

SOCIAL JUSTICE IN HEALTH: THE PATIENT-CENTERED MEDICAL HOME
AND HEALTH DISPARITIES

By

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ABSTRACT OF THE DISSERTATION

Social Justice in Health: The Patient-Centered Medical Home and Health Disparities

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Currently, the United States healthcare system is inequitable. It facilitates health disparities in the incidence, prevalence, mortality, and burden of disease among specific populations. These populations face inequities such as reduced healthcare access, lack of culturally competent care, discrimination, and poorer health outcomes. Despite the efforts of both Federally Qualified Health Centers (FQHCs) and the Patient-Centered Medical Home (PCMH) model, health disparities persist. There is currently no empirical evidence that the PCMH can reduce health disparities in populations impacted by health inequities.

Guided by a constructivist perspective, this study utilized a convergent parallel mixed-methods design to examine the efficacy of the PCMH model in reducing health disparities in FQHCs. Four research questions were addressed: 1) Does the NCQA PCMH improve physical and mental health among low-income minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? 2) What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? 3) What has been the health center staff experience in NCQA PCMH-recognized health

centers serving low-income, minority groups in New Jersey? 4) What has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout? Fifteen NCQA PCMH-recognized New Jersey FQHCs were included in the sample. Quantitative methods were used to examine 2016-2018 Uniform Data System (UDS) data, including quality of care measures for FQHC patients diagnosed with hypertension, diabetes, and coronary artery disease, as well as prevention screenings for obesity and depression. Qualitative content analysis was used to analyze 990 online Google FQHC patient reviews and 295 online Indeed FQHC employee reviews. A constructed hybrid framework guided the analysis.

Study findings suggest the need to design a health care delivery model that reduces health disparities. Future research should examine other health care delivery models for their ability to reduce health disparities and explore the impact of public policies designed to address inequities. Targeted investment in FQHCs may yet yield an equitable and scalable health system that reduces health disparities and works for all regardless of racial, ethnic, or socioeconomic status.

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Dedication

To Big Ben (May 19, 1949 – March 18, 2009), Dad, I did it! The pursuit of a terminal degree was not a goal that I initially set for myself, but when the opportunity presented itself, I accepted. As one of my strongest supporters, I felt your spirit and support in my darkest hours. I am still daddy's girl.

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List of Abbreviations

NCQA: National Committee for Quality Assurance

NIH: National Institutes of Health

NIMHHD: National Institute of Minority Health and Health Disparities

PCMH: Patient-centered medical home

U.S.: United States

SES: Socioeconomic status

GDP: Gross domestic product

IHI: Institute for Healthcare Improvement

IOM: Institute of Medicine

ESRD: end-stage renal disease

CHIP: Children's Health Insurance Program

AHRQ: Agency for Healthcare Research and Quality

HRSA: Health Resources Services Administration

FQHC: Federally Qualified Health Centers

NHSC: National Health Services Corps

AAP: American Academy of Pediatrics

VHA: Veterans Health Administration

ACA: Affordable Care Act

ACO: Accountable Care Organizations

NDP: National Demonstration Project

ACU: Association for Clinicians of the Underserved

UDS: Uniform Data System

OPCRH: Office of Primary Care and Rural Health

NJDOH: New Jersey Department of Health

NJPCA: New Jersey Primary Care Association

CAD: Coronary Artery Disease

BMI: Body Mass Index

HTN: Hypertension

DM: Diabetes

SPSS: Statistical Package for the Social Sciences

QCA: Qualitative Content Analysis

ED: Emergency Department

EMR: Electronic Medical Record

CQI: Continuous Quality Improvement

Chapter 1: Introduction and Theoretical Framework

The first chapter will discuss social justice in health and the problem of health disparities in the context of race and ethnicity and socioeconomic status. It will also describe the safety net systems that have been designed to provide health care services to minority and low-income groups likely to experience health disparities. Next, it will describe the specific problem the study will address. Then it will explore the current state of health care in the United States (U.S.) and the Committee on Quality of Health Care in America's six aims for its improvement (Committee on Quality of Health Care in America, 2001). Next, it will describe the intended audience and purpose of the research. Lastly, the chapter will examine the conceptually aligned National Institute on Minority Health and Health Disparities Research Framework and the Patient-Centered Medical Home Model, and the Maslach Burnout Toolkit for Medical Personnel as the frameworks for this study.

Social Justice in Health and the Problem of Health Disparities

In the U.S., the federal government focuses its funding on disease or treatment instead of prevention and wellness (Hofrichter, 2003). In other words, the U.S. has yet to adopt a rights-based approach to health or social justice in health that would yield an equitable health system. Fineberg (2012) defines social justice in health as the receipt of care and treatment that is absent of discrimination and disparities. Social justice in health starts with the recognition and acceptance that race, ethnicity, and socioeconomic status, among other demography, determine an individual's social position, which in turn influences their health status. Acknowledging the existence of social positioning or stratification (House & Williams, 2003) leads the way to believing that health is a product

of social, economic, political (Hofrichter, 2003), and institutional racism that produce and effectively replicate risks for health and illness in individuals, families, and communities (Geronimus, 2003). Social justice in health seeks an equitable health system, with a progressive financing system (premiums based on income that changes as income changes), and the collective morality and willingness to pay for other people (Ruger, 2010). A fair health system is accessible to all, and meets the needs of individuals in a way that they can achieve their highest health potential (Ruger, 2010).

At the most general level, the problem under consideration here is the problem of health disparities, which are the differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the U.S., most notably, between Whites and non-White minority groups (Braveman et al., 2011). The central issue is this: people of color and low-income individuals are more likely to be uninsured and face barriers when attempting to access health care which, in turn, contributes to health disparities (Orgera & Artiga, 2018). Health disparities are also present in the way that low-income and minority populations experience higher rates of many chronic and acute conditions compared to Whites and those at higher income levels (Orgera & Artiga, 2018).

In general, racial and ethnic minorities face numerous challenges when attempting to utilize the U.S. health care system (Marmot & Bell, 2013). Lack of or inadequate insurance, geographic isolation, and lack of sufficient support services are a few of the contributors to the access challenges of minority populations (Marmot & Bell, 2013). Additionally, discrimination and poor cultural competency contribute to the poor quality of care experienced by minority populations (Sorkin et al., 2010). Cultural competency is

defined here as the provider knowledge, skills, attitudes, and behavior required to optimally provide health care services to a range of cultural, racial, and ethnic populations (Shi & Singh, 2017).

Finally, racism or institutional policies and practices that create a racial disadvantage, individual discrimination, and biased treatment (Fiscella & Williams, 2004) also contribute to health disparities. Historically intertwined are race, socioeconomic status, and health in the U.S. for African Americans and in particular, social, economic, and political exclusion have resulted in poorer health since their arrival on this continent as slaves (Fiscella & Williams, 2004). Williams and Sternthal (2010) describe membership of both a racial or ethnic group and low socioeconomic status (SES) as the double jeopardy of increased health risks. Similarly, Marmot and Bell (2013) add residing in the most dangerous environments as resulting in experiencing less access to care as well as receiving care that is poorer in quality. This formulates a triple burden for those belonging to a minority group and low SES.

To date, racial and ethnic disparities in health persist despite a range of attempts to improve health care access for minority and low-income communities. Community health centers, established in 1965, were a demonstration program to combat the war on poverty (Rosenbaum, 2012). Health centers emphasize access, quality, cultural competency (Anderson & Olayiwola, 2012) and services to patients who face financial and social barriers (Hall & Rosenbaum, 2012). However, community health centers face challenges with organization and infrastructure, providers, and patients (Hayashi et al., 2009).

Models of primary care delivery such as the patient-centered medical home (PCMH) were introduced more recently with the hope of improving access to health care. While not specifically designed to eliminate health disparities, the PCMH has been a way to strengthen healthcare in the United States. The American College of Physicians defines a PCMH as a physician-led, team-based model of care that provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes (Jacobson et al., 2012). Most studies of the PCMH care delivery model to date have evaluated the effectiveness of the model through its ability to meet the Institute for Healthcare Improvement (IHI) Triple Aim.

The original IHI framework to optimize health system performance is known as the "Triple Aim" (*Institute for Healthcare Improvement*, n.d.). According to the Triple Aim framework, health care delivery design must address three aims simultaneously. Aim one is improving patient experience of care, aim two is improving the health of populations, and aim three is reducing the per capita cost of health care (Berwick et al., 2008; *Institute for Healthcare Improvement*, n.d.; Sikka et al., 2015; Whittington et al., 2015). A proposal to modify the Triple Aim is proposed, and includes staff satisfaction as a fourth aim (Park et al., 2018; Sikka et al., 2015) and as such is sometimes called the Quadruple Aim.

Specific Problem

By 2050, the U.S. will be a majority-minority country (Goldstein et al., 2009) and it is important that health disparities, or differences in health and health care between Whites and minorities, are reduced in order to support the overall health and wellbeing of the nation, and optimize global economic participation (Braveman et al., 2011). As noted

above, health disparities can be defined as the differences between Whites and minorities in new cases, total cases, death, and burden of disease that currently disadvantage specific minority groups in the U.S. (Braveman et al., 2011; LaVeist, 2005). There are strong reasons to prioritize the elimination of health disparities. However, this is not an easy task.

At this time the federal government, and in this case, the Health Resources and Services Administration, incentivizes and supports the patient-centered medical home (PCMH) in safety net settings like community health centers (Cook et al., 2015; Nocon et al., 2014; Quinn et al., 2013) without empirical evidence that the PCMH care delivery model can reduce health disparities in low income and minority safety net populations. This study will examine the PCMH care delivery model for reducing health disparities. Knowing whether the PCMH care delivery model reduces health disparities is important in justifying the continued support of the care model in safety net settings. This study will contribute to the limited literature in this subject area. Researchers, policymakers, and health professionals need to know whether the PCMH model is reducing health disparities towards the goal of eventual elimination. If the PCMH model is not moving the nation towards the elimination of health disparities, then we need to design a health care delivery model with the intent to reduce and eventually eliminate health disparities.

Researchers know that the patient-centered medical home (PCMH) has yielded mixed results in three of the four factors listed in the quadruple aim of health care (improved health outcomes, better patient experience, and better staff experience). On the one hand, there were no significant differences in PCMH and quality of care received or racial and ethnic health outcomes in several studies (Clarke et al., 2012; Jaen et al., 2010;

Shi et al., 2015; Simonetti et al., 2014) and Shi et al. (2015) identified a worse health outcome in the PCMH care delivery model in one domain. On the other hand, in examining the PCMH and patient experiences, some studies identified positive results (Aysola et al., 2015; Cook et al., 2015; Cook et al., 2016; Lebrun-Harris, 2013; Maeng et al., 2013; Schmidt et al., 2013; Leiyu; Shi et al., 2013). The Aysola et al. (2015) study, however, found no differences in some areas of PCMH and patient experience, and some of the same studies identified areas for improvement regarding PCMH and patient experience (Aysola et al., 2015; Cook et al., 2015; Cook et al., 2016; Schmidt et al., 2013).

In addition to identifying areas for improvement, the Schmidt et al. (2013) study identified an inverse relationship between a component of the PCMH model and patient experience. In examining PCMH and staff satisfaction, two studies demonstrated benefits or improvements in staff satisfaction (Jackson et al., 2013; Quinn et al., 2013); Friedberg et al. (2017) identified less satisfaction with the PCMH, and Lewis, et al. (2012) found mixed results regarding staff experience with the PCMH model. Bodenheimer (2014) found a possible association between higher scores on a PCMH assessment, meaning a higher functioning PCMH care delivery site, while assessing the standards, elements, and factors of operating as a PCMH and more clinician burnout in safety-net clinics that have adopted the PCMH model.

Further, researchers do not know the effect of patient-centered medical home recognition, designation, or accreditation on health care quality (Lebrun-Harris, 2013). Each regulatory agency refers to the granting of PCMH status differently. Another unknown is whether the PCMH care delivery model further reduces health disparities

since safety net systems receive credit with reducing health disparities by design (Anderson & Olayiwola, 2012; Hall & Rosenbaum, 2012). Lastly, researchers do not know whether practice transformation or recognition as a PCMH over time changes patient outcomes for the better (Cook et al., 2015; Maeng et al., 2013; Shi et al., 2015). Researchers want to know the effects of the PCMH on disparities (Reibling & Rosenthal, 2016). They want to know the equity effects of the PCMH care delivery model. And they want to know whether the model is more difficult to implement in safety net settings to improve health outcomes (Reibling & Rosenthal, 2016).

Background

The United States (U.S.) spends far more on health care and far less on social services in comparison to other industrialized countries, yet; still, Americans have poorer health outcomes than similar nations (Squires & Anderson, 2015), according to a report analyzing health care across thirteen high-income countries. The U.S. health care system is underperforming by multiple measures. Cost, access to care, which includes insurance coverage, and health outcomes are generally considered in assessing the effectiveness of a health care delivery system (Shi & Singh, 2017). Gross domestic product (GDP) is also used to determine the amount a country spends on the delivery of health care services (Shi & Singh, 2017). In a report released by the Society of Actuaries and The Henry J. Austin Kaiser Family Foundation (2019), it is noted that the U.S. currently spends 18% of its gross domestic product on health care, compared with 11% in comparable countries (Society of Actuaries & Henry J. Kaiser Family Foundation, 2019). Additionally, there are currently 27.4 million Americans without health insurance, down from the 44 million who did not have it before implementation of the Affordable Care Act (ACA). However,

this number is on the rise at the time of this writing due to changes to the ACA under the Trump administration (Garfield et al., 2019).

In a 2011 comparison to ten other industrialized countries, the U.S. had the lowest life expectancy at birth, with 78.8 years compared to the median of 81.2 years, and the highest infant mortality rate at 6.1 deaths per 1,000 live births. This in comparison to a median of 3.5 deaths per 1,000 live births in other comparable countries (Squires & Anderson, 2015). American adults are also sicker, with 68% of U.S. adults age 65 or older having at least two chronic conditions in comparison to a range of 33 to 56% in other countries. These problems have not gone unnoticed, and attempts are being made to solve them. The Committee on Quality of Health Care in America (2001) has proposed six aims to guide the future development of the U.S. health care system. These are as follows: U.S. health care should be safe, effective, patient-centered, timely, efficient, and equitable (Committee on Quality of Health Care in America, 2001). Each of these six aims are considered in turn below.

A safe health care system is a system free from errors with a focus on patient safety (Committee on Quality of Health Care in America, 2001). *To Err Is Human: Building a Safer Health System* (as cited in the Committee on Quality of Health Care in America, 2001), defines patient safety as freedom from accidental injury. However, it is not always easy to ensure a safe environment. Shortcomings in the organization of care, known as fragmentation can cause medical errors to occur, and drugs have advanced faster than the health care systems ability to deliver them safely (Committee on Quality of Health Care in America, 2001).

The U.S. health care system must also make more effective use of information technologies (Committee on Quality of Health Care in America, 2001). Unaided by technology, clinicians are unable to read, recall, and act on the volume of scientific literature necessary for evidence-based practice. Use of technology can effectively aid in many processes, including preventive reminders, follow-up, and assessment of patient adherence (Committee on Quality of Health Care in America, 2001). However, the safe and effective use of health care technology is still evolving.

Achieving patient-centered health care is also important. A patient-centered health care system, according to the Institute of Medicine (IOM), centers on individual patient needs, preferences, and values (Wynn, 2016). The patient should retain control over health decisions, which requires equipping patients with all the necessary information required to make informed decisions (Committee on Quality of Health Care in America, 2001). Patients need to know how to stay healthy, what is wrong in cases of illness, what to expect when in treatment, how treatment will affect them, and what to do when they are ill. Patients also require answers that are respectful, accurate, and in a language that the patient understands (Committee on Quality of Health Care in America, 2001).

It is not enough for the health care system to be safe, effective, and patient-centered. It must also be timely. A health care system that is timely reduces the wait for health care services because waiting to access health care is sometimes harmful (Committee on Quality of Health Care in America, 2001). Health care delivery processes are complex, requiring steps and handoffs that slow down the care process. It is important to reduce such delays whenever possible. A strong health care system should allow

everyone to obtain needed care in a convenient and timely fashion (Committee on Quality of Health Care in America, 2001).

Efficiency is also important. A health care system that is efficient avoids waste. This can take many forms, such as with equipment, supplies, ideas, and energy (Committee on Quality of Health Care in America, 2001). An efficient health care system provides required services and avoids both overutilization and underutilization. In this context, overutilization refers to the use of health care services when the potential risks of doing so outweigh the potential benefits. In contrast, health care services not provided (or received) when their potential benefit outweighs any potential risks is underutilization (Committee on Quality of Health Care in America, 2001).

Finally, to align with all six aims, the U.S. health care system must become equitable. An equitable health care system meets the needs of all Americans regardless of race, ethnicity, zip code or socioeconomic status (Committee on Quality of Health Care in America, 2001). Social justice in health is the receipt of care and treatment that is absent of discrimination and disparities (Fineberg, 2012). At this time, there are racial and ethnic disparities in all six domains (safe, effective, patient-centered, timely, efficient, equitable) of the U.S. health care system as described above (Marmot & Bell, 2013).

Target Audience and Significance of Study

The intended audience for this study includes researchers, policymakers, health care providers, and consumers of health care services. This study will add to scholarly research by providing new or additional evidence regarding the ability of the PCMH care delivery model to address the needs of low income, racial and ethnic minority

populations by reducing health disparities. This study can improve practice by providing evidence in support of or against the wide-spread implementation of the PCMH care delivery model in safety net settings that largely serve low income and minority populations. It can explore whether the PCMH is successful in reducing health disparities and contribute to the discussion about whether we should encourage continued uptake of the PCMH model or create a new model(s) in seeking to reduce health disparities. Finally, this study can improve policy or decision-making in three ways. First, by providing evidence that supports or refutes current policy regarding implementation of the PCMH model in safety net settings. Secondly, by supporting the allocation of funding towards continued wide-spread implementation of the PCMH care delivery model or by recommending the development of enhanced or new care delivery models designed to reduce health disparities. Lastly, this study can support or refute the value of implementing this health care delivery model to prepare health care settings for changes in payment structures based upon improved clinical outcomes of patient populations. It is imperative to study the PCMH model of health care delivery to assess its ability to reduce health disparities.

Purpose Statement

The purpose of this mixed methods research study is to examine the PCMH in reducing health disparities, through changes in health outcomes, in low income, racial and ethnic minorities at 15 Federally Qualified Health Centers (FQHCs) in New Jersey. Reducing health disparities is defined as demonstrating improvement in clinical outcomes experienced by low-income members of racial and ethnic minority groups. Patient and staff experiences including burnout with the PCMH model will also be examined and

analyzed by utilizing the National Institute on Minority Health and Health Disparities Research Framework and the Maslach Burnout Toolkit for Medical Personnel.

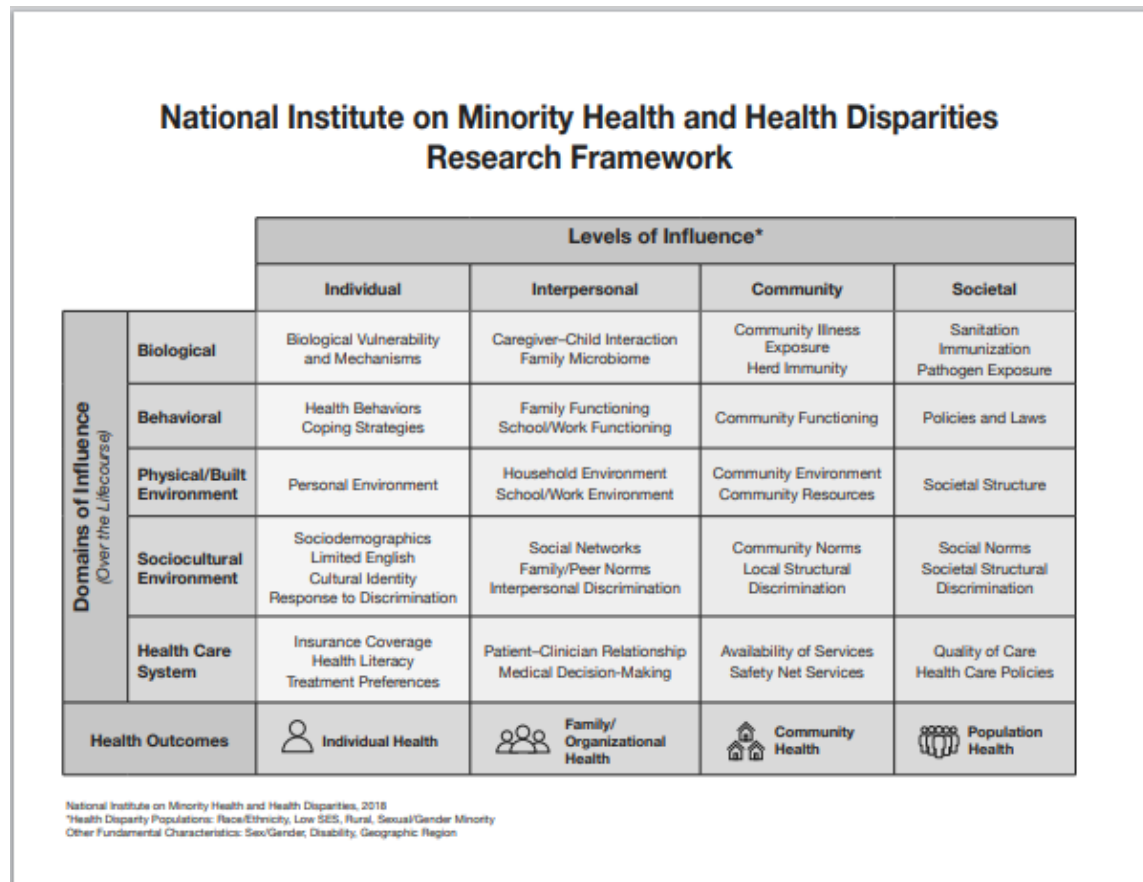
Research Questions

1. Does the National Committee for Quality Assurance (NCQA) PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey?
2. What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey?
3. What has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey?
4. What has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout?

Theoretical Framework

Figure 1

The National Institute on Minority Health and Health Disparities Research Framework



The theoretical framework utilized for this study is the National Institute on Minority Health and Health Disparities Research Framework (see Figure 1). This section will briefly describe all components of the framework, followed by an in-depth examination of the health care system domain used in this study. Next, I will define the PCMH care delivery model as the phenomena of study and briefly describe the NCQA. After that, I will examine the alignment of the NCQA 2014 Standards and Guidelines for the operations of the PCMH with the National Institute on Minority Health and Health

Disparities Research Framework. Then, I will describe the categories of the Maslach Burnout Toolkit for Medical Personnel. Lastly, I will provide a brief description of the use of the frameworks in data collection and analysis.

The theoretical framework for this study is the Minority Health and Health Disparities Research Framework (National Institute on Minority Health and Health Disparities, 2019). The National Institute of Minority Health and Health Disparities (NIMHD) is one of the twenty-seven institutes and centers of the National Institutes of Health (NIH). The mission of NIMHD is to lead scientific research to improve minority health and reduce health disparities (National Institute on Minority Health and Health Disparities, 2019).

The Minority Health and Health Disparities Research Framework conceptualizes evolving factors relating to the understanding and promotion of minority health and the understanding and reduction of health disparities. The framework recognizes and includes the complex and multifaceted domains of influence that address the nature of minority health and health disparities. It is reasonable to acknowledge that policies and interventions that successfully address minority health and health disparities must address the domains and levels of influence identified in the framework. This framework can serve as a vehicle for assessing progress, gaps, and opportunities for promoting minority health and reducing health disparities (National Institute on Minority Health and Health Disparities, 2019).

The framework recognizes as health disparity populations: racial and ethnic minority groups, groups with low socioeconomic status, groups living in rural areas, and sexual and gender minorities (National Institute on Minority Health and Health

Disparities, 2019). There are five domains or areas of influence in the framework as follows: the biological domain, the behavioral domain, the physical or built environment, the sociocultural environment, and the health care system itself. The biological domain of influence reflects a person's genetic make-up and his or her inherited traits that are beyond individual control. The behavioral domain of influence recognizes culture, lifestyle, and the choices of individuals. The physical or built environment domain of influence acknowledges where a person resides or works and any associated risks of harmful exposures as well as limited access to resources. The sociocultural environment domain of influence includes the type of social networks and capital that an individual can access. Lastly, the health care system domain of influence adds in access to health care services and an individual's experience with the health care system. All five domains influence health outcomes (National Institute on Minority Health and Health Disparities, 2019).

There are four levels of influence identified in the framework above: individual, interpersonal, community, and society. The individual level of influence reflects the characteristics of the individual that affects the health of that individual. The interpersonal level of influence recognizes the role of relationships in affecting the health of the family as well as organizational health. The community level of influence acknowledges factors that affect the health of a community. Lastly, the societal level of influence includes those determinants that affect the health of the population (National Institute on Minority Health and Health Disparities, 2019).

This study focused on the health care system domain and all four levels of influence. In the health care system domain, the individual levels of influence include

whether a person has insurance coverage to access the health care system, an individual's ability to access, understand, read, and use health care information, and an individual's cultural beliefs and lifestyle. This domain's interpersonal level of influence considers the relationship between the patient and the health care providers that care for him or her as well as the patient's involvement in the development of the treatment care plan. The community level of influence refers to the availability of health services. Common questions to assess this level include: How long does it take to get an appointment, and does the health care setting have evening or weekend availability? The availability of health services also includes the availability of safety-net services, which are those health care systems that provide services to the publicly insured, such as recipients of Medicare or Medicaid or uninsured people. Finally, at the society level of influence within the health care system domain lies quality of care and health care policies (National Institute on Minority Health and Health Disparities, 2019).

The Institute of Medicine defines health care quality as "providing patients with appropriate services in a technically competent manner, with good communication, shared decision-making, and cultural sensitivity" (Committee on Quality of Health Care in America, 2001). Health care policies determine access to care, the type of care received, and health care financing (National Institute on Minority Health and Health Disparities, 2019). The National Committee for Quality Assurance is one of several recognized bodies of the PCMH care delivery model, and its operational standards are the most widely utilized (Aysola et al., 2015).

The American College of Physicians defines a PCMH as a physician-led, team-based model of care that provides continuous and coordinated care throughout a patient's

lifetime to maximize health outcomes (Jacobson et al., 2012). The National Committee for Quality Assurance (NCQA) is a nonprofit founded in 1990 with a mission to improve the quality of health care through data, accreditation, certification, and recognition programs. This study used the NCQA PCMH 2014 Operational Standards and Guidelines in evaluating the PCMH care delivery model in reducing health disparities. The NCQA PCMH 2014 guidelines were selected because these are the standards by which most study sites are recognized as a level three PCMH, which is the highest level of recognition under this set of guidelines. Figure 2 below aligns the NCQA PCMH 2014 guidelines with the Minority Health and Health Disparities Research Framework's health care system domain and four levels of influence.

Figure 2

Conceptual Framework: The National Minority Health and Health Disparities Research Framework Aligned with the NCQA PCMH 2014 Operational Standards and Guidelines

Levels of Influence				
Individual		Interpersonal	Community	Societal
Insurance Coverage		Patient-Clinician Relationship	Availability of Services	Quality of Care
NCQA Standard 2-Element B- Factor 7 The practice gives uninsured patients information about obtaining coverage.		NCQA Standard 2-Element A-Factors 1 and 2 - Assisting patients/families to select clinician and documenting the selection in records. - Monitoring the percentage of patient visits with selected clinician or team.	NCQA Standard 1-Element A-Factors 1 and 2 - Providing same-day appointments for routine and urgent care. -Providing routine and urgent-care appointments outside of regular business hours. NCQA Standard 1-Element B-Factor 2 -Providing timely clinical advice by telephone	NCQA Standard 6-Element A Measure clinical quality performance. NCQA Standard 6-Element B Measure Resource Use and Care Coordination. NCQA Standard 6-Element C Measure patient/family experience. NCQA Standard 6-Element E Demonstrate continuous quality improvement.
Health Literacy		Medical Decision Making	Safety Net Services	
NCQA Standard 3-Element C – Factor 10 Assessment of health literacy.		NCQA Standard 3-Element E The practice implements clinical decision support following evidence-based guidelines. NCQA Standard 4-Element E-Factor 4 Adopts shared decision making aids.	NCQA Standard 2-Element B-Factor 6 The practice provides equal access to all their patients regardless of the source of payment.	
Treatment Preferences				
NCQA Standard 4-Element B – Factor 1 Incorporates patient preferences and functional/lifestyle goals.				
Individual Health Outcomes		Family/Organizational Health Outcomes	Community Health Outcomes	Population Health Outcomes

In the health care system domain of the Minority Health and Health Disparities Research Framework, the individual level of influence includes insurance coverage, health literacy, and treatment preferences (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 guidelines call for practices to educate patients regarding eligibility for insurance coverage and financial support. The practice is encouraged to assess the patient or family or caregiver's ability to understand

health information and care requirements to self-manage outside of the practice, practices are also emboldened to incorporate the patient's cultural beliefs and lifestyle goals into the treatment or care plan (National Committee for Quality Assurance, n.d.). The PCMH model recognizes that family members and caregivers have an intricate role in a patient's health outcomes. The interpersonal level of influence includes the patient-clinician relationship and medical decision-making (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 guidelines call for practices to assist patients in selecting a primary care provider and monitor patient visits with their selected primary care provider for continuity of care. The guidelines encourage practices to utilize evidence-based guidelines in managing health conditions. The health care team is also charged with utilizing a shared decision-making aid when working with a patient to decide a complex health condition with different options, without necessarily advising the patient to choose one option over the other (National Committee for Quality Assurance, n.d.).

In the health care system domain of influence of the Minority Health and Health Disparities Research Framework, the community level of influence includes the availability of health services by way of appointments and clinical advice by telephone and safety net services that provide health care services regardless of the ability to pay (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 guidelines call for health practices to offer same day appointments for routine and sick office visits. The expectation is that practices will stay open for a late evening or remain open over the weekend to create an opportunity for working patients who want to seek health care services. NCQA PCMH 2014 guidelines encourage practices to provide

equitable services to all patients regardless of the source of payment, and despite public or private insurance (National Committee for Quality Assurance, n.d.). The societal level of influence of the Minority Health and Health Disparities Research Framework include quality of care (National Institute on Minority Health and Health Disparities, 2019) and the NCQA PCMH 2014 guidelines require measurement of quality performance and patient experience. Practices must also implement continuous quality improvement activities and demonstrate improvement (National Committee for Quality Assurance, n.d.).

The other framework used in this study was the Maslach Burnout Toolkit for Medical Personnel which combines two surveys (Areas of Work life Survey and Maslach Burnout Inventory) to measure burnout in the workplace (Maslach et al., n.d.). The toolkit consists of a 50-item survey that takes approximately 25-30 minutes to complete. This study utilized the three categories of The Maslach Burnout Inventory (MBI), emotional exhaustion, depersonalization, and personal accomplishment. Emotional exhaustion presents as the employee being tired or overwhelmed with statements like “I feel emotionally drained from my work.” In depersonalization, the employee is desensitized and may make statements such as “I don’t really care what happens to some patients.” Lastly is personal accomplishment, whereas the employee does not feel like they are making a difference. A personal accomplishment statement could be, “I do not accomplish many worthwhile things in this job.” (Maslach et al., n.d.)

The mixed-methods design of this study utilized the conceptually aligned Minority Health and Health Disparities Research Framework, and the NCQA PCMH 2014 Operational Standards and Guidelines, and the Maslach Burnout Toolkit for

Medical Personnel in the collection and analysis of data. The quantitative component examined the societal level of influence of the quality of care in the health care system domain by assessing physical and mental health outcomes. One qualitative component examined three levels of influence (individual, interpersonal, and community) throughout the health care system domain by conducting qualitative content analysis of online patient reviews utilizing the Minority Health and Health Disparities Research Framework. The other qualitative component used qualitative content analysis of online employee reviews with a focus on the three categories of the Maslach Burnout Toolkit for Medical Personnel. Both frameworks served as the foundations for data analysis.

Chapter 2: Review of Literature

As a reminder, this project focuses on four research questions. First, does the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH) improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? Second, what has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Third, what has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Fourth, what has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout?

This chapter will begin with a brief description of the literature search strategy used, followed by offering definitions and a perspective on social justice in health and what it addresses. Then it will describe the interconnections among race and ethnicity, low socioeconomic status, and the safety net systems that provide health services to minority populations at increased risk for disparities in health and healthcare. Next, the chapter will explore the history of the PCMH and health care reform with its emphasis on the PCMH model and investment into community health centers. It will also examine the impact of the PCMH in addressing three of the four components of the Quadruple Aim of Health Care (health outcomes, patient experience, and staff satisfaction). The fourth aim, utilization, is not included in this study because of lack of health center specific utilization data. Finally, the chapter will close with a consideration of the gaps in this literature and explain how this study will address them.

Literature Search Strategy

The first literature search strategy was the identification of four relevant research domains. These were minority health, safety net systems, health care reform, and the patient-centered medical home (PCMH) care delivery model. A series of keywords associated with each domain identified relevant materials in books, peer-reviewed journals, reports, and professional websites. PubMed Central, CINAHL, Scopus, Health Star, and ProQuest were the databases used to locate most of this material. After the identification of potential sources, a review of their abstracts allowed the Principle Investigator (PI) to determine which sources to include in the literature review. In total, the literature search strategy resulted in the identification of one hundred nineteen sources.

Social Justice in Health

Social justice in health unequivocally makes the distinction between equality and equity, whereas equality refers to the same, while equity refers to fairness or need (Bambas & Casas, 2003; Hofrichter, 2003). According to Beauchamp (2003), under social justice, all persons are entitled equally to health protection or minimum standards of income. Hofrichter (2003) offers a three-pronged social justice perspective. The first concept is a collective responsibility for achieving healthy communities. The second concept concerns the systematic treatment of people as members of groups such as women or minorities. Group membership is particularly concerning when affiliations with these groups result in the marginalization and disenfranchisement of said groups. The third concept is the alignment of social justice with democracy and the inclusion, active participation, and empowerment of all members of society. The application of

social justice facilitates an equitable distribution of goods, institutional resources, and life opportunities (Hofrichter, 2003). Unchallenged, social injustices are embodied in individuals and populations as disease (Hofrichter, 2003), resulting in a cumulative health impact of disadvantage (Geronimus, 2003). Social justice in health is not an infringement on individual liberties; instead, it is a form of protection and a distributor of equity.

An equitable health system requires the protection of all individuals, especially the poor and most disadvantaged, from the monetary burdens associated with health risks and poor health due to economic uncertainty, including unemployment (Ruger, 2010). An equitable health system incorporates Aristotle's vertical and horizontal principles of equity (Ruger, 2010). Vertical equity requires that individuals with different needs receive different amounts and levels of services. Horizontal equity requires individuals with equal needs to receive fair and high-quality treatment regardless of their ability to pay. Social justice in health advocates believes that society should enable the conditions by which individuals can reach threshold levels of health, thereby reducing the gap between health achievement and health potential (Ruger, 2010). Achievement of health equity will require some compromise of personal choice for the greater good of all but will not be an infringement on fundamental liberties; instead, it will start to show some resemblance of a just society (Beauchamp, 2003). The next section discusses racial and ethnic minorities and individuals with low socioeconomic status and position as disadvantaged populations.

Race, Socioeconomic Status, and Health

Historically intertwined in the United States (U.S.) are race, socioeconomic status, and health. For the African American minority population, social, economic, and political

exclusion have resulted in poorer health since their arrival on this continent as slaves (Fiscella & Williams, 2004; LaVeist, 2005). In the U.S., group stratification by race, income, and other categories facilitates and extends dominance, power, and privilege to White (race), wealthy (income and socioeconomic status), males (gender) who are heterosexual (sexual orientation) and Christian (religion) (LaVeist, 2005).

Racial and ethnic minorities face poor access to healthcare services, poorer health outcomes and are more likely to receive health care services that do not consider their cultural beliefs and lifestyle (Marmot & Bell, 2013) or to receive health care services that are discriminatory (Sorkin et al., 2010). According to Fiscella and Williams (2004), socioeconomic status can be viewed as the potential or realized access to resources in three domains: the material domain (housing), the human domain (education), and the domain of social networks (capital). Low-income minorities are more likely to be residentially segregated with disproportionate exposure to unhealthy environments (Marmot & Bell, 2013), in receipt of a substandard education (Alexander et al., 2014) and socially excluded from full and active participation as members of society. The challenges associated with minority and low socioeconomic status contributes to existing health disparities.

Health Disparities

Health disparities refer to those differences in the incidence, prevalence, mortality, and burden of disease as well as other adverse health conditions that adversely impact specific population groups in the U.S (Braveman et al., 2011; LaVeist, 2005). There are disparities between racial and ethnic minorities and Whites in each of the six

aims (safety, timeliness, effectiveness, efficiency, patient-centeredness, and equity) for health care defined by the Institute of Medicine (Marmot & Bell, 2013).

These disparities have long been apparent to those familiar with the experiences of minority groups. W.E.B Dubois described the “Negro problem” in America in his 1899 book *The Philadelphia Negro* (Williams & Sternthal, 2010). Dubois wrote about differences in “social advancements” and the stark differential conditions by which Blacks and Whites lived. He argued that racial differences in health were primarily social. The contributing factors he noted were bad dwellings, poor food, and unsanitary living conditions. Moreover, he pointed out that the health of Blacks varied within Philadelphia by the neighborhood of residence (Williams & Sternthal, 2010).

Differential health status for different populations is a problem with far-reaching implications for the health of our nation. More than one-third of the U.S. population self-identifies as a member of a racial or ethnic minority group (Marmot & Bell, 2013). Minority health is important because, according to LaVeist (2005), the projection is that the U.S. will be a majority-minority country by the middle of the 21st century. As the U.S. continues to shift towards increasing proportions of Hispanics, African Americans, and Asian and Pacific Islanders, the Institute of Medicine and the National Academy of Sciences have called for attention to the problem of reduction in health care quality by race and ethnicity, emphasizing that it should become an important priority for U.S. health policy (Goldstein et al., 2009).

Profound economic and social consequences are associated with U.S. health disparities (Lebrun-Harris, 2013). Global economy and prosperity are predicated on the health of the nation (Braveman et al., 2011). Sick people are unable to work. In reverse

causality, poor health can result in low socioeconomic status (Fiscella & Williams, 2004). In one study, LaVeist, Gaskin, and Richard (2011), estimated that eliminating health disparities between 2003 and 2006 would have reduced direct medical care expenditures by approximately 230 billion dollars and reduced indirect costs associated with illness by more than one trillion dollars. However, this issue is more complicated than it seems. There is a difference between health equality and health equity. Health equality assumes that everyone's needs are the same, thereby providing access to the same resources to all. Health equity recognizes that different people have different needs and seeks to provide each person with what he or she needs so that all may have a chance at achieving the same health outcomes. Health equity, not just health equality, is true social justice in health (Braveman et al., 2011).

Two different theories can shed light on health disparities. The risk exposure theory (LaVeist, 2005) and the resource deprivation theory (LaVeist, 2005) both attempt to explain health status disparities between minorities and Whites. In the risk exposure theory, the high prevalence of social or environmental health risks in minority communities leads to a higher prevalence of disease and death. In the resource deprivation theory, racial and ethnic minorities experience disparities in health status because they are more likely to reside in neighborhoods that lack the resources that support a healthy lifestyle (LaVeist, 2005). Regardless of which theory one chooses to believe, health care services must meet the challenge of a higher prevalence of disease and death in minority neighborhoods.

Safety net systems are those major providers of health care services to minority populations most likely to experience health disparities. Those characteristics that are

recognized by the National Institute of Minority Health Disparities as most likely to signal vulnerability to health care disparities are race and ethnicity, low socioeconomic status, rural location, and membership in sexual and gender minority groups. Essentially, racial and ethnic minority groups, groups with low socioeconomic status, groups living in rural areas, and sexual and gender minorities are considered “health disparity populations” (National Institute on Minority Health and Health Disparities, 2019). Those community health centers and clinics that make up the U.S. safety net system are also the health care providers most likely to offer accessible care to health disparity populations.

Safety Net Systems

Safety net systems provide health care services regardless of ability to pay (Hall & Rosenbaum, 2012). They are usually heavily dependent on Medicare or Medicaid, both of which are federally funded programs (Shi & Singh, 2017). Medicare is available for those aged 65 and older, the disabled, and those with the chronic illness of end-stage renal disease (ESRD) (Shi & Singh, 2017). Medicare’s financing is out of social security taxes (Shi & Singh, 2017). Medicaid is available to low-income adults, the elderly, and individuals with disabilities with financing through federal and state revenues (Shi & Singh, 2017). The Children’s Health Insurance Program (CHIP) is a program like Medicaid, but for children. It is also a source of revenue for safety net clinics (Shi & Singh, 2017).

Medicare, Medicaid, and CHIP are essentially the nation’s safety net public health insurance programs. The nation’s safety net provides services to vulnerable populations as defined by the Agency for Healthcare Research and Quality (AHRQ) and cited by (Shi & Singh, 2017, p. 5) as “those who are made vulnerable by their financial circumstances

or place of residence, health, age, personal characteristics, functional or developmental status, ability to communicate effectively, and presence of chronic illness or disability.”

Persons who are poor, uninsured, belong to certain minority groups, or who are illegal immigrants, and those living in geographically underserved communities, defined as communities with limited access to resources, can be considered vulnerable.

Safety net providers also include publicly and community-supported clinics (including community health centers), public hospitals, and nonprofit hospitals. In some parts of the country, safety net services use integrated clinical care models that combine primary care physicians, specialists, and hospitals to provide enhanced services to vulnerable patients with greater health needs (Hall & Rosenbaum, 2012). Community health centers, the focus of this research study, receive most of their funding from the Health Resources Services Administration (HRSA), primarily through Section 330 of the Public Health Service Act (Lebrun-Harris, 2013), and from both the traditional and managed care plans of Medicaid (Rosenbaum, 2012).

Federal funding is important because community health center patients are nearly six times more likely to be poor, two and a half times as likely to be uninsured, and nearly three times as likely to receive Medicaid (Rosenbaum, 2012). Community health center patients are also disproportionately likely to be members of racial and ethnic minority groups. Seventy-five percent of community health center caseloads are both uninsured and use Medicaid (Shi et al., 2013; Rosenbaum, 2012; Anderson & Olayiwola, 2012). Those patients who receive care at health centers suffer a greater burden of ill health and are nearly three times more likely to seek care for complex chronic conditions (Rosenbaum, 2012). Thus, the adaptation of health care services to the needs of medically

underserved populations and communities is the hallmark of community health centers (Rosenbaum, 2012).

History

Community health centers were established in 1965 by President Lyndon B. Johnson as a war on poverty demonstration program grounded in the civil rights movement (Rosenbaum, 2012) and activism (Anderson & Olayiwola, 2012), and with an emphasis on access, quality, and cultural competency (Anderson & Olayiwola, 2012). In 1975, the demonstration program transformed into a formal component of the Public Health Service Act to provide accessible and affordable health care services to medically underserved populations with increased health risk in areas where there is a shortage of primary care services (Rosenbaum, 2012). There are several types of health centers: general purpose community health centers, migrant health centers (designed to meet the health care needs of migrant and seasonal farmworkers), centers providing health care for the homeless, and health centers for residents of public housing (Rosenbaum, 2012).

The statutory requirements for community health centers are location in or service to a medically underserved population, an obligation to make care affordable through sliding fee scales tied to income, a duty to provide comprehensive care across clinical care, public health, and social intervention, and a board of directors that is governed by a majority patient population of the health center (Rosenbaum, 2012). Designation of community health centers as Federally Qualified Health Centers (FQHC) makes them eligible for Medicaid and Medicare payments, federal grants, and cost-related payment rates. Health centers receive compensation on a per encounter basis which incentivizes

volume. Simultaneously, they receive bundled payments reflecting clinical and ancillary services, encouraging efficiency within a single encounter.

Health centers offer a wide range of services, including primary care, mental and behavioral health care, dental care, and supportive services such as case management and transportation (Leiyu Shi et al., 2013). Health centers receive malpractice coverage under the Federal Tort Claims Act and are qualified to participate in the 340B prescription drug program, which provides discounted rates for outpatient prescription drugs (Rosenbaum, 2012). The Institute of Medicine and others recognize health centers as models that reduce health disparities (Anderson & Olayiwola, 2012; Shi et al., 2013).

Benefits

Beyond providing services that have been shown to reduce health disparities while improving patient health outcomes, health centers serve those without insurance and people who face barriers to health care because of geographic, language, and cultural barriers. Safety net providers possess expertise in providing health care services to patients who have historically faced financial and non-financial barriers to care (Hall & Rosenbaum, 2012). Health centers employ community members, and they extensively utilize the National Health Services Corps (NHSC) personnel. NHSC awards scholarships and loan repayment to primary care providers in eligible disciplines dedicated to working in areas of the U.S. with limited access to care (Health Services and Resource Administration, n.d.). Research reveals that low-income health center patients are more likely than low-income patients served elsewhere to receive preventative services. Health centers outperform private physicians in referral rates for their privately insured patients. This means that health center providers refer their publicly insured

patients to specialists more often than private physicians refer their privately insured patients to specialists. Health centers also provide more ancillary services such as outreach and translation, and the staffing model of health centers helps to achieve greater levels of integration and efficiencies (Rosenbaum, 2012). The staffing models of health centers help to achieve greater levels of integration and efficiencies because their funding structure and requirements allow them to hire support service staff such as case managers and drivers.

Challenges

The challenges for safety net providers, programs, and systems can be categorized in the following way: organization and infrastructure challenges, provider-related challenges, and patient-related challenges. Organization and infrastructure challenges include limited resources, inadequate patient care space, and lack of essential supplies (Hayashi et al., 2009), the lack of system resources such as specialists willing to see uninsured patients (Hayashi et al., 2009, Rosenbaum, 2012), and health centers that lack operational and organizational acumen (Hall & Rosenbaum, 2012). Provider-related challenges are also a problem. Health centers are often located in less desirable locations and struggle to recruit new primary care providers (Anderson & Olayiwola, 2012). Although health center staff can be resilient to some of the stressors of working with low-income populations (Hayashi et al., 2009), they still experience stress (Hayashi et al., 2009), and centers often struggle to retain physicians (Fiscella & Williams, 2004). The particular typical challenges for health center patients are low literacy, poverty, and socioeconomic disadvantages (Hayashi et al., 2009). As previously mentioned, health center patients may also be more clinically complex (Hall & Rosenbaum, 2012). All

these challenges must be considered when designing health care delivery models that can meet them by providing design, strategy, or approach to the delivery of primary health care services that works under these demanding conditions. The patient-centered medical home (PCMH) is one type of health care delivery model given prominence under healthcare reform.

The Patient-Centered Medical Home

The Patient-Centered Medical Home (PCMH) concept emerged as a strategy for compiling all medical information, including medical records for children with special health care needs in the same place (Jacobson et al., 2012). The first documentation of the term “medical home” appeared in *Standards of Child Health Care*, a book published by the American Academy of Pediatrics (AAP) in 1967, written by the American Academy of Pediatrics (AAP) Council on Pediatric Practice. Multiple practitioners in various geographic locations that provided services to children with special health care needs were concerned about potential duplication and gaps in services due to the lack of communication and coordination among all practitioners involved in the care of the children. The first AAP conference on the medical home was held in 1989 (Jacobson et al., 2012). By 1992, the AAP published its first policy statement defining the medical home (Sia et al., 2004). Since then, the PCMH has gained momentum as a potential solution to the challenges of the U.S. health care system (Tuepker et al., 2013).

More recently, with the concept of the PCMH expanded for the use in adult populations, the American College of Physicians defines a PCMH as a physician-led, team-based model of care that provides continuous and coordinated care throughout a patient’s lifetime to maximize health outcomes (Jacobson et al., 2012). Features and

outcomes of the medical home include: accessibility (Jacobson et al., 2012), family centeredness (Jacobson et al., 2012), patient, family, and caregiver engagement (Goldman et al., 2015); coordination (Jacobson et al., 2012; Goldman et al., 2015), continuity (Jacobson et al., 2012), compassion (Jacobson et al., 2012), cultural effectiveness (Jacobson et al., 2012), improved health outcomes (Goldman et al., 2015), better patient experience of care (Goldman et al., 2015), improved efficiency and use of health information technology (Goldman et al., 2015), cost reductions (Goldman et al., 2015), lower rates of avoidable hospitalizations (Tuepker et al., 2013), and decreased emergency department use (Tuepker et al., 2013). Stakeholders disagree about exactly what a medical home is, how the process of medical home transformation affects health care settings, and how “medical homeness” should be assessed (Goldman et al., 2015). However, diverse stakeholders are excited about the PCMH model’s potential in improving health care delivery and reducing health and health care disparities (Goldman et al., 2015).

Determined by health care systems, insurers, and national bodies that accredit, designate, or recognize health care settings as patient-centered medical homes are the tenets of the PCMH. NCQA is the most commonly used set of PCMH operational standards (Aysola et al., 2015). The specifics of a medical home vary by the defining entity; however, most entities have adopted medical home tenets based on addressing the six aims (safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity) of the U.S. health care system as identified by the Institute of Medicine (IOM) (Committee on Quality of Health Care in America, 2001).

There have been challenges with implementation of the PCMH model, such as the change from a physician-centered model of care, in which the physician's needs and goals are primary, to a team-oriented model of care, which is a much more collaborative and equitable approach (Tuepker et al., 2013). It has also been challenging to align financial reimbursement with PCMH emphasis on team-based care and preventive services (Tuepker et al., 2013). Historically, reimbursement has been for services delivered by the physician, not for services delivered by other health care team members. Additionally, important services such as care coordination and case management that facilitate preventive services have not been reimbursable.

Another challenge of the PCMH model has been the reluctance to collect data on the model not directly correlated to financial incentives. Data collection not correlated to financial incentives has historically included patient, family, and clinician experience in the care and in the transformation process itself (Goldman et al., 2015). However, recognizing that the process that a health care setting undergoes in transforming into a PCMH is daunting and worthy of study, Tuepker and colleagues (2013) conducted just such a study of the implementation of the PCMH concept in the Veterans Health Administration (VHA) version of the PCMH.

In their study, Tuepker and colleagues (2013) conducted 32 focus groups and 21 semi-structured interviews with 241 employees from 15 primary care clinics within the veteran's health administration system. Five themes emerged from the focus groups and interviews. First, there is a conflict between the principles of the VHA, PCMH, and what is happening in practice. Employees reported that they were missing key resources for full, sustainable implementation of the model, such as additional employees and time for

training. Secondly, VHA employees recognized that PCMH implementation needs to occur in time-ordered steps. Creating a well-functioning team comes first, but that first step faces challenges. Thirdly, the VHA PCMH model requires greater primary control of frontline staff versus administration in implementation, within a supportive, well-aligned system. Employees wanted to be at the table in implementation decision making. Another related theme conveyed the need for staff training in specific VHA PCMH skills. Lastly, employees noted that facility and clinic leadership need to champion both employees and the care model itself for optimal uptake (Tuepker et al., 2013). Clearly, the process of becoming a PCMH is a challenging one (Crabtree et al., 2011).

Interestingly, a think tank of 28 national and regional authorities in PCMH evaluation developed an evaluation set of key domains for evaluation and selected or created methods and measures for inclusion to address the difficulties of the practice transformation process and help practices become functioning PCMHs. The Brown Primary Care Transformation Initiative at Brown's University Department of Family Medicine convened the think tank to identify a set of metrics and methods, that when used simultaneously, addresses the various contextual challenges involved when a health care setting is transforming into a PCMH (Goldman et al., 2015). The evaluation set design is for researchers, policymakers, and primary care clinicians who are conducting and evaluating PCMH initiatives. The mixed methods are recommended to capture baseline and follow-up data. These include qualitative interviews, participant observation, focus groups, surveys, other quantitative measures, and patient outcomes. PCMH researchers agree that a comprehensive evaluation helps to explain how and why practices transform as well as how stakeholders experience the transformation (Goldman

et al., 2015). Given all this recent work, current directions in health care reform in the U.S. includes the patient-centered medical home as a promising model of health care delivery.

Health Care Reform

Shi and Singh (2017) described the major forces that change U.S. health care delivery as follows: cultural beliefs and values (market versus social justice), social changes (demographics, locality, and health of the population), and technological advances (research, new treatments, accessibility, affordability, and maintenance). Additional forces include the economy (population employment for access to employer-based insurance, employer cost, and employee out of pocket cost), politics (current administration, political ideology or affiliation), and ecological considerations (new diseases, increased prevalence of known diseases, and treatment failures). On March 23, 2010, President Barack Obama signed a significant health care reform bill into law (Rosenbaum, 2012) named The Patients Protection and Affordable Care Act (PPACA), often shortened to the Affordable Care Act (ACA), and nicknamed “Obamacare.”

President Barack Obama (2016) stated

In my first days in office, I confronted an array of immediate challenges associated with the Great Recession. I also had to deal with one of the nation’s most intractable and long-standing problems, a health care system that fell short on quality of care, too often failing to keep patients safe, waiting to treat patients when they were sick rather than focusing on keeping them healthy, and delivering fragmented, poorly coordinated care. (p. 526)

The critical policy issues this act addressed were the disallowance of healthy people to opt out of health insurance coverage (Rosenbaum, 2012) and denials for pre-existing conditions (Rosenbaum 2012; Hall & Rosenbaum 2012), allowing coverage of young adults up to age 26 on their parents policies, eliminating annual and lifetime limits

on health insurance coverage (Marmot 2013; Hall & Rosenbaum 2012), and creation of state-based health insurance exchanges for more transparency and market competition in comparing health insurance products (Marmot & Bell, 2013). Other ACA features include enhanced funding for community health centers (Marmot 2013; Hall & Rosenbaum 2012) to better support an influx of patients with the expansion of health insurance and the shortage of primary care providers (Rosenbaum, 2012), support for research, imposing penalties for preventable hospital readmissions, denying payment for hospital-acquired infections and funding for public health, PCMHs, and accountable care organizations (ACOs) (Marmot & Bell, 2013). No legislation is perfect, and the ACA was no exception.

Reform Challenges

The ACA has gaps as well as unintentional outcomes. The legislation did not address the organization of health or the practice of health that effects quality and health outcomes (Rosenbaum, 2012). The Supreme Court made it optional for states to expand Medicaid eligibility (Shi & Singh, 2017). Moreover, the bill does not prevent providers from selecting the type of patients they want to care for and where they want to provide care (Rosenbaum, 2012). Americans that did receive health insurance through Medicaid expansion will still face difficulties locating primary care providers that accept Medicaid, and even greater difficulty identifying a Medicaid-accepting specialist (Shi & Singh, 2017). Higher income earners face increased cost-sharing through premiums, deductibles, copayments, and coinsurance (Hall & Rosenbaum 2012; Shi & Singh 2017). The bill does not address issues of cultural competency such as the need for health care providers and staff to understand and respect cultural norms, preferences, and the need to

communicate in the patient's preferred language (Rosenbaum, 2012). Lastly, the ACA excludes illegal immigrants and the essential benefits of dental and eye health insurance (Hall & Rosenbaum, 2012). These Affordable Care Act (ACA) challenges increased the need for a range of services at health care centers.

Reform and Community Health Centers

The challenges presented by the ACA will require that safety net providers, programs, and systems see more people, continue to serve the immigrant population, see those who will face unaffordable insurance premiums, and see those with insurance gaps as a result of job transitions, movement between public and private insurance coverage, and movement between Medicaid and exchange markets (Hall & Rosenbaum, 2012). However, the benefits of facing these challenges are profound.

The ACA elevates the status of health centers through both direct investment and indirectly through the expansion of Medicaid (Rosenbaum, 2012). It makes major investments in community health centers to address the chronic shortage of health care professionals serving low-income and medically underserved populations. These investments will help centers to prepare for the surge in health care use that can be expected to flow from a major expansion of insurance (Rosenbaum, 2012). Money has been allocated to expand health center operational capacity and capital health needs. Allocation of additional funds enables community-based residency training through the establishment of "teaching health centers" (Rosenbaum, 2012). Lastly, the ACA invests in health system change by encouraging health care providers to become more efficient in managing complex patients through the use of a medical-home approach to patient care (Rosenbaum, 2012), which means that patient management must be tracked and

measured. Fortunately, The Institute of Healthcare Improvement (IHI) has developed a framework for the design and performance measurement of health care delivery.

The Quadruple Aim of Health Care

The original IHI framework to optimize health system performance is known as the “Triple Aim” (*Institute for Healthcare Improvement*, n.d.). According to the Triple Aim framework, health care delivery design must address three aims simultaneously. Aim one is improving patient experience of care, aim two is improving the health of populations, and aim three is reducing the per capita cost of health care (“Institute for Healthcare Improvement, n.d.; Berwick et al., 2008; Sikka, Morath, & Leap, 2015; Whittington et al., 2015). A proposed modification to the Triple Aim includes staff satisfaction as a fourth aim (Sikka, Morath, & Leape, 2015; Park et al., 2018), causing the Triple Aim to sometimes be referred to as the Quadruple Aim.

This more recent Quadruple Aim, promoting staff satisfaction, offers an important expansion to the concept of high-quality health care delivery. Sikka and colleagues (2015) define staff satisfaction as joy and the sense of importance in their work. They argue that the proposed fourth aim of staff satisfaction is foundational for the realization of the other three aims. However, its adoption has not been universal. Much of the literature still focuses on the Triple Aim. Although this research study will operate from the basis of Quadruple Aim thinking, a good deal of the relevant literature covered here will reference the Triple Aim.

According to the Institute for Healthcare Improvement (n.d.), Triple Aim thinking strengthens many areas of health care reform, including models of primary care such as patient-centered medical homes. The next several subsections will examine the results of

studies on the PCMH model and three of the four quadruple aims (health outcomes, patient experience, and staff experience) that serve as important foci of this research study.

Patient-Centered Medical Homes and Health Outcomes

The focus of this section is the Patient-Centered Medical Home (PCMH) and its health outcomes. Two studies found no significant difference in either the quality of care or in racial and ethnic differences in patient outcomes in health care settings that were transforming into or already recognized as PCMHs. This study will examine both here.

Jaen and colleagues (2010) examined the National Demonstration Project (NDP) version of the PCMH. Specifically, they studied the adoption of the PCMH model in practice, quality of care, and patient-rated outcomes in a randomized clinical trial that divided 36 family medicine practices into two groups. One group received the ongoing assistance of a practice facilitator during the PCMH transformation process. The second group was self-directed and did not receive ongoing support from a practice facilitator. However, the control group received access to web-based practice improvement tools and services. The researchers calculated a chronic disease score for each practice by examining the percentage of patients with identified target conditions (including hypertension and diabetes, the health outcomes measures selected for this research study) who received the recommended quality measures for the target conditions. The recommended quality measures are agreed upon by a recognized authority in the health care field to monitor disease management. A questionnaire assessed patient-rated outcomes. Results revealed that practices in both groups were able to adopt components of the NDP PCMH model. There was no significant difference in the condition-specific

quality of care between the two groups nor were there any improvements in patient-rated outcomes. The key conclusion from this study is that the adoption of PCMH components appeared to slightly lower patient ratings regardless of group assignment. (Jaen et al., 2010).

Simonetti et al., (2014) conducted a retrospective cohort study of all adults with diabetes receiving primary care within university-based, general internal medicine practices, with PCMH recognition granted by NCQA. Included in the study were 1,457 patients of whom 59.6% were non-Hispanic White, and 40.4 % were Black. Black patients were less likely to have an attending primary care provider (69.3% vs. 94.5%; $P<0.001$), experienced less continuity of care, with a smaller proportion of total physician appointments with their primary care provider (81% vs 87%, $P<.001$), had a larger number of missed physician appointments (mean 1.89 vs. mean .83; $P< .001$), and had a larger number of emergency department visits during the study period (mean 2.90 vs. mean 1.68, $P<.001$). Black patients were also 43% less likely to receive HbA1C testing (odds ratio 0.57; 95% CI 0.34-0.95), which assesses how well a person is managing their diabetes, with a larger proportion of those receiving HbA1C testing having results indicating poor control of their diabetes (20.3% vs. 11.6%; $P<.001$). Blacks were also 36% less likely to have optimal control of their hypertension, which is a blood pressure reading of $<140/90$ mm Hg (OR 0.64 [95% CI 0.49-0.84]).

In this study, implementation of the PCMH care delivery model did not reduce racial differences in care processes or outcomes for Black patients with diabetes (Simonetti et al., 2014). The results revealed disparities in health care services. Disparities in health care services occur when one population receive health care services

less often than another population (LaVeist, 2005). In this study, Blacks had less continuity of care, more emergency department visits, and were less likely to have appropriate laboratory testing to monitor their disease state and management. This study also demonstrated disparities in health status which are the differences in health between populations (LaVeist, 2005). In this study, Blacks had poorer control of their diabetes and less optimal control of their hypertension in comparison to Whites. The focus of the next section is the PCMH and patient experience.

Patient-Centered Medical Home and Patient Experience

Before discussing the PCMH care delivery model and patient experience, it is worth distinguishing the difference between patient satisfaction and patient experience. Some researchers argue that patient satisfaction is subjective and patient experience is more objective. Batbaatar et al., (2015) defines patient satisfaction as a combination of health care services received and the needs, desires, or expectations of the patient. A patient's perception of what they need can be subjective, and a patient's desires or expectations are further along the spectrum of subjectivity. Browne et al., (2010) further describes patient satisfaction rates along with the patient's satisfaction with care. The use of patient satisfaction and patient ratings can become contentious in the health care industry, particularly among clinicians. Some clinicians argue that patients without medical training are not qualified to determine good quality care. Clinicians' who oppose patient satisfaction argue that patient satisfaction becomes ratings of the unqualified patient's health care desires or expectations which are subjective. Patient experience, on the other hand, is viewed by some scholars as the patient speaking to what they did or did not experience. In this sense, patient experience is objective. A patient was seen on time

or not seen on time. A clinician explained the patient's medications or did not explain the patient's medications. A woman who just turned 40 years old received a referral for a mammogram or did not receive a referral for a mammogram. This study focuses on the patient's experience versus satisfaction or dissatisfaction with the care received. The next section will discuss the importance of the patient experience in health care.

Patient experience is important because a better patient experience is associated with better adherence to recommended treatment (Wynn , 2016; Batbaatar et al., 2015; and Browne et al., 2010), better clinical and patient safety outcomes (Wynn, 2016 and Browne et al., 2010), and lower utilization of more costly health care services (Wynn, 2016). Patient experience is also important in maintaining market share when patients as consumers of health care services have a choice in where they seek health care services (Batbaatar et al., 2015). Another noteworthy consideration regarding the patient experience is that providers cannot achieve good health outcomes without commitment and action from their patients (Browne et al., 2010). According to Browne and colleagues (2010), the health system will transform when patients as consumers of health care services use their experience to select providers, when employers and purchasers use patient experience to design benefits and payments, and when medical staff and administrators act on patient experience to improve health care practice systems and care. After describing the importance of patient experience here, the next discussion will focus on the importance of patient experience in minority populations.

Minority patients are more likely to report being the subject of negative attitudes during the health care process, and those feelings of discrimination negatively impact their assessment of the quality of care received (Sorkin et al., 2010). Discrimination in

health may be a mediator or facilitator of the observed racial and ethnic differences in reports of health care quality (Sorkin et al., 2010). Sorkin and colleagues (2010) conducted a random-digit-dial telephone survey of the state of California's civilian population (N=36,831) to examine racial and ethnic disparities in perceptions of health care and mediation by perceived discrimination, patient sociodemographic characteristics, and other measures of patient experiences of care, including access to care and individual physician ratings. The researchers found that respondents who reported experiencing discrimination had twice the prevalence rates of lower perceived quality of care compared to those who did not report experiencing discrimination in health care. Feeling discriminated against in health care remained significantly associated with lower ratings of perceived quality of care across all groups (Sorkin et al., 2010). Receipt of health care services that are free from bias and discrimination is a movement towards social justice and equity in health. Therefore, one mode of inquiry in this study focuses on the patient's experience with the health center. The next section will describe the PCMH care delivery model and patient experience.

The Patient-Centered Medical Home attempts to engage patients in a partnership between physicians, patients, patient families, and caregivers (Schmidt et al., 2013). The health care quality improvements of the PCMH often occur "behind the scenes" (Schmidt et al., 2013 and Maeng et al., 2013) and out of the view of patients (Schmidt et al., 2013) so patients may not even notice any changes in terms of their care experience, even if the changes are real (Maeng et al., 2013). PCMH improvements are neither simple to implement or to evaluate, as described earlier (Jaen et al., 2010; Schmidt et al., 2013). According to Schmidt (2013), the literature on PCMH and patient experience so far is

limited, with mixed results partly due to differences in research designs, study populations, and measures (Schmidt et al., 2013). Studies that have evaluated the Patient-Centered Medical Home (PCMH) and patient experience have found a whole range of results, including positive results, less positive results with some areas for improvement, or no difference in patient experience.

Aysola and colleagues (2015) sought to explore patient experiences after the adoption of a PCMH model, with a special focus on the patient's perceptions of the overall PCMH model and its key components. The researchers also compared responses by patient race and ethnicity and the degree to which practices reported PCMH model adoption. Researchers conducted 48 semi-structured telephone interviews across 23 NCQA-recognized PCMH practices in the University of Pennsylvania System. Participating practices became assigned to one of four groups. The first group consisted of minority patients at high PCMH-adopting practices, which are practices successful in adopting more PCMH model components. The second group consisted of non-minority patients at high PCMH-adopting practices, which are practices successful in adopting more PCMH model components. The third group consisted of minority patients at low-PCMH adopting practices, which are practices that adopted less PCMH model components during the study period, and the fourth group consisted of non-minority patients at low-PCMH-adopting practices, which are practices that adopted less PCMH model components during the study period. Patient responses were positive in all four groups, centering on the patient's relationship with their primary care provider (PCP). Identified challenges were in the areas of access, team-based care, and care coordination which did not diminish patient experience if the patient's relationship with their primary

care provider (PCP) was solid. The relationship with the provider appeared to influence respondents' overall experience as well as their perceptions of specific PCMH domains. When asked directly, none of the respondents were familiar with the PCMH model nor were they initially aware that their practices were PCMHs. Many respondents, even after hearing the description of the PCMH, did not connect the model to the care they receive. There were no differences in patient experience between White patients and self-identified minority patients or between high-and-low-PCMH adopting practices (Aysola et al., 2015).

Cook and colleagues (2015) found similar positive results between the PCMH and patient experience in a cross-sectional study of 488 patients across five health centers at 13 center sites. The study attempted to understand patient experience in health centers recognized as PCMHs by NCQA. In this study, patients reported that their health centers were patient-centered, that they received treatment with courtesy and respect, and that their provider responded to their health questions in a way that they could understand. Patients identified the ability to contact the health center by phone, for appointment scheduling, to follow-up about tests, and to request a referral to health-related workshops or education programs as opportunities for improvement (Cook et al., 2015).

In another study of primary care safety net patients, defined as patients who reported low incomes and often identified as minority, Cook and colleagues (2016) conducted a cross-sectional survey of 351 ethnically diverse, primary care safety net patients that expressed high agreement that the staff was helpful (80.9%), that someone spoke to them about their prescriptions at every visit (83.1%), and that they received reminders between visits (93.7%). There was less agreement among respondents

regarding follow-up with results (78.6%), and about half of patients responded that the site was easy to contact or that they were able to receive appointments when they needed them (Cook et al., 2016).

Maeng and colleagues (2013) examined Geisinger's version of the advanced PCMH in rural Pennsylvania among predominantly White patients (93%) via surveys. There were 499 respondents in the intervention group and 356 respondents in the non-intervention control group. Respondents in the intervention group who received care at PCMHs were approximately twice as likely as controls to have noticed differences in their care, care coordination, and service. The PCMH group was also more likely to report that the quality of care at their primary clinic site was different and had improved. There was a higher likelihood of citing their primary care office as their usual source of care (83% vs. 68%) and a lower likelihood of citing the emergency room (ER) as their usual source of care (11% vs. 23%) (Maeng et al., 2013).

Lastly, Schmidt and colleagues (2013) hypothesized that there would be an association between greater use of PCMH structural and process improvements within primary care clinics and more positive patient ratings of accessibility, coordination, as well as greater confidence in the quality and safety of care. Researchers conducted in-person interviews with 1,573 patients served by 26 clinics, most of which had achieved formal PCMH recognition from the NCQA. They found a strong association between positive patient experiences of coordination of care and use of PCMH clinic processes. Patients in clinics with high PCMH scores were 2.6 times more likely to report a positive experience with care coordination, compared with those in clinics with a low PCMH score. The researchers did not identify a positive association between patient ratings of

accessibility and confidence in the quality and safety of care with the clinics' use of PCMH processes. Lastly, the researchers identified an inverse relationship between PCMH improvements at the clinic-level and patient experiences of confidence in the quality and safety of care.

In summary, the PCMH and patient experience demonstrated positive results for care management and support and population health management, a need for improvement in access, and mixed results in team-based care, care coordination, and quality improvement. The next section will examine the PCMH and staff satisfaction.

Patient-Centered Medical Home and Staff Satisfaction

In examining the PCMH and staff satisfaction, much of the literature distinguishes physician satisfaction from overall staff satisfaction in health care. Determined by both extrinsic and intrinsic factors is physician satisfaction. Intrinsic factors are those derived from a job well done or meeting a diagnostic challenge. Extrinsic factors encompass hours worked, financial remuneration, and working relationships with patients and colleagues (Murray et al., 2001). Physician dissatisfaction is associated with excessive workloads and time pressures (Murray et al., 2001), limited personal time (Murray et al., 2001), paperwork and associated patient communication (Murray et al., 2001), patients not responding to treatment (Murray et al., 2001), decreased professional autonomy over clinical decisions (Murray et al., 2001), decreased time with patients who have managed care insurance (Zuger, 2004), the malpractice crisis (Zuger, 2004), the practice of defensive medicine in which physicians order tests and devise treatment plans not medically justified to thwart off potential litigation (Zuger, 2004), disparate expectations reflecting the difference between what patients demand versus what is realistically

accomplishable (Zuger, 2004), and duties as double agents, in which physicians assume regulatory duties for insurers, government agencies, and courts on top of patient care responsibilities (Zuger, 2004). Physician satisfaction matters because dissatisfaction leads to increased physician turnover, increased physician turnover leads to decreased continuity of care for patients, and decreased continuity of care for patients can increase costs to the medical system (Murray et al., 2001).

Studies on physician and staff experience with the PCMH model have yielded mixed results. Jackson et al. (2013) sought to describe how studies conducted to date have implemented the PCMH through a systematic review. They also sought to evaluate the current evidence regarding the effect of PCMH interventions on patients, staff, and economic outcomes or costs. Jackson and colleagues (2013) analyzed 19 comparative studies and found that PCMH interventions had a small positive effect on patient experiences and small to moderate positive effect on the delivery of preventive care services. Staff experiences are also improved by a small to moderate degree, but no study reported effects on staff retention. The evidence was insufficient to determine effects on clinical and most economic outcomes or costs. (Jackson et al., 2013).

Quinn et al. (2013) also found positive results when they conducted semi-structured telephone interviews with administrators, providers, and staff to understand safety net health centers preparation for medical home adoption. The study included 20 health centers. Seventy-four percent of respondents anticipated improved job satisfaction with the adoption of the PCMH. Twenty-three percent of respondents, especially those in leadership positions, expected that the improved level of satisfaction would translate into a reduced turnover. Respondents also anticipated obstacles to PCMH implementation.

Forty-seven percent of 337 reported obstacles were staff-related including staff skepticism and resistance to change. Other obstacles were the lack of financial support (64%), inadequate technology (19%), and insufficient time to implement changes (20%) (Quinn et al., 2013).

On the other hand, Friedberg et al. (2017) identified less satisfaction among staff working in practices using the PCMH model. Friedberg and colleagues evaluated longitudinal changes in professional satisfaction, work environment, and practice culture within a national sample of FQHCs. There were two waves of surveys with all three measures of professional satisfaction worsening significantly over time. Overall satisfaction rates declined from 84.2% in the early wave to 74.4% in the late wave. Rates of burnout increased from 23% to 31.5%. The proportion of respondents reporting that they were likely to leave their practices within two years increased from 29.3% to 38.2%. The proportion of respondents reporting a hectic or chaotic practice atmosphere increased from 31.6% in the early wave to 40.1% in the late wave. The greatest adjusted standardized declines were for teamwork (-26.4%) and facilitative leadership (-23.3%). The researchers found statistically significant declines in most measures of professional satisfaction, work environment, and practice culture among clinicians and staff in a national sample of FQHCs (Friedberg et al., 2017). Lastly, Lewis et al., found mixed results regarding staff experience working in the PCMH model. Their research found an association with higher morale and higher provider burnout in 65 safety net clinics with greater implementation of characteristics of the medical home (Lewis et al., 2012).

In summary, several studies examining staff experience in safety net settings utilizing the PCMH model had mixed results. Some indicated improved staff satisfaction

and morale in safety net settings. Other studies indicated less satisfaction and increased burnout. The next section will define staff burnout and describe relevant studies.

Staff Burnout

Physician burnout is the loss of enthusiasm for work, feelings of cynicism, and a low sense of personal accomplishment (Bodenheimer & Sinsky, 2014). But burnout affects more than just physicians in the health care industry. Thirty-four percent of hospital nurses and 37% of nursing home nurses report burnout. Sixty-eight percent of receptionists experience verbal abuse from patients, and most feel that physicians fail to appreciate the complexity of their work (Bodenheimer & Sinsky, 2014).

Several studies have examined the problem of burnout among physicians. Sinsky et al. (2013) approached 23 high-performing practices in which most practices had achieved PCMH recognition. Through site visits, virtual visits with a telephone interview, and follow-up email communication, the researchers assessed how practices optimized the team-based care model, technology, and data outcomes to do the job of providing primary care services more palatable and enjoyable. The researchers then proposed joy in practice to address what is missing in primary care for physicians. Joy in practice includes a high level of physician work-life satisfaction, a low level of burnout, and a feeling that medical practice is fulfilling (Sinsky et al., 2013).

Shanafelt and colleagues (2012) conducted a national study of burnout among a large sample of U.S. physicians. They also surveyed a probability-based sample of the general U.S. population to compare with the physicians. Seven thousand two hundred eighty-eight members of the eligible population completed the survey. Participants were assessed using the Maslach Burnout Inventory (MBI), recognized as the leading measure

of burnout, using scales to measure emotional exhaustion, depersonalization, and personal accomplishment. The MBI revealed that 37.9% of U.S. physicians had high emotional exhaustion, 29.4% had high depersonalization, and 12.4% had a low sense of personal accomplishment. Physicians worked a median of ten hours more per week than population controls, with 37.9% of physicians and 10.6% of the population controls working sixty hours or more per week. In terms of satisfaction with work-life balance, 40.1% of physicians did not think their work schedule left enough time for personal or family life compared with 23.1% of controls. Physicians were at higher risk for emotional exhaustion (32.1% vs. 23.5%), depersonalization (19.4% vs. 15%), and overall burnout (37.9% vs. 27.8%) relative to population controls (Shanafelt et al., 2012).

The Association for Clinicians of the Underserved (ACU) sent an anonymous online survey to current members focusing on perceptions, degree, and impact of stress, burnout, and workplace wellness (Hayashi et al., 2009). The ACU is a transdisciplinary organization of clinicians (which includes physicians, advanced nurse practitioners, physician assistants, and other health-related clinicians), advocates, and health care organizations that provide health care for the underserved. The study aimed to assess the degree of stress and burnout experienced by those who work in safety net settings as well as the characteristics of their practice environment. Sixty-one percent of respondents agreed or some-what agreed with the statement “my job is a significant source of stress in my life.” Approximately 60% responded very likely or extremely likely to “how likely are you to remain at your current organization in three years,” with 10.6% responding not at all likely. Approximately 82% responded very likely or extremely likely to “how likely are you to remain in the field of work in three years,” with 1.8% responding not at all

likely. Responses to “my job is a significant source of stress” and “how likely are you to remain at your current organization in three years?” seem to show that the more a job is a significant source of stress, the less likely the individual will remain at their current organization in three years. Unsurprisingly, the survey results suggest that providing care in safety net health centers is a cause of significant stress (Hayashi et al., 2009).

According to the ACU study, working in safety net health care settings can lead to stress and burnout (Hayashi et al., 2009). The adoption of the patient-centered medical home (PCMH) care delivery model in safety net settings may contribute to higher levels of stress and burnout among safety net providers. Bodenheimer and Sinsky (2014) concluded that there might be an association between higher scores on a PCMH assessment and more clinician burnout in safety net clinics. The higher the PCMH assessment score, the more medical home attributes a health care setting has adopted. The final section of this literature review chapter will discuss deficiencies of the past literature and how this research study will address some of the identified deficiencies.

Deficiencies in Past Literature

Some studies reviewed here describe the lack of consensus about what constitutes a patient-centered medical home, or PCMH. Some researchers conducted studies on health care sites with self-described medical home components or attributes, not formally recognized as a PCMH. Other researchers have conducted studies knowing that some of the study sites were formally recognized as a PCMH, but with no means of identifying those PCMH-recognized sites in the data set. The inability to separate the formally recognized PCMH sites from the non-recognized PCMH sites make it impossible to assess if there are performance differences between recognized and non-recognized

PCMH sites. Given my professional experience, I am of the opinion that since there is no single agreed-upon notion of what constitutes a patient-centered medical home, it is important to conduct studies on health care practices that have achieved PCMH recognition in accordance with some form of standardized criteria, such as that utilized by the National Committee for Quality Assurance (NCQA).

Standardization is increasingly important in the PCMH transformation process, as standardized criteria are important in achieving PCMH status. Without standardized criteria, how would a health care setting know that they are indeed functioning as a medical home? Standardization supported by Olayiwola et al. (2016) has suggested that future research might allow for more optimal comparisons by utilizing formal PCMH classifications. Lebrun-Harris (2013) further supports this approach by indicating that more studies are needed to examine the independent effect of PCMH recognition or designation or accreditation on health center patients' reports of health care quality. Another area that requires additional research is investigating how the PCMH care delivery model operates in safety net settings.

It is important to evaluate health care delivery services in primary care settings situated within safety net systems such as health centers that provide care to underserved and vulnerable populations. Furthering the goal of reducing or eliminating health disparities in the U.S. health centers offers many benefits by providing health care services to low income and minority populations. Studies have indicated that some health center staff feel that they have been operating as patient-centered medical homes since their inception. The question is, do health centers have room for improvement? Jacobson et al. (2012) suggest that future analysis and research on health center adoption of the

PCMH model may indicate whether health centers are making serious strides in reshaping and improving the delivery of primary care services or simply posturing to receive government incentives. The obvious follow-up to the study of PCMH adoption and use in health centers is the examination of whether the use of the PCMH model adds to the reduction of health disparities.

According to Karliner et al. (2016), although the PCMH has gained prominence and widespread adoption, its ability to reduce or eliminate health disparities has yet to be fully assessed or realized. Researchers have noted that health disparities are not the explicit priority of the PCMH model, often overshadowed by cost reduction goals and overall quality improvement (Karliner et al., 2016). There is limited evidence to date that the PCMH improves existing racial and ethnic disparities in primary care (Aysola et al., 2015). Furthermore, to my knowledge, no research study to date has utilized the National Institute of Minority Health and Health Disparities Research Framework to evaluate the PCMH in safety net systems. Lastly, it is important to ground future studies in the recognition that practice transformation into a PCMH is an ongoing process.

Many studies have referenced the fact that implementation of and transformation into a PCMH is a daunting process, yet most have studied the care delivery model based on the observational cross-sectional design, but not longitudinally, to allow for better adoption of the model over time. This longitudinal approach is suggested by Cook et al. (2015) to evaluate the role of PCMH transformation on patient experience, by Maeng et al. (2013) to measure changes in patient experience before and after a PCMH implementation, and by Shi et al. (2015) to explore the impact of PCMH on performance

over time. Clearly, there are unaddressed gaps in the literature. This research study will address some of the gaps revealed by analyses of past studies.

Specifically, this research study will examine the PCMH care delivery model's ability to reduce health disparities in a low income and minority population receiving health care services at 15 Federally Qualified Health Centers (FQHCs) that have achieved NCQA PCMH recognition. Examining the PCMH model for the specific function of reducing health disparities contributes to the limited literature in this subject area. Setting the study in FQHCs that have been recognized by the National Committee for Quality Assurance indicates its PCMH status as determined by the NCQA's standardized criteria determining medical homeness. The NCQA's standards provide replicable criteria for the measurement of the health center's performance. Finally, in recognizing that practice change and practice transformation takes time, this study examines health care outcomes longitudinally over an extended period.

Chapter 3: Methodology

As a note, this study focused on four research questions. First, does the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH) improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? Second, what has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Third, what has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Fourth, what has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout? The sections below detail this study's research methodology, which was designed to address all four research questions.

Mixed Methods Design

This study utilized a convergent parallel mixed-methods design to examine the efficacy of the PCMH model in reducing health disparities in underserved populations. In the convergent parallel mixed-methods design, quantitative and qualitative data are collected separately. The data are then analyzed separately. This is followed by a comparison of the two sets of results to determine whether they are in alignment. The premise of the approach is each type of data set provides different types of information (Creswell, 2014). The quantitative and qualitative methods were implemented independently as described above and the results were connected at the end of the study after initial data analysis.

This study was guided by a constructivist perspective (Crotty, 1998). This epistemological stance acknowledges that truth is not known or given but is constructed. Individuals construct meaning based on their engagements and interactions (Crotty, 1998). In this study, it is recognized that the patients' and employees' interactions with the Federally Qualified Health Centers (FQHCs) shape their experiences and the meanings they attach to them. This study was also influenced by a hermeneutic perspective. Hermeneutics seek to examine the relationship between the parts of a phenomenon and its whole (Smith et al., 2009). To understand any part, one must also look to the whole, and to understand the whole, one must also look at its parts. While this study examined 15 health centers as a whole, each health center represented one important part of the whole (Smith et al., 2009).

In the convergent parallel mixed-methods design approach, qualitative data can be collected in the form of interviews, observations, documents, records, instrument data, observational checklists, or numeric records (Creswell, 2014). In this study, the qualitative component was made up of online patient reviews and online employee reviews. Google provides a platform to post reviews about a consumer's experience with health centers and other entities. Similarly, Indeed is a job board that allows current and former employees to rate their experience with an employer based on work-life balance, pay and benefits, job security and advancement, management, and culture. The quantitative component consisted of patient quality of care measures. Google and Indeed online reviews were selected as the qualitative data sources because they represent today's current use of technology in describing the experiences of health care service consumers and health care industry employees. A Google name search of each of the 15

health centers provided access to publicly available patient reviews. Similarly, a Google search using the phrase “employee reviews of [insert name of health center]” provided access to the publicly available employee reviews for each of the health centers.

The quantitative data for this study was drawn from the Uniform Data System (UDS). UDS is the required and standardized reporting system for FQHCs (Health Resources & Services Administration, n.d.). The UDS data set was used in this study because this data is both standardized and made publicly available each year.

One potential drawback to the convergent parallel mixed-methods design is the difference in sample sizes between the quantitative and qualitative data sets (Creswell, 2014). By nature, the qualitative data set was smaller than the quantitative data set. The differences in data set size reflect the different intent behind the two methods. The quantitative data set can be generalized to a population, while the qualitative data set elicits more detailed information about a smaller group. It is because of these differences in intent that the sample sizes are unequal (Creswell, 2014). Another potential issue is that in the convergent parallel mixed-methods design, ideally, members of the qualitative sample should be included in the quantitative sample for better comparison between the two (Creswell, 2014). But in this case, there is no way to confirm whether patients who completed the online Google patient reviews were included in the quantitative patient quality of care measures. However, the two preventive quality of care measures utilized in this study included all adult health center users, so there is a strong possibility that they were included. Secondly, although the data sets are different, what they have in common is the health care center experience. Whether quantitative or qualitative data, patient

health outcomes, patient experience, and staff experience all link to the health center experience.

In the qualitative component of this study, the qualitative codes were transformed into counts to create quantitative measures (Creswell, 2014). A coding frame was also created to categorize the content of the online reviews. The Minority Health and Health Disparities Research Framework, the 2014 NCQA PCMH Operational Standards, and the Maslach Burnout Toolkit for Medical Personnel provided the basis for the qualitative codes. See the section on qualitative methods for a detailed description of coding frame design and data collection and analysis.

The results chapter of this study reports the findings of both the quantitative and qualitative data sets. A comparison of the two analyzed data sets is detailed in the discussion chapter. Convergences between the two data sets are also highlighted (Creswell, 2014). The convergent parallel mixed-methods design approach is strongly suited to the exploration of this study's research questions because it offers so many lenses with which to answer them (Creswell, 2014).

Researcher's Role

It is important to note this researcher's role in this study. This study focuses on patient race, ethnicity, and socioeconomic status to explore whether the PCMH addresses health disparities. I acknowledge that as an African American, I am an insider researcher (Mertens, 2009) who shares a minority background with many health center patients. Acknowledging my minority status means that I have a raised sensitivity to racial and ethnic health-related disparities and a nuanced awareness of the plight and lived experience of minority group members in the United States. I am also an NCQA Certified

Content Expert who has worked with various health care settings to assist practice members to transform their practices and achieve PCMH recognition by NCQA. I bring that practical coaching experience and my PCMH expertise to this research. At the time of data collection and analysis, I served as New Jersey's Primary Care Officer in the Office of Primary Care and Rural Health (OPCRH) for the New Jersey Department of Health (NJDOH).

The OPCRH oversees the administration of the Uncompensated Care Fund for New Jersey's FQHCs. FQHCs submit claims for reimbursement in the provision of primary care and dental health services rendered to uninsured and underinsured New Jersey residents. In this role, I have conducted site visits to 13 of the 15 health centers included in this study, which allows me to bring insider knowledge to this effort.

Moreover, I bring knowledge of the health department's role in collecting and analyzing FQHC financial data to this study, as well as insights gained from my working relationship with the New Jersey Primary Care Association (NJPCA). The NJPCA is an FQHC-affiliated association in which one executive from each FQHC makes up the governing board of the organization. Lastly, I am personally vested in this challenging and uncomfortable social justice work. I believe that choosing not to work towards systematic change in the context of social inequities is equivalent to being complicit in those inequities.

The design of this study addressed beliefs, biases, and preexisting knowledge of the individual health centers. First, the quantitative data is publicly available, reported by each health center, and analyzed as aggregated data. There were no biases present in the collection or analysis of the quantitative data. Secondly, the qualitative data was collected

by health center, but analysis was aggregated. Moreover, instead of deductive coding, the codes in the coding frame were content-driven based on guidance from the Minority Health and Health Disparities Research Framework, the NCQA 2014 Operational Standards, and the Maslach Burnout Toolkit for Medical Personnel. The use of these established frameworks reduced the use of preexisting health center knowledge in code development.

Quantitative Methods

Quantitative methods were used to answer this study's first research question: does the NCQA PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? The quantitative analysis examined each health center's characteristics in terms of its initial and current type of NCQA PCMH recognition level and its patient demographics and health outcomes.

As a reminder, there are three levels of NCQA PCMH recognition. Health centers and other health care settings are evaluated on a range of criteria and their performance is reviewed. Final scores determine whether they are ranked at level one, two, or three or whether they are denied recognition (National Committee for Quality Assurance, n.d.). This study analyzed aggregated data for all 15 FQHCs for their combined years as level one through three PCMHs. Patient demographics, patient health outcomes, year of NCQA operational standards (2008, 2011, 2014, and 2017), level of NCQA recognition (level one, level two, level three, or no level), regional location of health center in the State of New Jersey (southern, central, or northern), and change over time were all examined.

This study collected longitudinal repeated measures of aggregated physical and mental health outcomes. In this approach, patient health outcomes and health center characteristics were the relevant variables, and health center years of PCMH recognition served as the units of analysis (Remler & Van Ryzin, 2015).

Study Sample and Recruitment

The study sample included patient health outcomes for 15 New Jersey FQHCs. New Jersey had 24 health centers in total at the time of data collection, but this study only included PCMHs recognized by the NCQA with publicly available UDS data. As previously noted, UDS is the required and standardized reporting system for FQHCs (Health Resources & Services Administration, n.d.). Five health centers were excluded from this study because they were not PCMH recognized. There are other organizations that accredit PCMHs. One such organization is the Joint Commission. The Joint Commission accredited three New Jersey health centers, all of which were excluded from the study. Another health center was excluded from the study because it was an FQHC look-alike during the study period, which means that it does not receive full FQHC benefits and has no public UDS data.

The 15 NCQA PCMH-recognized FQHCs included in this study have been recognized as medical homes for a range of years: from less than one year to 11 years. For these centers, the study examined five UDS secondary quality of care data metrics, including three chronic health conditions and two preventive care and screening measures: hypertension, diabetes mellitus, coronary artery disease (CAD) with lipid therapy, body mass index (BMI) screening with follow-up (obesity), and depression

screening with follow-up. UDS data is publicly available; therefore, a recruitment plan was not necessary to gather the quantitative data.

Study Variables and Measurement

The patient outcome variables in this study were as follows: high blood pressure control, uncontrolled hemoglobin A1C (HbA1c) (>9%), coronary artery disease with prescribed lipid therapy, body mass index screening with a follow-up plan for overweight and obese individuals, and depression screening with a follow-up plan. The UDS measure description for controlled hypertension (HTN) is as follows: patients between the ages of eighteen and eighty-five years old who have had a diagnosis of hypertension and whose blood pressure is less than 140/90mmHg during the measurement period (Health Resources & Services Administration, n.d.). The measure description for uncontrolled HbA1c is as follows: patients between the ages of eighteen and seventy-five years of age with diabetes (DM) who have had a hemoglobin A1c test result greater than 9.0% during the measurement period (Health Resources & Services Administration, n.d.).

The measure description for CAD with lipid therapy is as follows: the percentage of patients age 18 years and older with a diagnosis of CAD who are prescribed a lipid-lowering medicine (Health Resources & Services Administration, n.d.). The measure description for body mass index (BMI) screening with a follow-up plan is as follows: the percentage of patients aged 18 years and older with a documented BMI taken during the most recent visit or within the 12 months before that visit. When the BMI is outside of normal parameters, a follow-up plan must be documented during the visit or during the 12 months previous to that visit (Health Resources & Services Administration, n.d.). The last measure description, below, relates to mental health screening.

Depression screening and follow-up planning is captured by the percentage of patients age twelve years and older who are screened for depression on the date of the visit using an age-appropriate standardized depression screening tool, and if results are positive, a documented follow-up plan on the date of the positive screen (Health Resources & Services Administration, n.d.). All these patient outcomes were measured by change over time. Additionally, the demographic information collected from UDS included the total population served and the age, gender, race and ethnicity, income, and insurance status, of patients. The number of patients served in a language other than English was also collected.

Data Collection Procedures

The health centers report data through the UDS. UDS data for all 15 health centers, including demographics and composite clinical and outcomes data for patients with HTN, DM, CAD, and those eligible for BMI and depression screenings, were collected for 2016, 2017, and 2018 as described above.

Data Analysis Plan

Statistical Package for the Social Sciences (SPSS) 25.0 was used in all statistical analysis procedures. This study utilized the non-parametric Kruskal Wallis H test to examine potential associations among the levels of NCQA recognition, regional location, and change over time with quality of care. Post-hoc non-parametric Mann-Whitney U tests were used to compare the differences between levels, regional locations, and years. More specifically, the goal of the statistical analysis was to test hypertension, hemoglobin A1c, CAD, and BMI, and depression screenings change over time. The analysis proceeded in three steps, with the first step consisting of descriptive (univariate) analysis

summarizing the frequencies and proportions of study variables. The second step utilized non-parametric Kruskal-Wallis H tests to assess the associations between patient health outcomes (controlled HTN, hemoglobin A1c, coronary artery disease with lipid therapy, and body mass index and depression screenings), and the year of NCQA operational standards, level of NCQA recognition, regional location of health center in the State of New Jersey, and changes over years. The Kruskal-Wallis H test was used to compare the overall difference between two or more independent samples (controlled hypertension, uncontrolled diabetes, coronary artery disease with prescribed medications, body mass index screening with follow-up plan as appropriate, and depression screening with follow-up plan if positive) (Salkind, 2017).

Stratification of the 15 FQHCs was guided by the operational standards they followed during their initial PCMH recognition. Since operational standards changed over time, as noted by the operational standard years, examining the change in the quality of care measures by operational standards was another mechanism by which to analyze change over time.

In terms of PCMH recognition, there is an important point to note. Until the 2017 NCQA operational standards were instituted, previous operational standards recognized three levels, with level three being the highest. Level three PCMHs also demonstrate the most medical homeness. Medical homeness is used to describe the extent to which a healthcare setting is functioning as a PCMH. In 2017 these operational standards were changed, eliminating levels. Practices were either recognized as medical homes or not. However, the level three NCQA PCMH represents the gold standard for medical homeness and quality of care.

The third step in quantitative analysis focused on post-hoc analyses utilizing non-parametric Mann-Whitney U tests to further examine the differences between the year of NCQA operational standards (2008, 2011, 2014, and 2017), levels of NCQA recognition (level 1, level 2, or level 3), and regional locations in the State of New Jersey (southern, central, or northern region) when examined by patient health outcomes and changes over years. The Mann-Whitney U test compares two independent samples such as operational standard 2008 versus 2011, or NCQA level 1 versus level 2, or north versus south New Jersey (Salkind, 2017). All statistical tests were two-sided, considering p values less than 0.05 as statistically significant.

Qualitative Methods

The qualitative approach to this study employed qualitative content analysis (QCA), which utilized a highly defined coding frame to systematically describe the qualitative data (Schreier, 2012). A coding frame provides a systematic way of structuring material and differentiating between different meanings (Schreier, 2012). It also acts as a filter in which material that does not fall into a main or subcategory of the coding frame is filtered out (Schreier, 2012). This researcher created the coding frame by combining the Minority Health and Health Disparities Research Framework and the NCQA 2014 Operational Standards based on her years of experience working with health care practices on implementing the PCMH model of care to answer the research questions on patient health outcomes and experience. Categories of the Maslach Burnout Toolkit for Medical Personnel were added to the coding frame to answer the research question regarding staff burnout. To test the coding frame, the researcher coded the patient and staff online reviews for a single case at one of the health centers at two

different points in time approximately 10 to 14 days apart (Schreier, 2012). After creating the coding frame, the application of relevant material to the codes commenced (Schreier, 2012). See the section on data analysis for a detailed description of analysis procedures.

Qualitative content analysis (QCA) is a recognized form of qualitative research. The data it uses is symbolic and requires interpretation. The research questions it addresses explores personal or social meaning (Schreier, 2012). The qualitative data analyzed by QCA in this study were online patient and employee reviews. This QCA analysis was situational, in that the researcher took in as much material as necessary to answer the research questions (Schreier, 2012). It also encompassed reflexivity. This researcher brought her prior background (researcher role) to bear in the creation of the coding frame, while acknowledging her position as an insider researcher (Schreier, 2012).

With emergent flexibility offered by QCA, the researcher is allowed to adapt and change aspects of the research as data was collected and during the initial analysis (Schreier, 2012). Qualitative content analysis was also inductive because the researcher was able to create critical codes and decide on key concepts as the material was reviewed (Schreier, 2012). QCA is case-oriented with a variable-oriented rationale. In this QCA study, each health center represented a case. For each health center's online patient and employee reviews, the main and subcategories of the coding framework represented variables.

Study Sample and Recruitment

There were two sets of qualitative data samples: patient reviews and employee reviews. Nine hundred and ninety Google patient reviews made up the initial qualitative

study sample, drawn from 14 Federally Qualified Health Centers. Two hundred and ninety-five Indeed employee reviews comprised the second qualitative study sample of 13 FQHCs. Fifteen FQHCs were included in this study, but one FQHC was excluded from the online Google patient review sample and two FQHCs were excluded from the employee review study sample. This researcher excluded one health center's patient reviews and two health center employee reviews because it was unclear whether those reviews were focused on the health centers themselves or on other affiliated health care settings.

Data Collection

A Google name search of each of the 15 health centers provided access to online patient reviews. Similarly, a google search using the phrase "employee reviews of [insert name of health center]" provided access to online Indeed employee reviews for the health centers.

Data Analysis and Interpretation

The coding frame was used to systematically analyze the qualitative (Schreier, 2012) online patient and employee reviews. The sequence of QCA procedural steps is described below. Based on the three qualitative research questions proposed in this study, online patient and staff reviews constituted the data to be analyzed. In QCA, data can be verbal or visual text that is self-generated or sampled from other sources so that the meaning of the data can be analyzed (Schreier, 2012).

The first step in the procedural sequence undertaken in data analysis was the creation of a coding frame. As previously noted, a coding frame provides a systematic way of structuring material and differentiating between different meanings (Schreier,

2012). For this coding frame, the researcher established four main coding categories based on the four levels of influence recognized in the health care system domain of the Minority Health and Health Disparities Research Framework (see Figure 2). These include the individual level, the interpersonal level, the community level, and the societal level. Each main category was subdivided based on NCQA PCMH 2014 Operational Standards and Guidelines. There are eight subcategories. These include insurance coverage, health literacy, treatment preferences, patient-clinician relationship, medical decision making, availability of services, safety net services, and quality of care. Several standalone subcategories were also included to cover categories drawn from the Maslach Burnout Tool Kit for Medical Personnel. The online patient and staff reviews were divided into units of coding afterwards, using all these categories and subcategories.

To pilot test the coding frame, the researcher engaged in double coding. To double code, a researcher codes the same data twice at different points in time, approximately 10 to 14 days apart (Schreier, 2012). In this case, this researcher chose the patient and employee reviews of one health center and coded it into categories described on January 25, exactly two weeks later (February 7, 2020). The researcher repeated the process and then compared the two sets of coded data to see if they were identical. When both were compared there were differences. Since the goal of coding is to code consistently across time, these differences occurred because of the researcher's interpretation changing over time.

When coding changed, the researcher went back to the NCQA 2014 Operational Standards and Guidelines to reconcile the difference. For each of the eight subcategories of the coding frame described above, the operational standards and guidelines provide an

explanation. Each time the comparison of the two data sets (same data coded twice) yielded unmatched codes, the researcher read the explanation of the subcategory. After reading the explanation, the researcher re-read the visual text, and made a final determination of the most appropriate code for a segment of material. Coded information across health centers (as individual cases) clarified how each health center compared to the others providing aggregated information (Schreier, 2012).

The analysis occurred after copying and pasting the online patient and employee reviews into NVivo, a qualitative data management program. The data were analyzed using qualitative content analysis. Subcategories were mutually exclusive, meaning no overlap or ambiguity. A segment of the material was assigned to one subcategory only (Schreier, 2012).

The coding frame catalyzed the translation of material into categories. It served as the vehicle for organizing successive components of material into concept-driven categories. It took the combining of several elements (the National Institute of Minority Health and Health Disparities Research Framework, the NCQA 2014 PCMH Operational Standards, and the broad categories of the Maslach Burnout Toolkit for Medical Personnel, which are emotional exhaustion, depersonalization, and personal accomplishment) to create the coding framework. QCA was flexible and reduced data (Schreier, 2012). Reducing data limited the results to the analysis of those aspects of data that were relevant to the study research questions (Schreier, 2012). The focus of QCA in this study was to determine how the online reviews and categories of the coding frame related to one other. The concept-driven coding frame utilized in this research study allowed for the creation of coding categories (Schreier, 2012). Reductive coding, a form

of indexing where data is placed under codes to group like-themed data and link to different data points, was used in data analysis (Schreier, 2012).

Other analysis techniques utilized were polarization (oppositional experiences), numeration (star ratings), and functionality (relationship of themes in totality). The noting of negative, neutral, and positive online reviews occurred as appropriate (Schreier, 2012). Direct quotes from the reviews provide evidence to support each theme; these are organized into a table format in chapter four (Smith et al., 2009).

Through interpretation, coding, and the theming of the data, this researcher was able to reduce and organize data. Both the quantitative and qualitative data analyses were then integrated and crystallized; here, crystallization references the viewpoint that knowledge itself is multifaceted, with infinite possibilities, and is not limited to the three sides suggested by the term triangulation (Mertens, 2009).

Reliability, Validity, and Generalizability

In qualitative content analysis (QCA) reliability is achieved by checking the coding frame for consistency at different points in time (Schreier, 2012). This technique results in findings that are replicable (Krippendorff, 2013). The creation of memos was used to capture the details of data collection and record each step of the process, providing a publicly inspectable audit trail (see Appendix 3) that describes when and how the Principle Investigator's (PI's) understanding evolved based on the available data at any given time.

Validity was established by comparing the online patient and employee reviews to the conceptual framework. The coding framework represents the concepts driving the research questions, and validity was achieved by fitting the material (Schreier, 2012) to

the adapted NIMHHD Research framework based on the NCQA PCMH 2014 Operational Standards and Guidelines and the categories of the Maslach Burnout Toolkit for Medical Personnel. It is important to note that the results of the study apply only to the health centers included in this study and are not generalizable to the general population of U.S. health centers; however, they do indicate significant trends and offer important insights for consideration by other researchers, policymakers, and stakeholders.

Protection of Human Subjects

This research study (protocol # Pro2019002522) was approved by the Rutgers Newark Health Sciences Institutional Review Board on January 9, 2020 utilizing 2018 regulatory oversight requirements. This study underwent a non-committee review since it did not involve the participation of human subjects. The health centers that served as case studies in this research have been de-identified and the study did not use individual, patient-level data.

Chapter 4: Results

This study addressed the research questions: 1) Does the National Committee for Quality Assurance (NCQA) Patient-Centered Medical Home (PCMH) improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? 2) What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? 3) What has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? And, 4) What has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout? Using a mixed-methods design, the quantitative results of the study addressed research question one, with the qualitative results addressing research questions two through four. The first half of this results chapter describes the aggregated quantitative results for the 15 FQHCs included in this study. The second half of the chapter describes the qualitative results from online Google patient reviews and online Indeed employee reviews. There are more in-depth analyses and connections to the conceptually aligned Minority Health and Health Disparities Framework and the 2014 NCQA PCMH Operational Standards and Guidelines, as well as the three categories of the Maslach Burnout Inventories frameworks in the discussion chapter.

Quantitative Results

This study's quantitative results addressed the societal level of influence quality of care component in the conceptually aligned National Minority Health and Health Disparities Research Framework and 2014 NCQA PCMH Operational Standards and

Guidelines in Figure 2. The quantitative results addressed research question one, does the National Committee for Quality Assurance (NCQA) PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? In the PCMH care delivery model, recognized practices are required to measure quality performance, utilization of health care services, care coordination activities, and patient experience. In addition to measuring quality performance, PCMH-recognized practices must also demonstrate continuous quality improvement. Quality of care information as described here, was not obtainable from the online patient reviews or employee reviews, which necessitated the need to obtain the quality of care performance for the FQHCs through quantitative means. The subsection below describes the aggregated patient demographics of the 15 FQHCs.

Figure 2

Conceptually Aligned National Minority Health and Health Disparities Research

Framework and NCQA PCMH 2014 Operational Standards and Guidelines

Levels of Influence			
Individual	Interpersonal	Community	Societal
Insurance Coverage	Patient-Clinician Relationship	Availability of Services	Quality of Care
NCQA Standard 2-Element B- Factor 7 The practice gives uninsured patients information about obtaining coverage.	NCQA Standard 2-Element A-Factors 1 and 2 - Assisting patients/families to select clinician and documenting the selection in records. - Monitoring the percentage of patient visits with selected clinician or team.	NCQA Standard 1-Element A-Factors 1 and 2 - Providing same-day appointments for routine and urgent care. -Providing routine and urgent-care appointments outside of regular business hours. NCQA Standard 1-Element B-Factor 2 -Providing timely clinical advice by telephone	NCQA Standard 6-Element A Measure clinical quality performance. NCQA Standard 6-Element B Measure Resource Use and Care Coordination. NCQA Standard 6-Element C Measure patient/family experience. NCQA Standard 6-Element E Demonstrate continuous quality improvement.
Health Literacy	Medical Decision Making	Safety Net Services	
NCQA Standard 3-Element C – Factor 10 Assessment of health literacy.	NCQA Standard 3-Element E The practice implements clinical decision support following evidence-based guidelines. NCQA Standard 4-Element E-Factor 4 Adopts shared decision making aids.	NCQA Standard 2-Element B-Factor 6 The practice provides equal access to all their patients regardless of the source of payment.	
Treatment Preferences			
NCQA Standard 4-Element B – Factor 1 Incorporates patient preferences and functional/lifestyle goals.			
Individual Health Outcomes	Family/Organizational Health Outcomes	Community Health Outcomes	Population Health Outcomes

Health centers aggregated demographics in 2018

As shown in Table 1, these health centers were a source of health care to 349,453 New Jersey residents, of which most (n= 248,173, 71%,) were racial or ethnic minorities, below 200% of the federal poverty level (n= 249,815, 71%), and uninsured or publicly insured (n= 287,328, 85%) in 2018. Approximately one-third of the population (n= 119,626) was best served in a language other than English.

Table 1

Health Centers Aggregated Demographics in 2018

Patient Characteristics	Value
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Total Population Served	349,453
% Adults 18 and over	67%
Gender	
% Female	59%
% Male	41%
% Racial and/or Ethnic Minority Patients	71%
% Black or African American	27%
% Hispanic/Latino	41%
% Asian	.03%
% American Indian/Alaska Native	<.00%
% Native Hawaiian/Other Pacific Islander	<.00%
% Patients Best Served in a Language Other Than English	34%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	71%
% Uninsured Patients	25%
% Medicaid/Children Health Insurance Program (CHIP) Patients	60%

Patient health outcomes change over the years

As a reminder, the patient outcome variables in this study were as follows: high blood pressure control, uncontrolled hemoglobin A1C (HbA1c) (>9%), coronary artery disease with prescribed lipid therapy, body mass index screening with a follow-up plan for overweight and obese individuals, and depression screening with a follow-up plan. The statistical test used to analyze changes in the five quality of care measures over time (between 2016, 2017, and 2018) was the Non-parametric Kruskal Wallis test. Except for the poorly controlled diabetes quality of care measure, there was a favorable yearly increase in the other four quality of care measures based on mean rank. However, none of the improvements were statistically significant (see Table 2).

Table 2

Change in Patient Health Outcomes Over Years

	Year			Chi Square	P-Value
Quality of care measures	2016	2017	2018		
Mean Rank					
Adult medical patients age 18 and older with body mass index (BMI) screening and follow-up	21.53	23.07	24.40	.358	.836
Patients screened for clinical depression and if positive had a follow-up plan documented	21.67	22.57	24.77	.442	.802
Patients aged 18 and older diagnosed with coronary artery disease (CAD) and prescribed a lipid lowering therapy	22.53	23.00	23.47	.038	.981
Patients with hypertension whose blood pressure (BP) was controlled (<140/90 mmHg)	19.19	24.27	25.57	1.990	.370
Diabetic patients with poorly controlled hemoglobin A1c (HBA1c>9%) or no test during year	17.87	26.00	25.13	3.470	.176

Patient health outcomes change over years by NCQA Operational Standards year

The National Committee for Quality Assurance (NCQA) updated the operational standards of the patient-centered medical home (PCMH) model four times since its inception (2008, 2011, 2014, and 2017). When the health centers were stratified by initial recognition operational standard year, the quality of care measures significantly changed for clinical depression with follow-up for a positive screen ($p=0.013$), diagnosis of coronary artery disease with prescribed medication ($p=0.031$), and poorly controlled diabetes ($p=0.016$) using the non-parametric Kruskal-Wallis test (see Table 3). Each update of the operational standards of the PCMH model enhanced the standards, elements, and factors for recognition as a medical home. Mann-Whitney U tests were used as post-hoc tests to measure the changes between years. Results showed that there was a favorable increase in clinical depression with follow-up for a positive screen ($p=.020$), an unfavorable decrease in the diagnosis of coronary artery disease with

prescribed medication ($p=.018$), and an unfavorable increase in poorly controlled diabetes ($p=.018$) between the operational standard years of 2008 and 2011. When comparing the operational standard year 2008 to 2014, clinical depression with follow-up for a positive screen favorably increased ($p=.013$), but the diagnosis of coronary artery disease with prescribed medication unfavorably decreased ($p=.021$). Lastly, uncontrolled diabetes positively decreased significantly ($p=.039$) between operational standard years 2011 and 2014. The results were mixed for changes between years.

Table 3

Patient Health Outcomes Change by NCQA Operational Standards Year

	NCQA operational standard year			Chi Square	P-Value
Quality of care measures and p values	2008	2011	2014		
Mean Rank					
Adult medical patients age 18 and older with body mass index (BMI) screening and follow-up	9.00	23.82	24.67	3.682	.159
Patients screened for clinical depression and if positive had a follow-up plan documented	5.00	22.55	30.67	8.742	.013*
Patients aged 18 and older diagnosed with coronary artery disease (CAD) and prescribed a lipid lowering therapy	41.00	22.71	18.06	6.928	.031*
Patients with hypertension whose blood pressure (BP) was controlled (<140/90 mmHg)	15.00	25.00	18.33	3.015	.221
Diabetic patients with poorly controlled hemoglobin A1c (HBA1c>9%) or no test during year	9.33	26.30	15.44	8.314	.016*

* $p < .05$

Patient health outcomes change by PCMH recognition levels

Non-parametric Kruskal Wallis tests were used to assess changes over time by PCMH recognition levels. The NCQA 2008 through 2014 operational standards have

three levels of recognition: level one, level two, and level three. In the 2017 NCQA operational standards, which are the most recent, there are no levels of PCMH. In the 2017 NCQA operational standards, a health care setting is or is not a patient-centered medical home, without levels. The higher the PCMH (Level 1, Level 2, and Level 3), the more a health center operates as a medical home. As shown in Table 4, the changes in quality of care measures based on the level of PCMH was significant for all five quality of care measures. The Mann-Whitney U test was the post-hoc test used to examine the change between years. The results revealed better quality of care measures for health centers with a Level 3 PCMH recognition (nine out of fifteen health centers in the study are recognized as Level 3 PCMHs) in comparison to health centers with a Level 1 PCMH recognition for body mass index screening with follow-up ($p=.017$), diagnosis of coronary artery disease with prescribed medication ($p=.006$), and controlled blood pressure ($p=.021$). However, Level 1 PCMH-recognized sites favorably had less uncontrolled diabetic patients ($p=.005$) than Level 3 PCMH-recognized sites. Lastly, there were significant differences between the health centers with a Level 3 PCMH-recognition, which consisted of most health centers, and no level of recognition, which represented the most recent 2017 operational standards. The Level 3 health centers had better quality of care measures in body mass index screening with follow-up ($p=.017$), clinical depression screening with follow-up ($p=.013$), and controlled blood pressure ($p=.025$). The 2017 operational standards with no levels of PCMH recognition yielded better results for the uncontrolled diabetes quality of care measure ($p=.032$). Although differences between recognition levels varied, the no PCMH level excluded, four out of five quality of care measures significantly improved for health centers with higher levels

of PCMH-recognition, with Level 1 being the lowest and Level 3 as the highest in this scenario.

Table 4

Patient Health Outcomes Change by PCMH Recognition Levels

Quality of care measures and p values	Level of PCMH recognition				Kruskal-Wallis H	P-Value
	Level 1	Level 2	Level 3	No Level		
	Mean Rank					
Adult medical patients age 18 and older with body mass index (BMI) screening and follow-up	12.00	10.78	29.78	16.33	18.634	.000**
Patients screened for clinical depression and if positive had a follow-up plan documented	26.00	12.83	28.15	13.58	12.783	.005**
Patients aged 18 and older diagnosed with coronary artery disease (CAD) and prescribed a lipid lowering therapy	4.67	12.67	25.67	35.67	18.114	.000**
Patients with hypertension whose blood pressure (BP) was controlled (<140/90 mmHg)	8.33	12.67	29.22	17.83	16.302	.001**
Diabetic patients with poorly controlled hemoglobin A1c (HBA1c>9%) or no test during year	2.67	19.39	27.94	16.33	13.244	.004**

*p < .05. **p < .01

Patient health outcomes change by geographical regions

Table 5 shows the results for differences in quality of care measures based on the health centers in the northern, central, or southern areas of New Jersey. Non-parametric Kruskal Wallis test results showed significant differences in all quality of care measures by region except body mass index screening with follow-up. Mann-Whitney post-hoc tests revealed from best to worst, northern, then central, followed by southern for clinical depression screening and follow-up (p=.036), and controlling blood pressure (p=.048).

For the coronary artery disease with lipid therapy quality of care measure, performance from best to worst were as follows: southern, northern, then the central region. The rankings from best, with the least patients, to worst, with the greatest number of patients with uncontrolled diabetes were southern, then central, followed by the northern regions of the state ($p=.007$).

Table 5

Patient Health Outcomes Change by Geographical Regions

	Region			Kruskal-Wallis H	P-Value
Quality of care measures and p values	North	Central	South		
Mean Rank					
Adult medical patients age 18 and older with body mass index (BMI) screening and follow-up	29.00	21.83	18.11	3.941	.139
Patients screened for clinical depression and if positive had a follow-up plan documented	29.79	22.65	14.89	6.659	.036*
Patients aged 18 and older diagnosed with coronary artery disease (CAD) and prescribed a lipid lowering therapy	28.58	17.73	29.61	8.316	.016*
Patients with hypertension whose blood pressure (BP) was controlled (<140/90 mmHg)	31.00	20.13	20.00	6.072	.048*
Diabetic patients with poorly controlled hemoglobin A1c (HBA1c>9%) or no test during year	33.00	20.21	17.11	9.851	.007**

* $p < .05$. ** $p < .01$

Qualitative Results

The qualitative results were gathered from 990 online Google patient reviews drawn from 14 Federally Qualified Health Centers (FQHCs) and 295 online Indeed employee reviews collected from 13 Federally Qualified Health Centers. Shown in Table 6 for each health center is a pseudo health center name, its region in the state, the total

online Google patient reviews, and the total online Indeed employee reviews. A false name was designated to protect the identity of each health center. This research aims to examine improved health outcomes and the reduction of health disparities in low-income and minority populations. As such, the designated pseudo name for each health center recognizes a Black or Hispanic pioneer in health or healthcare. A brief description of the Black or Hispanic pioneer appears in the second column of the table. This study's qualitative component answered research questions two through four: 2) What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? 3) What has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? 3) What has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout?

Table 6

Location and Number of Reviews by Health Center

Pseudo Health Center Names	The Pseudo Name	Number of Online Google Patient Reviews	Number of Online Indeed Employee Reviews	Region of New Jersey
Rebecca Lee Crumpler Health Center	The first Black Woman in the U.S. to receive an MD degree	42 reviews	37 reviews	North
James McCune Smith Health Center	The first Black American to earn a medical degree	Unknown	Unknown	South
Leonidas Harris Berry Health Center	The first Black doctor on staff at the Michael Reese Hospital in Chicago, Illinois	39 reviews	Unknown	Central

Charles Richard Drew Health Center	Pioneered blood preservation techniques	37 reviews	17 reviews	Central
Louis Wade Sullivan Health Center	Founding dean of what became the Morehouse School of Medicine	119 reviews	38 reviews	Central
Marilyn Hughes Gaston Health Center	A leading researcher on sickle cell disease	74 reviews	11 reviews	Central
Patricia Era Bath Health Center	First African American to complete an ophthalmology residency	99 reviews	2 reviews	North
Herbert W. Nickens Health Center	First Director of the Office of Minority Health at the U.S. Department of Health and Human Services	27 reviews	6 reviews	Central
Alexa Irene Canady Health Center	First Black neurosurgeon in the United States	58 reviews	1 review	Central
Regina Marcia Benjamin Health Center	18 th U.S. Surgeon General	141 reviews	54 reviews	North
Severo Ochoa Health Center	Biochemist and molecular biologist co-awarded 1959 Nobel Prize in Physiology or Medicine for discovering an enzyme that enables the synthesis of RNA	96 reviews	31 reviews	Central
Helen Rodriguez Trias Health Center	First Latina President of the American Heart Association	174 reviews	9 reviews	South
Mario Molina Health Center	Won a Nobel Prize for his research on how human-made compounds affect the ozone layer	28 reviews	59 reviews	South
Luis Federico Leloir Health Center	Nobel Prize in Chemistry for discovery and study of sugar nucleotides	27 reviews	7 reviews	Central
Bernardo Alberto Houssay Health Center	Nobel Prize in 1947 for research on the role of pituitary hormones in the regulation of blood sugar	29 reviews	25 reviews	North

As described in the methods chapter, deductive coding frames were used to analyze the online patient and employee reviews. Deductive means that only material in the online reviews relevant to the coding frames was coded and analyzed. The application of the framework to the online reviews left a small amount of coded content.

The first coding frame, the conceptually aligned Minority Health and Health Disparities Framework, and the 2014 NCQA PCMH Operational Standards, were used to code and analyze the online patient reviews. This analysis answered research question two, which is: what has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Here are the coding items consistent with the framework. There are four levels of the Minority Health and Health Disparities Research Framework: the individual, interpersonal, community, and societal levels. Within each of the levels are the aligned 2014 NCQA PCMH Operational Standards. There are insurance coverage, health literacy, and treatment preferences of the PCMH operational standards for the individual level of influence. In terms of the interpersonal level of influence, there are patient-clinician relationships and medical decision making aspects of the PCMH operational standards. And as it relates to the community level of influence, there is the availability of services and safety net services of the PCMH standards (see Figure 2). As a reminder, the societal level of influence was addressed in the quantitative results.

Figure 2

The Conceptually Aligned National Minority Health and Health Disparities Research Framework and NCQA PCMH 2014 Operational Standards and Guidelines

Levels of Influence			
Individual	Interpersonal	Community	Societal
Insurance Coverage	Patient-Clinician Relationship	Availability of Services	Quality of Care
NCQA Standard 2-Element B- Factor 7 The practice gives uninsured patients information about obtaining coverage.	NCQA Standard 2-Element A-Factors 1 and 2 - Assisting patients/families to select clinician and documenting the selection in records. - Monitoring the percentage of patient visits with selected clinician or team.	NCQA Standard 1-Element A-Factors 1 and 2 - Providing same-day appointments for routine and urgent care. -Providing routine and urgent-care appointments outside of regular business hours. NCQA Standard 1-Element B-Factor 2 -Providing timely clinical advice by telephone	NCQA Standard 6-Element A Measure clinical quality performance. NCQA Standard 6-Element B Measure Resource Use and Care Coordination. NCQA Standard 6-Element C Measure patient/family experience. NCQA Standard 6-Element E Demonstrate continuous quality improvement.
Health Literacy	Medical Decision Making	Safety Net Services	
NCQA Standard 3-Element C – Factor 10 Assessment of health literacy.	NCQA Standard 3-Element E The practice implements clinical decision support following evidence-based guidelines. NCQA Standard 4-Element E-Factor 4 Adopts shared decision making aids.	NCQA Standard 2-Element B-Factor 6 The practice provides equal access to all their patients regardless of the source of payment.	
Treatment Preferences			
NCQA Standard 4-Element B – Factor 1 Incorporates patient preferences and functional/lifestyle goals.			
Individual Health Outcomes	Family/Organizational Health Outcomes	Community Health Outcomes	Population Health Outcomes

The individual level of influence

As shown in Figure 2, the National Minority Health and Health Disparities Research Framework's individual level of influencers aligned with the insurance coverage, health literacy, and treatment preferences of the NCQA PCMH 2014 Operational Standards and Guidelines that contribute to individual health outcomes. The subsection below describes the results of the online patient Google reviews as they relate to insurance coverage, health literacy, and treatment preferences.

The online patient reviews yielded eight references regarding insurance coverage, one reference to health literacy, and one reference to treatment preferences. The tone of all the texts in the individual level of influence was positive except for treatment preferences. See Table 7, for example quotations from the online Google patient reviews for each of the three categories.

The online patient reviews regarding insurance coverage were positive and illustrated that the health centers assisted these patients with obtaining health insurance, and that these patients received care. Not one patient reported that they were denied care or that their care was delayed while they waited for their insurance to be processed. The health centers in this study are meeting the PCMH requirement to give uninsured patients information about obtaining coverage and meeting their federal statutory obligation to make healthcare affordable through a sliding fee scale based on income.

There was only one online patient review related to health literacy. As a reminder, health literacy is the ability to understand health information and care requirements to self-manage outside of the practice. The one quotation regarding health literacy was positive and attributed to a specific provider at a health center. It is unknown how widespread health literacy is emphasized throughout the health centers in general. Similarly to health literacy, there was only one reference to treatment preferences, which was negative. Incorporating the patient's cultural beliefs and lifestyle goals into treatment and care plans increases the likelihood of adherence and follow-through. It was evident in the online review, example quotation six (EQ6), that the patient did not agree with or perhaps did not understand the sudden change of medications after taking the same medication regimen for years, as per the reviewer who was the patient's husband.

The individual level of influence reflects each person's unique circumstances that affect their health. The PCMH-aligned individual level of influencers are insurance coverage, health literacy, and treatment preferences. An individual's health outcomes are affected by access to health care through insurance, a person's understanding of their health status and how to manage their health outside of the healthcare system, and their

buy-in to the care or treatment plan. Buy-in to the care or treatment plan increases when a person shares the plan's development, and their cultural beliefs and lifestyle goals are incorporated. There were a small number of references analyzed in examining the individual level of influence. The small number reflects the conceptual framework (aligned National Minority Health and Health Disparities Research Framework and 2014 NCQA PCMH Operational Standards and Guidelines) content-driven coding that filtered out any text not related to the framework. Other studies using different frameworks or qualitative methods may yield different results.

Table 7

Patient Experience with the Individual Level of the Minority Health and Health

Disparities Framework

Individual Level of Influence	Example Quotation (EQ) + Number	Frequency, n (%)
Insurance Coverage	EQ1 “If you don't have health insurance, they'll help you get it.” EQ2 “This place is a godsend. I am currently between jobs and needed a physical for my next job before I can begin work. They found a way to provide me with a free month of Medicaid so I could get what I needed.” EQ3 “they [stet] assist you in getting insurance and if you aren't eligible, give you a more than reasonable self-pay sliding scale.” EQ4 “Upon my arrival I was greeted by the front staff, they were able to help me expedite my insurance process.”	8 (80%)
Health Literacy	EQ5 “Dr. Bacon is very nice, and explains things in a way you can understand.”	1 (10%)

Treatment Preferences	EQ6 “The nurse practitioner suddenly stopped my wife and all her medication even though my wife was explaining to her that she’s been on these medications for years.”	1 (10%)
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Interpersonal level of influence

As shown in Figure 2, the interpersonal level of influencers of the conceptually aligned National Minority Health and Health Disparities Research Framework and NCQA PCMH 2014 Operational Standards and Guidelines focuses on the patient-clinician relationship and medical decision-making that contribute to interpersonal health outcomes. The subsection below describes the results of the online patient Google reviews as it relates to the patient-clinician relationship and medical decision making.

The online patient reviews yielded nine references regarding the patient-clinician relationship and zero references for medical decision-making. Out of the nine patient-clinician references, two were positive, and seven were negative. See Table 8, for example quotations from the online Google patient reviews.

The patient-clinician relationship is a testament to rapport and trust. It is also a proxy for continuity of care. For a clinician to build a rapport and trust with a patient, the patient must select a clinician that they would like to see as their primary care provider. The health center must monitor the percentage of visits with the chosen clinician, which is a requirement of the PCMH model. The online reviews were both positive and negative, with most online patient reviews related to the patient-clinician relationship being negative. For the positive reviews, the researcher interpreted the length of time noted that a specific provider has been seeing a patient as familiarity “since he was born

[example quotation seven]” and indicative of a relationship, trust, and expectation “she’s been under her care for almost 5 years now [example quotation eight].” On the contrary, most negative reviews indicated a lack of continuity. For example, with example quotation nine “You see a different provider every time...”, example quotation 10 “...always changing pediatric Dr and the nurses [stet] everytime.”, example quotation 11 “My OB/GYN changed 100% of the time....”, and example quotation 12 “...Its always a random doctors...”, all support the interpretation of the loss of continuity. These patients wanted to see a clinician that they are familiar with, and who knows their history. Many follow-up visits in health care settings today are scheduled in 15-minute intervals. A clinician cannot review the entirety of a patient's chart and establish trust within a 15-minute interval. This loss of continuity of care becomes cumulative when a patient sees a different provider most of the time versus occasionally, representing a lack of consistency.

According to the Minority Health and Health Disparities Framework, the interpersonal level of influence impacts the family and organizational health outcomes. From the family perspective, the establishment of a patient-clinician relationship has the potential to increase the cultural capital of the family. Cultural capital is the general knowledge, disposition, and skills passed from one generation to another (MacLeod, 2008). Health centers serve patients of all ages from the cradle to the grave. In health centers, which are family-focused, the family's experience can either set good or poor expectations and practices regarding interactions with the healthcare system. This observation and experience, good or poor, can shape generations of families and their interactions with the healthcare system for the unforeseeable future. From the

organizational health outcomes perspective, the patient-clinician relationship is an influencer to how well the organization performs in improving the health outcomes of the patients they serve. In addition to the overarching goals of healthy and well patients, healthcare financing continues to move towards value-based or improved health outcomes versus fee-for-service payment structures. The healthcare system's fiscal health, including health centers, will depend on the patient-clinician relationship and improved health outcomes. The references that examined the interpersonal levels of influence were also small. In addition to the filtering and exclusion of material not relevant to the conceptual framework, the reviews were written at the reviewers' freewill, which was not influenced by the researcher's study questions.

Table 8

Patient Experience with the Interpersonal Level of the Minority Health and Health Disparities Framework

Interpersonal Level of Influence	Quotation Positive or Negative	Example Quotation (EQ)	Frequency, n (%)
Patient-Clinician Relationship	Positive	EQ7 “She has been my sons pediatrician since he was born.”	9 (100%)
	Positive	EQ8 “My wife went to see her primary doctor she’s been under her care for almost 5 years now.”	
	Negative	EQ9 “You see a different provider every time, there is no feeling of personalized care.”	
		EQ10 “Terrible service always changing pediatric Dr and the nurses [stet]	

	Negative	everytime.”	
		EQ11 “My OB/GYN changed 100% of the time. There was no consistency.”	
	Negative	EQ12 “and your regular doctor doesn't come to work. Its always a random doctors most with bad attitudes.”	
	Negative		

Community-level of influence

The community level of influencers of the conceptually aligned National Minority Health and Health Disparities Research Framework and the NCQA PCMH 2014 Operational Standards and Guidelines are the availability of health services and safety net services that contribute to community health outcomes. The subsection below describes the results of the online patient Google reviews as it relates to the availability of health services and safety net services.

The online patient reviews yielded 27 references about same-day appointments, two references regarding routine and urgent appointments, 82 references about providing timely clinical advice by telephone, and 19 references concerning equal access to patients regardless of the source of payment. All references regarding same-day appointments were negative. The two references to routine and urgent appointments outside of regular business hours were negative, and 80 out of 82 references about timely clinical advice by telephone were negative. References about equal access regardless of the source of payment were mostly positive (18 out of 19 references). See Table 9 for example quotations from the online Google patient reviews.

Same-day appointments are a critical factor of the PCMH model. All critical factors in the NCQA PCMH 2014 Standards and Guidelines must be met for a health care practice to become recognized. The critical factors of the PCMH can be considered the foundation or infrastructure of medical homeness. Every online patient review regarding same-day appointments indicated that getting a same-day appointment was not available. Patients' inability to receive an appointment when they need it affects access to care.

Routine and urgent care appointments outside of regular business hours is another component of the PCMH. In patient-centered health care practices, the expectation is that health care practices will be accessible to patients outside of regular business hours when patients themselves are working or unavailable. Practices can offer early morning, evening, or weekend services to accomplish this enhanced availability of services. Example quotation 15 references routine and urgent care appointments and implied unavailability: “Times when you need an urgent appointment . . . and there's nothing to do about it.” Another reference, example quotation 16, states, “and their Saturday clinic is a joke! No help for your sick child if they don’t have a fever or an appointment.” This implicated a differential quality of care in the off hours' visit to a health center if you don’t have an appointment or an acute concern, such as a fever. The ability to seek services in the evening and on weekends is another aspect of the availability of services. The consequence of the inability to get an urgent care appointment with a primary care provider leads to potentially avoidable Emergency Department (ED) utilization.

Providing timely clinical advice by telephone had the most references in the online patient reviews of all the levels of influence and aligned NCQA PCMH 2014 Standards and Guidelines. All 82 references were negative. References described phones

ringing at health centers with no answer, multiple attempts to reach health center staff to no avail, and voice messages left with no return phone call for days and weeks, if at all. Some reviews indicated that the only way to speak to a health center staff member was by physically showing up to the health center. Again, timely clinical advice by telephone is an essential aspect of the availability of services, and the inability to receive this timely advice by phone leads to potentially avoidable ED utilization.

Safety-net services are essential because health care practices that provide safety net services provide equal access to all their patients regardless of the source of payment. As stated earlier, health centers by statute must make health care available to all using a sliding fee scale. The health centers are the United States' closest version to universal health care. They provide services to persons without insurance, persons with public insurance, and persons with private insurance. All safety net comments were positive. The reviewers came off as grateful and appreciative to receive health care services for themselves or their loved ones when they had no insurance.

Community health outcomes or the population's health is determined by the community level of influence and the availability of safety net services. Health services must be accessible to all regardless of ability to pay. Moreover, health care services must be available when and where the community needs it. There is a Federally Qualified Health Center access point in each of the 21 counties in New Jersey. There were many more patient references included in the examination of the community level of influence. Still noteworthy is that this was an analysis of previously written material in the form of online patient reviews. The opportunity to probe or seek clarification occurs in more

Availability of Services - providing timely clinical advice by telephone	Negative	EQ17 “I have called [stet] bc of emergencies and still have got no call back from two full days ago.”	82 (63%)
	Negative	EQ18 “I called at least 5 times in the past 2 weeks [stet] & NOT ONCE has someone answered! I’ve left messages asking [stet] fir a return call & got none.”	
Safety net services – equal access regardless of the source of payment	Positive	EQ19 “A good community center that meets the needs of people like me who do not have health insurance.”	19 (15%)
	Positive	EQ20 “ They don’t turn people away for not being able to pay.”	

Online patient reviews star ratings

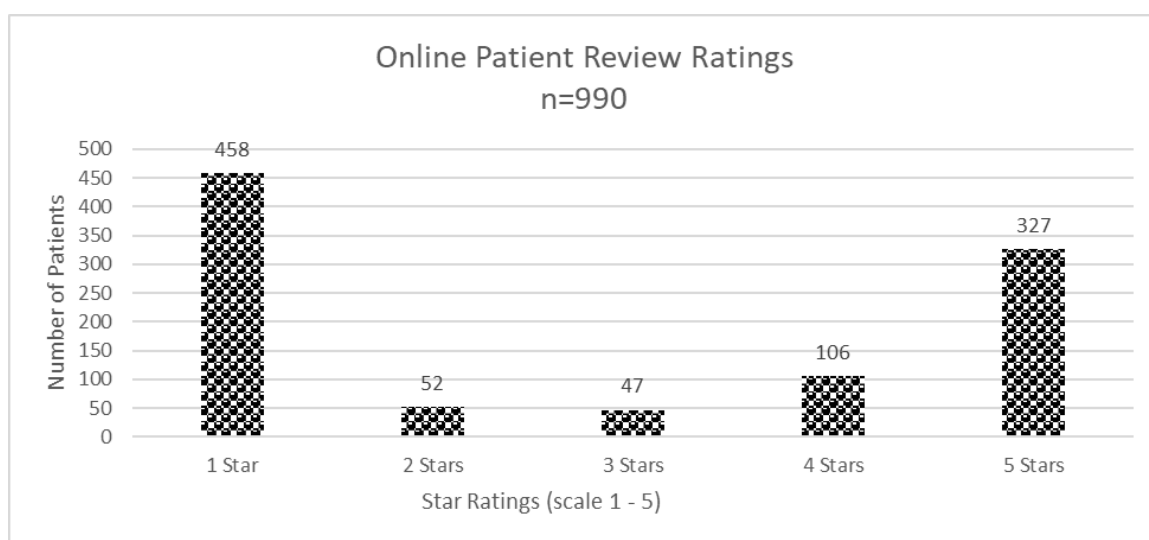
Above, the text of the online patient reviews was analyzed through the conceptually aligned Minority Health and Health Disparities framework and the 2014 NCQA PCMH Standards and Guidelines. In addition to the text of the online patient reviews, each review had a star rating of up to five stars with five stars indicating the most satisfactory experience with the health center. There was a star rating for each patient review, even when the reviewer did not write a text review of their experience. Analyzing the star ratings of the online patient reviews served as another lens to answer research question two, what has been the patient experience in NCQA PCMH-recognized

health centers serving low-income, minority groups in New Jersey? The researcher considered one or two-star ratings as negative patient experience, a three-star rating as neutral patient experience, and a four or five-star rating as positive patient experience.

Online Google patient reviews revealed that 52% (n=510) of patients documented a negative experience with the health centers by way of a one or two-star rating of a possible five stars (see Figure 3). There were 5% (n=47) of patients that were neutral with a three-star rating. Fewer patients had a positive experience with the health centers (n=433, 44%) by way of a four or five-star rating.

Figure 3

Patient Health Center Star Ratings



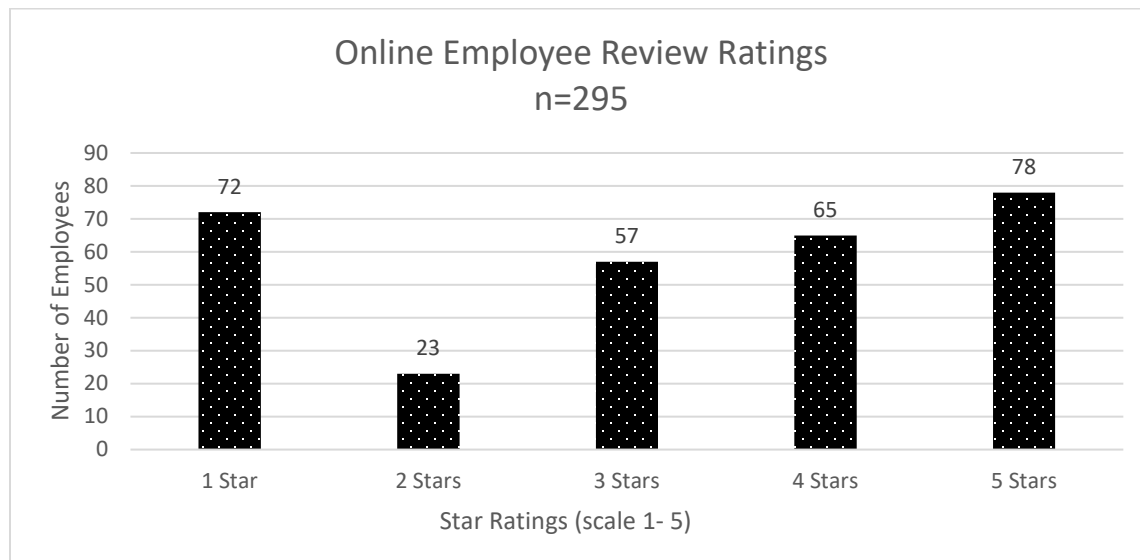
The remainder of this results chapter focuses on the employees of the Federally Qualified Health Centers (FQHCs). Specifically, research question three, what has been the health center staff experience in NCQA PCMH recognized health centers serving low-income, minority groups in New Jersey, and research question four, what has been the health center staff experience in NCQA PCMH recognized centers in New Jersey

regarding burnout, respectively, are answered here. Similarly to the patient reviews, the researcher analyzed online employee reviews from Indeed.

The online Indeed employee reviews were analyzed through two lenses. The first lens was through the star ratings. Like the patient reviews, each employee review had a star rating of up to five stars with five stars indicating the most satisfactory experience with the health center. There was a star rating for each employee review, even when the reviewer did not write a text review of their experience. The other lens was through the three categories of the Maslach Burnout Toolkit for Medical Personnel. The toolkit utilizes a 50-item survey to measure burnout in the workplace. This study's research method did not include the distribution of a survey, but an analysis of online employee reviews. Therefore, the employee reviews were analyzed for content related to the Maslach Burnout Inventory's three overarching categories. The three categories of the Maslach Burnout Inventory are emotional exhaustion, depersonalization, and personal accomplishment. First addressed is research question three, what has been the health center staff experience in NCQA PCMH recognized health centers serving low-income, minority groups in New Jersey, through the analysis of online employee reviews.

Online Employee Reviews Star Ratings

Online Indeed employee reviews revealed that 32% (n=95) of employees documented a negative experience with the health centers by way of a one or two-star rating of a possible five stars (see Figure 4). There were 19% (n=57) of employees that were neutral with a three-star rating. More employees had a positive experience with the health centers (n=143, 48%) by way of a four or five-star rating.

Figure 4*Employee Health Center Star Ratings****Maslach Burnout Toolkit for Medical Personnel***

The employee reviews yielded 35 references about emotional exhaustion, zero references regarding depersonalization, and three references about personal accomplishment. Shown in Table 10 are example quotations from each of the three categories from the online employee reviews. The three types are measuring burnout and have negative connotations.

Table 10*Employee Experience with Burnout*

Maslach Burnout Toolkit for Medical Personnel Categories	Example Quotation (EQ)	Frequency, n (%)
Emotional Exhaustion	EQ21 "The Employees are mostly dedicated and nice to work with but are overworked and under-compensated [stet] & feel powerless to effect change"	35 (92%)

	<p>EQ22 “I am a professional with many years of customer services skills who strives to do the best in any clinical environment. However, after a little over 2 months at . . . I was ready to throw in the towel because this place beat me down.”</p> <p>EQ23 “The stress from this place was actually sickening me literally. The stress from this place started in my muscles, bones, and tendons then spread to my spirit and soul.”</p> <p>EQ24 “The environment can be very fast-paced and stressful at times.”</p> <p>EQ25 “The job is very stressful because they don't really care about patients. But they care even less about employees.”</p> <p>EQ26 “Long 9 hour days [stet] Middleschool type management, very "do as I say or out extremely low moral with persistent turnover, and no raises. Persistent Scare tactics utilized to keep employees "in line" and working out of their scope.”</p>	
Personal Accomplishment	<p>EQ27 “I really thought I could make a difference there but shortly began to feel that that would never happen.”</p> <p>EQ28 “Hardest part of this job is seeing patient suffering that we cannot change.”</p> <p>EQ29 “But helping and caring for people always been my passion, especially when I see patients are not being treated the way they deserve to be treated.”</p>	3 (8%)

Emotional exhaustion presents as feeling overwhelmed and tired. This feeling of being overwhelmed and tired can also manifest physically as mental and physical health are not mutually exclusive (Felton, 1998; Shanafelt et al., 2012). Emotional exhaustion can be crippling and numbing. When a person is emotionally exhausted, it is difficult to

get out of bed in the morning and find the motivation to perform the duties at hand. As a coping mechanism, emotional exhaustion can lead a person to become numb. The numbness allows an individual to go through the mechanics of the day without genuinely feeling (Felton, 1998). For some, it is the only way to survive the workday.

For example, in quotation 21, the reviewer wrote, “The [stet] Employees are mostly dedicated and nice to work with but are overworked and under compensated [stet] & feel powerless to effect change.” This employee viewed their colleagues as people dedicated to serving the vulnerable populations that the health center serves. The reviewer seemed to enjoy working with their colleagues in serving the underserved. However, the reviewer expressed that employees of this health center work harder than reasonably expected and are not compensated for working harder. It is also noted that employees feel powerless. It is unclear the source of powerlessness. Based on other reviews, the feelings of powerlessness could be related to the style of management or feeling helpless in meeting the vast needs of health center populations.

In example quotation 22, the reviewer informs the reader that they have many years of experience providing customer service in a clinical environment. However, in just two months of working at a health center, they were ready to give up or quit from work demands. Noteworthy is that the reviewer informs the reader that they are not new to this line of work that they were performing at the health center. Not being new to the work is important because it rules out wanting to quit because it was not what they expected in terms of duties. In this review, it was not the work but something about the circumstances surrounding the work that was not appealing and fostered the desire to give up.

Stress was a major contributor to emotional exhaustion. For example, in example quotation 23, “The stress from this place was actually sickening me literally. The stress from this place started in my muscles, bones, and tendons then spread to my spirit and soul.” For this reviewer, the stress was so severe that it manifested as physical symptoms and affected their mental health and spiritual well-being. This review supports that stress can manifest as physical symptoms. In this review, the researcher thinks about the performance of the reviewer with this level of stress. How can this reviewer do their best daily for the vulnerable populations they serve? Did this person become disengaged and do the bare minimum as a coping mechanism to manage stress at the health center? Is this reviewer still at the health center, or did they ultimately resign?

Example quotation 24 reads, "The environment can be very fast-paced and stressful at times." The fast-pace described by this reviewer could be a consequence of health care financing. The fee-for-service payment model encourages health care practices to see more patients for payment, which results in many health care settings scheduling follow-up visits in 15-minute increments. A 15-minute appointment is a short timeframe to address acute conditions, address preventive health, provide education, and address any social determinants of health such as transportation and food insecurity. The short timeframe to address every patient's needs affects the entire health care team, creating a very demanding workflow that is hard to sustain consistently without burning out. Based on additional reviews, one source of stress can be related to the management style of health center executives. Another source of stress could be the complexity of health center patients and the guilt associated with the inability to meet all patients' needs.

Stress is also associated with working in the health center, as shown by example

quotation 25 “The job is very stressful because they don't really care about patients. But they care even less about employees.” In this example, the employee implies that people within the health center do not care about the patients they serve. “They” could be management or other health center employees. In this review, “they” most likely refers to health center management since the reviewer also wrote that “they” care even less about employees. The management style at some health centers has been noted as a contributor to employee burnout. From the researcher's experience, another contributor could be the lack of communication and transparency between health care executives and frontline employees regarding the reasoning behind the structure and operations of the health centers.

The last example quotation regarding the burnout category of emotional exhaustion, “Long 9 hour days [stet] Middleschool type management, very do as I say or out extremely low moral with persistent turnover, and no raises. Persistent Scare tactics utilized to keep employees in line and working out of their scope" support some health center executives' management style, increasing the stress of health center employees. The reviewer wrote about working more than the standard eight-hour day, employees performing duties outside of their job description, and employees being managed like children. It was noted that employees are in poor spirits, get hired, and leave in short periods, and do not get raises at the health center. The reviewer also noted management leading by fear. An example of leading by fear that was described more than once was by way of threatening to fire staff if they do not meet demands.

Personal accomplishment is another overarching category of the Maslach Burnout Toolkit for Medical Personnel. Personal accomplishment relates to the fulfillment that an

employee feels because of the work that they do. Personal accomplishment or satisfaction is a motivating factor in job selection for some people. In health care, personal accomplishment could be related to saving a life or making a difference in the health, well-being, or lives of patients.

In example quotation 27, “I really thought I could make a difference there but shortly began to feel that that would never happen,” the reviewer seems disappointed. It reads as though they chose to work at a community health center to make a difference in the lives of vulnerable populations but was disappointed. According to the review, it did not take long for the reviewer to feel as if they may never make a difference in the lives of the patients they serve. Not making a difference in the lives of patients diminishes the feeling of personal accomplishment.

Example quotation 28, “Hardest part of this job is seeing patient suffering that we cannot change,” speaks to the complexities of the vulnerable populations that seek services at health centers. There are many barriers to good health outcomes for racial and ethnic minorities with low socioeconomic status. Health centers provide many health care services beyond primary care and offer supportive services like outreach and transportation that solo and group physicians are often not staffed to provide. However, even with the advantage of offering co-located and supportive services, every patient's needs may still not be met at health centers.

For example, quotation 29, “But helping and caring for people always been my passion, especially when I see patients are not being treated the way they deserve to be treated.” The quotation reveals that this reviewer has a sense of personal accomplishment from caring for people. This review also mentions that people at the health center do not

treat patients the way they deserve to be treated. The researcher wonders whether the employees who are not treating patients the way they deserve to be treated as claimed may be suffering from burnout.

None of the employees online Indeed reviews conveyed feelings of depersonalization towards the patients they serve. There were no indications of objectifying, being callous towards, or not caring about the patients. As a reminder, the employee reviews answered two research questions. The first question focused on the employee experience and the second question focused on employee burnout. Although there were more employees that indicated a positive than negative experience working in health centers, there were still signs of burnout in health center employees, specifically in the categories of emotional exhaustion and personal accomplishment. There were a small number of employee references analyzed for signs of burnout, particularly for personal accomplishment. Similarly to the online patient reviews, the employee reviews were also coded and analyzed through the defined Maslach Toolkit for Medical Personnel categories that filtered out material that did not fit into the categories. Study methods that include disseminating the 50 items Maslach Burnout Toolkit for Medical Personnel survey to employees of health centers may find different results.

Results Chapter Summary

Does the NCQA PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? There was a yearly improvement between 2016 and 2018 for all quality of care measures, except diabetes; however, none of the gains were statistically significant. Quality of care measures was also examined by

NCQA Operational Standard Years (2008, 2011, 2014, and 2017). Each iteration of the operational standards year represented an opportunity to improve the medical homeness of health care facilities seeking PCMH recognition. The results were mixed for changes in quality of care measures by NCQA Operational Standards Year. Until the most recent iteration of the NCQA Operational Standards (2017), the former operational standards (2008, 2011, and 2014) had levels of PCMH recognition (Level 1, level 2, and Level 3) in which, the higher the level, the more a health care setting operated like a PCMH. The highest level (Level 3) of recognition under 2008, 2011, and 2014 NCQA Operational Standards improved four of five quality care measures in comparison to the lowest level (Level 1). Lastly, in examining patient health outcomes change by northern, central, and southern location of the health center in New Jersey, all quality of care measures, except body mass index screening with follow-up, yielded significant differences.

What has been the patient experience in NCQA PCMH recognized health centers serving low-income, minority groups in New Jersey? Online Google patient reviews were positive for insurance coverage and health literacy but negative for treatment preferences at the health centers. These factors influence health outcomes. Patient reviews were mostly negative for patient-clinician relationships. The relationship between patients and clinicians affects the health outcomes of the family and organization. Patient reviews were also primarily negative for same-day appointments, routine and urgent appointments, and timely clinical advice by telephone. Reviews regarding equal access to patients regardless of the source of payment were mostly positive. Access, to include appointment availability, speaking to a health care provider when needed, and the ability to receive health care services, all with or without insurance, influence the community's

health outcomes. Online Google patient star ratings were also analyzed in examining patient experience. Most patients rated their experience with the health centers as unfavorable.

What has been the health center staff experience in NCQA PCMH recognized health centers serving low-income, minority groups in New Jersey? Online Indeed, employee star ratings were used to analyze the employees' experience with the health centers. Most employee star ratings indicated a positive experience with the health centers.

What has been the health center staff experience in NCQA PCMH recognized centers in New Jersey regarding burnout? The three categories of the Maslach Burnout Toolkit for Medical Personnel were used to analyze the online Indeed employee reviews for signs and symptoms of burnout. The three types are emotional exhaustion, depersonalization, and personal accomplishment. The employee reviews revealed emotional exhaustion signs and a lack of personal accomplishment for some health center employees.

The qualitative content analysis of online patient and employee reviews through highly defined coding frames served as a filter to limit participant references not related to the research questions this study sought to answer. The online reviews were written at the reviewer's free will, not influenced by the research questions of this study. The obtained content did not come from traditional interviews or focus groups, which would have provided an opportunity to probe or seek clarity from the reviewers.

There is growing interest in online reviews of the healthcare sector among researchers. Researchers are using online reviews to assess staffing, access, convenience,

availability, operational efficiency, and patient-centered healthcare. In addition to using Google as a source of online healthcare reviews, researchers are also using hospital websites, HealthGrades, RateMDs, and Vitals (Kordzadeh, 2019). Consumer online reviews can be subject to random errors and systematic bias (Kordzadeh, 2019). Random errors relate to the characteristics of the reviewer. The review represents an individual's understanding, interpretation, memory, and communication abilities (Kordzadeh, 2019). Then there is systematic bias. Systematic bias can occur at the organizational level, whereas professionals can be hired to post promotional reviews about their services. Like random errors, reviewers can also introduce systematic bias based on their characteristics and behaviors. There are two types of systematic bias - acquisition bias and underreporting bias (Kordzadeh, 2019). In acquisition bias, online reviews tend to be skewed towards positive sentiments. The other type of acquisition bias is underreporting bias. In underreporting bias, people with extreme opinions, positive or negative, are more likely to write reviews. Individuals with moderate sentiments are generally underrepresented in online reviews. Lastly, there is social influence bias. Social influence bias can occur when an existing review influences ratings and comments of future reviewers. The online patient and staff reviews in this study could have random errors, systematic bias, or social influence bias.

Chapter 5: Discussion

This study focused on Patient-centered medical home (PCMH)-recognized health centers. However, PCMH recognition must be preceded by the process of practice transformation. Through practice transformation, a health center transforms itself into a PCMH. As a National Committee for Quality Assurance (NCQA) Certified Content Expert, I have facilitated practice transformation in various health care settings. Practice transformation necessitates understanding the concept of the medical home, achieving leadership buy-in, and convincing leaders to champion the PCMH model. It also requires staff training regarding team-based care, implementation support, and the development or revision of policies, procedures, and workflows.

Practice transformation also includes developing and producing materials that demonstrate medical homeness, such as running reports from the electronic medical record (EMR), collecting screenshots that demonstrate EMR capability, and gathering patient materials for different conditions, as well as other activities. Another hallmark of practice transformation is continuous quality improvement, or CQI. CQI facilitates the collection of baseline quality of care measures, and health centers must demonstrate improvement by comparing the outcomes of deliberate improvement efforts against baseline data.

Practice transformation is an ongoing organizational culture change. It should not end when health centers achieve PCMH recognition. Thus, the concept of continuing practice transformation provides an impetus for studying changes in patient health outcomes over time in health centers that have achieved PCMH recognition, as this study seeks to do. In this chapter, the results of this study will be examined to explore what it

can teach us about how PCMH-recognized FQHCs serve their patients, the majority of whom belong to underserved racial and ethnic minority groups. This chapter will also explore what this study can tell us about the experience of employees who work in these settings, as their wellbeing is also of critical importance.

Together, the 15 FQHCs included in this study have 78 years of combined experience as NCQA-recognized PCMHs, representing a significant amount of practice transformation. In this sample, the time elapsed since PCMH recognition varied from less than one year to eleven years. It is important to keep in mind, however, that, like primary care clinics themselves, the NCQA's operational standards for medical homeness have evolved over the years. While the initial standards were implemented in 2008, they were subsequently updated in 2011, 2014, and 2017. Each version of the standards attempted to improve the PCMH care delivery model based on the health care landscape and the most relevant patient needs noted at the time.

Therefore, to conduct this study, FQHCs were stratified based on their initial standard year of recognition. For instance, if the 2008 NCQA Operational Standards were utilized during a health center's initial PCMH recognition year, then that center has been a PCMH longer than sites that were first recognized by 2011, 2014, or 2017 operational standards. In addition to the year of NCQA recognition, operational standards also encompass the levels of PCMH recognition. For 2008, 2011, and 2014 NCQA operational standards, there were three levels of PCMH recognition with level three representing the highest level of medical homeness. The most recent NCQA operational standards, which were developed in 2017, excluded these levels of recognition. According to the 2017 NCQA operational standards, a health center is either functioning

as a PCMH or it is not. While these evolving standards can be confusing, it is important to keep them in mind as we explore the impact of PCMH recognition on the experiences of the low income, racially, and ethnically diverse patients of the FQHCs in this study, as well as those of their employees.

A Closer Look at the Populations Served

All the research questions posed by this study were specific to the outcomes and experiences of low income, racially, and ethnically diverse minority groups, which is the largest population served by the 15 FQHCs in the study sample. These 15 FQHCs provided health care services to approximately 350,000 patients during the year 2018. More than 70% of the patients who received services at these health centers had racial or ethnic minority status (Table 1). The two largest ethnic and racial populations served were Hispanic non-Whites (n=143,219, 41%) and African Americans or Blacks (n=95,842, 27%). Additionally, one-third (n= 119,626, 34%) of the patient population of these centers was best served in a language other than English.

The federal poverty level (FPL), Medicaid eligibility, and uninsured status of health center patients, were three important indicators that these FQHCs primarily served a socioeconomically disadvantaged group of patients. Seventy-one percent (n= 246,815) of the health center patients whose data were captured in this study had an income level at or below 200% of the FPL. Of these, approximately 55% of health center patients (n=191,247) reported incomes at or below 100% of the FPL in 2018. To put this into context, a family of four with a household income of \$62,750 was at 250% of the FPL in 2018. A family of four with a household income of \$25,100 was at 100% of the FPL (*Families USA: The Voice for Health Care Consumers*, n.d.).

Sixty percent (n=198,935) of the patients seen at this study's 15 FQHCs in 2018 were Medicaid recipients and 25% (n= 88,393) were uninsured. Combined, around 85% of the patient population were either Medicaid recipients or uninsured. Notably, this percentage is higher than the national health center average for uninsured or Medicaid caseload, which is 75% (Anderson & Olayiwola, 2012; Rosenbaum, 2012; Leiyu Shi et al., 2013). Based on this data, the 15 PCMH-recognized FQHCs in this study served a large group of low income, racially and ethnically diverse patients. This group of health centers offered an important opportunity to examine how PCMH recognition, in all its evolving complexity, impacts the health outcomes of vulnerable populations.

In the section below I will answer research question 1. Does the NCQA PCMH improve physical and mental health among low income minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk of depression in New Jersey? and research question 2. What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? This will be accomplished by drawing on the conceptually aligned frameworks of The National Health and Health Disparities Research Framework and the NCQA PCMH 2014 Operational Standards.

Answering Research Questions 1 and 2: Patient Reviews and Health Outcomes

These questions were answered via a quantitative analysis of patient health outcomes and a qualitative analysis of online patient reviews. To answer them and assess the effectiveness of NCQA recognized PCMH FQHCs in NJ in reducing health disparities, this study focused on the health care system domain of the Minority Health and Health Disparities Research Framework and particularly, on how the NCQA PCMH

2014 Operational Guidelines interacted with all four levels of this framework. Before we move on to answer these questions, it is useful to briefly review each level of the Minority Health and Health Disparities Research framework and describe how each level is aligned with the NCQA PCMH 2014 Operational Guidelines.

The Health Care System Individual Level of Influence

The first level of the framework is the individual level, which encompasses the direct experiences of each patient. This level focuses on an individual's insurance coverage, health literacy, and treatment preferences (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 Operational Standards that align with the individual level of the framework are as follows: medical home responsibilities (insurance coverage), comprehensive health assessment (health literacy), and care planning and self-care support (treatment preferences) (National Committee for Quality Assurance, n.d.).

The online Google patient reviews yielded eight references regarding insurance coverage, one reference relating to health literacy, and one reference relating to treatment preferences. As PCMHs, FQHCs should assess each patient's insurance status and educate them regarding their eligibility for insurance coverage and financial support. Insurance coverage is a fundamental requirement for accessing the health care system. In this study sample, the tone of all reviews mentioning insurance coverage was positive and appreciative.

And although captured only once as a reference, health literacy, the second individual-level characteristic associated with the Minority Health and Health Disparities Research Framework, is also essential in reducing health disparities. Everyone's health is

dependent on his or her ability to self-manage their health outside of the health care setting. The first step in self-management is understanding health information and care requirements. This requires a high level of health literacy.

The third aspect of the Minority Health and Health Disparities Research Framework's individual level of influence is treatment preference. Treatment preferences involve incorporating the patient's cultural beliefs and lifestyle goals into the treatment or care plan. Treatment preferences are an area in which clinicians sometimes resist the involvement of non-medically trained patients in the decision-making process (Browne et al., 2010).

If we turn to an example quotation regarding treatment preferences (see Table 7) we can explore this third aspect of the individual level of the Minority Health and Health Disparities Research Framework more closely. *“The nurse practitioner suddenly stopped my wife and all her medication even though my wife was explaining to her that she’s been on these medications for years”* This quote indicates a communication breakdown between a clinician and a family member; the latter was unhappy due to significant changes made to the treatment plan. Other parts of this example (not included in the quote above) indicated that the wife had visited the emergency department after the health center visit, suggesting that in this case, patient health outcomes had suffered.

The Health Care System Interpersonal Level of Influence

The second level of the Minority Health and Health Disparities Research Framework is the interpersonal level, which focuses on the patient-clinician relationship and medical decision making (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 Operational Standards that align with the

interpersonal level of the framework are continuity (in the patient-clinician relationship), implementation of evidence-based decision support (medical decision making), and the support of self-care and shared decision making (medical decision making) (National Committee for Quality Assurance, n.d.).

This study's sample of online Google patient reviews yielded nine references regarding the patient-clinician relationship but none for medical decision making. Out of the nine patient-clinician references, two were positive and seven were negative. Most respondents complained that they were not seeing the same clinician over time. The NCQA PCMH 2014 Operational Standards call for the patient to be able to choose the provider from whom they will seek health care services. They also note that after provider selection, most of the patient's health center visits should be with the chosen provider. The NCQA expectation for recognized PCMHs is that they will monitor how often patients have appointments with their chosen provider. Repeated health center visits with a chosen clinician helps to establish rapport, build trust, and facilitate continuity of care. Thus, this level of the framework encompasses important aspects of high quality health care provision.

The Health Care System Community Level of Influence

The third level of the Minority Health and Health Disparities Research Framework is the community level, , which focuses on the availability of healthcare services and safety net services (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 Operational Standards that align with the community level of the framework are patient-centered appointment access (availability

of services), and medical home responsibilities (safety net services) (National Committee for Quality Assurance, n.d.).

This study's sample of online patient reviews yielded 27 references related to same-day appointments, two references regarding routine and urgent appointments, 82 references about providing timely clinical advice by telephone, and 19 references concerning equal access to patients regardless of the source of payment, insurance type or lack of insurance. All 27 references regarding same-day appointments were negative, and the two references about routine and urgent appointments outside of regular business hours were negative. But by far, timely clinical advice by phone was referenced the most among all levels of influence in the Minority Health and Health Disparities Research Framework with 80 out of 82 references negative.

A study conducted by Cook and colleagues examined the PCMH and patient experience, identifying the ability to contact the health center by phone as an important opportunity to improve patients' experiences (Cook et al., 2015). Timely clinical advice given by telephone and same-day appointments are critical PCMH tenets because patients must be able to seek attention when they need it. The inability to access health care services when they are most needed leads to emergency department care-seeking. Care seeking at emergency departments is both traumatic for patients and disastrous for health care cost containment: unnecessary emergency department use drives health care costs upward. Thus, access to timely information by phone and access to same-day appointments are crucial.

This study did not address the Institute for Healthcare Improvement (IHI) aim of reduced high-cost utilization but avoiding more costly emergency department visits

reduces high-cost usage. The equal access regardless of the source of pay references were mostly positive. As might be expected for safety-net health care settings, health centers are mandated to provide services to patients regardless of ability to pay.

Health Care System Societal Level of Influence

The fourth and final level of the Minority Health and Health Disparities Research Framework is the societal level, which focuses on quality of care and health care policies (National Institute on Minority Health and Health Disparities, 2019). The NCQA PCMH 2014 Operational Standards that align with the societal level of the framework are the measurement of clinical quality performance, resources use, and care coordination. Moreover, the standards require the analysis of patient and family experience with the health center and the demonstration of continuous quality improvement (National Committee for Quality Assurance, n.d.). The online patient reviews that made up this study's sample yielded no information about health care policies, and the reviews could not be analyzed for quality of care or patient health outcomes objectively, which is why this mixed-method study included a quantitative component designed to access these aspects of care.

In particular, the quantitative component provided a mechanism by which to answer research question 1. Does the NCQA PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? Analysis of the quantitative data examined a three-year period (2016-2018) to address this research question regarding five conditions. The quality of care measures was also stratified to examine variation in health outcomes over time by NCQA PCMH

Operational Standard year, level of PCMH recognition, and New Jersey health center region (north, central, and south). The first and second statistical analyses assessed patient health outcomes and NCQA Operational Standard year in terms of change over time.

In examining change over time in the quality of care measures, there were no statistically significant improvements in patient health outcomes (see Table 2). When assessing a shift in the quality of care measures by NCQA Operational Standards year (another mechanism to evaluate change over time), there were significant increases and decreases between years (see Table 3). The preference for all patient health outcomes stratification would have been for all the quality of care measures to increase, except for uncontrolled diabetes, in which the number of patients should decrease.

Another mechanism with which to assess change in health outcomes was by PCMH recognition level. As previously explained, the higher the level of PCMH, the better the quality of care measures for three out of the five quality of care measures for level 3 versus the level 1 PCMH. One exception involved patients with uncontrolled diabetes. In this case, the level 1 PCMH had fewer patients with uncontrolled diabetes than level 3 PCMHs. As a reminder, the latest 2017 NCQA PCMH Operational Standards have no levels. When the 2017 recognized sites were compared to the 2014 level 3 recognized sites, the 2014 level 3 PCMHs yielded better results on three out of five quality of care measures (Table 4). Here again, there were significant favorable increases and unfavorable decreases between the level of PCMH.

Geographical location was another factor by which patient health outcomes changed in four of the five quality of care measures. For two quality of care measures

(clinical depression and controlled blood pressure), health centers in the northern region of the State performed best, followed by the central region. For these measures, health centers in the southern region of the state performed worst. For the coronary artery disease with lipid therapy quality of care measure, health centers located in the southern region of the State performed best, followed by the northern region. For this measure, health centers in the central region of the state performed worst. However, this changed for uncontrolled diabetes, with the southern region performing best with the fewest patients exhibiting uncontrolled diabetes, followed by health centers in the central region. Health centers in the northern region performed worst, with the greatest number of patients with uncontrolled diabetes. There are several possible reasons for these findings.

As an NCQA Certified Content Expert, I encountered multiple issues driving change or lack thereof in quality of care measures. Anecdotally, the number one issue for the practices I worked with was a recent change in the electronic medical record (EMR) system and either inconsistent staff EMR training or a lack of staff EMR training entirely. Without training in optimal EMR usage, staff could not capture important quality of care data.

Electronic Medical Records have structured data fields through which to obtain data and run reports for quality of care measures and other relevant information. Without proper training in how to use and manipulate these fields, staff cannot access quality of care information. Thus, quality of care measures typically trends downwards during EMR transitions. In a similar vein, inadequate or inconsistent user training and/or limited refreshers for health center staff can impede a health center's ability to track and act on quality of care data. Problems related to policies and protocols for training new staff

during onboarding can also adversely impact quality of care and population health management. Not capturing the quality of care measures and other data in an EMR's structured fields can result in the under-reporting of measures.

Another common issue, particularly in the context of FQHCs, is staffing. Quality of care metrics decline when there is a shortage of clinicians to provide care. Health centers struggle to recruit new primary care providers (Anderson & Olayiwola, 2012) and to retain physicians (Fiscella & Williams, 2004). The stresses experienced by health center staff (Hayashi et al., 2009), discussed in greater detail below, also impedes recruitment and retention efforts.

Another factor to consider regarding the quality of care is that some researchers believe health center patients to be more clinically complex (Hall & Rosenbaum, 2012). Health centers provide services regardless of ability to pay, but when publicly insured or uninsured patients need to see a specialist for disease management, resources are limited (Hayashi et al., 2009; Rosenbaum, 2012). Geographical region (urban versus rural) is also important. The neighborhood and sociocultural environments (demographics, English proficiency, cultural identity, and response to discrimination) in which health centers operate (LaVeist, 2005), can vary by region, ultimately altering the levels of influence that affect patient health outcomes by region.

The first research question is Does the NCQA PCMH improve physical and mental health among low-income, minority populations, particularly patients with diabetes, hypertension, coronary artery disease, obesity, and risk for depression in New Jersey? Based on these findings, the answer is no. The NCQA PCMH did not significantly improve physical and mental health among low-income, minority

populations over the three year study period (2016 to 2018). Studies by Jaen (2010) and Simonetti (2014) found similar results concerning changes in the quality of care measures at PCMHs. Jaen (2010) found no significant differences in condition-specific quality of care in PCMH-recognized practices. Simonetti (2014) found that the PCMH care delivery model did not improve health outcomes for Black patients with diabetes. This study found no significant changes in five quality of care measures in PCMH-recognized health centers in New Jersey that serve mostly low socioeconomic and racial and ethnic minorities.

There were also increases and decreases in changes to patient health outcomes based on NCQA PCMH Standard year, level of recognition, and regional location. The desired outcome would be an increase in BMI screening with a plan, clinical depression screening with follow-up, coronary artery disease diagnosis with lipid therapy, and controlled blood pressure from year to year. For uncontrolled diabetes, the desire would be to see a decrease in persons with uncontrolled diabetes from year to year.

Summary of Patient Experience

In analyzing the online patient reviews through the conceptual framework of the Minority Health and Health Disparities Research Framework and its alignment with the NCQA PCMH 2014 Operational Standards, patient experience was more negative than positive or neutral. On the one hand, two individual level categories (insurance coverage and health literacy) and one community level category (equal access regardless of the source of payment) received positive or mostly positive reviews. On the other hand, one individual level category (treatment preferences), one interpersonal level category (the patient-clinician relationship), and three community level categories (same-day

appointments, routine and urgent appointments, and timely clinical advice by telephone) had negative or mostly negative reviews. This analysis of all 990 online Google patient reviews is supported by an examination of the star ratings of each review. Most of the patient experiences were negative (n=510, 52%) in comparison to neutral (n=47, 5%) or positive (n=433; 44%) patient experiences.

Analysis of the online Google patient reviews also revealed negative experiences outside of the study's original conceptual framework. Based on this sample of reviews, wait time at the 15 health centers was a powerful source of frustration for patients and families, and this was mentioned 296 times, when stem variations of the word "wait" such as "waited, waiting, and waits" were included. A second collective negative patient experience involved interactions with front desk staff and clinical staff, the former more often than the latter. The words attitude or attitudes (which appeared 36 times), rude or rudely or rudeness (appearing 76 times), unprofessional (appearing 50 times), terrible (appearing 47 times), and horrible (appearing 73 times) were all used to describe patient interactions with health center staff.

The NCQA PCMH model does not address these two areas of concern, but they are crucial. Addressing wait times is critical in keeping patients engaged with a usual source of primary care. The customer service skills of front desk personnel are vital as they are the gatekeepers of access to care. Front desk personnel are the frequent first point of contact for patients, and they are often charged with answering the phones and are usually responsible for making follow-up appointments for patients. In terms of the customer service skills of clinicians, studies have shown that the relationship between the

patient and the clinician is the top factor impacting the patient experience (Aysola et al., 2015).

Research question 2. asks What has been the patient experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Based on the results of this analysis of online Google patient reviews and patient review star ratings, the patient experience at these 15 New Jersey FQHCs has been mostly negative. According to Schmidt (2013), the literature on PCMH and patient experience is limited, with mixed results. Patient experience captures what happened or did not happen in a healthcare setting versus patient satisfaction, which is considered a measure of the quality of care or treatment received in a healthcare setting. Some providers argue that without medical training, a patient is unable to accurately critique the quality of care or treatment received (Browne et al., 2010). Moreover, patient experience attributes to better adherence to recommended treatment (Batbaatar et al., 2015; Browne et al., 2010; Wynn, 2016), better clinical and patient safety outcomes (Browne et al., 2010; Wynn, 2016), lower utilization of more costly services (Wynn, 2016), and maintenance of market share (Batbaatar et al., 2015). Patients are consumers of healthcare services. Like any other good or service, patients have a choice in where they seek healthcare services. To maintain market share, healthcare settings must be concerned with the experience of its patients; otherwise, the market may become imbalanced. The market or demand may skew more towards health care settings where patient experience is positive.

Overall Staff Satisfaction and Burnout

Employee Review Demographics

A total of 295 Indeed online employee reviews were analyzed in this study. Of these, 62% (n=183) were former employees at the time of the review, 36% (n=105) were current employees at the time of the review, and the employment status was unknown for 2% of the reviews (n=7). Most employee reviews listed the employees' titles. References summarized through a text search in NVivo revealed that the titles Clerk, Patient Services Representative, Receptionist, Registrar, or Registration were listed among the majority of the references (n=360) followed by as were Certified Medical Assistant or Medical Assistant (n=216); Nurse, Licensed Practice Nurse, Registered Nurse, Nurse Midwife, or Nurse Practitioner (n=32); Manager or Case Manager (n=34); Director (n=9), and Provider (n=7).

Overall Employee Experience

Analysis of the 295 online Google employee reviews revealed that most employee experiences were positive (n=143, 48%) in comparison to neutral (n=57, 19%) or negative (n=95; 32%). The online Indeed employee reviews analysis generally revealed positive references regarding working at the health centers such as great (n=151), learning (n=83), fast-paced (n=79), and busy (n=34). Many respondents enjoyed their relationship with co-workers (n=107) and helping patients (n=29). Although the majority of employee reviews were positive, one-third of employees described low pay or a lack of raises (n=83), a toxic environment (n=73), stress (n=23), negative experiences with administration or leadership (n=21), and turnover (n=9).

Research question three was as follows: What has been the health center staff experience in NCQA PCMH-recognized health centers serving low-income, minority groups in New Jersey? Findings suggest that the health center experience has been positive for most former and current employees of the health centers included in this study. Front desk staff and medical assistants disproportionately completed Indeed employee reviews, with minimal representation from clinicians who manage a panel of patients. This is important because physician dissatisfaction leads to increased physician turnover, and increased physician turnover leads to decreased continuity of care for patients (Murray et al., 2001). Other studies focusing on physician and staff experiences with the PCMH model have yielded mixed results (Friedberg et al., 2017; Jackson et al., 2013; Lewis et al., 2012; Quinn et al., 2013).

The Quinn et al. (2013) study surveyed providers before PCMH implementation and found that providers anticipated improved satisfaction with adoption of the PCMH. This study examined staff satisfaction after PCMH model implementation. The Friedberg et al. (2017) study found less satisfaction among staff working in practices using the PCMH model. This study found the opposite – more satisfaction – among staff working in NCQA PCMH-recognized health centers in New Jersey. The Jackson et al. (2013) study found that PCMH interventions improved staff experience by a small to moderate degree. This study did not conduct an examination of staff experience before and after PCMH implementation. The Lewis, Norcon, & Tang (2012) study found a higher morale and higher provider burnout in safety net clinics with greater implementation of characteristics of the medical home. The results of the Lewis, Norcon, & Tang (2012)

study was the closest to the results of this study. This study found a more positive staff experience and symptoms of burnout.

Maslach Burnout Toolkit for Medical Personnel

In addition to staff satisfaction, the PI examined the online Indeed employee reviews for signs of burnout. The three categories of the Maslach Burnout Toolkit for Medical Personnel were used to assess burnout by identifying online employee reviews that described emotional exhaustion, depersonalization, and personal accomplishment. There were 35 references regarding emotional exhaustion, zero references regarding depersonalization, and three references about personal accomplishment.

In terms of emotional exhaustion, employees described long workdays. In many instances, stress and feeling overwhelmed were tied to health center leadership and its productivity expectations, professionalism, and management style. Several reviews that depicted a lack of personal accomplishment were related to the complexity of the patients served (Hall & Rosenbaum, 2012) and the centers' inability to address their needs at times, despite the structure of the FQHC (equal access regardless of ability to pay). Failure to address the needs of patients despite the FQHC structure can occur when a Medicaid insured, or uninsured patient needs a referral to a specialist. There are instances when the health center is unable to identify a specialist who is willing to see Medicaid or uninsured patients at all or within a reasonable timeframe (condition dependent). And although there were employee reviews that described negative experiences with angry patients, there were no reviews in which the employee indicated that they did not care about the patients they serve or what happens to them (depersonalization).

The fourth research question was as follows: What has been the health center staff experience in NCQA PCMH-recognized centers in New Jersey regarding burnout? There were indicators of burnout as it relates to emotional exhaustion and personal accomplishment. Friedberg's (2017) study found that rates of burnout increased among staff working in practices that are recognized PCMHs. Hayashi's (2009) research supports the experience of stress with health center staff as described in the results chapter.

Although there were a few reviews related to personal accomplishment, none of the reviews indicated a detachment from patients or not being concerned about the well-being of patients. Several reviews indicated a sense of love for the health center population. In non-study-related site visits to most of the health centers included in this study, I found that many of these health centers employ clinicians and staff who are from the local community. Often, the clinicians and staff belong to the same race, ethnicity, and cultural backgrounds as the populations they serve. Further, in my anecdotal experience, many of the health center staff actively choose to serve the health center population. However, health centers can be in less than desirable urban and rural environments, and the compensation staff receive is less competitive than that given in large health care systems or private or group practice. According to some researchers, it is this choice to serve low income and minority populations that make health center staff resilient to some of the stressors of working with low-income communities (Hayashi et al., 2009).

Social Justice in Health

In summary, this study collected patient health outcomes data, online patient reviews, and online employee reviews. Analysis of this data answered the four research questions about changes over time in quality of care metrics, patient experience, staff experience, and staff burnout in 15 NCQA PCMH-recognized FQHCs in New Jersey.

All data sources were interconnected and converged during analysis, as the PI, like other scholars, used these data in the assessment of progress towards three of the four aims of the quadruple aim of health care (improved patient health outcomes, and improved patient and staff experience). Like many health centers throughout the nation, New Jersey's FQHCs serve a majority low income and minority patient population. Examining health care delivery models in NCQA recognized PCMH FQHCs over an extended period allowed for the assessment of the reduction of health disparities in health care settings that are mostly serving the disparate health populations of low income and racial and ethnic minorities.

Although the PI found that most of the quality of care measures improved over the three-year study period, the improvements were not significant. PCMH-recognized health centers ultimately did not reduce health disparities in the low income, racially and ethnically diverse populations served by the health centers. Statistical analysis revealed mixed patient health outcomes results (improvement or a decrease in quality of care metrics) by length of time as a PCMH and by level of PCMH recognition. Further analysis indicated that there were regional differences between health centers located in the northern, central, and southern parts of the State in terms of patient health outcomes over time. Based on an analysis of the data included in the study's samples, the patient

experience was more negative than positive. Staff satisfaction was more positive than negative, but there were indicators of burnout in health center staff, particularly in emotional exhaustion. In the 15 NCQA PCMH-recognized New Jersey FQHCs in this sample, there is more work to be done in achieving two of the four aims included in the quadruple aim of health care (improved patient health outcomes and improved patient experience) and in addressing burnout. This study's findings revealed that the PCMH model is doing a better job at addressing the individual level of influence (which includes insurance coverage, health literacy, and treatment preferences) than the interpersonal level of influence (the patient-clinician relationship), the community level of influence (availability of services), and the societal level of influence (quality of care).

This study's quantitative method examined quality of care measures in low-income and minority populations served at New Jersey FQHCs between 2016 and 2018. The quantitative results yielded no significant improvements in the quality of care measures. The qualitative methods used in this study, online Google patient reviews, offered more contextual details to help deepen the quantitative results. According to the online patient reviews utilized, the health centers provided equal access to patients regardless of the source of payment, and they helped patients obtain insurance coverage. However, those elements of the online reviews that touched on the tenets of the patient-clinician relationship, same-day appointments, routine and urgent appointments, and timely clinical advice by telephone gave negative feedback about their implementation. These tenets impact health outcomes and quality of care.

Again, this study utilized publicly available aggregated quality of care measures over time data versus microdata of quality care measures for individual patients over

time. Microdata was not accessible for this study, and the data available often determines what gets studied (Remler & Van Ryzin, 2015), as was the case in this research study. It would be helpful for future researchers to use micro or patient-level data to follow individuals over time for changes in health outcomes with the opportunity to explore further why their health outcomes changed or did not change. Furthermore, microdata would allow for a better understanding of health outcomes at more granular levels beyond broad regions (in this case, the northern, central, and southern parts of New Jersey) by allowing researchers to focus on the municipality and neighborhood levels. A rights-based approach to healthcare or universal healthcare with microdata transparency and accessibility mandates would allow researchers and policymakers to better understand populations' needs in ways that can better inform policies, programs, and services.

A rights-based approach to equitable health is a core tenet of social justice in health. These FQHCs, with their requirements to provide health care services, regardless of ability to pay, do take a rights-based approach to health care. Among the different health systems in the USA, FQHCs are the single provider of health care services to Veterans (Veteran's Administration), the elderly or disabled (Medicare), adults and children with low socioeconomic status (Medicaid and the Children's Health Insurance Program), the uninsured, and those with employer-based insurance (private). However, moving past the question of these health centers' requirements is how they deliver health care services. Notably, the intent of the PCMH was not to reduce health disparities when it was established. Yet the federal government incentivizes it in health centers that serve

disparate health populations of persons of low income and racially and ethnically diverse minority status.

Although the conceptual framework of this study showed alignment with the NCQA PCMH Operational Standards, study results suggest that health centers would benefit from a health care delivery model specifically designed to reduce health disparities that keeps the complexity of health centers in mind. These health centers have complex financing systems, serve the most vulnerable populations, and offer more co-located services than any other non-hospital based health care system. Besides health centers, there are very few outpatient healthcare settings that provide primary care services, dental health services, and laboratory services under one roof and allow patients to utilize an on-site or contracted off-site pharmacy that offer medications at a reduced cost.

The PCMH model is specific to primary care services only and does not address service delivery in health centers that offer other much-needed services for their patient population. This study, together with the results of other studies, suggest a need for a health care delivery model designed specifically for the complexity of health centers with the intent to reduce health disparities in the low income and racially and ethnically diverse populations whom they serve. Lastly, the PCMH and other health care delivery models are downstream, or program level interventions aimed at the healthcare system and the individuals who interact with them. In addition to a health care delivery model specific to health centers, there is a need for upstream interventions in the form of public policies that can promote a more accessible and equitable health care system that reduces health disparities and eventually eliminates them.

Study Limitations

This study had several limitations. First, the patient health outcomes data was aggregated, not individual, so the PI was unable to confirm or negate that the quality of care measures included the same population from year to year in the aggregated patient health outcomes data. Second, the patient data did not allow the PI to account for changes in individual patients' social determinants of health, stressors such as U.S. Immigration and Customs Enforcement raids with family separation, or other trauma-inducing events that could have affected health status. Third, a key component of PCMH recognition mentioned previously is the initial and ongoing process of practice transformation as opposed to simply "checking the box" to satisfy or maintain recognition requirements at a minimum level. The extent of ongoing practice transformation efforts of the health centers included in this study is unknown.

Moreover, the PI did not assess direct shortages in clinical staff, changes to the EMR, or lack of sufficient EMR training of staff; this could have restricted the reporting of quality of care measures. Another consideration is that the three-year study period might not have been long enough to assess change over time in quality of care measures. Also, using patient and employee reviews available online could have resulted in response bias. Patients and employees who post reviews are more likely to have had a negative or positive experience versus neutral experience. Another consideration is that analyzing these reviews as qualitative data did not allow the PI to interact with patients or employees directly to probe further or to ask follow-up questions. The digital divide is another limitation in this study.

The digital divide refers to those who have access to the internet and those who do not. Mitchell and colleagues studied differences in technology used for managing health by race or ethnicity among older adults (Mitchell et al., 2019). They found that when controlling for the demographic characteristics of education and health, older Blacks and Hispanics were less likely to use technology for health-related purposes (for example, searching health management sites or for searching the web for health information). Given Mitchell and colleagues' study results, the population included in this research study may also have been less likely to post an online review; therefore, older Blacks and Hispanics may not have been represented in the online Google patient reviews utilized (Mitchell et al., 2019).

In addition to differences in technology use by race and ethnicity, other studies have examined barriers and challenges to accessing technology (Liu et al., 2020). Another study on the use of mobile health applications in low-income populations revealed local difficulties in implementation such as not owning a smartphone or tablet, having limited storage space, limited texting plan access, and inconsistent access to Wi-Fi or data plans (Liu et al., 2020). Lastly, Fernandez and colleagues in a Detroit case study examined urban internet myths and realities (Fernandez et al., 2019). Their research narrowed in on the differences between relying on a smartphone or mobile internet access versus a residential internet service provider contract. Those without residential access relied more on mobile phones in the former and engaged in fewer online activities such as health information seeking, fact-finding, and shopping. The online Google patient reviews examined in this study may have had less representation from patients with

barriers and challenges to accessing technology or those who relied on mobile phone usage versus residential access to the internet.

Chapter 6: Conclusion

Patient-Centered Medical Home and Health Disparities

During the study period, the Patient-Centered Medical Home (PCMH) did not significantly improve health outcomes and ultimately did not reduce health disparities during the study period in New Jersey's Federally Qualified Health Centers (FQHCs) serving low income, racial, and ethnic minorities. Similarly, patient experience was more negative than positive in health centers recognized as PCMHs. However, staff satisfaction was more positive than negative in these same health centers, although signs of burnout, particularly in emotional exhaustion, presented itself. The findings in this study are consistent with the mixed results of other studies examining the PCMH and health outcomes, patient experience, staff satisfaction, and burnout. The information obtained in this study reflects the views of some patients and employees who receive or provide health services at the health centers included in this study. Other qualitative content analysis or traditional qualitative methods, such as interviews or focus groups, may yield different results.

Future Practice

As mentioned in the discussion chapter, the findings of this study and other studies of the PCMH in health centers suggest a need to design a health care delivery model with the uniqueness of health center operations (primary care, dentistry, pharmacy services, etc.) and the needs of the vulnerable populations they serve at the forefront. Since quality of care measures in this study improved but not significantly, perhaps the PCMH model or components of it can be altered or embellished to reduce health disparities. There may not be a need to start from ground zero. Because the majority of

those served at the health centers are of a low income, racial, or ethnic minority, the design of the health care delivery model should be undertaken with the intent to reduce and eventually eliminate health disparities in this population. Investment in the safety net system needs to be ongoing and robust. If a healthcare delivery model designed for health centers demonstrates efficacy in reducing health disparities in society's most vulnerable population, then this could be a healthcare delivery model that works for all individuals.

Jacobson (2012) asked whether health centers are making significant strides in reshaping and improving the delivery of primary care services or merely posturing to receive government incentives. This question speaks to the specific problems examined by this research study. Currently, the Health Resources and Services Administration (HRSA) incentivizes and supports the PCMH in safety-net settings like community health centers without empirical evidence that the PCMH model can reduce health disparities. So, I do not think that Jacobson is asking the right question in this case.

The initial question posed should be "Is the PCMH health care delivery model sufficient to meet the needs of operationally complex health centers that deliver more than primary care services?" And if the answer is no, then another question should be asked: "Should the federal government continue to incentivize and support the PCMH in health centers?" While Jacobson asked whether health centers are posturing as PCMHs to receive incentives, the questions suggested here are different in that they question whether the government should be incentivizing the PCMH care delivery model in health centers at all. Jacobson asked whether health centers that are PCMH recognized are making significant strides to improve the delivery of primary care or simply seeking incentives from the government for being recognized as PCMHs. Based on the results of

this study and others, I am taking the position that the PCMH model in its current form may not be suited to positively change health care delivery in operationally complex health centers. Furthermore, given the mixed results of the PCMH care delivery model, perhaps the government should not incentivize widespread adoption of a health care delivery model in health centers that serve large numbers of low income and minority populations that has not been proven to reduce health disparities. The PCMH health care delivery model is a downstream intervention. As noted in the discussion chapter, programs and services that meet the needs of individuals are considered downstream interventions and public policies that address institutions are considered upstream interventions. To reduce and eventually eliminate health disparities, both upstream and downstream interventions that address the whole person's needs are required. Moreover, there is a need for a health care lens in education, environment, fiscal, and other policies, not just policies related to healthcare.

Policy Implications

According to Hofrichter (2003), the social justice in health goal of public policy is to address obstacles to achieving optimal health with priorities given to allocating additional resources for those who historically have more barriers to health because of social positioning (Hofrichter, 2003). Fiscella and Williams (2004) describe the need for access to resources in the three domains of material (housing), human (education), and social networks (capital). As mentioned above, public policies or upstream interventions can facilitate access to resources in the three domains described by Fiscella and Williams. Following Hofrichter, to fully actualize social justice in health, citizens and policymakers must be willing to pass national legislation that ensures equity in health for all (Ruger,

2010). Likewise, to truly address health inequities, societal members will have to galvanize, advocate for, and support public policies aimed at changing the historical structures of power and privilege that create differential health status or policies that address the social determinants of health.

The social determinants of health are those environmental conditions in which people are born, live, learn, work, and play that affect a range of health, functioning, and quality of life risks and outcomes (*Social Determinants of Health*, n.d.). The existence of persistent social determinants of health affirms that improved health status and better health outcomes lie beyond the reach of the health care system or individual alone. Public policy will have to address the social determinants of health to change the health status of those health disparate groups grappling with low income as well as racial and ethnic minority status.

Healthy People 2020 groups the social determinants of health by economic stability (employment, housing, and food insecurity), neighborhood and built environment (violent crimes, air quality, blood lead level), health and health care (insurance, usual primary care provider, source of ongoing care, health literacy, and health self-management), social and community context (incarceration, political capital), and education (increased high school graduation rates, enrollment in college). Healthy People 2020 is the federal governments prevention goals to build a healthier nation (*Social Determinants of Health*, n.d.). Racial and ethnic minorities are more likely to experience all of these (LaVeist, 2005; Marmot & Bell, 2013), live in residentially segregated neighborhoods (Marmot & Bell, 2013), receive a substandard education

(Alexander et al., 2014), and be socially excluded from full and active participation as members of society.

The New Jersey Legislature and Governor have passed progressive legislation that addresses specific social determinants of health under the administration of New Jersey's current Democratic Governor, Phil Murphy. In his first legislative session (2018 – 2019) he addressed economic stability with the Diane B. Allen Equal Pay Act to address differential pay by gender (employment), raised the hourly minimum wage to \$15 and raised overtime (employment), and addressed food insecurity among college students with the Hunger-Free Campus Act. Moreover, there is legislation that allows municipalities to adopt an ordinance to enter properties to perform lead service line replacements, to reduce blood lead levels, and addressing the neighborhood and built environment social determinants of health. As for the health and health care social determinant, legislation authorizes the New Jersey Department of Banking and Insurance to establish a state-based exchange for individual health insurance plans (insurance).

Another forward-thinking initiative is the Community College Opportunity Grant (education), which pays for up to 18 credit hours per semester for individuals with an adjusted gross income of no more than \$45,000. Together, these progressive bills are addressing the social determinants of health and the whole-person needs of systematically disadvantaged individuals by disrupting the patriarchy and promoting equal pay for women, raising the minimum wage, addressing food insecurity on college campuses, replacing lead service lines, establishing a state-based health insurance exchange for market competition and affordability (Marmot & Bell, 2013), and making college more accessible.

Many of the above-mentioned public policies align with Geronimus' (2003) recommendations regarding the possible program and policy levers that can address the cumulative impact of persistent disadvantage, which are implementing programs with measures that raise family incomes, improving municipal services, redressing environmental inequities, and expanding health insurance coverage (Geronimus, 2003). As New Jersey continues to move along a progressive path, additional areas for public policy consideration are more affordable housing (economic stability), reducing violent crimes (neighborhood), and increasing health literacy (health and health care). Addressing the disproportionate incarceration of Black and Hispanic men can reduce the proportion of children who have ever lived with a parent who has served time in jail or prison (*Social Determinants of Health*, n.d.), and increasing high school graduation rates can improve education as a social determinant of health. Lastly, the State could benefit from socioeconomic and racial and ethnic policy and practice (House & Williams, 2003) that address the structural barriers often faced by low income and racial and ethnic minorities.

Many factors affect the health of populations. The zip code in which people live, work, and socialize matters as it relates to access to resources. Public policy that addresses the social determinants of health must meet a health care delivery model designed to address health disparities at an intersection. When comprehensive social policies meet at the intersection of effective healthcare delivery, a more equitable environment may emerge. An equitable environment can provide the infrastructure and capacity for low income and minority populations to achieve central health capabilities.

Central health capability is the capability to avoid preventable diseases and premature death (Ruger, 2010).

Future Research

Future research should examine health care delivery models and the impact of public policies that address the social determinants of health. To reiterate, health centers have complex operations beyond the typical primary care setting to assist them in optimally meeting the health care needs of vulnerable populations. The design of the PCMH care delivery model is for primary care settings. Federally Qualified Health Centers need a health care delivery model that incorporates the delivery of dental health services, pharmacological services, and integrated behavioral health services. Future research should examine other health care delivery models or combinations of health care delivery models in meeting the needs of health centers and reducing health disparities. If current or combinations of existing models will not reduce health disparities, then researchers should prioritize the design of a health care delivery model for health centers with the clear intent of reducing and eventually eliminating health disparities. An additional recommendation for future research is that it seek to carefully examine the short and long-term health outcomes of progressive policies that address the social determinants of health.

Social Justice in Health

In 1899, W.E.B Dubois discussed the “Negro problem” in America as living in inadequate dwellings, having poor food, unsafe living conditions, and experiencing residential segregation (Williams & Sternthal, 2010). Issues of social, economic, and political exclusion (Fiscella & Williams, 2004; LaVeist, 2005) persist today, and

dominance, power, and privilege lie outside of the hands of those grappling with low socioeconomic status and members of racial and ethnic minorities (LaVeist, 2005). This makes it very difficult for those most impacted by injustice and health inequities to correct the situation. However, it is imperative that these injustices be corrected.

Beyond the health impact of the changing composition of the U.S population, specifically, the prediction that the U.S. will have more minorities than Whites by the middle of the 21st century (LaVeist, 2005), is the moral right to health care. A socially just healthcare system must provide individuals with what they need, known as health equity, as opposed to simply giving everyone the same care and resources, known as health equality. The only way to achieve an equitable health system is to confront the inequalities that effectively reproduce them (Geronimus, 2003). But disrupting disparities requires a shifting of consciousness accompanied by coalition building for social change (Hofrichter, 2003).

To achieve this goal, we as a society must work to alter public perspectives on race (Geronimus, 2003) and make health and wellbeing for all a goal that reaches beyond health policy alone and into other policy domains such as education, social welfare, environmental protection, and housing (Ruger, 2010). Even if we are unable to agree on a moral obligation to a right to health due to political differences, we should be able to agree on a right to health based on market needs and the economy. The most recent coronavirus (COVID-19) and its accompanying plunge in the stock market is proof of the relationship between population health and the economy. Lastly, and worthy of repetition, is that optimization of the FQHC health care system to meet the needs of the

nation's most vulnerable populations will provide a scalable, equitable health system that works for all regardless of socioeconomic or racial and ethnic minority status.

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Appendices

Appendix A

Rebecca Lee Crumpler Health Center

Located in the north and recognized as a PCMH for five years, Health Center 1 served approximately 15,000 patients in 2018, of which 77.25% were racial or ethnic minority patients, and 87.44% were below the federal poverty level (Table 2). The center's quality of care measures examined in this study (body mass index screening with follow-up, clinical depression screening with follow-up for patients with a positive screening, coronary artery disease diagnosis with prescribed medication, controlled hypertension, and uncontrolled diabetes) increased and decreased between the study period of 2016 and 2018 (Table 3). Online Google patient reviews revealed that 69% (n=42) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 1). Online Indeed, employee reviews revealed that 43% (n=37) of employees documented poor job satisfaction while employed by Health Center 1 by way of a one or two-star rating out of a possible five stars (Figure 2).

Table A1

Health Center 1 PCMH History

Initial Recognition Year	2015
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 3
Years of PCMH Recognition	5 Years
Current Recognition Operational Standards Year and Level (if applicable)	2017 NCQA Operational Standards (no levels for 2017)

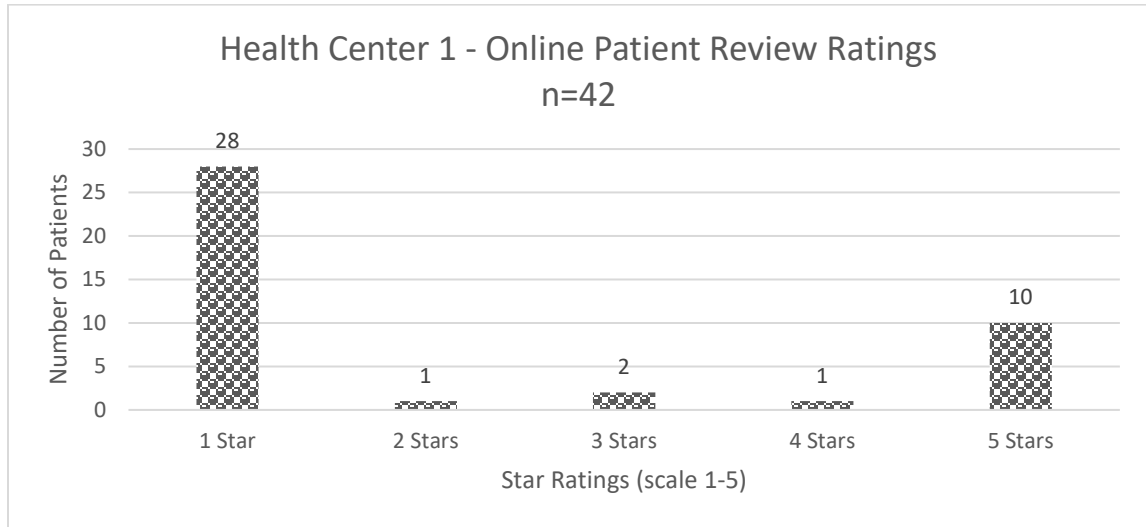
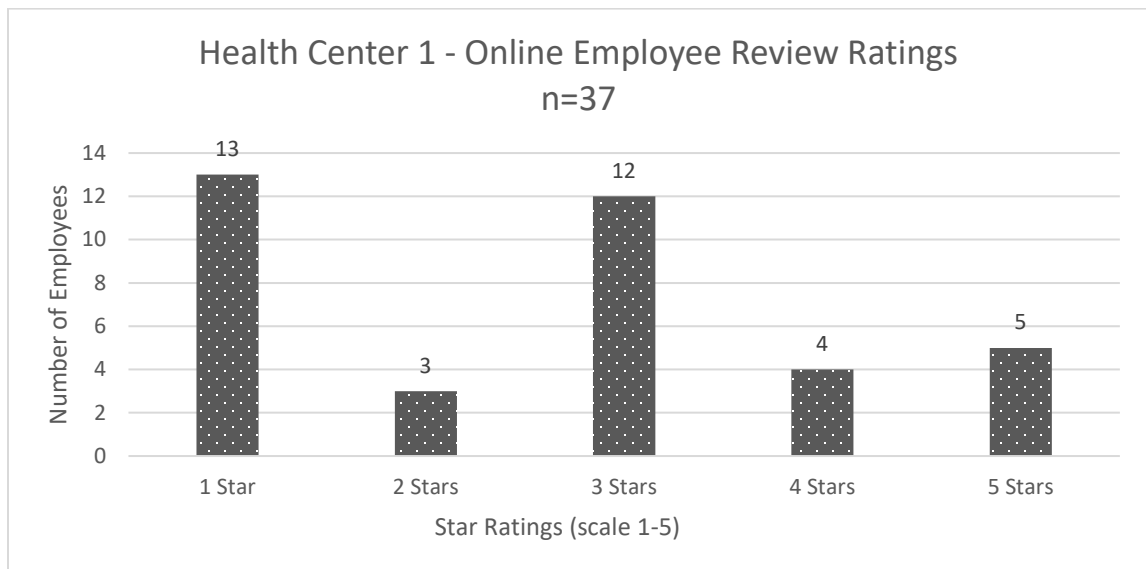
Table A2*Health Center 1 2018 Demographics*

Total Population Served	15,058
% Adults 18 and over	70.46%
Gender	
○ % Female	70.00%
○ % Male	30.00%
% of Racial and/or Ethnic Minority Patients	77.25%
○ % Black or African American	40.03%
○ % Hispanic/Latino	33.84%
○ % Asian	10.13%
○ % American Indian/Alaska Native	.01%
○ % Native Hawaiian/Other Pacific Islander	1.16%
% Best Served in a Language Other Than English	21.99%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	87.44%
% Uninsured Patients	22.75%
% Medicaid/Children Health Insurance Program (CHIP) Patients	53.88%

Table A3*Health Center 1 Uniform Data System (UDS) Quality of Care Measures Over 3 Years*

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	58.39%	95.78%	96.40%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	63.12%	66.39%	66.91%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	89.71%	92.76%	85.50%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	78.54%	70.04%	70.51%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	32.66%	37.82%	23.33%

Figure A1

Health Center 1 Online Patient Reviews Star Ratings**Figure A2***Health Center 1 Online Employee Reviews Star Ratings*

Appendix B

James McCune Smith Health Center

Located in the south and recognized as a PCMH for 11 years, Health Center 2 served approximately 7,800 patients in 2018, of which 77.05% were racial or ethnic minority patients, and 96.70% were below the federal poverty level (Table 5). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 6). Online Google patient reviews and online Indeed employee reviews for Health Center 2 were inseparable from its umbrella affiliated health system; therefore, there were no center-specific reviews to include in this study.

Table B1

Health Center 2 PCMH History

Initial Recognition Year	2009
Initial Recognition Operational Standards Year and Level	2008 NCQA Operational Standards – Level 1
Years of PCMH Recognition	11 Years
Current Recognition Operational Standards Year and Level (if applicable)	2017 NCQA Operational Standards (no levels for 2017)

Table B2

Health Center 2 2018 Demographics

Total Population Served	7,853
% Adults 18 and over	85.42%
Gender	
○ % Female	47.00%
○ % Male	53.00%
% of Racial and/or Ethnic Minority Patients	77.05%
○ % Black or African American	29.87%
○ % Hispanic/Latino	40.15%
○ % Asian	10.38%

○ % American Indian/Alaska Native	0.19%
○ % Native Hawaiian/Other Pacific Islander	0.99%
% Best Served in a Language Other Than English	28.94%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	96.70%
% Uninsured Patients	31.12%
% Medicaid/Children Health Insurance Program (CHIP) Patients	43.13%

Table B3

Health Center 2 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	65.16%	88.10%	90.56%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	62.03%	45.50%	62.72%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	93.78%	97.73%	91.01%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	68.97%	69.64%	61.18%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	36.80%	22.17%	24.85%

Appendix C

Leonidas Harris Berry Health Center

Located in the central region of the State and recognized as a PCMH for six years, Health Center 3 served approximately 16,000 patients in 2018, of which 89.04% were racial or ethnic minority patients, and 98.13% were below the federal poverty level (Table 8). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 9). Online Google patient reviews revealed that 62% (n=39) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 3). Online Indeed employee reviews for Health Center 3 were inseparable from its umbrella affiliated health system; therefore, there were no center-specific employee reviews to include in this study.

Table C1

Health Center 3 PCMH History

Initial Recognition Year	2013
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 2
Years of PCMH Recognition	6 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table C2

Health Center 3 2018 Demographics

Total Population Served	15,957
% Adults 18 and over	62.50%
Gender	
○ % Female	59.00%
○ % Male	41.00%
Percentage of Racial and/or Ethnic Minority Patients	89.04%

○ % Black or African American	21.13%
○ % Hispanic/Latino	70.69%
○ % Asian	4.04%
○ % American Indian/Alaska Native	0.02%
○ % Native Hawaiian/Other Pacific Islander	0.20%
% of Patients Best Served in a Language Other Than English	67.82%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	98.13%
% Uninsured Patients	40.08%
% Medicaid/Children Health Insurance Program (CHIP) Patients	51.44%

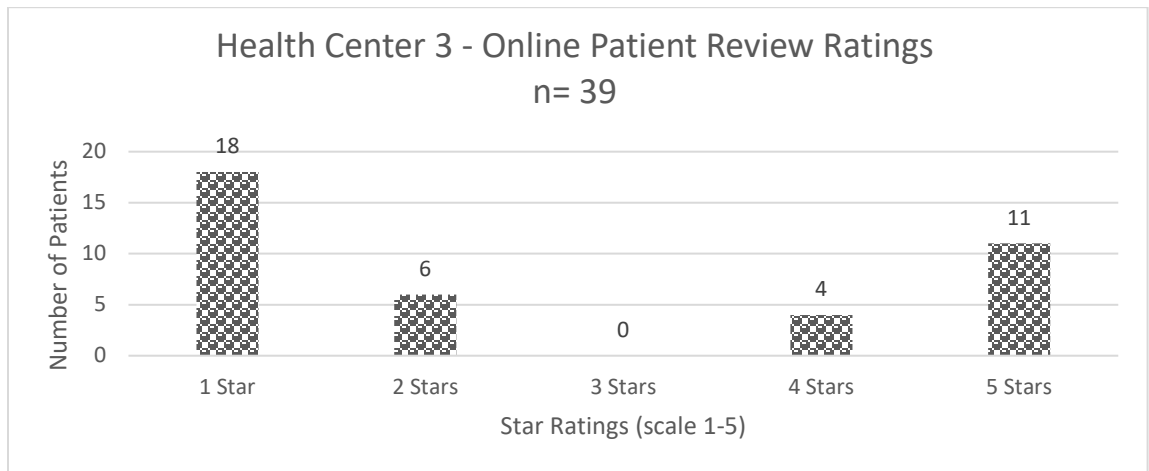
Table C3

Health Center 3 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	3.19%	83.96%	84.50%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	63.27%	62.57%	72.98%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	89.29%	91.86%	95.42%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	66.64%	70.09%	73.59%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	24.51%	23.73%	26.11%

Figure C1

Health Center 3 Online Patient Reviews Star Ratings



Appendix D

Charles Richard Drew Health Center

Located in the central region of the State and recognized as a PCMH for five years, Health Center 4 served approximately 14,600 patients in 2018, of which 90.47% were racial or ethnic minority patients, and 95.14% were below the federal poverty level (Table 11). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 12). Online Google patient reviews revealed that 57% (n=37) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 4). Online Indeed, employee reviews revealed that 63% (n= 16) of employees documented good job satisfaction while employed by Health Center 4 by way of a four or five-star rating out of a possible five stars (Figure 5).

Table D1

Health Center 4 PCMH History

Initial Recognition Year	2015
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 3
Years of PCMH Recognition	5 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table D2

Health Center 4 2018 Demographics

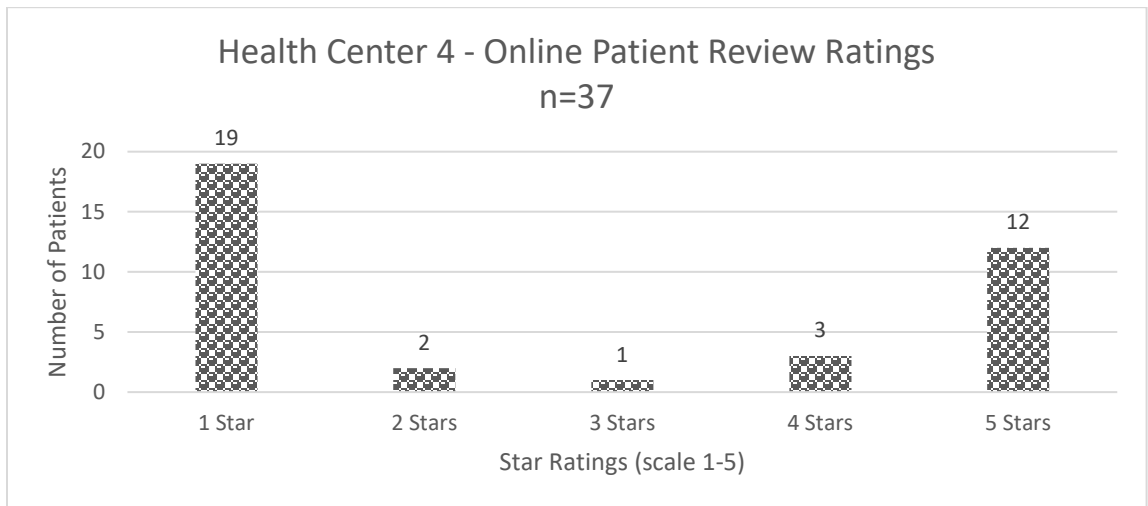
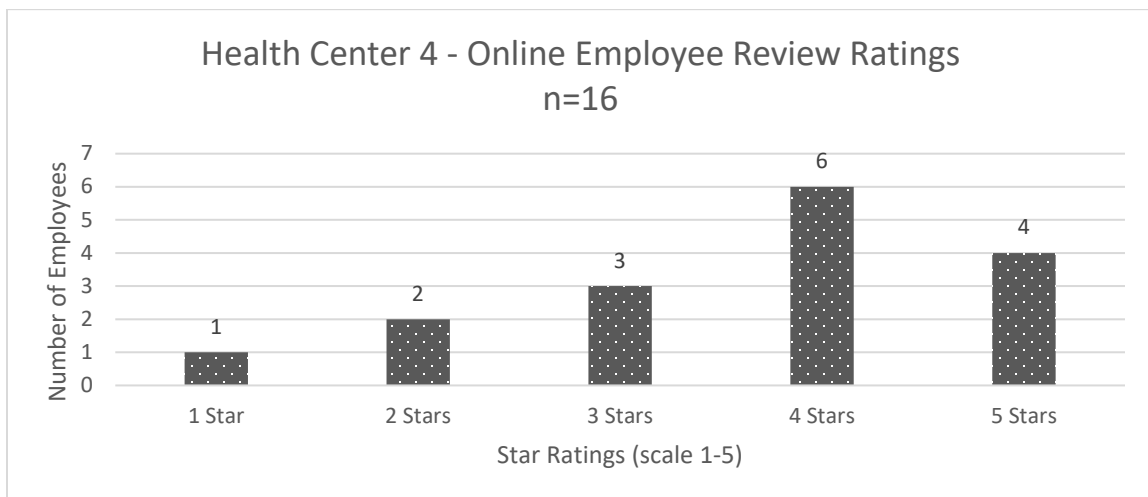
Total Population Served	14,566
% Adults 18 and over	67.50%
Gender	
○ % Female	54.00%
○ % Male	46.00%
Percentage of Racial and/or Ethnic Minority Patients	90.47%

○ % Black or African American	54.56%
○ % Hispanic/Latino	36.79%
○ % Asian	0.64%
○ % American Indian/Alaska Native	0.13%
○ % Native Hawaiian/Other Pacific Islander	0.65%
% of Patients Best Served in a Language Other Than English	22.83%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	95.14%
% Uninsured Patients	17.33%
% Medicaid/Children Health Insurance Program (CHIP) Patients	59.92%

Table D3

Health Center 4 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	72.86%	55.29%	73.07%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	75.35%	71.24%	72.88%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	75.97%	94.20%	91.36%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	63.44%	61.36%	58.52%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	29.85%	30.26%	29.18%

Figure D1*Health Center 4 Online Patient Reviews Star Ratings***Figure D2***Health Center 4 Online Employee Reviews Star Ratings*

Louis Wade Sullivan Health Center

Located in the central region of the State and recognized as a PCMH for six years, Health Center 5 served approximately 22,700 patients in 2018, of which 94.15% were racial or ethnic minority patients, and 96.09% were below the federal poverty level (Table 14). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 15). Online Google patient reviews revealed that 71% (n=119) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 6). Online Indeed, employee reviews revealed that 50% (n=38) of employees documented favorable job satisfaction while employed by Health Center 5 by way of a four or five-star rating out of a possible five stars (Figure 7).

Table E1

Health Center 5 PCMH History

Initial Recognition Year	2013
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 1
Years of PCMH Recognition	6 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table E2

Health Center 5 2018 Demographics

Total Population Served	22,729
% Adults 18 and over	58.81%
Gender	
○ % Female	55.00%
○ % Male	45.00%
% of Racial and/or Ethnic Minority Patients	94.15%
○ % Black or African American	30.43%
○ % Hispanic/Latino	64.14%

○ % Asian	1.80%
○ % American Indian/Alaska Native	0.11%
○ % Native Hawaiian/Other Pacific Islander	0.16%
% of Patients Best Served in a Language Other Than English	48.43%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	96.09%
% Uninsured Patients	20.78%
% Medicaid/Children Health Insurance Program (CHIP) Patients	64.82%

Table E3

Health Center 5 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	78.57%	68.57%	80.00%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	51.78%	71.25%	64.45%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	91.03%	93.14%	87.10%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	54.11%	53.47%	53.38%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	38.34%	46.43%	58.48%

Figure E1

Health Center 5 Online Patient Reviews Star Ratings

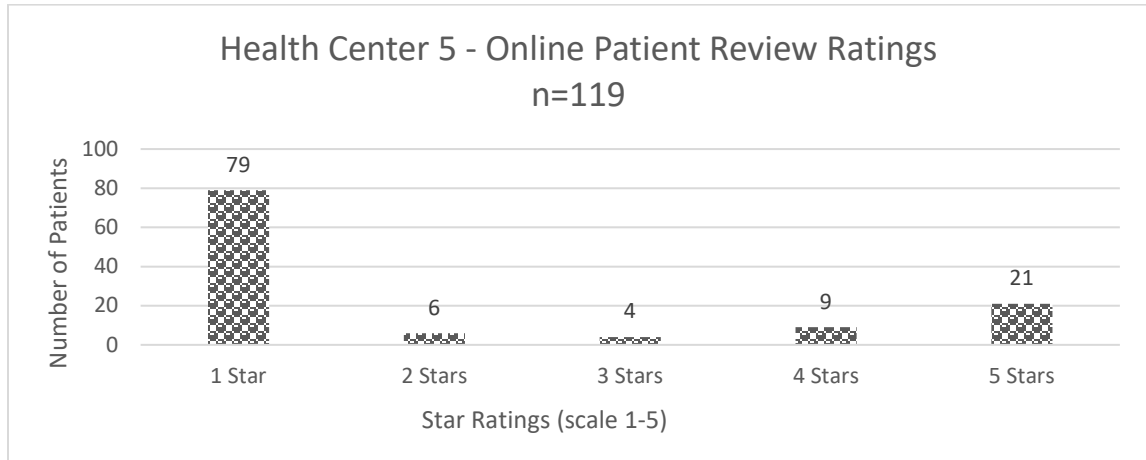
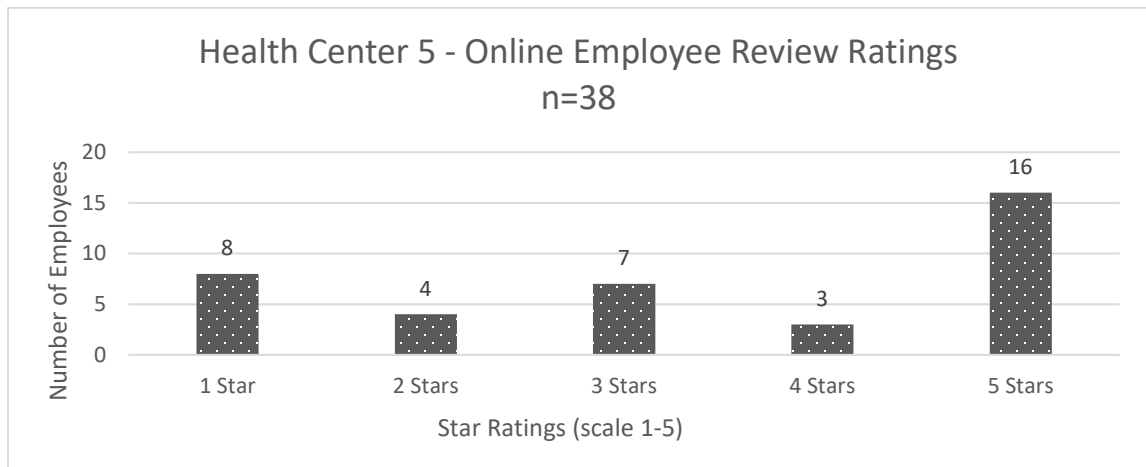


Figure E2

Health Center 5 Online Employee Reviews Star Ratings



Appendix F

Marilyn Hughes Gaston Health Center

Located in the central region of the State and recognized as a PCMH for two years, Health Center 6 served approximately 44,000 patients in 2018, of which 12.77% were racial or ethnic minority patients, and 94.71% were below the federal poverty level (Table 17). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 18). Online Google patient reviews revealed that 62% (n=74) of patients documented a positive experience with the health center by way of a four or five-star rating out of a possible five stars (Figure 8). Online Indeed, employee reviews revealed that 70% (n=10) of employees documented favorable job satisfaction while employed by Health Center 6 by way of a four or five-star rating out of a possible five stars (Figure 9).

Table F1*Health Center 6 PCMH History*

Initial Recognition Year	2018
Initial Recognition Operational Standards Year and Level	2014 NCQA Operational Standards – Level 3
Years of PCMH Recognition	2 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table F2*Health Center 6 2018 Demographics*

Total Population Served	44,009
% Adults 18 and over	48.72%
Gender	
○ % Female	52%
○ % Male	48%
% of Racial and/or Ethnic Minority Patients	12.77%
○ % Black or African American	1.31%
○ % Hispanic/Latino	10.48%
○ % Asian	1.13%

○ % American Indian/Alaska Native	0.12%
○ % Native Hawaiian/Other Pacific Islander	0.07%
% of Patients Best Served in a Language Other Than English	21.14%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	94.71%
% Uninsured Patients	9.51%
% Medicaid/Children Health Insurance Program (CHIP) Patients	65.87%

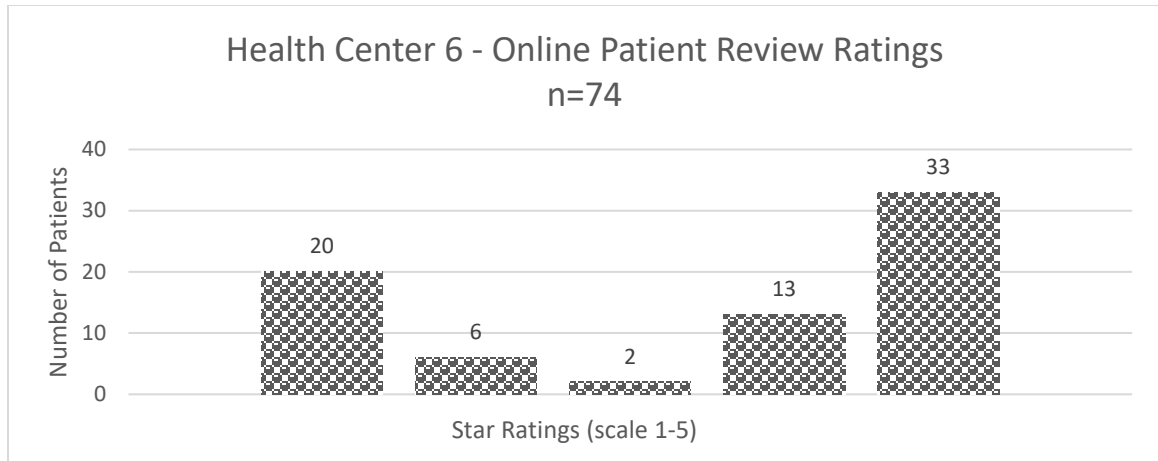
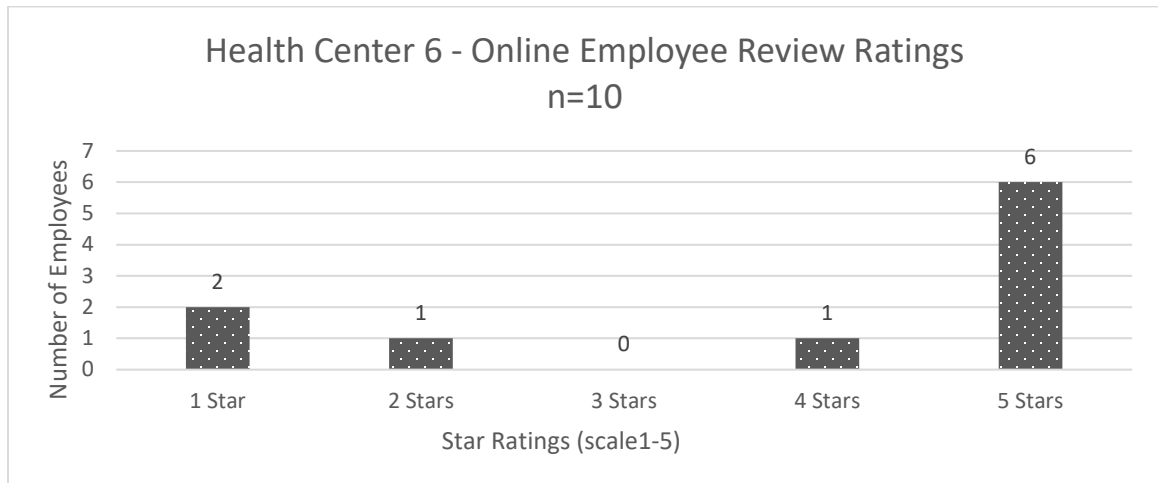
Table F3

Health Center 6 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	27.14%	62.86%	67.14%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	35.78%	46.76%	46.53%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	65.71%	80.43%	80.18%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	42.86%	64.29%	65.71%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	30.00%	41.43%	27.14%

Figure F1

Health Center 6 Online Patient Reviews Star Ratings

**Figure F2***Health Center 6 Online Employee Reviews Star Ratings***Appendix G****Patricia Era Bath Health Center**

Located in the north and recognized as a PCMH for five years, Health Center 7 served approximately 16,700 patients in 2018, of which 93.81% were racial or ethnic minority patients, and 88.98% were below the federal poverty level (Table 20). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 21). Online Google patient reviews revealed that 51% (n=99) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 10). Health Center 7 only had two online Indeed, employee reviews, which were both five-star ratings (Figure 11).

Table G1

Health Center 7 PCMH History

Initial Recognition Year	2014
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 2
Years of PCMH Recognition	5 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 2

Table G2

Health Center 7 2018 Demographics

Total Population Served	16,725
% Adults 18 and over	62.47%
Gender	
○ % Female	64%
○ % Male	36%
% of Racial and/or Ethnic Minority Patients	93.81%
○ % Black or African American	41.77%
○ % Hispanic/Latino	43.10%
○ % Asian	10.40%
○ % American Indian/Alaska Native	0.34%

○ % Native Hawaiian/Other Pacific Islander	0.33%
% of Patients Best Served in a Language Other Than English	28.94%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	88.98%
% Uninsured Patients	7.68%
% Medicaid/Children Health Insurance Program (CHIP) Patients	74.22%

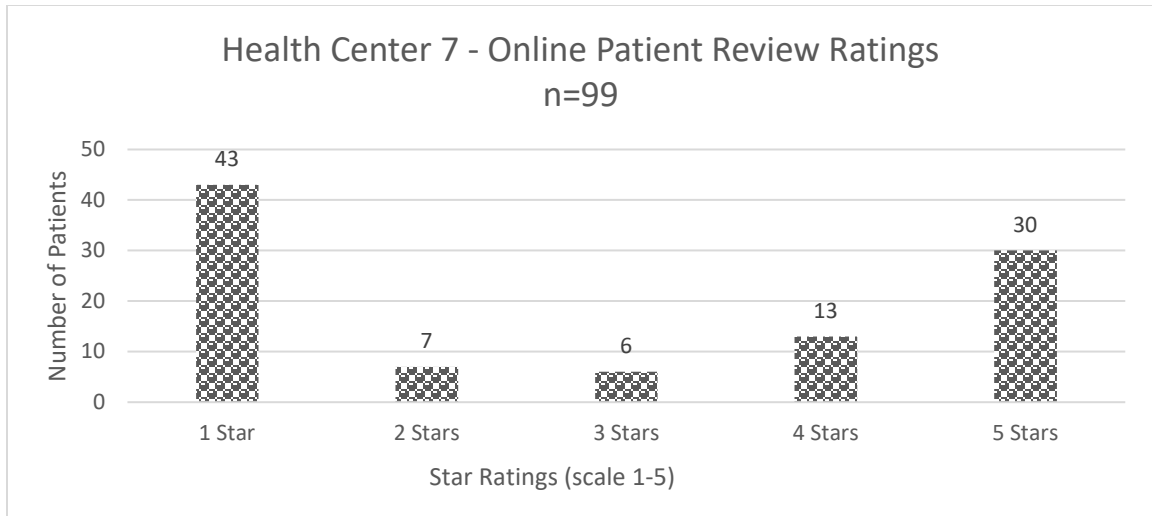
Table G3

Health Center 7 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

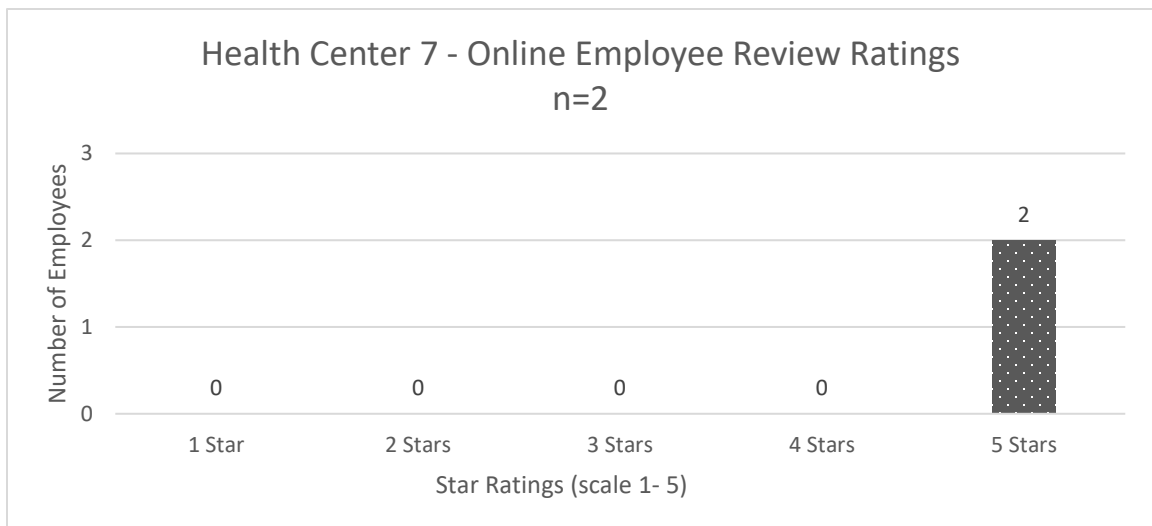
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	44.84%	49.99%	45.89%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	35.99%	47.73%	42.62%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	88.78%	84.87%	90.29%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	64.53%	63.80%	52.77%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	43.69%	47.95%	51.01%

Figure G1

Health Center 7 Online Patient Reviews Star Ratings

**Figure G2**

Health Center 7 Online Employee Reviews Star Ratings



Appendix H

Herbert W. Nickens Health Center

Located in the central region of the State and recognized as a PCMH for seven years, Health Center 8 served approximately 13,500 patients in 2018, of which 70.48%% were racial or ethnic minority patients, and 96.71% were below the federal poverty level (Table 23). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 24). Online Google patient reviews revealed that 85% (n=27) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 12). Online Indeed, employee reviews revealed that 50% (n=6) of employees documented favorable job satisfaction while employed by Health Center 8 by way of a four or five-star rating out of a possible five stars (Figure 13).

Table H1*Health Center 8 PCMH History*

Initial Recognition Year	2012
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 1
Years of PCMH Recognition	7 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 2

Table H2*Health Center 8 2018 Demographics*

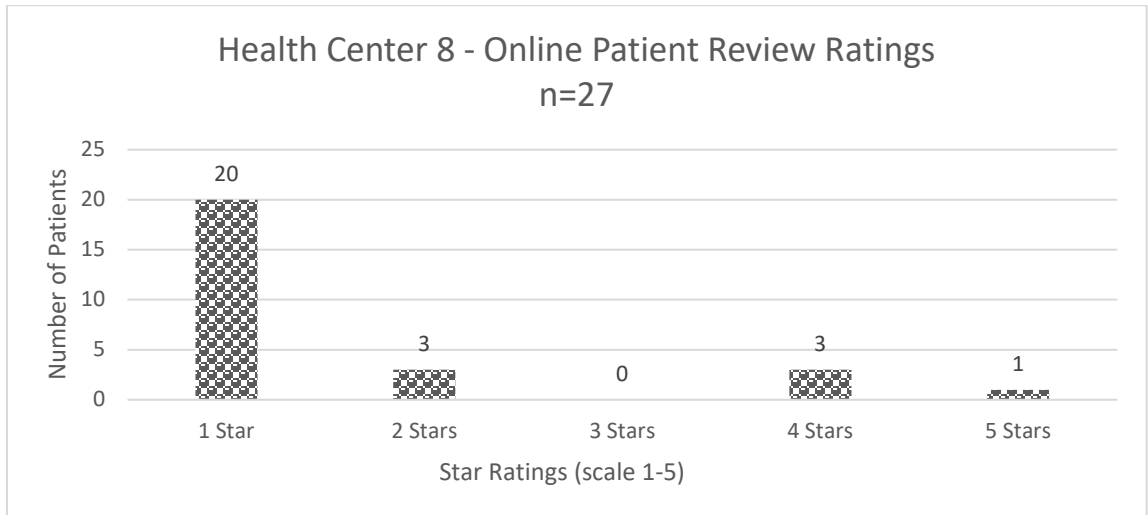
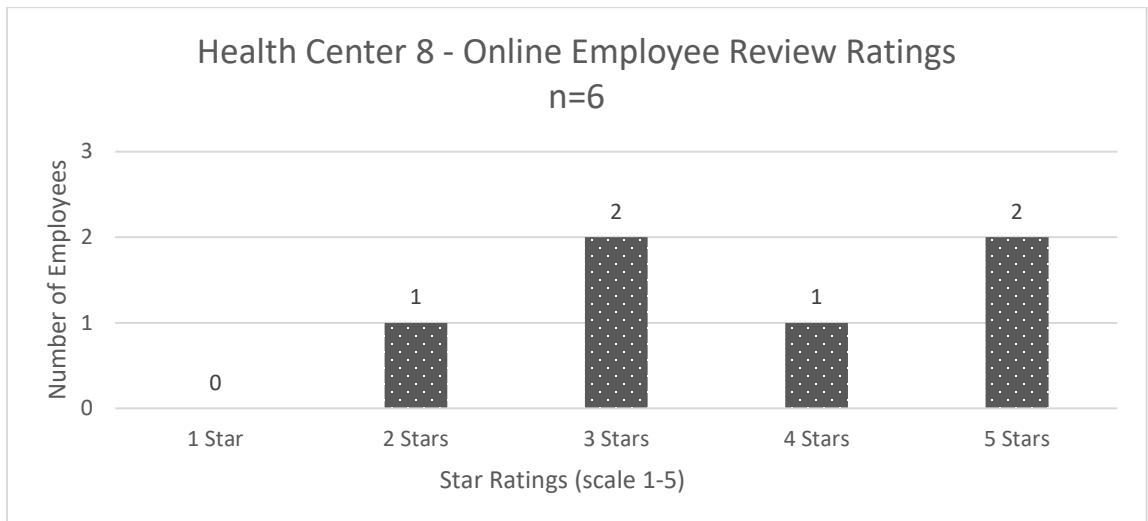
Total Population Served	13,522
% Adults 18 and over	65.87%
Gender	
○ % Female	63%
○ % Male	37%
% of Racial and/or Ethnic Minority Patients	70.48%
○ % Black or African American	13.60%
○ % Hispanic/Latino	54.54%
○ % Asian	2.40%

○ % American Indian/Alaska Native	0.16%
○ % Native Hawaiian/Other Pacific Islander	0.21%
% of Patients Best Served in a Language Other Than English	25.13%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	96.71%
% Uninsured Patients	37.29%
% Medicaid/Children Health Insurance Program (CHIP) Patients	53.22%

Table H3

Health Center 8 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	97.14%	87.14%	8.57%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	78.57%	72.86%	75.71%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	85.71%	26.92%	94.44%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	38.57%	55.71%	61.43%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	37.14%	41.43%	31.43%

Figure H1*Health Center 8 Online Patient Reviews Star Ratings***Figure H2***Health Center 8 Online Employee Reviews Star Ratings***Appendix I****Alexa Irene Canady Health Center**

Located in the central region and recognized as a PCMH for two years, Health Center 9 served approximately 12,900 patients in 2018, of which 95.20% were racial or ethnic minority patients, and 94.99% were below the federal poverty level (Table 26). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 27). Online Google patient reviews revealed that 84% (n=58) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 14). Health Center 9 only had one online Indeed, employee review, that was a one-star ratings (Figure 15).

Table I1*Health Center 9 PCMH History*

Initial Recognition Year	2018
Initial Recognition Operational Standards Year and Level	2014 NCQA Operational Standards – Level 1
Years of PCMH Recognition	2 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 1

Table I2*Health Center 9 2018 Demographics*

Total Population Served	12,896
% Adults 18 and over	59.62%
Gender	
○ % Female	59%
○ % Male	41%
% of Racial and/or Ethnic Minority Patients	95.20%
○ % Black or African American	26.20%
○ % Hispanic/Latino	66.45%
○ % Asian	1.62%
○ % American Indian/Alaska Native	0.92%

○ % Native Hawaiian/Other Pacific Islander	1.39%
% of Patients Best Served in a Language Other Than English	53.98%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	94.99%
% Uninsured Patients	36.76%
% Medicaid/Children Health Insurance Program (CHIP) Patients	40.87%

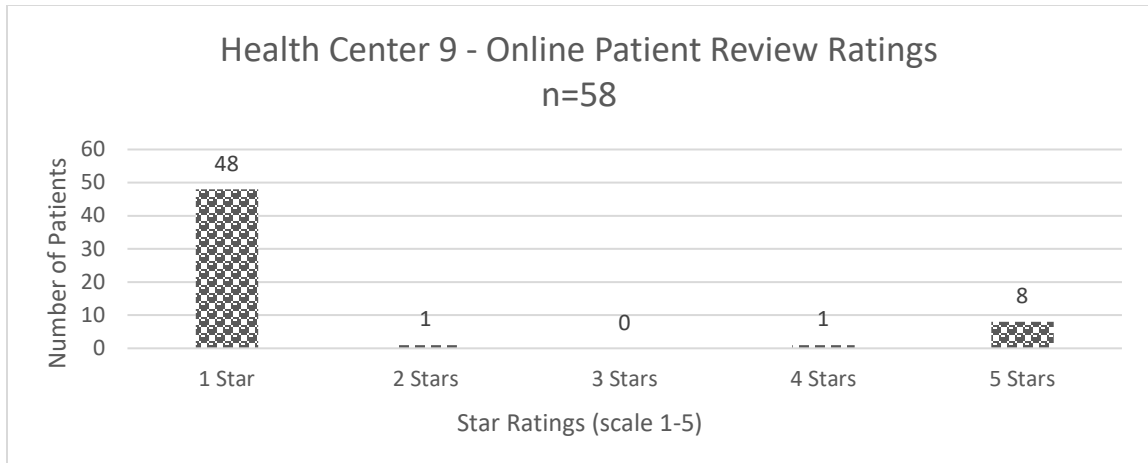
Table I3

Health Center 9 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

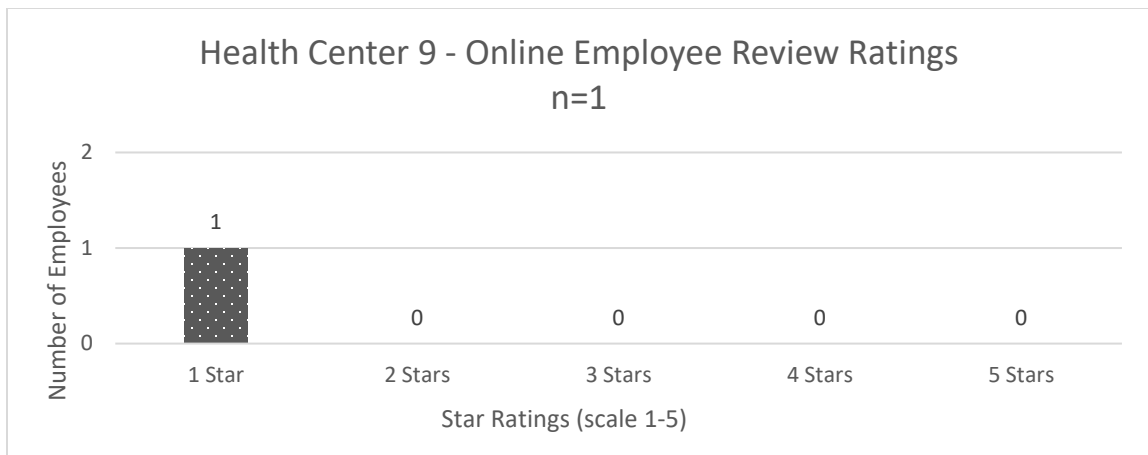
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	72.86%	75.71%	72.86%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	90.00%	91.43%	90.84%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	77.50%	85.00%	89.47%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	58.57%	53.56%	68.57%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	14.29%	18.57%	21.43%

Figure I1

Health Center 9 Online Patient Reviews Star Ratings

**Figure I2**

Health Center 9 Online Employee Reviews Star Ratings



Appendix J

Regina Marcia Benjamin Health Center

Located in the north and recognized as a PCMH for six years, Health Center 10 served approximately 49,100 patients in 2018, of which 98.08% were racial or ethnic minority patients, and 97.63% were below the federal poverty level (Table 29). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 29). Online Google patient reviews revealed that 49% (n=141) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 16). Online Indeed, employee reviews revealed that 54% (n=54) of employees documented favorable job satisfaction while employed by Health Center 10 by way of a four or five-star rating out of a possible five stars (Figure 17).

Table J1*Health Center 10 PCMH History*

Initial Recognition Year	2013
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 3
Years of PCMH Recognition	6 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table J2*Health Center 10 2018 Demographics*

Total Population Served	49,101
% Adults 18 and over	68.07%
Gender	
○ % Female	65%
○ % Male	35%
% of Racial and/or Ethnic Minority Patients	98.08%
○ % Black or African American	56.63%
○ % Hispanic/Latino	35.03%
○ % Asian	0.33%

○ % American Indian/Alaska Native	0.08%
○ % Native Hawaiian/Other Pacific Islander	2.05%
% of Patients Best Served in a Language Other Than English	34.68%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	97.63%
% Uninsured Patients	25.08%
% Medicaid/Children Health Insurance Program (CHIP) Patients	57.78%

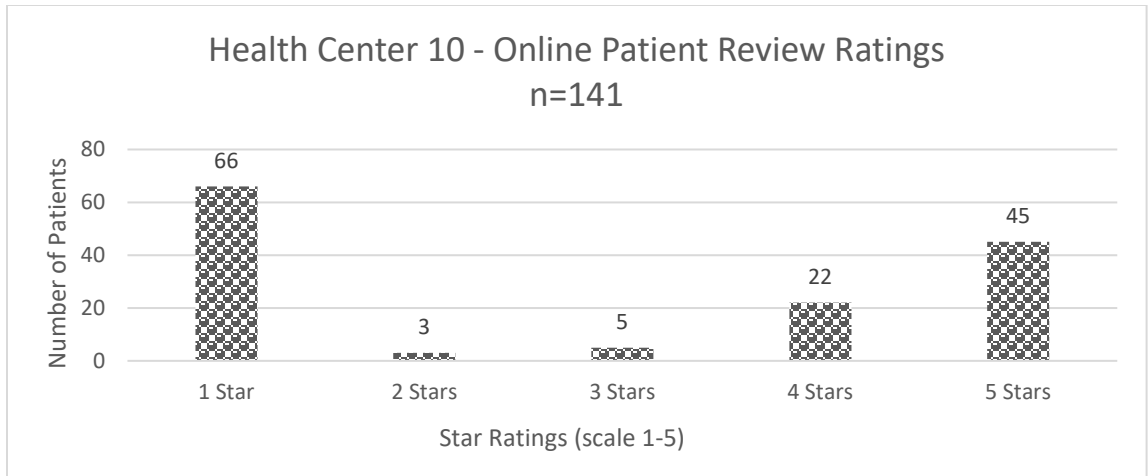
Table J3

Health Center 10 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

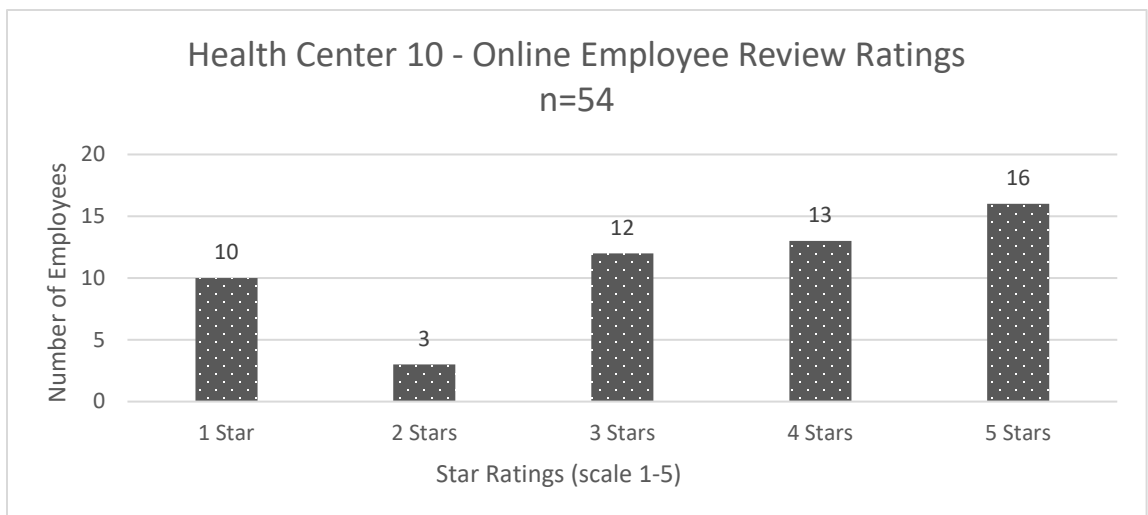
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	85.02%	80.89%	96.85%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	68.97%	71.00%	87.41%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	86.11%	78.95%	97.89%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	55.19%	53.78%	63.80%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	16.31%	45.07%	50.78%

Figure J1

Health Center 10 Online Patient Reviews Star Ratings

**Figure J2**

Health Center 10 Online Employee Reviews Star Ratings



Appendix K

Severo Ochoa Health Center

Located in the central region of the State and recognized as a PCMH for seven years, Health Center 11 served approximately 31,400 patients in 2018, of which 53.35% were racial or ethnic minority patients, and 92.61% were below the federal poverty level (Table 32). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 33). Online Google patient reviews revealed that 69% (n=96) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 18). Online Indeed, employee reviews revealed that 52% (n=31) of employees documented favorable job satisfaction while employed by Health Center 11 by way of a four or five-star rating out of a possible five stars (Figure 19).

Table K1*Health Center 11 PCMH History*

Initial Recognition Year	2013
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 3
Years of PCMH Recognition	7 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table K2*Health Center 11 2018 Demographics*

Total Population Served	31,378
% Adults 18 and over	70.17%
Gender	
○ % Female	61%
○ % Male	39%
% of Racial and/or Ethnic Minority Patients	53.35%
○ % Black or African American	8.80%
○ % Hispanic/Latino	41.67%
○ % Asian	1.61%

○ % American Indian/Alaska Native	1.40%
○ % Native Hawaiian/Other Pacific Islander	0.31%
% of Patients Best Served in a Language Other Than English	33.31%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	92.61%
% Uninsured Patients	21.80%
% Medicaid/Children Health Insurance Program (CHIP) Patients	64.36%

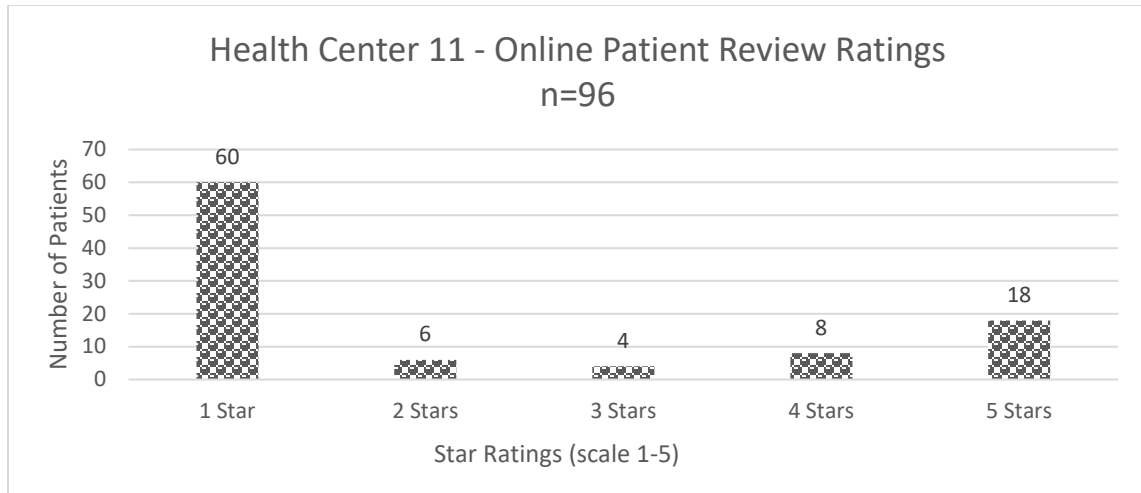
Table K3

Health Center 11 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

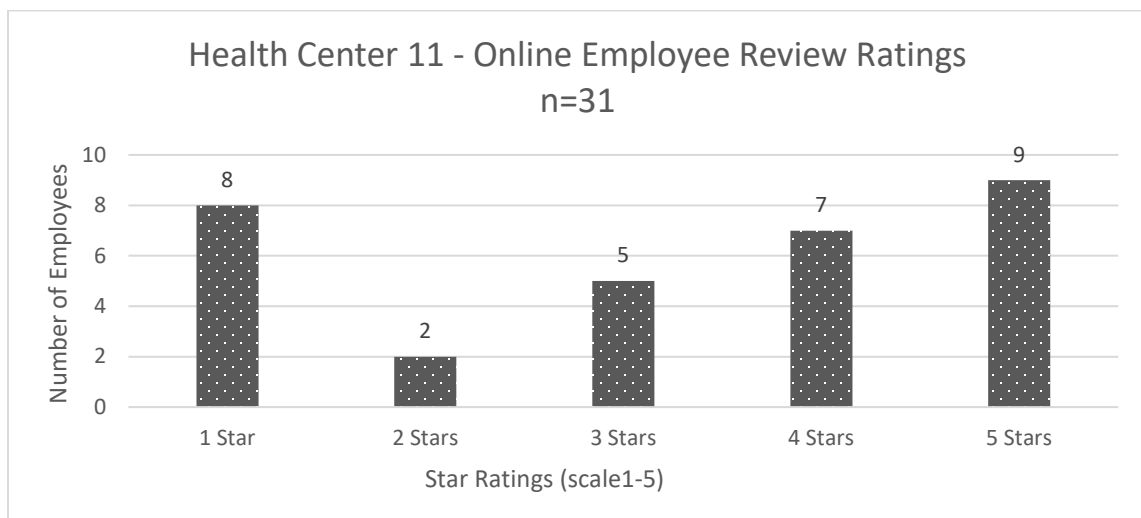
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	85.00%	88.88%	94.66%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	97.00%	95.39%	96.45%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	76.44%	88.32%	80.63%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	65.02%	64.39%	65.64%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	38.30%	52.37%	45.34%

Figure K1

Health Center 11 Online Patient Reviews Star Ratings

**Figure K2**

Health Center 11 Online Employee Reviews Star Ratings



Appendix L

Helen Rodriguez Trias Health Center

Located in the south and recognized as a PCMH for five years, Health Center 12 served approximately 5,200 patients in 2018, of which 75.01% were racial or ethnic minority patients, and 98.18% were below the federal poverty level (Table 35). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 36). Online Google patient reviews revealed that 75% (n=174) of patients documented a positive experience with the health center by way of a four or five-star rating out of a possible five stars (Figure 20). Online Indeed, employee reviews revealed that 78% (n=9) of employees documented favorable job satisfaction while employed by Health Center 12 by way of a four or five-star rating out of a possible five stars (Figure 21).

Table L1*Health Center 12 PCMH History*

Initial Recognition Year	2015
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 2
Years of PCMH Recognition	5 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 2

Table L2*Health Center 12 2018 Demographics*

Total Population Served	5,249
% Adults 18 and over	89.98%
Gender	
○ % Female	44%
○ % Male	56%
% of Racial and/or Ethnic Minority Patients	75.01%
○ % Black or African American	44.97%
○ % Hispanic/Latino	28.90%
○ % Asian	0.54%

○ % American Indian/Alaska Native	0.58%
○ % Native Hawaiian/Other Pacific Islander	2.88%
% of Patients Best Served in a Language Other Than English	12.71%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	98.18%
% Uninsured Patients	4.61%
% Medicaid/Children Health Insurance Program (CHIP) Patients	68.07%

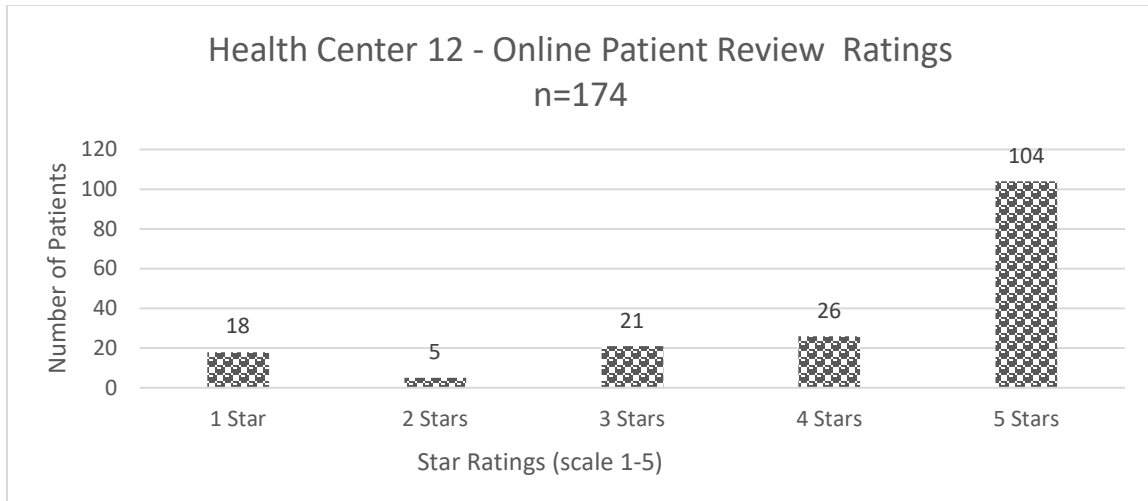
Table L3

Health Center 12 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

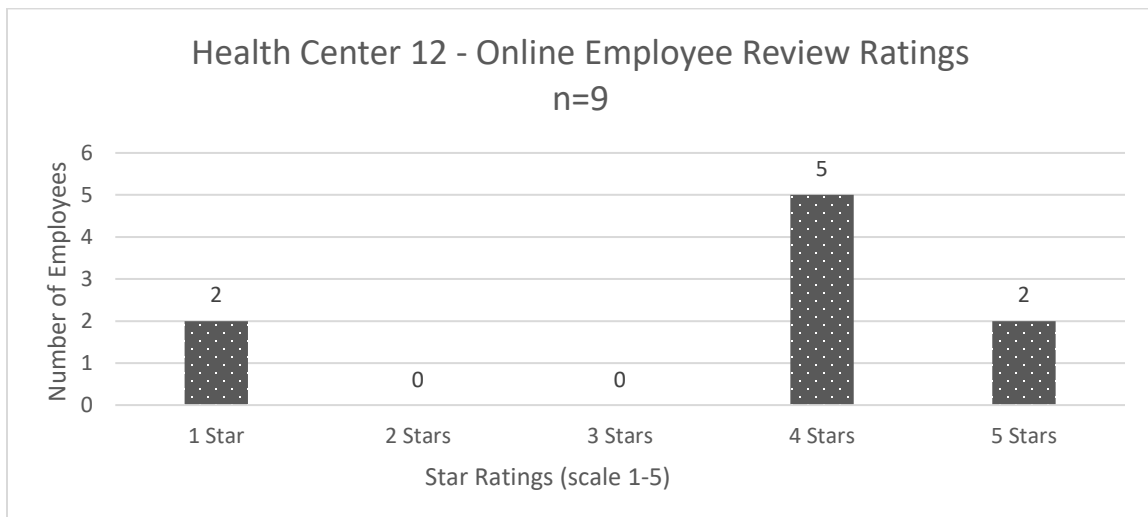
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	36.83%	28.78%	36.42%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	26.81%	24.76%	4.54%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	72.09%	78.43%	84.09%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	47.40%	44.81%	40.75%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	25.00%	51.30%	21.28%

Figure L1

Health Center 12 Online Patient Reviews Star Ratings

**Figure L2**

Health Center 12 Online Employee Reviews Star Ratings



Appendix M

Mario Molina Health Center

Located in the south and recognized as a PCMH for five years, Health Center 13 served approximately 51,000 patients in 2018, of which 74.20% were racial or ethnic minority patients, and 95.20% were below the federal poverty level (Table 38). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 39). Online Google patient reviews revealed that 71% (n=28) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 22). Online Indeed, employee reviews revealed that 51% (n=59) of employees documented poor job satisfaction while employed by Health Center 13 by way of a one or two-star rating out of a possible five stars (Figure 23).

Table M1

Health Center 13 PCMH History

Initial Recognition Year	2014
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 3
Years of PCMH Recognition	5 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table M2

Health Center 13 2018 Demographics

Total Population Served	51,187
% Adults 18 and over	70.02%
Gender	
○ % Female	59%
○ % Male	41%
% of Racial and/or Ethnic Minority Patients	74.20%
○ % Black or African American	43.67%
○ % Hispanic/Latino	31.42%
○ % Asian	4.03%

○ % American Indian/Alaska Native	1.46%
○ % Native Hawaiian/Other Pacific Islander	0.25%
% of Patients Best Served in a Language Other Than English	23.98%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	95.20%
% Uninsured Patients	23.68%
% Medicaid/Children Health Insurance Program (CHIP) Patients	58.88%

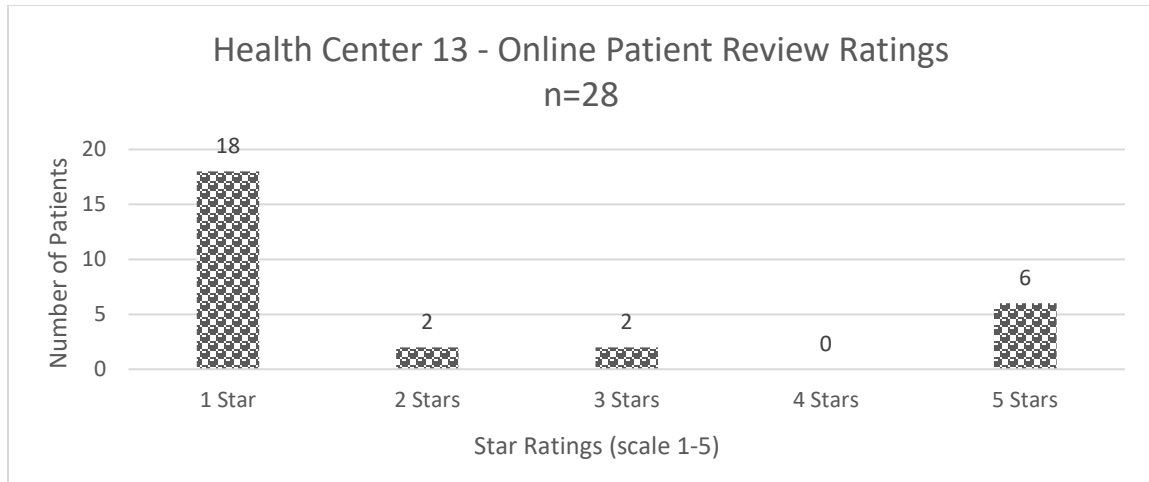
Table M3

Health Center 13 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

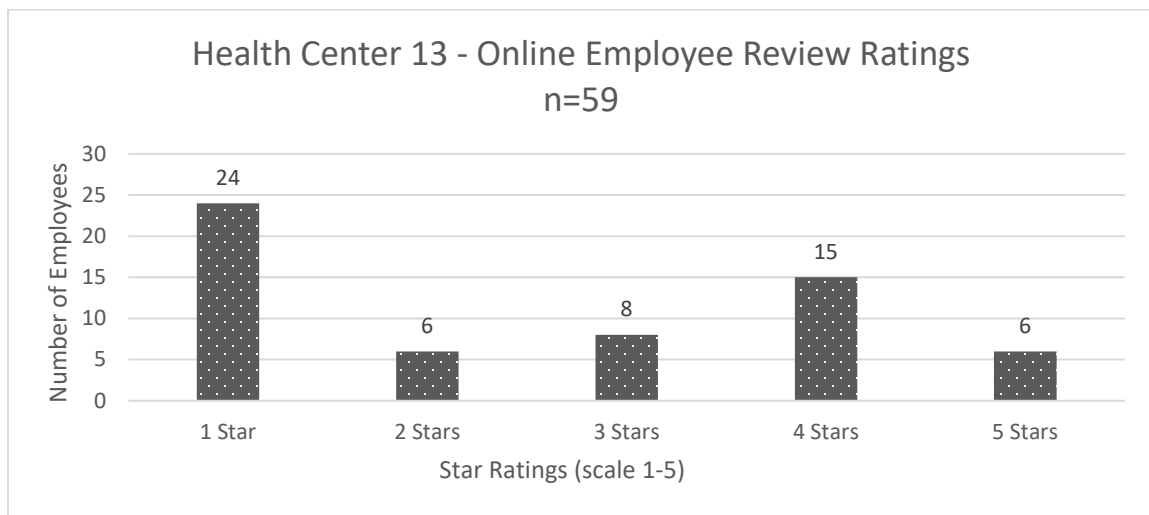
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	70.00%	75.71%	86.55%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	64.29%	50.00%	53.98%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	88.04%	82.86%	81.93%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	65.71%	65.71%	76.79%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	14.29%	20.00%	31.32%

Figure M1

Health Center 13 Online Patient Reviews Star Ratings

**Figure M2**

Health Center 13 Online Employee Reviews Star Ratings



Appendix N

Luis Federico Leloir Health Center

Located in the central region of the State and recognized as a PCMH for six years, Health Center 14 served approximately 10,100 patients in 2018, of which 59.71% were racial or ethnic minority patients, and 97.17% were below the federal poverty level (Table 41). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 42). Online Google patient reviews revealed that 67% (n=27) of patients documented a positive experience with the health center by way of a four or five-star rating out of a possible five stars (Figure 24). Online Indeed, employee reviews revealed that 86% (n=7) of employees documented favorable job satisfaction while employed by Health Center 14 by way of a four or five-star rating out of a possible five stars (Figure 25).

Table N1*Health Center 14 PCMH History*

Initial Recognition Year	2013
Initial Recognition Operational Standards Year and Level	2011 NCQA Operational Standards – Level 2
Years of PCMH Recognition	6 Years
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table N2*Health Center 14 2018 Demographics*

Total Population Served	10,122
% Adults 18 and over	78.67%
Gender	
○ % Female	60%
○ % Male	40%
% of Racial and/or Ethnic Minority Patients	59.71%
○ % Black or African American	21.75%
○ % Hispanic/Latino	31.04%
○ % Asian	1.43%

○ % American Indian/Alaska Native	0.23%
○ % Native Hawaiian/Other Pacific Islander	2.23%
% of Patients Best Served in a Language Other Than English	15.75%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	97.17%
% Uninsured Patients	27.46%
% Medicaid/Children Health Insurance Program (CHIP) Patients	57.14%

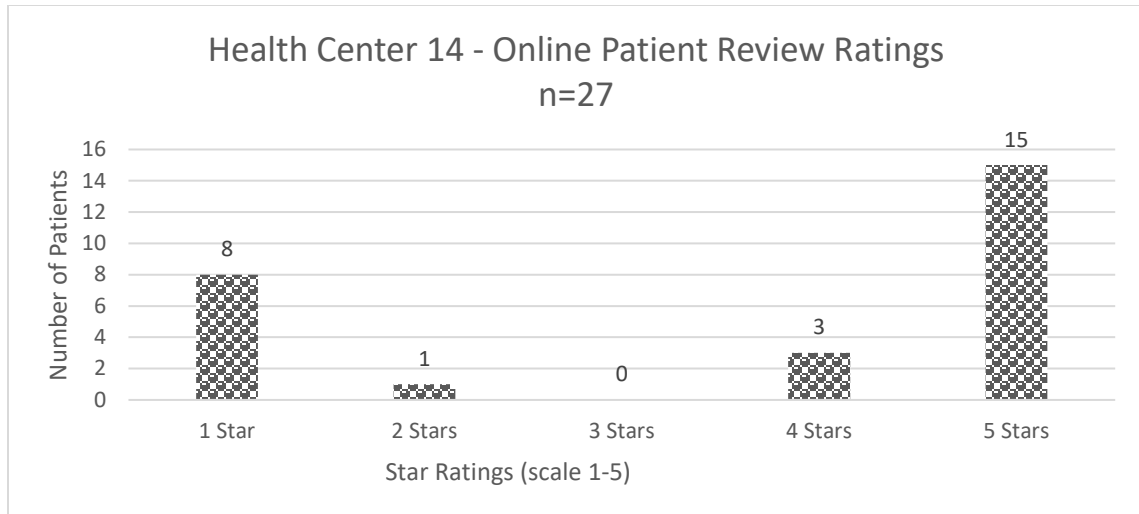
Table N3

Health Center 14 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

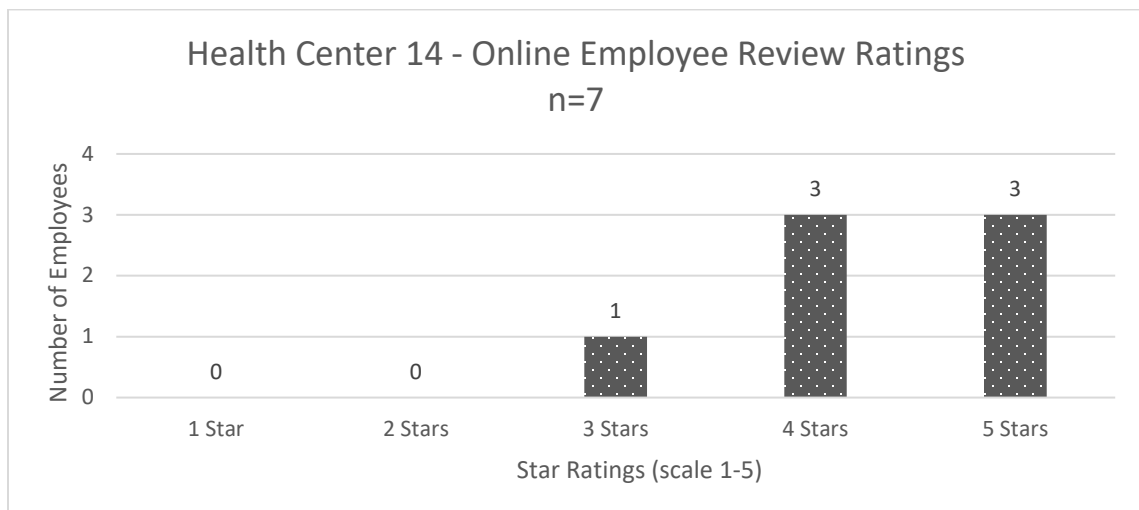
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	84.53%	78.26%	79.80%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	61.75%	62.76%	71.36%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	72.94%	86.96%	84.62%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	61.18%	65.35%	64.45%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	36.75%	37.71%	43.42%

Figure N1

Health Center 14 Online Patient Reviews Star Ratings

**Figure N2**

Health Center 14 Online Employee Reviews Star Ratings



Appendix O

Bernardo Alberto Houssay Health Center

Located in the north and recognized as a PCMH for less than one year, Health Center 15 served approximately 39,000 patients in 2018, of which 78.44% were racial or ethnic minority patients, and 90.78% were below the federal poverty level (Table 44). The center's quality of care measures examined in this study increased and decreased between the study period of 2016 and 2018 (Table 45). Online Google patient reviews revealed that 55% (n=29) of patients documented a negative experience with the health center by way of a one or two-star rating out of a possible five stars (Figure 26). Online Indeed, employee reviews revealed that 56% (n=25) of employees documented favorable job satisfaction while employed by Health Center 15 by way of a four or five-star rating out of a possible five stars (Figure 27).

Table O1*Health Center 15 PCMH History*

Initial Recognition Year	2019
Initial Recognition Operational Standards Year and Level	2014 NCQA Operational Standards – Level 3
Years of PCMH Recognition	<1 Year
Current Recognition Operational Standards Year and Level (if applicable)	2014 NCQA Operational Standards – Level 3

Table O2*Health Center 15 2018 Demographics*

Total Population Served	39,071
% Adults 18 and over	76.29%
Gender	
○ % Female	59.00%
○ % Male	41.00%
% of Racial and/or Ethnic Minority Patients	78.44%
○ % Black or African American	8.85%
○ % Hispanic/Latino	67.15%
○ % Asian	3.56%

○ % American Indian/Alaska Native	1.40%
○ % Native Hawaiian/Other Pacific Islander	0.30%
% of Patients Best Served in a Language Other Than English	57.24%
% Patients at or Below 200% of the Federal Poverty Level (FPL)	90.78%
% Uninsured Patients	49.44%
% Medicaid/Children Health Insurance Program (CHIP) Patients	35.36%

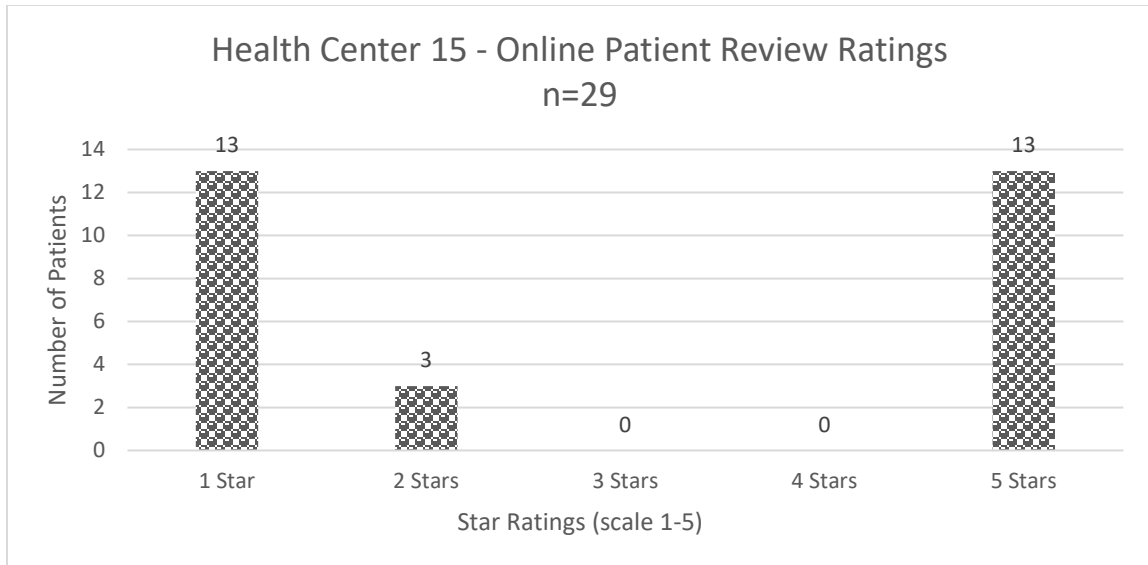
Table O3

Health Center 15 Uniform Data System (UDS) Quality of Care Measures Over 3 Years

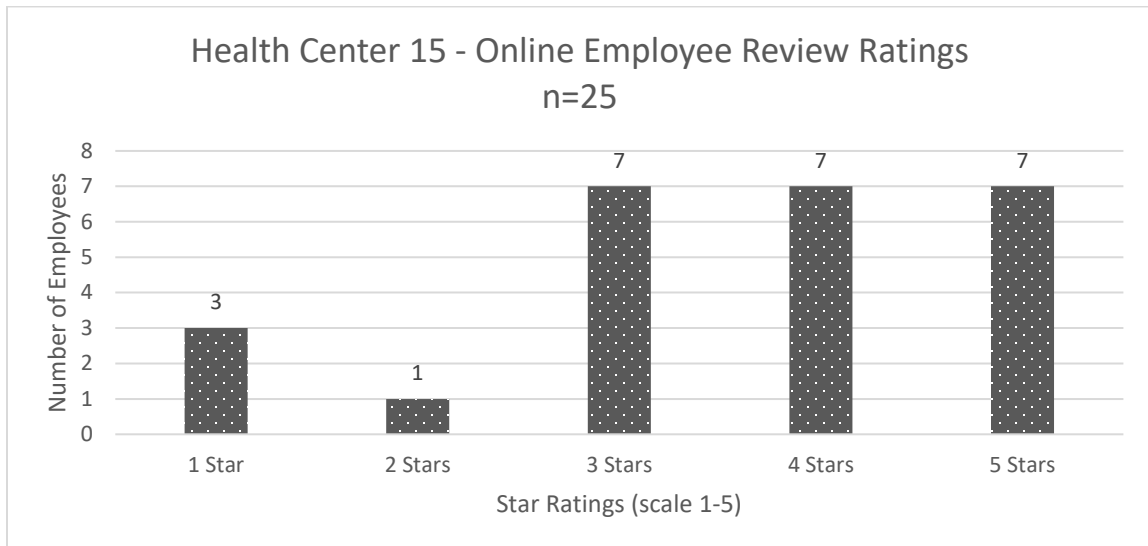
Quality of Care Measures	2016	2017	2018
Adult Medical Patients Age 18 and Older with Body Mass Index (BMI) Screening and Follow-Up	93.46%	92.60%	93.64%
Patients Screened for Clinical Depression and if Positive had a Follow-Up Plan Documented	98.57%	99.94%	99.92%
Patients Aged 18 and Older Diagnosed with Coronary Artery Disease (CAD) and Prescribed a Lipid Lowering Therapy	99.38%	98.84%	97.99%
Patients with Hypertension Whose Blood Pressure (BP) was Controlled (<140/90 mmHg)	69.62%	73.00%	73.31%
Diabetic Patients with Poorly Controlled Hemoglobin A1c (HbA1c>9%) or No Test During Year	25.60%	24.69%	25.51%

Figure O1

Health Center 15 Online Patient Reviews Star Ratings

**Figure O2**

Health Center 15 Online Employee Reviews Star Ratings



Appendix P

Coding Frame

Requirements of Coding Frame

- A. Unidimensional – each dimension in coding frame capture only one aspect of the material and there is no mixing of dimensions
- B. Mutual exclusiveness – each segment of the material is assigned to one subcategory only
- C. Exhaustiveness – the ability to assign each unit of coding in the material to at least one subcategory in the coding frame. All that is relevant in the material must be captured by one of the subcategories in the coding frame.
- D. Saturation – use each subcategory at least once and that no subcategory remains empty (an important finding is to acknowledge any categories not covered by data)
- E. Segmentation – building a coding frame dividing into units so that each segment/unit fits into one category of the coding frame
- F. Selecting
 - a. Start with online patient reviews
 - b. End with online employee reviews
- G. Structuring and Generating
 - a. Concept-driven strategy
 - b. Drawing upon theory – frameworks
 - c. Drawing upon research
 - d. Drawing upon everyday knowledge
 - e. Best to build your coding frame using the same material that you want to analyze

f. Residual/miscellaneous category after hierarchical level of coding frame

H. Defining – see chart below

I. Revising and Expanding

The Coding Frame Structure

Ten Dimensions (Main Categories – health centers, time, star ratings, no star ratings, employee reviewer demographics, the four levels of influence in the Minority Health and Health Disparities Research Framework and the areas of burnout in the Maslach Burnout Toolkit for Medical Personnel)

a) Health Centers

- i. Rebecca Lee Crumpler Health Center
- ii. James McCune Smith Health Center
- iii. Leonidas Harris Berry Health Center
- iv. Charles Richard Drew Health Center
- v. Louis Wade Sullivan Health Center
- vi. Marilyn Hughes Gaston Health Center
- vii. Patricia Era Bath Health Center
- viii. Herbert W. Nickens Health Center
- ix. Alexa Irene Canady Health Center
- x. Regina Marcia Benjamin Health Center
- xi. Severo Ochoa Health Center
- xii. Helen Rodriguez Trias Health Center
- xiii. Mario Molina Health Center
- xiv. Luis Frederico Leloir Health Center

xv. Bernardo Alberto Houssay Health Center

b) Star Ratings

1. Subcategory : Patient 1 Star
2. Subcategory : Patient 2 Stars
3. Subcategory : Patient 3 Stars
4. Subcategory : Patient 4 Stars
5. Subcategory : Patient 5 Stars
6. Subcategory : Employee 1 Star
7. Subcategory : Employee 2 Stars
- Subcategory : Employee 3 Stars
8. Subcategory : Employee 4 Stars
9. Subcategory : Employee 5 Stars

c) No Star Rating

1. Subcategory: Employee Negative
2. Subcategory: Employee Neutral
3. Subcategory: Employee Positive

d) Employee Reviews

1. Subcategory: Position Title
2. Subcategory: Current employee at time of review
3. Subcategory: Former employee at time of review

e) Individual

1. Subcategory : Insurance Coverage

(1) Sub-subcategory: Patient NCQA Standard 2 – Element B – Factor 7 – the practice gives uninsured patients information about obtaining coverage

(2) Sub-subcategory: Employee NCQA Standard 2 – Element B – Factor 7 – the practice gives uninsured patients information about obtaining coverage

2. Subcategory: Health Literacy

(1) Sub-subcategory: Patient NCQA Standard 3 – Element C – Factor 10 – assessment of health literacy

(2) Sub-subcategory: Employee NCQA Standard 3 – Element C – Factor 10 – assessment of health literacy

3. Subcategory: Treatment Preferences

(1) Sub-subcategory: Patient NCQA Standard 4 – Element B – Factor 1 – incorporates patient preferences and functional/lifestyle goals

(2) Sub-subcategory: Employee NCQA Standard 4 – Element B – Factor 1 – incorporates patient preferences and functional/lifestyle goals

f) Interpersonal

1. Subcategory: Patient Clinician Relationship

(1) Sub-subcategory: Patient NCQA Standard 2- Element A – Factor 1 – assisting patients/families to select clinician and documenting the selection in records

(2) Sub-subcategory: Employee NCQA Standard 2- Element A – Factor 1 – assisting patients/families to select clinician and documenting the selection in records

- (3) Sub-subcategory: Patient NCQA Standard 2 – Element A – Factor 2 –
monitoring the percentage of patient visits with selected clinician or team
- (4) Sub-subcategory: Employee NCQA Standard 2 – Element A – Factor 2 –
monitoring the percentage of patient visits with selected clinician or team

2. Subcategory: Medical Decision Making

- (1) Sub-subcategory: Patient NCQA Standard 3- Element E – Factor– The
practice implements clinical decision support following evidence-based
guidelines
- (2) Sub-subcategory: Employee NCQA Standard 3- Element E – Factor – The
practice implements clinical decision support following evidence-based
guidelines
- (3) Sub-subcategory: Patient NCQA Standard 4- Element E – Factor 4- adopts
shared decision making aids
- (4) Sub-subcategory: Employee NCQA Standard 4- Element E – Factor 4-
adopts shared decision making aids

g) Community

1. Subcategory: Availability of Services

- (1) Sub-subcategory: Patient NCQA Standard 1 – Element A – Factor 1 –
providing same-day appointments for routine and urgent care
- (2) Sub-subcategory: Employee NCQA Standard 1 – Element A – Factor 1 –
providing same-day appointments for routine and urgent care

- (3) Sub-subcategory: Patient NCQA Standard 1 – Element A – Factor 2 –
providing routine and urgent-care appointments outside of regular
business hours
- (4) Sub-subcategory: Employee NCQA Standard 1 – Element A – Factor 2 –
providing routine and urgent-care appointments outside of regular
business hours
- (5) Sub-subcategory: Patient NCQA Standard 1 – Element B – Factor 2 –
providing timely clinical advice by telephone
- (6) Sub-subcategory: Employee NCQA Standard 1 – Element B – Factor 2 –
providing timely clinical advice by telephone

2. Subcategory: Safety Net Services

- (1) Sub-subcategory: Patient NCQA Standard 2 – Element B – Factor6 – the
practice provides equal access to all their patients regardless of the source
of payment
- (2) Sub-subcategory: Employee NCQA Standard 2 – Element B – Factor6 –
the practice provides equal access to all their patients regardless of the
source of payment

h) Societal

1. Subcategory: Quality of Care

- (1) Sub-subcategory: Patient NCQA Standard 6 – Element A – measure
clinical quality performance
- (2) Sub-subcategory: Employee NCQA Standard 6 – Element A – measure
clinical quality performance

- (3) Sub-subcategory: Patient NCQA Standard 6 – Element B – measure
resource use and care coordination
- (4) Sub-subcategory: Employee NCQA Standard 6 – Element B – measure
resource use and care coordination
- (5) Sub-subcategory: Patient Standard 6 – Element C – measure
patient/family experience
- (6) Sub-subcategory: Employee Standard 6 – Element C – measure
patient/family experience
- (7) Sub-subcategory: Patient Standard 6- Element E – demonstrate continuous
quality improvement
- (8) Sub-subcategory: Employee Standard 6- Element E – demonstrate
continuous quality improvement
- i) Subcategory: Patient Other Miscellaneous
- j) Subcategory: Patient Other Irrelevant
- k) Subcategory: Employee Other Miscellaneous
- l) Subcategory: Employee Other Irrelevant
- m) Burnout areas in Maslach Burnout Tool Kit for Medical Personnel
 - 1. Subcategory: Employee Emotional Exhaustion
 - 2. Subcategory: Employee Depersonalization
 - 3. Subcategory: Employee Personal Accomplishment

The Coding Frame

Category/Subcategory	Code Name	Description	Examples
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Rebecca Lee Crumpler Health Center	RLCHC	Health Center 1	Self-explanatory
James McCune Smith Health Center	JMSHC	Health Center 2	Self-explanatory
Leonidas Harris Berry Health Center	LHBHC	Health Center 3	Self-explanatory
Charles Richard Drew Health Center	CRDHC	Health Center 4	Self-explanatory
Louis Wade Sullivan Health Center	LWSHC	Health Center 5	Self-explanatory
Marilyn Hughes Gaston Health Center	MHGHC	Health Center 6	Self-explanatory
Patricia Era Bath Health Center	PEBHC	Health Center 7	Self-explanatory
Herbert W. Nickens Health Center	HWNHC	Health Center 8	Self-explanatory
Alexa Irene Canady Health Center	AICHC	Health Center 9	Self-explanatory
Regina Marcia Benjamin Health Center	RMBHC	Health Center 10	Self-explanatory
Severo Ochoa Health Center	SOHC	Health Center 11	Self-explanatory
Helen Rodriguez Trias Health Center	HRTHC	Health Center 12	Self-explanatory
Mario Molina Health Center	MMHC	Health Center 13	Self-explanatory
Luis Frederico Leloir Health Center	LFLHC	Health Center 14	Self-explanatory
Bernardo Alberto Houssay Health Center	BAHHC	Health Center 15	Self-explanatory
Month and Year of rating	MY	Date review posted	Self-explanatory
Subcategory : Patient 1 Star	P1S	Low star rating	Rating 1 of 5 stars
Subcategory : Patient 2 Stars	P2S	Low star rating	Rating 2 of 5 stars
Subcategory : Patient 3 Stars	P3S	Neutral star rating	Rating 3 of 5 stars
Subcategory : Patient 4 Stars	P4S	High star rating	Rating 4 of 5 stars
Subcategory : Patient 5 Stars	P5S	High star rating	Rating 5 of 5 stars
Subcategory : Employee 1 Star	E1S	Low star rating	Rating 1 of 5 stars

Subcategory : Employee 2 Stars	E2S	Low star rating	Rating 2 of 5 stars
Subcategory : Employee 3 Stars	E3S	Neutral star rating	Rating 3 of 5 stars
Subcategory : Employee 4 Stars	E4S	High star rating	Rating 4 of 5 stars
Subcategory : Employee 5 Stars	E5S	High star rating	Rating 5 of 5 stars
No Star Rating Subcategory: Employee Negative	NSR E. Neg	When no star, negative tone	Clear dissatisfaction with health center such as “does not work at this center”
No Star Rating Subcategory: Employee Neutral	NSR E. Neu	When no star, neutral tone	Neutrality – Reviewer likes some aspects of the center while disliking other aspects
No Star Rating Subcategory: Employee Positive	NSR E. Pos	When no star, positive tone	Positive- “I love working at this health center”
Subcategory: Position Title	Title	Employees’ job title at health center	Self-explanatory
Current employee at time of review	Current Employee	Noted in review	Self-explanatory
Subcategory: Former employee at time of review	Former Employee	Noted in review	Self-explanatory
Subcategory : Insurance Coverage Sub-subcategory: Patient NCQA Standard 2 – Element B – Factor 7 – the practice gives uninsured patients information about obtaining coverage	P Ins. Cov.	The practice screens for eligibility and enrolls or refer for insurance enrollment	If a person is uninsured, they are screened or not screened for benefits eligibility
Subcategory: Health Literacy Sub-subcategory: Patient NCQA Standard 3 – Element C – Factor 10 –	P Health Lit.	The practice assesses patient’s ability to understand the care requirements	Patients understand or do not understand their condition and know how or do not know how to

assessment of health literacy		to self-manage their health	manage their health outside of the health center
Subcategory: Treatment Preferences Sub-subcategory: Patient NCQA Standard 4 – Element B – Factor 1 – incorporates patient preferences and functional/lifestyle goals	P Treat. Pref.	The patient's treatment preferences are included in the care plan	Patient concerns, preferences, and lifestyle goals are included or not included in the care plan
Subcategory: Patient Clinician Relationship Sub-subcategory: Patient NCQA Standard 2- Element A – Factor 1 – assisting patients/families to select clinician and documenting the selection in records	P Sel. Clin.	Patients select the provider of their choice	Indication of having or not having visits with same clinician
Subcategory: Patient Clinician Relationship Sub-subcategory: Patient NCQA Standard 2 – Element A – Factor 2 – monitoring the percentage of patient visits with selected clinician or team	P Mon. Clin. Visits	Patients have visits with their selected provider most of the time	Indication of having or not having visits with same clinician
Subcategory: Medical Decision Making Sub-subcategory: Patient NCQA Standard 3- Element E – The practice implements clinical decision support following evidence-based guidelines	P Clin. Dec. Mak.	The practice uses clinical decision support in disease management	Indication of using or not using evidence-based guidelines in treatment decisions
Subcategory: Medical Decision Making	P Adop. Shar. Dec. Aids	The practice uses patient appropriate	Indication of providing or not

Sub-subcategory: Patient NCQA Standard 4- Element E – Factor 4- adopts shared decision making aids		resources to aid patients in making difficult medical decisions	providing assistance in making choices about medical decisions to patients
Subcategory: Availability of Services Sub-subcategory: Patient NCQA Standard 1 – Element A – Factor 1 – providing same-day appointments for routine and urgent care	P Same Day Appt.	Patients can be seen the same day as needed	“I walked in and couldn’t be seen” or ”I called the center requesting to come in and was told no”
Subcategory: Availability of Services Sub-subcategory: Patient NCQA Standard 1 – Element A – Factor 2 – providing routine and urgent-care appointments outside of regular business hours	P Rout. And Urg. Appt.	Patients can be seen early in the AM, evenings, or weekends	Indication or no indication of outside of normal business hours at the health center
Subcategory: Availability of Services Sub-subcategory: Employee NCQA Standard 1 – Element B – Factor 2 – providing timely advice by telephone	P Clin. Adv. Tel.	Patient receives response to inquiry regarding symptoms, health status or acute/chronic conditions	Indication or no indication of responding timely to patient phone calls
Subcategory: Safety Net Services. Sub- subcategory: Patient NCQA Standard 2 – Element B – Factor6 – the practice provides equal access to all their patients regardless of the source of payment	P Acc. Sour. Pay	Patients are seen regardless of insurance status	Indication or no indication that no patients are turned away from services due to inability to pay

Subcategory: Quality of Care Sub-subcategory: Patient NCQA Standard 6 – Element A – measure clinical quality performance	P Meas. Clin. Qual. Perf.	The practice measures health outcomes – patient perspective	Statements about patient reported health outcomes
Subcategory: Quality of Care Sub-subcategory: Patient NCQA Standard 6 – Element B – measure resource use and care coordination	P Meas. Res. And CC.	The health center monitors the emergency room use and referral adherence of their patients	Statements about emergency department visits, hospital admissions, and health care related services outside of the health center
Subcategory: Quality of Care Sub-subcategory: Patient Standard 6 – Element C – measure patient/family experience	P Meas. Pat. Exp	The health center monitors patient experience with the center	Statements regarding modes of communicating satisfaction or dissatisfaction with health center
Subcategory: Quality of Care Sub-subcategory: Patient Standard 6- Element E – demonstrate continuous quality improvement	P Dem. CQI	The health center improves patient experience with the center	Statements about improved or worsening health
Subcategory: Patient Other Miscellaneous	P O. Misc.	Statements that are about patient experience, but does not fit into framework categories	Statements regarding societal patient experience that are not about quality
Subcategory: Patient Other Irrelevant	P O. Irr.	Statements deemed irrelevant to patient experience	Societal patient experience not about quality
Subcategory: Employee Other Miscellaneous	E O. Misc.	Statements that are about the employee experience, but does not fit into framework categories	Societal employee experience not about quality

Subcategory: Employee Other Irrelevant	E O. Irr.	Statements deemed irrelevant to employee experience	Statements about the employee experience that are not societal
Subcategory: Employee Emotional Exhaustion	EEE	Employee is tired or overwhelmed	“I feel emotionally drained from my work”
Subcategory: Employee Depersonalization	ED	Employee is desensitized	“I don’t really care what happens to some patients”
Subcategory: Employee Personal Accomplishment	EPA	Employee does not feel like they are making a difference	“ I do not accomplish many worthwhile things in this job”

Guidance in Using the Coding Frame

A. Mandatory codes for each patient review:

- a. Health center code
- b. Star Rating, if applicable
- c. If no star rating – general tone coding of review – negative, neutral, or positive
- d. Any other applicable codes

B. Mandatory codes for each employee review:

- a. Health center code
- b. Star rating, if applicable
- c. If no star rating – general tone coding of review – negative, neutral, or positive
- d. Position Title
- e. Former or current employee at the time of review
- f. Title of review

Appendix Q

Qualitative Memo Notes

1st Pilot Memo Notes

Initially, difficulty sticking to concept-driven coding framework. Must be mindful to place other findings in the miscellaneous or irrelevant categories. I will keep track of search words. Items in both categories can be searched and most common themes may be presented in the analysis or at a different time.

For the patient reviews - disregarded the individual level (individual, interpersonal, community, and society) irrelevant and miscellaneous, replacing with a general other for miscellaneous and irrelevant.

After reviewing the patient reviews for the pilot, HC4 - I realized that the NCQA PCMH 2014 Operational Standards includes clinical advice by telephone - mentioned several times in the reviews. I edited the combined conceptual frameworks, adding the clinical advice by telephone. It was also added to the coding frame - manually and in NVivo.

The employee reviews will have to be coded twice. Once for PCMH and again for burnout. That said, may have to create a second project for burnout to avoid coding the same statement twice.

For the employee reviews, I distinguished between employee burnout area miscellaneous and employee burnout area irrelevant. Miscellaneous will capture statements about negative employee experiences that do not fit into burnout categories. Irrelevant will capture positive employee experiences (no burnout).

There was only one statement related to PCMH during the pilot analysis of employee reviews. The Researcher will read the transcripts of 2 (20% of cases) to 4 (25% of cases) more health center employee reviews to determine if enough content is present. If not, the employee reviews will be analyzed for employee experience and burnout only - not PCMH.

The second pilot will occur on 2/8 - both pilots will be compared and reconciled, then the analysis of the remaining health centers will commence.

Words to Search Memo Notes

- Rescheduling/Reschedule/Rescheduled
- Called/Calling/Phone
- Customer Service/Service
- Rude
- Disrespectful
- Long/Longer Waits
- Worse
- Talent/Talented
- Courteous
- Passionate
- Unavailable
- Attitude
- Impatient
- Inconsiderate
- Recommend/Refer

- Wait/Waiting/Waits
- Confidentiality
- Satisfied/Satisfaction

Rebecca Lee Crumpler Health Center Memo Notes

- The owner is responding to online patient reviews
- Numerous complaints about billing, over charging, inability to get billing on the phone, and the inability to get timely billing statements

Leonidas Harris Berry Health Center Memo Notes

- I do not see anyone responding to online patient reviews

Charles Richard Drew Health Center Memo Notes

- I had 4 more reviews to analyze from my initial capture of online patient reviews.
- There are 37 reviews in total.
- I am noticing at this juncture that there are responses to the reviews from the owner - more recently.
- As I code CRDHC - my pilot case - really focusing on differentiating between patient experience and patient satisfaction. Patient experience is describing what happened in their interaction with the center. Patient satisfaction is everything else - positive or negative - from amenities such as a pharmacy and do not come to this health center.
- Search "wait"
- Search "refills"

Louis Wade Sullivan Health Center Memo Notes

- Search "parking"
- Search "wait"

- Search "rude"
- Search "attitude"
- Search "Unprofessional"
- Nobody from LWSHC is responding to online reviews

Marilyn Hughes Gaston Health Center Memo Notes

- Responses from owner to online reviews
- Patient-clinician relationship

Patricia Era Bath Health Center Memo Notes

- No owner responses to patient reviews

Herbert W. Nickens Health Center Memo Notes

- No response from owner to reviews

Alexa Irene Canady Health Center Memo Notes

- Search "dirty"
- Search "rude"

Regina Marcia Benjamin Health Center Memo Notes

- No responses from the owner

Severo Ochoa Health Center Memo Notes

- Some owner responses to online patient reviews
- Patients mentioned that nobody is responding to the online patient portal

Helen Rodriguez Trias Health Center Memo Notes

- Owner response to online reviews
- Quite a few reviews equate the center to saving their lives. This center provides substance abuse services and have a homeless designation

Luis Federico Leloir Health Center Memo Notes

- Some owner responses to online patient reviews

Bernardo Alberto Houssay Health Center Memo Notes

- Responses from owner to online reviews