A Crosswalk Protocol for Implementation of the Patient-Centered Medical Home and Meaningful Use at a Midwest Nurse Managed Center

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A Crosswalk Protocol for Implementation of the Patient-Centered Medical Home and Meaningful Use at a Midwest Nurse Managed Center

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# Table of Contents

Abstract ........................................................................................................................................ 4  
Executive Summary ....................................................................................................................... 5  
Introduction and Background ....................................................................................................... 8  
Problem Statement ....................................................................................................................... 11  
Evidence-Based Initiative ......................................................................................................... 13  
Conceptual Models ..................................................................................................................... 20  
The Donabedian Model ............................................................................................................... 20  
PARiHS Framework ................................................................................................................... 24  
Need and Feasibility Assessment of Organization ..................................................................... 28  
Project Plan .................................................................................................................................. 29  
Purpose of Project ......................................................................................................................... 29  
Project Objectives ....................................................................................................................... 29  
Type of Project ............................................................................................................................ 30  
Setting and Needed Resources ................................................................................................. 31  
Design for the Evidence-Based Initiative ................................................................................... 32  
Measurements: Sources of Data ................................................................................................. 33  
Steps for Project with Timeline ................................................................................................. 35  
Project Evaluation ...................................................................................................................... 38  
Ethics and Human Subject Protection ....................................................................................... 40  
Project Outcomes ....................................................................................................................... 41  
Implications for Practice ............................................................................................................. 46  
DNP Essentials .......................................................................................................................... 50  
Dissemination of Outcomes ........................................................................................................ 51  
References ..................................................................................................................................... 56  
Appendices .................................................................................................................................. 64
Abstract

Healthcare expenditures in the United States far exceed the spending that occurs in other high-income countries (Squires & Anderson, 2015). However, the healthcare outcomes are poorer in the U.S. on multiple key health care measures including life expectancy and the prevalence of chronic illnesses and comorbid conditions (Squires & Anderson, 2015). New care models not only focus on improvement of key health outcomes, but also on healthcare providers to reduce fragmented care with care coordination.

This DNP scholarly project addresses the need for financial stability within a Midwest nurse managed center. This center would benefit from utilization of a new care model such as the Patient-Centered Medical Home (PCMH) model supported financially by the monies from the Meaningful Use (MU) incentive program. The Donabedian model was used as a conceptual framework to explore the potential positive impacts on financial stability of the Midwest nurse managed center and the PARiHS model was used to guide project implementation. The purpose of this project was to address PCMH and MU within the current practice to improve healthcare outcomes and establish necessary financial stability. This was achieved by creating educational in-services for staff and providers, a patient portal protocol, PCMH toolkit, and business case analysis. The overall outcome of this project is a plan for the Midwest nurse managed center to continue successful attestation of MU while re-engineering the workflow to successfully become recognized as a PCMH Level 1. As an outcome of the project, the Midwest nurse managed center has the tools necessary to initiate and maintain the process of capturing necessary data to receive needed incentive dollars for financial stability.
Executive Summary

Healthcare expenditures in the United States far exceed the spending that occurs in other high-income countries (Squires & Anderson, 2015). However, the healthcare outcomes are poorer in the U.S. on multiple key health care measures including life expectancy and the prevalence of chronic illnesses and comorbid conditions (Squires & Anderson, 2015). New care models not only focus on improvement of key health outcomes, but also on healthcare providers to reduce fragmented care with care coordination.

The Patient-Centered Medical Home (PCMH) is a care model for primary care delivery with major objectives including: improving patient outcomes, safety and system efficiency and patient and staff experiences (Jackson et al., 2012). The PCMH model strengthens the relationship between the provider and patient, improving the coordination of care (Stroebel, Fuentes & Silver, 2012). By adopting the PCMH model, providers and healthcare organizations achieve the quadruple aim: improved patient outcomes, improved patient experience, and improved work life satisfaction of care providers while decreasing costs of care (American Academy Of Family Physicians [AAFP], 2015). The PCMH model is a recognition program that provides opportunity for incentive dollars granted by public and private insurance payers to participating healthcare organizations (AAFP, 2015). The overall return on investment of PCMH recognition is 15 dollars for every 10 dollars invested by the organization (Reid et al., 2010).

Meaningful Use (MU) is an incentive program funded by the Centers for Medicare and Medicaid Services (CMS) designed to encourage providers to adopt meaningful use of Electronic Health Records (EHRs) (CMS, 2017a). Once an organization achieves MU attestation, significant financial payments are received for up to five years. There is alignment between PCMH model recognition and MU incentive programs. All PCMHs must attain MU, which
accounts for 44% of PCMH recognition (Cucchiara, 2014). One of the specific aspects of overlap includes patient engagement through patient portals associated with EHR systems.

Nationwide, 7,000 sites have received PCMH recognition (Chuter, 2016). However, an identified university sponsored Midwest nurse managed center has not been recognized as a PCMH. Although, this center has not been recognized as a PCMH, several providers have attested to MU Modified Stage 2. In the past 6 years, since its in inception, the Midwest nurse managed center has been working at a $500,000.00 operational deficit, making it financially unstable. PCMH recognition and continued MU attestation would contribute to financial stability of this center. Therefore the two-fold clinical question is: 1) How would attainment of current quality and incentive program criteria affect the revenue and financial stability of the Midwest nurse managed center? (2) What are the resources, processes and staff educational needs that would be necessary to attain the criteria needed for PCMH and MU? This question was answered by reviewing the literature and current practice within the Midwest nurse manage center to create (1) educational in-services (2) patient portal protocol (3) a PCMH implementation toolkit and (4) business case analysis of potential revenue and expenses.

The Donabedian model and the PARiHS framework guided this quality improvement DNP scholarly project to develop, implement and evaluate the identified evidence-based initiative. An educational in-service was completed to improve the staff and provider knowledge of PCMH. Due to small sample size, descriptive analysis of the pre- and post- questionnaire responses was performed. Improvement on a five-point Likert scale was determined, indicating enhanced PCMH knowledge through in-service intervention. The patient portal protocol was evaluated by patient education and enrollment rates to the patient portal. Results of pre and post test to evaluate patient portal education showed significantly increased gain in patient knowledge
regarding the patient portal use in the EHR (p<0.001). Additionally, the patient enrollment rate into the patient portal increased from 46% to 48%. A PCMH toolkit was created to facilitate continued PCMH recognition and included the plan, job descriptions within the various levels of PCMH, and systematic assessment of needed documentation. Finally, this project included a business case analysis reflecting the total net revenue to substantiate PCMH adoption, continual MU attestation, and advised inclusion of a medical assistant to improve practice structure. If the practice adopts the project tools and recommendations, the overall net revenue of PCMH recognition and MU attestation within the Midwest nurse managed system would be $204,918 by 2021.
A Crosswalk Protocol for Implementation of the Patient-Centered Medical Home and Meaningful Use at a Midwest Nurse Managed Center

Addressing fragmented care and financial burdens in the ambulatory setting is crucial to healthcare reform. The U.S. healthcare expenditures exceed other high-income countries, however the outcomes are poorer (Squires & Anderson, 2015). In 2013, 17.1% of the U.S. gross domestic product was spent on healthcare, which was 50% more than France, the country with the second highest healthcare expenditure (Squires & Anderson, 2015). Although the spending in the U.S. surpasses all other countries, the outcomes are poorer on key health care measures including life expectancy and prevalence of chronic illnesses and comorbid conditions (Squires & Anderson, 2015). In order to address the high cost and poor quality of healthcare delivered in the U.S., new care models must be implemented. The Patient-Centered Medical Home (PCMH) is one of these care delivery models that improve outcomes by focusing on the quality of care provided in the ambulatory setting. The providers participating in the PCMH model can also influence financial sustainability by utilizing incentives from Meaningful Use (MU).

**Background**

With the shift in healthcare reimbursement from fee for service to value based reimbursement, new delivery models and incentive programs specific to the ambulatory care setting have emerged, including Patient Centered Medical Home and Meaningful Use. To better understand the delivery model, the three levels of PCMH and processes to obtain recognition be described. Attestation and stages of MU incentive program, along with influential policies will be identified.

**Patient-Centered Medical Home**
The Patient-Centered Medical Home is a primary care delivery model with major objectives including: improving patient outcomes, safety and system efficiency and patient and staff experiences (Jackson et al., 2012). The Patient-Centered Medical Home model also strengthens the relationship between the provider and patient improving the coordination of care (Stroebel, Fuentes & Silver, 2012). By adopting the Patient-Centered Medical Home model, providers and healthcare organizations achieve the quadruple aim: improved patient outcomes, improved patient experience, and improved work life satisfaction of care providers while decreasing costs of care (American Academy Of Family Physicians [AAFP], 2015). The Patient-Centered Medical Home model is a recognition program that provides opportunity for incentive dollars granted by public and private insurance payers to participating healthcare organizations (AAFP, 2015).

The Patient-Centered Medical Home includes levels of recognition based on a 100 point scoring system of elements, standards, and factors related to care delivery. Within the scoring system, there are 27 total elements with six being must-pass elements. The level scoring is as follows: Level 1 is 35 to 59 points, Level 2 is 60 to 84 points, and Level 3 is 85 to 100 points (Stroebel, Fuentes & Silver, 2012). The quality of care delivered improves as organizations progress in Patient-Centered Medical Home levels. Participants seeking Patient-Centered Medical Home recognition are able to select the elements, standards, and factors attainable by the organization. Appendix A includes the scorecard used for determining the Patient-Centered Medical Home level along with correlating elements, standards, and factors.

For an organization to become recognized as a Patient-Centered Medical Home, it must first be determined which recognition program will be utilized. Two recognition programs are primarily utilized in Michigan: National Committee for Quality Assurance (NCQA) and Blue
Cross Blue Shield (BCBS). Medicaid payers recognize the NCQA PCMH designation for reimbursement while BCBS and other payers recognize the BCBS PCMH designation for their payment structure to providers. When determining which recognition program to pursue, the decision is determined primarily on the payer mix of the organization (Alexander et al., 2013). Additionally, each insurance company determines and grants a variable financial incentive based on the Patient-Centered Medical Home level achieved (Appendix B).

**Meaningful Use**

Meaningful Use is an incentive program funded by the Centers for Medicare and Medicaid Services (CMS) designed to encourage providers to adopt meaningful use of Electronic Health Records (EHRs) (CMS, 2017a). The American Recovery and Reinvestment Act of 2009 specified three components of Meaningful Use including: “the use of certified Electronic Health Record (EHR) in a meaningful manner, the electronic exchange of health information to improve quality of health care and the use of certified EHR technology to submit clinical quality and other measures” (Health Resources and Services Administration [HRSA], para. 1, 2011b). Meaningful Use mandates that providers show utilization of certified EHR technology in methods that can measure quality and outcomes of care. In July of 2010, CMS published a ‘final rule’ establishing three stages of Meaningful Use to enable providers within acute and primary care settings to successfully use EHR programs in a meaningful way to improve overall quality of care (HRSA, 2011b).

Currently, the stages of Meaningful Use include Modified Stage 2 and Medicare Access and CHIP Reauthorization Act (MACRA). Both stages of Meaningful Use are attained by meeting designated thresholds that become more difficult to achieve with each stage. Modified Stage 2 was created to make Meaningful Use more attainable by combining what were
previously Stage 1 and Stage 2 (Practice Fusion, 2017). Medicare Access and CHIP Reauthorization Act was developed to replace the previous Meaningful Use Stage 3 and is recognized for its flexibility and increased attainability for providers to meet thresholds (The Network for Regional Healthcare Improvement [NRHI], 2016). The MACRA value-based payment program is comprised of two reimbursement structures: The Merit Based Incentive Payments System (MIPS) and the Alternative Payment Models (APM). The MIPS reimbursement program is based on a composite performance score and providers will receive positive, negative, or neutral adjustments to the base rate (NRHI, 2016). Therefore, higher performance based on quality indicators will result in higher reimbursement and poorer performance will result in lower reimbursement.

Attestation is the verification by CMS that Meaningful Uses thresholds are being met (Practice Fusion, 2017). This process is initiated when an eligible provider attests the Medicaid or Medicare incentive program. The incentive program is selected based on the insurance payer mix within the organization. The first attestation is a 90-day reporting period in which the organization demonstrates MU criteria fulfillment. Subsequent yearly attestation is based on a full year of data. Once an eligible provider has successfully attested an incentive payment is received. Appendix C includes the five-year incentive payment schedule for both Medicaid and Medicare incentive programs. Eligible providers can only receive financial incentives from attestation five times or yearly for five years.

**Problem Statement**

In the U.S., 1 in 5 patients use emergency rooms and urgent care clinicians instead of going to a primary care provider (PCP) (Chuter, 2016). Also, more than 60 million Americans do not have access to adequate primary care and there is a projected 14% increase in demand for
PCPs by 2020 (Chuter, 2016). New care models and incentive programs have been developed to not only address inadequate primary care services and increased patient influx in primary care, but also to reduce financial burdens and improve healthcare outcomes within the primary care setting. These innovations include the PCMH care model and the MU incentive program. Organizations achieving PCMH recognition have benefits such as a 58% increase in clinician satisfaction, 66% increase in clinic staff satisfaction, 11% increase in practice revenue and 14% increase in clinician salaries (Chuter, 2016). Also, PCMHs not only reduce the cost of care by decreasing emergency department and hospital visits, but also reduce health disparities while improving patient outcomes (National Committee for Quality Assurance [NCQA], 2015a).

Patient-Centered Medical Home recognition has been granted to over 7,000 sites and 34,492 providers, however a Midwest nurse managed center, affiliated with a university is not PCMH recognized (Chuter, 2016). This nurse managed center is a primary care office, providing services to both pediatric and adult patients. The Midwest nurse managed center is staffed with four nurse practitioners, two registered nurses, one office manager, one front office coordinator, and several part-time office assistants who are students at the affiliated university.

The Midwest nurse managed center has serviced 11,537 patients over the past two years. Of those patients, 8,224 or 71.2% were self-pay. Of the remaining 3,313 patients, 4.3% had Medicare, 58.7% had Medicaid, and 36.9% had commercial insurance. The Medicaid patients are disbursed into six different insurance groups including: Molina Medicaid Insurance (6.3%), Meridian Medicaid Insurance (26.7%), Priority Health Medicaid Insurance (43.3%), United Health Medicaid Insurance (0.5%), McLaren Medicaid Insurance (1.3%), and Michigan Traditional Medicaid Insurance (21.8%).
Currently, four providers at the Midwest nurse managed center have successfully attested to Modified Stage 2 MU, but the practice has not been PCMH recognized. This center also has an operational deficit of $500,000.00 over the past 6 years. Since financial stability is needed, the PCMH recognition and continuation of MU attestation are essential. Therefore the two-fold clinical question is: 1) How would attainment of current quality and incentive program criteria affect the revenue and financial stability of the Midwest nurse managed center? (2) What are the resources, processes and staff educational needs that would be necessary to attain the criteria needed for PCMH and MU? This question will be answered by reviewing the literature and current practice within the Midwest nurse manage center to create (1) educational in-services (2) portal protocol (3) a PCMH implementation toolkit and (4) business case analysis of potential revenue and expenses.

**Evidence-Based Initiative**

The university-affiliated nurse managed center can attain PCMH recognition, as well as maintain and progress in MU through evidence-based initiatives. The literature and current practice within the Midwest nurse managed center were reviewed to inform interventions. The current best practices will be described to understand the educational initiatives and step-wise plan included in this scholarly project.

**Best Practices to Attain PCMH Recognition**

The best practice of PCMH recognition is divided into three steps: learn it, earn it and keep it (NCQA, 2015b). The three steps are essential to attain and sustain the PCMH model within an organization. These three steps will be applied to the NCQA PCMH designation process at the nurse managed center.
Learn it. To effectively achieve PCMH recognition, it is necessary to learn the processes, standards and guidelines of the model. For an organization to become recognized, it is first important to learn if the organization site is eligible for PCMH recognition and to determine which recognition program will be utilized. Two recognition programs are primarily utilized in Michigan: National Committee for Quality Assurance (NCQA) and Blue Cross Blue Shield (BCBS). The payers that provide reimbursement for NCQA designation program only reimburses the Medicaid payers, while BCBS reimburses BCBS, Medicare and Medicaid beneficiaries. When determining which recognition program to pursue, the decision is determined primarily on the payer mix of the organization (Alexander et al., 2013). At the Midwest nurse managed center, the second largest group of payers is the Medicaid program (17%), with self-pay being the largest group of payers (71.2%). Thus, the NCQA designation is an appropriate program to pursue at this site for a PCMH recognition program.

The Midwest nurse managed center also met criteria for eligible clinicians. Eligible clinicians to achieve NCQA designation include: the Doctor of Medicine (MD), Doctor of Osteopathic Medicine (DO), Nurse Practitioner (NP) and Physician Assistant (PA) (Community Care of North Carolina, 2014). The providers are eligible if two or more clinicians practice together to provide initial, continuous, comprehensive or whole person-care across the practice (Community Care of North Carolina, 2014).

The second step of learning the PCMH model is education for providers and staff. Initial education includes obtaining and reading the published standards and guidelines available without charge from the NCQA website. In addition, local conferences, PCMH consultants, free webinar and in person trainings can be completed to assist with understanding the PCMH model.
After comprehensive knowledge is achieved and systematically evaluated with pre/post testing, the organization can proceed to the second step: earn it.

**Earn it.** Three aspects occur during the ‘earn it’ phase: transformation of processes and procedures using standards and guidelines, and completion of the survey tool and the Interactive Survey System (ISS). The amount of time it takes to complete this phase varies amongst organizations, ranging between three and 18 months (Connect, 2014). This required time depends upon existing documentation and querying ability within the organization, the processes and systems already in place and the team assembled to assist with the survey tool and ISS completion. In addition, the organization’s starting point, end goal and the level of transformation is used to determine a feasible timeline.

**Keep it.** Requirements for initial and continual PCMH recognition include a cumbersome accumulation and submission process. During this phase, the healthcare professionals within the organization need to focus on three concepts: promotion of NCQA PCMH designation, upgrading the NCQA recognition status, and maintenance of the NCQA recognition status (NCQA, 2016). Even after receiving initial incentive payments, the staff must remain motivated to continuously improve care delivery to maintain PCMH recognition. Secondly, PCMH is recognized on three different levels and upgrading not only improves the organization’s incentives, but also improves the patient’s health outcomes due to higher thresholds attained.

Last, to maintain PCMH recognition, providers are required to leverage EHRs, clinical analytics, and workflow improvements in various areas of practice to improve patient care outcomes (Bresnick, 2015). The importance of maintaining PCMH recognition is important not only because of the improved quality of care and return on investment, but also to meet the
incentives for the MU program. Utilizing EHRs in a meaningful way not only impacts PCMH recognition, but also MU attestation for financial incentives.

**Best Practice to Attain MU Incentives**

The first step towards best practice in MU incentive attainment is to determine whether to attest for the Medicare or Medicaid incentive program (HealthIT, 2013). The majority payer group within the organization determines the correct incentive program. During this first assessment, it is also important to assure that the provider attesting is eligible. The criteria for eligible providers are defined differently between Medicare and Medicaid. The eligible providers for the MU Medicare incentive program include the following: doctors of medicine or osteopathy, doctors of dental surgery or dental medicine, doctors of podiatry, doctors of optometry and chiropractors (HealthIT, 2013). The eligible providers for the MU Medicaid incentive program include the following: physicians, nurse practitioners, certified nurse-midwives, dentists and physician assistants (HealthIT, 2013). The Midwest nurse managed center utilizes nurse practitioners as the primary providers, who are eligible providers within MU Medicaid incentive program.

After the patient population is determined, the organization must purchase an Electronic Health Record (EHR) system (CMS, 2016a). The EHR must capture and share patient data efficiently (CMS, 2016a). If the EHR can report patient information in a structured manner, then the data can be easily retrieved and transferred. This allows the provider to utilize the EHR system in a method that can assist in patient care. CMS established a list of criteria EHRs must demonstrate to qualify for incentive program inclusion. The Certified Health IT Product List provides access to educational materials regarding which EHR systems and modules are certified for the Medicare and Medicaid EHR incentive programs, including MU (CMS, 2016a).
Purchasing a certified EHR system gives eligible providers the necessary technological capability, functionality and security to attain the MU criteria. The Midwest nurse managed center purchased the Athena EHR, a MU certified system that can be used in incentive programs. The organization must identify vendors, consultants, and other providers to collaborate with after the Medicaid or Medicare incentive program and EHR are determined. Many EHR systems have vendors and consultants available for an additional fee to the organization. One example is Athenahealth, which is one of the top ranked EHR vendors (Ellison, 2014). Once purchased, a provider can utilize Athena’s customer service line and collaborate with consultants. The consultants are experts regarding the MU elements and objectives. It is important to be aware if an EHR company offers these services upon selecting a certified EHR. Also, by collaborating with a consultant, all the clinical decision support alarms and tools can be activated to ensure the provider can utilize the system in the most efficient way and realize the safety benefits. Collaborating with the consultant, as well as providers from other recognized organization is beneficial. Other providers may be further progressed related to the MU process and stages. These providers may have already experienced barriers and successes that a novice MU provider may not have. Collaboration with other providers will not only provide assurance, but also save time and money. Currently, the Midwest nurse managed center has collaborated with a private consultant from Altarum who assists the organization with developing monthly reports to assure providers are meeting requirements.

**The Overall Benefit of PCMH Recognition and MU Attestation**

**PCMH.** Health care systems built on a health care delivery model provide more efficient and cost-effective care when compared to organizations that fail to invest in such a system (Grumbach & Grundy, 2010). Grumbach and Grundy (2010) published a review of available
literature on PCMH interventions with the objective to update the public on the most current outcomes of the model. The published review includes studies with more than a million patients, among different diverse practice settings, involving both private and public payers. All of the studies included in the review had similar outcomes: improved quality of care and patient experiences, and reductions in expensive hospital and emergency department utilization (Grumbach & Grundy, 2010). For example, BCBS of South Carolina-Palmetto Primary Care Physicians reduced inpatient hospital days per 1,000 enrollees per year among PCMH patients by 10.4%, inpatient days were reduced by 36.3%, and emergency department visits were reduced by 12.4% (Grumbach & Grundy, 2010). Furthermore, evidence is presented and supports that primary care clinics invested in PCMH recognition produce a savings in total health care expenditures. For example, the Erie Country PCMH model not only decreased duplication of services and tests, and lowered hospitalizations rates, but also accomplished an estimated savings of $1 million for 1,000 enrollees (Grumbach & Grundy, 2010). In addition, a Medicaid sponsored PCMH initiative accomplished in Community Care of North Carolina reported a cumulative savings of $974.5 million over a 6 year period (Grumbach & Grundy, 2010).

The cost-savings is evident, however the initial investment of PCMH recognition must be discussed. The initial cost of implementing PCMH can be intimidating. For the primary care setting to improve the quality of care, an investment is required and the return on investment is not always immediate for providers. The RAND Corporation, a nonprofit institution that helps improve policy and decision-making, reported a median annual cost of becoming a PCMH at $147,573 per practice, $64,768 per clinician, and $30 per patient (Bresnick, 2016). Another study published by the Journal of the American Board of Family Medicine reported that the average costs to apply for NCQA 2011 PCMH certification reached nearly $14,000 per physician
(Bresnick, 2016). Further, there is increased cost from adding care team members such as care coordinators, nurses, and providers to manage increased patient demands for services, time and financial resources from the organization. However, primary care services account for only six percent of the total health care budget, and the investment to support PCMH increases primary care costs to only 7.8% of the health care budget (Bresnick, 2016). An investment of 1.8% of healthcare expenditures for improving primary care delivery can produce savings in non-primary care expenditures such as reduced emergency department visits and hospital readmissions. The initial cost of PCMH recognition is high, however the long-term financial savings and incentives outweigh the cost.

MU. The MU program has a primary goal to improve the healthcare provided in a variety of health care settings, however the financial incentive is a secondary benefit. The incentive payment ranges between $44,000 over 5 years for the MU Medicare incentive program and $63,750 over 6 years for the MU Medicaid incentive program (CDC, 2016). Also, by attaining MU, providers avoid future penalties. Eligible providers who did not successfully demonstrate MU starting in 2015 were subjected to a payment adjustment. Starting in 2015, eligible providers who did not demonstrate MU were subjected to a downward adjustment to Medicare physician fee schedule payments for covered professional services (CMS, 2017c). More specifically, a reduction starting at 1% with a continued yearly reduction of 1% resulting in a maximum reduction of 5% in 5 years if an eligible provider continues to not demonstrate MU (CMS, 2016c). Therefore, by successfully attesting to MU, providers can improve health care outcomes, gain financial stability through incentive, and reduce financial penalties.

The Crosswalk
Many areas of overlap between MU and PCMH exist. More specifically, all PCMH recognized practices must attain MU, however only 44% of PCMH recognition is attained through meeting MU criteria (Cucchiara, 2014). Therefore, an intersection or crosswalk can be identified that accurately explains how specific criteria of the MU incentive program can meet requirements of PCMH recognition (Coffin, Duffie, & Furno, 2014). The evolving value-based programs are important to consider due to the present payment plan in the U.S. (Coffin, Duffie, & Furno, 2014). Currently, reimbursement is based on quality of care and bonus payments for improved outcomes (Coffin, Duffie, & Furno, 2014). MU and PCMH offer potential financial incentives, which assist with converting to the costly value-based payment model. Both MU and PCMH can be cumbersome to accomplish, however overlap between the two exist. The overlapping features to highlight include: patient engagement, privacy, using patient data, patient education and self care, care coordination, prescription management, and decision support (Coffin, Duffie, & Furno, 2014). Patient engagement is a common feature between programs to apply to attaining PCMH and MU initiatives. Much of the overlap criteria include difficult to attain features, however patient engagement is recognized as being the most difficult but can be addressed by utilizing a patient portal.

Specifically related to the crosswalk of patient engagement, patient portals can be utilized to fulfill both PCMH and MU requirements. The patient portal is a secure online website that provides patients with access to personal health information (HealthIT, 2015). A secure username and password are provided so that patients can access information including: discharge summaries, medications, immunizations, allergies and lab results. Also, the patient portal can enhance communication between the patient and provider by utilizing the secure message feature (The National Learning Consortium, 2012). Electronic Health Records that
directly engage patients through a patient portal can improve access, patient empowerment and health outcomes (The National Learning Consortium, 2012).

**Conceptual Models**

Conceptual models are used to provide a lens or framework to understand populations and phenomenon. The Donabedian Model was used to evaluate health service delivery related to outcomes. The PARiHS Framework was used to inform the implementation of evidence into practice for this project.

**The Donabedian Model**

The purpose of a conceptual model is to provide a high level of understanding of the phenomenon while guiding the intervention. The Donabedian model is a conceptual model with the three major concepts of structure, process, and outcome (Donabedian, 1988). The structure component accounts for the attributes of the settings or context in which care occurs. Structure includes properties such as finances, facilities, human resources, and equipment (Donabedian, 1988). The process component identifies what takes place during practice delivery of care such as the patient engagement in their own healthcare and the patient provider interaction (Donabedian, 1988). The outcomes component includes the end result of the patient’s care, knowledge, behaviors and outcomes as well as total improvements in population health for the practice. Appendix D contains the Donabedian model applied to the Midwest nurse managed center and has been organized below by the main concepts of the model.

**Structure.** The major structure component within this DNP scholarly project is the Midwest nurse managed center. The Midwest nurse managed center was formed in 1999 and is located in an urban environment. The site is a primary care office staffed with four nurse practitioners, two registered nurses, one office manager, a front office coordinator and several
part-time office assistants who are students. The students are only at the organization for a few semesters and work a maximum of 16 hours per week. Frequent hiring occurs to fill positions due to these issues.

The second structure component is the subsidizing facility, which is a nursing college within a university. The Office of Provost, Academic Budget Officer and board members from the university determine the fiscal allocation to each college through a shared decision process. The nursing college receives a portion of the total revenue from the university and allocates funds to appropriate programs. A portion of the funding is allocated to the Midwest nurse managed organization, which is determined by the dean of the nursing college. The remaining money is allocated to other areas within the nursing college.

The third structural component is the equipment and the EHR system within the Midwest nurse managed center. The organization has an established EHR and updated software that assist with workflow efficiency. The organization currently uses the Athena EHR system, which is ranked number one for usability according to the Keystone Library Automation System (Athena Health, 2016). Approximately 98% of Athena medical practice clients achieved stage 2 MU in 2014, which surpasses any other vendor (Monegain, 2015). The Athena EHR system has the ability to provide a cloud-based EHR, as well as practice management and engagement tools (Monegain, 2015). However, the computer hardware used within the Midwest nurse managed center is out dated, which negatively impacting daily workflow. For example, the computers operate slowly when the providers are utilizing Athena, checking e-mail, and/or utilizing the web browser. Also, the computers freeze often and need to be re-started daily workflow.

The final structural component is the operating deficit of the nurse managed center of $500,000.00 over the past 6 years. Key stakeholders within the university’s financial department
are very hesitant to provide support to the Midwest nurse managed center due to the large deficit. Self-sustainability and success of the organization has been debated in the past because of financial deficits.

Various structure components were addressed within this scholarly project. First, the educational in-services provided information to staff about the PCMH model. Also, the business case analysis was designed to improve the overall structure and workflow of the clinic by introducing a medical assistant. Finally, the business case analysis addresses the operational deficit within the center.

**Process.** The process component within the scholarly project includes daily transaction of care processes. The process component was significantly re-engineered and re-invented throughout this scholarly project. First, the utilization of the patient portal protocol was utilized with every patient who was a ‘new patient’ or not already enrolled in the patient portal. Also, education was provided to the patients enrolling into the patient portal to enhance user engagement. Second, a PCMH toolkit was developed to identify a systematic plan for PCMH adoption, job role descriptions and documentation needed to meet criteria within the Midwest nurse managed center. The PCMH toolkit will be used to successfully acquire Level 1 PCMH recognition. If the PCMH toolkit is followed, the processes and workflow will align with the PCMH model. Lastly, a business case analysis that included total revenue, total expense and a total net revenue was developed and presented to key stakeholders. The intention of the business model was to demonstrate the fiscal impact over the next five years that continuation of MU attestation and PCMH recognition will have on the Midwest nurse managed center. An increase in workload is expected because the organization does not have a medical assistant or support staff to address quality and documentation required for PCMH recognition. The business case
analysis also provided evidence that supported the creation of a new role, a medical assistant. By providing a medical assistant, the nurses and providers will be able to perform to their fullest scope of practice, as well as work more efficiently to provide the required quality care.

Process components were included within this DNP scholarly project. The patient portal protocol provides a standardized method to enroll patients into the patient portal. Additionally, the patient portal protocol contains education for patients on how to engage with the portal. The PCMH toolkit provides a systematic plan to obtain PCMH recognition, identifies roles, and determines documentation needs.

**Outcome.** The outcome component of the Donabedian model ultimately impacts the effect of care and sustainability of the Midwest nurse managed center. Increased fiscal allocation from the college within the university is a long-term outcome supported by the business case analysis. Secondly, incentive payments for the four nurse practitioners will continue to be received from successful MU attestation at the Midwest nurse managed center. Thirdly, the goal is for the Midwest nurse managed center to become level 1 PCMH recognized by January of 2018. As a result, the Midwest nurse managed center would receive additional incentive payments by adopting the PCMH model. Finally, the Midwest nurse managed center would improve patient engagement, meeting a criteria that overlaps both MU and PCMH measurements, by utilizing the patient portal protocol.

The deliverables of the DNP scholarly project included an educational in-service, patient portal protocol, and business case analysis. Specifically, the outcomes of the educational inservices included enhanced knowledge of staff and providers on the PCMH model. The outcome of the patient portal protocol is to improve patient engagement. Finally, the outcome of the
A CROSSWALK PROTOCOL

business case analysis is the recommendation to add a medical assistant to improve the workflow process at the nurse managed center.

**The PARiHS Framework**

The Promoting Action on Research Implementation in Health Services (PARiHS) framework provides an organized method to implement research into practice (National Collaborating Centre for Methods and Tools [NCCMT], 2011). The framework can be used to analyze the interactions between evidence, context, and facilitation. Utilization of the framework supports that implementation of high quality evidence into practice while considering the context and facilitation (NCCMT, 2011).

The PARiHS framework was used to create the four deliverables of this DNP scholarly project. The PARiHS framework was applied to the Midwest nurse managed center and has been organized below by the main concepts of the model. Appendix E provides the PARiHS framework model applied to the Midwest nurse managed center. The three major concepts of the PARiHS model include evidence, context and facilitation.

**Evidence.** Evidence includes clinical expertise and research related to a specific phenomenon. The evidence supporting the PCMH model and the MU incentive program are strong. The evidence regarding potential revenue produced by incentive payments by obtaining PCMH recognition and successful MU attestation is supported in the current literature. The staff and patients at the Midwest nurse managed center are likely to experience similar outcomes that are presented in the literature if PCMH recognition is accomplished while MU attestation is continued.

**PCMH.** The adoption of Patient-Centered Medical Homes have shown to provide high quality, lower cost care while improving patient and provider experiences in comparison to other
care delivery systems (NCQA, 2014). Also, the return on investment from adequately re-engineering a primary care practice to a PCMH practice is significant. For every ten dollars spent by the organization, 15 dollars are returned to the organization (Reid and et al., 2010). The CEO and president of the Carilion Clinic in Roanoke, Virginia, which is a 1.7 billion integrated healthcare system advocated for the organization to transition four primary care settings to PCMHs (MacDonald, 2015). The organization is now experiencing promising results; 34% decrease in patients’ use of the emergency department and a 44% decline in readmissions (MacDonald, 2015). Also, patient satisfaction increased and was above the 75th percentile when compared to practice data collected before the PCMH model of care was implemented (MacDonald, 2015). A Colorado’s multi-payer PCMH pilot demonstrated 15% reduction in emergency department visits and 18% reduction in inpatient admissions, which achieved a return on investment of 4.5 dollars for every dollar spent (Bresnick, 2014). In Maryland, a primary care organization that utilized the PCMH model demonstrated a $98 million savings of healthcare dollars and raised quality scores by nearly 10% in only one year (Bresnick, 2014). The BlueCross Blue Shield of Michigan physician group incentive program reported practices with full PCMH implementation showed a savings of $26.37 Per Member Per Month (PMPM), 5.1% higher prevention composite score and 3.5% higher adult quality score (Nielson et al., 2014).

**MU.** Effective use of EHR systems can help providers in all settings achieve better health outcomes and efficiency. Incentive and assistance programs have an objective to improve the overall health of patients while improving the performance of the healthcare system by implementing Meaningful Use through EHR systems (HRSA, 2011b). The MU incentive program and the associated payments are financially beneficial for providers who successfully attest due to the incentive payments.
After organizations demonstrate MU and receive the incentive payment, improved care coordination and patient engagement are experienced (Weiss, 2015). MU requires the provider to document electronic notes in the patient’s record. As a result, every provider can visualize the same summary and be up-to-date about the patient’s current health status, prescribed medications, tests ordered and completed, and plan of care. The implementation of the EHR system and MU provides better availability of patient information, improved health information exchange, reduced medical errors, reduced unnecessary tests, reduced healthcare spending, and improved care coordination overall (HealthIT, 2014). MU objectives eight and nine specifically target patient engagement by utilizing the patient portal (Weiss, 2015). By utilizing the patient portal in a meaningful way and giving patients a secure online access to healthcare information, patients will be more engaged in their own healthcare. Use of the portal engages patients their own care, but also portal use has shown to save money as well. The Health Data Management Journal reported that healthcare providers had savings of $0.63 per patient for mailing costs to send lab results, $17 per patient for online questions and $7 per patient for online scheduling (Emont, 2011). Also, the Northwest Medical Informatics Symposium reported that secure messaging saved $0.62 per appointment reminder, $1.75 per phone call to patients, and $2.69 for each lab result delivery (Emont, 2011).

**Context.** The context includes the environment and setting which the implementation takes place (Kitson, Harvey, & McCormack, 1998). As already identified, the Midwest nurse managed center is a primary care setting that is staffed with four nurse practitioners. The mission of the Midwest nurse managed center is to provide accessible, quality healthcare, and promote an innovative learning environment through an academic nurse managed approach. The culture of the center is based on safety and health. All the providers practice with an ultimate goal of
providing safe care by utilizing plans of care based on evidence-based interventions. Instead of ignoring problems identified in the organization, the healthcare team encourages a forward-thinking approach to identify and solve problems. Therefore, the culture revolves around improved healthcare outcomes and safety. Incentives and rewards for each employee include a benefit package that bundles health insurance, 401k contributions, and free tuition to the affiliated university.

The culture of the organization is not only based on safety and quality of care, but also motivation. Although the staff has reported they feel very overwhelmed and undereducated on reimbursement and incentive programs, they continue to be positively motivated. The new manager is enthusiastic about working towards goals to lead the organization to meet requirements of MU and PCMH. The manager is also realistic and acknowledges the office needs to successfully obtain identified requirements to successfully obtain incentives.

**Facilitation.** The facilitation includes required support within the organization to change habits, attitudes and workflow to assist with successful implementation of practice change (Kitson, Harvey, & McCormack, 1998). Currently, the attitudes of the staff, providers and manager at the Midwest nurse managed center exhibit leadership skills, motivation and excitement, which can be applied to the necessary changes to current habits and workflow processes. The staff at the Midwest nurse managed center are extremely motivated and acknowledge the need for the PCMH model to assist with necessary workflow, structure and process changes. The current work habits need to be addressed and changed within the center. Currently, the individual roles of team members are not defined. Due to lack of employed staff within the Midwest nurse managed center, staff and providers are performing tasks not within their designated role to accommodate for lack of support staff. By providing a medical assistant,
the nurses and providers will be able to perform to their fullest scope of practice, as well as work more efficiently.

The PARiHS framework by Kitson, Harvey, & McCormack (1998) was utilized to assist in the implementation of the four identified deliverables. The evidence within the literature and clinical setting, the context of the Midwest nurse managed center, and support for facilitation were considered in developing the program for this project and in the implementation recommendations.

**Need and Feasibility Assessment of the Organization**

Financial stability was identified as a priority for the Midwest nurse managed center. Currently, the university subsidizes the Midwest nurse managed center because of prior financial deficits. In the past 6 years since its inception, the organization has been working at a $500,000 operational deficit although revenue has increased due to meeting Stage 1 MU incentives by four providers. To further address the financial instability of the Midwest nurse managed center, analyzing the payer mix of the organization is important. Currently to date, the total number of patients served at the Midwest nurse managed center is 11,537 with an insurance payer mix of 71.2% self-pay, 1.2% Medicare, 16.9% Medicaid, and 10.6% commercial insurance. Although the majority of patients are self-pay, an unusually high number of the patient population at the Midwest nurse managed center includes Medicaid insured patients. Overall, Medicaid reimbursements are 40% less than Medicare or private insurance reimbursements for the same services (Ubel, 2013). Decreased reimbursements from Medicaid are accompanied by increasingly complex mandated documentation requirements for each patient (Ubel, 2013). This is an issue that further impedes the Midwest nurse managed center’s financial stability.
Not only can the organization improve financial stability by obtaining MU incentives, but also by adopting PCMH recognition. PCMH recognition allows the organization the opportunity to receive increased payments from the Medicaid payers at the Midwest nurse managed center. Initially, an additional expense for training and staff will be incurred, but will result in greater net revenue long term.

Project Plan

Purpose of the Project

The purpose of this DNP scholarly project was to address the financial stability of the Midwest nurse managed center by introducing the PCMH model and advancing MU attestation to improve quality outcomes and increase incentive payments. This was addressed by answering the two-fold clinical question: (1) How would attainment of current quality and incentive program criteria affect the revenue and financial stability of the nurse-managed center? (2) What are the resources, processes and staff educational needs that would be necessary to attain the criteria needed for PCMH and MU? The two-fold clinical question was addressed by reviewing the available literature and current practice to develop the following deliverables: (1) educational in-services (2) patient portal protocol (3) PCMH implementation toolkit, and (4) business case analysis of potential revenue and expenses

Objectives

Efforts to improve financial stability within the Midwest nurse managed center were evaluated by developing four different deliverables:

- The knowledge the staff possessed related to PCMH was evaluated by a pre-test. A total of three in-service educational seminars were presented to the staff at the Midwest nurse managed center. After the final in-service educational seminar, a post-test identical to the
A CROSSWALK PROTOCOL

pre-test was administered by March 22\textsuperscript{nd}, 2017 to evaluate the staff knowledge improvement regarding PCMH.

- A patient portal protocol was developed and implemented throughout the month of February with the objective of reaching the benchmark measurements for PCMH Level 1 and MU. Pre-post tests were administered to the patients before and after patient educational sessions regarding the patient portal and were compared to determine the significance of the provided education. Then, pre-post patient enrollment rates were compared to evaluate the patient portal protocol.

- A toolkit was created based on the PCMH model that established a realistic plan of how to obtain recognition for each level, the necessary roles for each level and needed protocols to help obtain recognition by March 10\textsuperscript{th}, 2017.

- A business case analysis of total revenue, total expenses and net revenue projected for 2021 was developed. The business case analysis was presented to the dean as supporting evidence to improve financial stability and work structure changes with the addition of a medical assistant. The business case analysis was presented to the dean on April 3\textsuperscript{rd}, 2017 with the intention to share with other key stakeholders.

**Type of Project**

This DNP scholarly project was deemed by the Grand Valley State Human Research Review Committee to be a quality improvement initiative. The Health Resources and Services Administration (2011a) states that a “quality improvement program involves systematic activities that are organized and implemented by an organization to monitor, assess, and improve its quality of healthcare” (p. 1). The continuous actions result in measureable improvement in services within the organization of a target group of patients. More specifically, a quality
improvement initiative considers the organization’s resources, activities, and results, which are directly linked to the approach of care delivery (HRSA, 2011a).

The DNP student assessed the current processes, knowledge level and financial stability of the Midwest nurse managed center. Appendix F contains a complete Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of the Midwest nurse managed center. Financial stability and potential increase of incentive dollars were the opportunities and weaknesses identified at the Midwest nurse managed center that have been addressed by answering the clinical question with appropriate interventions and deliverables. Appendix G contains a completed fishtail diagram that identifies the components affecting financial stability of the Midwest nurse managed center.

**Setting and Needed Resources**

The setting of this DNP scholarly project was at a university affiliated nurse managed center. The Midwest nurse managed center is a primary care office, providing care pediatric and adult patients. The university regulates the organization. The Office of Provost, Academic Budget Officer and board members determine the dollar allocation to each college through a shared decision process. The nursing college receives a portion of the total revenue from the university and then the dean of the nursing college determines the amount of money allocated to the Midwest nurse managed center.

The resources needed to complete this project included time spent with a private consultant from Altarum contracted within the Midwest nurse managed center to evaluate the EHR related to PCMH and MU status. The current status of the Midwest nurse managed center was analyzed. Other resources included time of the manager, providers and staff to support the project, develop protocols, attend in-service education and complete pre and post tests.
Additional resources included the scholarly project advisory team who provided clinical and value-based reimbursement knowledge and expertise. In addition, time was required to consult with a recently graduated DNP student, who served as a resource and mentor to develop the PCMH toolkit. Also, a total of two statistical assistants and one statistical professor from the Midwest University provided mentorship in analyzing the outcomes of this DNP scholarly project.

**Design for the Evidence-Based Initiative**

The PARiHS framework by Kitson, Harvey & McKormick (1998) was utilized to guide the development of the educational in-services, patient portal protocol, PCMH toolkit, and business case analysis.

**Evidence.** The available literature was reviewed to develop the educational in-services, patient portal protocol, PCMH toolkit and business case analysis. Current practice available in the literature guided the development of the three in-services utilized to improve the staff’s knowledge related to PCMH. Thresholds for PCMH recognition and MU attestation identified in the most current literature were applied to the patient portal protocol to maximize the impact. The PCMH toolkit included evidence from multiple up-to-date sources to guide the systematic evidence-based plan developed for the Midwest nurse managed center. The business case analysis included current salaries within the geographical location to determine the medical assistant salary. Also, the DNP student aggregated evidence available from Centers for Medicare and Medicaid Services and National Committee for Quality Assurance to determine accurate incentive payments and expenses related to PCMH and MU.

**Context.** The culture of the Midwest nurse managed center is patient centered with emphasis on quality of care. Although the Midwest nurse managed center is not currently
maximizing incentive payments, this remains a priority and is acknowledged as a necessary need. The four deliverables are identified as needs by the key stakeholders to improve financial stability.

**Facilitation.** Once the patient portal protocol, education in-service interventions and evaluation tools were developed with the providers and the staff at the Midwest nurse managed center, the DNP student’s role was determined. Ultimately, the DNP student assisted in developing resources that assisted with the change needed in the Midwest nurse managed center to enhance the skills of the staff to achieve the desired outcome of financial stability. Overall, the DNP student was credible on the topics, provided clarity of the roles and remained present and persistent.

**Participants**

Participants in this DNP scholarly project included the patients who scheduled an appointment during the month of February. These patients consisted of those already enrolled in the patient portal and those who were new patients to the center. Other participants included the staff and manager who were recipients of the educational in-services. Finally, the DNP student presented the results of the business case analysis to the dean of the college of nursing.

**Measurement: Sources of Data and Tools**

To address the needed resources, processes and staff educational deficits to successfully attain PCMH and MU, the DNP student collected data to inform initiatives in the Midwest nurse managed center. The DNP student consistently collaborated with the manager and providers at the Midwest nurse managed center to collect data related to PCMH and MU criteria. With the data collected, the DNP student developed a thorough understanding of what was being accomplished at the Midwest nurse managed center related to PCMH and MU. The data
collected determined the current status of the organization related to adoption of PCMH and MU attestation. The data was used to develop educational in-services, patient portal protocol, PCMH toolkit, and business case analysis.

The DNP student was granted a username and password to the EHR system used within the Midwest nurse managed center. The EHR system was Athenahealth. Also, the DNP student was provided a pin number, which granted access to the consultant at Athenahealth for assistance. The DNP student also was allowed access to MU reports from the past years of attestation and current pass rates of the four providers at the Midwest nurse managed center.

**Educational in-services.** The educational PCMH in-services were completed over a three-month period in which three in-services were completed. A pre test was administered to each staff member to assess the base-line knowledge of PCMH. After the three in-services were completed, an identical post test was administered. The pre and post tests were compared to determine if the in-services significantly improved the staff’s knowledge related to PCMH by collaborating with a statistician.

**Patient portal protocol.** The EHR system within the Midwest nurse managed center was used to produce reports to determine a baseline for current and potential patients who were not enrolled in the patient portal. These reports were developed before and after the patient portal protocol intervention to determine patient enrollment rate when the intervention was utilized at the Midwest nurse managed center. Appendix H includes the patient portal report produced prior to and after portal protocol intervention. The patients enrolled into the patient portal were mostly Medicaid beneficiaries. Majority of the patient population enrolled were of lower socio-economic status, older than 65 years old and high school educated. Also, many of the patients were blind, deaf and/or immobile. Thus, the description of the population shows the complexity
and barriers that the patients who were enrolled into the patient portal during the implementation of the protocol faced.

Also, each patient who was enrolled in the patient portal protocol completed a pre-post test. The pre-test was before education was provided to determine the patient’s baseline knowledge related to the importance and usage of the patient portal. Then, the patient received an identical post test to assess the knowledge after education was completed. The intervention was developed to meet upcoming thresholds related to Level 1 PCMH recognition and MU attestation criteria. The outcome measurements of patient enrollment was analyzed and compared to baseline patient enrollment percentage. The data collection was analyzed with a statistician to determine if the protocol significantly improved the overall patient enrollment percentage and knowledge related to the patient portal.

**PCMH toolkit.** The PCMH toolkit was not implemented during this DNP scholarly project, however the DNP scholarly project included a formation of a future plan in regards to successfully promote PCMH adoption and recognition. Three components were considered for the PCMH toolkit; the plan for Level 1, Level 2 and Level 3 PCMH recognition, role descriptions necessary for each level, and necessary documentation and protocols required for successful recognition for Level 1 PCMH. The standards, elements, and factors were collected from multiple sources and analyzed systematically to uniquely assist the Midwest nurse managed center.

**Business case analysis.** A business case analysis was performed using data from multiple sources. Current data of incentive payments from MU and PCMH was collected from the NCQA and CMS websites. PCMH payments were recorded to start in 2018 and MU incentive payments reflected the current payment schedule of the providers within the Midwest nurse managed
center. Additional fees of each program were taken into account. To advocate for a new position of a medical assistant, a projected salary and university cost was determined by collecting data from the University’s Human Resource department and the Employers Association of the Midwest City. A net revenue and bottom line were developed and presented to the dean of nursing to address the university concerning a new medical assistant position and to increase allocated dollars to successfully become recognized as a PCMH in 2018.

**Steps for Project: PCMH Toolkit, Patient Portal Protocol, Business Case Analysis and Educational In-Services Development**

Appendix I includes a timeline of step completed for this DNP scholarly project. During the implementation of the project, the DNP student:

- Appraised and reviewed the available literature on PCMH and MU/MACRA, collected data from the organizational assessment related to strengths, weaknesses, opportunities and threats, which adequately guided the development of the PCMH toolkit, patient portal protocol, business case analysis and PCMH educational in-service series.
- Developed a patient portal protocol for the Midwest nurse managed center utilizing the data from the organization and the available literature related to PCMH and MU requirements. Also, pre and post tests were developed, which the patients who participated in the patient portal protocol completed prior to the educational intervention and enrolled in the patient portal and post educational intervention. The pre and post tests assessed the participant’s knowledge related to the patient portal and its importance and usability.
- Presented the patient portal protocol to the Midwest nurse managed center staff, manager and providers. Necessary revisions were applied to the protocol. The step-by-step
protocol needed to be more detailed for the staff to utilize in the future and included
screen shots of each step the occurs during patient portal enrollment.

- Obtained approval of the developed patient portal protocol and pre and post tests from the
  Midwest nurse managed center staff, manager and providers.

- Developed an EHR report that identified patients who were not enrolled in the patient portal (the numerator) compared to the total patient population (denominator) at the
  Midwest nurse managed center. The report developed a list of patients who were not currently enrolled in the portal, which became the target population.

- Implemented the patient portal protocol at the Midwest nurse managed center during the
  month of February among the target population.

- Developed a second EHR report that identified patients who were not enrolled in the patient portal (the numerator) compared to the total patient population (denominator) at the
  Midwest nurse managed center after one month of implementing the patient portal protocol. The pre and post patient portal protocol enrollment data was collected and
  analyzed by collaborating with statistical clinician to determine if the protocol
  significantly improved the overall enrollment rate. Also, a pre test was administered to all
  patients who were enrolled during the one-month period. After the patient was enrolled
  into the patient portal, received education and messaged the provider, the same identical
  test was administered. These pre and post tests that were administered to the target
  population was collected and analyzed by collaborating with statistical clinician to
determine if the education significantly improved the patients knowledge on the patient portal
• Discussed the results with the staff, providers, manager and consultant from Altarum at a meeting on April 1st, 2017.

• Educated staff on components of the PCMH program through three in-service educational seminars. The pre and post test were utilized before the first in-service seminar and after the last in-service seminar.

• After the final in-service educational seminar, all pre and post tests were collected and analyzed by collaborating with statistical students, which was provided by the university to determine if the staff educational intervention significantly improved the staff knowledge of PCMH.

• Developed a PCMH toolkit, which included an identified step-wise plan to obtain PCMH level 1, 2 and 3, role descriptions necessary for the levels of PCMH, and necessary documentation required to obtain recognition.

• Developed a business case analysis that reflected the total revenue, total expenses and a projected total net revenue related to PCMH adoption and MU attestation.

• Presented the business case analysis to the dean of nursing to advocate for initial dollar allocation to assist with PCMH adoption and the initial expense of a Medical Assistant on April 3rd, 2017.

• Presented the final project to the Midwest nurse managed center at a meeting on April 12th, 2017.

• Defended the final project at the University on April 18th, 2017.

Project Evaluation

This DNP scholarly project included the development of an educational in-service, patient portal protocol, PCMH toolkit, and business case to answer the two-fold clinical
question: (1) How would attainment of current quality and incentive program criteria affect the revenue and financial stability of the Midwest nurse managed center? (2) What are the resources, processes and staff educational needs that would be necessary to attain the criteria needed for PCMH and MU? Successful attainment of each objective measure is given below.

**Educational in-services.** The educational in-services included three 60 minute sessions that were completed over a three-month period. The in-services focused on education that defined the PCMH model, analyzed the recognition process, and explained a methodology for the Midwest nurse manage center to assist with successful adoption and recognition as a Level 1 PCMH in 2018. This deliverable was evaluated by the use of pre/post tests before and after education was provided and the use of statistical analysis. An analysis of the change between pre and post test scores were analyzed for significance.

**Patient portal protocol.** The DNP student created and implemented a patient portal protocol that aligned with PCMH and MU thresholds. The patient portal protocol was designed to establish a systematic documentation and process to address the patient portal. The patient portal protocol was evaluated by using Athena reports and pre/post tests to determine change pre and post interventions. Before the patient portal protocol was implemented, reports from Athena were generated that identified patients who were not enrolled in the patient portal. After the patient portal protocol was implemented, the same report was generated. The two reports were compared statistically to determine if the protocol interventions significantly improved patient portal enrollment, a requirement of MU. Also, a pre/post test and statistical analysis was used to evaluate if the education provided to the patient about the usability of the patient portal significantly improved the knowledge regarding portal use.
**PCMH toolkit.** The DNP student developed a toolkit which included: an organized plan for the Midwest nurse managed center to obtain successful PCMH recognition in the future, described necessary roles for all three PCMH levels, and the necessary documentation needed to obtain successful recognition. The PCMH toolkit was presented to the staff, providers and manager at the Midwest nurse managed center. The evaluation of this toolkit included the acceptance by the staff, providers, and manager to implement and utilize in practice.

**Business case analysis.** A business case analysis was completed, which was presented to the dean of the nursing college to advocate for a new role of a medical assistant to allow the nurses and providers to perform to their fullest scope of practice, as well as work more efficiently within the Midwest nurse managed center. The business case analysis showcased how PCMH adoption and MU attestation can improve the financial stability of the Midwest nurse managed center by calculating projected 2021 net revenue. The projected net revenue included all expenses and revenues related to PCMH adoption and MU attestation. Evaluation of the business case analysis included the acceptance by the nursing college dean to provide financial support for initial costs of PCMH recognition and a medical assistant within the center.

**Ethics and Human Subjects Protection**

The scholarly quality improvement project included contact of human subjects during the DNP scholarly project. All necessary data was collected in a de-identified manner. An application was submitted to the university’s Human Research Review Committee for IRB determination. The project did not meet the definition of covered human subject research according to current federal regulations. The project did not require further review and approval by the HRRC. Submission of the IRB took place on December 28th, 2017 and approval from the university’s HRRC occurred on January 12th, 2017 (Appendix J).
Budget

Budget considerations for this project were very limited. Instead of cost considerations, the scholarly project was time intensive. The time required from the manager, providers and other staff within the organization and the DNP student to approve, and implement the proposed project was robust. Other resources included a conference room for the educational in-service series.

Stakeholders Support and Sustainability

For many years, sustainability and financial stability of the Midwest nurse managed center has been a challenge and has been discussed without resolution. The DNP scholarly project included four deliverables including: (1) educational in-services (2) a patient portal protocol (3) PCMH implementation toolkit and (4) a business case analysis to address financial stability and needed resources related to PCMH recognition and MU attestation. Key stakeholders need to be committed to the processes and structures that are embedded within the developed deliverables for DNP scholarly project to be sustainable. The deliverables will not only affect the financial stability and address the needed resources of the Midwest nurse managed center but also improve patient outcomes. The 2015 fiscal year was the first year that the Midwest nurse managed center was able to return allocated money back to the university. However, attainment of PCMH recognition and MU incentives to improve reimbursement will assist in financial stability.

The key stakeholders at the Midwest nurse managed center were enthusiastic and supportive of the scholarly project. The professionals were able to identify the need for PCMH adoption and MU attestation to establish financial stability at the Midwest nurse managed center. Another key stakeholder included the dean of the nursing college who favorably received the
deliverables of the project. These key stakeholders and their level of commitment to the Midwest nurse managed center determine the sustainability of the next phase of the project.

**Project Outcomes**

To answer the identified two fold clinical question these four deliverables were developed: (1) education in-services (2) patient portal protocol (3) PCMH implementation toolkit and (4) business case analysis to address financial stability related to PCMH recognition and MU attestation. According to the Donabedian model, each deliverable impacted the structure, process or outcome components. The educational in-service intervention improved the current structure component and staff knowledge of the PCMH. The patient portal protocol was designed to improve the process of how the staff addressed the patient portal enrollment and utilization. The PCMH toolkit impacted the daily processes of care delivery performed by the staff. The business case analysis improved the structural process by proposing the new role of a medical assistant to allow the nurses and providers to have adequate time to perform to their fullest scope of practice, as well as work more efficiently. The measurable outcomes of the four deliverables are provided below.

**Educational In-Services**

The educational in-services included three sessions that occurred over a three-month period from January 2017 through March 2017. Prior to the in-services, a pre test (Appendix K) was administered to the staff and providers who planned to attend all three PCMH educational in-services. After the three educational in-services were completed, the same questionnaire was administered as a post test. Appendix L contains the powerpoint presentations for each educational in-service. Due to a small sample size of 6 participants, descriptive statistics were used to analyze the effectiveness of the PCMH in-service series. The descriptive statistics
indicated that 6 of the 7 questions showed an increase in Likert scale response of providers and staff members. This indicates an increase in overall knowledge related to PCMH. Although the DNP student cannot conclude that the PCMH educational in-service series showed significant results due to the small sample size, the descriptive statistics show evidence that the in-service series improved the participants’ knowledge between the pre and post test responses. Appendix M includes the descriptive statistics produced from analyzing the pre and post test results.

**Patient Portal Protocol**

A patient portal protocol was created for staff and providers to educate patients on health portal engagement with a goal of meeting a MU criteria. A pre test (Appendix N) was administered to all patients who were enrolled in the patient portal during the one-month period. After the patient was enrolled into the patient portal and received the educational intervention, the same questionnaire was administered as a post test. The cronbach’s alpha coefficient of 0.871 was greater than the threshold value of 0.7 indicating that the survey had internal consistency. Therefore, the individual responses for each question were summed to acquire a quantitative value for each individual, corresponding with their knowledge on the patient portal. Then, a paired t-test was performed to evaluate if the provided education significantly increased the participants knowledge on the patient portal due to the education that occurred during enrollment. The p-value was < .0001, which is less than the threshold of 0.05, indicating statistical evidence that the series of educational in-services significantly increased the patient’s knowledge of the patient portal. Appendix O includes the statistical analysis performed from the patient portal education.

Additionally, an odds ratio test was completed to determine if the probability of enrollment to the patient portal was significantly different between the patients who received
patient portal education and the patients who did not receive patient portal education. The odds ratio test revealed a 95% confidence interval (.9831 and 1.1638), which included 1. Therefore, there is no statistically significant evidence that the probability of enrolling in the patient portal was greater in the group receiving the education when compared to the group not receiving the education. Refer to Appendix P for statistical output from Statistical Package for the Social Sciences (SPSS).

The patient portal protocol was completed in a short time period of one month, which can partially explain why the enrollment rate was not significant. However, it must be noted that the overall patient enrollment rate improved from 46% to 48%. The MU incentive program requires 50% of all patients seen by an eligible provider during the EHR reporting period to be enrolled into the patient portal to view online, download and transmit health information (CMS, 2017b). If the patient portal is continued, then the overall enrollment rate will continue to improve. Also, the educational intervention provided to the patients significantly improved the level of knowledge regarding patient portal use. By providing high-level education about the patient portal, the engagement of patients in their own healthcare can be improved (Devitto Dabbs & Curran, 2015).

PCMH Toolkit

The PCMH model of care delivery is an alternative to the current United States costly and fragmented healthcare system (NCQA, 2014). Adopting the PCMH care delivery model has been shown to provide higher quality and lower costs while improving patient and provider experiences when compared to the current expensive delivery system (NCQA, 2014). The NCQA PCMH designation is the most popular and widely used formal assessment program that results in PCMH recognition. The PCMH toolkit was designed for the Midwest nurse managed
center to assist with adoption of PCMH while identifying a systematic plan, job descriptions and a protocol needs assessment.

**The plan.** Within the 27 total elements, 6 must-pass elements exist (Stroebel, Fuentes & Silver, 2012). When a facility is scored, a total of 100 points are possible (Stroebel, Fuentes & Silver, 2012). It is required to pass all 6 must-pass elements by at least 50%. However, the total points determine what recognition level is granted. Level 1 is granted if 35 to 59 points are awarded, Level 2 is granted if 60 to 84 points are awarded and Level 3 is granted if 85 to 100 points are awarded (Stroebel, Fuentes & Silver, 2012).

In a systematic manner and based on the organization's current status, the most appropriate and obtainable measures have been highlighted for each level of PCMH. The highlighted content within Level 1 included the portions of PCMH that will be most easily obtained for the organization. As the Midwest nurse managed center progresses to Level 2 and Level 3, the highlighted areas will continue to require more staff attention and intervention. By creating an organized and systematic plan, the Midwest nurse managed center will be prepared and knowledgeable of necessary measures to address within specific timelines.

**Job descriptions.** The second section of the PCMH toolkit includes the job descriptions for the necessary roles of each PCMH level. As the Midwest nurse managed center advances to higher levels in PCMH, additional staff are needed and the job descriptions evolve. The purpose of the job descriptions is to identify the necessary roles needed for each level of PCMH adoption. The job descriptions for the Midwest nurse managed center were created by reviewing the current literature, and translating the evidence into feasible roles within the center.

**Protocol assessment.** As reviewed earlier, identified standards, elements and factors must be obtained for an organization to become recognized as a PCMH. Each level requires
more standards, elements and factors to be obtained to be reflective of increased quality of care provided. Based on a systematic assessment of the organization’s current PCMH and MU status, a plan has been developed for the organization to obtain PCMH Level 1 recognition by 2018. The protocol assessment identified documentation needs related to the factors, elements, and standards to attain PCMH Level 1 recognition. The appropriate type of documentation was identified and listed next to the factor in bold font. Therefore, the protocol assessment provides a detailed plan for the organization that identifies the necessary documentation and protocols needed to obtain PCMH Level 1 recognition. As the organization progresses to Level 2 and Level 3, the staff and providers will need to reassess and identify additional documentation requirements.

**Business Case Analysis**

The business case analysis was developed to provide evidence to support hiring a necessary role: a medical assistant. The medical assistant is necessary for the staff and providers at the Midwest nurse managed center to be successful in adopting PCMH Level 1 in 2018. By adding a medical assistant to the care team, the providers and nurses can focus on reimbursable work. The business case analysis accounted for a projected total expense, total revenue and total net revenue. The total net revenue will provide evidence and support for the university to provide initial financial support to the Midwest nurse managed center to establish the adoption of PCMH. The complete business case analysis is included in Appendix Q.

**Total revenue.** The total revenue accounts for adoption of PCMH and MU attestation. The business case analysis has been developed and provides a timeline related to PCMH: in 2018 the center will be PCMH Level 1 recognized, in 2019 the center will be PCMH Level 2 recognized and in 2020 and 2021 the center will be PCMH Level 3 recognized. The total revenue
A CROSSWALK PROTOCOL

also accounts for the MU incentive program. The payment between 2018 and 2021 will change based on the provider’s payment year. First time recipients attesting to MU will receive $21,250.00 (HealthIT, 2014). Then, the recipient will receive $8,500 the following years, up to five years if requirements of the program for each MU stage are met (HealthIT, 2014). Each provider at the Midwest nurse managed center are in different payment years, which is reflected in the fiscal payments in the business case analysis. The total projected revenue for the two programs by 2021 is $399,976.00.

**Total expenses.** The total expenses accounted for the PCMH adoption, the medical assistant role and a consultant fee for MU. The PCMH fees include the following: survey tool license, NCQA review fee and the conversion survey application. The medical assistant expense included the salary and benefits package. The total expense of the medical assistant accounted for the expected 2% annual inflation. The benefits package was calculated by determining the salary and associated fringe accrual rate. The human resources department within the university provided both of these values. The consultant fee is an expense the Midwest nurse managed center was previously paying, but was included in the business case analysis because the fee pertains to the success of MU attestation. The total projected 2021 expense was $195,058.81.

**Net revenue.** The net revenue represents the bottom line and was calculated by subtracting the total expense from the total revenue. The bottom line and projected net revenue for 2021 if the Midwest nurse managed center adopts PCMH and continue to attest MU would be $204,918.00. This net revenue accounts for the medical assistant hire.

**Implications for Practice**

**Success and Difficulties of Project**
Throughout the development, the key stakeholders recognized the need for the PCMH toolkit, patient portal protocol, business case analysis and PCMH educational in-service series. The PCMH toolkit provides an organized plan for the Midwest nurse managed center to adopt the PCMH model while accounting for the process already completed by attesting to the MU incentive program. Thus, the toolkit provides a systematic crosswalk between the PCMH model and MU incentive program with the intention of successful adoption of the PCMH model. The patient portal protocol provides an evidence-based process for the staff to follow to successfully address one PCMH standard that overlaps with MU, patient engagement. The PCMH educational intervention provided the knowledge that the staff needed to successfully adopt the PCMH model. Also, a business case was developed and presented to a key stakeholder, the dean of college of nursing, to serve as evidence of the fiscal impact the two models encompass. The key stakeholders recognized the need for all four deliverables to be developed within the Midwest nurse manage center, but expressed the issue of not having adequate time to do so. The scholarly project was completed at no cost and otherwise would not have been completed due to time constraints expressed by the staff.

Most of the difficulties of the project arose during the development of the patient portal protocol and business case analysis. The majority of the difficulties that occurred during the patient portal protocol were related to technology access. The DNP student had 10 days within one month to start and complete the protocol. During two of the ten days, the Internet access was disrupted. This further constrained the already limited time span. Although multiple encounters were missed due to the Internet disruption, the staff were able to correct the problem within one hour on both occasions. A second difficulty was that many of the patients being enrolled into the patient portal did not have Internet access at home and did not have an email account. An email
account is required to be enrolled into the patient portal. This difficulty was overcome by the DNP student allocating additional time to create a personalized Google email account before enrolling the patient into the patient portal. The business case posed a great difficulty when determining the medical assistant expense. The DNP student had difficulty understanding the process the university utilized to determine a benefits package for any role, but especially for this role because no such role has been utilized at the university. However, this difficulty was addressed when the DNP student met with the Human Resource staff to determine the cost of the annual salary and benefit package of the medical assistant role. By doing so, the business case analysis was completed.

**Strengths and Weaknesses of the Project**

The greatest strength of the DNP scholarly project was the development of a systematic plan for the Midwest nurse managed center. The evidence-based plan provides a step-wise method of how to adopt the PCMH model while continuing MU attestation into their practice to address financial stability while improving health care outcomes. The need to address the financial stability by adopting the PCMH model and continuing successful attestation to MU was identified by the key stakeholders when the DNP student was completing the organizational assessment. Another strength of the project was the evidence gained from the business case analysis. By completing the business case analysis, the Midwest nurse managed center is informed that PCMH adoption, MU attestation and an additional role of a medical assistant is necessary and is feasible to allow the nurses and providers to have adequate time to perform reimbursable tasks and to perform to their fullest scope of practice.

One weakness of the project was the lack of consideration of an adequate timeframe for implementation of the patient portal protocol. Instead of creating a timeframe that occurs within
one month based on the DNP student’s availability, the timeframe should have accounted for a total of 30 days within the Midwest nurse managed center. If this were accounted for, the enrollment rate would have drastically improved. A second weakness was the unavailability of the staff to attend the PCMH educational in-service series. The providers and nurses were busy throughout the allocated time for the in-services, which was during their lunch block. Although the descriptive statistics show improvement of knowledge after the education was provided, it would have been more beneficial if the seminars were completed at the beginning of the day or at the end of the day to improve the consistency of participant’s attendance.

**Sustainability of Project**

For many years, financial stability improvement has been a challenge related to the organization’s sustainability and has been discussed without resolution resulting in unsuccessful financial improvement. However, the presented DNP scholarly project addresses the necessary resources to address financial stability. The DNP student has developed a PCMH toolkit, a business case analysis, PCMH educational in-service series and a patient portal protocol. The deliverables determine what has already been accomplished and what resources are needed for the Midwest nurse managed center to successfully adopt the PCMH model while continuing to attest to MU.

Although the resources that are needed and an evidence-based plan has been developed, the staff at the Midwest nurse managed center need to commit themselves to the PCMH adoption and recognition process. For example, the roles that are identified in the toolkit need to be implemented. The first step in sustainability is to gain a new role of a medical assistant. One of the many tasks of the medical assistant is to perform the patient portal protocol. Also, after presenting the business case analysis to the dean, increased support from the university is
anticipated. Ultimately, the Midwest nurse managed center and university need to be committed to the transition that is required to acquire the PCMH recognition for this DNP scholarly project to be sustainable.

**Limitations**

Limitations of the project leading to the reported results included the limited time frame available for implementation of the patient portal protocol. Also, one provider was absent due to medical leave resulting in decrease patient volume during the already limited time frame. During statistical evaluation, the DNP student identified another limitation to the DNP scholarly project. The PCMH in-service series included a small sample size. Thus, when computing an outcome, the McNemar test was not an option. As a result, descriptive statistics were utilized because a test of greater power including the McNemar test was not available due to the small sample study.

**DNP Essentials**

The Doctor of Nursing Practice Essentials outline the core competencies that must be included within a DNP program (American Association of Colleges of Nursing [AACN], 2006). All DNP graduates are educated to enter a variety of roles and therefore, the DNP Essentials address the foundational competencies necessary to all nursing practice roles (AACN, 2006). The eight Essentials were utilized in a variety of methods throughout immersion hours and within the DNP scholarly project. Appendix R provides a chart of the DNP Essentials and how each has been enacted in this DNP scholarly project and immersion hours. Provided below is a further explanation of how the DNP Essentials were specifically enacted throughout this DNP scholarly project.

**Essential I: Scientific Underpinnings**
Essential I exhibits the scientific underpinnings and complexity of practice that is achieved at the doctoral level (AACN, 2006). The DNP student enacted Essential I by utilizing theories and evaluating current practice approaches at the Midwest nurse managed center. By doing so, the DNP student developed new practice approaches to improve outcomes of care and financial stability of the organization. The crosswalk patient portal protocol and PCMH toolkit are approaches of high quality care delivery methods that positively affect the revenue at the Midwest nurse managed center.

**Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking**

Essential II focuses on organizational and systems leadership to improve patient and health care outcomes while eliminating health disparities (AACN, 2006). The DNP student enacted Essential II by developing a quality improvement project focused on practice procedures and policies related to PCMH and MU. The DNP student enacted Essential II by developing a business case analysis to evaluate the cost effectiveness of PCMH and MU adoption. The DNP student designed a PCMH toolkit to assist the Midwest nurse managed center to adopt the PCMH model of care. Additionally, crosswalk protocol encouraged care delivery in a re-engineered manner to correlate with a quality and incentive program to improve revenue and healthcare outcomes. The DNP student enacted systems thinking by developing a business case analysis to evaluate the projected net revenue in 2021. This projected revenue contributed to the sustainability of the organization by evaluating the impact of PCMH adoption on the entire system.

**Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice**
Essential III emphasizes the scholarship, application, and translation of research into practice (AACN, 2006). This Essential was accomplished by appraising and reviewing the available literature related to PCMH and MU. The appraised literature was translated and applied to all aspect of the scholarly project to support the development of an educational in-service, evidence-based protocol, toolkit, and business case analysis. Also, data was collected before and after intervention to evaluate processes.

**Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care**

Essential IV focuses on the ability of the DNP student to use information systems to support or improve health care systems and patient outcomes (AACN, 2006). The DNP student generated reports within the information system to assist with evaluation of the patient portal protocol and by doing so, the DNP student enacted Essential IV. Also, developing an understanding current policy regarding programs such as MU that relates to successfully implementing and capturing incentives to support technology adoption in a healthcare organization.

**Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes**

Essential VII includes interprofessional collaboration within care teams to improve health delivery systems (AACN, 2006). This Essential was enacted by routinely meeting with stakeholders from different professional arenas, which included faculty from academia, managers, providers, nurses, statistical analysts and Human Resource employees. By collaborating with other professionals, insights from multiple disciplines were provided. Also, the DNP student conducted meetings and discussions that employed effective communication
and collaborative skills in the analysis of complex organizational issues related to financial stability.

**Essential VIII: Advanced Nursing Practice**

Essential VIII focuses on the expertise of advanced practice nurses in assessing and understanding the physical, psychological, cultural and socioeconomic aspects of care (AACN, 2006). This Essential was enacted by the DNP student in utilizing analytical skills to evaluate the links in practice and policies between PCMH and MU. These connections were applied to the PCMH toolkit, protocol and educational in-service series. Also, a DNP student has been identified and mentored to continue scholarly work focused on PCMH and MU within the Midwest nurse managed center.

**Dissemination of Outcomes**

Dissemination of this DNP scholarly project included presentations of outcomes related to the educational in-services, portal protocol, PCMH toolkit, and business plan. Dissemination of the fiscal outcomes demonstrated within the business case analysis were presented to the dean of the nursing college on April 3rd, 2017. The dean is a key stakeholder due to her authority in determination of financial allocation to the Midwest nurse managed center. The DNP student defended the scholarly project to the advisory team on April 18th, 2017. Dissemination to students and faculty occurred at a formal poster presentation on April 20th, 2017. The DNP student will collaborate with project team members to disseminate the scholarly project in a journal publication. Finally, the DNP student will continue to disseminate the toolkit to other practices by consulting with appropriate staff and presenting the project at professional conferences.
Currently, reimbursement is based on quality of care and bonus payments for improved outcomes (Coffin, Duffie, & Furno, 2014). MU and PCMH offer potential financial incentives, which assist with financial viability in the current value-based payment model. The identified nurse manage center has successfully attested to MU but is not recognized as a PCMH. Although the Midwest nurse managed center successfully attested to Modified Stage 2 MU, the center remains financially unstable. With continuation of successful attestation to MU, adoption of PCMH and utilization of the tools in this DNP project, the center can be come financially stable.
References


http://www.lafp.org/connect2014/ncqa-application-process


https://c.ymcdn.com/sites/www.mpca.net/resource/resmgr/clinical_quality__pcmh/pcmh%20lc%20-%20learning%20session%201set%203of%204.pdf


**Appendix A: Patient-Centered Medical Home Score Card**

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<th>Recognition Level</th>
<th>Required Points</th>
<th>Must-Pass Elements</th>
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<td>Level 1</td>
<td>35-59</td>
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<tr>
<td>Level 2</td>
<td>60-84</td>
<td>score for each Must-Pass element must be &gt; or equal to 50%</td>
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<tr>
<td>Level 3</td>
<td>85-100</td>
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</tr>
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<table>
<thead>
<tr>
<th>Points</th>
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<td>4.5</td>
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<td>Element B 24/7 Access to Clinical Advice</td>
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<td>2</td>
<td>Element C Electronic Access</td>
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<td><strong>PCMH 2: Team Based Care</strong></td>
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<td>Element A Continuity</td>
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<td>Element B Medical Home Responsibilities</td>
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<td>2.5</td>
<td>Element C Culturally and Linguistically Appropriate Services (CLAS)</td>
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<td>4</td>
<td>Element D The Practice Team</td>
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<tr>
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<td></td>
<td><strong>PCMH 3: Population Health Management</strong></td>
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<td>Element A Patient Information</td>
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<td>Element C Comprehensive Health Assessment</td>
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<td>Element D Use Data for Population Management</td>
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<td>Element</td>
<td>Description</td>
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</tr>
<tr>
<td>---------</td>
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<tr>
<td>4</td>
<td>Implement Evidence-Based Decision Support</td>
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<tr>
<td>4</td>
<td>Identify Patients for Care Management</td>
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<tr>
<td>4</td>
<td>Care Planning and Self-Care Support</td>
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<td>4</td>
<td>Medication Management</td>
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<tr>
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<td>Use Electronic Prescribing</td>
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<td>Support Self-Care and Shared Decision Making</td>
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**PCMH 4: Care Management and Support**

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<td>6</td>
<td>Test Tracking and Follow-Up</td>
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<tr>
<td>6</td>
<td>Referral Tracking and Follow-Up</td>
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<td>6</td>
<td>Coordinate Care Transitions</td>
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**PCMH 5: Care Coordination and Care Transitions**

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<tr>
<td>3</td>
<td>Measure Clinical Quality Performance</td>
</tr>
<tr>
<td>3</td>
<td>Measure Resource Use and Care Coordination</td>
</tr>
<tr>
<td>4</td>
<td>Measure Patient/Family Experience</td>
</tr>
<tr>
<td>4</td>
<td>Implement Continuous Quality Improvement</td>
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<td>3</td>
<td>Demonstrate Continuous Quality Improvement</td>
</tr>
<tr>
<td>3</td>
<td>Report Performance</td>
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</table>

**PCMH 6: Performance Measurement and Quality Improvement**

*Figure 1. The Patient-Centered Medical Home Scorecard. Reprinted from “NCQA patient-centered medical home: improving experiences for patients, providers, and practice staff,” by The National Committee of Quality Assurance 2014, Retrieved from https://www.ncqa.org/Portals/0/PCMH%20brochure-web.pdf*
## Appendix B: PCMH Insurance Incentives

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Appendix C: Meaningful Use Medicaid and Medicare Incentive Payment Plan

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*Figure 2. Medicaid EHR Incentive Payment Schedule for Eligible Professionals. Reprinted from “EHR incentive payment timeline,” by The Centers for Medicare and Medicaid Services, 2014, Retrieved from https://www.healthit.gov/providers-professionals/ehr-incentive-payment-timeline*

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*Figure 3. Medicare EHR Incentive Payment Schedule for Eligible Professionals. Reprinted from “EHR incentive payment timeline,” by The Centers for Medicare and Medicaid Services, 2014, Retrieved from https://www.healthit.gov/providers-professionals/ehr-incentive-payment-timeline*
Appendix D: The Donabedian Model and Approval to Use

1. Structure Components: The nurse managed center, the university as a subsidizing facility, up-to-date equipment, certified Electronic Health Record system in place, and working at a $500,000 deficit.

2. Process Component: Utilize new protocols specific to patient engagement including the process, and education related to PCMH and MU thresholds. The PCMH toolkit is provided to the nurse managed center for the second phase of the project: becoming recognized. The cost-benefit analysis will be presented to the dean of the nursing college.

3. Outcome Components: Improved allocated dollars to the college of nursing and the nurse managed center to establish a PCMH model. Received incentive payments from CMS for successful attestation to modified stage 2. Improved healthcare outcomes related to the protocols implemented.

Order Completed

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Your confirmation email will contain your order number for future reference.

Printable details.

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Appendix E: PARiHS Model and Approval to Use

Contextual Factors
- Midwest urban
- University Affiliation
- Surrounded by large health care organizations

Organizational Structure
- Limited staffing roles: 4 NPs, 2 RNs, multiple students
- High turnover of student volunteers
- Certified Electronic Health Record
- Limited performance incentives

Organizational Process
- All providers are at least successfully attested to stage 1 of MU.
- Need protocols that crosswalk MU and PCMH for the organization to use

Organizational outcomes
- Gained incentive $
- Gained allocated $
- Improved patient engagement

Provider Factors
- Experiences, attitudes, knowledge

Patient Factors
- Case mix, preferences, and patient engagement

Hi Kaitlyn,
Delighted you are finding the model useful. Happy for you to use it.
By the way do you know Gill Harvey and I have just recently written a book based on PARiHS?
Here’s the details:
Best
Prof Alison Kitson FAHMS
Dean of Nursing
Adelaide Nursing School
Faculty of Health and Medical Sciences
University of Adelaide
E alison.kitson@adelaide.edu.au
Wishes,
Alison
## Appendix F: Midwest Nurse Managed Center SWOT Analysis

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Opportunities</strong></th>
</tr>
</thead>
</table>
| - Staff motivation  
- Manager’s leadership skills  
- $60,000 received for attestation: two providers stage 1 and one provider stage 2.  
- Established utilization of an Electronic Health Record, Athena.  
- Up to date software: The Microsoft surface pros are third generations and recently the fourth generation has been developed. Each nurse and nurse practitioner has his or her own Microsoft pro and docking station | - Increase incentive opportunities by attesting to stage 2  
- Increase incentive opportunity by becoming PCMH recognized  
- Financial growth  
- Improved health outcomes  
- Education opportunities related to the EHR system and PCMH culture  
- Establish a Return of Investment (ROI) related to PCMH recognition  
- Consulting services related to PCMH and MU  
- Establish sustainability  
- Improve patient satisfaction by providing patient-centered care  
- Improve patient follow up and coordination |

<table>
<thead>
<tr>
<th><strong>Weaknesses</strong></th>
<th><strong>Threats</strong></th>
</tr>
</thead>
</table>
| - Staff is overwhelmed  
- Staff workload  
- Lack of identified roles and allocated budget  
- Financial instability  
- No identified role for an individual to submit paperwork for PCMH and MU  
- Increase demands related to PCMH and MU which can detract from patient care  
- Lack of staff knowledge on basic concepts related to PCMH and MU.  
- Billing communication disconnect between the coder and the providers  
- Low education level of the patient population | - Shortage of clinical analysts and experts  
- 2017 election: change in policy makers  
- Government regulations  
- Continued changes/adjustments to both programs  
- Professionals remaining up to date and informed  
- Patient engagement  
- Work-flow change |
Appendix G: The Fishtail Diagram

- **Reimbursement**
  - Lower reimbursement for Medicaid patients which accounts for 1,315 patients
  - Medicaid patients require more expensive resources due to chronic illnesses and needed care plans
  - The organization does not have a role dedicated to reimbursement

- **Incentives**
  - The organization does not have a role dedicated to incentive programs
  - Meaningful Use is the only incentive that has been accomplished
  - Unique population that restricts eligibility

- **Payers**
  - 11,537 total patients
  - 71.2% are self-pay
  - 1.2% is covered by Medicaid
  - 16.6% are covered by Medicare

- **Financial Instability**
  - The college of nursing is only allocated 2.5% of the total university budget
  - The college of nursing is working on a $500,000 deficit

- **Staff**
  - The staff plays many roles and is overworked
  - Money is not allocated to re-engineering the current staff roles
  - Staff benefits are abnormally high due to university policy

- **Patient Population**
  - A large part of the population is Medicaid beneficiaries: lack of education and emotional support resulting in decreased patient engagement using the portal
  - Patients are complex, requiring more time due to care plans resulting in decreased patient visit volume
  - The Medicaid beneficiaries require complex paperwork to be completed which takes more time

- **Financing**
  - Unique process of how money is allocated between the university, the college of nursing, the nurse managed center
  - The nurse managed center is allocated 6.5% of the total college of nursing budget
## Appendix H: Pre and Post Patient Portal Protocol Enrollment

<table>
<thead>
<tr>
<th></th>
<th>Enrolled into the Patient Portal</th>
<th>Not Enrolled into the Patient Portal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Protocol</strong></td>
<td>1929 patients/4209 patients = 45%</td>
<td>2279 patients/4209 patients = 54%</td>
</tr>
<tr>
<td><strong>Post-Protocol</strong></td>
<td>2124 patients/4470 patients = 47%</td>
<td>2346 patients/4470 patients = 52%</td>
</tr>
</tbody>
</table>
Appendix I: Project Timeline

IRB Approval
On Jan 12th

1st in-service for PCMH education completed on Jan 25th

2nd in-service for PCMH education completed on Feb 28th

3rd in-service for PCMH education completed on March 22nd and collected post tests

Pre and post test and patient portal protocol started on Feb 1st

Pre and post test and patient portal protocol completed on Feb 28th

PCMH tool kit and business case analysis finished by March 1st

Met with statisticians and evaluated the outcomes of the patient portal protocol

Met with statisticians and evaluated the outcomes of the patient portal protocol

Presented PCMH Tool Kit to nurse managed center by the end of March

Presented the business case analysis on April 3rd to the dean

Presented PCMH Tool Kit to nurse managed center by the end of March

Presented PCMH Tool Kit to the nurse managed organization March 22nd

Met with statisticians and evaluated the outcomes of the patient portal protocol

PCMH tool kit and business case analysis finished by March 1st

Met with statisticians and evaluated the outcomes of the patient portal protocol

PCMH tool kit and business case analysis finished by March 1st

Met with statisticians and evaluated the outcomes of the patient portal protocol

PCMH tool kit and business case analysis finished by March 1st
Appendix J: IRB

DATE: January 12, 2017

TO: Kaitlyn Rath, RN, BSN, DNP student
FROM: Grand Valley State University Human Research Review Committee
STUDY TITLE: [999812-1] A Crosswalk Protocol for Implementation of the Patient-Centered Medical Home and Meaningful Use at the Nurse Managed Center
REFERENCE #: 17-094-H
SUBMISSION TYPE: New Project
ACTION: NOT RESEARCH
EFFECTIVE DATE: January 12, 2017
REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned research study. It has been determined that this project:

Does not meet the definition of covered human subjects research* according to current federal regulations. The project, therefore, does not require further review and approval by the HRRC.

Any research-related problem or event resulting in a fatality or hospitalization requires immediate notification to the Human Research Review Committee Chair, Dr. Steve Glass, (616)331-8563 AND Human Research Protections Administrator, Dr. Jeffrey Potteiger, Office of Graduate Studies (616)331-7207. See HRRC policy 1020, Unanticipated problems and adverse events.

If you have any questions, please contact the Office of Research Integrity and Compliance at (616) 331-3197 or ric@gvsu.edu. The office observes all university holidays, and does not process applications during exam week or between academic terms. Please include your study title and reference number in all correspondence with our office.

*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as research in materials to participants, sponsors or in dissemination of findings.
Appendix K: Education Pre and Post Assessment
PCMH Tool Kit Evaluation

For each of the statements below, circle the response that best characterizes how you feel about the statement, where 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
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<tr>
<td>The in-service pertains to my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I understand the purpose of the PCMH model</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I understand how the measures of the PCMH model align with MU</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I understand my responsibilities pertaining to the PCMH model</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>I feel the PCMH model will improve my experiences and satisfaction with my job.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>I feel the PCMH model will cause more work for me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>I feel competent in myself and in my peers to function within a PCMH model</td>
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<td>2</td>
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Appendix K: PCMH Educational In-Service PowerPoint Presentations

First Session
Third Session
Appendix M: PCMH In-Service Series Descriptive Statistics

**Question 1**

<table>
<thead>
<tr>
<th>q1 The in-service pertains to my job</th>
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<td>Pre</td>
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**Question 2**

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<tr>
<td>Pre</td>
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</tr>
<tr>
<td>Post</td>
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**Question 3**

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<tr>
<td>Pre</td>
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<tr>
<td>Post</td>
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**Question 4**

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<tr>
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<tr>
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### Question 5

- I feel the PCMH model will improve my experiences and satisfaction with my job

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<tr>
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### Question 6

- I feel the PCMH model will cause more work for me

<table>
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<th>Total</th>
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<td>Pre</td>
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<td>3</td>
<td>6</td>
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<td>Post</td>
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<td>Total</td>
<td>8</td>
<td>4</td>
<td>12</td>
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</table>

### Question 7

- I feel competent in myself and in my peers to function within a PCMH model

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<tbody>
<tr>
<td>Pre</td>
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<td>2</td>
<td>6</td>
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<tr>
<td>Post</td>
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<tr>
<td>Total</td>
<td>5</td>
<td>7</td>
<td>12</td>
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</table>
Appendix N: Education Pre and Post Assessment  
Patient Evaluation

For each of the statements below, circle the response that best explains how you feel about the statement, where 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being active in my health is important</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>I understand what the patient portal is</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I know how to message and receive messages about my health from my provider in the patient portal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I understand my current health</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I feel that my provider make decisions as a team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I feel that the patient portal is not helpful.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I feel more informed about my health status when using the patient portal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
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</table>
Appendix O: SPSS Output for Patient Portal Education

### Reliability Statistics

<table>
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<tr>
<th>Cronbach's Alpha</th>
<th>N of items</th>
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<tr>
<td>.731</td>
<td>7</td>
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</tbody>
</table>

### Intraclass Correlation Coefficient

<table>
<thead>
<tr>
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<th>Intraclass Correlation</th>
<th>95% Confidence Interval</th>
<th>F Test with True Value 0</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
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<tr>
<td>Single Measures</td>
<td>.280</td>
<td>.167</td>
<td>.429</td>
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<tr>
<td>Average Measures</td>
<td>.731</td>
<td>.584</td>
<td>.840</td>
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Appendix P: SPSS Output related to Patient Enrollment to the Patient Portal

The FREQ Procedure

Table of period by enroll

<table>
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<th>period</th>
<th>enroll</th>
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<td></td>
<td>ENROLLED</td>
<td>NOT ENROLLED</td>
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<tr>
<td>Post</td>
<td>2124</td>
<td>2346</td>
<td>4470</td>
</tr>
<tr>
<td></td>
<td>47.52</td>
<td>52.48</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1929</td>
<td>2279</td>
<td>4208</td>
</tr>
<tr>
<td></td>
<td>45.84</td>
<td>54.16</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4053</td>
<td>4625</td>
<td>8678</td>
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</tbody>
</table>

Statistics for Table of period by enroll

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
<th>95% Confidence Limits</th>
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<tr>
<td>Odds Ratio</td>
<td>1.0696</td>
<td>0.9831 1.1638</td>
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<tr>
<td>Relative Risk (Column 1)</td>
<td>1.0366</td>
<td>0.9909 1.0843</td>
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<tr>
<td>Relative Risk (Column 2)</td>
<td>0.9691</td>
<td>0.9316 1.0080</td>
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### Appendix Q: The Business Case Analysis

#### Revenue

<table>
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<tbody>
<tr>
<td>Patient-Centered Medical Home</td>
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<tr>
<td>Level 1</td>
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<td>$23,664.00</td>
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<td>Level 2</td>
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<td>$47,326.00</td>
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<td>Meaningful Use</td>
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<tr>
<td>Attestation Year 1</td>
<td>$59,500.00</td>
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<td>$25,500.00</td>
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<tr>
<td><strong>Total Revenue</strong></td>
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<tr>
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<td>$395,976.00</td>
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#### Expenses

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<tr>
<td>Patient-Centered Medical Home</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Survey Tool License</td>
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<td>$ -</td>
<td>$320.00</td>
<td>$ -</td>
<td>$ -</td>
<td>$ -</td>
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<tr>
<td>NCQA Review/Recognition</td>
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<td>$2,200.00</td>
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<td>Conversion Survey Application</td>
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<td>$ -</td>
<td>$1,100.00</td>
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<tr>
<td>Medical Assistant</td>
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<tr>
<td>Benefits (medical, dental, group life, retirement, long term disability, tuition waiver, post retirement benefits, workmans comp, unemployment, parking)</td>
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<td>$15,691.00</td>
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<td>Fringe Beneficial Accrual Rate</td>
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<td>1</td>
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<td>Salary</td>
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<td><strong>Total Expense</strong></td>
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#### Net Revenue

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<td>$264,918.00</td>
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Appendix R: Enactment of DNP Essentials

<table>
<thead>
<tr>
<th>DNP Essential</th>
<th>Evidence of DNP Essential Competencies</th>
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</table>
| **I. Scientific Underpinnings for Practice**       | • Developed a systematic plan and processes at the Midwest nurse managed center by creating a PCMH tool kit, business case analysis, a protocol for the patient portal, and in-service educational seminars for an overall practice change.  
• Developed a policy and procedure manual on the patient portal with the purpose to obtain patient engagement through electronic means in order to facilitate secure communication to improve health care outcomes  
• Applied an implementation theory (PARIHS) and nursing theory, The Donabedian Model, to implementation and evaluate developed program  
• Created aspects within the toolkit and protocol to provide advanced strategies and communication techniques                                                                 |
| **II. Organization and Systems Leadership for Quality Improvement and Systems Thinking** | • Developed a care delivery approach that meets the current need of the organization  
• Utilized principles in business and finance to develop a business case analysis  
• Created a protocol for patient portal to analyze to improve the current process related to patient engagement                                                                                                                                 |
| **III. Clinical Scholarship and Analytical Methods for Evidence-Based Practice** | • Used analytic methods to appraise the available literature related to Patient-centered Medical Home (PCMH) and Meaningful Use (MU) to create an evidence-based toolkit for the adoption of PCMH which is aligned with MU  
• After reviewing the available literature, the DNP student developed educational in-service to improve the staffs level of knowledge related to PCMH  
• Utilized an Electronic Health Record to evaluate outcomes of a patient portal protocol including patient portal enrollment  
• Designed a pre and post test to evaluate the patient portal protocol and PCMH education in-service series  
• Utilized information technology to collect data and analyze data from the EHR  
• Acted as a consultant within the Midwest organization to collaborate and create a PCMH toolkit that is feasible within this organization  
• Watch multiple AACN webinars that utilized evidence-based practice  
• Disseminate DNP scholarly project to key stakeholders within the organization and GVSU on April 18th                                                                                                                                 |
| IV. Information System/Technology and Patient Care Technology for the Improvement and Transformation | • Collected data from various EHRs to inform quality improvement  
• Collaborated with an Athena consultant to establish baseline benchmarks and to assess current status of the Midwest                                                                                                                                 |
### V. Health Care Policy for Advocacy in Health Care
- Attended the Analyzing Health Care Economics Conference
- Analyzed health policy and initiatives related to MU and PCMH
- Assisted and hosted a legislative day even with DNP cohort to disseminate the role and abilities of what the DNP can accomplished within the current healthcare system

### VI. Interprofessional Collaboration for Improving Patient and Population Outcomes
- Used effective communication and collaboration skills in interdisciplinary team meetings in regard of the Midwest nurse managed center
- Lead administrative and clinical care team members in discussion about innovative, quality improvement program development to create change in the complex healthcare delivery system
- Attended the ketogenic diet conference to better understand specific diets and which diets may improve patient and population outcomes
- Continuously met and mentored two third year DNP students about potential project work at the Midwest nurse managed center

### VII. Clinical Prevention and Population Health for Improving the Nations Health
- Attended the Type-1 Nation Summit: Improving Live, Curing Type 1 Diabetes
- Watched many AACN webinars focused on population health and improving nations health
- Evaluated care delivery based on quality of care payment model. Analyzed community, environment, culture, and socioeconomic dimensions to create a toolkit for an innovative toolkit based on PCMH and MU.

### VIII. Advanced Nursing Practice
- Spent 500 hours in primary care and 100 hours in a specialty office to develop and demonstrate advanced levels of clinical thinking, judgment, and accountability to evidence-based interventions
- Spent time with a provider in the orthopedic clinic to learn how to evaluate individuals with orthopedic injuries
- Spent time with a nurse practitioner in the orthopedic clinic to learn how to evaluate individuals with orthopedic injuries, how to read radiology, and how to develop an appropriate care plan and diagnoses
- Used conceptual and analytic skills to evaluate the links between practice, populations, and policies that exist within PCMH and MU