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*Article begins on next page*

Teaching Strategies for Atypical Presentation of Illness in Older Adults

Deanna Gray-Miceli, PhD., GNP-BC, CRNP, FAANP<sup>1</sup>  
Melissa Aselage, MSN, RN, FNP-BC<sup>2</sup>  
Mathy Mezey, EdD., RN, FAAN<sup>3</sup>

1 Associate Professor, Widener University, School of Nursing, Chester, PA  
John A. Hartford Foundation Building Academic Geriatric Nursing Capacity (BAGNC)  
Post-Doctoral Scholar 2002-2004

2 Lecturer, University of North Carolina-Wilmington, School of Nursing; 2009-2011 John  
A. Hartford Foundation Building Academic Geriatric Nursing Capacity (BAGNC) Scholar;  
Doctoral Student, Medical University of South Carolina College of Nursing

3 Professor Emerita, Senior Research Associate, Director, The Hartford Institute for  
Geriatric Nursing, New York University College of Nursing

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Academic Geriatric Nursing Capacity (BAGNC) Scholar program.

### *Abstract*

Atypical presentation of illness is one of those phenomena where “seeing is believing”. Expert geriatric nurses and clinicians know all too well the early signs and symptoms of this frequent masquerader of bacterial infections, pain, acute myocardial infarction, heart failure or other serious medical ailments in older adults. Students however, as novices to clinical practice, require interactive learning approaches to reflect on the client’s illness presentations, help with developing the necessary skills to analyze and synthesize clinically relevant data, and to witness resolution of an atypical presentation when found and treated. We discuss various learner-centered, interactive approaches to teach students how to recognize an atypical presentation of illness using a real-life clinical case. Outlined are teaching strategies for faculty, drawn on visual, auditory, reading and kinesthetic modes of student learning. Use of the senses to teach nurses about care of patient’s is not entirely new or innovative, as reflected on by Florence Nightingale’s (1846) earliest writings of the ‘rules of nursing’.

*Human skills, appreciations, and reasonings in all their great variety, as well as human hopes, aspirations, attitudes, and values, are generally recognized to depend for their development largely on the events called learning (Gagne, 1985, p.1)*

## Introduction

No discussion about teaching undergraduate nurses on ‘how to care’ for older adults is complete without addressing atypical presentation of illness. This is not because of its reported incidence in the geriatric literature or mounting research evidence of its impact in geriatric assessment and disease management; but rather, because of its silence in print. Particularly noticeable is the degree to which atypical presentation of illness is omitted from educational curricula or learning materials used to teach undergraduate baccalaureate nursing students, even those packed full of age-related content (Ackley & Ladwig, 2008).

Once they graduate, nursing students will *most certainly* encounter atypical presentation of illness in their practice with older adults. Atypical presentation is inextricably linked to the occurrence to acute and complex chronic illnesses. Among all hospital discharges in 2007, the principal diagnoses for older adults were congestive heart failure, pneumonia, septicemia, infections and/or hip fractures. Most, if not all of these conditions, are often heralded by an “atypical” presentation when occurring among frail, vulnerable older adult populations (Healthcare Cost and Utilization Project [HCUP], 2007; Gray-Miceli, 2008).

Complex co-morbidities with superimposed illness that may present and masquerade atypically require careful and complete geriatric nursing assessment. While atypical presentation of illness is not a disease state, per se, it is of importance because

of its': 1) prominence in clinical practice; 2) frequency in many older adults; 3) influence on the type of assessments conducted, and 4) deleterious outcomes resulting if ignored. Early recognition and management of atypical presentation can result in positive health outcomes such as prompt diagnosis; reduced risk for added co-morbidities as well as potential for reduced hospital stay and improved quality of life.

How can professional nurse generalists effectively learn about this phenomenon observed so often among older adults, if current texts and resources do not address it? The purpose of this paper is to bridge the gap between curricular content and texts that currently omit the necessary content on atypical presentation and the reality of clinical practice. While the “what-ness” of atypical presentation of disease is covered in the Geriatric Nursing Education Consortium white paper (Gray-Miceli, 2008), the “how-ness [how to recognize it]” can be taught through a thorough nursing assessment. This paper provides the reader with a linkage to teaching strategies to reinforce the basic premises about how atypical presentation manifests itself, and the importance of geriatric nursing assessment in identifying this phenomenon.

We begin with an overview of the various ways students learn and apply it to a case exemplar of a hospitalized older adult. Using this approach, faculty will gain an appreciation for teaching strategies and various styles of student learning in order to help achieve the broad learner objectives of teaching students.

### The Learner-Centered Approach to Learning

For well over a century, the classic philosophers of education and theories of learning and instruction have permeated our American primary and secondary higher educational system guiding how we teach. Such instructor-centered theoretical models have stemmed from Piaget, Skinner and Rodgers to Bandura, Gagne and Vygotsky's

(Gredler, 2000). These theories of learning have among others shaped the structure, size and format of classroom instruction, including methods by which we deliver educational content. All the while, teachers recognize some students will learn from these methods, and others may not. Determining the effectiveness of instruction, or learning, appears to be more than the contribution of the educational conceptual framework (method of instruction) or teaching style itself. Evidenced-based educational research has revealed learning to be influenced by the quality of instruction, content type, as well as the style of learning inherently possessed by the learner. Perhaps the most important aspect of teaching, is whether or not the learner is truly learning. The remainder of this paper takes a closer look at aspects of the learner.

The acronym VARK has been coined to indicate student learner preferences as Visual, Aural, Read/write or Kinesthetic (such as simulations or hands on practice; Fleming & Mills, 1992). While learners may have multiple modes of learning within the VARK acronym, it is nonetheless valuable to gain insight as to the various ways a student learns the best; realizing one class of student may contain a variety of individuals with different learning styles or preferences. This speaks against teaching by only one method of instruction. Several studies among nursing and health professions student indicate a preference for thinking and watching modes of learning especially practical sessions, which include kinesthetic sensory mode of hands-on approach (Rakoczy & Money, 1995; Andrews, 2008). While it is impractical to survey every class of students to determine learning preferences, the most current teaching pedagogy, the learner-centered approach to teaching (Blumberg, 2009) encourages an eclectic model of differing teaching/learning strategies while striving to match teaching to learning style (Cleverly, 1994).

The learner-centered approach is recognized by the joint task force of the American Psychological Association and the Mid-Continent Regional Educational

Laboratory (Blumberg, 2009). Unlike the instructor-centered approach traditionally used, the learner approach posits beneficial effects related to: a) acquiring a knowledge base; strategic processing and execute control “meta-cognition”; c) motivation and affect; d) individual differences and development and 3) situation or context (Alexander & Murphy, 2000). In order to learn, each student needs to construct or make his own meaning of knowledge. Students integrate new knowledge with old knowledge for future use and retrieval. Student awareness of this process, or their meta-cognition, conscious awareness allows for a self-assessment of their own learning and knowledge base. In the learner-centered approach, as students learn they gain confidence and motivation, which reinforces more learning to take place. Student beliefs about their own competency or ability to succeed (self-efficacy) correlates with grades (Alexander & Murphy, 2000). Optimal learning environments, such as low student to faculty ratios, encouragement of open discussion and dialogue, and hands-on, interactive approaches are known to help students retain and recall knowledge.

The learner-centered approach to teaching is reinforced when educators use interactive instructional technology. Use of the ever popular “polling of the audience” instantly attracts the learner to a hands-on technology. Collectively, students are linked - in. This technology is interactive, subject specific, and fun. The student and faculty visualize immediately what the entire audience is thinking, and is consistent with BSN student preferences for digital literacy, experiential learning, interactivity and immediacy (Skiba & Barton, 2006).

Further digital interactive approaches to increase learning include use of gaming, (Blakely, et al, 2009); use of the personal digital assistant (PDA) downloaded with electronic books for use in clinical practice (Williams & Dittmer, 2009); problem based learning using model and demonstrations, debates with discussion, and role playing

(Alkhasawneh et al, 2008). Story telling and personification thought also improve student attention, retention and comprehension of primary concepts (Irvin, 1996).

A learner-centered approach while recognizing the various ways students learn is incorporated into the following case example of an older adult with atypical presentation of illness. This case highlights our recommended teaching strategies.

#### Teaching Strategies to Meet Objectives Related to Atypical Presentation of Illness,

Teaching strategies used to meet sample module objectives 1-3 (listed below) for student learning may be accomplished through any of the sensory modes of learning: visual, aural, reading/writing or kinesthetic, depending on individual student learner preference or style. Case studies provide “real life” situations for applying content in the classroom setting. The following case study offers the following opportunities for learning:

- Faculty may present this case as an “unfolding case study” in the classroom though use of power point – presenting information about the client’s condition with questions and content intermingled. This promotes dialogue between students and faculty in the classroom.
- Faculty may decide which points within the case study to stop and pose questions based on the learning needs of students.
- For online courses, faculty can post sections of the case study for students to pose questions and formulate responses in discussion boards.
- Faculty can add more case study information over time and supplement with resources to enhance learning.



- For a hybrid course, faculty may initiate the case in an online discussion board to determine student baseline knowledge, and once in a face-to-face classroom, continue the dialogue - highlighting key points.
- Case studies may be used for teaching, or for evaluating student learning (Penn, 2008).
- Faculty may present content and have students work the case study below individually or in groups, using resources and readings provided prior to class.

Three important features of atypical presentation of illness are presented in this case example: the new onset of delirium, which masquerades as the hallmark feature of an atypical presentation; the absence of pain; and the absence of a temperature elevation. These observations are emphasized as atypical presentation in the teaching-learning situation with students. Sample objectives are:

Objective 1: Identify the proper assessment of an older adult suspected of an atypical presentation of illness;

Objective 2: Recognize the risk for and co-morbidities associated with atypical presentation;

Objective 3: Identify imminent and urgent care situations from unrecognized atypical presentation of illness and geriatric syndromes;

#### Case Exemplar

##### Mr. Phillips: The Phases and Trajectory of Care (Past, Present and Future)

##### Past History

Mr. Phillips, a spry, agile 79-year-old man who runs 5 miles daily is admitted to the hospital for a sudden, altered mental status. His wife reports he has been seeing strange objects flying around in his kitchen for the past 24 hours. While running outside last week, Mr. Phillips mistakenly tried to enter a neighbor's home and was escorted

home by the police. Mr. Phillip's wife of 50 years is also physically active and in good health. Three weeks ago, the couple traveled to Rome, Italy where they vacationed for a week. Mr. Phillips past medical history includes hypertension and coronary artery by-pass surgery age 50; he is a retired executive who currently works part-time at home as an accountant.

### Present History

On admission to the hospital for acute mental status change, Mr. Phillip's confusion is very apparent as he has difficulty remembering the name of his wife and why he is hospitalized. On admission he is observed with a barely audible cough, chest congestion, but no reports of coughing or sputum production, night sweats, chills or fever. The nursing notes indicate nighttime confusion. When found in the bathroom by the nurse the evening of admission, Mr. Phillip's states he is looking for the way home. On the second day of hospitalization, Mr. P has daytime somnolence. He falls asleep during conversation with his wife visiting. Overall he sleeps through lunch and dinner meals, awakening very groggy. Admission laboratory data including a CBC, complete blood profile of liver, renal, pancreas function and urinalysis are normal. A 12-lead electrocardiogram shows 76 beats per minute, normal sinus rhythm, left axis deviation. A CAT Scan of the head is performed due to mental status changes and it is normal, showing age-related cerebral atrophy. By the 3rd hospital day, Mr. Phillips is reported to be agitated and restless, attempting at night to climb over the raised side rails, trying to leave to the facility. Vital signs reported include: Temperature oral 95.6 degree, respirations 28 and regular, apical pulse 96 at rest; BP 120/50. Pulse Ox- 92% on room air.

After the nurses perform a physical assessment, the findings of right lower lobe rales and increasing congestion are reported to the physician who orders a stat chest x-ray. The chest film confirms a right lower lobe infiltrate. It is concluded that Mr. Phillips

acquired pneumonia while traveling abroad, but the possibility of a cancerous mass cannot be excluded. He is immediately given Rocephin IV and oral anti-tussives. Respiratory therapy is started with pulmonary clapping, deep breathing and intermittent nasal oxygen as needed. Mr. Phillips pulse oximetry improves to 99% on nasal oxygenation by day 3 of therapy. Coughing and deep breathing exercises are also effective in sputum expectoration. Within 2-3 days of antibiotic therapy Mr. Phillip's acute confusion improves. A repeat chest film shows a reduction in the size of the pulmonary infiltrate and gradually, with aggressive humidified oxygen, intravenous antibiotics, oral –pharyngeal suctioning and bronchodilators, his mental confusion resolves. Visual acuity is 20/30 bilateral. Mini-Cog initially on admission was abnormal, but improves to normal following treatment. Once Mr. Phillips is stable, he is discharged back home on oral antibiotics and follow up chest x-ray.

Because atypical presentation of disease often encompasses many conditions, one method for students to conceptualize all of the interrelated events is to consider use of a broad conceptual clinical framework that allows students to consider all of the multifactorial etiology and circumstance, be they medical, psychosocial, cultural, spiritual or maladaptive. A model, such as that of Inouye's clinical predictive conceptual model fits this purpose, as it specifically accommodates the myriad of interrelationships existing between the older adult patient who is vulnerable and has a greater propensity to acquire additional mediating factors (Inouye & Charpentier, 1996). According to Inouye various *predisposing*, *precipitating* and *facilitating* factors operate dynamically and reciprocally to produce acute events, thereby creating a state of vulnerability. *Predisposing factors* increase an older adult's risk or vulnerability to a specific disease/condition, such as advancing age, functional and past medical history. *Precipitating factors* are physiological factors known to directly contribute to the development of the disease or condition. *Facilitating factors* include functional problems

or environmental hazards which increase the severity of an illness. In general, the greater the *predisposing factors*, the higher likelihood *for vulnerability to a particular condition*. Conversely, with fewer *predisposing factors* present at baseline, less vulnerability exists, and more *precipitating and facilitating factors* are needed to produce similar effects of an acute event such as acute confusion.

Background information for faculty: Detection of an atypical presentation requires a heightened awareness as to the possibility of an atypical presentation, and a comprehensive, problem focused history and assessment and critical analysis.

Consistent with Inouye's model, Mr. Phillips co-morbidities of CAD and prior MI are *predisposing factors* placing him at risk for additional cardiac decompensation.

Respiratory insufficiency and decreased pulmonary reserve (normal age-related change) is an additional *predisposing* risk factor. Mr. Phillips has an active pneumonia and acute confusion that could worsen without proper nursing assessment. His new symptoms of cough along with the findings of acute confusion warrant additional exploration of the origin of the cough and confusion, as well as tachypnea.

Question to consider/pose to students:

- On initial assessment of Mr. Phillips, what information might you like to know from his wife about his baseline functional and cognitive status that would surface *predisposing, precipitating and facilitating factors*?
- If Mr. Phillips does not become febrile with an active infection [i.e. he has an atypical presentation of an infection], how can you monitor the progress of his condition?
- What other parameters can be assessed? What geriatric syndrome is he at greatest risk for (e.g. *facilitating factors*)? Is it likely that Mr. Phillips would present with an atypical presentation of an acute illness? If so, how would you

proceed with a proper assessment of his condition-what needs further evaluation as soon as possible?

**Teaching Point:** Mr. Phillips never developed a temperature or alteration in his white blood cell count (leukocytosis) despite having an acute infection. His only sign of possible infection that required follow up was increased respiratory rate at rest (tachypnea) and occasional cough, which could have been due to underlying heart disease. The new onset of an acute delirium requires a search for underlying causes. Within the cascade of potential harbinger problems leading to acute confusional states, are infections. Infections quite often present atypically in older adults. Many older adults do not have a rise in temperature or even leukocytosis with acute illness (American Geriatrics Society, 2000), and a change in mental status often precedes physical symptoms (*precipitating* and *facilitating* factors. Important areas to further assess include:

- a) history of the acute confusion- contact with any illness abroad;
- b) current cognitive assessment using Mini-Cog or the Confusion Assessment Method (CAM) assessment tools (Doerflinger, 2007; Waszynski, 2007);
- c) assessment with more information elicited about visual acuity and hallucinations etc., ability to see light, objects, and ability to read/interpret printed materials;
- d) respiratory assessment and pulmonary assessment and monitoring in light of cough, tachypnea and hypoxia.

**Teaching Strategies to Elicit a Proper Geriatric Nursing Assessment:**

**Visual:** Students need to understand that what they “see” as an initial presentation of illness may not be the baseline status for the individual. Faculty should continue to work to dispel myths of aging and misperceptions. Teach students to “look beyond” the symptoms to determine if a reversible underlying cause exists is a critical component of

geriatric assessment (Gray-Miceli, 2008). Inouye's model of *predisposing*, *precipitating* and *facilitating* factors can help students remember what types of conditions to consider if atypical presentation is suspected. For content related to atypical presentation, faculty can "use the star" (insert a star shape on the power point to provide visual cues to students) on critical information that would be needed to solve the case study (Herrman, 2008). Another method to "use the star" would be to use the features within the power point program that allow the content slide to be presented, ask students what they feel is most important, and then have the "star" enter and post next to the critical point.

**Auditory:** In using the unfolding case study, information can be presented and at a certain point a bell rings. At that point in the case study, student are asked to prioritize and rank data based on acuity or priority without any further information (Herrman, 2008). Students need to learn to separate critical information from lower priority information based on what information they know when the bell rings. Another means for auditory learning include several pod casts available to introduce key concepts of critical thinking in care of older adults, atypical presentation of illness, and various geriatric resources available for care of the complex older adult (Aselage, 2009a, 2009b; Aselage, Gray-Miceli, & Mezey, 2009).

**Read/Writing:** Assigned readings for evidence-based geriatric protocols and topics can be helpful for beginning students or more advanced. For quick journal articles, faculty can access the topic resources for atypical presentation (Hartford Institute for Geriatric Nursing, NYU College of Nursing. [www.ConsultGeriRN.org](http://www.ConsultGeriRN.org)). One minute reflective writing by students at various points along the case studies could also be used to determine the muddiest point, clearest point, and clarify questions students hope to have answered (Herrman, 2008).

**Kinesthetic:** The Six Hats exercise can be used to allow students to think through the case study from different perspectives (Herrman, 2008). The Six Hats include emotional,

overarching values, logical, creative, optimistic, and pessimistic vantage points - or each hat could represent a different member of the interdisciplinary team involved. Web Assignments (WebQuests) are an innovative means for teaching students to find information to support practice (Herrman, 2008). In a web assignment, the clinical problem is presented in the classroom and students search the Internet for evidence to support interventions, or resources to assess or intervene based on patient needs.

### Summary

Detection of atypical presentation of illness is contingent upon several interrelated steps accomplished by a thorough nursing assessment. It requires a problem-focused history, focused physical assessment and then critical analysis of the data to determine whether or not an atypical presentation of illness may exist. In the history, it requires the nurse to modify their standard repertoire of questions by thinking beyond the classic symptoms associated with a particular disease entity. Because part of any atypical presentation may include alteration in level of consciousness or sudden cognitive impairment, it is very important that history taking be obtained from reliable sources or health care providers who can accurately and reliably attest to or verify the older adult's recent medical history. Review of the record and discussion with prior providers is essential, since the patient is confused. Confusion should never be taken on surface information as a person's baseline status.

The hallmark feature of experiential learning, as noted by Jarvis is that it involves the sense experiences of seeing/observing, touching, hearing and emotional feeling (1995). Recent nursing research evaluating students' critical thinking has suggested a significant relationship to exist between critical thinking and learning style; those with abstract conceptualization skills and active experimentation modes of pedagogy experienced increased critical thinking skill (Gyeong & Myung, 2008). Use of the senses

to teach nursing has been a long-standing tradition dating back to Florence Nightingale who vividly described oppressive, noxious living and healthcare environments laden with unsanitary conditions spurring illness in her famous discourse and appeal for sanitary conditions such as clear air and water to maintain health (Notes on Nightingale, 1846). In nursing curricula, we teach students to use their senses, especially “sight” to visually, observed changes in patient’s skin color, behavior, and affect or to look at facial expressions to diagnose anguish or pain. Kolb would refer to this as a concrete experience can be later reflected upon. Use of reflection through various approaches such as the popular ‘reflective journaling’ has a long-standing heritage and rightful place as an important teaching strategy to engage nursing students in the clinical setting.

In this clinical case, we have applied various teaching strategies, which appeal to students who learn through visual, auditory, reflective, or kinesthetic modes. It is efficacious for faculty to identify student-learning styles as it may inform teaching strategies in the modern day classroom.



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