USE OF LEARNING COLLABORATIVE IN THE IMPLEMENTATION OF PATIENT-CENTERED MEDICAL HOME MODEL IN THE STATE OF MARYLAND: WHAT ARE THE FACILITATORS AND BARRIERS?

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ABSTRACT

Deus Bazira Mubangizi: Use Of Learning Collaborative In The Implementation Of Patient-Centered Medical Home Model In The State Of Maryland: What Are The Facilitators And Barriers?
(Under the direction of George M Holmes)

The dissertation goal was to understand the role of a "learning collaborative" in the implementation of Patient-Centered Medical Home (PCMH) activities by primary care practices in the State of Maryland and how that role was affected by other factors. The key research question was: How has the Maryland Learning Collaborative affected the process of implementing the PCMH model within primary care practices in the State of Maryland and what factors have moderated its effectiveness?

The dissertation followed a case study design and involved collection of primary data through semi-structured interviews with 18 respondents from 9 practices and 2 key informants from the program. Key findings of the study include: 1) learning collaborative helped practices to go through PCMH recognition process, improve quality of care and facilitated key changes within practices including practice re-design and care management institutionalization, 2) practice operational leadership and management support was important for effectiveness of learning collaborative activities, 3) group meetings and events organized by the collaborative were useful for benchmarking and peer learning but the lack of performance data to guide these activities limited level of impact and, 4) development of the care management function was considered one of the significant contributions of the learning collaborative. In addition: 1) financial incentives were critical for practice participation in learning collaborative activities, 2) several practices felt they possessed the internal capability to implement the PCMH with or

without MLC involvement, and 3) routine use of data to inform the learning and improvement/change agenda was lacking. Other findings include: 1) the learning collaborative provided a medium for group motivation and inspiration to implement change, 2) the role of practices in defining and driving the learning agenda was not clarified and fully exploited, 3) sustainability of learning collaborative activities was not addressed and, 4) peer learning was not fully exploited because there was no structured learning approach and agenda. Overall the findings show that an external change agent is important in facilitating practice transformation into primary care medical home. This study reinforces the need for supporting transformations within practices because of required significant cultural and organization changes.

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LIST OF ABREVIATIONS

AAAHC	Accreditation Association for Ambulatory Health Care
AAFP	American Academy for Family Physicians
AAP	American Academy of Pediatrics
AHRQ	Agency for Healthcare Research and Quality
ACP	American College of Physicians
AOA	American Osteopathic Association
BTS	Breakthrough Series Collaborative
CCM	Chronic Care Model
CQI	Continuous Quality Improvement
EMR	Electronic Medical Records
EHR	Electronic Health Records
HEDIS	Health Plan Employer Data and Information Set
HMO	Health Maintenance Organization
IPIP	Improving Performance in Practice Program
KHF	Kenya Healthcare Federation
MLC	Maryland Learning Collaborative
MOH	Ministry of Health
NCC	Nairobi City County
NCQA	National Committee on Quality Assurance
OECD	Organization of Economic Cooperation and Development
PCMH	Patient-Centered Medical Home
UMB	University of Maryland Baltimore
UNC	University of North Carolina at Chapel Hill
WHR	World Health Report

CHAPTER I: INTRODUCTION

Cecil G. Sheps once asked why medicine does not live up to its amazing potential. He went on to say that it is largely because of the way it is organized*(1)*. I will add that despite advances in technology and the adoption of evidence-based medicine, health outcomes for many populations remain poor. Like Sheps CG*(1)*I believe primary care is the quintessential organizing principle for the world's healthcare systems if they are to be people-centered and effective. While evidence about the magnitude of impact of primary care on key health outcomes remains mixed*(2, 3)*, there is sufficient evidence to support the view that effective primary care can improve health outcomes and contain health costs*(4)*. In the United States, there is consensus that primary care is in crisis and needs reform – although the proposed solutions vary*(2)*. Some proposals frame the crisis as a problem of insufficient numbers of primary care physicians – hence calling for interventions that will attract medical students to primary care practice. Other opinions frame the crisis as stemming from insufficient capability – and the proponents of this problem advocate for new resource investments in electronic health records and non-physician care coordinators to enhance capability of primary care providers. The medical home and Chronic Care Model fall under this category of proposed solutions. The third group views the crisis as systemic and advocate for re-orienting the entire health care delivery system toward primary care. The latter calls for rebalancing primary care and specialty care and reforming the system for care cost reimbursement based on primary care core principles*(2)*. Regardless of the view one holds, reforming primary care to improve its effectiveness is a good thing. I undertook this study to investigate how medical practices in the State of Maryland (U.S.A) implemented Patient-Centered Medical Home (PCMH) model to improve primary care delivery using learning collaborative strategy, in order to develop a plan to

implement patient-centered care in in the Republic of Kenya using lessons learned in the State of Maryland.

Study Justification

The patient-centered medical home is not a new concept; the term was first used to describe a single centralized source of care and medical records for children with special health care needs in 1967*(5)* but has evolved into a more general concept*(6)*. PCMH is viewed as a critical component in the institutionalization of patient-centeredness, the ultimate aim of primary care and is being implemented as a new innovation. The patient-centered medical home as defined under joint principles adopted in 2007 by American Academy of Family Physicians (AAFP), American College of Physicians (ACP), American Academy of Pediatrics (AAP) and American Osteopathic Association (AOA) is "*an approach to providing comprehensive primary care for children, youth and adults*". Further, PCMH is a health care setting that facilitates partnerships between individual patients and their personal care providers and when appropriate the patient's family. To implement patient-centered medical home principles, primary care needs critical changes in the way it is organized and delivered.

While the focus of this study is not about the merits and demerits of primary care as a concept, we should recognize key features of primary care for purposes of understanding PCMH. Starfield B et al *(7)* identify primary care main features as: 1) first-contact access for each new need, 2) long-term person-focused care, 3) comprehensive care for most health needs, and 4) coordinated care when it must be sought elsewhere. The PCMH seeks to enhance these features. The features allow primary care to be viewed from 3 different perspectives: who provides it, what functions it serves and how it is oriented within the health system. Friedberg MW et al*(2)* define primary care in three ways: 1) according to the specialty of individual providers based on their training - this definition excludes certain specialties from serving any primary function, 2) according to the function served and this definition refers to a

usual source of care for patients for the four functions earlier identified, and 3) the third definition is often measured using area-level aggregations of provider specialty-based on function-based primary care. PCMH adoption and implementation requires practices to go through change management, improve quality of care quality delivered and is made possible through leadership support and commitment.

Following the renewed interest in the PCMH in the U.S. in part driven by the Patient Protection and Affordable Care Act of 2010, several studies have been undertaken investigating outcomes associated with PCMH implementation and others have looked at practice transformation for effective primary care delivery following PCMH implementation. Most of these studies (as the literature review will show) focus on determining the effectiveness of the general model. Fewer studies have sought to examine how PCMHs have been implemented.

There remain unanswered questions: What does it take to adopt the model? What affects successful implementation? How sustainable is PCMH as a primary care delivery model? These and other questions are equally as important as establishing health and cost outcomes following PCMH implementation. Even fewer studies have focused on exploring specific strategies that spur PCMH implementation and how various factors affect the process of implementation. This dissertation focuses on how implementation of PCMH in the State of Maryland has been affected by the strategy employed – learning collaborative – and in addition how the effectiveness of the learning collaborative has been moderated by other factors. Variants of learning collaboratives have been used in medical practices in ongoing efforts toward primary care redesign and transformation in several states including California (Sonoma County Health Action), Maine, Colorado and Oregon. This study sought to identify key lessons learned in the implementation process in order to inform relevant policy actions affecting scale-up of the model and its sustainability. In addition, as a specific requirement for the doctoral dissertation, the study supports development of a plan for change presented at the end of this dissertation to pilot implementation of patient-centered care as an innovation in primary care

delivery using learning collaborative strategy in another setting, the City of Nairobi in the Republic of Kenya.

Case Study: Maryland Learning Collaborative

The Maryland Learning Collaborative (MLC) is the clinical dissemination and implementation arm of the Program for Patient Centered Medical Home (MMPP) whose function is to promote rapid adoption of best practices and the advancement of the primary care model. The MMPP mission is “to develop a model of advanced patient centered primary care in the State that builds capacity within primary care practices to ensure care is accessible, continuous, comprehensive, coordinated and of high quality”

As of September 2012 there were 52 practices in the MLC drawn from rural, semi-rural and suburban practices (Source: Department of Health and Mental Hygiene, State of Maryland, 2012). The number of practices participating in the MLC remained the same through 2014 – during the time this study was undertaken. The National Committee on Quality Assurance (NCQA) recognized all the 52 practices as PCMHs in 2012. All the 52 practices volunteered to participate in this process.

Structure of MLC: The MMPP is State Of Maryland led and is supported by all the commercial insurers in the State (http://mhcc.maryland.gov/pcmh/). The MMPP is funded by the Maryland Health Care Commission and is administered through the Department of Health and Mental Hygiene. The MLC is provider-led and the leadership team is drawn from the two academic centers in the State – University of Maryland’s Schools of Medicine and Nursing and the Johns Hopkins Community Physicians (http://medschool.umaryland.edu/familymedicine/mdlearning/default.asp). The governance structure includes representatives from the State Government and a Steering Committee whose membership is drawn from local physician specialty societies, universities, public payers

(Medicare and Medicaid), health information exchange and other stakeholders (Source: DHMH, 2012).

The MLC's stated goals are to: (1) educate providers working in primary care about the advanced primary care model, (2) transform primary care practices to PCMHs utilizing learning collaborative participation and on site coaching, (3) retrain primary care workforce in specific skills essential to the advanced model of primary care including adoption of health information technology, and (4) re-structure workflows within practices to deliver efficient, accessible, high-quality patient-centered care supported by an innovative payment model.

The MLC employs several strategies to achieve the above goals including 1) holding face-to-face collaborative meetings, 2) work force training programs including access to care strategies and these are delivered via the internet (online learning), academic detailing, monthly teleconferences, print materials, emails and periodic dinner meetings, 3) expert coaching for practice transformation akin to Quality Improvement Specialists (http://medschool.umaryland.edu/familymedicine/mdlearning/) and 4) quality measurement, reporting and data sharing. These strategies are aimed at establishing and then enhancing, an advanced primary care model. The process also includes facilitating adoption of electronic health records use, streamlining specialist interactions, reducing unnecessary hospital and emergency department use and facilitating care transition between different levels of care especially for medically complex and chronically ill patients.

In addition, the MLC seeks to augment broader practice transformation and orientation to institutionalize long-term patient-centeredness and systems change. Additional aspects of MLC work include: 1) practice leadership strengthening, 2) establishment of teams within practices including definition and clarification of roles, 3) adoption of effective communication systems, and 4) embedding care management as a system-wide process. Patient-centeredness or the structure to promote Patient-Centeredness follows standards that have also been laid out by the NCQA as part of PCMH certification. The MLC seeks to enhance these standards across

all participating practices. An incentive package to support the transformation includes fixed payments linked to transformation achievements and support for health technology adoption. Further, rigorous quality measurement and evaluation processes are undertaken internally by the practices and externally by independent evaluators to validate the results. The program includes a shared performance-based incentive derived from cost savings as a result of the changes adopted in the process of care delivery.

The Collaborative started working with participating practices to facilitate the process of transformation into PCMHs by focusing educational and technical support efforts on "must pass" standards essential for PCMH NCQA recognition (available at http://www.ncqa.org/Programs/Recognition/Practices/PatientCenteredMedicalHomePCMH.aspx). Additional activities included quality improvement specifically utilizing data and development of forums for sharing of information and best practices, inclusion of additional training modules for specific needs such as medical treatment management, linking practices to available public and private health infrastructure in the state, integration of pediatric behavioral health management within PCMHs, ongoing practice transformation maintenance and care management training which is essential for long-term sustainability, and promotion of Health Information Exchange linkages and utilization. The success of the MPP PCMH program in meeting desired outcomes has been undergoing evaluation but the evaluation excluded the learning collaborative component of the PCMH facilitated implementation process.

NCQA Recognition Process: The NCQA process required practices to meet 6 standards that made up 28 elements, which were allocated a total of 152 factors. However to achieve recognition status a practice must pass six most important elements that contributed 29 points to the 100 possible points in total. These were: access during office hours, use data for population management, care management institutionalization, support self-care process, referral tracking and follow-up and implement Continuous Quality Improvement (CQI). While the MLC supported practices to implement all the 6 must pass elements, the focus was mostly on

three: Standard 3 – Plan and Manage Care, and Standard 6 – Measure and Improve Performance. This is understandable given that the way care is planned and managed is central to primary care delivery and hence any changes made in that dimension will likely result into desirable systemic changes. Standard 6 about performance measurement and improvement provides a method of validation for changes made and the direction of those changes.

1.1 The Problem

In developing countries such as Kenya the burden of disease and mortality are primarily caused by factors that could be prevented and managed if the country's primary care system was effective*(8)*. On the other hand, arguably the most developed nation, the United States of America spends $2.4 trillion*(9)* on healthcare, mostly on illnesses that could be prevented or better managed through effective primary care practice. According to the data from Organization of Economic Cooperation and Development (OECD) for the year 2011, the U.S. spent more than two and half times on health care than other developed nations – US$8,508 compared with the OECD average of US$3,339 - adjusted for purchasing power parity (Source: OECD Health Data 2013). Disappointingly, this level of healthcare expenditure in the U.S. does not generate commensurate health outcomes. For example life expectancy in the U.S. in 1960 was one and half years above other OECD countries, yet in 2011 (the last available data), the U.S. life expectancy was 78.7 years, well below the OECD average of 80.1 years! In 2011 obesity – adult and child obesity-stood at 36.5% (an increase of 15% since 1978) compared with 22.8% the average in OECD countries. U.S. mortality amenable to healthcare is higher than in most other developed countries. The challenge for the U.S. health care system stems from the way care is organized and coordinated especially for chronic conditions, which drive sub-optimal health outcomes and drive upwards the costs of health care in the country. For example the OECD (2013) data shows that asthma admissions in the U.S. in 2009 were 120.6 per 100,000 compared with 51.8 per 100,000 in other OECD countries. Chronic obstructive pulmonary

disease admissions in the U.S. were 230 per 100,000 in 2009 compared with 198 per 100,000 in other OECD countries. These conditions are amenable to primary care interventions.

1.2 Research Question and Goal of the Study

The goal for this study was to learn from the lessons of transforming practices into PCMHs in the State of Maryland using learning collaborative strategy in order to develop a strategy to pilot implementation of patient-centered care as an innovation in primary care delivery in Kenya. Understanding the role of learning collaborative combined with a consultative scoping process with key stakeholders in Kenya has informed the development of a plan of action/plan for change as presented at the end of the dissertation. The dissertation examined the role of the learning collaborative in the PCMH implementation from the perspectives of practices going through the process of transformation into PCMHs.

The key question for the study was: ***How has the Maryland Learning Collaborative affected the process of implementing the Patient-Centered Medical Home model within primary care practices in the State of Maryland and what factors have moderated its effectiveness?***

Study sub-questions included:

1) What have been facilitators and barriers to the Maryland Learning Collaborative's facilitation of PCMH implementation in the State?

2) What key components of the learning collaborative process have been the most effective in the PCMH implementation?

3) What lessons learned from the PCMH implementation experience in the State of Maryland might be applicable in promoting patient-centered care at primary care level in other settings?

The study followed a case study approach and was undertaken from the perspective of a primary care practice as the case. The unit of analysis was the practice.

The study was undertaken taking into consideration the following facts and conditions: There is emerging evidence to show that PCMH is associated with better health outcomes including changes in health care utilization patterns, increases efficiency, improves management of chronic illnesses and is a system more aligned with the traditional view of primary care*(10, 11)*.

For purposes of this study, the operational definition of the PCMH adopted in the State of Maryland was based on characteristics required for recognition by the National Committee on Quality Assurance (NCQA). However, the theoretical understanding of PCMH should be viewed from the broader definition as stated in the joint principles laid out by the AAFP, AAP, ACP and AOA in 2007 (earlier presented in this chapter).

Transformation of practices into PCMH is generally a structured process and the experience in Maryland has not been different. Many strategies, policies, and programs have been developed with the explicit goal of enhancing practice transformation into PCMH*(12)*. One program, and the focus of this work, was the Maryland Learning Collaborative (MLC) as earlier described.

Adoption of patient-centeredness or patient-centered care through the PCMH is one way of furthering the goals and ideals of primary care as stated under the Alma-Ata Declaration of 1978. While there is sufficient evidence that links primary care to improved population health outcomes and lowered cost of care, adoption of primary care ideals has remained an elusive concept for many countries.

A key output of this study is intended to provide support for the implementation of patient-centered care in Kenya as part of a plan for change. The results from this study can be used to develop a modified learning collaborative strategy to implement patient-centered care as an innovation to improve primary care delivery within the public health system in the City of Nairobi, Kenya. Innovations in primary care delivery are issues of interest to many countries and Kenya is no exception. The country's health policy*(13)* document for the period 2012 –

2030 identifies innovation to improve service delivery of an essential care package (a mix of preventive, curative and rehabilitative interventions) as a priority. In addition the Kenya Health Sector Strategic and Investment Plan document (2012 – 2018) *(14)* lays out actions required to strengthen the country's health care system. These actions include effective within and across facility care delivery management, creation of integrated care systems through a referral network and ensuring linkages across the entire continuum of care starting at the community level and through to the highest level of the care delivery pyramid. Patient-centered primary care fits in well with these priorities. The country's Health Policy and Health Strategic and Investment Plan have created an enabling environment for innovations to improve care delivery such as patient-centeredness.

While lessons learned from transformation of practices in the State of Maryland could be applicable in different settings, I picked Kenya for various reasons: 1) the country's policy and strategic plan documents plus pronouncements by key policy makers indicate that the country is ready for innovations to improve care delivery, 2) as a member of the Kenya Healthcare Federation – an organization that brings together key actors in Kenya's private health market, the author has established critical networks that will enhance the feasibility for implementation of the plan, and 3) as a member of various Technical Working Groups in the Kenya health system, the author has access to policy makers, leaders and managers in the health sector that will prove vital for political support for the developed plan. Further, the author has worked within the Kenya health system for more than 10 years and appreciates challenges within the system and opportunities available to make impactful changes. This intimate knowledge has greatly informed proposals made in the Plan for Change.

CHAPTER II: LITERATURE REVIEW

The focus of this study was to understand how the Maryland Learning Collaborative affected the process of transforming primary care practices into Patient-Centered Medical Homes and what factors might have moderated this effect.

To answer the dissertation's main questions, review of the literature to understand key gaps and provide context for the study was undertaken. The literature review sought to address a few issues namely: 1) What has been the contribution of primary care to health? 2) Why should we be concerned about PCMH implementation specifically and primary care reform in general? 3) What strategies have been applied to spur PCMH implementation in different settings? 4) What can we learn about implementation of innovations within heath services? 5) What is the evidence to-date on effectiveness of learning collaboratives in aiding implementation of health innovations and specifically PCMH implementation? Answering these questions and identifying gaps in the literature was critical to shaping this study and helping put findings in context.

PubMed (with its associated indexing system – MeSH = Medical Subject Headings) was the main database used for the review. The Matrix Method *(15)* of literature review was used to guide the data search process. This method was picked at it enabled the reviewer to develop an indexing system (the Matrix Indexing System) of creating and maintaining a reprint file for the review. A paper trail system was deployed to undertake the literature search. Prior to beginning the database search, a system for recording of all actions undertaken during the process of review was set up in form of document folders that kept track of: key words to be used; notes that included purpose of the review and important reminders; articles accessed, abstracted and fully reviewed and organized by year of publication; exclusion-inclusion criteria specified and

refined and a synthesis file of the selected articles that captured key review information namely – authors, journal of publication, title and year of publication, study design, key variables, sampling methodology, key findings, study limitations and recommendations.

In addition to PubMed, other electronic databases were used to compare article returns and these included CINAHL and Google Scholar. In addition, Agency for Healthcare Research and Quality (AHRQ) through its PCMH Resource Center was relied upon at the beginning of the literature search to gain better understanding of the progress of national PCMH National Demonstration Projects that are being used for evaluation research related to this model. Key reports authored on behalf of AHRQ, provided background material and knowledge and helped in shaping the research question. Further, snowballing technique was also used to find articles that were referenced in other studies. Key searches for the literature review focused on: PCMH, PCMH outcomes, learning collaborative and implementation of innovation in health care.

The literature review presented below covers the following:

- Rationale for patient-centered care
- Patient-centered medical home and evidence of its effectiveness
- Strategies and models that spur implementation of PCMH and other innovations in health care delivery
- Learning collaboratives and how they have affected PCMH implementation

2.1 Patient-Centered Care and Primary Care

The -Centered Medical Home is about reforming primary care to meet its original intended goals. Patient-centeredness is central to primary care and it at the heart of PCMH. Different providers, associations, and organizations have different perspectives on what patient-centered care means. For this dissertation the definition of patient-centered care adopted is the one used by the Institute of Medicine in their report*(16)*, “Crossing the Quality CHASM” (2001) that defines patient-centeredness as “*providing care that is respectful of and responsive to*

individual patient preferences, needs, values and ensuring that the patient values guide all clinical decisions". This approach to care delivery is best attained provided that care delivered is safe, effective, timely, efficient and equitable. How practices achieve patient-centeredness may vary by context, practice type and size. When primary care is optimally practiced, it results in adoption of patient-centeredness (or patient-centered care).

To understand PCMH we need to reflect first on what primary care is and why we need effective primary care. In addition we need to understand what patient-centeredness is about. Primary care is the care given by the first person a patient sees who has been trained in health care. This first person can be a bare foot doctor in China, a general practitioner in the UK, a pediatrician or internist in the United States*(17)*. Regardless of who provides this care, there are key elements of the care that should be provided and these include: (1) correct diagnosis as the precondition for treatment; (2) appropriate treatment to restore maximum possible restoration of function; (3) relief of pain and suffering, and alleviation of anxieties associated with illness; (4) appropriate referral or specialized diagnostic, treatment, and rehabilitation services; (5) management responsibility for the overall health of the patient; 6) preventive services: immunization, multiphasic screening for early detection, and preventive supervision; and (7) health education and advice for health promotion, disease prevention, treatment, and rehabilitation*(17)*.

Primary care is generally accepted as the level of care at which entry into the health care system is provided for most problems*(18)*. It however varies in the way it is organized. For example in Sweden and Finland primary care is delivered through health centers managed by local health authorities and these centers may employ many professional categories including physicians, district nurses and social workers. In Western Europe general practitioners deliver primary care and they function as entrepreneurs paid for their services. In Denmark, Great Britain, Ireland, Italy, Spain and the Netherlands, primary care physicians act as gatekeepers into the rest of the health care system – patients normally need a referral to see a specialist. In

the United States primary care practitioners include a variety of specialists and sub-specialists*(18)*.

Primary care is patient-oriented, continuous over time and is best suited to deal with health problems that are common and those that are not well defined*(18)*. The universality in agreement over the general characteristics of what primary care is does not necessarily translate into practice. While the Alma-Ata World Health Organization-sponsored declaration of 1978, states that primary care is the first level of contact in any national health care system and that this care should be made universally made accessible to all citizens, for many countries that goal is far from reality. Increasing access to optimal primary care is a stated goal in many countries' health policy priorities, but actualizing this goal has surprisingly remained a challenge for various reasons including inadequate funding, perceived low quality of care delivered at that level, shortage of primary care health providers and general poor health care delivery design mechanisms.

Engstrom et al*(18)* in a systematic literature review on effectiveness of physician centered general practice in the European model (a variation of primary care in that setting), report that despite political expectations of the contribution of primary care to better public health outcomes and lower health costs, in industrialized countries specialist care has expanded more than primary care. Starfield et al*(7)* reviewed evidence of primary care effects on health from studies on the supply of primary care physicians and these studies showed that: 1) U.S. states with higher ratios of primary care physicians to population had better health outcomes including lower rates of all causes of mortality (at the state level there was a negative correlation between primary care supply and mortality—not all states followed this pattern), and 2) the supply of primary care physicians was significantly associated with lower all-cause mortality, whereas a greater supply of specialty physicians was associated with higher mortality. These results remained unchanged after controlling for income inequality, education and geography*(7)*. In addition these findings were not confined to the U.S alone. In England, the standardized

mortality ratio for all-cause mortality at 15 to 64 years of age is lower in areas with greater supply of general practitioners*(7)*. However, Ricketts and Holmes*(3)* using age-adjusted data and other data modification found that association between physician supply (all types – primary or specialist) and mortality was more regionalized and did not apply across the United States. Studies that focus on physician supply alone may not capture the true effect of primary care because there are other factors that play a role – structural and socio-economic – that optimize the impact of primary care*(4)*.

Engstrom et al*(18)*further observe that an important factor in the achievement of positive effects of primary care is a long-term doctor – patient relationship facilitated by the free choice of the doctor. Similarly, Schmittdiel J et al*(19)* in another empirical study found that the single predictor most strongly related to having high overall patient satisfaction during the process of seeking care was having the choice of type of physician*(19)*. These findings are underpinned by the way primary care is organized in that it leads to reduction in specialist medical care consumption and potentially lowers healthcare costs and these effects get enhanced in the presence of more effective payment reimbursement system and continuity in provision*(18)*. The evidence about primary care effectiveness if well organized and delivered is thus not under dispute. Why has it remained a herculean task to ensure access to primary care in many settings?

Key components of primary care at the clinical level include access to and use of first-contact care, patient-focused (rather than disease-focused) care over time for defined populations, services that are comprehensive and timely, and coordination of care when patients need services elsewhere*(20)*. These components align with the features of patient-centered medical home being implemented in the State of Maryland that is of relevance to this study. Further, the evidence presented earlier about the effectiveness of primary care in improving health outcomes strengthens the case for implementation of the PCMH model, however this dissertation will not argue that case.

While primary care on its own may not be the ultimate solution to improving health outcomes the evidence for the theoretical rationale of its benefits to population health are equally not under dispute*(21)*. The role of other social interventions should be acknowledged. In addition, challenges to primary care still exist that may constrain achievement of better health outcomes. Starfield et al*(21)* point out these challenges including 1) recognizing and managing comorbidity, 2) preventing the adverse effects of medical interventions, 3) maintaining a high quality of the important characteristics of primary care practice, and 4) improving equity in health services and in the health of populations.

This dissertation is about application of a specific strategy to reform primary care through adoption of patient-centeredness. Primary care goals that aim to improve access to care and control costs of services and users' quality expectations can be achieved through adoption of the patient-centered medical home model under implementation in various parts of the United States. The World Health Report (WHR) of 2008 highlighted the role primary care could play in promotion of people-centered care. The tenets of people-centered primary care as highlighted by the WHR of 2008 include: 1) focus on health needs, 2) enduring personal relationships, 3) comprehensive, continuous and person-centered care, 4) responsibility for the health of all in the community along the life cycle, 5) responsibility for tackling determinants of ill-health, and 6) people are partners in managing their own health and that of their communities. These features align with tenets of PCMH for promotion of patient-centeredness.

Over time countries have labored to reform their primary care systems to meet those broad goals highlighted in the WHR of 2008. In Portugal, for example, the country has since 2005 been developing a new management and clinical governance system for primary care that seeks to reduce inappropriate utilization of secondary and emergency services, make efficiency gains and to better control costs*(22)* – objectives that are similar to what PCMH seeks to achieve in the U.S.A. Portugal is not the only country that has had a history of primary care reforms. In the Netherlands, the reforms that have introduced private health insurance were

based on primary care principles that included primary care collaboratives for out-of-hour services and chronic disease management, primary care team building and inclusion of practice nurses*(23)*. In addition, the Netherlands primary care system has traditionally involved family practices with defined populations based on patient panels, evidence-based medicine, and large-scale computerization and strengthening of primary care to help achieve public health goals*(23)*. In Canada, the country has seen transformative changes to their primary care system including: interdisciplinary healthcare teams, group practices and networks, patient enrollment with a specific primary care provider, financial incentives and blended payment schemes, implementation of electronic medical records, quality improvement and training support*(24, 25)*. These reforms depict different strategies being applied to optimize primary care delivery.

2.2 Patient-Centered Medical Home

PCMH is defined as a team-based model of care usually led by a personal physician (although they may be led by non-physician clinician such as a nurse practitioner or physician assistant) who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes*(26)*.

While the typology and definitions of PCMH are evolving and various parties define it slightly differently, there are common features of the various models. Stange et al*(27)* associate the PCMH with four elements including the following: 1) the fundamental tenets of primary care – first contact access, comprehensiveness, integration/coordination, and relationships involving sustained partnership, 2) new ways of organizing practice, 3) development of practices' internal capabilities and, 4) related healthcare system and reimbursement changes - all aspects that relate to the practice.

In addition, PCMH is characterized by 1) a personal provider, 2) a clinician[1]-directed medical practice, 3) whole-person orientation, 4) care coordination and/or integration, 5) improved quality and 6) enhanced access (such as availability in evenings and weekends) *(28)*. These latter characteristics relate to patient-centeredness. The PCMH draws from two other models: the pediatric medical home model and the chronic care model (CCM) *(29)*. Wise et al*(30)* in a study of the readiness for change in primary care practices report that the PCMH is the model that could help bridge the gap between the current primary care system in the U.S. which is designed to service acute, episodic illness to a system that provides proactive, consistent care over time and one that emphasizes outcomes of care instead of volume of care delivered. They go on to point out that the inherent deficiencies of the system have made it difficult for clinicians to apply evidence-based medical interventions that have offset or significantly delayed serious illnesses.

Hopefully, the PCMH will improve the way health care is organized in the U.S., providing the necessary and long overdue health care restructuring. Additionally, this model of care delivery if successful would resonate with the needs of many countries rich and poor - that are in dire need of solutions to strengthen their health systems hinged on the principles of primary care.

2.2 Evidence on PCMH Effectiveness and Patient Outcomes

PCMH is often conceptualized as having three primary outcomes: Quality Improvement, Cost Reduction, and Provider-Patient Experience Improvement. The evidence for each is summarized below.

[1] A clinician includes physician, physician assistant or nurse practitioner

2.2.1 Quality Improvement

PCMH quality measures were derived from validated existing technical measures from Ambulatory Care Quality Alliance (AQA), the Physician Quality Reporting Initiative (PQRI), state and payer demonstration measures*(31)* and Health Plan Employer Data and Information Set (HEDIS) *(32)* as standardized measures of quality and effectiveness of PCMH. Given variations in population and PCMH location, the selected evaluation metrics address core areas of primary care measurement namely: preventive care, chronic disease management, acute care, overuse and safety*(31)*. A mix of process, intermediate outcomes and final outcome measures are used to address short term (during pilot phase) and long-term performance measurement needs. No one set of existing measures could meet specific PCMH measurement requirements. For example HEDIS measures are designed based primarily on administrative data sets and their purpose is to compare performance of health plans. There are several major limitations of using HEDIS metrics to measure PCMH outcomes including: 1) inadequacy of administrative data to provide information on all key health outcomes; 2) variations in definitions of quality and effectiveness are more difficult to compute from standard administrative data, 3) measures may be computed based on different operational definitions and this affects interpretation of results, and 4) the difficulty in determining what influences reported performance. These limitations notwithstanding, HEDIS is increasingly moving beyond administrative performance data to more quality performance measures that will be useful for assessing quality or effectiveness following PCMH implementation in the long-term*(32)*.

Quality outcomes so far reported have mostly focused on process measures for the delivery of appropriate preventive care and care for selected disease states. Hudak RP et al, Maeng DD et al, Peikes D et al, Hoff T et al and Fontaine et al*(33-38)* report improvements in process of care and intermediate outcomes following PCMH implementation. Aysola J et al, De Vries A et al and Fifield J*(33, 39, 40)*report that implementation of PCMH showed significant

improvements in preventive services and chronic disease management ($p<0.05$ or less). The services evaluated included breast, cervical and colon rectal cancer screening; diabetes management measured by HBA1c testing; cardiovascular disease control measured by LDL testing and appropriate immunizations given to children. Toomey SL et al*(41)*report that children with ADHD receiving care through PCMH had far better functional effectiveness than their counterparts who did not receive care through PCMH. Jaén CR et al*(37)*report improvements in condition specific quality, process and access to care measures following PCMH implementation over 26-months period. Improvements were observed in prevention services, access scores and chronic care scores. However, despite absolute improvements in prevention services, the changes were not statistically significant.

More studies report that PCMH demonstration projects have shown evidence of improved quality of care albeit in varying degrees*(33, 37, 38, 42-44)*. Most of the quality improvement evidence to-date is about process outcomes but this is understandable as process outcomes can be viewed as driver indicators of long-term outcomes – assuming all other things hold. Nonetheless, we should consider PCMH process and intermediate outcomes so far observed as preliminary. Arguably, if PCMH ensures delivery of ideal primary care as it is universally defined, we should see evidence of long term impact in form of reduced morbidity and mortality among high risk and medically complex patient groups and significant improvements in quality of life key measures at the population level. The ultimate goal of PCMH adoption should be to improve health status of the population served. However, in the interim it is safe to suggest that PCMH is delivering desired results in improving management of chronic diseases and delivery of critical prevention services that are major determinants of disease outcomes*(45, 46)* in the United States.

2.2.2 Cost Reduction and Efficiency Improvement

Reid RJ et al*(47)*report that PCMH increases use of primary care and has reduced emergency department use in the immediate run especially for population groups with chronic illnesses but it may take longer to bend the cost curve due to slower changes in inpatient care and specialists use. Reid RJ et al*(47)*further report fewer (29% less) ED visits but inpatient admissions did not differ significantly compared to non-PCMH patients but PCMH patients had fewer hospitalizations for ambulatory sensitive conditions. In addition PCMH patients primary care and specialty care costs were higher. As a result, the evidence on PCMH reduction of cost in the U.S. so far is mixed. For example Fontaine P et al*(48)*report a decrease in primary care and specialty care use for patients enrolled in PCMH. In addition costs for both primary and specialty care PCMH patients were lower compared to the control population. However, patients receiving care through PCMH cost more per patient visit for primary care but lower for specialty care. Fishman PA et al*(49)* report that there were no cost savings associated with PCMH care delivery for seniors – in fact there was a slight increase in primary care costs. However, the study showed slight reduction in primary care visits for PCMH patients but increased virtual visits. Flottemesch TJ et al*(50)* report reduction in emergency department use for patients enrolled in PCMH. In addition total outpatient costs for medically complex cases over five years decreased although total costs for all patients went up significantly.

Some studies show positive impacts on altering specialty and inpatient utilization patterns, which point to improved efficiency*(34, 35)*. Where cost reductions have been observed, they are generally statistically insignificant. And in some cases costs have gone up following PCMH implementation*(48)*. This should not be surprising as increased uptake in primary care use is not always associated with lower costs especially for the chronically ill and medically complex patients. In addition, the nature of the evaluations – covering short periods of time that also included the transition process— may have limited power to capture the true cost

impact. We should also recognize that it is early in the process to determine PCMH long-term impact on cost. The foregoing notwithstanding, there seems to be an emerging trend in utilization patterns following PCMH implementation that suggests potential for efficiency improvement. Notably, PCMH implementation has reduced hospital emergency department use, rationalized specialist care seeking and has improved patterns of in-patient services utilization*(35, 36, 47, 49)*. The patient population currently served by PCMHs –that tend to be older and sicker – may explain the mixed results. Evaluations over the long-term will give us a clearer picture.

2.2.3 Provider and Patient Experiences

There is limited research on the level of satisfaction of patients and providers engaged in a PCMH. Savage AI et al*(51)* report that staff at PCMH felt a stronger connection to their patients and had deeper feeling of ownership in the process of care delivery and fulfillment of their roles. Christensen EW et al*(34)* report improved patient satisfaction including higher level of patient activation at PCMHs.

Most emphasis has been put on evaluating PCMH impact on quality and cost. I will argue that the utility of PCMH implementation lies in how it meets these two critical goals. Improving quality is a critical requirement for institutionalizing PCMH as a cornerstone of the healthcare system. Reducing cost is a necessary requirement for sustaining health care provision for today's and future generations. However, we should not lose sight of the key role of providers and patients in sustaining PCMH. The partnership between these two stakeholders is what will bring about changes in behavior that can significantly alter the health care dynamics in the U.S.A. – through promotion of health culture as opposed to treating disease by providers and adoption of healthy lifestyles by patients. Other studies*(47, 49)* that have evaluated provider and patient experience showed improvement in both patient and provider experience. In the evaluations, patient experience was driven by perception of ease of access to first contact for

care, physician-patient interaction, shared decision making (patient activation) and continuity of care. On the other hand provider experience was evaluated using measures of staff burn out and feeling of ownership. Patients reported better interaction with their providers and felt more involved in decisions about their care. Providers under PCMHs felt more empowered and experienced lower staff burnout compared to their colleagues in control sites*(47, 49)*.

2.3 Practice Transformation into Patient-Centered Medical Home

In this section of the literature review I provide an overview of process, experience and evidence about primary care practice transformation into PCMHs and what specific strategies have been employed to help reach the intended objectives. In addition, I present broadly the different models that have been applied to drive practice change initiatives within healthcare organizations in a bid to build a context for understanding the results of the study later focusing on the PCMH implementation experience supported by learning collaborative.

There is currently no single governing definition of the medical home although the National Committee on Quality Assurance (NCQA) standards have emerged as the basis for provider recognition as a medical home and will likely drive reimbursement*(52)*. The NCQA and the Patient-Centered Primary Care Collaborative (PCPCC) principles of the medical home broadly define attributes of the role of the primary care provider and the primacy of the patient-provider relationship across the spectrum of illness*(52)*. These principles inform the process of PCMH recognition.

The process of attaining PCMH status is an arduous one. It can be argued, that there is no end state to achieving a PCMH status – PCMH standard have to be maintained and practices go through periodic assessment in order to retain the recognition status. As a result and conceptually, the PCMH can be measured and described in various ways depending on the context provided the basic features as described earlier are met. For purposes of this dissertation, the standards defined by National Committee on Quality Assurance (NCQA) are

relied on to provide an operational context for PCMH in the U.S. The Accreditation Association for Ambulatory Health Care (AAAHC) in 2009 introduced the first accreditation program for medical homes. Unlike other quality assessment programs for medical homes, this peer-driven process also mandates that PCMHs meet the Core Standards required of all ambulatory organizations seeking AAAHC Accreditation (available at http://www.aaahc.org/en/accreditation/primary-care-medical-home/). The NCQA in partnership with the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians and the American Osteopathic Association developed standards known as the Physician Practice Connections – Patient-Centered Medical Home (PPC-PCMH). The NCQA through the PPC-PCMH program identifies and recognizes medical practices that demonstrate achievement of these standards. The NCQA principles are more process oriented and are open-ended. These standards/principles include 1) access and communication, 2) patient-tracking and registry functions, 3) care management, 4) self-management support, 5) electronic prescribing, 6) test tracking, 7) referral tracking, 8) performance reporting and improvement and, 9) advanced electronic communication (available at www.ncqa.org). Practices that get recognized as PCMH seek to improve patient care and are best positioned to take advantage of public and private incentives that reward patient-centered care.

The process a practice follows to achieve NCQA PPC-PCMH recognition is the practice's choice. In an empirical study of 16 practices going through a process of PCMH implementation in Michigan, Wise et al*(30)* found that practices had different motivations for pursuing PCMH recognition status. These motivations included the perceived value of PCMH, financial incentives, understanding of specific PCMH requirements and overall commitment to change*(30)*. Wise et al*(30)* report that the most noticeable difference among practices in the perceived value of the PCMH was whether respondents felt the PCMH had an intrinsic value or viewed it as a set of externally imposed requirements. In addition higher-scoring practices had

clearly internalized the value of PCMH as benefiting both their patients and their practice. On the other hand lower-scoring practices viewed PCMH as an external imposition by payers and viewed it as one more set of hurdles to jump.

Wise et al*(30)* further asked practices to indicate their capability to achieve PCMH functionality based on the following: 1) time demands of PCMH implementation, 2) prospects of changing patients' behavior, 3) health information technology (HIT), and 4) implementation expectations. The findings indicate that all practices regarded the time required to implement PCMH as a major challenge; higher-scoring practices thought PCMH was a good framework to inform patients about mutual expectations and to define their own role as primary care givers – the lower scoring practices were skeptical about patient accountability for their care. Higher-scoring practices had more HIT capability while lower-scoring practices appreciated the potential value of HIT but were generally challenged by both the expense and the time requirements for implementing and learning how to use it. Higher-scoring practices appreciated that implementing PCMH was hard work and would take time while lower-scoring practices considered the time and effort invested in PCMH to be too great to overcome.

The study by Wise et al*(30)* describes approaches practices used to prepare their practice teams to implement PCMH and they identified the following: 1) leadership support by physician champions also known as "thought leaders" who provided educational instruction on PCMH and infrastructural support for HIT; 2) importance of translating value of PCMH to peers who are skeptical; 3) designated PCMH experts who understand PCMH domains and tasks and help practices understand specific components; 4) need to implement PCMH incrementally; 5) using data especially evidence-based quality outcomes, pharmacy use and patient satisfaction; 6) clarifying roles and responsibilities of all practice team members, and; 6) a desire to learn from other practices – this was in response to the fact that fewer practices participated in locally sponsored PCMH learning collaboratives and those that did not participate indicated that if they

were to re-do the process again, they would wish to learn from other practices as part of the change process.

The Agency for Healthcare Research and Quality (AHRQ) *(53)* identifies practice facilitation as one way to support medical practices in efforts to redesign and transform primary care delivery. Indeed there are several ongoing programs in the country benefiting from practice facilitation including some whose objectives include transforming primary care practices into PCMHs and examples include*(53)* the Vermont Blueprint's EQuIP Program and Safety Net Medical Home Initiative. The Oklahoma Physicians Resource/Research Network and the North Carolina AHEC's Practice Support Program also pursue similar objectives - improving health outcomes, quality and lowering costs plus implementing best practices and evidence-based approaches.

The AHRQ has published a guide on how to develop and run a primary care practice facilitation program that can support PCMH implementation. Facilitation, however, comes with its costs*(54)*. Steven C et al*(54)* in a study of the cost of facilitation for 19 practices in South Texas seeking to improve chronic illness care, estimated that on average facilitation costs $9,670 per practice per year. They note that this finding was consistent with findings in other studies that evaluated facilitation costs to improve preventive services. However, cost of facilitation should not be viewed in a vacuum. Benefits accruing from the facilitation process have to be put into consideration although these benefits may materialize more at health system level and not necessarily within the practice. Nutting PA et al*(43, 55)* evaluated whether practice facilitation had any added benefit in speeding up adoption of PCMH standards. That study by Nutting PA et al*(55)* investigated effect of facilitation on practice outcomes in the National Demonstration Project model of the patient-centered medical home and results showed that facilitated practices added more PCMH components during the evaluated period and had more absolute improvements in chronic care and prevention scores. Thus, despite facilitation imposing costs it also accrues benefits.

The use of a process quality improvement approach to transform health care practices is not a new development and has been used before. For example the Michigan Improving Performance in Practice program has used quality experts from the automotive and other industries to coach primary care offices*(56)*. These coaches have helped physicians and staffs learn to apply quality improvement tools to improve care of chronically ill patients*(56)*. Grumbach K et al*(57)* report that in the United Kingdom facilitation led to improvement in palliative care delivery and in diagnosis and treatment of asthma for children*(57)*. In the Netherlands, facilitation led to increase in adherence to guidelines for cardiovascular disease preventive care. Similar findings were reported in Canada in which facilitated practices registered significant improvement in delivery of preventive services*(57)*For example Nutting P et al*(43)* study on the effect of facilitation on practice outcomes shows that practices with higher adaptive reserve is an important factor in a practice's ability to make and sustain change. The study also shows that facilitation led to adoption of more components of PCMH among facilitated practices compared to self-directed ones during the time of facilitation. Facilitated practices added on average 10.7 new components while self-directed practices added an average of 7.7. However, the study also showed that after the facilitation process ended, practices in total adopted equal number of components – thus putting into question the long-term effect of facilitation in sustaining desired change. These results show a need for a longer-term impact evaluation of practice transformation facilitation.

The Maryland Learning Collaborative helped practices transform using a mix of practice coaches, academic detailing, care manager embedment and quality improvement approaches. This dissertation makes recommendations on how to overcome challenges to sustaining changes within practices following the process of transformation.

2.4 Implementation of Innovations in Health Care

There have been several strategies and models applied to spur adoption and implementation of innovations in health care. PCMH adoption like any other innovation is influenced by several factors. In general introduction of a new way of doing things including reform in practice is influenced by contextual factors and the perceptions of the adopters about the benefits of the innovation.

Carlfjord et al*(58)* point out that factors to take into account when planning implementation of a new tool in primary health care should include assessment of staff expectations, assessment of the perceived need for the innovation to be implemented, and of its potential compatibility with existing routines. They add that the choice of implementation strategy should be given thorough analysis before using it. These factors are relevant in the case of PCMH implementation aided by learning collaborative. In the case of the State of Maryland, PCMH implementation has been a planned innovation and has been externally facilitated. Greenhalgh et al*(59)* through a systematic review of diffusion of innovations in service organizations report that when a planned dissemination program is used for the innovation like in the case of learning collaborative, it will be more effective if the program's organizers 1) take into full account of potential adopters' needs and perspectives, with particular attention to the balance of costs and benefits for them, 2) tailor different strategies to the different demographic, structural, and cultural features of different subgroups, 3) use messages with appropriate style, imagery, metaphors, 4) identify and use appropriate communication channels, and 5) incorporate rigorous evaluation and monitoring of defined goals and milestones. They also point out the importance of system antecedents for innovation drawn from the organization's context and features of the organization – structural and cultural. In the development of the plan for change as part of this study, understanding how innovations are disseminated and implemented are considered central to the proposed plan for patient-centered

care implementation in Kenya. In addition, understanding the theoretical underpinnings that belie health care innovation adoption and implementation has informed analysis of results in relation to contextual facilitators and barriers of PCMH implementation in the State of Maryland. Goldberg DG*(60)* concludes that primary care practices' implementation of innovations is bound by major constraints of limited resources and influenced by patients and other stakeholders. An important finding from Goldberg's study is that the largest predictor of innovation in primary care practices is organizational size. This has important implications not only for policy*(61, 62)*, but also, for sustainability.

Three models, the Chronic Care Model (CCM), Breakthrough Series Collaborative (BTS) model and Improving Performance In Practice Program (IPIP) are particularly relevant to this study due to their similarities with the Maryland Learning Collaborative (MLC). These will be briefly reviewed in this section including their effectiveness, shortfalls and gaps in the literature about them.

2.4.1 The Chronic Care Model

The adoption of advanced primary care model (patient-centered care) can also be related to the Chronic Care Model (CCM). The CCM seeks to transform healthcare and lead to functional and clinical outcomes – these aims are similar to those of PCMH. The CCM and the PCMH are complementary. Wagner et al*(63)* posit that the PCMH describes what patients should expect and how the practice can meet those expectations while the CCM explains how care should be structured and delivered. They go on to say that both models emphasize the centrality of the primary care provider-patient (and family) relationship and both advocate for empowerment of patients and families and their greater role in every aspect of their health and health care.

2.4.2 The Institute of Healthcare Improvement (IHI)'s Breakthrough Series Collaborative (BTS) Model

The BTS model helps healthcare organizations make breakthrough improvements in quality while reducing costs – a goal similar to the impetus behind practice transformation into PCMHs. The BTS model helps narrow the gap between knowledge and action and is designed to help organizations bridge identified gaps by creating a structure in which interested organizations can easily learn from each other and from recognized experts in topical areas they want to make improvements*(64)*. The process by and large employs learning collaborative, as a strategy to bring about these needed changes.

The major limitation of the BTS model implementation cycle is that it is long enough for practices to begin to improve but may not be long enough to achieve truly transformation of care as is required of PCMHs*(65)*. The BTS model presents a framework for learning and action that is characteristic of performance improvement.

2.4.3 Improving Performance in Practice Program (IPIP)

The Improving Performance in Practice (IPIP) program funded by the Robert Wood Johnson Foundation*(65)*, is a large system intervention led by a collaboration of the primary care certifying boards and professional societies. The program working through a tiered system of improvement from the patient upwards to the national level assists primary care physicians and their practice teams to assess and measurably improve the quality of care for chronic illness and preventive services using a common approach across specialties*(65)*. The IPIP goals since inception have remained the same and they include seeking to align efforts and motivate the creation of a tiered system of improvement at the national, state, practice and patient levels to assist primary care physicians and their practice teams to assess and measurably improve the quality of care for chronic illnesses and preventive services using a common approach across specialties*(65, 66)*. In North Carolina the IPIP has been implemented as the "Practice Support Program" since 2005 and is a statewide initiative that assists primary

care practices to improve the quality of care delivery*(67)*. The IPIP is particularly important to understand for it should provide a template on how to sustainably improve quality and maintain change within small practices – in the case of the MLC 44% of participating practices (23 out of 52) fall into this category. IPIP key strategies include a theoretically adopted framework of the chronic care model that puts emphasis on implementation of patient registries, provision of information at the point of care, standing orders and patient self-management support and outreach; development of learning networks (modification of BTS) to improve care across many clinical settings focusing on improvement of office systems and provision of technical support via Quality Improvement Coaches/Consultants and practice facilitation and; aligning as many incentives for practices as possible such as practice based CMEs, Maintenance of Certification Part IV (MOC IV) *(66)*.

2.4.4 Learning Collaborative

Greenhalgh T et al*(59)* define a collaborative also called a multi-organizational structured improvement collaborative – as an initiative that brings together groups of practitioners from different healthcare organizations to work in a structured way to improve one or more aspects of the quality of their service. It can also be thought of as a temporary learning organization*(68)*. For purposes of this dissertation the Maryland Learning Collaborative is considered an intentional (formal and planned) strategy for PCMH implementation using multi-organizational improvement collaborative.

Øvretveit J et al*(68)* in a synthesis of ongoing research about learning collaboratives note that their value in impacting desired outcomes sustainably is not yet fully determined. They posit that success of a collaborative is dependent on the subject chosen, how the collaborative is managed and the culture of the team's organization. In addition the purpose and preparation, collaborative organization and meetings, plus post collaborative transition could be challenges if not well addressed. The success for a topic chosen may also be influenced by: a) the topic's

complexity, b) its relative advantage, c) its observability, d) its compatibility with individual norms and values, e) its compatibility with institutional norms and practices, and f) its trialability and reinvention.

While the chosen topic of improvement chosen by the learning collaborative is important, the teams involved in its implementation are very critical to the success of learning collaboratives. However, a team's success is dependent on other factors namely: (1) their ability to work as a team, (2) their ability to learn and apply quality methods, (3) the strategic importance of their work to their home organization, (4) the culture of their home organization, and (5) the type and degree of support from management.

Organizations participate in learning collaboratives for a variety of reasons. For example Marsha G et al*(69)* found that firms chose to participate in a collaborative to improve health disparities because of: 1) their interest in learning about the issue, 2) their perception that collective action might be more efficient than individual action, and 3) their ability to use participation to gain internal leverage or address more mundane issues within their organizations. Results of this study point to motivations of practices for participation in the MLC. Motivation for participation is important especially for gauging commitment to the collaborative's goals. We should also be cognizant of other ongoing organizations' work that affects the subject of the collaborative. For example since the MLC primarily goals were to augment the achievement of PCMH goals, we should recognize that practices might have been doing other things independently to address these issues. This might have influenced their level of commitment to the collaborative process.

Greenhalgh T et al*(59)* in their systematic review raise a number of questions that remain unanswered about learning collaboratives. These include whether: 1) they spread improvements in practice more quickly than individual institutional efforts, 2) their results last longer, 3) the ideas spread more widely, 4) the resulting improvements are larger in magnitude, or whether 5) they are cost-effective. While this study did not seek to provide answers to all

these questions, understanding the role of the collaborative in implementation of PCMH and what factors enhanced or constrained its effectiveness, provides important information about these issues.

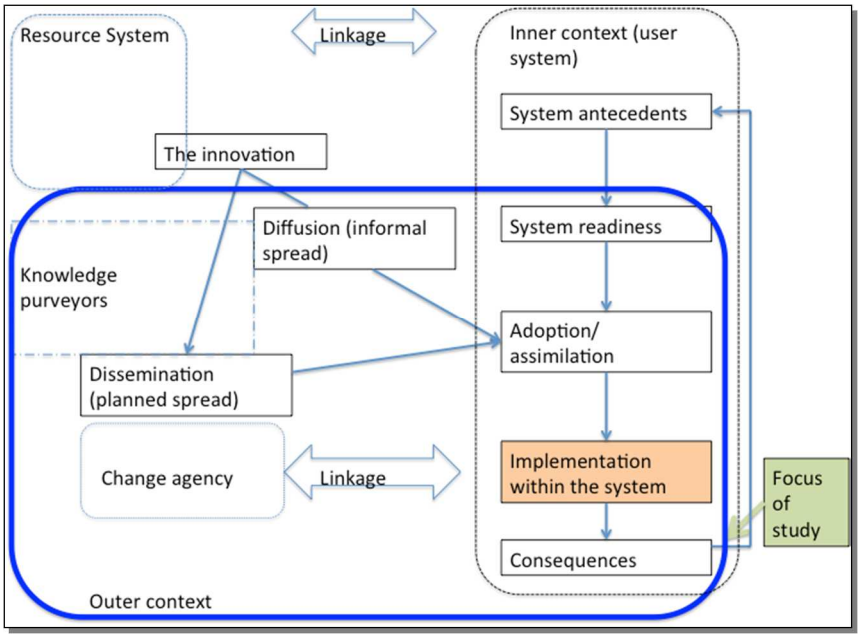
CHAPTER III: STUDY METHODS

3.1 Description of Conceptual Framework

The study applied a modified theory of determinants of diffusion of innovations in the organization and delivery of health services described by Greenhalgh et al*(59)*. The focus of the study was on innovation implementation – in this case the implementation of Patient-Centered Medical Home in the State of Maryland investigating the role of the change agency and the internal and external environment within which the innovation is implemented. The change agency in the study was the Maryland Learning Collaborative (MLC) that was set up to facilitate the implementation of PCMH among 52 primary care practices.

Figure 1*: Theoretical Conceptual Model: Diffusion of Innovations in Healthcare*

(Extracted from Greenhalgh et al, 1st Edition 2005: Page 6)



The study's underpinning hypothesis was that implementation of PCMH innovation was enhanced by the MLC as a change agent and the effectiveness of the process is explained by external and internal factors. The learning collaborative approach was a goal-directed process and mobilized external and internal actors to learn together through a common vision as a catalyst for change*(70)*.

Research on PCMH implementation identified internal factors, namely leadership support, adaptive reserve or innovation capability and change champions as factors that enhanced implementation of PCMH. In addition, this study also examined staff commitment/support/resistance to the change. Financial incentives and technical support received towards quality improvement for desired outcomes were key external influences. This study examined how these factors affected the process. In addition, the study looked at the learning collaborative process itself and how that might have affected the implementation of PCMH. Specifically, the study looked at: 2) learning agenda/goal for the collaborative, 2) organization of the collaborative, and 3) group processes. The study did not address all aspects of the internal and external context for innovation implementation but rather was more nuanced, and focused on the interface between the internal and external context in far as they enhanced or constrained the role of the change agent. To this end, the study did not seek to assess whether the practices were ready for the innovation – i.e. did not assess structural and cultural determinants of innovativeness since a decision was already made to implement the innovation. At the same time, the focus of the external context was limited to how the innovating organizations brought together into the learning collaborative and by the State policy push implemented the innovation and formed beneficial networks with each other.

Conceptually, the study was based on the premise that the change agency's involvement in the dissemination of the innovation influenced the success of implementation and whether the beneficiary organizations in this case the practices agreed with that characterization. In particular Greenhalgh et al*(59)* identify the following as key in optimizing the

interaction between the change agent and the affected organizations, namely 1) human relations, 2) sharing of common language, 3) sharing of resources in both directions, 4) facilitation of networking and collaboration between participating organizations, and 5) joint evaluation of the innovation consequences. Was this true for the MLC? In addition the change agency should possess the capacity, commitment, technical capability, communication and project management skills to assist participating organizations with operational issues.

For purposes of this study I adopted the Learning Collaborative definition advanced by Greenhalgh et al*(59)*: "**an initiative that brings together groups of practitioners from different healthcare organizations to work in a structured way to improve one aspect of quality of their service**". In this case the MLC, aimed to enhance the capacity of participating practices to improve quality through: 1) chronic disease management improvement with care management and coordination plus preventive metrics and outreach, and, 2) reduced utilization of services through care transitions that streamline with local hospital discharges and encounter notification for emergency department and hospital visits. The theory of diffusion of innovation through learning collaboratives describes the process as that of mutual learning by multiple organizations for purposes of bringing about change. The process requires organizations to share experiences, techniques, ideas and knowledge and set common goals for change while focusing on their internal organizational priorities for change. Study findings shed light on the process and how it might have influenced final desired outcomes as stated in the Maryland Multi-Payer Program for Patient-Centered Medical Home.

PCMH implementation process in the State of Maryland started with the desire of practices to transform into "ideal" practices on one hand, and health care financing stakeholders seeking to reduce costs of care. These two goals could be met through adoption of an advanced primary care model also known as patient-centered care. However, this did not happen in a vacuum. In addition, the State Government policy objectives and ongoing national healthcare reforms provided the optimal condition for the PCMH model implementation.

Receiving NCQA recognition as a PCMH was an important and necessarily step in the process. The learning collaborative in this case the MLC became the strategy employed to support the PCMH implementation process.

Implementation of PCMH model within a practice is confirmed through the NCQA recognition process. However, the goal for PCMH implementation goes beyond recognition and so are the goals of the MLC. The goal is for practices to adopt a patient-centered care model considered an advanced form of primary care and achievement of the three main outcomes for PCMH implementation namely: 1) quality and patient outcome improvement, 2) enhancement of provider and patient experiences, and 3) efficiency improvement and health care cost reduction. The learning collaborative created the mechanism and environment that brought the practices together to implement a needed change – the PCMH model. In addition the learning collaborative provided tools and introduced structural changes within the practices that arguably enhanced the implementation process. Study results will further elaborate on what these changes were.

3.2 Study Design

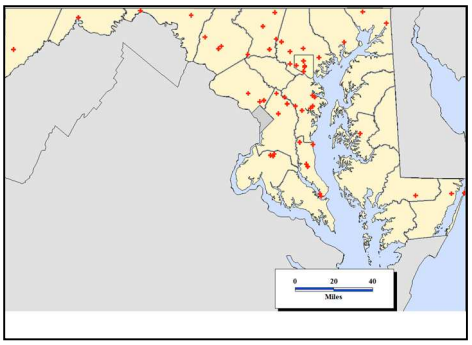
To answer the research question, multiple, comparative case study design was used. Semi-structured and key interviews were held with selected respondents and a short survey questionnaire was administered among select sites in order to understand how the Maryland Learning Collaborative enhanced the PCMH implementation process and what factors may have facilitated or constrained the learning collaborative's role. Qualitative research design was preferred for this study because the research question was exploratory in nature and would be best answered through an inquiry process that would help shed light on underlying factors that enhanced or constrained the process of practice transformation. The design in addition was compatible with the conceptual framework of the study for purposes of explaining experiences of actors involved in the process of change. Further, the end product of the study, is a plan of

action or change, would best benefit from understanding contextual factors and processes that normally influence implementation process.

3.3 Study Population and Setting

The study was done in the State of Maryland. The study population included all 52 practices that were part of the Learning Collaborative in 2014 covering about 200,000 patients. The map below shows the location of these practices:

Figure 2*: Map Showing all the 52 Practices Participating in MLC Supported PCMH Pilot*



At the time of the study, there were about 339 practitioners participating in the MLC as follows:

Table 1: *Providers Involved in MLC supported PCMH Pilot in the State of Maryland*

Physicians	**Other Practitioners**
Family Medicine - 133	Dentist - 1
Internal Medicine - 84	Nurse Practitioners - 39
Pediatrics - 59	Physician Assistants - 21
Geriatrics - 1	Miscellaneous - 1
Total: 277	**Total: 62**

The profile of the practices varied and included 24 hospital-owned including other corporate structure, 16 practitioner-owned, 7 solo practices and 2 federally qualified health centers (FQHCs). All the participating practices received recognition in 2012 as medical homes

from the National Committee for Quality Assurance (NCQA) and also met specific Maryland State requirements.

3.4 Sampling

A purposeful sampling strategy was employed. Nine (9) practices were picked out of 52 enrolled in the PCMH pilot based on their willingness to participate in the study. The following table shows a description of practices included in the study and the respondents for the study:

Table 2: Study Cases and Respondents Summary

Ownership Type	Location	Specialty	Respondents
Hospital Affiliated	Rural	Adult	Care Manager and Administrative Leader
Corporate Group	Semi-urban	Pediatrics	Care Manager and Medical Director
Solo Owned - Physician	Semi-urban	Adult	Care Manager and Administrative Lead
Solo Owned - NP	Rural	Adult	Provider Lead and Care Manager
Physician Group	Semi-urban	Adult	Care Manager and Medical Director
Hospital Affiliated	Urban	Adult	Medical Director and Care Manager
Physician Group	Semi-urban	Adult	Care Manager and Administrative Lead
Physician Group	Urban	Pediatrics	Care Manager and Administrative Lead
Corporate Group	Rural	Adult	Medical Director and Care Manager

The selected practices included all types in the pilot except the Federally Qualified Health Centers that did not volunteer to participate in the study. Practices were drawn from rural, suburban and urban locations. Seven were classified as offering adult care services while 2 were pediatric practices. The number selected allowed for cross-comparison in the implementation of PCMH and their participation in learning collaborative events. While in the end, the cross-comparisons between practices/cases did not reveal major differences; ensuring heterogeneity of cases among the sample pool was necessary. To get the nine practices for the study, a recruitment letter was sent to all 52 practices requesting them to indicate their willingness to be included in the study. The letter included synopsis of the study, potential benefits and risks of the study and a statement that participation in the study was voluntary. Those practices that responded in the affirmative were letter followed up through e-mail and

phone calls to agree on two people to be interviewed and the earliest date they would be available for the interview. The recruitment letter is included under the appendices section.

Data Collection

Primarily semi-structured interviews served as the primary strategy for data collection for the study. In addition, a short questionnaire was administered for each participating practice to collect key data on type of facility, number of employees, number of providers and classification, patients enrolled in the medical home and total number of patient visits for the period January 1, 2013 – December 31, 2013. Two key informant interviews were held with a representative of the Maryland Health Care Commission the State agency sponsoring PCMH activities and the second was a representative of practice coaches hired by the MLC to facilitate practice transformation activities.

Semi-Structured Interviews

Interview questions were derived from the main research question and sub-questions and were informed by the literature review done and the conceptual framework guiding the study. The interviews followed guidelines contained in the approval and exemptions issued by the Institutional Review Boards at University of North Carolina at Chapel Hill and University of Maryland at Baltimore. The Principal Investigator carried out the interviews. In all 18 face-to-face interviews were held at 9 selected practices. Further, to provide policy and learning collaborative perspectives in order to contextualize information provided by practice respondents, the PI interviewed one of the MLC hired practice coaches and a representative of the Maryland Health Care Commission (MHCC) - the State Agency coordinating the PCMH program. Data collection was done over a period of four weeks from mid June 2014 through mid August 2014. All the interviews were done face-to-face save for the interview with the Lead Practice Coach, which was done via phone. Face interviews done at the practice served an

additional purpose – it enabled the PI to observe the medical home practice even though this was not part of the study. Face-to-face interviews helped create rapport with respondents and allowed for probing and clarification of responses. Interviews lasted between 40 and 60 minutes each.

Interviewees/respondents were selected based on their leadership role within the practice and their involvement in the MLC facilitated process for PCMH implementation. From each practice a Care Manager was the second respondent the first being either the administrative or medical leader of the practice. In all the practices, the Care Manager function was introduced as part of PCMH implementation and the role was developed by the learning collaborative and in all practices Care Managers focused exclusively on PCMH implementation and hence bore the most potential to provide rich information on the issues under study. Prior to start of interviews, a consent form was given to the respondents and the PI further informed the respondents that participation in the interview and hence the study was voluntary and they could opt out at anytime during the interview. In addition, respondents were informed of their right to decline answering specific questions if they chose to.

Questions asked were broadly grouped in the following categories reflected in the table below:

Table 3: ***Overview of Semi-Structured Interview Questions***

Question Category	Question Focus
Internal factors	• Internal capability to implement PCMH • Overcoming resistance • Staff commitment • Leadership and management support • What enhanced the transformation process
External factors	• Role of incentives • Influence of other practices • Policy consideration • State involvement • Academic center involvement
MLC processes and role	• Value and type of technical assistance provided • Group activities and events – effectiveness and perceived value • Other resources provided by the learning collaborative • Methods of work by the MLC

3.5 Data Management and Analysis

Data Management

All interviews were audio-recorded using Recorder Plus Software program to ensure a verbatim record. To facilitate the process of data analysis, one practice per day was scheduled for interviews. This being a case study design, at the end of each practice interviews, data was transcribed and analyzed. A unique number was assigned to the questionnaire information and interview generated information for each participating practice/case.

All semi-structured interview data was transcribed and further crosschecked to make sure the transcript notes were a true representation of the verbatim audio-record. All questionnaires were kept in a locked safe in the PI's private office after collected information was entered into a computer to create an electronic record to inform the results. The electronic information was stored under password protection on the PI's computer that is not accessed by anyone else. Transcripts were saved in word and pdf versions as a safety precaution.

The analysis identified emerging themes in the responses and if a theme emerged from the preliminary analysis that was not included in the initial questions, the key informant interview

guide would be further enriched to include a question about that emergent theme to be investigated further in the next set of interviews. However no new themes emerged after interviews were conducted at the first 4 practices.

Within the overall data analysis strategy, explanation building analytical technique was used to analyze case study data. The goal was to describe how the learning collaborative was instrumental in the PCMH implementation by presenting data from multiple cases that have benefited from the process. Yin R*(71)* describes explanation building technique as a special type of pattern matching that seeks to stipulate a presumed set of causal links about how or why something happened. The goal for the study was to explain how the learning collaborative was effective in facilitating implementation of PCMH model within participating practices from which cases for the study were selected. In analyzing the cases I examined any competing rival explanations for what happened through responses that were given for questions asked about what else was driving transformation of practices into medical homes. The rival explanation postulates that external influences impacted the practices' internal capability, which combined with their motivation created the right incentive for change irrespective of the learning collaborative – in other words that the learning collaborative made no difference in the PCMH implementation. Through probing I asked respondents to identify what else was happening within their practices and whether this explained the changes associated with PCMH implementation.

Data Analysis

Data analysis was done in a systematic manner. Prior to the analysis the PI in line with recommendations for qualitative analysis by Creswell JW*(72)* first read through the data (transcripts) to obtain a general sense of the information and to reflect on its overall meaning. Next the data was coded using Nvivo Software version 10.1.3 for Mac. Initially the thematic coding utilized pre-determined constructs based on the study logic and the literature review.

Further, the thematic codes were updated as new themes emerged. Initially, 21 themes emerged from the coding process. Later, the codes were grouped under three broad categories namely: external factors, internal factors, role of learning collaborative and the process of learning collaborative. These themes were derived based on meaning, interpretation and frequency of occurrence in each transcript. In addition, leftover themes were also identified – those that emerged from responses that were not common yet from the respondent perspective the information provided was relevant to the study topic. Throughout this process the PI also developed memos and comments about that data and these were used to enrich the analysis further. To assess whether they were any differentiating patterns responses between cases (sources), data was queried through matrix coding. This was done to determine pattern matching if any and to point out differences. This part of the analysis would also support whether any rival explanations exist to disprove the study logic. In addition, the analysis looked at whether certain themes emerged consistently together for example peer learning and benchmarking opportunity. In other cases I was looking for example whether a certain internal process enabler response theme emerges consistently wherever there was an external mediator theme such as staff resistance or commitment with practice coach support. The analysis process was iterative and sought to ensure correct conclusion drawing. Coded information was then exported as word and pdf documents for results presentation.

Data analysis output later presented in the results chapter were summarized in two ways: 1) as quotes from interviewees for unique perspectives that the researcher did not anticipate and for highlighting emphasis on specific issues, and, 2) as synthesis of different views, perspectives and opinions in form of narrative or description or summary statement. Finally, the analysis was enriched with the PI's interpretation of the findings and this information comes through under the discussion section of the dissertation.

3.6 Reliability and Validity

Study Validity

Throughout the study process, steps were taken to maintain and ensure construct, internal and external validity plus study reliability as is expected of qualitative research. To ensure construct validity, two people were interviewed from each practice. This helped provide different sources for the information presented. To ensure internal validity analytical technique of explanation building for data analysis was used. In addition, data triangulation from different data sources was done – from interviews, program documents and the literature review to justify use of common themes. In addition, all emerging themes including those that might run counter to my expectations prior to the study have been included in the final presentation of results. To understand respondent answers, interviews were done at the practice site and time was spent at the site either before or after the interviews to experience medical home activities in each of the case settings.

Reliability

An IRB approved research protocol was used to guide the study. This provided a framework and guidance for the conduct of the study. Further, the procedure for conducting interviews was followed at all times. All interviews were audio recorded and transcription done verbatim and each script was crosschecked to ensure no mistakes or misrepresentation of statement. Definitions were used for all codes and these were continuously compared with the operational definition of the codes to ensure consistency during coding before analysis.

Study Limitation

Findings from this study will not be generalizable for all situations and context, which is a limitation of qualitative research. However, the in-depth analysis of the results provides a comprehensive picture of how the learning collaborative has impacted those select practices as

they implemented Patient-Centered Medical Home. This should provide key lessons that can be further explored in other studies that will employ methodology that allows generalization.

Only volunteer practices were included in the study. Hence study findings are further limited due to volunteer practice respondents' self-selection bias.

Ethics and Confidentiality

Institutional Review Board approval for the study was sought in April 2014 from Office of Human Research Ethics at the University of North Carolina (UNC) and was obtained in April 2014 (Study #13-3402). Additional IRB approval was sought in May 2014 from the University of Maryland Baltimore (UMB) Institutional Review Board and was received in June 2014 (Study # HP-00059905). Throughout the study the PI adhered to all UNC and UMB investigator ethical research standards to protect confidentiality of respondents and to minimize risks to study participants. All respondents were informed of their right to consent to participate in the study and their right to withdraw at any one time. All respondents signed informed consent forms, which the PI has stored securely in a locked safe in line with IRB standards. Permission was sought and received from all respondents for their interviews to be audio recorded and any information provided that respondents provided off record was not recorded. To protect confidentiality the data transcription firm used signed a confidentiality agreement with regard to all study data they received. Further, unique codes were signed to participating practices and associated respondents and any potential identifiers were removed from the raw data before transcription and analysis. Data reported is in aggregate format and where individual quotes are presented, they refer to neutral respondents and are not in any way linked to an identifiable case/practice. All records and raw data collected for the study will be destroyed once this dissertation is approved in line with study protocol.

Conflict of Interest

The Maryland Learning Collaborative (MLC) was run out of the University of Maryland Baltimore the institution for which I work. However, I as the Principal Investigator of the study did not have any role within the MLC. While this association did not in any way affect my objectivity during the study, it is imperative that the association be disclosed.

CHAPTER IV: RESULTS

This chapter presents results from semi-structured interviews and a questionnaire administered to 9 practices engaged in the Maryland Learning Collaborative (MLC). The questions asked collectively informed findings that answered the main research question and sub-questions. The main research question was: How has the Maryland Learning Collaborative affected the process of implementing the Patient-Centered Medical Home model within primary care practices in the State of Maryland and what factors have moderated its effectiveness? The findings presented in this chapter also answer the three associated research sub-questions: 1) What have been facilitators and barriers to the Maryland Learning Collaborative's facilitation of PCMH implementation in the State? 2) What key components of the learning collaborative have been the most effective in the PCMH implementation? 3) What lessons learned from PCMH implementation experience in the State of Maryland can be applicable in promoting patient-centered care at primary care level in other settings? Results are reported as response themes.

While the research was done on 9 different practices each considered a case, the findings did not identify much differentiation between the practices and hence the findings presented are based on multiple-case analysis/findings. Where there were notable insights into how different cases perceived the issues under question, those differences are highlighted. Further, results are presented informed by the literature review earlier done thus helping to provide comparisons and contrasts. In addition, the presentation of findings considers what new information has emerged from the study that previous research hadn't unearthed. Further, the interpretation part of the analysis seeks to identify key lessons that feed into the last part of the dissertation – the Plan for Change and policy recommendations.

The conceptual model of innovation implementation and the derived study logic as earlier presented in Chapter 3 were relied upon to inform the analysis. The analysis focused on common themes emerging from the study looking at internal and external enablers and barriers to the effectiveness of the Maryland Learning Collaborative in facilitating PCMH implementation. Additionally the analysis examined whether different practices (cases) due to their unique characteristics were affected differently by the learning collaborative and how they perceived the process of PCMH implementation.

Information from interviews was collected from two employees at the participating practices that were intimately involved in the learning collaborative activities supporting PCMH implementation. One of the interviewees was a Care Manager, a position that was created as part of PCMH implementation and was very active in the MLC process and the second interviewee was an operational leader who was responsible for driving the process of change within the organization. Operational leader interviewed was either the Administrative or Physician Lead.

4.1 Description of Case/Practice Characteristics

Table 4 below presents summary characteristics about practices from which information was collected for the research.

Table 4: ***Study Practice Characteristics***

Practice	Ownership Type	Type	Geographical Classification	Number of Health Providers	Number of Employees	Patients Enrolled in PCMH 2013	Patient Visits 2013
001	Hospital Affiliated	Adult	Rural	14	30	10,000	23,000
002	Physician Group	Pediatric	Semi-urban	13	39	8500	7147
003	Physician Owned	Adult	Semi-urban	4	11	2500	4500
004	Nurse Practitioner Owned	Adult	Rural	2	8	4000	6932
005	Physician Group	Adult	Rural	8	28	3545	6352
006	Hospital Affiliated	Adult	Urban	21	40	5000	13,000
007	Physician Group	Adult	Semi-urban	135	400	12,000	120,000
008	Physician Group	Pediatric	Urban	20	50	9000	25,000
010	Physician Group	Adult	Rural	24	120	7000	15,000

Two out of the nine practices provided pediatric primary care while the rest were adult practices that provide holistic primary care services. Four of the practices were rural, two were urban located in the City of Baltimore and the rest were suburban located in smaller towns within the State. The practices ranged in size from the smallest with 2 providers to the largest with 135 providers. Three of the practices were physician group owned, two were owned by hospital groups, two were owned via a corporate holding and two were solo owned of which one was owned by a Nurse Practitioner. Practices that provided information to this research had a total of 61,545 patients enrolled in PCMH in the year 2013 and recorded 220,931 total patient visits during the same time period.

While all these practices were enrolled in PCMH only 2-3 employees were actively engaged in learning collaborative main events except one practice whose majority of its staffs were involved in most MLC held group events supporting PCMH implementation. At the time of data collection all these practices were recognized as PCMH by the National Committee of

Quality Assurance (NCQA) and were still involved in continuing PCMH activities supported by the MLC.

4.2 Cross-Case Findings

In this chapter I present results from interviews conducted with respondents from nine sites, a learning collaborative coach and the representative of the Maryland Health Care Commission- a state agency coordinating the PCMH pilot. The results are presented under three broad categories: reported role of the learning collaborative and its process, internal factors and external factors that might have affected the learning collaborative role in its facilitation of the PCMH implementation. Internal and external factors include barriers and facilitators.

In presenting the results I examine the common themes that emerged from all the cases, patterns between cases based on differential characteristics of size and practice type and congruence or non-congruence with the study conceptual framework. Each of the broad constructs that emerged from the study contains several sub-themes that were mentioned most frequently by all respondents.

Summary of Key Themes

Nine major themes emerged from the semi-structured interviews with several sub-themes relating to the perceived role of the learning collaborative in PCMH implementation and what affected this role although only eight of the themes were more prominent. The table below summarizes the findings:

Table 5*: Summary of Study Emergent Key Themes*

Classification	Key Finding
Role of MLC	1.Practices generally reported that MLC support was instrumental to implementation of PCMH in the following ways: • Developing and institutionalizing the Care management function within practices • Supporting change management within practices • Improving documentation of care processes • Supporting implementation of NCQA recognition standards • Developing Care planning systems including patient tracking, care coordination and transition • Facilitating benchmarking between practices but this was undermined by lack of performance data • Providing a medium for group motivation and inspiration
Internal Factors	2. Practices considered themselves capable of implementing the PCMH in the absence of learning collaborative support but some practices would do it with difficulty
	3. The learning collaborative did not fully engage top leadership of the practices but was effective at engaging operational leadership
	4. Staff commitment, interest and resistance to change moderated effectiveness of the learning collaborative
External Factors	5.Financial incentives provided to practices by insurance payers enhanced the role of the MLC in supporting PCMH implementation
	6. Size of practice, location and ownership did not affect how practices participated in the learning collaborative process for PCMH implementation
	7. Sustainability of PCMH was not addressed in the learning collaborative process and this remains a concern for practices
	8. Role of State and Academic center was acknowledged but not considered critical in successes or failure of learning collaborative
	9. Market forces, competition and policy had no influence on learning collaborative effectiveness

4.2.1 Key Finding 1

The Learning Collaborative was instrumental in the implementation of the PCMH

The generally expressed view about the MLC role in PCMH implementation is that it played an important technical role in PCMH implementation. This was done through provision of expertise and guidance on how to implement specific changes, adopt priority standards and improve process of documenting care processes and outcomes. Without the MLC's involvement the process would have been difficult for some practices and the results different for all the practices collectively.

Specific questions were asked to all the respondents from all the nine participating practices about the direct role the MLC played in the implementation of the PCMH. Other questions focused on the effectiveness and process the MLC followed in carrying out the facilitation role. Broadly, respondents reported that MLC support was integral to their PCMH implementation. MLC's role in PCMH implementation was appreciated to various degrees irrespective of size and type of practice. Largely this role was viewed mostly as technical support but the depth and breadth of the support varied by practice. MLC technical support focused on: i) development of care management function, ii) NCQA recognition support, iii) quality improvement guidance, iv) development and implementation of care plans and systems, and v) supporting change management within practices. Other contributions included: a) facilitating benchmarking between practices although this was not optimized due to lack of performance data to compare and, b) providing a medium for group motivation and inspiration in the transformation process. The following statement from one of the respondents summarizes the general opinion on the role of MLC in overall PCMH implementation:

> "The learning collaborative was instrumental in the whole PCMH transformation and that applies to everyone although extent of perception might differ between practices" (Administrative Lead, Physician Group).

The above statement is a reflection of how practices viewed the MLC's contribution to the ongoing transformation into PCMHs. Findings below will showcase practices' opinions and perceptions on different aspects of the support received from the MLC.

4.2.1a Development and Institutionalization of Care Management Function within Practices

Respondents stated that the care management function introduced by the MLC was a key innovation and most important contribution of the learning collaborative to the practices' transformation into PCMHs. Taliani CA et al*(73)* describe care management within PCMH as function that involves more intensely caring for high-risk patients through the establishment and monitoring of care plans, more frequent follow-up visits, regular outreach between office visits to assess health status, extensive support for disease management and self-care, tracking and coordination of specialty and other services, and linkages with community resources.

All the 18 respondents from the nine practices identified care management function development as one of the most important contributions the MLC made to the PCMH implementation. In addition a series of probing questions were asked about the care management function aimed at determining its importance and contribution to the achievement of PCMH goals and all the 18 respondents from all nine practices with no exception stated that this was not only a valuable contribution by the MLC but that it was the most important part of the PCMH innovation. Nine care managers that were also respondents for the study reported that while the role has been well appreciated generally; it took some time for provider practitioners to understand it. Nine practice leaders interviewed for the study all expressed satisfaction and support for the role and they see it as a critical component of the practice as an institution going forward. Eight of the nine practice leader respondents reported that they want to keep the care manager function long after the PCMH pilot ends despite the financial constraints some practices might face in trying to keep the position. The one respondent that was non-committal expressed serious financial concerns over how to maintain the role if PCMH

related payment is not maintained. At the time of the interviews, care managers were being paid from PCMH payments but these payments will cease once the pilot ends. Five of the nine practices stated that this function has now been made part of the established structure and the organization will continue to pay for it from its generated patient fees revenue

A practice that had earlier experience with care managers credited the MLC for designing the role appropriately. This practice leader remarked thus*:*

> "The first thing I'd say is that I would only maintain the care managers if we had control over them, because in the first PCMH project that we got involved with, which was the Blue Cross project, we had care managers but they were owned by Blue Cross Blue Shield. It was not helpful. It was a big problem actually. There were a lot of phone calls, a lot of, you know, them coming in to the practice for visits and basically stalling things. And, so, we didn't have control over them. Had the MLC followed the same approach, we would not have accepted. Fortunately, the care managers were made ours – we hired them and we supervise them and we have made them an integral part of our organization and the results have been fantastic" (Physician Leader, Hospital Affiliated Practice).

The above statement and similar sentiments expressed reflect the background to care management as part of primary care prior to PCMH implementation. The function did not exist prior to the PCMH implementation. The MLC introduced this function and defined the role it would play and provided continuing support to help get it institutionalized within the practices. The MLC provided a Practice Coach who spent significant time working with individual practices and care managers to help define the role and how it fits in with the practice structure and primary care delivery organization. Therefore, these expressed opinions align with the effort the MLC put forth to develop and institutionalize this core aspect of PCMH.

4.2.1b National Committee on Quality Assurance (NCQA) PCMH Recognition Technical Support

Generally, respondents reported that the MLC played a critical role in guiding practices through NCA recognition process and while they could have done it successfully on their own, it would have been laborious and even very difficult for some practices. This view was informed by several factors including: a) time it would take to go through NCQA recognition, b)

recognition level achieved, c) ability to put in place all care systems and process to improve patient outcomes, and d) effectiveness in measuring and reporting key performance measures.

> "NCQA is very high level, I feel like that's the only way I can explain it. They think everyone's on the computer all the time and when you ask them for support, they're like oh, just go to my website and everything's there but they have this platform and that platform and it's very high level, I think. You know, they think everyone has a master's degree and so they expect you to understand everything with little explanation! They have all the resources and they assume that you should just know where to find it. Even when you call customer service they just say something quickly and you're like what? So MLC coaches were very helpful 'cause they would make it real for us or they would say no, you have to do this first and you have to do this next - so they would make it a little bit more fifth grade level for you" (Care Manager, Hospital Affiliated Practice).

Recognition support focused on ensuring practices achieved more than 50% score in the must pass six elements earlier described. MLC support through Practice Coaches included: explaining recognition requirements to practices, guiding them through preparation of required reports, putting in place systems to track how patients are cared for, translating standards of care to adopt and documenting minimum patient care outcomes.

Two practices – one part of a larger health care system and the other a corporate owned group practice were the only two out of the nine practices in the study whose parent organizations and leaders had gone through PCMH implementation sponsored by Blue Cross Blue Shield. The Maryland Multi-Payer Program on Patient-Centered Medical Home pilot was the second time they were going through this process. For these two practices, they did not require extensive support for achieving NCQA recognition but nonetheless found the support valuable since the locations transforming were different and so were practice employees involved. They also opined that practices that have never gone through the process needed MLC support.

Respondents from the rest of the seven practices pointed out NCQA recognition support as a key contribution by the MLC to varying degrees. All the seven practices reported that they would have faced significant hurdles in the process of seeking recognition. Four practices

indicated that they found the NCQA recognition process complex and laborious and without MLC acting as an intermediary in helping them to work through the process and requirements, it would have been very difficult to achieve the PCMH recognition. Three of the practices felt they were in position to go through the recognition process on their own without the MLC involvement but with great difficulty and they were not sure they would have achieved the recognition level they eventually received.

> "I think we would have done it. But the challenge is it's a lot of work and what the learning collaborative did was clarify the process for us going as far as specifying steps to be taken. So they helped us to develop transformation plans, things you don't necessarily get from NCQA! NCQA has a lot of training and education, webinars and different things but putting it in perspective and giving us goals and having us to look at our transformation, this is where you are currently and this is where you need to be. And timelines - I think they really helped us focus and it was helpful. I think if you are doing it on your own you're going to limp along, right, and you're going to get there may be. But because we had deadlines and we had timelines and different things the MLC put it in perspective for us, it made the process easier" (Administrative Director, Physician Group Owned Practice).

Practice coaches worked along practice employees to plot a performance roadmap for adoption of NCQA mandated standards. Nutting et al*(74)* in evaluation of the initial lessons of the national demonstration on practice transformation into PCMH state that there was variation in need for assistance for different practices to support transformation process. They go on to say that even among practices that self-directed their transformation, some believed they could have benefitted from assistance even when the type of assistance was not the same for all practices. Likewise, respondents for this study often stated that the required changes and work to get their practices to transform into PCMHs required individualized interventions and were specific to each practice and while the learning collaborative helped in this process, it was still up to the practices to get to the finish line. Practice coaches helped practices develop individualized solutions to their needs. This finding is consistent with what Nutting et al*(74)* pointed out that practices were able to develop and implement PCMH components that made

sense in their context especially for those practices with strong adaptive reserve. The findings above were consistent with the MLC program description and the major focus of technical support provided. The views expressed also affirm that practice transformation into PCMHs requires significant time commitment and is a technical process.

4.2.1c Development of Care Plans and their Implementation

Implementation of patient care plans is a critical process under care management and cuts across all the six must pass elements under NCQA PCMH recognition requirements. Generally, respondents were split over how helpful the MLC was in helping practices to develop and implement patient care plans. All 9 care manager respondents pointed out that MLC practice coaches were helpful in defining systems for care coordination, patient tracking and follow up and transitioning to specialists or hospitals. This was also considered part of care management function development. The respondents further reported that the MLC helped define and develop collaborative team-based care as part of care planning.

> "The MLC helped us to think about care for our patients even before they came to the practice. We discussed our individual roles regarding the same patient. It became a common responsibility to ensure we address all care needs. To some of us this was easier because that is how we were taught in nursing schools. While others took some time to get used to this shared approach to providing care, it is increasingly becoming routine here. The challenge we still face is how to best integrate these plans in our Electronic Health Record system" (Care Manager, Solo Owned Practice).

However, the same respondents reported that the development of actual care plan documents and integration of these documents within the Electronic Health Records was largely not accomplished. Nine respondents pointed out that the structure of the care plans was never agreed and this affected outcome achievement. Care manager nine respondents considered support for the implementation of the plans that largely emphasized team based care a useful contribution by the MLC. The MLC primarily through the practice coaches and to some extent during the collaborative meetings, events and conference calls helped in defining how care

teams should work together; communicate with each other and their individual roles in taking care of the same patient or groups of patients. The support also included how to monitor and measure progress on desired outcomes.

While practices were generally aware of different roles members of the team carried out prior to PCMH implementation, there was not a conscious approach to team based care. Mitchell P et al*(75)*, define team-based care as the provision of health services to individuals, families and/or their communities by at least two health providers who work collaboratively with patients and their care givers – to the extent preferred by each patient – accomplish shared goals within and across settings to achieve coordinated, high-quality care.

The findings above also point to the complexity of full utilization of Electronic Health Records and how that affects the transformation process. The findings are consistent with general views across the different study findings that mechanics of improving care processes (the technical aspect of primary care service delivery) was an easier task for practices but the challenges remain with strengthening and institutionalizing care systems – an aspect that an external change agent such as MLC could help improve.

4.2.1d Practice Redesign and Change Management Support

PCMH implementation requires practices to go through a process of transformation that includes changing the physical lay out of practices, changes in care flow processes, re-defining roles of care delivery teams and introduction of new systems to improve efficiency and effectiveness of care delivery. Equally important, practices also go through cultural transformation. The implementation also requires a change in perceptions, attitudes and practices within the organization leading to a cultural shift and re-alignment. Respondents reported that the MLC provided guidance to practices in re-designing their care flow processes, patient scheduling and process for patient consultation. In addition, respondents credited the MLC coaches for helping them develop strategies to make the changes acceptable to staff,

overcome resistance to change, where to put emphasis and make the process of transformation easier.

> "We understand the importance for example of documenting the care we give to our clients. However the heavy workload sometimes makes it harder for some providers to do it consistently and at times some information is left out of the patient charts. Physicians citing lack of time initially resisted follow-up and patient consultation by phone. We insisted they do although not all of them met the set time deadlines. Practice coaches helped us develop a prioritization process and set reminders for physicians to make the calls. This helped increase follow-up rates " (Medical Director, Physician Group Owned Practice).

Another respondent remarked that resistance from staff and mostly providers was driven by the perception that the changes would be temporary and hence not worth investing in too much time:

> "The feeling has been that this is not the first initiative that has come with pomp only later to fizzle out. Some of our staff particularly providers viewed the changes required of us and of them as a waste of time and they did not see any immediate benefit to them as individuals" (Medical Director, Hospital Affiliated Practice).

The process of PCMH implementation required internal changes to the practices and different practices reacted differently to the change requirements. Some of the changes were physical for example to improve patient flow following care steps such as registration, screening, consultation, lab tests and checkout. Others included redefining roles of the care team and how to work together.

Other changes were about the care processes and standards. For example providers were not consistently following up patients in between appointments.

In addition, implementing new roles for staff was faced with some resistance from some employees and the MLC was at hand to offer suggestions on how to mitigate such resistance.

Seven out of the nine practices reported continuing challenges to adopting and sustaining changes required of them to meet PCMH standards and process for care delivery.

Practices continue to rely on advice and guidance they received from practice coaches to address continuing challenges.

> "Practice coaches helped us restructure team roles and this helped alleviate time demands for implementing needed changes and has lessened resistance to some of the changes. We were able to share out responsibilities more effectively and we continue to monitor challenges with follow ups and team roles and make changes as necessary" (Care Manager, Hospital Owned Practice).

The change process was impacted by two major challenges: increased workload for staff and providers, and; doubts about the effectiveness and sustainability of those changes. Practices reported different challenges they faced in the process of PCMH transformation. For example small practices valued MLC support in redesigning their practices. Larger practices did not consider this support from the MLC necessary. Broadly practices benefited from MLC support to overcome staff resistance through restructuring team roles and improving work processes to lessen the burden on staff due to increased time demands. Practice coaches helped practices to work through processes to address problems as they arose. A major impact of the MLC support in this process was to encourage practices to innovate and come up with solutions to address their unique challenges underscoring the fact that the MLC role was facilitative and not there to replace practices' own responsibility.

4.2.1e Group Meetings, Webinars and Conference Calls Enhanced the MLC Effectiveness

Generally, group events and activities provided an identity for the MLC and helped remind practices about the PCMH implementation goals. Indeed group events are characteristic of learning collaborative modus operandi.

The role of the MLC would not be well understood without looking at the process that was followed. Several questions were asked of practice interviewees about the collaborative process. Findings show that regardless of how individuals interviewed perceived the role of the learning collaborative, they agreed the process followed by the MLC affected the eventual role or its effectiveness in affecting PCMH implementation. Interviewees commented on the various

methods used by the MLC to support PCMH implementation and these included: large event meetings and specific work groups meetings, off-site conference calls and webinars, the way group meetings were managed, learning approaches promoted, location of key events and participation at those meetings. All 18 respondents answered variously that group meetings were important but opinions were split as to whether all the meetings were effective.

> "Meetings helped to remind us we were going through a transformation initiative and in a way this drew our attention back to the PCMH goals" (Medical Director, Corporate Practice Group).

Respondents from six practices thought overall group meetings were of value. However, they also believed the organization of the large collaborative meetings could have been more effective by focusing them on specific content issues.

Seven respondents stated that the workshop format led to waste of time especially time spent on meals. Twelve respondents representing all nine practices, expressed the view that these events were considered essential for learning how different practices were addressing specific PCMH implementation aspects. However the lack of in-depth performance outcome data to discuss undermined this key benefit. Eight respondents pointed out that the long distances travelled to the events might have discouraged consistent participation by some practices but that this did not have material effect. However, they also stated that the MLC might have had this in mind by shifting locations of meetings to various parts of the State to minimize possibility of specific individuals traveling long distances all the time. These views are reflective of the diverse nature of practices and how implementation of innovations in the end is grounded within the organization itself even when organizations participate in collaborative efforts.

Nine respondents expressed the view that working groups especially the Care Manager Working Group and the Electronic Health Records Group were very beneficial to the PCMH and for collaborative learning.

> "This has been very enriching – meeting other care managers that were doing certain things successfully and learning from them helped provide learning lessons" (Care Manager, Solo Owned Practice).

The smaller size of these groups allowed for intimate discussions and made it possible for individualized questions and answer sessions. The working groups further allowed members to share specifics on how they addressed problems in their own settings that other practices relate to. One respondent remarked that participation in the large events was always about 30 - 35 people although the number at the beginning was higher. Twelve respondents pointed out that physician participation overall was lower compared to other professional groups. This was more noticeable in Webinars where Care Managers webinars were well attended compared to those for physicians. One respondent offered the following possible explanation for poor physician attendance:

> "It is hard to get physicians to agree to a common time given their different work schedules" (Medical Director, Physician Group Practice).

Another respondent added:

> "There was no common understanding and agreement over how to conduct the physician webinars. At times it was always the same people talking and this could have led to others losing interest" (Medical Director, Hospital Affiliated Practice).

Another physician lead respondent summed up the view about Physician Group Meetings as follows:

> "I participated in a few of those, because they tended to be fairly specific things, and if you weren't interested in whatever there was, the calls were not beneficial. I mean there weren't that many people on them, and I don't know, just the form for it was hard to get something productive out of those. I think that they may have worked as a way to have, whoever is running a leadership just sort of get a pulse of what's going on, but when you're only having 5, or 6, or 7, maybe 10 people on the call, clearly most of the collaborative is not participating. So you're not disseminating things and these could not work as learning avenues" (Medical Director, Hospital Affiliated Practice).

In addition to the above statements, six other interviewees gave various reasons for the low attendance of physicians including inconvenient timing for the webinars and calls – which were held at 7 AM. Other reasons cited included: general lack of buy-in by the physicians, lack of clarity in identifying issues to inform the learning agenda and for some others lack of familiarity with conference calls and webinar formats for learning. This finding and opinions expressed highlight the challenges of organizing physicians to participate in a collaborative initiative.

Generally, respondents from all nine practices were of the view that while a lot was shared and learned through these events, the lack of performance data to discuss during group meetings undermined the full benefit that could have been derived from these learning events. The State did not avail performance patient and care outcome data in time to inform collaborative learning agenda. Respondents did not think there was a structured approach to learning together besides the technical assistance provided through remote and on-site coaching. By structured learning I mean a defined methodology adopted that detailed how practices would learn together collaboratively. For example respondents valued the process that allowed discussions as opposed to lectures at main events. A prior developed and agreed learning agenda would have for example addressed what effective and innovative methods to adopt for purposes of collaborative learning.

4.2.1f Benchmarking Opportunity

Benchmarking provides an opportunity for organizations to learn from each other and to adopt best practices relevant to the business. Benchmarking is an expected benefit of learning collaborative and this expectation was no different for practices in Maryland participating in the MLC. Respondents reported benefitting greatly from other practices participating in the learning collaborative. The following opinions expressed by respondents give an overview of how

benchmarking happened, how it could have been improved and how helpful it was to the implementation of the PCMH.

> "In my opinion, practices were of the view that "Let's help each other to get where we need to go," and so I do feel that those goals were achieved by the practices, and I do feel like there was a core set of practices who very much wanted to help out their fellow physicians or practitioners, and they really did. I feel like anybody in this program would reach out to anybody else, and when you go to these collaborative meetings, I do feel like it really just fostered a sense of collegiality—this supports the initial theme as well" (Care Manager, Physician Group Practice).

In addition, benchmarking offered small practices opportunities to network and at times learn from others.

> "Joining the MLC opened doors for our small practice to all of a sudden gain access to other providers and managers from other practices we could ask questions and learn from them how they had overcome specific issues — again, also supports earlier themes about improving care processes, collaborative learning, benchmarking opportunity and general role of MLC support (Administrative Director, Solo Owned Practice).

Practice respondent views pointed to a lost opportunity to optimize benefits of benchmarking by the MLC.

> "Learning from other practices especially those that had had experience with PCMH implementation was unfortunately not fully exploited by the collaborative. We are part of group of practices that had gone through PCMH implementation supported by BlueCross Blue Shield. We had gained a lot of experience and had a lot to share. We shared some experiences but we could have done more to show struggling practices how to fix their problems if we had been called upon to do so. We felt underutilized" (Medical Director, Hospital Affiliated Practice).

Another respondent added,

> "Call it benchmarking or learning from each other, it happened but was kind of adhoc. May be one practice would call another to ask about a specific issue. But to say that we came together with a clear agenda to look at say one issue and review how different practices address it – compare and contrast and learn from it, that never happened" (Care Manager, Hospital Affiliated Practice).

The above findings show extent of benchmarking that went on during the learning collaborative process. Further, nine respondents were of the view that while benchmarking did take place, the lack of performance data to share undermined the benchmarking process. The learning collaborative group events allowed for sharing of lessons and challenges, which gave practices insights into how other practices were progressing and how they were struggling. Other practices especially those with more internal resources and those that were part of groups or networks that implemented PCMH through other initiatives were able to share their experiences during collaborative meetings and this helped the process of implementation. Learning collaboratives seek to promote joint learning and provide opportunities for collaborative to improve a specific process or system. These results affirm that the MLC provided these opportunities albeit to varying degrees of success. The findings further underscore the need for learning collaborative to deliberately work to ensure optimal benchmarking happens. The findings also show that he learning collaborative could have optimized benchmarking opportunities if this had been done deliberately.

4.2.1g Group Motivation and Inspiration

Learning collaboratives provide a medium for organizations to network, advocate, reassure and support each other when going through a common change initiative. Practices in Maryland expressed similar incentives about the MLC. All 18 respondents reported that coming together during learning collaborative events provided a medium for motivation and inspiration even if one's problems were not solved in that one event or series of events. Sharing experiences about challenges to the respondents' surprise provided group motivation and inspiration to work towards the agreed goals of the PCMH

> "We never imagined that by just going to the group meetings and hearing how others were progressing with PCMH, even without finding solutions to our own problems would motivate us to keep working at it. One would walk way with this sense of – we are not the only ones having a hard time. This is one experience I will miss about the MLC" (Administrative Director, Physician Group Practice).

Fostering a spirit of collegiality is a powerful tool for reinforcing messages and reasons for change. Practices coming together periodically helped heighten and sustain PCMH implementation awareness among practices and simple statements or testimonials of success encouraged practices to stay engaged. Coming together in learning collaborative events helped practices feel encouraged and connected to others in a way that was reassuring. This finding is consistent with other experiences reported under successful learning networks. McCannon and Perla*(76)* writing about sustainable learning networks that seek to bring about large improvements, state that such networks stimulate affection. They go on to say that a strong learning network cares a lot about how constituent members perceive it; seeks to be a trusted friend and helper – the place that practitioners go for encouragement, amusement, and practical peer advice in the hard process of change. Arguably the MLC created an environment in which practices implementing the PCMH got to experience the same feeling.

Summary of Findings on Perceived Role of MLC on PCMH Implementation

Table 6 below summarizes the perception of respondents on the role of the learning collaborative in the implementation of PCMH. While the rating is in no way validated, it provides the general perception and views of respondents and practices about the role of the MLC in helping their practices implement the PCMH. These perceptions should be considered collectively and reinforce individual findings presented above in line with Key Finding One. Overall the findings about perceptions and views of practices hold that the MLC played an important role in facilitating PCMH implementation in the State. This role largely carried out through individual practice coaching and through collaborative learning helped practices achieve NCQA recognition, transform internal care processes and systems, develop and institutionalize care management and planning. In addition through its collaborative processes the MLC provided opportunities for practices to benchmark each other and to reinforce each other's commitment to PCMH implementation efforts and goals. Further, the MLC helped practices to experience the challenges and successes of implementing the changes and this experience

gave them a feeling of inspiration, motivation and affection. Practices encouraged each other through the process of hard change.

Table 6*: Summary of Findings about Role of Maryland Learning Collaborative among All Study Practices*

Support	P001	P002	P003	P004	P005	P006	P007	P008	P009
Overall role of MLC in PCMH Implementation Facilitation	+	+	++	+	+	++	++	+	+
Care management function development	++	++	++	++	++	++	++	++	++
NCQA recognition support	+	+	++	++	+	++	++	+	++
Quality Improvement and Use of data	++	++	+	+	++	+	++	+	+
Group meetings and learning sessions	+	+	+	+	+	+	+	0	0
Benchmarking and peer learning	+	+	++	+	0	++	+	0	++
Group motivation and inspiration	++	++	++	++	++	++	++	++	++

Key: ++ MLC support was critical for goal achievement outcome

0 MLC support made no difference to goal achievement outcome

\+ MLC support was important but not critical to the final achievement outcome

Internal Factors

PCMH implementation has been an innovation for many of the practices – those that participated in this study and those that did not. The process of implementation was considered intensive, time consuming and a learning experience. Semi-structured interviews revealed that internal factors played a role in enhancing or constraining the facilitative role of the learning collaborative in PCMH implementation. These findings are presented below in detail.

4.2.2 Key Finding 2

Leadership and management support enhanced learning collaborative role, but level of leadership engagement was not consistent across practices

Leadership engagement and support is crucial for organizational change initiatives and primary care practice transformation into PCMH is no different. Other studies on practice transformation and primary care practices' readiness for change by Wise CG et al*(30)*, McMullen CK et al*(77)* and Donahue KE et al *(67)* have affirmed this view previously.

There was no consensus among the practices participating in the study over how to describe the type of leadership support received for PCMH implementation activities through MLC efforts.

Questions were asked about leadership support from two perspectives: support for participation in MLC activities and support for PCMH implementation generally. Leadership in this case was considered from different levels: corporate/institutional leadership – also referred to as top leadership and operational leadership that includes administrative and physician leadership.

Responses show a breadth of perspectives and while these responses could not be classified according to differences in practice types, they provided clear pointers to differences in the way organizations supported new initiatives.

All the nine practice leaders interviewed stated that their institutional leadership was involved at the beginning of the MLC process and gave the approval to participate in PCMH but participation in activities that followed varied for different practices as summarized in the statement below:

> "Yeah, honestly I'm probably the only one involved in day-to-day PCMH activities. It's just that I have to bring everything to executive committees, talk about proposals of what I'm going to do before I get approval to do so. So, technically there are five votes needed for any decision to be made. In a major decision there would be all the partners involved, and there are 18 of us, but I've yet to come across a situation in which we didn't get approval to do something. This notwithstanding however, there is no visibility of top leadership in day-to-day support for this apart from approving key decisions. So I will say, yes we have had leadership support but with those qualifications" (Physician Leader, Corporate Group Practice).

Institutional leaders from large physician groups or hospital owned practices were largely not involved in MLC activities except for two practices out of six. Small and individual owned practices on the other hand had their leaders at all levels involved in many aspects of PCMH implementation including participation in MLC activities. There was congruence of opinion from all eighteen respondents in terms of leadership approval to engage in all PCMH activities at the beginning primarily because there was funding provided by the major health insurance payers for this to happen. Two practices recognized the role of leadership support played in getting their practices engaged in PCMH activities but beyond that the leadership was not involved.

Respondents from three practices reported that the support was occasional – meaning top leadership only got involved and gave necessary approvals when approached but was not actively or continuously involved post-granting approval. For one practice, leadership support was lacking.

> "I'll be bold. I will say regretfully, "no leadership support" was received since we started implementing PCMH" (Care Manager, Physician Group Practice).

Other interviewees gave mixed review of their leadership support that on the surface appeared supportive but was not considered effective over time. This latter view was shared across four practices including two practices whose respondents still gave high marks for leadership support and one interviewee described it thus:

> "And the thing with the leadership – oh, whenever we had an issue, we would take it to the leadership and their response was almost always, "We back you 100 percent; this is what we need to do." But then, when we left the room – apparently, they would discus again and there was never follow through. I guess this was due to the multiple levels of disagreement amongst them. In the end they would come back and say, "Okay, well, we're going to do this, and we're implementing that." And we would say, "Okay, well, when is that taking place? In the end it would never happen" (Care Manager, Hospital Affiliated Practice).

Opinions presented above were largely representative of what the plurality of respondents felt about leadership engagement in learning collaborative activities. Seven interviewees offered a deeper explanation as to why leadership support might not have been as strong in some practices compared to others. These respondents attributed the lack of deeper involvement by their leadership to their disengagement from day-to-day PCMH activities. This might have limited opportunities for involvement. However, three interviewees from smaller practices tended to express the view that their leadership support was sufficient because their leaders were involved in day-to-day PCMH related activities including participation in all learning collaborative activities, events and meetings. These responses show no single reason was cited by respondents for apparent lack of engagement of top leadership in learning collaborative activities.

As a recurring theme many interviewees stated that had the MLC specifically targeted top institutional leadership including for example organizing at least one event per year for leaders to discuss PCMH matters, that maybe the support received would have been different. One respondent put it this way:

> "Learning collaborative activities supporting PCMH are hands-on and if one is not intimately involved like our higher up leadership, it is not easy to get engaged or be motivated to engage. If the MLC had organized one or two events targeting owner and

higher leadership, may be that could have exposed them to various ways for leadership engagement" (Administrative Director, Physician Group Practice).

Engaging leadership of the practice is critical because they control resources – financial, time and logistics--for participation in learning collaborative activities and for implementing changes required for PCMH adoption. Taylor and Salem-Schatz et al *(78)* in a review of best practices in collaborative learning methods for health care improvement point out the held view of experts that engaged leadership is crucial for supporting health care home implementation. They state three components that should be focused on to ensure engaged leadership and these include: ways in which the initiative implementation is strategic to the practice, ways in which administrative leaders help facilitate successful practice teams engaged in implementation by dedicating adequate resources, and ways in which administrative leaders can be engaged in the team's progress. Wise CG et al *(79)* also point out that practice managers and leaders, if actively engaged, help create a culture of commitment to PCMH change in many ways including playing roles of thought leaders for the rest of the practice team and leading implementation. Participation of practice leadership according to the practices included in the study was mixed. For example clinicians who are generally considered leaders of health care teams and are key to implementation of quality improvement initiatives were not active in learning collaborative process - at best they provided lukewarm support and at worst they were outright resistant and were even disengaged in some practices.. The absence of top leadership support however did not diminish practice ability to implement needed changes especially for clinical improvement, however this presents concern over long-term sustainability of ongoing practice changes. Donahue KE et al*(67)* point out the importance of vision for transformation, which is a function of top leadership. The learning collaborative managed to get operational leadership appropriately engaged and this helped practices to meet initial goal of receiving PCMH status recognition, however the long-term institutionalization of this model of primary care will require involvement of senior leadership of the practices.

4.2.3 Key Finding 3

Several practices considered themselves capable of implementing PCMH, but nonetheless viewed MLC support as valuable

Capability for implementing PCMH refers to how practices viewed their ability to transform their care processes and systems to meet PCMH goals. This capability includes: internal infrastructure and resources to support transformation, technical competences to make the necessary clinical and system changes, meeting NCQA recognition goals and meeting time requirements for implementing the PCMH.

PCHM implementation in Maryland was a complex and structured process that introduced significant changes within practices while they carried on with normal business of taking care of their patients. Three out of the nine practices included in the study reported that their practices have a history of innovation and continuously seek out new ways of improving their practice and patient care. It is for this reason that they embraced PCMH implementation and enthusiastically participated in MLC activities to ensure successful implementation.

> "We consider ourselves an innovative practice and had been looking at ways of improving the way we deliver care. When the PCMH opportunity presented itself, we jumped on board" (Administrative Leader, Solo Owned Practice).

Practices that had gone through prior PCMH implementation also considered themselves capable of PCMH implementation with minimal support from the MLC.

> "I wouldn't put us in the same category as a group who started with the Maryland Multi-payer Program back in 2011 who was starting from scratch. We had gone through this for several years with Blue Cross/Blue Shield's program and had really developed a pretty clear idea about what we were going to do, and this was just an extension of that" (Physician Leader, Hospital Affiliated Practice).

Innovative practices believed in their ability to implement the PCMH with or without the PCMH but also reported that despite their internal ability and belief to do it benefitted from MLC support. These practices were welcoming of changes and considered PCMH an opportunity to

improve the way they deliver care to their patients. These practices showcased the example of Electronic Health Records, which they had successfully implemented prior to the PCMH and this enhanced their ability to report on key outcomes that NCQA and the Maryland Health Care Commission required of them. Nonetheless they still relied on the MLC Practice Coaches to learn how to use this technology better to track and report on care process indicators and patient outcomes

> "I think comprehensive care and the whole-person care concept was new to a lot of the clinical providers, as well as staff. We didn't understand it fully even though we consider ourselves an innovative practice. For example we didn't understand that care management involves every aspect of patient's health care and not just what's immediately offered in the office. So I think it was a learning experience for everybody and the learning collaborative helped to speed up for us the process of transformation. Once we understood what was expected of us, it was smooth sailing for us" (Care Manager, Physician Group Practice).

MLC assisted practices to work on improving care processes and this support was generally required across most practices. The documentation required to show changes in key care processes was a challenge at the beginning of the implementation for the practices involved in this study primarily due to heavy workload. The learning collaborative through coaches and during group meetings guided practices through these documentation requirements. Several respondents highlighted this as a major contribution of the learning collaborative. Often times, practices felt they had the capability to implement changes provided they were well explained and this is where the learning collaborative proved most useful. Even when the practices believed they had the capability to implement these changes they still relied on the learning collaborative to speed up the progress.

Respondents from practices that considered themselves innovative and considered PCMH to be aligned with their patient care goals also tended to be the ones that participated more actively in the learning collaborative activities to learn more about PCMH. Similarly, Wise CG*(79)* observe from their study about practice readiness to implement PCMH, that practices

that perceived PCMH to be of high value took a very active role in learning about the PCMH. The views, perceptions and opinions presented above further reinforce key finding #3 that practices considered MLC support valuable for implementation and speed up of care improvement processes regardless of their internal capabilities to implement PCMH. In addition, this finding shows that practices involved in the study were generally ready for the innovation or were innovation capable and this moderated effectiveness of the learning collaborative.

4.2.4 Key Finding 4

Staff commitment, interest and resistance to change moderated effectiveness of the Learning Collaborative

Practice views of staff commitment and interest means how enthusiastic employees were in engaging in MLC activities supporting PCMH implementation in addition to their normal functions. Resistance to change on the other hand means expressed lack of interest and deliberate effort or attempt to avoid participating in these activities. Practice views, perceptions and opinions were derived from a series of questions about how engaged, interested and/or resistant staff were to learning collaborative activities supporting PCMH implementation.

All nine practices' eighteen respondents stated that the responsibility for implementing PCMH in many practices lay with all staff - administrative, providers and other auxiliary health care professionals but the levels of involvement differed among staff. Staff commitment and interest enhanced the MLC's role while staff resistance to change constrained the MLC's effectiveness.

Responses from interviews show that different practices had different experiences with staff commitment and interest. Two interviewees from a small physician owned practice indicated that all their staff – providers and administrators were extremely committed to the PCMH implementation and they saw their participation in MLC activities as a critical component of that.

"We participated in all the events they had and for us it was a group participation so we always would close our office and everyone would go to the collaborative meetings. We were always the practice that had everyone there because we work as a team and we feel that whatever information is shared we all can benefit from it. So we would attend the collaborative meetings, the webinars and all training sessions. We would participate and ask coaches lots of questions. I mean they were very involved in giving us advice on the whole recognition process. So we just tried to get as much information as we could" (Administrative Lead, Physician Owned Practice).

To this practice participation by all helped put everyone on the same page even those who were not enthusiastic about the idea of PCMH implementation.

Physicians in general were not enthusiastic about MLC supported activities for PCMH implementation due to lack of interest or time demands.

"We couldn't get every provider to agree. We worked on broadening parameters that they could go by to implement needed changes. And so we learned how each provider pretty much practiced. And then, we did all we had to do to make it work for each provider. We all have to bend a little bit, and understand where each provider or patient is coming from. We did and we've adapted very well on our own and through the help of the Learning Collaborative, to look for ways of accommodating physicians, and how to help them cope with additional demands" (Care Manager, Physician Group Practice).

Clinician resistance in some practices threatened to derail the implementation of PCMH and several things were tried to secure physician buy-in. During practice coach visits the issue of physician resistance was discussed and an idea emerged to use patient outcome results of each provider to motivate change and may be secure physician buy in.

"We compared patient outcome measures for each provider and it was clear who the poor performers were. While we wanted this to motivate others to change, we realized some providers became more defensive. We now discuss aggregate results in meetings and set practice targets for overall improvement. However, I still go to individual poor performers to emphasize their need to embrace changes we are implementing collectively. It is still work in progress" (Administrative Lead, Physician Group Practice).

Four practices tried using monthly meetings to discuss how patients of each provider

performed relative to key outcome indicators emphasized by the PCMH initiative namely blood sugar A1c control, blood pressure, unnecessary emergency department visits and specific primary screening tests. The open discussion of these results made some physicians uncomfortable but in other practices it helped create an atmosphere of competitiveness. One respondent added:

> "We are trying many things and we don't know what will work in the long run" (Care Manager, Corporate Body Owned Practice).

Three practices introduced incentives such as practice team awards and group practice bonuses for improvements in patient outcomes and care processes. In some practices care managers worked with physicians to task-shift some tasks such as reminder calls to patients and patient chart reviews in order to reduce time demands on providers. These ideas often came up in discussions with practice coaches or during collaborative meetings.

At times staff challenges to implementing required changes stemmed from lack of clarity on the mechanics of getting things done. Practices attributed this challenge to the manner in which PCMH and MLC activities were initially started.

> "We have got to understand that this concept, and this program, and entering the Maryland Learning Collaborative, in particular, was all done by the administration people in the business end of the organization. So, yes they relied heavily on the Learning Collaborative to introduce to them all the guidelines, and the rules, and the qualifications they had to meet – because they weren't clinical to understand their true implications. And then, as the program kept going on, and we care managers were brought on board and we started bringing more things to light, the administrators realized they needed more – or someone with more clinical background to follow things through. The learning collaborative after realizing the practice was struggling basically said, "These are some things practices have tried." And the Practice Coach did give us some ideas and we started to slowly turn around support and involvement of providers. At this point, I'm just using motivational coaching to keep not only providers but all staff involved in what we are doing" (Medical Director, Hospital Affiliated Practice).

Practices used different approaches to getting staff to engage in the PCMH implementation. Practice coaches helped to explain basics of PCMH elements during the early

visits of the pilot. This helped address a few challenges stemming from lack of PCMH understanding. Two of the practices for example would hold internal meetings after every collaborative meeting to disseminate what they had learned and hence steps that needed to be taken to bring about changes.

Generally, several practices attempted to address challenges using different approaches depending on cause of the resistance. They also tried creating incentives to maintain interest and commitment of staff. For providers the main reason for lack of interest was heavy workload. They also cited perceived disconnect between their day-to-day work with PCMH, a genuine belief that PCMH promise won't hold up to expectation. This feeling was informed by previous attempts to reform primary care that did not work – hence to them PCMH is considered not a paradigm shift but rather a buzzword of the moment. For non-provider staff, the concern was mostly over the perception that PCMH implementation was complex due to the way the initiative was introduced. The learning collaborative through group events and practice coaches endeavored to provide more clarity, provide practical tools to guide practices and also helped explain rationale behind suggested changes. These efforts helped to alleviate staff resistance but concerns remain that will either dissipate or intensify depending on the general outcome of PCMH implementation nationally. These findings collectively reinforce the general key finding theme about the perceived role of the learning collaborative but also underscore the lingering concerns, worries and the need for a long term concerted effort to keep staff and providers motivated and engaged in critical PCMH implementation activities with or without the learning collaborative.

External Factors

Financial incentives in form of monthly payments for every patient enrolled in PCMH helped keep practices engaged in learning collaborative activities. The involvement of other practices helped with collaborative learning but that on its own did not influence how practices

engaged in learning collaborative activities. The role of the academic center in facilitating learning collaborative activities might have provided some benefit but was not considered critical to the failure or success of the learning collaborative. Policy, market forces and State involvement did not have material effect on effectiveness of the earning collaborative.

All nine practices' eighteen respondents stated that the MLC was viewed as the vehicle for facilitating the implementation of PCMH in the State and hence MLC was part and parcel of the failures and successes associated with PCMH implementation. One respondent summed up this sentiment as follows:

> "Most us were introduced to PCMH through the MLC. Many of us were not involved in the initial decisions to participate in PCMH implementation. Hence the MLC became the face of the program" (Care Manager, Physician Group).

As such several events unfolding or decisions taken externally to either support or influence how the PCMH initiative progressed was bound to affect the effectiveness of the MLC in the given role. While there is a clear distinction between the PCMH and the learning collaborative, practices viewed the two as interconnected and that the latter existed primarily for the implementation and success of the former.

4.2.5 Key Finding 5

Financial incentives critical to involvement

Payments made to practices were critical to the practices' participation in learning collaborative activities. All eighteen respondents stated that payments received from insurance multi-payers were a huge influencing factor for participation in PCMH implementation and by extension in MLC supported activities. One respondent described this influence as follows:

> "PCMH payments received were one of the reasons that we participated. I mean the incentives are great and being in family practice is challenging, right, especially when your goal is to serve the underserved and you are a practice located in the areas that have poor populations. So the payments played a big part in allowing us to do the things that we needed to do. For example, payments enabled us to have a care manager in

place. These payments made it even possible for us, to close the entire operation - all three locations, to attend learning collaborative meetings. You know, just having the interaction, having resources for our patients like to send the letters out to all these patients about their care needs - I mean it was very helpful".

"I don't see how we could have participated in PCMH activities without financial incentives" (Medical Director, Physician Group).

Another added:

"Our reimbursements have been cut several times over the last couple of years, hence one needs to look for other sources of revenue. Payments received for the PCMH project has been a tremendous help for us" (Provider Lead, Solo Owned Practice).

While practices were not paid to participate in learning collaborative, they nonetheless had a positive effect because the learning collaborative was viewed as a means to achieving the PCMH for which they were being paid.

However two interviewees from one practice stated while the funding was appreciated and recognized its contribution to the bottom line was not the critical factor in what they did.

"Well, see, we'd already been doing pretty much most of patient-centered care, because as nurses we look at prevention as a huge thing for us, and so that had been an emphasis in this practice since the beginning, and so this is just another way that we got recognition. We got the NCQA recognition, so everybody got a little bonus. We tried to kind of provide financial incentives as well, which are motivating, and the patients got engaged, too, when they saw, you know, that their A1Cs were coming down, they were getting a little more attention. It was good" (Medical Director, Corporate Owned Practice).

Similarly, another respondent while recognizing that payments were important, but were not the only reason they participated went on to say:

"When this program was introduced with a funding source, we said, naturally, "Ah, so someone has thought about how to incorporate sustainability into the transformative process," that the payment system was now at least beginning to recognize the value in that process, hence we adopted it. You know, I would have been keenly interested in that regardless. But I think that the overall leadership of the organization would say, "No, it's not economically feasible. Let's not do it" (Medical Director, Hospital Affiliated Practice).

Financial incentives provided contributed to the perception that sustainability was being considered although payments were not assured over the long term. In the short run, the payments made it easier for the leadership to support participation in the project.

The views expressed by practices about importance of financial incentives are no different from other studies about PCMH implementation. For example Wise CG et al*(79)* report that financial incentives were important although they had different motivational impact depending on how practices perceive PCMH value. To those that consider PCMH as valuable, financial incentives are necessary but not the sole reason while those less enthused practices consider the payment a cost for the extra work they have to do. Practices under this study expressed similar views about the role of payments. The continuing unresolved issue is whether these payments will be maintained past the pilot and if not what the ramifications will be. The findings above show that the financial incentive in form of PCMH per member payment had a material effect on how practices engaged in learning collaborative activities.

4.2.6 Key Finding 6

Market forces, competition and policy influence

A key finding was that competition, market forces and the policy environment did not play an important role in practices' decision to participate in learning collaborative activities but that it did not deter them nonetheless from engagement in practice transformation activities. Nine interviewees indicated that it was not lost to them that health care changes were happening and the PCMH may be one of the future aspects of reform and hence they may as well make an effort to change or change will be forced on them in the end.

Competition did not substantially influence practice participation in learning collaborative activities but at the same time it did not discourage participation.

One respondent summed it this way:

> "Competition did not matter so much. Because one, it didn't really matter; I know

where I wanted this to go. I had our vision – our goals. I really wanted to be – I mean, the practice nearby was in it, but they're more of an urgent care center. The other office involved is more of an adult practice. As far as pediatric groups go, there's not a lot of that kind of competition from medical homes in our area. But it was more – just, our ultimate goals were – we needed to improve how we provide care to our patients. To us that was the most important thing" (Administrative Lead, Physician Practice).

Another added:

"We were motivated to be there and so it didn't matter what other practices did. We didn't see the other practices as competition. They didn't really affect us I think. We wanted to be there, our goal was to attend and participate as a group and we did what we could. We tried to, you know at one of the collaborative's meetings, I think the one in Annapolis - we all had dressed alike in our practice T-shirts and then the next collaborative meeting we saw people in shirts for their practices too so we thought that was nice" (Administrative Lead, Physician Owned Practice).

Several respondents who did not feel that their participation in learning collaborative activities was in any way as a result of other practice participation or competition pressures shared similar views. If anything practices were more intrigued about the concept of PCMH than policy or market influences.

The findings above also show that to some extent competition might have subtly influenced them and how they participated in learning collaborative activities. Practices indeed might have paid attention to what other practices were doing – after all that is the reasons for establishing learning collaboratives – creating an environment for participating organizations to interact, learn together and learn from each other. While respondents did not characterize decisions taken by practices as being competitor driven, they severally pointed out that hearing how other practices were implementing aspects of PCMH and successes registered in improving care processes and outcomes, gave them motivation to stay the course. Five practices reported that they spent sometime after every collaborative event to talk about how other practices were doing. Many practices were in part driven by fear of failure. They did not want to be viewed as the "failing practice". These findings in fact support the earlier findings

about the overall role of the MLC and how it promoted benchmarking between practices, provided a medium for collaborative learning and had an inspirational and motivational effect on practices that they were in this together!

In addition, policy influence was not a major factor in practice engagement in learning collaborative activities but it was not lost to the practices what changes were going on in the policy environment.

> "I think it was evident at some of the learning collaborative meetings that there were different views on the role of ACA (Affordable Care Act of 2010) and even the folks in our practice that were not so happy with this whole process of PCMH implementation, I can say it because they weren't happy with the whole ACA piece. So they thought they equated the PCMH thing to President Obama's project – so they made the connection and as a result were just resistant in general because of that. We however didn't really see an impact as it relates to the collaborative process although through the collaborative meetings and other information we received a lot of information about the ACA. They had resources there to explain how it would work, and as I said, at that meeting where they talked about the Medicaid expansion plans and just how we're going to move forward with those plans and how patients would be in different categories based on the ACA. I think it opened eyes for other practices that didn't operate a certain way. But it didn't affect us in any way" (Provider Lead, Solo Practice).

All nine practice respondents interviewed for the study generally stated their level of engagement in MLC activities was not influenced by policy, but at the same time they stated that it was not lost to them that the State was pushing for the changes. Four respondents indicated that they were aware that PCMH implementation was done within the broader context under the Patient Protection and Affordable Care Act of 2010 (aka Obamacare - ACA) but that during the process of implementation this did not feature prominently as if there was a deliberate attempt to underemphasize it. Nonetheless sufficient information was provided through learning collaborative events on some aspects of the ACA. Information shared during collaborative meetings on policy elements was received positively especially by those practices that do not have the resources to engage in policy discussions. In hindsight some practices

might miss out on this benefit provided by the MLC – dissemination opportunities for policy relevant information.

4.2.7 Key Finding 7

Role of state and academic center involvement

Practices did not consider the State's involvement a moderating factor in the effectiveness of the learning collaborative.

> "We were aware that the State was behind the MLC and PCMH implementation and State officials attended and spoke at MLC meetings. That's as far as it went" (Administrative Lead, Physician Group Practice).

The State did not play an active role in practice transformation activities since this role had been assigned to the MLC. The views about the State's role were also in part influenced by its failure to share performance data to support collaborative learning and benchmarking as earlier highlighted. In addition, it was never the State's intention to play a facilitative role beyond supporting the MLC and the general PCMH pilot.

Relatedly, opinion was divided over the impact of the academic center as the facilitator of the leaning collaborative. One respondent whose opinion was shared by several others who thought this had an impact, summed it up as follows:

> "So I do think that academic centers enhanced the process of implementation – there was a wide variety of experiences, and for example, the Hopkins people would see things differently than the Maryland people, and I do think the lead facilitator brought a lot of energy and ideas into the program that, if she had not personally been part of it, these ideas would not have been offered. In addition Hopkins participants brought a lot of ideas into the process about institutionalizing the role of care management and I don't think we would have necessarily learnt this much, without this particular combination of people. You know, the only disadvantage, I think, is geographically this was run out of Baltimore – if we could've had satellite centers throughout the State it could have enhanced the process of learning, but I understand, you can't really do that with the way we're set up now 'cause everything's kind of central to Baltimore. And people would travel long distances to collaborative events and in between the events, apart from teleconferences and webinars; it was not possible to interact regularly with the facilitators from the two academic centers" (Care Manager, Physician Group Practice).

Another added that:

> "Well, I guess it would always be a positive thing to say you're collaborating with a prestigious institution like the University of Maryland. I mean University of Maryland and Hopkins are really coming down further into this territory – taking over hospitals and practices. So, yes if we say we're participating with them, I can only see that as beneficial. I don't know if that's why our practice chose to sign up with the program. I can't attest to that, but I can certainly say that – since we are affiliated with the universities through this program – that yes, it's a positive thing" (Administrative Lead, Physician Owned Practice).

On the other hand some practices did not view the role of the academic center in a positive light.

> "I don't know that it would have made a difference whether the learning collaborative was university-based or not. Maybe in the fact that they were used to working with large groups of other practices, for other things; they kind of were already doing communities of practice meetings, continuing education events, and worked with other practices, and were already working with people and other doctors' offices about care transitions and that sort of thing – ahead of time. So that may have given them an edge in running the collaborative" (Medical Director, Hospital Affiliated Practice).

Another interviewee commented as follows:

> "I'll tell you the truth, that I don't think it was immediately apparent to anyone that it was run out of an academic center, you know, other than the fact that the Lead Coordinator was, and is, at University of Maryland Family Practice Program. It felt more like – to me, anyway – that she took a leadership role, but it wasn't the university's leadership role; it was just she happened to be a leader and, by association, she's with the university. But the university part didn't hit you square in the eyes" (Administrative Lead, Physician Group Practice).

About half of the respondents thought the involvement of academic centers brought new knowledge and influenced practice. The other half differed and thought it did not matter. The involvement of the academic centers was a natural progression. Initially there was a an advisory panel on primary care in the State which later dwindled down before the PCMH pilot and in the end the remaining members happened to be from the two academic institutions and this is how

they morphed into the MLC. I learnt this from speaking with the Maryland Health Care Commission – the state agency coordinating PCMH pilot in the State.

Practices that viewed positively the role of academic centers in running the learning collaborative mentioned access to rich information, perceived lack of bias and genuine desire to improve health outcomes in the State in addition to furthering the role of primary care as reasons why the academic centers were beneficial to the implementation process. To the the involvement of academic centers brought new knowledge and influenced primary care practice transformation. The other half who differed and did not think it mattered also held the view that academic centers push a more selfish agenda. It was not obvious to these practices what the academic institutions contributed that could not come from any other facilitating entity. It was severally mentioned that the two institutions involved Johns Hopkins and University of Maryland were expanding their health care systems network into all parts of the State and this could have been the underlying negative sentiment. However, both groups (those who thought academic center was a good thing and those who didn't) singled out the important role played by the MLC Leader as an individual and not because of the institution he or she came from. The above finding reinforces the importance of an external facilitator in enhancing practice transformation process but at the same time, the findings do not support whether there is a special advantage to that external facilitator being an academic institution or any other type of organization and at the same time findings also did not obviate academic center involvement as an external facilitator of the learning collaborative. This is something that future research could investigate further given split of opinions.

4.3 Other Findings

There were other findings besides external and internal factors that are related to the role and effectiveness of the learning collaborative.

4.3.1 Planning for Sustainability of PCMH

Practices remain worried that some of the transformation activities supported during the pilot by the MLC might not be sustainable. While there was no expectation that the learning collaborative would stay in perpetuity, the continuing requirement for sustaining NCQA recognition remains a point of concern for some practices. They worry that maintaining NCQA recognition might not be achievable without some form of external support.

Respondents opined that while they did not expect the MLC to stay forever, that its end might affect sustainability of PCMH as a whole. One respondent summed up these concerns as follows:

> "Fears from some practices on how to sustain started transformation activities are expected. However, with time for those practices that owned their own transformation agenda, moving forward will be a lot easier. However, there are some practices that might start to give up on some aspects of PCMH" (Care Manager, Physician Group Practice).

Seven practice respondents explained that in many ways the MLC was the embodiment and face of PCMH implementation and its end without clear guidance on what happens next might have negative implications. The continuing requirements for maintaining PCMH recognition level in some cases was one of the reasons stated for why the learning collaborative was still required. One provider respondent raised concern that the end of the MLC will take away an advocacy platform that could help galvanize practices to address key issues affecting them such as maintaining PCMH payments practices need to sustain this model of primary care. Several respondents agreed with this view and 4 out of the 9 practices were concerned about how to sustain the care management function. Six other respondents were worried that the process of change hadn't transformed into a culture for their organizations and the learning collaborative coaches were instrumental in helping individual practices to find solutions for overcoming resistance to change especially from physicians. The MLC did not discuss the future of PCMH and practices did not feel that these lingering issues about sustainability were

adequately addressed. While these concerns remain and might be real, there is an expectation that over time practices will learn to move on without the external support. For now the MLC has been center stage of during the PCMH implementation pilot but when the learning collaborative ends practices will chart a new path in a bid to continue previously MLC supported activities.

4.3.2 Practice Size and Location

Cross-case analysis of findings did not show major differences between practices in the way they engaged in the learning collaborative. Small and large practices experienced resistance from physicians and also reported enthusiastic support from some staff. Respondents equally reported increased workload as a concern. Across board Practice Coaches were considered valuable. Practices large and small thought the learning collaborative played an important and valuable role in helping them implement the PCMH.

> "I am sure each practice found something useful in the support provided by the learning collaborative" (Medical Director, Hospital Affiliated Practice).

Practices big and small sought MLC support depending on their needs and not because of their size or location. For example all types of practices sought MLC practice coach support to address challenges caused at times by staff resistance or physician disinterest. The findings did not show differences in the type of support sought and received. There might have been differences in the depth of the support but findings did not show these to be major.

Practices were asked whether they thought size and type of practice were factors in influencing level and extent of participation in learning collaborative activities. Broadly, respondents stated that they did not think it mattered that much. Three practice respondents thought while this was not a major influencing factor it might have played a less-than significant role. These respondents opined that decision-making processes affecting participation in learning collaborative supported activities might have differed in some instances. Small practices reported that it was easier for them to get decisions made about learning collaborative

activities supporting PCMH implementation but they also reported that their leaders were intimately involved with the process and hence had all the information needed to make a decision.

> "At collaborative meetings participants from small practices often stated it was easier for them to get things done. While a practice like ours is large and we did not necessarily face major delays in seeking decisions and approvals to get things done or help with overcoming staff reluctance to fulfill their PCMH roles, we at times had to go through hoops to get decisions made" (Administrative Leader, Corporate Owned Practice).

The differences practices mentioned included getting staff assigned new roles in places where interest in PCMH was lackluster. Others included allowing more staff to attend collaborative events and meetings. For example a small practice could close a practice and send all staff to go attend a collaborative meeting while larger practices would send 1 or 2 people only because managing schedules at large practices is more complex. These findings however were more selective and isolated and not common to materially alter the key finding that there were no major differences in the way practices engaged in the learning collaborative. There were large practices whose leaders were supportive and there were others whose leaders were not and this also applied to small practices. Location of the practice did not matter much. One practice in a rural setting stated that being in a rural setting means they have to work ahead to connect with resources for their patients in order to meet PCMH goals but that they did not see location as a disadvantage. Driving long distances to collaborative events was mentioned but not so much as a barrier to participation and the MLC tried to address this concern through rotation of meetings to different locations within the State. While pediatric practices, mentioned that at times they felt group meetings did not take their needs into consideration, they did not consider this a major deterrent to their support or participation in the learning collaborative.

CHAPTER V: DISCUSSION

In the previous chapter I presented key findings from the descriptive analysis of the cases (practices) and semi-structured interviews conducted for the study. In this chapter I will discuss these findings from the context of published literature related to using learning collaboratives to improve health care delivery, implementing innovations in health care delivery and other studies that reviewed PCMH implementation. Throughout the discussion I will also offer my views on issues that emerged as major themes out of this study. In addition I will state study limitations.

This study sought to address one primary question and attendant three sub-questions, namely:

1. How has the Maryland Learning Collaborative (MLC) affected the process of implementing the Patient-Centered Medical Home (PCMH) model within primary care practices in the State of Maryland and what factors have moderated its effectiveness? (1) What have been facilitators and barriers to the MLC's facilitation of the PCMH implementation in the State? (2) What key components of the learning collaborative process have been the most effective in the PCMH implementation? (3) What lessons learned from the PCMH implementation experience in the State of Maryland can be applicable in promoting patient-centered care at primary care level in other settings?

The study had two dimensions: one was understanding the role of the change agency – in this case the learning collaborative in the process of innovation implementation, and; the second dimension looked at internal and external contexts of the organizations and how that moderated the effectiveness of the change agent. The interorganizational learning and collaboration was as

much influenced by cultural and political contexts in which these organizations operate as well as intraorganizational factors including structural and practice factors.

While discussing the findings presented in Chapter 4, I will reference the conceptual framework earlier presented. This study was guided by the theoretical conceptual model for determinants of diffusion of innovations in the organization and delivery of health services found in Greenhalgh et al, 2005*(80)* particularly focusing on the implementation aspect of the model and how that is influenced by a change agency. In addition, the MLC generally adapted the Institute for Health Improvement's Breakthrough Series approach to implement PCMH using learning collaborative methods and hence the discussion pays attention to that.

Overall there were no clear contrasts between different practices by size, ownership structure and geographical location. However, practices that had gone through PCMH implementation in the past considered the role of the learning collaborative to have been a coordination one or platform through which practices could interact and to some extent learn from each other. Further, these practices considered the interaction involving all practices to have been largely been more motivational. Nonetheless, these practices reported that they too benefitted from the learning collaborative. Practices that had not gone through the PCMH implementation credited the technical support role of the learning collaborative and considered that support to have been instrumental in PCMH implementation. All practices considered financial payments from insurers critical for PCMH implementation and participation in learning collaborative activities.

Overall, practices valued the role of MLC in the implementation of the PCMH with variations in terms of its criticality to the innovation implementation. This study was not designed to determine the comparative advantage of the MLC in the implementation of the PCMH but rather was designed to provide in-depth understanding of its role, how that role was executed, and whether the recipient organizations understood and appreciated that role. The discussion hence is limited to how the MLC affected the process of PCMH implementation and references to its

effectiveness as change agent or strategy is limited to that specific context – did the MLC in any way affect the process? Without a comparator it would be a stretch to try and create an association between the process and outcome. Second the discussion is presented within the context of a determined outcome, which in this case was a practice receiving NCQA PCMH recognition. All 9 practices at the time of the study had already received NCQA recognition as designated PCMH.

Broadly the role of the MLC was recognized as: 1) a source of technical support, and 2) a moderator in the change process. Practices saw the learning collaborative as a resource for a variety of issues involved in the implementation of the PCMH:

a) **Technical Support Role**: The MLC's technical support role to practices was in line with the approach taken by other learning collaboratives that follow the IHI's Breakthrough Series model. For the smaller practices this role was appreciated more for guiding practices to navigate the NCQA recognition process. NCQA PCMH recognition is the most widely used method to transform primary care practices into medical homes and was the one chosen by the Maryland Program for Patient-Centered Medical Home (MMPP). The NCQA process required practices to meet 6 standards that made up 28 elements, which were allocated a total of 152 factors. However to achieve recognition status a practice must pass six most important elements that contributed 29 points to the 100 possible points in total. These were: access during office hours, use data for population management, care management, support self-care process, referral tracking and follow-up and implement Continuous Quality Improvement (CQI). While the MLC supported practices to implement all the 6 standards, the MLC was credited for particularly enhancing the practices' ability to implement the following: Standard 3 – Plan and Manage Care, and Standard 6 – Measure and Improve Performance. This is understandable given that the way care is planned and managed is central to primary care delivery and hence any changes made in that dimension will likely result into desirable systemic changes. Standard 6 about performance measurement and improvement provides a method of validation for

changes made and the direction of those changes. These two standards tested the ability of practices to change and required significant effort on their part in order to meet PCMH recognition requirements. This certainly influenced the perception that the MLC role was mostly about the technical support provided to individual practices to implement care management and in putting in place documentation to demonstrate performance including guiding practices through specific CQI initiatives. Apart from two practices – part of groups that had gone through PCMH processes before, there were no contrasts between all the other practices in appreciating the valuable role MLC played in enhancing their ability to work through requirements for NCQA recognition.

The study found the majority of practices understood the role of the learning collaborative as the facilitator of the PCMH implementation process. In line with the conceptual framework of the study, the MLC played the role of the change agent. However, it was not clear from the respondents whether the achievement of the PCMH recognition status should be used as a yardstick to measure the effectiveness of the collaborative. Arguably many practices would have struggled to achieve PCMH recognition on their own without the support of the MLC. To some respondents, the lack of structured approach to process improvement and learning, in some instances might have given the perception that the collaborative was an optional strategy. The MLC in its program documents states the collaborative adopted the IHI Breakthrough model in the collaborative learning process, but not all aspects of this model were followed. For example there was no clear evidence as to how interorganizational benchmarking was done*(80)*.

b) **Moderating Change within Practices**: From practice redesign to introduction of the care management function and promoting team based care, the MLC was integral to the changes taking place within the practices for effective implementation of PCMH. Respondents singled out Practice Coaches as having played a crucial role in getting practices to overcome some key challenges. Most of the support provided to spur change was however more advisory.

Respondents across board did not give the impression that there was a clear change model adopted by the MLC to drive transformation. While PCMH standards defined what was to be achieved, a change agency like the MLC should have adopted a framework for change management adaptable to each organization's internal environment but findings did not reveal whether this happened. Like other collaboratives this may not be a critical requirement. What matters is how the changes being implemented are undertaken or communicated*(77)*. In this regard practice coaches walked practice teams through specific steps required to bring about needed changes and often challenged practices to innovate within their circumstances in order to get things done. Indeed respondents mentioned the numerous times they went through trials trying to get changes implemented successfully and even went as far as consulting other practices outside the collaborative that had implemented PCMH or other initiatives that impacted it. Severally mentioned was implementation of Electronic Health Records. At times they went outside the network to find help. The fact that practices figured out ways to solving their problems as a result of support provided by the MLC is a good thing. This could be considered a form of peripheral learning that characterizes successful learning networks*(76)*.

c) **Improving Care Processes and Patient Outcomes**: The ultimate goal of the collaborative was to help practices adopt patient-centeredness and improve care outcomes if the objectives of PCMH implementation were to be met. Effective learning collaboratives or networks regularly use data to monitor progress and determine sustainability of improvements made. Taylor J et al*(78)* observe that experts in the field of health care home implementation and learning collaboratives mentioned routine use of data to evaluate performance. In the case of MLC, care outcome data was not used during group meeting because it always came in late from the State but individual practices used their own data to track performance improvements. In addition, practice coaches discussed data with individual practices as part of technical assistance/coaching support. The late analysis and feedback of data by the MHCC was mentioned adversely as having negated benefits of benchmarking and sharing of lessons during

group events. The Commonwealth Fund*(81)* posits that using data to communicate specific messages could be an important tool to build will for change. In such a situation data must be tailored based on what executives or front-line staff value. Through the interviews it did not come out clearly as to how practices used data to target leadership or other staff that were not actively engaged in PCMH related change initiatives apart from using patient outcomes data to compare performance of different providers in a bid to encourage participation driven by peer review. PCMH implementation is not a physician-only concern but rather the practice and hence data sharing and information use should be broadened to the practice team including non-clinical members of staff.

Financial Incentives: While the study sought to understand how different external factors such as market forces, policy influence and academic center involvement in the process moderated impact of the learning collaborative, these factors did not seem to have had a major difference in the implementation of PCMH and in the facilitative role of the MLC. However, financial incentives made a difference.

Payments made to practices proved critical and encouraged enthusiastic engagement in the learning collaborative's activities supporting PCMH implementation. Even though participation in MLC activities was not mandatory respondents stated that they viewed MLC active engagement as crucial for their own successes in meeting PCMH payments. Several respondents stated that they doubt their leadership would have supported PCMH implementation and/or participation in the learning collaborative activities without some form of payment for additional work. The payments helped with hiring and paying for care managers and enhancements to IT systems. This finding is consistent with practices in Michigan that went through PCMH implementation. Wise CG et al*(79)* report that the Michigan practices considered the payments a necessary step to getting started on PCMH but did not explain the whole rationale for participation. Indeed even for the practices under this study, several reported desire for change, keen interest in improving patient care, realization that current practices were not

sustainable were additional motivations for engaging in activities supporting implementation of PCMH.

Structured Learning Approach: While the learning collaborative's role in provision of technical support for PCMH implementation was widely accepted the process was faulted for not being structured enough as far as promoting collaborative learning which is a key characteristic of learning collaboratives. Yuan CT et al (2010) *(82)* make a case for practical implementation tools such as how-to-guides, toolkits, newsletters and success stories to promote the learning agenda. While tools and guidelines were provided in many instances, it wasn't done through a structured process. In addition, data was not routinely used to promote adoption of best practices as part of the benchmarking process. This argument is reinforced by the fact that the learning collaborative in its critical role of facilitating PCMH implementation was not included in planned formative evaluation of the PCMH initiative! This shortcoming might have compromised the full effectiveness of learning possibilities. Yuan CT et al (2010) *(82)* in the review of literature on best practices dissemination identify a key strategy for successful spread - incorporating monitoring and evaluation strategies of milestones and goals. This helps keep participants motivated.

At the beginning of this dissertation I adopted a learning collaborative definition advanced by Greenhalgh T et al*(80)* [page 163 of the book], which is, " an initiative that brings together groups of practitioners from different healthcare organizations to work in a structured way to improve one aspect of quality of their service". The MLC was structured and had clearly stated goals and methods of work. Respondents agreed with this characterization but also stated that most of the MLC focus was on practice transformation and less on personal development of individuals involved in the PCMH implementation especially providers/physicians. In addition, respondents were of the view that the learning agenda wasn't clear. They knew that the ultimate aim of MLC was to help them meet NCQA recognition and to do that they needed to improve specific care processes and outcomes of medically complex

patients but that this was not primarily done through a learning agenda. Further, respondents stated that they did not go through a specific process for learning, there was no specific curriculum to follow and peer-to-peer learning kind of happened without much facilitation from the MLC save for the group meetings supported by the MLC. This may have partly impacted the low participation of physicians in learning collaborative activities. Nutting PA et al*(74)* recommend that those organizations promoting PCMH should see themselves beyond the advocacy role for a new reimbursement structure but should also embrace a need to promote new approaches to doctoring, managing practices and transformation. They go on to say that this requires among other things new learning tools and personal development formats to help physicians transform within themselves and their relationships with patients, practice partners, health care systems and communities. From the interviews, this did not come through as something the MLC put much emphasis on apart from care management function development.

Engaged Leadership Support: Leadership is key to bringing about needed changes in any organization. Operational leadership support was evident in all practices that participated in this study but higher level leadership disengaged and the learning collaborative did not make engaging top level leadership a priority. The disengagement of top leadership rendered the process mostly a technical undertaking. McMullen CK et al*(83)* in the study exploring how learning collaboratives cultivated engaged leadership in implementation of PCMH point out that it is the involvement of leaders who designed the vision for change that helped permeate the collaborative effort pursued in the Primary Care Renewal (PCR) initiative among Oregon Safety Net Clinics. This element of practice leaders articulating a vision and mobilizing internal and external resources to get the vision implemented was not evident in the MLC's facilitated process. This point is further articulated by McCannon and Perla*(76)* in their position paper based on the Institute for Healthcare Improvement (IHI)'s 5 Million Lives Campaign to reduce 5 million instances of medical harm among U.S hospitals in which they make a case that successful learning networks engage leaders. This is premised on the fact that engaged and

attentive leadership set the agenda for addressing problems, study progress, allocate resources and celebrate success. Most importantly such leaders unleash significant energy and without their support others may not enthusiastically join the network. Greenhalgh T et al*(80)* in the systematic literature review about diffusions of innovations in health care state that learning collaboratives that have brought about successful and significant changes were those that involved strong leadership, effective processes and appropriate choice of intervention. In many respects the MLC got involved in appropriate intervention that all the practices had already signed onto – that is PCMH implementation but fell short of engaging all levels of leadership.

McCullen CK et al (2013) *(77)* emphasize the important role engaged leadership played in the primary care renewal among Oregon Safety Net Clinics – especially in providing inspiration and modeling the different types of leadership required to sustain change initiatives. A recurring theme in this study coming from all respondents was that institutional leadership for the most part got involved in making the initial decision to join the PCMH initiative but had no ongoing role. Two institutional leaders who stayed engaged had an interest in PCMH as a concept and one could argue this influenced their participation in the learning collaborative. Taylor J et al*(78)* state that experts in the field of PCMH practice transformation using learning collaborative strategy agree to the essential need for developing and supporting leadership at all levels – systems, clinic administration and clinician leadership. Engaged leadership helps provide material and other support however minimal and most importantly may catalyze change. Wise CG et al*(79)* report that in a study about readiness for change in primary care practices to implement PCMH, respondents highlighted benefits of leadership in both the organization and the practice. They also report that physician champions were instrumental as thought leaders who could advocate the values of PCMH to the rest of the team. This finding is consistent with findings of this study and in those practices that reported engaged leadership and physician champions, they also stated that this made it easy to mobilize all staff and physician providers to support the transformative agenda. Where engaged leadership lacked, the staff driving the

PCMH agenda felt isolated and often struggled to get other members of the practice team to support PCMH activities.

Sustainability of PCMH Implementation Support: Majority of respondents expressed concerns over long-term sustainability of PCMH initiative. In addition, while they acknowledged that 3-years of support received from the MLC to support implementation might be viewed as sufficient, they still argued for some form of collaborative structure for a bit longer to ensure that changes made have been institutionalized. The argument was based on the notion that primary care has been neglected for long in the country and hence changes in the way care is delivered require sufficient time and new resources to institutionalize and bring about long-term behavior and attitude change among providers and health care leaders. While expectations for supporting practices to implement PCMH over the long term are unrealistic, it is important to acknowledge that the sustainability strategy was not adequately explained at the start of the initiative. In many ways the MLC especially through organized group events and practice coaches were the main mechanisms through which PCMH implementation issues could be addressed and once the collaborative ends, they worry there won't be an effective medium through which to articulate issues affecting PCMH implementation. Some respondents expressed their concerns over how to sustain care managers especially in those practices where the leadership was disengaged from the PCMH implementation process in the absence of MLC providing a lobby platform for practices to advocate for continuation of PCMH payments beyond the pilot phase. However, practices also understand that a long-term learning collaborative might not sustainable and hence they will have to devise other ways of continuing and sustaining transformation changes initiated with MLC support.

Innovation Ability: Despite the across-board appreciation of the MLC's role in facilitating the PCMH implementation, practices felt capable of implementing the PCMH albeit some with significant difficulties and over longer time period. However practices appreciated MLC's support as it helped lessen time demands and steep learning curves. While other studies

reported that practice capabilities were moderated among others by health information technology infrastructure available to support PCMH implementation*(30)*, it was not the case in the Maryland pilot as all practices had acquired electronic health records systems prior to engaging in PCMH pilot. This factor can be argued enhanced practices' belief in their internal capability to implement the PCMH with or without learning collaborative support.

Practice Size, Type and Location: Practices recognized differences in size and geographical location and even ownership structures and while these differences provided advantage in some instances and in other instances generated additional work for others, overall respondents did not consider them to have had material effect on the PCMH implementation. In some instances some practices showed more enthusiasm than others and in particular smaller practices made relevant decisions faster than larger ones, but these situations did not affect the pace or the outcome of learning collaborative activities.

Study Limitations

General limitation of this study lies in its design. Qualitative study findings are not generalizable. The study was limited to practices that volunteered and hence the findings are not generalizable to all practices including even all those studies that participated in PCMH implementation in the State. For example, it may be that practices with a more positive MLC experience were more willing to participate in the interview than others a possibility that was not established. However, practices included in the study included all categories in the broader pool of 52 practices participating in the Maryland Multi Payer Program on PCMH and hence this improves external validity of the study. The study included both hospital and non-hospital affiliated practices. The study sought to address how a specific strategy affected the process of implementing PCMH and did not hence address all aspects of practice transformation. The study considered NCQA recognition to mean PCMH implementation success but this is not

necessarily true as the outcomes of the transformation are still work in progress. In addition, initial NCQA recognition does not mean long-term sustainability of PCMH requirements.

CHAPTER VI: POLICY AND PRACTICE RECOMMENDATIONS AND PLAN FOR CHANGE

6.1 Policy and Practice Recommendations

PCMH implementation projects across the country are ongoing and several of these initiatives are using or have employed learning collaborative strategy to implement required changes within practices. Several studies have evaluated outcomes of PCMH implementation but even fewer studies have looked at the process of PCMH implementation and the different approaches followed to reach the same goal. PCMH implementation is a change directed undertaking that disrupts how individuals and teams work together within practices, interactions with patients and their families, use of technology and data to drive care decisions and embraces concept of collaborative care. These changes are fundamental and can be overwhelming. In many of the pilot and demonstration projects PCMH implementation has been externally conceived although implementation has been an internal process to each practice involved. The close linkage between reimbursement changes and PCMH implementation presents unique opportunities but could also spell problems down the road if the reimbursements do not hold up to practice expectations.

Practices in the State of Maryland involved in PCMH implementation have fully embraced the role of care management and many consider it critical for driving desired PCMH outcomes. Nonetheless many practices still question their ability to sustain this function using patient care revenues without significant changes in the way primary care is paid for. Hence payers of healthcare should consider factoring this into reimbursement formula used to pay for primary care.

This study further reinforces the need for supporting transformations within practices because PCMH requires significant cultural and organizational changes. The most difficult aspect to change is the mindsets of key actors in the process of adopting patient-centeredness. The learning collaborative in this case was not able to involve a significant number of physician providers and they remain skeptical to the success of PCMH model. For PCMH to be sustained efforts for effective engagement of physician providers should continue and the role of physician champions should be enhanced.

Further, failure to ensure engaged leadership of administrative, corporate and physician leaders threatens the long-term viability of PCMH implementation. While staff commitment is crucial, it may not be sufficient to guarantee long-term changes that are only possible if backed by organizational and physician leadership. In future learning collaboratives should explore and make concerted effort to involve corporate and system leaders in collaborative activities.

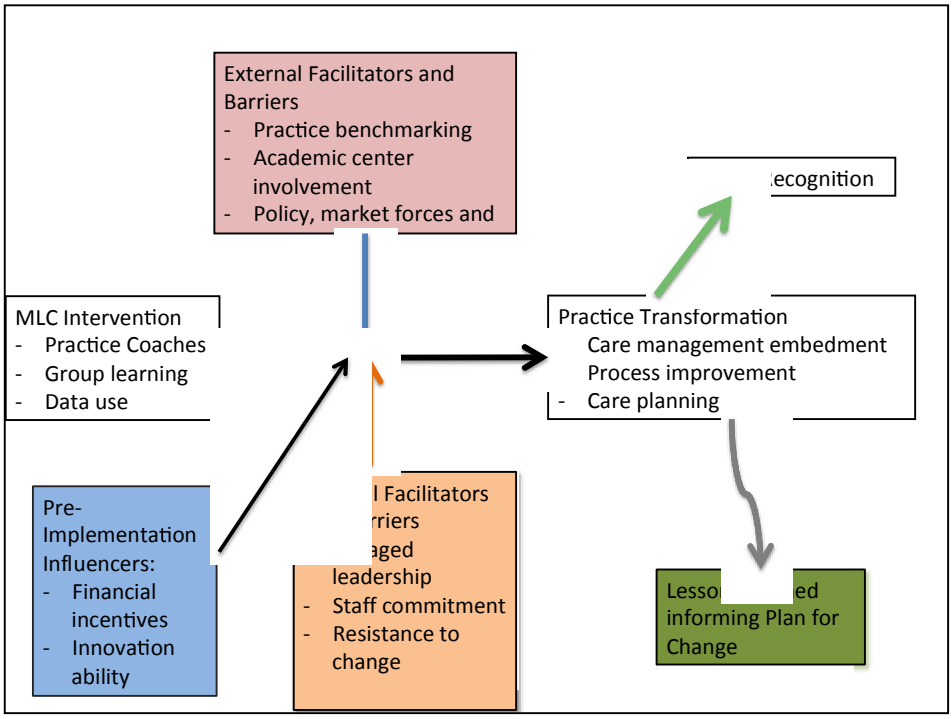
This study like others that have looked at the role of incentives in implementation of PCMH further reinforces the fact that financial incentives are important for kick-starting an innovation in this case PCMH implementation but they are not enough to sustain it. The practices that were more enthusiastic about PCMH implementation also seemed to be those that considered themselves innovation oriented, believed in patient-centeredness and were attuned to the changing policy context and hence understood that current primary care practice as usual would not be enough in the not too distant future. Hence future initiatives should consider ways of using financial incentives to bring about needed cultural and system changes early in the process in order to sustain the innovation.

The goals of the learning collaborative (MLC) extend beyond the pilot given the long-term nature of requirements for successful implementation of PCMH. Hence additional strategies are required to make initially sponsored learning networks such as MLC transform into ongoing large-scale efforts focused on improving primary care practice. There is a need to develop an ecosystem that harnesses and promotes learning at the periphery in addition to the

center. Such an evolution will lead to creation of local networks that foster collaborating learning and inspire change beyond a specific initiative – especially one that is time bound such as the MLC.

The success of a learning collaborative strategy still requires as a first step clear definition of what the goal to be achieved is. Further, learning collaborative would not be complete without a structured learning agenda. One finding of this study is that while the goal was clear the approach to achieving that goal was not clearly defined for all involved. In some ways it is arguable that spontaneity and interest from individual practices enabled the achievement of the learning collaborative goals but the outcome could have been different if practice motivations differed. Practice coaches were considered very helpful in helping practices make required process improvements but this did not follow a structured learning approach. The presence of practices that belonged to organizations that had had previous experience implementing PCMH helped provide learning lessons to other practices. However, the learning collaborative did not intentionally tap into these experiences. Hence, the benchmarking between practices that was evident was not proactively driven by the learning collaborative and was largely left to individual effort. While this may have ended up serving some practices well – those that made an effort to learn from others - arguably an opportunity was lost to help those practices that struggled through the process of transformation. Future learning collaboratives supporting PCMH implementation should consider defining the process to be followed, learning agenda to follow and methodology for learning that considers needs of individual participants. Based on the study findings, I propose a modified framework that can be used to guide learning collaboratives in implementation of PCMH – what factors to consider to overcome key barriers and to enhance effectiveness of implementation:

Figure 3*: Modified Framework: Learning Collaborative Role and What Affects It*



6.2 Plan for Change

Piloting Patient-Centered Care Implementation within Primary Care Practices in Nairobi, Kenya using Learning Collaborative Strategy

This study was done with an eye on applicability of findings to improve practice, inform policy and in addition provide a learning template for exploring how experiences and lessons learned in one part of the world on an issue of significant importance could be relied on to design an intervention that works for a different context and setting.

The plan for change is intended for me to demonstrate how I will use results of my study, literature review and general knowledge acquired throughout my doctoral training to impact organizational, systems or health policy in the real world.

The plan for change I propose is unique for the reason that it relates to a setting very different from the one in which the research was done. Nonetheless the results are relevant for improving experience of implementing patient-centered care using learning collaborative

strategy in any setting. Learning collaborative strategy is applicable in any setting and the methods and process for routine workings of the collaborative ought to be consistent regardless of setting. The plan and strategy I propose ensures that necessary adaptations will be made to ensure compatibility with practice, culture and resource environment in Nairobi City County of Kenya. The plan for change recommends starting with a pilot to allow for local lessons and contextualization before large scale-up at national level.

There are two aspects to the plan for change I am proposing: 1) laying out clear strategies and process for implementation of patient-centered care model within Nairobi City County, and 2) advancing a strategy to mobilize health care facilities to work together through learning collaborative approach to achieve objectives of patient-centeredness and collaborative care.

Findings from the study relevant to the proposed plan for change include: 1) role of engaged leadership including institutional specific change champions, 2) putting in place financial and other incentives for the additional generated work, 3) providing a structure and mechanism for ongoing facility benchmarking, 4) provision of technical resources for service improvement including practice coaches, 5) use of data continuously to evaluate outcome improvements, 6) developing a learning agenda as part of a learning collaborative process influenced by belief in the proposed innovation, 7) generating team/staff commitment to implementing a new innovation, 8) putting in place strategies to overcome resistance to change, and 9) starting with the end in mind in order to ensure sustainability. Table 7 below summarizes these findings and recommendations for the Plan for Change:

Table 7*: Study Findings and Recommendations for Plan for Change*

Dimension	Study Key Finding	Plan for Change Recommendations/Implications
Role of Learning Collaborative		
Care Management Function Development	Care management function development and institutionalization of care managers was critical to implementing care improvement processes	Care coordination and management in the Nairobi City County health systems is not a standard practice. Under Steps 1, 5 and 9 of the Plan for Change (P4C) I recommend introduction and institutionalization of care coordination as part of the agenda and vision for change and for improving care processes.
Quality Improvement and Change Management Support	Technical support provided for quality improvement and change management, e.g. support on-site and remotely helped practices innovate and overcome barriers to change.	Under Step 3 of the P4C I recommend that coaches or technical assistance providers with expertise in quality improvement and change management should be provided to support the pilot. These can be tapped from the current quality improvement experts trained under the Kenya Quality Model for Health (KQMH) initiative.
Collaborative Learning through Group Meetings and Learning Sessions	Through group meetings, events and learning sessions, participants could share problems, receive new knowledge and share lessons learned	Under Step 3 of the Plan for Change Sufficient resources should be set aside to support collaborative learning through group meetings, webinars and other events.
Benchmarking and Peer Learning	Benchmarking through not well structured helped practices learn from each other and adopt key lessons learned to overcome implementation challenges.	Under Step 3 I recommend set up of benchmarking forums to promote peer learning, share information and experiences on best practices as a core component of the learning collaborative structure.
Structured Learning	While learning happened under MLC, the agenda for learning was not structured and learning goals not well clarified	Under Steps 5 and 6 of the P4C, I recommend that methodology for learning and learning agenda be developed and followed throughout the learning collaborative process. Further, participants should be involved in defining learning goals and agenda. This should include developing practical tools to guide learning process.
Internal Factors		
Leadership and Management Support	Leadership support, however tepid in some instances, was important for	Under Step 2 of the P4C I recommend that owner, administrative and physician leadership is established within the technical

	participation in learning collaborative activities and for availing internal resources needed for care processes transformation.	working group to drive the learning collaborative and patient-centered care change initiative.
Innovation Capability	Practices that considered themselves innovation oriented and/or capable showed more enthusiasm for learning collaborative activities and PCMH implementation.	I recommend under Step 4 of the P4C during systems readiness for change assessment that facilities deemed innovation capable should be encouraged/selected to participate in the pilot.
Staff Commitment, Interest and Willingness to Change	Staff commitment, interest and willingness to change were crucial in supporting care process improvement initiatives supported by the learning collaborative.	Under Step 8 of the P4C, I recommend that a mix of incentives (carrot and stick) be employed to secure staff commitment and overcome resistance to change.
External Factors		
Financial Incentives and Payments to Practices/Facilities	Financial payments made to practices provided incentives for active participation in learning collaborative activities for PCMH implementation.	Under Step 7 of the P4C I recommend that a package of financial and non-financial incentives should be availed to facilities, providers and staff in return for supporting all change initiative activities.
Policy Influence	Respondents did not consider policy to be a determinant in their decision to participate in learning collaborative activities.	Policy support in the Kenya environment is crucial for promoting change. Under Step 10 of the P4C, I recommend that a policy is developed to guide future scale up of patient-centered care following successful pilot
Sustainability Concern	Respondents expressed concern over lack of planning for sustainability of activities supported by the learning collaborative required for PCMH implementation.	Under Step 9 of the P4C I recommend that sustainability planning be made part of the change initiative from the start and that additional strategies be explored for ensuring patient-centered care and collaborative learning activities are sustainable in the long run.
Patient Involvement	Patients were not engaged in learning collaborative activities	I recommend under Step 1 of the P4C that patients be involved in setting the agenda and vision for change

In addition to lessons learned from the findings, the plan picks lessons from other studies that detail experience and insights into how best practices and innovations are spread, implemented and sustained. In addition, the plan is informed by emerging common observations and lessons from learning networks whose purpose is to spur large-scale improvements in health care.

Nairobi City County health facilities work through a loose structure of about 497 facilities of which 51% are privately owned, 22% are government owned and 27% are owned by non-profit faith based organizations*(84)*. About 84%*(84)* of all facilities are primary care health facilities and are the focus for the plan for change. Health facilities are connected through a referral network that works from the community to primary care through to district hospitals and national referral and specialist hospitals. However, because there is no established collaborative care process by and large this structure is not respected and patients self-refer and can skip different levels of the care system and go to a specialist referral hospital as the first point of contact for care. The plan for change is aimed at fostering patient-centered care through a collaborative approach and hopefully this will in the long term promote a more effective care organization system that respects the referral structure. However, creating a more effective referral network is not the core goal of this plan.

To introduce patient-centeredness within Nairobi City County primary care facilities requires a combination of change management strategy in addition to the lessons learnt from this study. It is for this reason that I recommend following the United Kingdom's National Health Service Change Model*(85)* adopted to help bring about large-scale changes within the UK's National Health Service (NHS) system. In addition Kotter's 8-step change model*(86)* is also considered in the plan to bring about the desired change. Given the nature of change desired and the fact that several organizations will be expected to work together, the strategy is also informed by the Institute for Healthcare Improvement (IHI)'s methodology for motivating large scale improvement in quality of care through collaborative efforts and

structures. These models will help in ensuring a clear agenda for change is defined, a mechanism and structure for driving the change is put in place and resiliency is built into the initiative for long-term sustainability.

The NHS Change model consists different elements built around a shared purpose within an organization or system as the driving force for bringing about improvement in patient care within the NHS. The model was developed through involvement of staff across all levels of the NHS in order to improve its chances of success – hoping that involvement of the staff increases its acceptability. The change model was created to support the NHS to adopt a shared approach to leading change and transformation (http://www.changemodel.nhs.uk). The model emphasizes what needs to change, why change, how to make change happen and who needs to be involved in the change process.

The NHS change model includes eight interconnected parts that must work together for change to be successful. These include: 1) Shared purpose: this is the first part and holds everything together, sets the goal and emphasizes values of the organization; 2) Engagement to mobilize: this refers to what needs to be said to the target audience to get them involved; 3) Leadership for change: refers to what must be done to inspire leadership that can bring about change; 4) Spread of innovation: refers to best practices that needs to be adopted and accelerated and also involves finding out if there are other organizations that have gone through similar changes to support benchmarking efforts; 5) Improvement methodology: refers to specific method that will be followed to bring about desired change – this must be relevant to the type of change and/or improvement being pursued; 6) Rigorous delivery: this includes structural programming, setting milestones, monitoring progress and ensuring accountability; 7) Transparent measurement: refers to defining what will be measured, type of data to collect, how it will be collected, analyzed and communicated/shared; 8) System drivers: this refers to conditions that are necessary for enhancing the change process and these could include standards, incentives and penalties.

The proposed plan for change follows a series of steps as follows:

Step 1: Defining the agenda for change, developing a vision and mobilizing key support: Kenya like most countries through its health policy*(13)* embraces people-driven health services and a rights-based approach to health care, aspects that align well with the concept of primary care and is in tune with the Institute of Medicine report of 2001*(16)* that defines patient-centeredness, as care that is respectful of and responsive to individual patient preferences, needs and values and ensures that the patient values guide all clinical decisions. The first step will require that key stakeholders in the Nairobi City County health system share a common purpose and agree that implementing patient-centeredness is a desired goal. Luckily, health policy and plan documents from the nation and the county point to this commitment although it has not yet resulted in the desired outcomes. This aspect of the step is important for ensuring that there is alignment between the proposed change and other strategic goals of the country. Bradley EH et al*(87)* and Yuan CT et al*(82)* report that participants in specific change initiatives credited their effectiveness to alignment with strategic goals of the organizations – in those cases they addressed financial and patient care goals, which made them attractive to both managerial and clinical leaders. It will be critical that the change proposed for Nairobi City County health system addresses priority concerns of political, institutional, health professional and clinical leadership.

However, this is not sufficient and there is need for proactive steps to move this commitment to a priority issue. I have already broached the idea of how to implement patient-centered care through collaborative learning initiative to key leaders – the county Chief Executive for Health and his two directors – Director for Medical Services and Director for Public Health. I have also initiated discussions with a few members of the nascent Kenya Family Medicine Practitioners Association and the Kenya Health Federation – a grouping of private health care providers. These preliminary discussions and the subsequent ones aim to build a critical mass of a Technical Work Group (TWG) that will refine the concept for improving patient

care, define goals for its implementation, structure a methodology for improvement, mobilize key internal and external stakeholders, plan for the pilot and define a monitoring and evaluation framework for implementing the initiative. The TWG must include representatives of providers from the primary care facilities. Two champions will be needed to help drive this agenda - one from within the county health leadership and the second one drawn from outside the county government. A member from either The Kenya Family Medicine Practitioners Association or Kenya Health Federation (http://www.khf.co.ke/) will be best suited for this champion role. This is because these two organizations possess the technical resource pool required to drive such an agenda. In addition to the initiative leaders, there will be need to mobilize a critical mass of champions that will help increase chances for successful implementation.

Engaging stakeholders should go beyond mere representation but should strive to address values and concerns of stakeholders relative to patient-centeredness and why they should or would support or not support it. The proposed change will take long, require commitment and may go through turns and hence engagement strategy from the start has to anticipate factors and developments that could derail the initiative and hence there is need for resilience which will only be possible if people have been well prepared for the road ahead. It is also for this reason that those who stand to benefit the most should be included in the initiative. For example patients were not represented in the MLC and this author believes, it was an oversight and hence the NCC TWG should include patient representatives. Patients stand to benefit the most from the proposed change and might make the best case for implementation of patient-centered care. From the outset a package of financial and other incentives should be defined and a process for how those incentives are administered clearly explained to participating facilities. It is partly for this reason that key health care payers should get represented in the TWG and these include private health insurers, the government's National Health Insurance Fund and the national and county governments. These groups are most likely the ones that will provide resources for financial incentives. In addition, donors who support the

health sector should also be included in the TWG as they too might provide financial support for the initiative.

Step 2: Establish leadership to drive the change initiative: The NHS change model emphasizes the role of committed leadership for a shared purpose through collaboration. The findings of the study and literature on PCMH implementation all point out the importance of engaged leadership to drive important change. Three types of leadership are required and include: owner leadership, operational leadership and physician leadership. The results of this author's study indicate that where three levels of leadership were engaged, respondents reported it was easier to overcome internal resistance for change from staff and it was also easier to access internal resources required to support transformation effort. In the case of Nairobi City County facilities, three levels of leadership will be required to implement patient-centered care and they include: county health leaders, owners of health facilities, managers of health facilities and physicians in health facilities. To ensure resources required for the initiative payers of health care in Kenya – government and health insurance companies will also need to engage. All the leaders should aim to mobilize all other actors to commit to a shared purpose and work collaboratively. It will take committed leadership to inspire others, to mobilize within the county for appropriate resources and to set the agenda for change. McCannon and Perla*(76)* make this case in their opinion piece while analyzing what made the 5 Millions Lives Campaign succeed in promoting initiatives to reduce medical errors among U.S hospitals. In that case all types and levels of leadership were key and for this Plan for Change to succeed it will take more than one leader and institution. This implies that political, managerial, professional and all relevant informal leaders are mobilized to support this initiative. It will take education, persuasion and structuring of right political and emotional incentives to galvanize this support.

To get these leaders engaged several strategies will be required and one strategy cannot appeal to all. County health leaders need to be convinced that patient-centered care

through collaboration improves outcomes and may even save costs. Hence they need to be provided evidence that points to that. Managers of facilities need to be convinced that patient-centered care will improve outcomes for patients that over-utilize services and will help decongest facilities. To make the case, one need not go further than point to recent experiences with HIV care and treatment programs that largely apply similar principles of patient-centeredness in order to keep patients engaged in care in Kenya and other similar settings. These initiatives have helped decongest facilities and lowered in-patient days. In addition, facility managers need to be sold the benefits of collaborative care and why they should work with other facilities. Benefits of benchmarking need to be explained and evidence from the literature provided to make the case.

Offering financial payments based on performance might also help the case. Kenya is already experimenting with performance based funding to improve maternal health care services and therefore this idea is not far fetched. Physicians who lead care teams tend to be resistant to changes that present additional workload with no clear benefits to them. While they might be amenable to accepting evidence on improved patient outcomes they also need to be incentivized for the additional workload. Evidence on performance based funding shows that payments incentives made to both facilities and staff tend to have the most effect. Hence financial incentives to be offered should be structured to benefit facilities, physicians and other members of staff. While a finding from the study shows a mixed picture, evidence from the literature shows that a champion and/or champions are needed to lead the change. From the different identified stakeholders, champions will be identified early on and this author has been reaching out to potential leaders who can commit to the initiative and help lead the effort. Providing sufficient evidence and making a strong case for this initiative to get champions excited is what this author believes he can contribute.

Step 3: Develop learning collaborative structure: Implementing patient-centeredness requires involvement of several health care facilities and providers and hence a structure and

medium through which a process for collaboration is possible. I selected to study how learning collaborative facilitated a process of patient-centered medical home implementation primarily to understand how this strategy could be applied in the plan for change. I picked the NHS Change Model because it promotes collaborative engagement to bring about needed changes. The facilities in Nairobi City County that will be targeted for this initiative include a mix of public, private-for profit and private-not-for profit but all with a common public health agenda – to improve population health outcomes. Few models in health care for inter-organizational collaboration exist and improvement-learning collaboratives provide a template for organizations to work in a structured way to improve quality of their service*(80)* – and the proposed goal is no different. Following the set up of the TWG and definition of the agenda, a business plan for set up of a Nairobi City County Primary Care Learning Collaborative (NCC PCLC) will be developed that lays out structure of the collaborative, sets up a secretariat, defines timelines and describes how the collaborative will work to help deliver the patient-centered care implementation agenda. In addition the plan will include what financial and technical resources will be required to facilitate the work of the collaborative. Greenhalgh T et al*(59, 80)* observe that rationale for collaboratives is partly economies of scale in finding and processing evidence for what works and presenting to busy clinicians and managers. Once the collaborative starts, resource persons running the collaborative will be in position to generate and present information and evidence to encourage support from clinicians and managers.

What I am proposing is a learning network of health facilities in the city and county. While these facilities might share a common underlying purpose – serving health needs of the population, they are different and are also competitors in the same space. It will take effective strategies to get them to learn to work together in order to collectively improve patient care. Effective learning networks in addition to engaging committed and active leaders possess other features. McCannon et al Perla*(76)* report that effective learning networks also: set shared aims, welcome everyone and harness their energies, are tiered, are self-conscious, are nonlinear,

devolve control, manage knowledge with agility, seek critical mass, are reflective and responsive, are sense-makers, value asking, operate a recognition economy (celebrate successes) and stimulate affection. These features are based on the fact that effecting large-scale change is a persistent challenge and while some organizations might fall on the wayside others will seek to join the learning network. What these features mean for the proposed learning collaborative in Nairobi City is that health facilities should be engaged in setting the agenda. Health facilities should also be allowed to form sub-networks to promote local learning at the periphery and not just through centrally organized activities. Findings of this author's study showed that practices in Maryland at times identified opportunities to learn from individual practices were not necessarily driven by the MLC. They also reported that when this happened such learning was greatly appreciated. The learning collaborative should encourage health facilities to learn from others including those outside the network and in this case they should be encouraged to explore international experiences. While I advocate for an elaborate planning process for the change initiative, stakeholders in the planned collaborative should be made to understand that change is unpredictable and hence they should be prepared to exploit opportunities that arise and could enhance the change. The health facilities in Nairobi City County will belong to sub-groups such as private-for-profit networks, sub-county public facilities, individual practices and not-for-profit facilities. It is possible that some sub-groups will be more amenable to change than others. In such situations, they should be encouraged to move forward even if others are lagging behind. In the event that a critical mass of facilities emerges that is pursuing and achieving goals of the change initiative, investment in terms of more effort and resources should be targeted at these facilities. If they turn out to be successful, it might raise level of awareness and expectations and motivate late adopters to engage. Further, these successful examples could trigger relevant policy and other interventions that might enhance the change initiative on a large scale.

The collaborative should also plan for the process of collaboration – what type of meetings will be held, working groups, frequency and nature of group meetings, learning agenda and how this will be set. Defining these things upfront creates clarity and sets expectations, which can also be used as a basis to assess how well the learning collaborative is meeting its goals. Kenya has developed a Quality Model for Health Care*(14)* improvement and through external support has trained domestic experts to drive the quality improvement agenda. These experts should be tapped as external coaches to help facilities improve care processes and systems required for full implementation of patient-centered care. The literature reviewed for the study and the study findings both show that expert coaches play a critical role in helping practices implement new initiatives and develop local solutions to overcome resistance to change.

Preliminarily, I have informally approached programs that support service delivery in the county – those that target HIV/AIDS, maternal and neonatal and child health services to gauge their interest in supporting the county to operationalize the collaborative. In setting up the collaborative, representatives from facilities should be included to ensure support in the future for the collaborative work. Respondents in the Maryland study mentioned that while they welcomed the support from the learning collaborative, they were not consulted in its set up and working processes. It was not lost to this author that had the practices been involved early in the learning collaborative planning process, the role of the practices in driving the learning agenda might have been more beneficial. Yuan CT et al*(82)* point out that strategies found to be effective in promoting a collaborative learning environment include creating networks to foster learning opportunities, generating a threshold of participating organizations that maximize network exchanges and developing appropriate tools and guides for key stakeholder groups. Learning collaborative strategy is a new concept in the Kenya context and hence careful planning and application of strategies that can help galvanize support for this approach will be

key. The plan for change will additionally emphasize these strategies to improve chances of success.

Step 4: Assess systems readiness for change and undertake baseline patient outcome assessment: I am proposing change and spread of innovation to affect how primary care is delivered that might run into implementation challenges. To avoid this I propose a systems readiness assessment of facilities that volunteer to participate in this initiative. Findings from the study point to the role of electronic health records in PCMH implementation and how this made it easier for practices to measure and report on specific tracked outcome measures. In the absence of EHRs the process of reporting and documentation would have been more laborious and demotivating to others. The readiness assessment will help establish level and state of medical record systems in primary care facilities, resource requirements for implementation, staffing complement, skills mix, workload, catchment areas and population characteristics, referral networks and also ask a key question about what it takes for different facilities to engage in collaborative care. The readiness assessment will also provide information for determining financial resource needs to implement the change initiative and hence the scope of the pilot and eventual scale-up within the county and the country as a whole. In carrying out the readiness systems assessment among other things the TWG would best be served by referring to the information on Standards for PCMH available at: http://www.ncqa.org/Programs/Recognition/Practices/PatientCenteredMedicalHomePCMH.aspx The TWG might find several of these standards relevant to patient-centered care model implementation in Kenya. Further, to help build a pool of evidence for change, a baseline assessment should be done to show major causes of high facility service utilization in order to use that information to drive improvement agenda but also to convince different stakeholders of the need for change. The system readiness assessment will also help identify internal dynamics that might point to drivers or constraints to implementing changes. Special attention will be paid to enhancing features that other organizations in different settings including this study have

shown to be supportive of innovation spread and implementation. These will include among others presence of internal champions, enabling structures that foster adoption and evidence of being a learning organization*(82)*. The proposed initiative will require strong support from influential health professional organizations, owners of healthcare networks and policy makers to succeed. Hence proactive lobbying efforts will be needed to get them on board as champions. In addition, the recruitment process should seek out innovative and learning organizations to form the initial critical mass needed to drive the change initiative.

Step 5: Adopt a methodology for improvement: Implementing patient-centered care will require making improvements in care processes, establishing care continuity for patients and their families to stay engaged in care, create linkages between different levels of the care systems and most importantly improve patient outcomes. To accomplish these changes will require a structured approach to improvement and I propose the use of rapid-cycle test-of – change technique*(80)*. This technique also commonly referred to as Small Test of Change (STOC) is not new to facilities in Nairobi and this author with colleagues working through other programs has been using the approach to improve quality of HIV services*(88)* in the facilities that potentially will be part of the proposed patient-centered care learning collaborative. The STOC approach requires that desired change in practice is identified and data are gathered quickly to demonstrate whether an effect occurs*(80)*. In setting up the learning collaborative the TWG should consider leveraging tools and resources from the Institute for Health Improvement available at: http://www.ihi.org/resources/Pages/IHIWhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx. Further practical and easy to use tools that include how-to guidelines, tool kits, newsletters and success stories should be made available to participating health facilities to use. Such tools were proven useful in similar efforts in other countries that sought through large-scale initiatives to improve patient care*(82)*.

Step 6: Develop results measurement methodology and define indicators of performance: a Monitoring and Evaluation (M&E) framework will be established in part informed by the concept definition of patient-centered care and system readiness. At the beginning a few outcome and care process measures should be considered and used to improve care practices, which can then be spread across the care continuum. For Nairobi City County facilities common causes of morbidity and mortality and drivers of care utilization are HIV/AIDS, other infectious diseases and increasingly metabolic diseases namely diabetes and hypertension. In addition, respiratory infections among children including asthma are also common. It is hence recommended that the TWG target a few conditions to show improvement through patient-centered care and change provider practices. Once these are identified, indicators should be selected including benchmarks that demonstrate recognized improvements. In addition, the frequency of measurement and reporting should be set. Further, results reported through performance dashboards should be made the focus of collaborative group meetings, discussions and other events. In defining the care improvement process, facilities should be encouraged to routinely monitor their own performance and use evidence generated to inform care improvement plans through the rapid cycle-of-test change methodology earlier described. The proposed change initiative will include several and different organizations and will seek to broaden reach. While this is critical for generating critical mass it might mean it won't be possible to evaluate all aspects of the effort. In addition results of the initiative should be publicly reported. Potential avenues could include monthly newsletters and through the Learning Collaborative website that will be set up. There will be many confounding factors that impact patient care improvement but this should not be used as an excuse for not measuring improvements brought about by the planned interventions.

Step 7: Define a set of incentives to motivate change: Incentives are required to motivate engaged leadership as earlier presented and also to get staff of facilities to engage in implementing any new innovation. Financial and non-financial incentives will be required. Non-

financial incentives for facility staff and facilities could include among others support for continuing education credits for those who attend learning collaborative events and awarding of certificates to high performing facilities. Support for attending national and international conferences to show care outcome results following implementation of patient-centered care should be considered. All these will be addressed in the business plan developed to guide the implementation process. For this initiative to work, there is a need to align it with the changing healthcare financing landscape in the country. This will mean involving the key financial players namely the National Hospital Insurance Fund that is slowly turning into the nation's Public National Health Insurance Fund, private health insurance and the government through direct budget appropriation. It is for this reason that key stakeholders should be involved in the design of the economic incentives since they will be the main source of funding.

Step 8: Design strategies to overcome resistance: The literature and this author's study show that resistance for change tends to come mostly from physicians and is also a result of skepticism over whether the innovation will work. High level leadership including governing boards tend to be divorced from such initiatives and their lack of participation might wrongly signal to the rest of employees that the organization is not committed to the proposed change. Kotter JP (2007) *(86)* advises that planning for quick wins may help secure support of those sitting on the fence. The TWG should identify care outcomes and processes that can be improved within a short time and use those to show potential for the initiative. In addition, physician champions should be identified and recruited as spokespersons for patient-centered care to convince their colleagues. Respondents in the study also reported that peer review helped 'shame' physicians resisting change to engage through publishing of patient-panel results for each physician. Another practice reported public recognition of care teams as an effective strategy to generate internal competition, which might lead to better participation. Further, leadership involvement and clear communication that reinforces and supports involvement in patient-centered care implementation initiative can also be effective. The

initiative should not be strictly bound to a limited set of strategies. In-house solutions should be encouraged provided they lead to the same outcome goal. Bradley EH et al *(87)* report that what made the Alliance for Quality (D2B) campaign that sought to reduce delays in treatment for patients who have had severe type of heart attack known as ST-segment elevation myocardial infarction (STEMI) among U.S hospitals was catalyzing the development of innovative strategies that were not specifically recommended but worked. The TWG should employ all these strategies to drum up support for the initiative within and across participating facilities.

Organizational culture can be a facilitator of change but could also be a hindrance. It will therefore be important that the proposed change initiative applies strategies that have a beneficial effect of strengthening the existing organizational cultures – a move that might increase support for the initiative. One way of achieving that is addressing weaknesses in current systems and processes within each organization that undermine teamwork, inhibit coordination and create silos between functions and departments leading to communication breakdown. While the focus might be improving patient care by addressing other organizational issues that lead to better and effective internal collaboration will benefit general implementation of the initiative. Bradley EH*(87)* in the D2B Alliance documents how an initiative focused on preventing cardiac arrests among U.S hospitals also addressed other internal work processes that led to stronger teamwork, better relationships among departments and disciplines and greater focus on achieving common goals and in the end managed to influence organizational cultures. This will be an important lesson to learn if the Nairobi City Council initiative to improve patient care through learning collaborative strategy is to succeed.

Step 9: Develop a sustainability strategy: A major concern from the study was about how to sustain initiatives introduced during the pilot such as care management function within facilities. In the case of Nairobi City County, facilities and stakeholders should be asked to participate in care structure that works best for their settings. For example the county implements a community strategy that involves hundreds if not thousands of community health

workers (CHWs). These CHWs can be tapped to support care coordination efforts within the community at no additional cost. Through task shifting strategy, facilities should consider identifying from existing staff to take lead on patient-centered care new tasks (equivalent to care management function in the case of Maryland State's PCMH initiative). This author's experience derived from years of supporting implementation of health programs within facilities shows that when facilities are encouraged to innovate, they devise more cost-effective approaches to solving their own problems and the TWG should consider encouraging facilities to innovate in the process of implementing patient-centered care. Finally, to cement patient-centered care requires a policy change that supports and promotes that. The TWG therefore should mount a policy advocacy effort for a favorable policy on patient-centered care. To make this advocacy effort successful will require presentation of evidence to policy makers about patient-centered care health outcomes.

Step 10: Develop a communication plan: Patient-centered care while not entirely a new concept in Kenya (the tenets of primary health care are similar and the country already embraces ideals of primary care) faces major hurdles to its adoption. On the other hand the learning collaborative strategy will be new. Opponents might raise cost issues or unnecessary additional workload or general lack of resources to forestall its implementation. Health care reforms generally tend to get misunderstood and often times their benefits are not easy to simplify for easy communication to an audience that is not health literate. Hence an effective communication plan will be needed and the TWG should consider developing this early on during the planning phases of the pilot. Various audiences need to be targeted: policy makers and politicians, health managers, provider teams lead by physicians, health professional associations and groups, payers of health care and the general population within the county. The TWG should aim to over communicate the vision for patient-centered care. Kotter JP*(86)* points out that even transformative visions fail because of little communication and hence the TWG should guard against that.

The Nairobi City County learning collaborative will require an effective campaign strategy if it is to mobilize a network of organizations to work together and improve patient care. The initiative will require a campaign sponsors – these will be individuals and organizations that are respected in Kenya whose views and opinions are greatly respected. It is for this reason that I have recommended key health professional groups and policy makers to publicly render their support to the initiative.

Additional Considerations: The Architects of the NHS change model offered more ideas which should be explored for suitability in the implementation setting to make change succeed and they are: 1) Intrinsic and extrinsic motivations for change, 2) anatomy and physiology of change, and 3) balancing commitment and compliance.

To get patient-centered care implemented will require the TWG and vision champions to balance competing intrinsic and extrinsic motivators. On one hand individuals involved in the change initiative must connect to a shared purpose. Key actors must engage, mobilize and call each other to action while leaders of the initiative at all levels must provide motivation for all stakeholders to stay the course. In addition, for the plan for change to work and patient-centered care implementation in particular, systems drivers must be well aligned and incentives optimally structured. These will include making sure payments made to facilities are based on results, that performance management becomes the basis for key decisions and that measures prioritized are those that also place emphasis on accountability. The architects of the NHS change model argue and this author agrees that balancing the two will help build energy and creativity on the part of actors and at the same time will create focus and momentum for delivery of the change initiative.

Before embarking on full-scale implementation of patient-centered care the Technical Working Group leading the initiative must go through a process of deep analysis of the structure and state of health care delivery in Nairobi City County facilities – what works and does not work, how care teams work or don't work together and care processes. This should be

counterbalanced by an effort to learn what motivates health care providers in those facilities. Without understanding these two elements might create an imbalance between the anatomy and physiology of the desired change.

Finally to get the change goals accomplished the TWG should endeavor to balance commitment and compliance needs. Respondents in the study for example pointed out the motivational and inspirational benefit of interacting with other practices through the learning collaborative. This can also happen if the learning collaborative in Nairobi pays attention to what motivates participants and uses that to raise commitment to a shared purpose. This might be a first step to then emphasizing getting the delivery of patient-centered care achieved. The latter will be enhanced through validity of the methodology for measurement of results and how these results then influence management of incentives on offer. It will be a question of carrots and sticks and creating the right balance between the two. Compliance can be enhanced further, if the TWG advocates for broader adherence to general health care standards that the Ministry of Health develops but are rarely followed consistently.

APPENDIX 1: KEY INFORMANT INTERVIEW GUIDES FOR PRACTICES

Key Informant Interview Guide for Practice Leaders

Introduction

The purpose of this interview is to learn how the Maryland Learning Collaborative has affected the process of transforming your practice and others within the State into Patient-Centered Medical Homes (PCMH) and what external factors have moderated the transformation process. Ten to fifteen participants drawn from the 52 participating practices and the MLC will participate in the interview. The interviews will take about 45 minutes. The interviews will be confidential and information collected through this process will only be used for completion of a doctoral dissertation. Your identity will remain completely anonymous and the information you provide will not in any way be associated with you. I request your permission to record this interview.

Before we proceed, are there any questions that you have about the study, this interview or any clarifications?

Do I have your permission to start recording the interview?

<u>Warm Up Questions</u>

- What is your role at this practice and for how long have you worked here?
- When did your practice join the Maryland PCMH pilot?
- What is your role in the ongoing PCMH implementation at this practice?
- Who else from the practice has been involved in the PCMH implementation process?
- What led you to join the PCMH pilot?

Probe for what influenced the decision to participate in the process – external and internal factors

<u>Topic area: Process of Interacting with the MLC</u>

- Describe to me how you work with the MLC? (*Probe: process*)

- What role has the MLC played in PCMH implementation at this practice?

Probe for specific activities undertaken by the MLC; training and integration of Care Managers into care teams

- Considering the design of the MLC as you know it, how has this enhanced or constrained the workings of the MLC
- What have been key functions of the practice coaches?

Probe how the coaching process has worked?

Probe for facilitation skills, effectiveness

- Have you participated in any other learning collaborative prior to the MLC? If yes how do you compare your experience working with MLC and other learning collaboratives that you have been part of?
- What specific aspects of MLC support have been most beneficial?

Probe for performance feedback, academic detailing, sharing of lessons learned, receiving technical materials, quality improvement initiatives, care manager embedment, PCMH redesign team

Probe for what has not worked well

- Thinking about the role of the MLC, what could have been different in the PCMH implementation in the absence of the MLC?
- Which mechanisms of interaction do you consider most effective?

Probe for: face-to-face interactions, virtual interface, peer-to-peer connections, teleconference, web technology solutions

- Looking back at the experience of working with the MLC, what specific activities, practices need to be maintained? How do you think these could be continued?
- Do you foresee a role for the MLC beyond the PCMH implementation pilot? Probe for specific activities

- Considering the benefits of receiving MLC support, would your practice be willing to pay for similar services after the MLC? If yes, which are those services?

Topic area: External factors

- What incentives were offered to your organization to participate in the PCMH implementation?

Probe for whether these incentives influenced participation in the MLC supported processes

- In your opinion, what factors have affected the effectiveness of MLC as a facilitator of the PCMH implementation process? Of these factors which ones have had a positive effect? Which ones have negatively impacted effectiveness of MLC?

Probe for role of EMR, reimbursement mechanisms (Fixed Transfer Payments and Shared Savings), State Government role, involvement of academic institutions.

- Are there any specific policies that had an effect in the MLC facilitated PCMH implementation? Probe for reimbursement changes
- Thinking of the healthcare market as a whole, which market factors have played a role in the PCMH implementation? How have these factors affected the MLC process?

Probe for effect of Health Insurance companies involvement, CMS, patients/clients, Health Insurance Exchange

- To what extent has technology enhanced or constrained the MLC facilitated process?

Topic Internal Factors

- What do you think has influenced the process of implementing PCMH in this practice? Probe for what has helped and what has constrained the process (leadership support, staff interest and commitment etc…)
- How would you characterize your leadership support and involvement in PCMH implementation and MLC activities? What could have been done differently?
- What has influenced your participation in learning collaborative events?

- What resources have been internally availed to support implementation of PCMH and participation in MLC activities?

  Topic area: Role of Other Practices

- What has been the role of other practices in supporting the PCMH implementation process? *Probe for how interactions have been useful*

  Probe for influencing level of participation, sharing of best practices, peer learning, Learning Groups – Electronic Health Records Group, Care Managers Group, Physician Group and Geographical Regional Group

- Conclusion

  Is there anything else you would want me to know about the MLC's role in PCMH implementation at your practice?

Thank you.

Key Informant Interview Guide for Practice Care Managers

Introduction

The purpose of this interview is to learn how the Maryland Learning Collaborative has affected the process of transforming your practice and others within the State into Patient-Centered Medical Homes (PCMH) and what external factors have moderated the transformation process. Ten to fifteen participants drawn from the 52 participating practices and the MLC will participate in the interview. The interviews will take about 45 minutes. The interviews will be confidential and information collected through this process will only be used for completion of a doctoral dissertation. Your identity will remain completely anonymous and the information you provide will not in any way be associated with you. I request your permission to record this interview.

Before we proceed, are there any questions that you have about the study, this interview or any clarifications?

Do I have your permission to start recording the interview?

<u>Warm Up Questions</u>

- What is your role at this practice and for how long have you worked here?
- When did your practice join the Maryland PCMH pilot?
- What is your role in the ongoing PCMH implementation at this practice?
- Who else from the practice has been involved in the PCMH implementation process?

<u>Topic area: Process of Interacting with the MLC</u>

- Describe to me how you work with the MLC? (*Probe: process*)
- What role has the MLC played in PCMH implementation at this practice?

Probe for specific activities undertaken by the MLC; training and integration of Care Managers into care teams

- In your opinion what has worked well? What has not worked that could be improved?
- Considering the design of the MLC as you know it, how has this enhanced or constrained the workings of the MLC
- What have been key functions of the practice coaches?

  Probe how the coaching process has worked?

  Probe for facilitation skills, effectiveness
- Have you participated in any other learning collaborative prior to the MLC? If yes how do you compare your experience working with MLC and other learning collaboratives that you have been part of?
- What specific aspects of MLC support have been most beneficial in the PCMH implementation?

Probe for performance feedback, academic detailing, sharing of lessons learned, receiving technical materials, quality improvement initiatives, care manager embedment, PCMH practice redesign, care planning

- Thinking about the role of the MLC, what could have been different in the PCMH implementation in the absence of the MLC?
- Which mechanisms of interaction do you consider most effective?
- Overall how do you characterize the role of MLC in the implementation of PCMH?

Probe for: face-to-face interactions, virtual interface, peer-to-peer connections, teleconference, web technology solutions

- Looking back at the experience of working with the MLC, what specific activities, practices need to be maintained? How do you think these could be continued?
- Do you foresee a role for the MLC beyond the PCMH implementation pilot? Probe for specific activities
- Considering the benefits of receiving MLC support, would your practice be willing to pay for similar services after the MLC? If yes, which are those services?

Topic Internal Factors

- What do you think has influenced the process of implementing PCMH in this practice? Probe for what has helped and what has constrained the process (leadership support, staff interest and commitment etc…)
- How would you characterize your leadership support in MLC activities that supported PCMH implementation? What could have been done differently?
- What has influenced your participation in learning collaborative events?
- What resources have been internally availed to support participation in MLC activities?

Topic area: External factors

- In your opinion, what factors have affected the effectiveness of MLC as a facilitator of the PCMH implementation process? Of these factors which ones have had a positive effect? Which ones have negatively impacted effectiveness of MLC?

Probe for role of EMR, reimbursement mechanisms (Fixed Transfer Payments and Shared Savings), State Government role, involvement of academic institutions.

- Thinking of the healthcare market as a whole, which market factors have played a role in the PCMH implementation? How have these factors affected the MLC process?

Probe for effect of Health Insurance companies involvement, CMS, patients/clients, Health Insurance Exchange

- To what extent has technology enhanced or constrained the MLC facilitated process?

Topic area: Role of Other Practices

- What has been the role of other practices in supporting the PCMH implementation process through learning collaborative activities? *Probe for how interactions have been useful, benchmarking, competition, motivation*

Probe for influencing level of participation, sharing of best practices, peer learning, Learning Groups – Electronic Health Records Group, Care Managers Group, Physician Group and Geographical Regional Group

- Conclusion

Is there anything else you would want me to know about the MLC's role in PCMH implementation at your practice?

Readiness:

- How ready was the practice to implement the PCMH? What enhanced this readiness?

Thank you.

Questionnaire for Practices

Introduction

Thank you for accepting to fill this short questionnaire. The questionnaire is in support of a study titled: Use of Learning Collaborative in the Implementation of Patient-Centered Medical Home Model in the State of Maryland: What are the Facilitators and Barriers? The purpose of this questionnaire is to establish which factors have been important to the practices in the process of implementing the Patient-Centered Medical Home.

The purpose of this study is to understand the experience of implementing a patient-centered medical home model within practices in the State of Maryland and learn lessons that can be applied in implementation of patient-centered care models in other settings. The study is in partial fulfillments of the requirements for the Doctorate in Public Health Leadership at the Gillings Global School of Public Health, University of North Carolina at Chapel Hill. The information collected will be confidential and information collected through this process will only

be used for completion of a doctoral dissertation. Your identity will remain completely anonymous and the information you provide will not in any way be associated with you.

Background questions about the Practice

1. Number of employees ----------
2. Year practice opened ----------
3. Type of ownership (tick as appropriate): a) ---------- Solo Owned; b) ---------- Physician Group Owned; c) ---------- Hospital Owned/Affiliated
4. Total number of patient visits in 2013: ----------
5. Number of patients enrolled in the PCMH in 2013: ----------
6. Number of health professionals employed here: a) ---------- Physicians; b) ---------- Physician Assistants; c) ---------- Nurse Practitioners; d) ---------- Other Nurses; e) ---------- Social Workers

Internal Factors

1. Please indicate in terms of importance what internal factors influenced the practice decision to implement Patient-Centered Medical Home primary care model: Key: 1 = Very Important 2= Important 3 = Somewhat Important 4 = Neutral 5 = Not Important
   a) Our leadership ----------
   b) Belief in patient-centered care ---------
   c) Concern for patient's health ----------
   d) Employees ----------
   e) Our ability to do it ----------

External Factors

2. Please indicate in terms of importance what external factors influenced the practice decision to implement Patient-Centered Medical Home primary care model: Key: 1 = Very Important 2= Important 3 = Somewhat Important 4 = Neutral 5 = Not Important
   a. Promise of incentive payment ----------

b. Changes anticipated under the Affordable Care Act ----------

c. Anticipated changes in reimbursement ----------

d. Policy push by the State ----------

e. Competition ----------

Thank you for your time.

Please send back your responses in the included post pre-paid envelope to: **Deus B Mubangizi (Doctoral Candidate), 9711 Bon Haven Lane Owings Mills MD 21117 USA.**

Key Informant Interview Guide for MLC Practice Coach and Representative of the Maryland Health Care Commission

Introduction

The purpose of this interview is to learn how the Maryland Learning Collaborative has affected the process of PCMH implementation in the State and what factors have moderated the learning collaborative's effectiveness. Ten to fifteen participants drawn from the 52 participating practices and the MLC will participate in the interview. The interviews will take about 30 - 45 minutes. The interviews will be confidential and information collected through this process will only be used for completion of a doctoral dissertation. Your identity will remain completely anonymous and the information you provide will not in any way be associated with you. I request your permission to record this interview.

Before we proceed, are there any questions that you have about the study, this interview or any clarifications?

Do I have your permission to start recording the interview?

<u>Background Questions about the MLC</u>

1. How did the idea for the MLC start?
2. Describe the goals of the MLC and provide details of how it works including technical assistance activities, specific events and other resources the MLC provides to participating practices.
3. What specific steps and activities have been undertaken or any efforts required making the MLC operational?

<u>MLC Interaction with Practices</u>

4. There are 52 practices participating in the MLC and these differ by size, ownership and geographical location. Do you notice any differences in the way these practices participate in MLC activities?
    a. *Probe for whether these characteristics have played a role in enhancing the effectiveness of the MLC*
5. Would you say that participation in all MLC activities has been voluntary for all practices? What role have financial and other incentives played in encouraging practices to participate in the process? Would the PCMH implementation have succeeded without these incentives?
6. Looking back at the progress and achievements of the MLC, what specific factors in your opinion have had the greatest effect on the way the MLC has worked with practices? Which of those factors do you consider to have been enablers of the process and which ones have acted as barriers?
7. Are there other factors or rival explanations that you are aware of that have enhanced the process of PCMH implementation besides support from the MLC?
8. What do you think the effect of system wide issues has been on: a) Motivation for participation by practices, and b) internal capability of the practices to implement necessary changes?

    <u>Evaluation Questions</u>
9. Earlier, you outlined goals of the MLC in the process of implementing the Patient-Centered Medical Home in all 52 participating practices, what indicators of achievement are you using to measure whether these goals have been met in addition to achieving PCMH certification, which all practices received in 2012?
10. Have you undertaken any evaluation to assess whether the MLC is working or not? If yes, what have been the key findings?

11. The MLC is time limited but the contributions it makes to practices implementing the PCMH are long term in nature and need to be sustained. In your opinion what specific activities currently led by the MLC need to be sustained beyond the life of the MLC? If there are any, how do you think these will be sustained?

APPENDIX 2: HUMAN INTERVIEW INFORMED CONSENT FORM

Investigator: Deus Bazira Mubangizi, MBA, MPH, BPharm, DrPH (candidate) Department of Health Policy and Management, Gillings Global School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Title of Study: Use of Learning Collaborative in the Implementation of Patient-Centered Medical Home Model in the State of Maryland: What are the Facilitators and Barriers?

Purpose of the Study: The purpose of this study is to understand the experience of implementing a patient-centered medical home model within practices in the State of Maryland and learn lessons that can be applied in implementation of patient-centered care models in other settings.

If you participate, you will be asked to: Give your opinions on how the learning collaborative has been beneficial in the transformation of practices into patient-centered medical homes, what has worked well, what has not worked well and recommendations for improving the learning collaborative process.

Time Required for Participation: The interview will take between 30 – 45 minutes of your time.

Potential Risks of Study: There are no known direct or indirect risks to participating in this study. This study has received IRB approval from University of North Carolina Office of Human Research Ethics (Study #13-3402) and University of Maryland Baltimore Institutional Review Board (Study # HP-00059905)

Benefits: The study may benefit you by learning how learning collaborative initiatives could be sustained beyond the pilot. In addition, the study will benefit other practices intending to implement patient-centered medical home model by learning from your lessons and avoiding pitfalls to successful implementation of patient-centeredness within their practices.

Ensuring Confidentiality: I as the researcher will be the only person with access to interview information. Your name or practice name will not in anyway be associated with the responses you provide during the interview.

Voluntary Participation

Participation in this study is completely voluntary. If you decide not to participate there will not be any negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

By signing this form I am attesting that I have read and understand information above and I freely give my consent to participate in the study.

_____ _____

Name of Participant Signature of Participant Date

If you have any questions about this study, feel free to contact me, Deus Bazira Mubangizi at 410.209.7765/443.315.9349 or by email at baziradm@verizon.net/baziradm@live.unc.edu

APPENDIX 3: LETTER OF RECRUITMENT AS RESPONDENT IN A RESEARCH STUDY

Dear [Mr. / Ms. LAST NAME],

I am writing to tell you about a study I am conducting titled**: Use of Learning Collaborative in the Implementation of Patient-Centered Medical Home Model in the State of Maryland: What are Facilitators and Barriers?** I received your name from the Maryland Learning Collaborative at the University of Maryland.

The purpose of this research study is to understand the experience of implementing a patient-centered medical home model within practices in the State of Maryland and learn lessons that can be applied in implementation of patient-centered care models in other settings.

It is important to know that this letter is not to tell you to join this study. It is your decision. Your participation is voluntary. Whether or not you participate in this study will have no effect on your practice or professional standing.

1. If you would like to learn more about this study, please check box #1 on the enclosed form and return in the pre-paid envelope.

2. If you do not wish to hear about this study and do not wish to be contacted again about this study, please check box #2 on the enclosed form and return in the pre-paid envelope.

If you like to talk to me directly regarding this letter, please call me at 410-209-7765 or email me at baziradm@verizon.net

If I do not receive your reply within two weeks I may send you another letter and/or contact you by phone. If you would not wish to be contacted again about this study, please indicate so in the attached opt-out form.

Thank you for your time and consideration.

Sincerely,

Deus Bazira Mubangizi

Principal Investigator

DrPH (candidate) Department of Health Policy and Management, Gillings Global School of Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

OPT-IN/OPT-OUT FORM

Use of learning collaborative in the implementation of patient-centered medical home model in the State of Maryland: What are facilitators and barriers?

Please complete this form and return in the pre-paid envelope provided

1. I am interested in learning more about this study. Please contact me using the following information:

Name:

_____

Telephone(s):

_____

Best time and day to call:_____

Email:

_____@_____

2. I am <u>not</u> interested in this study. Please do not contact me again about this study.

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