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AN INTERDISCIPLINARY TEAM APPROACH TO THE PATIENT-CENTERED  
MEDICAL HOME AS A MEANS OF MEETING MEANINGFUL USE STAGE 2  
REQUIREMENTS

Katie Marissa Alfredson

A Dissertation Submitted to the Faculty of  
GRAND VALLEY STATE UNIVERSITY

In

Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF NURSING PRACTICE

Kirkhof College of Nursing

July 2015

## **Dedication**

I would like to dedicate this project to my mother and my son, Iver. Mom, I could not have done this without all of your support, encouragement, and prayers. Iver, you have given me more motivation through this process than you could ever know. I love you both so very much.

## **Acknowledgements**

Throughout this project, I have been blessed to have received support and encouragement from a number of individuals. Dr. Dianne Conrad has been a fabulous mentor and a co-chair of my dissertation committee. Her guidance has been invaluable and I have grown immensely as a professional as a result of her influence. I would like to thank her for all the time and effort she has invested in me and this project, through hours of proof-reading, collaborative discussions, and guiding me through the scholarly process. I would like to thank Dean Cynthia McCurren, who co-chaired my committee with Dr. Conrad. Her experience in the dissertation process was instrumental in arriving at the final project and very much appreciated. In addition, I would like to thank Dr. Timothy Syfert and Dr. Alan Conrad who also contributed as members of my committee. It was through the expertise each committee member brought that enabled the successful development of this project. It has truly been a collaborative effort. In addition, I would like to thank the providers and staff at the Clinic for welcoming me as part of the team over the past year while I conducted my project. I would also like to thank my family for their continued prayers and support. I could not have made it through without their encouragement. Last but not least, I would like to thank my heavenly Father who has blessed me beyond what I could have ever imagined.

## **Abstract**

In an attempt to address the shortcomings of the current U.S. healthcare system, reimbursement structure is changing from fee-for-service to a value-based model. This requires drastic change in how care is delivered. Therefore, care delivery models and reimbursement incentive programs are evolving to promote advancements in care delivery. This project examined an interdisciplinary team model utilized at a rural, privately owned practice that is a Patient Centered Medical Home (PCMH). This practice has incorporated unique structures and processes to attain Stage 2 Meaningful Use requirements in the first year attesting for this stage became available as a means of addressing shortcomings within the current healthcare system. An understanding of this model was obtained through informal interviews, observation, shadowing staff members, and a comparison of Stage 2 attainment between the Clinic and national data. This project found high quality care is delivered through the structures and processes in place at this Clinic resulting in a greater proportion of Stage 2 attainment within the Clinic compared to national data regarding similar providers. In doing so, this model has not only obtained enhanced reimbursement but has also experienced improved patient outcomes. Nurses were found to be an integral part of this team, necessary for the success of Stage 2 attainment and optimizing patient outcomes. As reimbursement continues to evolve to promote improved quality and outcomes, to remain viable, U.S. care delivery must adapt. As this model has seen success, a toolkit was developed containing documents that can be used in replicating this interdisciplinary team model in other primary care sites. This toolkit can be used to assist other primary care practices progress to meet the demands of reimbursement reform.

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## Abbreviations

Academy of Pediatrics .....	AAP
Accountable Care Organization .....	ACO
Advance Practice Registered Nurse.....	APRN
Affordable Care Act .....	ACA
Agency for Healthcare Research and Quality .....	AHRQ
American Academy of Family Physicians.....	AAFP
American College of Physicians.....	ACP
American Medical Directors Association.....	AMDA
Annual Medicare Wellness Visit .....	AWV
Blue Cross Blue Shield of Michigan .....	BCBSM
Centers for Medicare and Medicaid Services .....	CMS
Certified Diabetes Educator.....	CDE
Certified Medical Assistant.....	CMA
Chronic Care Model.....	CCM
Computerized Provider Order Entry.....	CPOE
Consolidated-Clinical Data Architecture .....	C-CDA
Current Procedural Terminology .....	CPT
Doctor of Nursing Practice .....	DNP
Electrocardiogram.....	EKG
Electronic Health Record.....	EHR
Electronically Protected Health Information .....	ePHI
Eligible Professional .....	EP
Emergency Room.....	ER

Full-Time Equivalent .....	FTE
Health Information Technology.....	HIT
Health Insurance Portability and Accountability Act .....	HIPPA
Health Level 7.....	HL7
Hemoglobin A1c.....	A1c
Information Technology .....	IT
Licensed Practical Nurse.....	LPN
Michigan Care Improvement Registry.....	MCIR
Medical Assistant.....	MA
National Committee for Quality Assurance.....	NCQA
Nurse Practitioner .....	NP
Office of the National Coordinator for Health Information Technology .....	ONC
Patient-Centered Medical Home.....	PCMH
Physician Assistant .....	PA
Physician Group Incentive Program .....	PGIP
Physician Health Organization .....	PHO
Physician Quality Reporting System .....	PQRS
Registered Nurse.....	RN
Return on Investment.....	ROI
Structure, Process, Outcomes .....	SPO
Transitional Care Management.....	TCM
U.S. Department of Health and Human Services .....	USDHHS
Value-Based Payment Modifier.....	VM

## CHAPTER 1

### INTRODUCTION

Spurred by excessive spending (Berwick, Nolan, & Whittington, 2013) that continues to yield suboptimal patient outcomes (Arend, Tsang-Quinn, Levine, & Thomas, 2012), the United States healthcare system is currently undergoing a period of reform. As a means of addressing shortcomings of the system, the Institute for Healthcare Improvement (IHI) developed the Triple Aim, a collection of goals encouraging improved care quality, population health, and reducing healthcare expenditures (IHI, 2014; “The Triple Aim,” 2009). To support the changing healthcare climate, payment models are also adapting, moving from fee-for-service to reimbursement based on value and quality outcomes.

Various models of care have been proposed and initiated as potential methods for redirecting healthcare to support this course. Among the most promising models for the redesign of primary care is the Patient-Centered Medical Home (PCMH). The PCMH is a primary care model that creates a system in which accessible, comprehensive, patient-centered care is delivered in a high quality and coordinated fashion (U.S. Department of Health and Human Services [USDHHS], 2014).

Incentive programs have also been created to support the delivery of quality care while reimbursement models transition from fee-for-service to pay-for-performance. The Medicare Electronic Health Record (EHR) Incentive Program and the Medicaid EHR Incentive Program, (collectively referred to as Meaningful Use) are two such programs that encourage the integration of health information technology (HIT) as a means of enhancing the quality and efficiency of care that is provided. Although there are additional models and numerous incentive programs available, for the purpose of this

project, the focus was on the PCMH and Meaningful Use.

This chapter discusses the project aims, common issues in the primary care setting, the impetus for the development of the PCMH and a description of the contribution this proposed project will make. In particular, this chapter introduces a unique interdisciplinary team approach that utilizes nursing staff as part of the team to achieve and maintain PCMH status, leading to enhanced incentive reimbursement through incentive programs such as Meaningful Use.

### **Project Aims**

This project focused on a clinic with PCMH status located in a rural county in Michigan. Three components were explored: the Clinic team, the processes utilized by this team, and the use of the EHR to accomplish quality incentives that result in enhanced reimbursement. In exploring these components, this project sought to answer several questions. First, how does the incentive reimbursement obtained by an interdisciplinary team approach implemented at the Clinic compare to national incentive reimbursement data, specifically in regards to the meaningful use of technology? In addition, what is the nursing contribution to the interdisciplinary team that results in enhanced care quality and incentive reimbursement? Finally, do the employees of the Clinic function as a team to provide high quality care?

By answering these questions, an effective PCMH that uses an innovative, interdisciplinary team approach while optimizing ambulatory care processes through the incorporation of information technology with the EHR was revealed. The structure and processes that have promoted specific Meaningful Use objectives (Appendix A) were explored. The success in meeting Meaningful Use criteria was compared to outcomes of

other eligible professionals (EPs) in the nation in meeting Meaningful Use Stage 1 and Stage 2 criteria (Appendix B and Appendix A, respectively). By completing a detailed model description focusing on the interdisciplinary team and optimization of ambulatory care processes utilizing the EHR, other practices can potentially utilize the evidence and steps necessary to benefit from implementation of similar structures and processes that enhance EHR utilization to improve care quality and reimbursement through the Meaningful Use program.

### **Background and Significance**

Primary care is the frontline of healthcare. It should be the primary access point for most healthcare delivery and the gateway for patients to other healthcare system services (The Commonwealth Fund, 2013). While leaders in healthcare strive to meet the objectives described by the Triple Aim, the 2010 Patient Protection and Affordable Care Act (ACA) has enabled an additional 20 million Americans to obtain health insurance as of May 1, 2014 (The Commonwealth Fund, 2014). So many citizens obtaining health insurance is a monumental accomplishment and thus it is imperative for the primary care system to adapt and develop the abilities to serve such an expanded population.

Under the current design of healthcare and the dramatic increase of insured individuals, an estimated shortage of 20,400 physicians in primary care by the year 2020 is predicted (USDHHS, 2013). Healthcare reform and alternative methods of primary care delivery must be explored and implemented to assure care is provided efficiently and effectively while maintaining quality and the objectives of the Triple Aim.

Reimbursement structure is also evolving. Currently, reimbursement is based on fee-for-service. Under this model, quality is not rewarded in a way that would ensure



sustainability of a model that may cost more to achieve enhanced outcomes. Therefore, as healthcare models evolve, reimbursement is evolving into a value-based model where practices are rewarded for providing high quality care and improved patient outcomes. Change, however, is slow. While reimbursement models are in the process of redesign, incentive programs are paving the way for sustaining innovative care delivery models, such as the PCMH, that aim to improve care quality and patient outcomes.

### **The Patient-Centered Medical Home**

To address these issues and achieve the goals of the Triple Aim, innovative healthcare delivery models have been proposed (Berwick et al., 2013). The Accountable Care Organization (ACO) and the Patient -Centered Medical Home (PCMH) are two such models (“The Triple Aim,” 2009). An ACO is comprised of preferentially established relationships between healthcare providers who strive to provide high-quality, coordinated care, assuring patients receive “the right care at the right time” (Centers for Medicare & Medicaid Services [CMS], 2013). Through ACOs, patient information and services are coordinated between primary care and specialists (American Hospital Association, 2010). This has been shown to avoid unnecessary services while preventing medical errors, resulting in reduced spending (CMS, 2013).

ACOs and PCMHs are related in that multiple PCMHs can be a part of an ACO. PCMHs are preferred members by most ACOs due to the quality and performance outcomes realized by the PCMH model (Helfgott, 2012). In the care delivery system of an ACO, however, there is a greater responsibility for cost and quality as it spans within and beyond the primary care relationship (Miller, 2009). ACOs are accountable for improving health outcomes and controlling costs for a larger population and across the

entire care continuum. Because the PCMH has been successful in meeting these goals, healthcare providers belonging to ACOs are often part of a PCMH or are encouraged to help their practice become PCMH certified as a means of optimizing the ACO.

Originating in the early 1960s among pediatric providers (Berryman et al., 2013), the PCMH has received more attention in response to the ACA. This model of healthcare delivery creates a system that emphasizes the importance of a long-term partnership between the patient and provider, enhances care coordination and communication, allows for ready access to care, promotes patient support and empowerment, and requires the integration of HIT (Bechtel & Ness, 2010; National Committee for Quality Assurance [NCQA], 2012). The goal of the PCMH is the provision of comprehensive, patient-centered quality care that is accessible and coordinated with the broader healthcare system (USDHHS, 2014). In doing so, this model minimizes fragmentation of care and reduces medical errors resulting in better care (Bechtel & Ness, 2010) while improving health outcomes, enhancing the patient experience, and reducing healthcare costs (Fontaine, Flottemesch, Solberg & Asche, 2010).

### **Meaningful Use**

CMS has developed the Medicare EHR Incentive Program and the Medicaid EHR Incentive Program through which eligible professionals (EPs) can benefit from payments awarded for adopting, implementing, or demonstrating the meaningful use of HIT (CMS, 2015a).

There are three stages of Meaningful Use. The year 2014 was the first year EPs could attest for Stage 2. Because of its timeliness, for the purpose of this project, Stage 2 Core Objectives were examined in the context of the Clinic (Appendix A). Specifically,

structures and processes that facilitate the achievement of these objectives were examined and described as they occurred within the interdisciplinary team utilized by the Clinic.

### **Project Purpose and Deliverables**

Despite the innovative concepts of the PCMH to address current healthcare issues and incentives enabling the sustainability of such a model, there is not a standardized method for implementation. Multiple approaches have been taken to achieve PCMH status, which is awarded based on achievement criteria through credentialing organizations such as the NCQA and Blue Cross Blue Shield of Michigan (BCBSM). This project used a systemic assessment approach to thoroughly examine how a private practice in a small rural community, successful credentialed as an NCQA and BCBSM PCMH, utilized a unique interdisciplinary model to meet core objectives of Stage 2 Meaningful Use. The result was a process improvement toolkit to be utilized for replicating the model.

### **Conclusion**

The following chapter provides a review of the literature pertaining to the PCMH, interdisciplinary roles found within the PCMH (particularly nursing roles), and reimbursement options that reward practices for providing high quality care. Chapter 3 describes the theoretical frameworks used to provide understanding to the phenomenon of interest and guide this project. Chapter 4 describes the methodology that was utilized to fulfill project goals, as it was informed by these frameworks. Chapter 5 then reveals findings of the project followed by a discussion pertaining to these findings in Chapter 6.

## CHAPTER 2

### LITERATURE REVIEW

The Patient-Centered Medical Home (PCMH) holds promise as a solution to the commonplace inefficiencies with the current primary care system. As of yet, however, there is no standardized method to guide the implementation of a PCMH. Therefore, the purpose of this project was to describe features of a successful clinic that uses an innovative, cost-effective version of the PCMH model through the use of an interdisciplinary team. A comparison of Meaningful Use incentive reimbursement data between the Clinic and the national data was conducted as a means of demonstrating the effectiveness of this model, ultimately for the purpose of disseminating an evidence-based model worthy of replication.

This chapter provides a review of the literature regarding the PCMH and team member roles, with an emphasis on the role of nurses in the PCMH model. Literature regarding the PCMH effectiveness is limited. The data that is available, however, suggest cost savings and improved patient outcomes can be generated through the use of the PCMH. Various incentive programs are described as these programs provide the bridge from the current fee-for-service reimbursement model to the eventual value-based reimbursement model. The literature reviewed in this chapter is organized by first describing the history of the PCMH that has led to the current structure and outcomes realized by the PCMH. A discussion regarding PCMH team members, specifically nurses, is included pertaining to their use within the PCMH model. A discussion regarding the necessity of incorporating nursing staff as members of the interdisciplinary team verses the sole use of unlicensed personnel follows. Finally, a description of newly

introduced reimbursement opportunities and currently available incentive programs is provided. In this section, an emphasis is placed on Meaningful Use as this is the incentive program explored in this project.

### **Appraisal of the Literature**

Studies described are ranked one to seven based on level of evidence, with one referring to the highest level of research (*Table 1*) (Melnyk & Finehout-Overhold, 2011).

Table 1

#### *Levels of Evidence*

---

Level 1	Systematic review or meta-analysis
Level 2	Well-designed random control trial
Level 3	Well-designed control trial without randomization
Level 4	Well-designed case-control or cohort studies
Level 5	Systematic review of descriptive and qualitative studies
Level 6	Single descriptive or qualitative studies
Level 7	Opinion of authorities and/or reports of expert committees

---

*Note:* Adapted from “Evidence-Based Practice” By Melnyk & Finehout-Overholt, 2011, p. 12.

Each study included in this review is subjected to this ranking scheme. Studies are presented chronologically according to this table in their corresponding sections for organizational purposes.

### **Search Methods**

A study was included in this literature review if pre-defined inclusion criteria were met and the study provided relevant direction to the inquiry. Inclusion criteria

required the literature to be written in English; and to address the PCMH and nurses in primary care or the payment structure used. Relevant literature was gleaned from CINAHL, PubMed, ProQuest, and Cochrane. Search terms included Patient-Centered Medical Home, PCMH, history, nurse, payment, and payment system. As reimbursement models for primary care are evolving rapidly, nontraditional sources that forecast the new healthcare reimbursement were included in this literature review as they help provide a current focus on the best potential reimbursement models.

### **The Development of the Patient-Centered Medical Home**

American Academy of Pediatrics (AAP) first introduced the medical home in 1967 as a means of improving care coordination of children with chronic disease (Berryman et al., 2013). At the time, maintaining a single repository of information pertaining to the child's care and allowing a single provider to oversee all care pertaining to the child was the method of achieving the PCMH (Shepherd, 2010). Vast improvements in the PCMH design have been made since that time.

A decade after its introduction in pediatrics, the World Health Organization met at Alma Ata and developed the basic framework of the PCMH and its relationship to primary care delivery (International Conference on Primary Health Care, 1978). The declaration made concluding this meeting stressed the crucial role primary care has in guiding patients to health. The declaration explained "the attainment of the highest possible level of health is a most important world-wide social goal" (p. 2) and describes primary care in language that is now incorporated in the description of the PCMH.

Then, in a 1997 policy statement, the AAP proposed a formal definition of the PCMH (Medical Home Initiatives, 2002). Despite this definition, multiple interpretations

of what constituted a “medical home” and lack of sufficient reimbursement for services provided within this model posed challenges to the widespread implementation of the PCMH. In response, the AAP issued a second policy statement.

This 2002 statement expanded the PCMH concept and included an operational definition of the medical home, including 37 specific activities that should occur within this model (Medical Home Initiatives, 2002). Operational characteristics included accessibility, comprehensive, continuous, family-centered, compassionate, culturally effective, and coordinated care.

The American Academy of Family Physicians (AAFP) (Bush, 2004) and the American College of Physicians (ACP) (Barr & Ginsburg, 2006) have since produced their own version of the medical home which includes all ages. Now, practices meeting set objective criteria are formally recognized by the National Committee for Quality Assurance (NCQA) as PCMHs (NCQA, n.d.). A fee is required for application of PCMH status through the NCQA. Other recognizing bodies do not require an application fee, such as Blue Cross Blue Shield of Michigan (BCBSM) (BCBSM, 2014a), a major payer in Michigan that reimburses for meeting their PCMH measures. Regardless of designating body, the prestigious title of PCMH is only awarded to practices that have successfully integrated information technology (IT) and systemic processes that enhance the quality of patient care. *Table 2* provides a list of capabilities that must be demonstrated by a practice to be considered for PCMH recognition (BCBSM, 2014a).

Table 2

*Necessary Capabilities for PCMH Recognition*

---

Patient-Provider Partnership	Linkage to Community Services
Preventative Services	Patient Registry
Self-Management Support	Individual Care Management
Performance Reporting	Patient Web Portal
Coordination of Care	Test Tracking & Follow-up
Extended Access	Specialist Referral Tracking Process
Electronic Prescribing	

(BCBSM, 2014a)

Once identified as containing these requirements, when recognized by the NCQA, a practice is identified as belonging to one of three levels of the PCMH or failing to meet PCMH standards. Each level requires attainment of a certain degree of the required elements. PCMH level is defined by a point system recognizing the level of capabilities and sophistication of each PCMH requirement. Scoring low, for instance on the NCQA PCMH point system, with less than 35 deems a practice unready for PCMH recognition. A practice, however, that achieves a score between 35 and 59, while passing all essential elements, earns Level 1 PCMH Recognition (Edgman-Levitan et al., 2011). Scoring 60-84 points while passing all essential elements deems a practice worthy of PCMH Level 2 Recognition. Lastly, a score between 85 and 100, while passing all essential elements, results in the prestigious NCQA PCMH Level 3 Recognition.

### **Characteristics of the Patient-Centered Medical Home**

The Agency for Healthcare Research and Quality (AHRQ) (n.d.) described the PCMH as more than just a physical place. The AHRQ describes the PCMH as a model that organizes primary care in a manner that ensures the delivery of primary health care



core functions. There are five functions and attributes that characterize the PCMH: comprehensive care, patient-centered care, coordinated care, accessible services, and quality and safety. Although not a specific function of the PCMH, the use of IT has also been identified as a key feature of the medical home. All six of these components are discussed in this section.

### **Comprehensive Care**

The first attribute the AHRQ (n.d.) recognized as vital to the PCMH is comprehensive care. This means the majority of a patient's needs, both mental and physical, are being met in the medical home through the provision of acute care, chronic care, and preventative and wellness services. The team providing such care could include a number of different healthcare providers including: nurses, physicians, advance practice registered nurses (APRNs), physician assistants (PAs), care coordinators, nutritionists, pharmacists, social workers, and educators, among others. Some PCMHs are large enough to have a team as diverse as described above. Others, however, must reach out into the community, creating links between their patients and these other services and providers. These links are critical to integrated care needed for an effective accountable care organization (ACO) (Olayiwola, Bodenheimer, Dube, Willard-Grace, & Grumbach, 2014).

### **Patient-Centered Care**

Care delivered in a patient-centered manner is also essential to the PCMH. When care is patient-centered, it is focused on caring for the whole person in a relationship-based manner (AHRQ, n.d.). Such holistic care requires conveying respect and understanding for individual needs, culture, preferences, and values, along with the

recognition of patients and their families as essential members of the team. As team members, they must be supported in learning how to manage and organize their care at whatever level they choose (Scholle, Torda, Peikes, Han, & Genevro, 2010). This enables them to participate in the establishment of their individualized care plans in an informed manner as team partners.

### **Coordinated Care**

As a patient's central hub for care, the PCMH is responsible for coordinating patient care across the entire healthcare system, including hospitals, specialty care, community services, and home healthcare, among other supports and services (AHRQ, n.d.). The PCMH enhances care coordination through building and maintaining open lines of communication between patients, families, and the healthcare team. Such coordination is highly valued during transitions of care between facilities, such as hospital discharge or nursing home admission.

Care coordination is of particular importance for patients with complex needs who use more services than the general patient population and at various different settings (Lipson, Rich, Libersky, & Parchman, 2011). The use of costly resources, such as emergency room (ER) visits and hospitalizations, by these patients increases the risk for fragmented care. The PCMH aims to address this issue by enhancing care coordination, smoothing transitions between multiple providers, and placing an emphasis on preventative care.

### **Accessible Services**

Access to primary care services has been a major healthcare limitation (Stremikis, Schoen, & Fryer, 2011). The PCMH aims to improve this by offering extended office

hours, including evenings and weekends, same-day appointments for urgent concerns, twenty-four hours per day/seven days per week telephone or electronic access to a team member, and other methods of communication such as telehealth and email (AHRQ, n.d.). In this way, the PCMH is able to respond to patient preferences and needs regarding access, avoiding costly acute care visits.

### **Quality and Safety**

Lastly, the PCMH maintains a focus on providing care that is safe and of high quality (AHRQ, n.d.). With such direction, quality improvement activities are common. Initiatives with quality and safety goals are informed through performance measurement, patient satisfaction and experiences, and population health management. Energy is also spent engaging in clinical decision-support tools and evidence-based medicine as a guide for assuring the quality and safety of shared decision making with patients and their families (Scholle et al., 2010).

### **Health Information Technology**

Incorporating health information technology (HIT) is becoming essential in implementing the key features of the PCMH described above (Krist et al., 2014). HIT provides support for the medical home structure by enhancing internal processes and improving care coordination through the connection between patients and the practice and patients and other providers (Moreno, Peikes, & Krilla, A, 2010). HIT provides an organized means of collecting, storing, managing and exchanging patient health information. It also provides a means of improving clinical safety by enabling support for clinical decision-making. Through the use of HIT, quality can be addressed by monitoring population health and quality outcomes. Lastly, patients become active

participants in their care through enhanced self-management empowered by HIT.

Although a PCMH model can be imitated without HIT, such offerings enhance PCMH capabilities and are associated with greater care quality, enabling the attainment of NCQA PCMH recognition (Moreno et al., 2010).

### **Outcomes of the Patient-Centered Medical Home**

It has been expressed that “the better the primary care, the greater the cost savings, the better the health outcomes, and the greater the reduction in health and health care disparities” (Epstein, 2001, as cited in Rosenthal, 2008, p. 427). The question remains, however, how can better primary care be provided? The PCMH has gained momentum since its introduction in the 1960s. This, however, would be meaningless if outcomes, both patient- and financial-based, did not support its continuation. This section provides a brief exploration of the literature regarding outcomes the PCMH has realized in alignment with the Triple Aim goals of improving population health and the care experience while reducing the cost per capita (HIT, 2014; “The Triple Aim,” 2009).

#### **Patient Satisfaction**

In a systematic review (Level 1) of the literature exploring the effects of PCMH implementation, researchers found evidence of improvement on staff and patient experiences (Jackson et al., 2013). It was noted, however, long term (greater than 2 years) studies were limited. Because of this, researchers pointed out that studies included may not be representative of the larger U.S. population.

Since the time of the systematic review by Jackson et al. (2013), additional studies have become available that corroborate its results. In 2014, Heyworth et al. conducted a large scale, quasi-experimental, pre-intervention/post-intervention analysis

with a control group (Level 3) that examined patient satisfaction levels among other patient-centered care indicators before and after a PCMH Lean transformation intervention. A total of 2502 surveys were collected from the intervention group and 1622 from the control group. Data collected over a 15-month timeframe before the intervention and over 14 months after intervention. Although not statistically significant ( $p = .10$ ), among the intervention group, researchers found a trend toward an overall greater patient satisfaction with the care received, particularly in regards to improved communication with the provider in comparison to the control group.

Patient ratings of care quality and satisfaction with a PCMH model were assessed among a nation-wide randomized sample (Level 6) (Lebrun-Harris et al., 2013). Data were collected using a survey and in-person interviews. Participant ratings ( $n = 166$ ) of care quality were high with nearly 53% rating service as excellent and 30% rating service as very good. Likewise, 84% reported they would be very likely to refer family and friends to the practice.

### **Emergency Room Use**

The aforementioned systematic review by Jackson et al. (2013) (Level 1) examined clinical and economic outcomes and the process of care, in addition to patient and staff experiences. In addition to the positive effect on patient and staff experiences, researchers also found a reduction in ER visits by older adults (risk ratio of 0.81 [95% CI, 0.67 to 0.98]) but not readmissions to the hospital (RR of 0.96 [95% CI, 0.84 to 1.10]). Cost savings within the PCMH model were not reported.

A reduction in ER use was also found in a cohort study (Level 4) exploring the impact of assigning a PCMH during ER visits to uninsured patients (Roby et al., 2010).

The longer an individual belonged to a PCMH, the likelihood of an ER visit declined (odds ratio [OR] = 0.96,  $p < 0.05$ ). Conversely, switching medical homes three or more times was associated with a greater chance of utilizing the ER (OR = 1.28,  $p < 0.05$ ). Researchers stated this most likely relates to improved access to care through the PCMH, enhanced care coordination, case management delivery, and receiving education regarding self-management. Components of the PCMH, however, were not individually analyzed in this study.

### **Patient Outcomes**

A cohort study (Level 4) examined the effects of PCMH implementation for 105 involved practices (Gabbay, Bailit, Mauger, Wagner, & Siminerio, 2011). All were able to attain PCMH Level 1 NCQA recognition during the first year. Throughout this year, diabetes was the disease targeted for examining the effect PCMH status has on quality improvement. There were significant improvements in the percentage of individuals screened for complications of diabetes in alignment with current evidence-based guidelines. There was also a significant improvement in the percentage of patients placed on therapies, such as statins and angiotensin-converting enzyme inhibitors, to reduce morbidity and mortality. In their conclusion, researchers described the promise that the PCMH holds for improving the delivery of diabetes care.

### **Cost Reductions**

Cost reductions have also been seen in association with the PCMH. In a retrospective pilot cohort study (Level 4), the Geisinger Health System successful use of an innovative strategy for the redesign of a care model was described (Paulus, Davis, & Steele, 2008). In the first year, preliminary data revealed a 20% reduction in all

admissions, regardless of cause. In addition, a total of 7% savings in total medical costs was realized. The authors explained these results were attributed to encompassing HIT, aligning with financial incentives, and creating roles within the PCMH to optimize outcomes, both patient- and financial-based. They explained success in these categories resulted in improved reimbursement and cost-savings over time.

A large-scale retrospectively constructed cohort study (Level 4) reviewing a five-year time period corroborated the cost-saving findings of the Geisinger pilot study (Flottemesch, Anderson, Solberg, Fontaine, & Asche, 2012). In this study, researchers determined the relationship between cost, utilization, and the PCMH by comparing those associated with individuals (n = 58,391) receiving care at 1 of 22 medical homes. Outcomes assessed included total costs, inpatient costs and days, outpatient costs, and ER use. Among all group classifications (demographics, ability to pay, and medical complexity) included in the sample, a reduction in ER use was found ( $p < 0.001$ ). However, an association between the PCMH and lower total costs, ER use, outpatient costs, and inpatient days was only found in patients identified as complex.

In 2008, Bridges to Excellence conducted an analysis that demonstrated the cost savings associated with improved quality. In this analysis, a savings of \$279 per year per patient was estimated to result from maintaining a diabetic patient's glycohemoglobin at 7 or below. Similarly, maintaining a diabetic's low-density lipoprotein under 100 resulted in saving \$369 per patient per year, while a \$494 savings per patient per year resulted when blood pressure was maintained below 130/80. Successfully meeting all measures resulted in a savings of \$1,059 per patient per year.

### **Enhanced Care Coordination and Optimized HIT**

In 2014, a large study conducted in Maryland by the Maryland Learning Collaborative and the Maryland Multi-Payer Program was published (Khanna, Shaya, Chirikov, Steffen, & Sharp, 2014). In this study (Level 4), 52 primary care practices were assisted in becoming PCMHs. A brief 14-question Likert scale survey was used to assess the PCMH impact on both the practices and providers regarding patient care and outcomes. Out of the 339 surveys sent to practitioners and 52 sent to case management teams after 18 months of program participation, 67 were returned and analyzed. From these surveys, several outcomes were identified. Participants had developed a better understanding of the PCMH ( $p > 0.001$ ). In addition, patients experienced improved access to care and care coordination ( $p > 0.001$ ). And lastly, HIT was optimized ( $p > 0.001$ ).

### **Blue Cross Blue Shield Data**

In practices designated as a PCMH, BCBSM has recognized measurable improved outcomes regarding both quality and cost of care (BCBSM, 2014b). This includes 3.5% higher care quality for adults, 12.2% more preventative care for children, and 5.1% more preventative care for adults, all while lowering per member per month cost by \$26.37 for adults. Within the Michigan Blues' PCMH program alone, \$155 million were saved in claim costs that were prevented between July 2008 and June 2011. BCBSM (2014b) points to newer 2014 data that are showing this program has also resulted in lower hospitalization rates, including a 20% lower inpatient admissions for patients with conditions that could be responsive to treatment within the primary care setting, such as asthma, hypertension, or diabetes. Fewer ER visits when compared to non-designated practices are also being seen. The model has also demonstrated a rating



increase of 12% for pediatric preventative care.

### **Medicare Fee-for-Service Data**

Explorations regarding the impact of PCMH designation have also been conducted at the national level. One such study compared healthcare utilization and payments by the Medicare fee-for-service program between NCAQ recognized PCMHs and practices lacking such recognition (Level 4) (VanHasselt, McCall, Keyes, Wensky, & Smith, 2014). Through this longitudinal, non-experimental exploration, a reduced rate of ER visits for any condition was seen in association with PCMH designation ( $p < 0.001$ ). A reduction in Medicare payments by \$325 per practice was also observed in association with the delivery of cost-effective care within the PCMH ( $p < 0.01$ ). Overall, a reduction of 4.9% Medicare payment for PCMH designated practices was noted when compared to non-PCMH practices ( $p < 0.05$ ). This evidence supports the PCMH as a means of reducing healthcare utilization and containing healthcare costs.

### **Summation of Literature Regarding the PCMH**

Wide-spread, high-quality evidence supporting the effectiveness of the PCMH is limited; however, available data does suggest an association between the PCMH and improved outcomes and cost savings (Arend et al., 2012). This is in alignment with the goals of the Triple Aim. First, satisfaction of both patients and staff seem to be improved in this model of care (Heyworth et al., 2014; Jackson et al., 2013). In addition, the use of HIT also seems to be enhanced in the PCMH (Khanna et al., 2014). Belonging to a PCMH is associated with reduced ER visits (Flottemesch et al., 2012; Jackson et al., 2013; Roby et al., 2010) and improved health outcomes (Gabbay et al., 2011). Cost reductions, however, seem to be associated only with the most complex patients.

Therefore, as recommended by several of the studies aforementioned, although quality care associated with the PCMH should be available to all patients, certain patient-centered interventions may be more appropriate and intensively delivered for patients with complex needs (Paulus et al., 2008). Current incentives could then be used for the overhead costs of intensifying management of these patients.

### **Nursing Roles in the Patient-Centered Medical Home**

The question remains, what is the best way to implement the PCMH and realize these promising outcomes? Utilizing an interdisciplinary team, which includes nurses, enabling them to practice to their fullest scope of practice, is one viable solution that has seen promising results (Tomcavage, Littlewood, Salek, & Sciandra, 2012).

Historically, nursing roles have been limited in the ambulatory care setting (Laughlin & Beisel, 2010). Roles have been restricted to patient education, technical activities such as medication administration, some nurse visits as directed by physician care plans, and telephone triage for patients desiring to schedule an appointment. With the implementation of the PCMH and changing reimbursement landscape from fee-for-service to one based on quality and outcomes, expanded nursing roles and utilizing them as valued members of the interdisciplinary team can help optimize care delivery and realize the aforementioned outcomes (Laughlin & Beisel, 2010). A review of the literature exploring nursing roles in the PCMH is provided. Case management is the most commonly seen role.

#### **Telephone Outreach**

A large randomized control trial (Level 2) (n = 174,120) involved two health centers managing transitions care through telephone outreach (Wennberg, Marr, Lang,

O'Malley, & Bennett, 2010). Patients were randomly assigned to receive regular support or enhanced support with the same telephone intervention delivered in both groups. This intervention involved a registered nurse (RN) identifying patients who had been discharged from the inpatient setting and reconnecting them with the medical home as a means of improving care coordination. During the phone contact, gaps in skills, knowledge, and resources needed to manage care at home could be identified and attended to promptly. The same intervention was used in the regular and enhanced support groups. Participants in the enhanced group, however, were eligible for more coaching as cutoff points were lowered for inclusion based on predicted future costs and broadening the number of health conditions that qualified. Initially, resource utilization and medical costs were similar between the intervention and control groups.

After 12 months, 3.7% of the control group received the telephone intervention while 10.4% of the enhanced-support group received the intervention (Wennberg et al., 2010). During these phone calls, the RNs coordinated post-discharge care through initiating referrals and care coordination among various providers and services (received by 20% of patients), follow-up primary care provider appointments (received by 51% of patients), medication management (received by 89% of patients), and self-management goal setting (received by 63% of patients). Cost savings were seen in several areas. The enhanced-support group saw a 3.6% (\$7.97) greater reduction in the monthly average pharmacy and medical costs compared to the control group (\$213.82 vs. \$221.78,  $p = 0.05$ ). Most of the savings resulted from the 10.1% decline in annual hospital admissions ( $p < 0.001$ ). These results were realized with intervention costs totaling less than \$2.00 per person each month.

## **Additional Nursing Roles**

In a review of pilot studies (ranging from Level 2 or 3) conducted at a single, large, academic health system, expanding RN roles within the PCMH healthcare team were explored with the aim of improving care for the chronically ill (Laughlin & Beisel, 2010). Through these pilot studies, authors concluded that investing in complex care coordination would likely be cost effective. They also recognize RNs as vital members of the healthcare team with unique qualifications enabling them to work with patients who have chronic conditions. This pilot study review is organized by the type of nursing role utilized to fulfill the intervention: diabetes management and chronic care management. The nursing roles in this pilot study will be discussed below in corresponding sections. Other studies supporting that particular nursing role will be juxtaposed in the discussion.

### **Diabetes management.**

The first initiative aimed at enhancing nursing care for complex diabetes patients (Laughlin & Beisel, 2010). In this randomized control trial pilot (Level 2), RNs worked at improving diabetes outcomes for high-risk patients through assessing “self-management goal(s), understanding and compliance with current medications, barriers to care such as finances or transportation, and coping” (p. 411). The RNs were also enabled, through protocols, to adjust lipid lowering agents and oral hypoglycemic medications. HIT was vital as a means of guiding patient interactions through templates and facilitating documentation in the electronic health record (EHR).

After a six month intervention period, improvements in only two measures were seen in the intervention group compared to the control: annual foot exam compliance and

identification of self-management goals. Other improvements in the outcome metrics of the intervention group were seen but were minimal, such as percent compliance with testing for ordered A1c, renal function, and LDL-C; percent on a statin; percent with controlled blood pressure; percent compliance with ordered eye exam; and percent with A1c and LDL-C within desired limits. Statistical significance was not assessed.

Nurses belonging to the practice were used to staff this intervention. To release these nurses from typical duties to focus on the intervention, the practice hired a float nurse to work 4 hours a week. This format did not ideally facilitate the nursing intervention as nurses responsible for the intervention were not supported with continued relief from their other duties. In addition, six months was not a sufficient timeframe to identify sustainable outcomes or patient behavioral change. When surveyed, however, nurses found this work gratifying.

A 2011 single-group, pre-test/post-test study (Level 4) also evaluated the use of an RN role in addressing complex diabetes patients (Moran, Burson, Critchett, & Olla, 2011). In this study, however, the RN role was that of a certified diabetes educator (CDE) who conducted an assessment of patients with uncontrolled diabetes (A1c > 8%) that had not received any diabetes education within the previous 6 months; as well as four monthly group sessions and four sessions for individual follow up. Measures included participation rates, satisfaction rates, and program surveys. Cost-effective measures included provider time saved, performance incentives, patient healthcare utilization, revenue, and program surveys. Physiological measures were obtained from medical records and included: LDL, A1c, urine micro-albumin, fasting blood glucose, blood pressure, body mass index, and the retinal eye exam.

The researchers reported a significant reduction in A1c, LDL, and fasting blood glucose. Both participants and providers were found to be highly satisfied with the program. Healthcare Effectiveness Data and Information Set measures improved 27% from the start of the program. Researchers point to a potential savings of \$6,480.00 associated with this improvement. In addition, the cost-benefit analysis suggested a theoretical net pretax benefit to the program of \$5,467.35 for this practice. The researchers concluded a RN-CDE can improve clinical outcomes of patients with diabetes while remaining cost-effective.

### **Chronic care management.**

The second pilot study described by Laughlin & Beisel (2010) (Level 4) involved five primary care facilities in which RNs were partnered with physicians to provide chronic care management as a means of achieving PCMH status. In this initiative, physicians referred patients to an RN team member to provide care coordination, patient education, assessment and monitoring as needed, and self-management support. This initiative focused strictly on adults with a diagnosis of asthma, hyperlipidemia, diabetes, or hypertension. This project shifted care delivery from reactive to proactive by identifying patients on an electronic registry who were not meeting outcomes, reaching out to those patients and providing the necessary identified nursing interventions as described above. Outcomes of this initiative were not described. Authors, however, stated through this intervention, patients were empowered to become active participants in their care.

The third pilot described by Laughlin & Beisel (2010) also utilized nursing in a care management role. This initiative took advantage of the Blue Cross Blue Shield of

Michigan Provider Directed Care Management Program aimed to improve patient health status and reduce health care costs over a longitudinal intervention (Level 4). This was to be achieved through enhancing patient motivation and self-efficacy to become active participants in their health. To do so, an RN was to provide patient care between provider visits as a means of augmenting traditional office visits. The RNs underwent training on self-management coaching, empowerment counseling, and active and reflective listening skills. Once a month, each RN would meet with a physician and review patient health metrics, such as A1c, LDL, blood pressure, and body mass index, for patients with one or more chronic illnesses to identify who could benefit from RN coaching and additional assistance. Patients could also be referred to case management by the physician during office visits or by the RN during a phone triage interaction.

After accepting an invitation into the program, the RN would meet with the patient face-to-face or on the telephone. Frequency of visits could be tailored to individual patient needs but it was recommended each patient had a RN visit once a month for at least 3-4 months. Topics during visits could include care coordination needs, health education, and/or coaching on self-care or lifestyle changes and goals that could improve overall health. Outcomes from this pilot were not discussed.

A study conducted in Canada took a different view of nurses conducting care management. Through semi-structured qualitative interviews (Level 6), this study explored nursing roles and perspectives regarding factors influencing the interdisciplinary team within the primary care setting (Sayah, Szafran, Robertson, Bell, & Williams, 2014). Case management was identified as a key nursing role. Researchers found nurses transitioning from the inpatient setting to primary care experience expanded scope-of-

practice within this role. These nurses explained they moved from task-oriented jobs in the acute care setting to case management type roles in the ambulatory care setting, requiring more initiative and critical decision making abilities. The specific case management roles identified fell in nine areas:

- coordinating patient care
- assessing and identifying patient needs
- educating patients
- advocating for patients
- serving as a primary point of contact for patients
- assisting with navigation both within the clinic and within the primary care network setting
- coordinating care among various team members
- providing leadership within the interdisciplinary team
- facilitating communication among team members

Although nurses in this study were successful in these case management roles, researchers concluded in order to enhance the interdisciplinary team through nursing, these staff members needed to be oriented and prepared more thoroughly for the case management roles expected of them when transitioning from an acute care setting.

Researchers also recommended further describing the roles of members within the care team and enhancing communication as a means of improving the nursing function within the team.

### **Summation of Literature Regarding Nursing Roles and Outcomes within the PCMH**

Several roles nurses are capable of fulfilling within the PCMH have been



identified in the literature. They range from telephone outreach, diabetes management, and chronic care management. All of these roles involved a level of care coordination to be successful. Outcomes included cost savings, reduced hospital admissions, enhanced patient compliance and empowerment, improved outcome metrics and ordering compliance, and improved patient and provider satisfaction, among others (Patel et al, 2013, Sayah, Szafran, Robertson, Bell, & Williams, 2014, Rosland et al., 2013). In review of this literature, the benefits of incorporating nurses into the PCMH can be recognized.

### **Nurses and Unlicensed Personal**

Including nurses in the primary care setting, however, may be a cost concern as the use of unlicensed personal, such as medical assistants (MAs), is less expensive to the practice and MAs capable of fulfilling roles traditionally conducted by nurses, such as taking vital signs and giving immunizations. Primary care, however, is changing. In all levels of care, an emphasis is being placed on quality and outcomes. Unlicensed personal are valued members of the team and are integral to many processes in the interdisciplinary team model. However, as the complexities of delivering care in the PCMH increase, MAs lack the training and scope-of-practice possessed by nurses that are essential to reach the elevated quality standards required to receive value-based reimbursement. As previously mentioned, improving care quality of the most complex patients is associated with the greatest cost savings (Bridges to Excellence, 2008; Flottemesch et al, 2012). To reach complex patients and realize enhanced care quality and associated outcomes, the enhanced skill set of professional nurses is necessary as they are capable of performing care coordination activities and patient education, among

other activities. (Laughlin & Beisel, 2010; Wennberg et al., 2010).

When considering this, regardless of implementation methods or model used, there is a cost associated with realizing PCMH status. Although PCMH practices can achieve healthcare cost savings, a PCMH cannot be implemented without experiencing up-front expenses. A 2012 cross-sectional study (Level 4) that included 6,000 full-time equivalent (FTE) primary care physicians explored PCMH operating costs and ratings (Nocon et al., 2012). Researchers found that a 10 point increase in PCMH score was associated with an increase of \$28,000 per physician in operating cost. They concluded this increased cost is not sustainable unless case management reimbursement or benefits from decreased high cost utilization is received. As described above, nurses are capable of providing such case management services and reduce utilization of high cost services. Therefore, although more costly than MAs, nurses provide one way of attaining the quality standards necessary for sustainable PCMH designation.

### **Reimbursement for Services Delivered in the Patient-Centered Medical Home**

Just as there is a cost associated with attaining PCMH status, as mentioned in Chapter 1, chronic disease is associated with an extraordinary financial and human cost. The traditional fee-for-service reimbursement schedule is not viable in the changing landscape of PCMH care delivery and associated costs. Fee-for-service fails to acknowledge the care management services that take place in a non-face-to-face scenario, such as remote patient monitoring, medication reconciliation, arranging social service, and care coordination (Pershing Yoakley & Associates, 2014). Without financial recognition or reward for successful care coordination outreach services, the PCMH lacks

the financial stability to continue (Laughlin & Beisel, 2010; Lipson et al., 2011). Lack of financial incentives for the provider to deliver cost effective care or improve patient outcome metrics promote a costly care model. Furthermore, failure to recognize such services exacerbates the chronic disease issue as patients are left to self-management between care episodes (Lipson et al., 2011). With an aging population and the increase in chronic illness, change in reimbursement policy is a necessity (Rosenthal, 2008). This prompted the beginning of reimbursement change.

Over the past several years, changes in reimbursement are evolving to recognize and reimburse for services that reduce high cost care, such as ER visits and hospitalizations. These services are not recognized by the in-office, face-to-face care traditionally reimbursed for in the fee-for-service model. Providers are now being rewarded for their time, regardless if the patient is physically in the office or not. In addition, services provided by non-physician team members are being recognized, particularly care coordination. These changes can be seen in the Medicare Physician Fee Schedule, incentive programs, and billing codes for services enhancing care quality and outcomes such as care coordination codes, transition of care codes, and codes to bill for the Medicare Wellness Visit.

### **Medicare Physician Fee Schedule**

The 2015 Medicare Physician Fee Schedule has issued multiple changes that provide financial support for the pursuit of PCMH characteristics, such as quality and chronic care management. This is seen in newly available reimbursement opportunities and new billing codes.

#### **Chronic care management.**

In 2015, Centers for Medicare & Medicaid Services (CMS) will now provide a payment rate of \$42.60 for chronic care management (CCM) services billed under the 99490 CCM code (American Medical Directors Association [AMDA], 2014). This code can be used up to once a month for each patient with two or more significant chronic conditions when CCM services are provided in a non-face-to-face manner. Services that can be recognized under this code include the creation of a care plan, managing care transitions, enhancing continuity of care and access, among others (Blunt & Moore, 2014). Greater flexibility regarding the supervision of clinical staff providing CCM services is also being granted. Additional codes for transitions of care, however, may not be used in conjunction with this CCM code.

**Transitional care management codes.**

CMS has also issued two transitional care management current procedural terminology (CPT) codes, 99495 and 99496 (AMDA, 2014). These codes can be used for moderate and highly complex services, respectively. These codes are to be used when coordinating services and providing care management for a patient transitioning levels of care, such as from the hospital back into primary care. Both codes require communication with the patient, whether it be direct, electronic, or via telephone, within 2 business days of discharge. However, billing a service as a 99495 requires at least a moderate complexity medical decision to be made during the service period and a face-to-face visit within 14 days of hospital discharge while billing a service as a 99496 requires a high complexity decision to be made during the service period and a face-to-face visit within 7 days of discharge.

Regardless of the code being used, the transitional care management (TCM)

service period is 30 days from the date of discharge. During this time, services can be provided by both the provider and other clinical staff to fulfill non-face-to-face service criteria.

### **Physician value-based payment modifier.**

For physicians providing care to beneficiaries of Medicare Fee-for-Service, CMS has adjusted the Medicare Physician Fee Schedule based on the cost and quality of care provided (AMDA, 2014). This is referred to as a value-based payment modifier (VM). Starting at the beginning of 2015, the VM has been applied only to specific physician and physician groups. Starting the first of 2017, however, this will apply to all.

In this model, based on physician performance in terms of various quality and cost measures, an uplift of 2% to 4% in adjusted payments will be awarded (AMDA, 2014). This is a budget neutral model, however, meaning physicians that score low on quality and high on cost will have a 2% to 4% penalty applied to their reimbursement. This VM is intended to encourage physicians to practice in a cost-conscious manner while still obtaining positive patient outcomes.

### **Annual Medicare Wellness Visit**

Preventative services have been recognized and rewarded as a means of improving care quality and outcomes. Now, rewards are targeted toward the Medicare population with new reimbursement programs by CMS incentivizing providers. The Annual Medicare Wellness Visit (AWV) is one such service. This visit can be conducted by a provider or team of practitioners, including a health educator, registered dietitian, nurse, or nutritional professional, among others. (CMS, 2012a). Billing for this visit, however, still occurs under the provider and must be signed off by the provider. This visit

includes administration of cognitive, fall risk, and depression screenings and updating immunizations among other requirements. For the initial AWV, G0438 is the code to be used for billing purposes. This is a yearly service available to Medicare beneficiaries; however, a different code, G0439, is used in subsequent years, after the initial evaluation, for lower reimbursement. It is desired that gaps in patient care are identified and addressed through conducting this visit. In this way, quality and patient outcomes can be improved.

### **Incentive Programs**

Incentive programs are also available through a number of sources such as BCBSM and CMS. While the broader healthcare reimbursement system is in the process of transitioning from fee-for-service to a value based system, such incentive programs provide a means for practices to pursue quality improvement in a sustainable manner.

#### **Blue Cross Blue Shield of Michigan Physician Group Incentive Program.**

In 2005, BCBSM introduced the Physician Group Incentive Program (PGIP) (BCBSM, 2015). This incentive program aims to improve care quality for all Michigan residents, regardless of payer, by encouraging payer collaboration instead of payer-specific reimbursement development. To do so, systems of care are developed with the intent of being used for all patients, regardless of payer, to avoid altering the care process based on patient insurer.

This program rewards physician organizations when improved performance in care delivery is demonstrated (BCBSM, 2015). Incentives are awarded twice a year for PGIP Organized Systems of Care and PGIP physician organizations for performance and improvement in population level management and system transformation. Rewards can

be used at the discretion of each organization; however, it is expected the funds are used to further the goals of transforming healthcare value and improving healthcare quality.

**Centers for Medicare & Medicaid Services EHR incentive programs.**

Other incentive programs aim to improve care quality using HIT, specifically the EHR, to document care and effectively communicate data across the care continuum. CMS has developed various incentive programs that provide eligible professionals (EPs) with payments for adopting, implementing, or demonstrating Meaningful Use of HIT (CMS, 2015a). CMS is responsible for two such incentive programs, the Medicare EHR Incentive Program and the Medicaid EHR Incentive Program, which is managed by the state. These programs will be the focus of the incentive comparison between what EPs at the Clinic have been able to achieve compared to other EPs, through the use of available national data.

There are three stages to the Meaningful Use Programs. Attestation for Stage 1 first occurred in 2011. This stage focuses on capturing and sharing data. Criteria for meeting Stage 1 requirements can be found in Appendix B. The year 2014 was the first EPs could attest for Stage 2. Many of the objectives of Stage 2 are similar, if not the same, as those required in Stage 1. Stage 2, however, requires more for the same objectives to be met, for instance, a higher compliance percentage. Meeting Stage 2 Meaningful Use requires EPs to continue to demonstrate the 13 required core objectives and 5 out of 9 menu objectives from Stage 1 in addition to Stage 2 criteria. Stage 2 criteria includes specific 17 core objectives and 6 menu objectives from which the EP must choose at least 3 to be met (Appendix A) (CMS, 2012b). Each of these objectives aims to advance clinic processes. As of now, the final stage of Meaningful Use will allow

for attestation in 2017. This third stage aims to result in improved outcomes with a major focus on interoperability.

Only certain types of providers, however, are eligible for these programs. Nurse practitioners, for instance, are not defined as eligible Meaningful Use providers under the Medicare program (CMS, 2014a). Therefore, these providers can only take advantage of the Medicaid Meaningful Use incentives if their practices qualify. In addition, EPs can only benefit from participation in one of these programs. Providers who desire to participate and qualify for both of these programs must choose which one they will join.

*Table 3* provides a comparison of the Medicaid and Medicare EHR Incentive programs.

Table 3

*Comparison of CMS EHR Incentive Programs*

<b>Medicaid EHR Incentive Program</b>	<b>Medicare EHR Incentive Program</b>
Run by the State Medicaid Agency	Run by CMS
Incentive Maximum = \$63,750	Incentive Maximum = \$44,000
Payments are made over 6 years that do not have to be consecutive	Payments are made over 5 consecutive years
Payment adjustments are not made for providers who only qualify for the Medicaid program.	Payment adjustments will be made for eligible professional (EP) who decline participation beginning in 2015
During the first year of program enrollment, providers can receive incentive payments for adopting, implementing or upgrading EHR technology. During following years, however, meaningful use must be demonstrated to receive incentive payments.	Meaningful use must be demonstrated by providers each year in order to receive incentive payments.

(CMS, 2015a)

EHRs utilized must also be certified to qualify for Meaningful Use incentive programs (CMS, 2015a). Certification recognizes EHRs that have the capability to capture patient data and share it in an efficient manner. To do so, these EHRs store data



in a structured format which allows information to be easily accessed and transferred.

Encouraging the use of these certified EHRs serves several purposes. First, without an EHR, it is difficult to transmit performance measures to payers to receive incentives for meeting quality and outcome metrics, particularly Meaningful Use. In addition, the EHR contributes to efficient workflow. With an EHR linked to clerical activities, processes utilized in areas such as billing and scheduling are more efficient. The EHR is also essential to managing population health. Without the EHR, it would be nearly impossible to trend patient data and track population metrics regarding health outcome measures. Lastly, the EHR makes it possible to provide a patient portal which promotes patient engagement in personal health. Through the CMS EHR Incentive Programs, the functionality of the aforementioned EHR capabilities are incentivized by Meaningful Use dollars to encourage practices to improve in these areas. To receive these incentive payments, EPs must demonstrate that they are using the EHR in a meaningful way, meeting the threshold for a number of core objectives and menu objectives. The EHR Incentive Programs increase in requirements over three phased-in stages. Currently, EPs meeting Stage 1 and Stage 2 requirements are benefitting from incentive dollars (CMS, 2015b).

Payments for successfully meeting the requirements of Meaningful Use are substantial. If, however, an EP does not demonstrate meaningful use successfully, a payment reduction, starting at 1% and increasing to a maximum of 5%, will be applied (CMS, 2015b). This penalty will not be applied, however, to EPs who only qualify for the Medicaid program. *Table 4* provides an outline of potential payments an EPs can receive from meeting Meaningful Use requirements through the Medicare EHR Incentive

Program while *Table 5* demonstrates payment potential for those enrolled in the Medicaid EHR Incentive Program.

Table 4

*Medicare EHR Incentive Program Payment Schedule for Eligible Professionals*

Payment Amount	If EP Qualifies for first payment in 2011	If EP Qualifies for first payment in 2012	If EP Qualifies for first payment in 2013	If EP Qualifies for first payment in 2014
For 2011	\$18,000	\$0	\$0	\$0
For 2012	\$12,000	\$18,000	\$0	\$0
For 2013	\$8,000 – 2% = \$7,840*	\$12,000 – 2% = \$11,760*	\$15,000 – 2% = \$14,700*	\$0
For 2014	\$4,000 – 2% = \$3,920*	\$8,000 – 2% = \$7,840*	\$12,000 – 2% = \$11,760*	\$12,000 – 2% = \$11,760*
For 2015	\$2,000 – 2% = \$1,960*	\$4,000 – 2% = \$3,920*	\$8,000 – 2% = \$7,840*	\$8,000 – 2% = \$7,840*
For 2016	\$0	\$2,000 – 2% = \$1,960*	\$4,000 – 2% = \$3,920*	\$4,000 – 2% = \$3,920*
Total Incentive Payments	\$43,720	\$43,480	\$38,220	\$23,520

(CMS, 2015b)

\* On March 1, 2013, President Obama, as required by law, issued a sequestration order (CMS, 2015b). As a result, payments through the Medicare EHR Incentive Program are reduced by 2%. This reduction is applied to any reporting period that ended after April 1, 2013. The Medicaid EHR Incentive Program is not affected by this sequestration order.

Table 5

*Medicaid EHR Incentive Program Payment Schedule for Eligible Professionals*

Payment Amount	If EP Qualifies for first payment in 2011	If EP Qualifies for first payment in 2012	If EP Qualifies for first payment in 2013	If EP Qualifies for first payment in 2014	If EP Qualifies for first payment in 2015	If EP Qualifies for first payment in 2016
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For 2011	\$21,250	\$0	\$0	\$0	\$0	\$0
For 2012	\$8,500	\$21,250	\$0	\$0	\$0	\$0
For 2013	\$8,500	\$8,500	\$21,250	\$0	\$0	\$0
For 2014	\$8,500	\$8,500	\$8,500	\$21,250	\$0	\$0
For 2015	\$8,500	\$8,500	\$8,500	\$8,500	\$21,250	\$0
For 2016	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$21,250
For 2017	\$0	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
For 2018	\$0	\$0	\$8,500	\$8,500	\$8,500	\$8,500
For 2019	\$0	\$0	\$0	\$8,500	\$8,500	\$8,500
For 2020	\$0	\$0	\$0	\$0	\$8,500	\$8,500
For 2021	\$0	\$0	\$0	\$0	\$0	\$8,500
Total Incentive Payments	\$63,750	\$63,750	\$63,750	\$63,750	\$63,750	\$63,750

(CMS, 2015b)

As mentioned, there are three stages of Meaningful Use. EPs are given the opportunity to join the program through 2017. EPs that join the program from its initiation in 2011 will need to demonstrate Stage 1 capabilities for consecutive three years prior to moving on to Stage 2 requirements. EPs that join in subsequent years will need to meet Meaningful Use Stage 1 criteria for two consecutive years before advancing to Stage 2 criteria. *Table 6* provides the timeline for Meaningful Use implementation based on when the EP joined the program.

Table 6

*Timeline for Meaningful Use Implementation*

---

1 <sup>st</sup> year in MU program	Stage of Meaningful Use										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2011	1	1	1	1 or 2*	2	2	3	3	TBD	TBD	TBD
2012		1	1	1 or 2*	2	2	3	3	TBD	TBD	TBD
2013			1	1*	2	2	3	3	TBD	TBD	TBD
2014				1*	1	2	2	3	3	TBD	TBD
2015					1	1	2	2	3	3	TBD

2016						1	1	2	2	3	3
2017							1	1	2	2	3

\* A 3-month reporting EHR reporting period for Medicare and a continuous 90-day (or 3-

month State option) period for Medicaid EPs. All providers in the first year of the Meaningful Use program in 2014 may use any continuous 90-day reporting period.

(Swihart & Kiesel, 2014)

### **Summation of Reimbursement within the Patient-Centered Medical Home**

As reimbursement models are evolving, alternative reimbursement methods and incentives pave the way for PCMH sustainability. A portion of the available reimbursement opportunities is described above, many of which can be carried out by non-physician team members. With reimbursement possibilities no longer requiring direct physician contact, incentives can be obtained cost effectively through the use of appropriately trained staff working to the highest extent of their education.

Because of the implications surrounding Meaningful Use, this incentive program will be the focus when comparing what EPs at the Clinic have been able to achieve to national data regarding the program. Processes within the interdisciplinary team approach to the PCMH that facilitate meeting Meaningful Use criteria will be described with a particular focus on the nursing roles. From this description, a case will be made for the inclusion of various nursing roles, implemented through a replication plan, at other PCMHs as a means of improving the delivery of quality care and optimizing incentive reimbursement.

### **Conclusion**

The PCMH has evolved over the years. What has remained the same is the focus on patient-centeredness. As the PCMH becomes a mainstream method of healthcare

delivery, explorations regarding associated outcomes have increased with promising results. The literature reflects the success nurses, as members of an interdisciplinary team, have had in obtaining the desired enhanced outcomes of the PCMH. In addition, reimbursement opportunities are expanding to reward cost savings and quality. However, the question regarding how the incentive reimbursement obtained by this specific PCMH compare at the national level remains. Specifically, as members of the interdisciplinary team, how do nurses contribute to enhance care quality as a means of realizing Meaningful Use criteria, enhancing incentive reimbursement. The following chapters will provide greater examination of this question.

## CHAPTER 3

### CONCEPTUAL FRAMEWORK

This chapter describes the conceptual frameworks used to guide this project through development, implementation, and the evaluation process. This project has several aims: (1) describe the structures and processes established in a Patient-Centered Medical Home (PCMH) located in a rural county in Michigan with an emphasis on the interdisciplinary team approach utilizing nursing staff to ensure the provision of quality care, (2) provide a comparison of Meaningful Use attainments achieved by the Clinic to what has been achieved by other practices in the nation, and (3) provide a toolkit to inform the creation of a replication plan based on processes vital to the model's success as they occur within the interdisciplinary team.

The frameworks include the Chronic Care Model (CCM), Donabedian's Model of structure, process, and outcomes (SPO) and the Value Creation Frontier. The CCM is used as the theoretical model to describe primary care delivery. Donabedian's model and the Value Creation Frontier help provide further understanding of the phenomenon of interest while also providing guidance regarding methodology used in project implementation. All three frameworks are necessary to provide an in depth understanding of the phenomenon and guide project implementation. Therefore, each is described in detail below.

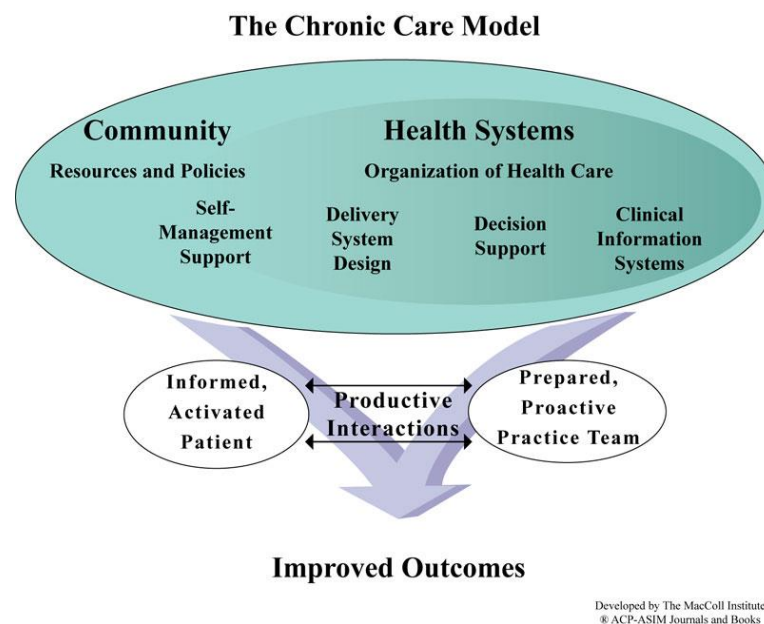
#### **The Chronic Care Model**

The Chronic Care Model (CCM) (*Figure 1*) was first published in 1996 to be used as a framework that would guide improvements in care quality for chronic conditions (Wagner, Austin, Von Korff, 1996). (Refer to Appendix C for approval of this image.) Instead of promoting the acute and reactive care of patients with chronic illness, the CCM

aims to transform care to a more proactive, population-based, and planned system (Coleman, Austin, Brach, & Wagner, 2009). This framework has been successful in other studies by guiding practice redesign, resulting in improved patient care and health outcomes (Curacanova et al., 2012; Gabby et al., 2011; Holm & Severinsson, 2012).

Figure 1

*The Chronic Care Model*



Note: By MacColl Center for Healthcare Innovation, Group Health Research Institute,

2006-2014

The CCM identifies six components that influence the quality of chronic disease care within the healthcare system. These components guide practice redesign and include community, health systems, self-management support, delivery system design, decision support, and clinical information systems. These components include:

**Community** – includes the private and public policies and resources available to

the healthcare organization

**Health Systems** – pertains to the organization of healthcare, including payment structures

**Self-Management Support** –includes patient empowerment, educational tools, and motivational techniques

**Delivery System Design** – includes the patient encounter and the organizational structure of the provider (i.e. clinic, hospital system, doctor’s office)

**Decision Support** – includes evidence-based care guidelines available for clinicians to access and implement

**Clinical Information Systems** – includes decision support tools, computerized information, reminders, medical records, etc.

In any project, any or all of these components can be used in conjunction to accomplish the goal of evidence-based and patient-centered care (Coleman et al., 2009). There is no one “right” way to implement the components of this model. It is meant to guide chronic illness quality improvement initiatives by highlighting components to consider that influence quality care delivery.

### **The Care Model or Expanded Care Model**

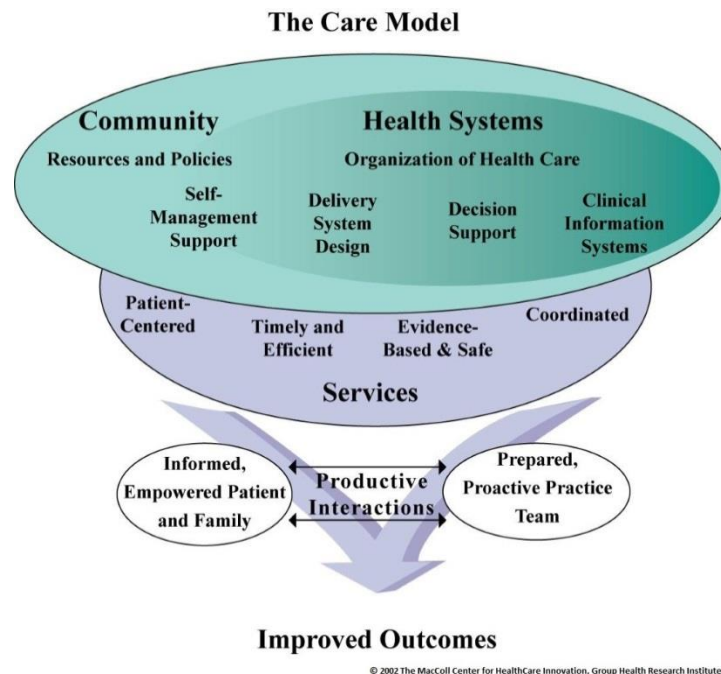
The CCM has developed over the years into an expanded version. This new model helps provide a greater understanding of this successful private practice as it is comprehensive and includes the complexities of care management. This new model is sometimes referred to as the Care Model or the Expanded Care Model as it is no longer applied strictly to direct treatment of chronic disease. The Care Model has been applied to the delivery of health promotion and preventative services (Hung et al., 2007; Barr et



al., 2003). *Figure 2* provides a depiction this expanded model.

Figure 2

*The Care Model*



Note: By MacColl Center for Healthcare Innovation, Group Health Research Institute,

2002

\*Permission not required for the reprint of this image

This expanded Care Model adds a dimension describing characteristics of services that should be provided to all patients regardless of diagnosis or condition. This model encourages services that are patient-centered, timely and efficient, evidence-based and safe, and coordinated. It is through such services and the previously mentioned attributes of the community and health system that come together to create a productive interaction between an informed and empowered patient and family and a prepared and proactive practice team. Such an interaction results in improved outcomes (Arend et al., 2012;

BCBSM, 2014b; Gabbay et al., 2011).

### **Donabedian's Model**

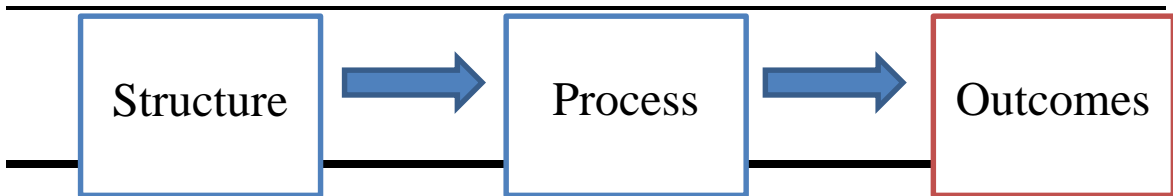
In 1966, Donabedian first proposed his model of structure-process-outcomes (SPO) (*Figure 3*). This model is used to describe how the Clinic delivers care using an innovative interdisciplinary team model to deliver care within the context of the current healthcare reimbursement system. The model posits that healthcare structure influences processes through which care is delivered, ultimately affecting care outcomes in the form of mortality rate and quality of life (Sirriyeh, Armitage, Gardner, & Lawton, 2010). To use this model, Donabedian (1988) explains there must be an established understanding of the relationship between structure and process and between process and outcomes. Examining these linkages within the Clinic and between the Clinic and the broader healthcare infrastructure can provide better understanding regarding how the practice has maintained sustainability. Understanding these linkages will also provide structure for examining the facets of the organization that must be considered to adequately understand the inter-workings of the interdisciplinary team. This model also provides the framework that will guide the description of the Clinic.

Since its development, the model has been used as a framework for evaluating the quality of medical care (Gardner, 2014; Qu, 2010). The SPO model will be used in this project to help explore and evaluate the quality of health services provided within the interdisciplinary team model that utilizes nurses as part of a primary care PCMH and in the context of the broader and ever-changing United States healthcare infrastructure. This model (*Figure 3*) will help provide an understanding of how this interdisciplinary model is structured and the processes associated with it that result in optimizing quality as a

means of optimizing value-based reimbursement. A thorough explanation of the structures, processes, and outcomes as Donabedian describes them is provided below.

Figure 3

*Donabedian's Model*



(AHRQ, 2011)

**Structure**

Donabedian (1966) describes structure as encompassing the physical, professional, and organizational components of a system. Structure includes the facility in which care takes place, the equipment used, human resources, administrative structure, payment methods, and the structures in which operations occur. Simply stated, structure encompasses all factors that affect the context of care delivery. Despite being relatively easy to observe and measure, structure is often the cause of upstream problems discovered when assessing process as the structure does not facilitate the defined processes (Donabedian, 2003). The structure of the Clinic will be described in greater detail in Chapter 4 when describing the setting of this project and in Chapter 5 when discussing how the Clinic is organized to conduct processes that enable the achievement of desired outcomes.

**Process**

Processes occur within the boundaries of healthcare structure. They entail the actions that make up healthcare. Processes can include preventative care, patient

education, diagnosis, treatment, and patient and family actions. Donabedian (1966) explains processes are assessed with the goal of revealing “whether what is now known to be ‘good’ medical care has been applied” (p. 694). This can be determined by assessing:

the appropriateness, completeness and redundancy of information obtained through clinical history, physical examination and diagnostic tests; justification of diagnosis and therapy; technical competence in the performance of diagnostic and therapeutic procedures, including surgery; evidence of preventive management in health and illness; coordination and continuity of care; acceptability of care to the recipient and so on. (Donabedian, 1966, p. 694)

Simply stated, processes are explored with the intent of identifying those that result in the best care and outcomes. Specifically identified processes that have enabled the attainment of Stage 2 Meaningful Use will be described in Chapter 5.

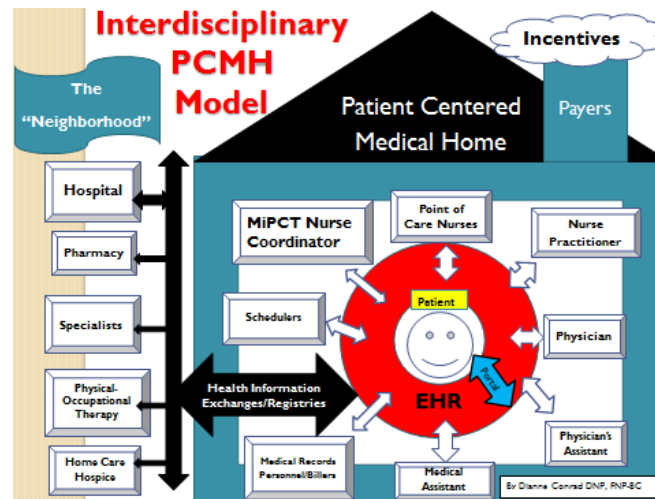
## **Outcomes**

Outcomes are a third measure of quality. Outcomes are simply the result of the structure and process coming together to produce a result (Donabedian, 1966). Donabedian (1966) describes the validity of outcome as a measurement of quality as one that is rarely questioned. He goes on to explain that outcomes are concrete in nature and, therefore, can be precisely measured. Therefore, outcomes of the Clinic will be examined and described in Chapter 5 as a means of exploring the effectiveness of structures and processes utilized within the Clinic. These structures and processes observed at the Clinic will also be described in Chapter 5. This will be done through the lens of Dr. Dianne Conrad’s model depicted in *Figure 4*, which first described the interdisciplinary team

approach to the PCMH utilized in the Clinic.

Figure 4

*Interdisciplinary PCMH Model*

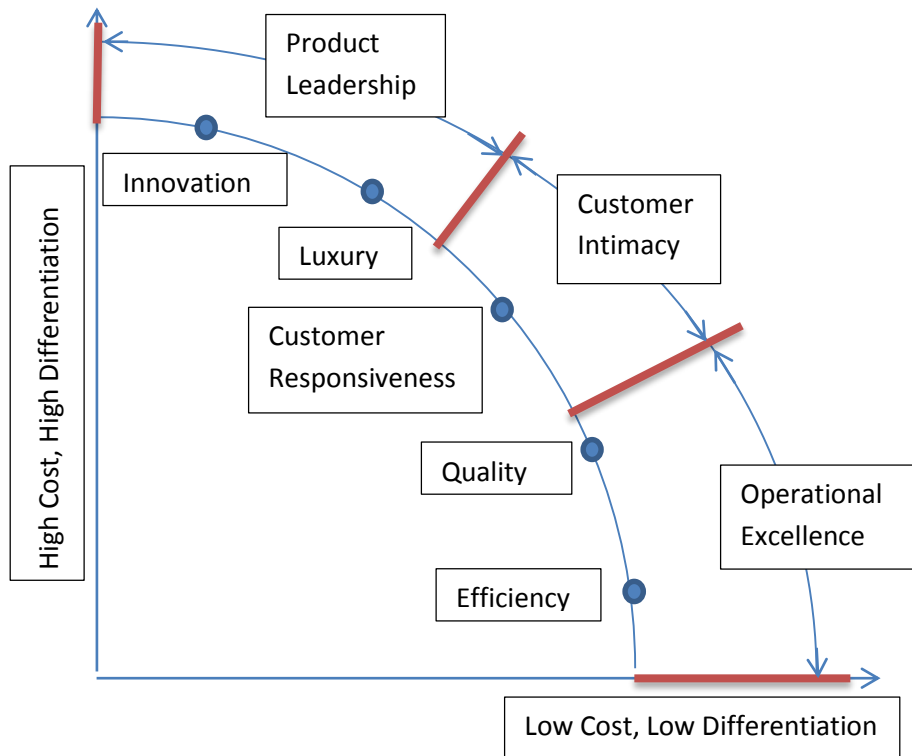


(Conrad, 2014)

**Value Creation Frontier**

From the business realm, the Value Creation Frontier was chosen as the framework to provide a deeper understanding regarding how the Clinic adds value to services provided and to guide project methodology. This model examines how a business, or in this case a primary care private practice, creates value by obtaining its competitive advantage through the resources and capabilities it possesses to make a profit (Porter, 1985). Obtaining the desired competitive advantage, however, is associated with a cost. Therefore, a balance must be maintained between serving the customer, in this case, both the patient and the payers, while controlling cost. *Figure 5* provides a depiction of this model.

Figure 5



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### The Value Creation Frontier and the Customer

The Value Creation Frontier is a double arc model (Figure 5). It describes a business both by the way it delivers to the customer and how it competes in the market.

#### **How a business delivers to a customer.**

The inner arc describes how a business may deliver its product or service to the customer. The lower right side of this arc describes businesses that produce their product or service as efficiently as possible (Stein, Smith, & Stein, 2012). These businesses have little concern for quality but maintain a low cost for their product or service. As the arc moves up and toward the left, the model describes businesses that cost more but provide more differentiation. The second level describes businesses that value quality. They

minimize errors while maintaining a value on low customer cost but still do not provide customization of their product or service. It is not until the third level in this model such customization begins to be seen. Businesses at this level are responsive to customers in that they begin to make personalization of their product or service a priority.

Beyond the level of customer responsiveness, products and services are defined by this model as luxurious or innovative. Luxurious and innovative products and services are highly differentiated, or unique, from other products or services on the market (Porter, 1985). Those defined as luxurious are designed to improve customer comfort and convenience. Innovative products and services go beyond those defined as luxurious in that they are not only designed to enhance customer comfort and convenience, but do so in such a way that is completely new and unique from other products or services available on the market. Such a high level of differentiation does not come without a cost. Therefore, in the healthcare arena, businesses at these last two levels are limited, for instance, to care provided in a concierge service.

#### **How a business competes in the market.**

The second arc describes how a business competes in the market (*Figure 5*). Businesses defined by their efficiency and quality are found in the operational excellence category (Treacy & Wiersema, 1995). These businesses attract customers by providing a combination of price, quality, and ease of purchase that cannot be matched. Businesses in this category, however, are not innovators and do not provide personalization.

This type of personalization begins the second level of the outer arc, customer intimacy. Businesses attracting customers through customer intimacy deliver value through personal bonds (Treacy & Wiersema, 1995). Companies in this category cater to

a particular type of customer, not the entire market. These businesses excel at knowing their customers and the products and services they desire. Businesses in this category deliver products or services that range between quality and customer responsiveness or customer responsiveness and luxury.

Lastly, the third category a business can fall under in regards to how they attract and retain customers is product leadership. Businesses that focus on luxury and innovation fall into this category. These businesses are constantly striving to offer its customers products or services that go beyond the current performance boundaries (Treacy & Wiersema, 1995). Once again, they offer their customers the best products or services available on the market. It is because of these factors the cost of products and services falling under this category are relatively extreme. This is also why healthcare does not possess many businesses in this category.

### **Conclusion**

In conclusion, frameworks, such as the CCM, Donabedian's SPO model, and the Value Creation Frontier, can be used to help understand a phenomenon and project methodology. Frameworks informing both the phenomenon of interest and methodology are necessary to provide understanding and guidance for this project. These models can provide valuable insight regarding the success the Clinic has experienced in their patient-centered model of care. In the next chapter, Donabedian's SPO model and the Value Creation Frontier will be discussed in greater detail as they aid in describing the methodology that will be used to explore the project plan.



## CHAPTER 4

### METHODOLOGY

This project involves describing processes as workflow moves through a Patient-Centered Medical Home (PCMH) primary care practice, requiring the contribution from various members of an interdisciplinary team. The three clinical questions addressed in this project include: (1) Do the employees of the Clinic function as a team to provide high quality care? (2) What is the nursing contribution to the interdisciplinary team that results in enhanced care quality and incentive reimbursement? (3) How does the incentive reimbursement obtained by an interdisciplinary team approach implemented at the Clinic compare to national incentive reimbursement data, specifically in regards to the meaningful use of technology? These questions place an emphasis on the evaluation and assessment of the role of nurses used in this model. It is through the description of these processes a case is made for the inclusion of nurses as a part of the interdisciplinary PCMH team. Based on these process descriptions, a toolkit that can be used to inform a replication plan has been produced that other practices desiring to incorporate nurses in their model can utilize. Incentive reimbursement realized through the Meaningful Use Incentive Program by the Clinic is compared to national data regarding eligible professional (EP) reimbursement. This comparison demonstrates an example of outcomes the structure and processes involved in this practice have been able to achieve. This chapter describes the methodology delineating this process. Donabedian's structure, process, outcome (SPO) model and the Value Creation Frontier are utilized to inform this methodology.

#### **Setting**

This project was inspired by a primary care practice in a rural county in Michigan.

The Clinic is staffed by 5 physician owners, a part-time nurse practitioner (NP), and a physician assistant (PA). The Clinic employs certified medical assistant (CMA), a total of 4.6 full-time equivalents (FTEs). (It is of note that this practice only hires CMAs, not MAs, as CMAs have the recognized training enabling them to create orders through computerized provider order entry (CPOE) based on practice protocols.) The practice also has a fully functional laboratory with 1.5 FTEs for laboratory technicians and 4.6 FTEs for phlebotomists. An x-ray department is also on site with 1.16 FTEs for radiology technicians.

What sets the staffing model utilized by this practice apart and what also inspired this project is the evolving nursing roles that have led to the creation of 8.0 FTEs for nursing (licensed practical nurse and registered nurse). This is a 4.1 FTE increase from 2009 to 2014. This is described in greater detail in a later section as these nurses contribute to the interdisciplinary team. All of these healthcare workers, however, are necessary to fulfill the mission and vision of the practice.

The city this practice serves has a population of 10,270 and a median household income of \$31,644 (Citi-data, 2013). The payer mix at this practice includes 32.47% Blue Cross Blue Shield (BCBS), 24.41% Medicare, 15.14% commercial, 19.84% self-pay, 4.91% Medicaid, 2.03% occupational health, and 1.19% workers' compensation, based on the percentage of total payments received for the year 2014.

As mentioned in previous chapters, this Clinic has been designated a PCMH by both the National Committee for Quality Assurance (NCQA) and BCBS of Michigan (BCBSM). The practice takes pride in this recognition and strives to maintain this status. PCMH recognition also brings reimbursement benefits through these credentialing bodies

that offset the overhead of model implementation and maintenance. Capabilities inherent to the PCMH also optimize reimbursement and incentive opportunities through other programs, such as Meaningful Use. Such reimbursement enables the practice to deliver a service that has a level of quality and patient-centeredness the Value Creation Frontier identifies as creating customer intimacy and responsiveness.

### **Needed Resources**

Key resources vital to this project included staff members at the Clinic, and the utilization of a timeline detailing the necessary steps required to complete the project. The following describes the necessity of each step of the process.

#### **Staff at the Clinic**

Personnel at the Clinic were essential to project success. These individuals not only helped provide understanding as to how the model works, including staff roles and responsibilities, but also contributed to the comprehensive assessment of the Clinic to include overhead costs and reimbursement for services realized.

#### **A Timeline for Project Completion**

A timeline for project completion was necessary to guide the project to its completion. This timeline helped maintain direction throughout the project assuring progress was made in a timely manner. It also delineated the steps necessary to achieve the desired outcomes of this project. *Figure 6* is a depiction of the timeline used.

Figure 6

*Timeline for Project Completion*

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<p>October 8-10, 2014</p> <p>Co-present a description of the model used at the Clinic during the 2014 National DNP Conference</p>	<p>February 23, 2015</p> <p>Defend project proposal</p>	<p>March 1, 2015</p> <p>Be ready to submit manuscript, co-authored with co-chair, for publication</p>	<p>March 2, 2015</p> <p>Begin Interviewing Clinic staff regarding practice structures and processes</p>	<p>March 2, 2015</p> <p>Begin collecting outcome data from accountant and quality department at the Clinic</p>	<p>March 2, 2015</p> <p>Begin collecting outcome and EP data from the Meaningful Use Programs through CMS</p>
<p>April 1, 2015</p> <p>Complete the practice comparison based on data collected from the Clinic and CMS regarding Meaningful Use</p>	<p>April 1, 2015</p> <p>Complete the descriptions of structures and processes identified during interviews that affect outcomes</p>	<p>April 10, 2015</p> <p>Complete the toolkit based on identified structures and processes that optimize outcomes</p>	<p>April 23, 2015</p> <p>Defend final project</p>	<p>May 8, 2015</p> <p>Be ready to submit revisions of project</p>	

### **Design for the Evidence-Based Initiative**

The design of this evidence-based initiative was divided into several parts as there were several desired outcomes. The first outcome, as mentioned, was a description of processes that occur within the context of the interdisciplinary team, making it possible to attain incentive reimbursement. The results from this description identified team member roles, specifically nursing roles, which are vital to attaining this high level of incentive reimbursement. Doing so paved the way for the development of an evidence-based toolkit that can be used to guide model replication and further describe the interdisciplinary team and processes that lead to an effective PMCH team. Lastly, a comparison of Meaningful Use attainment by the Clinic to what other eligible professionals (EPs) are achieving nationally was conducted as a means of demonstrating

the outcomes achieved by the structures and processes utilized at the Clinic.

### **Description of Processes within the Interdisciplinary Team**

The contribution of the interdisciplinary team to processes that are essential to attaining incentive reimbursement are evaluated in Chapter 5. The Value Creation Frontier provided the basic understanding that both competencies and resources within the practice are necessary to achieve the competitive advantage realized by the practice. The interdisciplinary team was, therefore, examined as a key resource to this model. In addition, essential processes were explored as the competencies necessary to the success of the practice. Information regarding this structure and these processes were collected through direct observation and informal interviews with the staff at the Clinic.

Donabedian's SPO model was used to guide the description of these resources and competencies. To do so, processes that resulted in attaining Meaningful Use objectives were traced throughout the structure of the interdisciplinary team. A detailed description of these processes and how they require the use of the interdisciplinary team, including nurses, is provided. Processes examined included what was involved to initially implement the meaningful use of technology within the practice and those that have maintained the attainment of Meaningful Use objectives. In short, structures and processes within the practice are described as they are understood through direct observation and informal interviews in the context of optimizing the desired outcome of utilizing technology in a way that enhances care quality and reimbursement.

### **Overhead Associated with an Interdisciplinary Team Incorporating Nurses**

The Value Creation Frontier suggests the Clinic achieves its competitive advantage by providing the customer intimacy characteristic of the interdisciplinary

PCMH team model. By doing so, the Clinic attracts both patients and payers as customers of the services provided. Attaining this competitive advantage, however, is associated with a cost. The practice must balance providing the customers, which include both patients and insurers, what is desired while being conscientious of overhead expenditures associated with employing highly trained personnel. Therefore, in addition to providing incentive data, overhead costs, in the form of compensation, associated with incorporating nurses into the model as a means of attaining the incentives is provided in the toolkit that was created to inform the replication of this model. This information was obtained from the Clinic accountant along with the Meaningful Use Incentive Reimbursement data for EPs in the Clinic.

### **Toolkit for Replication Plan Development**

Through the examination of processes within the practice that lead to attaining various incentives, key nursing roles were identified. Although a direct return on investment (ROI) is not calculable as it takes each member of the team to realize the desired reimbursement outcomes, a toolkit reflecting the role of each staff team member is provided as processes conducted within these roles result in desired outcomes. This toolkit can be used to inform a replication plan of this model to be implemented elsewhere by practices interested in adding nursing professionals to their PCMH team as a means of enhancing reimbursement and incentive opportunities.

### **Comparison of Practices**

It is assumed a practice utilizing an interdisciplinary team that incorporates nurses to fulfill key roles will experience higher levels of incentive reimbursement due to the provision of higher quality of care. To determine the validity of that claim, two incentive

programs, the Medicare EHR Incentive Program and the Medicaid EHR Incentive Program, were explored. As mentioned, EPs may only participate in one of these programs. The Clinic participates in the Medicare EHR Incentive program. Collectively, however, the Medicaid and Medicare programs are known as Meaningful Use. Therefore, national Meaningful Use data was used as part of this comparison. Incentive data from the practice, obtained from the Clinic accountant and quality team, were compared to the national incentive data provided by Centers for Medicare & Medicare Services (CMS). Specifically, this project explored the percentage of EPs at the Clinic to the percentage of EPs nationally attaining Stage 2 Meaningful Use during the first year of attestation.

### **Stakeholder Support/Sustainability**

There were two main stakeholder groups for this project: the physician owners and others who may have an interest in implementing the nursing model within their organization. The physician owners at the Clinic were supportive of this project. They are invested in the model and desire its success. This project provided them with reassurance of the model's sustainability in the context of the changing healthcare reimbursement environment.

For those who may be interested in implementing the model within their organization, results from the Meaningful Use data comparison may provide them with information they need to support this decision. The toolkit contains the description of team member roles (including nurses) and processes that occur within this structure providing these practices with the information needed to begin creating a plan to guide replication of this model. The nursing compensation data provided in this toolkit can also provide interested organizations with an idea of the overhead for maintaining the use of

nurses as members of the interdisciplinary team.

### **Conclusion**

A changing healthcare environment demanding the reform of care delivery calls for a change in models of care. This project compared Meaningful Use incentive data from CMS regarding what is happening on the national field and from a practice that incorporates nurses as part of the interdisciplinary team. A description of processes utilizing this interdisciplinary team is included in a toolkit as they enhance the attainment of Meaningful Use objectives. This information demonstrated the benefit of utilizing nurses within the primary care setting as reimbursement models become more value-based. The overhead cost associated with incorporating such highly educated staff is also included as a part of the toolkit. This toolkit is meant to act as a guide for the creation of a replication plan aimed at incorporating nurses into a practice. Results of this project will be presented at both the site of interest and to current Doctor of Nursing Practice (DNP) students. It is also hoped the findings will be presented to a local hospital organization. Lastly, it is also hoped that several articles will be submitted for publication regarding project findings over the next several months. In this way, others can gain access to this innovative model.



## CHAPTER 5

### RESULTS

This chapter reports the results of the comprehensive assessment of the Clinic regarding structures and processes that produced quality outcomes. As described in Chapter 4, the Clinic utilizes an interdisciplinary team approach to patient care that has enabled Stage 2 Meaningful Use to be attained by all eligible professionals (EPs) within the Clinic during the first year of attestation. This chapter describes how this model operates pertaining to three specific questions: (1) Do the employees of the Clinic function as a team to provide high quality care? (2) What is the nursing contribution to the interdisciplinary team that results in enhanced care quality and incentive reimbursement? (3) How does the incentive reimbursement obtained by an interdisciplinary team approach implemented at the Clinic compare to national incentive reimbursement data, specifically in regards to the meaningful use of technology? The three models described in Chapter 3, Chronic Care Model/Expanded Care Model, Donabedian's model of structure, process, and outcomes, and the Value Creation Frontier, are used as a framework for this discussion and to provide further insight regarding the functioning of the Clinic.

#### **The Clinic**

The Clinic provides care to all individuals they serve. The Chronic Care Model (*Figure 1*) helps provide understanding as to how the care is provided to achieve the outcomes attained. To begin to understand this health system, it is important to understand that the small practice composed of 5 physicians, a PA, and a part-time NP has achieved Level 3 Patient-Centered Medical Home (PCMH) status by the National Committee for Quality Assurance (NCQA) and has also been credentialed as a PCMH

through Blue Cross Blue Shield of Michigan (BCBSM). This is not only the highest recognition of quality care delivery in the PCMH, but also has reimbursement benefits and associated incentive programs that enhance payment. Achieving this recognition is largely related to the emphasis the Clinic places on the interdisciplinary team.

In the model utilized by the Clinic, each team member is of equal importance. No one member is more important than another. Each is necessary for the other to efficiently achieve the overall vision of the clinic to provide patient-centered care. The inclusion of nursing staff is a unique aspect of this interdisciplinary team. Because the nurses are empowered to practice to the fullest extent of their training and education, many tasks can be completed without provider involvement, which would normally be required in a practice excluding nurses. This leads to efficiency in providing quality care to all patients in the practice.

### **The Chronic Care Model and the Clinic**

The Chronic Care Model provides a framework to describe, in further detail, how this small practice obtained the prestigious Level 3 PCMH recognition as well as Stage 2 Meaningful Use during the first year of attestation. First, the Clinic provides self-management supports for patients in various ways. Many self-management supports utilize information technology (IT), such as the patient portal that provides billing information, the ability to make bill payments and schedule appointments, and the ability for patients to view lab and other personal health data. Through the portal, patients also have secure email access to contact providers and staff regarding clinical questions and information. This functionality of the patient portal meets two core objectives for Meaningful Use Stage 2: Objective 7 and Objective 17 (Appendix A). (All subsequent

references to objectives in this chapter refer to Appendix A).

The major emphasis of meeting Meaningful Use criteria is placed on the effective use of an electronic health record (EHR) as a tool in delivering quality care. In addition providing a means of documenting care delivered in the clinic setting, the EHR is a clinical information system utilized by all staff, enabling them to gain an overview of the patient, an in-depth understanding of the clinical picture, a summary of health maintenance needs, and the ability to run periodic reports to improve population health outcome measures. Since the EHR is a critical tool in managing patients within the PCMH, optimal processes are needed to fully integrate the EHR into team based care.

In addition to the utilization of the EHR, decision support tools, as recommended by the CCM, are also utilized by staff. Nursing staff and medical assistants (MAs), for instance, work from evidence-based protocols that have been reviewed and approved by the physician owners to provide patients with timely and efficient evidence-based care. This frees provider time, enabling them to focus on patient visits that require their unique skillset.

Such IT capabilities not only enhance patient engagement and empowerment but also improve quality of care. Patients are empowered to engage in addressing their health and interact with the Clinic through the portal. At the same time, each team member is given access to the patient through the EHR to address health needs, improving the delivery of quality care.

### **The Care Model and the Clinic**

The Care Model (*Figure 2*), as described in Chapter 3 affords an added dimension to the Chronic Care Model. This revised version adds a description of the multiple facets

leading to the success by which preventative care can be delivered. This is the care delivery model that is seen in a PCMH and, therefore, the model utilized by the Clinic.

Patient-centeredness is at the heart of the mission and vision of the Clinic. The aim of the Clinic dictated by the mission statement is to compassionately provide a holistic, patient-centered experience in a trusted environment. In a similar manner, the vision of the Clinic is to provide the best patient care in a trusting and open atmosphere. Delivering patient-centered care is the passion of the interdisciplinary team at the Clinic. Therefore, each team member is equally valued as each is necessary to provide the best care possible to the patient.

The Clinic also strives to provide timely and efficient service. Patients are able to schedule same-day appointments for acute illnesses. In addition, many services, including a laboratory and x-ray department, are located on campus. This creates efficiency in the care provided. Although the Clinic provides staff with autonomy to practice to the fullest scope of practice, precautions are taken to assure care provided is evidence-based and safe. For instance, nursing staff and CMAs often work from protocols that are in alignment with current practice guidelines and recommendations that are periodically reviewed and updated by the Clinic physician owners. Allowing staff such guided autonomy also aides in the provision of timely and effective care as patients do not necessarily have to wait for a provider to act on such guidelines.

Lastly, the Clinic strives to assure the success of care coordination. The clinic has taken advantage of the coordination tools currently available and uses them to smooth care transitions whenever possible. For instance, there is a referral specialist dedicated to the consistent and timely communication between this private practice, specialty groups,

and the broader hospital system. Health Information Technology (HIT) is aiding in this endeavor.

When the referral specialist makes a referral, if the receiving facility has the capability to receive the electronically protected health information (ePHI) (Objective 9), a patient summary regarding what prompted the referral is electronically sent via Consolidated-Clinical Data Architecture (C-CDA) for practices that have the capability to receive such data or sent through eFax by the referral specialist to the receiving facility (Objectives 15). The C-CDA contains information pertinent to the referral including patient allergies, laboratory and radiology reports, problem list, and plan of care, among other pertinent data. The receiving office then contacts the patient regarding the referral if the patient has been accepted and an appointment is set. A confirmation receipt of the referral and acceptance or decline of the request is then sent back to the referral specialist from the receiving facility via phone, fax, or, occasionally, via eFax or CCDA. A comment regarding this appointment is then attached to the referral order. After the date of the set appointment, the referral specialist confirms that a consultation note has been received and documents this in the EHR, completing the referral process. In this way, pertinent information is efficiently communicated between facilities and the referral loop is closed.

The health information exchange is also enhancing the referral process and, more broadly, interoperability (Objectives 9 and 15). Through a health information exchange, the secure transfer of electronic information across organizations within a particular geographical location or healthcare system is made possible. At the Clinic, referrals can be made through health information exchanges used by organizations within the

geographical vicinity of the Clinic. To do so, the referral specialist sends pertinent patient's information to the receiving facility through the EHR. Using a secure login, the referral specialist then accesses the exchange. A referral form is then completed containing additional information and notifying the receiving facility they have access to patient information through the EHR. The referral specialist and receiving facility are then able to communicate via secure messaging through the health information exchange as needed. Clinic team members have access to the patient note after the referral visit is complete through the EHR to close the loop.

With HIT advancements and interoperability set as the goal, the ability to communicate electronically between primary care and other healthcare entities such as the hospital, pharmacy, and specialty practices is in the near future. At this point in time, however, interoperability is limited. Although the Clinic has access through interfaces with hospital lab and imaging, the hospital does not have access to charts from the Clinic unless it is purposefully sent by the Clinic to the hospital. True interoperability is still evolving as IT systems are continuing to develop to enhance communication. The ultimate goal of Meaningful Use Stage 3 is interoperability. This is contingent upon IT development.

Another example of moving toward interoperability in Stage 2 Meaningful Use regards the electronic transfer of information to an immunization registry. The Michigan Care Improvement Registry (MCIR) for immunizations is currently being utilized to communicate data in a one-way fashion (Objective 16) (MCIR, 2015). When an individual is immunized or an immunization is updated, clinical personnel access the MCIR through a secure login and, from the EHR, enter the immunization information.

Because the Clinic has a health level 7 (HL7) interface that enables communication to the registry, this information is automatically transferred from the EHR and recorded in the MCIR to meet the requirement of core objective 16 in Stage 2 Meaningful Use. Through the EHR, individuals at other healthcare sites are able to view immunization status. Through the use of the MCIR, they are enabled to contribute to the immunization record, when appropriate. In this way, there is a current, active immunization record for the patient that is accessible regardless of healthcare venue. As technology and software continue to advance, communication between healthcare entities and registries will continue to move toward true interoperability where two-way communication will be possible, a goal of Stage 3 Meaningful Use.

By addressing each component of the Care Model, the Clinic is able to reap the benefits of a better informed and empowered patient and patient family population that interacts productively with their prepared and proactive practice team. Through this interaction, improved outcomes are realized. These outcomes are discussed in a later section. Such services and capabilities enable the Clinic to achieve PCMH recognition through both the NCQA and BCBS. As described in Chapter 2, PCMH recognition requires care to be comprehensive and patient-centered with a focus on quality and safety. All of this is to occur while maintaining accessibility and enhancing care coordination. These PCMH characteristics result in enhanced patient outcomes and cost savings (BCBS, 2014).

### **Structures, Processes, and Outcomes**

Within the generic PCMH model delineated by the Chronic Care Model and the Care Model, the Clinic has developed additional structures and processes that have

enabled the attainment of Stage 2 Meaningful Use. In alignment with Donabedian's SPO model (Donabedian, 1966), these structures and processes are described below as they have been influenced by the currently evolving healthcare system and as they are carried out on a daily basis. Outcomes related to Meaningful Use Stage 2 attainment at a national level are then described and compared to what the Clinic has achieved.

### **Structure Related to an Evolving Healthcare System**

The structure of the broader healthcare system must be considered as it has a direct impact on the success or failure of any entity belonging to it. As mentioned, the current healthcare system is changing. Reimbursement structure is transitioning from fee-for-service to pay-for-performance and, ultimately, value-based reimbursement. Regardless of transitioning trends, the current healthcare system is dominantly a fee-for-service model. This type of model does not provide adequate reimbursement for services such as care coordination and those that do not take place in the traditional face-to-face setting. Therefore, as shown in *Figure 4: Interdisciplinary PCMH Model*, incentive programs provided by payers assist in bridging the payment gap that exists for value-based services, enabling survival of the PCMH model.

Although occurring slowly, action at the individual practice level must occur in response to changes instituted at the macro level in order to remain relevant and financially solvent. This requires ambulatory care practices to shift their service models to include payers as customers, not just the patients that belong to their practices. Practices must adapt to realize incentives and enhance reimbursement opportunities (Berryman et al., 2013). This is something the Clinic has been able to achieve through the innovative structures and processes utilized that have resulted in over one million dollars



in incentive reimbursement in a four year period.

### **Structure of the Clinic**

The structure of the Clinic is an important component to consider as it contributes to clinic outcomes. This small private practice takes pride in the resources and capabilities available on-site to provide patient-centered services that interface with the greater care continuum, the “neighborhood,” within its community.

For instance, on the small, single site campus, there is a laboratory and x-ray department. In addition, there is a procedure room where minor surgeries can be performed. These capabilities provide convenience for patients as they are not required to travel to undergo basic testing. The Clinic also has an EHR, from the vendor Allscripts, which can be accessed by any team member when appropriate for patient care. Such HIT has the ability to assist in keeping patients informed regarding their plan of care through the EHR’s patient portal, another Meaningful Use measure (Objectives 7 and 17). It also enhances provider and staff effectiveness as information is readily available.

The staffing structure is also a noteworthy resource and essential to the success of the Clinic. This office has the usual resources that include billing, scheduling, and patient services personnel. There are also CMAs who assist with both clerical and clinical work.

In exploring this model with the intent of identifying components that contribute to Stage 2 Meaningful Use attainment, the quality team was also found to be an essential component of the interdisciplinary team. This quality team is composed of CMAs and led by a registered nurse (RN). This team works to ensure the Clinic is optimizing incentive reimbursement opportunities.

For instance, each month, the quality team receives population health reports that

are developed by the information technology nurse in the EHR and are automatically run regarding various health and quality measures, such as hemoglobin A1c (A1c), a measure of average blood sugar control routinely examined in diabetic patients (American Diabetes Association, 2015). Patients not meeting criteria set by the various insurers are identified in these reports. The quality team then addresses each patient on the report to assure the patient receives the appropriate follow-up care to tend to the issue. By creating a system where this loop is closed and patient needs are met through appropriate follow-up, the number of patients not meeting designated measures identified by insurers is reduced. This enhances incentive reimbursement opportunities through the improvement of care quality and population health. The process improvement toolkit that was created with the intent of informing model replication contains a decision tree that delineates this process. The outcome measure specifically chosen to exemplify the interdisciplinary team processes was the A1c level, as each member is needed to adequately address this measure. In addition, with the rise of diabetes in the U.S. from 3.8% in 1988 to 8.7% in 2010 (Casagrande, Fradkin, Saydah, Rust, & Cowie, 2013), identifying processes that can improve outcomes for this population is desirable.

The use of nurses within the Clinic was also identified as a particularly unique feature regarding structure. Specific nursing roles were identified that contribute to realizing enhanced care quality and incentive reimbursement. These roles included the information technology nurse who specializes in HIT, the phone nurses, and the point of care nurses.

Both licensed practical nurses (LPNs) and RNs are employed by the Clinic and utilized to the fullest scope of their practice. Nurses are more costly than MAs. They are

prepared, however, for a broader scope of practice than MAs. In the changing healthcare environment, a broad scope is essential. Nurses are licensed and educated regarding a defined scope of practice that includes knowledge of health promotion, disease processes, patient education, care planning and care coordination. MAs do not have the advanced training that is vital to directly impact the improvement of quality care delivery required for value-based reimbursement. By utilizing nurses in primary care to fulfill such duties, provider time is freed. This enables providers to focus on what they do best, working to their full scope of education and training to deliver appropriate care. The Clinic believes they are able to obtain greater incentive reimbursement due to the enhanced quality provided through their interdisciplinary model compared to other practices. They have realized over a million dollars in reimbursement between 2009 and 2013 from various incentive programs.

As shown in *Figure 4: Interdisciplinary PCMH Model*, the patient is at the center of this interdisciplinary care structure. It is not hierarchical. The interdisciplinary PCMH team model is patient-centered. In this way, the right team member can provide the patient with appropriate, timely care, within the scope of the team member's education and training. Therefore, if a patient calls requesting a same-day appointment for a sick visit, the scheduler has the autonomy to fit the patient in the schedule. If a patient is diabetic and due for a foot exam, the CMA or nurse rooming the patient can ensure easy access to the patient's feet for the foot exam. If a patient calls needing a refill of a chronic care medication, the phone nurse is also enabled to fulfill this task under the guide of specified protocols. As mentioned in chapter 2, such autonomy is associated with increased staff and patient satisfaction (Heyworth et al., 2014; Jackson et al., 2013).

There is a high level of staff satisfaction at the clinic as evidenced by the clinic receiving the 2012 Michigan Health Council retention award for staff longevity.

### **Processes within the Broader Healthcare System**

Before exploring the processes within the Clinic, the processes of the broader healthcare system must be understood as they have an effect on the processes conducted at the individual practice level. As mentioned, the change in reimbursement has an effect on all levels of healthcare. There are several processes dictated by the broader healthcare system that have direct implications on individual practices. These processes consist of fee-for-service and pay-for-performance, including new billing codes, the Medicare Physician Fee Schedule, and incentive programs, such as Meaningful Use, that affect reimbursement for services, each of which were discussed previously in Chapter 2. When a practice has processes in place to optimize these reimbursement and incentive opportunities, both financial and quality outcomes are enhanced.

### **Processes within the Clinic**

The processes utilized by the interdisciplinary team within the Clinic has resulted in improved care quality, population health, and cost reduction. In this section, the patient portal is described as the Clinic utilized nearly every member of the interdisciplinary team to recruit patients to sign up, utilize its capabilities, and maintain the portal on a day-to-day basis. The specific processes conducted by nursing staff and the quality team are then described.

#### **The patient portal.**

The patient portal was introduced at the Clinic in 2010. In 2013, the Clinic started using an improved version that had updates capable of addressing more of the

requirements of Meaningful Use. Through the portal, patients are enabled to interact with their health information and securely communicate with the Clinic. In doing so, patients are enabled to participate in their care, taking greater responsibility for their health.

*Signing up for the patient portal.* Promoting the portal and maintaining its effectiveness requires the use of the whole interdisciplinary team in order to be effective. When first introduced, patients were assisted in signing up for the portal by a hired high school student and a hired college student in the check-in area. These students were instructed regarding the collection of patient demographics and emails. They were not provided training in the EHR or provided logins to the system. The students eased the sign up process as they would walk the patients through the process step by step. This was particularly helpful for recruiting elderly patients. A one-time, mass email was also sent to every patient belonging to the Clinic who had provided a valid email address regarding the portal and encouraging enrollment.

Incentives were also offered for patients to sign up for the patient portal. The information technology nurse offered two drawings where patients who enrolled in the portal within a set time frame would be entered to win a gift card. When patients came into the Clinic during this time period, they were given a handout that described the portal, encouraged enrollment, and mentioned the drawings as an incentive to join. Illustrating the team approach to this process, these handouts were given to patients by any team member who had contact with the patient, to include the front desk, a CMA, a nurse, the provider, or the check-out desk.

Although it has been roughly 5 years since the introduction of the portal, patients are still being informed regarding its utility and encouraged to sign up. The Clinic

waiting room has two scrolling picture frames for messages and announcements. One of the messages on the picture frames regards the patient portal. Patients also continue to be encouraged by all team members to join the portal. When a patient comes to the Clinic, if not a member of the portal already, a flyer is provided describing the portal and the benefit of joining.

If a patient decides to join the portal and an email address is not on file, the patient's email address is obtained when the desire to join the portal is expressed. This could be at check-in, during the visit, or at check-out. An email invitation to join the portal is then sent by the patient service representative before the patient leaves the office. This patient service representative is also a designated staff member who is available for assisting patients by phone or while in the Clinic with portal technical questions. This further illustrates the team effort required for attaining the portal requirements for Meaningful Use Stage 2.

***Capabilities of the patient portal.*** From within the portal, the patient can accomplish many things. This patient portal is associated with the particular electronic health record (EHR) vendor utilized by the Clinic. Therefore, the patient portal and EHR can communicate with each other. Through this communication, appropriate laboratory results and other testing results are made available on the portal within a short time of them becoming available within the EHR and after review from the provider. The patient is able to view, download, and transmit health information (Objective 7) and communicate, for example, with the clinic to request an appointment or pay a bill.

Secure messaging is also enabled through the patient portal (Objective 17). This type of messaging is electronically protected by the firewall utilized by the Clinic

(Objective 9). Therefore, patients and team members can communicate relevant health information through the portal in a safe manner.

*Processes involved with secure messaging.* Just as seen with many of the other processes utilized at the clinic, addressing messages sent through the portal requires a team approach. To satisfy the Stage 2 objective of secure messaging (Objective 17), a patient must send relevant health information to the Clinic and the Clinic must respond appropriately. This objective cannot be met by the Clinic simply sending a message to a patient. Communication must be two-way.

Therefore, the information technology nurse encouraged several methods of achieving this. First, a message was sent to every patient involved in the portal requesting a health-related message back. Doing so had some success in prompting patient responses. The action resulting in the greatest success in increasing the number of patients sending messages, however, regards provider involvement. When, after an office visit or reviewing patient test results, a provider sends a secure message to a patient regarding this information and requests a message back, patients have been more inclined to respond, closing the loop on this objective.

When a secure message is sent by a patient, it goes to one of two places. If the message is to request an appointment, the message is automatically sent to the scheduler inbox who can address the request. If, however, the message regards anything else, it is sent to the phone nurse inbox. The phone nurse is then able to triage the message. If the message pertains to refilling a chronic care medication, external routine lab orders (such as mammograms, annual lab work, or EKGs), or something addressed in standing protocols, the phone nurse is enabled to personally address the issue. After addressing the

issue and sending a response to the patient, the message is saved to the chart. If, however, the message requires the oversight of a provider, the message is sent on to the inbox of the corresponding provider. The provider then addresses the issue, responds to the patient message, and saves the message to the chart.

**Unique and essential roles to Clinic processes.** Through review of what is required to maintain the patient portal and create, run, and address population reports, as mentioned previously, several unique and specific roles have been identified as having particular importance in enabling the Clinic to conduct processes necessary of Stage 2 attainment. These roles include the information technology nurse, the quality team, point of care nurses and CMAs, and phone nurses. Processes fulfilled by each role are described below.

- Information technology nurse – has advanced HIT training and ongoing training by the vendor as EHR updates occur. This nurse has the ability to create population reports (Objectives 11), modify templates within the EHR, and contribute on other special projects, including the creation of processes enabling the Clinic to meet Meaningful Use criteria. The process improvement toolkit provides step-by-step instructions regarding how the information technology nurse creates population reports that are used by the quality team.
- The quality team – is led by a nurse and is composed of CMAs that utilize the monthly population data from the reports run by the information technology nurse as a means of identifying patients not meeting quality measures (Objective 12). These patients are then contacted and



encouraged to make an appointment where the plan of care can be addressed. The quality team is also responsible for adapting input needed as quality measures and standards differ and change yearly for the various payers, among other duties. The toolkit provides a decision tree describing the steps the quality team takes to accomplish this.

- Point of care nurses and CMAs – work with providers to maximize clinical workflow, identify quality measures that need to be addressed during the patient visit through the use of clinical decision supports (Objective 6) and perform/order appropriate tests based on protocols (Objective 1), among other clinical activities. They also assist providers in documenting care delivery. In doing so, the documentation of care provided that leads to improved outcome measures is accurate and more thorough. Resulting improved outcome measures are subsequently transmitted to payers which lead to the obtainment of incentive reimbursement. The toolkit provides a decision tree describing the steps the point of care team takes to address quality measures that need to be addressed.
- Phone nurses – triage patient phone calls and secure patient messages sent through the patient portal (Objective 17). These nurses are also enabled to fill chronic care medications, and make adjustments to certain medications based on set protocols (Objectives 1, 2 and 6). They also address quality measures while on the phone with patients, regardless of the reason for the phone call. The toolkit provides a decision tree delineating how these

nurses address quality measures.

This list of roles, and the processes conducted within each role, is by no means exhaustive. However, these are the roles that have been identified as being unique to the Clinic and have contributed to attaining Meaningful Use Stage 2 Core Objectives. No single role, however, could be successful independently of the others. Processes that enable Meaningful Use attainment touch multiple team members before closing the loop to meet the desired patient or incentive outcome. Beyond Meaningful Use, these roles are optimized by the potential to receive reimbursement for improved outcomes for all patients in the practice population, regardless of insurer, rather than relying solely on fee-for-service based care delivery.

The utilization of this unique interdisciplinary team mix would not be possible without a supporting culture. The Clinic is team oriented; all team members are enabled to initiate patient-centered interventions (*Figure 4: Interdisciplinary PCMH Model*). Such a foundation enables team members to enact all facets of the PCMH delivery model without direct supervision from a provider.

### **Struggles encountered and addressed to achieve Stage 2.**

Attainment of Stage 2 Meaningful Use requirements has been challenging. These processes have taken time to develop and required the constant reinforcement of team members regarding compliance over time. The Clinic team, however, has been dedicated to process improvement with the mission and vision emphasizing the delivery of patient-centered care at the forefront. Despite this goal, resistance, the need for continued education, and the ever-evolving Meaningful Use requirements have complicated Stage 2 attainment.

Although the staff is committed to providing patient-centered care, resistance has been encountered. The attainment of many of the Meaningful Use objectives requires data to be documented in fields that are queryable and recognizable in the EHR. If data is documented, but not in one of these recognizable fields, the report will not count that piece of data as meeting the requirement. This lowers the percentage of compliance and can have the potential to prevent satisfying that particular Meaningful Use objective.

Resistance stems from not wanting to change current workflow and a lack of understanding implications for not complying in these situations. The information technology nurse has found competition to be a viable way to enhance EP compliance. By providing the EPs with a report card each week that demonstrates percent compliance with each objective in comparison to the rest of the EPs within the Clinic, EPs have taken it upon themselves to improve in troublesome areas in an attempt to surpass their colleagues.

Continuous education has also been vital. Meaningful Use is complicated. There are multiple facets to understand and components to address. In addition, each of the intricate pieces composing the Meaningful Use program are moving targets (Centers for Medicare and Medicaid Services [CMS], 2014b; Conway, 2015). CMS makes the rules of this program and changes them relatively frequently. Therefore, the information technology nurse frequently provides staff and providers with additional training and education as deemed appropriate. Such education reduces resistance as team members develop an understanding for the purpose behind each change that is made. Education and training is conducted during monthly meetings and through emails containing screenshots of essential processes. Walking team members through processes as they

appear in the EHR has been an essential piece of this training. It has enabled team members to visualize steps that need to occur in order to document precisely and appropriately. The result is an accurate representation of the patient in the EHR.

Although a difficult task with multiple barriers, the Clinic has found ways to overcome obstacles and create the structures and processes necessary to succeed in attaining Meaningful Use Stage 2.

### **What is to come in Stage 3 Meaningful Use.**

Attainment of Stage 3 Meaningful Use will further test this interdisciplinary model. Stage 3 will require the demonstration of improved population health outcomes. As mentioned, the Clinic is starting to see these improved outcomes in population reports that trend outcome measures over time. This, however, is only possible due to the level that HIT is utilized. Meaningful Use Stage 3 will require more than improved population health outcomes as interoperability is the main goal.

Unfortunately, current technology does not allow for full interoperability. Because of this, Stage 3 Meaningful Use is not yet feasible. Currently, there are multiple HIT vendors with their own version of an EHR. These vendors have not pursued interoperability as there is not a business case to do so at this time (McCann, 2015). Therefore, as previously described, communication between healthcare entities is limited to what can be facilitated through health information exchanges and registries, such as the MCIR, that enable the electronic sharing of immunization data in a one-way fashion. Through these capabilities that are currently available, the Clinic continues to advance the use of HIT and continually re-evaluates and updates structures and processes utilized to optimize outcomes.

## **Outcomes of the Broader Healthcare System**

Not all healthcare entities have responded like the Clinic during this time of healthcare reform. Although new incentive programs, particularly Meaningful Use, have prompted many practices to install EHRs, add staff, and network within the broader community (Rosenthal, 2008) relatively few EPs have taken advantage of this program, with fewer yet advancing to pursue Stage 2. The year 2014 was the first year EPs could attest for Stage 2 Meaningful Use. Because of low attestation rates, however, CMS extended the attestation period until February 28, 2015 (Office of the National Coordinator for Health Information Technology [ONC], 2015).

Preliminary data demonstrates that out of those enrolled in one of the Meaningful Use programs (n = 537,000), 42% (n = 223,000) of EPs qualified for attestation for Stage 2 in the 2014 calendar year as they met the requirement of successfully meeting the requirements of Stage 1 during the two years prior. Despite this reasonably attractive percentage, as of the end of December 2014, only 15% (33,000) of these EPs attested. Of the 15% who attested, only 53% (n = 17,000) attested for Stage 2. The remaining 47% (n = 16,000) who were scheduled to attest for Stage 2 took advantage of the Flexible Rule issued by CMS which allows EPs enrolled in the Medicaid program to attest to Stage 1 again. This means only 7.95% (n = 1,300) of EPs enrolled in one of the Meaningful Use programs attested for Stage 2 as of the end of December, 2014. This, however, is an impressive increase from the mere 106 EPs that had attested for Stage 2 Meaningful Use at the end of June 2014 (CMS, 2014a).

## **Outcomes of the Clinic**

Owners of the Clinic propose they have found a way to be successful within the

ever-changing broader healthcare arena. They point to reimbursement data from various incentive programs to support their model, actualizing over one million dollars in incentives between 2009 and 2013 through programs offered by various payers. *Table 7* provides a description of the Meaningful Use payment schedule and what the Clinic has been able to attain through the use of an interdisciplinary team with its five EPs in the corresponding years.

Table 7

*Meaningful Use Payment Schedule*

Year	Payment Per EP	Meaningful Use Incentive Dollars Realized by EPs at the Clinic
2011	\$18,000	\$90,000
2012	\$12,000	\$60,000
2013	\$8,000 – 2% = \$7,840	\$39,200
2014	\$4,000 – 2% = \$3,920	\$19,600
2015	\$2,000 – 2% = \$1,960	n/a
Total	\$43,720	\$189,200

How does the incentive reimbursement realized through the Meaningful Use Program by the Clinic compare to what is being accomplished by other EPs nationally? As mentioned, final national data is not yet available as the attestation period was extended until the end of February 2015. The preliminary data, however, demonstrated only 7.95% (n = 1,300) of EPs actively enrolled in one of the Meaningful Use programs attested for Stage 2 as of the end of December, 2014. This is in comparison to the 100% of EPs (n = 5) at the Clinic who have successfully attested to Stage 2 Meaningful Use in 2014. Therefore, these five providers at the Clinic are among the top 7.95% of EPs enrolled in the Meaningful Use Program. Not only did the 5 EPs from the Clinic attest for

Stage 2 during the 2014 calendar year, they attested in the first quarter of 2014. This is in contrast to the 106 EPs nationally that attested by the end of the second quarter of 2014. Based on this comparison, the Clinic has achieved a high level of the meaningful use of technology compared to what other EPs are attaining at nationally.

In addition to succeeding national trends regarding Meaningful Use attainment, the Clinic is also beginning to see improvements in population health. Through the use of HIT and the reports that are conducted monthly, key health measure summaries can be graphically conveyed revealing population health trends. Many of these report summaries are beginning to see an improvement in population health metrics. Appendix D provides an example that demonstrates a reduction in the number of patients with an A1c level greater than 7% as this metric is traced through population health reports conducted from April 2014 through March 2015. This graphical summary reveals a reduction in the number of patients with an A1c level greater than or equal to 7% from 430 patients to 372 patients ( $p = 0.99$ ). Data were not available to trace this outcome measure further back in time as the reports are only saved for one year. Although not statistically significant, it is anticipated that through the continuation of addressing population health issues identified in reports like this, population health will improve resulting in a statistically significant change. Such population health improvements are the end goal of Meaningful Use Stage 3. Therefore, although this type of model may cost more initially to implement, once enacted for some time, improvements in population health outcomes can be achieved that result in cost savings.

### **The Value Creation Frontier and the Clinic**

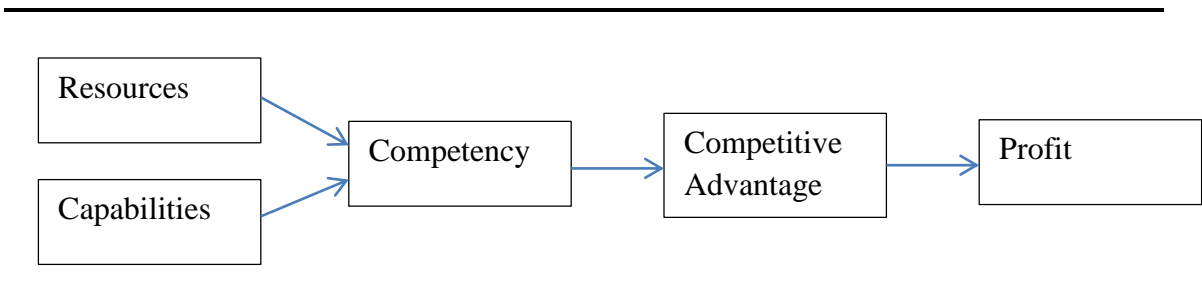
From the above descriptions and the outcome data comparison, it would appear

the interdisciplinary team at the Clinic functions well together to achieve the desired outcome of Meaningful Use. The question remains, however, is the care provided by the Clinic team of high quality? The Value Creation Frontier can provide a framework to address this question.

The Value Creation Frontier (*Figure 5*) provides an understanding of how the Clinic creates value that attracts and maintains its customers, patients and payers. Both patients and payers expect quality care to be provided. To obtain PCMH recognition, practices must reach beyond providing quality alone and provide more customization. While patients expect this customization, payers will not reimburse for luxury or innovative services. The Clinic has found a way, however, to meet PCMH standards by personalizing patient care and reaching beyond quality toward what the Value Creation Frontier refers to as customer responsiveness. In doing so, the Clinic can be found somewhere between quality and customer responsiveness on the inner arc of the model and within the realm of customer intimacy on the outer arc *Figure 5*. *Figure 7* provides a strategy map dictating how this was done as recommended by Kaplan and Norton (2000).

Figure 7

*Strategy Map*



As shown in the strategy map, the Clinic pooled resources and capabilities



together, including staffing structure, the facility and its offerings, along with processes conducted within this structure, to create its competency. The competency of the Clinic entails its ability to meet the needs of both the patient and payers. For instance, the Clinic caters to the patient by responding to individual needs through offering same day appointments, promoting patient engagement through the use of HIT, and coordinating services within the broader healthcare community. Providing such services would not be possible without the use of an interdisciplinary team.

Through the interdisciplinary team approach and the incorporation of nurses and innovative CMA roles within the Clinic, the Clinic has effectively responded to the ever-changing payer requirements by maintaining population health standards and incorporating payer requirements into everyday practice. This is seen in all nursing roles when processes such as care coordination or patient assessments are conducted or when workflow is maximized or population health reports are created. Such responsiveness is essential as quality parameters are changing by each payer as often as yearly. Performance standards are changing rapidly and it is vital for practices to be able to adapt. Possessing this ability has given the Clinic a competitive advantage in the market defined as customer intimacy, enabling its success and profitability.

### **Conclusion**

This chapter reviewed the results of this project as they addressed three main questions: (1) Do the employees of the Clinic function as a team to provide high quality care? (2) What is the nursing contribution to the interdisciplinary team that results in enhanced care quality and incentive reimbursement? (3) How does the incentive reimbursement obtained by an interdisciplinary team approach implemented at the Clinic

compare to national incentive reimbursement data, specifically in regards to the meaningful use of technology?

Project results revealed, through the use of an interdisciplinary team model that utilizes each team member to the highest level of their education and scope of practice, the Clinic has been able to provide high quality care, enabling the attainment of Stage 2 Meaningful Use during the first year of attestation. Workflow processes key to attaining specified Meaningful Use Stage 2 objectives were traced as they move through the interdisciplinary team. These processes require multiple members of the interdisciplinary team (including nurses) in order to be successful. They also require each team member to be utilized to the fullest scope of their practice. As mentioned, the process improvement toolkit created as a part of this project provides decision trees reflecting the flow of these processes as they move through the interdisciplinary team. Nursing and CMA roles vital to the processes described have been identified to inform the creation of a replication plan that will be discussed in Chapter 6. Lastly, the comparison of Meaningful Use data from the Clinic and national data revealed the Clinic is surpassing national Meaningful Use trends as EPs within the Clinic rank among the top 7.95% in the nation.

## CHAPTER 6

### DISCUSSION

Project results demonstrate the Clinic has utilized an effective interdisciplinary structure to enact processes that enable the attainment of Meaningful Use Stage 2 core objectives. This has been accomplished through the use of the interdisciplinary team model in combination with electronic health technology to improve population health and care quality. These findings have implications for practice at the individual practice level and for care delivery within the broader healthcare system. These implications and sustainability are addressed in this discussion. The process improvement toolkit designed after this model is also discussed as it can aid model replication in other practices. Successes and difficulties encountered while conducting this project, along with project limitations are also discussed. Recommendations are provided for further development of this project and a reflection on the Doctor of Nursing Practice (DNP) Essentials as they were used in this project is then provided. Finally, this chapter discusses the dissemination of project results.

#### **Implications for Practice**

Findings from this project have direct and dramatic implications for the way primary care is currently delivered in the United States, particularly in regards to the use of nurses. The description of processes that necessitate the use of nurses in order to achieve incentive reimbursement provides a case for the inclusion of various nursing roles within ambulatory care, a setting in which nurses have widely been excluded (Laughlin & Beisel, 2010). As reimbursement continues to evolve from a fee-for-service model to one based on value and outcomes, care delivery must adapt to remain relevant

and viable. The process descriptions and comparison of Meaningful Use data provided in this project demonstrate how an interdisciplinary team that includes nurses is able to capture funds through the Meaningful Use Incentive Program by making strides toward attaining the goals of the Triple Aim, to improve care quality and population health while reducing cost (IHI, 2014; “The Triple Aim,” 2009). In doing so, nurses are shown to be a vital addition to the primary care team in light of healthcare reform.

Without the inclusion of nurses as members of the primary care interdisciplinary team, a level of care that has the potential to improve population health and optimize reimbursement opportunities is missing. This project demonstrated the value of utilizing nurses to the fullest extent of their education and training in the primary care setting. Although it is more costly to employ nurses than strictly medical assistants (MAs) in a primary care setting, nurses have the scope of practice that optimizes patient care delivery resulting in improved patient outcomes, long term healthcare cost savings as a result of healthier patients, and enhanced reimbursement opportunities as fee-for-service continues to turn to value-based care.

Implications for the broader healthcare system are numerous. This model provides an example of how effective care can be provided through an interdisciplinary team approach. Through the use of this team, Meaningful Use Stage 2 core objectives can be successfully met while improving population health. In addition, this project provided a toolkit to guide the creation of replication plans, enabling other practices to reproduce this model. Although not studied in this project, replication of best practices identified through this project is anticipated to have the same types of outcomes including improved population health, cost savings, and enhanced reimbursement.

## **Project Sustainability**

Findings from this project and a review of current reimbursement trends suggested the model of care delivery utilized at the Clinic is sustainable. The clinic has developed a unique staffing structure that utilizes nursing in an interdisciplinary team to conduct processes that lead to Meaningful Use Stage 2 attainment. Through the implementation of this structure and these processes, the Clinic has moved from providing more than quality care, as described by the Value Creation Frontier, but has begun to provide care that is responsive to patient needs. This has enabled the clinic to realize reimbursement for the delivery of high quality care provided during a time of reimbursement transitions that reward the provision of quality care and improved population health, through the Meaningful Use Incentive Program and others.

This model, which strives toward customer responsiveness does not come, however, without a cost. The process improvement toolkit contains a set of tables displaying the increase staffing levels that have been required to accomplish the interdisciplinary team model that is currently being used to accomplish the outcomes described in this project. The number of all staff members has increased over this time period. Nursing staff, however, the most costly staff hired at the clinic, have had the biggest increase in full-time equivalents (FTEs). Simultaneously, wages for all staff members has increased.

For this model to remain viable, incentive reimbursements and uplifts are necessary to support this level of staffing and care provided. These structures must be in place as reimbursement continues the transition to reward value, because soon these incentives and uplifts will turn to penalties for practices not meeting designated standards

of quality and outcomes. Sustainability of this model is forecasted to be high. A demand for model replication is also foreseen as the model addresses the goals of the Triple Aim while providing a practical model utilizing structures and processes needed in the evolving reimbursement infrastructure.

This project resulted in the creation of a toolkit, entitled “A Process Improvement Toolkit to Guide the Attainment of Meaningful Use Stage 2 Requirements.” This toolkit can be used by other practices to guide the replication of structures and processes that have been vital to the Clinic’s success, particularly in Stage 2 attainment. This toolkit includes:

- job descriptions for the innovative roles utilized at the Clinic,
- step-by-step instructions regarding how to create and run a population report (for A1c levels, as an example) in the Allscripts system,
- decision trees delineating processes needed to address abnormal results identified by the population report as they necessitate various members of the interdisciplinary team,
- tables describing the investment this model required for the Clinic, and
- a step-by-step example of how processes flow through the interdisciplinary team to address one patient’s needs while meeting nearly every Stage 2 objective.

These resources found within the toolkit can be used by other practices to replicate this interdisciplinary model of care delivery with the goal of realizing outcomes similar to those achieved by the Clinic.

### **Project Successes and Difficulties Encountered**

Both successes and difficulties were experienced during this project. Successes

included the ease at which the student was accepted by the Clinic staff. This enabled direct access to team members, Clinic outcome and reimbursement data, and even financial information.

Breakthrough conversations with committee members were also considered successes of this project. Through these conversations, project development and evolution occurred which led to the success of the final project. It was through these conversations, an understanding was developed regarding the fluidity of a project. A project cannot be approached with a concrete plan. There must be flexibility to adapt and alter original perspectives.

These conversations also provided insight regarding the scope of a project. When initially brainstorming for project ideas and methodology, it was easy to have grandiose notions of what the project should entail. Such broad ideas, however, can limit the quality of a project as they are difficult to adequately, if not impossible, to address. Therefore, an understanding developed that starting with a narrowed focus was necessary. Additional projects can be conducted at a different time to address different aspects of the same phenomenon.

### **Limitations**

This project has several major limitations. First, the model described by this project examined only one example. The model was described as it occurred in one, small practice in a rural setting that was owned by its physicians. This model was successful under very specific conditions. It is unclear whether the exact processes and interdisciplinary roles utilized within this model would result in the same outcomes in a different setting.

In addition, this project examined only one small component of the structures and processes that need to be in place to improve quality and health while reducing costs as they relate to one particular incentive program, Meaningful Use. To be a successful practice, there are many more processes that need to be considered as they pertain to care quality, patient and population health, reimbursement, and other incentive programs. Within the Clinic, simply advancing onto meeting Meaningful Use Stage 3 would require the implementation of additional processes and possibly additional structures. This project, however, was limited to addressing structures and processes that enable to attainment of Stage 1 and Stage 2 core objectives.

Lastly, Centers for Medicare & Medicaid Services (CMS) extended the attestation period for Meaningful Use Stage 2. This resulted in a delay in providing national data regarding Stage 2 attainment. Therefore, national Meaningful Use Stage 2 data provided in this project for comparison with the Clinic does not include the final numbers. Although it is not anticipated the extended attestation period will change project findings, results may not be quite as favorable to the Clinic as found with originally cited national data when new data becomes available.

### **Recommendations**

Because of the lack of generalizability for project findings, it is recommended that the model described be implemented and examined in other settings. The process improvement toolkit provides the groundwork to inform such replication. More definitive evidence of the model's effectiveness could then be provided by testing and examining the model in a replicated setting.

In addition, as only structures and processes were explored that attained desired



outcomes within the Meaningful Use program, further exploration should examine the numerous other structures and processes within the Clinic that enable overall success and sustainability for other reimbursement and value added programming. This would provide further evidence regarding the overall effectiveness of the model.

Once national data for Meaningful Use Stage 2 attestation becomes available, the comparison between data from the Clinic and this new national data should be conducted. This would provide definitive support for or against the Clinic regarding the innovation and effectiveness of the interdisciplinary team model in meeting Meaningful Use Stage 2 criteria.

Lastly, patient outcomes achieved by the Clinic should be monitored closely. Definitive evidence of patient outcomes, overtime, would provide further evidence regarding the success of the model utilized by the Clinic.

### **Reflection on Enactment of DNP Essential Competencies**

To complete this project, many of Essentials of the DNP Education were necessary (*Table 8*) (American Association of Colleges of Nursing, 2006). Utilizing these essentials to obtain answers to project questions fostered the development of competency in each of the eight essentials. Such development aided in the completion of this project and will provide a foundation of knowledge for the student after graduating with a DNP degree. This knowledge will enable the nurse with a practice doctorate to undertake new advanced practice nursing roles. The project serves as a means to demonstrate the DNP competencies.

Table 8

*The Essentials of Doctoral Education for Advanced Nursing Practice*

I.	Scientific Underpinnings for Practice
II.	Organizational and Systems Leadership for Quality Improvement and Systems Thinking
III.	Clinical Scholarship and Analytical Methods for Evidence-Based Practice
IV.	Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care
V.	Health Care Policy for Advocacy in Health Care
VI.	Interprofessional Collaboration for Improving Patient and Population Health Outcomes
VII.	Clinical Prevention and Population Health for Improving the Nation's Health
VIII.	Advanced Nursing Practice

(American Association of Colleges of Nursing, 2006)

Although most of the DNP Essentials were required for completion of this project, several were vital to the success of the project. For instance, systems thinking for quality improvement (Essential II) was developed as the student examined the Clinic in regards to structures and processes utilized and outcomes attained. Through this examination, the student developed strategies to examine how the Clinic functions independently and within the broader healthcare infrastructure. Competency regarding the use of information technology (IT) for patient care and healthcare transformation (Essential 4) was developed as the student learned about the structures and processes utilized to create and run population reports. From these reports, the student learned how the Clinic utilizes structures and processes to address abnormalities found from these reports as a means of improving patient care and quality. Developing competency in

interprofessional collaboration (Essential VI) was also achieved through the evolution of the project. Through working closely with committee members, along with the staff and providers of the Clinic, competency with interprofessional collaboration was developed. Lastly, a competency in clinical prevention and population health for improving national health (Essential VII) was developed as it was needed throughout this project to identify processes that address shortcomings identified with patient health through population reports.

The development of competency in the eight DNP Essentials has fostered a broad perspective of healthcare from the standpoint of both a clinician and from that of a business person. The foundational knowledge acquired through competency in the DNP Essentials and the resulting unique viewpoint enabled the success of this project and has provided the student with an attractive competitive advantage going forth into the healthcare arena as a DNP prepared nurse.

### **Dissemination of Outcomes**

Outcomes of this project have been and will be disseminated in several ways. First, description of the interdisciplinary model and the idea for the project were co-presented at a national conference. As the project progressed, an article was co-written with a faculty member, who has focused on the description of this model throughout her scholarship, and submitted to a journal for publication. Project findings will be presented to the physician owners of the Clinic and a poster presentation will likely be given at a future nursing conference to inform others of this model and its success.

After graduation, it is hoped several additional articles pertaining to this project will be written and submitted for publication. It is also hoped that findings can be

discussed with local hospital organizations as potential sites for future implementation with the aim of assisting them in transitioning into a similar model. It is hoped that through dissemination of project results, other organizations will consider the inclusion of nurses in their model of care delivery. It is also hoped disseminating results regarding the success of this interdisciplinary model will further the nursing profession and provide evidence for the value of nurses as part of the interdisciplinary team in this nontraditional setting. In short, dissemination will be a continuous process that is hoped to have an impact on how healthcare is delivered by guiding primary care practices in model replication.

### **Conclusion**

This project provided a detailed description of the structures and processes in place at a clinic that utilizes an interdisciplinary team approach to providing care. Specifically, structures and processes in place that aided in the attainment of Stage 2 Meaningful Use were explored. A comparison of Stage 2 attainment for EPs at the Clinic to national data was provided. This demonstrated superior outcomes at the Clinic. A process improvement toolkit providing the basic necessities for model replication was then created and provided a means of promoting the delivery of quality primary healthcare through model replication. Further exploration of the model is necessary to provide a complete view of how desired outcomes are achieved within this model. This project, however, provides the first step in achieving this goal. Through this project, it is hoped progress is made in advancing primary healthcare delivery to a model focused on delivering high quality healthcare that results in improved population outcomes while simultaneously reducing cost.

## Appendix A

### Stage 2 Meaningful Use Criteria

Core objectives include:

1. Computerized provider order entry (CPOE)
2. Generate and transmit prescriptions electronically, when permissible
3. Record patient demographics, including sex, ethnicity, race, preferred language, and date of birth, within the EHR
4. Within the EHR, record vital signs, including height/length, weight, blood pressure (if over the age of 3), BMI, and plot growth charts that can be displayed for patients under the age of 21
5. Record smoking status for patients over the age of 12
6. Utilize clinical decision support tools for high-priority health conditions
7. Provide patients the ability to download, view, and transmit their personal health information
8. Provide patients with a clinical summary after each visit
9. Protect electronic health information
10. Incorporate clinical lab-test results as structured data within the EHR
11. Generate lists of patients with specific conditions as a means of monitoring and improving population health
12. Identify patients, utilizing clinically relevant information, who should receive reminders for preventive and follow-up care, per patient preference
13. Identify resources for patient-specific education utilizing certified EHR technology

14. Perform medication reconciliation
15. Provide a summary care record for each care transition or referral
16. Submit electronic data regarding immunizations to registries
17. Utilize secure electronic messaging to communicate relevant health information to patients

Menu objectives include:

1. The ability to submit electronic syndromic surveillance data, in accordance with the law, to appropriate public health agencies
2. Record patient notes within the EHR
3. Display imaging results including the image itself and the explanation or other supplementary information
4. Record patient family health history as structured data
5. The ability to identify and report cancer cases, in accordance with the law, to a public health central cancer registry
6. The ability to identify and report specific cases, in accordance with the law, to specialized registries

Centers for Medicare and Medicaid Services. (2012c). Stage 2: Eligible professional (EP) meaningful use core and menu measures table of contents. Retrieved from [http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage2\\_MeaningfulUseSpecSheet\\_TableContents\\_EPs.pdf](http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage2_MeaningfulUseSpecSheet_TableContents_EPs.pdf)

## Appendix B

### Stage 1 Meaningful Use Criteria

Core objectives include:

1. Computerized provider order entry (CPOE)
2. Implement drug-allergy and drug-drug interaction checks
3. Maintain an updated problem list of active and current diagnoses
4. Generate and transmit prescriptions electronically, when permissible
5. Maintain an active patient medication list
6. Maintain an active medication allergy list
7. Record patient demographics including: preferred language, gender, race, ethnicity, and date of birth
8. Record and chart vital signs including: height, weight, blood pressure, a calculated and displayed body mass index (BMI), and plot and display growth charts for children 2-20 years old, including BMI
9. Record smoking status for patients over the age of 12
10. Report ambulatory clinical quality measures to CMS if enrolled in the Medicare program, or if enrolled in the Medicaid program, the state (This is no longer a core objective but is still required)
11. Implement one clinical decision support rule for a high-priority health condition and the ability to track rule compliance
12. Provide patients an electronic copy of their health information upon request
13. Provide patients with a clinical summary after each visit
14. Protect electronic health information

Menu Objectives Include:


1. Implement formulary drug checks
2. Incorporate clinical lab-test results into the EHR as structured data
3. Generate lists of patients with specific conditions as a means of monitoring and improving population health
4. Send patient reminders per patient preference for preventative and follow-up care
5. Provide patients with timely access to their electronic health information
6. Identify resources for patient-specific education utilizing certified EHR technology
7. Perform medication reconciliation after a transition of care or when believed relevant
8. Provide a summary care record for each care transition or referral
9. Submit electronic data regarding immunizations to registries
10. The ability to submit electronic syndromic surveillance data, in accordance with the law, to appropriate public health agencies

Centers for Medicare and Medicaid Services. (2014c). Eligible professional meaningful use table of contents core and menu set objectives: Stage 1. Retrieved from <https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/downloads/EP-MU-TOC.pdf>



## Appendix C

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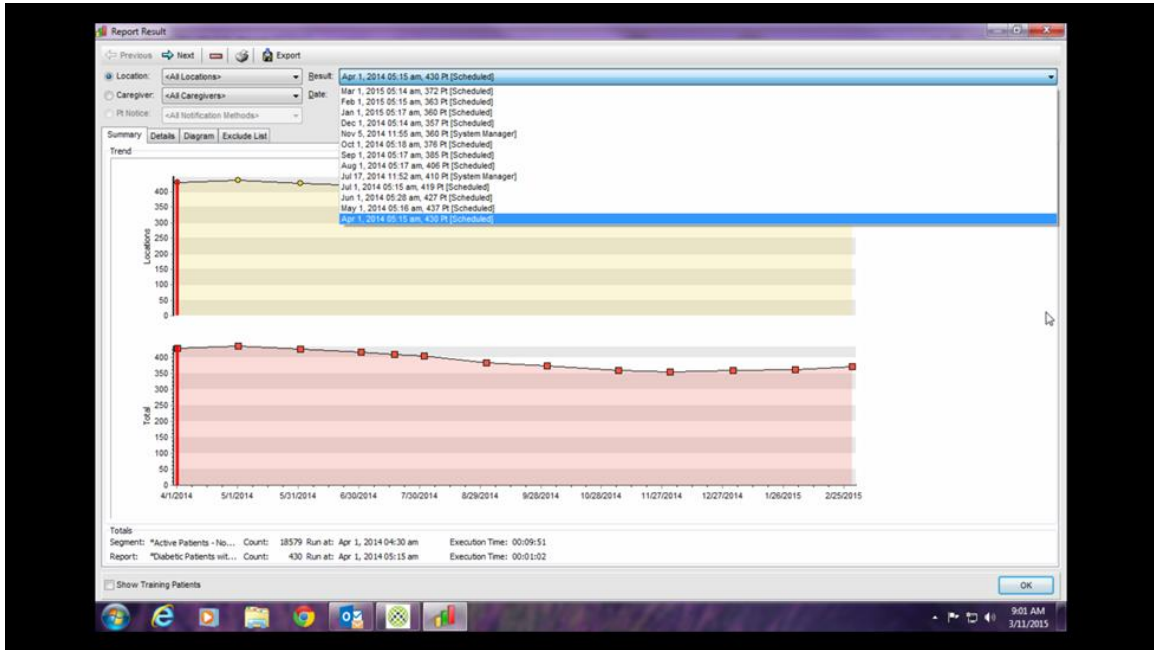
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# Appendix D

## Population Health Trends: A1c as an Example



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