation (continued)	Scope of Practice	Healthcare professions, including AH disciplines, that are involved in scope of practice issues: Ophthalmologists versus Optometrists, Psychiatrists versus Psychologists, Anesthesiologists versus Nurse Anesthetists, Allopathic and Osteopathic Physicians versus Naturopathic Doctors, Allopathic and Osteopathic Physicians versus Chiropractic Doctors, Allopathic and Osteopathic Physicians versus Podiatric Doctors, Dentists versus Dental Hygienists, Chiropractors versus Physical Therapists, Physical Therapists versus Athletic Trainers (Elwood, 2013, p. 4).
	Direct or indirect supervision	Inconsistencies of supervision requirements across universities and allied health disciplines (Romig et al., 2012). Tighter supervisory requirements such as “line of sight” or “direct supervisory” of the clinical instructor (Dunfee, 2008; Gwyer et al., 2003).
Regulation: Federal Law	Federal Legislative Impact	The Patient Protection and Affordable Care Act (PPACA, 2009) also contains provisions targeted to allied health programs including: loan forgiveness, recruitment/retention programs, and mid-life career training programs (ASAHP, 2011). The full impact of national healthcare legislation and federal and state regulations on allied health professions, student education and the supply of clinical placement slots remains unknown (Mathews et al., 2010; O'Sullivan Maillet, 2012).

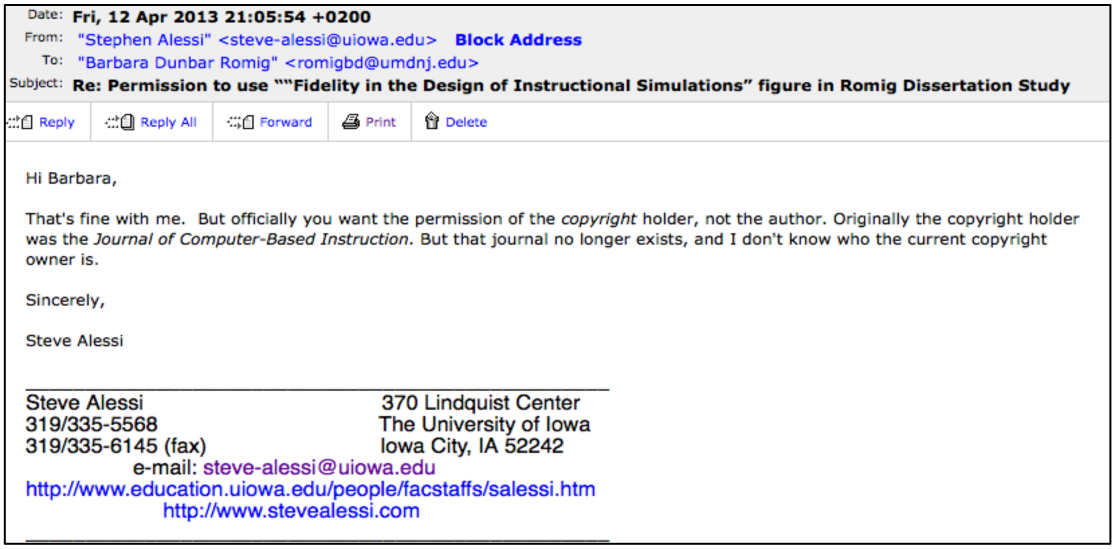
Key Factor	Issues	Outcomes
Regulation: Federal Law (continued)	Reimbursement	Allied health lacks the visibility, economic muscle, and political clout of other contenders that limits student funding (Elwood, 2009). Reimbursement guidelines and payment essentials have become much stricter and no longer can any patient be selected and treated to encourage student learning through active patient care (Gwyer, et al., 2003). Student caseloads include Medicare and third-party payer requirements which mandate “line of sight” or “direct supervision” by the clinical instructor (Dunfee, 2008).
	Allied Health Defined	The term “allied health professional” means an allied health professional as defined in section 799B(5) of the Public Health Service Act (42 U.S.C. 295, p.5) who—(A) has graduated and received an allied health professions degree or certificate from an institution of higher education; and (B) is employed with a Federal, State, local or tribal public health agency, or in a setting where patients might require health care services, including acute care facilities, ambulatory care facilities, personal residences, and other settings located in health professional shortage areas, medically underserved areas, or medically underserved populations, as recognized by the Secretary of Health and Human Services (Patient Protection and Affordable Care Act, 2009).

Key Factor	Issues	Outcomes
Regulation: State Law	Scope of Practice	Scope of practice policies that match student clinical training and licensure for the delivery of the full range of healthcare services is important for a cost-effective, team-based healthcare model of care (Elwood, 2012). Further research needed on state laws and impact on overall clinical education outcomes (Mathews, et al., 2010).
Regulation: Other Issues	Bureaucracy of placement	Clinical rotation highly regulated via a combination of federal and state reviews and audits. Considerable variability in the responsibilities that different states assume in educational quality assurance (National Advisory Committee on Institutional Quality and Integrity, 2011). Clinical rotation paperwork process, including background checks, drug testing, probationary procedures and other mandated items, are associated with an increasing burden of clinical placement for higher education and the clinical facilitator (Bender, 2012).
	Patient Safety	As patient safety and reducing medical errors are a priority, especially with student training in the clinical environment, the complexity of placement is will remain an important issue in the clinical education arena (Kohn, 2000). Increasingly important will be the various forms of professional credentialing, such as licensure, registration and certification, that provide a mechanism for quality assurance, patient safety and reduced employer liability (Collier, 2012).

Appendix G

Permission to Use “Fidelity in the Design of Instructional Simulation” Figure

Table G1. Permission from Author Dr. Stephen Alessi to use the Hypothesized Relationship Between Level of Learner and Degree of Fidelity Figure in the Romig Dissertation



Date: **Fri, 12 Apr 2013 21:05:54 +0200**
From: "Stephen Alessi" <steve-alessi@uiowa.edu>
To: "Barbara Dunbar Romig" <romigbd@umdnj.edu>
Subject: **Re: Permission to use ""Fidelity in the Design of Instructional Simulations" figure in Romig Dissertation Study**

Hi Barbara,

That's fine with me. But officially you want the permission of the *copyright* holder, not the author. Originally the copyright holder was the *Journal of Computer-Based Instruction*. But that journal no longer exists, and I don't know who the current copyright owner is.

Sincerely,

Steve Alessi

Steve Alessi
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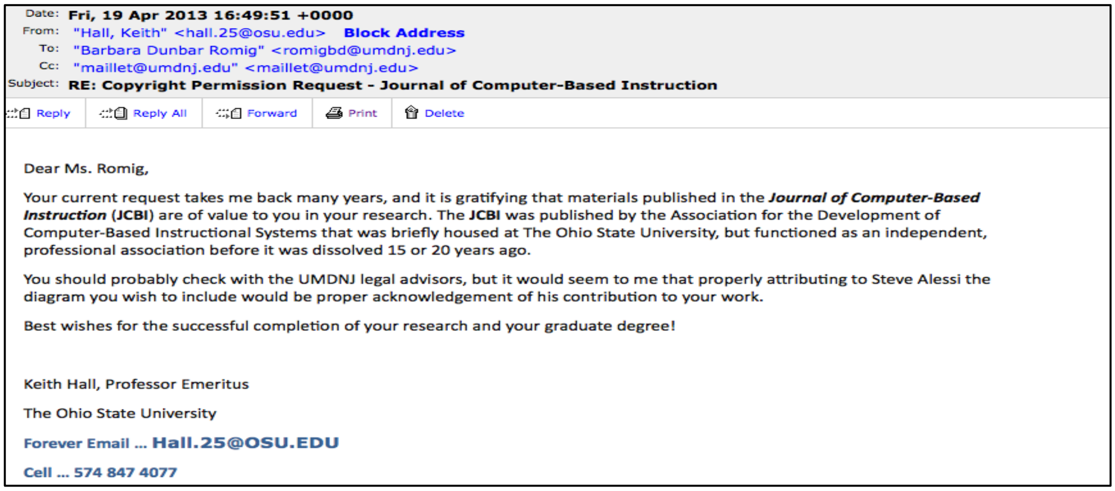
Table G2.

Permission from former Editor of Computer-Based Instruction Keith A. Hall to use the Hypothesized Relationship Between Level of Learner and Degree of Fidelity Figure in the Romig Dissertation



Date: **Fri, 19 Apr 2013 16:49:51 +0000**
From: "Hall, Keith" <hall.25@osu.edu>
To: "Barbara Dunbar Romig" <romigbd@umdnj.edu>
Cc: "maillet@umdnj.edu" <maillet@umdnj.edu>
Subject: **RE: Copyright Permission Request - Journal of Computer-Based Instruction**

Dear Ms. Romig,

Your current request takes me back many years, and it is gratifying that materials published in the ***Journal of Computer-Based Instruction*** (**JCBI**) are of value to you in your research. The **JCBI** was published by the Association for the Development of Computer-Based Instructional Systems that was briefly housed at The Ohio State University, but functioned as an independent, professional association before it was dissolved 15 or 20 years ago.

You should probably check with the UMDNJ legal advisors, but it would seem to me that properly attributing to Steve Alessi the diagram you wish to include would be proper acknowledgement of his contribution to your work.

Best wishes for the successful completion of your research and your graduate degree!

Keith Hall, Professor Emeritus

The Ohio State University

Forever Email … Hall.25@OSU.EDU

Cell … 574 847 4077

Appendix H

Delphi Studies in Allied Health, Medicine, and Nursing Healthcare Research

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Bartlett, D.J., Lucy, S.D., & Bisbee, L. (2006). Item generation and pilot testing of the comprehensive professional behaviours development log. *Journal of Allied Health*, *35*(2), 89-93.	AH - Physical Therapy (PT)	Delphi generated and refined criteria for professional behaviors. Attained content validation of the comprehensive professional behaviours development log.	2-Round Delphi. 42 final year PT students. 9 key professional behaviors; 0 to 10 Behaviour score. 3 pt. Likert scale.	Consensus not set a priori. Consensus reached through rounds of iterations.	Behavioral criteria for 9 key professional behaviors supported the content validity of log development.
Bramwell, L., & Hykawy, E. (1999). The Delphi Technique: A possible tool for predicting future events in nursing education. *Canadian Journal of Nursing, 30*(4), 47-58.	Nursing	Study predicted events of next fifty years in nursing education.	4-Round Delphi on event time prediction. 16 Master’s degree or above nursing panelists. 38 statements = Questionnaire II.	Consensus, set at 75% of experts reaching agreement.	Positive reaction to Delphi. Consensus was reached on 15 of 38 statements. Challenge to separate the ‘will happen” from the “should happen”.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Brody, R.A. (2009). *Identifying components of advanced-level practice in clinical nutrition practice: A Delphi study.* Doctor of Philosophy in Health Sciences, University of Medicine and Dentistry of New Jersey, Newark.	AH - Dietetics	Study provided a comprehensive definition of advanced-level practice (ALP) in clinical nutrition practice.	3-Round Delphi. 117 Advanced Practice Registered Dietitians. 7 pt. ordinal scale.	Consensus defined when interquartile range of response ≤ 2.0.	In total, 233 statements achieved 100% consensus. 76 of 85 experts completed all rounds. Model of ALP in clinical nutrition proposed.
Chang, A. M., Gardner, G. E., Duffield, C., & Ramis, M. A. (2010). A Delphi study to validate an advanced-practice nursing tool. *Journal of Advanced Nursing, 66*(10), 2320-2330.	Nursing	Study validated the Strong Model of Advance Practice Nurse (APN) Role Delineation tool in an international contemporary health service context.	3-Round Delphi via (online and e-mail). 16 nurses constitute the panel.	Consensus defined as 75% cut-off from feedback and statistical responses.	Validate Model with consensus at Round 3. Deletion of 1 activity; rewording of 5 APN activities. No panel comments.
Christian, L.R. (2003). *Essential characteristics of accreditation site visit team members: A Delphi study*. Doctor of Philosophy, Texas Woman's University, Denton	AH - Accreditation Experts from multiple disciplines	Study reported a list of essential characteristics that site visit team members.	3-Round Delphi. 19 experts in specialized accreditation. 4 research questions 5 pt. Likert scale, Median, and Std. deviation.	Consensus defined in Round 2 as Median of 4 or greater.	The panel chose 68 essential attributes to characteristics of site visit team members.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Cook, C., Brismee, J.M., Fleming, R., & Sizer, P.S. (2005). Identifiers suggestive of clinical cervical spine instability: A Delphi study of physical therapists. *Physical Therapy*, *85*, 895-906.	AH - Physical Therapy (PT)	Studied consensus among PTs regarding symptoms and physical examination findings associated with clinical cervical spine instability (CCSI).	3-Round Delphi; Web-based and mail. 172 PTs. 5 pt. Likert scale. Categorical clustering of findings into smaller groups to improve the discriminatory capability of the descriptors.	Consensus defined as 75% panelist agreement.	Delphi created standard for symptoms and physical examination findings for clinical cervical spine instability. 16 symptoms achieved consensus with CCSI.
De Villiers, M.J., De Villiers, J.T., & Kent, A.P. (2005). The Delphi Technique in health science education research, *Medical Teacher, 27*(7), 639-643.	Health Science	Studied consensus of opinion on content and methods of education and training relating to physician competence.	3-Round Delphi 20 panelists 4 pt. Likert scale Mean and Std. deviation 5 months to attain consensus.	Consensus defined as 70%.	Updating education and training frequency of 5-10 years was important factor. Outreach visits, workshops, and lectures were of value.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
DeWolfe, J.A., Laschinger, S., & Perkins, C. (2010). Preceptors' perspectives on recruitment, support, and retention of preceptors. *Journal of Nursing Education*, *49*(4), 198-206.	Nursing	Study achieved consensus among preceptors the key issues of preceptors' recruitment, support, and retention.	2-Round Delphi. 102 preceptors of senior nursing students. 5 pt. Likert scale. Focus group for post Delphi exploration of non-consensus.	Consensus defined as 80% agreement on a statement rating.	Recruitment strategies should emphasize personal satisfaction, and agreement was recorded on ways to support students in placement. Consensus was not reached on whether students helped preceptor work.
Duffield, C. (1993). The Delphi technique: A comparison of results obtained using two expert panels. *International Journal of Nursing Studies*, *30*(3), 227-237.	Nursing	Study identified 168 competencies expected of first-line nurse managers.	2-Round Delphi. 2-panels of 16 RNs in management or management education. 5 pt. Likert scale. 16-week study.	Consensus defined when 10% or less of 168 competencies moved to 3.00 baseline mean.	156 of 168 competencies (93%) attained or rejected by both panels.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Falzarano, M., & Zipp, G. P. (2013). Seeking consensus through the use of the Delphi Technique in health science research. *Journal of Allied Health, 42*(2), 99-105.	Health Science	Studied Health Science Faculty Mentoring Surveys at Seton Hall University with nursing faculty.	2-Round Delphi. 10 SHU faculty. Central tendency statistical analysis	A priori consensus defined at 80% of agreement.	80% consensus on Delphi technique funnel decision-making model.
Ford, T. E. (2002). *A national Delphi study examining the feasibility of universal access to health and medical care in the United States.* Doctor of Public Administration, School of Public Affairs and Health Administration, La Verne, California. (3057221)	Health Services	Study explored and proposed possible alternatives to the current U.S. health and medical care system.	3-Round Delphi. 5 pt. Likert scale. Experts in 5 health service related fields. 8-week study. Median, Interquartile range, Chi-Square test.	Consensus not set a priori. Consensus was defined as general agreement.	Consensus achieved on all 14 questions. Multipayor universal access system implemented over 5-7 years would lower costs, improve quality, and open access to healthcare for all U.S. residents.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Gebbie, K.M., Meier, B.M., Bakken, S., Carrasquillo, O., Formicola, A., Aboelela, S.W. et al. (2008). Training for interdisciplinary health research: Defining the required competencies. *Journal of Allied Health*, *37*(2), 65-70.	Health Sciences and Medicine	Study identified essential competencies for interdisciplinary research.	3-Round online Delphi. 30 scholars from healthcare disciplines (medicine and health sciences (11), public health and environmental sciences (12), and natural (3) and social sciences (8).	Consensus not set a priori. 75% agreement for competency inclusion equaled consensus.	Consensus reached on 17 interdisciplinary research competencies: conduct research, communicate, and interact with others. Round 1 = 11 responders; Round 2 = 10 responders.
Griffen, S. (2002). Occupational therapy practice in acute care neurology and orthopaedics. *Journal of Allied Health*, *31*(1), 35-42.	AH - Occupational Therapy (OT)	Study explored consensus on occupational therapy practice in acute care orthopaedics and neurology.	2-Round Delphi. OTs; 19 in orthopedics and 26 in neurology	No a priori definition of consensus provided. Rank order consensus evolved over iterative rounds.	Early referral for OT services identified as the most important acute care factor. Rank order: assessments, interventions, practice models, resources.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Handler, S. L. (2006). *Precursors of merger and acquisition success in the healthcare service sector: An integrated framework of inquiry.* Doctor of Philosophy, Capella University, Minneapolis, MN. (3239342)	Healthcare Services	Study determined opinion of middle market healthcare service industry in 3 phases of mergers and acquisitions.	3-Round Delphi with 37 healthcare industry experts. 5 construct survey 4 pt. Likert scale. 4-month study.	Consensus defined as 90% agreement.	Expanded knowledge of healthcare mergers and acquisitions. 60 of 76 variables attained consensus.
Hemming, J., Lordly, D., & Glanville, T. (2011). Developing an interview guide to evaluate practice-based evidence in nutrition: Use of the Delphi technique. *Canadian Journal of Dietetic Practice and Research, 72*(4), 186-190.	AH - Dietetics	Delphi developed interview for Practice-based Evidence in Nutrition (PEN).	3-Round Delphi (electronic) 7 experts in knowledge translation and transfer (KIT) and (PEN).	Consensus defined as agreement by six of seven participants.	Achieved consensus on PEN Logic Model in 3 rounds. New ideas added. Confusion on Delphi instructions resulted in response error.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Holmes, W.M., & Scaffa, M.E. (2009). An exploratory study of competencies for emerging practice in occupational therapy. *Journal of Allied Health*, *38*(2), 81-90.	AH - Occupational Therapy (OT)	Delphi identified competencies for emerging practice and strategies for development.	3-Round Delphi (electronic and mail). 23 U.S. certified occupational therapists Multi-Attribute Utility: rank on importance and weighted for contribution to main topic.	Consensus not set a priori. Consensus evolved over iterative rounds.	Draft blueprint of 104 competencies and 55 strategies for competency development. Response rates: round 1 = 95.8%, round 2 = 60.6%, round 3 = 65.2%.
Ito, C., Ota, K., & Matsuda, M. (2011). Educational content in nurse education in Japan: A Delphi study. [Nursing Practice]. *Nursing Ethics, 18*(3), 441-454.	Nursing	Delphi defined nursing ethics basic program in educational and clinical settings.	3-Round Delphi (mail). Nursing faculty at 158 four-year Japanese universities. 53 RN educators; 29 RN clinical educators.	Consensus defined as 80% for educational content and 50% for content mastery level.	Consensus (80%) on 41 of 63 items in 4 proposed frameworks. Defined content mastery (50%) for 40 items.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Janse, L., Rasekaba, T., Presnell, S., & Holland, A. E. (2012). Finding evidence to support practice in allied health: Peers, experience, and the internet. *Journal of Allied Health*, 41(4), 154-161.	AH	Delphi explored methods to acquire evidence and develop AH study questionnaire.	2 –Round e-Delphi. 8 clinical and academic allied health experts. 4 pt. Likert importance scale Questionnaire validation by median; interquartile range (IQR) to measure agreement.	High consensus defined as IQR = zero.	Final questionnaire consisted of 5 sections comprising 69 items.
Kennedy, H.P. (2004). Enhancing Delphi research: Methods and results. *Journal of Advance Nursing*, *45*(5), 504-511.	AH - Midwifery	Two concurrent Delphi studies to describe best midwifery practice. Goal to expand Delphi findings with unique approach.	2 simultaneous Delphi 2 panels: 14 experienced midwives and 4 recipients of midwifery care. Structured framework within feminist critique.	Consensus not set a priori. Consensus evolved with congruence in mixed panel analysis.	80% overall congruence achieved via comparison of codes. 87% congruence for dimension of caring between midwife and woman.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Kirby, B. A. (2008). *The future of clinical laboratory science: A Delphi study.* Doctor of Education in Educational Leadership Studies, West Virginia University, Morgantown, West Virginia. (3300902)	AH - Clinical Laboratory Science	Study explored the future of the clinical laboratory science profession.	3-Round Delphi. 24 nationally known authorities. 147 event(s) survey. 7 pt. Likert scale. Median individual to group comparison.	Consensus defined as 60% or more of respondents having agreement.	Forecasted significant events: decreased reimbursement, increased lab testing, inadequately staffed labs and technological advances.
Last, L., & Fulbrook, P. (2003). Why do student nurses leave? Suggestions from a Delphi study. *Nurse Education Today*, *23*, 449-458.	Nursing	Delphi established consensus of the reasons why student nurses leave their pre-registration education program.	3-Round Delphi. 32 student nurses in final year of education. Focus groups and 1:1 interviews 48-statement attitude Delphi questionnaire.	Consensus defined as 75% agreement.	Consensus achieved for 41 of 48 statements. Academic failure is leading cause of nursing student dropout. In addition, communication, operational issues at university and clinic, not valued, unmet expectations.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Lopopolo, R.B., Schafer, D.S., & Nosse, L.J. (2004). Leadership, administration, management, and professionalism (LAMP) in physical therapy: A Delphi study. *Physical Therapy*, *84*(2), 137-150.	AH - Physical Therapy (PT)	Study defined the range of knowledge and skills required for leadership, administration, management, and professionalism (LAMP) in physical therapy.	3-Round Internet Delphi; fax/mail backup. 34 physical therapist clinical managers. 4 pt. Likert scale. 165 LAMP components in 7 elements. Median score, rank, average score and std. deviation	Consensus not set a priori. Consensus evolved over rounds of iteration.	First research attempt to define LAMP. Consensus on 178 LAMP with skills and knowledge with top-ranked categories: communication, professional involvement, ethical practice, and organizational scanning.
McIlfatrick, S.J., & Keeney, S. (2003). Identifying cancer nursing research priorities using the Delphi technique. *Journal of Advance Nursing*, *42*(6), 629-636.	Nursing	Delphi facilitated a strategic approach to cancer nursing research by identifying the research priorities of cancer nurses.	3-Round Delphi. 112 nurses attending a cancer seminar. Ranked priorities.	Consensus defined as 65%+ agreement.	Nursing cancer research priorities: communication, nursing stress and burnout, psychosocial issues and care of patients. Round 3 response rate = 91%.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
McKenna, H., & Hasson, F. (2003). A study of skill mix issues in midwifery: A multimethod approach. *Journal of Advanced Nursing*, *37*(1), 52-61.	Allied Health - Midwifery	Delphi established skill set and most effective use of midwifery position. Clerical, domestic, portering and stock duties take up a large portion of the midwives' time.	2-Round Delphi. 194 hospital midwives and 79 student midwives. 188 nonmidwifery duties identified.	Consensus defined as 70% agreement.	83% consensus on 188 midwifery assistant duties. 94% consensus on inclusion of midwifery assistants to ward team.
Mitchell, M.P. (1998). Nursing Education Planning: A Delphi study. *Journal of Nursing Education 37*(7), 305-307. Original reference: Stead, F.L. (1975). An application of the Delphi method of forecasting to nursing education planning in West Virginia. Dissertation Abstracts International, 36, 3312B (University Microfilms No. 76-00, 755).	Nursing	Delphi forecasted future events in nursing education.	3-Round Delphi. Follow-up to Stead (1975) research of 53 predicted events 33 administrative heads of nursing.	Consensus not set a priori.	From Stead research - 22 of 26 events occurred as predicted; 85% accuracy. 24 of 25 events remained viable; 96% accuracy.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Parente, R., & Anderson-Parente, J. (2011). A case study of long-term Delphi accuracy. *Technological Forecasting and Social Change*, 10.1016/j.techfore.2011.07.005	AH - Mental Health	Delphi predicted the future of mental health profession over a 20-year time frame and beyond.	2-Round Delphi. 600 mental health staff; 6 disciplines. 18 scenarios with table of mean rank differences. 20 year end point; predicted vs. observed	Consensus not set a priori. Consensus defined as decreased variability in responses.	4 of 18 scenarios occurred in forecasted time. “If” and “When” validation of future events challenging due to timing.
Randall, K., Hopes, S., & Bender, D. (2008). Developing an honor statement for university students in graduate professional programs. *Journal of Allied Health*, *37*(2), 121-124.	AH - Occupational Therapy (OT) and Physical Therapy (PT)	Study identified consensus on the development of an honor statement for graduate students in occupational and physical therapy.	3-Round Delphi. 97 OT and PT students and faculty panel. 5 pt. Likert scale with priority ranking.	Consensus not set a priori. Consensus defined where most panel members agree.	87% of students and 83% of faculty voted in favor of honor statement. Delphi outcome: formal honor statement, set of shared values and beliefs, impetus for academic integrity, and student-faculty collaboration.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Roberts-Davis, M., & Read, S. (2001). Clinical role clarification: Using the Delphi method to establish similarities and differences between nurse practitioners and clinical nurse. *Journal of Advanced Nursing*, *10*, 33-43.	Nursing	Delphi clarified the differences between nurse practitioners and clinical nurse specialists.	3-Round Delphi. 175 panelists with RNs, educators, purchasers, providers, and statutory and professional bodies. 5 pt. Likert scale. 27-month project.	Initial lowest consensus level as agreement /disagreement = 60%; consensus updated to 80%.	Primary nursing skills are central to nurse practitioner and clinical nurse specialist roles. Differentiation between roles difficult to define.
Sizer, P.S., Flstehausen, V., Sawyer, S., Dornier, L. Matthews, P., & Cook, C. (2007). Eight critical skill sets required for manual therapy competency: A Delphi study and factor analysis of physical therapy educators *Journal of Allied Health*, *36*(1), 30-40.	AH - Physical Therapy (PT)	Studied the identification of psychomotor skills and abilities important to orthopedic manual therapy (OMC).	3-Round, Web-based Delphi. 388 PTs in initial panel. 4 pt. Likert scale.	Consensus = 75%+; 50% to 74% forced near consensus or undecided.	Delphi completed by 80 PTs. 29 stand-alone skills and 8 homogenous skill sets identified as important to manual therapy competency and application.

Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Valdez, A. M. (2008). *Educational priorities for the future of emergency nursing.* Doctor of Philosophy, Capella University, Minneapolis, MN. (3315963)	Emergency Nursing	Delphi examined societal and healthcare trends impact on educational needs of ER nurse.	3-Round Web-based Delphi. 50 emergency nurses. 7 pt. Likert scale.	Consensus: High = 80% agreement; moderate = 50% agreement.	Consensus on 42 societal and healthcare priorities and 63 educational priorities.
Wang, E. E., Dyne, P., & Hongyan, D. (2011). Systems-based practice: Summary of the 2010 council of emergency medicine residency directors academic assembly consensus workgroup- teaching and evaluating the difficult-to-teach competencies. *Academic Emergency Medicine, 18*(10), S110-S120.	Emergency Medicine (EM)	Delphi developed systems-based practice (SBP) taxonomy of EM with domain-specific knowledge, skills, and attitudes (KSA).	3-Round modified Delphi: Round 1 pre-conference questions (e-mail), and Round 2-3 used small focus groups. 75 EM program directors and assistant/ associate directors.	Consensus not set a priori.	Response rates from 68-100%. Redefined the 2002 EM SBP competency definitions, revised taxonomy of EM-specific domains to reflect core KSAs.

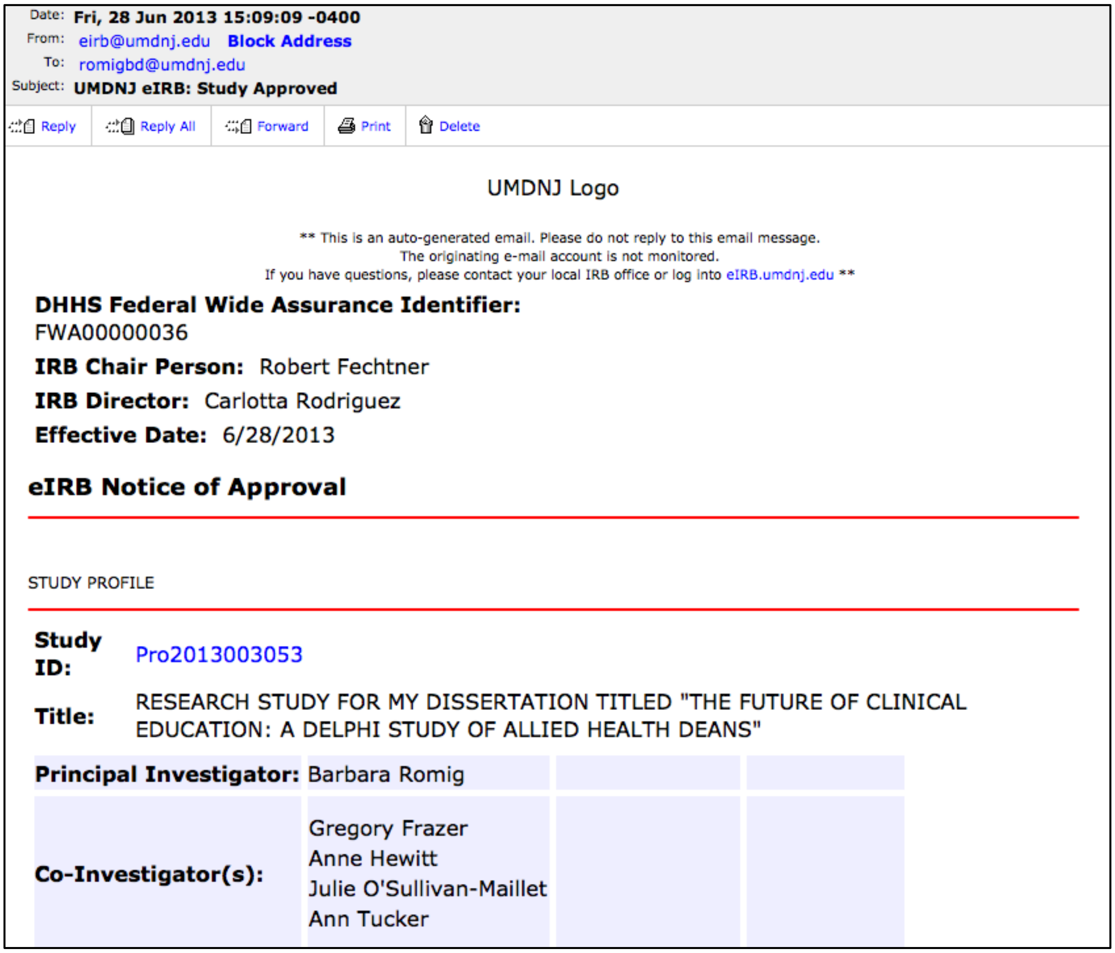
Authors/Title	Discipline	Purpose	Methodology	Consensus	Major Findings
Wieck, K.L. (2003). Faculty for the millennium: Changes needed to attract the emerging workforce into nursing. *Journal of Nursing Education, 42*(4), 151-158.	Nursing	Delphi examined the determination of emerging workforce values with translation to increasing the number of nursing students.	Emerging Workforce Preference Survey. 176 young people (~ 20 age yrs.), 49 faculty nursing staff. 3 pt. Likert scale. Prioritized ranking.	Consensus not set a priori.	Survey demonstrated students value: supportive, motivational, professional, and dedicated attributes. Faculty thought students would value: advocate, caring, competent, and positive. Future of nursing may depend upon attracting young people.

Note. AH denotes allied health.

Appendix I

University of Medicine and Dentistry of New Jersey (UMDNJ) Newark Institutional Review Board Approval of “The Future of Clinical Education: A Delphi Study of Allied Health Deans”

(As of July 1, 2013, UMDNJ-SHRP became part of
Rutgers, The State University of New Jersey)



Date: **Fri, 28 Jun 2013 15:09:09 -0400**
From: eirb@umdnj.edu
To: romigbd@umdnj.edu
Subject: **UMDNJ eIRB: Study Approved**

UMDNJ Logo

** This is an auto-generated email. Please do not reply to this email message.
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DHHS Federal Wide Assurance Identifier:
FWA00000036

IRB Chair Person: Robert Fechtner

IRB Director: Carlotta Rodriguez

Effective Date: 6/28/2013

eIRB Notice of Approval

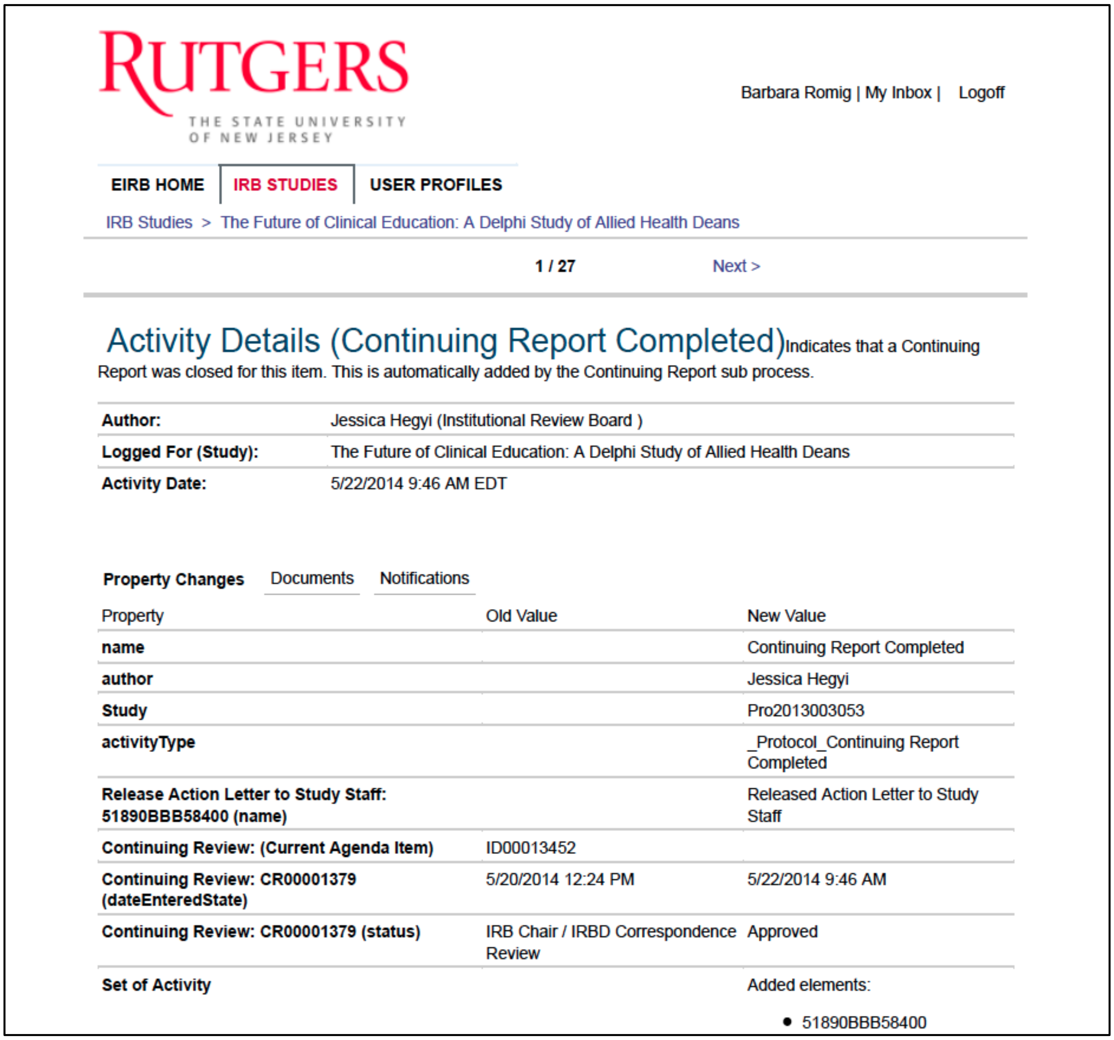
STUDY PROFILE

Study ID:	Pro2013003053
Title:	RESEARCH STUDY FOR MY DISSERTATION TITLED "THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS"
Principal Investigator:	Barbara Romig
Co-Investigator(s):	Gregory Frazer Anne Hewitt Julie O'Sullivan-Maillet Ann Tucker

Appendix J

Rutgers, The State University of New Jersey, Newark Institutional Review Board Approval of the Continuing Review of "The Future of Clinical Education: A Delphi Study of Allied Health Deans"

(As of July 1, 2013, UMDNJ-SHRP became part of
Rutgers, The State University of New Jersey)


RUTGERS
THE STATE UNIVERSITY OF NEW JERSEY
Barbara Romig | My Inbox | Logoff
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IRB STUDIES
USER PROFILES
IRB Studies > The Future of Clinical Education: A Delphi Study of Allied Health Deans
1 / 27
Next >
Property Changes
Documents
Notifications

Activity Details (Continuing Report Completed)

Indicates that a Continuing Report was closed for this item. This is automatically added by the Continuing Report sub process.

Author:	Jessica Hegyi (Institutional Review Board)
Logged For (Study):	The Future of Clinical Education: A Delphi Study of Allied Health Deans
Activity Date:	5/22/2014 9:46 AM EDT

Property	Old Value	New Value
name		Continuing Report Completed
author		Jessica Hegyi
Study		Pro2013003053
activityType		_Protocol_Continuing Report Completed
Release Action Letter to Study Staff: 51890BBB58400 (name)		Released Action Letter to Study Staff
Continuing Review: (Current Agenda Item)	ID00013452	
Continuing Review: CR00001379 (dateEnteredState)	5/20/2014 12:24 PM	5/22/2014 9:46 AM
Continuing Review: CR00001379 (status)	IRB Chair / IRBD Correspondence Review	Approved
Set of Activity		Added elements: • 51890BBB58400

APPENDIX K

ASSOCIATION OF SCHOOLS OF ALLIED HEALTH (ASAHP) MEMBERSHIP DIRECTORY
JUNE 2013 Institutional Member Listing

	Health Professions Education Institutions Eligible for Study Participation (N=115)	Unit
1	Alabama State University	College of Health Sciences
2	American International College	School of Health Sciences
3	Andrews University	School of Health Professions
4	Appalachian State University	College of Health Sciences
5	Arkansas State University	College of Nursing & Health Professions
6	Armstrong Atlantic State University	College of Health Professions
7	Baptist College of Health Sciences	Allied Health
8	Bowling Green State University	College of Health & Human Services
9	California Baptist University	College of Allied Health
10	Central Michigan University	College of Health Professions
11	Charles R. Drew University of Medicine and Science	College of Science and Health
12	Creighton University	Pharmacy & Health Professions
13	Des Moines University	College of Health Sciences

	Health Professions Education Institutions	Unit
14	Drexel University	College of Nursing & Health Professions
15	East Carolina University	College of Applied Sciences
16	East Tennessee State University	College of Clinical & Rehabilitative Health Sciences
17	Eastern Kentucky University	College of Health Sciences
18	Eastern Michigan University	College of Health & Human Services
19	El Paso Community College	NA
20	Excelsior College (proprietary school)	School of Health Sciences
21	Ferris State University	College of Health Professions
22	Florida A&A University	School of Allied Health Sciences
23	Florida Gulf Coast University	College of Health Professions & Social Work
24	Georgia Regents University	College of Allied Health Sciences
25	Governors State University	College of Health and Human Services
26	Grand Valley State University	College of Health Professions
27	Harding University	College of Allied Health
28	Holy Family University	Radiologic Science Program

	Health Professions Education Institutions	Unit
29	Howard University	Division of Allied Health Sciences
30	Idaho State University	Division of Health Sciences
31	Indiana State University	Nursing, Health, and Human Services
32	Indiana University	School of Health and Rehabilitation Sciences
33	Ithaca College	Science and Human Performance
34	Kaiser Permanente	School of Allied Health Sciences
35	Loma Linda University	School of Allied Health Professions
36	Long Island University - Brooklyn	School of Health Professions
37	Long Island University - C.W. Post Campus	School of Health Professions & Nursing
38	Louisiana State University Health Sciences Center (New Orleans)	School of Allied Health Professions
39	Louisiana State University Health Sciences Center (Shreveport)	School of Allied Health Professions
40	Marquette University	College of Health Sciences
41	Marshall University	College of Health Professions
42	Mary Baldwin College	Murphy Deming College of Health Sciences
43	Maryville University of Saint Louis	School of Health Professions

	Health Professions Education Institutions	Unit
44	Massachusetts College of Pharmacy and Health Sciences (MCPHS)	NA
45	Mayo Clinic	Health Sciences, College of Medicine
46	Medical Education and Training Campus at Fort Sam Houston	NA
47	Medical University of South Carolina	NA
48	Mercy College	School of Health and Natural Sciences
49	MGH Institute of Health Professions	School of Health and Rehabilitation Sciences
50	Midwestern University (Downer's Grove)	College of Health Sciences
51	Midwestern University (Glendale Campus)	College of Health Sciences
52	Mountain State University	Permanently closed on 1/1/13
53	New York Institute of Technology	School of Health Professions
54	Northeastern University	Bouve College of Health Sciences
55	Northern Arizona University	College of Health and Human Services
56	Nova Southeastern University	College of Health Care Sciences
57	Ohio University	College of Health Sciences and Professions
58	Old Dominion University	College of Health Sciences
59	Pacific University	College of Health Professions

	Health Professions Education Institutions	Unit
60	Quinnipiac University	School of Health Sciences
61	The Richard Stockton College of New Jersey	School of Health Sciences
62	Rosalind Franklin University of Medicine and Science	College of Health Professions
63	Rush University Medical Center	College of Health Sciences
64	Sacred Heart University	College of Health Professions
65	Saint John University	College of Pharmacy & Health Sciences
66	Saint Louis University	Doisy College of Health Sciences
67	Seton Hall University	School of Health and Medical Sciences
68	Springfield College	Sciences and Rehabilitation Studies
69	St. Catherine University	The Henrietta Schmoll School of Health
70	State University of New York Upstate Medical University	College of Health Professions
71	Texas Southern University	College of Pharmacy & Health Sciences
72	Texas State University (San Marcos)	College of Health Professions
73	Texas Tech University Health Sciences Center	School of Allied Health Sciences
74	The George Washington University	School of Medicine & Health Sciences
75	The Ohio State University	School of Health and Rehabilitation Sciences

	Health Professions Education Institutions	Unit
76	The University of Texas Southwestern Medical Center at Dallas	School of Health Professions
77	Thomas Jefferson University	Jefferson School of Health Professions
78	Towson University	College of Health Professions
79	University at Buffalo, The State University of New York	School of Public Health and Health Professions
80	University of Alabama at Birmingham	School of Health Professions
81	University of Arkansas for Medical Sciences	College of Health Related Professions
82	University of Cincinnati	Center for Allied Health Sciences
83	University of Hartford	Education, Nursing and Health
84	University of Illinois at Chicago	College of Applied Health Sciences
85	University of Kansas	School of Health Professions
86	University of Kentucky	College of Health Sciences
87	University of Minnesota	Center for Allied Health Programs
88	University of Mississippi Medical Center	School of Health Related Professions
89	University of Missouri at Columbia	School of Health Professions
90	University of Nebraska Medical Center	School of Allied Health Professions
91	University of New England	College of Health Professions

	Health Professions Education Institutions	Unit
92	University of North Carolina at Chapel Hill	Department of Allied Health Sciences
93	University of North Carolina at Greensboro	School of Health and Human Performance
94	University of North Dakota	School of Medicine & Health Sciences
95	University of North Florida	Brooks College of Health
96	University of Oklahoma Health Sciences Center	College of Allied Health
97	University of South Alabama	College of Allied Health Professions
98	University of Tennessee Health Sciences Center	College of Allied Health Professions
99	University of Texas Health Sciences Center at San Antonio	School of Health Professions - MSC 6243
100	University of Texas M.D. Anderson Cancer Center	School of Health Professions
101	University of Texas Medical Branch at Galveston	School of Health Professions
102	University of the Sciences in Philadelphia	College of Health Sciences
103	University of Toledo	Judith Herb College of Education, Health Science and Human Service
104	University of Wisconsin at Milwaukee	College of Health Sciences
105	Utica College	School of Health Professions and Education
106	Virginia Commonwealth University	School of Allied Health Professions

	Health Professions Education Institutions	Unit
107	Wayne State University	Applebaum College of Pharmacy & Health Sciences
108	Weber State University	Dumke College of Health Professions
109	Western Carolina University	College of Health & Human Sciences
110	Western Kentucky University	College of Health & Human Services
111	Western Michigan University	College of Health & Human Services
112	Wichita State University	College of Health Professions
113	Winston-Salem State University	School of Health Sciences
114	University of Puerto Rico Medical Sciences Campus	School of Health Professions
115	Texas Health Science Center at Houston	School of Health Professions

	Note. Health Professions Education Institutions Not Eligible for Study Participation	Unit
1	Duquesne University	John G. Rangos, Sr. School of Health Sciences
2	King Saud-Bin Abdulaziz University for Health Sciences	College of Applied Medical Sciences
3	Kuwait University	Faculty of Allied Health Sciences
4	University of Medicine and Dentistry of New Jersey (As of July 1, 2013, UMDNJ-SHRP became part of Rutgers, The State University of New Jersey)	School of Health Related Professions

Appendix L

UMDNJ Institutional Review Board Approval of the Pilot Test for the Delphi Round 1 and 2 Surveys, Research Problem and Allied Health Dean Demographic Form

**** This is an auto-generated email. Please do not reply to this email message.**
The originating e-mail account is not monitored.
If you have questions, please contact your local IRB office or log into eIRB.umdnj.edu **

DHHS Federal Wide Assurance Identifier: FWA00000036

IRB Chair Person: Robert Fechtner

IRB Director: Carlotta Rodriguez

Effective Date: 2/7/2013

eIRB Notice of Approval

Study ID: Pro2012002411

Title: PILOT PROGRAM OF DELPHI ROUND ONE AND TWO, RESEARCH PROBLEM AND ALLIED HEALTH DEAN DEMOGRAPHIC FORM

INITIAL PILOT RESEARCH STUDY FOR MY DISSERTATION TITLED "THE FUTURE DELIVERY OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS"

Principal Investigator:	Barbara Romig		
Co-Investigator(s):	Julie O'Sullivan-Maillet Ann Tucker		
Sponsor:	Department Funded	**Approval Cycle:**	Twelve Months
Risk Determination:	Minimal Risk		

Review Type:	Expedited	**Expedited Category:**	7
Subjects:	11		

Appendix M

Pilot Test Invitation and Participant Consent
Used for E-mail Recruitment, One week Non-Responder E-mail Recruitment and Two Week Non-Responder Phone Recruitment

THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY OF ALLIED HEALTH DEANS

UMDNJ
University of Medicine &
Dentistry of New Jersey

February 18, 2013

Dear [Name]

As a PhD candidate at the University of Medicine and Dentistry of New Jersey, I am writing to request your participation in "**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans" Pilot Test**. You have been identified as an expert due to your experience as a former Allied Health Dean and leadership role in the Association of Schools of Allied Health Professions (ASAHP) to pilot the questionnaire. This study is designed to gain expert consensus of Allied Health Deans on **key factors impacting allied health clinical education**. This is a timely and important topic that addresses a portion of the ASAHP's strategic plan and assists in the preparation of allied health clinical education for future success and achievement. Contributing to the knowledge of allied health clinical education is a critical step forward to ensure optimum student training and your involvement can provide much needed insight on the topic.

You will be asked to pilot test the first of three Delphi surveys, the dissertation research problem, and the allied health demographic form and then provide written feedback with a brief phone interview. I am interested in your thoughts about how understandable the questions are and if the choices are appropriate and comprehensive. The survey and interview will take approximately 60 minutes to complete.

If you are interested in participating in this pilot study, please forward your contact information (name, preferred e-mail and mailing address, and phone number) to Barbara Romig at romigbd@umdnj.edu by [insert date]. You will receive the survey link accessible via Survey Monkey around [insert date] 2012.

There is no risk to you in participating in this research. Data will be treated confidentially and participation is voluntary. There will be no penalty if you choose not to participate. Return of your contact information acknowledges your voluntary agreement to participate in the pilot study and gives permission to use your information to contact you for inclusion in the Delphi pilot study and to contact you via mail, e-mail or phone to encourage you to complete the Delphi pilot study. The UMDNJ Newark Institutional Review Board has approved this research. If you have any questions regarding your rights as a research participant, you can contact the UMDNJ Newark Institutional Review Board at 973-972-3608.

This pilot will enhance the quality of the actual Delphi of current Allied Health Deans. If you have any questions regarding this research, please feel free to contact me at 248-622-7494 (romigbd@umdnj.edu) or my Dissertation Chair Julie O'Sullivan Maillet PhD at 973-972-6957 (maillet@umdnj.edu).

The success of this research depends on the generous support and time of leaders in your profession like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Sincerely,

Barbara Romig

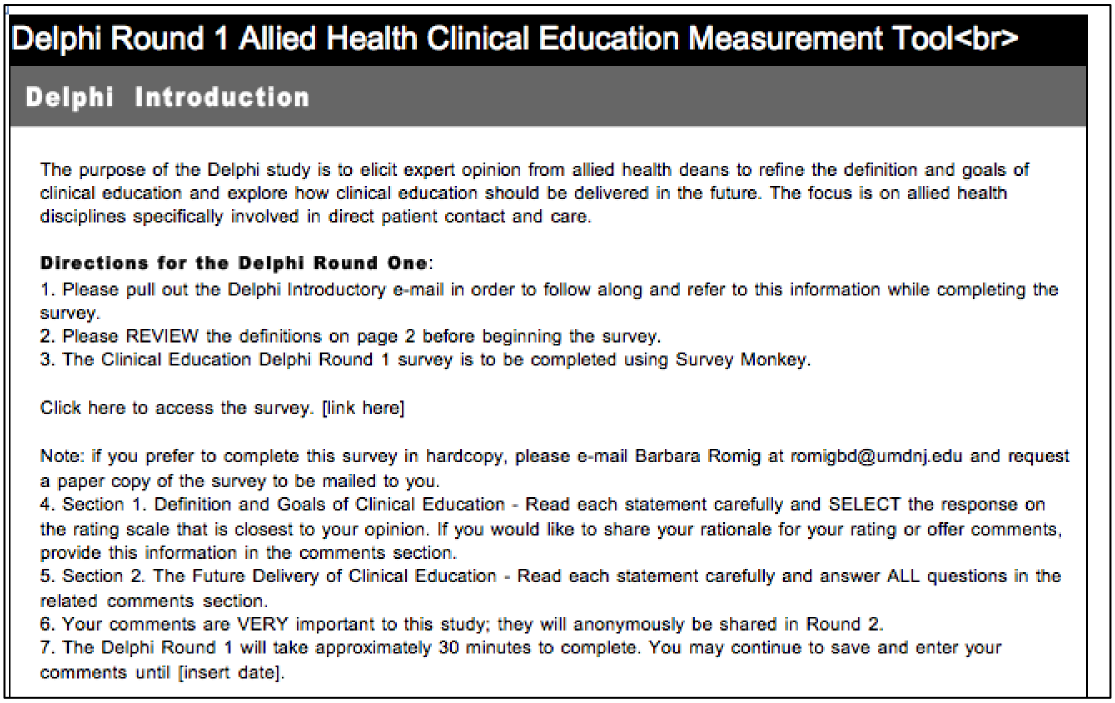
Barbara Romig, MS, MBA
PhD Candidate – University of Medicine and Dentistry of New Jersey
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P.
Interim Dean UMDNJ-SHRP & Chair of Dissertation Committee
E-mail: maillet@umdnj.edu
Phone: 973-972-6957

Dissertation Committee Members:
Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P., Chair
Ann W. Tucker, D.Ed; UMDNJ -SHRP
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix N

Pilot Test Round 1 Survey



Delphi Round 1 Allied Health Clinical Education Measurement Tool

Delphi Introduction

The purpose of the Delphi study is to elicit expert opinion from allied health deans to refine the definition and goals of clinical education and explore how clinical education should be delivered in the future. The focus is on allied health disciplines specifically involved in direct patient contact and care.

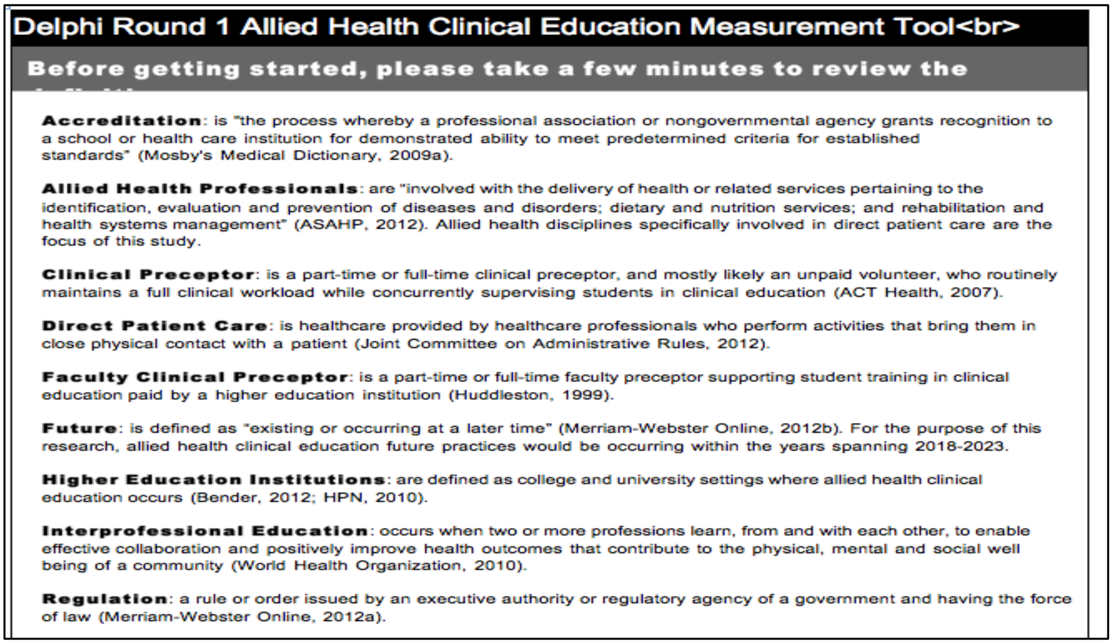
Directions for the Delphi Round One:

1. Please pull out the Delphi Introductory e-mail in order to follow along and refer to this information while completing the survey.
2. Please REVIEW the definitions on page 2 before beginning the survey.
3. The Clinical Education Delphi Round 1 survey is to be completed using Survey Monkey.

Click here to access the survey. [link here]

Note: if you prefer to complete this survey in hardcopy, please e-mail Barbara Romig at romigbd@umdnj.edu and request a paper copy of the survey to be mailed to you.

4. Section 1. Definition and Goals of Clinical Education - Read each statement carefully and SELECT the response on the rating scale that is closest to your opinion. If you would like to share your rationale for your rating or offer comments, provide this information in the comments section.
5. Section 2. The Future Delivery of Clinical Education - Read each statement carefully and answer ALL questions in the related comments section.
6. Your comments are VERY important to this study; they will anonymously be shared in Round 2.
7. The Delphi Round 1 will take approximately 30 minutes to complete. You may continue to save and enter your comments until [insert date].



Delphi Round 1 Allied Health Clinical Education Measurement Tool

Before getting started, please take a few minutes to review the

Accreditation: is "the process whereby a professional association or nongovernmental agency grants recognition to a school or health care institution for demonstrated ability to meet predetermined criteria for established standards" (Mosby's Medical Dictionary, 2009a).

Allied Health Professionals: are "involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management" (ASAHP, 2012). Allied health disciplines specifically involved in direct patient care are the focus of this study.

Clinical Preceptor: is a part-time or full-time clinical preceptor, and mostly likely an unpaid volunteer, who routinely maintains a full clinical workload while concurrently supervising students in clinical education (ACT Health, 2007).

Direct Patient Care: is healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012).

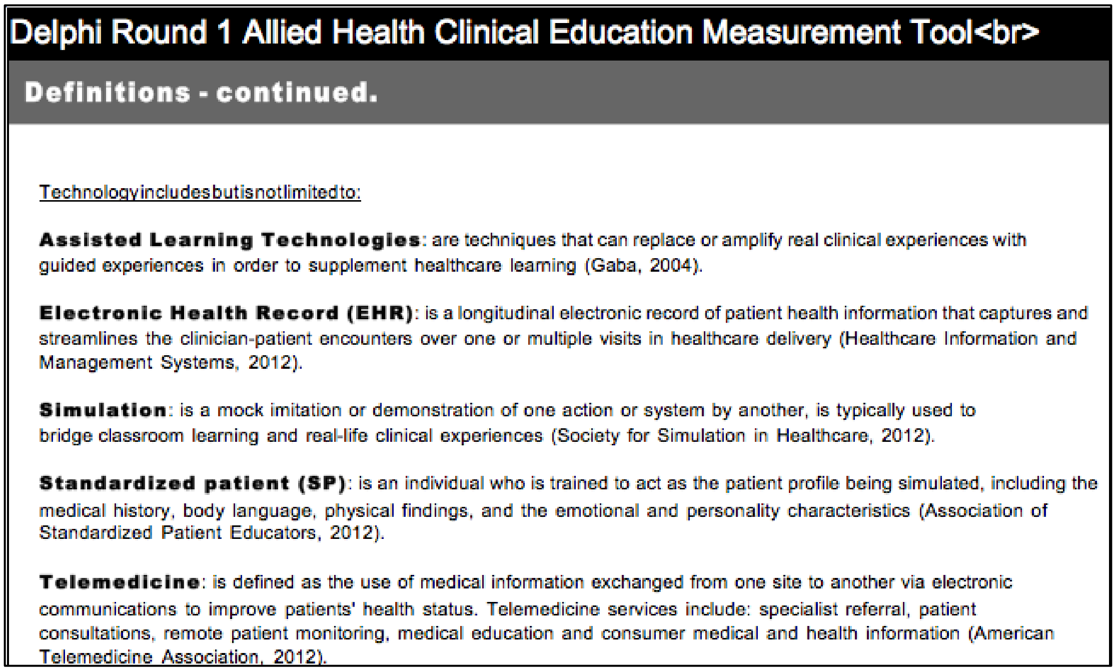
Faculty Clinical Preceptor: is a part-time or full-time faculty preceptor supporting student training in clinical education paid by a higher education institution (Huddleston, 1999).

Future: is defined as "existing or occurring at a later time" (Merriam-Webster Online, 2012b). For the purpose of this research, allied health clinical education future practices would be occurring within the years spanning 2018-2023.

Higher Education Institutions: are defined as college and university settings where allied health clinical education occurs (Bender, 2012; HPN, 2010).

Interprofessional Education: occurs when two or more professions learn, from and with each other, to enable effective collaboration and positively improve health outcomes that contribute to the physical, mental and social well being of a community (World Health Organization, 2010).

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law (Merriam-Webster Online, 2012a).



Delphi Round 1 Allied Health Clinical Education Measurement Tool

Definitions - continued.

Technologyincludesbutisnotlimitedto:

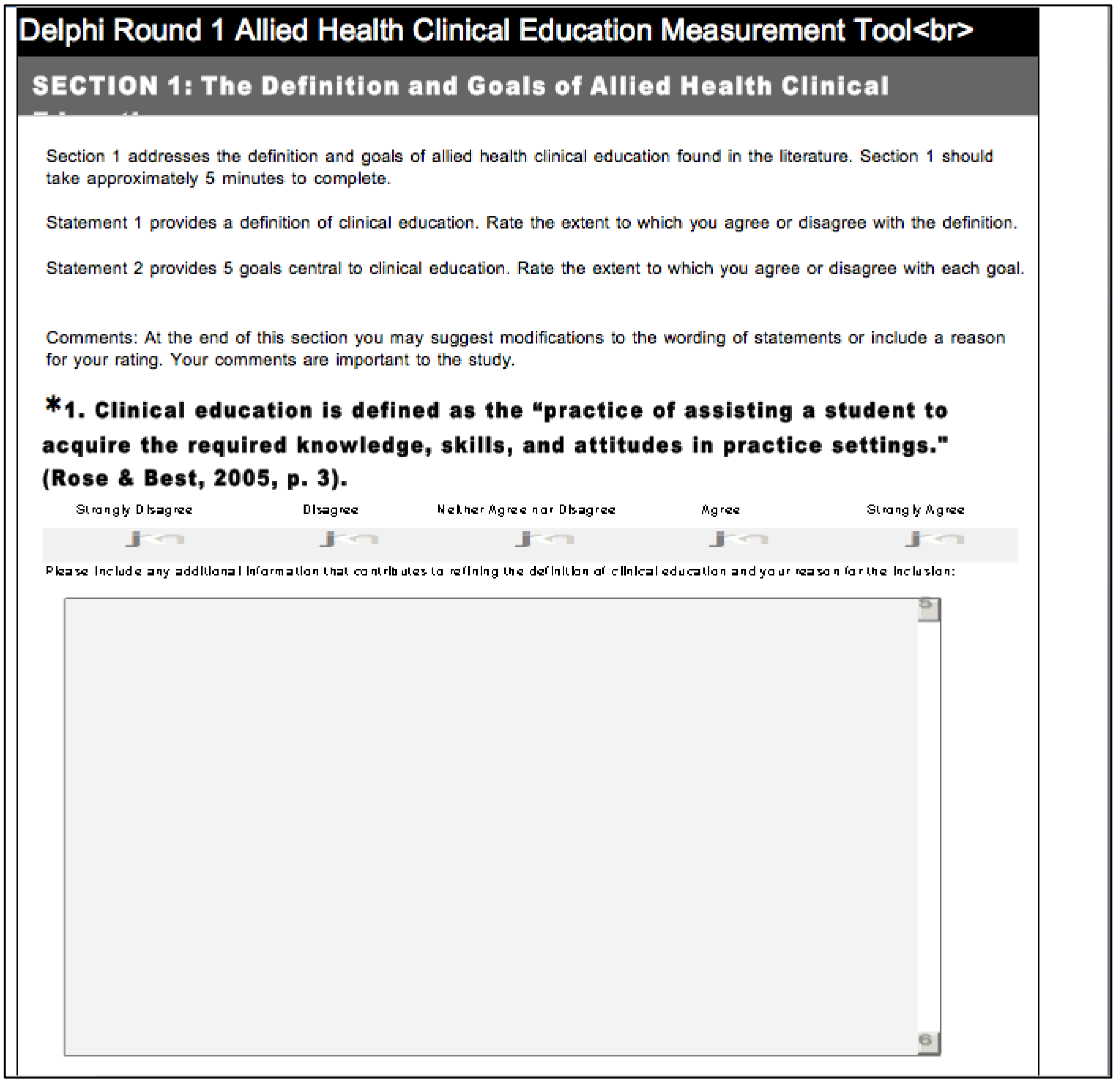
Assisted Learning Technologies: are techniques that can replace or amplify real clinical experiences with guided experiences in order to supplement healthcare learning (Gaba, 2004).

Electronic Health Record (EHR): is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012).

Simulation: is a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Standardized patient (SP): is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Association of Standardized Patient Educators, 2012).

Telemedicine: is defined as the use of medical information exchanged from one site to another via electronic communications to improve patients' health status. Telemedicine services include: specialist referral, patient consultations, remote patient monitoring, medical education and consumer medical and health information (American Telemedicine Association, 2012).



Delphi Round 1 Allied Health Clinical Education Measurement Tool

SECTION 1: The Definition and Goals of Allied Health Clinical

Section 1 addresses the definition and goals of allied health clinical education found in the literature. Section 1 should take approximately 5 minutes to complete.

Statement 1 provides a definition of clinical education. Rate the extent to which you agree or disagree with the definition.

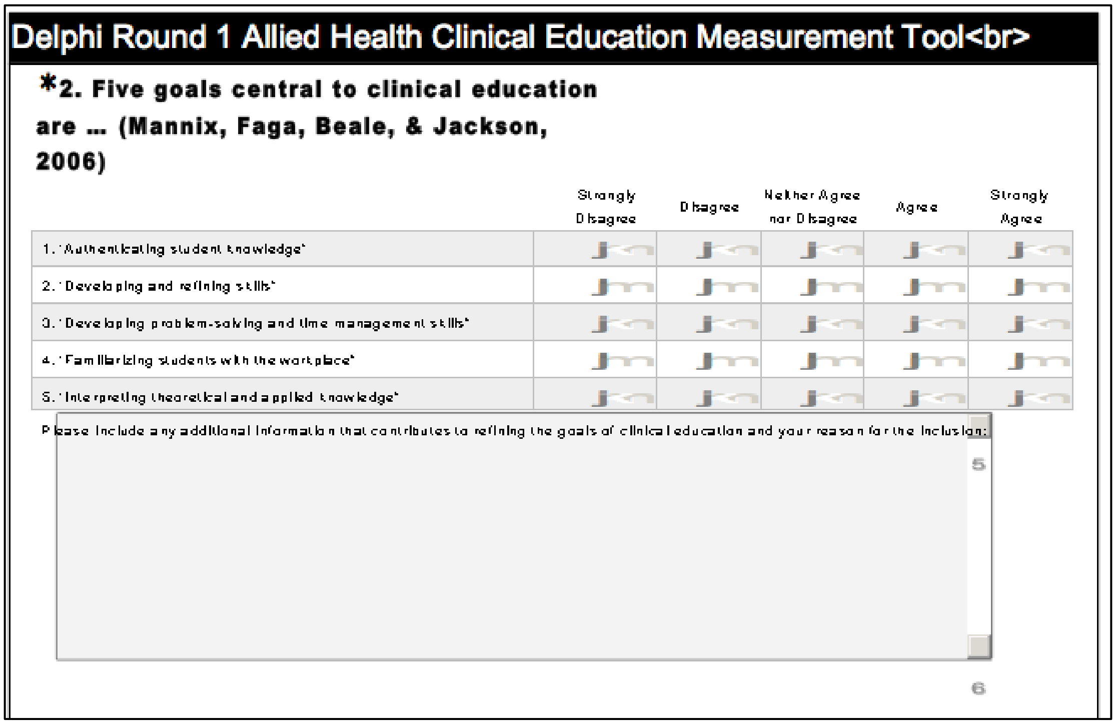
Statement 2 provides 5 goals central to clinical education. Rate the extent to which you agree or disagree with each goal.

Comments: At the end of this section you may suggest modifications to the wording of statements or include a reason for your rating. Your comments are important to the study.

***1. Clinical education is defined as the "practice of assisting a student to acquire the required knowledge, skills, and attitudes in practice settings." (Rose & Best, 2005, p. 3).**

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Please include any additional information that contributes to refining the definition of clinical education and your reason for the inclusion:

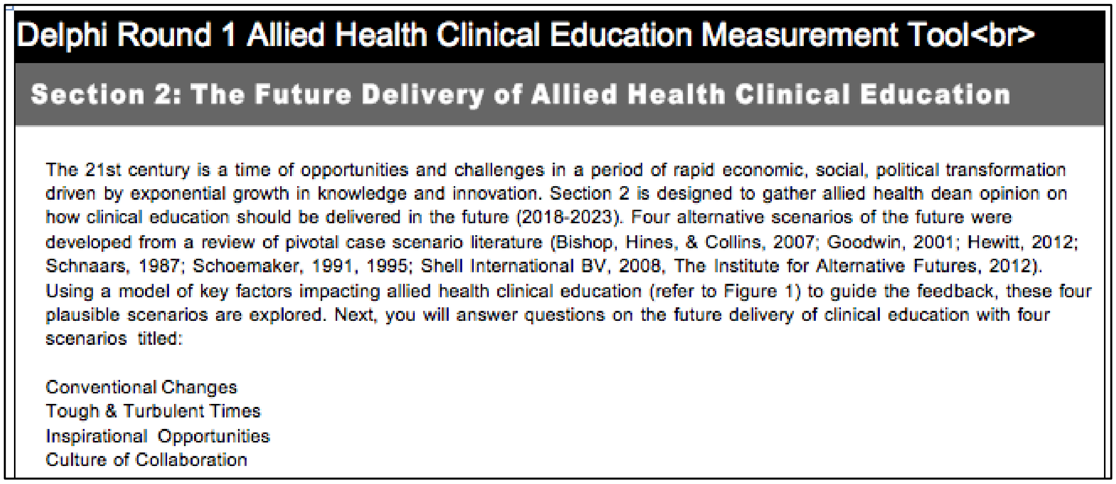


**Delphi Round 1 Allied Health Clinical Education Measurement Tool
**

***2. Five goals central to clinical education are ... (Mannix, Faga, Beale, & Jackson, 2006)**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. "Authenticating student knowledge"	○	○	○	○	○
2. "Developing and refining skills"	○	○	○	○	○
3. "Developing problem-solving and time management skills"	○	○	○	○	○
4. "Familiarizing students with the workplace"	○	○	○	○	○
5. "Interpreting theoretical and applied knowledge"	○	○	○	○	○

Please include any additional information that contributes to refining the goals of clinical education and your reason for the inclusion:



**Delphi Round 1 Allied Health Clinical Education Measurement Tool
**

Section 2: The Future Delivery of Allied Health Clinical Education

The 21st century is a time of opportunities and challenges in a period of rapid economic, social, political transformation driven by exponential growth in knowledge and innovation. Section 2 is designed to gather allied health dean opinion on how clinical education should be delivered in the future (2018-2023). Four alternative scenarios of the future were developed from a review of pivotal case scenario literature (Bishop, Hines, & Collins, 2007; Goodwin, 2001; Hewitt, 2012; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008, The Institute for Alternative Futures, 2012). Using a model of key factors impacting allied health clinical education (refer to Figure 1) to guide the feedback, these four plausible scenarios are explored. Next, you will answer questions on the future delivery of clinical education with four scenarios titled:

Conventional Changes
Tough & Turbulent Times
Inspirational Opportunities
Culture of Collaboration

Figure 1. Key Factors Impacting Allied Health Clinical Education

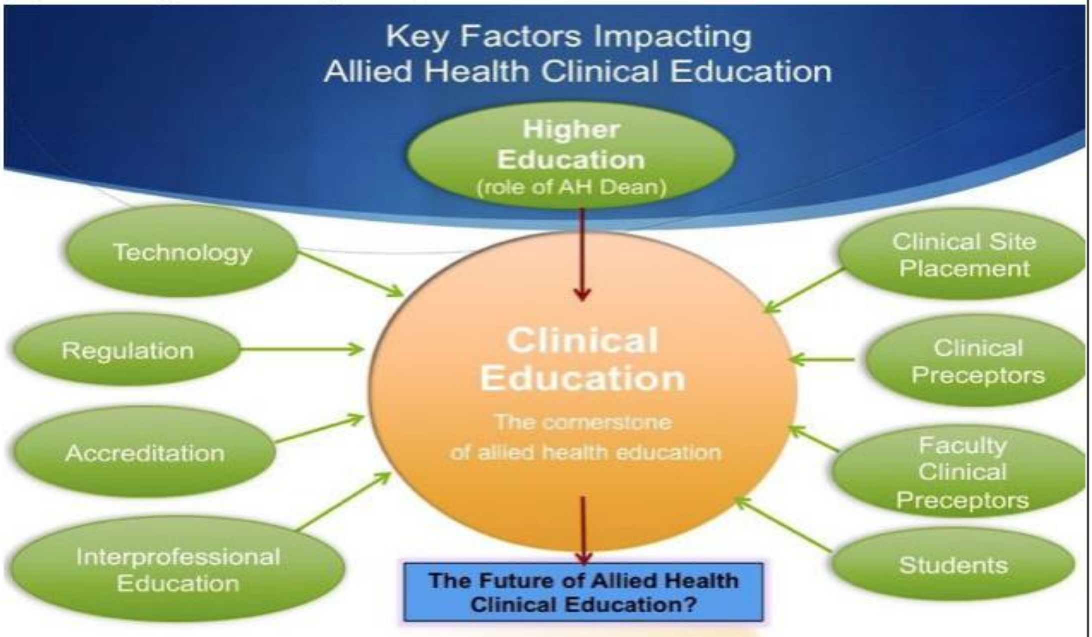
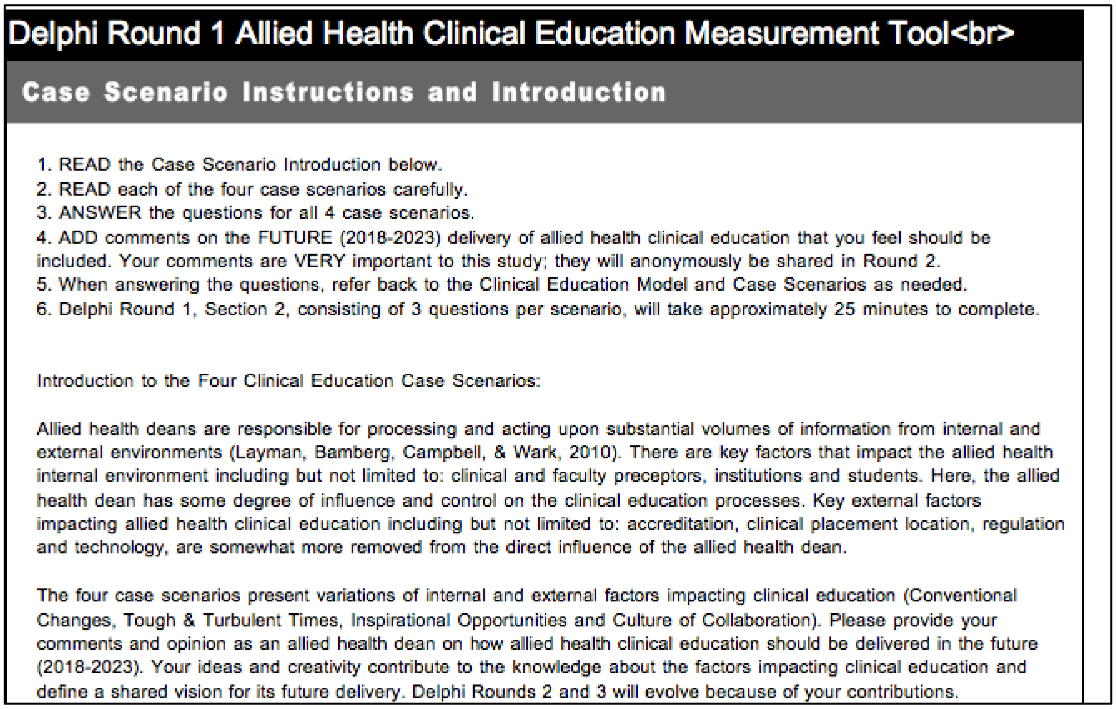

Key Factors Impacting
Allied Health Clinical Education
Higher Education (role of AH Dean)
Technology
Regulation
Accreditation
Interprofessional Education
Clinical Education
The cornerstone of allied health education
The Future of Allied Health Clinical Education?
Clinical Site Placement
Clinical Preceptors
Faculty Clinical Preceptors
Students

Figure 1. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20 and June 26th, 2012.



Delphi Round 1 Allied Health Clinical Education Measurement Tool

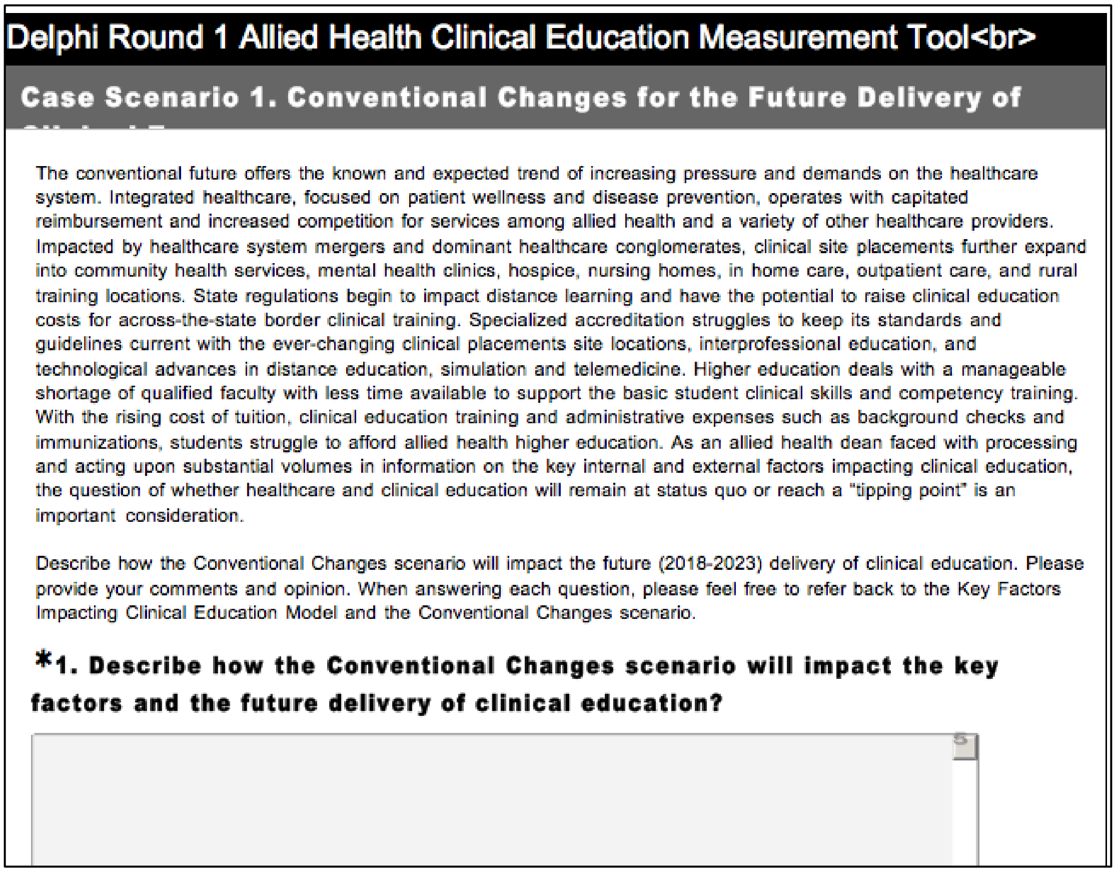
Case Scenario Instructions and Introduction

1. READ the Case Scenario Introduction below.
2. READ each of the four case scenarios carefully.
3. ANSWER the questions for all 4 case scenarios.
4. ADD comments on the FUTURE (2018-2023) delivery of allied health clinical education that you feel should be included. Your comments are VERY important to this study; they will anonymously be shared in Round 2.
5. When answering the questions, refer back to the Clinical Education Model and Case Scenarios as needed.
6. Delphi Round 1, Section 2, consisting of 3 questions per scenario, will take approximately 25 minutes to complete.

Introduction to the Four Clinical Education Case Scenarios:

Allied health deans are responsible for processing and acting upon substantial volumes of information from internal and external environments (Layman, Bamberg, Campbell, & Wark, 2010). There are key factors that impact the allied health internal environment including but not limited to: clinical and faculty preceptors, institutions and students. Here, the allied health dean has some degree of influence and control on the clinical education processes. Key external factors impacting allied health clinical education including but not limited to: accreditation, clinical placement location, regulation and technology, are somewhat more removed from the direct influence of the allied health dean.

The four case scenarios present variations of internal and external factors impacting clinical education (Conventional Changes, Tough & Turbulent Times, Inspirational Opportunities and Culture of Collaboration). Please provide your comments and opinion as an allied health dean on how allied health clinical education should be delivered in the future (2018-2023). Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future delivery. Delphi Rounds 2 and 3 will evolve because of your contributions.



**Delphi Round 1 Allied Health Clinical Education Measurement Tool
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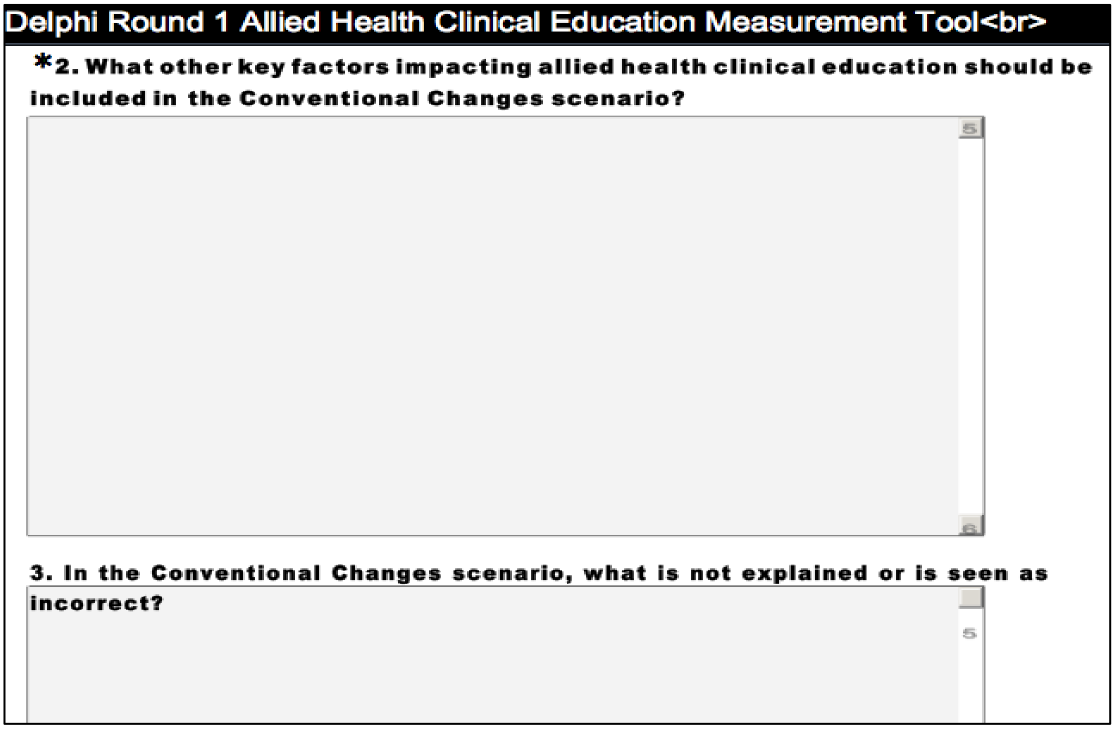
Case Scenario 1. Conventional Changes for the Future Delivery of

The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operates with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in home care, outpatient care, and rural training locations. State regulations begin to impact distance learning and have the potential to raise clinical education costs for across-the-state border clinical training. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telemedicine. Higher education deals with a manageable shortage of qualified faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford allied health higher education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external factors impacting clinical education, the question of whether healthcare and clinical education will remain at status quo or reach a "tipping point" is an important consideration.

Describe how the Conventional Changes scenario will impact the future (2018-2023) delivery of clinical education. Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Conventional Changes scenario.

***1. Describe how the Conventional Changes scenario will impact the key factors and the future delivery of clinical education?**



**Delphi Round 1 Allied Health Clinical Education Measurement Tool
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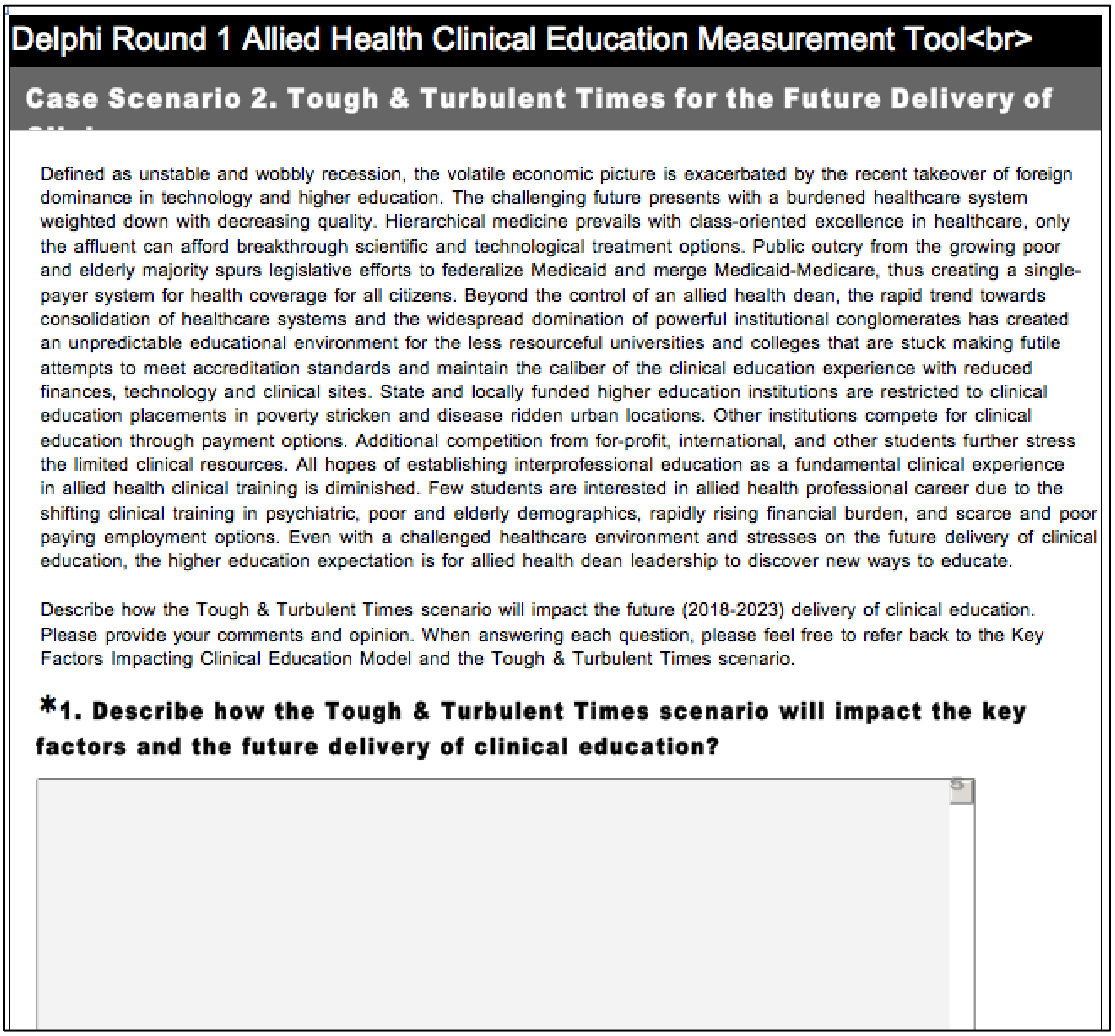
***2. What other key factors impacting allied health clinical education should be included in the Conventional Changes scenario?**

3. In the Conventional Changes scenario, what is not explained or is seen as incorrect?



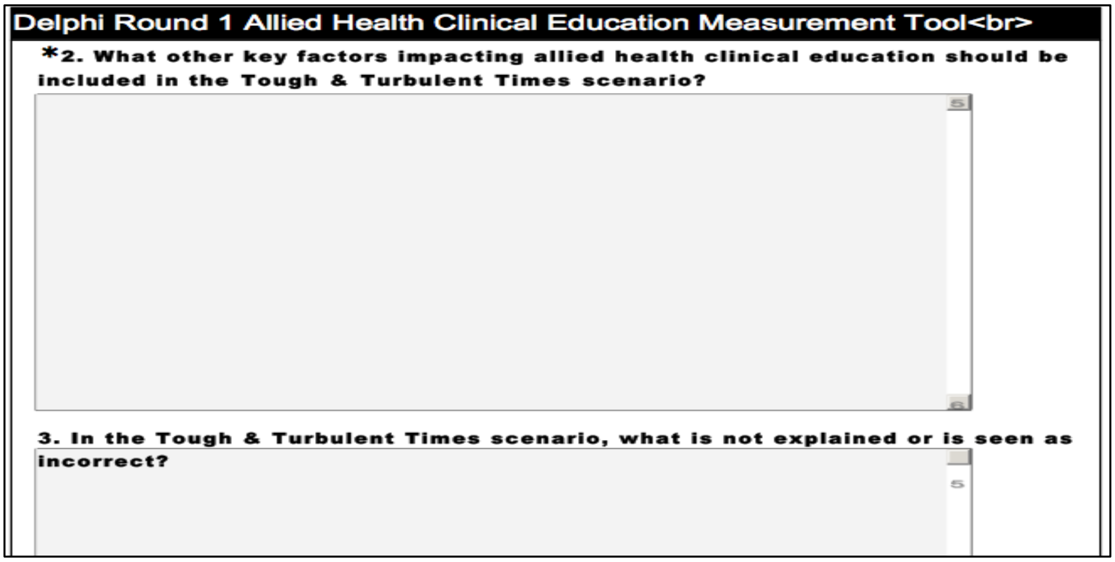
Delphi Round 1 Allied Health Clinical Education Measurement Tool

Case Scenario 2. Tough & Turbulent Times for the Future Delivery of

Defined as unstable and wobbly recession, the volatile economic picture is exacerbated by the recent takeover of foreign dominance in technology and higher education. The challenging future presents with a burdened healthcare system weighted down with decreasing quality. Hierarchical medicine prevails with class-oriented excellence in healthcare, only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the rapid trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates has created an unpredictable educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded higher education institutions are restricted to clinical education placements in poverty stricken and disease ridden urban locations. Other institutions compete for clinical education through payment options. Additional competition from for-profit, international, and other students further stress the limited clinical resources. All hopes of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in allied health professional career due to the shifting clinical training in psychiatric, poor and elderly demographics, rapidly rising financial burden, and scarce and poor paying employment options. Even with a challenged healthcare environment and stresses on the future delivery of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

Describe how the Tough & Turbulent Times scenario will impact the future (2018-2023) delivery of clinical education. Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Tough & Turbulent Times scenario.

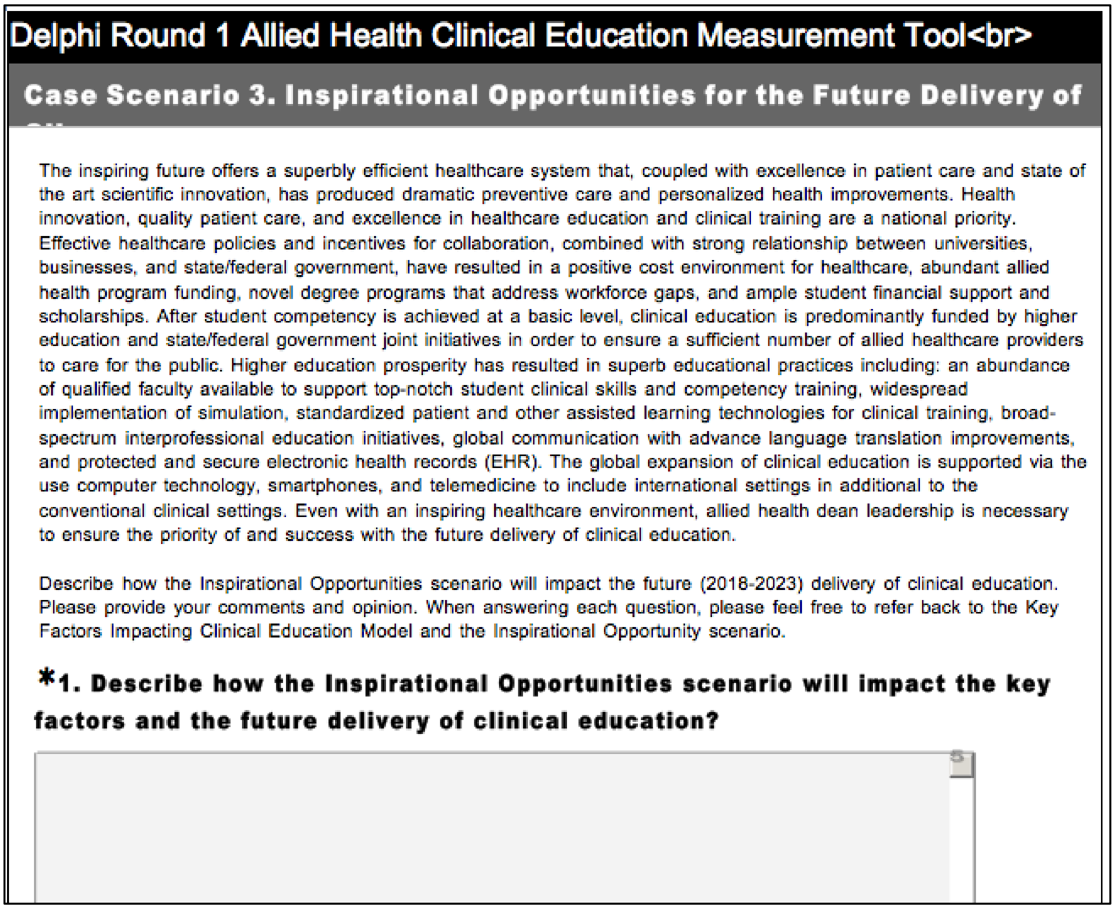
***1. Describe how the Tough & Turbulent Times scenario will impact the key factors and the future delivery of clinical education?**



Delphi Round 1 Allied Health Clinical Education Measurement Tool

***2. What other key factors impacting allied health clinical education should be included in the Tough & Turbulent Times scenario?**

3. In the Tough & Turbulent Times scenario, what is not explained or is seen as incorrect?



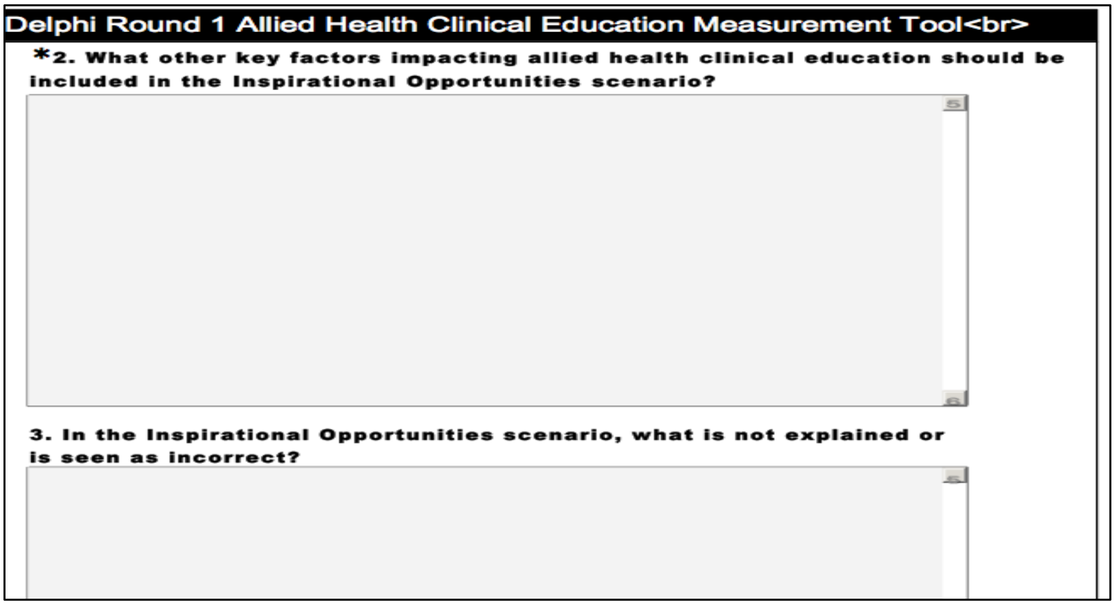
Delphi Round 1 Allied Health Clinical Education Measurement Tool

Case Scenario 3. Inspirational Opportunities for the Future Delivery of

The inspiring future offers a superbly efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has produced dramatic preventive care and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have resulted in a positive cost environment for healthcare, abundant allied health program funding, novel degree programs that address workforce gaps, and ample student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the public. Higher education prosperity has resulted in superb educational practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). The global expansion of clinical education is supported via the use computer technology, smartphones, and telemedicine to include international settings in additional to the conventional clinical settings. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future delivery of clinical education.

Describe how the Inspirational Opportunities scenario will impact the future (2018-2023) delivery of clinical education. Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Inspirational Opportunity scenario.

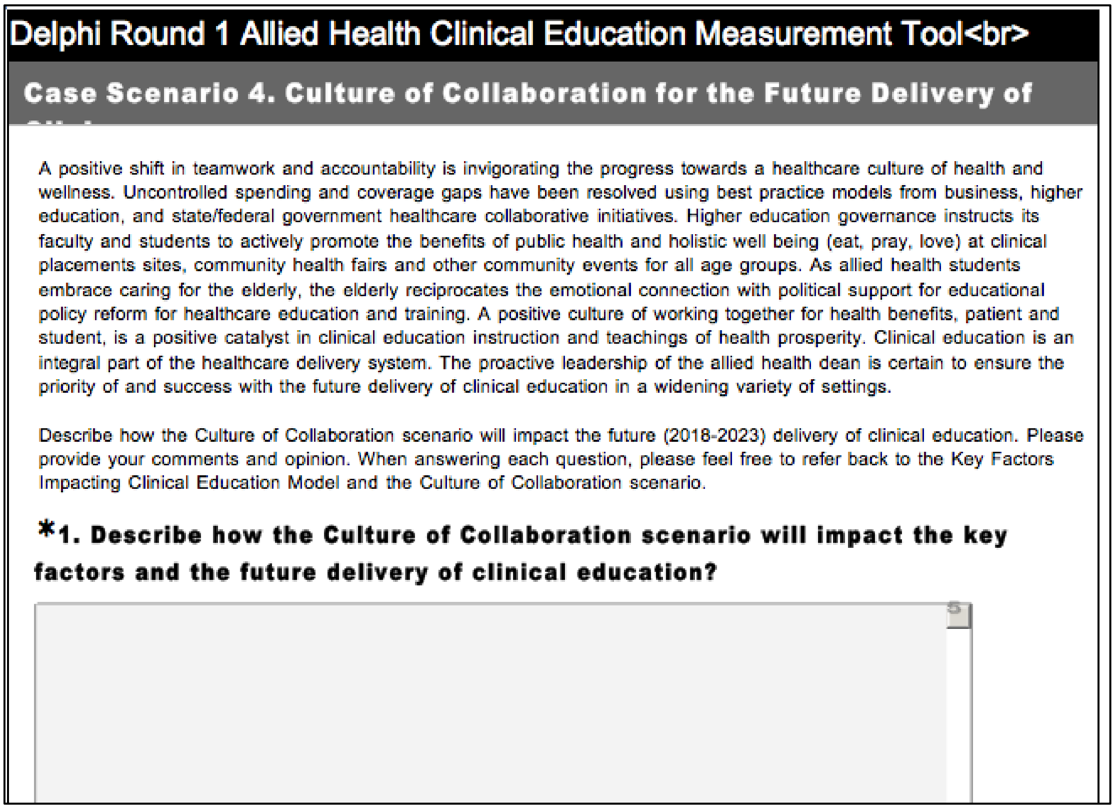
***1. Describe how the Inspirational Opportunities scenario will impact the key factors and the future delivery of clinical education?**



Delphi Round 1 Allied Health Clinical Education Measurement Tool

***2. What other key factors impacting allied health clinical education should be included in the Inspirational Opportunities scenario?**

3. In the Inspirational Opportunities scenario, what is not explained or is seen as incorrect?



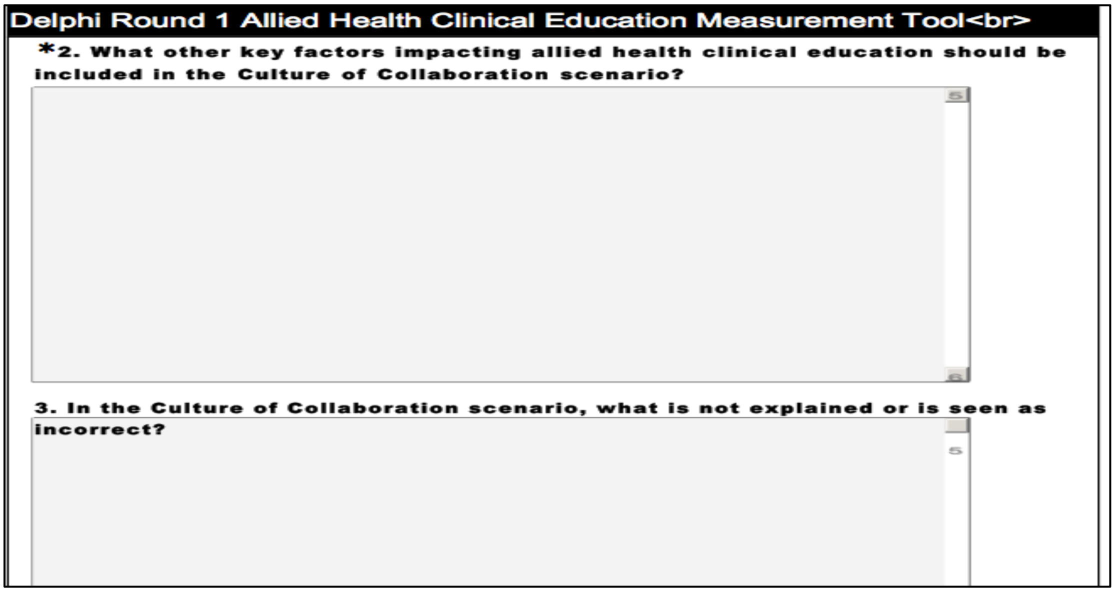
Delphi Round 1 Allied Health Clinical Education Measurement Tool

Case Scenario 4. Culture of Collaboration for the Future Delivery of

A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Higher education governance instructs its faculty and students to actively promote the benefits of public health and holistic well being (eat, pray, love) at clinical placements sites, community health fairs and other community events for all age groups. As allied health students embrace caring for the elderly, the elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future delivery of clinical education in a widening variety of settings.

Describe how the Culture of Collaboration scenario will impact the future (2018-2023) delivery of clinical education. Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Culture of Collaboration scenario.

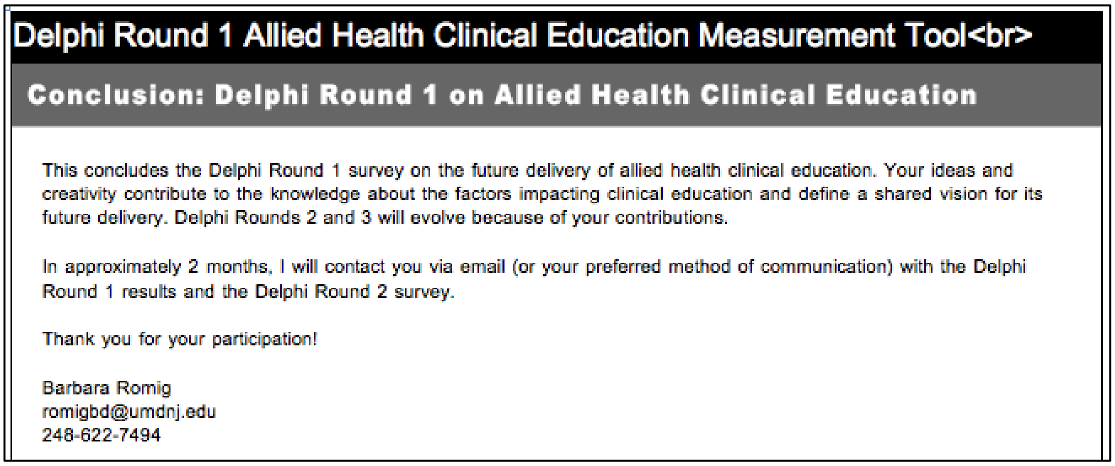
***1. Describe how the Culture of Collaboration scenario will impact the key factors and the future delivery of clinical education?**



Delphi Round 1 Allied Health Clinical Education Measurement Tool

***2. What other key factors impacting allied health clinical education should be included in the Culture of Collaboration scenario?**

3. In the Culture of Collaboration scenario, what is not explained or is seen as incorrect?



Delphi Round 1 Allied Health Clinical Education Measurement Tool

Conclusion: Delphi Round 1 on Allied Health Clinical Education

This concludes the Delphi Round 1 survey on the future delivery of allied health clinical education. Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future delivery. Delphi Rounds 2 and 3 will evolve because of your contributions.

In approximately 2 months, I will contact you via email (or your preferred method of communication) with the Delphi Round 1 results and the Delphi Round 2 survey.

Thank you for your participation!

Barbara Romig
romigbd@umdnj.edu
248-622-7494

Appendix O

Pilot Test of Allied Health Dean Demographic Form

The Future Delivery of Clinical Education:
A Delphi Study of Allied Health Deans

By completing the form, I agree to participate in the dissertation study titled "The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans". All information will be reported in aggregate form.

Contact Information:

Full Name:

If different that the ASAHP directory information, please provide:

Position:

Email Address:

Mailing Address:

Telephone Number:

Part 1: Participant Profile

a. Gender:

☐Female ☐Male

b. Please indicate the number of years of experience (current and previous employment) as the Dean of allied health:

☐< 1 ☐1-5 ☐6-10 ☐11-15 ☐16-20 ☐Over 20

c. Please indicate the number of years in academia (full-time or >50%):

☐< 1 ☐1-5 ☐6-10 ☐11-15 ☐16-20 ☐Over 20

d. Are you credentialed / licensed as an allied health licensed provider?

☐No ☐Yes

If yes, please provide your specific discipline with credentials (e.g., dietetics, physical therapy, speech-language pathology, etc.)

e. What is your highest degree and the corresponding field (e.g., Ph.D. / Higher Education Administration)?

Part II. Institutional Profile:

a. Select your institutional profile:
☐Public ☐Private ☐Other ________________

b. Within what type of sponsoring institution are you located in?
☐Four year college/university (UC); ☐Academic health center / medical school (AH)

☐Other; Please describe.

c. How many allied health programs do you oversee?
☐< 5 ☐5-10 ☐11-15 ☐16-20 ☐Over 20

d. What is the size of your yearly budget (in millions)?
☐< $5 ☐$5-$10 ☐$11-$15 ☐$16-$20 ☐Over $20

e. Please provide the website to your school.

f. Please describe any ASAHP committee positions held in the past 5 years.

(e.g., membership or chaired in an ASAHP Committee or Task Force position)

g. Please describe any additional allied health organizational positions and the year held.
(e.g., membership or chaired in a regional, state or federal specialized accreditation position or other allied health specific position)

h. Do you agree to have your name released for publication / presentation as a participant for this study? (What you say will not be attributed to you, just a contribution.)

☐Yes ☐No

Thank you for your interest in participating in this study!

Appendix P

Pilot Test of the Dissertation Research Problem

THE FUTURE DELIVERY OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS

Based on projected future challenges and opportunities in clinical education and key factors impacting allied health clinical education, this study will explore where is there agreement among allied health deans on how allied health clinical education should be delivered in the future. In order to answer this question, a three-round Delphi questionnaire will be used to examine the purposes of allied health clinical education, identify where there is agreement on the major key challenges and opportunities impacting future allied health clinical education, and provide suggestions for the delivery of clinical education in the future.

Appendix Q

Pilot Test Round 1 Survey Feedback Form

UMDNJ
UNIVERSITY OF MEDICINE &
DENTISTRY OF NEW JERSEY

[Date]

[Participant Name]

“The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans Pilot Test Questions

<u>Section 1. Romig Dissertation Research Question</u>

THE FUTURE DELIVERY OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS

Research Problem
Based on projected future challenges and opportunities in clinical education and key factors impacting allied health clinical education, this study will explore where is there agreement among allied health deans on how allied health clinical education should be delivered in the future. In order to answer this question, a three-round Delphi questionnaire will be used to examine the purposes of allied health clinical education, identify where there is agreement on the major key challenges and opportunities impacting future allied health clinical education, and provide suggestions for the delivery of clinical education in the future.

1. Is the Research Problem clearly stated??

2. What would you change?

3. Is there any other information that should be included?

<u>Section 2. Delphi Round One</u>

1. How much time did the Delphi Round One take to complete?

2. Delphi Instructions (page 1):
Are the instructions clear?
What would you change to improve the instructions?

3. Round One Definitions (page 2):
Are the definitions clear?
Are there other definitions that should be included?

4. Section 1. Definition and Goals of Allied Health Clinical Education (page 3):
Are the Section I instructions clear?
Is the order of the listing of the 5 goals central to clinical education appropriate?
Is there anything you would change?

5. Section 2. Future Delivery of Allied Health Clinical Education (page 4):
Is the introduction to this section clear?
What would you change to improve the introduction?
Is Figure 1. Key Factors Impacting Allied Health Clinical Education comprehensive?
What would you change to improve the Figure 1?

6. Section 2 Case Scenario Instructions and Introduction (page 5):
Are the case scenario instructions clear?
Does the introduction provide a clear vision of the research section objective to have the Delphi participants provide comments and opinion about the future delivery of Allied Health Clinical Education?

7. Section 2. Case Scenarios (pages 6 through 13) – Answer the following for each of the 4 case scenarios:

<u>a. Conventional Changes:</u>
Is the title appropriate for the scenario?
Is the scenario description appropriate for the research section objective to provide comments and opinion about the future delivery of Allied Health Clinical Education?
What would you change?
Are the Conventional Changes scenario questions clear?
What would you change in the Conventional Changes scenario?

<u>b. Tough Times:</u>
Is the title appropriate for the scenario?
Is the scenario description appropriate for the research section objective to provide comments and opinion about the future delivery of Allied Health Clinical Education?
What would you change?
Are the Tough Times scenario questions clear?
What would you change in the Tough Times scenario?

<u>c. Inspirational Opportunities:</u>

Is the title appropriate for the scenario?
Is the scenario description appropriate for the research section objective to provide comments and opinion about the future delivery of Allied Health Clinical Education?
What would you change?
Are the Inspirational Opportunities scenario questions clear?
What would you change in the Inspiration Opportunities scenario?

d. Culture for Collaboration:
Is the title appropriate for the scenario?
Is the scenario description appropriate for the research section objective to provide comments and opinion about the future delivery of Allied Health Clinical Education?
What would you change?
Are the Culture for Collaboration scenario questions clear?
What would you change in the Culture for Collaboration scenario?

8. Conclusion and Thank You (page 14):
Is the conclusion and process for the Delphi Rounds 2 and 3 clear?
Any additional comments?

Section 3. Allied Health Dean Demographic Form

1. How much time did the Demographic form take to complete?

2. Were any of the statements unclear?

3. Provide your comments on the use of Allied Health Dean versus other terminology (i.e., Health Profession Education, etc.)

Appendix R

Pilot Test Round 1 Survey E-Mail Reminder

UMDNJ
University of Medicine &
Dentistry of New Jersey

[Date]

Dear [Name]

Approximately 1 week ago, the “**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans**” **Pilot Test** was e-mailed to you. Your feedback on the Delphi survey is extremely important to this study.

If you have already completed the survey and scheduled a convenient time for a phone interview, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. If you prefer, you may request a PDF copy of the survey to be e-mailed to you. Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview.

Thank you in advance for your time and insight. If you have any questions regarding this request, please contact me at 248-622-7494 (romigbd@umdnj.edu) or my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@umdnj.edu). If you have any questions regarding your rights as a research participant, you can contact the UMDNJ Newark Institutional Review Board at 973-972-3608.

I am extremely grateful for your help with this important research.

Sincerely,

Barbara Romig

Barbara Romig, MS, MBA
PhD Candidate – University of Medicine and Dentistry of New Jersey
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O’Sullivan Maillet, Ph.D., F.A.S.A.H.P.
Interim Dean UMDNJ-SHRP & Chair of Dissertation Committee

E-mail: maillet@umdnj.edu
Phone: 973-972-6957

Dissertation Committee Members:
Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P., Chair
Ann W. Tucker, D.Ed; UMDNJ-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix S

Pilot Test Round 1 Survey Final E-Mail Reminder

UMDNJ
University of Medicine &
Dentistry of New Jersey

[Date]
Dear [Name]

Approximately 3 weeks ago, "**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans**" **Pilot Test** was e-mailed to you. As a recognized expert, your participation is extremely important to the success of the study. The study is designed to gain expert consensus on the challenges and opportunities in the current and future allied health clinical education arena.

If you have already completed and returned the survey, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. A PDF version of the survey is attached for your convenience. Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview.

I am extremely grateful for your help with this important research.

Barbara Romig, MS, MBA
PhD Candidate – University of Medicine and Dentistry of New Jersey
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P.
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Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix T

Pilot Test Round 1 Survey Phone Script Reminder

Hello,

My name is Barbara Romig and I am a PhD student at the University of Medicine and Dentistry of New Jersey. Thank you for agreeing to participate in the "**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans" Pilot Test**. This study is designed to gain expert consensus of Allied Health Deans on **key factors impacting allied health clinical education**.

Approximately two weeks ago, you received an e-mail with the Delphi Round 1 survey link accessible via Survey Monkey. If you have already completed the survey and scheduled a convenient time for a phone interview, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. If you prefer, you may request a PDF copy of the survey to be e-mailed to you.

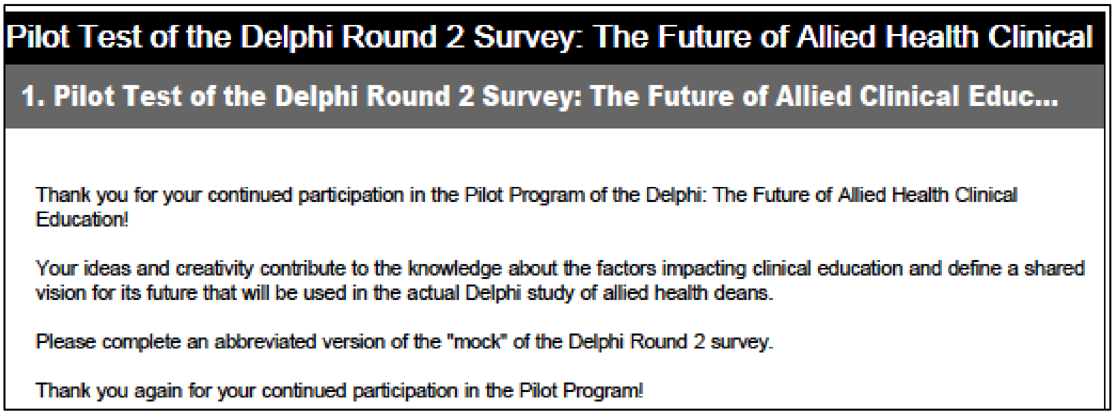
The survey and interview will take approximately 90 minutes to complete.
Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview. I am interested in your thoughts about how understandable the Delphi Round 1 questions are and if the choices are appropriate and comprehensive.

If you have any questions regarding this study, please do not hesitate to call me at 248-622-7494.

Thank you very much for your support of this very important study.

Appendix U

Pilot Test Round 2 Survey



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

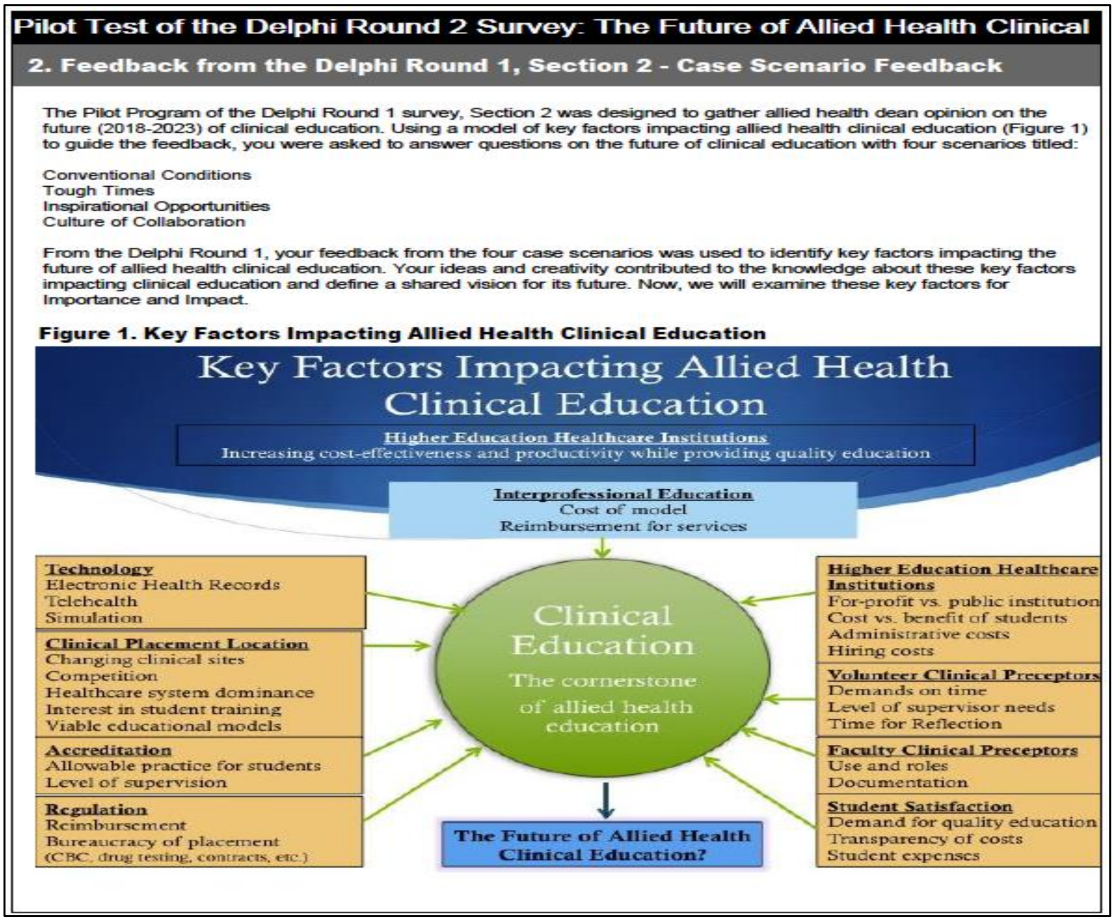
1. Pilot Test of the Delphi Round 2 Survey: The Future of Allied Clinical Educ...

Thank you for your continued participation in the Pilot Program of the Delphi: The Future of Allied Health Clinical Education!

Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future that will be used in the actual Delphi study of allied health deans.

Please complete an abbreviated version of the "mock" of the Delphi Round 2 survey.

Thank you again for your continued participation in the Pilot Program!



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

2. Feedback from the Delphi Round 1, Section 2 - Case Scenario Feedback

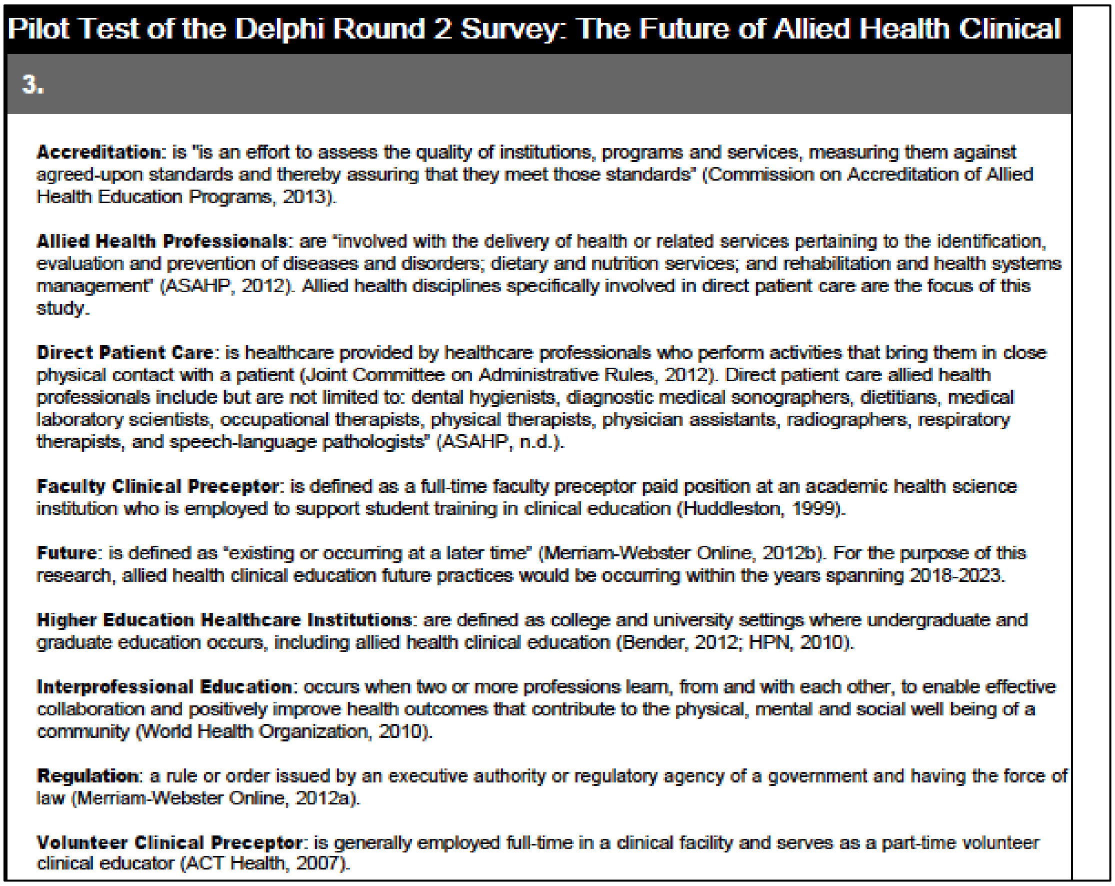
The Pilot Program of the Delphi Round 1 survey, Section 2 was designed to gather allied health dean opinion on the future (2018-2023) of clinical education. Using a model of key factors impacting allied health clinical education (Figure 1) to guide the feedback, you were asked to answer questions on the future of clinical education with four scenarios titled:

Conventional Conditions
Tough Times
Inspirational Opportunities
Culture of Collaboration

From the Delphi Round 1, your feedback from the four case scenarios was used to identify key factors impacting the future of allied health clinical education. Your ideas and creativity contributed to the knowledge about these key factors impacting clinical education and define a shared vision for its future. Now, we will examine these key factors for Importance and Impact.

Figure 1. Key Factors Impacting Allied Health Clinical Education

Key Factors Impacting Allied Health Clinical Education
Higher Education Healthcare Institutions
Increasing cost-effectiveness and productivity while providing quality education
Interprofessional Education
Cost of model
Reimbursement for services
Technology
Electronic Health Records
Telehealth
Simulation
Clinical Placement Location
Changing clinical sites
Competition
Healthcare system dominance
Interest in student training
Viable educational models
Accreditation
Allowable practice for students
Level of supervision
Regulation
Reimbursement
Bureaucracy of placement
(CBC, drug testing, contracts, etc.)
Clinical Education
The cornerstone of allied health education
The Future of Allied Health Clinical Education?
Higher Education Healthcare Institutions
For-profit vs. public institution
Cost vs. benefit of students
Administrative costs
Hiring costs
Volunteer Clinical Preceptors
Demands on time
Level of supervisor needs
Time for Reflection
Faculty Clinical Preceptors
Use and roles
Documentation
Student Satisfaction
Demand for quality education
Transparency of costs
Student expenses



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

3.

Accreditation: is "is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards" (Commission on Accreditation of Allied Health Education Programs, 2013).

Allied Health Professionals: are "involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management" (ASAHP, 2012). Allied health disciplines specifically involved in direct patient care are the focus of this study.

Direct Patient Care: is healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012). Direct patient care allied health professionals include but are not limited to: dental hygienists, diagnostic medical sonographers, dietitians, medical laboratory scientists, occupational therapists, physical therapists, physician assistants, radiographers, respiratory therapists, and speech-language pathologists" (ASAHP, n.d.).

Faculty Clinical Preceptor: is defined as a full-time faculty preceptor paid position at an academic health science institution who is employed to support student training in clinical education (Huddleston, 1999).

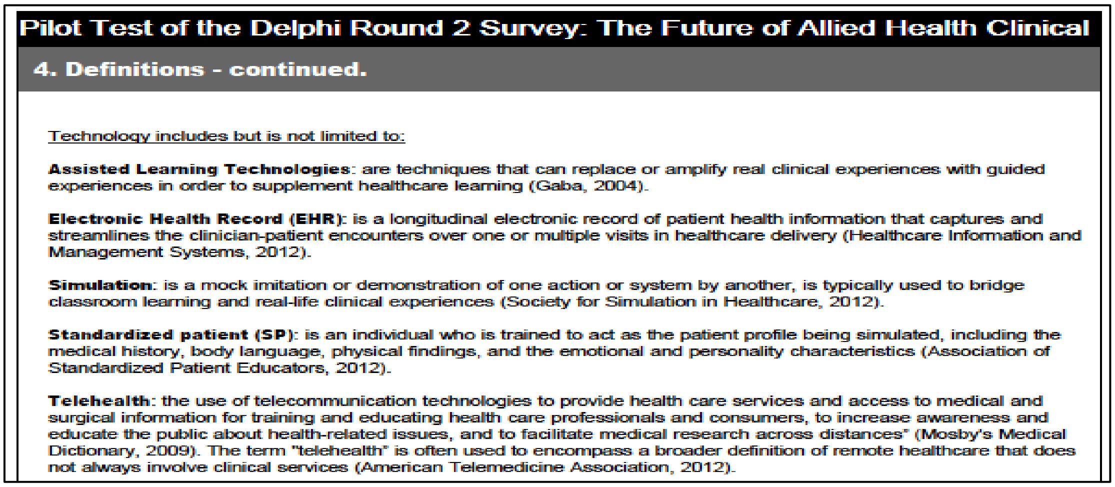
Future: is defined as "existing or occurring at a later time" (Merriam-Webster Online, 2012b). For the purpose of this research, allied health clinical education future practices would be occurring within the years spanning 2018-2023.

Higher Education Healthcare Institutions: are defined as college and university settings where undergraduate and graduate education occurs, including allied health clinical education (Bender, 2012; HPN, 2010).

Interprofessional Education: occurs when two or more professions learn, from and with each other, to enable effective collaboration and positively improve health outcomes that contribute to the physical, mental and social well being of a community (World Health Organization, 2010).

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law (Merriam-Webster Online, 2012a).

Volunteer Clinical Preceptor: is generally employed full-time in a clinical facility and serves as a part-time volunteer clinical educator (ACT Health, 2007).



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

4. Definitions - continued.

<u>Technology includes but is not limited to:</u>

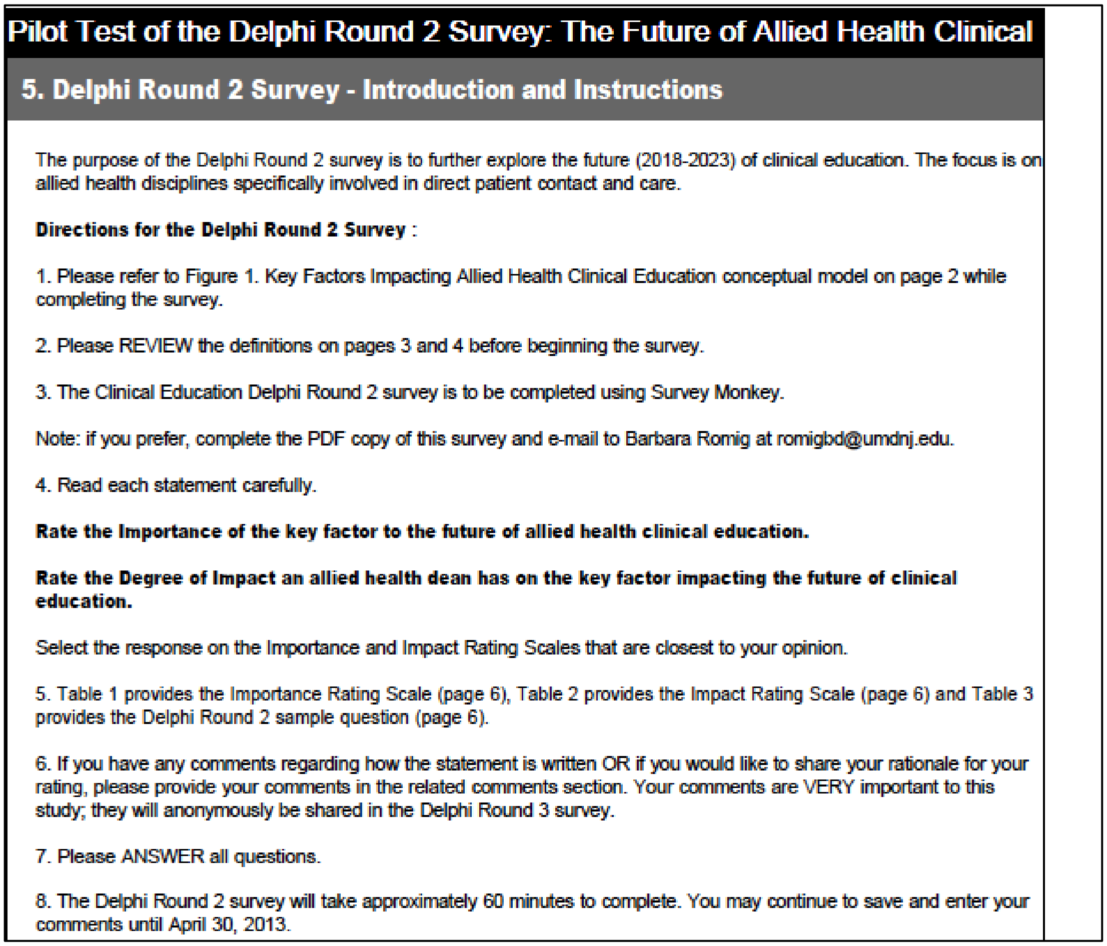
Assisted Learning Technologies: are techniques that can replace or amplify real clinical experiences with guided experiences in order to supplement healthcare learning (Gaba, 2004).

Electronic Health Record (EHR): is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012).

Simulation: is a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Standardized patient (SP): is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Association of Standardized Patient Educators, 2012).

Telehealth: the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances" (Mosby's Medical Dictionary, 2009). The term "telehealth" is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012).



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

5. Delphi Round 2 Survey - Introduction and Instructions

The purpose of the Delphi Round 2 survey is to further explore the future (2018-2023) of clinical education. The focus is on allied health disciplines specifically involved in direct patient contact and care.

Directions for the Delphi Round 2 Survey :

1. Please refer to Figure 1. Key Factors Impacting Allied Health Clinical Education conceptual model on page 2 while completing the survey.

2. Please REVIEW the definitions on pages 3 and 4 before beginning the survey.

3. The Clinical Education Delphi Round 2 survey is to be completed using Survey Monkey.

Note: if you prefer, complete the PDF copy of this survey and e-mail to Barbara Romig at romigbd@umdnj.edu.

4. Read each statement carefully.

Rate the Importance of the key factor to the future of allied health clinical education.

Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.

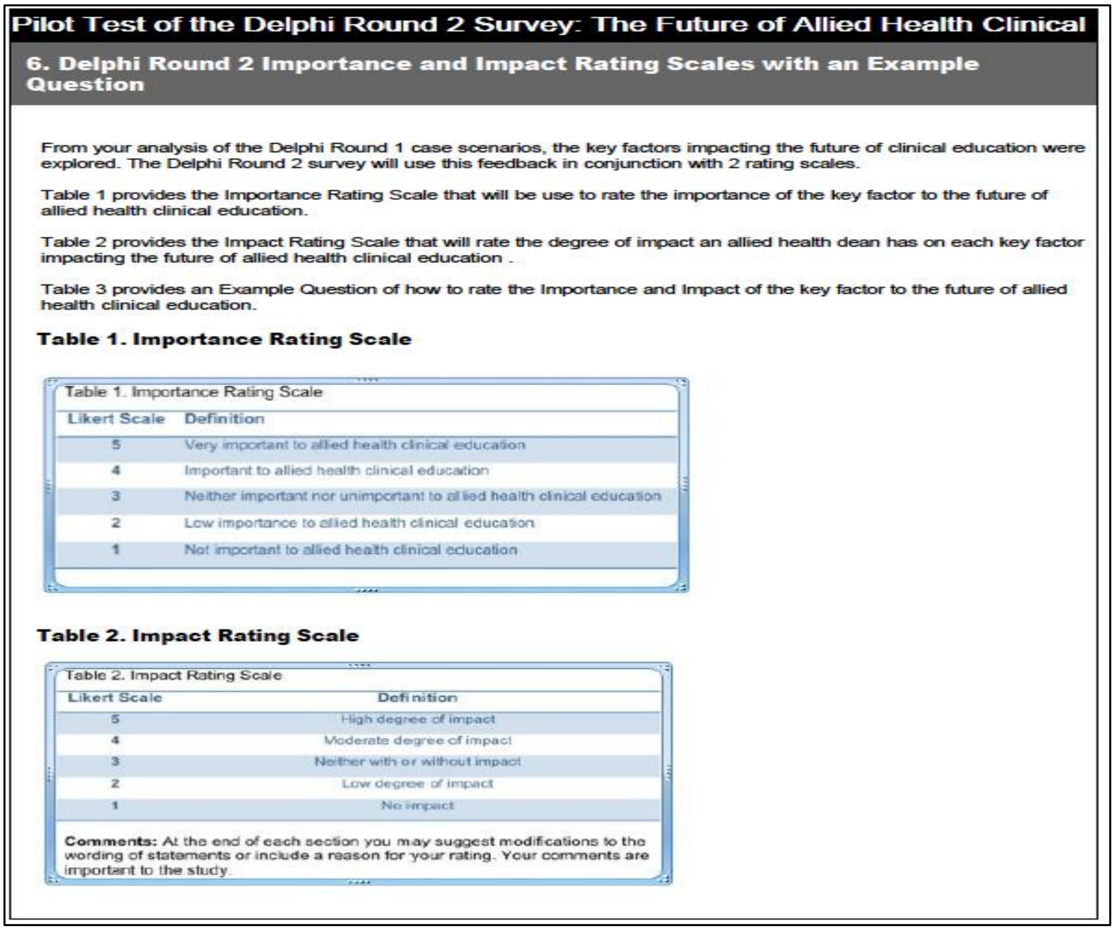
Select the response on the Importance and Impact Rating Scales that are closest to your opinion.

5. Table 1 provides the Importance Rating Scale (page 6), Table 2 provides the Impact Rating Scale (page 6) and Table 3 provides the Delphi Round 2 sample question (page 6).

6. If you have any comments regarding how the statement is written OR if you would like to share your rationale for your rating, please provide your comments in the related comments section. Your comments are VERY important to this study; they will anonymously be shared in the Delphi Round 3 survey.

7. Please ANSWER all questions.

8. The Delphi Round 2 survey will take approximately 60 minutes to complete. You may continue to save and enter your comments until April 30, 2013.



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

6. Delphi Round 2 Importance and Impact Rating Scales with an Example Question

From your analysis of the Delphi Round 1 case scenarios, the key factors impacting the future of clinical education were explored. The Delphi Round 2 survey will use this feedback in conjunction with 2 rating scales.

Table 1 provides the Importance Rating Scale that will be use to rate the importance of the key factor to the future of allied health clinical education.

Table 2 provides the Impact Rating Scale that will rate the degree of impact an allied health dean has on each key factor impacting the future of allied health clinical education .

Table 3 provides an Example Question of how to rate the Importance and Impact of the key factor to the future of allied health clinical education.

Table 1. Importance Rating Scale

Table 1. Importance Rating Scale

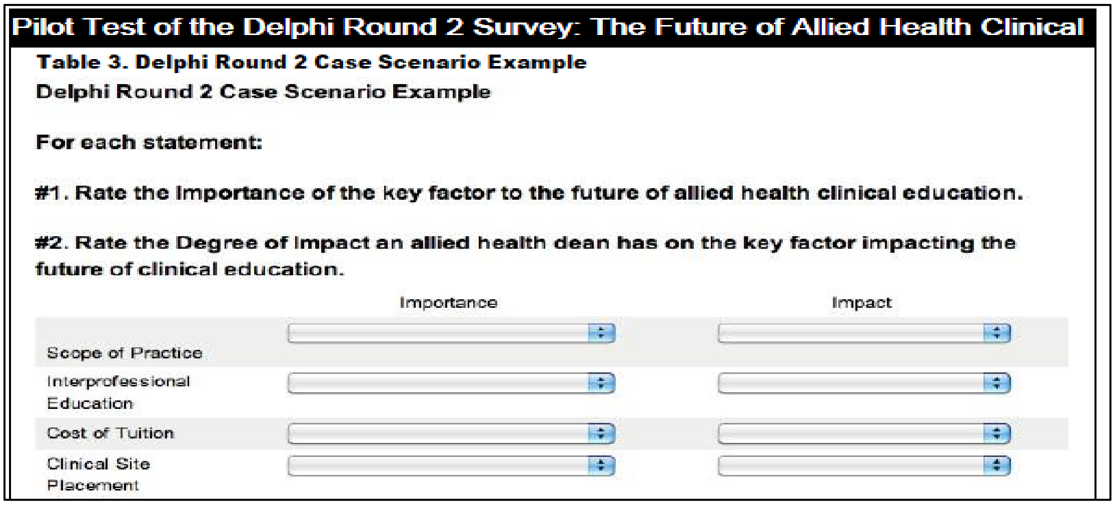
Likert Scale	Definition
5	Very important to allied health clinical education
4	Important to allied health clinical education
3	Neither important nor unimportant to allied health clinical education
2	Low importance to allied health clinical education
1	Not important to allied health clinical education

Table 2. Impact Rating Scale

Table 2. Impact Rating Scale

Likert Scale	Definition
5	High degree of impact
4	Moderate degree of impact
3	Neither with or without impact
2	Low degree of impact
1	No impact

Comments: At the end of each section you may suggest modifications to the wording of statements or include a reason for your rating. Your comments are important to the study.



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

Table 3. Delphi Round 2 Case Scenario Example

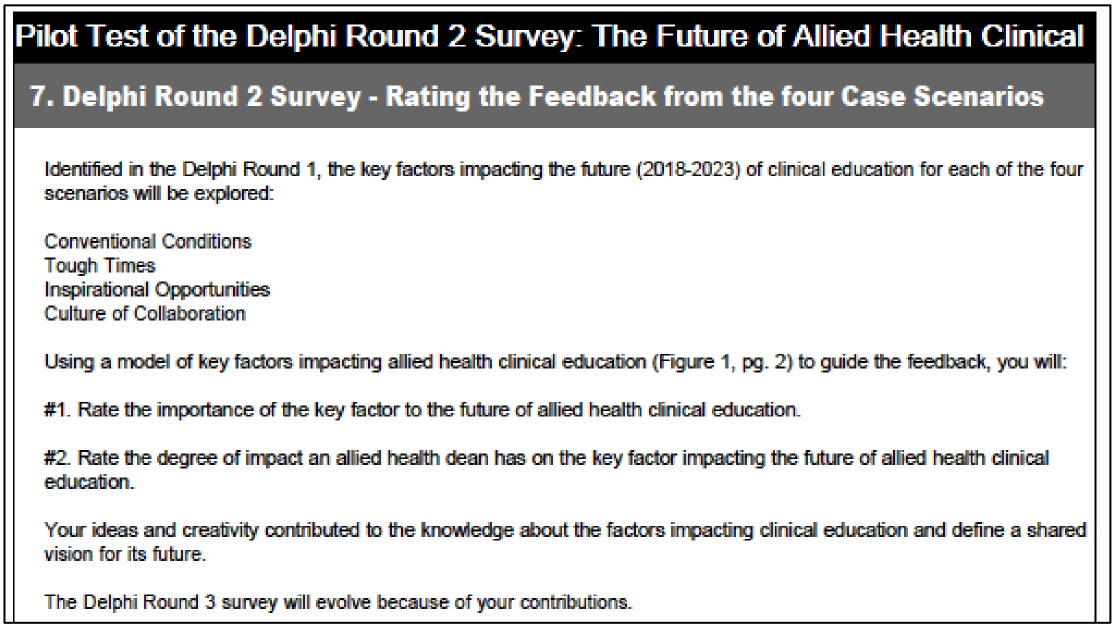
Delphi Round 2 Case Scenario Example

For each statement:

#1. Rate the Importance of the key factor to the future of allied health clinical education.

#2. Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.

	Importance	Impact
Scope of Practice		
Interprofessional Education		
Cost of Tuition		
Clinical Site Placement		



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

7. Delphi Round 2 Survey - Rating the Feedback from the four Case Scenarios

Identified in the Delphi Round 1, the key factors impacting the future (2018-2023) of clinical education for each of the four scenarios will be explored:

Conventional Conditions
Tough Times
Inspirational Opportunities
Culture of Collaboration

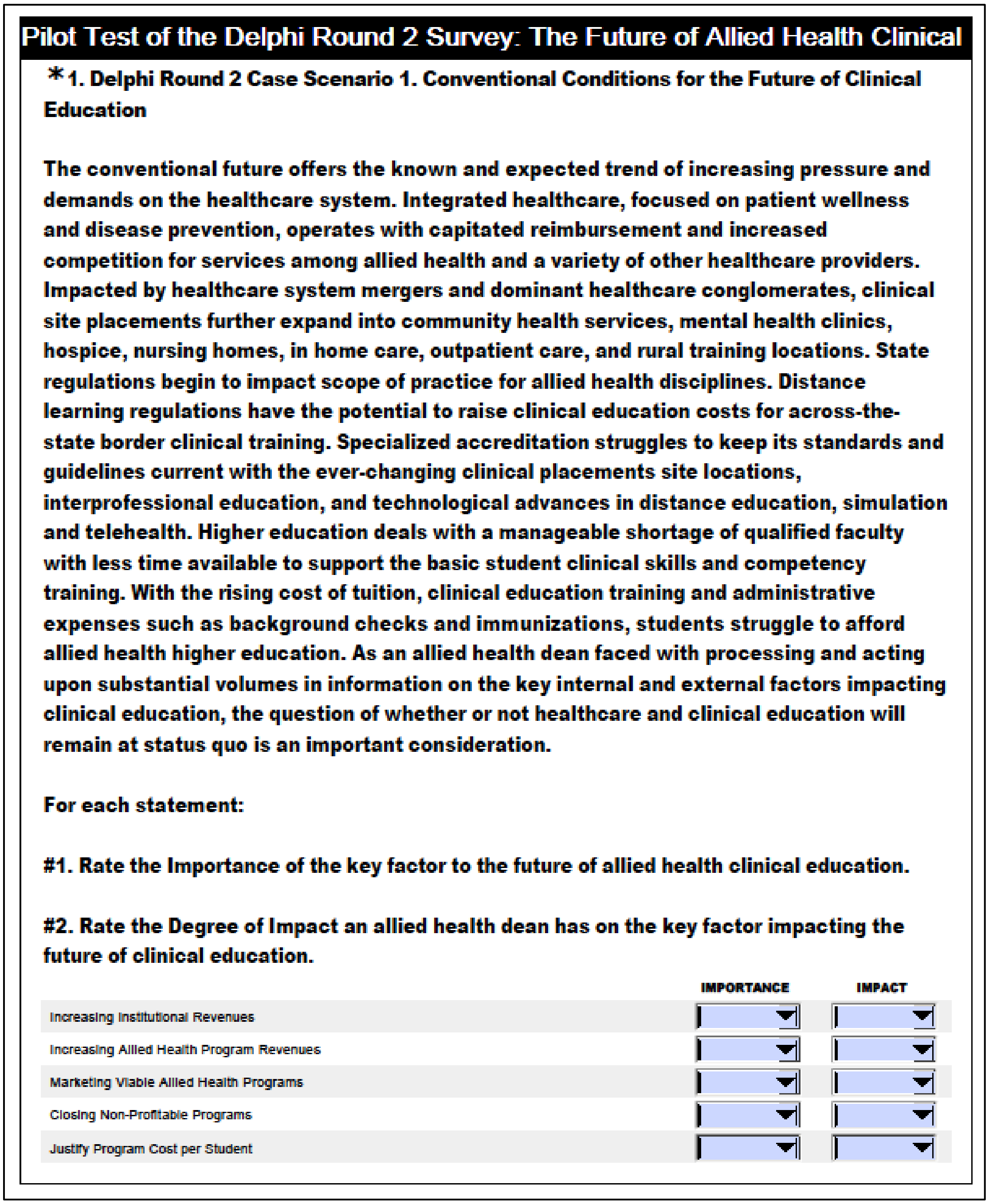
Using a model of key factors impacting allied health clinical education (Figure 1, pg. 2) to guide the feedback, you will:

#1. Rate the importance of the key factor to the future of allied health clinical education.

#2. Rate the degree of impact an allied health dean has on the key factor impacting the future of allied health clinical education.

Your ideas and creativity contributed to the knowledge about the factors impacting clinical education and define a shared vision for its future.

The Delphi Round 3 survey will evolve because of your contributions.



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

***1. Delphi Round 2 Case Scenario 1. Conventional Conditions for the Future of Clinical Education**

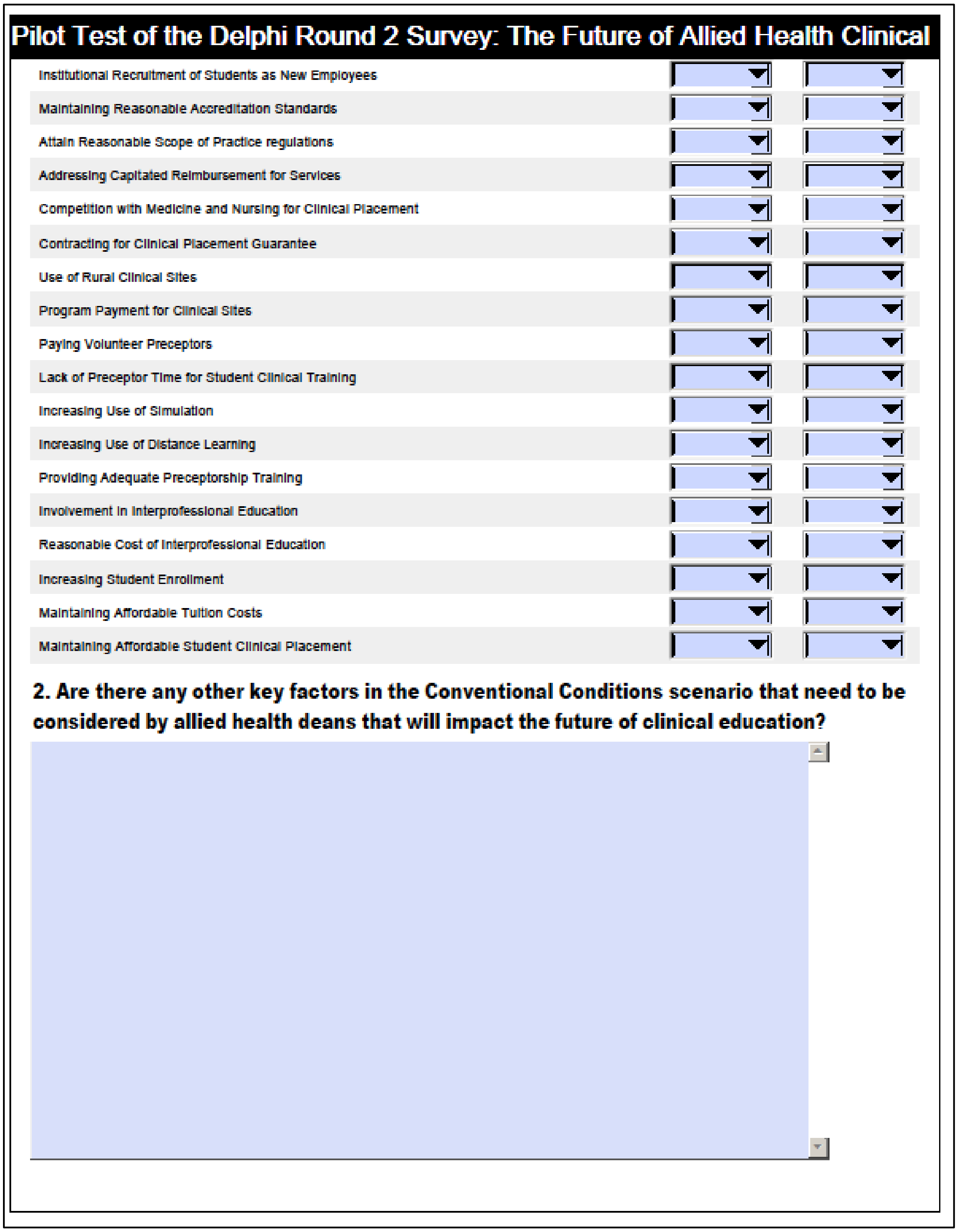
The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operates with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs for across-the-state border clinical training. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. Higher education deals with a manageable shortage of qualified faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford allied health higher education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.

For each statement:

#1. Rate the Importance of the key factor to the future of allied health clinical education.

#2. Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.

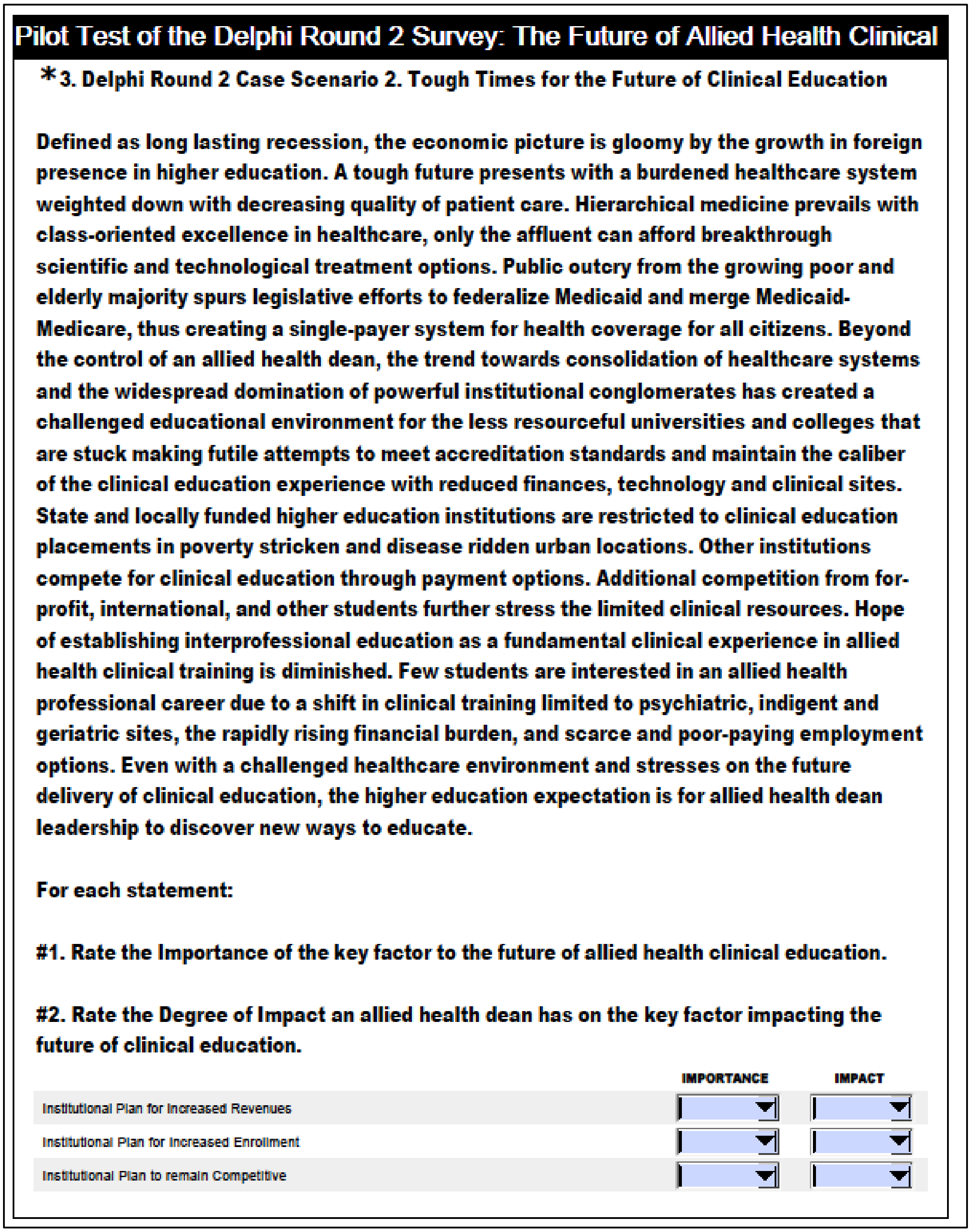
	IMPORTANCE	IMPACT
Increasing Institutional Revenues		
Increasing Allied Health Program Revenues		
Marketing Viable Allied Health Programs		
Closing Non-Profitable Programs		
Justify Program Cost per Student		



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

Institutional Recruitment of Students as New Employees
Maintaining Reasonable Accreditation Standards
Attain Reasonable Scope of Practice regulations
Addressing Capitated Reimbursement for Services
Competition with Medicine and Nursing for Clinical Placement
Contracting for Clinical Placement Guarantee
Use of Rural Clinical Sites
Program Payment for Clinical Sites
Paying Volunteer Preceptors
Lack of Preceptor Time for Student Clinical Training
Increasing Use of Simulation
Increasing Use of Distance Learning
Providing Adequate Preceptorship Training
Involvement in Interprofessional Education
Reasonable Cost of Interprofessional Education
Increasing Student Enrollment
Maintaining Affordable Tuition Costs
Maintaining Affordable Student Clinical Placement

2. Are there any other key factors in the Conventional Conditions scenario that need to be considered by allied health deans that will impact the future of clinical education?



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

***3. Delphi Round 2 Case Scenario 2. Tough Times for the Future of Clinical Education**

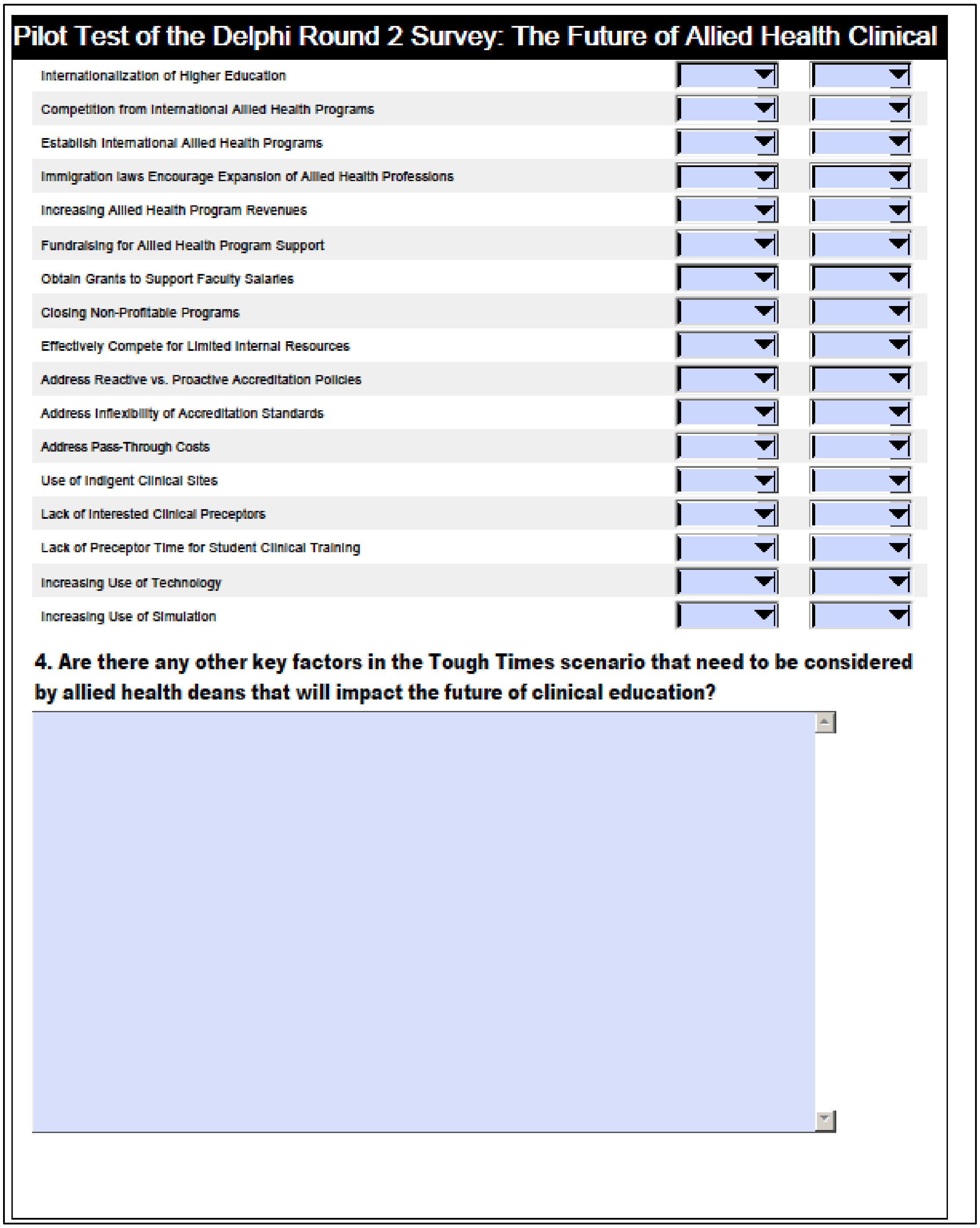
Defined as long lasting recession, the economic picture is gloomy by the growth in foreign presence in higher education. A tough future presents with a burdened healthcare system weighted down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare, only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates has created a challenged educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded higher education institutions are restricted to clinical education placements in poverty stricken and disease ridden urban locations. Other institutions compete for clinical education through payment options. Additional competition from for-profit, international, and other students further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to a shift in clinical training limited to psychiatric, indigent and geriatric sites, the rapidly rising financial burden, and scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the future delivery of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

For each statement:

#1. Rate the Importance of the key factor to the future of allied health clinical education.

#2. Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.

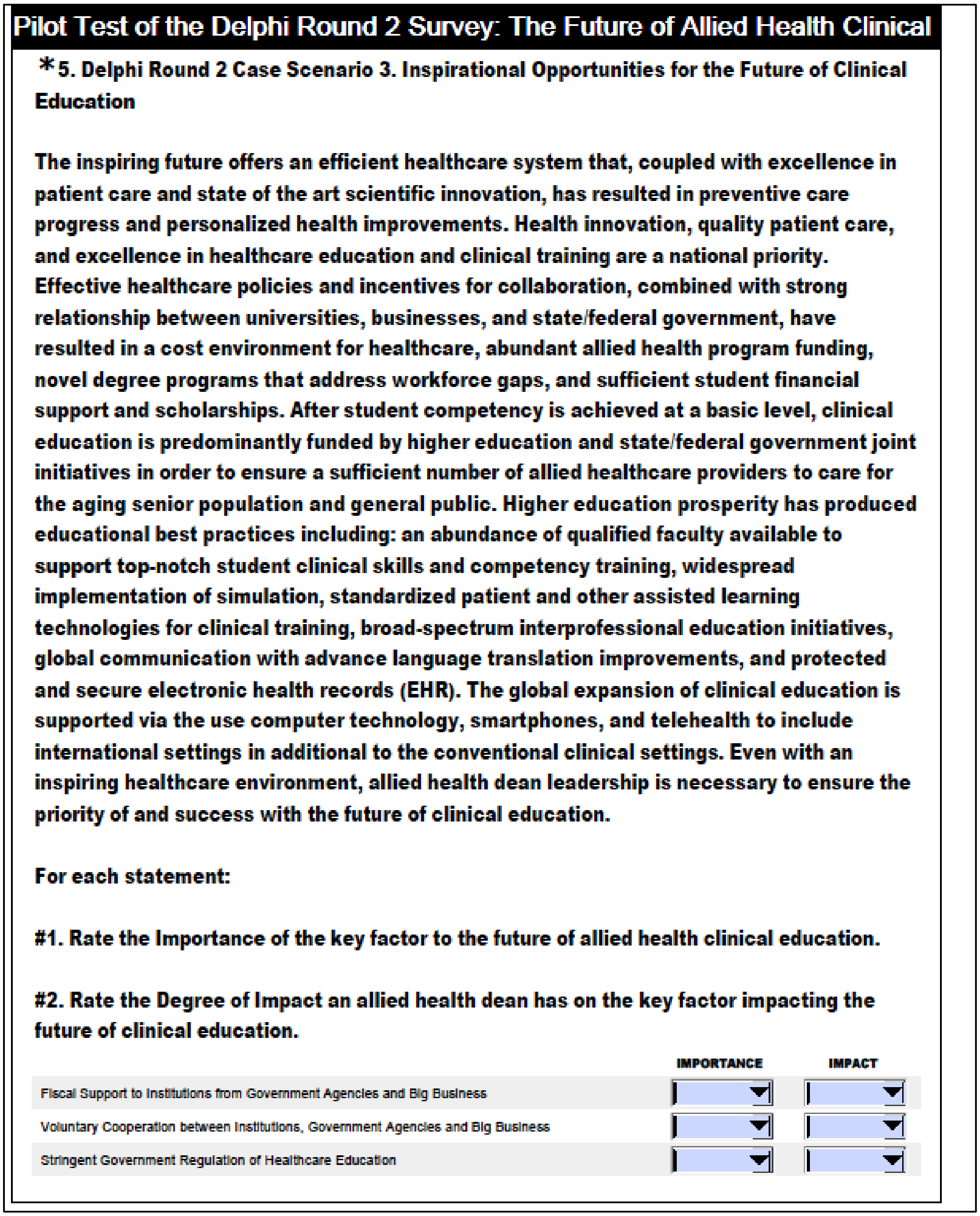
	IMPORTANCE	IMPACT
Institutional Plan for Increased Revenues	▼	▼
Institutional Plan for Increased Enrollment	▼	▼
Institutional Plan to remain Competitive	▼	▼



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

Internationalization of Higher Education
Competition from International Allied Health Programs
Establish International Allied Health Programs
Immigration laws Encourage Expansion of Allied Health Professions
Increasing Allied Health Program Revenues
Fundraising for Allied Health Program Support
Obtain Grants to Support Faculty Salaries
Closing Non-Profitable Programs
Effectively Compete for Limited Internal Resources
Address Reactive vs. Proactive Accreditation Policies
Address Inflexibility of Accreditation Standards
Address Pass-Through Costs
Use of Indigent Clinical Sites
Lack of Interested Clinical Preceptors
Lack of Preceptor Time for Student Clinical Training
Increasing Use of Technology
Increasing Use of Simulation

4. Are there any other key factors in the Tough Times scenario that need to be considered by allied health deans that will impact the future of clinical education?



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

***5. Delphi Round 2 Case Scenario 3. Inspirational Opportunities for the Future of Clinical Education**

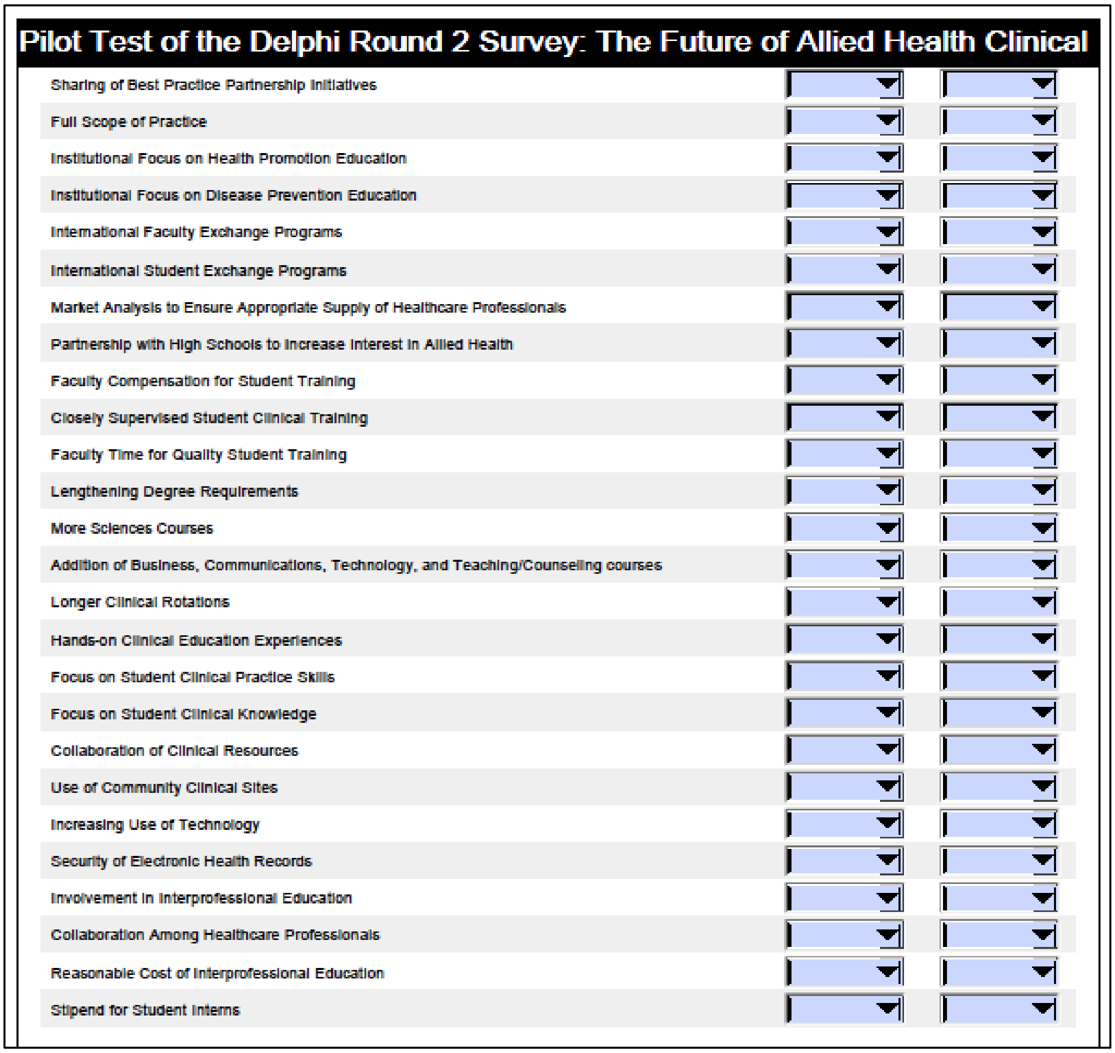
The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have resulted in a cost environment for healthcare, abundant allied health program funding, novel degree programs that address workforce gaps, and sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Higher education prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). The global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to include international settings in additional to the conventional clinical settings. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

For each statement:

#1. Rate the Importance of the key factor to the future of allied health clinical education.

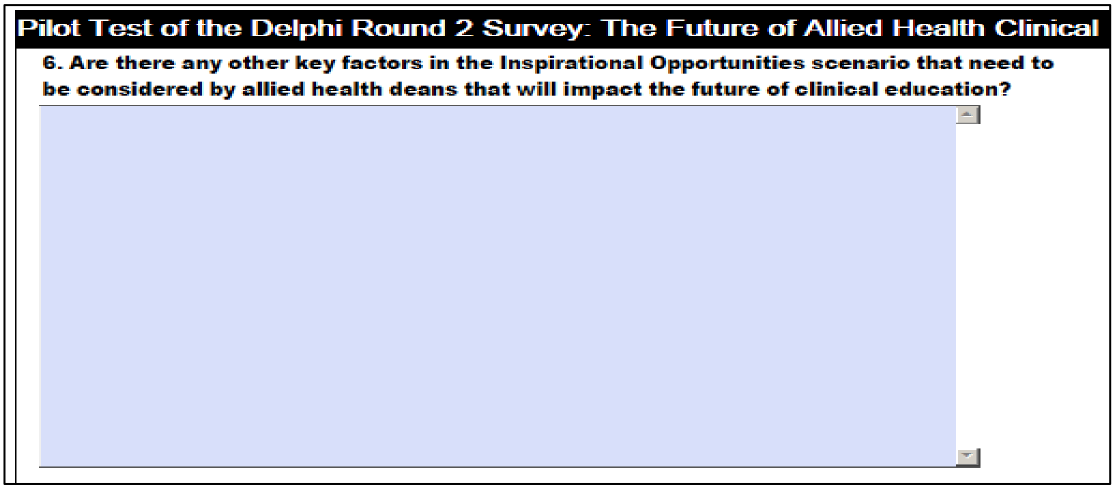
#2. Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.

	IMPORTANCE	IMPACT
Fiscal Support to Institutions from Government Agencies and Big Business		
Voluntary Cooperation between Institutions, Government Agencies and Big Business		
Stringent Government Regulation of Healthcare Education		



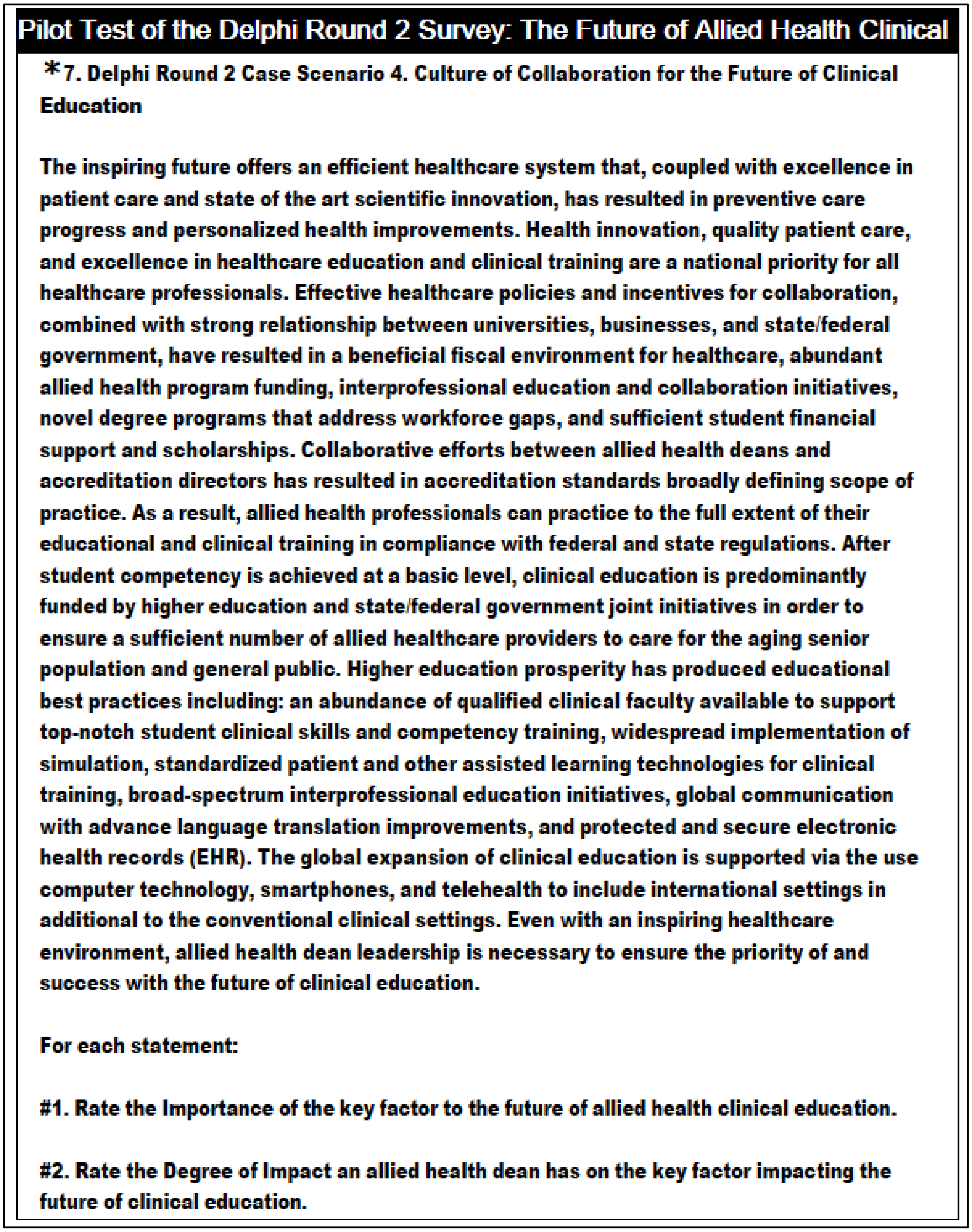
Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

Sharing of Best Practice Partnership Initiatives
Full Scope of Practice
Institutional Focus on Health Promotion Education
Institutional Focus on Disease Prevention Education
International Faculty Exchange Programs
International Student Exchange Programs
Market Analysis to Ensure Appropriate Supply of Healthcare Professionals
Partnership with High Schools to Increase Interest in Allied Health
Faculty Compensation for Student Training
Closely Supervised Student Clinical Training
Faculty Time for Quality Student Training
Lengthening Degree Requirements
More Sciences Courses
Addition of Business, Communications, Technology, and Teaching/Counseling courses
Longer Clinical Rotations
Hands-on Clinical Education Experiences
Focus on Student Clinical Practice Skills
Focus on Student Clinical Knowledge
Collaboration of Clinical Resources
Use of Community Clinical Sites
Increasing Use of Technology
Security of Electronic Health Records
Involvement in Interprofessional Education
Collaboration Among Healthcare Professionals
Reasonable Cost of Interprofessional Education
Stipend for Student Interns



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

6. Are there any other key factors in the Inspirational Opportunities scenario that need to be considered by allied health deans that will impact the future of clinical education?



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

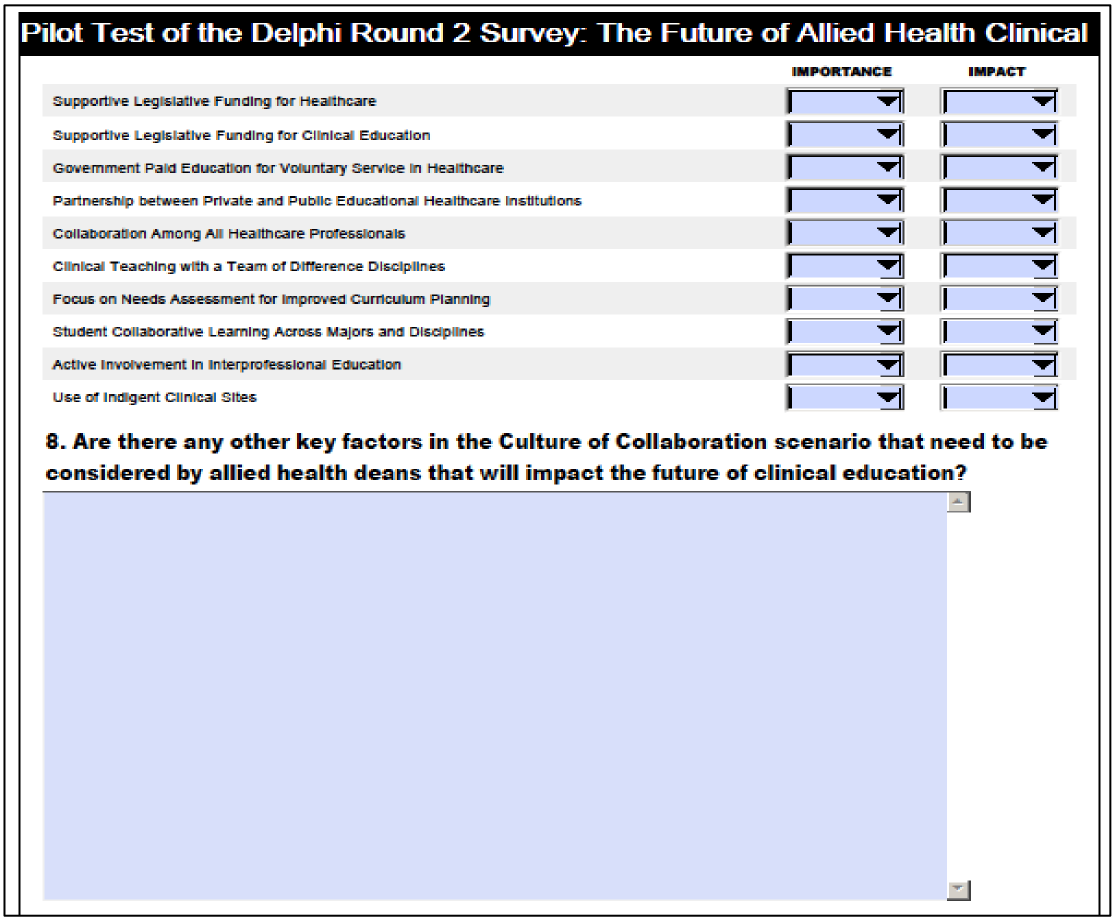
***7. Delphi Round 2 Case Scenario 4. Culture of Collaboration for the Future of Clinical Education**

The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority for all healthcare professionals. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have resulted in a beneficial fiscal environment for healthcare, abundant allied health program funding, interprofessional education and collaboration initiatives, novel degree programs that address workforce gaps, and sufficient student financial support and scholarships. Collaborative efforts between allied health deans and accreditation directors has resulted in accreditation standards broadly defining scope of practice. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Higher education prosperity has produced educational best practices including: an abundance of qualified clinical faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). The global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to include international settings in additional to the conventional clinical settings. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

For each statement:

#1. Rate the Importance of the key factor to the future of allied health clinical education.

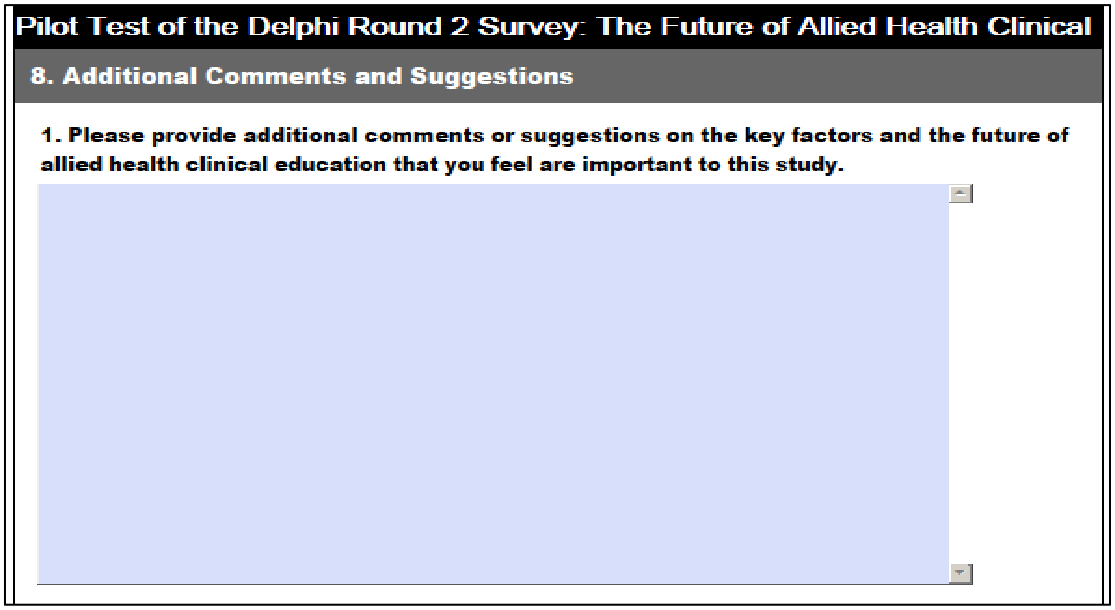
#2. Rate the Degree of Impact an allied health dean has on the key factor impacting the future of clinical education.



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

	IMPORTANCE	IMPACT
Supportive Legislative Funding for Healthcare		
Supportive Legislative Funding for Clinical Education		
Government Paid Education for Voluntary Service in Healthcare		
Partnership between Private and Public Educational Healthcare Institutions		
Collaboration Among All Healthcare Professionals		
Clinical Teaching with a Team of Difference Disciplines		
Focus on Needs Assessment for Improved Curriculum Planning		
Student Collaborative Learning Across Majors and Disciplines		
Active Involvement in Interprofessional Education		
Use of Indigent Clinical Sites		

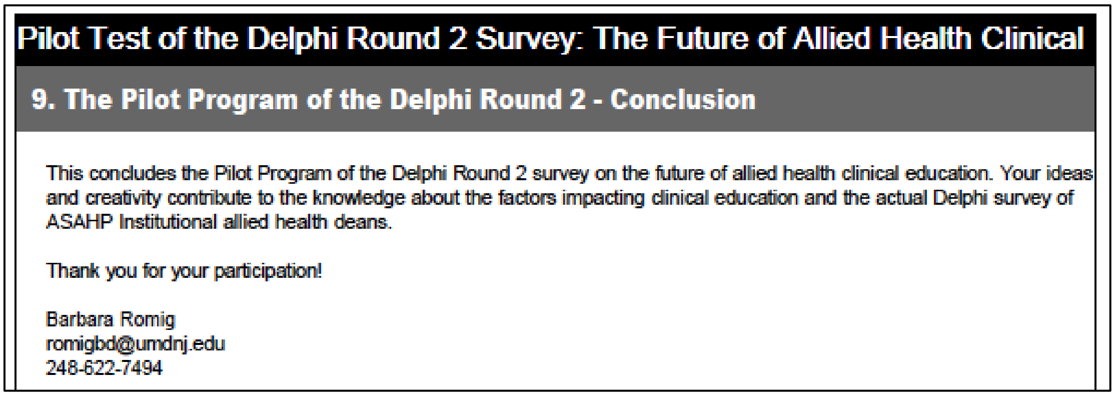
8. Are there any other key factors in the Culture of Collaboration scenario that need to be considered by allied health deans that will impact the future of clinical education?



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

8. Additional Comments and Suggestions

1. Please provide additional comments or suggestions on the key factors and the future of allied health clinical education that you feel are important to this study.



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

9. The Pilot Program of the Delphi Round 2 - Conclusion

This concludes the Pilot Program of the Delphi Round 2 survey on the future of allied health clinical education. Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and the actual Delphi survey of ASAHP Institutional allied health deans.

Thank you for your participation!

Barbara Romig
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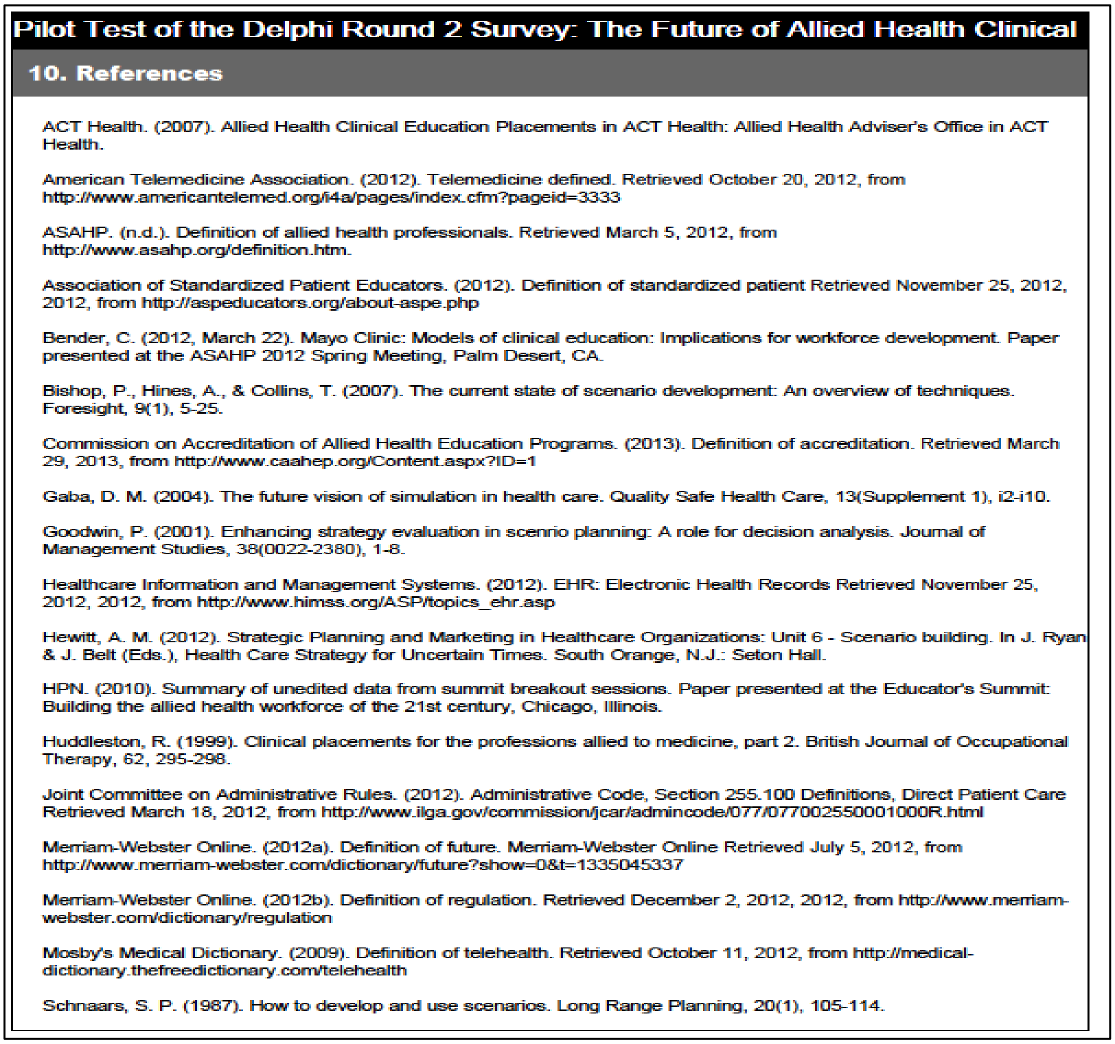
248-622-7494



Pilot Test of the Delphi Round 2 Survey: The Future of Allied Health Clinical

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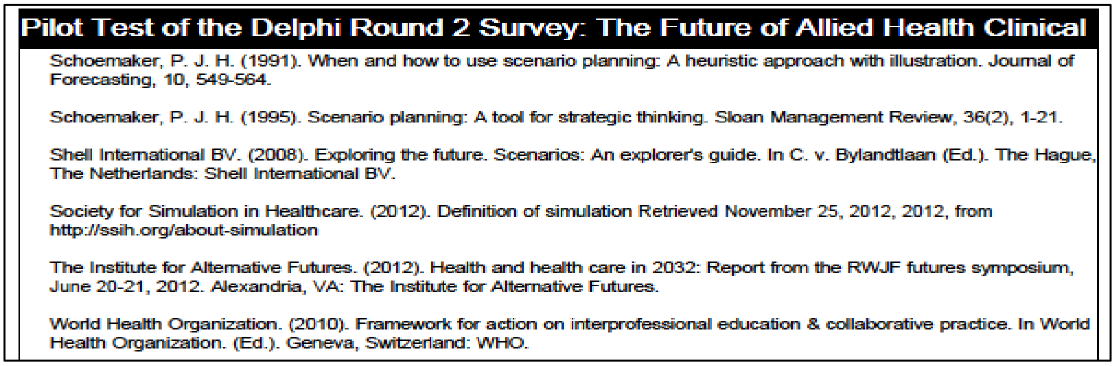

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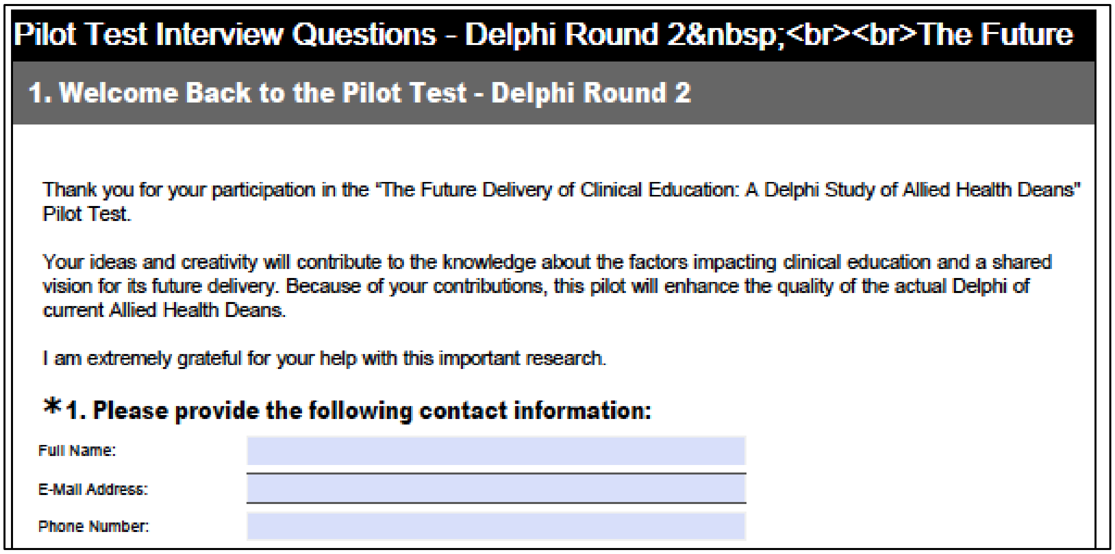
Appendix V

Pilot Test Round 2 Survey Feedback Form



Pilot Test Interview Questions - Delphi Round 2

The Future

1. Welcome Back to the Pilot Test - Delphi Round 2

Thank you for your participation in the "The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans" Pilot Test.

Your ideas and creativity will contribute to the knowledge about the factors impacting clinical education and a shared vision for its future delivery. Because of your contributions, this pilot will enhance the quality of the actual Delphi of current Allied Health Deans.

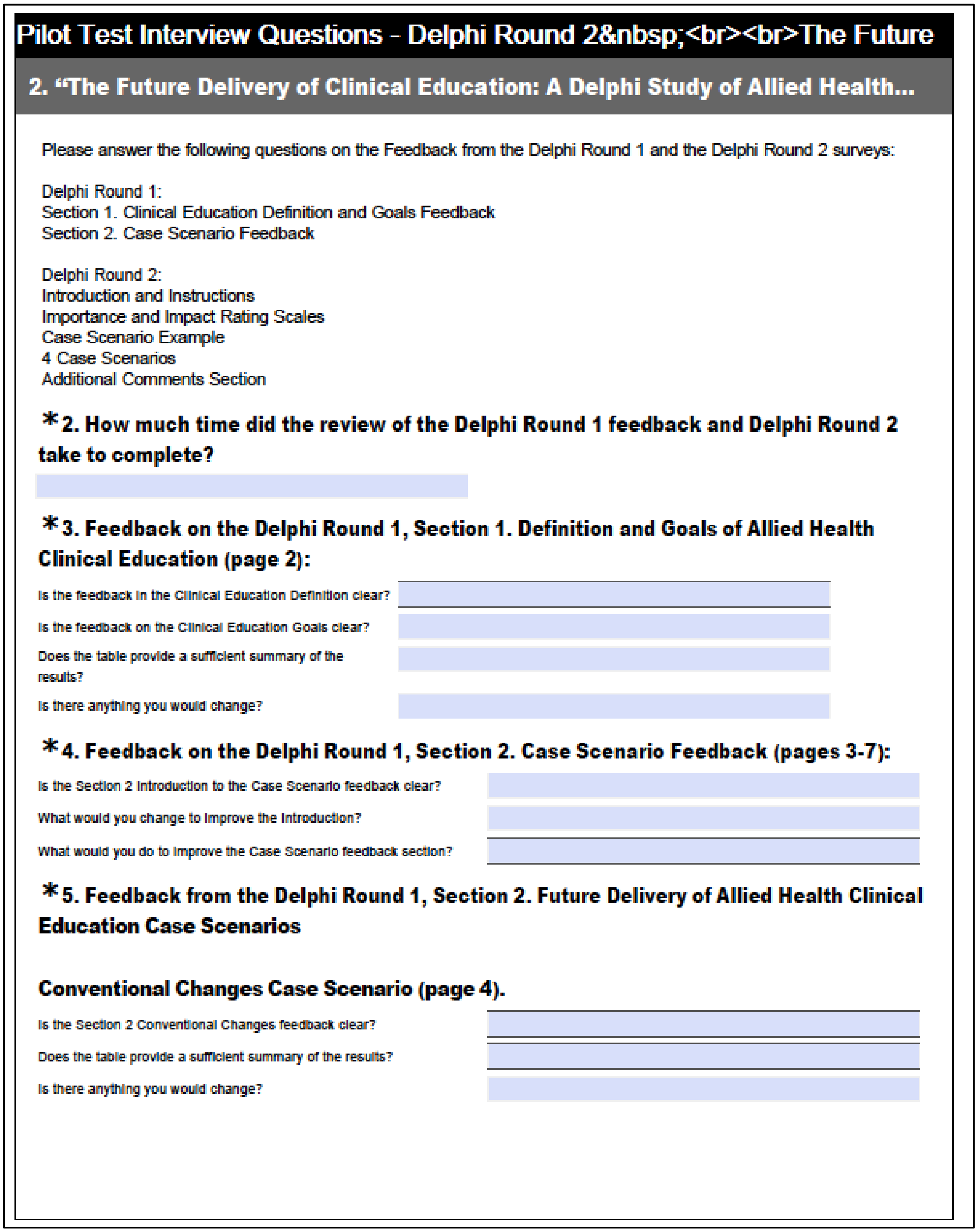
I am extremely grateful for your help with this important research.

***1. Please provide the following contact information:**

Full Name:

E-Mail Address:

Phone Number:



Pilot Test Interview Questions - Delphi Round 2

The Future

2. “The Future Delivery of Clinical Education: A Delphi Study of Allied Health...

Please answer the following questions on the Feedback from the Delphi Round 1 and the Delphi Round 2 surveys:

Delphi Round 1:
Section 1. Clinical Education Definition and Goals Feedback
Section 2. Case Scenario Feedback

Delphi Round 2:
Introduction and Instructions
Importance and Impact Rating Scales
Case Scenario Example
4 Case Scenarios
Additional Comments Section

***2. How much time did the review of the Delphi Round 1 feedback and Delphi Round 2 take to complete?**

***3. Feedback on the Delphi Round 1, Section 1. Definition and Goals of Allied Health Clinical Education (page 2):**

Is the feedback in the Clinical Education Definition clear?
Is the feedback on the Clinical Education Goals clear?
Does the table provide a sufficient summary of the results?
Is there anything you would change?

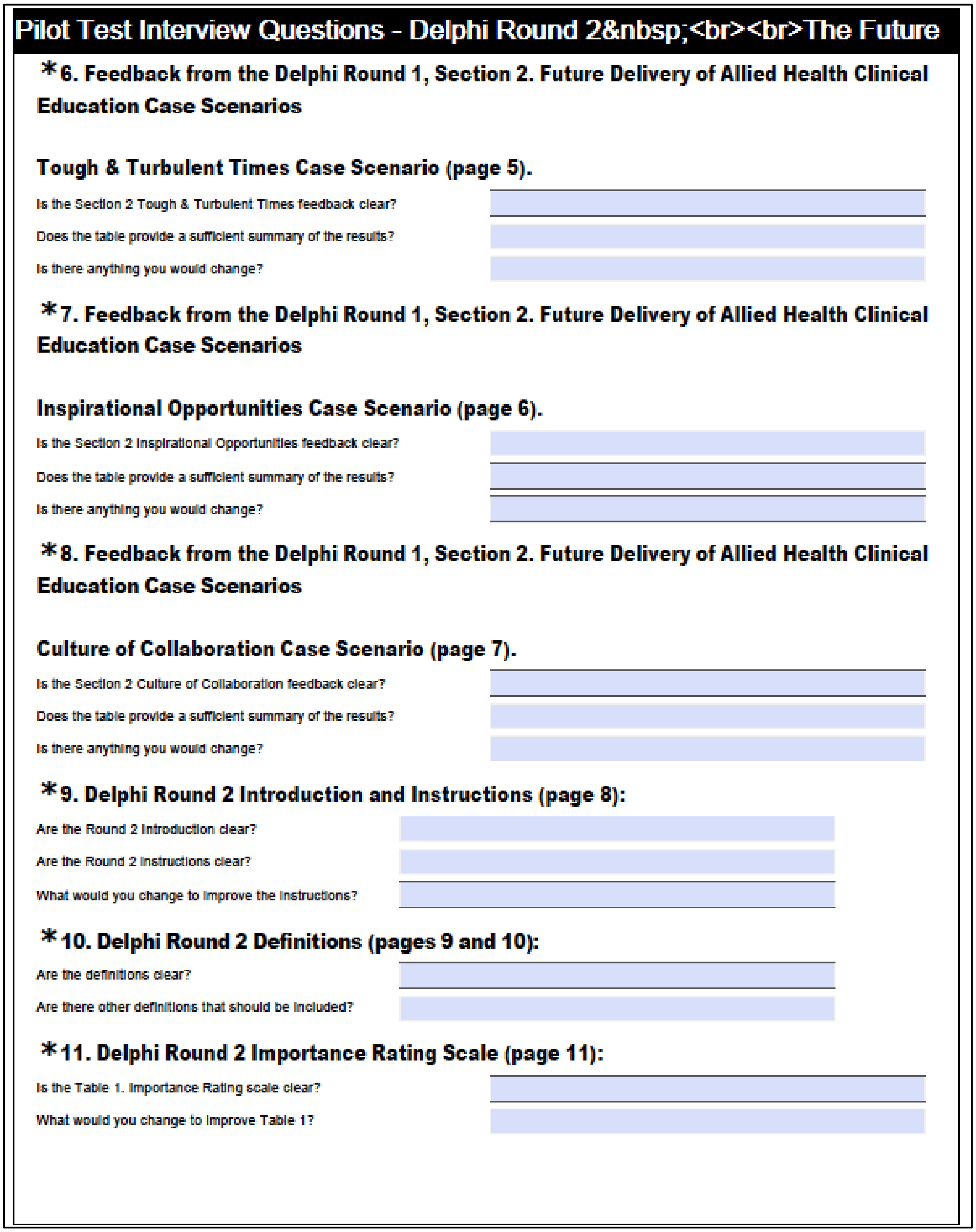
***4. Feedback on the Delphi Round 1, Section 2. Case Scenario Feedback (pages 3-7):**

Is the Section 2 Introduction to the Case Scenario feedback clear?
What would you change to improve the introduction?
What would you do to improve the Case Scenario feedback section?

***5. Feedback from the Delphi Round 1, Section 2. Future Delivery of Allied Health Clinical Education Case Scenarios**

Conventional Changes Case Scenario (page 4).

Is the Section 2 Conventional Changes feedback clear?
Does the table provide a sufficient summary of the results?
Is there anything you would change?



Pilot Test Interview Questions - Delphi Round 2

The Future

***6. Feedback from the Delphi Round 1, Section 2. Future Delivery of Allied Health Clinical Education Case Scenarios**

Tough & Turbulent Times Case Scenario (page 5).

Is the Section 2 Tough & Turbulent Times feedback clear?

Does the table provide a sufficient summary of the results?

Is there anything you would change?

***7. Feedback from the Delphi Round 1, Section 2. Future Delivery of Allied Health Clinical Education Case Scenarios**

Inspirational Opportunities Case Scenario (page 6).

Is the Section 2 Inspirational Opportunities feedback clear?

Does the table provide a sufficient summary of the results?

Is there anything you would change?

***8. Feedback from the Delphi Round 1, Section 2. Future Delivery of Allied Health Clinical Education Case Scenarios**

Culture of Collaboration Case Scenario (page 7).

Is the Section 2 Culture of Collaboration feedback clear?

Does the table provide a sufficient summary of the results?

Is there anything you would change?

***9. Delphi Round 2 Introduction and Instructions (page 8):**

Are the Round 2 introduction clear?

Are the Round 2 instructions clear?

What would you change to improve the instructions?

***10. Delphi Round 2 Definitions (pages 9 and 10):**

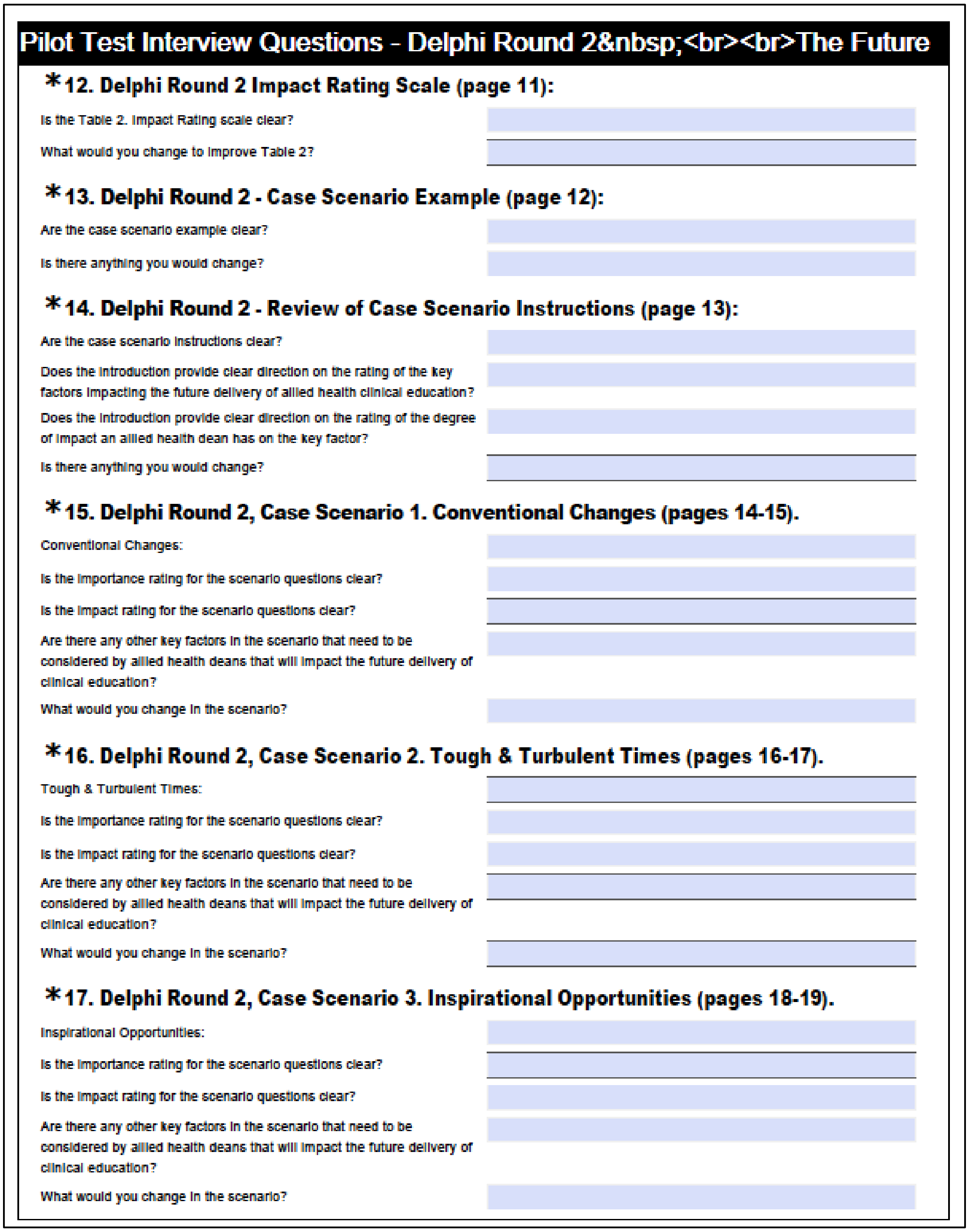
Are the definitions clear?

Are there other definitions that should be included?

***11. Delphi Round 2 Importance Rating Scale (page 11):**

Is the Table 1. Importance Rating scale clear?

What would you change to improve Table 1?



Pilot Test Interview Questions - Delphi Round 2

The Future

*12. Delphi Round 2 Impact Rating Scale (page 11):

Is the Table 2. Impact Rating scale clear?

What would you change to improve Table 2?

*13. Delphi Round 2 - Case Scenario Example (page 12):

Are the case scenario example clear?

Is there anything you would change?

*14. Delphi Round 2 - Review of Case Scenario Instructions (page 13):

Are the case scenario instructions clear?

Does the introduction provide clear direction on the rating of the key factors impacting the future delivery of allied health clinical education?

Does the introduction provide clear direction on the rating of the degree of impact an allied health dean has on the key factor?

Is there anything you would change?

*15. Delphi Round 2, Case Scenario 1. Conventional Changes (pages 14-15).

Conventional Changes:

Is the importance rating for the scenario questions clear?

Is the impact rating for the scenario questions clear?

Are there any other key factors in the scenario that need to be considered by allied health deans that will impact the future delivery of clinical education?

What would you change in the scenario?

*16. Delphi Round 2, Case Scenario 2. Tough & Turbulent Times (pages 16-17).

Tough & Turbulent Times:

Is the importance rating for the scenario questions clear?

Is the impact rating for the scenario questions clear?

Are there any other key factors in the scenario that need to be considered by allied health deans that will impact the future delivery of clinical education?

What would you change in the scenario?

*17. Delphi Round 2, Case Scenario 3. Inspirational Opportunities (pages 18-19).

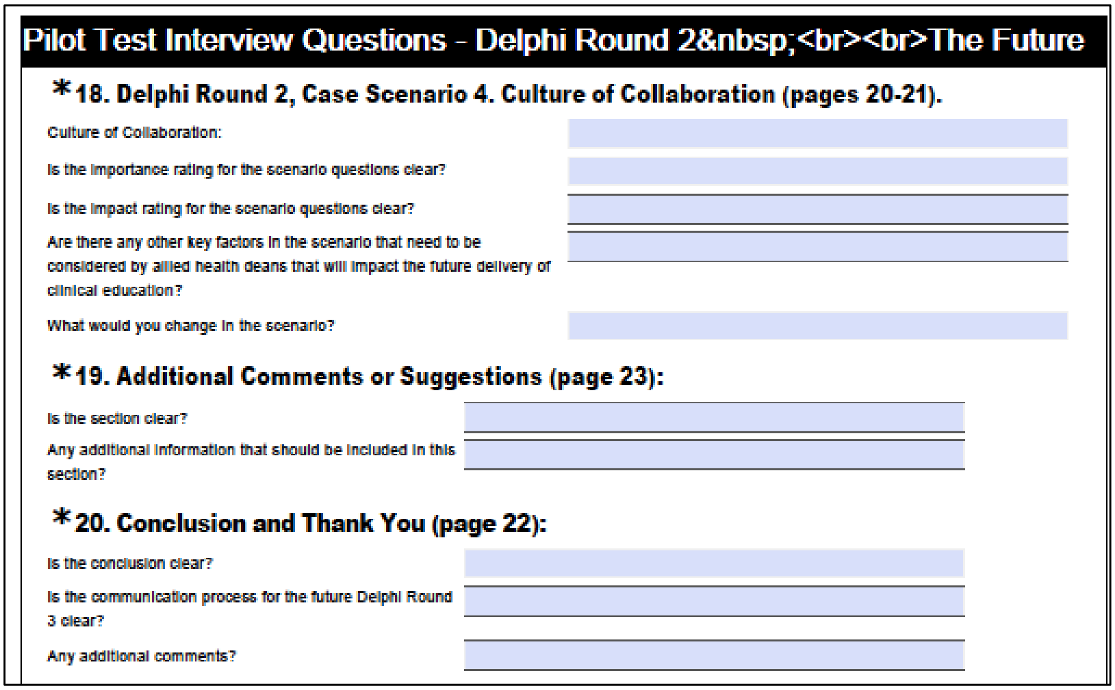
Inspirational Opportunities:

Is the importance rating for the scenario questions clear?

Is the impact rating for the scenario questions clear?

Are there any other key factors in the scenario that need to be considered by allied health deans that will impact the future delivery of clinical education?

What would you change in the scenario?



Pilot Test Interview Questions - Delphi Round 2

The Future

***18. Delphi Round 2, Case Scenario 4. Culture of Collaboration (pages 20-21).**

Culture of Collaboration:

Is the importance rating for the scenario questions clear?

Is the impact rating for the scenario questions clear?

Are there any other key factors in the scenario that need to be considered by allied health deans that will impact the future delivery of clinical education?

What would you change in the scenario?

***19. Additional Comments or Suggestions (page 23):**

Is the section clear?

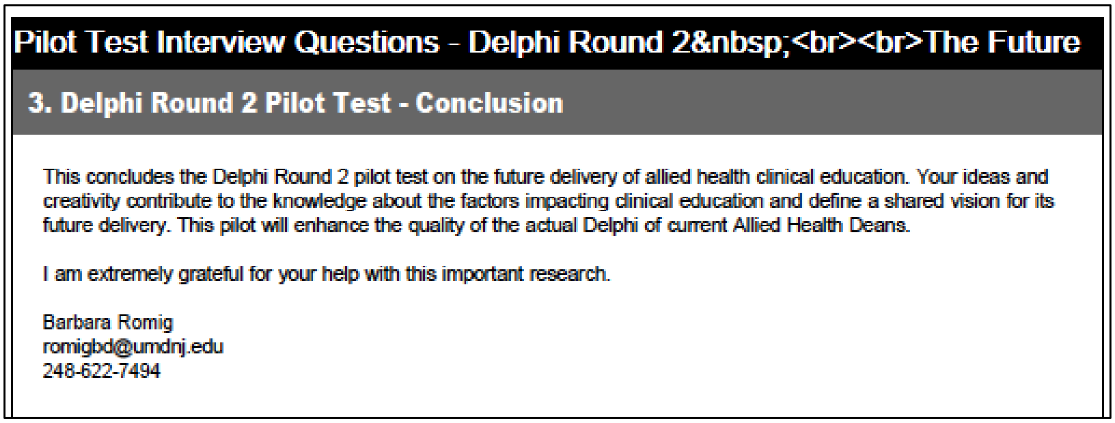
Any additional information that should be included in this section?

***20. Conclusion and Thank You (page 22):**

Is the conclusion clear?

Is the communication process for the future Delphi Round 3 clear?

Any additional comments?



Pilot Test Interview Questions - Delphi Round 2

The Future

3. Delphi Round 2 Pilot Test - Conclusion

This concludes the Delphi Round 2 pilot test on the future delivery of allied health clinical education. Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future delivery. This pilot will enhance the quality of the actual Delphi of current Allied Health Deans.

I am extremely grateful for your help with this important research.

Barbara Romig
romigbd@umdnj.edu
248-622-7494

Appendix W

Pilot Test Round 2 Survey E-Mail Reminder

UMDNJ
UNIVERSITY OF MEDICINE &
DENTISTRY OF NEW JERSEY

[Date]
Dear [Name]

Approximately 1 week ago, the “**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans**” **Delphi Round 2 Pilot Test** was e-mailed to you. Your feedback on the Delphi survey is extremely important to this pilot study.

If you have already completed the survey and scheduled a convenient time for a phone interview, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. If you prefer, you may request a PDF copy of the survey to be e-mailed to you. Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview.

Thank you in advance for your time and insight. If you have any questions regarding this request, please contact me at 248-622-7494 (romigbd@umdnj.edu) or my Dissertation Chair Julie O’Sullivan Maillet PhD at 973-972-6957 (maillet@umdnj.edu). If you have any questions regarding your rights as a research participant, you can contact the UMDNJ Newark Institutional Review Board at 973-972-3608.

I am extremely grateful for your help with this important research.

Barbara Romig, MS, MBA
PhD Candidate – University of Medicine and Dentistry of New Jersey
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O’Sullivan Maillet, Ph.D., F.A.S.A.H.P.
Interim Dean UMDNJ-SHRP & Chair of Dissertation Committee
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Dissertation Committee Members:
Julie O’Sullivan Maillet, Ph.D., F.A.S.A.H.P., Chair

Ann W. Tucker, D.Ed; UMDNJ-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

As of July 1, 2013, UMDNJ-SHRP will become part of Rutgers, The State University of New Jersey.

Appendix X

Pilot Test Round 2 Final E-Mail Reminder

UMDNJ
University of Medicine &
Dentistry of New Jersey

[Date]
Dear [Name]

Approximately 3 weeks ago, "**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans**" **Pilot Test Delphi Round 2** was emailed to you. As a recognized expert, your participation is extremely important to the success of the study. The study is designed to gain expert consensus on the challenges and opportunities in the current and future allied health clinical education arena.

If you have already completed and returned the survey, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. A PDF version of the survey is attached for your convenience. Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview.

I am extremely grateful for your help with this important research.

Sincerely,

Barbara Romig, MS, MBA
PhD Candidate – University of Medicine and Dentistry of New Jersey
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P.
Interim Dean UMDNJ-SHRP & Chair of Dissertation Committee
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Dissertation Committee Members:
Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P., Chair
Ann W. Tucker, D.Ed; UMDNJ-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

As of July 1, 2013, UMDNJ-SHRP will become part of Rutgers, The State University of New Jersey.

Appendix Y

Pilot Test Round 2 Survey Phone Script for Reminder

Hello,

My name is Barbara Romig and I am a PhD student at the University of Medicine and Dentistry of New Jersey. Thank you for participating in the "**The Future Delivery of Clinical Education: A Delphi Study of Allied Health Deans Pilot Test**. This study is designed to gain expert consensus of Allied Health Deans on **key factors impacting allied health clinical education**.

Approximately two weeks ago, you received an e-mail with the Delphi Round 2 survey link accessible via Survey Monkey. If you have already completed the survey and scheduled a convenient time for a phone interview, please accept my sincere thanks. If you have not completed the survey, please use the Survey Monkey link [**insert link**] to access and complete the survey by **[insert date**]. If you prefer, you may request a PDF copy of the survey to be e-mailed to you.

The Round 2 survey and interview will take approximately 60 minutes to complete. Once you have completed the survey, we will arrange a convenient day and time in the next week for our phone interview. I am interested in your thoughts about how understandable the Delphi Round 2 questions are and if the choices are appropriate and comprehensive.

If you have any questions regarding this study, please do not hesitate to call me at 248-622-7494.

Thank you very much for your support of this very important study.

Barbara Romig

Appendix Z

Former AH Deans of ASAHP Participating in the Pilot Program and Who Agreed to have their Name Released for Publication / Presentation**:**

Dean	Title	Institution
Steve Collier	Ph.D., F.A.S.A.H.P., Director and Professor	University of Alabama at Birmingham
Jim Erdmann	Ph.D., F.A.S.A.H.P., Assoc. Sr. VP for Academic Affairs	Thomas Jefferson University
Polly Fitz	M.A., R.D., F.A.S.A.H.P., ASAHP Past President, Professor Emeritus	University of Connecticut
Dave Gibson	Ed.D., F.A.S.A.H.P., A.S.A.H.P. Past President; Professor Emeritus	University of Medicine and Dentistry of New Jersey
Randy Lambrecht	Ph.D., F.A.S.A.H.P., Vice President, Research & Academic Relations	Aurora Health Care
Dawna Mughal	Ph.D., R.D., L.D.N., F.A.D.A., Director, Medical Technology Program	Gannon University
Lindsay Rettie	Ed.D., F.A.S.A.H.P., Professor and Dean Emeritus	Old Dominion University
Steve Wilson	Ph.D., F.A.S.A.H.P., A.S.A.H.P. Past President	The Ohio State University

Note. ASAHP is the Association of Schools of Allied Health Professions.

Appendix AA

Pilot Study Feedback
Round 1 Survey, Allied Health Dean Demographic Form, and Research Problem

March 20, 2013

Section I. Research Problem feedback:

Is the Research Problem clearly stated?

The problem statement is very clear as it is, however I always like to enumerate or highlight the foci of the study; i.e., To identify: 1) purposes of Allied Health clinical education, 2) challenges in offering clinical education (experience), 3) future opportunities in providing clinical education, 4) suggestions for delivering clinical education.

The statement of the problem is reasonably clear but could be improved and perhaps strengthened to obviate what may later be criticisms. For example I would suggest that you enumerate the three segments. "will be used to examine (1) the purpose of allied health clinical education; (2) identify, etc.; and (3) provide suggestions, etc."

Somewhat. However, the first sentence is not particularly clear and I think the beginning phrase "Based on projected future challenges and opportunities in clinical education and key factors impacting allied health clinical education" clouds the research problem and is unnecessary. The second part of the sentence that begins "this study will explore where..." is clear and really is the research problem. The next sentence begins "In order to answer this question..." Yet, it is not phrased as a question. This can be rectified by either phrasing the research problem as a question or else changing the second sentence to read something like, "In order to address this research problem, a..."

Despite the Research Problem being stated with two 40-50+ word sentences containing grammatical issues, the problem can be understood, It is not however clearly stated for the reader.

What would you change?

Perhaps this is a "picky" point, but I raise the issue of using "should" versus "will" in the statement of the research problem--i.e., " this study will explore where is there agreement among allied health deans on how allied health clinical education should be delivered in the future." There may be a distinction on how allied health deans believe clinical education SHOULD be delivered in the future versus how it WILL be delivered. Whatever ever word is chosen, I think the distinction should be acknowledged and explained in the introductory part of the narrative of the dissertation.

I would suggest that you remove the word "future" in the opening sentence of your Statement of the Problem inasmuch as projected and future are synonymous. Moreover, to answer what may be a later question: "Whose projected challenges and opportunities?" You may want to note something along these lines: "Based on projected challenges and opportunities found in the literature etc." Also, the main introductory sentence, the is an awkwardness as follows: "...this study will explore where is there agreement..." I would suggest changing the sentence as follows to allow for greater clarity: "...this study will explore where there is agreement..." Finally, in the last part of the Statement beginning with: and provide suggestions..." It might be wise to use a modifying phrase such as: "... and provide consent derived suggestions..." This might obviate questions as to the origins of suggestions for the delivery of future clinical education.

1) Construct a hypothesis statement or a Question that is meaningful in describing the problem. 2) Refrain from assuming that the projected opportunities, challenges, and key factors in AH clinical education are known. 3) Shorten the sentences that describe the problem. 4) Provide greater focus on specific aims. Phrases such as "purposes of AH clinical education", agreement on major key challenges, opportunities impacting future..." are too broad and may not be measureable or comparable (quantitatively or qualitatively)
4. Is there any other information that should be included?
Perhaps efficiency measures that include cost and quality are inherent in the research problem description. Research and innovation should also be integrated within the stated problem.

Section 2. Delphi Round 1 Definitions feedback:

Accreditation in Allied Health is programmatic or specialized not by "school or institution" per.

Allied Health professionals do provide "direct patient care" but some AH professions do not, is Medical Lab Sciences. Also some programs are located in Technical Schools not Colleges.

A. Clinical Education Instructions feedback:

Are the Delphi Round 1 Section I instructions clear?

Somewhat. However, the first sentence is not particularly clear and I think the beginning phrase "Based on projected future challenges and opportunities in clinical education and key factors impacting allied health clinical education" clouds the research problem and is unnecessary. The second part of the sentence that begins "this study will explore where..." is clear and really is the research problem. The next sentence begins "In order to answer this question...".

Yet, it is not phrased as a question. This can be rectified by either phrasing the research problem as a question or else changing the second sentence to read something like, "In order to address this research problem, a..."

Yes, but this initial round requires a lot of "free flow" think from the participating dean. I'm not sure how much you will get as you move into the alternative scenarios. Deans will know something about clinical education and the issues but they deal with these issues at a relatively high and general level such as financial allocations, contracts, student problems, accreditation issues, etc. Their comments may be quite general.

B. Clinical Education Model feedback:

Is the Key Factors Impacting Allied Health Clinical Education model comprehensive?

No, it does not include the political environmental factors or the individual behavioral factors.

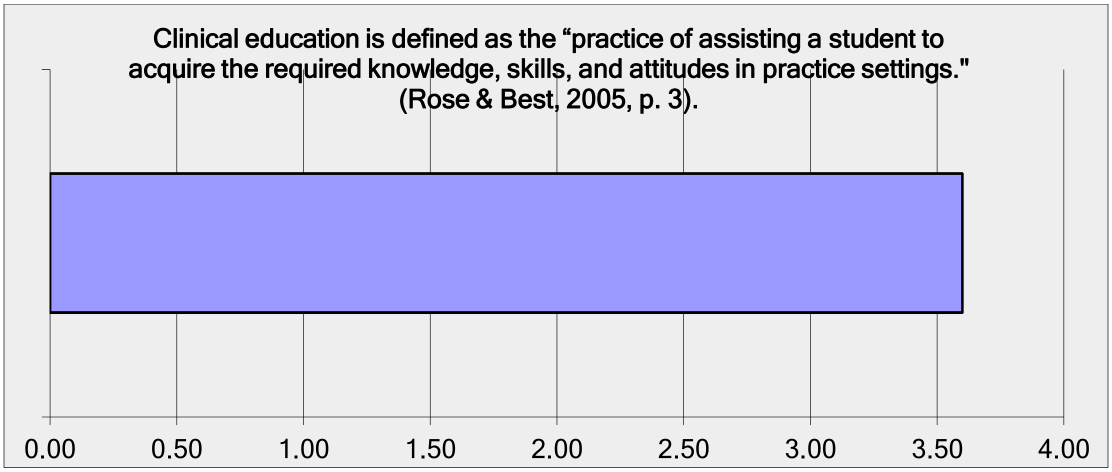
Mostly, somewhere the "funding of Clinical Education" has to come into play. Clinical education is the most expensive part of the process in AH.

C. Pilot Answers to the Clinical Education Definition and Goals

Delphi Round 1 Survey Agreement Rating Scale

Likert Scale	Definition
1	Strongly disagree
2	Disagree
3	Neither agree nor disagree
4	Agree
5	Strongly Agree

Clinical Education Definition:



5 responses
Average rating score of 3.6
1 Disagree; 4 Agree

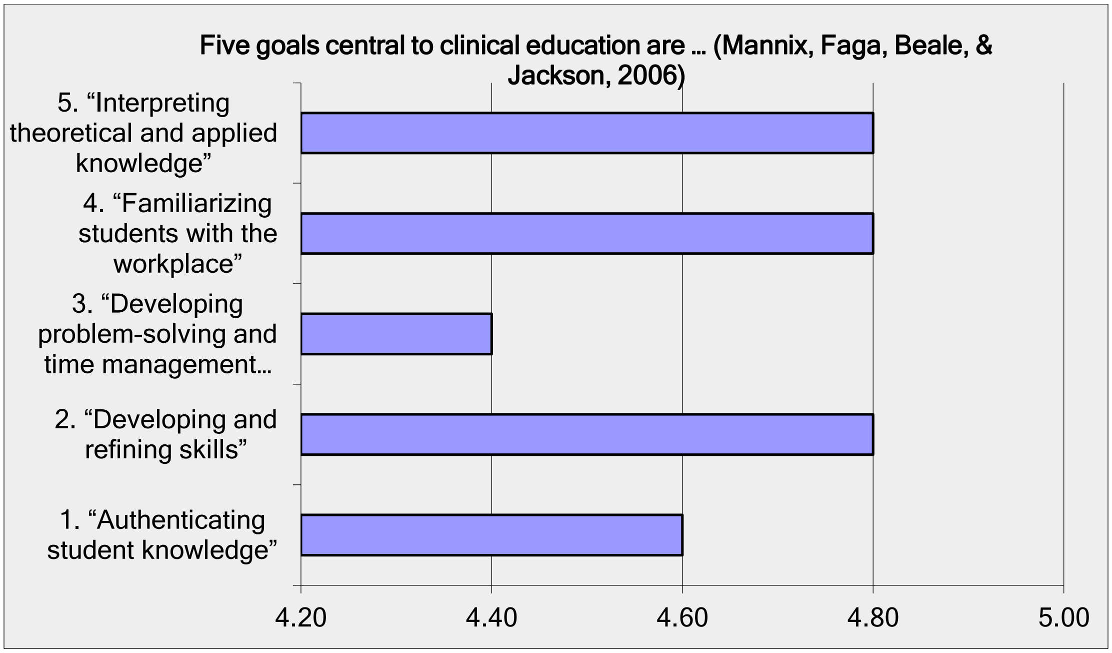
Pilot Comments:
1. I would add competencies, defined as outcomes, required by the standards of educational programs. So it is more than knowledge and skills.

2. The definition can be appropriate and adequate as stated, but if this is what clinical education is, then it does not all need to take place in a clinical setting, e.g. acquiring many components of the knowledge and attitudes of clinical practice can occur outside of the actual clinical practice environment. I have traditionally considered clinical education to be those components that need to occur in the clinical setting itself (which can include lab and simulation environments) rather than just the classroom. Otherwise, it will be difficult to make a distinction as to what must or should occur in clinical settings as opposed to non-clinical settings. I also realize I may be creating a semantic problem for myself (and perhaps others) in equating "clinical education" with "clinical setting", but without doing so then the boundaries can become less clear and almost any kind of instruction or knowledge can be construed to have a clinical component, and thus be clinical education.

3. I agree but not strongly so because the underlying knowledge is more cognitive in nature and less through practice. Hence, I think of clinical education as a fortifying exercise for the knowledge upon which solid clinical skills are interpreted and practiced and of an observable forum to hone appropriate affective responses.

4. Check with the Laboratory Sciences faculty to see how they identify the terminology "clinical education" or laboratory experience.

Pilot Answers on Clinical Education Goals:



5 responses

Pilot Comments:
1. Developing self-management skills. Some students nowadays can't even manage themselves well enough in the beginning of clinical education when they face multiple tasks and priorities. Item # 2 above is very broad. It can include many skills. It can include # 3. So it may be better to specify the sets of skills if not individual skills.

2. While numbers 3 and 5 can be a component of clinical education, they do not necessarily need to occur only in the clinical setting.

3. The reason that I rated #3 as agree rather than strongly agree is because problem solving is a highly cognitive activity that is part of a good critical thinking focused curriculum. Hence I would choose the term "honing" rather than developing.

D. Delphi Round 1 Allied Health Clinical Education (AHCE) Case Scenarios

Instructions:
Are the instructions clear?

I was not sure of what you wanted in response to the scenarios.

For the most part, it is difficult to respond to this feedback form without being able to go back and see the round one survey itself. It would be helpful to see the entire survey before beginning the responses.

Case Scenario 1:
Conventional Changes for the Future of Clinical Education

The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operates with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in home care, outpatient care, and rural training locations. State regulations begin to impact distance learning and have the potential to raise clinical education costs for across the state border clinical training. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telemedicine. Higher education deals with a manageable shortage of qualified faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford allied health higher education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external factors impacting clinical education, the question of whether healthcare and clinical education will remain at status quo or reach a “tipping point” is an important consideration.

Scenario 1 Ideas to Consider:

Crisper definition of Conventional Change would serve the dissertation well. After the first sentence, most of the descriptors would fit any model of, at least, the current and immediate future of health care. For instance, the cited example of immunizations under costs may be rendered moot under the "ObamaCare" model. I rather like the equation set up in the above scenario between Conventional Change and Status Quo because it allows for a crisp and clear understanding tat there is change expected but that it is done in an orderly, well established mode of decision-making.

The scenario describes a number of the stresses and issues with which deans will need to deal with. As such, there will increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college/university in classroom, labs and simulation experiences, leaving only those essential things that need to be addressed in the actual clinical practice setting.

Explain interpersonal education in the context of accreditation guidelines. - Additional cost to students (besides books and uniforms and other school supplies) include travel to sites and lodging and meals in other locations if the sites are a distance from campus, health clearances that require physical exams and other tests that affiliations may require (so not just immunizations) shortage of faculty: This depends where you live and the salary you offer if it is competitive.

We have been discussing the notion of "Tipping Points" for many years. It’s really never happened. Lots of talk.....we adapt

<u>Case Scenario 2:</u>

<u>Tough & Turbulent Times for the Future of Clinical Education</u>

Defined as unstable and wobbly recession, the volatile economic picture is exacerbated by the recent takeover of foreign dominance in technology and higher education. The challenging future presents with a burdened healthcare system weighted down with decreasing quality. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single payer system for health coverage for all citizens. Beyond the control of an allied health dean, the rapid trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates has created an unpredictable educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded higher education institutions are restricted to clinical education placements in poverty stricken and disease ridden urban locations. Other institutions compete for clinical education through payment options. Additional competition from for-profit, international, and other students further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to a shift in clinical training limited to psychiatric, indigent and geriatric sites, the rapidly rising financial burden, and scarce and poor paying employment options. Even with a challenged healthcare environment and stresses on the future delivery of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

Scenario 2 Ideas to Consider:

The influence of international/global forces, primarily though international students seeing allied health as a way to immigrate to the U.S. and gain a foothold in the country and economy. Immigration laws will become more flexible to allow greater for certain allied health professions (similar to the current H1B visas).

Interprofessional education means what?
Foreign dominance seems very confusing.

Case Scenario 3:
Inspirational Opportunities for the Future of Clinical Education

The inspiring future offers a superbly efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has produced dramatic preventive care and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have resulted in a positive cost environment for healthcare, abundant allied health program funding, novel degree programs that address workforce gaps, and ample student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the public. Higher education prosperity has resulted in superb educational practices including: an abundance of qualified faculty available to support topnotch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). The global expansion of clinical education is supported via the use computer technology, smartphones, and telemedicine to include international settings in additional to the conventional clinical settings. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future delivery of clinical education.

Scenario 3 Ideas to Consider:

What is also not explained or is largely ignored are the underlying fundamentals of our political and legal system that have a great impact on what kind of healthcare is delivered, to whom it is delivered, and how it is financed. Another way of stating this is what the late scholar and analyst Aaron Wildavsky said about healthcare, which was (to paraphrase), "90% of all of the 'fuss' about healthcare is in trying to answer the two questions of a) who will be allowed to do what to whom? and b) who will pay for it?" The answers to those questions (or attempts to answer them) greatly impact all of healthcare, including allied health and its clinical education.

Case Scenario 4:
Culture of Collaboration for the Future of Clinical Education

A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Higher education governance instructs its faculty and students to actively promote the benefits of public health and holistic well being (eat, pray, love) at clinical placements sites, community health fairs and other community events for all age groups. As allied health students embrace caring for the elderly, the elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future delivery of clinical education in a widening variety of settings.

Scenario 4 Ideas to Consider:

Key Factors: 1) Technology, Noticeably missing from this Utopian scenario is any mention of the use (and/or cost and education on same of both). Hence, needs to be addresses\d, 2) Regulations, also missing 3) Accreditation, also missing 4) Inter-professional Education, also missing 5) Clinical Site Placement, not a mentioned concern 6) Clinical Preceptors, no mentioned concern 7) Faculty Clinical Preceptors, no mentioned concern 8) Students, only mention of allied health students is oblique in relationship to a mutually beneficial relationship between the elderly and allied health care providers.

2. What other key factors impacting allied health clinical education should be included in the Culture of Collaboration scenario?
What seems to be most unrealistic under this scenario is the total lack of non-allied health practitioners, notwithstanding the title of "Culture of Collaboration."

3. In the Culture of Collaboration scenario, what is not explained or is seen as incorrect?

No mention of other health care providers as participants in a culture of collaboration is a major fault and vitiates the validity of any previous mention of inter-professional collaboration.

What is not explained or alluded to is "who pays", or in what way, for the various components of the scenario.

E. Allied Health Dean Demographic form feedback:

You are asking for a lot of info regarding deans address, email, and telephone which is not usually asked on survey questionnaires to ensure privacy. But this is a different kind of survey. Maybe a short statement needs to be added about why this info is asked.
Feedback on the term of allied health dean:

The phrase "allied health dean" is a bit deceptive because the survey is to be conducted with allied health deans, so to avoid confusion I would suggest the plural for the noun.

I went through this for 30+ years :-). Not even worth getting into.

Appendix BB

Modifications to Delphi Post Pilot Study Feedback

Delphi Round 1 Survey - Changes Per Pilot Program Feedback

Dissertation Title Change:

From: “The Future Delivery of Allied health Clinical Education”

To: “The Future of Allied Health Clinical Education”

Note: the word “delivery” is removed throughout the dissertation and Delphi surveys.

Dissertation Research Problem:

Rewording of Research Problem:
(combined input from Dissertation Committee and Pilot study)

- Evolved from current and future to use of future only.
- Duplicity of the words “projected and future” - Based on projected future challenges and opportunities in clinical education…
- Duplicity of the words “major and key” – major was deleted while words of challenges, opportunities, and key factors remain.
- Operational Definitions updated as needed.

Updated Research Problem:
Based on challenges and opportunities in clinical education and key factors impacting allied health clinical education, this study will explore where is there agreement among allied health deans on the future of allied health clinical education. To answer this question, a three-round Delphi questionnaire will be used to examine the purposes of allied health clinical education, identify where there is agreement on the major key challenges and opportunities impacting future allied health clinical education, and provide suggestions for the future of clinical education.

Changes to Definitions:

- Accreditation definition and source changed from Mosby’s Medical Dictionary to CAAHEP.
- Direct Patient Care definition updated with examples of allied health disciplines.
- Higher Education Institutions renamed to Health Professions Education Institutions. Technical schools added to definition.
- Telemedicine replaces with Telehealth.

Section 1: Definition and Goals of Clinical Education

Definition Changes:

Previous Definition:
Clinical education defined as the “practice of assisting a student to acquire the required knowledge, skills, and attitudes in practice”.
(Rose & Best, 2005, p. 3).

Updated Definition:
Clinical education takes place in the clinical/patient care setting. It provides students with the education and experience necessary to develop and refine clinical skills, knowledge, and values required to provide quality patient care.
(Rose & Best, 2005, p. 3).

Changes to Clinical Education Goals:

Previous Definition:
Five goals central to clinical education are …
(Mannix, Faga, Beale, & Jackson, 2006)

1. “Authenticating student knowledge”
2. “Interpreting theoretical and applied knowledge”
3. “Developing and refining skills”
4. “Familiarizing students with the workplace”
5. “Developing problem-solving and time management skills”

Updated Definition:
Five goals central to clinical education are …
(adapted from Mannix, Faga, Beale, & Jackson, 2006)

1. Application of theory and didactic learning into applied clinical practice
2. Authenticating the application of student knowledge in a clinical setting
3. Orienting students with the clinical workplace
4. Honing and refining clinical skills
5. Developing problem-solving and time management skills in the clinical setting

Section 2: Instructions, Clinical Education Model and Case Scenarios

Original Delphi Round 1 Survey

Original Instructions:

The 21st century is a time of opportunities and challenges in a period of rapid economic, social, political transformation driven by exponential growth in knowledge and innovation. Section 2 is designed to gather allied health dean opinion on how clinical education should be delivered in the future (2018-2023). Four alternative scenarios of the future were developed from a review of pivotal case scenario literature (Bishop, Hines, & Collins, 2007; Goodwin, 2001; Hewitt, 2012; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008, The Institute for Alternative Futures, 2012). Using a model of key factors impacting allied health clinical education (refer to Figure 1) to guide the feedback, these four plausible scenarios were created. Next, you will answer questions on the future delivery of clinical education with four scenarios titled:

Conventional Changes
Tough & Turbulent Times
Inspirational Opportunities
Culture of Collaboration

Original Clinical Education Model:

Figure 1. Key Factors Impacting Allied Health Clinical Education

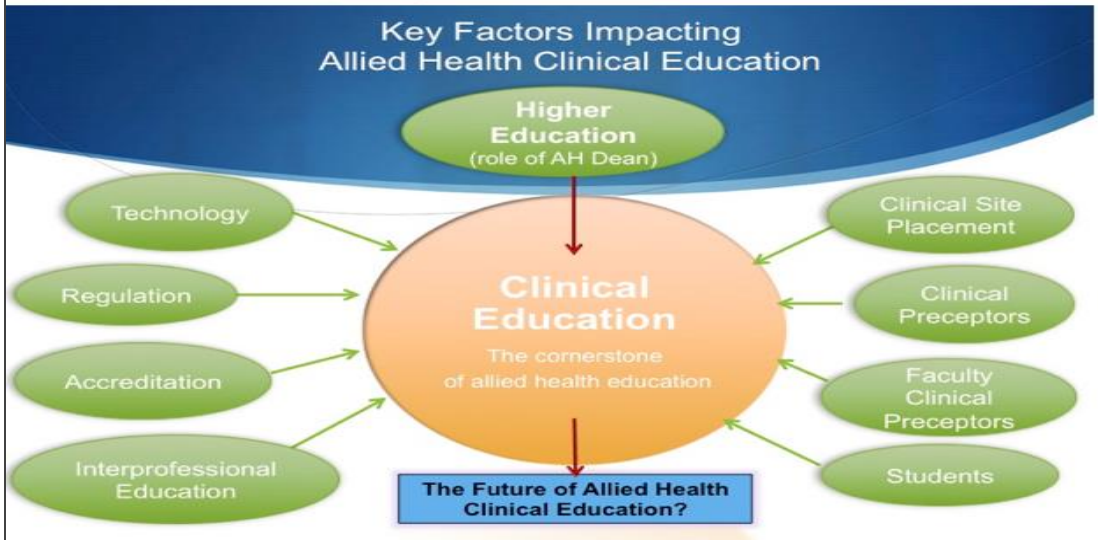

Key Factors Impacting
Allied Health Clinical Education
Higher Education
(role of AH Dean)
Technology
Regulation
Accreditation
Interprofessional Education
Clinical Education
The cornerstone of allied health education
Clinical Site Placement
Clinical Preceptors
Faculty Clinical Preceptors
Students
The Future of Allied Health Clinical Education?

Figure 1. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20 and June 26th, 2012.

Updated Delphi Round 1 Survey

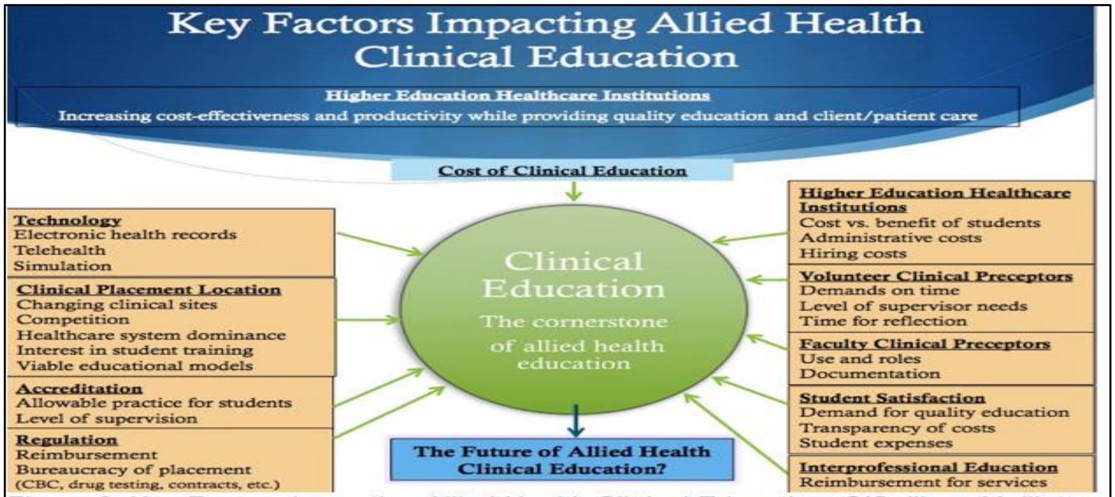
Updated Instructions:

The 21st century is a time of opportunities and challenges in a period of rapid economic, social, political transformation driven by exponential growth in knowledge and innovation. Section 2 is designed to gather allied health deans' opinion on the future (2018 - 2023) of clinical education. The structure of the four case scenarios is based upon a review of pivotal case scenario literature

(Bishop, Hines, & Collins, 2007; Goodwin, 2001; Hewitt, 2012; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008, The Institute for Alternative Futures, 2012). The content for the four case scenarios is based on the model of key factors impacting allied health clinical education (O'Sullivan Maillet & Romig, 2011). Inherent in the clinical education model (Figure 1) is the assumption that there are costs associated with all of the key factors impacting the future of allied health clinical education.

The future scenarios are titled:
#1. Conventional Conditions
#2. Tough Times
#3. Inspirational Opportunities
#4. Culture of Collaboration

Updated Clinical Education Model:



Key Factors Impacting Allied Health Clinical Education

Higher Education Healthcare Institutions
Increasing cost-effectiveness and productivity while providing quality education and client/patient care

Cost of Clinical Education

Clinical Education
The cornerstone of allied health education

The Future of Allied Health Clinical Education?

Technology
Electronic health records
Telehealth
Simulation

Clinical Placement Location
Changing clinical sites
Competition
Healthcare system dominance
Interest in student training
Viable educational models

Accreditation
Allowable practice for students
Level of supervision

Regulation
Reimbursement
Bureaucracy of placement
(CBC, drug testing, contracts, etc.)

Higher Education Healthcare Institutions
Cost vs. benefit of students
Administrative costs
Hiring costs

Volunteer Clinical Preceptors
Demands on time
Level of supervisor needs
Time for reflection

Faculty Clinical Preceptors
Use and roles
Documentation

Student Satisfaction
Demand for quality education
Transparency of costs
Student expenses

Interprofessional Education
Reimbursement for services

Figure 2. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20, and June 26, 2012; April 19, 2013.

Section 2: Case Scenario Changes

#1. Conventional Changes Scenario:
Case scenario name change to "Conventional Conditions".
Minor wording changes.
Content added: interprofessional education and demands on clinical education resources.
Content removed: reference to a "tipping point".

#2. Tough and Turbulent Times Scenario:
Case scenario name change to "Tough Times".
Minor wording changes.
Content removed: foreign dominance in higher education.

#3. Inspirational Opportunities Scenario:
Minor wording changes.
Content added: reduced fraud and waste, fiscally beneficial environment for healthcare and higher education.

#4. Culture of Collaboration Scenario:

Minor wording changes.

Content added: collaboration between allied health deans and accreditation, scope of practice, interprofessional education standards of excellence, and positive culture of working together.

APPENDIX CC

Flyer Announcing Delphi Study

UMDNJ
UNIVERSITY OF MEDICINE &
DENTISTRY OF NEW JERSEY

THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS
FLYER ANNOUNCING INVITATION TO PARTICIPATE

June 28, 2013:

As a Ph.D. candidate at the University of Medicine and Dentistry of New Jersey in the School of Health Related Professions, I am conducting my dissertation study on “**The Future of Clinical Education: A 3-round Delphi Study of Allied Health Deans”**. As an allied health dean, you are aware of the critical issues facing clinical education. As an expert in this area, I am inviting you to participate. The select group of allied health deans invited to participate are those whose institution is a member of the Association of Schools of Allied Health Professions (ASAHP).

This study is timely and an important topic that addresses a portion of the ASAHP’s strategic plan. It will provide direction to programs as they prepare allied health clinical education for future success and achievement. Please take five minutes to watch Futurist Jim Carroll’s video on his vision of healthcare in the year 2020:

http://www.youtube.com/watch?v=RVGw23Z36Gg

Contributing to the knowledge of allied health clinical education is a critical step forward to ensure optimum student training. Your involvement in this research can provide much needed insight. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

You will receive your formal invitation and the first round of the Delphi study in an email later in July 2013. Accompanying the email will be a letter explaining the study and a link to the Delphi through Survey Monkey.

I hope you will be willing to advance the knowledge of clinical education through your participation in this study.

Barbara Romig

Barbara Romig, M.S., M.B.A.
ASAHP Member since 2010
Ph.D. Candidate - UMDNJ-SHRP
E-mail: romigbd@umdnj.edu
Phone: 248-622-7494

Julie O’Sullivan Maillet, Ph.D., F.A.S.A.H.P
Chair - Dissertation Committee
Interim Dean UMDNJ-SHRP and Chair of Dissertation Committee
E-mail: maillet@umdnj.edu
Phone: 973-972-6957

Dissertation Committee Members:
Ann W. Tucker, D.Ed; UMDNJ-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

As of July 1, 2013, UMDNJ-SHRP will become part of Rutgers, The State University of New Jersey.

APPENDIX DD

Delphi Letter of Introduction and Consent

RUTGERS
School of Health Related
Professions

THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY OF ALLIED HEALTH DEANS
LETTER OF INTRODUCTION AND CONSENT

July 9, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

You have been identified as an expert due to your experience as an Allied Health Dean and membership in the Association of Schools of Allied Health Professions (ASAHP). As a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey, I am writing to request your participation in my dissertation research study titled, “**The Future of Clinical Education: A Delphi Study of Allied Health Deans”**.

This study is designed to gain agreement of Allied Health Deans on **key factors impacting allied health clinical education**. This is a timely and important topic that addresses a portion of the ASAHP’s strategic plan and assists in the preparation of allied health clinical education for future success and achievement. Contributing to the knowledge of allied health clinical education is a critical step forward to ensure optimum student training. Your involvement in this research can provide much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Please take a brief moment to watch Futurist Jim Carroll’s video on his vision of healthcare in the year 2020:

http://www.youtube.com/watch?v=RVGw23Z36Gg

As customary in Delphi research, you will be asked to participate in three rounds of surveys between July and December 2013 with an anticipated total time commitment of about 3 hours over 5 months. For each Delphi round, you will have 3 to 4 weeks to complete the survey, contribute ideas and rate the importance of key factors for allied health clinical education. You will have the opportunity to re-rate statements during successive rounds in light of responses of other experts when initial consensus is not reached. At the conclusion of the study, we hope to have expert agreement on key factors impacting allied health clinical education and its future.

If you are willing to participate on the expert panel, please respond to this e-mail by July 22, 2013. Next, you will receive an e-mail with a cover letter with the Delphi Round 1 survey instructions, definitions, the clinical education model, case scenarios and corresponding Delphi Round 1 survey so you can print and refer to this material throughout the study. You will receive a separate e-mail with the first Delphi Round 1 survey containing a unique Survey Monkey link later in July 2013. It is very important to complete all three-survey rounds. Each survey will take approximately 60 minutes to complete.

There are no foreseeable risks to you in participating in this Delphi research. Approximately 80 allied health deans will participate in this study. Data will be treated confidentially, participation is voluntary, and the Principal Investigator will assure your privacy and secure all data that will be kept until the final analysis and study closure anticipated in early 2014. There will be no penalty if you choose not to participate. Response to the introductory e-mail acknowledges your voluntary agreement to participate in the study, gives permission to contact you for inclusion in the Delphi study with the opportunity to communicate with you via mail, e-mail or phone to encourage you to complete the Delphi rounds, and gives permission to use your responses in aggregate form for research purposes. The Rutgers Newark Institutional Review Board has approved this research.

When you complete all three Delphi rounds, for your efforts and with your permission, you will be acknowledged by name as a member of the Expert Panel in any publications resulting from this research and be among the first to receive the results. While the study results will acknowledge your participation, what you say will not be attributed directly to you or any individual participant.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me, Barbara Romig, in the Department of Interdisciplinary Studies at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Sincerely,

Barbara Romig

Barbara Romig, M.S., M.B.A.
ASAHP Member since 2010
Ph.D. Candidate - Rutgers-SHRP
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Julie O’Sullivan Maillet, Ph.D., F.A.S.A.H.P
Chair - Dissertation Committee
Interim Dean Rutgers-SHRP and Chair of Dissertation Committee
E-mail: maillet@shrp.rutgers.edu
Phone: 973-972-6957

Dissertation Committee Members:
Ann W. Tucker, D.Ed; Rutgers
Anne H. Hewitt, Ph.D.; Seton Hall
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix EE

Delphi Introduction with Participant Consent E-mail Reminder

RUTGERS
School of Health Related
Professions

THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY OF ALLIED HEALTH DEANS

LETTER OF INTRODUCTION AND CONSENT
E-MAIL REMINDER

July 16, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

You have been identified as an expert due to your experience as an Allied Health Dean and membership in the Association of Schools of Allied Health Professions (ASAHP). Approximately two weeks ago, you received an e-mail asking you to participate in my dissertation study titled, "**The Future of Clinical Education: A Delphi Study of Allied Health Deans"**. This study is designed to gain agreement of Allied Health Deans on **key factors impacting allied health clinical education**. This is a timely and important topic that addresses a portion of the ASAHP's strategic plan regarding clinical education and will provide direction regarding the future of allied health clinical education.

Contributing to the knowledge of allied health clinical education is a critical step forward to ensure optimum student training. Your involvement in this research can provide much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Please take a brief moment to watch Futurist Jim Carroll's video on his vision of healthcare in the year 2020:

http://www.youtube.com/watch?v=RVGw23Z36Gg

As customary in Delphi research, you will be asked to participate in three rounds of surveys between July and December 2013 with an anticipated total time commitment of about 3 hours over 5 months. For each Delphi round, you will have 3 to 4 weeks to complete the survey, contribute ideas and rate the importance of key factors for allied health clinical education. You will have the opportunity to re-rate statements during successive rounds in light of responses of other experts when initial consensus is not reached. At the conclusion of the study, we hope to have expert agreement on key factors impacting allied health clinical education and its future.

If you are willing to participate on the expert panel, please respond to this e-mail by July 22, 2013. Next, you will receive an e-mail with a cover letter with the Delphi Round 1 survey instructions, definitions, the clinical education model, case scenarios and corresponding Delphi Round 1 survey so you can print and refer to this material throughout the study. You will receive a separate e-mail with the first Delphi Round 1 survey containing a unique Survey Monkey link later in July 2013. It is very important to complete all three-survey rounds. Each survey will take approximately 60 minutes to complete.

There are no foreseeable risks to you in participating in this Delphi research. Data will be treated confidentially, participation is voluntary, and the Principal Investigator will assure your privacy and secure all data. There will be no penalty if you choose not to participate. Response to the introductory e-mail acknowledges your voluntary agreement to participate in the study, gives permission to contact you for inclusion in the Delphi study with the opportunity to communicate with you via mail, e-mail or phone to encourage you to complete the Delphi rounds, and gives permission to use your responses in aggregate form for research purposes. The Rutgers Newark Institutional Review Board has approved this research.

When you complete all three Delphi rounds, for your efforts and with your permission, you will be acknowledged by name as a member of the Expert Panel in any publications resulting from this research and be among the first to receive the results. While the study results will acknowledge your participation, what you say will not be attributed directly to you or any individual participant.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O'Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Sincerely,

Barbara Romig

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ASAHP Member since 2010
Ph.D. Candidate – Rutgers-SHRP
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Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P
Chair - Dissertation Committee
Interim Dean Rutgers-SHRP and Chair of Dissertation Committee
E-mail: maillet@shrp.rutgers.edu
Phone: 973-972-6957

Dissertation Committee Members:
Ann W. Tucker, D.Ed; Rutgers-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix FF

Delphi Introduction and Participant Consent Phone Script Reminder

THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS

My name is Barbara Romig and I am a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey. Approximately two weeks ago, you received an e-mail asking you to participate in my dissertation study titled, "**The Future of Clinical Education: A Delphi Study of Allied Health Deans"**. This study is designed to gain agreement of Allied Health Deans on **key factors impacting allied health clinical education**. You have been identified as an expert due to your experience as an Allied Health Dean and Institutional Membership in the Association of Schools of Allied Health Professions (ASAHP). This is a timely and important topic that addresses a portion of the ASAHP's strategic plan regarding clinical education and will provide direction regarding the future design and delivery of allied health clinical education.

As customary in Delphi research, you will be asked to participate in three rounds of surveys between July and December 2013 with an anticipated total time commitment of about 3 hours over 5 months. For each Delphi round, you will have 3 to 4 weeks to complete the survey, contribute ideas and rate the important of key factors for allied health clinical education. You will have the opportunity to re-rate statements during successive rounds in light of responses of other experts when initial consensus is not reached. At the conclusion of the study, we hope to have expert agreement on key factors impacting allied health clinical education and its future.

If you are willing to participate on the expert panel, please respond to the introductory e-mail July 22, 2013. You will receive the first Delphi study in an email containing a unique Survey Monkey link later in July 2013. It is very important to complete all three-survey rounds. Each survey will take approximately 60 minutes to complete.

There are no foreseeable risks to you in participating in this Delphi research. Data will be treated confidentially, participation is voluntary, and the Principal Investigator will assure your privacy and secure all data. There will be no penalty if you choose not to participate. Return of your contact information acknowledges your voluntary agreement to participate in the study, gives permission to contact you for inclusion in the Delphi study with the opportunity to communicate with you via mail, e-mail or phone to encourage you to complete the Delphi rounds, and gives permission to use your responses in aggregate form for research purposes. The Rutgers Newark Institutional Review Board has approved this research.

When you complete all three Delphi rounds, for your efforts and with your permission, you will be acknowledged by name as a member of the Expert Panel in any publications resulting from this research and be among the first to receive the results. While the study results will acknowledge your participation, what you say will not be attributed directly to you or any individual participant.

Please note the e-mail address changed with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O'Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Appendix GG

Delphi Introduction and Participant Consent Final E-mail Reminder

RUTGERS
School of Health Related
Professions

THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS

LETTER OF INTRODUCTION AND CONSENT FINAL E-MAIL REMINDER

July 31, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

As a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey, I am writing to request your participation in my dissertation study. Approximately three weeks ago, you received an e-mail asking you to participate in my dissertation study titled, “**The Future of Clinical Education: A Delphi Study of Allied Health Deans”**. This study is designed to gain agreement of Allied Health Deans on **key factors impacting allied health clinical education**. You have been identified as an expert due to your experience as an Allied Health Dean and Institutional Membership in the Association of Schools of Allied Health Professions (ASAHP). This is a timely and important topic that addresses a portion of the ASAHP’s strategic plan regarding clinical education and will provide direction regarding the future design and delivery of allied health clinical education.

Contributing to the knowledge of allied health clinical education is a critical step forward to ensure optimum student training. Your involvement in this research can provide much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Please take a brief moment to watch Futurist Jim Carroll’s video on his vision of healthcare in the year 2020:

http://www.youtube.com/watch?v=RVGw23Z36Gg

As customary in Delphi research, you will be asked to participate in three rounds of surveys between July through December 2013 with an anticipated total time commitment of about 3 hours over 5 months. For each Delphi round, you will have 3 to 4 weeks to complete the survey, contribute ideas and rate the importance of key factors for allied health clinical education. You will have the opportunity to re-rate statements during successive rounds in light of responses of other experts when initial consensus is not reached. At the conclusion of the study, we hope to have expert agreement on key factors impacting allied health clinical education and its future.

If you are willing to participate on the expert panel, please respond to this e-mail by **Monday, August 5th**. Next, you will receive an e-mail with a cover letter with the Delphi Round 1 survey instructions, definitions, the clinical education model, case scenarios and corresponding Delphi Round 1 survey so you can print and refer to this material throughout the study. You will receive a separate e-mail with the first Delphi Round 1 survey containing a unique Survey Monkey link later in August 2013. It is very important to complete all three-survey rounds. Each survey will take approximately 60 minutes to complete.

There are no foreseeable risks to you in participating in this Delphi research. Data will be treated confidentially, participation is voluntary, and the Principal Investigator will assure your privacy and secure all data. There will be no penalty if you choose not to participate. Your return e-mail acknowledges your voluntary agreement to participate in the study, gives permission to contact you for inclusion in the Delphi study with the opportunity to communicate with you via mail, e-mail or phone to encourage you to complete the Delphi rounds, and gives permission to use your responses in aggregate form for research purposes. The Rutgers Newark Institutional Review Board has approved this research.

When you complete all three Delphi rounds, for your efforts and with your permission, you will be acknowledged by name as a member of the Expert Panel in any publications resulting from this research and be among the first to receive the results. While the study results will acknowledge your participation, what you say will not be attributed directly to you or any individual participant.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Sincerely,

Barbara Romig

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ASAHP Member since 2010
Ph.D. Candidate – Rutgers-SHRP
E-mail: romigbd@shrp.rutgers.edu
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Julie O'Sullivan Maillet, Ph.D., F.A.S.A.H.P
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Interim Dean Rutgers-SHRP and Chair of Dissertation Committee
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Ann W. Tucker, D.Ed; Rutgers-SHRP
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix HH

Participating AH Deans Who Agreed to have their Name Released for Publication / Presentation

AH Dean	Designated Representative
Matthew Adeyanju	Julie Coon
Augustine Agho	
Ann Barr-Gillespie	
Hugh Bonner	
Janice Burke	
Elizabeth Cada	
Jodi Calahan	
Pamela Chally	
Pat Chute	
Mitchell Cordova	
Barry Eckert	
Terry Fulmer	Tom Olson

AH Dean	Designated Representative
Michael Gargano	
Charles Gulas	
Susan Noll Hanrahan	
Craig Jackson	
Harold Jones	
Elizabeth King	
Randy Leite	
Kyle Meyer	
David Miller	
Karen L. Miller	Lou Loescher-Junge
Douglas Murphy	
Richard Oliver	
Leslie Portney	
Elizabeth Protas	

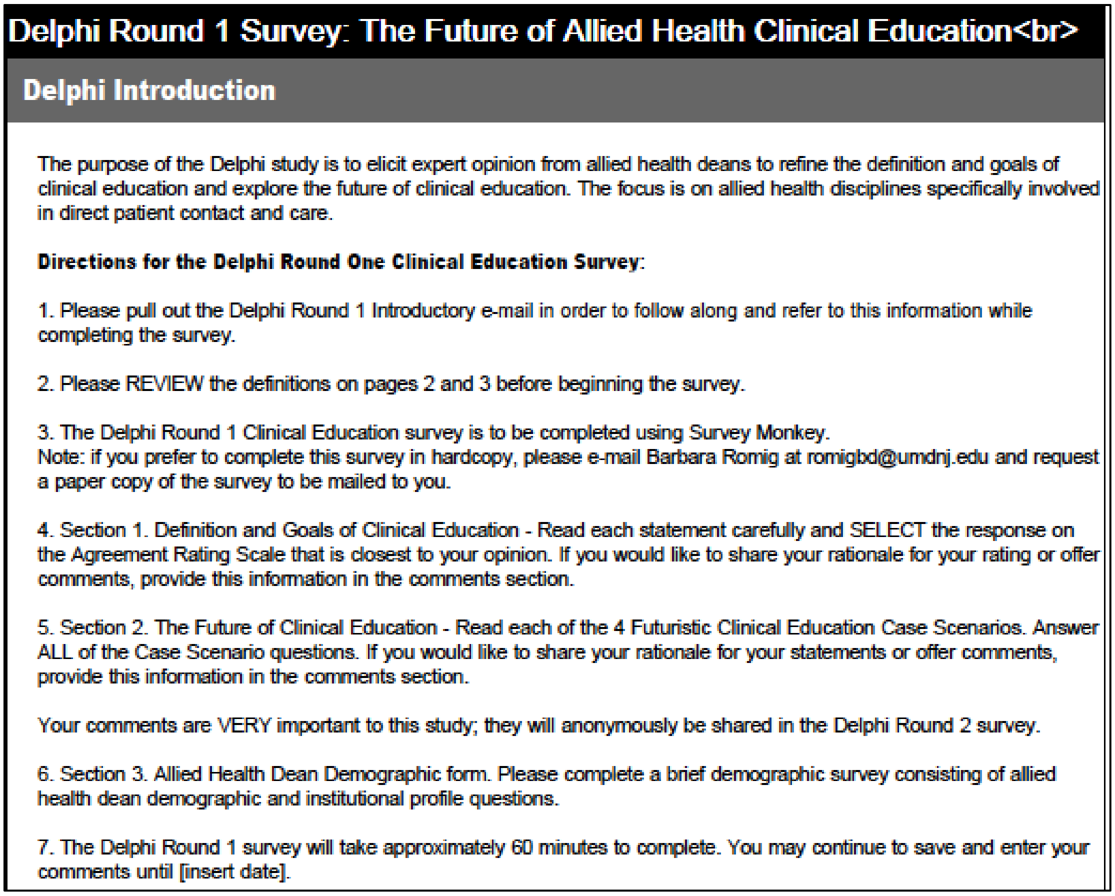
AH Dean	Designated Representative
Linda Reed	
Shirley Richmond	
C. Robin Satterwhite	
Beverly Schmoll	
Linda Seestedt-Stanford	
Laurie Sherwen	
Brian Shulman	Christopher O’Brien
Yasmin Simonian	
Jacquelyn Smith	
Cesarina Thompson	
Joan Toglia	Ruth Hansen
David Ward	
Earlie Washington	Richard Long

AH Dean	Designated Representative
Rebecca Weaver	
Karen Weis	
Ruth Wellborn	
Cyrus Whaley	
Frederick Whitt	

Note. ASAHP is the Association of Schools of Allied Health Professions.

Appendix II

Round 1 Survey



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Delphi Introduction

The purpose of the Delphi study is to elicit expert opinion from allied health deans to refine the definition and goals of clinical education and explore the future of clinical education. The focus is on allied health disciplines specifically involved in direct patient contact and care.

Directions for the Delphi Round One Clinical Education Survey:

1. Please pull out the Delphi Round 1 Introductory e-mail in order to follow along and refer to this information while completing the survey.

2. Please REVIEW the definitions on pages 2 and 3 before beginning the survey.

3. The Delphi Round 1 Clinical Education survey is to be completed using Survey Monkey.
Note: if you prefer to complete this survey in hardcopy, please e-mail Barbara Romig at romigbd@umdnj.edu and request a paper copy of the survey to be mailed to you.

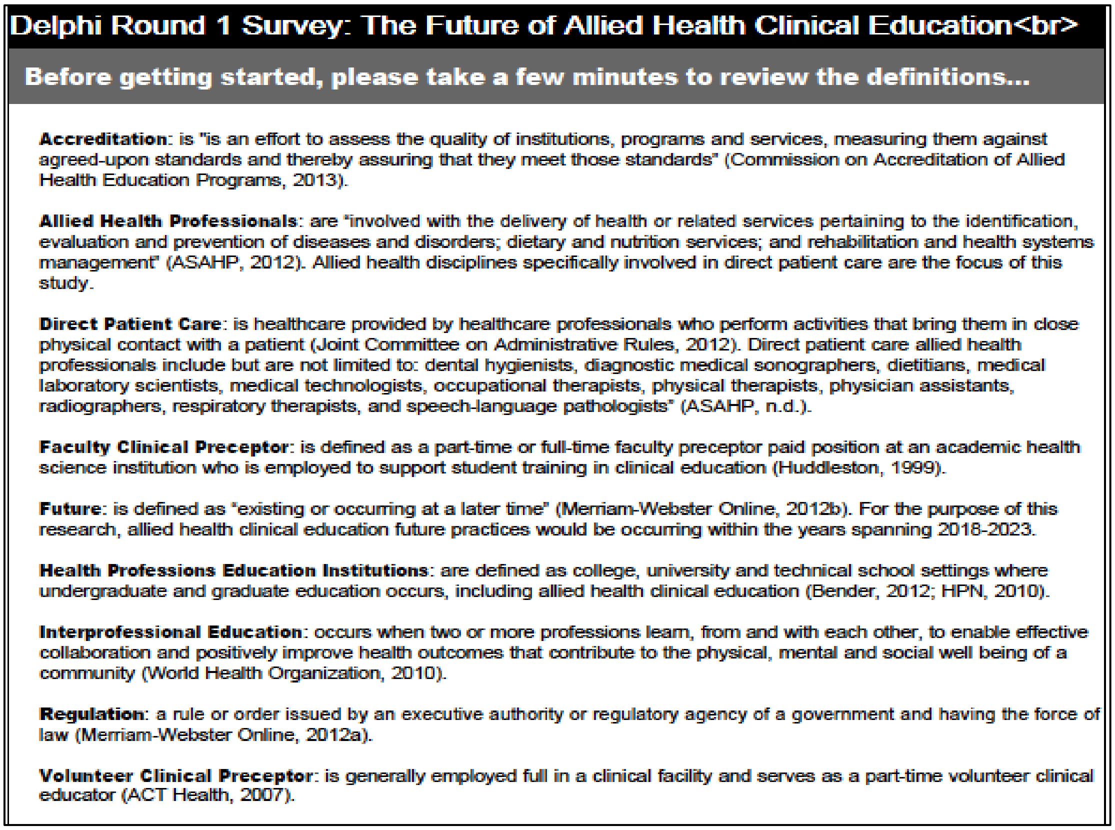
4. Section 1. Definition and Goals of Clinical Education - Read each statement carefully and SELECT the response on the Agreement Rating Scale that is closest to your opinion. If you would like to share your rationale for your rating or offer comments, provide this information in the comments section.

5. Section 2. The Future of Clinical Education - Read each of the 4 Futuristic Clinical Education Case Scenarios. Answer ALL of the Case Scenario questions. If you would like to share your rationale for your statements or offer comments, provide this information in the comments section.

Your comments are VERY important to this study; they will anonymously be shared in the Delphi Round 2 survey.

6. Section 3. Allied Health Dean Demographic form. Please complete a brief demographic survey consisting of allied health dean demographic and institutional profile questions.

7. The Delphi Round 1 survey will take approximately 60 minutes to complete. You may continue to save and enter your comments until [insert date].



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Before getting started, please take a few minutes to review the definitions...

Accreditation: is "is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards" (Commission on Accreditation of Allied Health Education Programs, 2013).

Allied Health Professionals: are "involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management" (ASAHP, 2012). Allied health disciplines specifically involved in direct patient care are the focus of this study.

Direct Patient Care: is healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012). Direct patient care allied health professionals include but are not limited to: dental hygienists, diagnostic medical sonographers, dietitians, medical laboratory scientists, medical technologists, occupational therapists, physical therapists, physician assistants, radiographers, respiratory therapists, and speech-language pathologists" (ASAHP, n.d.).

Faculty Clinical Preceptor: is defined as a part-time or full-time faculty preceptor paid position at an academic health science institution who is employed to support student training in clinical education (Huddleston, 1999).

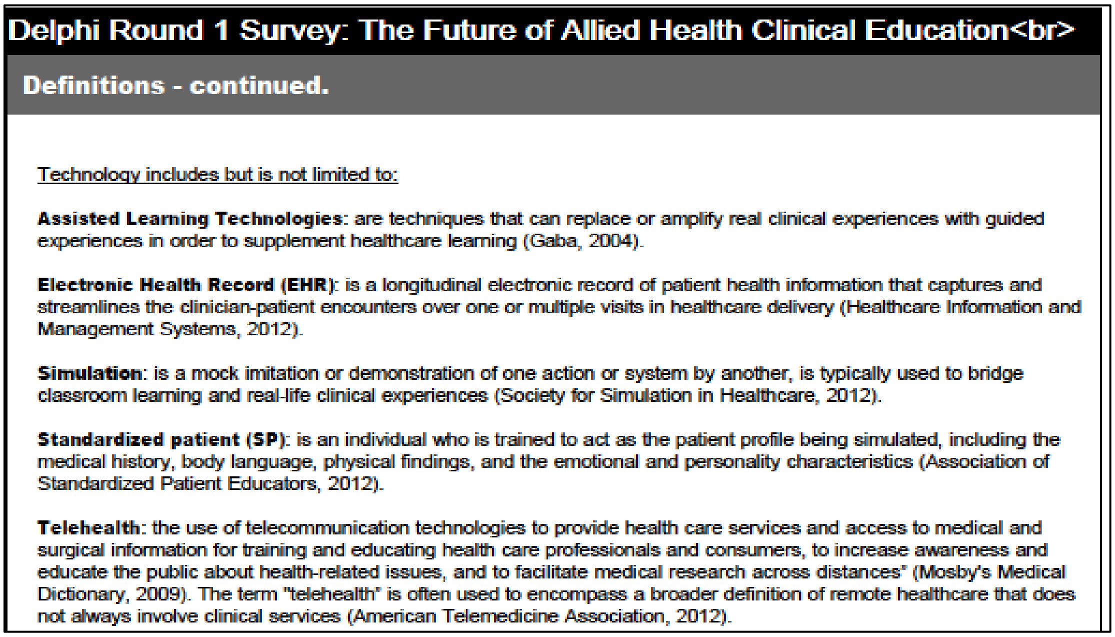
Future: is defined as "existing or occurring at a later time" (Merriam-Webster Online, 2012b). For the purpose of this research, allied health clinical education future practices would be occurring within the years spanning 2018-2023.

Health Professions Education Institutions: are defined as college, university and technical school settings where undergraduate and graduate education occurs, including allied health clinical education (Bender, 2012; HPN, 2010).

Interprofessional Education: occurs when two or more professions learn, from and with each other, to enable effective collaboration and positively improve health outcomes that contribute to the physical, mental and social well being of a community (World Health Organization, 2010).

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law (Merriam-Webster Online, 2012a).

Volunteer Clinical Preceptor: is generally employed full in a clinical facility and serves as a part-time volunteer clinical educator (ACT Health, 2007).



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Definitions - continued.

Technology includes but is not limited to:

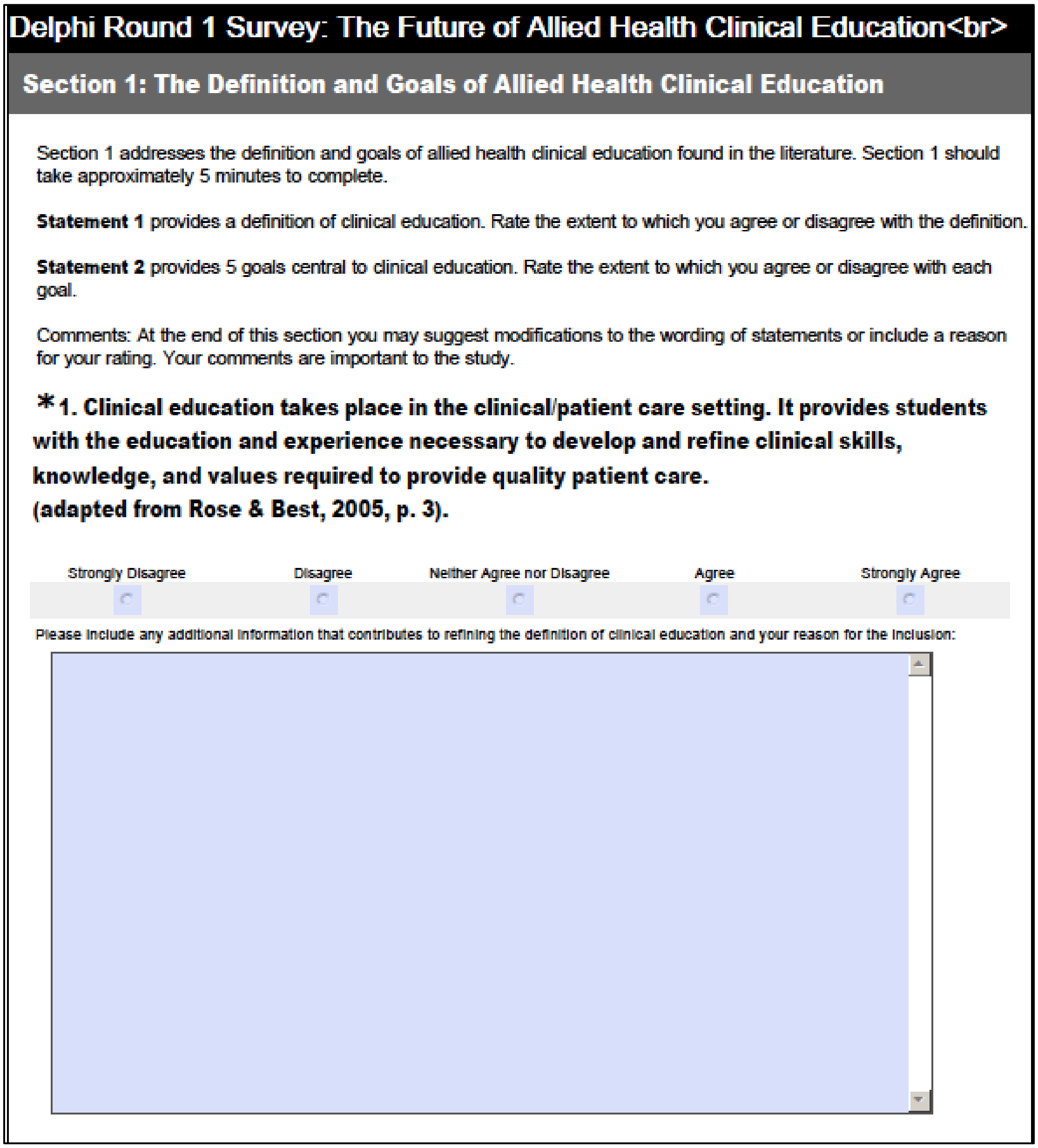
Assisted Learning Technologies: are techniques that can replace or amplify real clinical experiences with guided experiences in order to supplement healthcare learning (Gaba, 2004).

Electronic Health Record (EHR): is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012).

Simulation: is a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Standardized patient (SP): is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Association of Standardized Patient Educators, 2012).

Telehealth: the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances" (Mosby's Medical Dictionary, 2009). The term "telehealth" is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012).



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Section 1: The Definition and Goals of Allied Health Clinical Education

Section 1 addresses the definition and goals of allied health clinical education found in the literature. Section 1 should take approximately 5 minutes to complete.

Statement 1 provides a definition of clinical education. Rate the extent to which you agree or disagree with the definition.

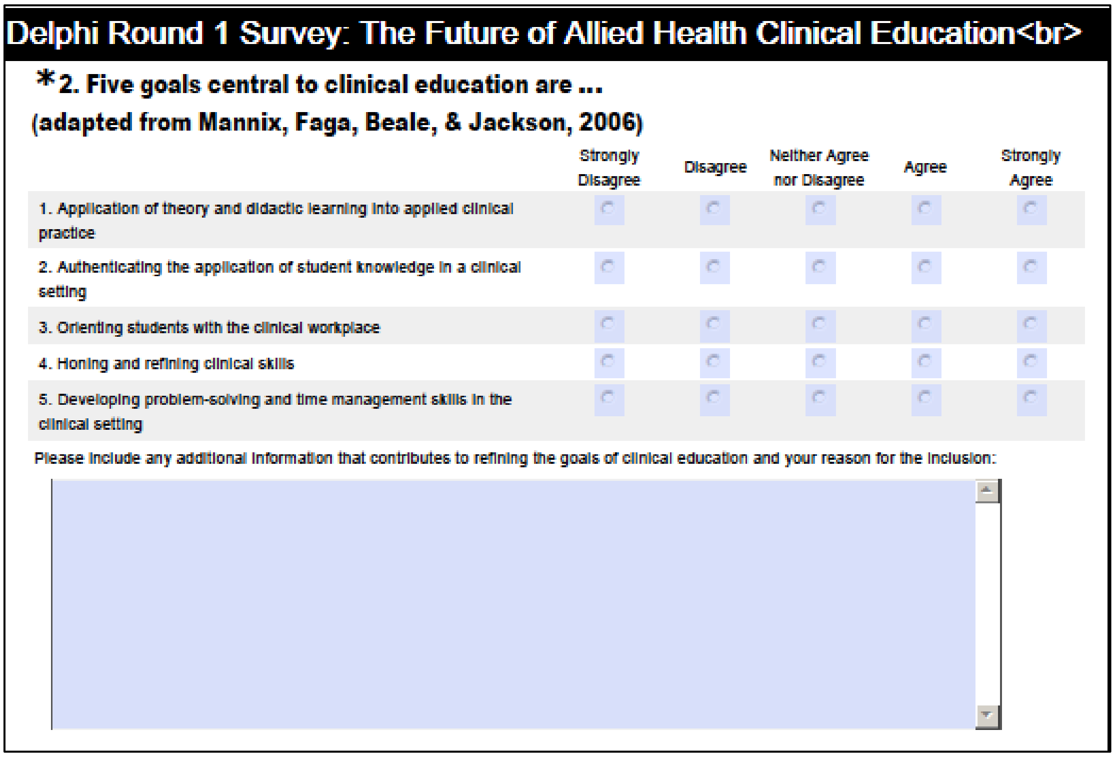
Statement 2 provides 5 goals central to clinical education. Rate the extent to which you agree or disagree with each goal.

Comments: At the end of this section you may suggest modifications to the wording of statements or include a reason for your rating. Your comments are important to the study.

***1. Clinical education takes place in the clinical/patient care setting. It provides students with the education and experience necessary to develop and refine clinical skills, knowledge, and values required to provide quality patient care.**
(adapted from Rose & Best, 2005, p. 3).

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Please include any additional information that contributes to refining the definition of clinical education and your reason for the inclusion:

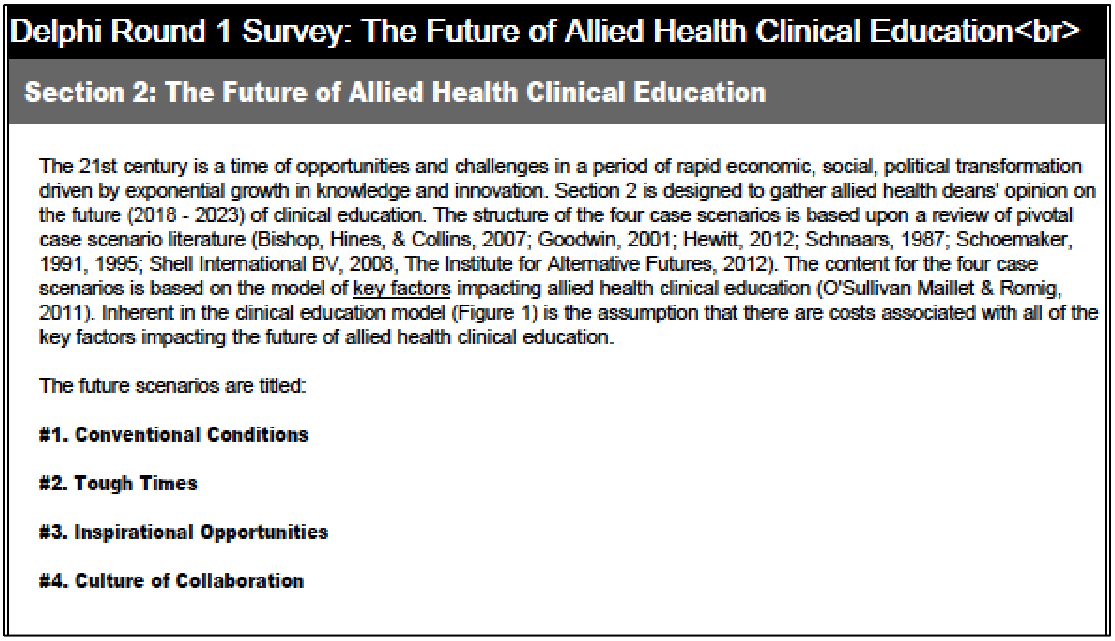


Delphi Round 1 Survey: The Future of Allied Health Clinical Education

***2. Five goals central to clinical education are ...**
(adapted from Mannix, Faga, Beale, & Jackson, 2006)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. Application of theory and didactic learning into applied clinical practice	○	○	○	○	○
2. Authenticating the application of student knowledge in a clinical setting	○	○	○	○	○
3. Orienting students with the clinical workplace	○	○	○	○	○
4. Honing and refining clinical skills	○	○	○	○	○
5. Developing problem-solving and time management skills in the clinical setting	○	○	○	○	○

Please include any additional information that contributes to refining the goals of clinical education and your reason for the inclusion:



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Section 2: The Future of Allied Health Clinical Education

The 21st century is a time of opportunities and challenges in a period of rapid economic, social, political transformation driven by exponential growth in knowledge and innovation. Section 2 is designed to gather allied health deans' opinion on the future (2018 - 2023) of clinical education. The structure of the four case scenarios is based upon a review of pivotal case scenario literature (Bishop, Hines, & Collins, 2007; Goodwin, 2001; Hewitt, 2012; Schnaars, 1987; Schoemaker, 1991, 1995; Shell International BV, 2008, The Institute for Alternative Futures, 2012). The content for the four case scenarios is based on the model of key factors impacting allied health clinical education (O'Sullivan Maillet & Romig, 2011). Inherent in the clinical education model (Figure 1) is the assumption that there are costs associated with all of the key factors impacting the future of allied health clinical education.

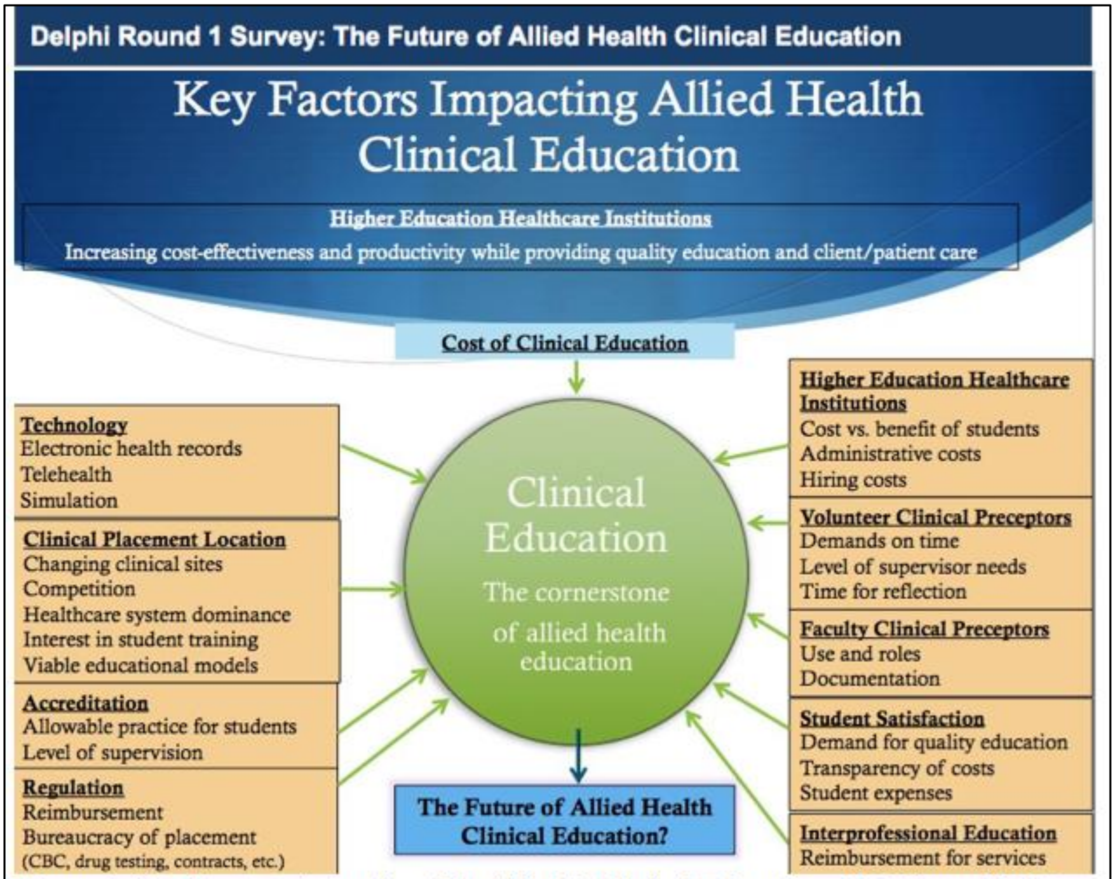
The future scenarios are titled:

#1. Conventional Conditions

#2. Tough Times

#3. Inspirational Opportunities

#4. Culture of Collaboration



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Key Factors Impacting Allied Health Clinical Education

Higher Education Healthcare Institutions
Increasing cost-effectiveness and productivity while providing quality education and client/patient care

Cost of Clinical Education

Technology
Electronic health records
Telehealth
Simulation

Clinical Placement Location
Changing clinical sites
Competition
Healthcare system dominance
Interest in student training
Viable educational models

Accreditation
Allowable practice for students
Level of supervision

Regulation
Reimbursement
Bureaucracy of placement
(CBC, drug testing, contracts, etc.)

Clinical Education
The cornerstone of allied health education

The Future of Allied Health Clinical Education?

Higher Education Healthcare Institutions
Cost vs. benefit of students
Administrative costs
Hiring costs

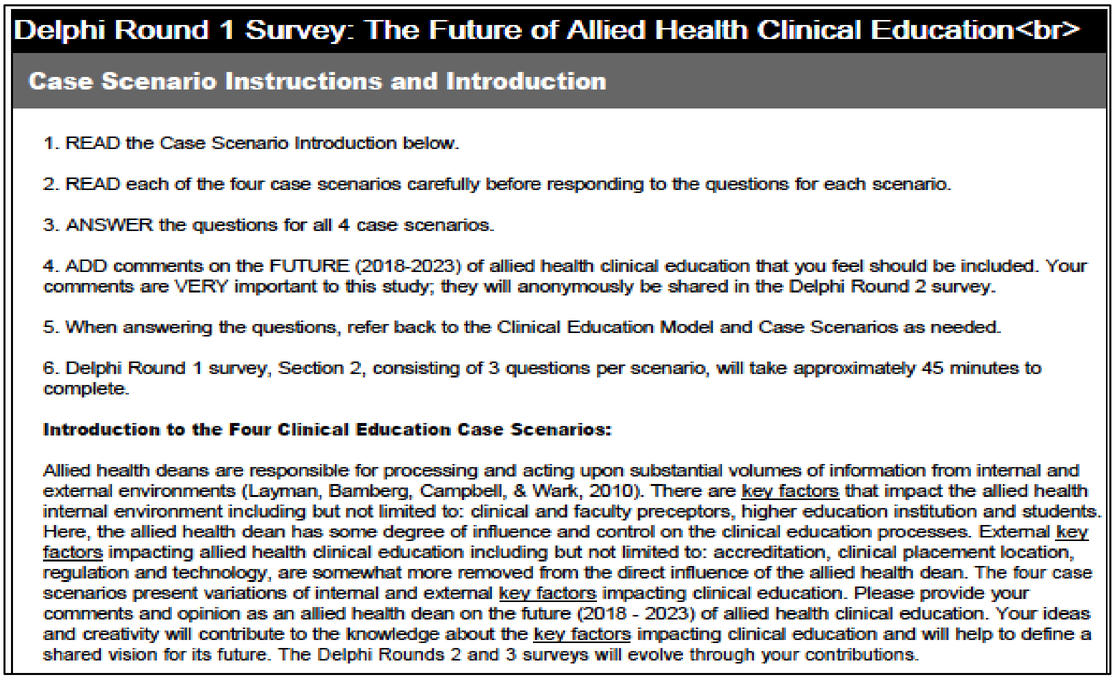
Volunteer Clinical Preceptors
Demands on time
Level of supervisor needs
Time for reflection

Faculty Clinical Preceptors
Use and roles
Documentation

Student Satisfaction
Demand for quality education
Transparency of costs
Student expenses

Interprofessional Education
Reimbursement for services

Figure 2. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20, and June 26, 2012; April 19, 2013.



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Case Scenario Instructions and Introduction

1. READ the Case Scenario Introduction below.

2. READ each of the four case scenarios carefully before responding to the questions for each scenario.

3. ANSWER the questions for all 4 case scenarios.

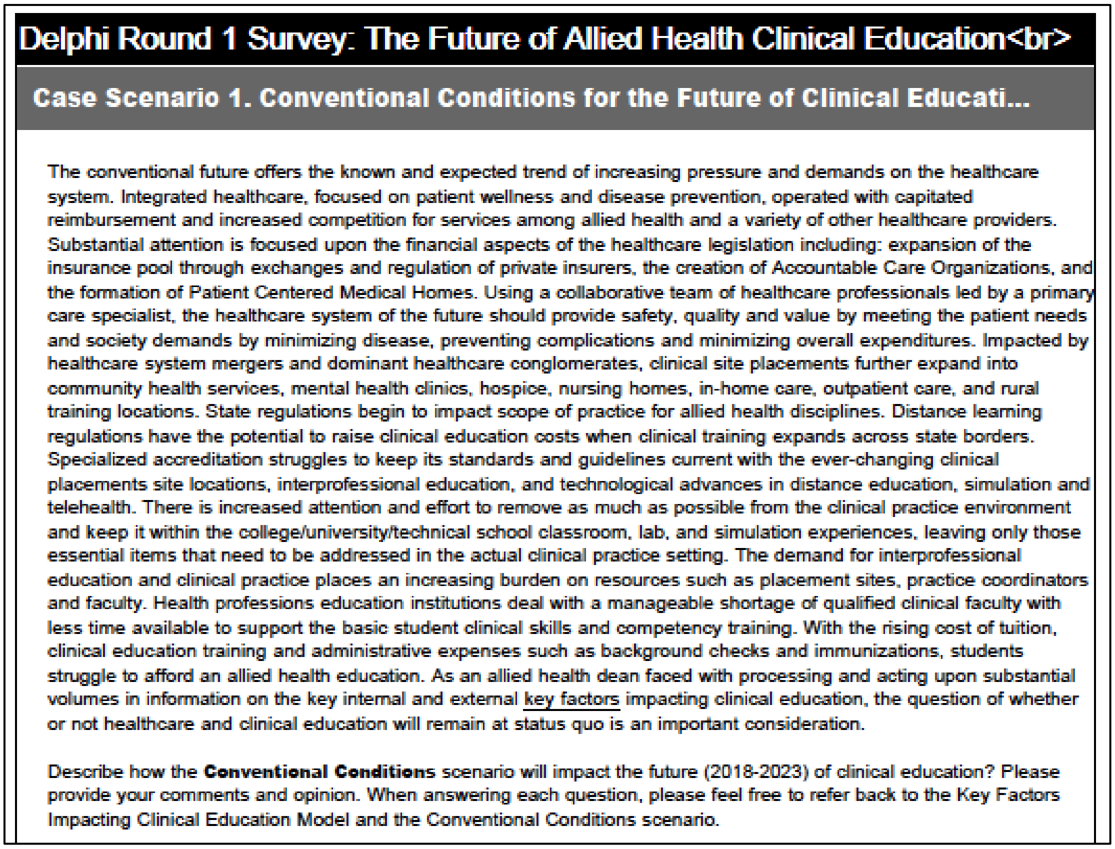
4. ADD comments on the FUTURE (2018-2023) of allied health clinical education that you feel should be included. Your comments are VERY important to this study; they will anonymously be shared in the Delphi Round 2 survey.

5. When answering the questions, refer back to the Clinical Education Model and Case Scenarios as needed.

6. Delphi Round 1 survey, Section 2, consisting of 3 questions per scenario, will take approximately 45 minutes to complete.

Introduction to the Four Clinical Education Case Scenarios:

Allied health deans are responsible for processing and acting upon substantial volumes of information from internal and external environments (Layman, Bamberg, Campbell, & Wark, 2010). There are key factors that impact the allied health internal environment including but not limited to: clinical and faculty preceptors, higher education institution and students. Here, the allied health dean has some degree of influence and control on the clinical education processes. External key factors impacting allied health clinical education including but not limited to: accreditation, clinical placement location, regulation and technology, are somewhat more removed from the direct influence of the allied health dean. The four case scenarios present variations of internal and external key factors impacting clinical education. Please provide your comments and opinion as an allied health dean on the future (2018 - 2023) of allied health clinical education. Your ideas and creativity will contribute to the knowledge about the key factors impacting clinical education and will help to define a shared vision for its future. The Delphi Rounds 2 and 3 surveys will evolve through your contributions.

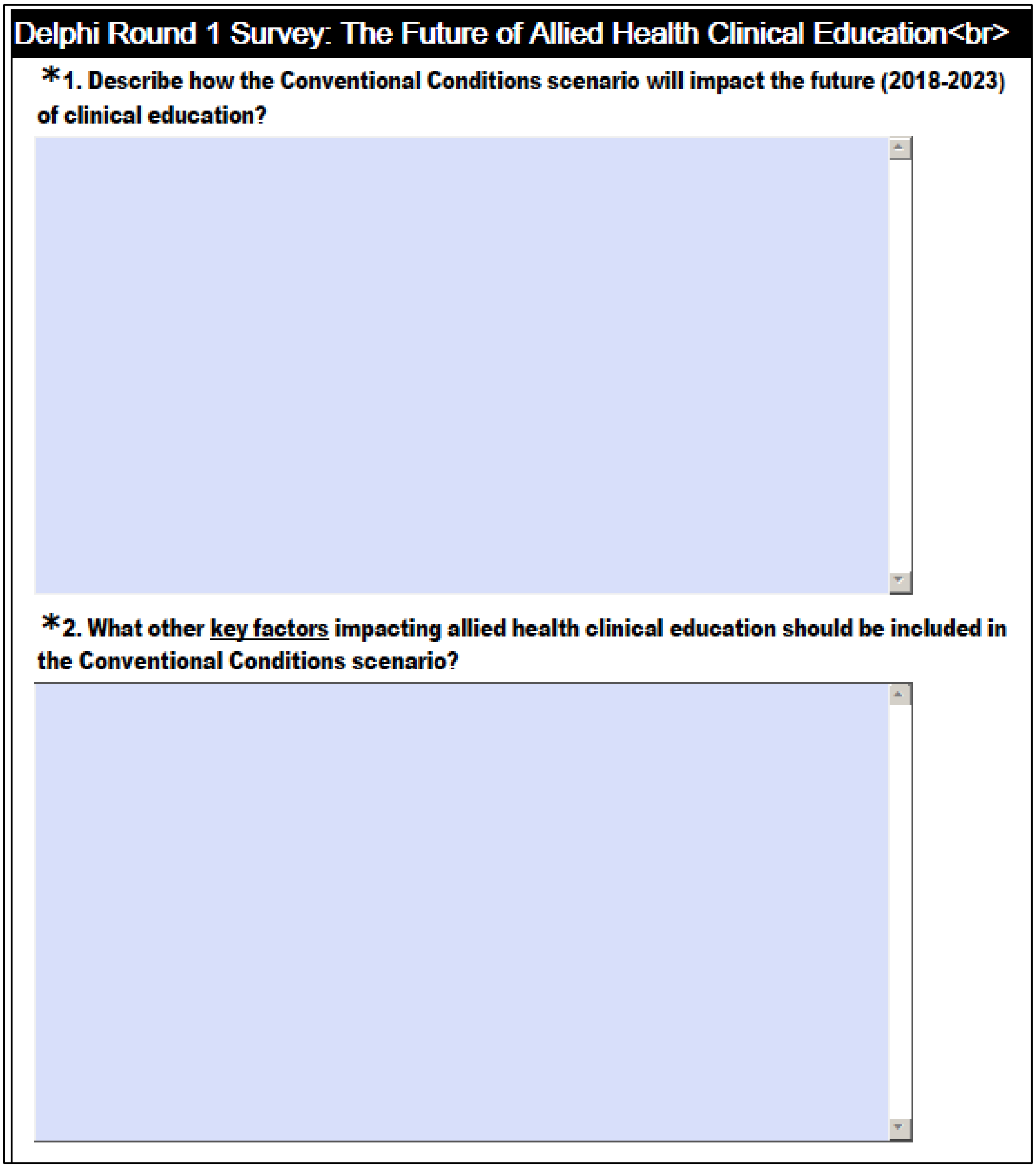


Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Case Scenario 1. Conventional Conditions for the Future of Clinical Educati...

The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operated with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes. Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in-home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs when clinical training expands across state borders. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. There is increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college/university/technical school classroom, lab, and simulation experiences, leaving only those essential items that need to be addressed in the actual clinical practice setting. The demand for interprofessional education and clinical practice places an increasing burden on resources such as placement sites, practice coordinators and faculty. Health professions education institutions deal with a manageable shortage of qualified clinical faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford an allied health education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external key factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.

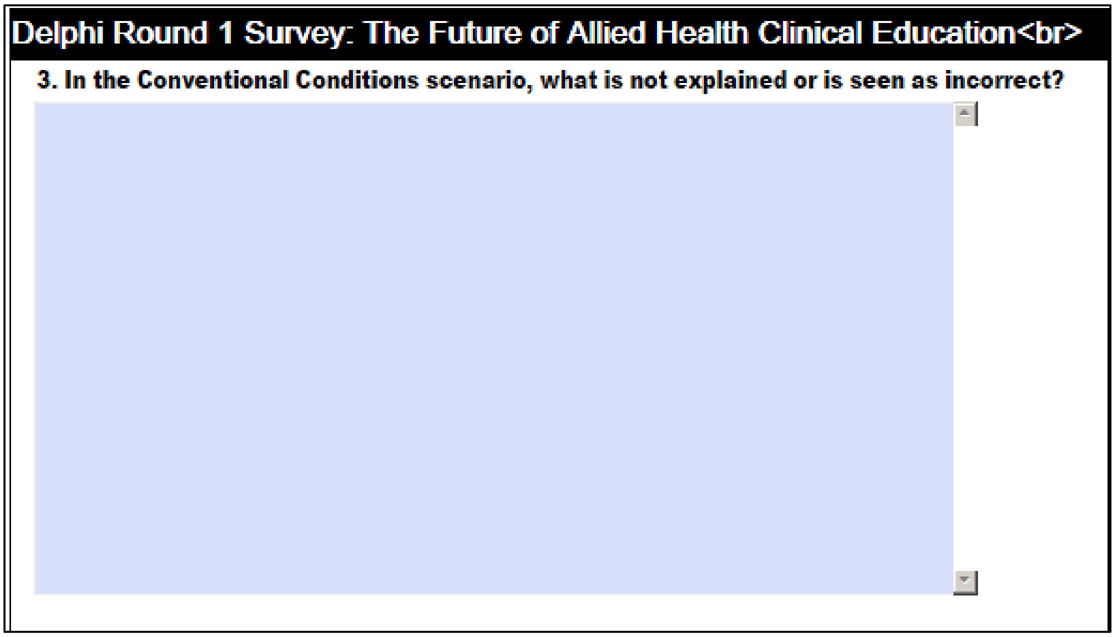
Describe how the **Conventional Conditions** scenario will impact the future (2018-2023) of clinical education? Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Conventional Conditions scenario.



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

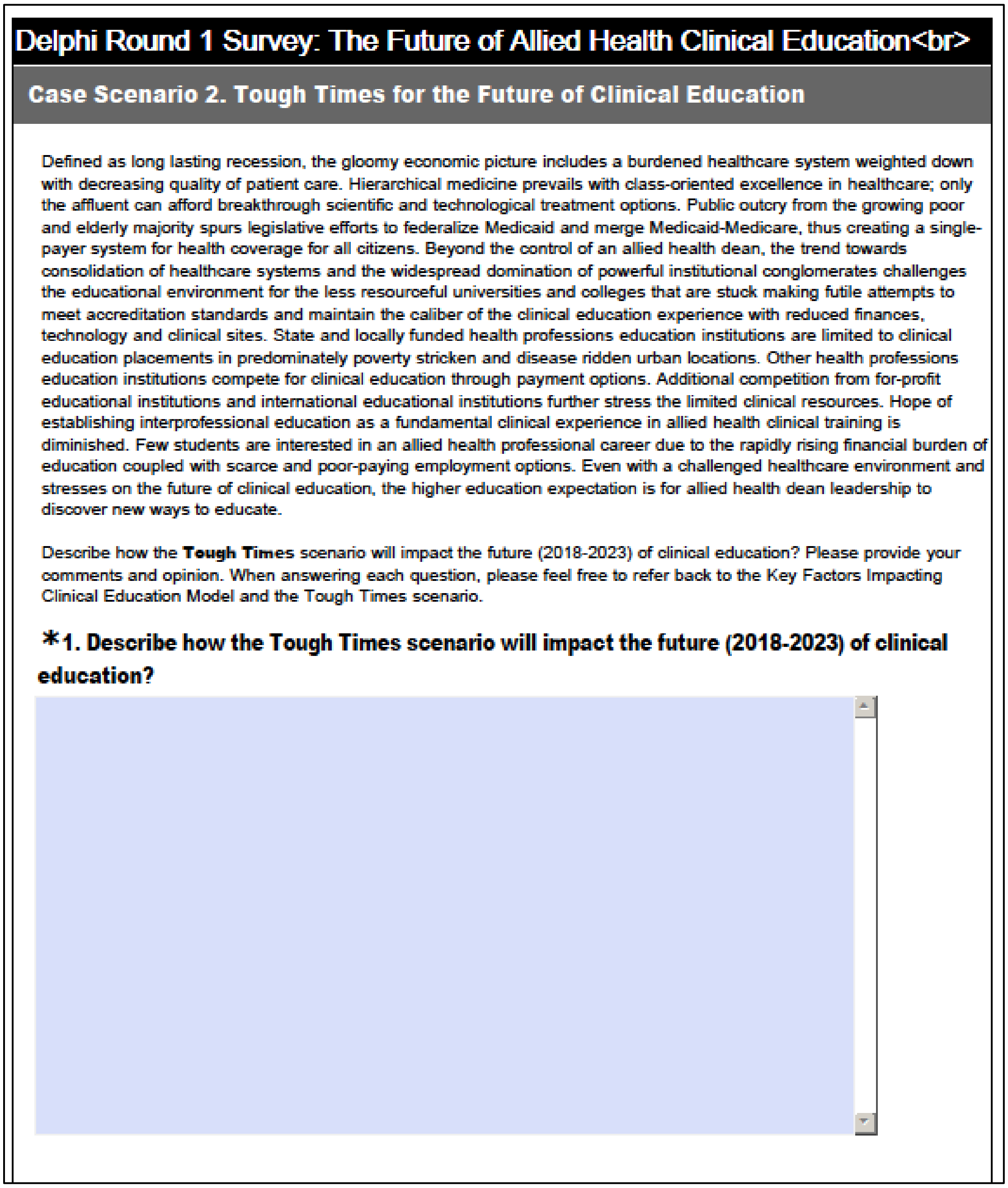
***1. Describe how the Conventional Conditions scenario will impact the future (2018-2023) of clinical education?**

***2. What other <u>key factors</u> impacting allied health clinical education should be included in the Conventional Conditions scenario?**



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

3. In the Conventional Conditions scenario, what is not explained or is seen as incorrect?



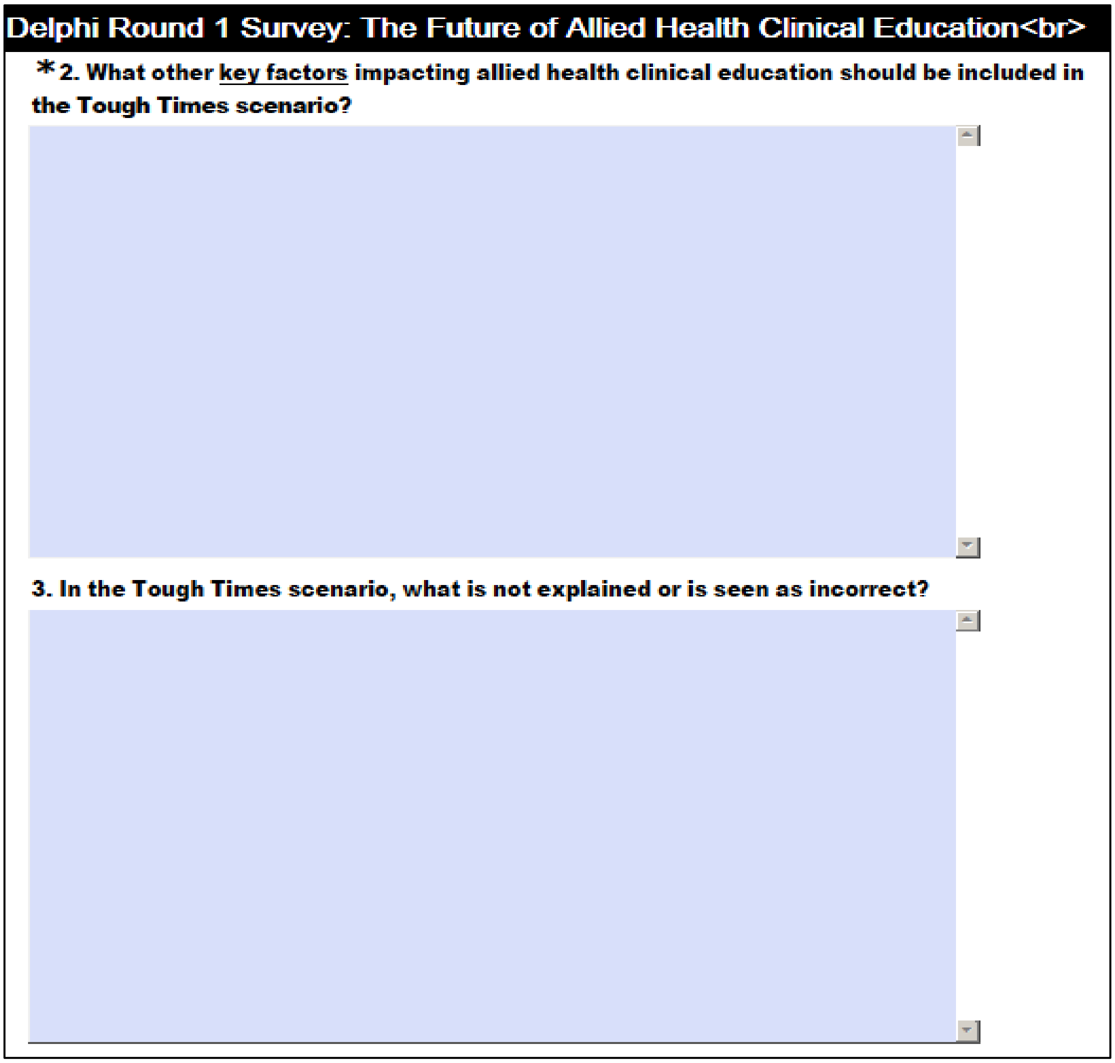
Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Case Scenario 2. Tough Times for the Future of Clinical Education

Defined as long lasting recession, the gloomy economic picture includes a burdened healthcare system weighted down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates challenges the educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded health professions education institutions are limited to clinical education placements in predominately poverty stricken and disease ridden urban locations. Other health professions education institutions compete for clinical education through payment options. Additional competition from for-profit educational institutions and international educational institutions further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to the rapidly rising financial burden of education coupled with scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the future of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

Describe how the **Tough Times** scenario will impact the future (2018-2023) of clinical education? Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Tough Times scenario.

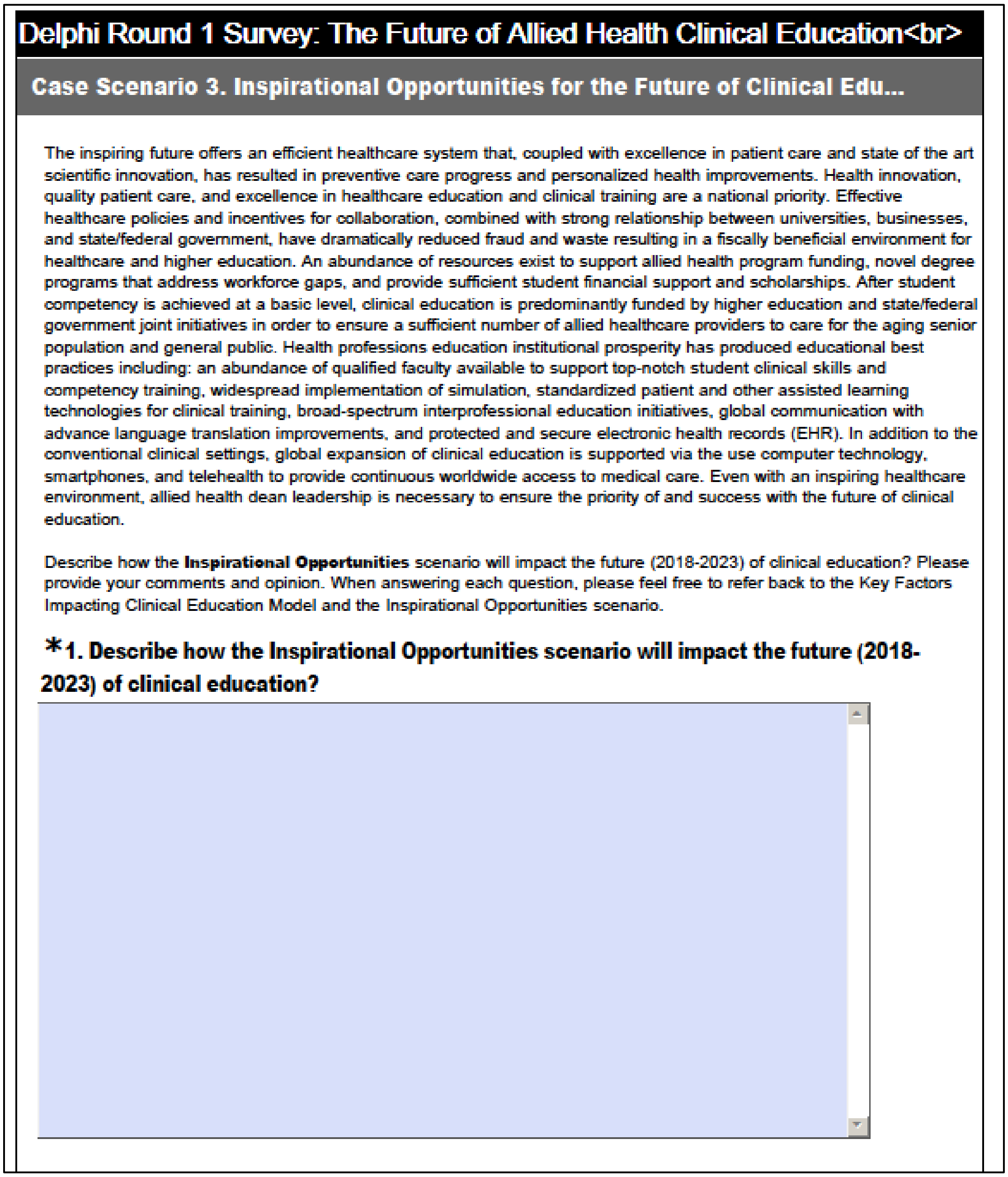
***1. Describe how the Tough Times scenario will impact the future (2018-2023) of clinical education?**



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

***2. What other key factors impacting allied health clinical education should be included in the Tough Times scenario?**

3. In the Tough Times scenario, what is not explained or is seen as incorrect?



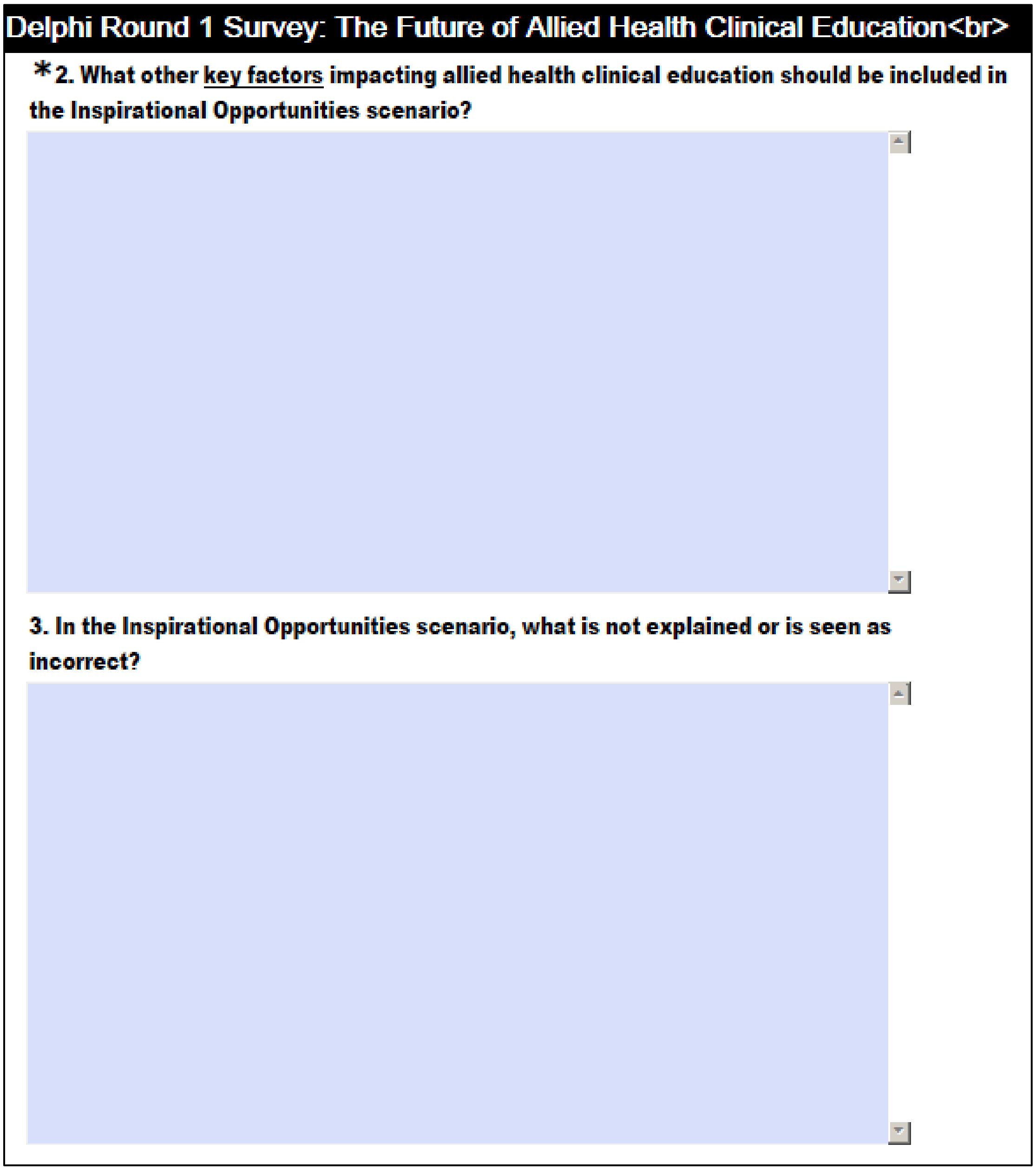
Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Case Scenario 3. Inspirational Opportunities for the Future of Clinical Edu...

The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have dramatically reduced fraud and waste resulting in a fiscally beneficial environment for healthcare and higher education. An abundance of resources exist to support allied health program funding, novel degree programs that address workforce gaps, and provide sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Health professions education institutional prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). In addition to the conventional clinical settings, global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to provide continuous worldwide access to medical care. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

Describe how the **Inspirational Opportunities** scenario will impact the future (2018-2023) of clinical education? Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Inspirational Opportunities scenario.

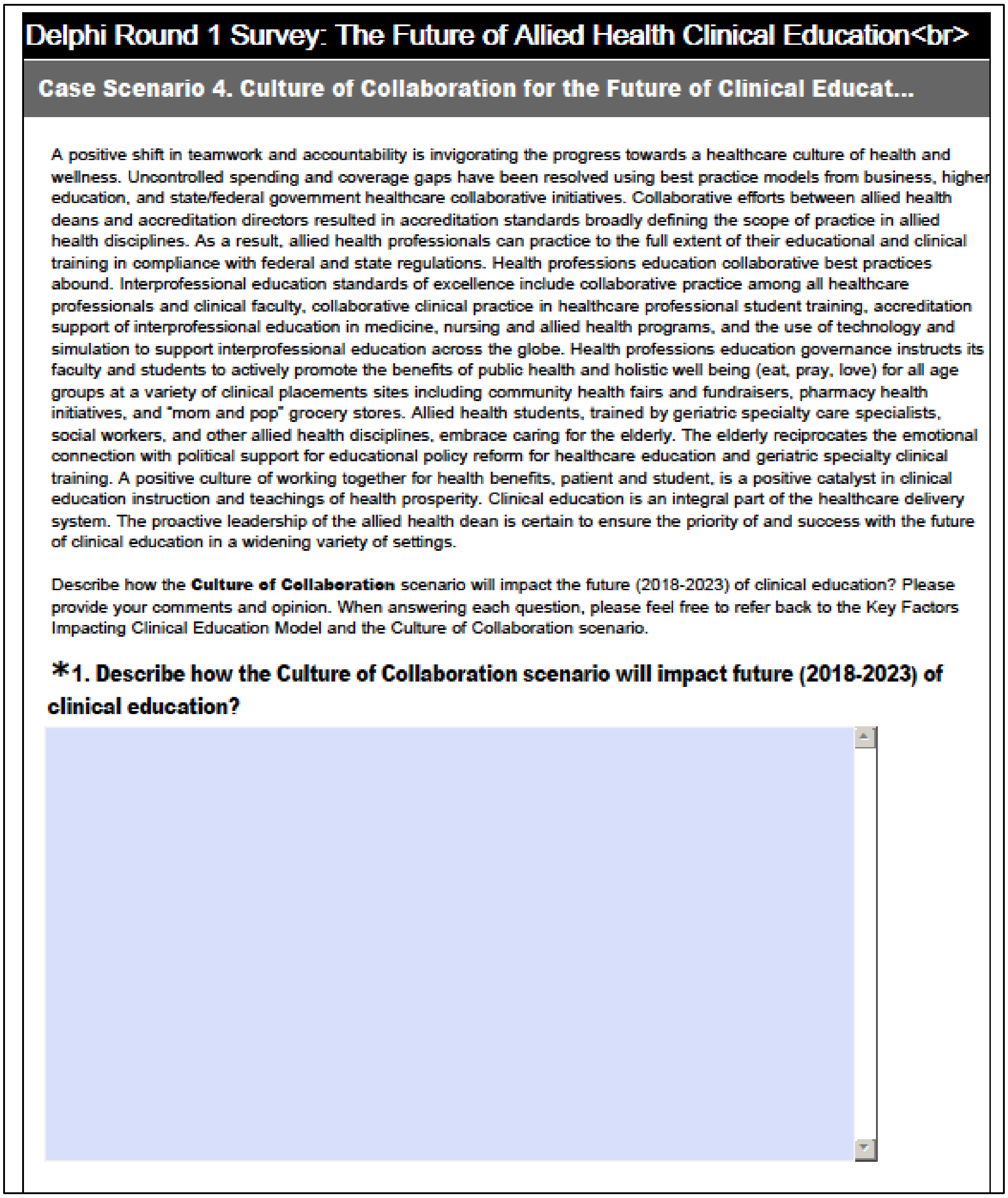
***1. Describe how the Inspirational Opportunities scenario will impact the future (2018-2023) of clinical education?**



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

***2. What other key factors impacting allied health clinical education should be included in the Inspirational Opportunities scenario?**

3. In the Inspirational Opportunities scenario, what is not explained or is seen as incorrect?



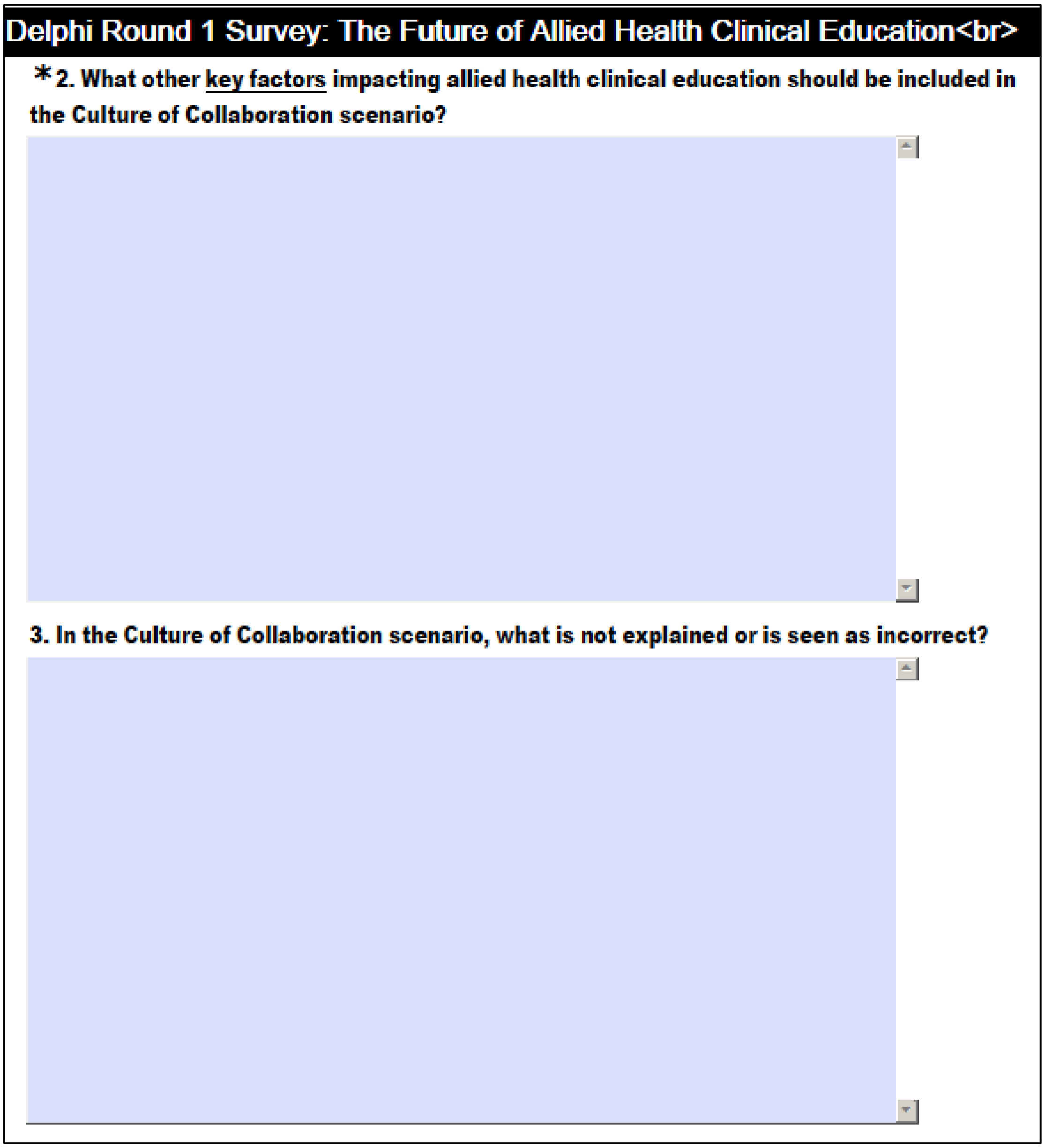
Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Case Scenario 4. Culture of Collaboration for the Future of Clinical Educat...

A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Collaborative efforts between allied health deans and accreditation directors resulted in accreditation standards broadly defining the scope of practice in allied health disciplines. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. Health professions education collaborative best practices abound. Interprofessional education standards of excellence include collaborative practice among all healthcare professionals and clinical faculty, collaborative clinical practice in healthcare professional student training, accreditation support of interprofessional education in medicine, nursing and allied health programs, and the use of technology and simulation to support interprofessional education across the globe. Health professions education governance instructs its faculty and students to actively promote the benefits of public health and holistic well being (eat, pray, love) for all age groups at a variety of clinical placements sites including community health fairs and fundraisers, pharmacy health initiatives, and "mom and pop" grocery stores. Allied health students, trained by geriatric specialty care specialists, social workers, and other allied health disciplines, embrace caring for the elderly. The elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and geriatric specialty clinical training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future of clinical education in a widening variety of settings.

Describe how the **Culture of Collaboration** scenario will impact the future (2018-2023) of clinical education? Please provide your comments and opinion. When answering each question, please feel free to refer back to the Key Factors Impacting Clinical Education Model and the Culture of Collaboration scenario.

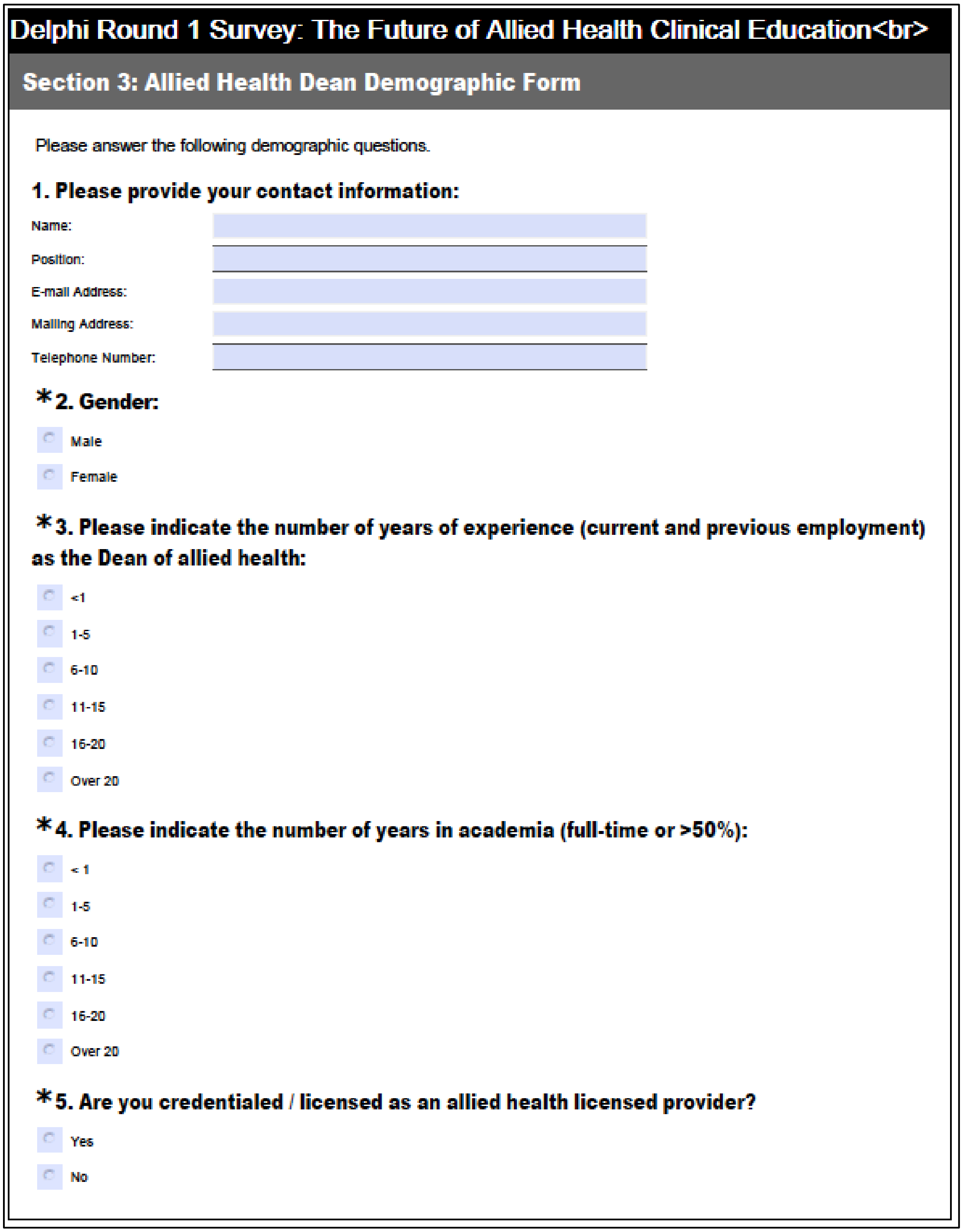
***1. Describe how the Culture of Collaboration scenario will impact future (2018-2023) of clinical education?**



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

*2. What other key factors impacting allied health clinical education should be included in the Culture of Collaboration scenario?

3. In the Culture of Collaboration scenario, what is not explained or is seen as incorrect?



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Section 3: Allied Health Dean Demographic Form

Please answer the following demographic questions.

1. Please provide your contact information:

Name:
Position:
E-mail Address:
Mailing Address:
Telephone Number:

***2. Gender:**

○ Male
○ Female

***3. Please indicate the number of years of experience (current and previous employment) as the Dean of allied health:**

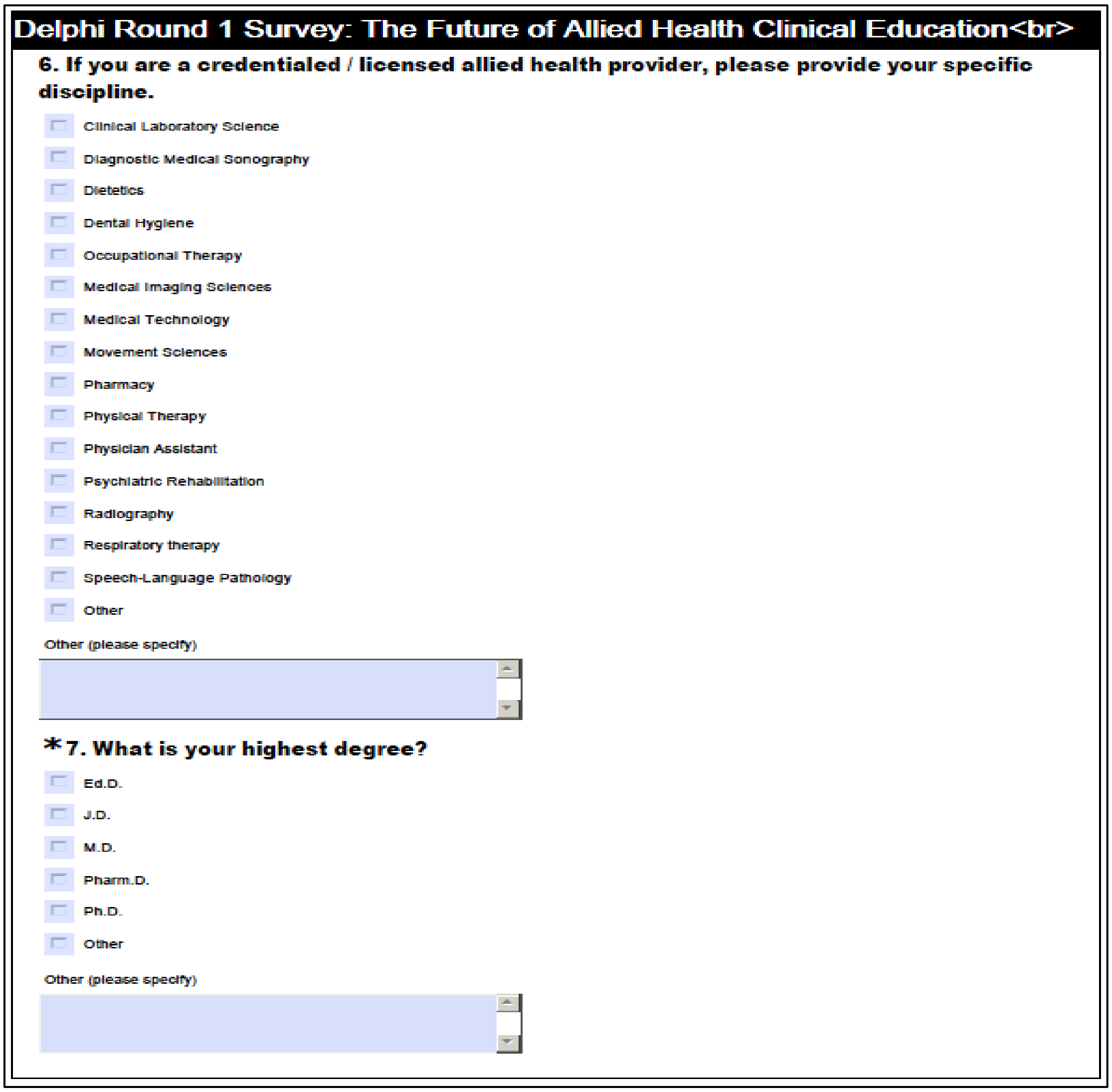
○ <1
○ 1-5
○ 6-10
○ 11-15
○ 16-20
○ Over 20

***4. Please indicate the number of years in academia (full-time or >50%):**

○ < 1
○ 1-5
○ 6-10
○ 11-15
○ 16-20
○ Over 20

***5. Are you credentialed / licensed as an allied health licensed provider?**

○ Yes
○ No



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

6. If you are a credentialed / licensed allied health provider, please provide your specific discipline.

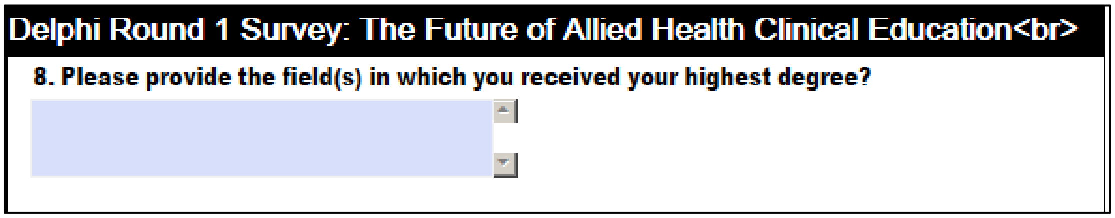
☐ Clinical Laboratory Science
☐ Diagnostic Medical Sonography
☐ Dietetics
☐ Dental Hygiene
☐ Occupational Therapy
☐ Medical Imaging Sciences
☐ Medical Technology
☐ Movement Sciences
☐ Pharmacy
☐ Physical Therapy
☐ Physician Assistant
☐ Psychiatric Rehabilitation
☐ Radiography
☐ Respiratory therapy
☐ Speech-Language Pathology
☐ Other

Other (please specify)

***7. What is your highest degree?**

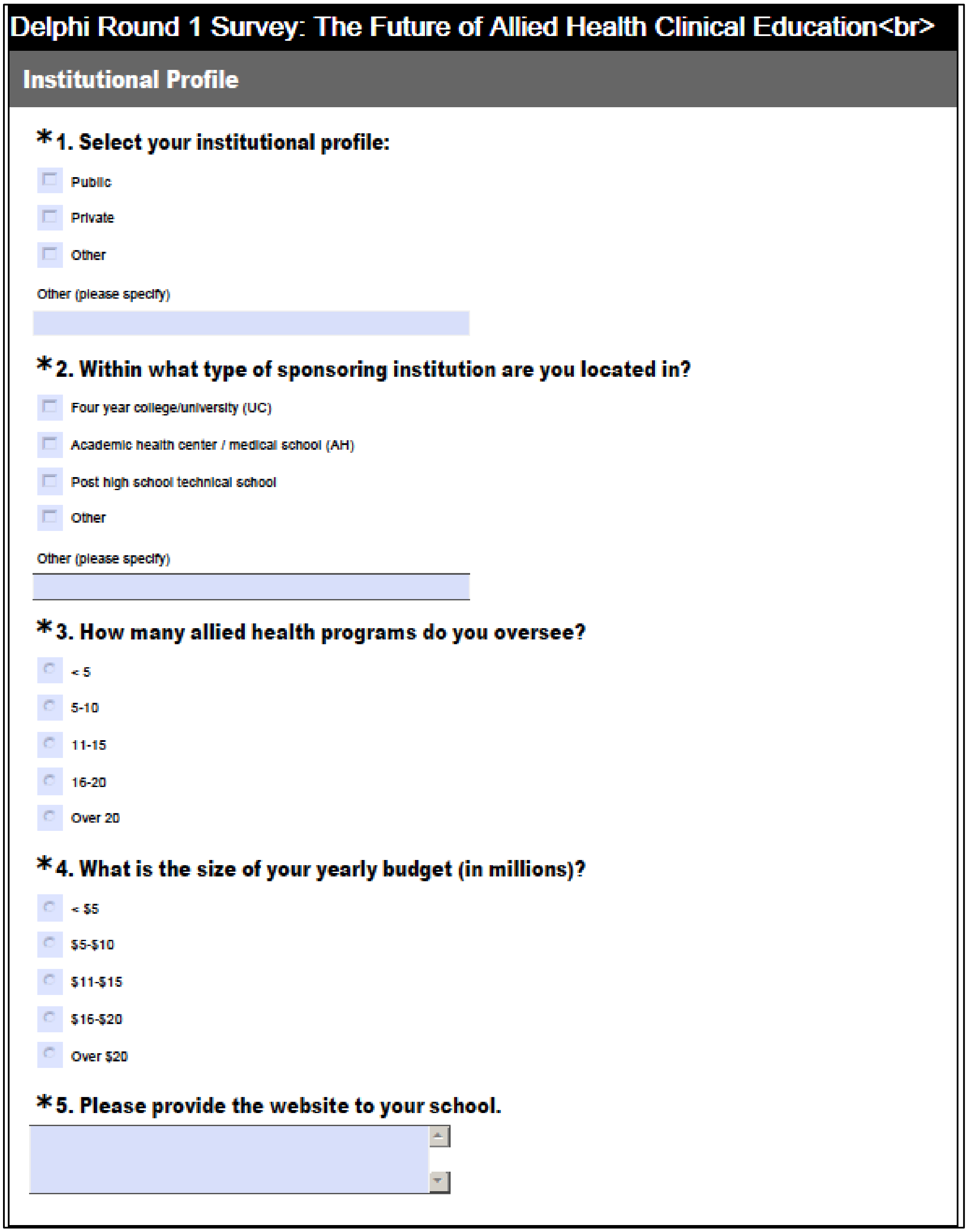
☐ Ed.D.
☐ J.D.
☐ M.D.
☐ Pharm.D.
☐ Ph.D.
☐ Other

Other (please specify)



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

8. Please provide the field(s) in which you received your highest degree?



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

Institutional Profile

***1. Select your institutional profile:**

☐ Public

☐ Private

☐ Other

Other (please specify)

***2. Within what type of sponsoring institution are you located in?**

☐ Four year college/university (UC)

☐ Academic health center / medical school (AH)

☐ Post high school technical school

☐ Other

Other (please specify)

***3. How many allied health programs do you oversee?**

○ < 5

○ 5-10

○ 11-15

○ 16-20

○ Over 20

***4. What is the size of your yearly budget (in millions)?**

○ < $5

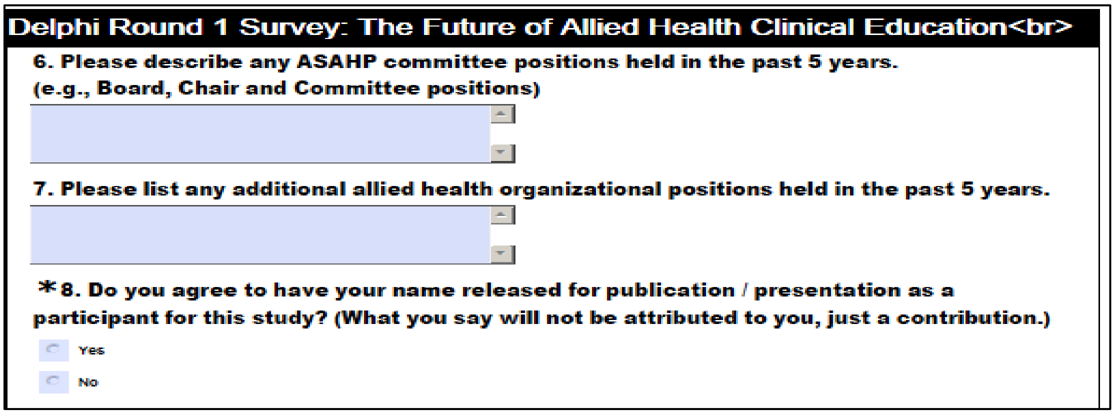
○ $5-$10

○ $11-$15

○ $16-$20

○ Over $20

***5. Please provide the website to your school.**



**Delphi Round 1 Survey: The Future of Allied Health Clinical Education
**

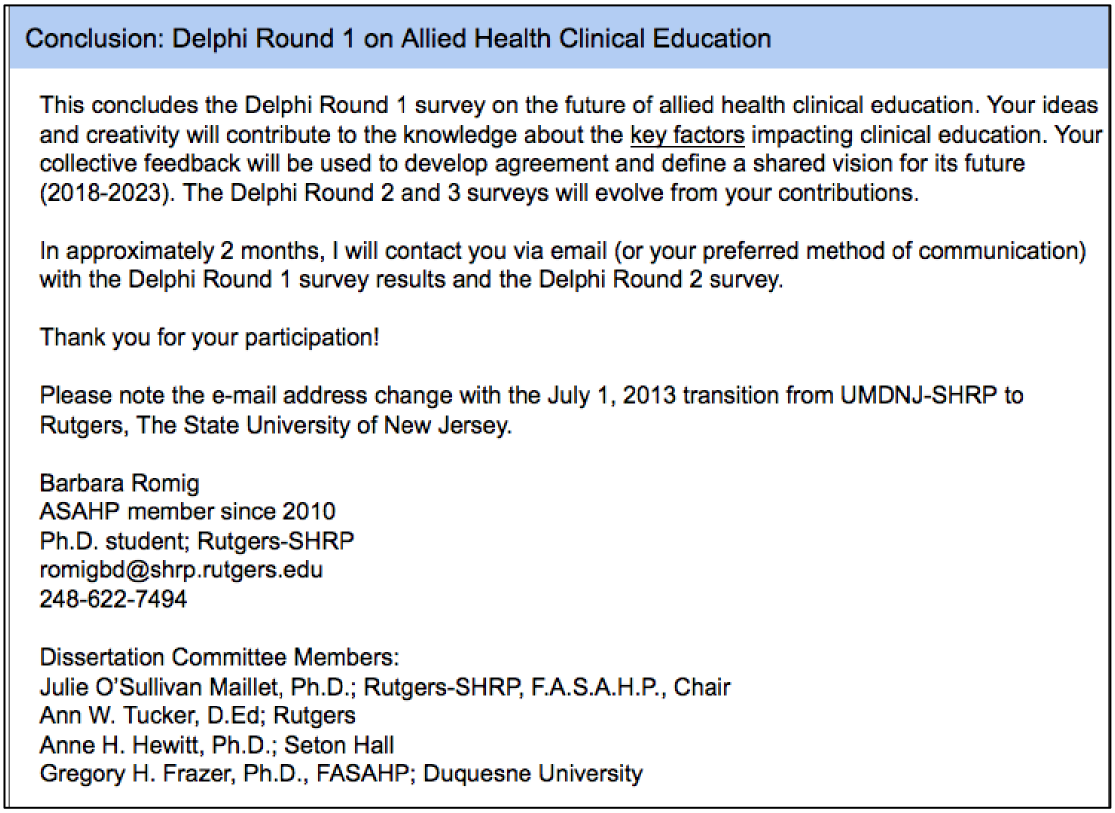
6. Please describe any ASAHP committee positions held in the past 5 years. (e.g., Board, Chair and Committee positions)

7. Please list any additional allied health organizational positions held in the past 5 years.

***8. Do you agree to have your name released for publication / presentation as a participant for this study? (What you say will not be attributed to you, just a contribution.)**

○ Yes

○ No



Conclusion: Delphi Round 1 on Allied Health Clinical Education

This concludes the Delphi Round 1 survey on the future of allied health clinical education. Your ideas and creativity will contribute to the knowledge about the key factors impacting clinical education. Your collective feedback will be used to develop agreement and define a shared vision for its future (2018-2023). The Delphi Round 2 and 3 surveys will evolve from your contributions.

In approximately 2 months, I will contact you via email (or your preferred method of communication) with the Delphi Round 1 survey results and the Delphi Round 2 survey.

Thank you for your participation!

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey.

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP
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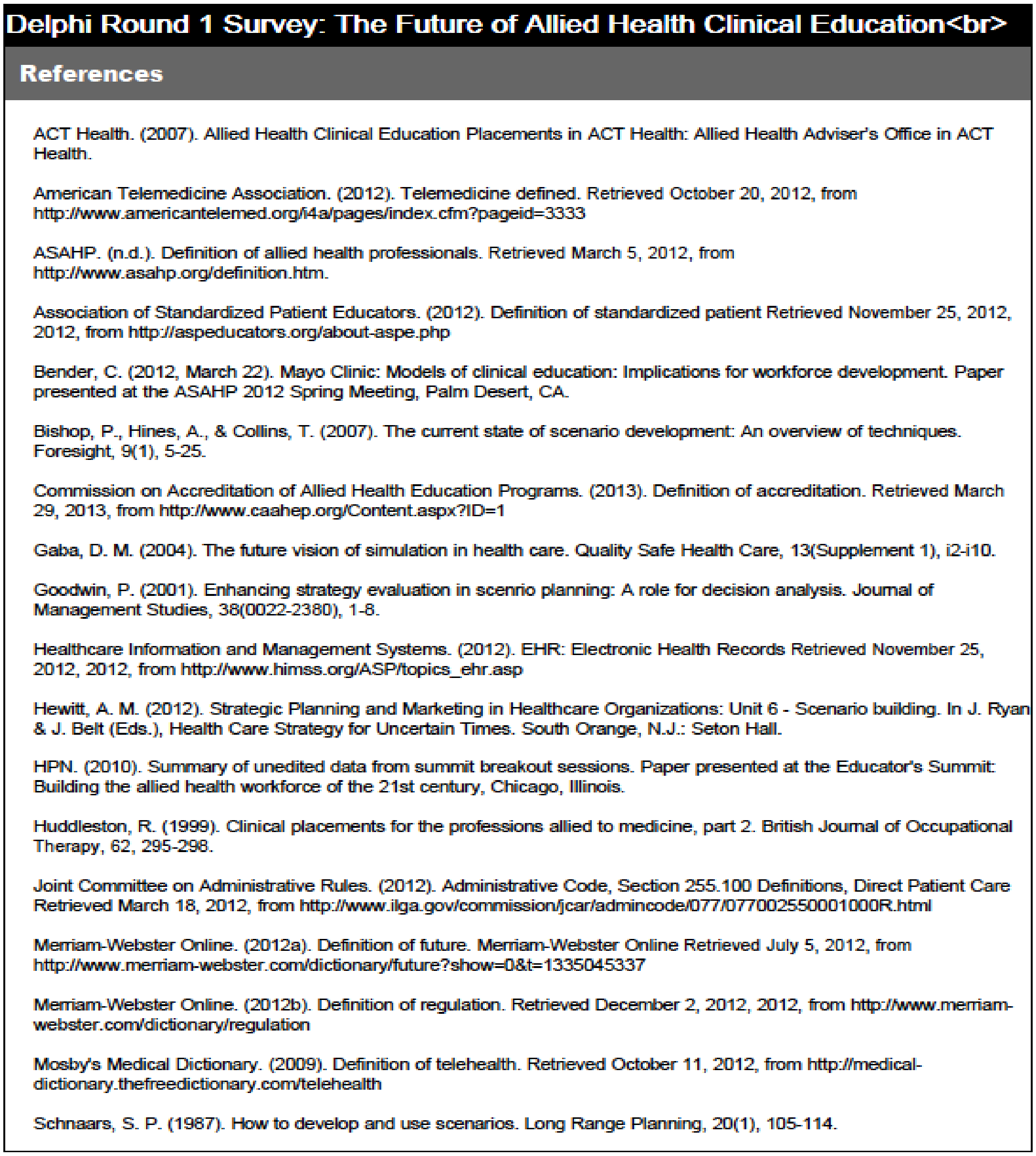
248-622-7494

Dissertation Committee Members:
Julie O'Sullivan Maillet, Ph.D.; Rutgers-SHRP, F.A.S.A.H.P., Chair
Ann W. Tucker, D.Ed; Rutgers
Anne H. Hewitt, Ph.D.; Seton Hall
Gregory H. Frazer, Ph.D., FASAHP; Duquesne University



Delphi Round 1 Survey: The Future of Allied Health Clinical Education

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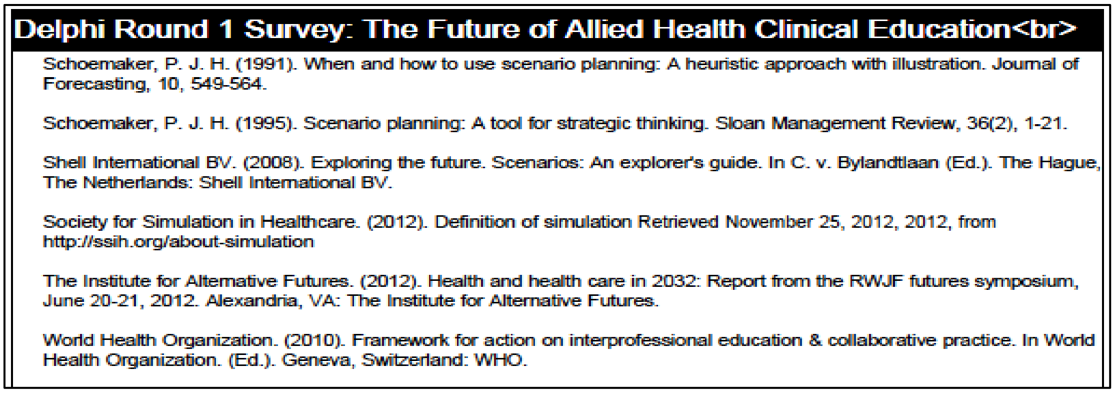

Delphi Round 1 Survey: The Future of Allied Health Clinical Education

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Appendix JJ

Round 1 Survey Cover Letter

RUTGERS
School of Health Related Professions

THE FUTURE OF CLINICAL EDUCATION:
A DELPHI STUDY OF ALLIED HEALTH DEANS

Delphi Round 1 Survey Cover Letter

Including the Delphi Round 1 Survey with Instructions, Definitions, and Clinical Education Model PDF Attachment

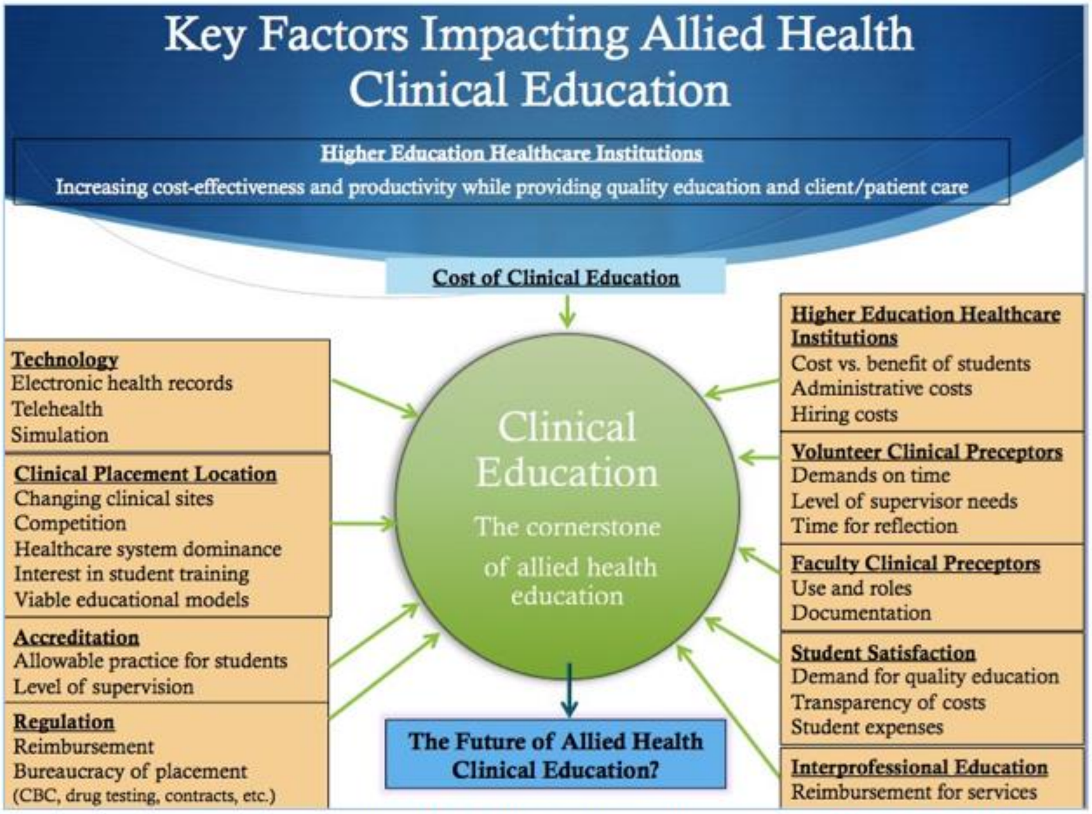
July 23, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Thank you for participating in my dissertation study titled, “**The Future of Clinical Education: A Delphi Study of Allied Health Deans”**. This study is designed to gain expert agreement of **Allied Health Deans** on the **key factors in allied health clinical education**. This is a timely and important topic that addresses a portion of the ASAHP Strategic Plan and assists in the preparation of allied health clinical education for future success and achievement. As an expert, your confidential opinion on statements and new ideas are encouraged. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

The Delphi research will be conducted using a combination of e-mail and SurveyMonkey. Please refer to the PDF file of the Delphi Round 1 survey attached to this e-mail as you complete the SurveyMonkey online survey. You are asked to complete the Delphi Round 1 survey that is divided into 3 sections:

1) Refine the definition and goals of allied health clinical education.
2) Use case scenarios to explore the future of allied health clinical education. A conceptual model of key factors impacting allied health clinical education (refer to Figure 2 below) will be used to guide the feedback.
3) Complete the Allied Health Dean Demographic form.



Key Factors Impacting Allied Health Clinical Education

Higher Education Healthcare Institutions
Increasing cost-effectiveness and productivity while providing quality education and client/patient care

Cost of Clinical Education

Technology
Electronic health records
Telehealth
Simulation

Clinical Placement Location
Changing clinical sites
Competition
Healthcare system dominance
Interest in student training
Viable educational models

Accreditation
Allowable practice for students
Level of supervision

Regulation
Reimbursement
Bureaucracy of placement
(CBC, drug testing, contracts, etc.)

Clinical Education
The cornerstone of allied health education

The Future of Allied Health Clinical Education?

Higher Education Healthcare Institutions
Cost vs. benefit of students
Administrative costs
Hiring costs

Volunteer Clinical Preceptors
Demands on time
Level of supervisor needs
Time for reflection

Faculty Clinical Preceptors
Use and roles
Documentation

Student Satisfaction
Demand for quality education
Transparency of costs
Student expenses

Interprofessional Education
Reimbursement for services

Figure 2. Key Factors Impacting Allied Health Clinical Education, O'Sullivan Maillet and Romig Clinical Education Presentation, College of Health Deans, Northeast Regional Deans Joint Meeting, July 18, 2011, slight revisions February 14, March 16, April 20, and June 26, 2012; April 19, 2013.

The Delphi Round 1 survey should take approximately 60 minutes to complete. You will have 3 weeks to complete the Delphi Round 1 survey and contribute ideas regarding the key factors impacting allied health clinical education. We forecast that you will be one of 80 allied health deans to participate in this study.

Please complete your Delphi Round 1 survey via your unique SurveyMonkey link by Monday, August 19, 2013. If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission.

After you complete your survey, the results will be tallied and the Delphi Round 2 survey will be sent to you approximately 4 to 6 weeks later. New statements, modification, or comments generated by the group will be included on the Delphi Round 2 survey. You will be asked to consider your initial response in light of the responses of the other members on the Expert panel. You will then be given the opportunity to change your ratings if you choose. The Delphi Round 3 survey instructions will be similar to Delphi Round 2 survey. This iterative process will identify areas of agreement as well as areas where agreement could not be reached. It is very important that you complete all three survey rounds.

There is no risk to you in completing any of the Delphi surveys. All data will be treated confidentially. Once the data collection is complete, the list of participants will be destroyed so there will be no link to your identity. Participation is voluntary and there will be no penalty if you choose not to participate. Your completion and return of each round of the Delphi survey acknowledges that you have agreed to voluntarily participate and gives permission to use your responses in aggregate form for research purposes and to contact you via mail, e-mail or phone to encourage you to complete the Delphi rounds. The Rutgers Newark Institutional Review Board has approved this research. The results of this study will be shared with the Association of Schools of Allied Health. Participants who complete all three rounds will be given the option of having their name acknowledged in the final dissertation and any subsequent publications.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

Thank you again for your participation.

Barbara Romig, M.S., M.B.A.
ASAHP Member since 2010
Ph.D. Candidate - Rutgers-SHRP
E-mail: romigbd@shrp.rutgers.edu
Phone: 248-622-7494

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Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

APPENDIX KK

Round 1 Survey E-mail Reminder

RUTGERS
School of Health Related
Professions

THE FUTURE OF CLINICAL EDUCATION: A DELPHI STUDY OF ALLIED HEALTH DEANS

DELPHI ROUND 1 SURVEY E-MAIL REMINDER

August 6, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Approximately 1 week ago, the “**The Future of Clinical Education: A Delphi Study of Allied Health Deans**” Round 1 Survey was e-mailed to you. Your feedback on the Delphi survey is extremely important to this study. This study is designed to gain expert consensus of Allied Health Deans on **key factors impacting allied health clinical education**. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

The Delphi Round 1 survey should take approximately 60 minutes to complete. You will have 3 weeks to complete the Round 1 survey and contribute ideas regarding the key factors impacting allied health clinical education. We forecast that you will be one of 80 allied health deans to participate in this study.

Please refer to the PDF file of the Delphi Round 1 survey sent in the prior e-mail as you complete the SurveyMonkey online survey. Please complete your Delphi Round 1 survey via your unique SurveyMonkey link by Monday, August 19th. If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education. We look forward to sharing our results with the Association of Schools of Allied Health Professions.

Sincerely,

Barbara Romig

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ASAHP Member since 2010
Ph.D. Candidate - Rutgers-SHRP
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Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix LL

Round 1 Survey Phone Script Reminder

Hello, my name is Barbara Romig and I am a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey. Approximately two weeks ago, you received an e-mail requesting your participation in my dissertation study titled, “**The Future of Clinical Education: A Delphi Study of Allied Health Deans”**. This study is designed to gain expert consensus of Allied Health Deans on **key factors impacting allied health clinical education**. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

The Delphi Round 1 survey should take approximately 60 minutes to complete. You will have 3 weeks to complete the Delphi Round 1 survey and contribute ideas regarding the key factors impacting allied health clinical education. We forecast that you will be one of 80 allied health deans to participate in this study.

Please refer to the PDF file of the Delphi Round 1 survey attached to the prior e-mail as you complete the SurveyMonkey online survey. Please complete your Delphi Round 1 survey via your unique SurveyMonkey link by Monday, August 19th. If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission.

Please note the e-mail address change with the July 1, 2013 transition from UMDNJ-SHRP to Rutgers, The State University of New Jersey. If you have any questions regarding this research, please contact me at 248-622-7494 (romigbd@shrp.rutgers.edu), my Dissertation Chair Julie O’Sullivan Maillet at 973-972-6957 (maillet@shrp.rutgers.edu), or other Dissertation Committee Members Dr. Ann Tucker at 856-566-6434 (tuckeraw@shrp.rutgers.edu), Dr. Anne Hewitt at 973-275-2070 (anne.hewitt@shu.edu) or Dr. Greg Frazer at 412-396-5303 (frazer@duq.edu). If you have any questions regarding your rights as a research participant, you can contact the Rutgers Newark Institutional Review Board at 973-972-3608.

The success of this research depends on the generous support and time of allied health deans like you. Thank you very much for considering this opportunity to further our knowledge of allied health clinical education.

Appendix MM

Round 1 Survey Final E-Mail Reminder

RUTGERS
School of Health Related Professions

August 26, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Approximately 3 weeks ago, the Allied Health Clinical Education Delphi Round 1 Survey was available for your response via your unique SurveyMonkey link. As a recognized expert, your participation and feedback is extremely important to the success of the study. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

If you have already completed the survey, please accept my sincere thanks. If you have not completed it, please use this Survey Monkey link to access the survey and complete by Friday, August 30, 2013. Please refer to the PDF file of the Delphi Round 1 survey attached to the prior e-mail as you complete the SurveyMonkey online survey. If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission.

I am extremely grateful for your help with this important research.

Barbara Romig, M.S., M.B.A.
ASAHP Member since 2010
Ph.D. Candidate - Rutgers-SHRP
E-mail: romigbd@shrp.rutgers.edu
Phone: 248-622-7494

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Chair - Dissertation Committee
Interim Dean Rutgers-SHRP and Chair of Dissertation Committee
E-mail: maillet@shrp.rutgers.edu
Phone: 973-972-6957

Dissertation Committee Members:
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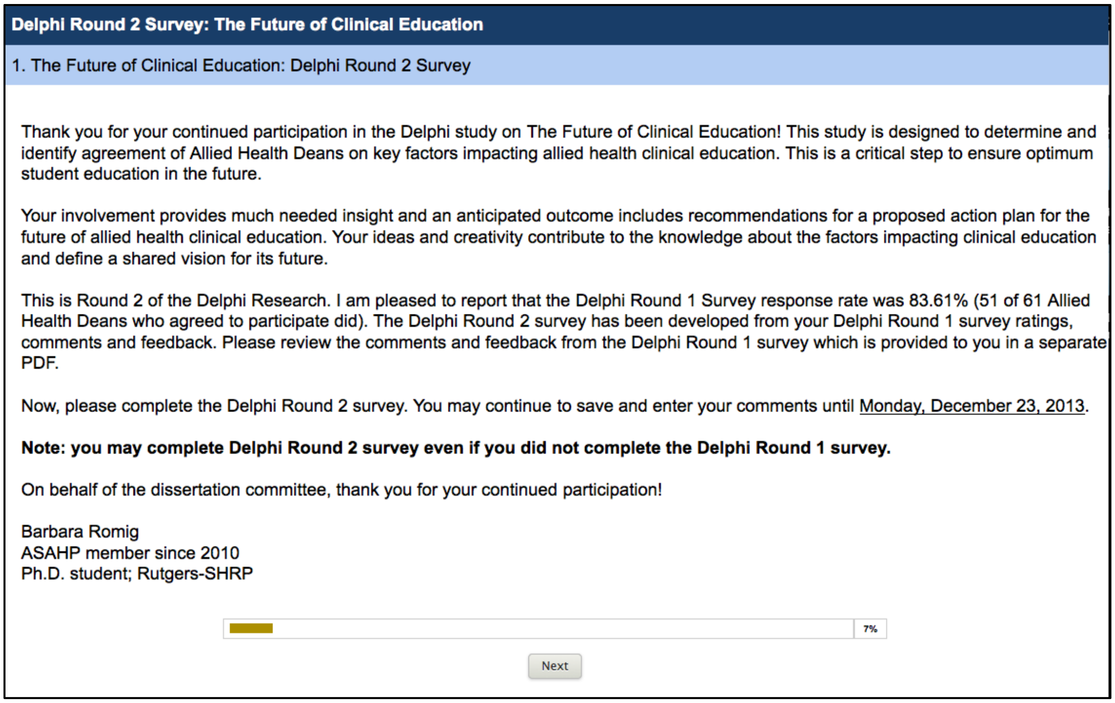
Anne H. Hewitt, Ph.D.; Seton Hall University
Gregory H. Frazer, Ph.D., F.A.S.A.H.P.; Duquesne University

Appendix NN

Round 2 Survey



Delphi Round 2 Survey: The Future of Clinical Education

1. The Future of Clinical Education: Delphi Round 2 Survey

Thank you for your continued participation in the Delphi study on The Future of Clinical Education! This study is designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education. This is a critical step to ensure optimum student education in the future.

Your involvement provides much needed insight and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future.

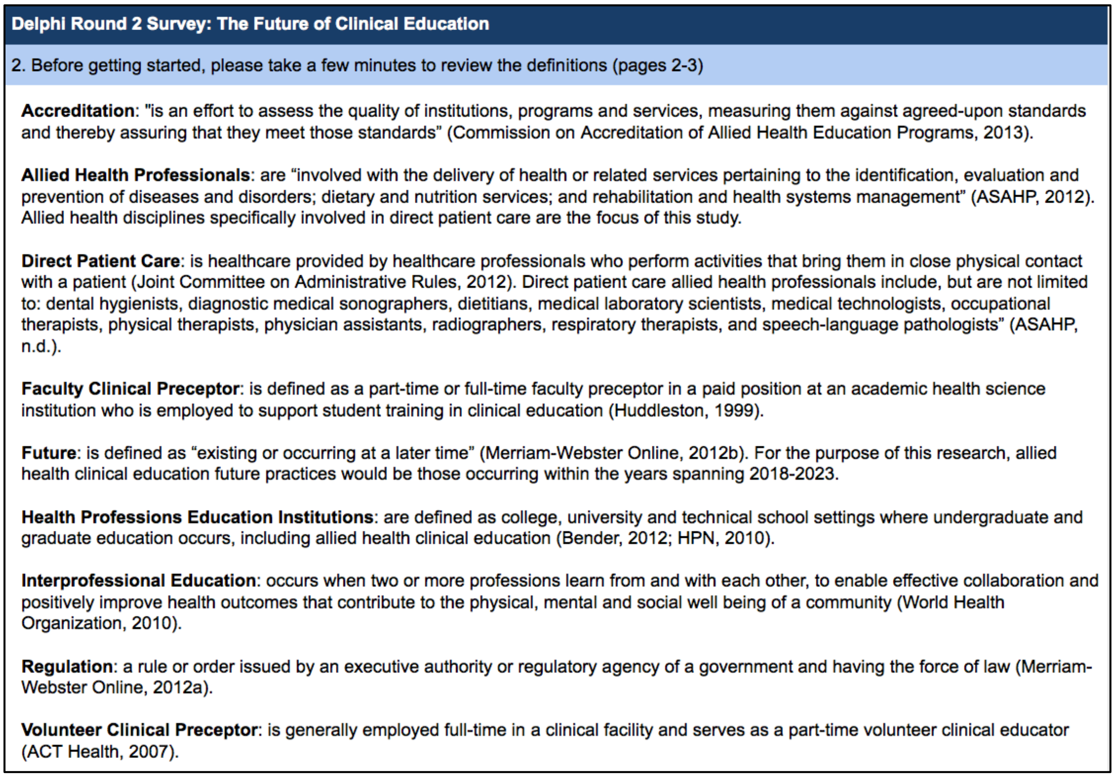
This is Round 2 of the Delphi Research. I am pleased to report that the Delphi Round 1 Survey response rate was 83.61% (51 of 61 Allied Health Deans who agreed to participate did). The Delphi Round 2 survey has been developed from your Delphi Round 1 survey ratings, comments and feedback. Please review the comments and feedback from the Delphi Round 1 survey which is provided to you in a separate PDF.

Now, please complete the Delphi Round 2 survey. You may continue to save and enter your comments until Monday, December 23, 2013.

Note: you may complete Delphi Round 2 survey even if you did not complete the Delphi Round 1 survey.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP



Delphi Round 2 Survey: The Future of Clinical Education

2. Before getting started, please take a few minutes to review the definitions (pages 2-3)

Accreditation: "is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards" (Commission on Accreditation of Allied Health Education Programs, 2013).

Allied Health Professionals: are "involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management" (ASAHP, 2012). Allied health disciplines specifically involved in direct patient care are the focus of this study.

Direct Patient Care: is healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012). Direct patient care allied health professionals include, but are not limited to: dental hygienists, diagnostic medical sonographers, dietitians, medical laboratory scientists, medical technologists, occupational therapists, physical therapists, physician assistants, radiographers, respiratory therapists, and speech-language pathologists" (ASAHP, n.d.).

Faculty Clinical Preceptor: is defined as a part-time or full-time faculty preceptor in a paid position at an academic health science institution who is employed to support student training in clinical education (Huddleston, 1999).

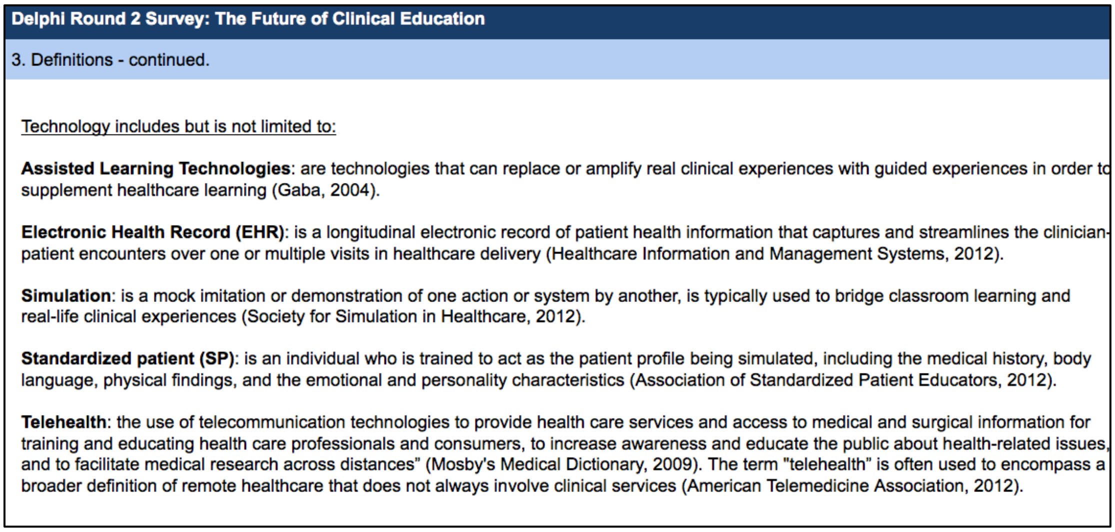
Future: is defined as "existing or occurring at a later time" (Merriam-Webster Online, 2012b). For the purpose of this research, allied health clinical education future practices would be those occurring within the years spanning 2018-2023.

Health Professions Education Institutions: are defined as college, university and technical school settings where undergraduate and graduate education occurs, including allied health clinical education (Bender, 2012; HPN, 2010).

Interprofessional Education: occurs when two or more professions learn from and with each other, to enable effective collaboration and positively improve health outcomes that contribute to the physical, mental and social well being of a community (World Health Organization, 2010).

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law (Merriam-Webster Online, 2012a).

Volunteer Clinical Preceptor: is generally employed full-time in a clinical facility and serves as a part-time volunteer clinical educator (ACT Health, 2007).



Delphi Round 2 Survey: The Future of Clinical Education

3. Definitions - continued.

Technology includes but is not limited to:

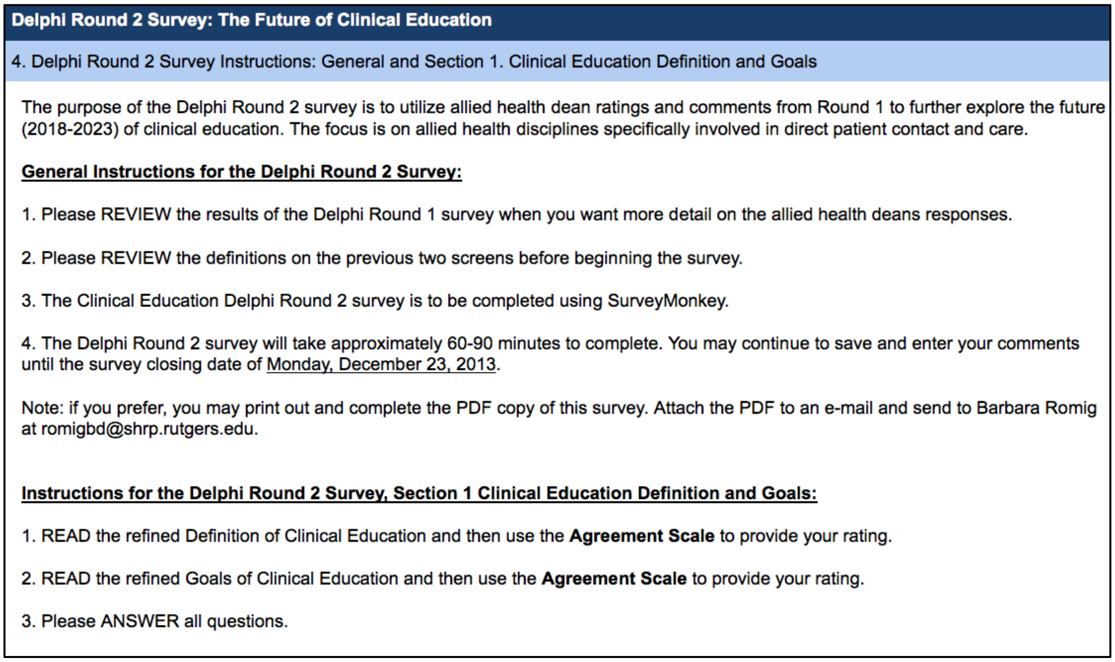
Assisted Learning Technologies: are technologies that can replace or amplify real clinical experiences with guided experiences in order t supplement healthcare learning (Gaba, 2004).

Electronic Health Record (EHR): is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012).

Simulation: is a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Standardized patient (SP): is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Association of Standardized Patient Educators, 2012).

Telehealth: the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances" (Mosby's Medical Dictionary, 2009). The term "telehealth" is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012).



Delphi Round 2 Survey: The Future of Clinical Education

4. Delphi Round 2 Survey Instructions: General and Section 1. Clinical Education Definition and Goals

The purpose of the Delphi Round 2 survey is to utilize allied health dean ratings and comments from Round 1 to further explore the future (2018-2023) of clinical education. The focus is on allied health disciplines specifically involved in direct patient contact and care.

General Instructions for the Delphi Round 2 Survey:

1. Please REVIEW the results of the Delphi Round 1 survey when you want more detail on the allied health deans responses.

2. Please REVIEW the definitions on the previous two screens before beginning the survey.

3. The Clinical Education Delphi Round 2 survey is to be completed using SurveyMonkey.

4. The Delphi Round 2 survey will take approximately 60-90 minutes to complete. You may continue to save and enter your comments until the survey closing date of Monday, December 23, 2013.

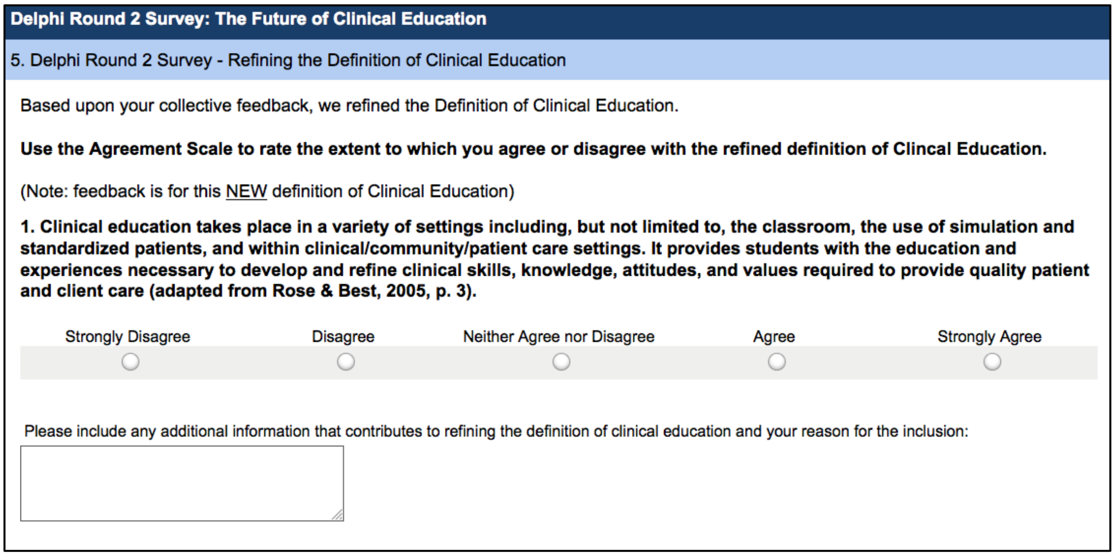
Note: if you prefer, you may print out and complete the PDF copy of this survey. Attach the PDF to an e-mail and send to Barbara Romig at romigbd@shrp.rutgers.edu.

Instructions for the Delphi Round 2 Survey, Section 1 Clinical Education Definition and Goals:

1. READ the refined Definition of Clinical Education and then use the **Agreement Scale** to provide your rating.

2. READ the refined Goals of Clinical Education and then use the **Agreement Scale** to provide your rating.

3. Please ANSWER all questions.



Delphi Round 2 Survey: The Future of Clinical Education

5. Delphi Round 2 Survey - Refining the Definition of Clinical Education

Based upon your collective feedback, we refined the Definition of Clinical Education.

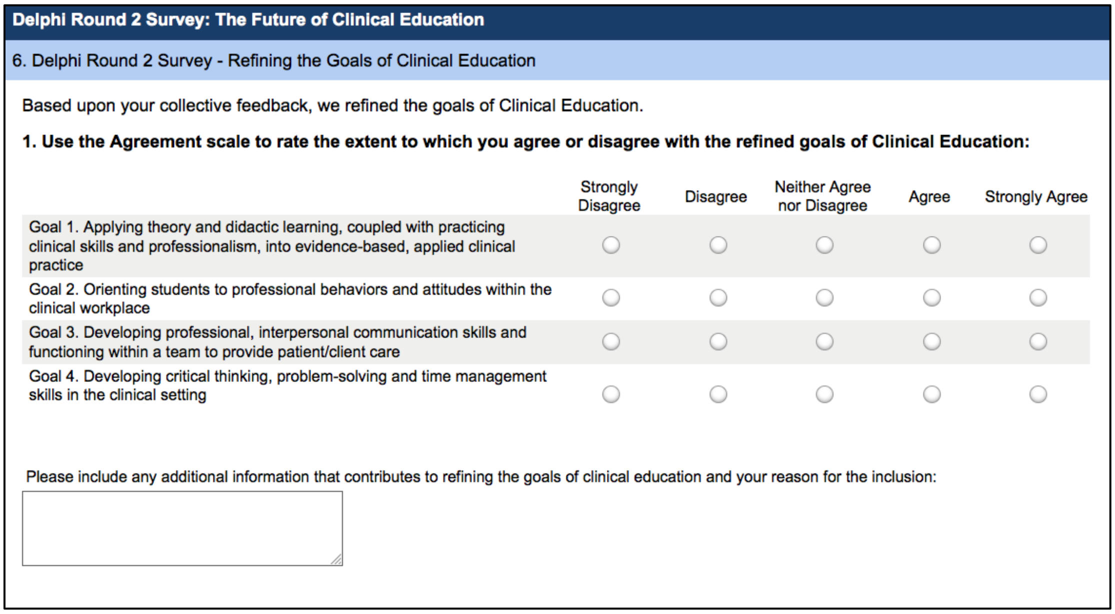
Use the Agreement Scale to rate the extent to which you agree or disagree with the refined definition of Clincal Education.

(Note: feedback is for this NEW definition of Clinical Education)

1. Clinical education takes place in a variety of settings including, but not limited to, the classroom, the use of simulation and standardized patients, and within clinical/community/patient care settings. It provides students with the education and experiences necessary to develop and refine clinical skills, knowledge, attitudes, and values required to provide quality patient and client care (adapted from Rose & Best, 2005, p. 3).

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

Please include any additional information that contributes to refining the definition of clinical education and your reason for the inclusion:



Delphi Round 2 Survey: The Future of Clinical Education

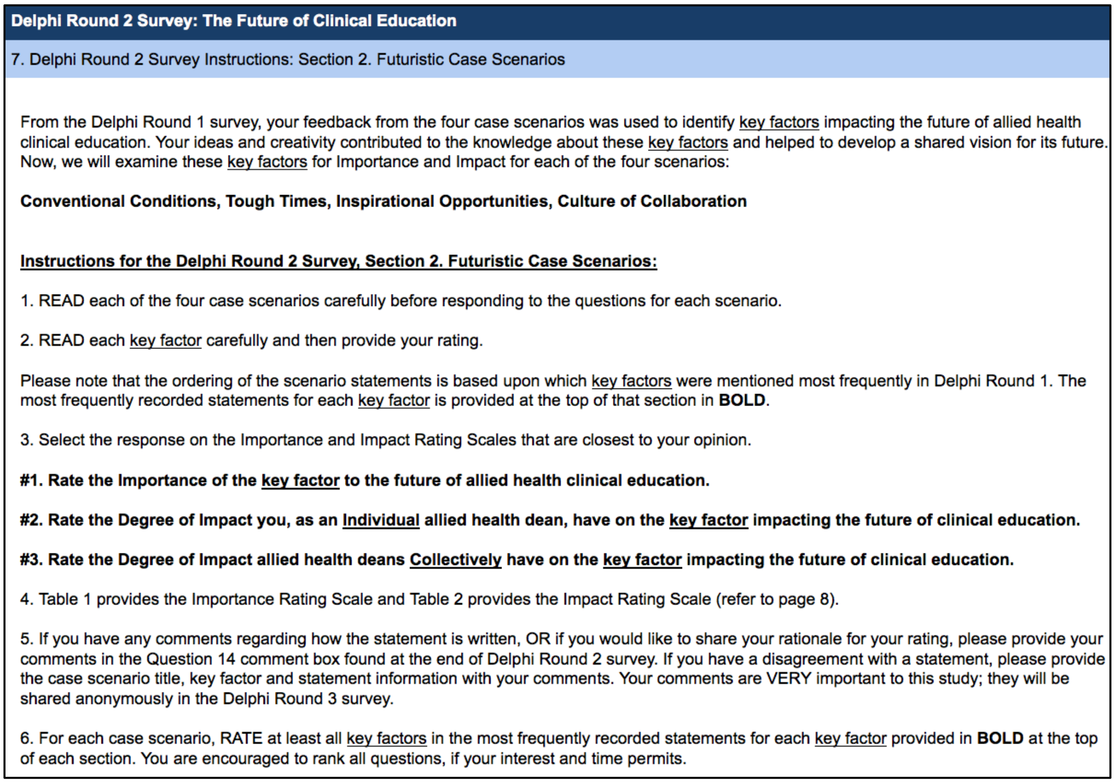
6. Delphi Round 2 Survey - Refining the Goals of Clinical Education

Based upon your collective feedback, we refined the goals of Clinical Education.

1. Use the Agreement scale to rate the extent to which you agree or disagree with the refined goals of Clinical Education:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Goal 1. Applying theory and didactic learning, coupled with practicing clinical skills and professionalism, into evidence-based, applied clinical practice	○	○	○	○	○
Goal 2. Orienting students to professional behaviors and attitudes within the clinical workplace	○	○	○	○	○
Goal 3. Developing professional, interpersonal communication skills and functioning within a team to provide patient/client care	○	○	○	○	○
Goal 4. Developing critical thinking, problem-solving and time management skills in the clinical setting	○	○	○	○	○

Please include any additional information that contributes to refining the goals of clinical education and your reason for the inclusion:



Delphi Round 2 Survey: The Future of Clinical Education

7. Delphi Round 2 Survey Instructions: Section 2. Futuristic Case Scenarios

From the Delphi Round 1 survey, your feedback from the four case scenarios was used to identify key factors impacting the future of allied health clinical education. Your ideas and creativity contributed to the knowledge about these key factors and helped to develop a shared vision for its future. Now, we will examine these key factors for Importance and Impact for each of the four scenarios:

Conventional Conditions, Tough Times, Inspirational Opportunities, Culture of Collaboration

Instructions for the Delphi Round 2 Survey, Section 2. Futuristic Case Scenarios:

1. READ each of the four case scenarios carefully before responding to the questions for each scenario.

2. READ each key factor carefully and then provide your rating.

Please note that the ordering of the scenario statements is based upon which key factors were mentioned most frequently in Delphi Round 1. The most frequently recorded statements for each key factor is provided at the top of that section in **BOLD**.

3. Select the response on the Importance and Impact Rating Scales that are closest to your opinion.

#1. Rate the Importance of the key factor to the future of allied health clinical education.

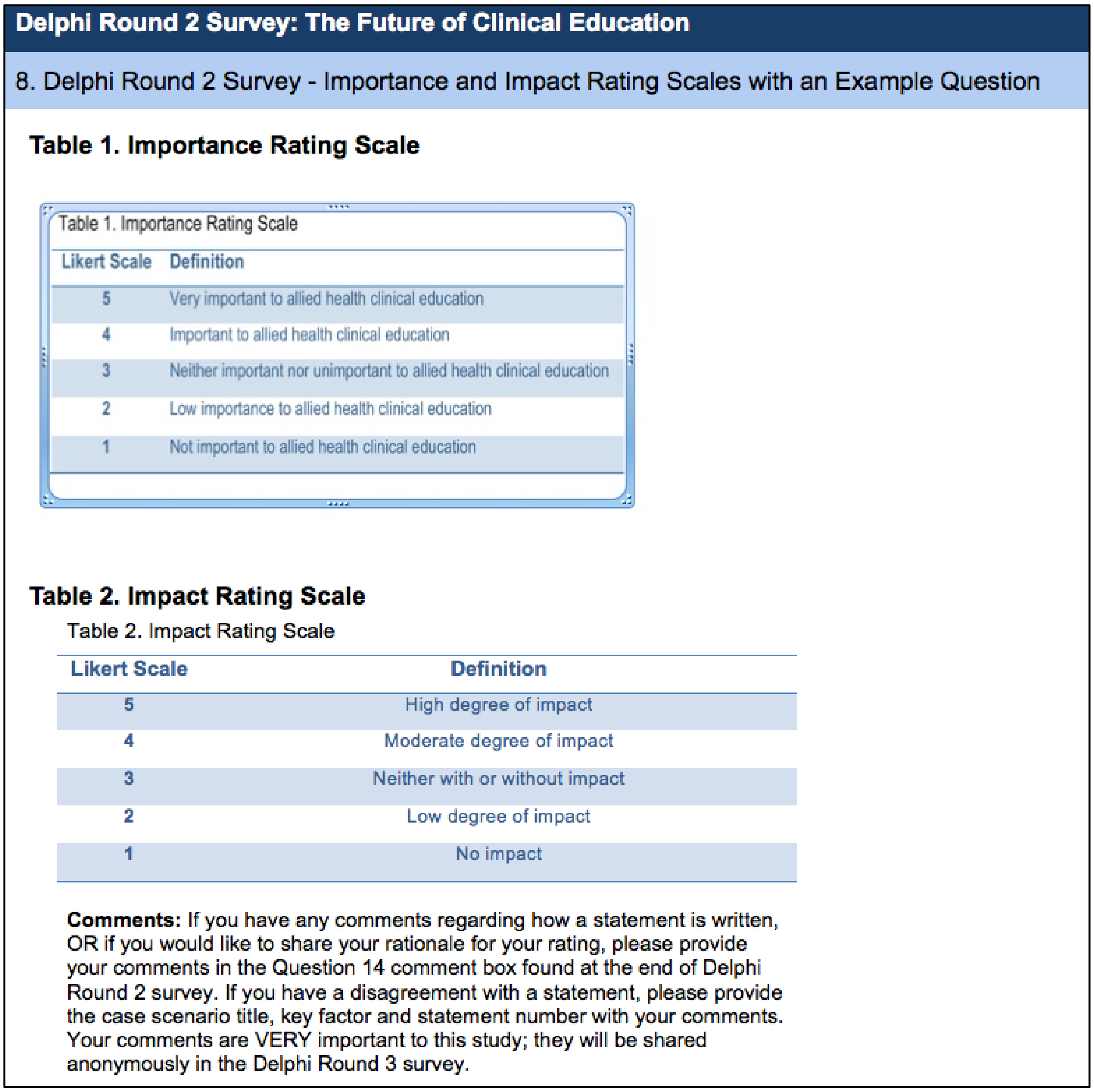
#2. Rate the Degree of Impact you, as an Individual allied health dean, have on the key factor impacting the future of clinical education.

#3. Rate the Degree of Impact allied health deans Collectively have on the key factor impacting the future of clinical education.

4. Table 1 provides the Importance Rating Scale and Table 2 provides the Impact Rating Scale (refer to page 8).

5. If you have any comments regarding how the statement is written, OR if you would like to share your rationale for your rating, please provide your comments in the Question 14 comment box found at the end of Delphi Round 2 survey. If you have a disagreement with a statement, please provide the case scenario title, key factor and statement information with your comments. Your comments are VERY important to this study; they will be shared anonymously in the Delphi Round 3 survey.

6. For each case scenario, RATE at least all key factors in the most frequently recorded statements for each key factor provided in **BOLD** at the top of each section. You are encouraged to rank all questions, if your interest and time permits.



Delphi Round 2 Survey: The Future of Clinical Education

8. Delphi Round 2 Survey - Importance and Impact Rating Scales with an Example Question

Table 1. Importance Rating Scale

Table 1. Importance Rating Scale

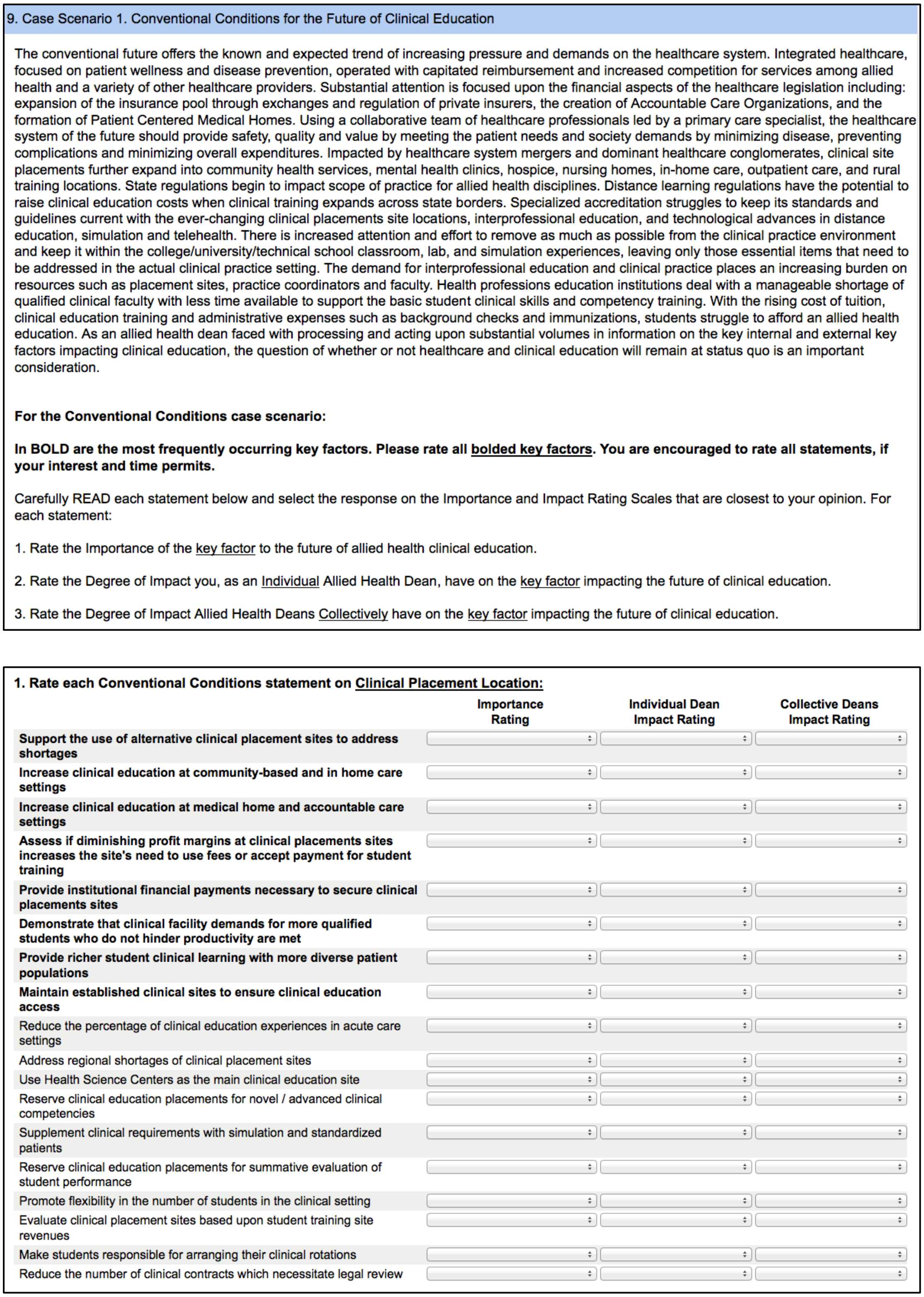
Likert Scale	Definition
5	Very important to allied health clinical education
4	Important to allied health clinical education
3	Neither important nor unimportant to allied health clinical education
2	Low importance to allied health clinical education
1	Not important to allied health clinical education

Table 2. Impact Rating Scale

Table 2. Impact Rating Scale

Likert Scale	Definition
5	High degree of impact
4	Moderate degree of impact
3	Neither with or without impact
2	Low degree of impact
1	No impact

Comments: If you have any comments regarding how a statement is written, OR if you would like to share your rationale for your rating, please provide your comments in the Question 14 comment box found at the end of Delphi Round 2 survey. If you have a disagreement with a statement, please provide the case scenario title, key factor and statement number with your comments. Your comments are VERY important to this study; they will be shared anonymously in the Delphi Round 3 survey.



9. Case Scenario 1. Conventional Conditions for the Future of Clinical Education

The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operated with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes. Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in-home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs when clinical training expands across state borders. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. There is increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college/university/technical school classroom, lab, and simulation experiences, leaving only those essential items that need to be addressed in the actual clinical practice setting. The demand for interprofessional education and clinical practice places an increasing burden on resources such as placement sites, practice coordinators and faculty. Health professions education institutions deal with a manageable shortage of qualified clinical faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford an allied health education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external key factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.

For the Conventional Conditions case scenario:

In BOLD are the most frequently occurring key factors. Please rate all <u>bolded key factors</u>. You are encouraged to rate all statements, if your interest and time permits.

Carefully READ each statement below and select the response on the Importance and Impact Rating Scales that are closest to your opinion. For each statement:

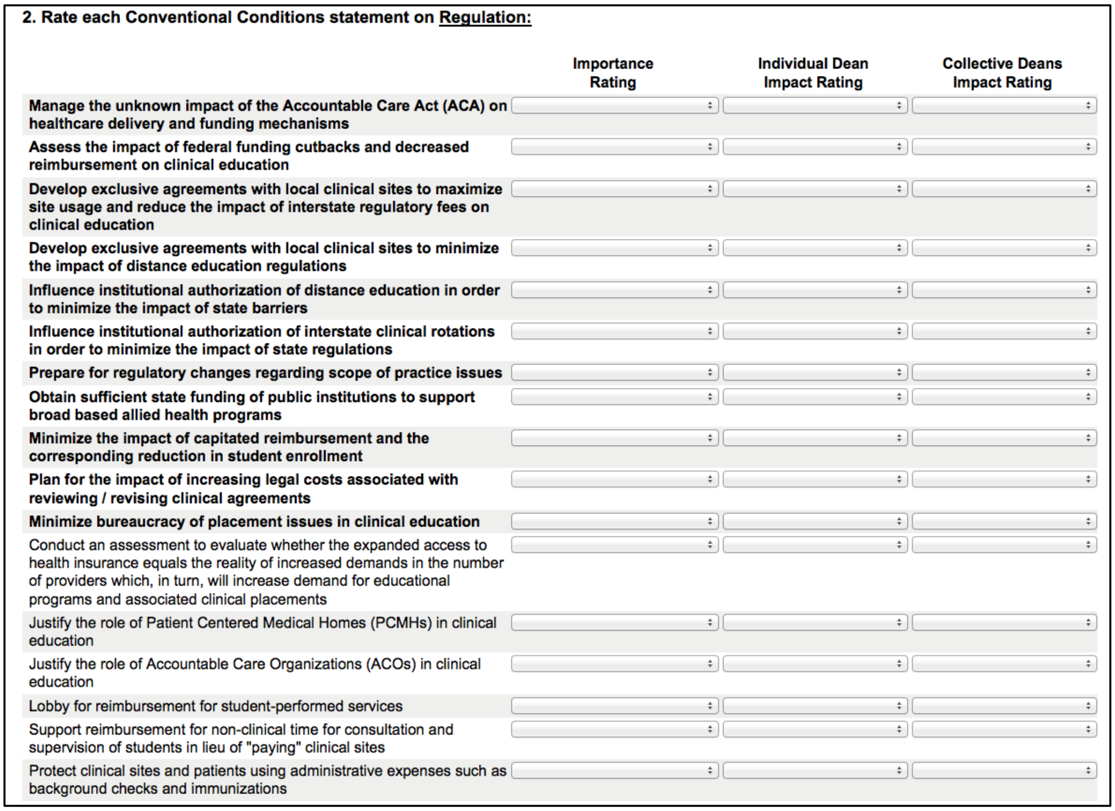
1. Rate the Importance of the <u>key factor</u> to the future of allied health clinical education.

2. Rate the Degree of Impact you, as an <u>Individual</u> Allied Health Dean, have on the <u>key factor</u> impacting the future of clinical education.

3. Rate the Degree of Impact Allied Health Deans <u>Collectively</u> have on the <u>key factor</u> impacting the future of clinical education.

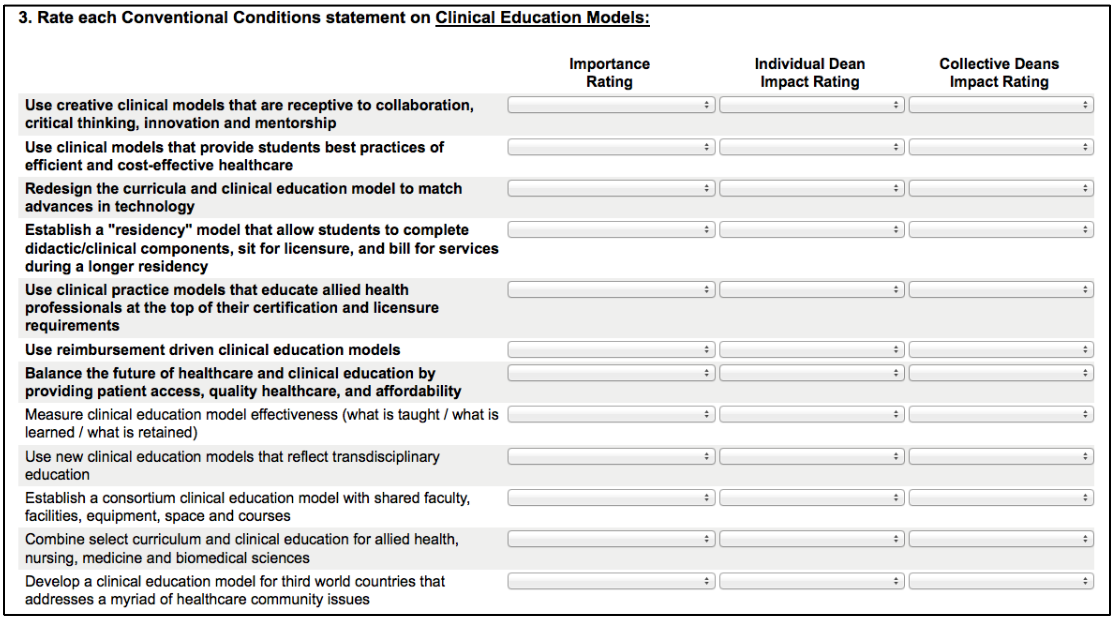
1. Rate each Conventional Conditions statement on <u>Clinical Placement Location:</u>

	Importance Rating	**Individual Dean Impact Rating**	**Collective Deans Impact Rating**
Support the use of alternative clinical placement sites to address shortages			
Increase clinical education at community-based and in home care settings			
Increase clinical education at medical home and accountable care settings			
Assess if diminishing profit margins at clinical placements sites increases the site's need to use fees or accept payment for student training			
Provide institutional financial payments necessary to secure clinical placements sites			
Demonstrate that clinical facility demands for more qualified students who do not hinder productivity are met			
Provide richer student clinical learning with more diverse patient populations			
Maintain established clinical sites to ensure clinical education access			
Reduce the percentage of clinical education experiences in acute care settings			
Address regional shortages of clinical placement sites			
Use Health Science Centers as the main clinical education site			
Reserve clinical education placements for novel / advanced clinical competencies			
Supplement clinical requirements with simulation and standardized patients			
Reserve clinical education placements for summative evaluation of student performance			
Promote flexibility in the number of students in the clinical setting			
Evaluate clinical placement sites based upon student training site revenues			
Make students responsible for arranging their clinical rotations			
Reduce the number of clinical contracts which necessitate legal review			



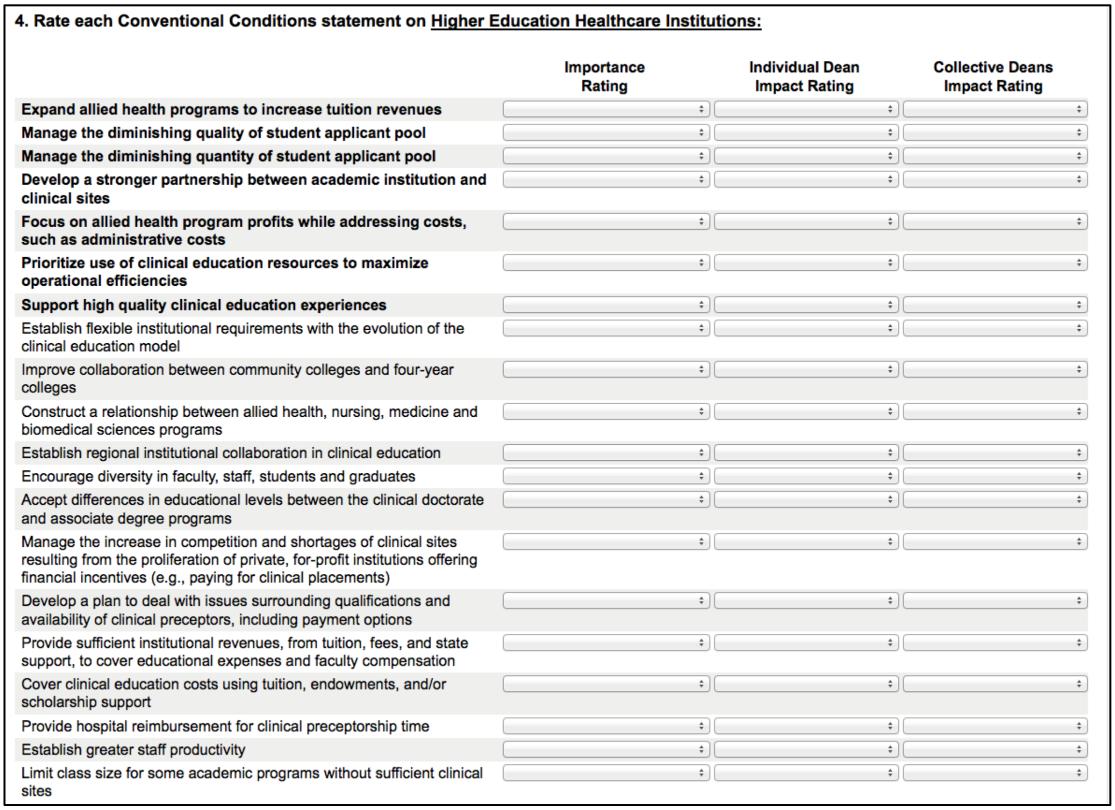
2. Rate each Conventional Conditions statement on Regulation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Manage the unknown impact of the Accountable Care Act (ACA) on healthcare delivery and funding mechanisms			
Assess the impact of federal funding cutbacks and decreased reimbursement on clinical education			
Develop exclusive agreements with local clinical sites to maximize site usage and reduce the impact of interstate regulatory fees on clinical education			
Develop exclusive agreements with local clinical sites to minimize the impact of distance education regulations			
Influence institutional authorization of distance education in order to minimize the impact of state barriers			
Influence institutional authorization of interstate clinical rotations in order to minimize the impact of state regulations			
Prepare for regulatory changes regarding scope of practice issues			
Obtain sufficient state funding of public institutions to support broad based allied health programs			
Minimize the impact of capitated reimbursement and the corresponding reduction in student enrollment			
Plan for the impact of increasing legal costs associated with reviewing / revising clinical agreements			
Minimize bureaucracy of placement issues in clinical education			
Conduct an assessment to evaluate whether the expanded access to health insurance equals the reality of increased demands in the number of providers which, in turn, will increase demand for educational programs and associated clinical placements			
Justify the role of Patient Centered Medical Homes (PCMHs) in clinical education			
Justify the role of Accountable Care Organizations (ACOs) in clinical education			
Lobby for reimbursement for student-performed services			
Support reimbursement for non-clinical time for consultation and supervision of students in lieu of "paying" clinical sites			
Protect clinical sites and patients using administrative expenses such as background checks and immunizations			



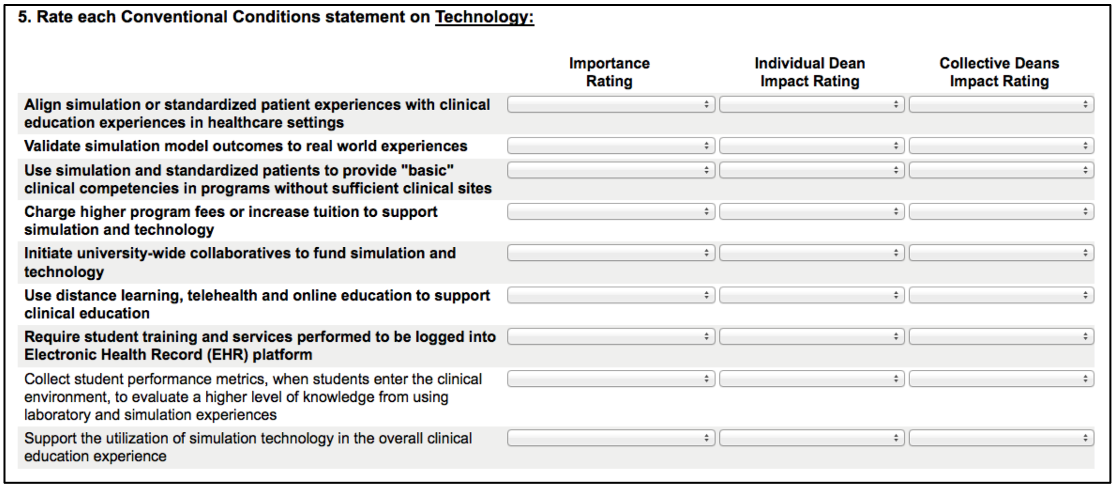
3. Rate each Conventional Conditions statement on Clinical Education Models:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Use creative clinical models that are receptive to collaboration, critical thinking, innovation and mentorship			
Use clinical models that provide students best practices of efficient and cost-effective healthcare			
Redesign the curricula and clinical education model to match advances in technology			
Establish a "residency" model that allow students to complete didactic/clinical components, sit for licensure, and bill for services during a longer residency			
Use clinical practice models that educate allied health professionals at the top of their certification and licensure requirements			
Use reimbursement driven clinical education models			
Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability			
Measure clinical education model effectiveness (what is taught / what is learned / what is retained)			
Use new clinical education models that reflect transdisciplinary education			
Establish a consortium clinical education model with shared faculty, facilities, equipment, space and courses			
Combine select curriculum and clinical education for allied health, nursing, medicine and biomedical sciences			
Develop a clinical education model for third world countries that addresses a myriad of healthcare community issues			



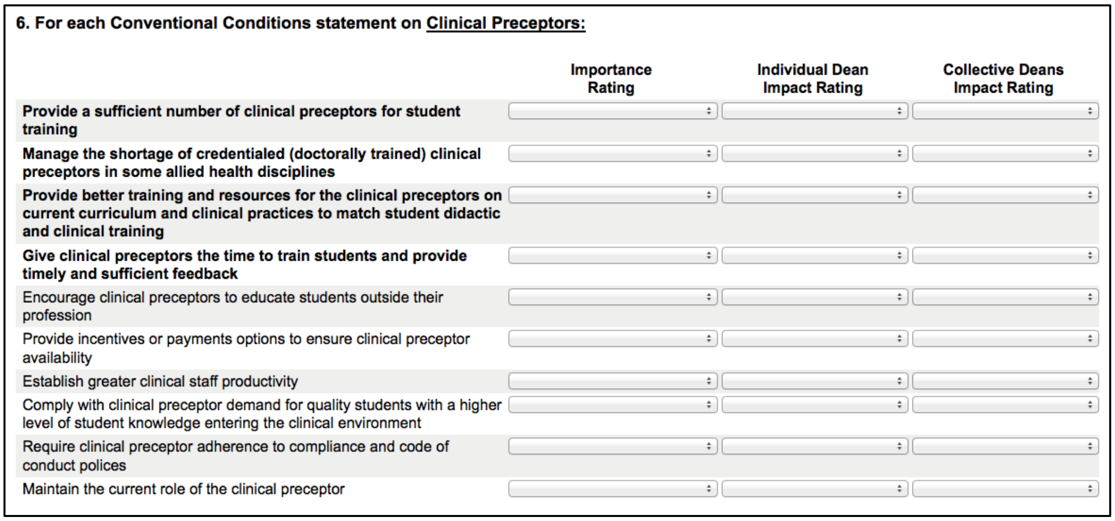
4. Rate each Conventional Conditions statement on Higher Education Healthcare Institutions:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Expand allied health programs to increase tuition revenues			
Manage the diminishing quality of student applicant pool			
Manage the diminishing quantity of student applicant pool			
Develop a stronger partnership between academic institution and clinical sites			
Focus on allied health program profits while addressing costs, such as administrative costs			
Prioritize use of clinical education resources to maximize operational efficiencies			
Support high quality clinical education experiences			
Establish flexible institutional requirements with the evolution of the clinical education model			
Improve collaboration between community colleges and four-year colleges			
Construct a relationship between allied health, nursing, medicine and biomedical sciences programs			
Establish regional institutional collaboration in clinical education			
Encourage diversity in faculty, staff, students and graduates			
Accept differences in educational levels between the clinical doctorate and associate degree programs			
Manage the increase in competition and shortages of clinical sites resulting from the proliferation of private, for-profit institutions offering financial incentives (e.g., paying for clinical placements)			
Develop a plan to deal with issues surrounding qualifications and availability of clinical preceptors, including payment options			
Provide sufficient institutional revenues, from tuition, fees, and state support, to cover educational expenses and faculty compensation			
Cover clinical education costs using tuition, endowments, and/or scholarship support			
Provide hospital reimbursement for clinical preceptorship time			
Establish greater staff productivity			
Limit class size for some academic programs without sufficient clinical sites			



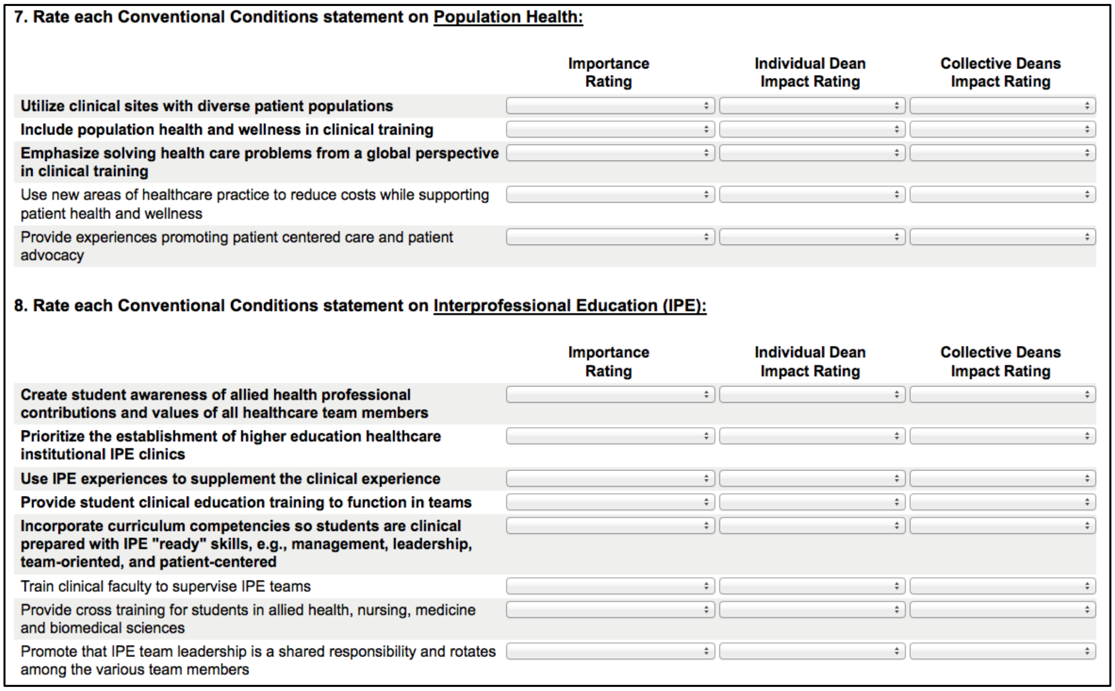
5. Rate each Conventional Conditions statement on Technology:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Align simulation or standardized patient experiences with clinical education experiences in healthcare settings			
Validate simulation model outcomes to real world experiences			
Use simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites			
Charge higher program fees or increase tuition to support simulation and technology			
Initiate university-wide collaboratives to fund simulation and technology			
Use distance learning, telehealth and online education to support clinical education			
Require student training and services performed to be logged into Electronic Health Record (EHR) platform			
Collect student performance metrics, when students enter the clinical environment, to evaluate a higher level of knowledge from using laboratory and simulation experiences			
Support the utilization of simulation technology in the overall clinical education experience			



6. For each Conventional Conditions statement on Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Provide a sufficient number of clinical preceptors for student training			
Manage the shortage of credentialed (doctorally trained) clinical preceptors in some allied health disciplines			
Provide better training and resources for the clinical preceptors on current curriculum and clinical practices to match student didactic and clinical training			
Give clinical preceptors the time to train students and provide timely and sufficient feedback			
Encourage clinical preceptors to educate students outside their profession			
Provide incentives or payments options to ensure clinical preceptor availability			
Establish greater clinical staff productivity			
Comply with clinical preceptor demand for quality students with a higher level of student knowledge entering the clinical environment			
Require clinical preceptor adherence to compliance and code of conduct polices			
Maintain the current role of the clinical preceptor			

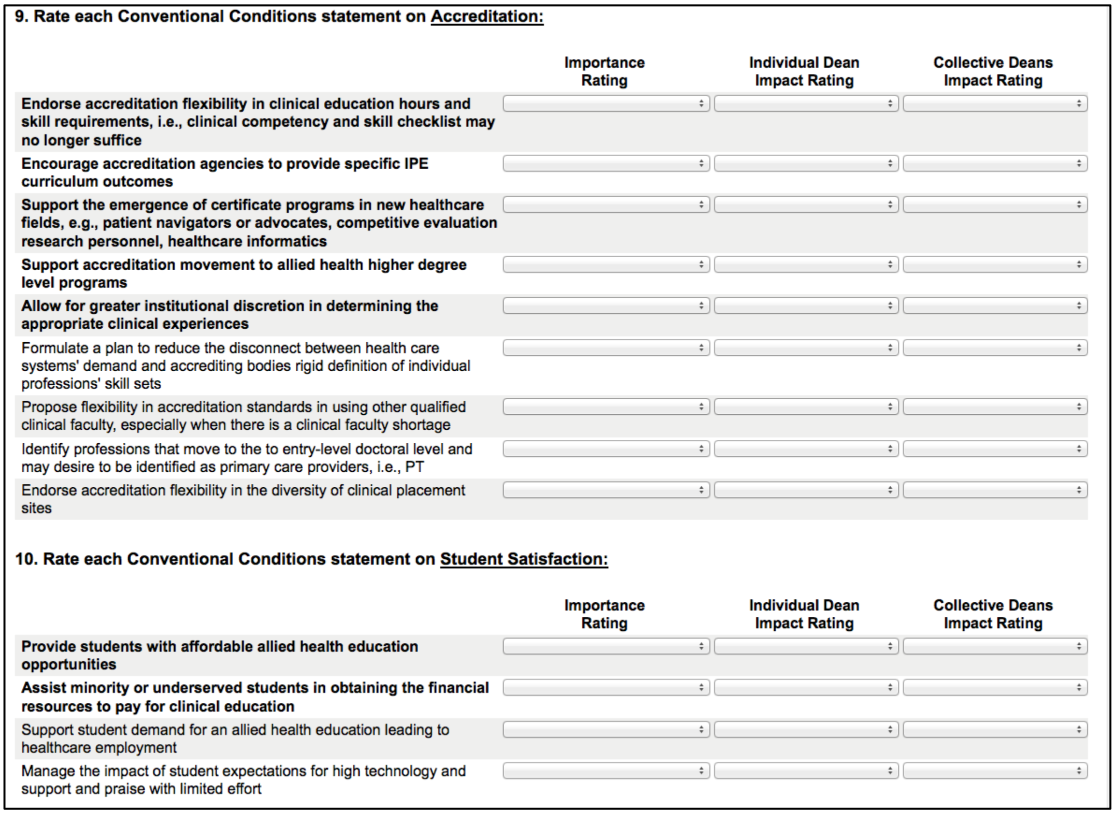


7. Rate each Conventional Conditions statement on Population Health:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Utilize clinical sites with diverse patient populations			
Include population health and wellness in clinical training			
Emphasize solving health care problems from a global perspective in clinical training			
Use new areas of healthcare practice to reduce costs while supporting patient health and wellness			
Provide experiences promoting patient centered care and patient advocacy			

8. Rate each Conventional Conditions statement on Interprofessional Education (IPE):

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Create student awareness of allied health professional contributions and values of all healthcare team members			
Prioritize the establishment of higher education healthcare institutional IPE clinics			
Use IPE experiences to supplement the clinical experience			
Provide student clinical education training to function in teams			
Incorporate curriculum competencies so students are clinical prepared with IPE "ready" skills, e.g., management, leadership, team-oriented, and patient-centered			
Train clinical faculty to supervise IPE teams			
Provide cross training for students in allied health, nursing, medicine and biomedical sciences			
Promote that IPE team leadership is a shared responsibility and rotates among the various team members			

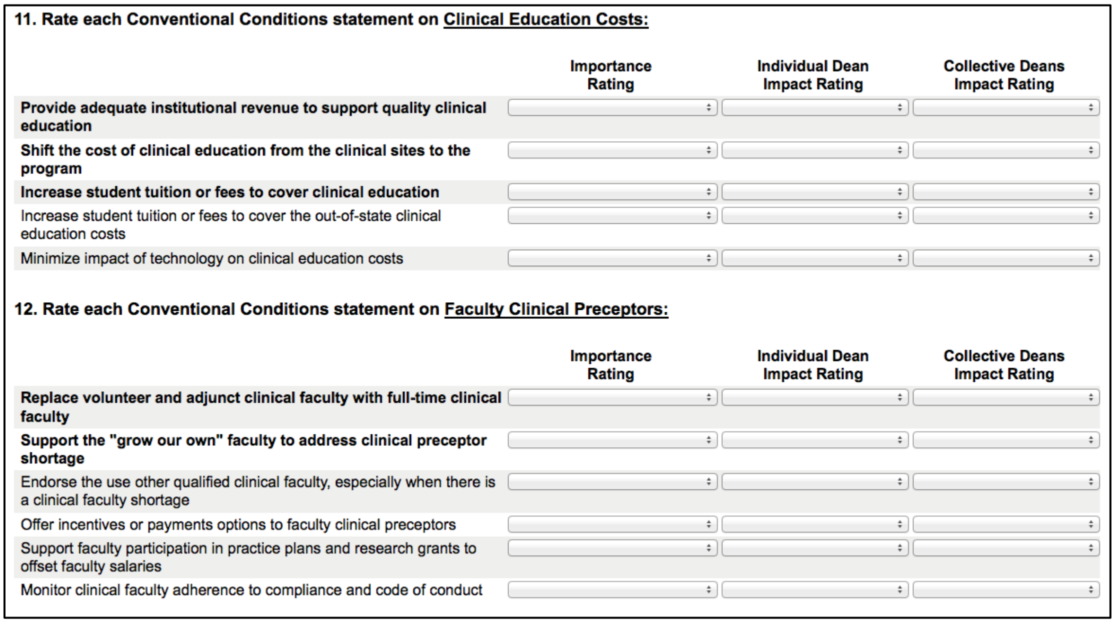


9. Rate each Conventional Conditions statement on Accreditation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Endorse accreditation flexibility in clinical education hours and skill requirements, i.e., clinical competency and skill checklist may no longer suffice			
Encourage accreditation agencies to provide specific IPE curriculum outcomes			
Support the emergence of certificate programs in new healthcare fields, e.g., patient navigators or advocates, competitive evaluation research personnel, healthcare informatics			
Support accreditation movement to allied health higher degree level programs			
Allow for greater institutional discretion in determining the appropriate clinical experiences			
Formulate a plan to reduce the disconnect between health care systems' demand and accrediting bodies rigid definition of individual professions' skill sets			
Propose flexibility in accreditation standards in using other qualified clinical faculty, especially when there is a clinical faculty shortage			
Identify professions that move to the to entry-level doctoral level and may desire to be identified as primary care providers, i.e., PT			
Endorse accreditation flexibility in the diversity of clinical placement sites			

10. Rate each Conventional Conditions statement on Student Satisfaction:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Provide students with affordable allied health education opportunities			
Assist minority or underserved students in obtaining the financial resources to pay for clinical education			
Support student demand for an allied health education leading to healthcare employment			
Manage the impact of student expectations for high technology and support and praise with limited effort			

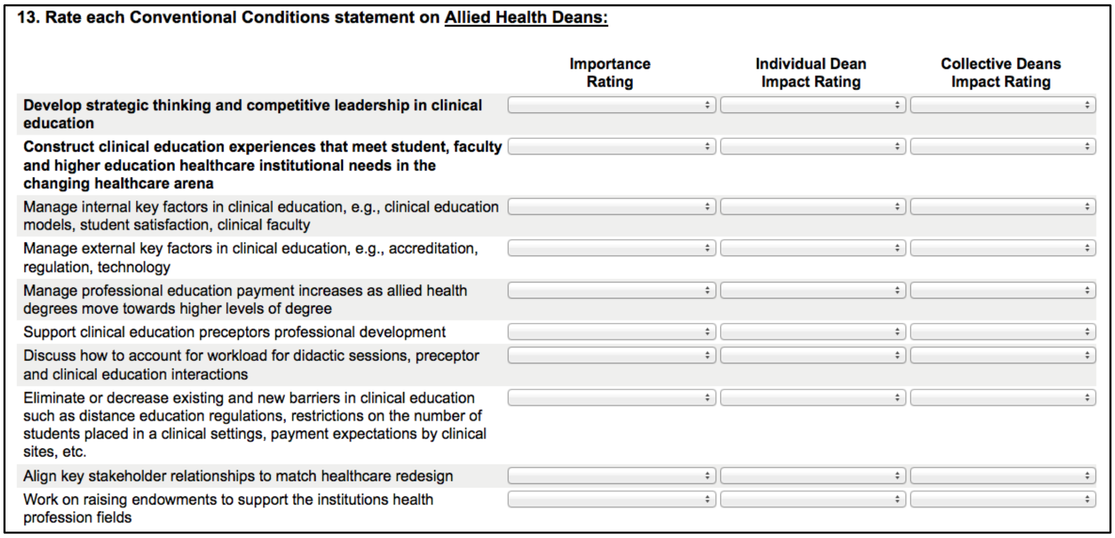


11. Rate each Conventional Conditions statement on Clinical Education Costs:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Provide adequate institutional revenue to support quality clinical education			
Shift the cost of clinical education from the clinical sites to the program			
Increase student tuition or fees to cover clinical education			
Increase student tuition or fees to cover the out-of-state clinical education costs			
Minimize impact of technology on clinical education costs			

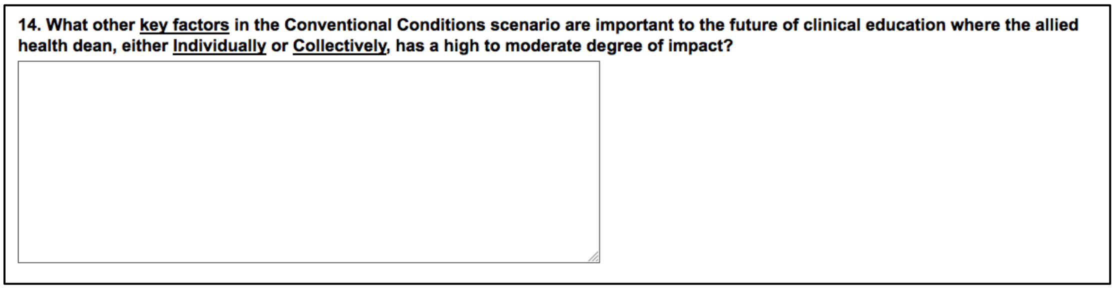
12. Rate each Conventional Conditions statement on Faculty Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Replace volunteer and adjunct clinical faculty with full-time clinical faculty			
Support the "grow our own" faculty to address clinical preceptor shortage			
Endorse the use other qualified clinical faculty, especially when there is a clinical faculty shortage			
Offer incentives or payments options to faculty clinical preceptors			
Support faculty participation in practice plans and research grants to offset faculty salaries			
Monitor clinical faculty adherence to compliance and code of conduct			

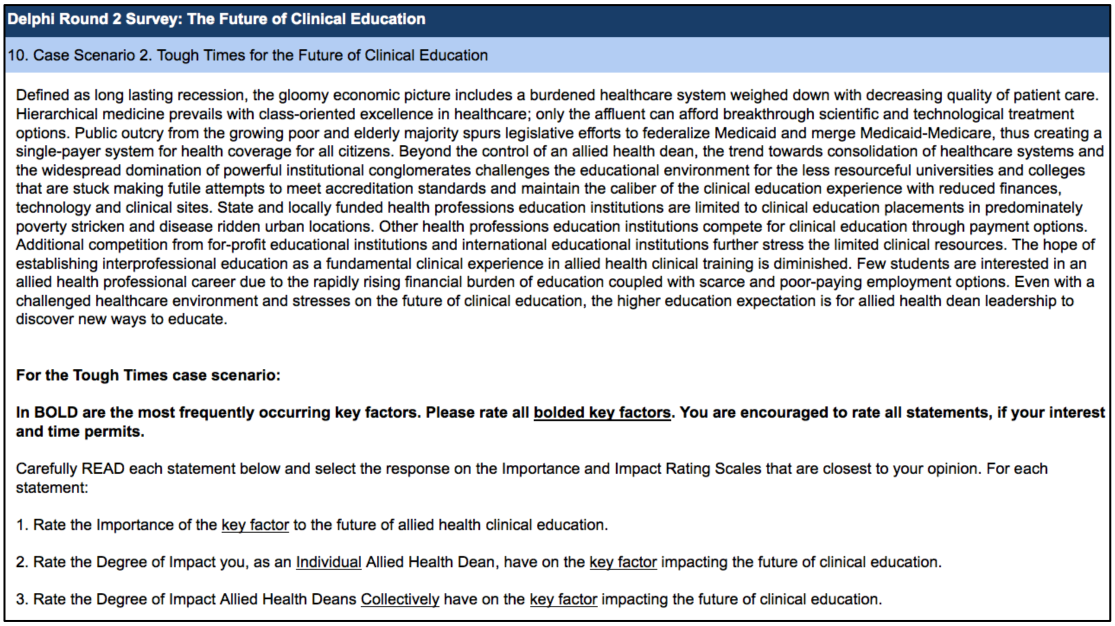


13. Rate each Conventional Conditions statement on Allied Health Deans:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Develop strategic thinking and competitive leadership in clinical education			
Construct clinical education experiences that meet student, faculty and higher education healthcare institutional needs in the changing healthcare arena			
Manage internal key factors in clinical education, e.g., clinical education models, student satisfaction, clinical faculty			
Manage external key factors in clinical education, e.g., accreditation, regulation, technology			
Manage professional education payment increases as allied health degrees move towards higher levels of degree			
Support clinical education preceptors professional development			
Discuss how to account for workload for didactic sessions, preceptor and clinical education interactions			
Eliminate or decrease existing and new barriers in clinical education such as distance education regulations, restrictions on the number of students placed in a clinical settings, payment expectations by clinical sites, etc.			
Align key stakeholder relationships to match healthcare redesign			
Work on raising endowments to support the institutions health profession fields			



14. What other key factors in the Conventional Conditions scenario are important to the future of clinical education where the allied health dean, either Individually or Collectively, has a high to moderate degree of impact?



Delphi Round 2 Survey: The Future of Clinical Education

10. Case Scenario 2. Tough Times for the Future of Clinical Education

Defined as long lasting recession, the gloomy economic picture includes a burdened healthcare system weighed down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates challenges the educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded health professions education institutions are limited to clinical education placements in predominately poverty stricken and disease ridden urban locations. Other health professions education institutions compete for clinical education through payment options. Additional competition from for-profit educational institutions and international educational institutions further stress the limited clinical resources. The hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to the rapidly rising financial burden of education coupled with scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the future of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

For the Tough Times case scenario:

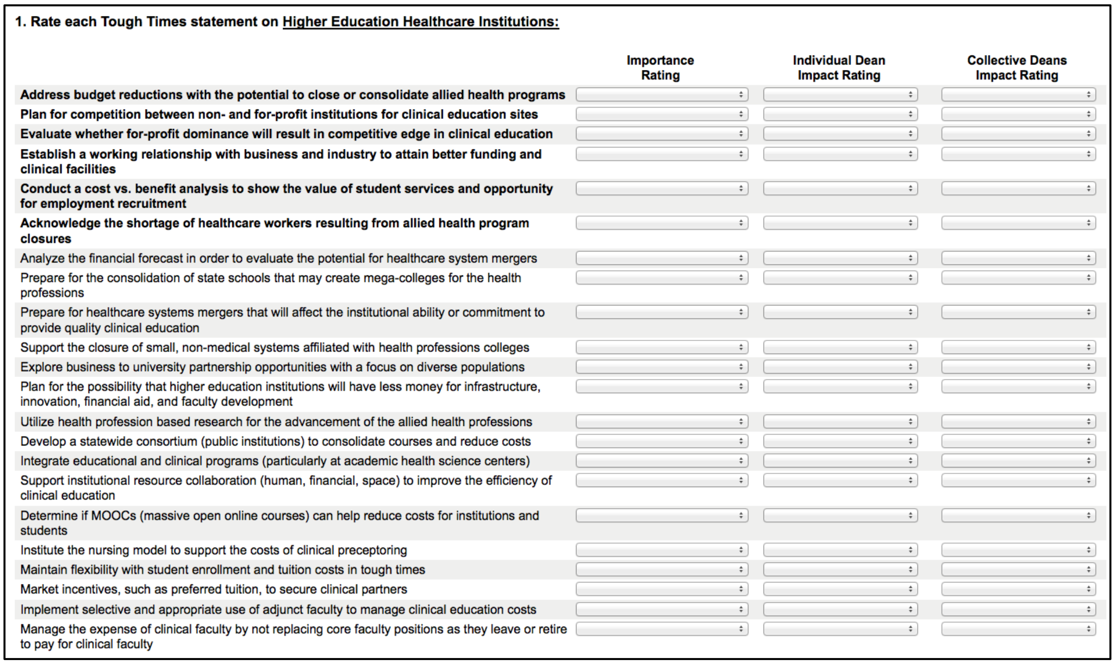
In BOLD are the most frequently occurring key factors. Please rate all bolded key factors. You are encouraged to rate all statements, if your interest and time permits.

Carefully READ each statement below and select the response on the Importance and Impact Rating Scales that are closest to your opinion. For each statement:

1. Rate the Importance of the key factor to the future of allied health clinical education.

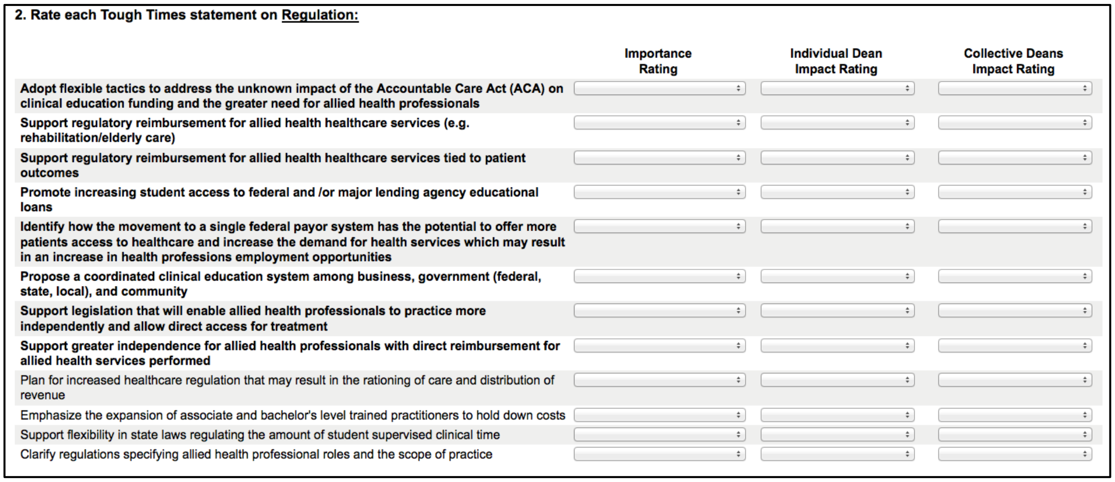
2. Rate the Degree of Impact you, as an Individual Allied Health Dean, have on the key factor impacting the future of clinical education.

3. Rate the Degree of Impact Allied Health Deans Collectively have on the key factor impacting the future of clinical education.



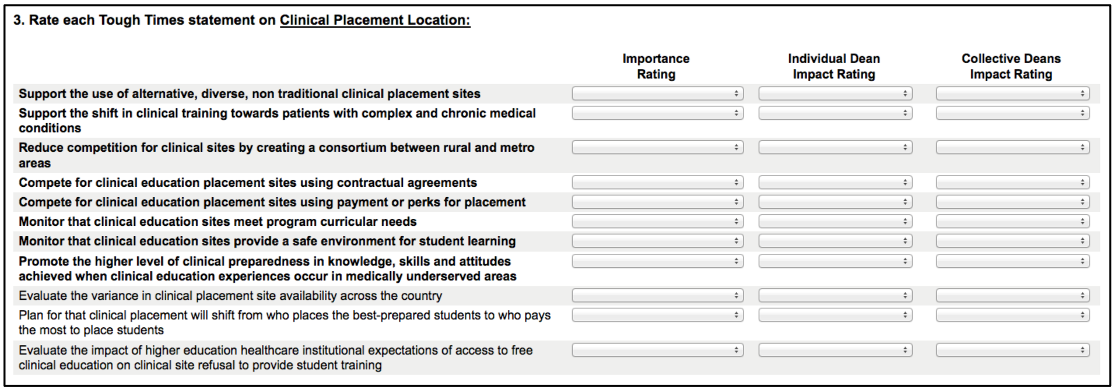
1. Rate each Tough Times statement on Higher Education Healthcare Institutions:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Address budget reductions with the potential to close or consolidate allied health programs			
Plan for competition between non- and for-profit institutions for clinical education sites			
Evaluate whether for-profit dominance will result in competitive edge in clinical education			
Establish a working relationship with business and industry to attain better funding and clinical facilities			
Conduct a cost vs. benefit analysis to show the value of student services and opportunity for employment recruitment			
Acknowledge the shortage of healthcare workers resulting from allied health program closures			
Analyze the financial forecast in order to evaluate the potential for healthcare system mergers			
Prepare for the consolidation of state schools that may create mega-colleges for the health professions			
Prepare for healthcare systems mergers that will affect the institutional ability or commitment to provide quality clinical education			
Support the closure of small, non-medical systems affiliated with health professions colleges			
Explore business to university partnership opportunities with a focus on diverse populations			
Plan for the possibility that higher education institutions will have less money for infrastructure, innovation, financial aid, and faculty development			
Utilize health profession based research for the advancement of the allied health professions			
Develop a statewide consortium (public institutions) to consolidate courses and reduce costs			
Integrate educational and clinical programs (particularly at academic health science centers)			
Support institutional resource collaboration (human, financial, space) to improve the efficiency of clinical education			
Determine if MOOCs (massive open online courses) can help reduce costs for institutions and students			
Institute the nursing model to support the costs of clinical preceptoring			
Maintain flexibility with student enrollment and tuition costs in tough times			
Market incentives, such as preferred tuition, to secure clinical partners			
Implement selective and appropriate use of adjunct faculty to manage clinical education costs			
Manage the expense of clinical faculty by not replacing core faculty positions as they leave or retire to pay for clinical faculty			



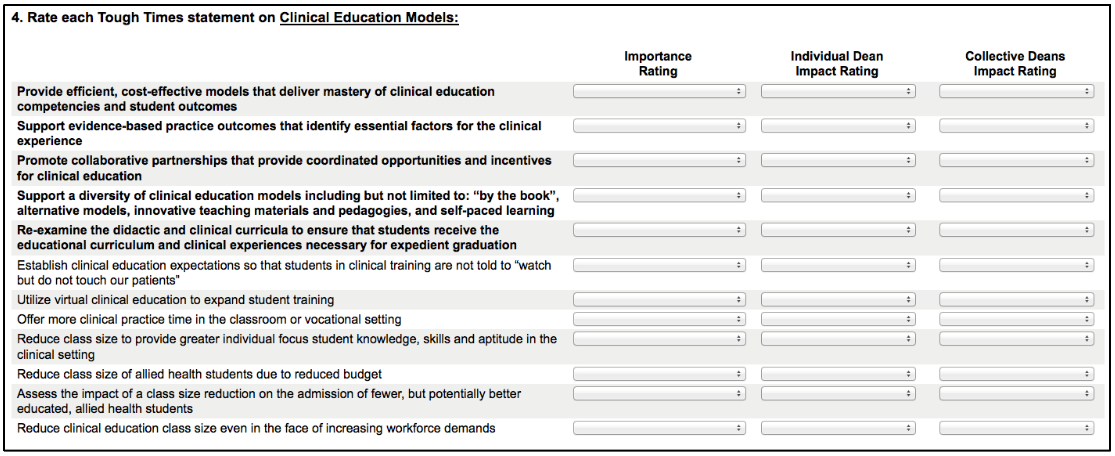
2. Rate each Tough Times statement on Regulation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Adopt flexible tactics to address the unknown impact of the Accountable Care Act (ACA) on clinical education funding and the greater need for allied health professionals			
Support regulatory reimbursement for allied health healthcare services (e.g. rehabilitation/elderly care)			
Support regulatory reimbursement for allied health healthcare services tied to patient outcomes			
Promote increasing student access to federal and /or major lending agency educational loans			
Identify how the movement to a single federal payor system has the potential to offer more patients access to healthcare and increase the demand for health services which may result in an increase in health professions employment opportunities			
Propose a coordinated clinical education system among business, government (federal, state, local), and community			
Support legislation that will enable allied health professionals to practice more independently and allow direct access for treatment			
Support greater independence for allied health professionals with direct reimbursement for allied health services performed			
Plan for increased healthcare regulation that may result in the rationing of care and distribution of revenue			
Emphasize the expansion of associate and bachelor's level trained practitioners to hold down costs			
Support flexibility in state laws regulating the amount of student supervised clinical time			
Clarify regulations specifying allied health professional roles and the scope of practice			



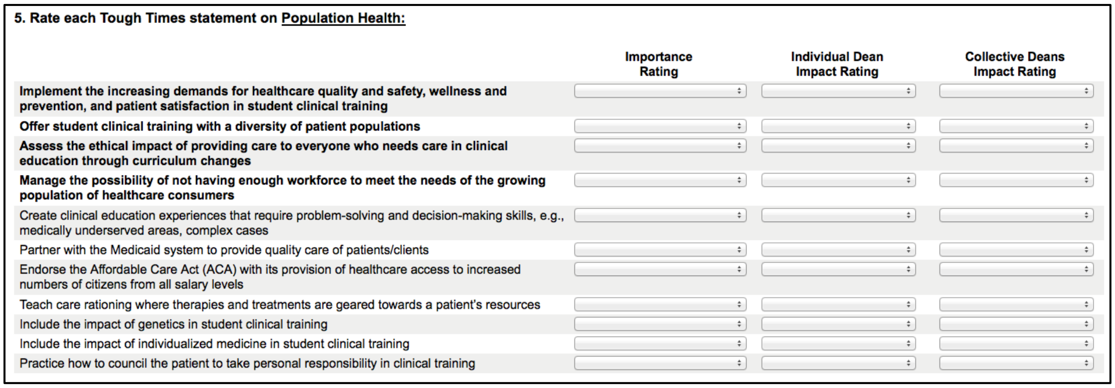
3. Rate each Tough Times statement on Clinical Placement Location:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Support the use of alternative, diverse, non traditional clinical placement sites			
Support the shift in clinical training towards patients with complex and chronic medical conditions			
Reduce competition for clinical sites by creating a consortium between rural and metro areas			
Compete for clinical education placement sites using contractual agreements			
Compete for clinical education placement sites using payment or perks for placement			
Monitor that clinical education sites meet program curricular needs			
Monitor that clinical education sites provide a safe environment for student learning			
Promote the higher level of clinical preparedness in knowledge, skills and attitudes achieved when clinical education experiences occur in medically underserved areas			
Evaluate the variance in clinical placement site availability across the country			
Plan for that clinical placement will shift from who places the best-prepared students to who pays the most to place students			
Evaluate the impact of higher education healthcare institutional expectations of access to free clinical education on clinical site refusal to provide student training			



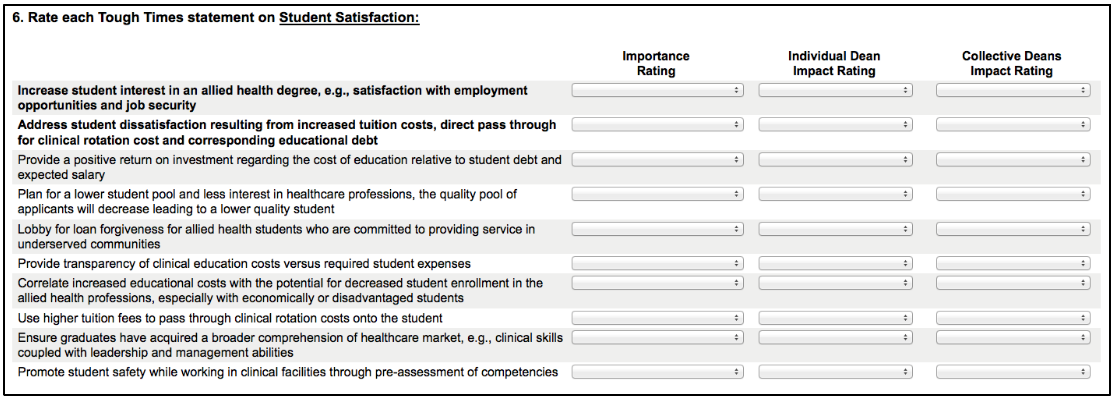
4. Rate each Tough Times statement on Clinical Education Models:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Provide efficient, cost-effective models that deliver mastery of clinical education competencies and student outcomes			
Support evidence-based practice outcomes that identify essential factors for the clinical experience			
Promote collaborative partnerships that provide coordinated opportunities and incentives for clinical education			
Support a diversity of clinical education models including but not limited to: "by the book", alternative models, innovative teaching materials and pedagogies, and self-paced learning			
Re-examine the didactic and clinical curricula to ensure that students receive the educational curriculum and clinical experiences necessary for expedient graduation			
Establish clinical education expectations so that students in clinical training are not told to "watch but do not touch our patients"			
Utilize virtual clinical education to expand student training			
Offer more clinical practice time in the classroom or vocational setting			
Reduce class size to provide greater individual focus student knowledge, skills and aptitude in the clinical setting			
Reduce class size of allied health students due to reduced budget			
Assess the impact of a class size reduction on the admission of fewer, but potentially better educated, allied health students			
Reduce clinical education class size even in the face of increasing workforce demands			



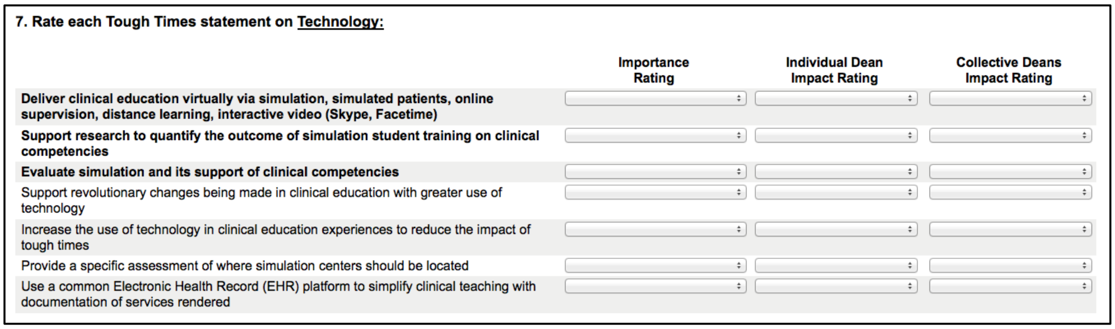
5. Rate each Tough Times statement on Population Health:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Implement the increasing demands for healthcare quality and safety, wellness and prevention, and patient satisfaction in student clinical training			
Offer student clinical training with a diversity of patient populations			
Assess the ethical impact of providing care to everyone who needs care in clinical education through curriculum changes			
Manage the possibility of not having enough workforce to meet the needs of the growing population of healthcare consumers			
Create clinical education experiences that require problem-solving and decision-making skills, e.g., medically underserved areas, complex cases			
Partner with the Medicaid system to provide quality care of patients/clients			
Endorse the Affordable Care Act (ACA) with its provision of healthcare access to increased numbers of citizens from all salary levels			
Teach care rationing where therapies and treatments are geared towards a patient's resources			
Include the impact of genetics in student clinical training			
Include the impact of individualized medicine in student clinical training			
Practice how to council the patient to take personal responsibility in clinical training			



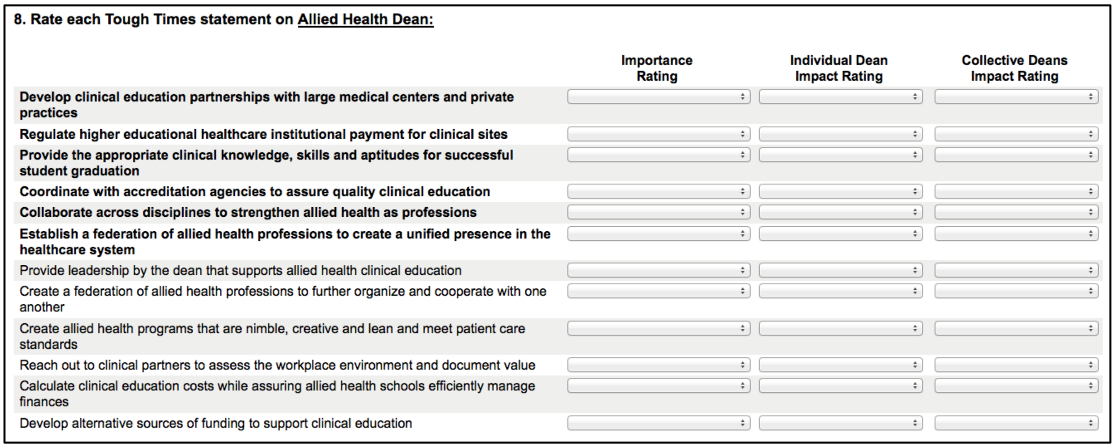
6. Rate each Tough Times statement on Student Satisfaction:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Increase student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security			
Address student dissatisfaction resulting from increased tuition costs, direct pass through for clinical rotation cost and corresponding educational debt			
Provide a positive return on investment regarding the cost of education relative to student debt and expected salary			
Plan for a lower student pool and less interest in healthcare professions, the quality pool of applicants will decrease leading to a lower quality student			
Lobby for loan forgiveness for allied health students who are committed to providing service in underserved communities			
Provide transparency of clinical education costs versus required student expenses			
Correlate increased educational costs with the potential for decreased student enrollment in the allied health professions, especially with economically or disadvantaged students			
Use higher tuition fees to pass through clinical rotation costs onto the student			
Ensure graduates have acquired a broader comprehension of healthcare market, e.g., clinical skills coupled with leadership and management abilities			
Promote student safety while working in clinical facilities through pre-assessment of competencies			



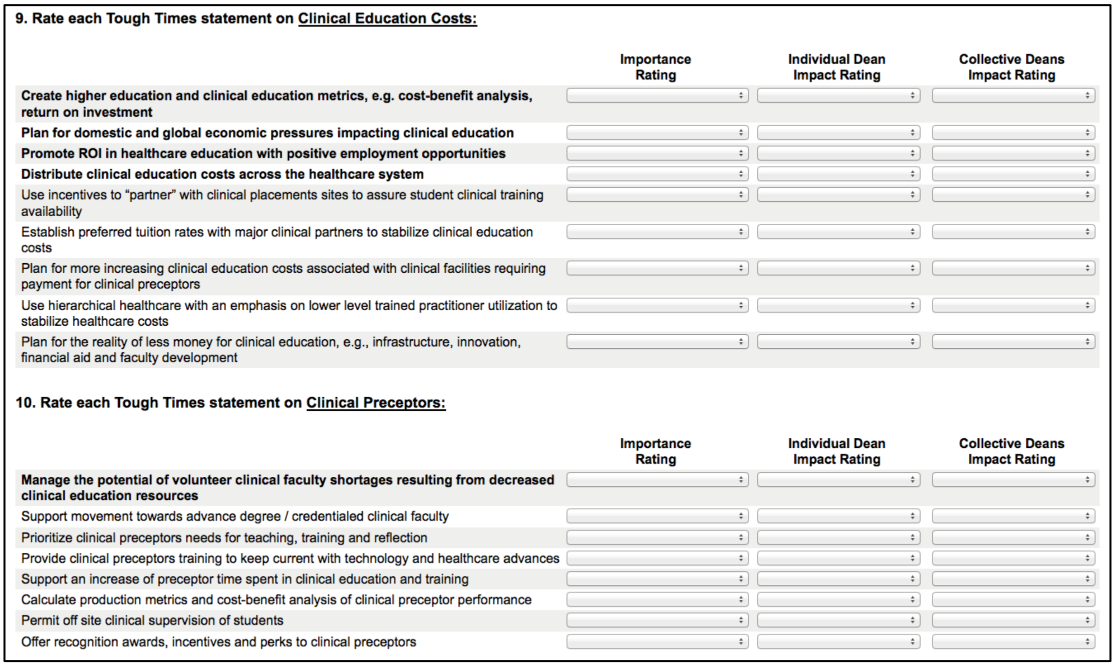
7. Rate each Tough Times statement on Technology:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Deliver clinical education virtually via simulation, simulated patients, online supervision, distance learning, interactive video (Skype, Facetime)			
Support research to quantify the outcome of simulation student training on clinical competencies			
Evaluate simulation and its support of clinical competencies			
Support revolutionary changes being made in clinical education with greater use of technology			
Increase the use of technology in clinical education experiences to reduce the impact of tough times			
Provide a specific assessment of where simulation centers should be located			
Use a common Electronic Health Record (EHR) platform to simplify clinical teaching with documentation of services rendered			



8. Rate each Tough Times statement on Allied Health Dean:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Develop clinical education partnerships with large medical centers and private practices			
Regulate higher educational healthcare institutional payment for clinical sites			
Provide the appropriate clinical knowledge, skills and aptitudes for successful student graduation			
Coordinate with accreditation agencies to assure quality clinical education			
Collaborate across disciplines to strengthen allied health as professions			
Establish a federation of allied health professions to create a unified presence in the healthcare system			
Provide leadership by the dean that supports allied health clinical education			
Create a federation of allied health professions to further organize and cooperate with one another			
Create allied health programs that are nimble, creative and lean and meet patient care standards			
Reach out to clinical partners to assess the workplace environment and document value			
Calculate clinical education costs while assuring allied health schools efficiently manage finances			
Develop alternative sources of funding to support clinical education			

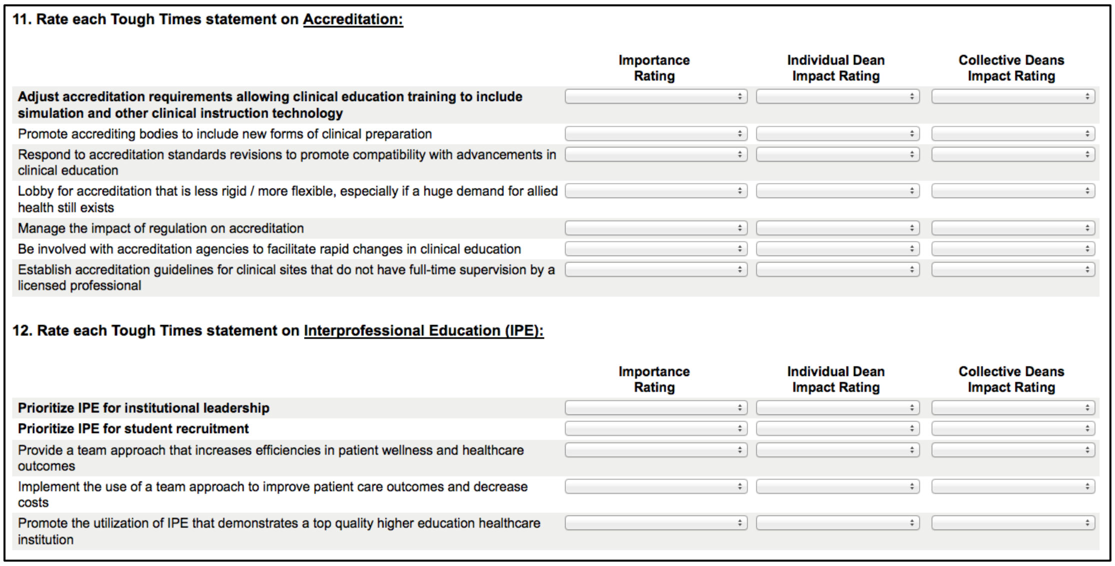


9. Rate each Tough Times statement on Clinical Education Costs:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Create higher education and clinical education metrics, e.g. cost-benefit analysis, return on investment			
Plan for domestic and global economic pressures impacting clinical education			
Promote ROI in healthcare education with positive employment opportunities			
Distribute clinical education costs across the healthcare system			
Use incentives to "partner" with clinical placements sites to assure student clinical training availability			
Establish preferred tuition rates with major clinical partners to stabilize clinical education costs			
Plan for more increasing clinical education costs associated with clinical facilities requiring payment for clinical preceptors			
Use hierarchical healthcare with an emphasis on lower level trained practitioner utilization to stabilize healthcare costs			
Plan for the reality of less money for clinical education, e.g., infrastructure, innovation, financial aid and faculty development			

10. Rate each Tough Times statement on Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Manage the potential of volunteer clinical faculty shortages resulting from decreased clinical education resources			
Support movement towards advance degree / credentialed clinical faculty			
Prioritize clinical preceptors needs for teaching, training and reflection			
Provide clinical preceptors training to keep current with technology and healthcare advances			
Support an increase of preceptor time spent in clinical education and training			
Calculate production metrics and cost-benefit analysis of clinical preceptor performance			
Permit off site clinical supervision of students			
Offer recognition awards, incentives and perks to clinical preceptors			

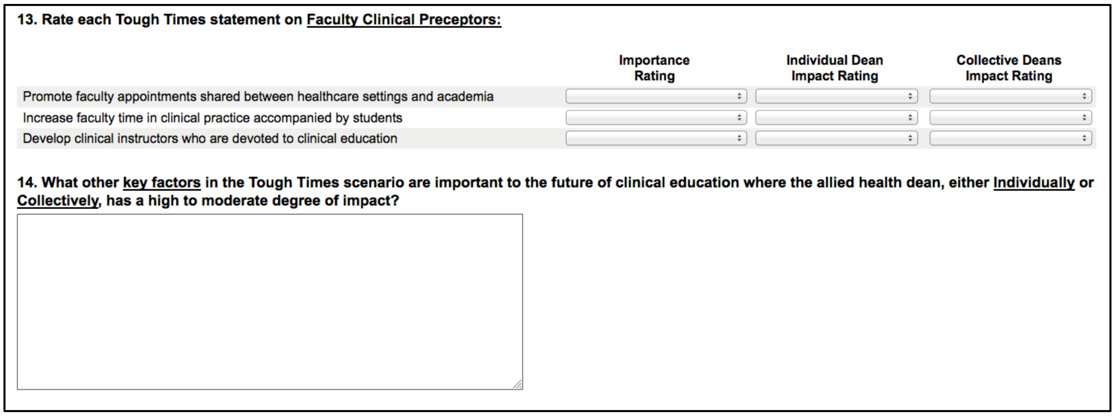


11. Rate each Tough Times statement on Accreditation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Adjust accreditation requirements allowing clinical education training to include simulation and other clinical instruction technology			
Promote accrediting bodies to include new forms of clinical preparation			
Respond to accreditation standards revisions to promote compatibility with advancements in clinical education			
Lobby for accreditation that is less rigid / more flexible, especially if a huge demand for allied health still exists			
Manage the impact of regulation on accreditation			
Be involved with accreditation agencies to facilitate rapid changes in clinical education			
Establish accreditation guidelines for clinical sites that do not have full-time supervision by a licensed professional			

12. Rate each Tough Times statement on Interprofessional Education (IPE):

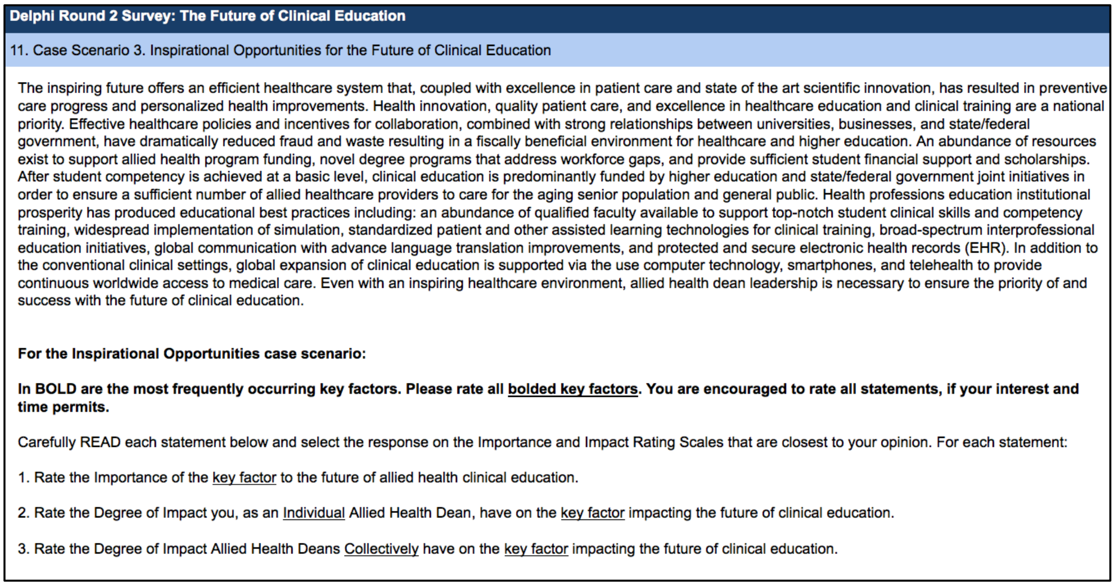
	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Prioritize IPE for institutional leadership			
Prioritize IPE for student recruitment			
Provide a team approach that increases efficiencies in patient wellness and healthcare outcomes			
Implement the use of a team approach to improve patient care outcomes and decrease costs			
Promote the utilization of IPE that demonstrates a top quality higher education healthcare institution			



13. Rate each Tough Times statement on Faculty Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Promote faculty appointments shared between healthcare settings and academia			
Increase faculty time in clinical practice accompanied by students			
Develop clinical instructors who are devoted to clinical education			

14. What other key factors in the Tough Times scenario are important to the future of clinical education where the allied health dean, either Individually or Collectively, has a high to moderate degree of impact?



Delphi Round 2 Survey: The Future of Clinical Education

11. Case Scenario 3. Inspirational Opportunities for the Future of Clinical Education

The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationships between universities, businesses, and state/federal government, have dramatically reduced fraud and waste resulting in a fiscally beneficial environment for healthcare and higher education. An abundance of resources exist to support allied health program funding, novel degree programs that address workforce gaps, and provide sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Health professions education institutional prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). In addition to the conventional clinical settings, global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to provide continuous worldwide access to medical care. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

For the Inspirational Opportunities case scenario:

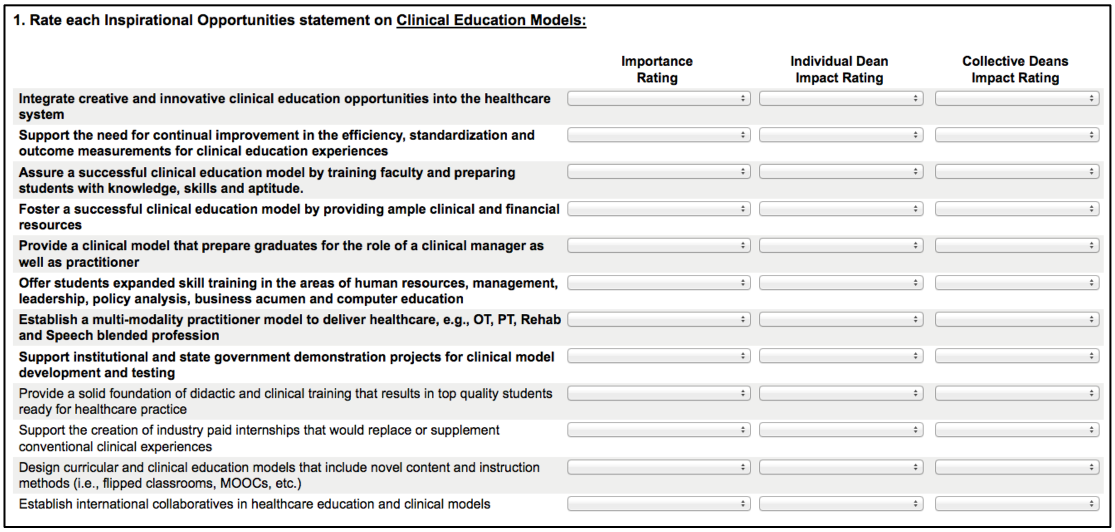
In BOLD are the most frequently occurring key factors. Please rate all bolded key factors. You are encouraged to rate all statements, if your interest and time permits.

Carefully READ each statement below and select the response on the Importance and Impact Rating Scales that are closest to your opinion. For each statement:

1. Rate the Importance of the key factor to the future of allied health clinical education.

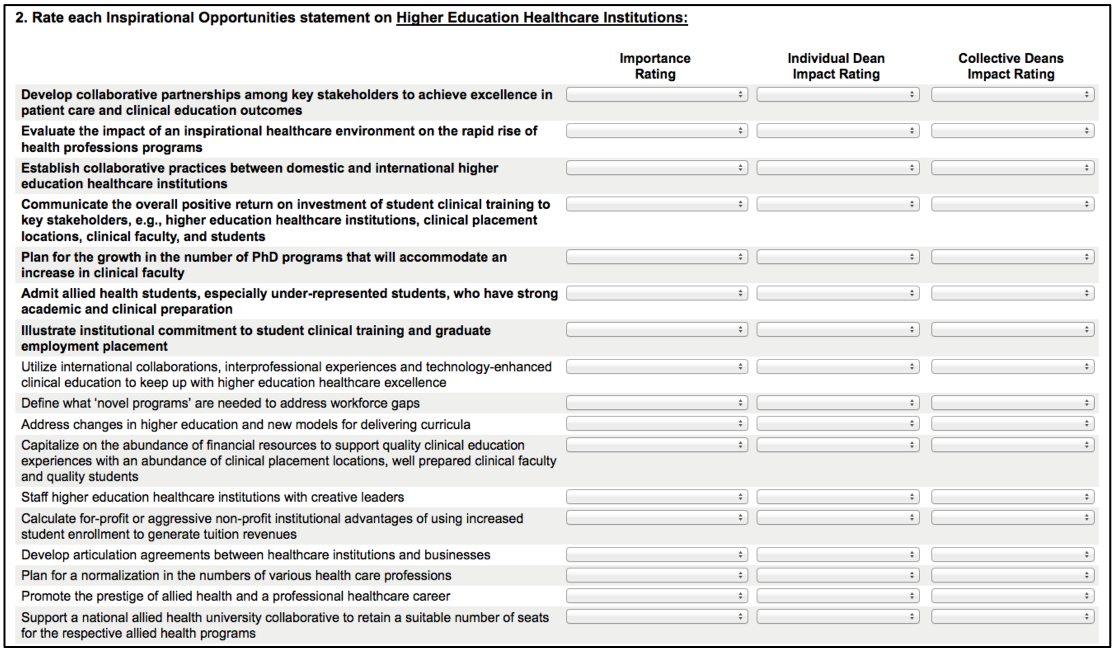
2. Rate the Degree of Impact you, as an Individual Allied Health Dean, have on the key factor impacting the future of clinical education.

3. Rate the Degree of Impact Allied Health Deans Collectively have on the key factor impacting the future of clinical education.



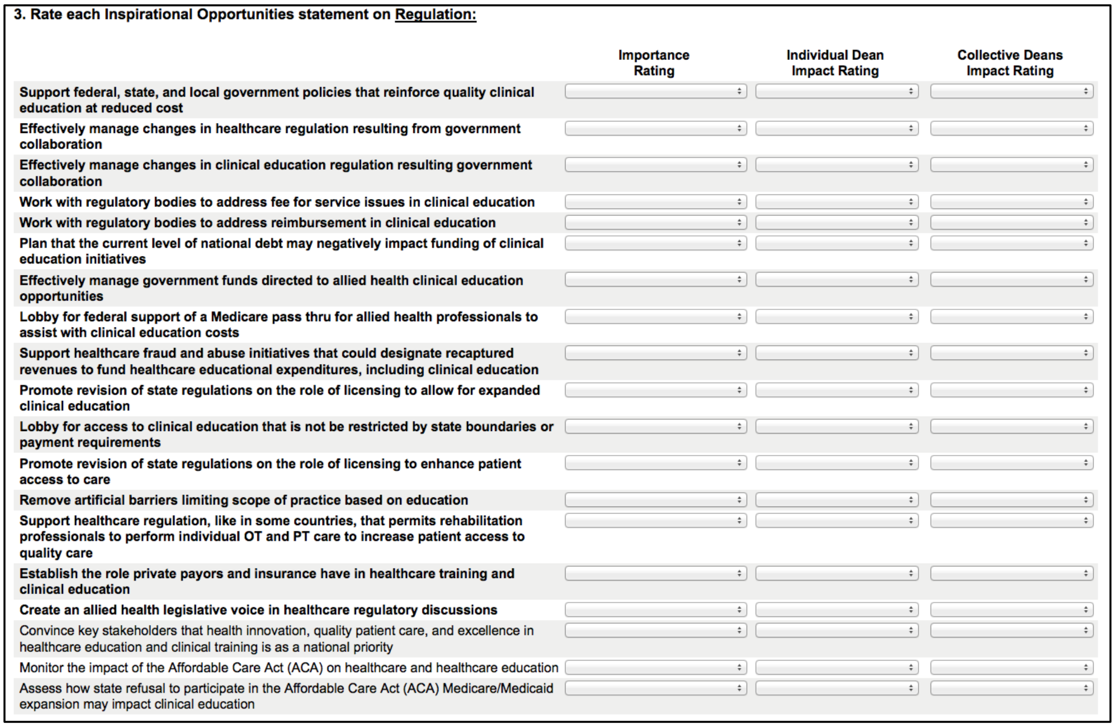
1. Rate each Inspirational Opportunities statement on <u>Clinical Education Models:</u>

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Integrate creative and innovative clinical education opportunities into the healthcare system			
Support the need for continual improvement in the efficiency, standardization and outcome measurements for clinical education experiences			
Assure a successful clinical education model by training faculty and preparing students with knowledge, skills and aptitude.			
Foster a successful clinical education model by providing ample clinical and financial resources			
Provide a clinical model that prepare graduates for the role of a clinical manager as well as practitioner			
Offer students expanded skill training in the areas of human resources, management, leadership, policy analysis, business acumen and computer education			
Establish a multi-modality practitioner model to deliver healthcare, e.g., OT, PT, Rehab and Speech blended profession			
Support institutional and state government demonstration projects for clinical model development and testing			
Provide a solid foundation of didactic and clinical training that results in top quality students ready for healthcare practice			
Support the creation of industry paid internships that would replace or supplement conventional clinical experiences			
Design curricular and clinical education models that include novel content and instruction methods (i.e., flipped classrooms, MOOCs, etc.)			
Establish international collaboratives in healthcare education and clinical models			



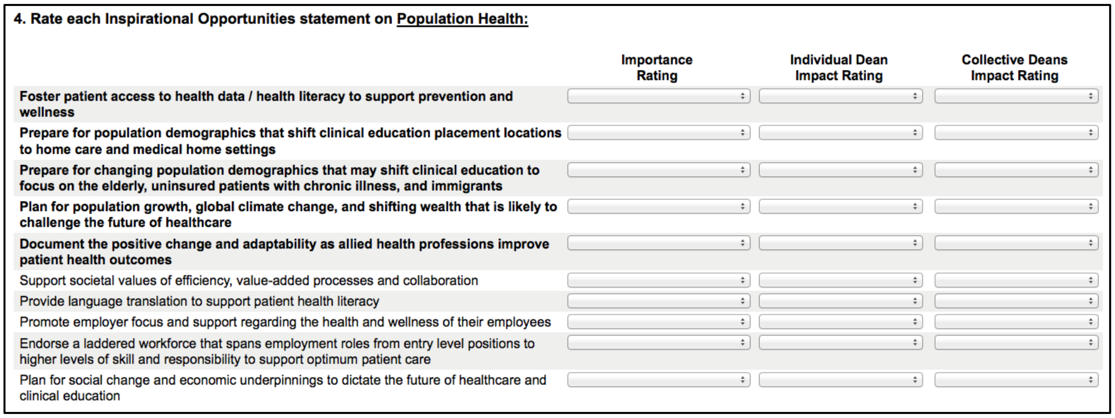
2. Rate each Inspirational Opportunities statement on <u>Higher Education Healthcare Institutions:</u>

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Develop collaborative partnerships among key stakeholders to achieve excellence in patient care and clinical education outcomes			
Evaluate the impact of an inspirational healthcare environment on the rapid rise of health professions programs			
Establish collaborative practices between domestic and international higher education healthcare institutions			
Communicate the overall positive return on investment of student clinical training to key stakeholders, e.g., higher education healthcare institutions, clinical placement locations, clinical faculty, and students			
Plan for the growth in the number of PhD programs that will accommodate an increase in clinical faculty			
Admit allied health students, especially under-represented students, who have strong academic and clinical preparation			
Illustrate institutional commitment to student clinical training and graduate employment placement			
Utilize international collaborations, interprofessional experiences and technology-enhanced clinical education to keep up with higher education healthcare excellence			
Define what 'novel programs' are needed to address workforce gaps			
Address changes in higher education and new models for delivering curricula			
Capitalize on the abundance of financial resources to support quality clinical education experiences with an abundance of clinical placement locations, well prepared clinical faculty and quality students			
Staff higher education healthcare institutions with creative leaders			
Calculate for-profit or aggressive non-profit institutional advantages of using increased student enrollment to generate tuition revenues			
Develop articulation agreements between healthcare institutions and businesses			
Plan for a normalization in the numbers of various health care professions			
Promote the prestige of allied health and a professional healthcare career			
Support a national allied health university collaborative to retain a suitable number of seats for the respective allied health programs			



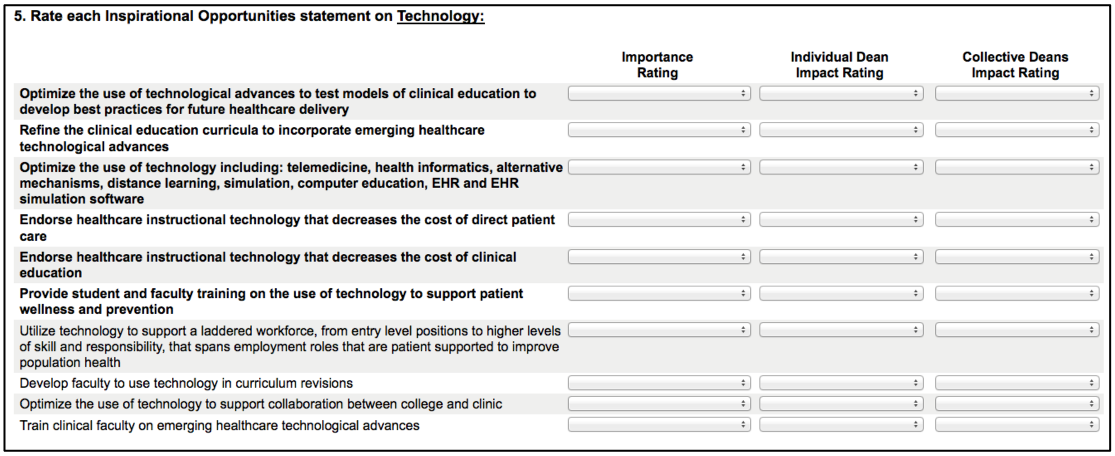
3. Rate each Inspirational Opportunities statement on Regulation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Support federal, state, and local government policies that reinforce quality clinical education at reduced cost			
Effectively manage changes in healthcare regulation resulting from government collaboration			
Effectively manage changes in clinical education regulation resulting government collaboration			
Work with regulatory bodies to address fee for service issues in clinical education			
Work with regulatory bodies to address reimbursement in clinical education			
Plan that the current level of national debt may negatively impact funding of clinical education initiatives			
Effectively manage government funds directed to allied health clinical education opportunities			
Lobby for federal support of a Medicare pass thru for allied health professionals to assist with clinical education costs			
Support healthcare fraud and abuse initiatives that could designate recaptured revenues to fund healthcare educational expenditures, including clinical education			
Promote revision of state regulations on the role of licensing to allow for expanded clinical education			
Lobby for access to clinical education that is not be restricted by state boundaries or payment requirements			
Promote revision of state regulations on the role of licensing to enhance patient access to care			
Remove artificial barriers limiting scope of practice based on education			
Support healthcare regulation, like in some countries, that permits rehabilitation professionals to perform individual OT and PT care to increase patient access to quality care			
Establish the role private payors and insurance have in healthcare training and clinical education			
Create an allied health legislative voice in healthcare regulatory discussions			
Convince key stakeholders that health innovation, quality patient care, and excellence in healthcare education and clinical training is as a national priority			
Monitor the impact of the Affordable Care Act (ACA) on healthcare and healthcare education			
Assess how state refusal to participate in the Affordable Care Act (ACA) Medicare/Medicaid expansion may impact clinical education			



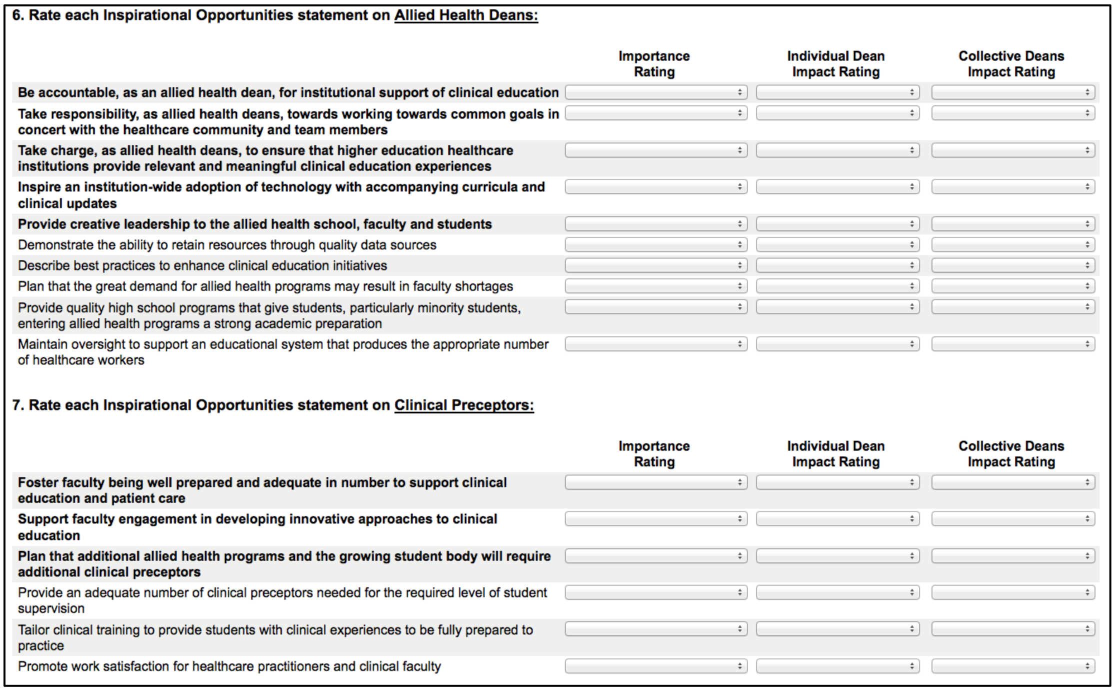
4. Rate each Inspirational Opportunities statement on Population Health:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Foster patient access to health data / health literacy to support prevention and wellness			
Prepare for population demographics that shift clinical education placement locations to home care and medical home settings			
Prepare for changing population demographics that may shift clinical education to focus on the elderly, uninsured patients with chronic illness, and immigrants			
Plan for population growth, global climate change, and shifting wealth that is likely to challenge the future of healthcare			
Document the positive change and adaptability as allied health professions improve patient health outcomes			
Support societal values of efficiency, value-added processes and collaboration			
Provide language translation to support patient health literacy			
Promote employer focus and support regarding the health and wellness of their employees			
Endorse a laddered workforce that spans employment roles from entry level positions to higher levels of skill and responsibility to support optimum patient care			
Plan for social change and economic underpinnings to dictate the future of healthcare and clinical education			



5. Rate each Inspirational Opportunities statement on Technology:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Optimize the use of technological advances to test models of clinical education to develop best practices for future healthcare delivery			
Refine the clinical education curricula to incorporate emerging healthcare technological advances			
Optimize the use of technology including: telemedicine, health informatics, alternative mechanisms, distance learning, simulation, computer education, EHR and EHR simulation software			
Endorse healthcare instructional technology that decreases the cost of direct patient care			
Endorse healthcare instructional technology that decreases the cost of clinical education			
Provide student and faculty training on the use of technology to support patient wellness and prevention			
Utilize technology to support a laddered workforce, from entry level positions to higher levels of skill and responsibility, that spans employment roles that are patient supported to improve population health			
Develop faculty to use technology in curriculum revisions			
Optimize the use of technology to support collaboration between college and clinic			
Train clinical faculty on emerging healthcare technological advances			

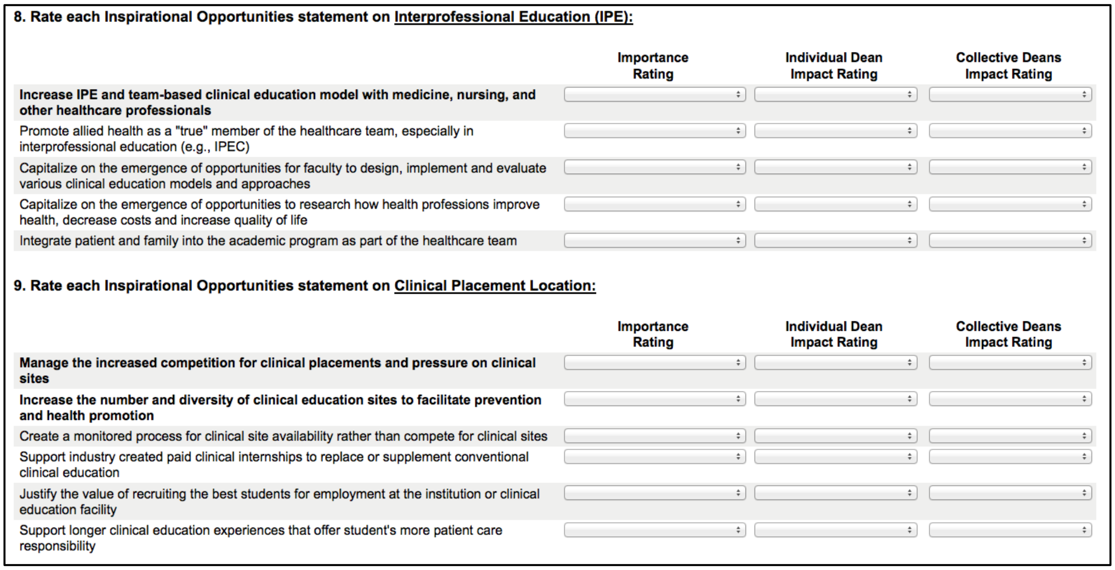


6. Rate each Inspirational Opportunities statement on Allied Health Deans:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Be accountable, as an allied health dean, for institutional support of clinical education			
Take responsibility, as allied health deans, towards working towards common goals in concert with the healthcare community and team members			
Take charge, as allied health deans, to ensure that higher education healthcare institutions provide relevant and meaningful clinical education experiences			
Inspire an institution-wide adoption of technology with accompanying curricula and clinical updates			
Provide creative leadership to the allied health school, faculty and students			
Demonstrate the ability to retain resources through quality data sources			
Describe best practices to enhance clinical education initiatives			
Plan that the great demand for allied health programs may result in faculty shortages			
Provide quality high school programs that give students, particularly minority students, entering allied health programs a strong academic preparation			
Maintain oversight to support an educational system that produces the appropriate number of healthcare workers			

7. Rate each Inspirational Opportunities statement on Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Foster faculty being well prepared and adequate in number to support clinical education and patient care			
Support faculty engagement in developing innovative approaches to clinical education			
Plan that additional allied health programs and the growing student body will require additional clinical preceptors			
Provide an adequate number of clinical preceptors needed for the required level of student supervision			
Tailor clinical training to provide students with clinical experiences to be fully prepared to practice			
Promote work satisfaction for healthcare practitioners and clinical faculty			

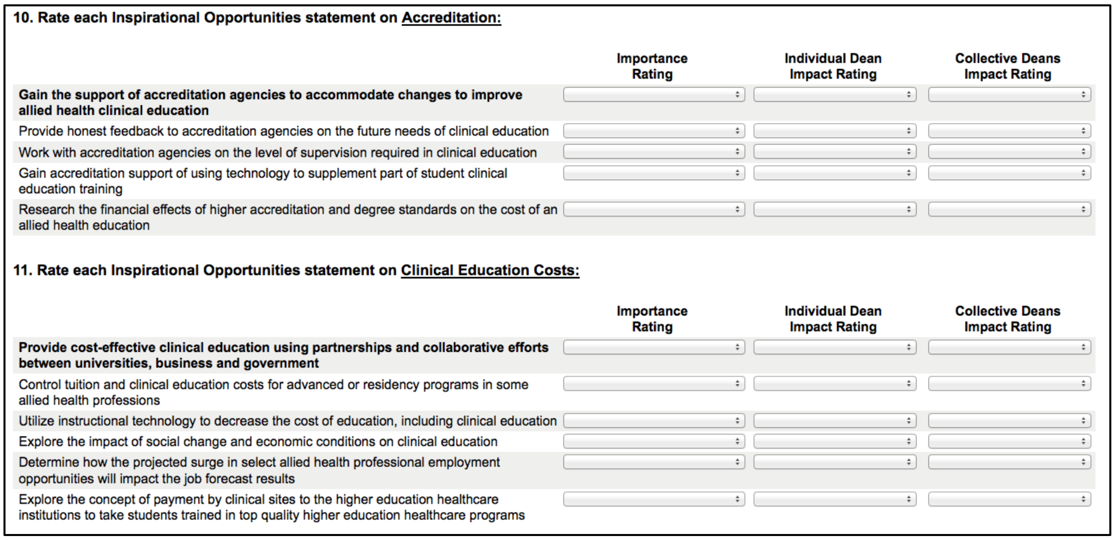


8. Rate each Inspirational Opportunities statement on Interprofessional Education (IPE):

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Increase IPE and team-based clinical education model with medicine, nursing, and other healthcare professionals			
Promote allied health as a "true" member of the healthcare team, especially in interprofessional education (e.g., IPEC)			
Capitalize on the emergence of opportunities for faculty to design, implement and evaluate various clinical education models and approaches			
Capitalize on the emergence of opportunities to research how health professions improve health, decrease costs and increase quality of life			
Integrate patient and family into the academic program as part of the healthcare team			

9. Rate each Inspirational Opportunities statement on Clinical Placement Location:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Manage the increased competition for clinical placements and pressure on clinical sites			
Increase the number and diversity of clinical education sites to facilitate prevention and health promotion			
Create a monitored process for clinical site availability rather than compete for clinical sites			
Support industry created paid clinical internships to replace or supplement conventional clinical education			
Justify the value of recruiting the best students for employment at the institution or clinical education facility			
Support longer clinical education experiences that offer student's more patient care responsibility			

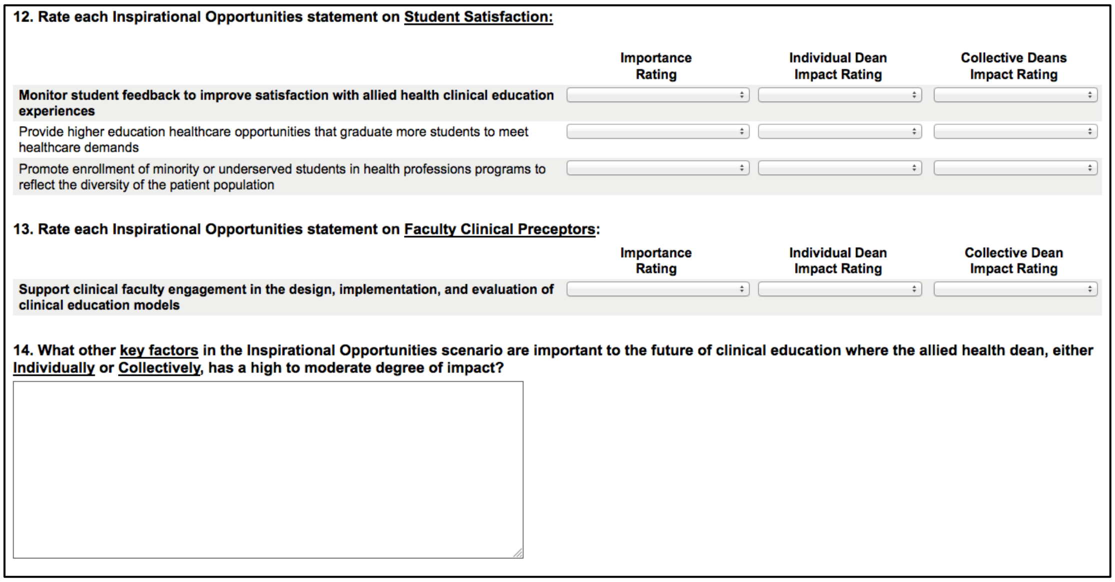


10. Rate each Inspirational Opportunities statement on Accreditation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Gain the support of accreditation agencies to accommodate changes to improve allied health clinical education			
Provide honest feedback to accreditation agencies on the future needs of clinical education			
Work with accreditation agencies on the level of supervision required in clinical education			
Gain accreditation support of using technology to supplement part of student clinical education training			
Research the financial effects of higher accreditation and degree standards on the cost of an allied health education			

11. Rate each Inspirational Opportunities statement on Clinical Education Costs:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Provide cost-effective clinical education using partnerships and collaborative efforts between universities, business and government			
Control tuition and clinical education costs for advanced or residency programs in some allied health professions			
Utilize instructional technology to decrease the cost of education, including clinical education			
Explore the impact of social change and economic conditions on clinical education			
Determine how the projected surge in select allied health professional employment opportunities will impact the job forecast results			
Explore the concept of payment by clinical sites to the higher education healthcare institutions to take students trained in top quality higher education healthcare programs			



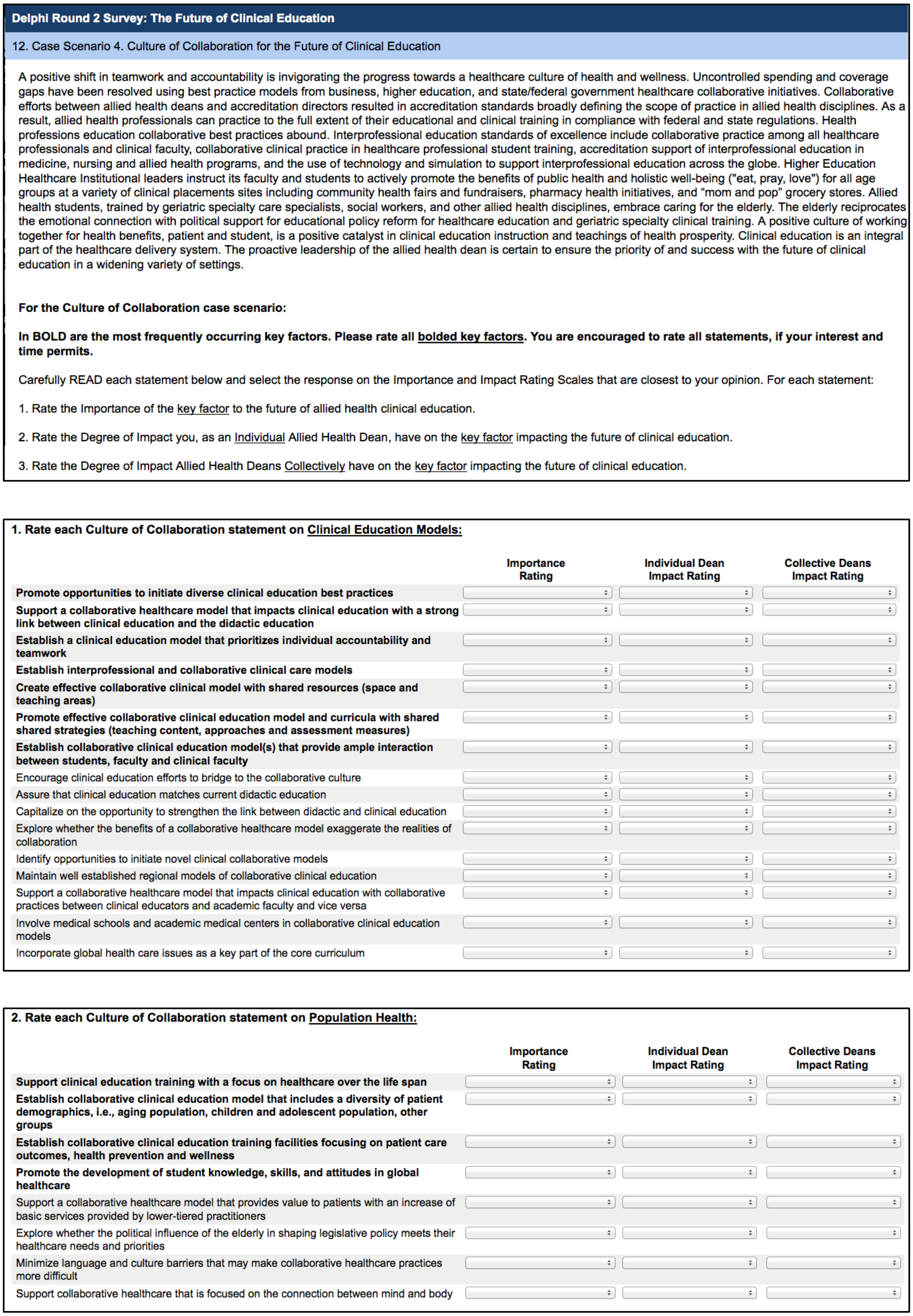
12. Rate each Inspirational Opportunities statement on Student Satisfaction:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Monitor student feedback to improve satisfaction with allied health clinical education experiences			
Provide higher education healthcare opportunities that graduate more students to meet healthcare demands			
Promote enrollment of minority or underserved students in health professions programs to reflect the diversity of the patient population			

13. Rate each Inspirational Opportunities statement on Faculty Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Dean Impact Rating
Support clinical faculty engagement in the design, implementation, and evaluation of clinical education models			

14. What other key factors in the Inspirational Opportunities scenario are important to the future of clinical education where the allied health dean, either Individually or Collectively, has a high to moderate degree of impact?



Delphi Round 2 Survey: The Future of Clinical Education

12. Case Scenario 4. Culture of Collaboration for the Future of Clinical Education

A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Collaborative efforts between allied health deans and accreditation directors resulted in accreditation standards broadly defining the scope of practice in allied health disciplines. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. Health professions education collaborative best practices abound. Interprofessional education standards of excellence include collaborative practice among all healthcare professionals and clinical faculty, collaborative clinical practice in healthcare professional student training, accreditation support of interprofessional education in medicine, nursing and allied health programs, and the use of technology and simulation to support interprofessional education across the globe. Higher Education Healthcare Institutional leaders instruct its faculty and students to actively promote the benefits of public health and holistic well-being ("eat, pray, love") for all age groups at a variety of clinical placements sites including community health fairs and fundraisers, pharmacy health initiatives, and "mom and pop" grocery stores. Allied health students, trained by geriatric specialty care specialists, social workers, and other allied health disciplines, embrace caring for the elderly. The elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and geriatric specialty clinical training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future of clinical education in a widening variety of settings.

For the Culture of Collaboration case scenario:

In BOLD are the most frequently occurring key factors. Please rate all bolded key factors. You are encouraged to rate all statements, if your interest and time permits.

Carefully READ each statement below and select the response on the Importance and Impact Rating Scales that are closest to your opinion. For each statement:

1. Rate the Importance of the key factor to the future of allied health clinical education.

2. Rate the Degree of Impact you, as an Individual Allied Health Dean, have on the key factor impacting the future of clinical education.

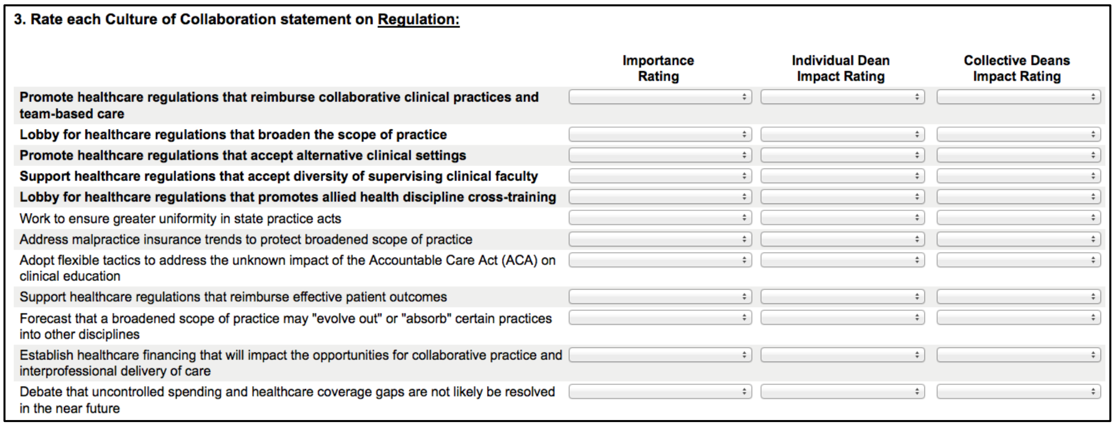
3. Rate the Degree of Impact Allied Health Deans Collectively have on the key factor impacting the future of clinical education.

1. Rate each Culture of Collaboration statement on Clinical Education Models:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Promote opportunities to initiate diverse clinical education best practices			
Support a collaborative healthcare model that impacts clinical education with a strong link between clinical education and the didactic education			
Establish a clinical education model that prioritizes individual accountability and teamwork			
Establish interprofessional and collaborative clinical care models			
Create effective collaborative clinical model with shared resources (space and teaching areas)			
Promote effective collaborative clinical education model and curricula with shared shared strategies (teaching content, approaches and assessment measures)			
Establish collaborative clinical education model(s) that provide ample interaction between students, faculty and clinical faculty			
Encourage clinical education efforts to bridge to the collaborative culture			
Assure that clinical education matches current didactic education			
Capitalize on the opportunity to strengthen the link between didactic and clinical education			
Explore whether the benefits of a collaborative healthcare model exaggerate the realities of collaboration			
Identify opportunities to initiate novel clinical collaborative models			
Maintain well established regional models of collaborative clinical education			
Support a collaborative healthcare model that impacts clinical education with collaborative practices between clinical educators and academic faculty and vice versa			
Involve medical schools and academic medical centers in collaborative clinical education models			
Incorporate global health care issues as a key part of the core curriculum			

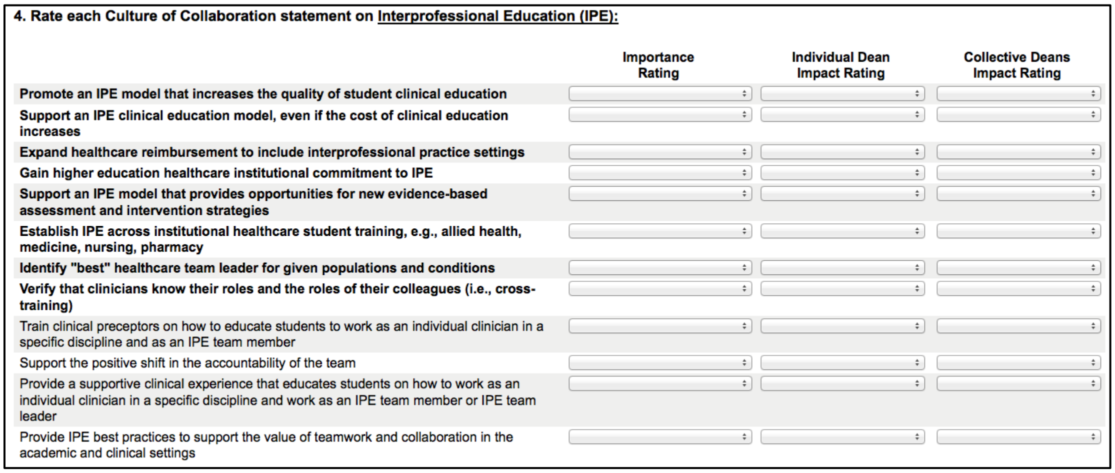
2. Rate each Culture of Collaboration statement on Population Health:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Support clinical education training with a focus on healthcare over the life span			
Establish collaborative clinical education model that includes a diversity of patient demographics, i.e., aging population, children and adolescent population, other groups			
Establish collaborative clinical education training facilities focusing on patient care outcomes, health prevention and wellness			
Promote the development of student knowledge, skills, and attitudes in global healthcare			
Support a collaborative healthcare model that provides value to patients with an increase of basic services provided by lower-tiered practitioners			
Explore whether the political influence of the elderly in shaping legislative policy meets their healthcare needs and priorities			
Minimize language and culture barriers that may make collaborative healthcare practices more difficult			
Support collaborative healthcare that is focused on the connection between mind and body			



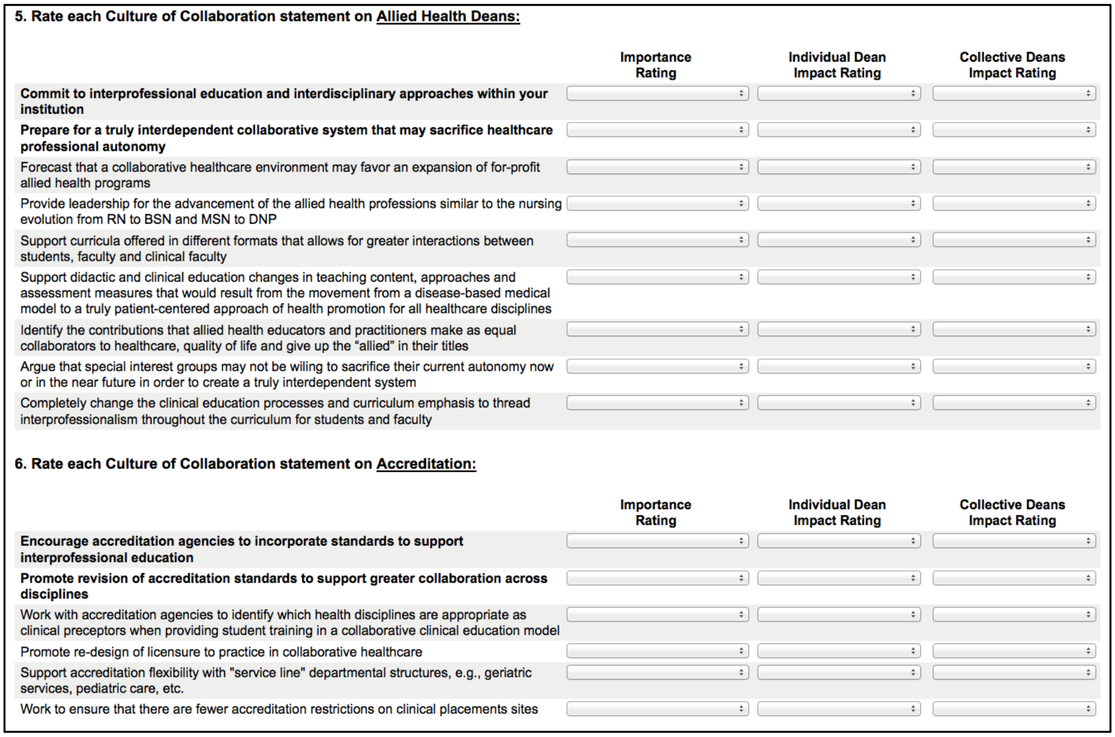
3. Rate each Culture of Collaboration statement on Regulation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Promote healthcare regulations that reimburse collaborative clinical practices and team-based care			
Lobby for healthcare regulations that broaden the scope of practice			
Promote healthcare regulations that accept alternative clinical settings			
Support healthcare regulations that accept diversity of supervising clinical faculty			
Lobby for healthcare regulations that promotes allied health discipline cross-training			
Work to ensure greater uniformity in state practice acts			
Address malpractice insurance trends to protect broadened scope of practice			
Adopt flexible tactics to address the unknown impact of the Accountable Care Act (ACA) on clinical education			
Support healthcare regulations that reimburse effective patient outcomes			
Forecast that a broadened scope of practice may "evolve out" or "absorb" certain practices into other disciplines			
Establish healthcare financing that will impact the opportunities for collaborative practice and interprofessional delivery of care			
Debate that uncontrolled spending and healthcare coverage gaps are not likely be resolved in the near future			



4. Rate each Culture of Collaboration statement on Interprofessional Education (IPE):

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Promote an IPE model that increases the quality of student clinical education			
Support an IPE clinical education model, even if the cost of clinical education increases			
Expand healthcare reimbursement to include interprofessional practice settings			
Gain higher education healthcare institutional commitment to IPE			
Support an IPE model that provides opportunities for new evidence-based assessment and intervention strategies			
Establish IPE across institutional healthcare student training, e.g., allied health, medicine, nursing, pharmacy			
Identify "best" healthcare team leader for given populations and conditions			
Verify that clinicians know their roles and the roles of their colleagues (i.e., cross-training)			
Train clinical preceptors on how to educate students to work as an individual clinician in a specific discipline and as an IPE team member			
Support the positive shift in the accountability of the team			
Provide a supportive clinical experience that educates students on how to work as an individual clinician in a specific discipline and work as an IPE team member or IPE team leader			
Provide IPE best practices to support the value of teamwork and collaboration in the academic and clinical settings			

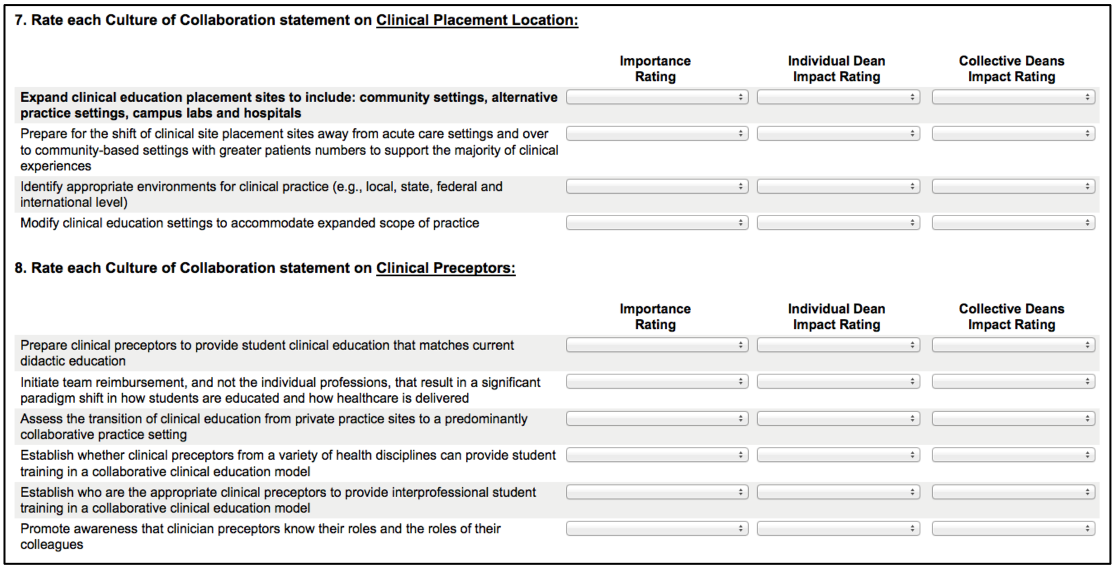


5. Rate each Culture of Collaboration statement on Allied Health Deans:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Commit to interprofessional education and interdisciplinary approaches within your institution			
Prepare for a truly interdependent collaborative system that may sacrifice healthcare professional autonomy			
Forecast that a collaborative healthcare environment may favor an expansion of for-profit allied health programs			
Provide leadership for the advancement of the allied health professions similar to the nursing evolution from RN to BSN and MSN to DNP			
Support curricula offered in different formats that allows for greater interactions between students, faculty and clinical faculty			
Support didactic and clinical education changes in teaching content, approaches and assessment measures that would result from the movement from a disease-based medical model to a truly patient-centered approach of health promotion for all healthcare disciplines			
Identify the contributions that allied health educators and practitioners make as equal collaborators to healthcare, quality of life and give up the "allied" in their titles			
Argue that special interest groups may not be wiling to sacrifice their current autonomy now or in the near future in order to create a truly interdependent system			
Completely change the clinical education processes and curriculum emphasis to thread interprofessionalism throughout the curriculum for students and faculty			

6. Rate each Culture of Collaboration statement on Accreditation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Encourage accreditation agencies to incorporate standards to support interprofessional education			
Promote revision of accreditation standards to support greater collaboration across disciplines			
Work with accreditation agencies to identify which health disciplines are appropriate as clinical preceptors when providing student training in a collaborative clinical education model			
Promote re-design of licensure to practice in collaborative healthcare			
Support accreditation flexibility with "service line" departmental structures, e.g., geriatric services, pediatric care, etc.			
Work to ensure that there are fewer accreditation restrictions on clinical placements sites			

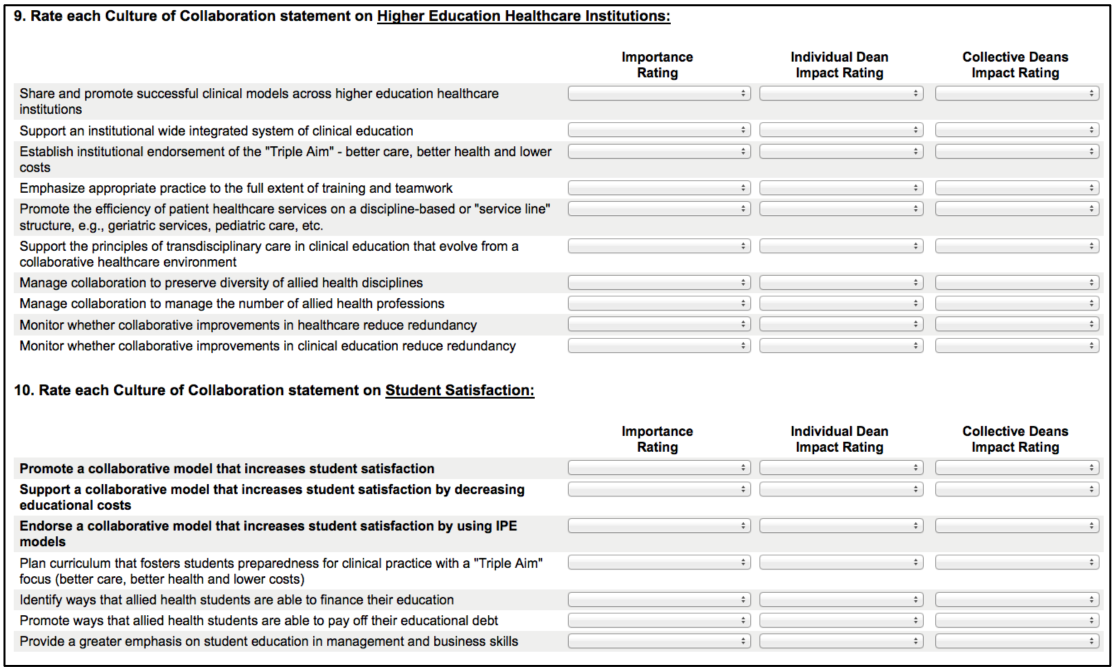


7. Rate each Culture of Collaboration statement on Clinical Placement Location:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Expand clinical education placement sites to include: community settings, alternative practice settings, campus labs and hospitals			
Prepare for the shift of clinical site placement sites away from acute care settings and over to community-based settings with greater patients numbers to support the majority of clinical experiences			
Identify appropriate environments for clinical practice (e.g., local, state, federal and international level)			
Modify clinical education settings to accommodate expanded scope of practice			

8. Rate each Culture of Collaboration statement on Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Prepare clinical preceptors to provide student clinical education that matches current didactic education			
Initiate team reimbursement, and not the individual professions, that result in a significant paradigm shift in how students are educated and how healthcare is delivered			
Assess the transition of clinical education from private practice sites to a predominantly collaborative practice setting			
Establish whether clinical preceptors from a variety of health disciplines can provide student training in a collaborative clinical education model			
Establish who are the appropriate clinical preceptors to provide interprofessional student training in a collaborative clinical education model			
Promote awareness that clinician preceptors know their roles and the roles of their colleagues			

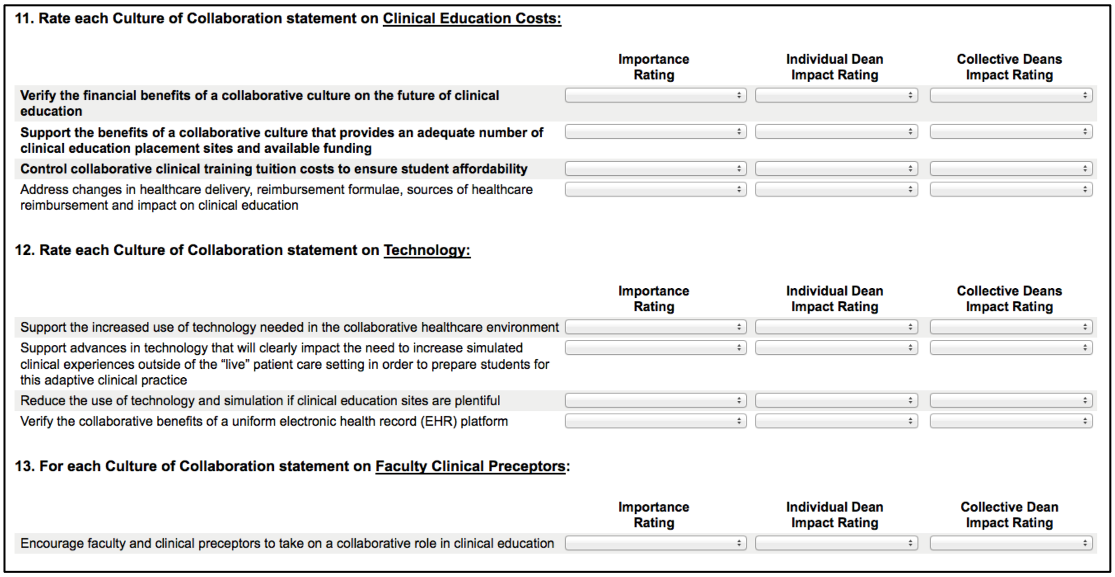


9. Rate each Culture of Collaboration statement on Higher Education Healthcare Institutions:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Share and promote successful clinical models across higher education healthcare institutions			
Support an institutional wide integrated system of clinical education			
Establish institutional endorsement of the "Triple Aim" - better care, better health and lower costs			
Emphasize appropriate practice to the full extent of training and teamwork			
Promote the efficiency of patient healthcare services on a discipline-based or "service line" structure, e.g., geriatric services, pediatric care, etc.			
Support the principles of transdisciplinary care in clinical education that evolve from a collaborative healthcare environment			
Manage collaboration to preserve diversity of allied health disciplines			
Manage collaboration to manage the number of allied health professions			
Monitor whether collaborative improvements in healthcare reduce redundancy			
Monitor whether collaborative improvements in clinical education reduce redundancy			

10. Rate each Culture of Collaboration statement on Student Satisfaction:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Promote a collaborative model that increases student satisfaction			
Support a collaborative model that increases student satisfaction by decreasing educational costs			
Endorse a collaborative model that increases student satisfaction by using IPE models			
Plan curriculum that fosters students preparedness for clinical practice with a "Triple Aim" focus (better care, better health and lower costs)			
Identify ways that allied health students are able to finance their education			
Promote ways that allied health students are able to pay off their educational debt			
Provide a greater emphasis on student education in management and business skills			



11. Rate each Culture of Collaboration statement on Clinical Education Costs:

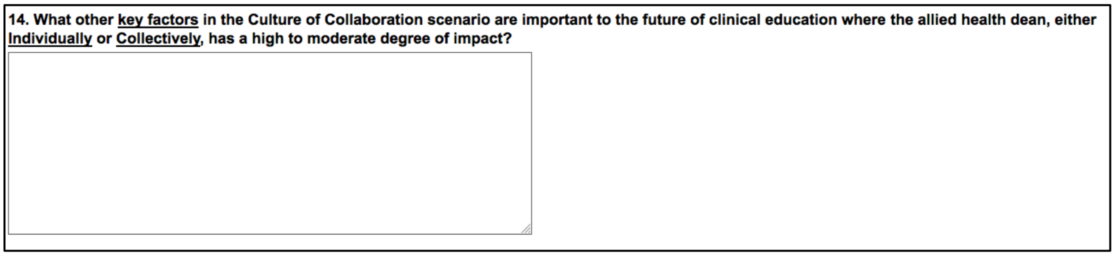
	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Verify the financial benefits of a collaborative culture on the future of clinical education			
Support the benefits of a collaborative culture that provides an adequate number of clinical education placement sites and available funding			
Control collaborative clinical training tuition costs to ensure student affordability			
Address changes in healthcare delivery, reimbursement formulae, sources of healthcare reimbursement and impact on clinical education			

12. Rate each Culture of Collaboration statement on Technology:

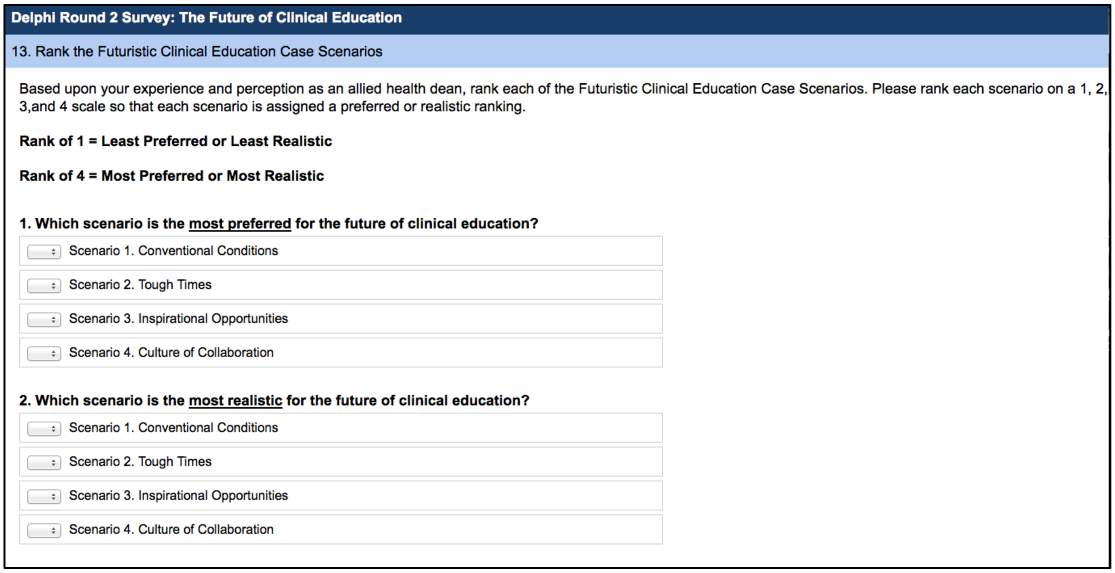
	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Support the increased use of technology needed in the collaborative healthcare environment			
Support advances in technology that will clearly impact the need to increase simulated clinical experiences outside of the “live” patient care setting in order to prepare students for this adaptive clinical practice			
Reduce the use of technology and simulation if clinical education sites are plentiful			
Verify the collaborative benefits of a uniform electronic health record (EHR) platform			

13. For each Culture of Collaboration statement on Faculty Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Dean Impact Rating
Encourage faculty and clinical preceptors to take on a collaborative role in clinical education			



14. What other key factors in the Culture of Collaboration scenario are important to the future of clinical education where the allied health dean, either Individually or Collectively, has a high to moderate degree of impact?



Delphi Round 2 Survey: The Future of Clinical Education

13. Rank the Futuristic Clinical Education Case Scenarios

Based upon your experience and perception as an allied health dean, rank each of the Futuristic Clinical Education Case Scenarios. Please rank each scenario on a 1, 2, 3,and 4 scale so that each scenario is assigned a preferred or realistic ranking.

Rank of 1 = Least Preferred or Least Realistic

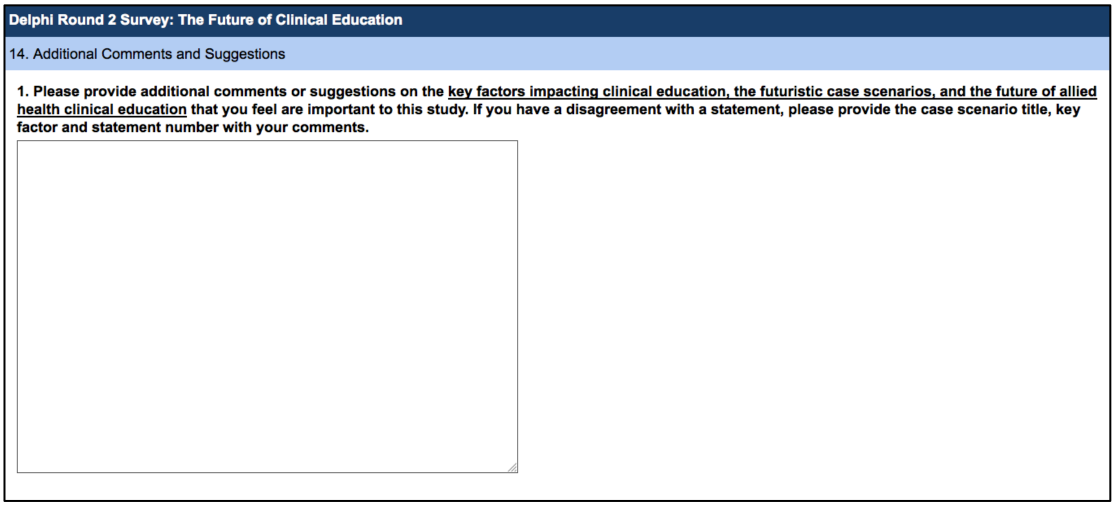
Rank of 4 = Most Preferred or Most Realistic

1. Which scenario is the most preferred for the future of clinical education?

Scenario 1. Conventional Conditions
Scenario 2. Tough Times
Scenario 3. Inspirational Opportunities
Scenario 4. Culture of Collaboration

2. Which scenario is the most realistic for the future of clinical education?

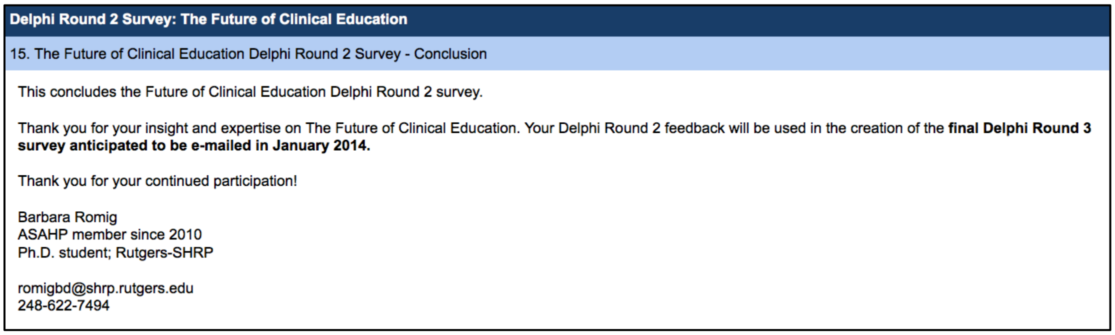
Scenario 1. Conventional Conditions
Scenario 2. Tough Times
Scenario 3. Inspirational Opportunities
Scenario 4. Culture of Collaboration



Delphi Round 2 Survey: The Future of Clinical Education

14. Additional Comments and Suggestions

1. Please provide additional comments or suggestions on the <u>key factors impacting clinical education, the futuristic case scenarios, and the future of allied health clinical education</u> that you feel are important to this study. If you have a disagreement with a statement, please provide the case scenario title, key factor and statement number with your comments.



Delphi Round 2 Survey: The Future of Clinical Education

15. The Future of Clinical Education Delphi Round 2 Survey - Conclusion

This concludes the Future of Clinical Education Delphi Round 2 survey.

Thank you for your insight and expertise on The Future of Clinical Education. Your Delphi Round 2 feedback will be used in the creation of the **final Delphi Round 3 survey anticipated to be e-mailed in January 2014.**

Thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

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248-622-7494

Appendix OO

Round 2 Survey Cover Letter

RUTGERS
School of Health Related Professions

DELPHI ROUND 2 SURVEY COVER LETTER

Including the Delphi Round 2 Survey with Instructions, Definitions, and Futuristic Case Scenarios

November 22, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Thank you for your continued participation in the Delphi study on The Future of Clinical Education! This study is designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education. This is a critical step to ensure optimum student education in the future.

Your involvement provides much needed insight and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future.

This is Round 2 of the Delphi Research. I am pleased to report that the Delphi Round 1 Survey response rate was 83.61% (51 of 61 Allied Health Deans who agreed to participate did). The Delphi Round 2 survey has been developed from your Delphi Round 1 survey ratings, comments and feedback. Please review the comments and feedback from the Delphi Round 1 survey which is provided to you in a separate SurveyMonkey link and PDF.

Now, please complete the Delphi Round 2 survey using the following SurveyMonkey link.

You may continue to save and enter your comments until Monday, December 23, 2013.

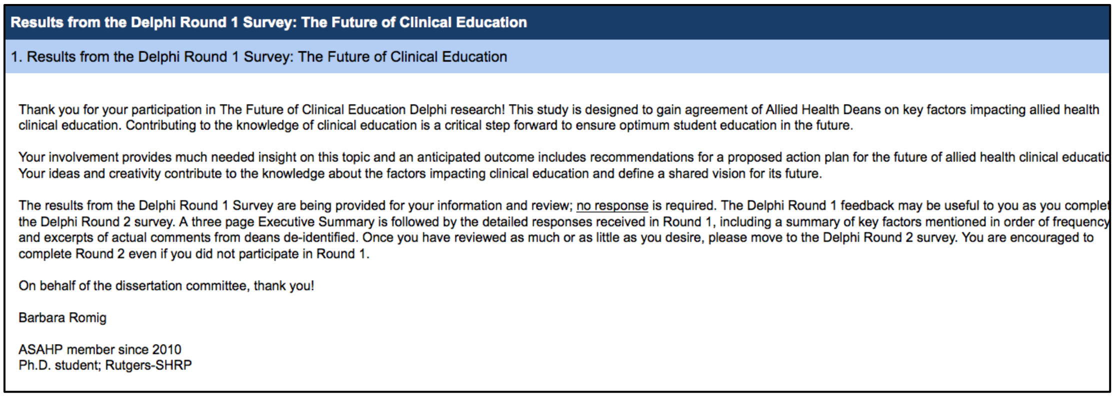
Note: you may complete Delphi Round 2 survey even if you did not complete the Delphi Round 1 survey.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

Appendix PP

Round 1 Survey Results



Results from the Delphi Round 1 Survey: The Future of Clinical Education

1. Results from the Delphi Round 1 Survey: The Future of Clinical Education

Thank you for your participation in The Future of Clinical Education Delphi research! This study is designed to gain agreement of Allied Health Deans on key factors impacting allied health clinical education. Contributing to the knowledge of clinical education is a critical step forward to ensure optimum student education in the future.

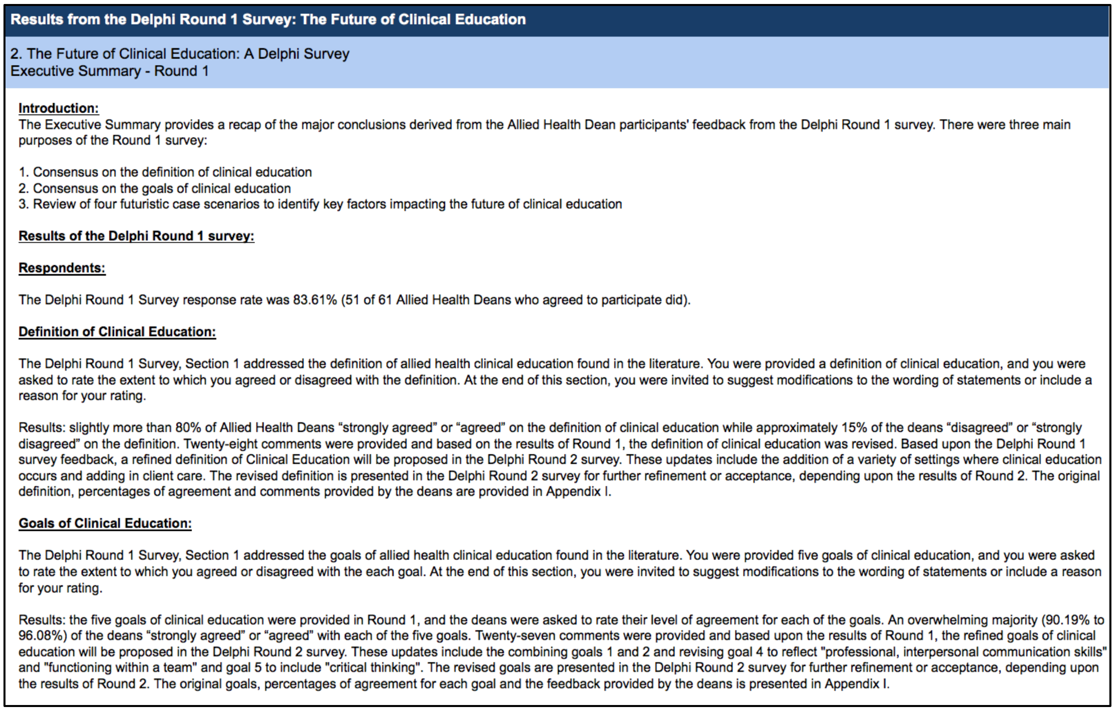
Your involvement provides much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical educatio Your ideas and creativity contribute to the knowledge about the factors impacting clinical education and define a shared vision for its future.

The results from the Delphi Round 1 Survey are being provided for your information and review; no response is required. The Delphi Round 1 feedback may be useful to you as you complet the Delphi Round 2 survey. A three page Executive Summary is followed by the detailed responses received in Round 1, including a summary of key factors mentioned in order of frequency and excerpts of actual comments from deans de-identified. Once you have reviewed as much or as little as you desire, please move to the Delphi Round 2 survey. You are encouraged to complete Round 2 even if you did not participate in Round 1.

On behalf of the dissertation committee, thank you!

Barbara Romig

ASAHP member since 2010
Ph.D. student; Rutgers-SHRP



Results from the Delphi Round 1 Survey: The Future of Clinical Education

2. The Future of Clinical Education: A Delphi Survey
Executive Summary - Round 1

Introduction:
The Executive Summary provides a recap of the major conclusions derived from the Allied Health Dean participants' feedback from the Delphi Round 1 survey. There were three main purposes of the Round 1 survey:

1. Consensus on the definition of clinical education
2. Consensus on the goals of clinical education
3. Review of four futuristic case scenarios to identify key factors impacting the future of clinical education

Results of the Delphi Round 1 survey:

Respondents:

The Delphi Round 1 Survey response rate was 83.61% (51 of 61 Allied Health Deans who agreed to participate did).

Definition of Clinical Education:

The Delphi Round 1 Survey, Section 1 addressed the definition of allied health clinical education found in the literature. You were provided a definition of clinical education, and you were asked to rate the extent to which you agreed or disagreed with the definition. At the end of this section, you were invited to suggest modifications to the wording of statements or include a reason for your rating.

Results: slightly more than 80% of Allied Health Deans “strongly agreed” or “agreed” on the definition of clinical education while approximately 15% of the deans “disagreed” or “strongly disagreed” on the definition. Twenty-eight comments were provided and based on the results of Round 1, the definition of clinical education was revised. Based upon the Delphi Round 1 survey feedback, a refined definition of Clinical Education will be proposed in the Delphi Round 2 survey. These updates include the addition of a variety of settings where clinical education occurs and adding in client care. The revised definition is presented in the Delphi Round 2 survey for further refinement or acceptance, depending upon the results of Round 2. The original definition, percentages of agreement and comments provided by the deans are provided in Appendix I.

Goals of Clinical Education:

The Delphi Round 1 Survey, Section 1 addressed the goals of allied health clinical education found in the literature. You were provided five goals of clinical education, and you were asked to rate the extent to which you agreed or disagreed with the each goal. At the end of this section, you were invited to suggest modifications to the wording of statements or include a reason for your rating.

Results: the five goals of clinical education were provided in Round 1, and the deans were asked to rate their level of agreement for each of the goals. An overwhelming majority (90.19% to 96.08%) of the deans “strongly agreed” or “agreed” with each of the five goals. Twenty-seven comments were provided and based upon the results of Round 1, the refined goals of clinical education will be proposed in the Delphi Round 2 survey. These updates include the combining goals 1 and 2 and revising goal 4 to reflect "professional, interpersonal communication skills" and "functioning within a team" and goal 5 to include "critical thinking". The revised goals are presented in the Delphi Round 2 survey for further refinement or acceptance, depending upon the results of Round 2. The original goals, percentages of agreement for each goal and the feedback provided by the deans is presented in Appendix I.

Results from the Delphi Round 1 Survey: The Future of Clinical Education

3. Executive Summary: Results of the Delphi Round 1 Survey (continued)

Allied Health Dean Responses from Futuristic Case Scenarios:

The deans were asked to read four futuristic case scenarios:

Conventional Conditions
Tough Times
Inspirational Opportunities
Culture of Collaboration

Following the review of each case, the deans were asked to:

1. Identify key factors impacting each scenario
2. Suggest additional key factors that may have not been included in the scenario
3. Explain what is not explained or is seen as incorrect in the scenario

For each of the four futuristic case scenarios, the comments provided from allied health dean feedback were coded by key factors impacting clinical education. The key factors identified most frequently across all four futuristic case scenarios were:

#1. Clinical Education Models; N=138
#2. Regulation; N=129
#3. Higher Education Healthcare Institutions; N=127
#4. Clinical Placement Location; N=115
#5. Population Health; N=100

However, other themes such as: accreditation, clinical preceptors, clinical education placement, for example, emerged as key factors in these scenarios. All major themes and the number of responses for each futuristic scenario are provided in Table 4 in Appendix II.

A detailed analysis of each futuristic case scenario revealed the following:

Scenario 1. Conventional Conditions:
The key factors identified most frequently in the Conventional Conditions scenario were:

#1. Clinical Placement Location; N=66
#2. Regulation; N=42
#3. Clinical Education Models; N=41
#4. Higher Education Healthcare Institutions; N=40
#5. Technology; N=33

Other themes such as: clinical preceptors, population health, interprofessional education and accreditation, for example, emerged as key factors in this scenario. All major themes and the number of responses for this case scenario are provided in the Conventional Conditions section, Tables 1 through 13, in Appendix II.

Scenario 2. Tough Times:
The key factors identified most frequently in the Tough Times scenario were:

#1. Higher Education Healthcare Institutions N=40
#2. Regulation; N=35
#3. Clinical Placement Location; N=27
#4. Clinical Education Model: N=25

Other themes such as: population health, student satisfaction, technology and allied health deans emerged as key factors in this scenario. All major themes and the number of responses for this case scenario are provided in the Tough Times section, Tables 1 through 13, in Appendix II.

Scenario 3. Inspirational Opportunities:
The key factors identified most frequently in the Inspirational Opportunities scenario were:

#1. Clinical Education Model; N=39
#2. Higher Education Healthcare Institutions; N=38
#3. Regulation; N=30
#4. Population Health; N=25

Other themes such as: technology, allied health deans, clinical preceptors and interprofessional education emerged as key factors in this scenario. All major themes and the number of responses for this case scenario are provided in the Inspirational Opportunities section, Tables 1 through 13, in Appendix II.

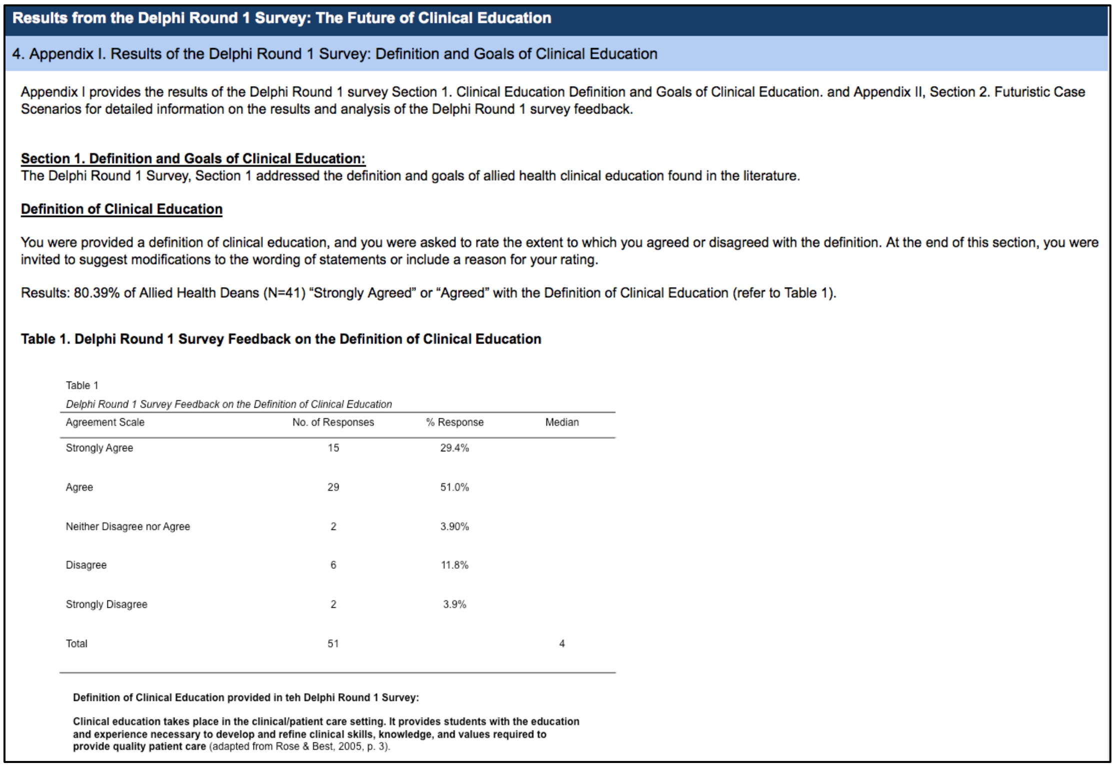
Scenario 4. Culture of Collaboration:
The key factors identified most frequently in the Culture of Collaboration scenario were:

#1. Clinical Education Model; N=33
#2. Population Health; N=31
#3. Regulation; N=22
#4. Interprofessional Education; N=17

Other themes such as: allied health deans, accreditation, clinical placement location and clinical preceptors emerged as key factors in this scenario. All major themes and the number of responses for this case scenario are provided in the Culture of Collaboration section, Tables 1 through 13, in Appendix II.

Conclusion:

The results from the Delphi Round 1 Survey, Section 1 show that the majority of Allied Health Deans "strongly agreed" or "agreed" on the definition of clinical education and with each of the five goals of clinical education. The original definition and goals of clinical education, percentages of agreement for the definition and goals and dean feedback is presented in Appendix I. The results from the Delphi Round 1 Survey, Section 2 futuristic case scenarios (Conventional Conditions, Tough Times, Inspirational Opportunities and Culture of Collaboration) show that Allied Health Deans identified several key factors impacting clinical education including: clinical education models, regulation, higher education healthcare institutions, clinical placement location and population health. Other themes such as: accreditation, clinical preceptors, clinical education placement emerged as key factors in these scenarios. Please refer to Appendix II for general scenario comments, select excerpts taken directly from allied health dean feedback and the coding of key factors for each case scenario.



Results from the Delphi Round 1 Survey: The Future of Clinical Education

4. Appendix I. Results of the Delphi Round 1 Survey: Definition and Goals of Clinical Education

Appendix I provides the results of the Delphi Round 1 survey Section 1. Clinical Education Definition and Goals of Clinical Education. and Appendix II, Section 2. Futuristic Case Scenarios for detailed information on the results and analysis of the Delphi Round 1 survey feedback.

Section 1. Definition and Goals of Clinical Education:
The Delphi Round 1 Survey, Section 1 addressed the definition and goals of allied health clinical education found in the literature.

Definition of Clinical Education

You were provided a definition of clinical education, and you were asked to rate the extent to which you agreed or disagreed with the definition. At the end of this section, you were invited to suggest modifications to the wording of statements or include a reason for your rating.

Results: 80.39% of Allied Health Deans (N=41) "Strongly Agreed" or "Agreed" with the Definition of Clinical Education (refer to Table 1).

Table 1. Delphi Round 1 Survey Feedback on the Definition of Clinical Education

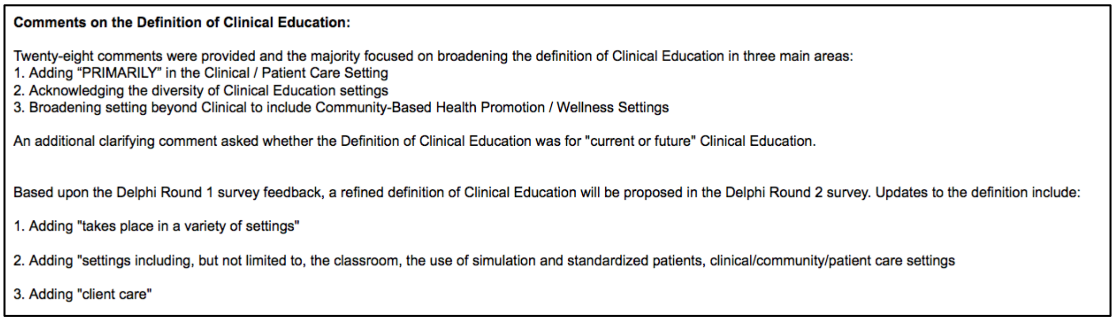
Table 1

Delphi Round 1 Survey Feedback on the Definition of Clinical Education

Agreement Scale	No. of Responses	% Response	Median
Strongly Agree	15	29.4%	
Agree	29	51.0%	
Neither Disagree nor Agree	2	3.90%	
Disagree	6	11.8%	
Strongly Disagree	2	3.9%	
Total	51		4

Definition of Clinical Education provided in teh Delphi Round 1 Survey:

Clinical education takes place in the clinical/patient care setting. It provides students with the education and experience necessary to develop and refine clinical skills, knowledge, and values required to provide quality patient care (adapted from Rose & Best, 2005, p. 3).



Comments on the Definition of Clinical Education:

Twenty-eight comments were provided and the majority focused on broadening the definition of Clinical Education in three main areas:
1. Adding "PRIMARILY" in the Clinical / Patient Care Setting
2. Acknowledging the diversity of Clinical Education settings
3. Broadening setting beyond Clinical to include Community-Based Health Promotion / Wellness Settings

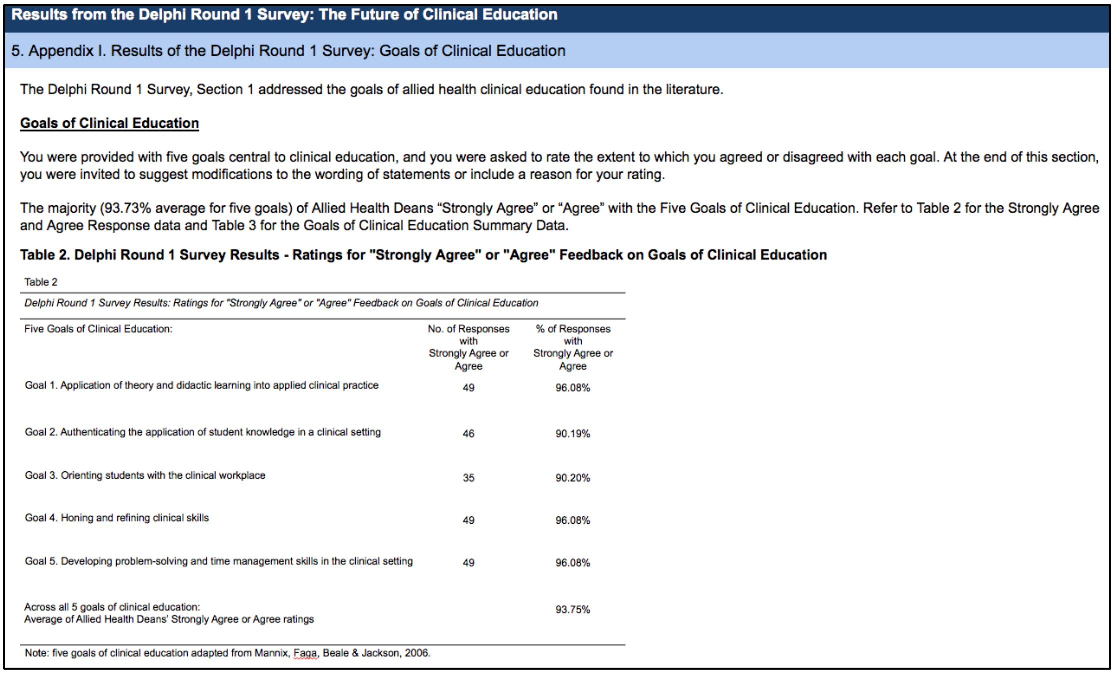
An additional clarifying comment asked whether the Definition of Clinical Education was for "current or future" Clinical Education.

Based upon the Delphi Round 1 survey feedback, a refined definition of Clinical Education will be proposed in the Delphi Round 2 survey. Updates to the definition include:

1. Adding "takes place in a variety of settings"

2. Adding "settings including, but not limited to, the classroom, the use of simulation and standardized patients, clinical/community/patient care settings

3. Adding "client care"



Results from the Delphi Round 1 Survey: The Future of Clinical Education

5. Appendix I. Results of the Delphi Round 1 Survey: Goals of Clinical Education

The Delphi Round 1 Survey, Section 1 addressed the goals of allied health clinical education found in the literature.

Goals of Clinical Education

You were provided with five goals central to clinical education, and you were asked to rate the extent to which you agreed or disagreed with each goal. At the end of this section, you were invited to suggest modifications to the wording of statements or include a reason for your rating.

The majority (93.73% average for five goals) of Allied Health Deans "Strongly Agree" or "Agree" with the Five Goals of Clinical Education. Refer to Table 2 for the Strongly Agree and Agree Response data and Table 3 for the Goals of Clinical Education Summary Data.

Table 2. Delphi Round 1 Survey Results - Ratings for "Strongly Agree" or "Agree" Feedback on Goals of Clinical Education

Table 2

Delphi Round 1 Survey Results: Ratings for "Strongly Agree" or "Agree" Feedback on Goals of Clinical Education

Five Goals of Clinical Education:	No. of Responses with Strongly Agree or Agree	% of Responses with Strongly Agree or Agree
Goal 1. Application of theory and didactic learning into applied clinical practice	49	96.08%
Goal 2. Authenticating the application of student knowledge in a clinical setting	46	90.19%
Goal 3. Orienting students with the clinical workplace	35	90.20%
Goal 4. Honing and refining clinical skills	49	96.08%
Goal 5. Developing problem-solving and time management skills in the clinical setting	49	96.08%
Across all 5 goals of clinical education: Average of Allied Health Deans' Strongly Agree or Agree ratings		93.75%

Note: five goals of clinical education adapted from Mannix, Faga, Beale & Jackson, 2006.

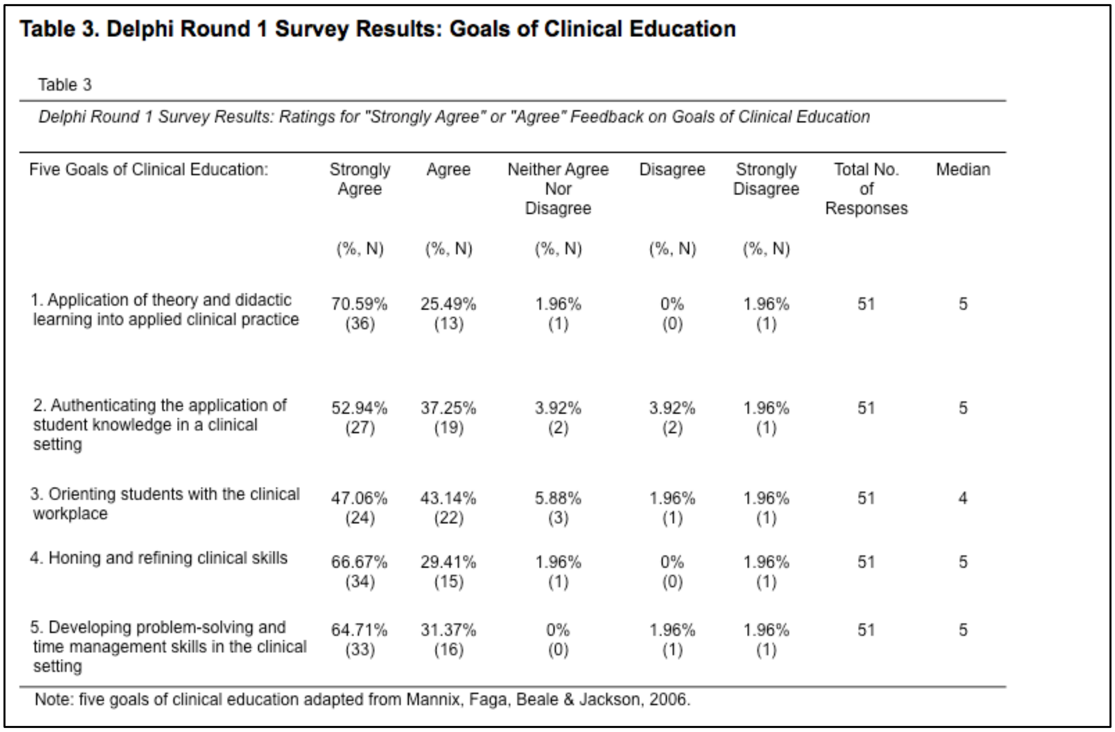


Table 3. Delphi Round 1 Survey Results: Goals of Clinical Education

Table 3

Delphi Round 1 Survey Results: Ratings for "Strongly Agree" or "Agree" Feedback on Goals of Clinical Education

Five Goals of Clinical Education:	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	Total No. of Responses	Median
	(%, N)	(%, N)	(%, N)	(%, N)	(%, N)		
1. Application of theory and didactic learning into applied clinical practice	70.59% (36)	25.49% (13)	1.96% (1)	0% (0)	1.96% (1)	51	5
2. Authenticating the application of student knowledge in a clinical setting	52.94% (27)	37.25% (19)	3.92% (2)	3.92% (2)	1.96% (1)	51	5
3. Orienting students with the clinical workplace	47.06% (24)	43.14% (22)	5.88% (3)	1.96% (1)	1.96% (1)	51	4
4. Honing and refining clinical skills	66.67% (34)	29.41% (15)	1.96% (1)	0% (0)	1.96% (1)	51	5
5. Developing problem-solving and time management skills in the clinical setting	64.71% (33)	31.37% (16)	0% (0)	1.96% (1)	1.96% (1)	51	5

Note: five goals of clinical education adapted from Mannix, Faga, Beale & Jackson, 2006.

Delphi Round 1 Survey Comments on the Five Goals of Clinical Education:

Twenty-seven comments were provided regarding the five goals central to Clinical Education. The general feedback on the Clinical education goals was to clarify if the goals are for the student or Clinical Educator. Additionally, using words such as "refining" or "expanding" may make the goals clearer to the process from didactic to clinical setting.

Feedback on specific Goals of Clinical Education included:

Goal 1 feedback: Goal 1 is too similar to Goal 2 (N=1).
Goal 2 feedback: Provide clarity on the term "authenticating" (N=2).
Goal 3 feedback: None
Goal 4 feedback: None
Goal 5 feedback: Use explicit terms such as: "higher order thinking", "critical thinking" (N=1).

Based upon the Delphi Round 1 survey feedback, refined goals of Clinical Education will be proposed in the Delphi Round 2 survey. Updates to the goals include:

1. Combining Goals 1 and 2

2. Revising Goal 4 to reflect "professional, interpersonal communication" and "functioning within a team to provide patient/client care"

3. Revising Goal 5 to include "critical thinking"

Results from the Delphi Round 1 Survey: The Future of Clinical Education

6. Appendix II. Results of the Delphi Round 1 Survey: Section 2. Futuristic Case Scenarios

Appendix II provides the results of the Delphi Round 1 survey, Section 2. Futuristic Case Scenarios. Allied health dean feedback from the four case scenarios was used to identify key factors impacting the future (2018-2023) of allied health clinical education. For each case scenario, the collective responses for Questions 1 through 3 were combined to identify these key factors. The coded scenario feedback was listed from the highest to lowest number of responses.

Results from the Futuristic Case Scenarios:

For each of the four futuristic case scenarios, the comments provided from allied health dean feedback were coded by key factors impacting clinical education. The key factors mentioned most frequently across all four futuristic case scenarios were:

#1. Clinical Education Models; N=138
#2. Regulation; N=129
#3. Higher Education Healthcare Institutions; N=127
#4. Clinical Placement Location; N=115
#5. Population Health; N=100

Refer to Table 4 for a detailed summary of the individual and cummulative futuristic case scenario feedback.

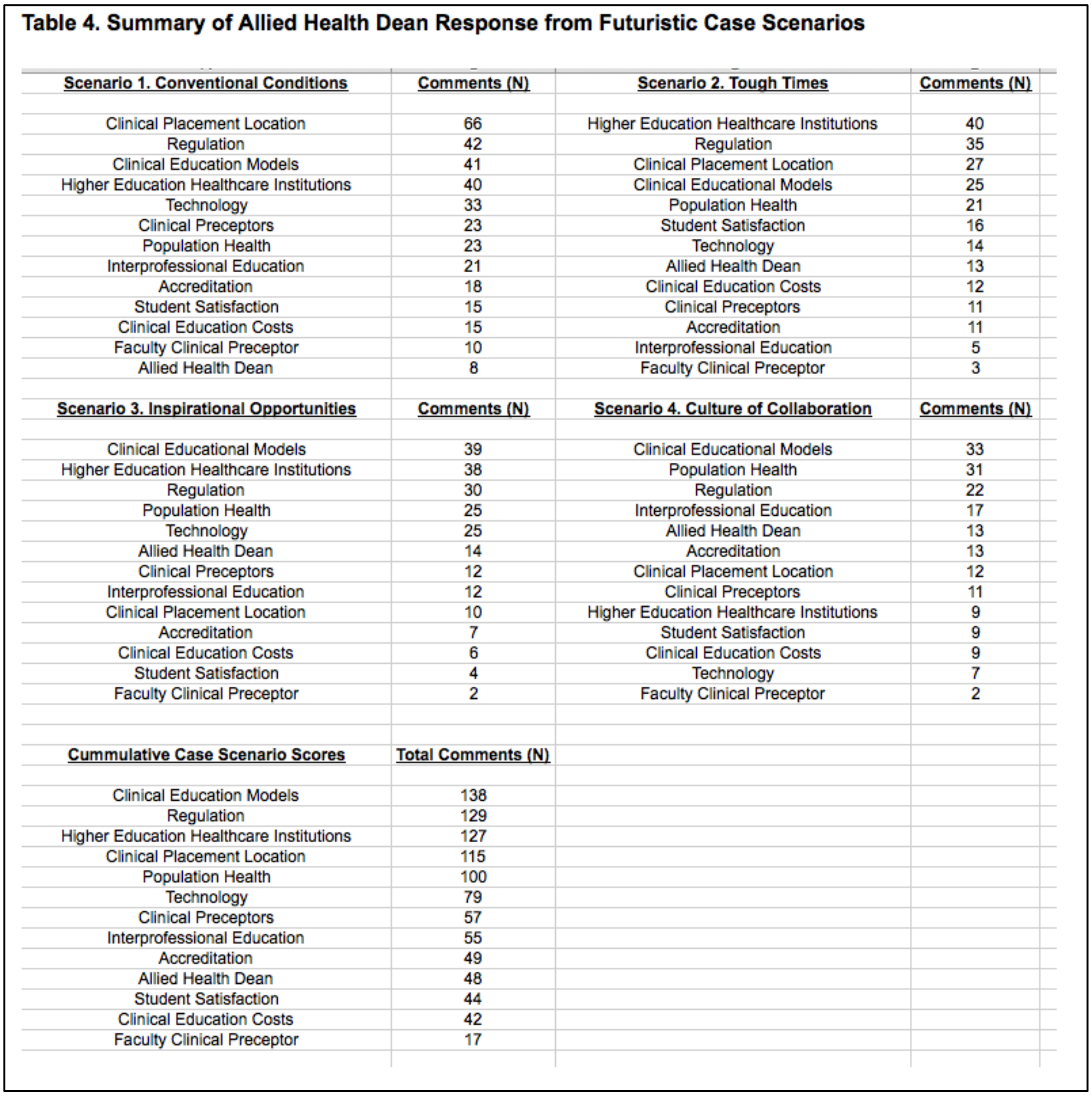
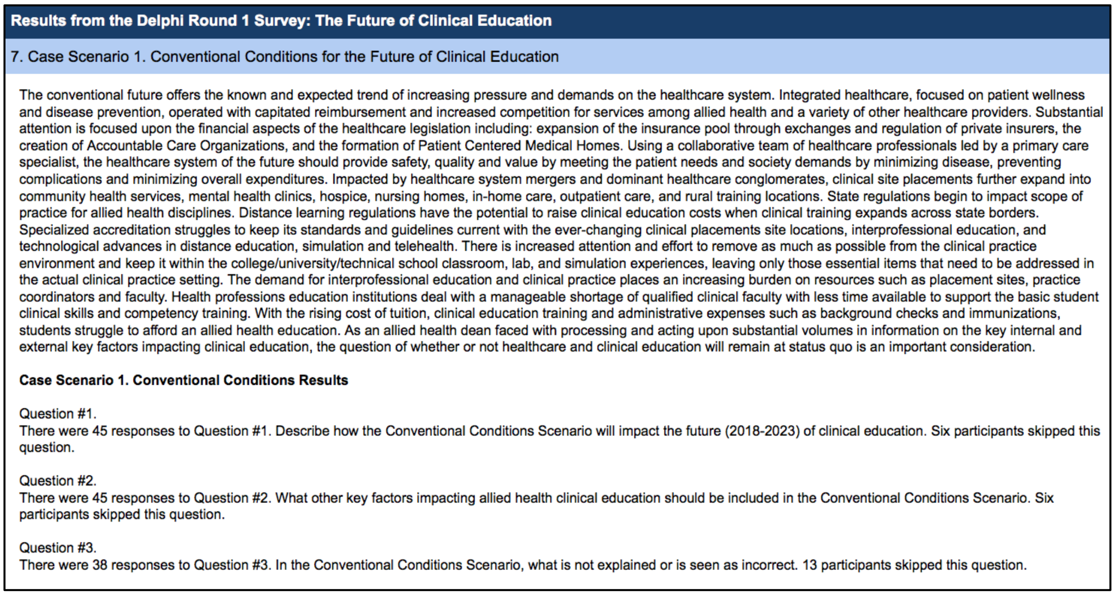


Table 4. Summary of Allied Health Dean Response from Futuristic Case Scenarios

Scenario 1. Conventional Conditions	Comments (N)	Scenario 2. Tough Times	Comments (N)
Clinical Placement Location	66	Higher Education Healthcare Institutions	40
Regulation	42	Regulation	35
Clinical Education Models	41	Clinical Placement Location	27
Higher Education Healthcare Institutions	40	Clinical Educational Models	25
Technology	33	Population Health	21
Clinical Preceptors	23	Student Satisfaction	16
Population Health	23	Technology	14
Interprofessional Education	21	Allied Health Dean	13
Accreditation	18	Clinical Education Costs	12
Student Satisfaction	15	Clinical Preceptors	11
Clinical Education Costs	15	Accreditation	11
Faculty Clinical Preceptor	10	Interprofessional Education	5
Allied Health Dean	8	Faculty Clinical Preceptor	3
Scenario 3. Inspirational Opportunities	**Comments (N)**	**Scenario 4. Culture of Collaboration**	**Comments (N)**
Clinical Educational Models	39	Clinical Educational Models	33
Higher Education Healthcare Institutions	38	Population Health	31
Regulation	30	Regulation	22
Population Health	25	Interprofessional Education	17
Technology	25	Allied Health Dean	13
Allied Health Dean	14	Accreditation	13
Clinical Preceptors	12	Clinical Placement Location	12
Interprofessional Education	12	Clinical Preceptors	11
Clinical Placement Location	10	Higher Education Healthcare Institutions	9
Accreditation	7	Student Satisfaction	9
Clinical Education Costs	6	Clinical Education Costs	9
Student Satisfaction	4	Technology	7
Faculty Clinical Preceptor	2	Faculty Clinical Preceptor	2
Cummulative Case Scenario Scores	**Total Comments (N)**		
Clinical Education Models	138		
Regulation	129		
Higher Education Healthcare Institutions	127		
Clinical Placement Location	115		
Population Health	100		
Technology	79		
Clinical Preceptors	57		
Interprofessional Education	55		
Accreditation	49		
Allied Health Dean	48		
Student Satisfaction	44		
Clinical Education Costs	42		
Faculty Clinical Preceptor	17		



Results from the Delphi Round 1 Survey: The Future of Clinical Education

7. Case Scenario 1. Conventional Conditions for the Future of Clinical Education

The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operated with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes. Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in-home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs when clinical training expands across state borders. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. There is increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college/university/technical school classroom, lab, and simulation experiences, leaving only those essential items that need to be addressed in the actual clinical practice setting. The demand for interprofessional education and clinical practice places an increasing burden on resources such as placement sites, practice coordinators and faculty. Health professions education institutions deal with a manageable shortage of qualified clinical faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford an allied health education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external key factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.

Case Scenario 1. Conventional Conditions Results

Question #1.
There were 45 responses to Question #1. Describe how the Conventional Conditions Scenario will impact the future (2018-2023) of clinical education. Six participants skipped this question.

Question #2.
There were 45 responses to Question #2. What other key factors impacting allied health clinical education should be included in the Conventional Conditions Scenario. Six participants skipped this question.

Question #3.
There were 38 responses to Question #3. In the Conventional Conditions Scenario, what is not explained or is seen as incorrect. 13 participants skipped this question.

Case Scenario 1. Conventional Conditions
There were 45 responses to Question #1. Describe how the Conventional Conditions Scenario will impact the future (2018-2023) of clinical education and Question #2. What other key factors impacting allied health clinical education should be included in the Conventional Conditions Scenario. There were 38 responses to Question #3. In the Conventional Conditions Scenario, what is not explained or is seen as incorrect.

The key factors frequently mentioned in the Conventional Conditions case scenario were:

#1. Clinical Placement Location; N=66
#2. Regulation; N=42
#3. Clinical Education Model; N=41
#4. Higher Education Healthcare Institutions; N=40

General scenario comments:

Clinical sites want to be reimbursed for preceptor time, which presents a burden on the educational facility and may require additional tuition reimbursement. Many schools will establish teaching clinics to fill this void and to also serve as a site for those patients and families needing access to health care services. If there ends up being a cost to the educational facility to send students to another state for their clinical experience that would place another significant financial burden on the Schools which then would get passed on to the student. The lack of diversity in faculty, staff, students and graduates in allied health programs will continue to be a major issue. Better coordination between community colleges and four-year colleges will be important as students explore multiple pathways to obtain professional degrees and credentials.

Dean Responses of Interest from Case Scenario 1. Conventional Conditions

Select excerpts taken directly from allied health dean feedback are provided below in order to capture the flavor and robustness of the responses. Please note that these excerpts capture only a portion of the Conventional Conditions responses. Refer to Appendix I for the summary of dean responses coded by key factors impacting the future of clinical education.

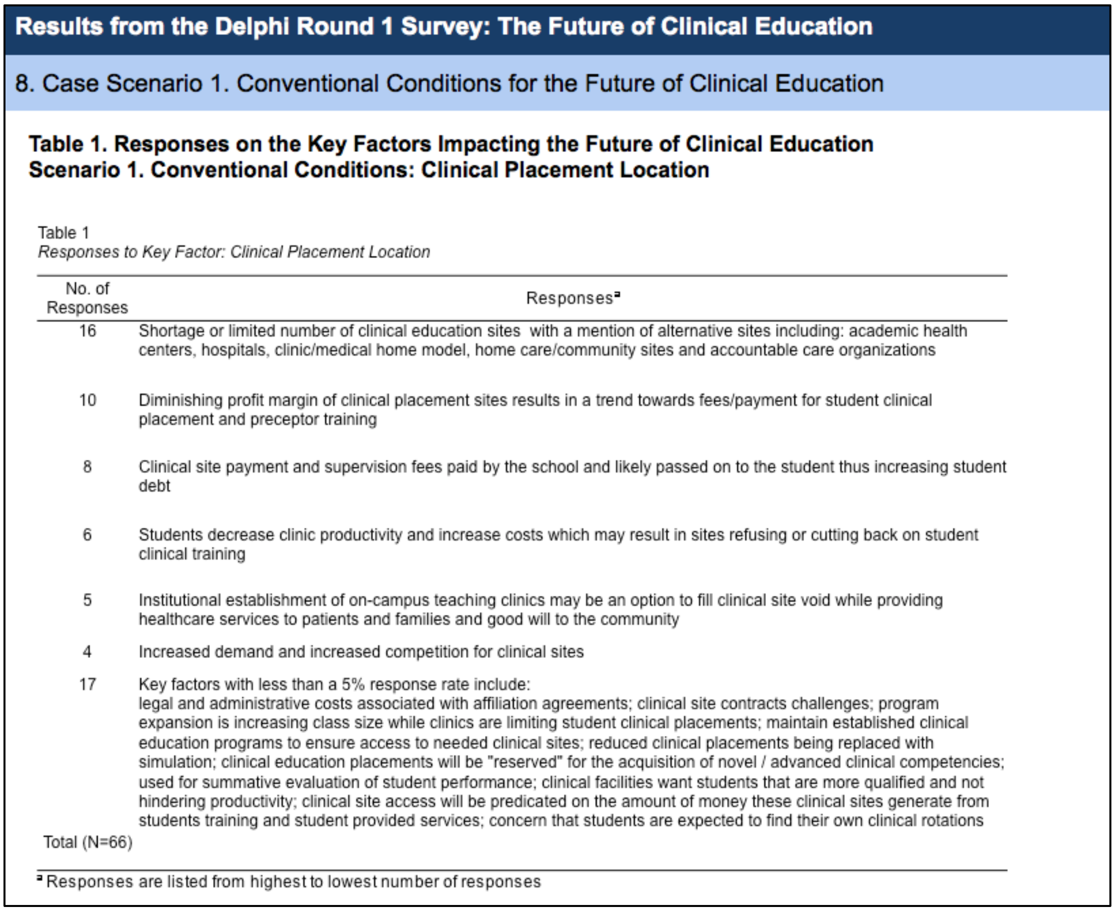
Dean Responses of Interest:

I think that we are already experiencing the future of clinical education. Hospitals and other health care facilities are cutting back on the number of students they accept or are not accepting any students. Some of the cutbacks in Medicare and Medicaid reimbursement have been a factor, along with pressure for greater staff productivity. Hospitals want to be reimbursed for preceptor time, which presents a heavy burden on the educational facility and will require additional tuition reimbursement. I think that some of the health care professionals will have difficulty finding positions and others may remain in demand. We are already experiencing clinical sites only wanting students for long (several weeks) clinicals because of the length of time it takes to orient a student to the facility. The use of the electronic medical record interprofessional case studies will replace the short term clinical experiences, as well the use of standardized patients. More educational facilities will develop their own interprofessional clinics to place students and receive reimbursement for services. Clinical faculty would then be the preceptors. If there ends up being a cost to the educational facility to send students to another state for their clinical experience that would place another significant financial burden on the Schools which then would get passed on to the student.

Even with these conditions, clinical education will not change dramatically. There will be increased competition for clinical sites, but established programs will still have access to needed sites. Many schools will establish teaching clinics to fill this void and to also serve as a site for those patients and families needing access to health care services. The traditional role of the clinical supervisor remains the standard by which clinical skills are taught and evaluated. Interprofessional education will be stressed but the focus will remain on specific professional competencies since reimbursement models will not adequately pay for team care. The costs of higher education will continue to escalate causing a widening gap between those who can afford and can't afford to go to college. Public higher education will begin to look more like the private sector as state funding declines.

The lack of diversity in faculty, staff, students and graduates in allied health programs will continue to be a major issue. Better coordination between community colleges and four year colleges will be important as students explore multiple pathways to obtain professional degrees and credentials.

We may need to establish in-house clinical services to educate students and reduce some of the clinical rotations that are currently required. Incentive for hiring faculty who could provide direct services. Increase the use of simulation and live patients. May need to "grow our own" faculty especially in PA and OT programs where finding faculty is a real challenge... May want to consider using more online instruction thus reducing a student stays on campus and total cost of education. This will differ discipline to discipline but some very innovative models could be developed that may reduce costs to students and still maintain rigorous standards. Programs may need to "come together" in a consortium model and share faculty, facilities, equipment and courses. This is not a popular solution but may support smaller programs that are regionally important in surviving



Results from the Delphi Round 1 Survey: The Future of Clinical Education

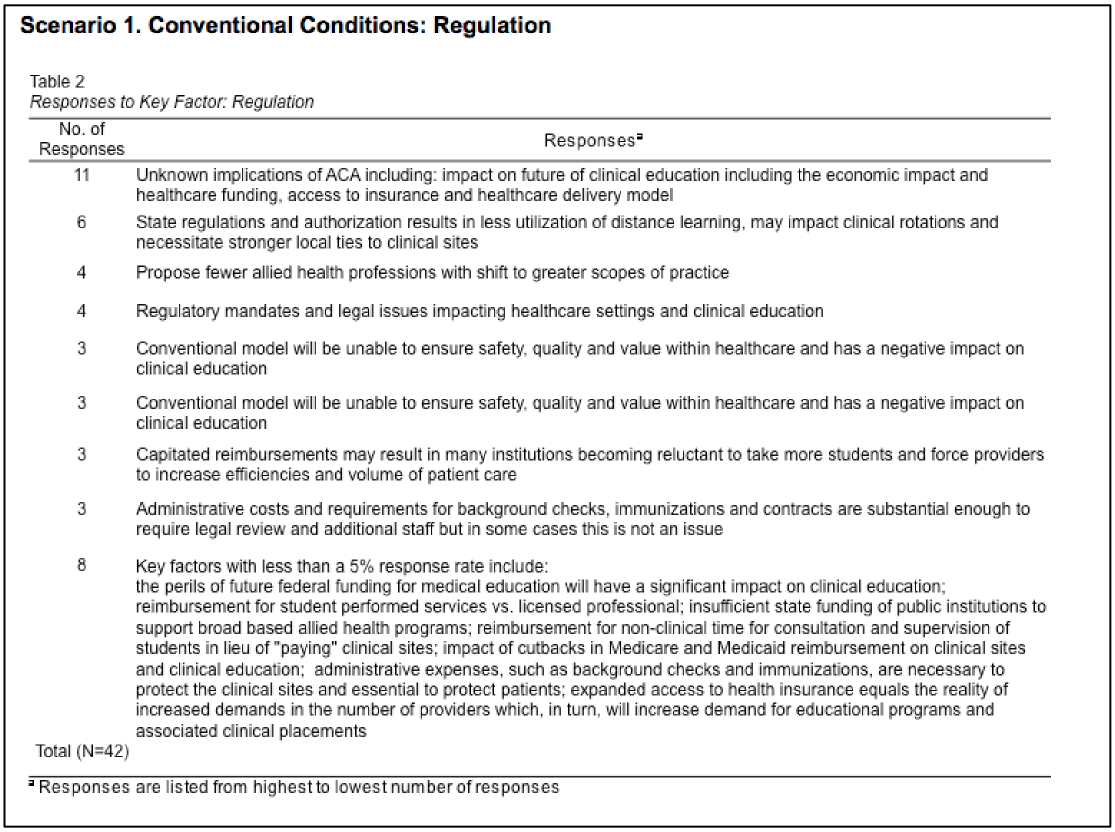
8. Case Scenario 1. Conventional Conditions for the Future of Clinical Education

Table 1. Responses on the Key Factors Impacting the Future of Clinical Education Scenario 1. Conventional Conditions: Clinical Placement Location

Table 1
Responses to Key Factor: Clinical Placement Location

No. of Responses	Responses[a]
16	Shortage or limited number of clinical education sites with a mention of alternative sites including: academic health centers, hospitals, clinic/medical home model, home care/community sites and accountable care organizations
10	Diminishing profit margin of clinical placement sites results in a trend towards fees/payment for student clinical placement and preceptor training
8	Clinical site payment and supervision fees paid by the school and likely passed on to the student thus increasing student debt
6	Students decrease clinic productivity and increase costs which may result in sites refusing or cutting back on student clinical training
5	Institutional establishment of on-campus teaching clinics may be an option to fill clinical site void while providing healthcare services to patients and families and good will to the community
4	Increased demand and increased competition for clinical sites
17	Key factors with less than a 5% response rate include: legal and administrative costs associated with affiliation agreements; clinical site contracts challenges; program expansion is increasing class size while clinics are limiting student clinical placements; maintain established clinical education programs to ensure access to needed clinical sites; reduced clinical placements being replaced with simulation; clinical education placements will be "reserved" for the acquisition of novel / advanced clinical competencies; used for summative evaluation of student performance; clinical facilities want students that are more qualified and not hindering productivity; clinical site access will be predicated on the amount of money these clinical sites generate from students training and student provided services; concern that students are expected to find their own clinical rotations
Total (N=66)	

[a] Responses are listed from highest to lowest number of responses

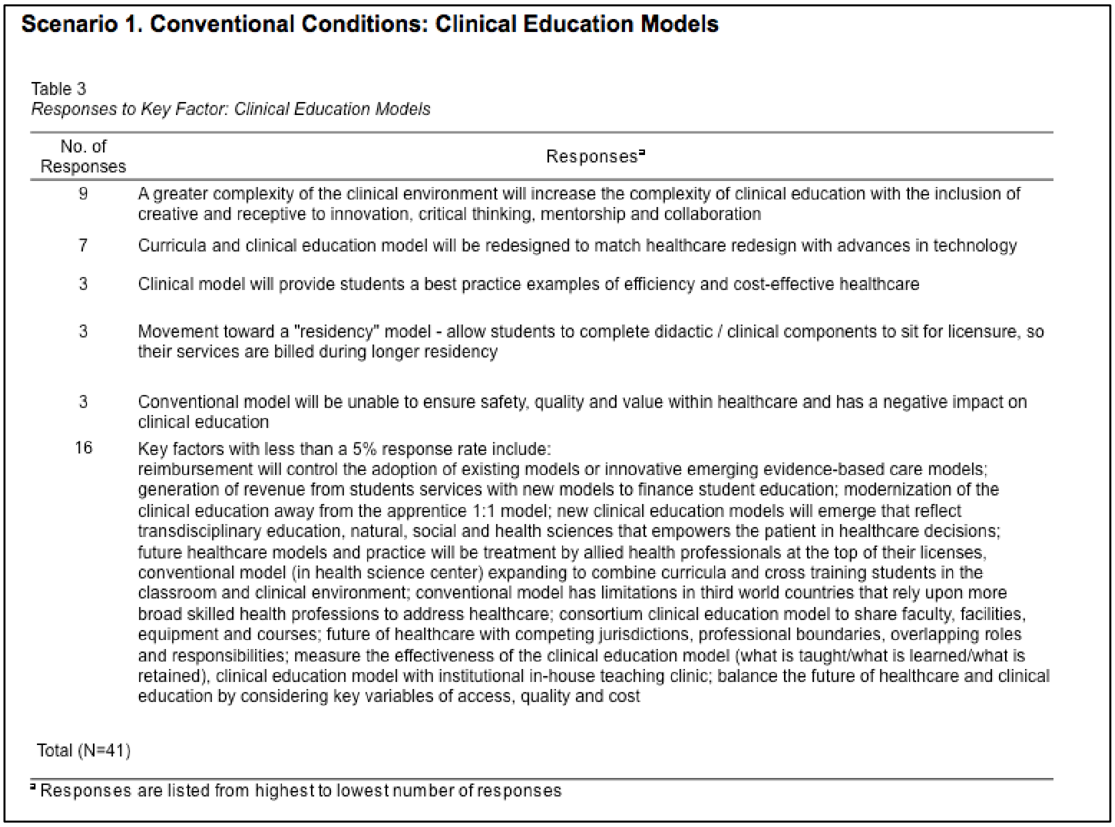


Scenario 1. Conventional Conditions: Regulation

Table 2
Responses to Key Factor: Regulation

No. of Responses	Responses[a]
11	Unknown implications of ACA including: impact on future of clinical education including the economic impact and healthcare funding, access to insurance and healthcare delivery model
6	State regulations and authorization results in less utilization of distance learning, may impact clinical rotations and necessitate stronger local ties to clinical sites
4	Propose fewer allied health professions with shift to greater scopes of practice
4	Regulatory mandates and legal issues impacting healthcare settings and clinical education
3	Conventional model will be unable to ensure safety, quality and value within healthcare and has a negative impact on clinical education
3	Conventional model will be unable to ensure safety, quality and value within healthcare and has a negative impact on clinical education
3	Capitated reimbursements may result in many institutions becoming reluctant to take more students and force providers to increase efficiencies and volume of patient care
3	Administrative costs and requirements for background checks, immunizations and contracts are substantial enough to require legal review and additional staff but in some cases this is not an issue
8	Key factors with less than a 5% response rate include: the perils of future federal funding for medical education will have a significant impact on clinical education; reimbursement for student performed services vs. licensed professional; insufficient state funding of public institutions to support broad based allied health programs; reimbursement for non-clinical time for consultation and supervision of students in lieu of "paying" clinical sites; impact of cutbacks in Medicare and Medicaid reimbursement on clinical sites and clinical education; administrative expenses, such as background checks and immunizations, are necessary to protect the clinical sites and essential to protect patients; expanded access to health insurance equals the reality of increased demands in the number of providers which, in turn, will increase demand for educational programs and associated clinical placements
Total (N=42)	

[a] Responses are listed from highest to lowest number of responses



Scenario 1. Conventional Conditions: Clinical Education Models

Table 3
Responses to Key Factor: Clinical Education Models

No. of Responses	Responses[a]
9	A greater complexity of the clinical environment will increase the complexity of clinical education with the inclusion of creative and receptive to innovation, critical thinking, mentorship and collaboration
7	Curricula and clinical education model will be redesigned to match healthcare redesign with advances in technology
3	Clinical model will provide students a best practice examples of efficiency and cost-effective healthcare
3	Movement toward a "residency" model - allow students to complete didactic / clinical components to sit for licensure, so their services are billed during longer residency
3	Conventional model will be unable to ensure safety, quality and value within healthcare and has a negative impact on clinical education
16	Key factors with less than a 5% response rate include: reimbursement will control the adoption of existing models or innovative emerging evidence-based care models; generation of revenue from students services with new models to finance student education; modernization of the clinical education away from the apprentice 1:1 model; new clinical education models will emerge that reflect transdisciplinary education, natural, social and health sciences that empowers the patient in healthcare decisions; future healthcare models and practice will be treatment by allied health professionals at the top of their licenses, conventional model (in health science center) expanding to combine curricula and cross training students in the classroom and clinical environment; conventional model has limitations in third world countries that rely upon more broad skilled health professions to address healthcare; consortium clinical education model to share faculty, facilities, equipment and courses; future of healthcare with competing jurisdictions, professional boundaries, overlapping roles and responsibilities; measure the effectiveness of the clinical education model (what is taught/what is learned/what is retained), clinical education model with institutional in-house teaching clinic; balance the future of healthcare and clinical education by considering key variables of access, quality and cost
Total (N=41)	

[a] Responses are listed from highest to lowest number of responses

Scenario 1. Conventional Conditions: Higher Education Healthcare Institutions

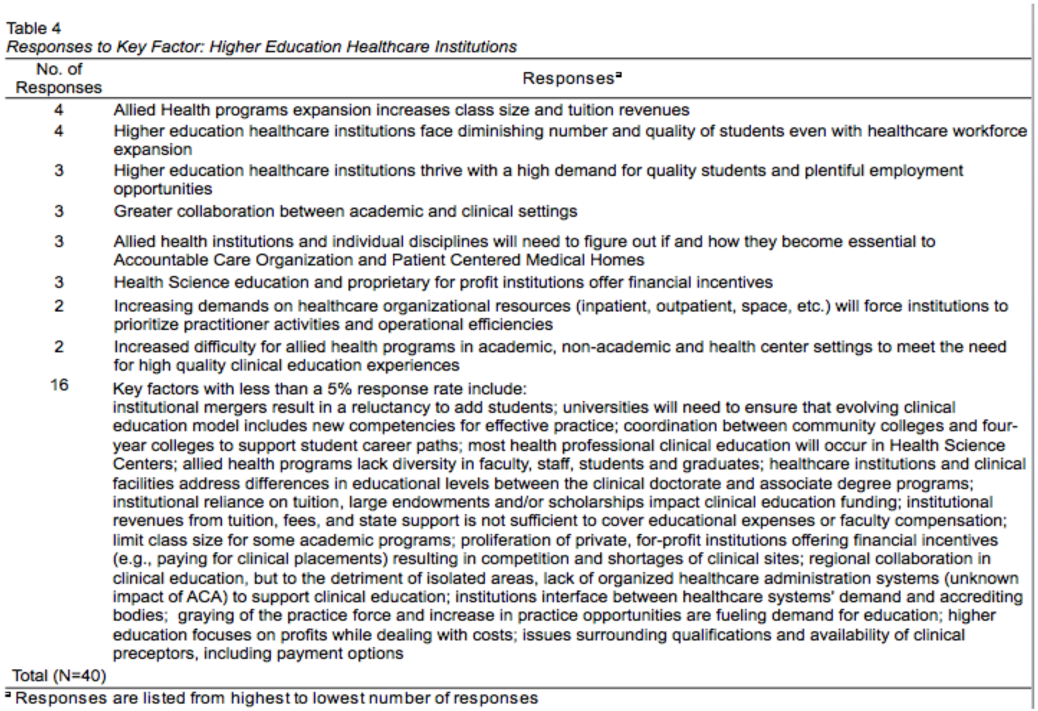


Table 4

Responses to Key Factor: Higher Education Healthcare Institutions

No. of Responses	Responses[a]
4	Allied Health programs expansion increases class size and tuition revenues
4	Higher education healthcare institutions face diminishing number and quality of students even with healthcare workforce expansion
3	Higher education healthcare institutions thrive with a high demand for quality students and plentiful employment opportunities
3	Greater collaboration between academic and clinical settings
3	Allied health institutions and individual disciplines will need to figure out if and how they become essential to Accountable Care Organization and Patient Centered Medical Homes
3	Health Science education and proprietary for profit institutions offer financial incentives
2	Increasing demands on healthcare organizational resources (inpatient, outpatient, space, etc.) will force institutions to prioritize practitioner activities and operational efficiencies
2	Increased difficulty for allied health programs in academic, non-academic and health center settings to meet the need for high quality clinical education experiences
16	Key factors with less than a 5% response rate include: institutional mergers result in a reluctancy to add students; universities will need to ensure that evolving clinical education model includes new competencies for effective practice; coordination between community colleges and four-year colleges to support student career paths; most health professional clinical education will occur in Health Science Centers; allied health programs lack diversity in faculty, staff, students and graduates; healthcare institutions and clinical facilities address differences in educational levels between the clinical doctorate and associate degree programs; institutional reliance on tuition, large endowments and/or scholarships impact clinical education funding; institutional revenues from tuition, fees, and state support is not sufficient to cover educational expenses or faculty compensation; limit class size for some academic programs; proliferation of private, for-profit institutions offering financial incentives (e.g., paying for clinical placements) resulting in competition and shortages of clinical sites; regional collaboration in clinical education, but to the detriment of isolated areas, lack of organized healthcare administration systems (unknown impact of ACA) to support clinical education; institutions interface between healthcare systems' demand and accrediting bodies; graying of the practice force and increase in practice opportunities are fueling demand for education; higher education focuses on profits while dealing with costs; issues surrounding qualifications and availability of clinical preceptors, including payment options
Total (N=40)	

[a] Responses are listed from highest to lowest number of responses

Scenario 1. Conventional Conditions: Technology

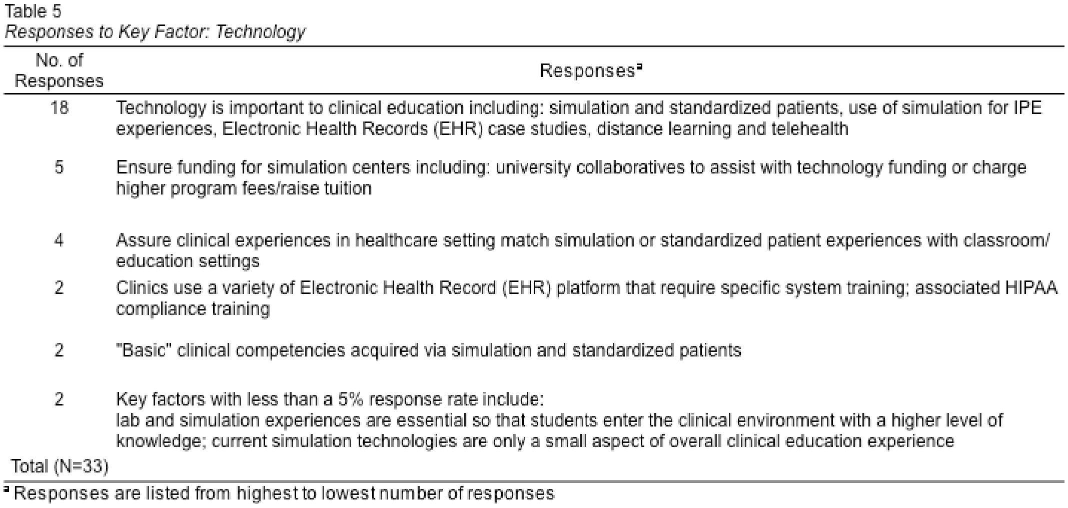


Table 5

Responses to Key Factor: Technology

No. of Responses	Responses[a]
18	Technology is important to clinical education including: simulation and standardized patients, use of simulation for IPE experiences, Electronic Health Records (EHR) case studies, distance learning and telehealth
5	Ensure funding for simulation centers including: university collaboratives to assist with technology funding or charge higher program fees/raise tuition
4	Assure clinical experiences in healthcare setting match simulation or standardized patient experiences with classroom/ education settings
2	Clinics use a variety of Electronic Health Record (EHR) platform that require specific system training; associated HIPAA compliance training
2	"Basic" clinical competencies acquired via simulation and standardized patients
2	Key factors with less than a 5% response rate include: lab and simulation experiences are essential so that students enter the clinical environment with a higher level of knowledge; current simulation technologies are only a small aspect of overall clinical education experience
Total (N=33)	

[a] Responses are listed from highest to lowest number of responses

Scenario 1. Conventional Conditions: Clinical Preceptors

Table 6

Responses to Key Factor: Clinical Preceptors

No. of Responses	Responses[a]
7	Address the shortage of credentialed (doctorally educated), qualified and appropriately trained clinical preceptors in some allied health disciplines
4	Train clinical preceptors to provide timely and sufficient feedback to student; train on major sections of curriculum and current clinical practices
2	Changing roles of healthcare team members and their willingness/adaptability to educate students outside their profession
2	Clinical preceptors more time to train students
2	Sufficient number of clinical preceptors for the growing number of allied health students
6	Key factors with less than a 5% response rate include: incentives or payments options to ensure availability of clinical preceptors; traditional role of the clinical supervisor remains the standard by which clinical skills are taught and evaluated'; difference in the "current practice" and how students are educated as students are often better prepared that their supervisors; institutional support of volunteer clinical preceptors; clinical preceptor (and clinical site) demands for quality students coming into the clinical environment at a higher level of knowledge; problem of clinical instructor abuse of students; psychological and sometimes sexual
Total (N=23)	

[a] Responses are listed from highest to lowest number of responses

Scenario 1. Conventional Conditions: Population Health

Table 7

Responses to Key Factor: Population Health

No. of Responses	Responses[a]
8	Greater diversity in patient populations (elderly, rural, minority, lower literacy patient, immigration reform); population health in terms of health status, health literacy, culture, and personal/family values
7	Emphasis on population health - lifestyle change, wellness and prevention in clinical education training
4	Healthcare practitioner delivery of patient centered care with awareness and control of costs
2	Globalization; data and analytics (HIM) are critical to solving health care problems from a global perspective
2	Key factors with less than a 5% response rate include: new areas of healthcare practice, particularly those perceived as being relatively low cost; need to be more patient centered and use patient advocates
Total (N=23)	

[a] Responses are listed from highest to lowest number of responses

Scenario 1. Conventional Conditions: Interprofessional Education (IPE)

Table 8

Responses to Key Factor: Interprofessional Education (IPE)

No. of Responses	Responses[a]
7	Greater use of inter-professional team model in Conventional Conditions scenario
3	Interprofessional education/collaborative care is an important healthcare trend and is associated with a reduction of cost of treatment
3	Educational leaders should embrace IPE and reduce concerns over who gets to be the "leader"; important to recognize professional contributions and values of all healthcare team members
2	Educational facilities develop their own interprofessional clinics to place students and receive reimbursement for services; currently, there is no reimbursement for IPE services
2	Clinical preparation of students to attain interprofessional "ready" skills, e.g., management, leadership, team-oriented, patient-centered
2	IPE role in continuity of patient care and improved patient outcomes; patient needs drive the team leader of the collaborative team
2	Key factors with less than a 5% response rate include: clinical faculty supervision of IPE teams; IPE team leadership will be a shared responsibility and will rotate among the various team members
Total (N=21)	

[a] Responses are listed from highest to lowest number of responses

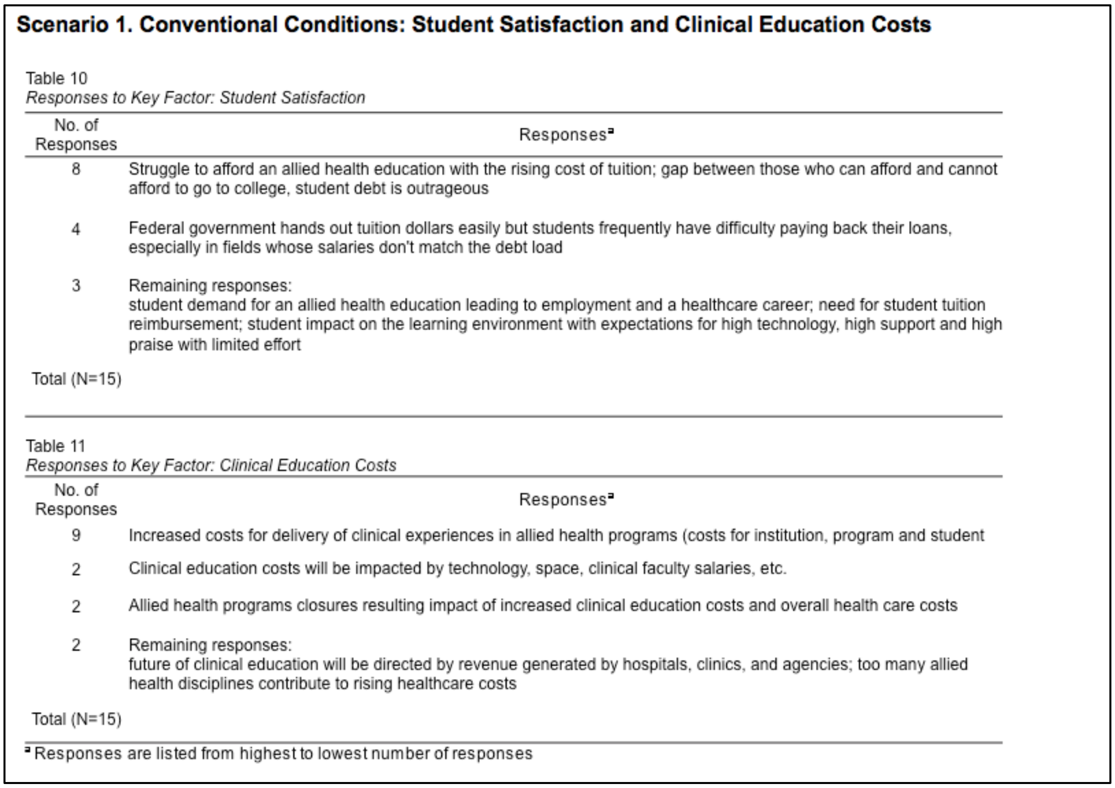
Scenario 1. Conventional Conditions: Accreditation

Table 9

Responses to Key Factor: Accreditation

No. of Responses	Responses[a]
6	Accreditation standards accommodate/support IPE, IPP, alternative practice settings, and simulation to meet clinical education requirements in terms of skills, hours, and outcomes; clinical competency and skill checklist may no longer suffice
5	Emergence of certificate programs in new healthcare fields, i.e., patient navigators or advocates, competitive evaluation research personnel, and healthcare informatics
2	Accreditation movement to doctoral allied health doctoral programs: movement from associate degree entry level to bachelor degree programs
2	Accreditation bodies should leave more discretion to the institution to make decisions about appropriate clinical experiences
3	Remaining responses: Balance health care systems' demand with accrediting agencies rigid definition of the skill sets of individual professions; accreditation movement of allied health professions toward increased competencies on clinical outcomes; more professions may desire to be identified as primary care providers as degrees move to the to doctoral level
Total (N=18)	

[a] Responses are listed from highest to lowest number of responses



Scenario 1. Conventional Conditions: Student Satisfaction and Clinical Education Costs

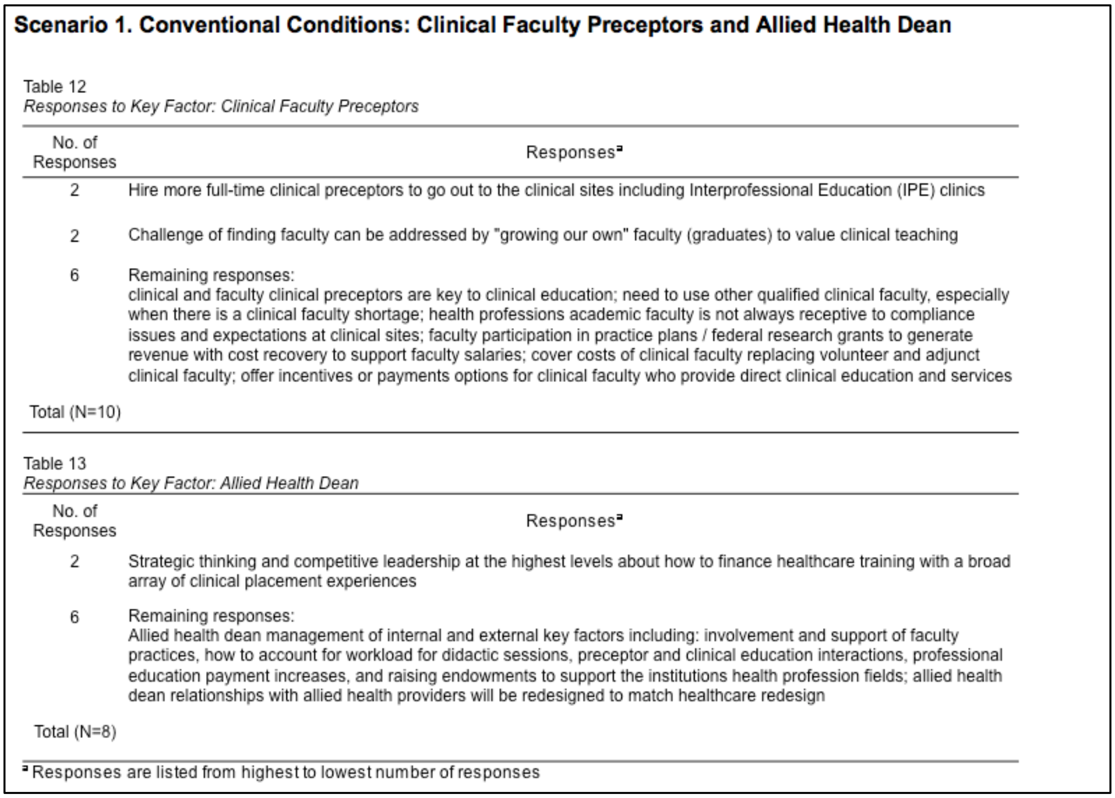
Table 10
Responses to Key Factor: Student Satisfaction

No. of Responses	Responses[a]
8	Struggle to afford an allied health education with the rising cost of tuition; gap between those who can afford and cannot afford to go to college, student debt is outrageous
4	Federal government hands out tuition dollars easily but students frequently have difficulty paying back their loans, especially in fields whose salaries don't match the debt load
3	Remaining responses: student demand for an allied health education leading to employment and a healthcare career; need for student tuition reimbursement; student impact on the learning environment with expectations for high technology, high support and high praise with limited effort
Total (N=15)	

Table 11
Responses to Key Factor: Clinical Education Costs

No. of Responses	Responses[a]
9	Increased costs for delivery of clinical experiences in allied health programs (costs for institution, program and student
2	Clinical education costs will be impacted by technology, space, clinical faculty salaries, etc.
2	Allied health programs closures resulting impact of increased clinical education costs and overall health care costs
2	Remaining responses: future of clinical education will be directed by revenue generated by hospitals, clinics, and agencies; too many allied health disciplines contribute to rising healthcare costs
Total (N=15)	

[a] Responses are listed from highest to lowest number of responses



Scenario 1. Conventional Conditions: Clinical Faculty Preceptors and Allied Health Dean

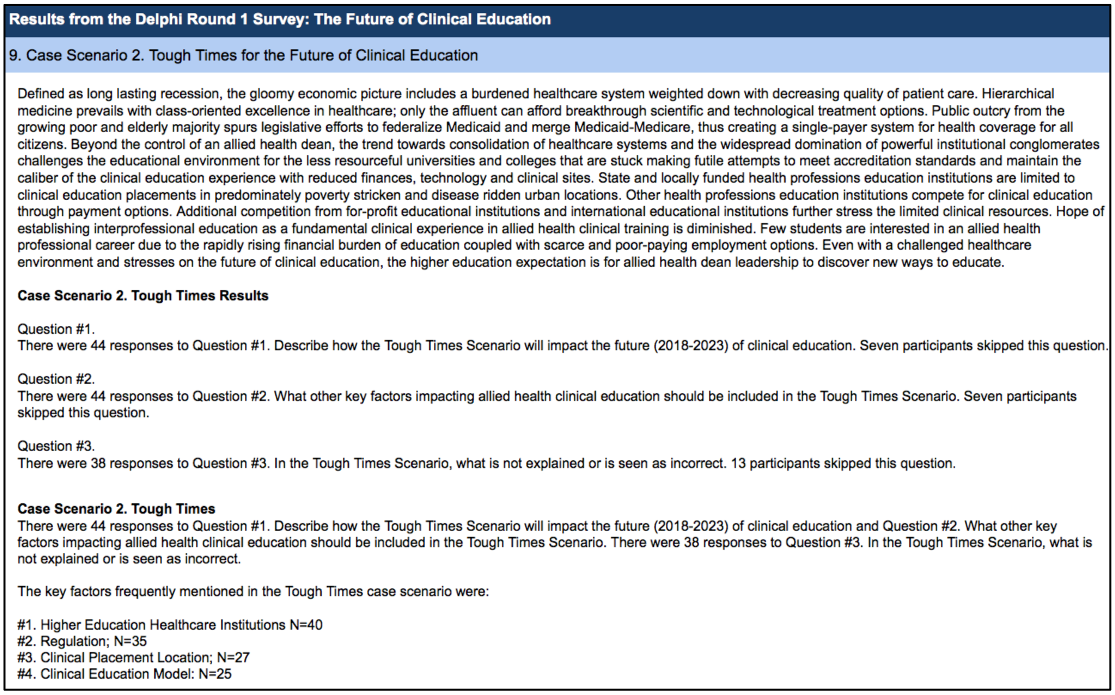
Table 12
Responses to Key Factor: Clinical Faculty Preceptors

No. of Responses	Responses[a]
2	Hire more full-time clinical preceptors to go out to the clinical sites including Interprofessional Education (IPE) clinics
2	Challenge of finding faculty can be addressed by "growing our own" faculty (graduates) to value clinical teaching
6	Remaining responses: clinical and faculty clinical preceptors are key to clinical education; need to use other qualified clinical faculty, especially when there is a clinical faculty shortage; health professions academic faculty is not always receptive to compliance issues and expectations at clinical sites; faculty participation in practice plans / federal research grants to generate revenue with cost recovery to support faculty salaries; cover costs of clinical faculty replacing volunteer and adjunct clinical faculty; offer incentives or payments options for clinical faculty who provide direct clinical education and services
Total (N=10)	

Table 13
Responses to Key Factor: Allied Health Dean

No. of Responses	Responses[a]
2	Strategic thinking and competitive leadership at the highest levels about how to finance healthcare training with a broad array of clinical placement experiences
6	Remaining responses: Allied health dean management of internal and external key factors including: involvement and support of faculty practices, how to account for workload for didactic sessions, preceptor and clinical education interactions, professional education payment increases, and raising endowments to support the institutions health profession fields; allied health dean relationships with allied health providers will be redesigned to match healthcare redesign
Total (N=8)	

[a] Responses are listed from highest to lowest number of responses



Results from the Delphi Round 1 Survey: The Future of Clinical Education

9. Case Scenario 2. Tough Times for the Future of Clinical Education

Defined as long lasting recession, the gloomy economic picture includes a burdened healthcare system weighted down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates challenges the educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded health professions education institutions are limited to clinical education placements in predominately poverty stricken and disease ridden urban locations. Other health professions education institutions compete for clinical education through payment options. Additional competition from for-profit educational institutions and international educational institutions further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to the rapidly rising financial burden of education coupled with scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the future of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

Case Scenario 2. Tough Times Results

Question #1.
There were 44 responses to Question #1. Describe how the Tough Times Scenario will impact the future (2018-2023) of clinical education. Seven participants skipped this question.

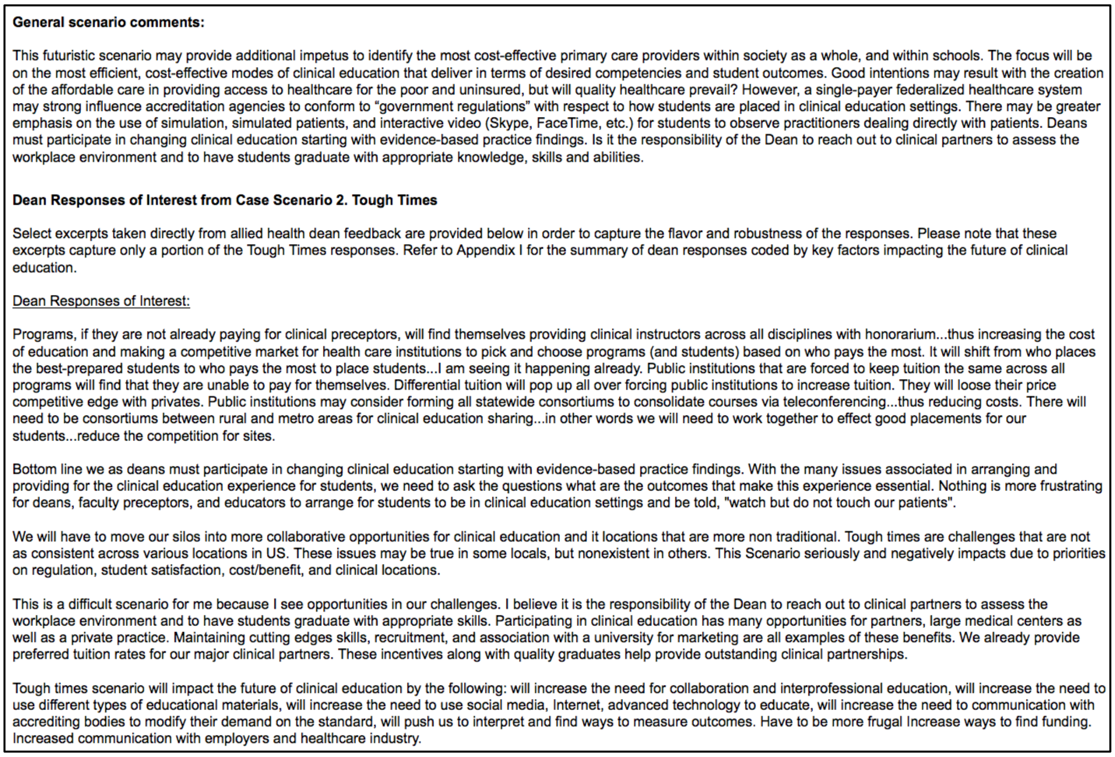
Question #2.
There were 44 responses to Question #2. What other key factors impacting allied health clinical education should be included in the Tough Times Scenario. Seven participants skipped this question.

Question #3.
There were 38 responses to Question #3. In the Tough Times Scenario, what is not explained or is seen as incorrect. 13 participants skipped this question.

Case Scenario 2. Tough Times
There were 44 responses to Question #1. Describe how the Tough Times Scenario will impact the future (2018-2023) of clinical education and Question #2. What other key factors impacting allied health clinical education should be included in the Tough Times Scenario. There were 38 responses to Question #3. In the Tough Times Scenario, what is not explained or is seen as incorrect.

The key factors frequently mentioned in the Tough Times case scenario were:

#1. Higher Education Healthcare Institutions N=40
#2. Regulation; N=35
#3. Clinical Placement Location; N=27
#4. Clinical Education Model: N=25



General scenario comments:

This futuristic scenario may provide additional impetus to identify the most cost-effective primary care providers within society as a whole, and within schools. The focus will be on the most efficient, cost-effective modes of clinical education that deliver in terms of desired competencies and student outcomes. Good intentions may result with the creation of the affordable care in providing access to healthcare for the poor and uninsured, but will quality healthcare prevail? However, a single-payer federalized healthcare system may strong influence accreditation agencies to conform to “government regulations” with respect to how students are placed in clinical education settings. There may be greater emphasis on the use of simulation, simulated patients, and interactive video (Skype, FaceTime, etc.) for students to observe practitioners dealing directly with patients. Deans must participate in changing clinical education starting with evidence-based practice findings. Is it the responsibility of the Dean to reach out to clinical partners to assess the workplace environment and to have students graduate with appropriate knowledge, skills and abilities.

Dean Responses of Interest from Case Scenario 2. Tough Times

Select excerpts taken directly from allied health dean feedback are provided below in order to capture the flavor and robustness of the responses. Please note that these excerpts capture only a portion of the Tough Times responses. Refer to Appendix I for the summary of dean responses coded by key factors impacting the future of clinical education.

<u>Dean Responses of Interest:</u>

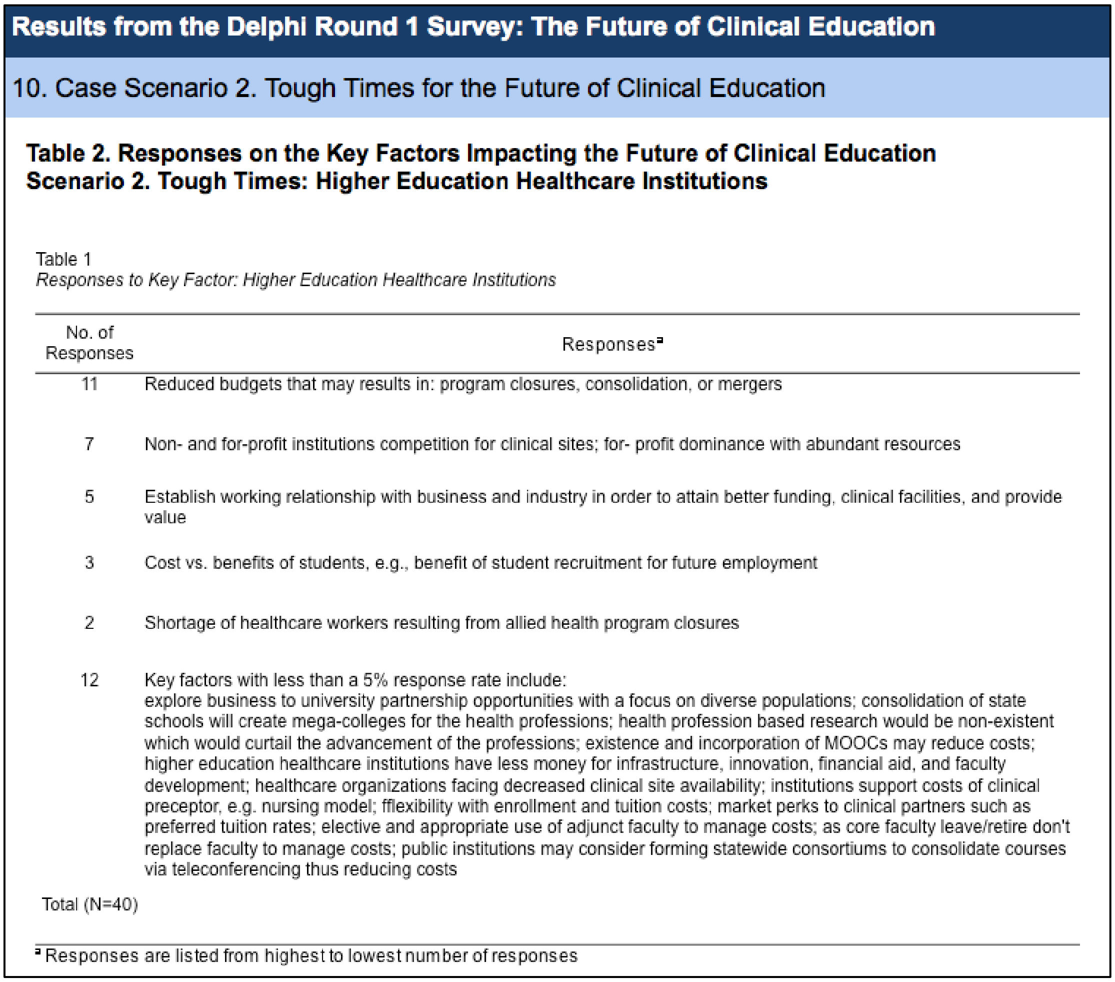
Programs, if they are not already paying for clinical preceptors, will find themselves providing clinical instructors across all disciplines with honorarium...thus increasing the cost of education and making a competitive market for health care institutions to pick and choose programs (and students) based on who pays the most. It will shift from who places the best-prepared students to who pays the most to place students...I am seeing it happening already. Public institutions that are forced to keep tuition the same across all programs will find that they are unable to pay for themselves. Differential tuition will pop up all over forcing public institutions to increase tuition. They will loose their price competitive edge with privates. Public institutions may consider forming all statewide consortiums to consolidate courses via teleconferencing...thus reducing costs. There will need to be consortiums between rural and metro areas for clinical education sharing...in other words we will need to work together to effect good placements for our students...reduce the competition for sites.

Bottom line we as deans must participate in changing clinical education starting with evidence-based practice findings. With the many issues associated in arranging and providing for the clinical education experience for students, we need to ask the questions what are the outcomes that make this experience essential. Nothing is more frustrating for deans, faculty preceptors, and educators to arrange for students to be in clinical education settings and be told, "watch but do not touch our patients".

We will have to move our silos into more collaborative opportunities for clinical education and it locations that are more non traditional. Tough times are challenges that are not as consistent across various locations in US. These issues may be true in some locals, but nonexistent in others. This Scenario seriously and negatively impacts due to priorities on regulation, student satisfaction, cost/benefit, and clinical locations.

This is a difficult scenario for me because I see opportunities in our challenges. I believe it is the responsibility of the Dean to reach out to clinical partners to assess the workplace environment and to have students graduate with appropriate skills. Participating in clinical education has many opportunities for partners, large medical centers as well as a private practice. Maintaining cutting edges skills, recruitment, and association with a university for marketing are all examples of these benefits. We already provide preferred tuition rates for our major clinical partners. These incentives along with quality graduates help provide outstanding clinical partnerships.

Tough times scenario will impact the future of clinical education by the following: will increase the need for collaboration and interprofessional education, will increase the need to use different types of educational materials, will increase the need to use social media, Internet, advanced technology to educate, will increase the need to communication with accrediting bodies to modify their demand on the standard, will push us to interpret and find ways to measure outcomes. Have to be more frugal Increase ways to find funding. Increased communication with employers and healthcare industry.



Results from the Delphi Round 1 Survey: The Future of Clinical Education

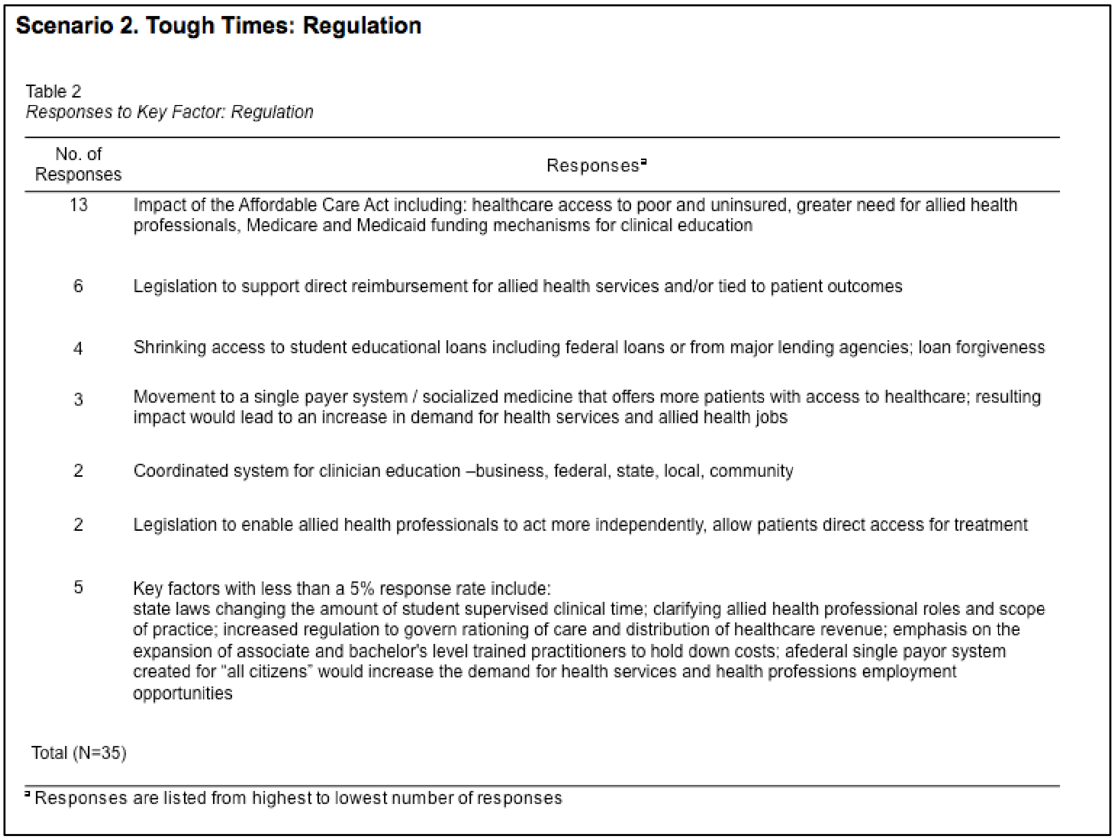
10. Case Scenario 2. Tough Times for the Future of Clinical Education

Table 2. Responses on the Key Factors Impacting the Future of Clinical Education Scenario 2. Tough Times: Higher Education Healthcare Institutions

Table 1
Responses to Key Factor: Higher Education Healthcare Institutions

No. of Responses	Responses[a]
11	Reduced budgets that may results in: program closures, consolidation, or mergers
7	Non- and for-profit institutions competition for clinical sites; for- profit dominance with abundant resources
5	Establish working relationship with business and industry in order to attain better funding, clinical facilities, and provide value
3	Cost vs. benefits of students, e.g., benefit of student recruitment for future employment
2	Shortage of healthcare workers resulting from allied health program closures
12	Key factors with less than a 5% response rate include: explore business to university partnership opportunities with a focus on diverse populations; consolidation of state schools will create mega-colleges for the health professions; health profession based research would be non-existent which would curtail the advancement of the professions; existence and incorporation of MOOCs may reduce costs; higher education healthcare institutions have less money for infrastructure, innovation, financial aid, and faculty development; healthcare organizations facing decreased clinical site availability; institutions support costs of clinical preceptor, e.g. nursing model; fflexibility with enrollment and tuition costs; market perks to clinical partners such as preferred tuition rates; elective and appropriate use of adjunct faculty to manage costs; as core faculty leave/retire don't replace faculty to manage costs; public institutions may consider forming statewide consortiums to consolidate courses via teleconferencing thus reducing costs
Total (N=40)	

[a] Responses are listed from highest to lowest number of responses

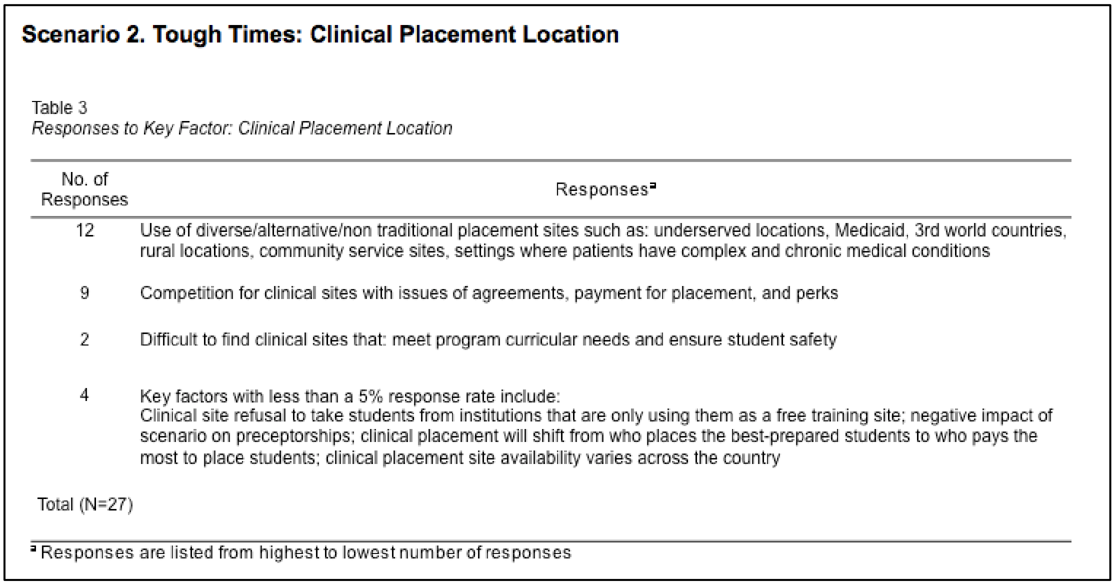


Scenario 2. Tough Times: Regulation

Table 2
Responses to Key Factor: Regulation

No. of Responses	Responses[a]
13	Impact of the Affordable Care Act including: healthcare access to poor and uninsured, greater need for allied health professionals, Medicare and Medicaid funding mechanisms for clinical education
6	Legislation to support direct reimbursement for allied health services and/or tied to patient outcomes
4	Shrinking access to student educational loans including federal loans or from major lending agencies; loan forgiveness
3	Movement to a single payer system / socialized medicine that offers more patients with access to healthcare; resulting impact would lead to an increase in demand for health services and allied health jobs
2	Coordinated system for clinician education –business, federal, state, local, community
2	Legislation to enable allied health professionals to act more independently, allow patients direct access for treatment
5	Key factors with less than a 5% response rate include: state laws changing the amount of student supervised clinical time; clarifying allied health professional roles and scope of practice; increased regulation to govern rationing of care and distribution of healthcare revenue; emphasis on the expansion of associate and bachelor's level trained practitioners to hold down costs; afederal single payor system created for "all citizens" would increase the demand for health services and health professions employment opportunities
Total (N=35)	

[a] Responses are listed from highest to lowest number of responses



Scenario 2. Tough Times: Clinical Placement Location

Table 3
Responses to Key Factor: Clinical Placement Location

No. of Responses	Responses[a]
12	Use of diverse/alternative/non traditional placement sites such as: underserved locations, Medicaid, 3rd world countries, rural locations, community service sites, settings where patients have complex and chronic medical conditions
9	Competition for clinical sites with issues of agreements, payment for placement, and perks
2	Difficult to find clinical sites that: meet program curricular needs and ensure student safety
4	Key factors with less than a 5% response rate include: Clinical site refusal to take students from institutions that are only using them as a free training site; negative impact of scenario on preceptorships; clinical placement will shift from who places the best-prepared students to who pays the most to place students; clinical placement site availability varies across the country
Total (N=27)	

[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Clinical Education Models

Table 4
Responses to Key Factor: Clinical Education Models

No. of Responses	Responses[a]
6	Efficient, cost-effective models that deliver mastery of clinical education competencies and student outcomes vs. credit based or time-based
4	Collaborative partnerships or consortium providing coordinated opportunities and incentives clinical education
4	Types of clinical education models: "by the book", alternative, innovative teaching materials and pedagogies, self-paced learning
2	Revise curriculum for earlier graduation / accelerated graduation
2	More clinical time in the classroom or vocational setting
2	Clinical education model would be diminished in this scenario
5	Key factors with less than a 5% response rate include: reduce clinical education class size even in the face of increasing workforce demands; nothing is more frustrating for deans, faculty preceptors and educators to arrange for students to be in clinical education settings and be told "watch but do not touch our patients"; utilization of virtual clinical education to expand student training; re-examine the didactic and clinical curricula to ensure that students get the content needed for expedient graduation; reduced budgets of allied health schools leads to admission of fewer, but potentially better students
Total (N=25)	

[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Population Health

Table 5
Responses to Key Factor: Population Health

No. of Responses	Responses[a]
6	Increasing demands for quality and safety, patient satisfaction, emphasis on prevention, and efficiency in the delivery of patient care
3	Population demographics including: aging population / Baby Boomers
2	Ethical impact of needing to provide care to everyone who needs care
2	Possibility of not having enough workforce to meet the needs of the growing population of healthcare consumers
8	Key factors with less than a 5% response rate include: impact of individualized medicine--gene diagnostics and therapy, greater emphasis on personal responsibility of the patient for healthcare; group models for patient care; Affordable Care Act (ACA) is providing healthcare access to increased numbers of citizens from all salary levels; learning to practice in medically underserved areas can provide sound grounding in problem-solving and clinical decision-making and exposure to complex cases; opportunity to help the Medicaid system in quality care of their clients; more emphasis on care rationing where therapies and treatments are geared towards a patient's resources; more allied health student education serving the underserved
Total (N=21)	

[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Student Satisfaction

Table 6

Responses to Key Factor: Student Satisfaction

No. of Responses	Responses[a]
4	Student demand for allied health education remains strong, e.g., job security
4	Negative impact of scenario on student satisfaction resulting from increase tuition costs, direct pass through for clinical rotation costs and corresponding educational debt
8	Remaining responses: lobby for loan forgiveness for allied health students who are committed to providing service in underserved communities; transparency of costs/student expenses; higher tuition and clinical education costs to students; graduates will require broader view of healthcare market – clinical skills coupled with leadership and management; ensure student safety while training in clinical facilities; with a lower student pool and less interest in healthcare professions, the quality pool of applicants will decrease leading to a lower quality student; increasing education costs has the potential for decreasing the enrollment in the allied health professions by economically or otherwise disadvantaged students; return on investment: the cost of education relative to student debt and expected salary
Total (N=16)	

[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Technology and Allied Health Dean

Table 7

Responses to Key Factor: Technology

No. of Responses	Responses[a]
8	Technology to deliver virtual clinical education in an innovative and cost-efficient manner, e.g., simulation, simulated patients, online supervision, distance learning, interactive video (Skype, FaceTime)
2	Research on simulation to quantify the outcomes of simulation on clinical competencies and determine the acquisition of clinical competencies
4	Remaining responses: increased use of technology to avoid the tough times; revolutionary changes are being made in clinical education with greater use of technology, self-pace learning and focus on mastery; use of a common EHR platform to make clinical teaching less prohibited; determine where simulation centers should be housed
Total (N=14)	

Table 8

Responses to Key Factor: Allied Health Dean

No. of Responses	Responses[a]
5	Role of the Allied Health Dean: arrange clinical partnerships (large medical centers, private practice), regulate payment for clinical sites, ensure students graduate with appropriate skills /clinical outcomes, coordinate with accreditation
2	Collective strength of allied health professions to organize & cooperate with one another; establish a federation of health professions
	Remaining responses: Allied health dean identification of alternative sources of funding to support clinical education; allied health dean leadership is needed in this changing health care environment; role of the Allied Health Dean to reach out to clinical partners to assess the workplace environment and show value; costs will have to be figured into educational costs and allied health schools need to be more efficient in financial management; allied health programs would need to be nimble, creative and lean; create a federation of allied health professions to further organize and cooperate with one another
Total (N=13)	

[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Clinical Education Costs and Clinical Preceptors

Table 9

Responses to Key Factor: Clinical Education Costs

No. of Responses	Responses[a]
2	Greater emphasis on production metrics, cost benefit analysis, ROI calculation on higher education
2	Negative impact of scenario on overall cost, including tuition costs
2	Global economic pressures exist but employment in healthcare jobs will still be needed
6	Remaining responses: distribution of clinical costs across healthcare system; more clinical facilities require payment for clinical preceptors; use of hierarchical medicine with an emphasis on expansion of associate and bachelor's level trained practitioners to help hold down costs; less money for infrastructure, innovation, financial aid and faculty development; establish preferred tuition rates with major clinical partners; use incentives to "partner" with clinical placements sites to ensure student clinical training availability
Total (N=12)	

Table 10

Responses to Key Factor: Clinical Preceptors

No. of Responses	Responses[a]
8	Lack/shortage of clinical faculty including: volunteer faculty impacted by decreased resources, faculty leaving profession and leaving teaching
3	Remaining responses: issues of clinical faculty credentials requiring advanced degrees and roles requiring more training; more preceptor time will be spent in clinical education; greater emphasis on production metrics and cost-benefit analysis of clinical preceptor performance
Total (N=11)	

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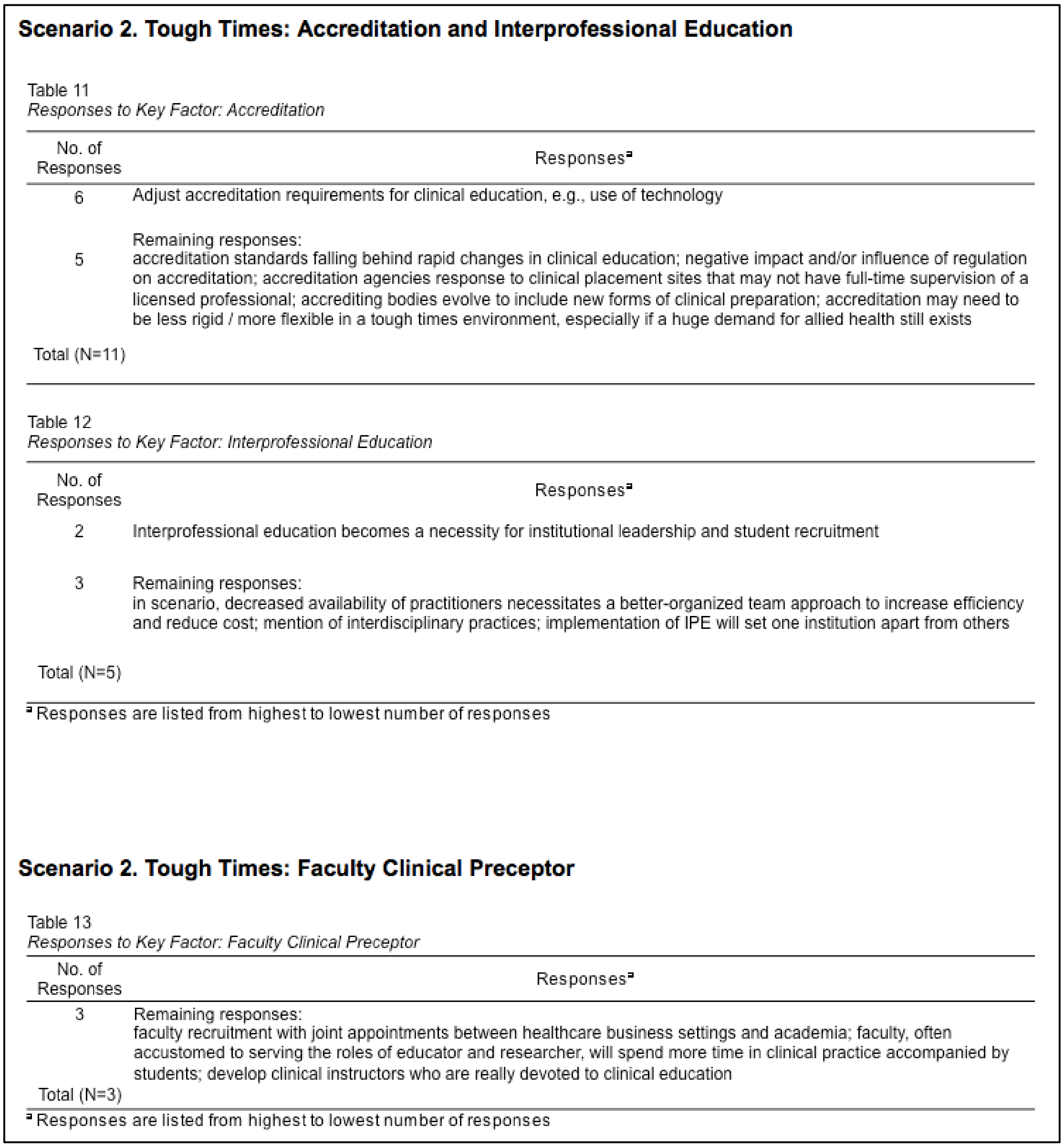
[a] Responses are listed from highest to lowest number of responses



Scenario 2. Tough Times: Accreditation and Interprofessional Education

Table 11
Responses to Key Factor: Accreditation

No. of Responses	Responses[a]
6	Adjust accreditation requirements for clinical education, e.g., use of technology
5	Remaining responses: accreditation standards falling behind rapid changes in clinical education; negative impact and/or influence of regulation on accreditation; accreditation agencies response to clinical placement sites that may not have full-time supervision of a licensed professional; accrediting bodies evolve to include new forms of clinical preparation; accreditation may need to be less rigid / more flexible in a tough times environment, especially if a huge demand for allied health still exists
Total (N=11)	

Table 12
Responses to Key Factor: Interprofessional Education

No. of Responses	Responses[a]
2	Interprofessional education becomes a necessity for institutional leadership and student recruitment
3	Remaining responses: in scenario, decreased availability of practitioners necessitates a better-organized team approach to increase efficiency and reduce cost; mention of interdisciplinary practices; implementation of IPE will set one institution apart from others
Total (N=5)	

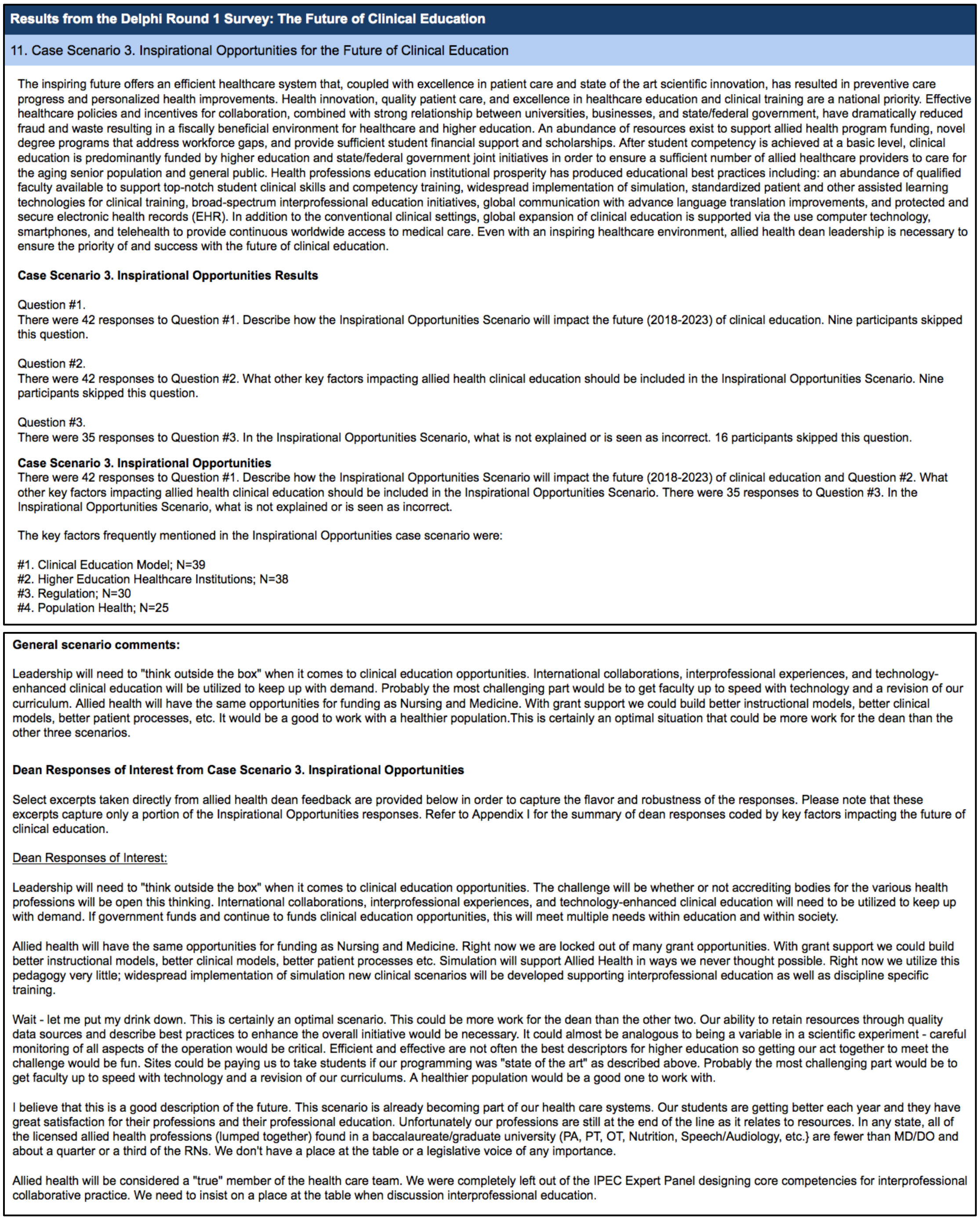
[a] Responses are listed from highest to lowest number of responses

Scenario 2. Tough Times: Faculty Clinical Preceptor

Table 13
Responses to Key Factor: Faculty Clinical Preceptor

No. of Responses	Responses[a]
3	Remaining responses: faculty recruitment with joint appointments between healthcare business settings and academia; faculty, often accustomed to serving the roles of educator and researcher, will spend more time in clinical practice accompanied by students; develop clinical instructors who are really devoted to clinical education
Total (N=3)	

[a] Responses are listed from highest to lowest number of responses



Results from the Delphi Round 1 Survey: The Future of Clinical Education

11. Case Scenario 3. Inspirational Opportunities for the Future of Clinical Education

The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have dramatically reduced fraud and waste resulting in a fiscally beneficial environment for healthcare and higher education. An abundance of resources exist to support allied health program funding, novel degree programs that address workforce gaps, and provide sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Health professions education institutional prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). In addition to the conventional clinical settings, global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to provide continuous worldwide access to medical care. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

Case Scenario 3. Inspirational Opportunities Results

Question #1.
There were 42 responses to Question #1. Describe how the Inspirational Opportunities Scenario will impact the future (2018-2023) of clinical education. Nine participants skipped this question.

Question #2.
There were 42 responses to Question #2. What other key factors impacting allied health clinical education should be included in the Inspirational Opportunities Scenario. Nine participants skipped this question.

Question #3.
There were 35 responses to Question #3. In the Inspirational Opportunities Scenario, what is not explained or is seen as incorrect. 16 participants skipped this question.

Case Scenario 3. Inspirational Opportunities
There were 42 responses to Question #1. Describe how the Inspirational Opportunities Scenario will impact the future (2018-2023) of clinical education and Question #2. What other key factors impacting allied health clinical education should be included in the Inspirational Opportunities Scenario. There were 35 responses to Question #3. In the Inspirational Opportunities Scenario, what is not explained or is seen as incorrect.

The key factors frequently mentioned in the Inspirational Opportunities case scenario were:

#1. Clinical Education Model; N=39
#2. Higher Education Healthcare Institutions; N=38
#3. Regulation; N=30
#4. Population Health; N=25

General scenario comments:

Leadership will need to "think outside the box" when it comes to clinical education opportunities. International collaborations, interprofessional experiences, and technology-enhanced clinical education will be utilized to keep up with demand. Probably the most challenging part would be to get faculty up to speed with technology and a revision of our curriculum. Allied health will have the same opportunities for funding as Nursing and Medicine. With grant support we could build better instructional models, better clinical models, better patient processes, etc. It would be a good to work with a healthier population.This is certainly an optimal situation that could be more work for the dean than the other three scenarios.

Dean Responses of Interest from Case Scenario 3. Inspirational Opportunities

Select excerpts taken directly from allied health dean feedback are provided below in order to capture the flavor and robustness of the responses. Please note that these excerpts capture only a portion of the Inspirational Opportunities responses. Refer to Appendix I for the summary of dean responses coded by key factors impacting the future of clinical education.

<u>Dean Responses of Interest:</u>

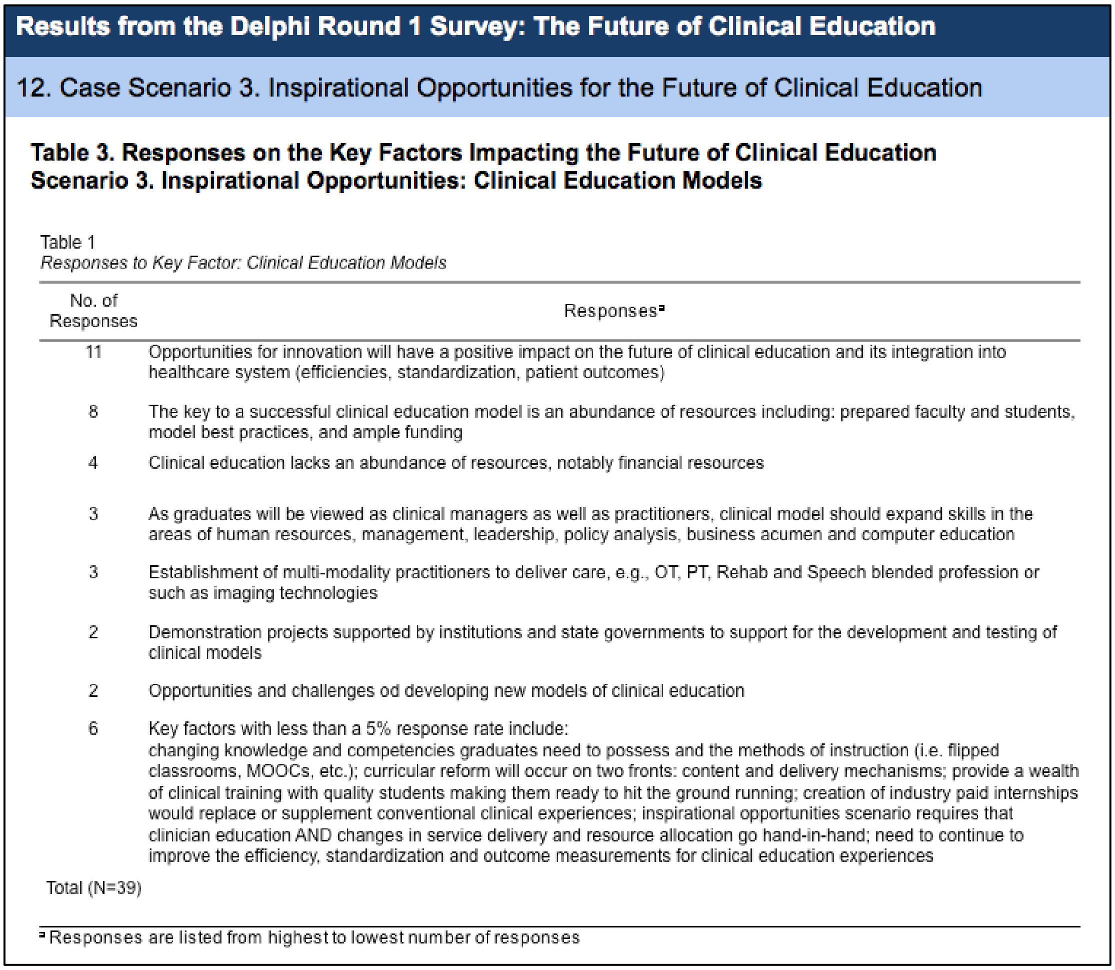
Leadership will need to "think outside the box" when it comes to clinical education opportunities. The challenge will be whether or not accrediting bodies for the various health professions will be open this thinking. International collaborations, interprofessional experiences, and technology-enhanced clinical education will need to be utilized to keep up with demand. If government funds and continue to funds clinical education opportunities, this will meet multiple needs within education and within society.

Allied health will have the same opportunities for funding as Nursing and Medicine. Right now we are locked out of many grant opportunities. With grant support we could build better instructional models, better clinical models, better patient processes etc. Simulation will support Allied Health in ways we never thought possible. Right now we utilize this pedagogy very little; widespread implementation of simulation new clinical scenarios will be developed supporting interprofessional education as well as discipline specific training.

Wait - let me put my drink down. This is certainly an optimal scenario. This could be more work for the dean than the other two. Our ability to retain resources through quality data sources and describe best practices to enhance the overall initiative would be necessary. It could almost be analogous to being a variable in a scientific experiment - careful monitoring of all aspects of the operation would be critical. Efficient and effective are not often the best descriptors for higher education so getting our act together to meet the challenge would be fun. Sites could be paying us to take students if our programming was "state of the art" as described above. Probably the most challenging part would be to get faculty up to speed with technology and a revision of our curriculums. A healthier population would be a good one to work with.

I believe that this is a good description of the future. This scenario is already becoming part of our health care systems. Our students are getting better each year and they have great satisfaction for their professions and their professional education. Unfortunately our professions are still at the end of the line as it relates to resources. In any state, all of the licensed allied health professions (lumped together) found in a baccalaureate/graduate university (PA, PT, OT, Nutrition, Speech/Audiology, etc.} are fewer than MD/DO and about a quarter or a third of the RNs. We don't have a place at the table or a legislative voice of any importance.

Allied health will be considered a "true" member of the health care team. We were completely left out of the IPEC Expert Panel designing core competencies for interprofessional collaborative practice. We need to insist on a place at the table when discussion interprofessional education.



Results from the Delphi Round 1 Survey: The Future of Clinical Education

12. Case Scenario 3. Inspirational Opportunities for the Future of Clinical Education

Table 3. Responses on the Key Factors Impacting the Future of Clinical Education Scenario 3. Inspirational Opportunities: Clinical Education Models

Table 1

Responses to Key Factor: Clinical Education Models

No. of Responses	Responses[a]
11	Opportunities for innovation will have a positive impact on the future of clinical education and its integration into healthcare system (efficiencies, standardization, patient outcomes)
8	The key to a successful clinical education model is an abundance of resources including: prepared faculty and students, model best practices, and ample funding
4	Clinical education lacks an abundance of resources, notably financial resources
3	As graduates will be viewed as clinical managers as well as practitioners, clinical model should expand skills in the areas of human resources, management, leadership, policy analysis, business acumen and computer education
3	Establishment of multi-modality practitioners to deliver care, e.g., OT, PT, Rehab and Speech blended profession or such as imaging technologies
2	Demonstration projects supported by institutions and state governments to support for the development and testing of clinical models
2	Opportunities and challenges od developing new models of clinical education
6	Key factors with less than a 5% response rate include: changing knowledge and competencies graduates need to possess and the methods of instruction (i.e. flipped classrooms, MOOCs, etc.); curricular reform will occur on two fronts: content and delivery mechanisms; provide a wealth of clinical training with quality students making them ready to hit the ground running; creation of industry paid internships would replace or supplement conventional clinical experiences; inspirational opportunities scenario requires that clinician education AND changes in service delivery and resource allocation go hand-in-hand; need to continue to improve the efficiency, standardization and outcome measurements for clinical education experiences
Total (N=39)	

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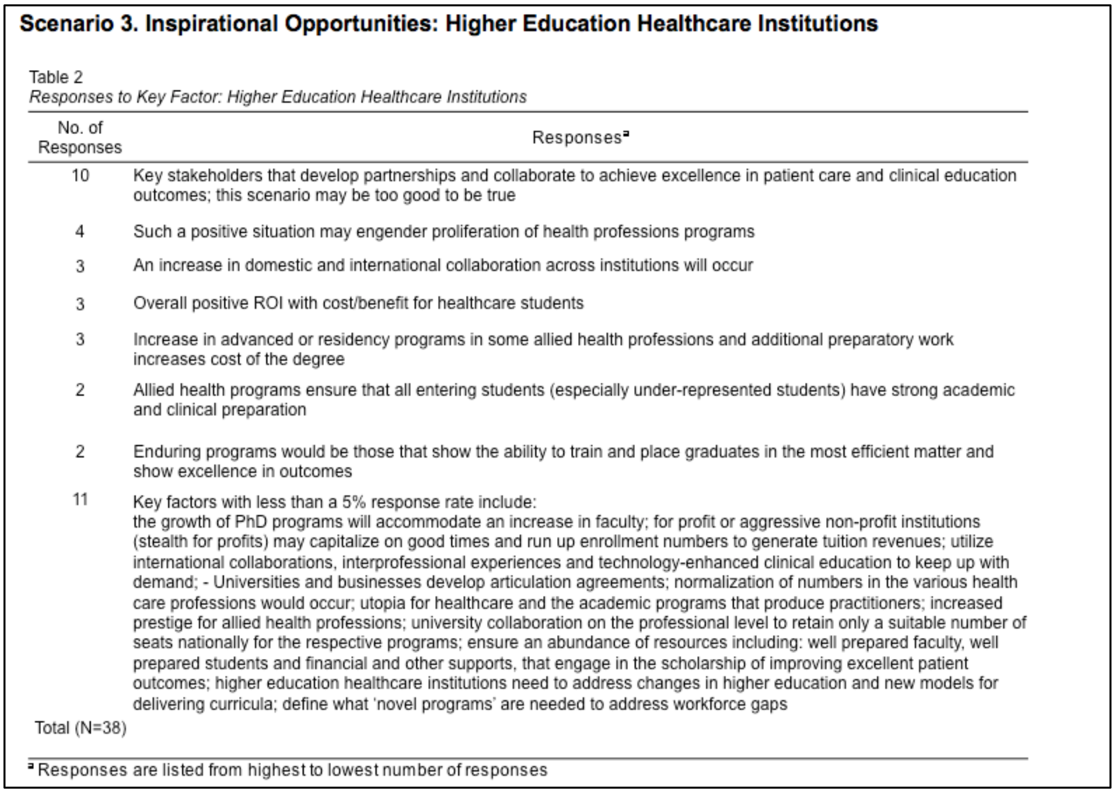
[a] Responses are listed from highest to lowest number of responses

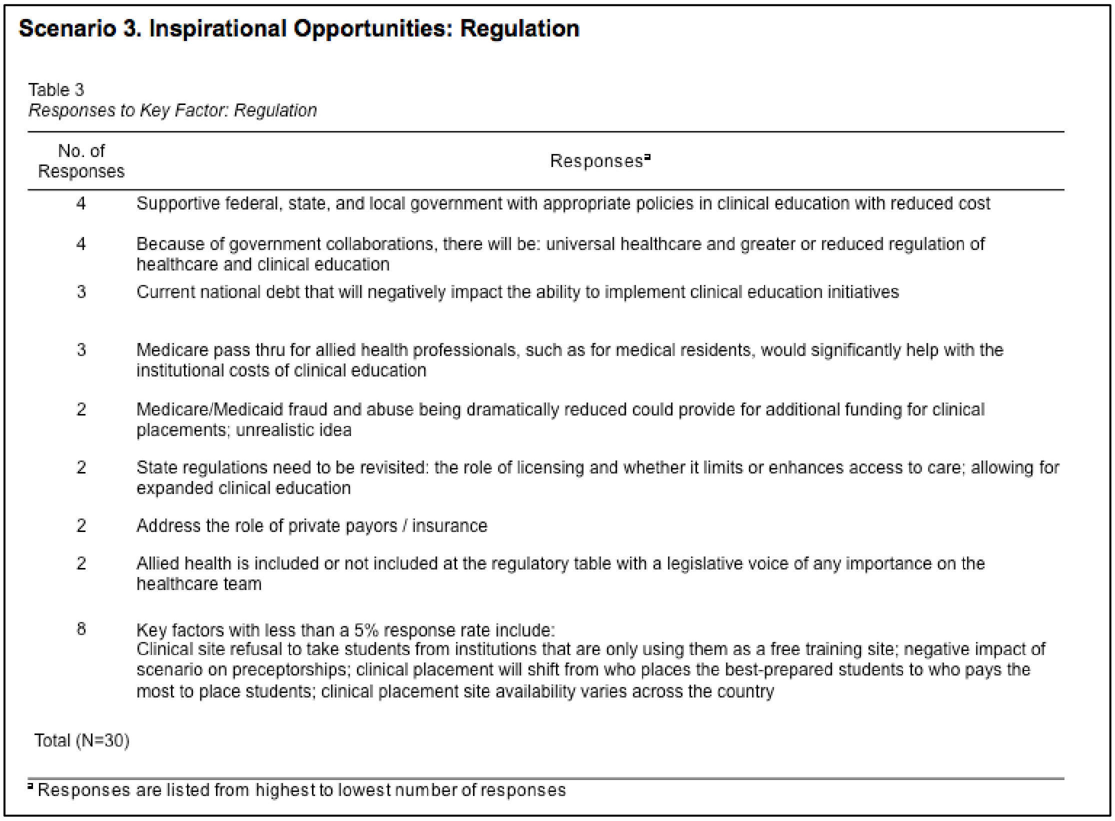


Scenario 3. Inspirational Opportunities: Higher Education Healthcare Institutions

Table 2
Responses to Key Factor: Higher Education Healthcare Institutions

No. of Responses	Responses[a]
10	Key stakeholders that develop partnerships and collaborate to achieve excellence in patient care and clinical education outcomes; this scenario may be too good to be true
4	Such a positive situation may engender proliferation of health professions programs
3	An increase in domestic and international collaboration across institutions will occur
3	Overall positive ROI with cost/benefit for healthcare students
3	Increase in advanced or residency programs in some allied health professions and additional preparatory work increases cost of the degree
2	Allied health programs ensure that all entering students (especially under-represented students) have strong academic and clinical preparation
2	Enduring programs would be those that show the ability to train and place graduates in the most efficient matter and show excellence in outcomes
11	Key factors with less than a 5% response rate include: the growth of PhD programs will accommodate an increase in faculty; for profit or aggressive non-profit institutions (stealth for profits) may capitalize on good times and run up enrollment numbers to generate tuition revenues; utilize international collaborations, interprofessional experiences and technology-enhanced clinical education to keep up with demand; - Universities and businesses develop articulation agreements; normalization of numbers in the various health care professions would occur; utopia for healthcare and the academic programs that produce practitioners; increased prestige for allied health professions; university collaboration on the professional level to retain only a suitable number of seats nationally for the respective programs; ensure an abundance of resources including: well prepared faculty, well prepared students and financial and other supports, that engage in the scholarship of improving excellent patient outcomes; higher education healthcare institutions need to address changes in higher education and new models for delivering curricula; define what 'novel programs' are needed to address workforce gaps
Total (N=38)	

[a] Responses are listed from highest to lowest number of responses



Scenario 3. Inspirational Opportunities: Regulation

Table 3
Responses to Key Factor: Regulation

No. of Responses	Responses[a]
4	Supportive federal, state, and local government with appropriate policies in clinical education with reduced cost
4	Because of government collaborations, there will be: universal healthcare and greater or reduced regulation of healthcare and clinical education
3	Current national debt that will negatively impact the ability to implement clinical education initiatives
3	Medicare pass thru for allied health professionals, such as for medical residents, would significantly help with the institutional costs of clinical education
2	Medicare/Medicaid fraud and abuse being dramatically reduced could provide for additional funding for clinical placements; unrealistic idea
2	State regulations need to be revisited: the role of licensing and whether it limits or enhances access to care; allowing for expanded clinical education
2	Address the role of private payors / insurance
2	Allied health is included or not included at the regulatory table with a legislative voice of any importance on the healthcare team
8	Key factors with less than a 5% response rate include: Clinical site refusal to take students from institutions that are only using them as a free training site; negative impact of scenario on preceptorships; clinical placement will shift from who places the best-prepared students to who pays the most to place students; clinical placement site availability varies across the country
Total (N=30)	

[a] Responses are listed from highest to lowest number of responses

Scenario 3. Inspirational Opportunities: Population Health

Table 4
Responses to Key Factor: Population Health

No. of Responses	Responses[a]
10	Patient prevention and wellness through access to healthcare data / health literacy; patient self-care/lifestyle changes; home care; medical home
5	Changing patient/population demographics such as: elderly, uninsured individuals with chronic illness, immigrants
3	Continued population growth coupled with global climate change; global health and shifting wealth are likely to challenge such an optimistic scenario
3	Positive change and adaptability as allied health professions improve patient health outcomes, increase quality of life
4	Key factors with less than a 5% response rate include: employers increased their focus and support for the health and wellness of their employees; laddered workforce that is patient supported but not patient directed might contribute to improved population health; public recognition; effecting social change and economic underpinnings to bring to fruition will dictate the outcome
Total (N=25)	

[a] Responses are listed from highest to lowest number of responses

Scenario 3. Inspirational Opportunities: Technology

Table 5
Responses to Key Factor: Technology

No. of Responses	Responses[a]
10	Importance of technology to the future of clinical education and healthcare; global importance of technology
6	Refine the clinical education curricula to teach the latest advances, e.g., telemedicine, health informatics, alternative mechanisms, distance learning, simulation, computer education, EHR and EHR simulation software
2	Instructional technology will have a major impact on decreasing the cost of clinical education and cost of direct patient care
2	Importance of technology (e.g., smartphone) to assist patients in the necessary lifestyle changes and prevention
5	Key factors with less than a 5% response rate include: innovation usually results from being "squeezed," not from having ample resources; utilize technology to support a laddered workforce that spans employment roles that are patient supported to improve population health; challenge of getting faculty up to speed with technology and a revision of the curriculum; use of technology to support collaboration between college and clinic; advances in technology will test models of clinical education to develop best practices for future healthcare delivery
Total (N=25)	

[a] Responses are listed from highest to lowest number of responses

Scenario 3. Inspirational Opportunities: Allied Health Dean

Table 6
Responses to Key Factor: Allied Health Dean

No. of Responses	Responses[a]
3	Allied health dean take responsibility about accountability and relevancy to healthcare organizations that support clinical education, in concert with the healthcare community, a team member working toward common goals
2	Deans, program directors, department chairs, school directors (and students) need to be open to technology and update curricula content
2	Allied health schools / deans with creative leadership and faculty will excel
7	Remaining responses: this is not a realistic clinical education scenario in my geographic area of the country; scenario may results in more work for the Dean vs. other scenarios due to the careful monitoring of all key aspects of clinical education would be critical; great demand for faculty for increased programs will result in faculty shortages; demonstrate the ability to retain resources through quality data sources and describe best practices to enhance clinical education initiatives; maintain some oversight to ensure that we do not develop an educational system that produces too many healthcare workers; take charge as Deans that our education is relevant and meaningful in order to fulfill our responsibility and accountability for quality healthcare and clinical education; ensure that all students, particularly minority students, entering allied health programs have a strong academic preparation
Total (N=14)	

[a] Responses are listed from highest to lowest number of responses

Scenario 3. Inspirational Opportunities: Clinical Preceptors and Interprofessional Education

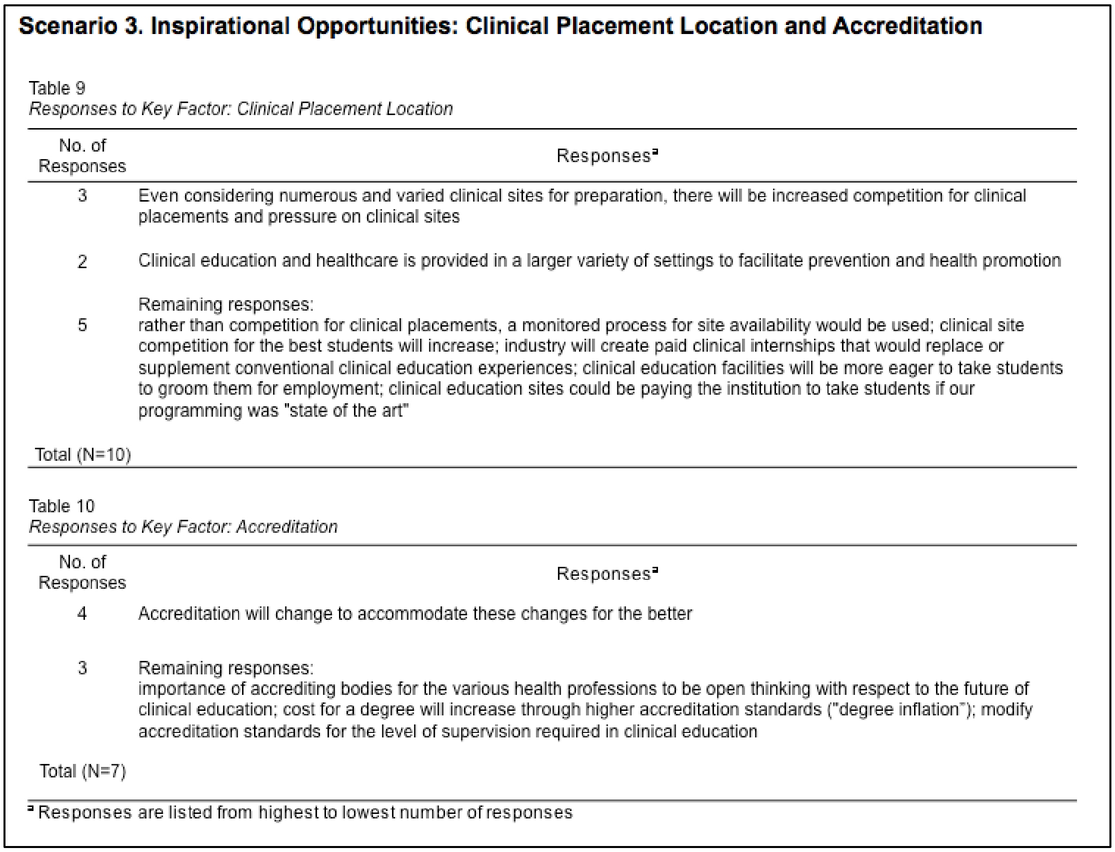
Table 7
Responses to Key Factor: Clinical Preceptors

No. of Responses	Responses[a]
5	Faculty who are well prepared and adequate in number engaged in the scholarship of student education and patient care
4	This scenario would increase the number of students and include more clinical educators
3	Remaining responses: work satisfaction for healthcare practitioners and clinical faculty; clinical preceptors would volunteer rather than charge for reimbursement for student IPE training; level of supervision required in clinical setting
Total (N=12)	

Table 8
Responses to Key Factor: Interprofessional Education

No. of Responses	Responses[a]
8	Realization of team-based (inter-professional) clinical education model with medicine and nursing, etc.
4	Remaining responses: Allied health insistence on being a "true" member of the healthcare team, especially in interprofessional education (e.g., IPEC); emergence of opportunities for faculty to design, implement and evaluate various clinical education models and approaches; emergence of opportunities to research how health professions improve health, decrease costs and increase quality of life; integrate patient and family into the academic program as part of the healthcare team
Total (N=12)	

[a] Responses are listed from highest to lowest number of responses



Scenario 3. Inspirational Opportunities: Clinical Placement Location and Accreditation

Table 9

Responses to Key Factor: Clinical Placement Location

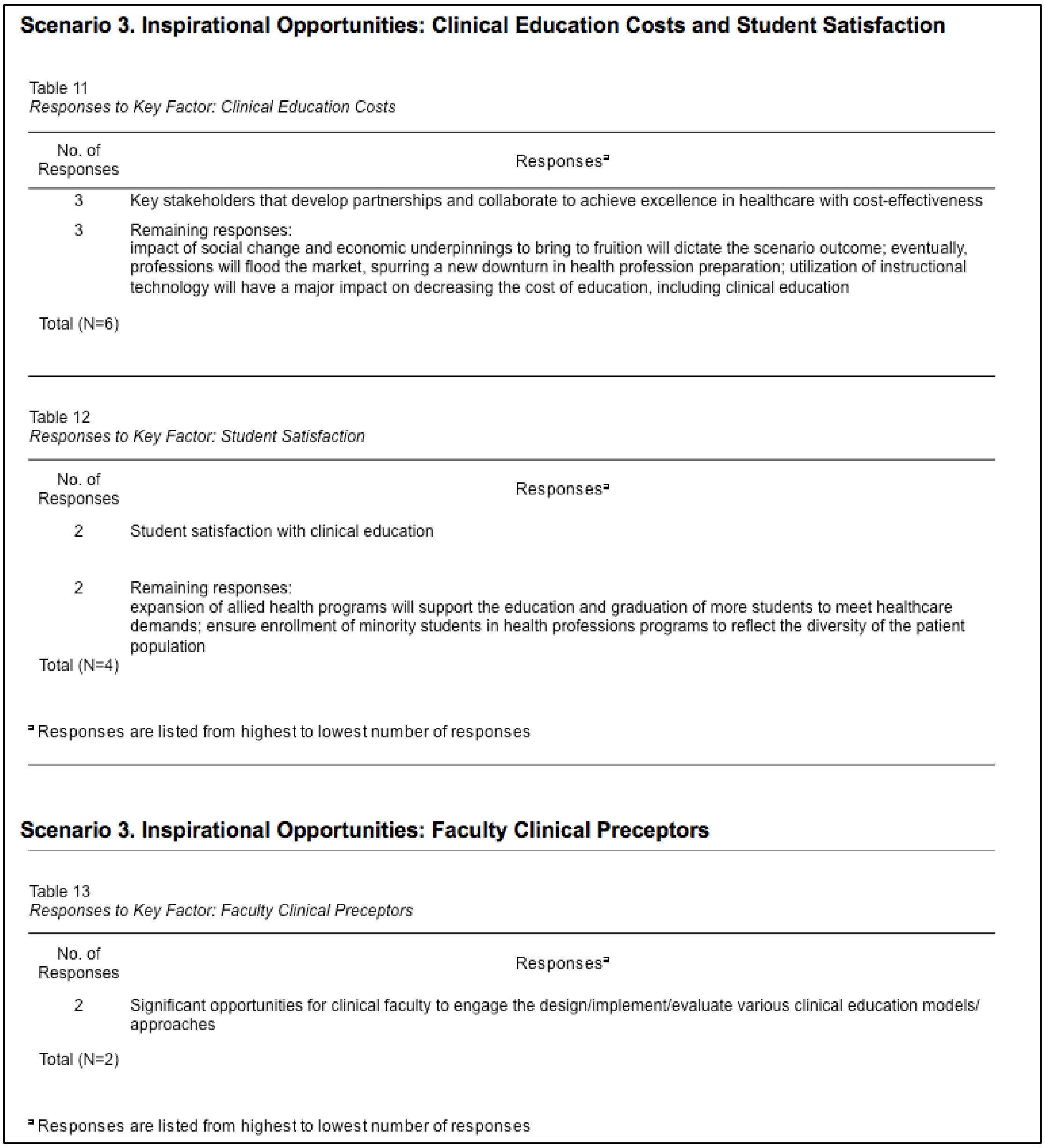
No. of Responses	Responses[a]
3	Even considering numerous and varied clinical sites for preparation, there will be increased competition for clinical placements and pressure on clinical sites
2	Clinical education and healthcare is provided in a larger variety of settings to facilitate prevention and health promotion
5	Remaining responses: rather than competition for clinical placements, a monitored process for site availability would be used; clinical site competition for the best students will increase; industry will create paid clinical internships that would replace or supplement conventional clinical education experiences; clinical education facilities will be more eager to take students to groom them for employment; clinical education sites could be paying the institution to take students if our programming was "state of the art"
Total (N=10)	

Table 10

Responses to Key Factor: Accreditation

No. of Responses	Responses[a]
4	Accreditation will change to accommodate these changes for the better
3	Remaining responses: importance of accrediting bodies for the various health professions to be open thinking with respect to the future of clinical education; cost for a degree will increase through higher accreditation standards ("degree inflation"); modify accreditation standards for the level of supervision required in clinical education
Total (N=7)	

[a] Responses are listed from highest to lowest number of responses



Scenario 3. Inspirational Opportunities: Clinical Education Costs and Student Satisfaction

Table 11
Responses to Key Factor: Clinical Education Costs

No. of Responses	Responses[a]
3	Key stakeholders that develop partnerships and collaborate to achieve excellence in healthcare with cost-effectiveness
3	Remaining responses: impact of social change and economic underpinnings to bring to fruition will dictate the scenario outcome; eventually, professions will flood the market, spurring a new downturn in health profession preparation; utilization of instructional technology will have a major impact on decreasing the cost of education, including clinical education
Total (N=6)	

Table 12
Responses to Key Factor: Student Satisfaction

No. of Responses	Responses[a]
2	Student satisfaction with clinical education
2	Remaining responses: expansion of allied health programs will support the education and graduation of more students to meet healthcare demands; ensure enrollment of minority students in health professions programs to reflect the diversity of the patient population
Total (N=4)	

[a] Responses are listed from highest to lowest number of responses

Scenario 3. Inspirational Opportunities: Faculty Clinical Preceptors

Table 13
Responses to Key Factor: Faculty Clinical Preceptors

No. of Responses	Responses[a]
2	Significant opportunities for clinical faculty to engage the design/implement/evaluate various clinical education models/ approaches
Total (N=2)	

[a] Responses are listed from highest to lowest number of responses

Results from the Delphi Round 1 Survey: The Future of Clinical Education

13. Case Scenario 4. Culture of Collaboration for the Future of Clinical Education

A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Collaborative efforts between allied health deans and accreditation directors resulted in accreditation standards broadly defining the scope of practice in allied health disciplines. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. Health professions education collaborative best practices abound. Interprofessional education standards of excellence include collaborative practice among all healthcare professionals and clinical faculty, collaborative clinical practice in healthcare professional student training, accreditation support of interprofessional education in medicine, nursing and allied health programs, and the use of technology and simulation to support interprofessional education across the globe. Health professions education governance instructs its faculty and students to actively promote the benefits of public health and holistic well being (eat, pray, love) for all age groups at a variety of clinical placements sites including community health fairs and fundraisers, pharmacy health initiatives, and "mom and pop" grocery stores. Allied health students, trained by geriatric specialty care specialists, social workers, and other allied health disciplines, embrace caring for the elderly. The elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and geriatric specialty clinical training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future of clinical education in a widening variety of settings.

Case Scenario 4. Culture of Collaboration Results

Question #1.
There were 42 responses to Question #1. Describe how the Culture of Collaboration Scenario will impact the future (2018-2023) of clinical education. Nine participants skipped this question.

Question #2.
There were 42 responses to Question #2. What other key factors impacting allied health clinical education should be included in the Culture of Collaboration Scenario. Nine participants skipped this question.

Question #3.
There were 36 responses to Question #3. In the Culture of Collaboration Scenario, what is not explained or is seen as incorrect. 15 participants skipped this question.

Case Scenario 4. Culture of Collaboration
There were 42 responses to Question #1. Describe how the Culture of Collaboration Scenario will impact the future (2018-2023) of clinical education and Question #2. What other key factors impacting allied health clinical education should be included in the Culture of Collaboration Scenario. There were 36 responses to Question #3. In the Culture of Collaboration Scenario, what is not explained or is seen as incorrect.

The key factors frequently mentioned in the Culture of Collaboration case scenario were:

#1. Clinical Education Model; N=33
#2. Population Health; N=31
#3. Regulation; N=22
#4. Interprofessional Education; N=17

General scenario comments:

We will see curricula, with a strong link between the clinical education and the didactic education, offered in different formats that allow for greater interactions between students, faculty and clinical faculty. This scenario offers greater availability of clinical education experiences in more settings to accommodate expanded scope of practice. Cross-training will re-surface and become a more viable possibility. Clinical education curricula will out of necessity embrace teamwork, interprofessional and collaborative care models. Academic administrators, program directors, and program faculty can all contribute by joining forces in recognizing that the best, and most efficient healthcare is one that is delivered through a true interprofessional and interdisciplinary approach. All health care settings will have an integrated approach to education. Deans and academic leaders can have a strong influence as we continue to educate the next generation of allied health professionals.

Dean Responses of Interest from Case Scenario 4. Culture of Collaboration

Select excerpts taken directly from allied health dean feedback are provided below in order to capture the flavor and robustness of the responses. Please note that these excerpts capture only a portion of the Culture of Collaboration responses. Refer to Appendix I for the summary of dean responses coded by key factors impacting the future of clinical education.

Dean Responses of Interest:

The culture of collaboration will most certainly, in a positive way, affect the future of clinical education. Academic administrators, program directors, and program faculty can all contribute substantively to developing a new culture of collaboration. This will require faculty and clinicians across professions to join forces in recognizing that the best, and most efficient healthcare is one that is delivered through a true interprofessional and interdisciplinary approach. This is perhaps the most important area that Deans and academic leaders can have a strong influence as we continue to educate the next generation of allied health professionals. The preparation of the next generation of allied health professionals needs to occur embracing the culture of collaboration.

The biggest impact for clinical education in the scenario above is the strength of the link between the clinical education and the didactic education. When collaboration is the norm, our clinical preceptors will be embraced by, and supported by, our academic faculty and vice versa. This level of collaboration will enable best practices in education (both clinical and didactic) to flourish.

Greater availability of clinical education experiences in more settings to accommodate expanded scope of practice. Shortage of qualified faculty/preceptors in clinical settings until the new generation of practitioners move into those positions. Emphasis on patient education and wellnessmonitoring, rather than treatment and therapies. Cross-training will resurface and become a more viable possibility. Clinical education curricula will out of necessity embrace teamwork, interprofessional and collaborative care models. More opportunities for career ladders, depending on the setting; e.g., "mom and pop" grocery stores will offer basic services provided by lower level practitioners, and reduce the need for highly trained practitioners at other clinical settings that provide more comprehensive services.

There will be a strong understanding of interprofessional practice and therefore how to educate health professionals. There is a greater collaboration with all disciplines, including medical schools. Medical education will begin to expand its understanding of where physicians practice, which will also allow for collaboration with other health disciplines. Accreditation standards are revised completely, with greater collaboration across disciplines, so that the standards can be met in ways that are interprofessional. We will see curricula offered in different formats that allow for greater interactions between students, faculty and clinical faculty. All health care settings will have an integrated approach to education.

Students will need to have a strong grasp of the health care systems of the world. Global health care issues will be a key part of the core curriculum. Knowing how to be both a team member and a team leader will be key to success in this environment. Much of health care will be pushed into the community setting. Graduates will need to be familiar with alternative practice settings and the role of healthy aging. There will be enhanced reimbursements for those practitioners that keep patients healthy.

Results from the Delphi Round 1 Survey: The Future of Clinical Education

14. Case Scenario 4. Culture of Collaboration for the Future of Clinical Education

Table 4. Responses on the Key Factors Impacting the Future of Clinical Education
Scenario 4. Culture of Collaboration: Clinical Education Models

Table 1
Responses to Key Factor: Clinical Education Models

No. of Responses	Responses[a]
9	Culture of health and wellness has a positive impact on the future of clinical education transdisciplinary care
7	Collaborative model will enable best practices in education (either or both clinical and didactic) to flourish
5	Clinical education includes: teamwork, interprofessional and collaborative care models; cross-training, and accountability
4	Ensure resources (space and teaching areas) and strategies (teaching content, approaches and assessment measures) for effective collaborative clinical model
2	Clinical model and curricula offered in different formats that allow for greater interactions between students, faculty and clinical faculty
6	Key factors with less than a 5% response rate include: a collaborative healthcare model provides a big impact clinical education in the strength of the link between clinical education and the didactic education coupled with the collaborative practices between clinical educators and academic faculty and vice versa; global health care issues will be a key part of the core curriculum; involvement of medical schools and academic medical centers will be essential to collaborative clinical education model; the benefits of a collaborative healthcare model may exaggerated the realities of collaboration; ensure that clinical education matches current didactic education
Total (N=33)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Population Health

Table 2
Responses to Key Factor: Population Health

No. of Responses	Responses[a]
9	Demographic changes including: life span, aging population, child and adolescent population, other (1)
8	Improve the delivery of health care by working to decrease redundancy and focus on patient care outcomes/ health prevention and wellness
7	Improve population health / global health / geriatric health
3	Positive impact on healthcare and clinical education
4	Key factors with less than a 5% response rate include: A collaborative healthcare model will provide value to patients with an increase of basic services provided by lower-level practitioners; language and culture barriers may make collaborative healthcare practices more difficult; ensure that collaborative healthcare is focused on the connection between mind and body; elderly may be vocal about healthcare but do not hold enough political clout to sway legislators
Total (N=31)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Regulation

Table 3

Responses to Key Factor: Regulation

No. of Responses	Responses[a]
6	Collaborative healthcare model where insurance/Medicare/Medicaid may provide reimbursement / payment for efficient team-based care and allied health services rendered
3	Broaden the scope of practice to permit additional clinical settings, more diverse supervising clinical faculty, and cross-training
2	Legislature and across the board healthcare organizations and healthcare professional support of collaboration and scope of practice expansion
2	Collaborative model changes regulation and may be coupled with allied health funding
2	What will license to practice look like?
7	Key factors with less than a 5% response rate include: more uniformity in state practice acts will be required to promote this culture of collaboration; stricter malpractice insurance may influence what allied health students can and cannot do in any type of setting; impact of the Accountable Care Act (ACA) on IPE; enhanced reimbursements for healthcare practitioners that keep patients healthy; there is a possibility that some professions might "evolve out" of the system because other their practices might be absorbed by other professions; evaluate how healthcare financing will impact the opportunities for collaborative practice and interprofessional delivery of care; uncontrolled spending and healthcare coverage gaps will not likely be resolved in the near future
Total (N=22)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Interprofessional Education (IPE)

Table 4

Responses to Key Factor: Interprofessional Education (IPE)

No. of Responses	Responses[a]
3	IPE model of clinical education would increase quality of student education; IPE may decrease the cost of healthcare
3	Changing patient/population demographics such as: elderly, uninsured individuals with chronic illness, immigrants
2	IPE, is an excellent idea, but it's of limited value without an inter-professional practice setting that will not be paid by a third party
2	IPE model provides opportunities for new assessment and intervention strategies
2	IPE is positive and a priority in clinical education
2	Who is the team leader?; physicians may not want to lose team leader designation
3	Key factors with less than a 5% response rate include: will there be a positive shift in teamwork and accountability?; clinical education should include IPE training as a team member and team leader; provide IPE best practices to support its value in the academic community
Total (N=17)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Allied Health Dean

Table 5

Responses to Key Factor: Allied Health Dean

No. of Responses	Responses[a]
3	Priority of Deans to lead in collaborative efforts using an interprofessional and interdisciplinary approach
2	What is the likelihood that healthcare professions would be willing to sacrifice their current autonomy in order to create a truly interdependent collaborative system?
8	Remaining responses: as equal collaborators and contributors, should we give up "allied health" in title to focus on health and wellness?; completely change the clinical education processes and curriculum emphases to thread interprofessionalism throughout the curriculum for students and faculty; allied health deans should provide leadership in the advancement of the allied health professions similar to the nursing evolution; allied health deans see curricula offered in different formats that allow for greater interactions between students, faculty and clinical faculty; the movement from a disease-based to a truly patient-centered approach of health promotion for all healthcare disciplines would essentially change the kinds of teaching content, approaches and assessment measures in didactic and clinical education; collaborative healthcare would be favorable for the rise of for-profit allied health programs; recognize the contributions that allied health educators and practitioners make as equal collaborators to health, quality of life and give up the "allied" in their titles; recognize that special interest groups may not be wiling to sacrifice their current autonomy now or in the near future in order to create a truly interdependent system
Total (N=13)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Accreditation and Clinical Placement Location

Table 6

Responses to Key Factor: Accreditation

No. of Responses	Responses[a]
7	Revision of accreditation standards for interprofessional education standards of excellence and greater collaboration across disciplines
6	Remaining responses: role of the individual in complying with accreditation standards of care; accreditation flexibility with "service line" departmental structures, e.g., geriatric services, oncology care, pediatric care, etc.; fewer accreditation restrictions on clinical placements sites; establish accreditation guidelines identifying what health disciplines are considered as appropriate clinical preceptors when provide student training in a collaborative clinical education model; establish accreditation guidelines identifying who is an appropriate clinical preceptor when providing interprofessional student training in a collaborative clinical education model; define license to practice in collaborative healthcare
Total (N=13)	

Table 7

Responses to Key Factor: Clinical Placement Location

No. of Responses	Responses[a]
6	Numerous clinical settings with community settings as the dominant location and alternative practice settings, campus labs and hospitals
2	Clinical placement funding is not an issue
4	Remaining responses: more clinical settings to accommodate expanded scope of practice; all health care clinical settings will have an integrated approach to clinical education; what will constitute an appropriate environment for clinical practice at the local, state, federal and international level?; shift of clinical site placement sites away from acute care settings and over to community-based settings with greater patients numbers to support the majority of clinical experiences
Total (N=12)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Clinical Preceptors and Higher Education Healthcare Institutions

Table 8

Responses to Key Factor: Clinical Preceptors

No. of Responses	Responses[a]
2	Change in clinical roles of faculty and clinical preceptors
9	Remaining responses: shortage of clinical faculty; private practitioners may be unwilling to transition to a true collaborative practice if it results in decreased compensation; how will clinical educators balance educating individuals to work as IP teams vs. practice in a specific profession?; reduce the need for highly trained practitioners at clinical settings that provide more comprehensive services; all clinicians know their roles and the roles of their colleagues; team reimbursement, and not the individual professions, could result in a significant paradigm shift in how students are educated and how care is delivered; in collaborative clinical education, will appropriate clinical preceptors include a variety of health disciplines for student training; in collaborative clinical education, who is the appropriate clinical preceptor for interprofessional student training; ensure that clinical preceptors provide student clinical education that matches current didactic education
Total (N=11)	

Table 9

Responses to Key Factor: Higher Education Healthcare Institutions

No. of Responses	Responses[a]
9	Responses: all stakeholders benefit; discipline-based department structures might be replaced by "service line" structures, e.g., geriatric services, oncology care, pediatric care, etc.; collaboration and accountability may decrease the numbers or eliminate some allied health disciplines; academic administrators, program directors, and program faculty contribute to new culture of collaboration; diversity of healthcare workforce; with a collaborative healthcare environment, clinical education will be more likely to support/foster the principles of transdisciplinary care; positive ROI where student clinical education is a benefit over costs; integrated system of clinical education reduces competition; higher education healthcare institutions are still being challenged by limited successful clinical models
Total (N=9)	

[a] Responses are listed from highest to lowest number of responses

Scenario 4. Culture of Collaboration: Student Satisfaction and Clinical Education Costs

Table 10

Responses to Key Factor: Student Satisfaction

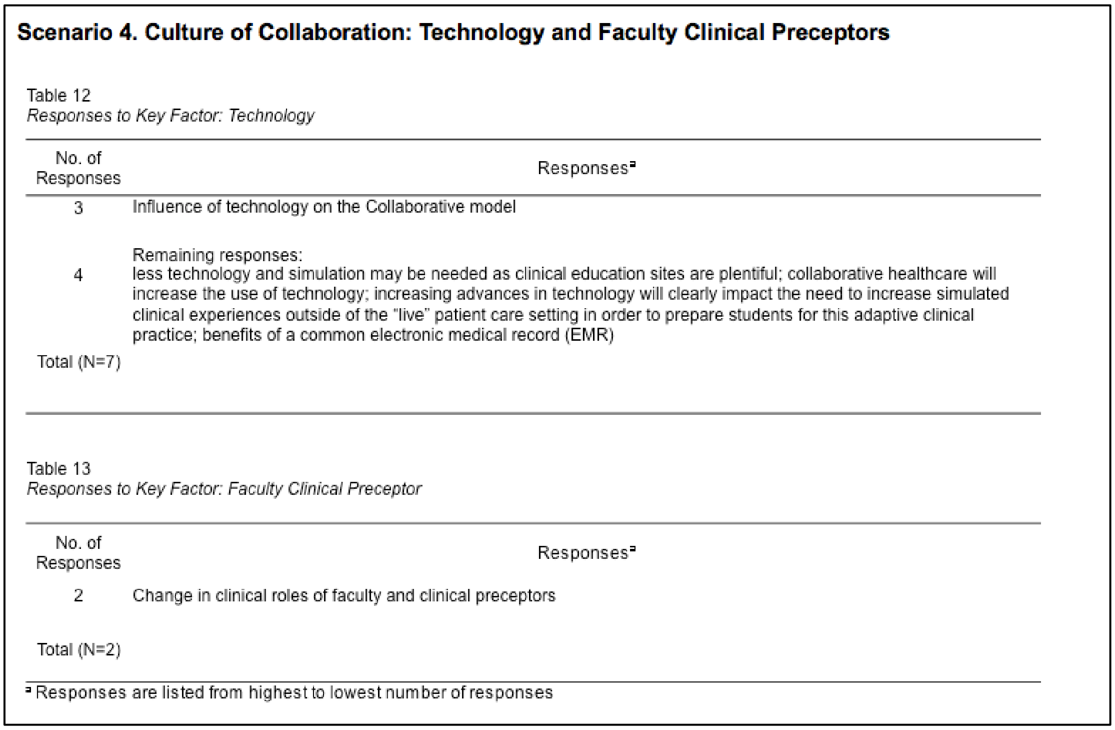
No. of Responses	Responses[a]
5	Collaborative model increases student satisfaction that may be associated with a decreased cost of education and the use of IPE models
4	Remaining responses: students better prepared for clinical practice with teaching and training on the Triple Aim (better care, better health and lower costs); greater emphasis on business skills student training; how will students finance their education?; how will students pay off their debt?
Total (N=9)	

Table 11

Responses to Key Factor: Clinical Education Costs

No. of Responses	Responses[a]
3	Culture of health and wellness (IPE model) has a positive impact on the future of clinical education and costs
3	Resolution or not of "uncontrolled spending and coverage gaps"
2	Clinical placement funding is not an issue
1	Remaining response: Address changes in healthcare delivery, reimbursement formulae, sources of healthcare reimbursement and impact on clinical education
Total (N=9)	

[a] Responses are listed from highest to lowest number of responses



Scenario 4. Culture of Collaboration: Technology and Faculty Clinical Preceptors

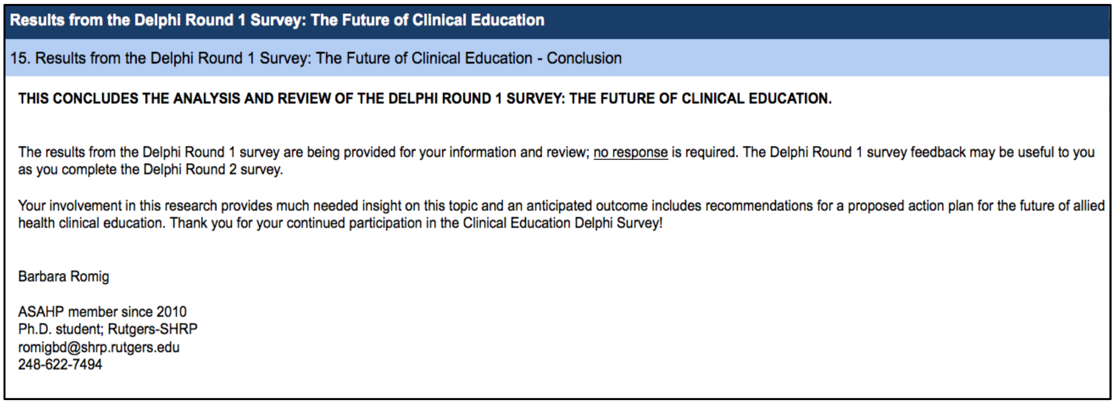
Table 12
Responses to Key Factor: Technology

No. of Responses	Responses[a]
3	Influence of technology on the Collaborative model
4	Remaining responses: less technology and simulation may be needed as clinical education sites are plentiful; collaborative healthcare will increase the use of technology; increasing advances in technology will clearly impact the need to increase simulated clinical experiences outside of the "live" patient care setting in order to prepare students for this adaptive clinical practice; benefits of a common electronic medical record (EMR)
Total (N=7)	

Table 13
Responses to Key Factor: Faculty Clinical Preceptor

No. of Responses	Responses[a]
2	Change in clinical roles of faculty and clinical preceptors
Total (N=2)	

[a] Responses are listed from highest to lowest number of responses



Results from the Delphi Round 1 Survey: The Future of Clinical Education

15. Results from the Delphi Round 1 Survey: The Future of Clinical Education - Conclusion

THIS CONCLUDES THE ANALYSIS AND REVIEW OF THE DELPHI ROUND 1 SURVEY: THE FUTURE OF CLINICAL EDUCATION.

The results from the Delphi Round 1 survey are being provided for your information and review; no response is required. The Delphi Round 1 survey feedback may be useful to you as you complete the Delphi Round 2 survey.

Your involvement in this research provides much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education. Thank you for your continued participation in the Clinical Education Delphi Survey!

Barbara Romig

ASAHP member since 2010
Ph.D. student; Rutgers-SHRP
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248-622-7494

Appendix QQ

Round 2 Survey E-Mail Reminder

RUTGERS
School of Health Related Professions

December 10, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Approximately 1 week ago, the “The Future of Clinical Education: A Delphi Study of Allied Health Deans” Round 2 Survey was e-mailed to you. This study is designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education. This is a critical step to ensure optimum student education in the future.

Your feedback on the Delphi survey is extremely important to this research study. Your involvement provides much needed insight and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education.

Please review the comments and feedback from the Delphi Round 1 survey which was provided to you in a separate SurveyMonkey link and PDF. Once you have reviewed as much or as little as you desire, please move to the Delphi Round 2 survey.

The Delphi Round 2 survey has been developed from your Delphi Round 1 survey ratings, comments and feedback. The Delphi Round 2 survey will take approximately 60-90 minutes to complete. You may continue to save and enter your comments until the survey closing date of Monday, December 23, 2013.

Now, please complete the Delphi Round 2 survey using the following SurveyMonkey link.

Note: you may complete Delphi Round 2 survey even if you did not complete the Delphi Round 1 survey.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010

Ph.D. Candidate; Rutgers-SHRP
E-mail: romigbd@shrp.rutgers.edu
Phone: 248-622-7494

Appendix RR

Round 2 Survey Phone Script Reminder

My name is Barbara Romig and I am a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey. I am calling to remind you that the Delphi Round 2 survey is now available for feedback on Survey Monkey. Approximately two weeks ago, you received the Delphi Round 2 survey via a unique SurveyMonkey link.

If you have already completed the survey, please accept my sincere thanks. If not, please complete your Delphi Round 2 survey via your unique SurveyMonkey link by Monday, December 23rd. If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission. If you have any questions regarding this study, please do not hesitate to call me at 248-622-7494.

I am extremely grateful for your participation in the **“The Future of Clinical Education: A Delphi Study of Allied Health Deans” Round 2 Survey**. I would very much appreciate your continuation in the study. Your feedback is very important to the agreement building process and the study outcomes. An anticipated outcome includes recommended action plans regarding the future of allied health clinical education.

Thank you very much for your support of this very important study.

Barbara Romig

Appendix SS

Round 2 Survey Final E-Mail Reminder

RUTGERS
School of Health Related
Professions

December 18, 2013

Dear [Name of Institutional Member Dean or Designated Representative],

Instructions on How to Save Your SurveyMonkey Responses:

Your survey responses can be saved halfway and finished later:

Yes, the navigation buttons of "Next" or "Done" must always be clicked on the bottom of the page to save the response.

If a respondent answers questions on a page, clicks the back button on the top of the web browser, the survey will move back to the previous page and not save the current response.

http://help.surveymonkey.com/articles/en_US/kb/Can-you-use-the-browser-s-Back-Forward-buttons-to-save-a-response

Your survey can be saved halfway and finished later:

Yes, respondents can go back to previous pages in the survey and update existing responses until the survey is finished or until they have exited the survey. After the survey is finished, the respondent will not be able to re-enter the survey.

http://help.surveymonkey.com/articles/en_US/kb/Can-a-survey-be-saved-halfway-and-finished-later

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Approximately 2 weeks ago, the “The Future of Clinical Education: A Delphi Study of Allied Health Deans” Round 2 Survey was e-mailed to you. This study is designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education. This is a critical step to ensure optimum student education in the future.

Your feedback on the Delphi survey is extremely important to this research study.

Your involvement provides much needed insight and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education.

Please review the comments and feedback from the Delphi Round 1 survey which was provided to you in a separate SurveyMonkey link and PDF. Once you have reviewed as much or as little as you desire, please move to the Delphi Round 2 survey.

The Delphi Round 2 survey has been developed from your Delphi Round 1 survey ratings, comments and feedback. The Delphi Round 2 survey will take approximately 60-90 minutes to complete. You may continue to save and enter your comments until the survey closing date of Monday, December 23, 2013.

Now, please complete the Delphi Round 2 survey using the following SurveyMonkey link.

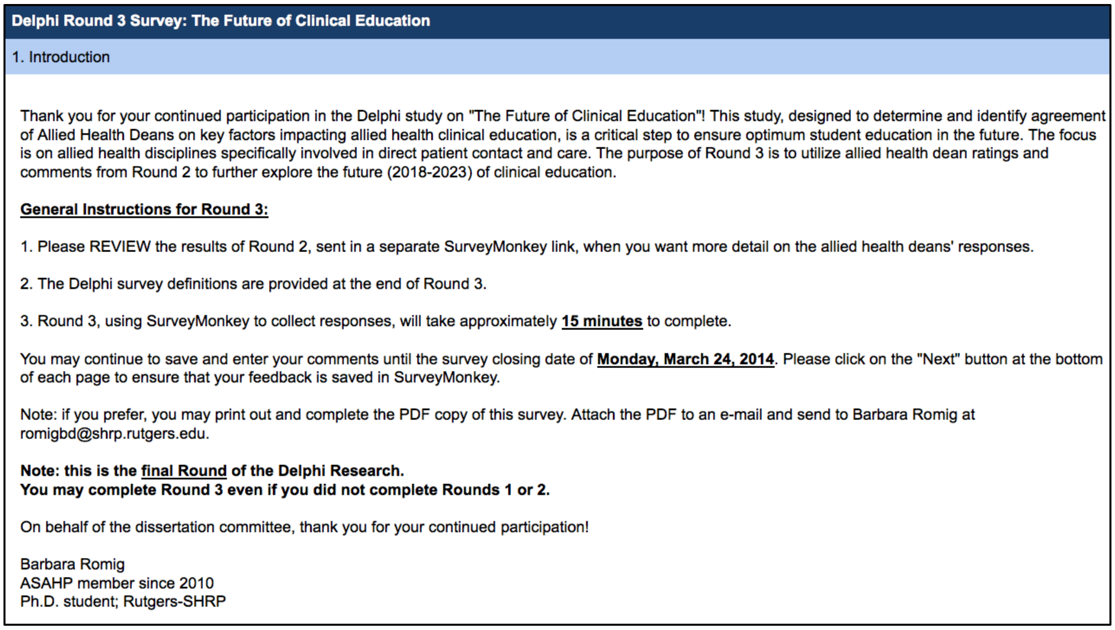
Note: you may complete Delphi Round 2 survey even if you did not complete the Delphi Round 1 survey.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. Candidate; Rutgers-SHRP
E-mail: romigbd@shrp.rutgers.edu
Phone: 248-622-7494

Appendix TT

Round 3 Survey



Delphi Round 3 Survey: The Future of Clinical Education

1. Introduction

Thank you for your continued participation in the Delphi study on "The Future of Clinical Education"! This study, designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education, is a critical step to ensure optimum student education in the future. The focus is on allied health disciplines specifically involved in direct patient contact and care. The purpose of Round 3 is to utilize allied health dean ratings and comments from Round 2 to further explore the future (2018-2023) of clinical education.

General Instructions for Round 3:

1. Please REVIEW the results of Round 2, sent in a separate SurveyMonkey link, when you want more detail on the allied health deans' responses.

2. The Delphi survey definitions are provided at the end of Round 3.

3. Round 3, using SurveyMonkey to collect responses, will take approximately **15 minutes** to complete.

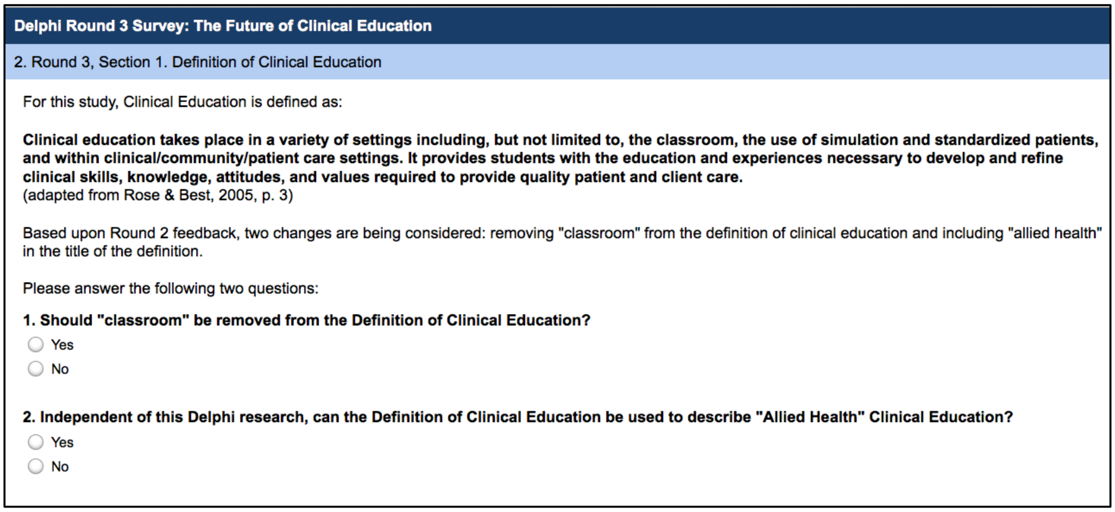
You may continue to save and enter your comments until the survey closing date of **Monday, March 24, 2014**. Please click on the "Next" button at the bottom of each page to ensure that your feedback is saved in SurveyMonkey.

Note: if you prefer, you may print out and complete the PDF copy of this survey. Attach the PDF to an e-mail and send to Barbara Romig at romigbd@shrp.rutgers.edu.

Note: this is the final Round of the Delphi Research.
You may complete Round 3 even if you did not complete Rounds 1 or 2.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP



Delphi Round 3 Survey: The Future of Clinical Education

2. Round 3, Section 1. Definition of Clinical Education

For this study, Clinical Education is defined as:

Clinical education takes place in a variety of settings including, but not limited to, the classroom, the use of simulation and standardized patients, and within clinical/community/patient care settings. It provides students with the education and experiences necessary to develop and refine clinical skills, knowledge, attitudes, and values required to provide quality patient and client care.
(adapted from Rose & Best, 2005, p. 3)

Based upon Round 2 feedback, two changes are being considered: removing "classroom" from the definition of clinical education and including "allied health" in the title of the definition.

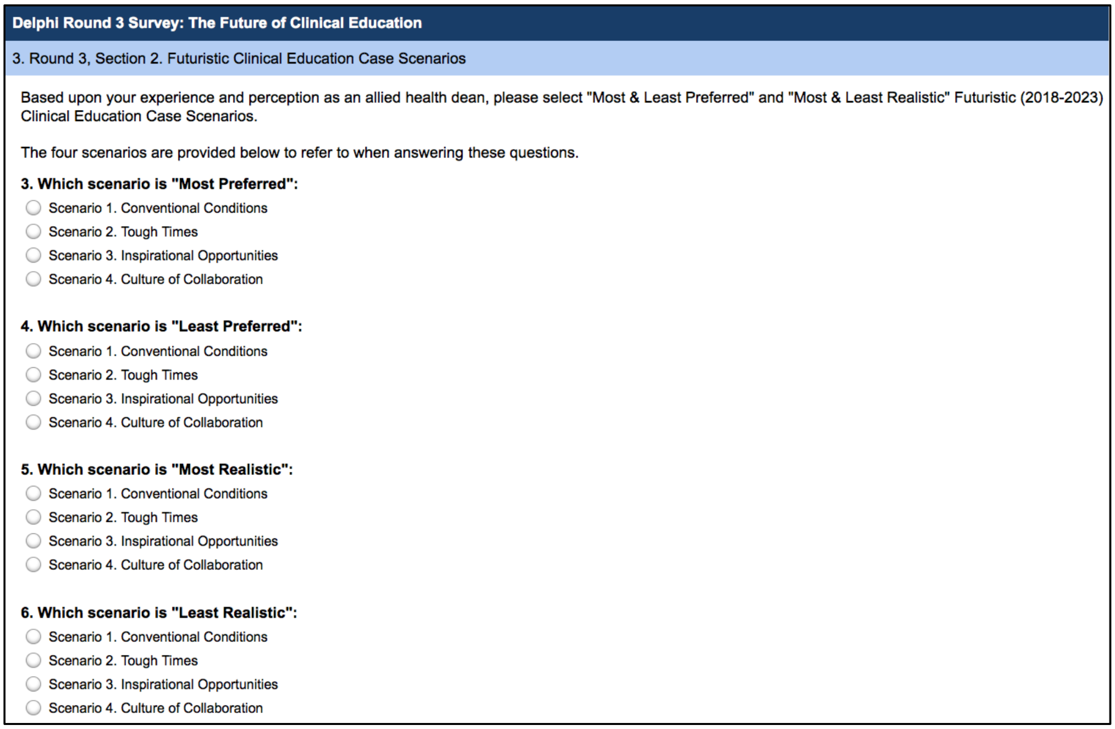
Please answer the following two questions:

1. Should "classroom" be removed from the Definition of Clinical Education?

○ Yes
○ No

2. Independent of this Delphi research, can the Definition of Clinical Education be used to describe "Allied Health" Clinical Education?

○ Yes
○ No



Delphi Round 3 Survey: The Future of Clinical Education

3. Round 3, Section 2. Futuristic Clinical Education Case Scenarios

Based upon your experience and perception as an allied health dean, please select "Most & Least Preferred" and "Most & Least Realistic" Futuristic (2018-2023) Clinical Education Case Scenarios.

The four scenarios are provided below to refer to when answering these questions.

3. Which scenario is "Most Preferred":

○ Scenario 1. Conventional Conditions
○ Scenario 2. Tough Times
○ Scenario 3. Inspirational Opportunities
○ Scenario 4. Culture of Collaboration

4. Which scenario is "Least Preferred":

○ Scenario 1. Conventional Conditions
○ Scenario 2. Tough Times
○ Scenario 3. Inspirational Opportunities
○ Scenario 4. Culture of Collaboration

5. Which scenario is "Most Realistic":

○ Scenario 1. Conventional Conditions
○ Scenario 2. Tough Times
○ Scenario 3. Inspirational Opportunities
○ Scenario 4. Culture of Collaboration

6. Which scenario is "Least Realistic":

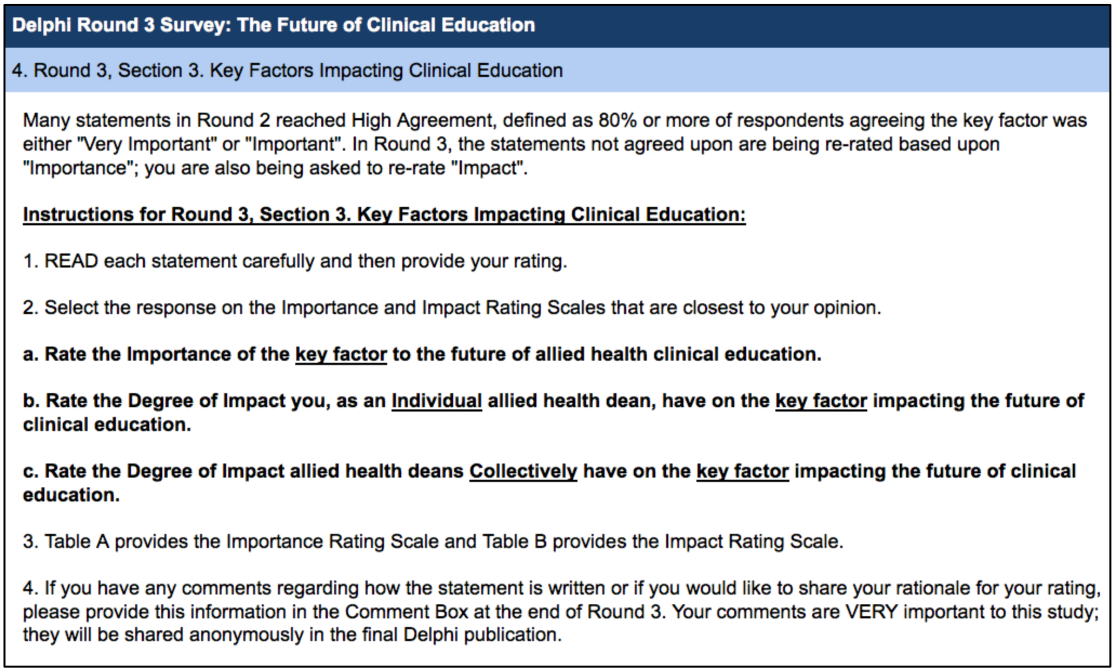
○ Scenario 1. Conventional Conditions
○ Scenario 2. Tough Times
○ Scenario 3. Inspirational Opportunities
○ Scenario 4. Culture of Collaboration

Scenario 1. Conventional Conditions:
The conventional future offers the known and expected trend of increasing pressure and demands on the healthcare system. Integrated healthcare, focused on patient wellness and disease prevention, operated with capitated reimbursement and increased competition for services among allied health and a variety of other healthcare providers. Substantial attention is focused upon the financial aspects of the healthcare legislation including: expansion of the insurance pool through exchanges and regulation of private insurers, the creation of Accountable Care Organizations, and the formation of Patient Centered Medical Homes. Using a collaborative team of healthcare professionals led by a primary care specialist, the healthcare system of the future should provide safety, quality and value by meeting the patient needs and society demands by minimizing disease, preventing complications and minimizing overall expenditures. Impacted by healthcare system mergers and dominant healthcare conglomerates, clinical site placements further expand into community health services, mental health clinics, hospice, nursing homes, in-home care, outpatient care, and rural training locations. State regulations begin to impact scope of practice for allied health disciplines. Distance learning regulations have the potential to raise clinical education costs when clinical training expands across state borders. Specialized accreditation struggles to keep its standards and guidelines current with the ever-changing clinical placements site locations, interprofessional education, and technological advances in distance education, simulation and telehealth. There is increased attention and effort to remove as much as possible from the clinical practice environment and keep it within the college/university/technical school classroom, lab, and simulation experiences, leaving only those essential items that need to be addressed in the actual clinical practice setting. The demand for interprofessional education and clinical practice places an increasing burden on resources such as placement sites, practice coordinators and faculty. Health professions education institutions deal with a manageable shortage of qualified clinical faculty with less time available to support the basic student clinical skills and competency training. With the rising cost of tuition, clinical education training and administrative expenses such as background checks and immunizations, students struggle to afford an allied health education. As an allied health dean faced with processing and acting upon substantial volumes in information on the key internal and external key factors impacting clinical education, the question of whether or not healthcare and clinical education will remain at status quo is an important consideration.

Scenario 2. Tough Times:
Defined as long lasting recession, the gloomy economic picture includes a burdened healthcare system weighted down with decreasing quality of patient care. Hierarchical medicine prevails with class-oriented excellence in healthcare; only the affluent can afford breakthrough scientific and technological treatment options. Public outcry from the growing poor and elderly majority spurs legislative efforts to federalize Medicaid and merge Medicaid-Medicare, thus creating a single-payer system for health coverage for all citizens. Beyond the control of an allied health dean, the trend towards consolidation of healthcare systems and the widespread domination of powerful institutional conglomerates challenges the educational environment for the less resourceful universities and colleges that are stuck making futile attempts to meet accreditation standards and maintain the caliber of the clinical education experience with reduced finances, technology and clinical sites. State and locally funded health professions education institutions are limited to clinical education placements in predominately poverty stricken and disease ridden urban locations. Other health professions education institutions compete for clinical education through payment options. Additional competition from for-profit educational institutions and international educational institutions further stress the limited clinical resources. Hope of establishing interprofessional education as a fundamental clinical experience in allied health clinical training is diminished. Few students are interested in an allied health professional career due to the rapidly rising financial burden of education coupled with scarce and poor-paying employment options. Even with a challenged healthcare environment and stresses on the future of clinical education, the higher education expectation is for allied health dean leadership to discover new ways to educate.

Scenario 3. Inspirational Opportunities:
The inspiring future offers an efficient healthcare system that, coupled with excellence in patient care and state of the art scientific innovation, has resulted in preventive care progress and personalized health improvements. Health innovation, quality patient care, and excellence in healthcare education and clinical training are a national priority. Effective healthcare policies and incentives for collaboration, combined with strong relationship between universities, businesses, and state/federal government, have dramatically reduced fraud and waste resulting in a fiscally beneficial environment for healthcare and higher education. An abundance of resources exist to support allied health program funding, novel degree programs that address workforce gaps, and provide sufficient student financial support and scholarships. After student competency is achieved at a basic level, clinical education is predominantly funded by higher education and state/federal government joint initiatives in order to ensure a sufficient number of allied healthcare providers to care for the aging senior population and general public. Health professions education institutional prosperity has produced educational best practices including: an abundance of qualified faculty available to support top-notch student clinical skills and competency training, widespread implementation of simulation, standardized patient and other assisted learning technologies for clinical training, broad-spectrum interprofessional education initiatives, global communication with advance language translation improvements, and protected and secure electronic health records (EHR). In addition to the conventional clinical settings, global expansion of clinical education is supported via the use computer technology, smartphones, and telehealth to provide continuous worldwide access to medical care. Even with an inspiring healthcare environment, allied health dean leadership is necessary to ensure the priority of and success with the future of clinical education.

Scenario 4. Culture of Collaboration:
A positive shift in teamwork and accountability is invigorating the progress towards a healthcare culture of health and wellness. Uncontrolled spending and coverage gaps have been resolved using best practice models from business, higher education, and state/federal government healthcare collaborative initiatives. Collaborative efforts between allied health deans and accreditation directors resulted in accreditation standards broadly defining the scope of practice in allied health disciplines. As a result, allied health professionals can practice to the full extent of their educational and clinical training in compliance with federal and state regulations. Health professions education collaborative best practices abound. Interprofessional education standards of excellence include collaborative practice among all healthcare professionals and clinical faculty, collaborative clinical practice in healthcare professional student training, accreditation support of interprofessional education in medicine, nursing and allied health programs, and the use of technology and simulation to support interprofessional education across the globe. Health professions education governance instructs its faculty and students to actively promote the benefits of public health and holistic well being (eat, pray, love) for all age groups at a variety of clinical placements sites including community health fairs and fundraisers, pharmacy health initiatives, and "mom and pop" grocery stores. Allied health students, trained by geriatric specialty care specialists, social workers, and other allied health disciplines, embrace caring for the elderly. The elderly reciprocates the emotional connection with political support for educational policy reform for healthcare education and geriatric specialty clinical training. A positive culture of working together for health benefits, patient and student, is a positive catalyst in clinical education instruction and teachings of health prosperity. Clinical education is an integral part of the healthcare delivery system. The proactive leadership of the allied health dean is certain to ensure the priority of and success with the future of clinical education in a widening variety of settings.



Delphi Round 3 Survey: The Future of Clinical Education

4. Round 3, Section 3. Key Factors Impacting Clinical Education

Many statements in Round 2 reached High Agreement, defined as 80% or more of respondents agreeing the key factor was either "Very Important" or "Important". In Round 3, the statements not agreed upon are being re-rated based upon "Importance"; you are also being asked to re-rate "Impact".

Instructions for Round 3, Section 3. Key Factors Impacting Clinical Education:

1. READ each statement carefully and then provide your rating.

2. Select the response on the Importance and Impact Rating Scales that are closest to your opinion.

a. Rate the Importance of the key factor to the future of allied health clinical education.

b. Rate the Degree of Impact you, as an Individual allied health dean, have on the key factor impacting the future of clinical education.

c. Rate the Degree of Impact allied health deans Collectively have on the key factor impacting the future of clinical education.

3. Table A provides the Importance Rating Scale and Table B provides the Impact Rating Scale.

4. If you have any comments regarding how the statement is written or if you would like to share your rationale for your rating, please provide this information in the Comment Box at the end of Round 3. Your comments are VERY important to this study; they will be shared anonymously in the final Delphi publication.

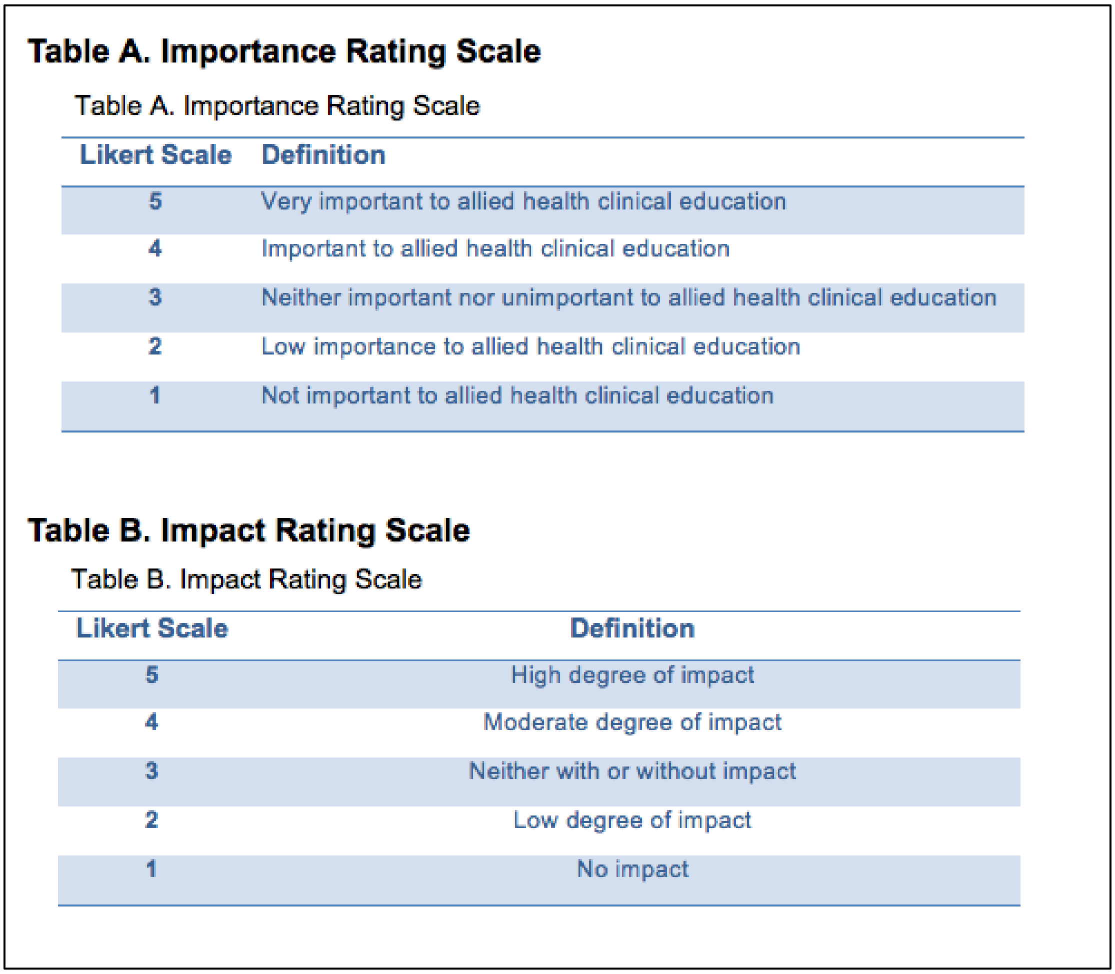


Table A. Importance Rating Scale

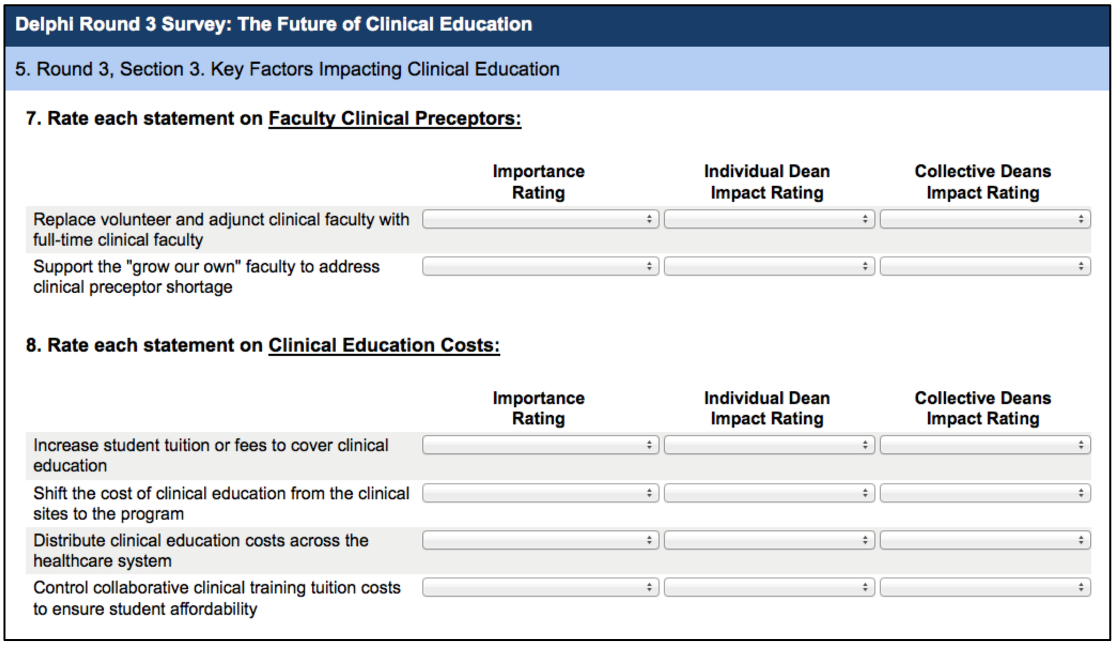
Table A. Importance Rating Scale

Likert Scale	Definition
5	Very important to allied health clinical education
4	Important to allied health clinical education
3	Neither important nor unimportant to allied health clinical education
2	Low importance to allied health clinical education
1	Not important to allied health clinical education

Table B. Impact Rating Scale

Table B. Impact Rating Scale

Likert Scale	Definition
5	High degree of impact
4	Moderate degree of impact
3	Neither with or without impact
2	Low degree of impact
1	No impact



Delphi Round 3 Survey: The Future of Clinical Education

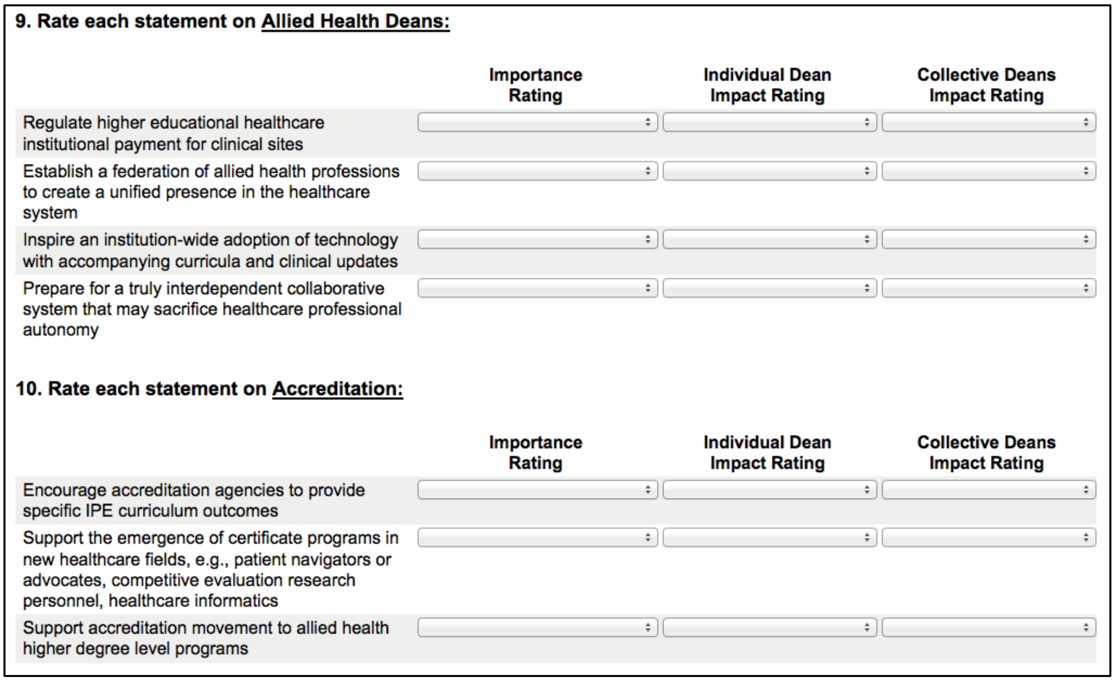
5. Round 3, Section 3. Key Factors Impacting Clinical Education

7. Rate each statement on Faculty Clinical Preceptors:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Replace volunteer and adjunct clinical faculty with full-time clinical faculty			
Support the "grow our own" faculty to address clinical preceptor shortage			

8. Rate each statement on Clinical Education Costs:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Increase student tuition or fees to cover clinical education			
Shift the cost of clinical education from the clinical sites to the program			
Distribute clinical education costs across the healthcare system			
Control collaborative clinical training tuition costs to ensure student affordability			

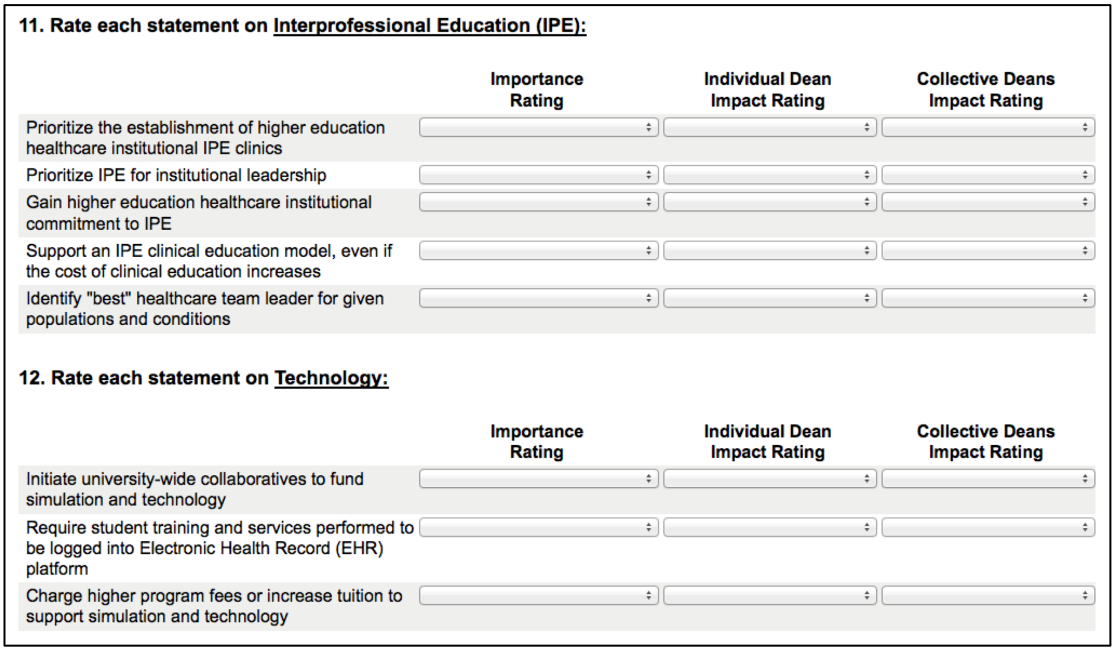


9. Rate each statement on Allied Health Deans:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Regulate higher educational healthcare institutional payment for clinical sites			
Establish a federation of allied health professions to create a unified presence in the healthcare system			
Inspire an institution-wide adoption of technology with accompanying curricula and clinical updates			
Prepare for a truly interdependent collaborative system that may sacrifice healthcare professional autonomy			

10. Rate each statement on Accreditation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Encourage accreditation agencies to provide specific IPE curriculum outcomes			
Support the emergence of certificate programs in new healthcare fields, e.g., patient navigators or advocates, competitive evaluation research personnel, healthcare informatics			
Support accreditation movement to allied health higher degree level programs			

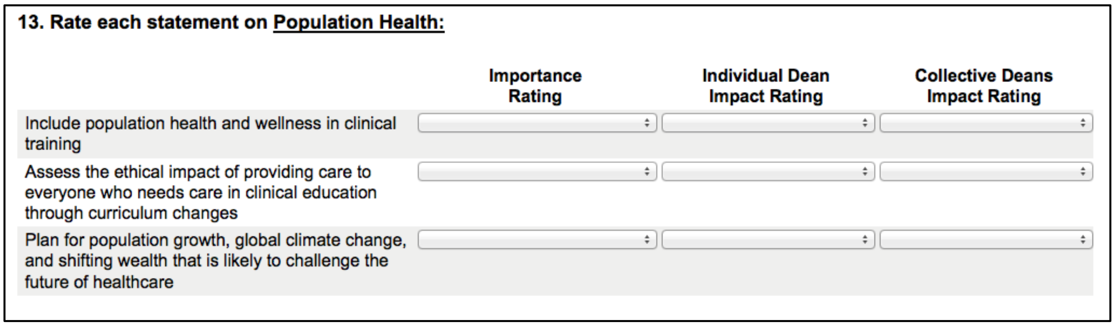


11. Rate each statement on Interprofessional Education (IPE):

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Prioritize the establishment of higher education healthcare institutional IPE clinics			
Prioritize IPE for institutional leadership			
Gain higher education healthcare institutional commitment to IPE			
Support an IPE clinical education model, even if the cost of clinical education increases			
Identify "best" healthcare team leader for given populations and conditions			

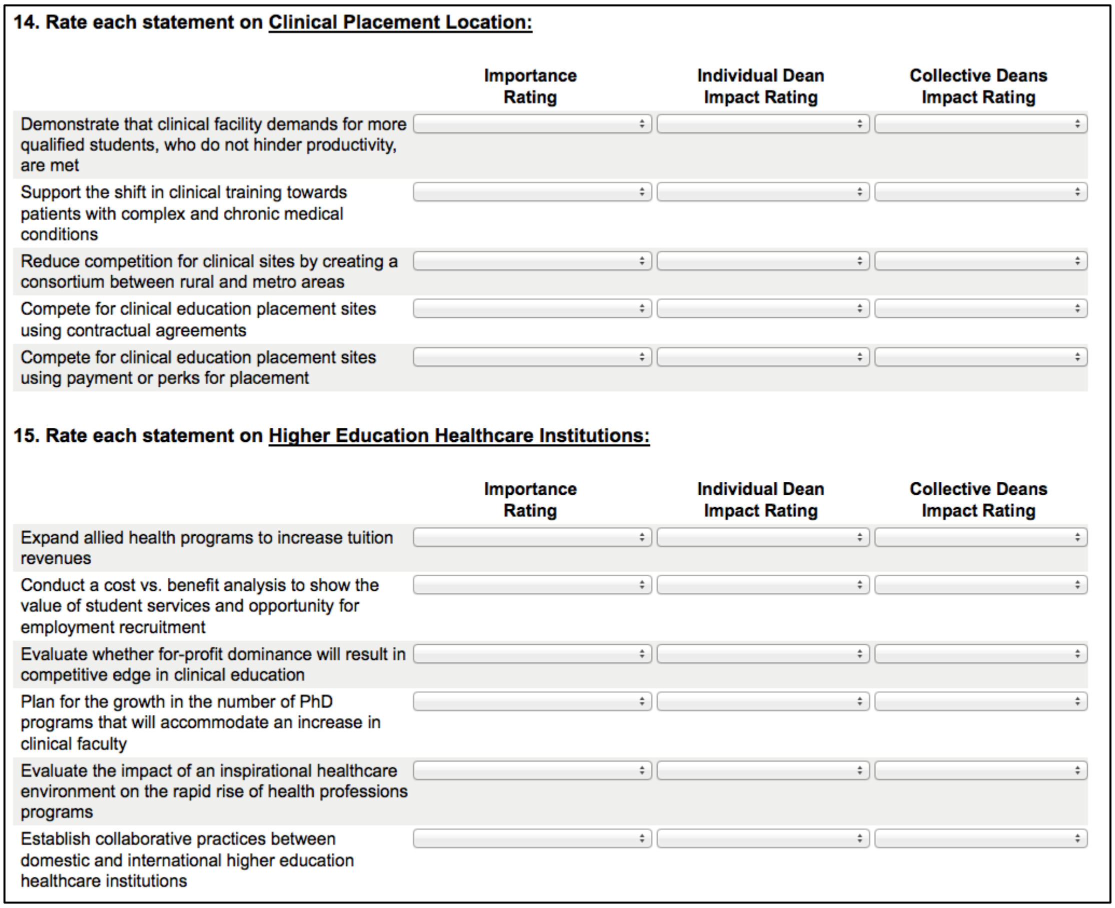
12. Rate each statement on Technology:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Initiate university-wide collaboratives to fund simulation and technology			
Require student training and services performed to be logged into Electronic Health Record (EHR) platform			
Charge higher program fees or increase tuition to support simulation and technology			



13. Rate each statement on Population Health:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Include population health and wellness in clinical training			
Assess the ethical impact of providing care to everyone who needs care in clinical education through curriculum changes			
Plan for population growth, global climate change, and shifting wealth that is likely to challenge the future of healthcare			

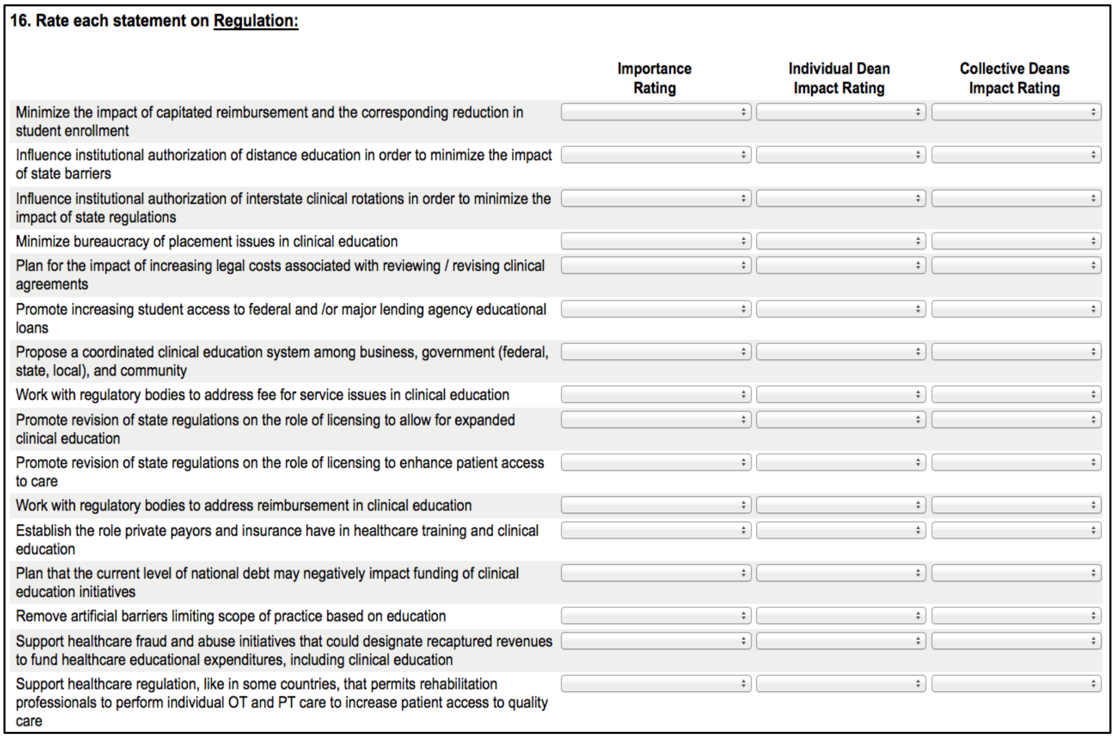


14. Rate each statement on Clinical Placement Location:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Demonstrate that clinical facility demands for more qualified students, who do not hinder productivity, are met			
Support the shift in clinical training towards patients with complex and chronic medical conditions			
Reduce competition for clinical sites by creating a consortium between rural and metro areas			
Compete for clinical education placement sites using contractual agreements			
Compete for clinical education placement sites using payment or perks for placement			

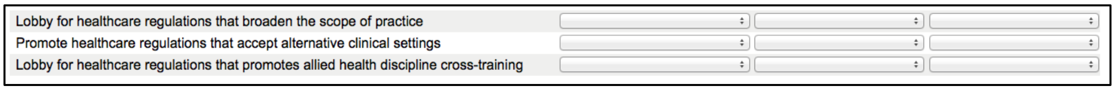
15. Rate each statement on Higher Education Healthcare Institutions:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Expand allied health programs to increase tuition revenues			
Conduct a cost vs. benefit analysis to show the value of student services and opportunity for employment recruitment			
Evaluate whether for-profit dominance will result in competitive edge in clinical education			
Plan for the growth in the number of PhD programs that will accommodate an increase in clinical faculty			
Evaluate the impact of an inspirational healthcare environment on the rapid rise of health professions programs			
Establish collaborative practices between domestic and international higher education healthcare institutions			

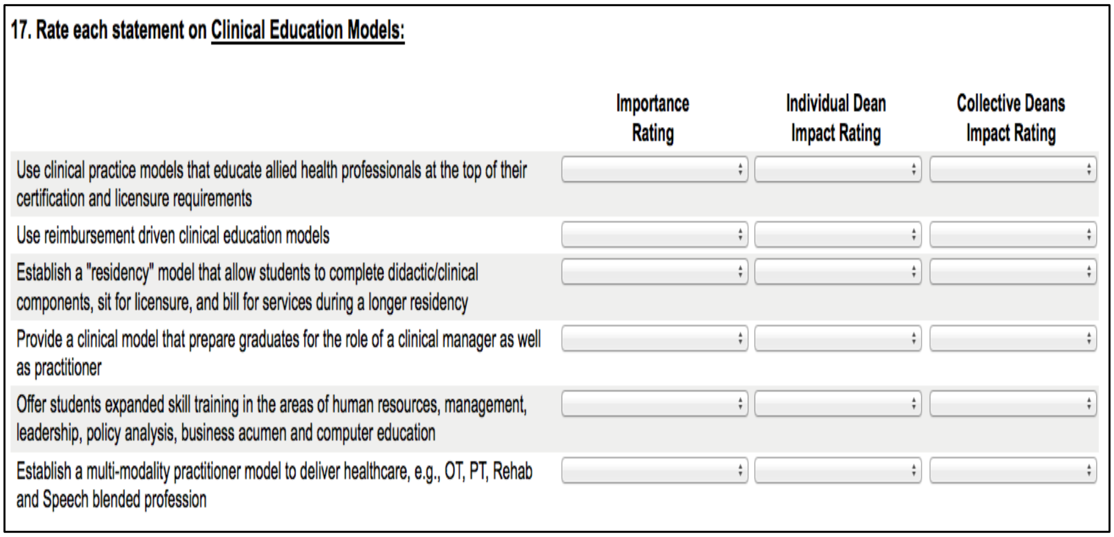


16. Rate each statement on Regulation:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Minimize the impact of capitated reimbursement and the corresponding reduction in student enrollment			
Influence institutional authorization of distance education in order to minimize the impact of state barriers			
Influence institutional authorization of interstate clinical rotations in order to minimize the impact of state regulations			
Minimize bureaucracy of placement issues in clinical education			
Plan for the impact of increasing legal costs associated with reviewing / revising clinical agreements			
Promote increasing student access to federal and /or major lending agency educational loans			
Propose a coordinated clinical education system among business, government (federal, state, local), and community			
Work with regulatory bodies to address fee for service issues in clinical education			
Promote revision of state regulations on the role of licensing to allow for expanded clinical education			
Promote revision of state regulations on the role of licensing to enhance patient access to care			
Work with regulatory bodies to address reimbursement in clinical education			
Establish the role private payors and insurance have in healthcare training and clinical education			
Plan that the current level of national debt may negatively impact funding of clinical education initiatives			
Remove artificial barriers limiting scope of practice based on education			
Support healthcare fraud and abuse initiatives that could designate recaptured revenues to fund healthcare educational expenditures, including clinical education			
Support healthcare regulation, like in some countries, that permits rehabilitation professionals to perform individual OT and PT care to increase patient access to quality care			

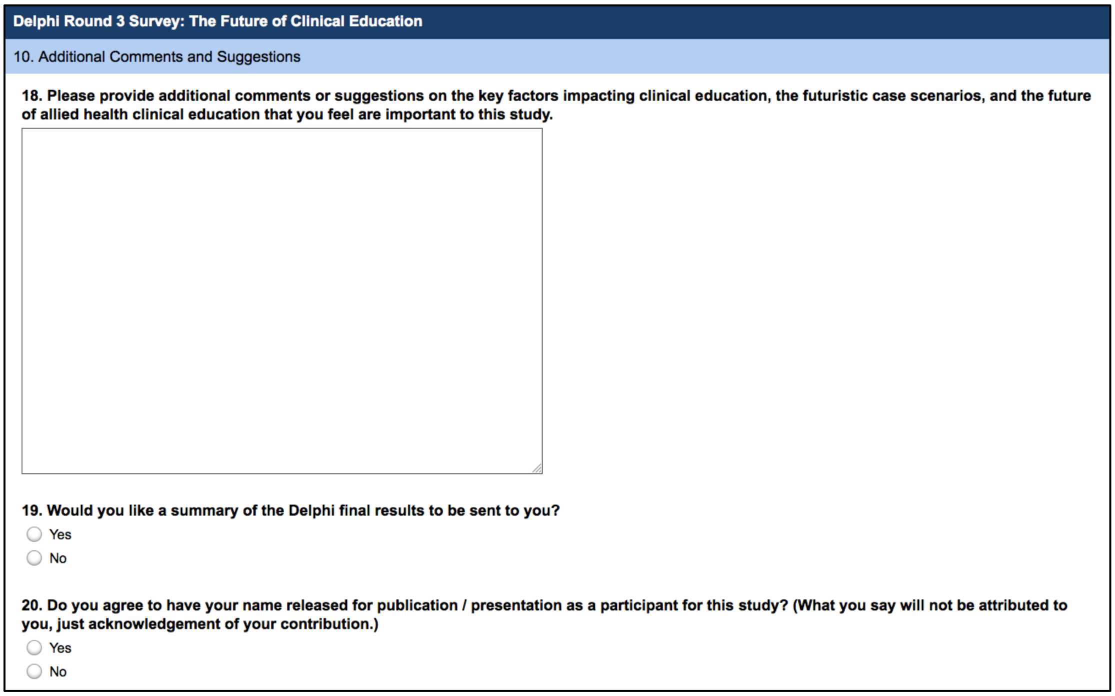


Lobby for healthcare regulations that broaden the scope of practice			
Promote healthcare regulations that accept alternative clinical settings			
Lobby for healthcare regulations that promotes allied health discipline cross-training			



17. Rate each statement on Clinical Education Models:

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Use clinical practice models that educate allied health professionals at the top of their certification and licensure requirements			
Use reimbursement driven clinical education models			
Establish a "residency" model that allow students to complete didactic/clinical components, sit for licensure, and bill for services during a longer residency			
Provide a clinical model that prepare graduates for the role of a clinical manager as well as practitioner			
Offer students expanded skill training in the areas of human resources, management, leadership, policy analysis, business acumen and computer education			
Establish a multi-modality practitioner model to deliver healthcare, e.g., OT, PT, Rehab and Speech blended profession			



Delphi Round 3 Survey: The Future of Clinical Education

10. Additional Comments and Suggestions

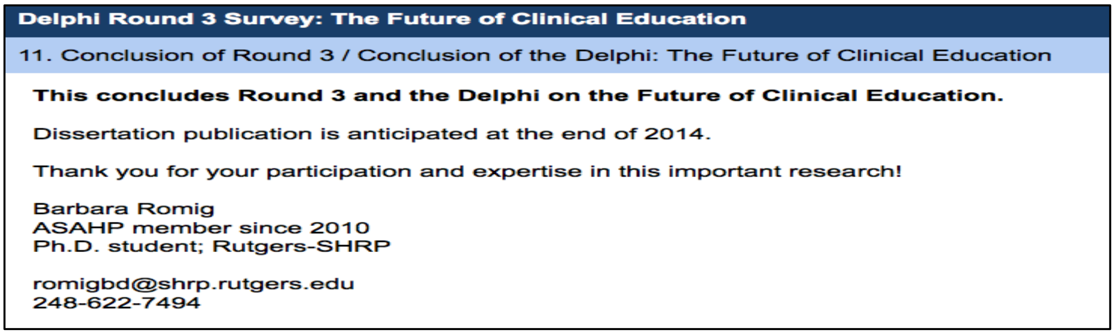
18. Please provide additional comments or suggestions on the key factors impacting clinical education, the futuristic case scenarios, and the future of allied health clinical education that you feel are important to this study.

19. Would you like a summary of the Delphi final results to be sent to you?

○ Yes
○ No

20. Do you agree to have your name released for publication / presentation as a participant for this study? (What you say will not be attributed to you, just acknowledgement of your contribution.)

○ Yes
○ No



Delphi Round 3 Survey: The Future of Clinical Education

11. Conclusion of Round 3 / Conclusion of the Delphi: The Future of Clinical Education

This concludes Round 3 and the Delphi on the Future of Clinical Education.

Dissertation publication is anticipated at the end of 2014.

Thank you for your participation and expertise in this important research!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

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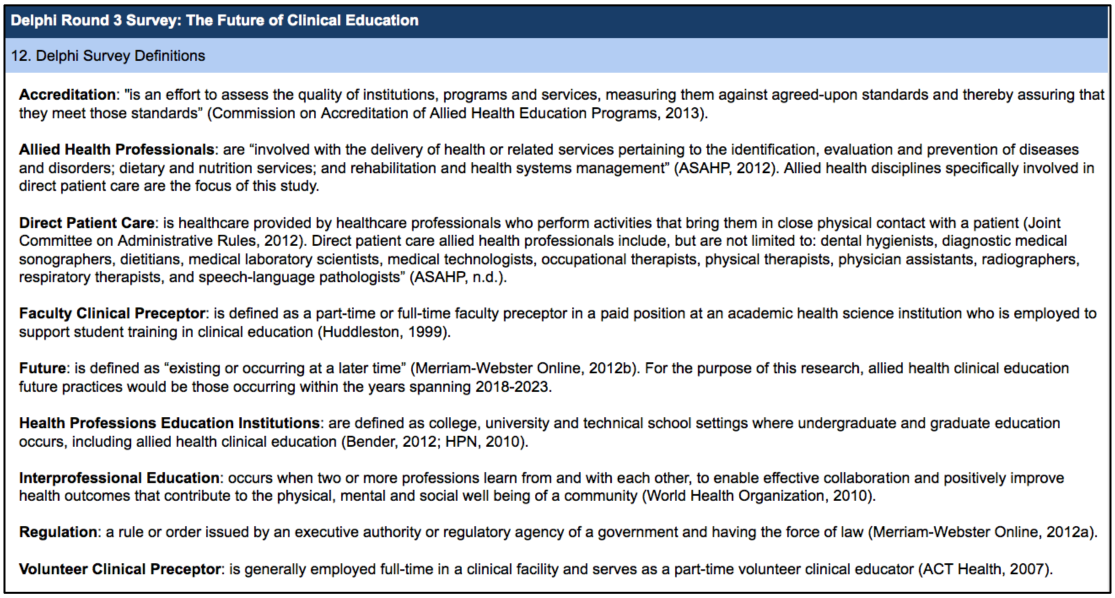
248-622-7494



Delphi Round 3 Survey: The Future of Clinical Education

12. Delphi Survey Definitions

Accreditation: "is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards" (Commission on Accreditation of Allied Health Education Programs, 2013).

Allied Health Professionals: are "involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management" (ASAHP, 2012). Allied health disciplines specifically involved in direct patient care are the focus of this study.

Direct Patient Care: is healthcare provided by healthcare professionals who perform activities that bring them in close physical contact with a patient (Joint Committee on Administrative Rules, 2012). Direct patient care allied health professionals include, but are not limited to: dental hygienists, diagnostic medical sonographers, dietitians, medical laboratory scientists, medical technologists, occupational therapists, physical therapists, physician assistants, radiographers, respiratory therapists, and speech-language pathologists" (ASAHP, n.d.).

Faculty Clinical Preceptor: is defined as a part-time or full-time faculty preceptor in a paid position at an academic health science institution who is employed to support student training in clinical education (Huddleston, 1999).

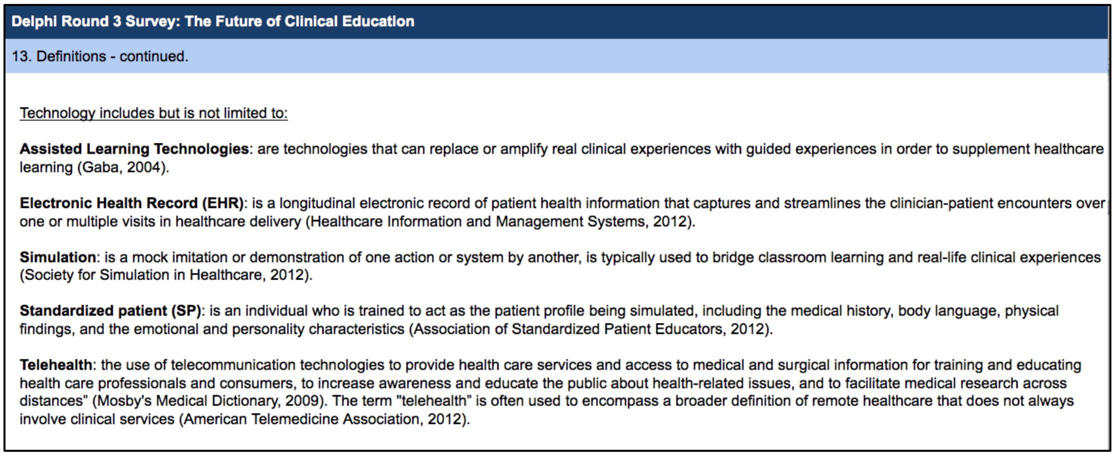
Future: is defined as "existing or occurring at a later time" (Merriam-Webster Online, 2012b). For the purpose of this research, allied health clinical education future practices would be those occurring within the years spanning 2018-2023.

Health Professions Education Institutions: are defined as college, university and technical school settings where undergraduate and graduate education occurs, including allied health clinical education (Bender, 2012; HPN, 2010).

Interprofessional Education: occurs when two or more professions learn from and with each other, to enable effective collaboration and positively improve health outcomes that contribute to the physical, mental and social well being of a community (World Health Organization, 2010).

Regulation: a rule or order issued by an executive authority or regulatory agency of a government and having the force of law (Merriam-Webster Online, 2012a).

Volunteer Clinical Preceptor: is generally employed full-time in a clinical facility and serves as a part-time volunteer clinical educator (ACT Health, 2007).



Delphi Round 3 Survey: The Future of Clinical Education

13. Definitions - continued.

Technology includes but is not limited to:

Assisted Learning Technologies: are technologies that can replace or amplify real clinical experiences with guided experiences in order to supplement healthcare learning (Gaba, 2004).

Electronic Health Record (EHR): is a longitudinal electronic record of patient health information that captures and streamlines the clinician-patient encounters over one or multiple visits in healthcare delivery (Healthcare Information and Management Systems, 2012).

Simulation: is a mock imitation or demonstration of one action or system by another, is typically used to bridge classroom learning and real-life clinical experiences (Society for Simulation in Healthcare, 2012).

Standardized patient (SP): is an individual who is trained to act as the patient profile being simulated, including the medical history, body language, physical findings, and the emotional and personality characteristics (Association of Standardized Patient Educators, 2012).

Telehealth: the use of telecommunication technologies to provide health care services and access to medical and surgical information for training and educating health care professionals and consumers, to increase awareness and educate the public about health-related issues, and to facilitate medical research across distances" (Mosby's Medical Dictionary, 2009). The term "telehealth" is often used to encompass a broader definition of remote healthcare that does not always involve clinical services (American Telemedicine Association, 2012).

Appendix UU

Round 3 Survey Cover Letter

RUTGERS
School of Health Related Professions

DELPHI ROUND 3 SURVEY COVER LETTER

February 24, 2014

Dear [Name of Institutional Member Dean or Designated Representative],

Thank you for your continued participation in the Delphi study on "The Future of Clinical Education"! This study, designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education, is a critical step to ensure optimum student education in the future. The focus is on allied health disciplines specifically involved in direct patient contact and care. The purpose of Round 3 is to utilize allied health dean ratings and comments from Round 2 to further explore the future (2018-2023) of clinical education.

General Instructions for Round 3:

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3. Round 3, using this SurveyMonkey link to collect responses, will take approximately 15 minutes to complete.

You may continue to save and enter your comments until the survey closing date of Monday, March 24, 2014. Please click on the "Next" button at the bottom of each page to ensure that your feedback is saved in SurveyMonkey.

Note: if you prefer, you may print out and complete the PDF copy of this survey. Attach the PDF to an e-mail and send to Barbara Romig at romigbd@shrp.rutgers.edu.

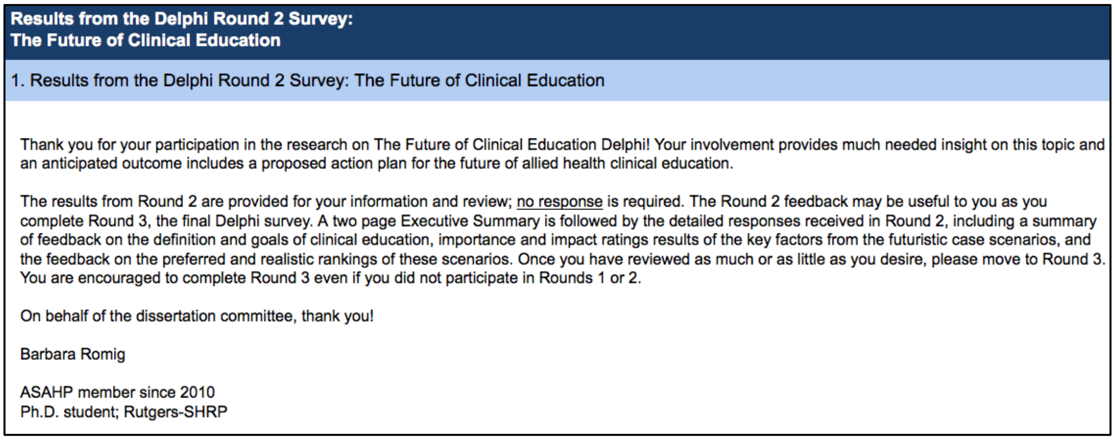
This is the final Round of the Delphi Research.
You may complete Round 3 even if you did not complete Rounds 1 or 2.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

Appendix VV

Round 2 Survey Results



Results from the Delphi Round 2 Survey:
The Future of Clinical Education

1. Results from the Delphi Round 2 Survey: The Future of Clinical Education

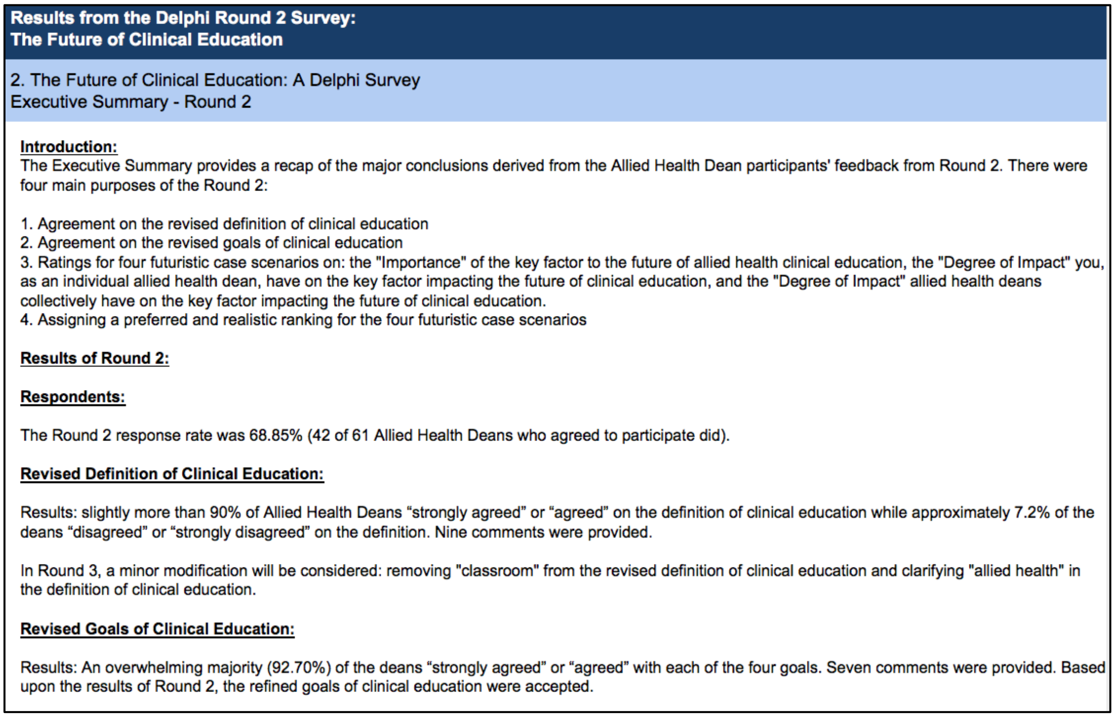
Thank you for your participation in the research on The Future of Clinical Education Delphi! Your involvement provides much needed insight on this topic and an anticipated outcome includes a proposed action plan for the future of allied health clinical education.

The results from Round 2 are provided for your information and review; no response is required. The Round 2 feedback may be useful to you as you complete Round 3, the final Delphi survey. A two page Executive Summary is followed by the detailed responses received in Round 2, including a summary of feedback on the definition and goals of clinical education, importance and impact ratings results of the key factors from the futuristic case scenarios, and the feedback on the preferred and realistic rankings of these scenarios. Once you have reviewed as much or as little as you desire, please move to Round 3. You are encouraged to complete Round 3 even if you did not participate in Rounds 1 or 2.

On behalf of the dissertation committee, thank you!

Barbara Romig

ASAHP member since 2010
Ph.D. student; Rutgers-SHRP



Results from the Delphi Round 2 Survey:
The Future of Clinical Education

2. The Future of Clinical Education: A Delphi Survey
Executive Summary - Round 2

Introduction:
The Executive Summary provides a recap of the major conclusions derived from the Allied Health Dean participants' feedback from Round 2. There were four main purposes of the Round 2:

1. Agreement on the revised definition of clinical education
2. Agreement on the revised goals of clinical education
3. Ratings for four futuristic case scenarios on: the "Importance" of the key factor to the future of allied health clinical education, the "Degree of Impact" you, as an individual allied health dean, have on the key factor impacting the future of clinical education, and the "Degree of Impact" allied health deans collectively have on the key factor impacting the future of clinical education.
4. Assigning a preferred and realistic ranking for the four futuristic case scenarios

Results of Round 2:

Respondents:

The Round 2 response rate was 68.85% (42 of 61 Allied Health Deans who agreed to participate did).

Revised Definition of Clinical Education:

Results: slightly more than 90% of Allied Health Deans “strongly agreed” or “agreed” on the definition of clinical education while approximately 7.2% of the deans “disagreed” or “strongly disagreed” on the definition. Nine comments were provided.

In Round 3, a minor modification will be considered: removing "classroom" from the revised definition of clinical education and clarifying "allied health" in the definition of clinical education.

Revised Goals of Clinical Education:

Results: An overwhelming majority (92.70%) of the deans “strongly agreed” or “agreed” with each of the four goals. Seven comments were provided. Based upon the results of Round 2, the refined goals of clinical education were accepted.

Results from the Delphi Round 2 Survey: The Future of Clinical Education

3. Executive Summary: Results of the Delphi Round 2 Survey (continued)

Allied Health Dean Importance and Impact Ratings of Key Factors:

Allied Health Deans were asked to read the four case scenarios:

Conventional Conditions, Tough Times, Inspirational Opportunities, Culture of Collaboration

Next, the Deans were asked to rate key factor statements using the Importance and Impact Rating Scales. The key factor statements were listed and prioritized by most frequent comments to least frequent comments. Key factors that had the most comments were listed first and bolded.

For each individual case scenario, the ratings of the key factor statements were listed in order of Highest Percentage by: Importance and High Importance, followed by Individual Dean Impact and lastly Collective Deans Impact. Next, collective case scenario ratings of the key factor statements were separated into High Agreement and Low Agreement for Importance to Very Important ratings. In Round 2, many key factors statements were accepted as achieving High Agreement. Appendix I provides the results of the Importance and Impact Ratings for the Key Factors from the Futuristic (2018-2023) Case Scenarios.

Allied Health Dean Preferred and Realistic Ratings of the Futuristic Case Scenarios:

Deans were asked to assign each of the Futuristic (2018-2023) Clinical Education Case Scenarios a "Preferred" or "Realistic" ranking. Due to technical challenges with the question format, the decision was made to revisit this question in Round 3.

Conclusion - Summary of Round 2 Results:

The results from Round 2 show that the majority of Allied Health Deans “strongly agreed” or “agreed” on the revised definition of clinical education and on he revised goals of clinical education.

The results from Round 2 Importance and Impact ratings from the futuristic case scenarios (Conventional Conditions, Tough Times, Inspirational Opportunities and Culture of Collaboration) show that Allied Health Deans reached agreement on many key factors statements. Per the Delphi protocol, key factors statements that did not reach agreement will be brought forth to Round 3 for re-rating.

Results from the Delphi Round 2 Survey: The Future of Clinical Education

4. Appendix I. Results of the Delphi Round 2 Survey: Section 2. Futuristic Case Scenarios

Below are the key factor statements from Round 2 which reached High Agreement among the allied health deans. Statements attaining High Agreement, defined as 80% or more of respondents agreeing on a response selection, are provided in order of the percentage of agreement of "Importance" across the 4 Futuristic (2108-2023) Futuristic Case scenarios:

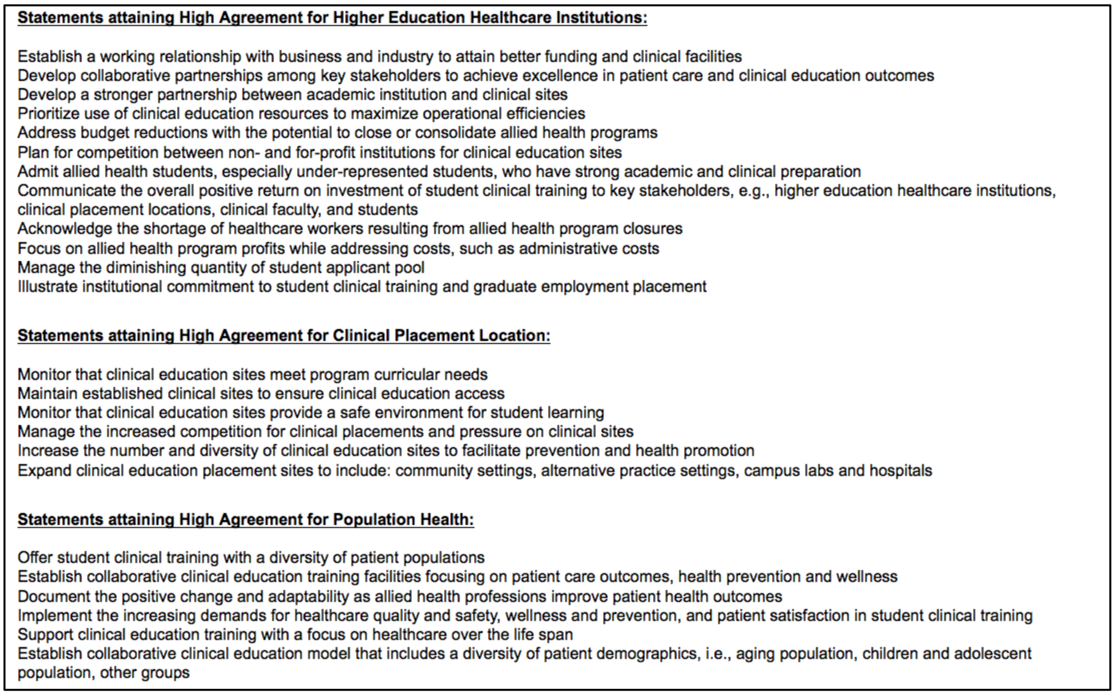
Conventional Conditions, Tough Times, Inspirational Opportunities, Culture of Collaboration

Statements attaining High Agreement for Clinical Education Models:

Establish a clinical education model that prioritizes individual accountability and teamwork
Create effective collaborative clinical model with shared resources (space and teaching areas)
Use clinical models that provide students best practices of efficient and cost-effective healthcare
Integrate creative and innovative clinical education opportunities into the healthcare system
Use creative clinical models that are receptive to collaboration, critical thinking, innovation and mentorship
Support evidence-based practice outcomes that identify essential factors for the clinical experience
Provide efficient, cost-effective models that deliver mastery of clinical education competencies and student outcomes
Redesign the curricula and clinical education model to match advances in technology
Assure a successful clinical education model by training faculty and preparing students with knowledge, skills and aptitude
Foster a successful clinical education model by providing ample clinical and financial resources
Establish interprofessional and collaborative clinical care models
Establish collaborative clinical education model(s) that provide ample interaction between students, faculty and clinical faculty
Promote opportunities to initiate diverse clinical education best practices
Promote collaborative partnerships that provide coordinated opportunities and incentives for clinical education
Support the need for continual improvement in the efficiency, standardization and outcome measurements for clinical education experiences
Promote effective collaborative clinical education model and curricula with shared strategies (teaching content, approaches and assessment measures)

Statements attaining High Agreement for Regulation:

Lobby for access to clinical education that is not be restricted by state boundaries or payment requirements
Support federal, state, and local government policies that reinforce quality clinical education at reduced cost
Create an allied health legislative voice in healthcare regulatory discussions
Support healthcare regulations that accept diversity of supervising clinical faculty
Lobby for federal support of a Medicare pass thru for allied health professionals to assist with clinical education costs
Develop exclusive agreements with local clinical sites to maximize site usage and reduce the impact of interstate regulatory fees on clinical education



Statements attaining High Agreement for Higher Education Healthcare Institutions:

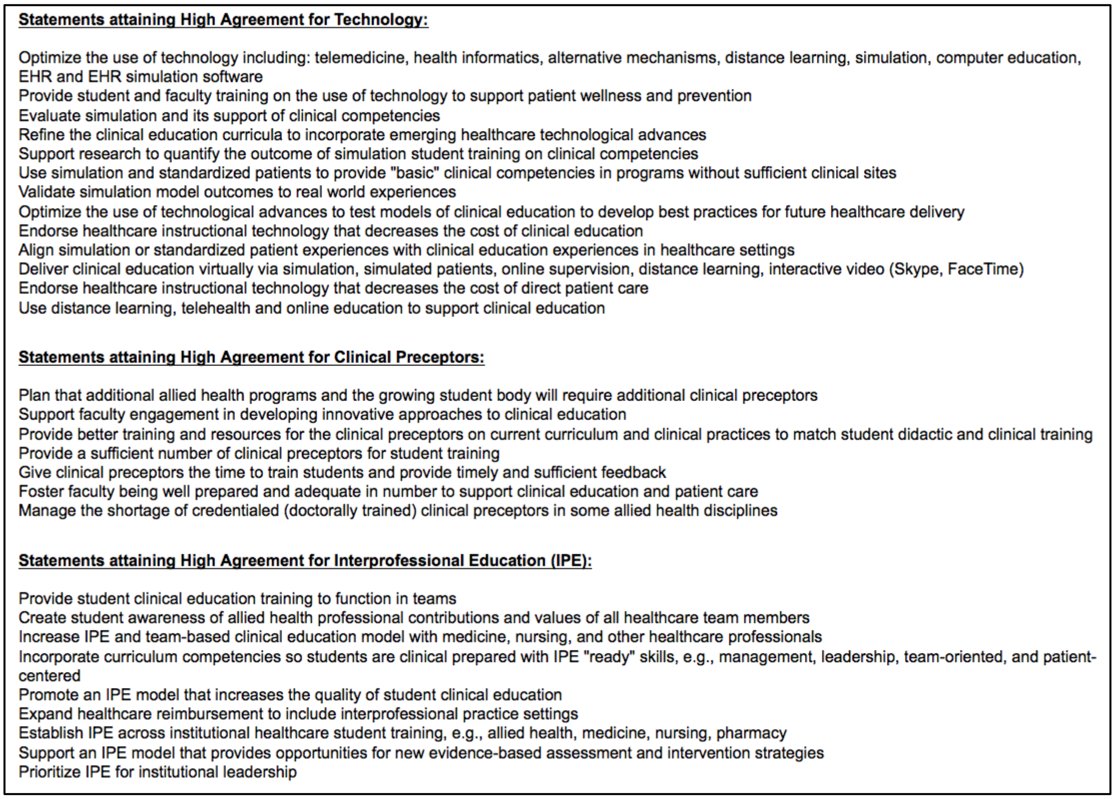
Establish a working relationship with business and industry to attain better funding and clinical facilities
Develop collaborative partnerships among key stakeholders to achieve excellence in patient care and clinical education outcomes
Develop a stronger partnership between academic institution and clinical sites
Prioritize use of clinical education resources to maximize operational efficiencies
Address budget reductions with the potential to close or consolidate allied health programs
Plan for competition between non- and for-profit institutions for clinical education sites
Admit allied health students, especially under-represented students, who have strong academic and clinical preparation
Communicate the overall positive return on investment of student clinical training to key stakeholders, e.g., higher education healthcare institutions, clinical placement locations, clinical faculty, and students
Acknowledge the shortage of healthcare workers resulting from allied health program closures
Focus on allied health program profits while addressing costs, such as administrative costs
Manage the diminishing quantity of student applicant pool
Illustrate institutional commitment to student clinical training and graduate employment placement

Statements attaining High Agreement for Clinical Placement Location:

Monitor that clinical education sites meet program curricular needs
Maintain established clinical sites to ensure clinical education access
Monitor that clinical education sites provide a safe environment for student learning
Manage the increased competition for clinical placements and pressure on clinical sites
Increase the number and diversity of clinical education sites to facilitate prevention and health promotion
Expand clinical education placement sites to include: community settings, alternative practice settings, campus labs and hospitals

Statements attaining High Agreement for Population Health:

Offer student clinical training with a diversity of patient populations
Establish collaborative clinical education training facilities focusing on patient care outcomes, health prevention and wellness
Document the positive change and adaptability as allied health professions improve patient health outcomes
Implement the increasing demands for healthcare quality and safety, wellness and prevention, and patient satisfaction in student clinical training
Support clinical education training with a focus on healthcare over the life span
Establish collaborative clinical education model that includes a diversity of patient demographics, i.e., aging population, children and adolescent population, other groups



Statements attaining High Agreement for Technology:

Optimize the use of technology including: telemedicine, health informatics, alternative mechanisms, distance learning, simulation, computer education, EHR and EHR simulation software
Provide student and faculty training on the use of technology to support patient wellness and prevention
Evaluate simulation and its support of clinical competencies
Refine the clinical education curricula to incorporate emerging healthcare technological advances
Support research to quantify the outcome of simulation student training on clinical competencies
Use simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites
Validate simulation model outcomes to real world experiences
Optimize the use of technological advances to test models of clinical education to develop best practices for future healthcare delivery
Endorse healthcare instructional technology that decreases the cost of clinical education
Align simulation or standardized patient experiences with clinical education experiences in healthcare settings
Deliver clinical education virtually via simulation, simulated patients, online supervision, distance learning, interactive video (Skype, FaceTime)
Endorse healthcare instructional technology that decreases the cost of direct patient care
Use distance learning, telehealth and online education to support clinical education

Statements attaining High Agreement for Clinical Preceptors:

Plan that additional allied health programs and the growing student body will require additional clinical preceptors
Support faculty engagement in developing innovative approaches to clinical education
Provide better training and resources for the clinical preceptors on current curriculum and clinical practices to match student didactic and clinical training
Provide a sufficient number of clinical preceptors for student training
Give clinical preceptors the time to train students and provide timely and sufficient feedback
Foster faculty being well prepared and adequate in number to support clinical education and patient care
Manage the shortage of credentialed (doctorally trained) clinical preceptors in some allied health disciplines

Statements attaining High Agreement for Interprofessional Education (IPE):

Provide student clinical education training to function in teams
Create student awareness of allied health professional contributions and values of all healthcare team members
Increase IPE and team-based clinical education model with medicine, nursing, and other healthcare professionals
Incorporate curriculum competencies so students are clinical prepared with IPE "ready" skills, e.g., management, leadership, team-oriented, and patient-centered
Promote an IPE model that increases the quality of student clinical education
Expand healthcare reimbursement to include interprofessional practice settings
Establish IPE across institutional healthcare student training, e.g., allied health, medicine, nursing, pharmacy
Support an IPE model that provides opportunities for new evidence-based assessment and intervention strategies
Prioritize IPE for institutional leadership

Statements attaining High Agreement for Accreditation:

Adjust accreditation requirements allowing clinical education training to include simulation and other clinical instruction technology
Promote revision of accreditation standards to support greater collaboration across disciplines
Gain the support of accreditation agencies to accommodate changes to improve allied health clinical education
Encourage accreditation agencies to incorporate standards to support interprofessional education
Endorse accreditation flexibility in clinical education hours and skill requirements, i.e., clinical competency and skill checklist may no longer suffice

Statements attaining High Agreement for Allied Health Dean:

Take charge, as allied health deans, to ensure that higher education healthcare institutions provide relevant and meaningful clinical education experiences
Be accountable, as an allied health dean, for institutional support of clinical education
Provide creative leadership to the allied health school, faculty and students
Construct clinical education experiences that meet student, faculty and higher education healthcare institutional needs in the changing healthcare arena
Develop strategic thinking and competitive leadership in clinical education
Provide the appropriate clinical knowledge, skills and aptitudes for successful student graduation
Take responsibility, as allied health deans, towards working towards common goals in concert with the healthcare community and team members
Coordinate with accreditation agencies to assure quality clinical education
Commit to interprofessional education and interdisciplinary approaches within your institution
Collaborate across disciplines to strengthen allied health as professions
Develop clinical education partnerships with large medical centers and private practices
Provide the appropriate clinical knowledge, skills and aptitudes for successful student graduation

Statements attaining High Agreement for Student Satisfaction:

Increase student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security
Monitor student feedback to improve satisfaction with allied health clinical education experiences
Endorse a collaborative model that increases student satisfaction by using IPE models
Address student dissatisfaction resulting from increased tuition costs, direct pass through for clinical rotation cost and corresponding educational debt

Statements attaining High Agreement for Clinical Education Costs:

Create higher education and clinical education metrics, e.g. cost-benefit analysis, return on investment
Provide cost-effective clinical education using partnerships and collaborative efforts between universities, business and government
Support the benefits of a collaborative culture that provides an adequate number of clinical education placement sites and available funding
Verify the financial benefits of a collaborative culture on the future of clinical education
Plan for domestic and global economic pressures impacting clinical education

Statements attaining High Agreement for Faculty Clinical Preceptor:

Support clinical faculty engagement in the design, implementation, and evaluation of clinical education models

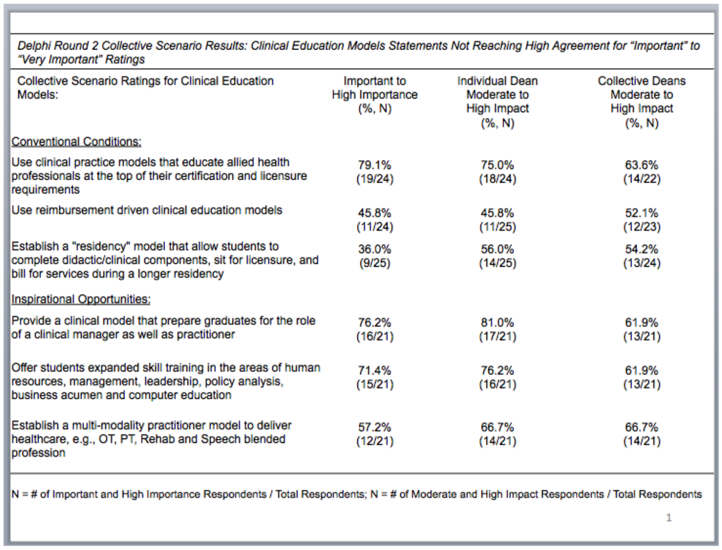
Results from the Delphi Round 2 Survey:
The Future of Clinical Education

5. Appendix I. Results of the Delphi Round 2 Survey: Section 2. Futuristic Case Scenarios (continued)

All of these key factors statements will be in Round 3.

From the Round 2 ratings of key factors impacting clinical education taken from the futuristic (2018-2023) case scenarios, several statements **did not** reach High Agreement on "Importance"; High Agreement is defined as 80% or more of respondents agreeing on a response selection. Per the Delphi protocol, you will have the opportunity to re-rate these statements not reaching agreement in Round 3.

Delphi Round 2 Collective Scenario Results: Statements Not Reaching High Agreement for “Important” to “Very Important” Ratings



Delphi Round 2 Collective Scenario Results: Clinical Education Models Statements Not Reaching High Agreement for “Important” to “Very Important” Ratings

Collective Scenario Ratings for Clinical Education Models:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Use clinical practice models that educate allied health professionals at the top of their certification and licensure requirements	79.1% (19/24)	75.0% (18/24)	63.6% (14/22)
Use reimbursement driven clinical education models	45.8% (11/24)	45.8% (11/25)	52.1% (12/23)
Establish a "residency" model that allow students to complete didactic/clinical components, sit for licensure, and bill for services during a longer residency	36.0% (9/25)	56.0% (14/25)	54.2% (13/24)
Inspirational Opportunities:			
Provide a clinical model that prepare graduates for the role of a clinical manager as well as practitioner	76.2% (16/21)	81.0% (17/21)	61.9% (13/21)
Offer students expanded skill training in the areas of human resources, management, leadership, policy analysis, business acumen and computer education	71.4% (15/21)	76.2% (16/21)	61.9% (13/21)
Establish a multi-modality practitioner model to deliver healthcare, e.g., OT, PT, Rehab and Speech blended profession	57.2% (12/21)	66.7% (14/21)	66.7% (14/21)

N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents

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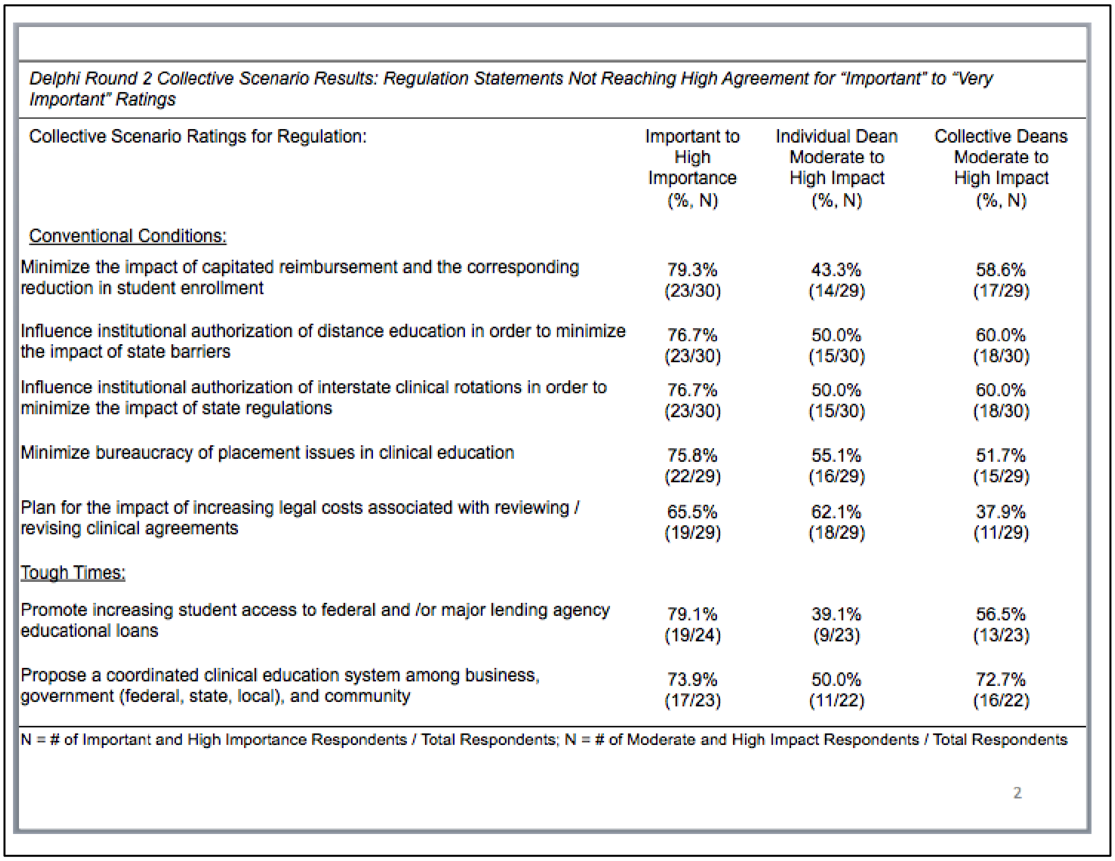

Delphi Round 2 Collective Scenario Results: Regulation Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Regulation:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Minimize the impact of capitated reimbursement and the corresponding reduction in student enrollment	79.3% (23/30)	43.3% (14/29)	58.6% (17/29)
Influence institutional authorization of distance education in order to minimize the impact of state barriers	76.7% (23/30)	50.0% (15/30)	60.0% (18/30)
Influence institutional authorization of interstate clinical rotations in order to minimize the impact of state regulations	76.7% (23/30)	50.0% (15/30)	60.0% (18/30)
Minimize bureaucracy of placement issues in clinical education	75.8% (22/29)	55.1% (16/29)	51.7% (15/29)
Plan for the impact of increasing legal costs associated with reviewing / revising clinical agreements	65.5% (19/29)	62.1% (18/29)	37.9% (11/29)
Tough Times:			
Promote increasing student access to federal and /or major lending agency educational loans	79.1% (19/24)	39.1% (9/23)	56.5% (13/23)
Propose a coordinated clinical education system among business, government (federal, state, local), and community	73.9% (17/23)	50.0% (11/22)	72.7% (16/22)

N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents

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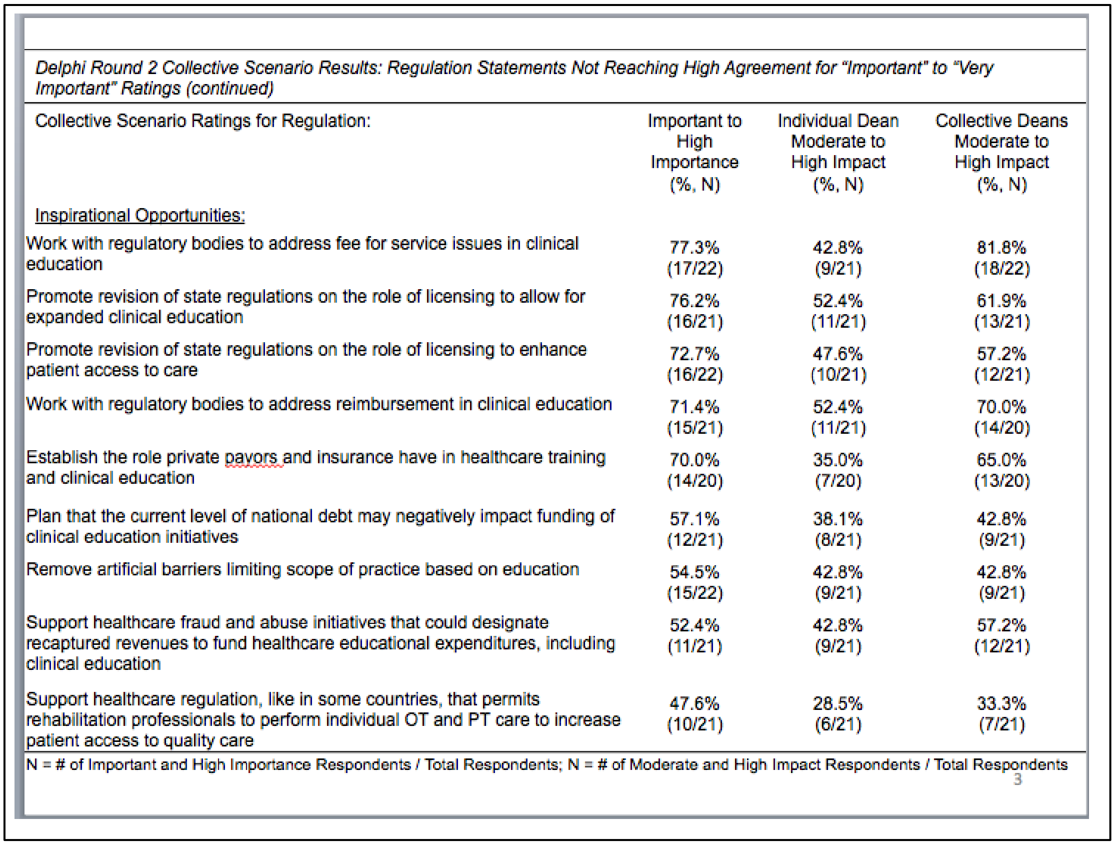

Delphi Round 2 Collective Scenario Results: Regulation Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings (continued)

Collective Scenario Ratings for Regulation:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Inspirational Opportunities:			
Work with regulatory bodies to address fee for service issues in clinical education	77.3% (17/22)	42.8% (9/21)	81.8% (18/22)
Promote revision of state regulations on the role of licensing to allow for expanded clinical education	76.2% (16/21)	52.4% (11/21)	61.9% (13/21)
Promote revision of state regulations on the role of licensing to enhance patient access to care	72.7% (16/22)	47.6% (10/21)	57.2% (12/21)
Work with regulatory bodies to address reimbursement in clinical education	71.4% (15/21)	52.4% (11/21)	70.0% (14/20)
Establish the role private payors and insurance have in healthcare training and clinical education	70.0% (14/20)	35.0% (7/20)	65.0% (13/20)
Plan that the current level of national debt may negatively impact funding of clinical education initiatives	57.1% (12/21)	38.1% (8/21)	42.8% (9/21)
Remove artificial barriers limiting scope of practice based on education	54.5% (15/22)	42.8% (9/21)	42.8% (9/21)
Support healthcare fraud and abuse initiatives that could designate recaptured revenues to fund healthcare educational expenditures, including clinical education	52.4% (11/21)	42.8% (9/21)	57.2% (12/21)
Support healthcare regulation, like in some countries, that permits rehabilitation professionals to perform individual OT and PT care to increase patient access to quality care	47.6% (10/21)	28.5% (6/21)	33.3% (7/21)

N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents

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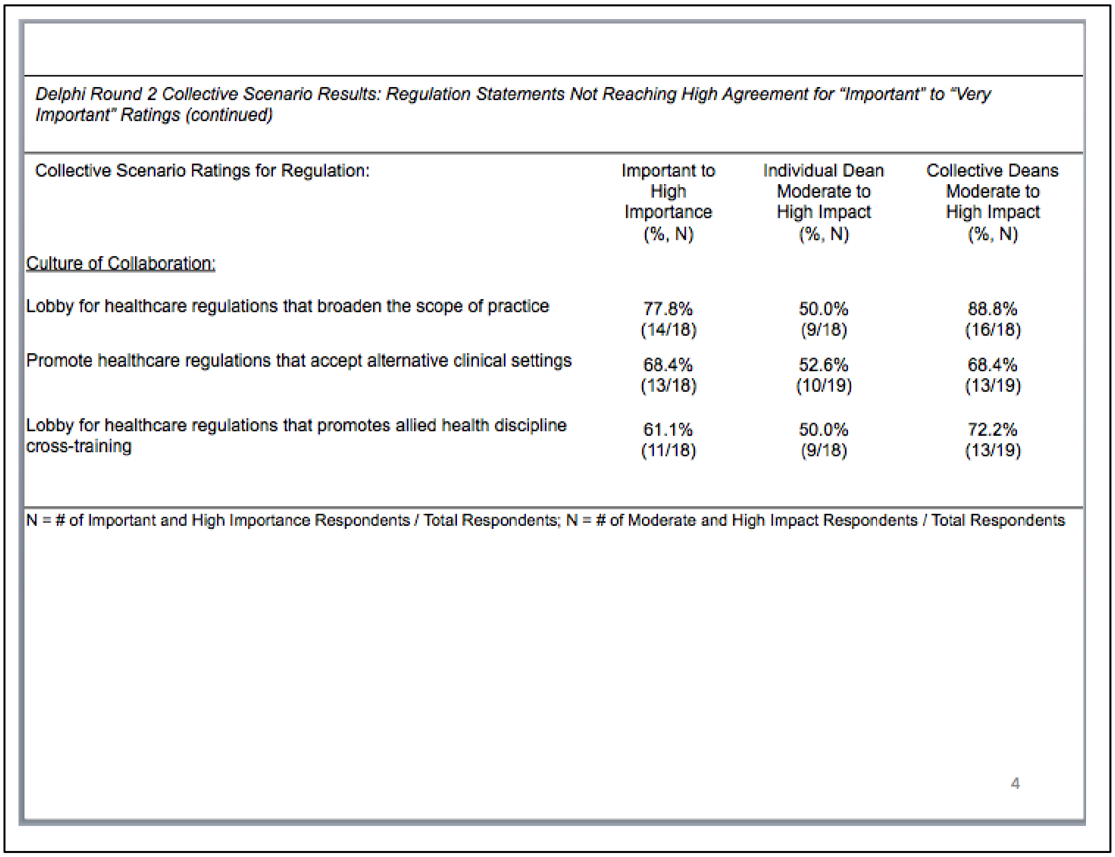
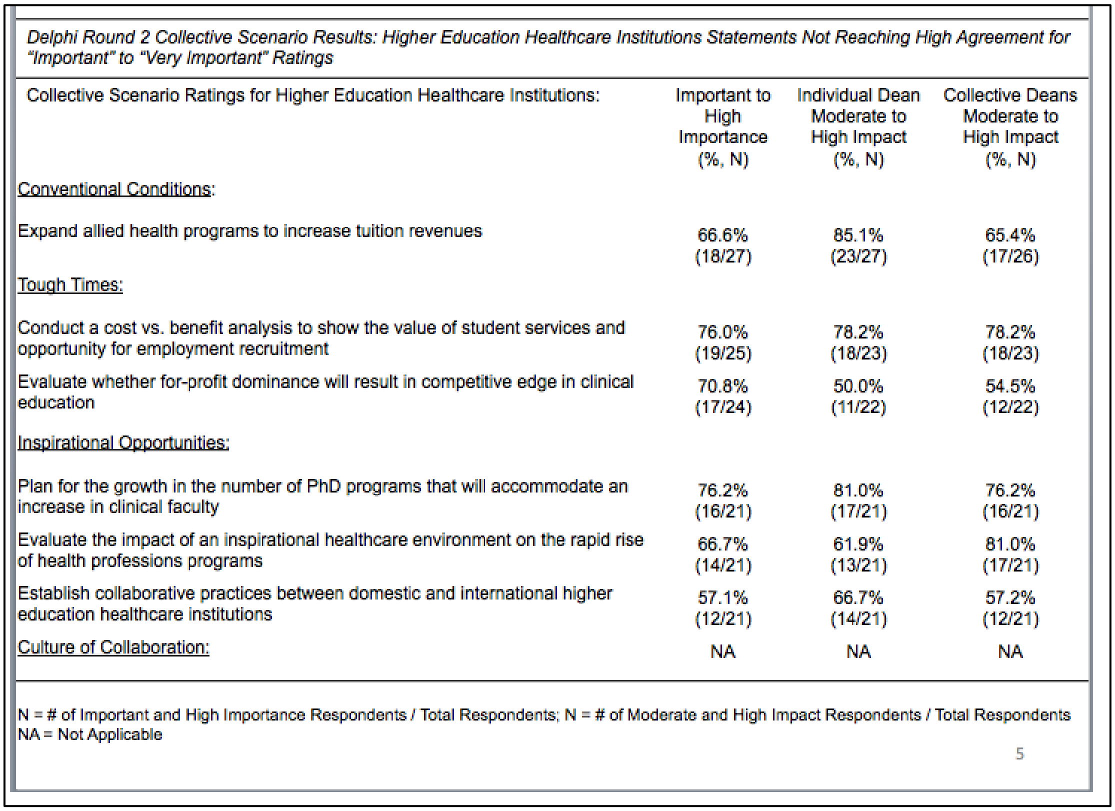


Delphi Round 2 Collective Scenario Results: Regulation Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings (continued)

Collective Scenario Ratings for Regulation:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Culture of Collaboration:</u>			
Lobby for healthcare regulations that broaden the scope of practice	77.8% (14/18)	50.0% (9/18)	88.8% (16/18)
Promote healthcare regulations that accept alternative clinical settings	68.4% (13/18)	52.6% (10/19)	68.4% (13/19)
Lobby for healthcare regulations that promotes allied health discipline cross-training	61.1% (11/18)	50.0% (9/18)	72.2% (13/19)

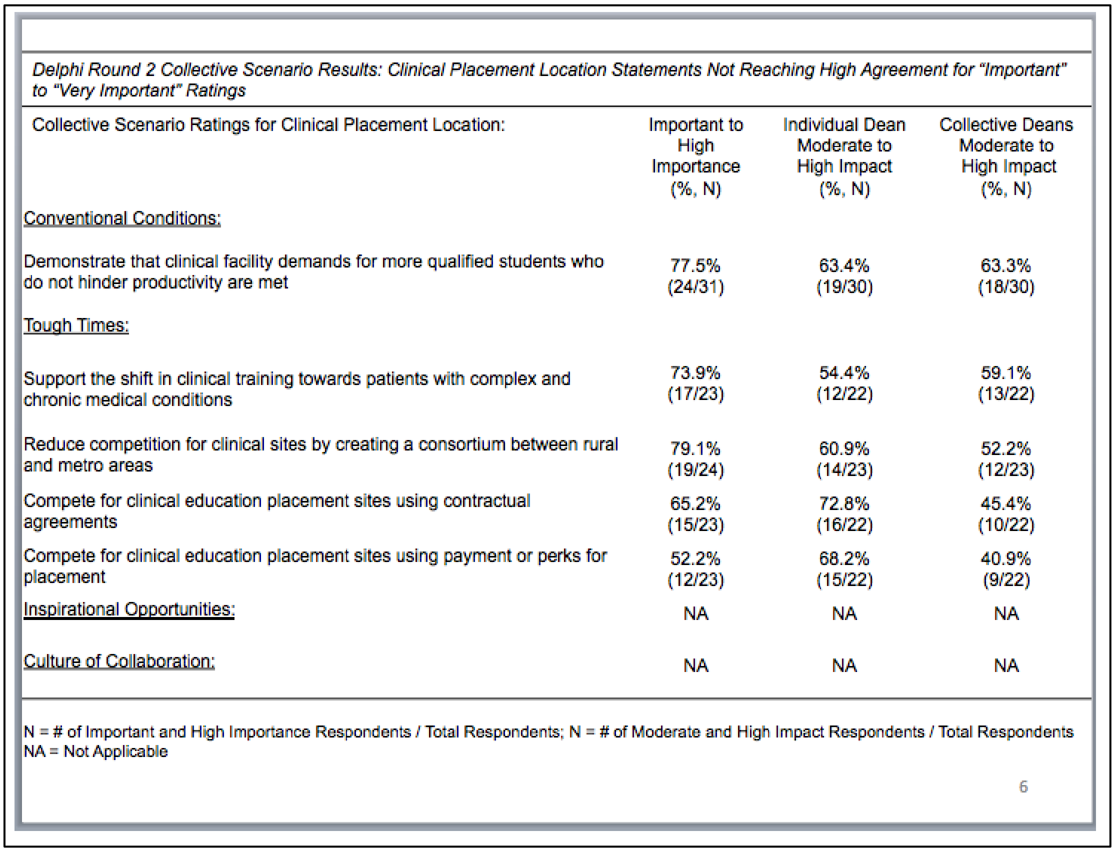
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents



Delphi Round 2 Collective Scenario Results: Higher Education Healthcare Institutions Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Higher Education Healthcare Institutions:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Conventional Conditions</u>:			
Expand allied health programs to increase tuition revenues	66.6% (18/27)	85.1% (23/27)	65.4% (17/26)
<u>Tough Times:</u>			
Conduct a cost vs. benefit analysis to show the value of student services and opportunity for employment recruitment	76.0% (19/25)	78.2% (18/23)	78.2% (18/23)
Evaluate whether for-profit dominance will result in competitive edge in clinical education	70.8% (17/24)	50.0% (11/22)	54.5% (12/22)
<u>Inspirational Opportunities:</u>			
Plan for the growth in the number of PhD programs that will accommodate an increase in clinical faculty	76.2% (16/21)	81.0% (17/21)	76.2% (16/21)
Evaluate the impact of an inspirational healthcare environment on the rapid rise of health professions programs	66.7% (14/21)	61.9% (13/21)	81.0% (17/21)
Establish collaborative practices between domestic and international higher education healthcare institutions	57.1% (12/21)	66.7% (14/21)	57.2% (12/21)
<u>Culture of Collaboration:</u>	NA	NA	NA

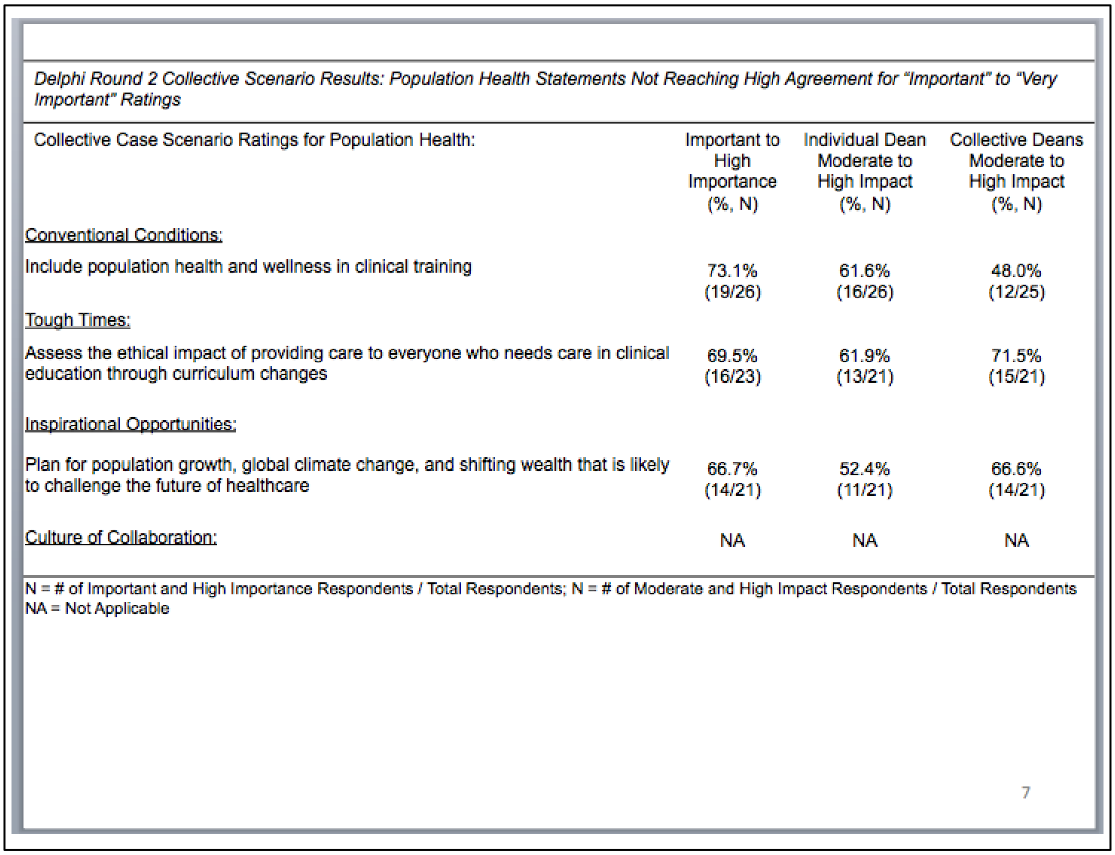
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Clinical Placement Location Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Clinical Placement Location:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Demonstrate that clinical facility demands for more qualified students who do not hinder productivity are met	77.5% (24/31)	63.4% (19/30)	63.3% (18/30)
Tough Times:			
Support the shift in clinical training towards patients with complex and chronic medical conditions	73.9% (17/23)	54.4% (12/22)	59.1% (13/22)
Reduce competition for clinical sites by creating a consortium between rural and metro areas	79.1% (19/24)	60.9% (14/23)	52.2% (12/23)
Compete for clinical education placement sites using contractual agreements	65.2% (15/23)	72.8% (16/22)	45.4% (10/22)
Compete for clinical education placement sites using payment or perks for placement	52.2% (12/23)	68.2% (15/22)	40.9% (9/22)
Inspirational Opportunities:	NA	NA	NA
Culture of Collaboration:	NA	NA	NA

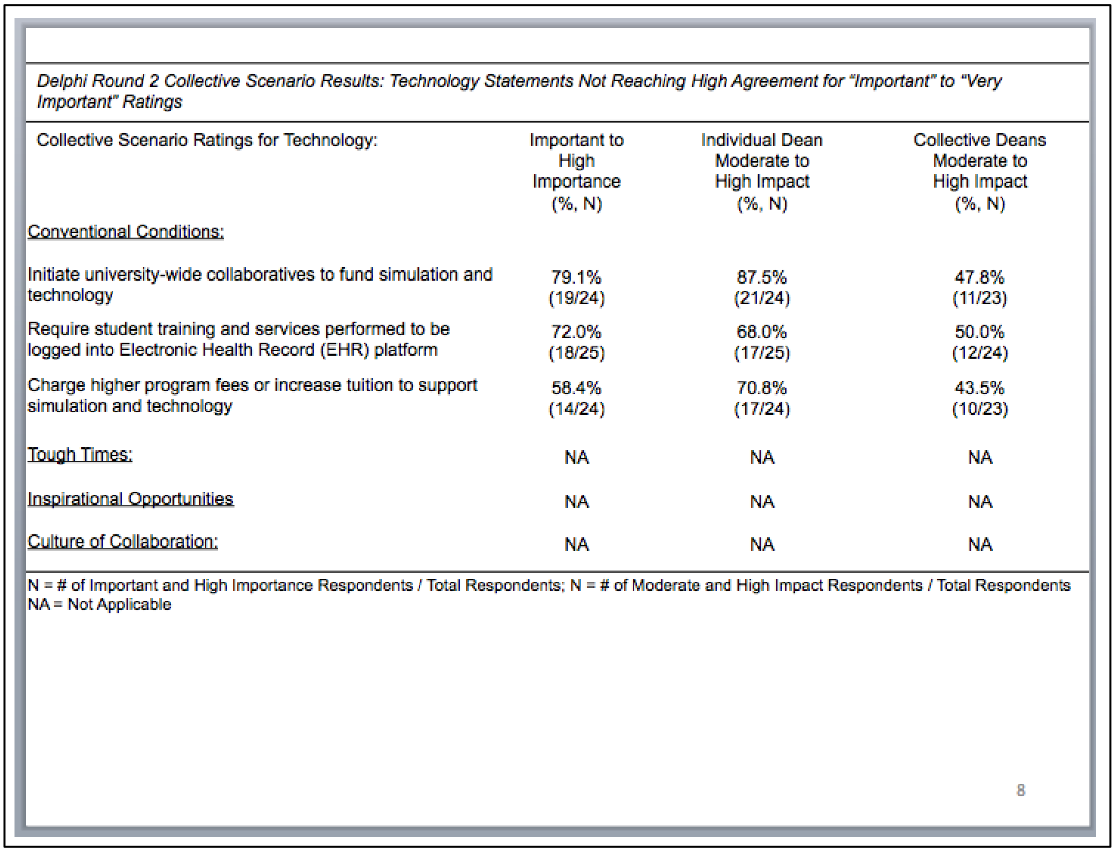
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Population Health Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Case Scenario Ratings for Population Health:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Include population health and wellness in clinical training	73.1% (19/26)	61.6% (16/26)	48.0% (12/25)
Tough Times:			
Assess the ethical impact of providing care to everyone who needs care in clinical education through curriculum changes	69.5% (16/23)	61.9% (13/21)	71.5% (15/21)
Inspirational Opportunities:			
Plan for population growth, global climate change, and shifting wealth that is likely to challenge the future of healthcare	66.7% (14/21)	52.4% (11/21)	66.6% (14/21)
Culture of Collaboration:	NA	NA	NA

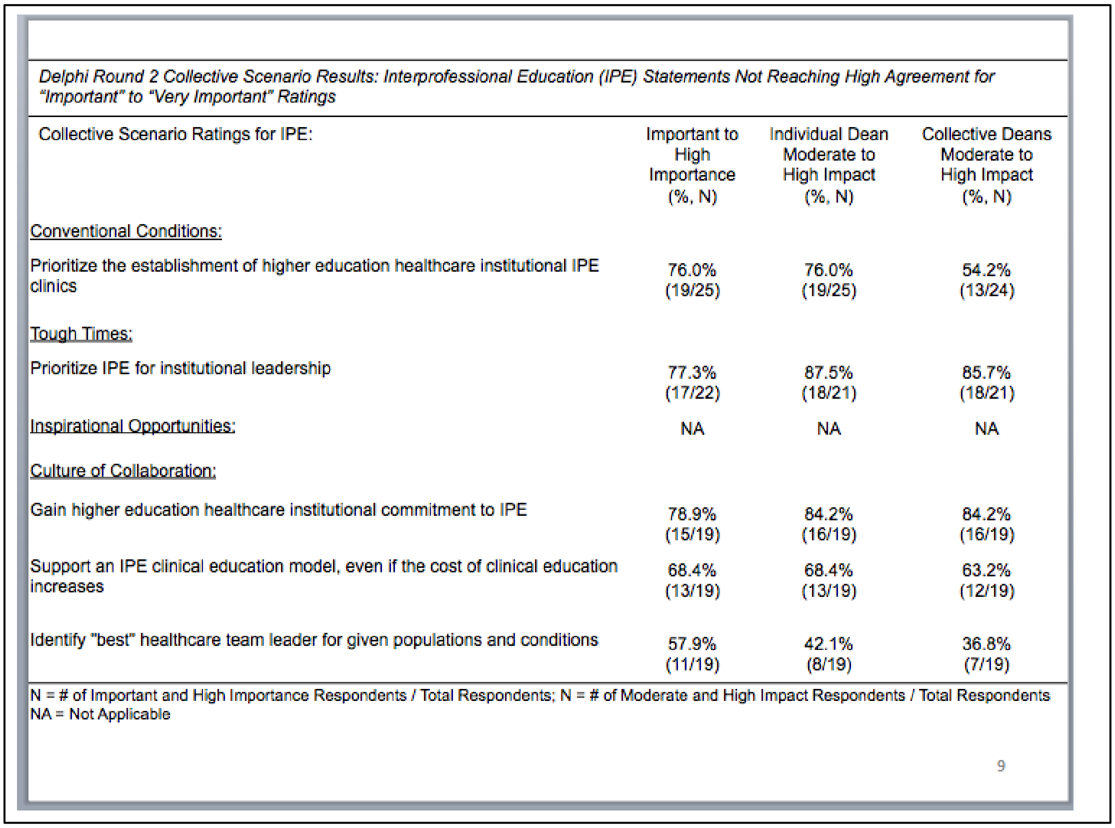
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Technology Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Technology:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Conventional Conditions:</u>			
Initiate university-wide collaboratives to fund simulation and technology	79.1% (19/24)	87.5% (21/24)	47.8% (11/23)
Require student training and services performed to be logged into Electronic Health Record (EHR) platform	72.0% (18/25)	68.0% (17/25)	50.0% (12/24)
Charge higher program fees or increase tuition to support simulation and technology	58.4% (14/24)	70.8% (17/24)	43.5% (10/23)
<u>Tough Times:</u>	NA	NA	NA
<u>Inspirational Opportunities</u>	NA	NA	NA
<u>Culture of Collaboration:</u>	NA	NA	NA

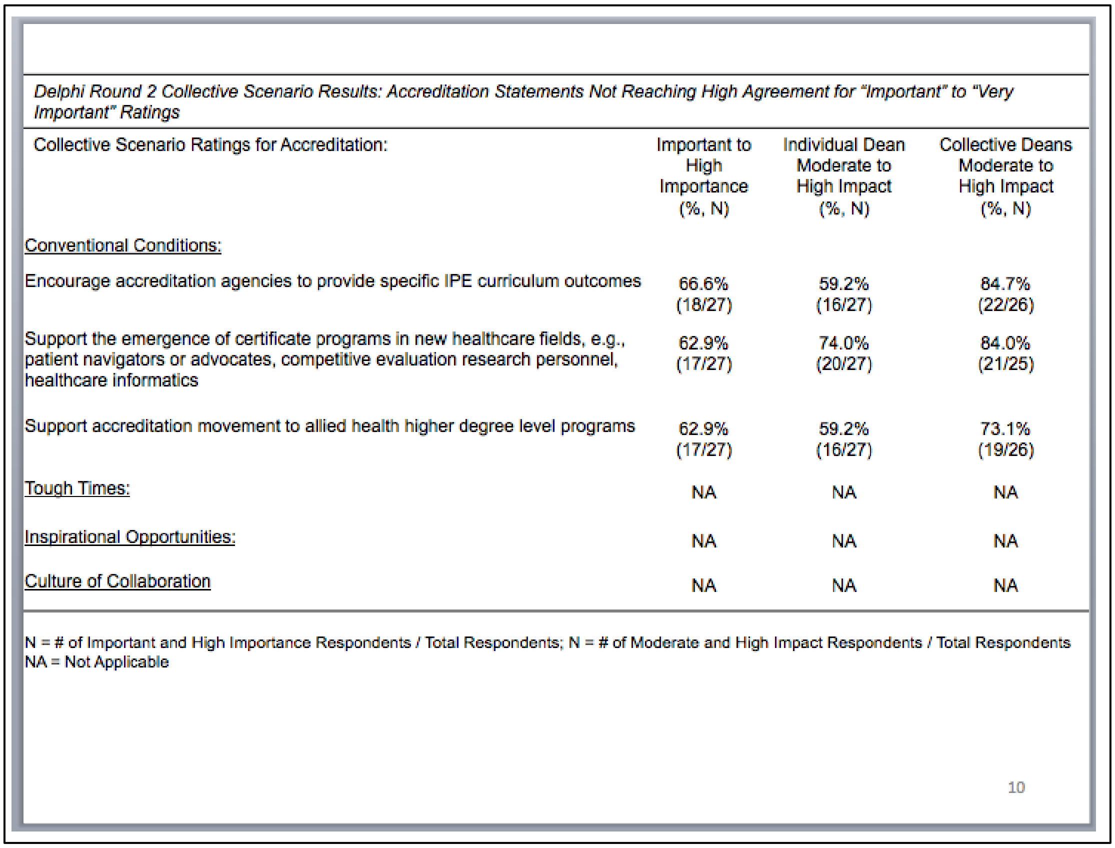
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Interprofessional Education (IPE) Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for IPE:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Conventional Conditions:</u>			
Prioritize the establishment of higher education healthcare institutional IPE clinics	76.0% (19/25)	76.0% (19/25)	54.2% (13/24)
<u>Tough Times:</u>			
Prioritize IPE for institutional leadership	77.3% (17/22)	87.5% (18/21)	85.7% (18/21)
<u>Inspirational Opportunities:</u>	NA	NA	NA
<u>Culture of Collaboration:</u>			
Gain higher education healthcare institutional commitment to IPE	78.9% (15/19)	84.2% (16/19)	84.2% (16/19)
Support an IPE clinical education model, even if the cost of clinical education increases	68.4% (13/19)	68.4% (13/19)	63.2% (12/19)
Identify "best" healthcare team leader for given populations and conditions	57.9% (11/19)	42.1% (8/19)	36.8% (7/19)

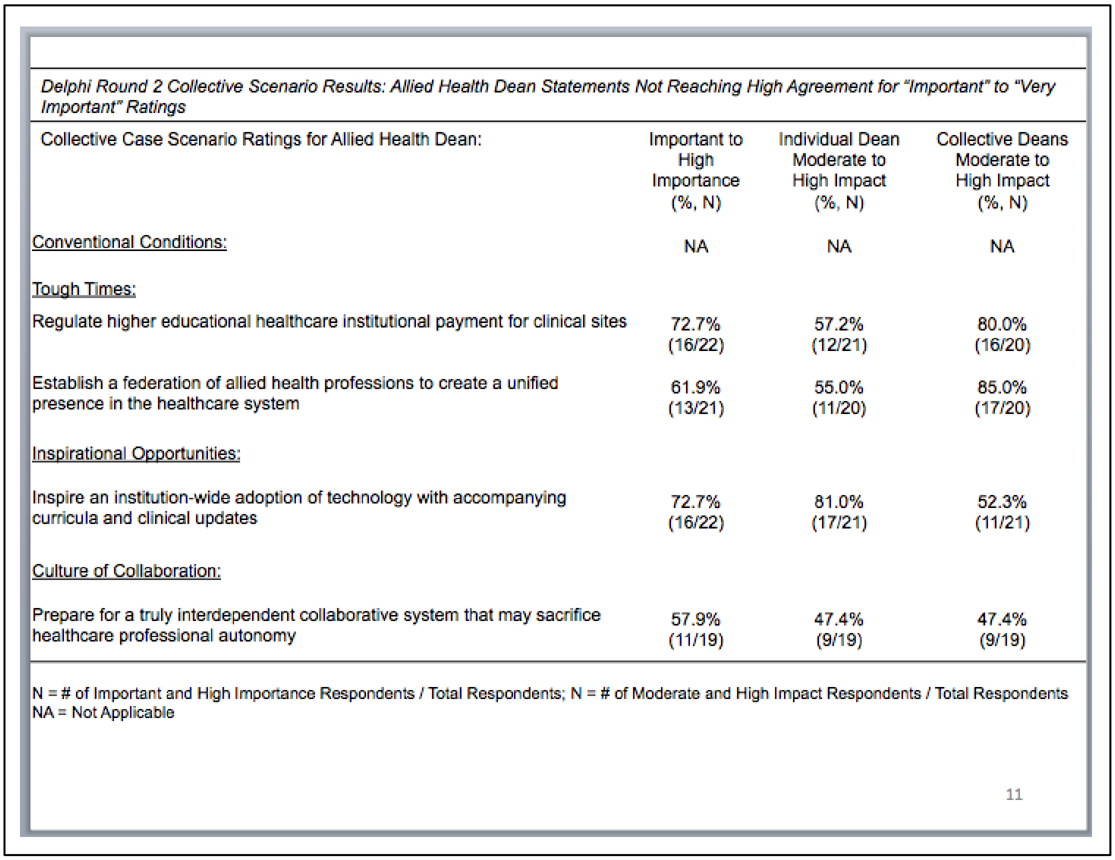
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Accreditation Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Accreditation:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Conventional Conditions:</u>			
Encourage accreditation agencies to provide specific IPE curriculum outcomes	66.6% (18/27)	59.2% (16/27)	84.7% (22/26)
Support the emergence of certificate programs in new healthcare fields, e.g., patient navigators or advocates, competitive evaluation research personnel, healthcare informatics	62.9% (17/27)	74.0% (20/27)	84.0% (21/25)
Support accreditation movement to allied health higher degree level programs	62.9% (17/27)	59.2% (16/27)	73.1% (19/26)
<u>Tough Times:</u>	NA	NA	NA
<u>Inspirational Opportunities:</u>	NA	NA	NA
<u>Culture of Collaboration</u>	NA	NA	NA

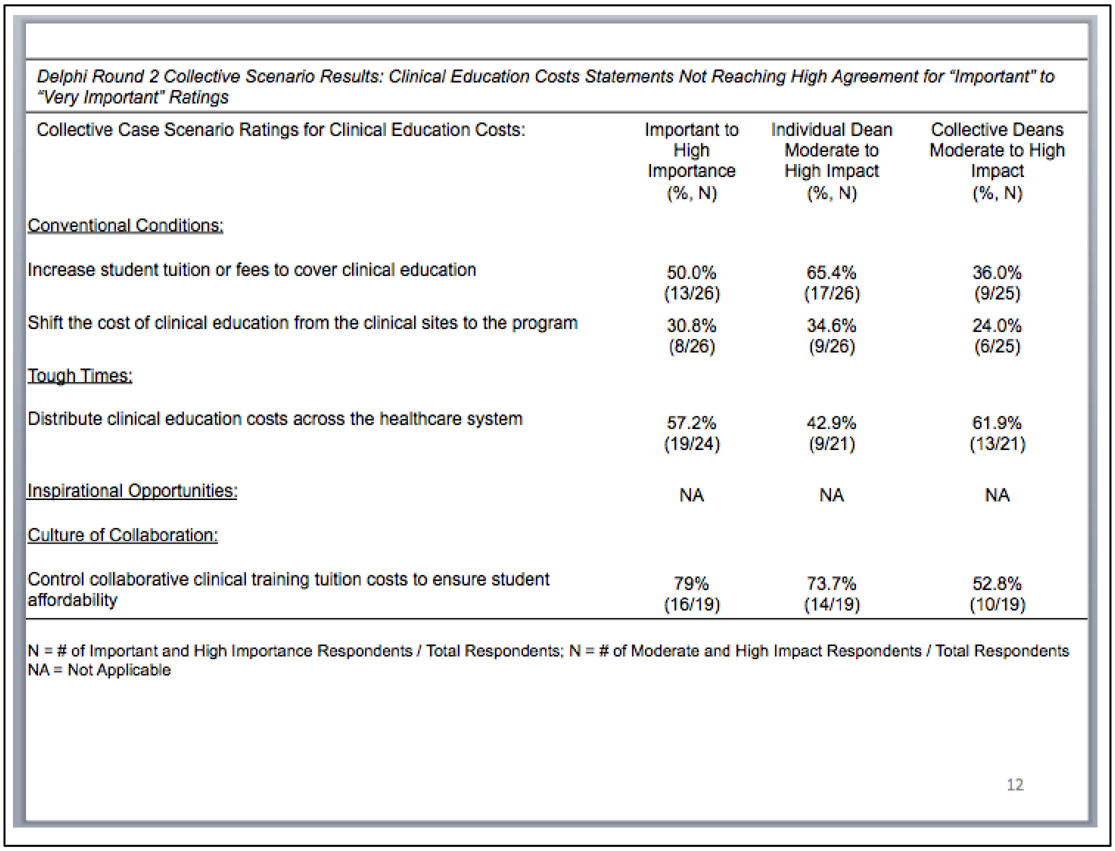
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Allied Health Dean Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Case Scenario Ratings for Allied Health Dean:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
<u>Conventional Conditions:</u>	NA	NA	NA
<u>Tough Times:</u>			
Regulate higher educational healthcare institutional payment for clinical sites	72.7% (16/22)	57.2% (12/21)	80.0% (16/20)
Establish a federation of allied health professions to create a unified presence in the healthcare system	61.9% (13/21)	55.0% (11/20)	85.0% (17/20)
<u>Inspirational Opportunities:</u>			
Inspire an institution-wide adoption of technology with accompanying curricula and clinical updates	72.7% (16/22)	81.0% (17/21)	52.3% (11/21)
<u>Culture of Collaboration:</u>			
Prepare for a truly interdependent collaborative system that may sacrifice healthcare professional autonomy	57.9% (11/19)	47.4% (9/19)	47.4% (9/19)

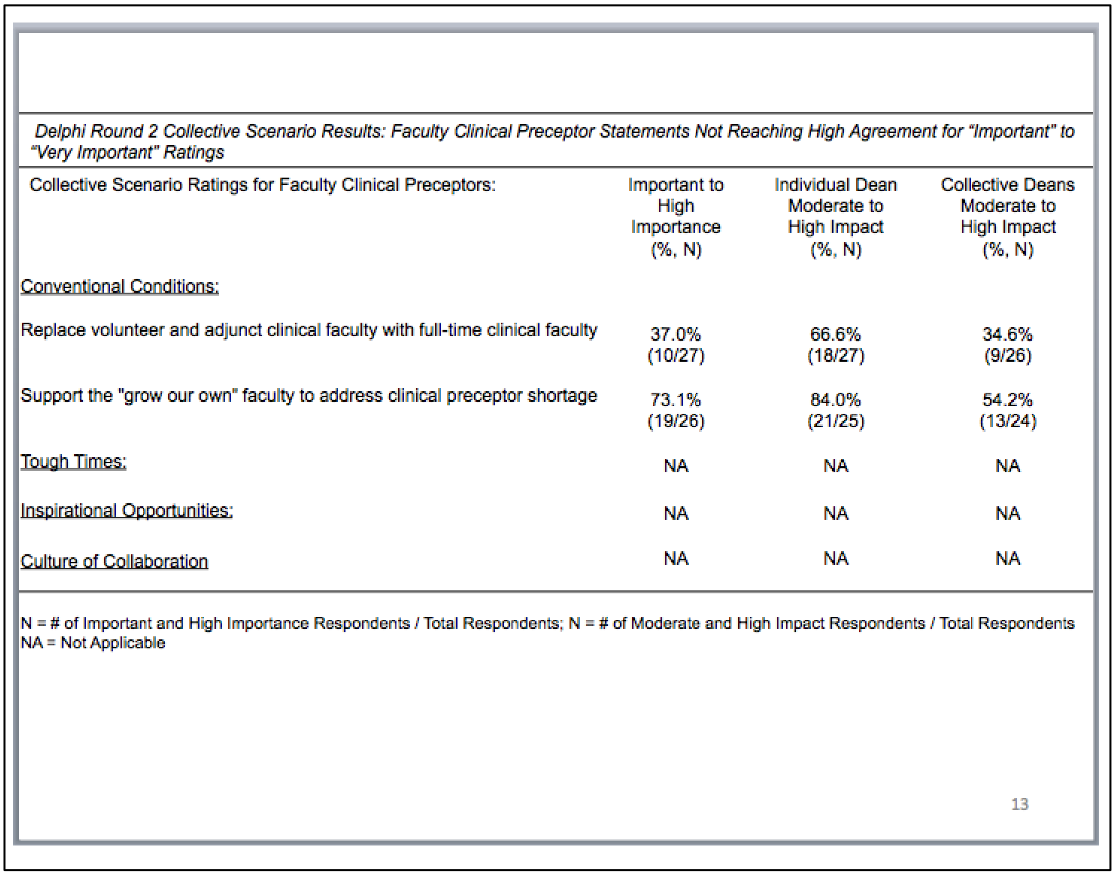
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Clinical Education Costs Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Case Scenario Ratings for Clinical Education Costs:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Increase student tuition or fees to cover clinical education	50.0% (13/26)	65.4% (17/26)	36.0% (9/25)
Shift the cost of clinical education from the clinical sites to the program	30.8% (8/26)	34.6% (9/26)	24.0% (6/25)
Tough Times:			
Distribute clinical education costs across the healthcare system	57.2% (19/24)	42.9% (9/21)	61.9% (13/21)
Inspirational Opportunities:	NA	NA	NA
Culture of Collaboration:			
Control collaborative clinical training tuition costs to ensure student affordability	79% (16/19)	73.7% (14/19)	52.8% (10/19)

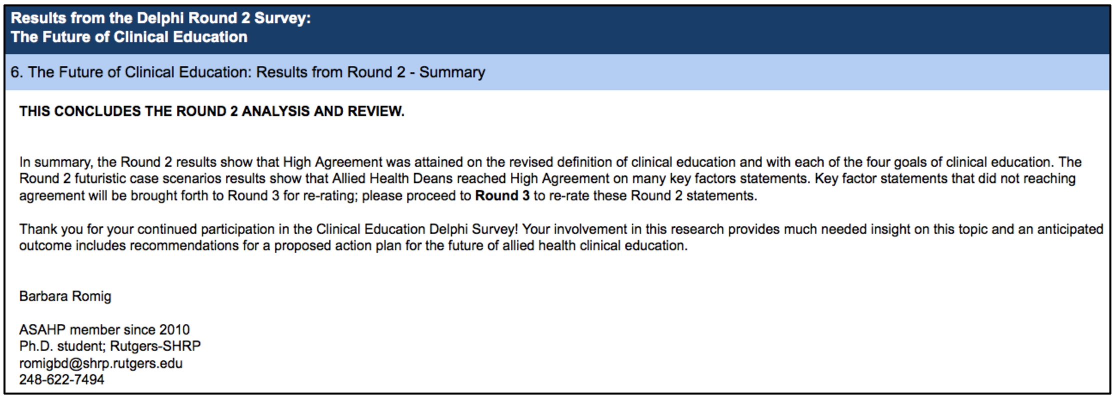
N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Delphi Round 2 Collective Scenario Results: Faculty Clinical Preceptor Statements Not Reaching High Agreement for "Important" to "Very Important" Ratings

Collective Scenario Ratings for Faculty Clinical Preceptors:	Important to High Importance (%, N)	Individual Dean Moderate to High Impact (%, N)	Collective Deans Moderate to High Impact (%, N)
Conventional Conditions:			
Replace volunteer and adjunct clinical faculty with full-time clinical faculty	37.0% (10/27)	66.6% (18/27)	34.6% (9/26)
Support the "grow our own" faculty to address clinical preceptor shortage	73.1% (19/26)	84.0% (21/25)	54.2% (13/24)
Tough Times:	NA	NA	NA
Inspirational Opportunities:	NA	NA	NA
Culture of Collaboration	NA	NA	NA

N = # of Important and High Importance Respondents / Total Respondents; N = # of Moderate and High Impact Respondents / Total Respondents
NA = Not Applicable



Results from the Delphi Round 2 Survey:
The Future of Clinical Education

6. The Future of Clinical Education: Results from Round 2 - Summary

THIS CONCLUDES THE ROUND 2 ANALYSIS AND REVIEW.

In summary, the Round 2 results show that High Agreement was attained on the revised definition of clinical education and with each of the four goals of clinical education. The Round 2 futuristic case scenarios results show that Allied Health Deans reached High Agreement on many key factors statements. Key factor statements that did not reaching agreement will be brought forth to Round 3 for re-rating; please proceed to **Round 3** to re-rate these Round 2 statements.

Thank you for your continued participation in the Clinical Education Delphi Survey! Your involvement in this research provides much needed insight on this topic and an anticipated outcome includes recommendations for a proposed action plan for the future of allied health clinical education.

Barbara Romig

ASAHP member since 2010
Ph.D. student; Rutgers-SHRP
romigbd@shrp.rutgers.edu
248-622-7494

Appendix WW

Round 3 Survey E-Mail Reminder

RUTGERS
School of Health Related Professions

March 3, 2014

Dear [Name of Institutional Member Dean or Designated Representative],

Thank you for your continued participation in the Delphi study on "The Future of Clinical Education"! This study, designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education, is a critical step to ensure optimum student education in the future. The focus is on allied health disciplines specifically involved in direct patient contact and care. The purpose of Round 3 is to utilize allied health dean ratings and comments from Round 2 to further explore the future (2018-2023) of clinical education.

General Instructions for Round 3:

1. Please REVIEW the results of Round 2, sent in a separate SurveyMonkey link, when you want more detail on the allied health deans' responses.

2. The Delphi survey definitions are provided at the end of Round 3.

3. Round 3, using this SurveyMonkey link to collect responses, will take approximately 15 minutes to complete.

You may continue to save and enter your comments until the survey closing date of Monday, March 24, 2014. Please click on the "Next" button at the bottom of each page to ensure that your feedback is saved in SurveyMonkey.

Note: if you prefer, you may print out and complete the PDF copy of this survey. Attach the PDF to an e-mail and send to Barbara Romig at romigbd@shrp.rutgers.edu.

This is the final Round of the Delphi Research.
You may complete Round 3 even if you did not complete Rounds 1 or 2.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig
ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

Appendix XX

Round 3 Survey Phone Script Reminder

My name is Barbara Romig and I am a Ph.D. candidate in the Department of Interdisciplinary Studies in the School of Health Related Professions at the Rutgers, The State University of New Jersey. I am calling to remind you that the Delphi Round 3 survey is now available for feedback on Survey Monkey. Approximately two weeks ago, you received the Delphi Round 3 survey via your unique SurveyMonkey link.

If you have already completed the survey, please accept my sincere thanks. If not, please complete your Delphi Round 3 survey via your unique Survey monkey link by Monday, March 24th.

If you prefer, you may request to complete a hardcopy version of the survey and return via e-mail (romigbd@shrp.rutgers.edu), fax (248-475-9003), or request a self-addressed stamped envelope for survey submission. If you have any questions regarding this study, please do not hesitate to call me at 248-622-7494.

I am extremely grateful for your participation in the **"The Future of Clinical Education: A Delphi Study of Allied Health Deans".** This is the final Round of the Delphi Research. You may complete Round 3 even if you did not complete Rounds 1 or 2. I would very much appreciate your continuation in the study. Your feedback is very important to the consensus building process and the study outcomes.

Thank you very much for your support of this very important study.

Barbara Romig

Appendix YY

Round 3 Survey Final E-Mail Reminder

RUTGERS
School of Health Related
Professions

March 18, 2014

Dear [Name of Institutional Member Dean or Designated Representative],

Thank you for your continued participation in the Delphi study on "The Future of Clinical Education"! This study, designed to determine and identify agreement of Allied Health Deans on key factors impacting allied health clinical education, is a critical step to ensure optimum student education in the future. The focus is on allied health disciplines specifically involved in direct patient contact and care. The purpose of Round 3 is to utilize allied health dean ratings and comments from Round 2 to further explore the future (2018-2023) of clinical education.

General Instructions for Round 3:

1. Please REVIEW the results of Round 2, sent in a separate SurveyMonkey link, when you want more detail on the allied health deans' responses.

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3. Round 3, using this SurveyMonkey link to collect responses, will take approximately 15 minutes to complete.

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This is the final Round of the Delphi Research.
You may complete Round 3 even if you did not complete Rounds 1 or 2.

On behalf of the dissertation committee, thank you for your continued participation!

Barbara Romig

ASAHP member since 2010
Ph.D. student; Rutgers-SHRP

Appendix ZZ

Key Factors Not Reaching High Agreement on Importance

***<u>Clinical Education Models</u>**: Key Factors Not Reaching High Agreement on Importance*

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Offer students expanded skill training in the areas of human resources, management, leadership, policy analysis, business acumen and computer education	IO, R2	71.4% (15/21)	4	1-5	76.2% (16/21)	4	2-5	61.9% (13/21)	4	1-5
	IO, R3	57.1% (20/35)	4	1-5	58.8% (20/34)	4	1-5	38.2% (12/34)	3	2-5
Provide a clinical model that prepare graduates for the role of a clinical manager as well as practitioner	IO, R2	76.2% (16/21)	4	1-5	**80.9%** (17/21)	4	3-5	61.9% (13/21)	4	1-5
	IO, R3	45.7% (16/35)	3	1-5	47.1% (16/34)	3	1-5	35.3% (12/34)	3	2-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Establish a "residency" model that allow students to complete didactic/clinical components, sit for licensure, and bill for services during a longer residency	CC, R2	36.0% (9/25)	3	1-5	56.0% (14/25)	4	1-5	54.2% (13/24)	4	1-5
	CC, R3	25.7% (9/35)	3	1-5	44.1% (15/34)	3	1-4	45.4% (15/33)	3	1-5
Establish a multi-modality practitioner model to deliver healthcare, e.g., OT, PT, Rehab and Speech blended profession	IO, R2	57.2% (12/21)	4	1-5	66.7% (14/21)	4	1-5	66.7% (14/21)	4	2-5
	IO, R3	25.7% (9/35)	2	1-5	32.4% (11/34)	3	1-5	41.2% (14/34)	3	1-5
Use reimbursement driven clinical education models	CC, R2	45.8% (11/24)	3	1-5	45.8% (11/24)	3	1-5	52.1% (12/23)	4	1-5
	CC, R3	35.3% (12/34)	3	1-5	65.2% (15/33)	3	1-5	45.4% (15/33)	3	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Regulation*: Key Factors Not Reaching High Agreement on Importance*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS), Round (R)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Plan for the impact of increasing legal costs associated with reviewing / revising clinical agreements	CC, R2	65.5% (19/29)	4	3-5	62.1% (18/29)	4	1-5	37.9% (11/29)	3	1-5
	CC, R3	60.0% (21/35)	4	1-5	55.9% (19/34)	4	1-5	39.4% (13/33)	3	2-5
Promote revision of state regulations on the role of licensing to enhance patient access to care	IO, R2	72.7% (16/22)	4	1-5	47.6% (10/21)	4	2-5	57.2% (12/21)	4	2-5
	IO, R3	79.4% (27/34)	4	1-5	45.4% (15/33)	3	1-5	51.5% (17/33)	4	2-5
Promote healthcare regulations that accept alternative clinical settings	CoC, R2	68.4% (13/18)	4	2-5	52.6% (10/19)	4	2-5	68.4% (13/19)	4	2-5
	CoC, R3	76.5% (26/34)	4	1-5	54.6% (18/33)	4	1-5	69.7% (23/33)	4	2-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Lobby for healthcare regulations that broaden the scope of practice	CoC, R2	77.8% (14/18)	4.5	2-5	50.0% (9/18)	3.5	2-5	**88.8%** (16/18)	4	2-5
	CoC, R3	67.6% (23/34)	4	1-5	42.4% (14/33)	3	1-5	54.5% (18/33)	4	2-5
Work with regulatory bodies to address reimbursement in clinical education	IO, R2	71.4% (15/21)	3	2-5	52.4% (11/21)	4	2-5	70.0% (14/20)	4	3-5
	IO, R3	67.6% (23/34)	4	1-5	42.4% (14/33)	3	1-5	57.6% (19/33)	4	1-5
Support healthcare fraud and abuse initiatives that could designate recaptured revenues to fund healthcare educational expenditures, including clinical education	IO, R2	52.4% (11/21)	4	1-5	42.8% (9/21)	3	1-5	57.2% (12/21)	4	2-5
	IO, R3	64.7% (22/34)	4	1-5	33.3% (11/33)	3	1-5	45.4% (15/33)	3	1-5
Promote revision of state regulations on the role of licensing to allow for expanded clinical education	IO, R2	76.2% (16/21)	4	1-5	52.4% (11/21)	4	2-5	61.9% (13/21)	4	1-5
	IO, R3	61.8% (21/34)	4	2-5	42.4% (14/33)	3	1-5	45.4% (15/33)	3	2-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Minimize the impact of capitated reimbursement and the corresponding reduction in student enrollment	CC, R2	79.3% (23/30)	4	2-5	43.3% (14/29)	3	1-5	58.6% (17/29)	4	1-5
	CC, R3	61.8% (21/34)	4	1-5	30.3% (10/33)	3	1-5	39.4% (13/33)	3	1-5
Establish the role private payors and insurance have in healthcare training and clinical education	IO, R2	70.0% (14/20)	4	2-5	35.0% (7/20)	3	1-5	65.0% (13/20)	4	1-5
	IO, R3	58.8% (20/34)	4	1-5	27.3% (9/33)	2	1-5	40.6% (13/32)	3	1-5
Remove artificial barriers limiting scope of practice based on education	IO, R2	54.5% (15/22)	4	1-5	42.8% (9/21)	3	1-5	42.8% (9/21)	3	1-5
	IO, R3	52.9% (18/34)	4	1-5	30.3% (10/33)	3	1-5	36.4% (12/33)	3	1-5
Propose a coordinated clinical education system among business, government (federal, state, local), and community	TT, R2	73.9% (17/23)	4	1-5	50.0% (11/22)	3.5	1-5	72.7% (16/22)	4	1-5
	TT, R3	50.0% (17/34)	3.5	1-5	36.4% (13/33)	3	1-5	48.5% (16/33)	3	2-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Lobby for healthcare regulations that promotes allied health discipline cross-training	CoC, R2	61.1% (11/18)	4	1-5	50.0% (9/18)	3.5	2-5	72.2% (13/19)	4	2-5
	CoC, R3	47.1% (16/34)	3	1-5	36.4% (12/33)	3	1-5	57.6% (19/33)	4	1-5
Plan that the current level of national debt may negatively impact funding of clinical education initiatives	IO, R2	57.1% (12/21)	4	1-5	38.1% (8/21)	3	1-5	42.8% (9/21)	3	1-5
	IO, R3	47.1% (16/34)	3	1-5	33.3% (11/33)	3	1-5	30.3% (10/33)	3	1-5
Work with regulatory bodies to address fee for service issues in clinical education	IO, R2	77.3% (17/22)	4	2-5	42.8% (9/21)	3	2-5	**81.8%** (18/22)	5	3-5
	IO, R3	47.1% (16/34)	3	1-5	24.2% (8/33)	3	1-5	45.4% (15/33)	4	1-5
Support healthcare regulation, like in some countries, that permits rehabilitation professionals to perform individual OT and PT care to increase patient access to quality care	IO, R2	47.6% (10/21)	3	1-5	28.5% (6/21)	2	1-5	33.3% (7/21)	3	1-5
	IO, R3	32.4% (11/34)	3	1-5	21.2% (7/33)	3	1-5	36.4% (12/33)	3	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

***<u>Health Professions Education Institutions</u>**: Key Factors Not Reaching High Agreement on Importance*

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Plan for the growth in the number of PhD programs that will accommodate an increase in clinical faculty	IO, R2	76.2% (16/21)	4	2-5	**81.0%** (17/21)	5	3-5	76.2% (16/21)	4	2-5
	IO, R3	75.7% (28/37)	4	1-5	69.4% (25/36)	4	1-5	61.1% (22/36)	4	1-5
Conduct a cost vs. benefit analysis to show the value of student services and opportunity for employment recruitment	TT, R2	76.0% (19/25)	4	2-5	78.2% (18/23)	4	2-5	78.2% (18/23)	4	2-5
	TT, R3	70.3% (26/37)	4	2-5	61.1% (22/36)	4	2-5	58.3% (21/36)	4	1-5
Evaluate whether for-profit dominance will result in competitive edge in clinical education	TT, R2	70.8% (17/24)	4	2-5	50.0% (11/22)	3.5	2-5	54.5% (12/22)	4	2-5
	TT, R3	62.2% (23/37)	4	1-5	52.8% (19/36)	4	1-5	66.7% (24/36)	4	1-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean’s Impact			COLL Deans’ Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Evaluate the impact of an inspirational healthcare environment on the rapid rise of health professions programs	IO, R2	66.7% (14/21)	4	1-5	61.9% (13/21)	4	1-5	**81.0%** (17/21)	4	2-5
	IO, R3	54.1% (20/37)	4	1-5	47.2% (17/36)	3	1-5	52.8% (19/36)	4	1-5
Expand allied health programs to increase tuition revenues	CC, R2	66.6% (18/27)	4	1-5	85.1% (23/27)	4	2-5	65.4% (17/26)	4	1-5
	CC, R3	43.2% (16/37)	3	1-5	61.1% (28/36)	4	1-5	58.3% (21/36)	4	1-5
Establish collaborative practices between domestic and international higher education healthcare institutions	IO, R2	57.1% (12/21)	4	1-5	66.7% (14/21)	4	1-5	57.2% (12/21)	4	2-5
	IO, R3	43.2% (16/37)	3	1-5	66.7% (24/36)	4	1-5	58.3% (21/36)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Clinical Placement Location: *Key Factors Not Reaching High Agreement on Importance*

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	Case Scenario (CS), Round (R)	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Demonstrate that clinical facility demands for more qualified students who do not hinder productivity are met	CC, R2	77.5% (24/31)	4	1-5	63.4% (19/30)	4	2-5	63.3% (18/30)	4	2-5
	CC, R3	75.7% (28/37)	4	1-5	63.9% (23/36)	4	1-5	61.1% (22/36)	4	1-5
Reduce competition for clinical sites by creating a consortium between rural and metro areas	TT, R2	79.1% (19/24)	4	1-5	60.9% (14/23)	4	1-5	52.2% (12/23)	4	1-5
	TT, R3	73.0% (27/37)	4	1-5	72.2% (26/36)	4	1-5	66.7% (24/36)	4	1-5
Support the shift in clinical training towards patients with complex and chronic medical conditions	TT, R2	73.9% (17/23)	4	1-5	54.4% (12/22)	4	1-5	59.1% (13/22)	4	1-5
	TT, R3	56.8% (21/37)	4	1-5	41.7% (15/36)	3	2-5	44.4% (16/36)	3	1-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Compete for clinical education placement sites using contractual agreements	TT, R2	65.2% (15/23)	4	1-5	72.8% (16/22)	4	1-5	45.4% (10/22)	3	1-5
	TT, R3	45.9% (17/37)	3	1-5	55.6% (20/36)	4	1-5	50.0% (18/36)	3.5	1-5
Compete for clinical education placement sites using payment or perks for placement	TT, R2	52.2% (12/23)	4	1-5	68.2% (15/22)	4	1-5	40.9% (9/22)	3	1-5
	TT, R3	37.8% (14/37)	2	1-5	66.7% (24/36)	4	1-5	61.1% (22/36)	4	1-5

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

<u>Population Health</u>*: Key Factors Not Reaching High Agreement on Importance*

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Plan for population growth, global climate change, and shifting wealth that is likely to challenge the future of healthcare	IO, R2	66.7% (14/21)	4	1-5	52.4% (11/21)	4	1-5	66.6% (14/21)	4	1-5
	IO, R3	75.7% (28/37)	4	2-5	61.1% (22/36)	4	1-5	61.1% (22/36)	4	1-5
Assess the ethical impact of providing care to everyone who needs care in clinical education through curriculum changes	TT, R2	69.5% (16/23)	4	1-5	61.9% (13/21)	4	1-5	71.5% (15/21)	4	1-5
	TT, R3	62.2% (23/37)	4	1-5	55.6% (20/36)	4	1-5	50.0% (18/36)	3.5	1-5

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Technology*: Key Factors Not Reaching High Agreement on Importance*

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Require student training and services performed to be logged into Electronic Health Record (EHR) platform	CC, R2	72.0% (18/25)	4	1-5	68.0% (17/25)	4	1-5	50.0% (12/24)	4	1-5
	CC, R3	59.4% (22/37)	4	2-5	61.1% (22/36)	4	1-5	50.0% (18/36)	4	1-5
Charge higher program fees or increase tuition to support simulation and technology	CC, R2	58.4% (14/24)	4	2-5	70.8% (17/24)	4	2-5	43.5% (10/23)	3	1-5
	CC, R3	56.8% (21/37)	4	1-5	72.2% (26/36)	4	1-5	55.6% (20/36)	4	1-5

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of AH deans responding High Importance or Important / Total Importance Respondents.
n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

***<u>Interprofessional Education</u>*: Key Factors Not Reaching High Agreement on Importance**

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Prioritize the establishment of higher education healthcare institutional IPE clinics	CC, R2	76.0% (19/25)	4	1-5	76.0% (19/25)	4	1-5	54.2% (13/24)	4	1-5
	CC, R3	73.0% (27/37)	4	1-5	75.0% (27/36)	4	1-5	50.0% (18/36)	4	1-5
Support an IPE clinical education model, even if the cost of clinical education increases	CoC, R2	68.4% (13/19)	4	2-5	68.4% (13/19)	4	2-5	63.2% (12/19)	4	1-5
	CoC, R3	67.6% (25/37)	4	1-5	75.0% (27/36)	4	1-5	63.9% (23/36)	4	1-5
Identify "best" healthcare team leader for given populations and conditions	CoC, R2	57.9% (11/19)	4	1-5	42.1% (8/19)	3	1-5	36.8% (7/19)	3	1-5
	CoC, R3	45.9% (17/37)	3	1-5	36.1% (13/36)	3	1-5	38.9% (14/36)	3	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

***__Accreditation__*: Key Factors Not Reaching High Agreement on Importance*

Key Factor	Case Scenario (CS), Round (R)	Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Encourage accreditation agencies to provide specific IPE curriculum outcomes	CC, R2	66.6% (18/27)	4	1-5	59.2% (16/27)	4	1-5	**84.7%** (22/26)	5	1-5
	CC, R3	75.7% (28/37)	4	1-5	66.7% (24/36)	4	1-5	**80.6%** (29/36)	4	1-5
Support the emergence of certificate programs in new healthcare fields, e.g., patient navigators or advocates, competitive evaluation research personnel, healthcare informatics	CC, R2	62.9% (17/27)	4	1-5	74.0% (20/27)	4	1-5	**84.0%** (21/25)	4	1-5
	CC, R3	70.3% (26/37)	4	1-5	**83.3%** (30/36)	4	1-5	66.7% (24/36)	4	1-5
Support accreditation movement to allied health higher degree level programs	CC, R2	62.9% (17/27)	4	1-5	59.2% (16/27)	4	1-5	73.1% (19/26)	4	2-5
	CC, R3	62.2% (23/37)	4	1-5	55.6% (20/36)	4	1-5	**80.6%** (29/36)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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***__Allied Health Deans__**: Key Factors Not Reaching High Agreement on Importance*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS), Round (R)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Inspire an institution-wide adoption of technology with accompanying curricula and clinical updates	IO, R2	72.7% (16/22)	4.5	2-5	**81.0%** (17/21)	4	2-5	52.3% (11/21)	4	1-5
	IO, R3	75.7% (28/37)	4	1-5	**88.9%** (32/36)	4	2-5	55.6% (20/36)	4	1-5
Regulate higher educational healthcare institutional payment for clinical sites	TT, R2	72.7% (16/22)	4.5	1-5	57.2% (12/21)	4	1-5	**80.0%** (16/20)	4	2-5
	TT, R3	70.3% (26/37)	4	1-5	63.9% (23/36)	4	1-5	75.0% (27/36)	4	1-5
Prepare for a truly interdependent collaborative system that may sacrifice healthcare professional autonomy	CoC, R2	57.9% (11/19)	4	2-5	47.4% (9/19)	3	2-5	47.4% (9/19)	3	2-5
	CoC, R3	56.8% (21/37)	4	1-5	44.4% (16/36)	3	2-5	61.1% (22/36)	4	1-5

Key Factor	Case Scenario (CS), Round (R)	IMP			INDV Dean’s Impact			COLL Deans’ Impact		
		(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Establish a federation of allied health professions to create a unified presence in the healthcare system	TT, R2	61.9% (13/21)	4	1-5	55.0% (11/20)	4	1-5	**85.0%** (17/20)	4	3-5
	TT, R3	51.4% (19/37)	4	1-5	40.0% (14/35)	3	1-5	57.1% (20/35)	4	2-5

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
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***Clinical Education Costs**: Key Factors Not Reaching High Agreement on Importance*

		Ratings								
		IMP			INDV Dean's Impact			COLL Deans' Impact		
Key Factor	Case Scenario (CS), Round (R)	(%, *n*[a])	Mdn	RNG	(%, *n*[b])	Mdn	RNG	(%, *n*[c])	Mdn	RNG
Distribute clinical education costs across the healthcare system	TT, R2	57.2% (19/24)	4	1-5	42.9% (9/21)	3	1-5	61.9% (13/21)	4	1-5
	TT, R3	73.0% (27/37)	4	1-5	61.1% (22/36)	4	1-5	69.4% (25/36)	4	1-5
Increase student tuition or fees to cover clinical education	CC, R2	50.0% (13/26)	3.5	1-5	65.4% (17/26)	4	1-5	36.0% (9/25)	3	1-5
	CC, R3	67.6% (25/37)	4	1-5	**83.3%** (30/36)	4	2-5	66.6% (24/36)	4	1-5
Shift the cost of clinical education from the clinical sites to the program	CC, R2	30.8% (8/26)	3	1-5	34.6% (9/26)	3	2-5	24.0% (6/25)	3	1-5
	CC, R3	51.4% (19/37)	4	1-5	66.6% (24/36)	4	2-5	36.8% (23/36)	4	1-5

Table continues.

Table continued.

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean's Impact, and finally Collective Deans' Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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n^b = # of AH deans responding High or Moderate Individual Dean's Impact / Total Individual Dean's Impact Respondents.
n^c = # of AH deans responding High or Moderate Collective Deans' Impact / Total Collective Deans' Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

***__Faculty Clinical Preceptor__**: Key Factors Not Reaching High Agreement on Importance*

		Ratings								
		IMP			INDV Dean’s Impact			COLL Deans’ Impact		
Key Factor	Case Scenario (CS), Round (R)	(%, n^a)	Mdn	RNG	(%, n^b)	Mdn	RNG	(%, n^c)	Mdn	RNG
Replace volunteer and adjunct clinical faculty with full-time clinical faculty	CC, R2	37.0% (10/27)	3	1-5	66.6% (18/27)	4	2-5	34.6% (9/26)	3	1-5
	CC, R3	31.6% (12/38)	3	1-5	67.6% (25/37)	4	1-5	52.8% (19/36)	4	1-5

Note. Key Factors are listed with highest percentage of Importance from Round 3 in order of total responses with the highest denominator, followed by Individual Dean’s Impact, and finally Collective Deans’ Impact.
Case Scenarios (CS): Conventional Conditions - CC; Tough Times - TT; Inspirational Opportunities - IO; Culture of Collaboration - CoC.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
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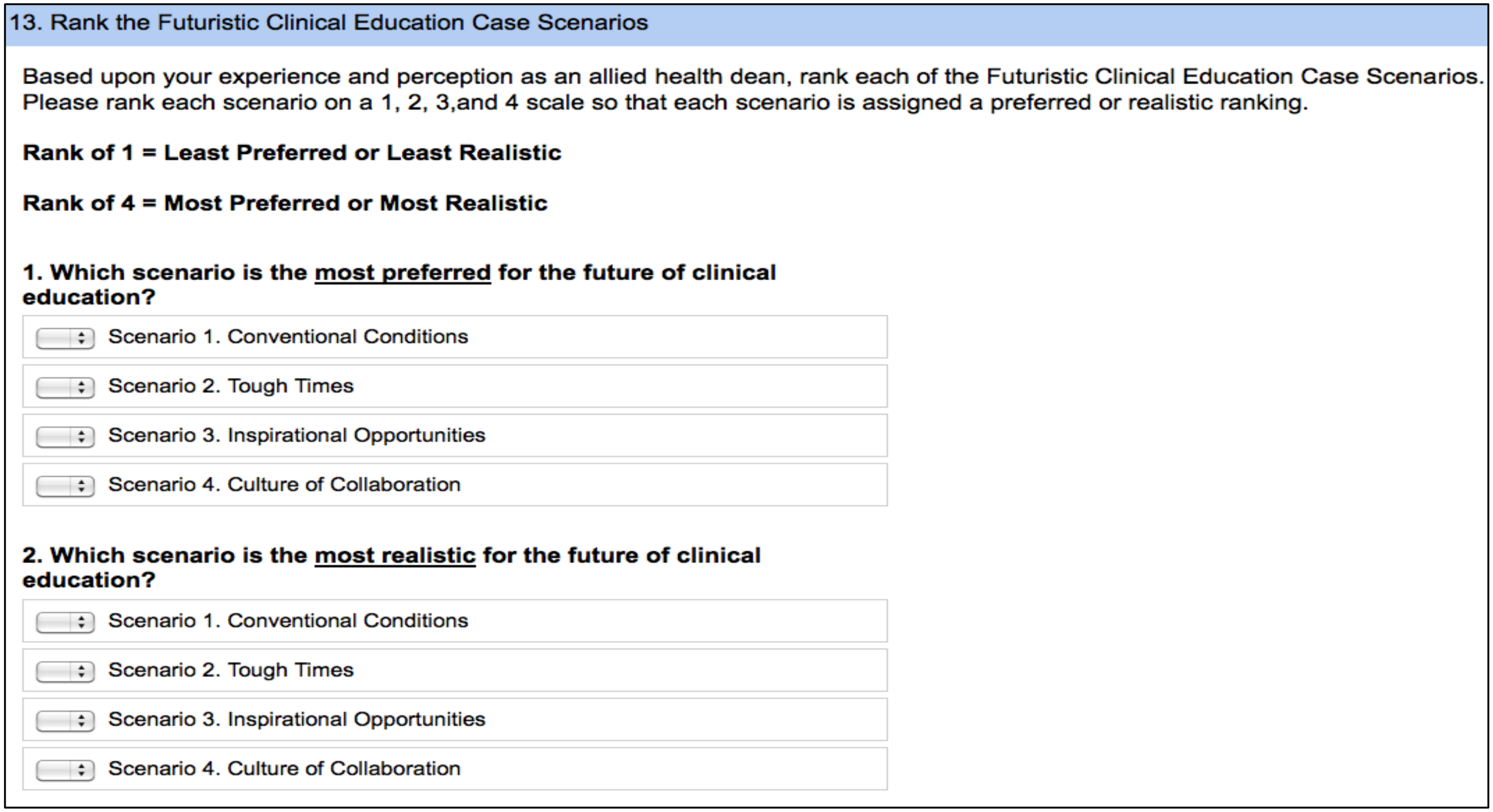
n^c = # of AH deans responding High or Moderate Collective Deans’ Impact / Total Collective Deans’ Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Appendix AAA

Round 2 Survey Case Scenario Rankings



13. Rank the Futuristic Clinical Education Case Scenarios

Based upon your experience and perception as an allied health dean, rank each of the Futuristic Clinical Education Case Scenarios. Please rank each scenario on a 1, 2, 3,and 4 scale so that each scenario is assigned a preferred or realistic ranking.

Rank of 1 = Least Preferred or Least Realistic

Rank of 4 = Most Preferred or Most Realistic

1. Which scenario is the most preferred for the future of clinical education?

Scenario 1. Conventional Conditions
Scenario 2. Tough Times
Scenario 3. Inspirational Opportunities
Scenario 4. Culture of Collaboration

2. Which scenario is the most realistic for the future of clinical education?

Scenario 1. Conventional Conditions
Scenario 2. Tough Times
Scenario 3. Inspirational Opportunities
Scenario 4. Culture of Collaboration

Appendix BBB

Round 2 Survey Ranking Results

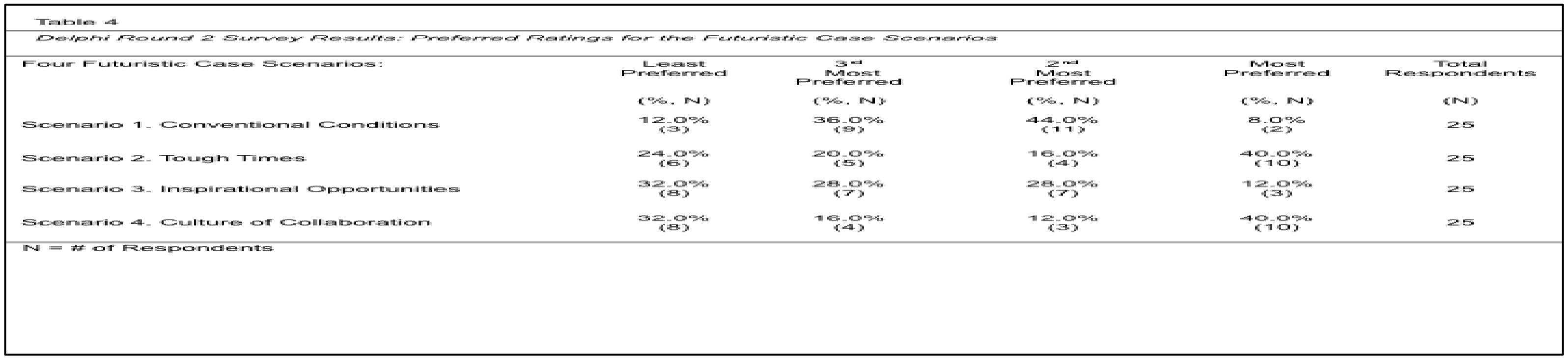


Table 4

Delphi Round 2 Survey Results: Preferred Ratings for the Futuristic Case Scenarios

Four Futuristic Case Scenarios:	Least Preferred	3rd Most Preferred	2nd Most Preferred	Most Preferred	Total Respondents
	(%, N)	(%, N)	(%, N)	(%, N)	(N)
Scenario 1. Conventional Conditions	12.0% (3)	36.0% (9)	44.0% (11)	8.0% (2)	25
Scenario 2. Tough Times	24.0% (6)	20.0% (5)	16.0% (4)	40.0% (10)	25
Scenario 3. Inspirational Opportunities	32.0% (8)	28.0% (7)	28.0% (7)	12.0% (3)	25
Scenario 4. Culture of Collaboration	32.0% (8)	16.0% (4)	12.0% (3)	40.0% (10)	25

N = # of Respondents

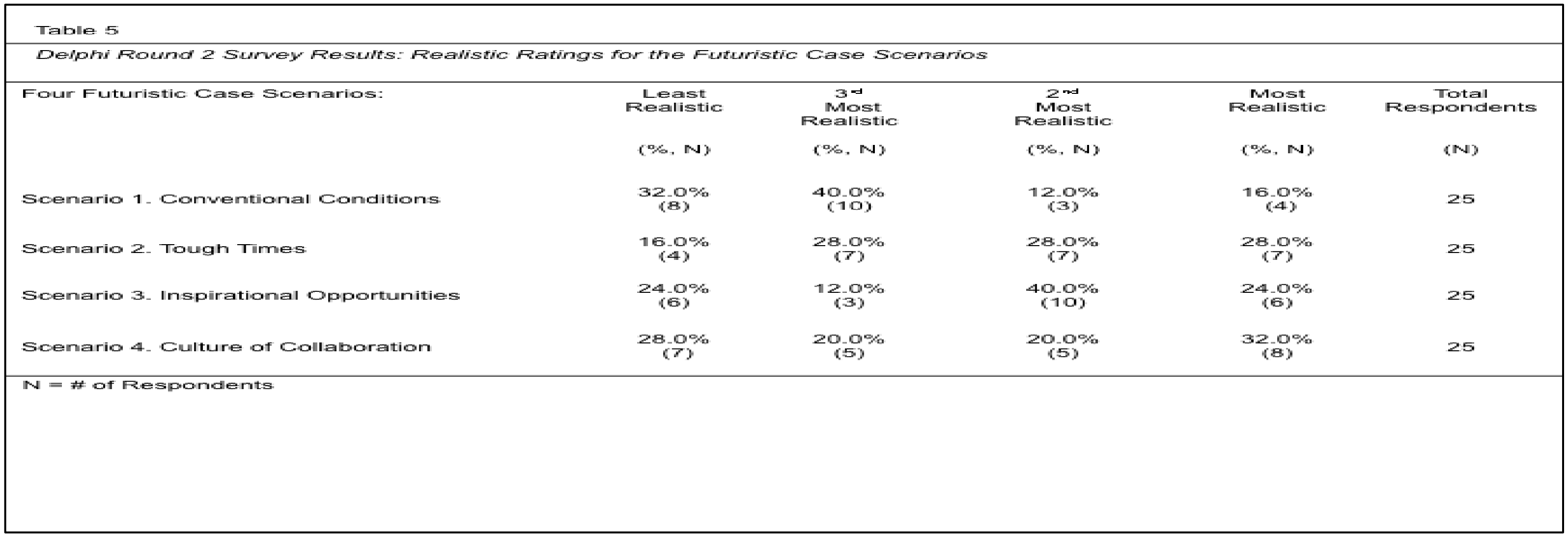


Table 5

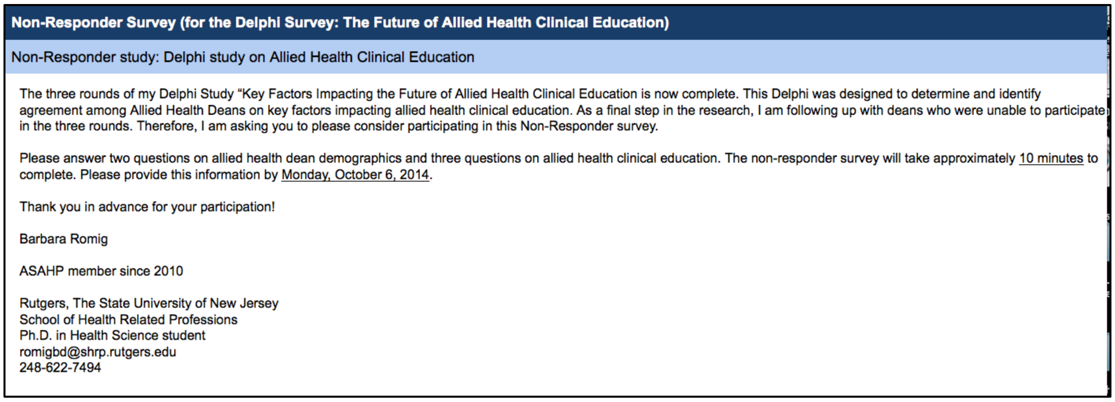
Delphi Round 2 Survey Results: Realistic Ratings for the Futuristic Case Scenarios

Four Futuristic Case Scenarios:	Least Realistic	3rd Most Realistic	2nd Most Realistic	Most Realistic	Total Respondents
	(%, N)	(%, N)	(%, N)	(%, N)	(N)
Scenario 1. Conventional Conditions	32.0% (8)	40.0% (10)	12.0% (3)	16.0% (4)	25
Scenario 2. Tough Times	16.0% (4)	28.0% (7)	28.0% (7)	28.0% (7)	25
Scenario 3. Inspirational Opportunities	24.0% (6)	12.0% (3)	40.0% (10)	24.0% (6)	25
Scenario 4. Culture of Collaboration	28.0% (7)	20.0% (5)	20.0% (5)	32.0% (8)	25

N = # of Respondents

Appendix CCC

Non-response Bias Survey



Non-Responder Survey (for the Delphi Survey: The Future of Allied Health Clinical Education)

Non-Responder study: Delphi study on Allied Health Clinical Education

The three rounds of my Delphi Study "Key Factors Impacting the Future of Allied Health Clinical Education is now complete. This Delphi was designed to determine and identify agreement among Allied Health Deans on key factors impacting allied health clinical education. As a final step in the research, I am following up with deans who were unable to participate in the three rounds. Therefore, I am asking you to please consider participating in this Non-Responder survey.

Please answer two questions on allied health dean demographics and three questions on allied health clinical education. The non-responder survey will take approximately 10 minutes to complete. Please provide this information by Monday, October 6, 2014.

Thank you in advance for your participation!

Barbara Romig

ASAHP member since 2010

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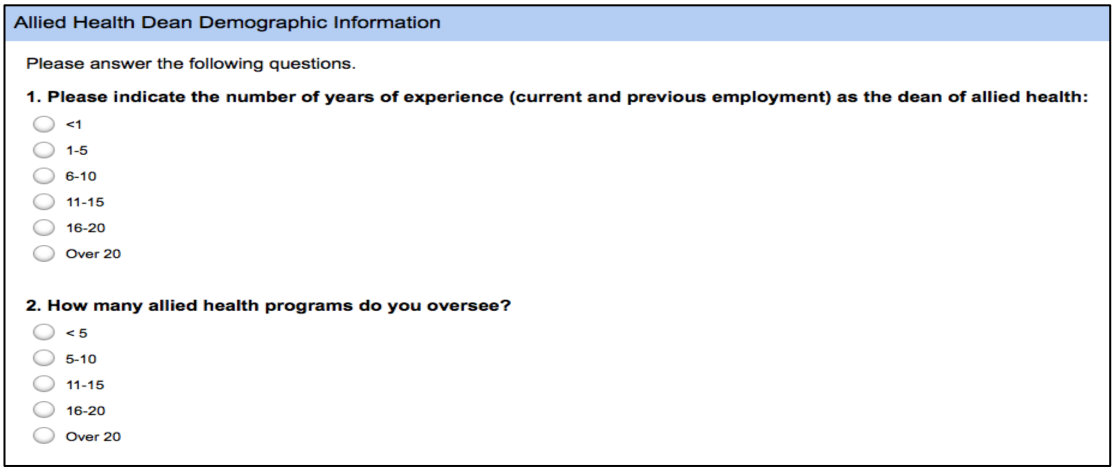


Allied Health Dean Demographic Information

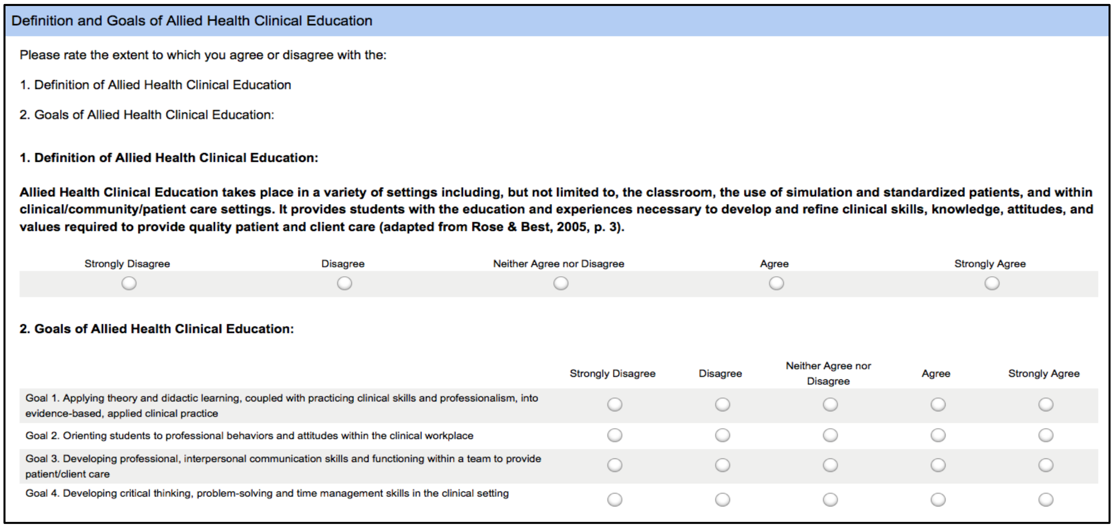
Please answer the following questions.

1. Please indicate the number of years of experience (current and previous employment) as the dean of allied health:

○ <1
○ 1-5
○ 6-10
○ 11-15
○ 16-20
○ Over 20

2. How many allied health programs do you oversee?

○ < 5
○ 5-10
○ 11-15
○ 16-20
○ Over 20



Definition and Goals of Allied Health Clinical Education

Please rate the extent to which you agree or disagree with the:

1. Definition of Allied Health Clinical Education

2. Goals of Allied Health Clinical Education:

1. Definition of Allied Health Clinical Education:

Allied Health Clinical Education takes place in a variety of settings including, but not limited to, the classroom, the use of simulation and standardized patients, and within clinical/community/patient care settings. It provides students with the education and experiences necessary to develop and refine clinical skills, knowledge, attitudes, and values required to provide quality patient and client care (adapted from Rose & Best, 2005, p. 3).

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
○	○	○	○	○

2. Goals of Allied Health Clinical Education:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Goal 1. Applying theory and didactic learning, coupled with practicing clinical skills and professionalism, into evidence-based, applied clinical practice	○	○	○	○	○
Goal 2. Orienting students to professional behaviors and attitudes within the clinical workplace	○	○	○	○	○
Goal 3. Developing professional, interpersonal communication skills and functioning within a team to provide patient/client care	○	○	○	○	○
Goal 4. Developing critical thinking, problem-solving and time management skills in the clinical setting	○	○	○	○	○

Rate Allied Health Clinical Education Statements on Importance and Allied Health Dean Impact

Instructions for Rating Allied Health Clinical Education Statements on Importance and Allied Health Dean Impact:

A. READ each statement carefully and select the response on the Importance and Impact Rating Scales that are closest to your opinion.

#1. Rate the Importance of the statement to the future of allied health clinical education.

#2. Rate the Degree of Impact you, as an Individual allied health dean, have on the statement impacting the future of clinical education.

#3. Rate the Degree of Impact allied health deans Collectively have on the statement impacting the future of clinical education.

B. Table 1 provides the Importance Rating Scale and Table 2 provides the Impact Rating Scale.

Table 1. Importance Rating Scale

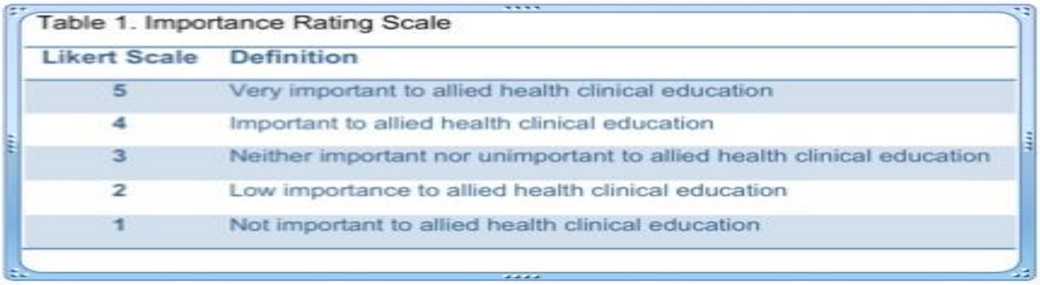


Table 1. Importance Rating Scale

Likert Scale	Definition
5	Very important to allied health clinical education
4	Important to allied health clinical education
3	Neither important nor unimportant to allied health clinical education
2	Low importance to allied health clinical education
1	Not important to allied health clinical education

Table 2. Impact Rating Scale

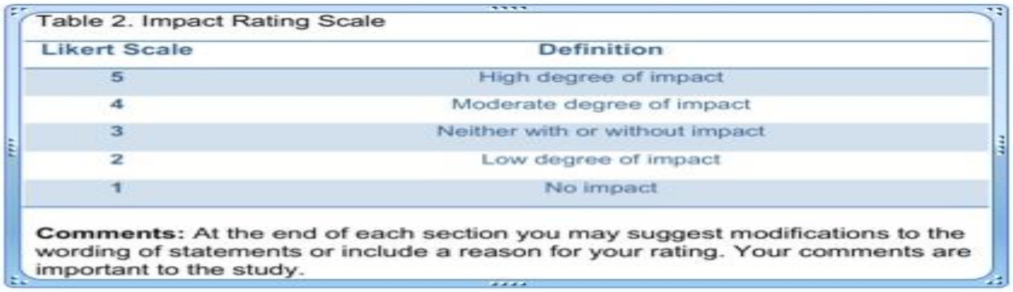
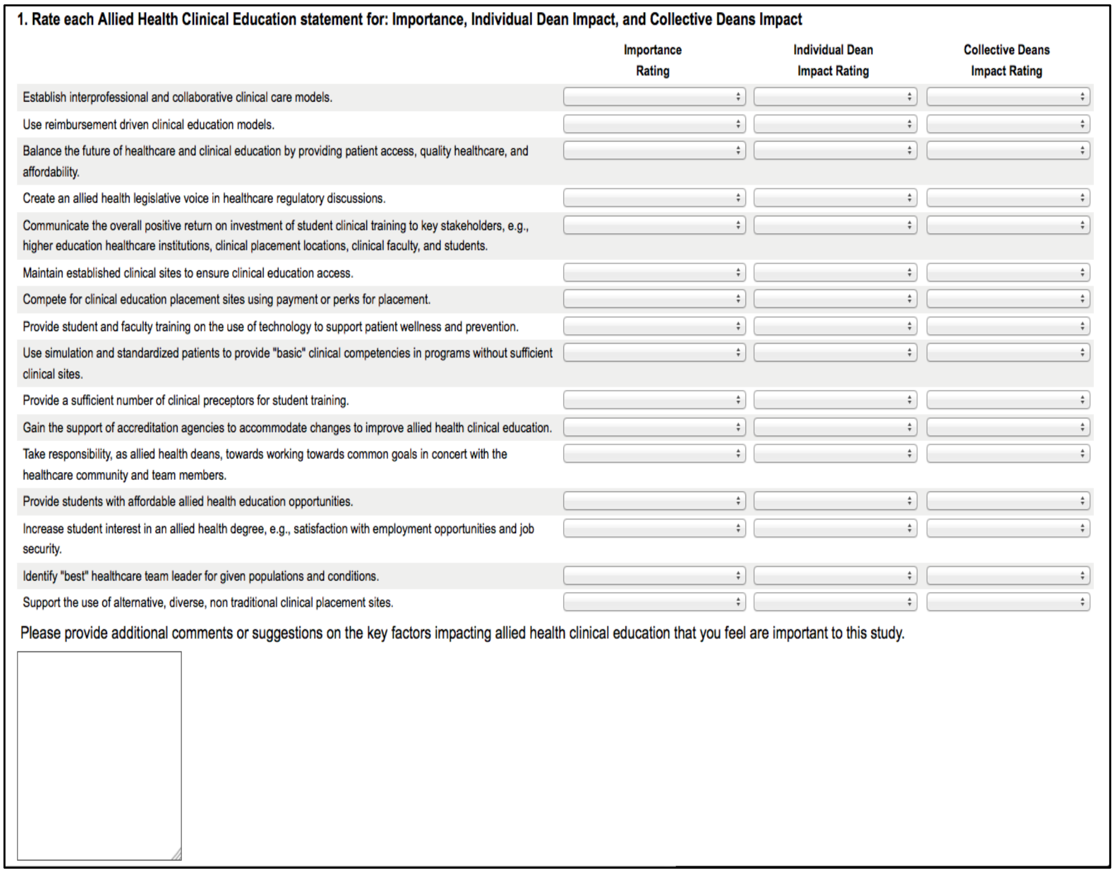


Table 2. Impact Rating Scale

Likert Scale	Definition
5	High degree of impact
4	Moderate degree of impact
3	Neither with or without impact
2	Low degree of impact
1	No impact

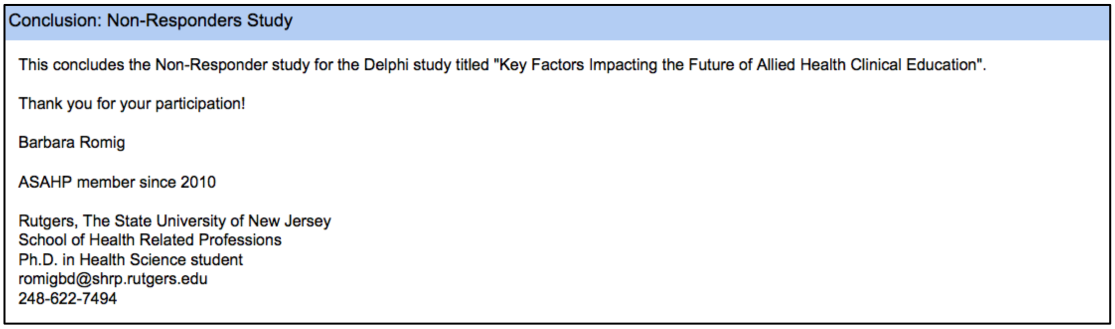
Comments: At the end of each section you may suggest modifications to the wording of statements or include a reason for your rating. Your comments are important to the study.



1. Rate each Allied Health Clinical Education statement for: Importance, Individual Dean Impact, and Collective Deans Impact

	Importance Rating	Individual Dean Impact Rating	Collective Deans Impact Rating
Establish interprofessional and collaborative clinical care models.			
Use reimbursement driven clinical education models.			
Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability.			
Create an allied health legislative voice in healthcare regulatory discussions.			
Communicate the overall positive return on investment of student clinical training to key stakeholders, e.g., higher education healthcare institutions, clinical placement locations, clinical faculty, and students.			
Maintain established clinical sites to ensure clinical education access.			
Compete for clinical education placement sites using payment or perks for placement.			
Provide student and faculty training on the use of technology to support patient wellness and prevention.			
Use simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites.			
Provide a sufficient number of clinical preceptors for student training.			
Gain the support of accreditation agencies to accommodate changes to improve allied health clinical education.			
Take responsibility, as allied health deans, towards working towards common goals in concert with the healthcare community and team members.			
Provide students with affordable allied health education opportunities.			
Increase student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security.			
Identify "best" healthcare team leader for given populations and conditions.			
Support the use of alternative, diverse, non traditional clinical placement sites.			

Please provide additional comments or suggestions on the key factors impacting allied health clinical education that you feel are important to this study.



Conclusion: Non-Responders Study

This concludes the Non-Responder study for the Delphi study titled "Key Factors Impacting the Future of Allied Health Clinical Education".

Thank you for your participation!

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Appendix DDD

Non-responder Survey Results for Opportunities

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
1. Establish interprofessional and collaborative clinical care models	**95.3%** (20/21)	5	3-5	**95.3%** (20/21)	4	3-5	**95.0%** (19/20)	4	2-5
Non-responder Survey	**100.0%** (2/2)	5	5	**100.0%** (2/2)	5	5	**100.0%** (2/2)	4.5	4-5

Fisher’s Exact Test Results: Importance $p = 1.00$, INDV Dean Impact $p = 1.00$, and COLL Deans Impact $p = 0.21$. The association between responders and non-responders was not significant for all categories.

Clinical Education Models, Statement 17 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
2. Create an allied health legislative voice in healthcare regulatory discussions	**90.0%** (18/20)	4	2-5	55.0% (11/20)	4	2-5	**95.0%** (19/20)	4	2-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4	4	**100.0%** (2/2)	4.5	4-5

Fisher's Exact Test Results: Importance p = 1.00, INDV Dean Impact p = 0.49, and COLL Deans Impact p = 1.00. The association between responders and non-responders was not significant for all categories.

Regulation, Statement 19 was selected because high agreement was reached for Importance and Collective Deans Impact, but not for Individual Dean Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, *n*[a])	Mdn	RNG	INDV Dean Impact (%, *n*[b])	Mdn	RNG	COLL Dean Impact (%, *n*[c])	Mdn	RNG
3. Communicate the overall positive return on investment of student clinical training to key stakeholders, e.g., Health Professions Education Institutions, clinical placement locations, clinical faculty, and students	**95.4%** (21/22)	5	2-5	**95.4%** (21/22)	4	3-5	**100.0%** (22/22)	5	4-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	50.0% (1/2)	3.5	3-4	**100.0%** (2/2)	4	4

Fisher’s Exact Test Results: Importance *p* = 1.00, INDV Dean Impact *p* = 0.16, and COLL Deans Impact *p* = 0.21. The association between responders and non-responders was not significant for all categories.

Health Professions Education Institutions, Statement 12 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

Key Factor Statement:	Importance Ratings IMP (%, n^a)	Mdn	RNG	Individual Dean Ratings INDV Dean Impact (%, n^b)	Mdn	RNG	Collective Deans Ratings COLL Dean Impact (%, n^c)	Mdn	RNG
4. Maintain established clinical sites to ensure clinical education access	**100.0%** (31/31)	5	4-5	**86.4%** (26/30)	4	3-5	**80.0%** (24/30)	4	1-5
Non-responder Survey	**100.0%** (2/2)	5	5	**100.0% (2/2)**	4.5	4-5	50.0% (1/2)	2.5	1-4

Fisher's Exact Test Results: Importance *p* = 1.00, INDV Dean Impact *p* = 1.00, and COLL Deans Impact *p* = 0.40. The association between responders and non-responders was not significant for all categories.

Clinical Placement Location, Statement 1 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

Key Factor Statement:	Importance Ratings IMP (%, n^a)	Mdn	RNG	Individual Dean Ratings INDV Dean Impact (%, n^b)	Mdn	RNG	Collective Deans Ratings COLL Dean Impact (%, n^c)	Mdn	RNG
5. Provide student and faculty training on the use of technology to support patient wellness and prevention	**100.0%** (20/20)	5	4-5	**100.0%** (20/20)	4	4-5	**80.0%** (16/20)	4	2-5
Non-responder Survey	50.0% (1/2)	3.5	2-5	50.0% (1/2)	3.5	2-5	50.0% (1/2)	3.5	2-5

Fisher's Exact Test Results: Importance $p = 0.09$, INDV Dean Impact $p = 0.09$, and COLL Deans Impact $p = 0.41$. The association between responders and non-responders was not significant for all categories.

Technology, Statement 13 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
6. Use simulation and standardized patients to provide "basic" clinical competencies in programs without sufficient clinical sites	**100.0%** (25/25)	4	4-5	**88.0%** (22/25)	4	2-5	79.1% (19/24)	4	1-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4	4

Fisher’s Exact Test Results: Importance p = 1.00, INDV Dean Impact p = 1.00, and COLL Deans Impact p = 0.21. The association between responders and non-responders was not significant for all categories.

Technology, Statement 1 was selected because high agreement was reached for Importance and Individual Dean Impact, but not for Collective Deans Impact.

Key Factor Statement:	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
7. Provide a sufficient number of clinical preceptors for student training	**100.0%** (24/24)	5	4-5	**83.3%** (20/24)	4.5	1-5	**80.9%** (17/21)	4	1-5
Non-responder Survey	**100.0%** (2/2)	5	5	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4.5	4-5

Fisher's Exact Test Results: Importance *p* = 1.00, INDV Dean Impact *p* = 1.00, and COLL Deans Impact *p* = 0.21. The association between responders and non-responders was not significant for all categories.

Clinical Preceptors, Statement 2 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
8. Gain the support of accreditation agencies to accommodate changes to improve allied health clinical education	**95.0%** (19/20)	5	2-5	**80.0%** (16/21)	4	2-5	**95.0%** (17/21)	5	2-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4	4	**100.0%** (2/2)	4.5	4-5

Fisher’s Exact Test Results: Importance p = 1.00, INDV Dean Impact p = 1.00, and COLL Deans Impact p = 0.21. The association between responders and non-responders was not significant for all categories.

Accreditation, Statement 4 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, *n*[a])	Mdn	RNG	INDV Dean Impact (%, *n*[b])	Mdn	RNG	COLL Dean Impact (%, *n*[c])	Mdn	RNG
9. Allied Health Deans, Statement 10. Take responsibility, as allied health deans, towards working towards common goals in concert with the healthcare community and team members	**95.5%** (21/22)	5	3-5	**90.9%** (20/22)	5	4-5	**80.9%** (17/21)	5	2-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4	4	**100.0%** (2/2)	4.5	4-5

Fisher's Exact Test Results: Importance p = 1.00, INDV Dean Impact p = 1.00, and COLL Deans Impact p = 0.21. The association between responders and non-responders was not significant for all categories.

Allied Health Deans, Statement 10 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
10. Increase student interest in an allied health degree, e.g., satisfaction with employment opportunities and job security	**100.0%** (23/23)	4	4-5	**86.4%** (19/22)	4	2-5	**90.9%** (20/22)	4	2-5
Non-responder Survey	**100.0%** (2/2)	4	4	**100.0%** (2/2)	4.5	4-5	**100.0%** (2/2)	4.5	4-5

Fisher’s Exact Test Results: Importance *p* = 1.00, INDV Dean Impact *p* = 1.00, and COLL Deans Impact *p* = 0.21. The association between responders and non-responders was not significant for all categories.

Student Satisfaction, Statement 3 was selected because high agreement was reached across all three groups: Importance, Individual Dean Impact, and Collective Deans Impact.

Table continues.

Table continued.

Note. Clinical Education Opportunities were defined as Key Factor Statements with High Agreement of Importance and Impact.

IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.

n^a = # of deans responding High Importance or Important / Total Importance Respondents.

n^b = # of deans responding High or Moderate Individual Dean Impact / Total Individual Dean Impact Respondents.

n^c = # of deans responding High or Moderate Collective Deans Impact / Total Collective Deans Impact Respondents.

Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.

Appendix EEE

Non-responder Survey Results for Challenges

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
1. Provide students with affordable allied health education opportunities	**96.3%** (26/27)	5	3-5	70.3% (19/27)	4	2-5	42.3% (11/26)	3	1-5
Non-responder Survey	**100.0%** (2/2)	4	4	**100.0%** (2/2)	4	4	50.0% (1/2)	3.5	3-4

Fisher's Exact Test Results: Importance p = 1.00, INDV Dean Impact p = 1.00, and COLL Deans Impact p = 0.21. The association between responders and non-responders was not significant for all categories.

Student Satisfaction, Statement 2 was selected because high agreement was reached for Importance, but not for Individual or Collective Deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, n^a)	Mdn	RNG	INDV Dean Impact (%, n^b)	Mdn	RNG	COLL Dean Impact (%, n^c)	Mdn	RNG
2. Support the use of alternative, diverse, non traditional clinical placement sites	**95.8%** (23/24)	5	3-5	73.9% (17/23)	4	2-5	69.6% (16/23)	4	1-5
Non-responder Survey	50.0% (1/2)	3.5	3-5	50.0% (1/2)	3.5	3-5	50.0% (1/2)	3.5	3-5

Fisher's Exact Test Results: Importance $p = 0.15$, INDV Dean Impact $p = 0.49$, and COLL Deans Impact $p = 1.00$. The association between responders and non-responders was not significant for all categories.

Clinical Placement Location, Statement 7 was selected because high agreement of important was reached, but not for Individual or Collective deans Impact.

	Importance Ratings			Individual Dean Ratings			Collective Deans Ratings		
Key Factor Statement:	IMP (%, *n*[a])	Mdn	RNG	INDV Dean Impact (%, *n*[b])	Mdn	RNG	COLL Dean Impact (%, *n*[c])	Mdn	RNG
3. Balance the future of healthcare and clinical education by providing patient access, quality healthcare, and affordability	**92.0%** (23/25)	5	3-5	60.0% (15/25)	4	2-5	62.5% (15/24)	4	2-5
Non-responder Survey	**100.0%** (2/2)	4.5	4-5	50.0% (1/2)	4	3-5	50.0% (1/2)	4	3-5

Fisher's Exact Test Results: Importance $p = 1.00$, INDV Dean Impact $p = 1.00$, and COLL Deans Impact $p = 1.00$. The association between responders and non-responders was not significant for all categories.

Clinical Education Models, Statement 4 was selected because high agreement was reached for Importance, but not for Individual or Collective Deans Impact.

Table continues.

Table continued.

Note. Clinical Education Challenges were defined as Key Factor Statements with High Agreement of Importance but lacking both Individual and Collective Deans Impact.
IMP = Importance; INDV = Individual; COLL = Collective; Mdn = Median, reported to the tenth value where applicable, potential value from 1-5; RNG = Range, potential values between 1-5.
n^a = # of deans responding High Importance or Important / Total Importance Respondents.
n^b = # of deans responding High or Moderate Individual Dean Impact / Total Individual Dean Impact Respondents.
n^c = # of deans responding High or Moderate Collective Deans Impact / Total Collective Deans Impact Respondents.
Boldfaced equals high agreement, defined as where 80% or more of respondents agreed.