ABSTRACT: This report is a summary of current literature on the medical home model. The purpose of this research was to provide a background and overview of current innovations and strategies regarding the patient-centered medical home (PCMH), a primary care model that emphasizes coordinated, comprehensive, accessible, and cost-effective care. The summary identifies current definitions of the PCMH and other primary care models. Research was conducted to examine what PCMH strategies have been used in other states regarding forming partnerships with key players, payment, and practice support. Another purpose of the research was to determine how successful PCMH has been in other states and determine what evaluation measures have been used. Methods for this research included an empirical literature search that was conducted using Pubmed, Medscape, and the UAMS Online Libraries, and a review of policies from several web-sites including those of The National Academy of State Health Policy (NASHP), The Patient-Centered Primary Care Collaborative (PCPCC), and The National Center for Quality Assurance (NCQA). The literature demonstrates that various PCMH strategies exist across states regarding recognizing PCMHs, forming partnerships, payment methodologies, supporting practices in transitioning to and maintaining PCMH status, and measuring and evaluating PCMH outcomes at the practice and system level. Current literature identifies many challenges for states as they develop PCMH initiatives as a means to transform primary care. However, states may find it easier to design successful PCMH initiatives by utilizing newly developed recommendations from leading researchers and by referencing an increasing amount of evidence from states who have already established successful PCMH initiatives.
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Background

Definition of a Medical Home

The concept of the medical home has existed since the 1960s, but has recently become a focus for discussion and innovation in the health care system. It was initially introduced by the American Academy of Pediatrics (AAP) in 1967 and referred to a central location for a child’s medical records; it was particularly important for children with special health care needs. This concept evolved over time from a centralized medical record to a method of providing comprehensive primary care for children at the community level. The American College of Physicians (ACP), and the American Academy of Family Physicians (AAFP) then developed their own versions of the concept, expanding its reach to care for adults.\(^1\) Examples of prominent current definitions of the medical home are those presented by the Patient-Centered Primary Care Collaborative (PCPCC), the National Committee for Quality Assurance (NCQA), and the Commonwealth Fund (CWF). These definitions share: adoption of health information technology and decision support systems, modification of clinical practice patterns, and ensuring continuity of care.\(^2,3,4,5\)

According to the Patient-Centered Primary Care Collaborative, the patient-centered medical home (PCMH) is a model of healthcare delivery that incorporates the following characteristics associated with better outcomes and lower costs:\(^3\)

- The PCMH is built upon the documented value of primary care in achieving better health outcomes, higher patient experience, and more efficient use of resources. Patients who receive care from a PCMH have continuous access to a personal physician who provides comprehensive and coordinated care for the large majority of their healthcare needs (from the Institute of Medicine definition of primary care).

- The PCMH would be responsible for all of the patients’ healthcare needs – acute care, chronic care, preventive services, and end of life care working with teams of healthcare professionals. The PCMH would coordinate the care of its patients with specialists, lab/x-ray facilities, hospitals, home care agencies, and all other healthcare professionals on the patient care team.

- The PCMH would adopt the principles of patient-centeredness: allowing patients free choice of physician, providing prompt appointments, reducing waiting times, delivering care based on the best evidence on clinical effectiveness, empowering patients to partner with their personal physicians on decision-making, and providing care in a culturally and linguistically appropriate manner.

- The PCMH would use health information systems to provide data and reminder prompts such that all patients receive needed services.
The current definition of a “medical home” or patient-centered medical home (PCMH) varies. Several professional groups, payors, and researchers have offered differing, or nuanced definitions of medical homes. The “Joint Principles of The Patient-Centered Medical Home” were developed in a collaborative effort by members of The American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), and American Osteopathic Association (AOA). These principles include:

- **Personal physician** - each patient has an ongoing relationship with a personal physician trained to provide first contact, continuous and comprehensive care.

- **Physician directed medical practice** – the personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients.

- **Whole person orientation** – the personal physician is responsible for providing for all the patient’s health care needs or taking responsibility for appropriately arranging care with other qualified professionals. This includes care for all stages of life; acute care; chronic care; preventive services; and end of life care.

- **Care is coordinated and/or integrated across all elements of the complex health care system** (e.g., subspecialty care, hospitals, home health agencies, nursing homes) and the patient’s community (e.g., family, public and private community-based services). Care is facilitated by registries, information technology, health information exchange and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner.

- **Quality and safety are hallmarks of the medical home:**
  - Practices advocate for their patients to support the attainment of optimal, patient-centered outcomes that are defined by a care planning process driven by a compassionate, robust partnership between physicians, patients, and the patient’s family.
  - Evidence-based medicine and clinical decision-support tools guide decision making.
  - Physicians in the practice accept accountability for continuous quality improvement through voluntary engagement in performance measurement and improvement.
  - Patients actively participate in decision-making and feedback is sought to ensure patients’ expectations are being met.
  - Information technology is utilized appropriately to support optimal patient care, performance measurement, patient education, and enhanced communication.
  - Practices go through a voluntary recognition process by an appropriate non-governmental entity to demonstrate that they have the capabilities to provide patient centered services consistent with the medical home model.
  - Patients and families participate in quality improvement activities at the practice level.
• Enhanced access to care is available through systems such as open scheduling, expanded hours and new options for communication between patients, their personal physician, and practice staff.

• Payment appropriately recognizes the added value provided to patients who have a patient-centered medical home. The payment structure should be based on the following framework:
  o It should reflect the value of physician and non-physician staff patient-centered care management work that falls outside of the face-to-face visit.
  o It should pay for services associated with coordination of care both within a given practice and between consultants, ancillary providers, and community resources.
  o It should support adoption and use of health information technology for quality improvement;
  o It should support provision of enhanced communication access such as secure e-mail and telephone consultation;
  o It should recognize the value of physician work associated with remote monitoring of clinical data using technology.
  o It should allow for separate fee-for-service payments for face-to-face visits. (Payments for care management services that fall outside of the face-to-face visits, as described above, should not result in a reduction in the payments for face-to-face visits).
  o It should recognize case mix differences in the patient population being treated within the practice.
  o It should allow physicians to share in savings from reduced hospitalizations associated with physician-guided care management in the office setting.
  o It should allow for additional payments for achieving measurable and continuous quality improvements.

The Arkansas Workforce Strategic Plan uses a generally accepted definition of the medical home that is offered by the Agency for Healthcare Research and Quality (AHRQ). The AHRQ defines a medical home not simply as a place but as a model of the organization of primary care that delivers the core functions of primary health care. ¹

The AHRQ definition of the medical home encompasses five functions and attributes:

**Patient-centered**: The primary care medical home provides primary health care that is relationship-based with an orientation toward the whole person. Partnering with patients and their families requires understanding and respecting each patient’s unique needs, culture, values, and preferences. The medical home practice actively supports patients in learning to manage and organize their own care at the level the patient chooses. Recognizing that patients and families are core members of the care team, medical home practices ensure that they are fully informed partners in establishing care plans.
Comprehensive care: The primary care medical home is accountable for meeting the large majority of each patient’s physical and mental health care needs, including prevention and wellness, acute care, and chronic care. Providing comprehensive care requires a team of care providers. This team might include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators, and care coordinators. Although some medical home practices may bring together large and diverse teams of care providers to meet the needs of their patients, many others, including smaller practices, will build virtual teams linking themselves and their patients to providers and services in their communities.

Coordinated care: The primary care medical home coordinates care across all elements of the broader health care system, including specialty care, hospitals, home health care, and community services and supports. Such coordination is particularly critical during transitions between sites of care, such as when patients are being discharged from the hospital. Medical home practices also excel at building clear and open communication among patients and families, the medical home, and members of the broader care team.

Superb access to care: The primary care medical home delivers accessible services with shorter waiting times for urgent needs, enhanced in-person hours, around-the-clock telephone or electronic access to a member of the care team, and alternative methods of communication such as email and telephone care. The medical home practice is responsive to patients’ preferences regarding access.

A systems-based approach to quality and safety: The primary care medical home demonstrates a commitment to quality and quality improvement by ongoing engagement in activities such as using evidence-based medicine and clinical decision-support tools to guide shared decision making with patients and families, engaging in performance measurement and improvement, measuring and responding to patient experiences and patient satisfaction, and practicing population health management. Sharing robust quality and safety data and improvement activities publicly is also an important marker of a system-level commitment to quality.

AHRQ recognizes the central role of health IT in successfully operationalizing and implementing the key features of the medical home. Additionally, AHRQ notes that building a primary care delivery platform that the nation can rely on for accessible, affordable; high-quality health care will require significant workforce development and fundamental payment reform. Without these critical elements, the potential of primary care will not be achieved. 1

Other innovative patient-centered care delivery models exist alongside a PCMH. A “health home” is for individuals enrolled in Arkansas Medicaid and who have conditions that require a more specialized care approach, such as individuals with developmental disabilities, severe and persistent mental illnesses, or other, a Health Home will be used to meet those unique needs rather than a medical home. Arkansas has received CMS funding to conduct planning activities for the Health
Home model for enrollees with chronic conditions under newly available State Option, Section 2703 of the Affordable Care Act. Health Homes are meant for people with Medicaid who either have two or more chronic conditions, have one chronic condition and are at risk for a second, or have one serious and persistent mental health condition.

The patient-centered medical home and health home will exist within a robust “Medical Neighborhood” - a totality of providers, related non-health services, and patients in the area, working together in a coherent, organized, and coordinated manner. The medical neighborhood can be conceptualized as a PCMH and the constellation of other clinicians providing health care services to patients within it, along with community and social service organizations and state and local public health agencies. Defined in this way, the PCMH and the surrounding medical neighborhood can focus on meeting the needs of the individual patient but also incorporate aspects of population health and overall community health needs in its objectives. PCMHs and Health Homes will serve as a vehicle to decrease fragmentation within the system, improve coordination, and place a greater emphasis on the needs of the patient. A medical neighborhood should also take on functions that span the entire population, such as managing population health.

**Methods**

**Search Strategy**

Pubmed and Medscape were searched using medical home, patient centered medical home, medical neighborhood, and patient centered care as primary search phrases. The web sites of the National Academy for State Health Policy, the Patient-Centered Primary Care Collaborative, and The Commonwealth Fund were also searched. These sources lead to secondary searches of cited literature and reports. Key sources are cited in the bibliography.

Search terms included: Patient-centered medical home, PCMH, Health Home, Medical Neighborhood, Patient Centered Care, Comprehensive Care, Care Coordination, Primary Care Workforce, Defining/Evaluating/Qualifying a Medical Home.

**Results**

**Patient-Centered Medical Home Strategies**

**Forming Partnerships**

Various strategies have been used by states regarding forming partnerships with key players, including patients, providers, and private sector payors. Initiatives in many states have taken a similar developmental approach in forming advisory committees, identifying who will be the convening agency to lead their initiative, determining key stakeholders, and in their initial engagement of stakeholders with whom they seek to partner.
In order to educate and gain feedback from stakeholders and increase buy-in, public forums and town hall-style meetings have been held in many states including Alabama, Connecticut, Oklahoma, and West Virginia. Some initiatives have included workgroup sessions to educate and gain feedback from stakeholders. For example, The West Virginia Bureau of Medical Services is leading a stakeholder advisory group for Affordable Care Act Section 2703 Health Homes that is open to all interested stakeholders. This advisory group includes four workgroups with the following focus areas: a Health Home Workgroup, a Community Care Coordination Workgroup, a Member Engagement Workgroup, and a Measures and Outcomes Workgroup.

Medicaid agencies convene stakeholders and lead initiatives in many states, including Alabama, Florida, Montana, New Jersey, and New Mexico. Florida’s Medicaid Medical Home Task Force stressed a “bottom-up” approach to developing a medical home program by soliciting input from providers, consumers, and other interested stakeholders. The task force also recommended that an advisory board assist in the planning and implementation of a Medicaid medical home pilot project.

In several states the legislature has acted to implement advisory committees and similar groups to engage partners. In Maryland, the Governor’s Council created the Patient-Centered Medical Home Workgroup in 2009. In Idaho, Gov. C. L. “Butch” Otter created an eight-member multi-stakeholder Governor’s Select Committee on Health Care in Executive Order 2007-13. The Select Committee was charged with providing recommendations from the Idaho Health Care Summit, including advancing medical homes. As a result of the Select Committee’s recommendations, Gov. Otter established the Idaho Medical Home Collaborative (IMHC) in Executive Order 2010-10. The Louisiana legislature established the Louisiana Health Care Quality Forum (LHCQF) with House Concurrent Resolution 75 of the 2007 Regular Legislative Session.

Defining and Recognizing Medical Homes

As states move towards a medical home model they must first define what a medical home is and what it should do, and establish processes to qualify and recognize medical homes. The Commonwealth Fund and The National Academy of State Health Policy have suggested the following desired traits of definition and qualification standards:

- Establish common principles and terms to build a medical home initiative;
- Establish concrete expectations for practices, providers, and patients;
- Reassure payers that practices that receive enhanced payments are providing high quality primary care; and
- Reassure practices that investments they make to improve the way they deliver care will be rewarded.

While states’ definitions may include national standards and align with the functions put forth in the JPPCMH and AHRQ definitions of a medical home, several states have developed their own definitions of a medical home to reflect local practice standards and values. Some individual state definitions of a medical home are:
Louisiana: Act 243 of the 2007 Regular Legislative Session defined a medical home system as: “a health care delivery system that is patient and family centered and is guided by a personal primary care provider who coordinates and facilitates preventive and primary care that improves patient outcomes in the most cost-efficient manner possible. By providing a coordinated continuum of care, the cost of the current health care delivery system shall be reduced, health outcomes shall improve, and the disparities in access to health care among the state's populations shall be reduced. The medical home system of care shall consist of an integrated system of public, private, or public and private primary care providers, specialty care groups, and hospital providers that are willing to participate in the integrated system and meet participation criteria.”

Montana: In March 2010, stakeholders initially agreed on the following definition of the patient-centered medical home: “In Montana, a patient-centered medical home is health care directed by primary care providers offering family centered, culturally effective care that is coordinated, comprehensive, continuous, and, when possible, in the patient's community and integrated across systems. Health care is characterized by enhanced access, an emphasis on prevention, and improved health outcomes and satisfaction. Primary care providers receive payment that recognizes the value of medical home services.”

Many states have sought to align payments with new expectations for quality and efficiency, and have done so by adopting standards that recognize the achievement of a practice in attaining certain standards or qualify practices as medical homes. The PCMH standards of The National Committee for Quality Assurance (NCQA) are widely used, and are required or expected for PCMH recognition in several states. Connecticut, Vermont, Rhode Island, New York, and North Carolina all use NCQA medical home standards to recognize medical homes. New PCMH standards were released in 2011 to replace those set forth by the NCQA in 2008, and differences in the two sets of standards reflect a more current understanding of what it means to be a PCMH. The 2011 NCQA standards build on those from 2008 and include the following points:

- Promotes patient-centered care
- Emphasizes language, culturally sensitive aspects
- Integrates behaviors affecting health, substance abuse, mental health and risk factor assessment and management
- Integrates applicability to pediatric patients
- Aligns with CMS Meaningful Use requirements
- Emphasizes relationship with/expectations of subspecialists
- Increases importance of evaluating patient experience
- Underscores the importance of system cost-savings
- Increases importance of using clinical performance measure results
Maine, Maryland, Massachusetts, and Pennsylvania are examples of states that have used modified versions of NCQA standards. Some states have created their own standards for recognizing and qualifying PCMH which may have one or multiple tiers of qualification. Single-tier standards have one set of measures that all practices must meet while multi-tiered programs have an initial core set of quality measures to encompass all providers, with other higher levels of qualification used to incent performance improvements. Colorado uses their own single tier qualification standards, though they use many elements of NCQA standards. This decision was in part based on concerns from providers that if NCQA standards were followed many smaller practices would be excluded due to their lack of health information technology or other resources required under NCQA standards. Oklahoma uses multi-tiered standards which allow practices to move from the entry level tier to the “advanced medical home” tier if they meet additional requirements such as after-hours care and same day appointments.  

Payment: Aligning Reimbursement and Purchasing

Increased payments provide incentive for practices to meet medical home quality standards and improve efficiency. States have engaged in various payment strategies to support providers who establish PCMHs. Some commonly adopted strategies are monthly care management fees plus fee-for-service payments; enhanced fee-for-service payments for certain office or outpatient visits known as “evaluation and management” visits; lump-sum payments for up-front costs; network payments; and pay-for-performance. 

Most states’ PCMH initiatives have offered a per member per month (PMPM) care management fee to providers who meet predetermined PCMH qualification standards. The payment amount varies across initiatives, and may or may not be adjusted depending on either patient health status and demography or medical home level. Some examples of states’ approach to PMPM and enhanced payments are: 

**Alabama:** For the Patient Care Networks of Alabama (PCNA): Medicaid pays the networks $3.00 PMPM for each assigned enrollee who is not aged, blind, or disabled (ABD). The fee is $5.00 PMPM for each assigned ABD enrollee. Networks are also eligible for up to $50,000 in reimbursement for start-up costs. For primary medical providers (PMPs): PMPs who have agreed to partner with their area networks are receiving a $1.60-$2.10 PMPM care management payment. This is in addition to the $1.00 Patient 1st care management PMPM that has traditionally been paid to all Patient 1st PMPs. Medicaid varies the additional network provider payment based on the average acuity level of each PMP’s panel. Since 2004, Patient 1st PMPs have been eligible to receive shared savings payments that vary in accordance with performance on certain quality benchmarks. As of late 2011, PMPs outside network areas are still receiving these incentive payments.

**Colorado:** In this state-wide Medicaid PCMH initiative, a $20 PMPM payment is divided among three entities. The primary care medical provider receives $4 PMPM, a regional care collaborative organization receives $13 PMPM, and a state-wide data and analytics contractor
receives a $3 PMPM payment. Colorado’s initiative also offers enhanced payment to practices based on performance.

North Carolina: Currently, Community Care of North Carolina (CCNC) providers and networks both receive per-member per-month (PMPM) payments for each patient under their care. For CCNC providers, this PMPM payment is in addition to fee-for-service reimbursement. CCNC providers receive:

- Aged, Blind and Disabled (ABD) population: $5.00 PMPM
- Non-ABD population: $2.50 PMPM

CCNC Networks receive:

- ABD population: $13.72 PMPM
- Non-ABD population: $3.72 PMPM

However, to support the central office, networks return $3.17 and $0.54 monthly for each ABD and non-ABD enrollee. Prior to statewide expansion and ABD participation, CCNC networks and providers both received $2.50 PMPM for each enrollee. Carolina Access providers not participating in the Community Care of North Carolina program receive $1.00 PMPM.

Maine: For the duration of the Maine Patient-Centered Medical Home (PCMH) Pilot, participating practices will receive per member per month (PMPM) payments of $7.00 for each eligible MaineCare (Medicaid) beneficiary. Medicare fee-for-service will be paying $6.95 PMPM to the practices and $2.95 PMPM to the Community Care Teams (CCTs). In addition to MaineCare and Medicare fee-for-service, three commercial payers – Anthem Blue Cross Blue Shield, Aetna, and Harvard Pilgrim – are also voluntarily participating in the Pilot. The amount that commercial insurers pay to practices is not publicly available.

Maryland: In the Maryland patient-centered medical home pilot, qualifying practices receive a PMPM payment ranging from $4.68–$11.54. The amount of the payment varies depending on payor type and practice size, with smaller practices receiving higher PMPM payments. Participating providers are eligible for on-going PMPM referred to as “fixed transformation payments”. Practices may also be eligible for “incentive payments”. In general, smaller practices receive higher PMPM payments than larger practices all other things being equal. Likewise, practices with higher recognition levels receive greater PMPMs. Federally qualified health centers (FQHCs) are not eligible for fixed transformation payments. The exact amounts of the fixed transformation payments are adjusted annually on the basis of the Medicare Economic Index.

Practice Support

Most practices will need to make changes in order to transition to a PCMH. Aside from appropriate payments, practices will need additional forms of support to further develop the systems and infrastructure necessary to implement and sustain a PCMH and advance patient-centered care. Visible leadership will be required to help practices undergo these changes by helping staff envision a better
organization and improved care, establish a quality improvement structure and culture, and ensure staff have the time and training to work on system change.8, 9

Practices must be supported technologically in the use of electronic health records (EHR), registries and data. States may direct participating practices to use a portion of the per-member per-month (PMPM) payment made by the state to establish and maintain a registry for tracking key information and develop a system for sharing clinical information with a key hospital.7 Health information technology (HIT) supports many of the core principles of PCMH, but there are still several challenges as not all technologies have functionalities yet that facilitate the model. We suggest patient-centeredness be one of the main concepts that drives the redesign and implementation of new health technologies in primary care. It is no longer about just implementing new technologies; these technologies must enhance patient-provider relationships, communication, access, and patients’ engagement in their own care.10

Practices will need other support measures including the use of learning collaboratives, deployment of practice coaches, and the addition of care coordinators on staff. States have put high priority on ensuring that patients and practices have access to these dedicated professionals who specialize in organizing care across settings to make sure patients get the right care at the right time.7 Many of the PMPM payments are designed to provide at least a portion of funding for hiring a care coordinator and it is reasonable for states to expect these funds to be used for this purpose. Additional opportunities exist for funding and supporting care coordination. Several states are exploring how to best use area health education centers (AHECs) and other state organizations to train care coordinators.7 Some examples of strategies for practice support in advancing medical homes in:2

Colorado: Under the Accountable Care Collaborative, Regional Care Collaborative Organizations (RCCOs) and the State-wide Data and Analytics Contractor (SDAC) provide support for participating Primary Care Medical Providers (PCMPs). RCCOs provide:

- Technical assistance provided through on-site quality improvement (QI) coaching, learning community webinars, and learning collaborative;
- Administrative support includes RCCOs providing PCMPs with information and education on Colorado Medicaid and providing assistance with prior authorization requests and payment issues;
- Practice support includes RCCOs assisting PCMPs to establish and implement patient-centered medical homes, including supporting practice redesign;
- Resources such as a provider website that includes general and specific information about the program and RCCO support services; and
- Access to client health, claim, and utilization data provided from the SDAC and assist in the acquisition and analysis of SDAC reports.
Rhode Island: Chronic Care Sustainability Initiative (CSI-RI) practices receive support through practice coaching and learning collaboratives. They are also receiving health IT support through the Beacon Community program as well as on-going data feedback. Additionally, practices have received support for hiring nurse care managers or contracting for remote nurse care manager support.

Vermont: Practices are supported in numerous ways including through a quality improvement collaborative sponsored by the Vermont Program for Quality in Health Care. Funding has been provided for expanded electronic medical record (EMR) use, including population management, data sharing, and a web-based clinical tracking system with e-prescribing. The University of Vermont’s Vermont Child Health Improvement Program (UVM VCHIP) works with practices to apply for and achieve NCQA PCMH recognition. Each practice employs a care integration coordinator and may receive practice coaching. Practices are supported by multidisciplinary community care teams including Vermont Department of Health (VDH) Public Health Prevention Specialists.

North Carolina: In the Community Care of North Carolina Program (CCNC), primary care providers and 14 locally operated networks receive per-member per-month payments to offer medical home support services to patients and providers. These services include care management, pharmacy support, and hospital discharge planning. Practices and network staff receive key data such as real-time hospital and emergency department censuses, pharmacy claims, medical claims, and lab results. Providers can also view condition-specific patient registries, and they receive regular feedback on their performance. As a condition of participating in the program, practices must meet state developed standards. (In regions where Medicare is participating, practices must meet NCQA standards.) First launched in 1998, the program now serves Medicaid patients state-wide. In addition, other payors (Medicare, Blue Cross Blue Shield of North Carolina, the state employee plan, and certain self-insured groups) are participating in select regions.

Care managers play a central role in helping the CCNC networks achieve its goals. They are primarily responsible for helping to identify patients with high risk conditions or needs, assisting the providers in disease management education and/or follow-up, helping patients coordinate their care or access needed services, and collecting data on process and outcome measures. The CCNC Program Office recognizes the document Best Practices in Coordinated Care (Mathematica Policy Research) as an excellent reference for describing the key processes involved in the delivery of case and disease management services. The CCNC Informatics Center in Raleigh provides each network access to a secure, web-based Care Management Information System (CMIS) for the management of its enrollees. The system includes modules for:

- Reporting (both individual and population level)
- Accessing claims data and other clinical and patient-centric data
- Case Assignment
- Patient Assessment and Care Planning
• Medication Management
• Secure Messaging System

The system can be used by all individuals that are either employed by, or are business associates of the CCNC, provided that each user is engaged in the process of patient care coordination only. CCNC leadership and network representatives have on-going planning sessions aimed at refining and improving the Care Manager’s ability to assess, plan, implement, and evaluate patient care management through CMIS. 11

Measuring Results

Some preliminary lessons may be learned from PCMH demonstration projects that have been conducted or are currently underway in various states. In an effort to test the feasibility of the PCMH on a national level, The American Academy of Family Physicians launched the first National Demonstration Project (NDP) in June 2006 to test a model of the PCMH in a diverse national sample of 36 family practices. Practices were randomized into either facilitated or self-directed groups. Facilitated practices received on-going assistance from a change facilitator, as well as on-going consultation from a panel of experts in practice economics, health information technology, quality improvement, and discounted software technology, training, and support. They were also involved in 4 learning sessions and regular group conference telephone calls. Self-directed practices were given access to Web-based practice improvement tools and services, but they did not have on-site assistance. They self-organized their own learning session halfway through the 2-year project and participated in the final learning session. 16

Analysis of the NDP serves to address both the effect of the PCMH model on patient and practice outcomes and the effectiveness of facilitated interventions in bringing about transformation. Among the recommendations that have been made based on continued analysis of the NDP, several highlight the importance of refined methods of measuring the results of the PCMH. In reviewing the results of the NDP, leading researchers have recommended the acceleration of efforts to improve current measures of the core attributes of primary care. Developing better measures for whole-person health within a community context and for assessing healing relationships is necessary to ensure appropriate outcome measures for primary care. Along with the NDP, many demonstration projects have been completed or are currently underway at the state level that may serve to inform states as they move towards developing PCMH initiatives.

Although medical home initiatives have been underway in some states for several years, many medical home initiatives are still in their infancy. Certain outcomes must be measured and evaluated In order for Medicaid agencies and other payors to justify continued funding of medical home initiatives. Measurement outcomes have been set forth that generally fall under four categories: 8

Improvements within primary care practices: Alabama, Iowa, Maryland, Nebraska, Texas, and Virginia intend to assess the effect of their programs on primary care, particularly the program’s impact on access and clinical processes.
Effect on services delivered by other providers: Many plan to examine the effects of their programs on other aspects of the delivery system. While many of these services are not under the direct control of primary care providers, states believe that empowered primary care can lead to improved patterns of utilization.

Cost containment: Many of the specific measures and targets were chosen because improvements in these areas should produce significant cost savings for Medicaid. In addition, these states plan to measure actual changes in Medicaid costs, most often as a change in the per-member per-month cost of care.

Patient and provider experience: Alabama, Nebraska, and Texas seek to examine patient satisfaction and experience. Alabama further specified that they plan to use the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey tool. Nebraska reported that they will also examine provider satisfaction.

In order to further promote effectiveness and refine these initiatives, a recent collaboration by a group of more than 75 researchers sought to identify a core set of measures to evaluate the PCMH with respect to cost, utilization, and clinical quality. The objectives of this group were to:

- reach consensus on a standard core set of outcome measures and instruments;
- share the consensus on instruments, metrics, and methodological lessons with interested researchers around the country; and
- foster an ongoing and supportive exchange that helps evaluators share ideas that improve their evaluation designs, analytic approach, and interpretation of findings.

The researchers found that the vast majority of participants supported the recommendations of the cost and utilization work group to include emergency department (ED) visits, hospitalizations, and readmissions as the primary utilization indicators in the minimum measure set. According to the work group’s analysis, these indicators were both consistent with the logic model that attempted to capture all the levers a medical home could use to affect utilization, cost, and efficiency and were supported by at least some empirical evidence. For cost measures, there was consensus that evaluations should always include analysis of total per member per month cost effects for high-risk patients, since the PCMH initiative will most likely be able to detect a measureable effect on this patient population. A new measure on total cost of care and resource use, which was endorsed by the National Quality Forum (NQF) in January 2012, was not yet available for consideration during the work group’s deliberations in June 2011, though it does appear to be promising.

PCMH initiatives in other states have developed various strategies to measuring results of the patient-centered medical home:

North Carolina: Treo Solutions, Inc. has reported that Community Care of North Carolina has saved over $1.5 billion between 2007 and 2009. Mercer, Inc. prepared studies that found annual savings ranging from $154-194 million between 2006 and 2009. CCNC has also reported that
enrollee’s diabetes, asthma, and heart disease HEDIS measures rank in the top 10% nationally (compared to commercial managed care plans). Practice assessments are completed by local Community Care Program Office using:

• Medicaid claims data;
• Pharmacy claims data – web-based pharmacy home program;
• Case identification reports – risk stratification;
• Gaps in care analysis reports;
• Customized queries; and
• Baseline measures, on-going monitoring, and trend analysis.

Furthermore, an informatics center can provide feedback reports at the individual, practice, network and state levels. However, certain data (including substance abuse and HIV data) cannot be included in individual reports. The Brookings Institution will be evaluating the public-private “First in Health” program’s impact on both quality and cost of care.²

**Oklahoma:** The Oklahoma Health Care Authority (OHCA) uses HEDIS measures to evaluate performance. The SFY2010 Performance and Quality Report describes that the OHCA Quality Assurance and Improvement Department uses standardized audit tools to conduct on-site reviews of contracted SoonerCare Choice providers. Following the redesign of SoonerCare Choice, the number of patients contacting the Oklahoma Health Care Authority (OHCA) for same/next day access issues in a year decreased from 1670 in 2008 to 13 in 2009 to 4 in 2010. The program has demonstrated a $29 decrease in per capita member costs (per patient/per year) from 2008-2010 while increasing evidence-based primary care services (including breast and cervical cancer screening). A 2009 pediatric health survey showed an increase of more than 18 percent of patients between 2007 and 2009 who “always [received] treatment quickly.” A 2010 adult health survey found a similar increase of 8 percent for adults between 2008 and 2010.²

**Conclusions**

A good deal of literature exists regarding the medical home model, and the current literature reflects the evolution of the PCMH concept and its implication for the future of improving primary care delivery. As more states develop PCMH initiatives, navigate the implementation process and measure the results of their efforts, the scope of related literature and publications will certainly broaden. Challenges and opportunities exist for states that choose to use medical homes to address primary care improvement at the system, practice, and patient level. As variation exists within the states in terms of resources and goals for system improvements, states have approached the medical home concept differently and have seen promising preliminary results while achieving varying degrees of success.

The current body of literature shows that barriers exist within each state regarding the cost, quality, access, and political feasibility associated with PCMH initiatives and overall sustainability of primary care systems. The level of transformation involved in PCMH requires organizations and practices to rethink
the way they deliver care, and make necessary changes. The medical home concept is still relatively new, yet it offers the promise of reduced costs and improved quality in the delivery of primary care. The path to sustainability in primary care delivery will become clearer as states develop more sophisticated methods and innovations of care delivery through gradual adoption of the PCMH model.

Next Steps

By examining what other states and entities have already experienced regarding design and implementation of PCMHs, Arkansas stakeholders and policymakers will be better informed as they strive to develop a successful medical home model for the state. A state-based PCMH model will be designed with input from public and private payers, health care providers, and patients, and will target all primary care practices (e.g. family practice, pediatric, geriatric). Discussion to define an appropriate process to qualify and recognize medical homes will also be necessary.

In addition to aligning the Arkansas Medicaid Health Home initiative with the future PCMH design, the Arkansas Workforce Strategic Plan will be consulted throughout as it fully highlights the need for an expanded primary care workforce, increased use of health information technology, improved and more efficient care coordination and a financing strategy that incents patient- and family-centered care. The entire spectrum of PCMH strategies that have been used by other states, as well as any current confluent opportunities such as Medicare’s Comprehensive Primary Care Initiative (CPC), in order to design a PCMH model will be considered and will at minimum address, forming partnership, patient empanelment, care coordination, practice transformation, enhanced payment, shared savings and quality reporting.

References


**PUBMED**


**MEDSCAPE**


Appendix A
Reference list with abstracts where applicable


   The concept of a medical home is receiving increased attention as a potential means to improve care and reduce costs. This study describes the characteristics and capabilities of practices that have achieved recognition of National Committee for Quality Assurance as a "patient-centered medical home" (PCMH). Both small and large practices demonstrate capabilities related to the goals of PCMH of accessible, coordinated, and patient-centered care; however, practices affiliated with larger organizations achieve higher levels of PCMH recognition compared with unaffiliated small practices. Efforts to support practices to implement medical home capabilities are needed, particularly in the use of data for population management and patient self-management.


   BACKGROUND: The Patient-Centered Medical Home (PCMH) is a widely endorsed model of delivery system reform that emphasizes primary care. Pilot demonstration projects are underway in many states, sponsored by Medicare, Medicaid, major health plans and multi-payer coalitions.

   METHODS: In this paper we consider the development of a long-term policy-relevant research agenda on outcomes of the PCMH. We provide an overview of potential measures of PCMH impact, identify measurement challenges and recommend areas for further study. Although the PCMH should not be expected to solve every problem in the health care system, developing a research agenda for measuring outcomes of delivery system innovations such as the PCMH should be considered in the context of the larger effort to improve the US health care system, with the ultimate goal to improve population health.

   RESULTS: As a framework for our discussion, we have chosen the Institute of Medicine's six specific aims for 21st century health care: (1) safe, (2) effective, (3) patient-centered, (4) timely, (5) efficient and (6) equitable. In addition, we include potential areas of PCMH outcomes that do not easily fall under this framework and consider unintended consequences.

   CONCLUSION: Multi-stakeholder involvement will be essential in developing a long-term policy-relevant research agenda for outcomes of the PCMH.


The global themes that arose in our focus groups included the desire for timely, clear, and courteous communication; a practice that is structured to facilitate an ongoing relationship with a provider who knows the patient; and a relationship that allows the patient both to trust the provider's guidance and to engage more fully in his or her own care.
CONCLUSIONS: Our patients want a provider to know them personally and to take time to listen to their issues. They feel that they cannot access their providers in a timely fashion, find our automated phone systems frustrating, and want more time with their provider. Although the technological and structural implementation of the PCMH requires considerable effort and resources, we cannot neglect the relationships we have with our patients. Patients should be involved in this process of change to ensure we address their concerns and preserve the primary care relationships they value.


PUBMED

This article describes patient-centered medical home initiatives that seventeen states have launched. These initiatives use national recognition or state-based qualification standards along with incentive payments to address soaring costs and lagging health outcomes in state Medicaid programs. Even though these initiatives are in their infancy, early results are encouraging. Modest increases in payment to physicians, aligned with quality improvement standards, have not only resulted in promising trends for costs and quality, but have also greatly improved access to care. Several state programs have already demonstrated declines in per capita costs for patients enrolled in Medicaid; increased participation of physicians in caring for Medicaid patients; and high patient and provider satisfaction. These early results give states good reason to continue developing patient-centered medical homes as part of their Medicaid programs. This article provides a closer look at these innovative models, to inform public and private reform efforts.

This article summarizes findings from the National Demonstration Project (NDP) and makes recommendations for policy makers and those implementing patient-centered medical homes (PCMHs) based on these findings and an understanding of diverse efforts to transform primary care. The NDP was launched in June 2006 as the first national test of a particular PCMH model in a diverse sample of 36 family practices, randomized to facilitated or self-directed groups. An independent evaluation team used a multimethod evaluation strategy, analyzing data from direct observation, depth interviews, e-mail streams, medical record audits, and patient and clinical staff surveys. Peer-reviewed manuscripts from the NDP provide answers to 4 key questions: (1) Can the NDP model be built? (2) What does it take to build the NDP model? (3) Does the NDP model make a difference in quality of care? and (4) Can the NDP model be widely disseminated? We find that although it is feasible to transform independent practices into the NDP conceptualization of a PCMH, this transformation requires tremendous effort and motivation, and benefits from external support. Most practices will need additional resources for this magnitude of transformation. Recommendations focus on the need for the PCMH model to continue to evolve, for delivery system reform, and for sufficient resources for implementing personal and practice development plans. In the meantime, we find that much can be done before larger health system reform.


The patient-centered medical home (PCMH) is four things: 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 health care system and reimbursement changes. All of these are focused on improving the health of whole people, families, communities and populations, and on increasing the value of healthcare. The value of the fundamental tenets of primary care is well established. This value includes higher health care quality, better whole-person and population health, lower cost and reduced inequalities compared to healthcare systems not based on primary care. The needed practice organizational and health care system change aspects of the PCMH are still evolving in highly related ways. The PCMH will continue to evolve as evidence comes in from hundreds of demonstrations and experiments ongoing around the country, and as the local and larger healthcare systems change. Measuring the PCMH involves the following: Giving primacy to the core tenets of primary care. Assessing practice and system changes that are hypothesized to provide added value. Assessing development of practices’ core processes and adaptive reserve. Assessing integration with more functional healthcare system and community resources. Evaluating the potential for unintended negative consequences from valuing the more easily measured instrumental features of the PCMH over the fundamental relationship and whole system aspects. Recognizing that since a fundamental benefit of primary care is its adaptability to diverse people, populations and systems, functional PCMHs will look different in different settings. Efforts to transform practice to patient-centered medical homes must recognize, assess and value the fundamental features of primary care that provide personalized, equitable health care and foster individual and population health.


OBJECTIVES: To systematically review the current evidence on the patient-centered medical home (PCMH, or medical home), which aims to reinvigorate primary care and achieve the triple aim of better quality, improved experience, and lower costs.

STUDY DESIGN: Systematic review of quantitative evidence on the PCMH.

METHODS: Out of 498 studies published or disseminated from January 2000 to September 2010 on US-based interventions, 14 evaluations of 12 interventions met our inclusion criteria: (1) tested a practice-level intervention with 3 or more of 5 key PCMH components and (2) conducted a quantitative study of one of the triple aim outcomes or of healthcare professional experience. We synthesized findings on interventions that were evaluated using rigorous methods. We also provide guidance to structure future evaluations to maximize learning.
RESULTS: The interventions most often cited to support the medical home can be viewed as precursors to the medical home. Evaluations of 6 of these interventions provided rigorous evidence on 1 or more outcomes. This evidence indicates some favorable effects on all 3 triple aim outcomes, a few unfavorable effects on costs, and many inconclusive results.

CONCLUSIONS: Although the PCMH is a promising innovation, rigorous quantitative evaluations and comprehensive implementation analyses are needed to assess effectiveness and refine the model to meet stakeholders' needs. Findings from future evaluations will help guide the substantial efforts practices and payers invest to adopt the PCMH with the goal of achieving the triple aim outcomes.


BACKGROUND: The patient-centered medical home (PCMH) has become a widely cited solution to the deficiencies in primary care delivery in the United States. To achieve the magnitude of change being called for in primary care, quality improvement interventions must focus on whole-system redesign, and not just isolated parts of medical practices.

METHODS: Investigators participating in 9 different evaluations of Patient Centered Medical Home implementation shared experiences, methodological strategies, and evaluation challenges for evaluating primary care practice redesign.

RESULTS: A year-long iterative process of sharing and reflecting on experiences produced consensus on 7 recommendations for future PCMH evaluations: (1) look critically at models being implemented and identify aspects requiring modification; (2) include embedded qualitative and quantitative data collection to detail the implementation process; (3) capture details concerning how different PCMH components interact with one another over time; (4) understand and describe how and why physician and staff roles do, or do not evolve; (5) identify the effectiveness of individual PCMH components and how they are used; (6) capture how primary care practices interface with other entities such as specialists, hospitals, and referral services; and (7) measure resources required for initiating and sustaining innovations.

CONCLUSIONS: Broad-based longitudinal, mixed-methods designs that provide for shared learning among practice participants, program implementers, and evaluators are necessary to evaluate the novelty and promise of the PCMH model. All PCMH evaluations should as comprehensive as possible, and at a minimum should include a combination of brief observations and targeted qualitative interviews along with quantitative measures.


After adjusting for baseline, seniors in the PCMH clinic reported higher ratings than controls on 3 of 7 patient experience scales. Seniors in the PCMH clinic had significantly greater quality outcomes over time, but this difference was not significant relative to control. PCMH patients used more e-mail, phone, and specialist visits but fewer emergency services and inpatient admissions for ambulatory care sensitive conditions. At 1 and 2 years, the PCMH and control clinics did not differ significantly in overall costs.

IMPLICATIONS: A PCMH redesign can be associated with improvements in patient experience and quality without increasing overall cost.


Patient-centeredness is often only vaguely defined as being in opposition to provider-centered or technology-centered. Our analysis shows that focusing on either technological improvements or enhancing patient-centered care will not improve the fragmented healthcare system in the United States. We argue that these two concepts are not incompatible as sometimes believed, but rather it is critical that we recognize they must work together in routine practices in order to truly improve the state of healthcare.

CONCLUSION: Health information technology (HIT) supports many of the core principles of PCMH, but there are still several challenges as not all technologies have functionalities yet that facilitate the model. We suggest patient-centeredness be one of the main concepts that drives the redesign and implementation of new health technologies in primary care. It is no longer about just implementing new technologies; these technologies must enhance patient-provider relationships, communication, access, and patients’ engagement in their own care.

**PURPOSE:** Understanding the transformation of primary care practices to patient-centered medical homes (PCMHs) requires making sense of the change process, multilevel outcomes, and context. We describe the methods used to evaluate the country’s first national demonstration project of the PCMH concept, with an emphasis on the quantitative measures and lessons for multi-method evaluation approaches.

**METHODS:** The National Demonstration Project (NDP) was a group-randomized clinical trial of facilitated and self-directed implementation strategies for the PCMH. An independent evaluation team developed an integrated package of quantitative and qualitative methods to evaluate the process and outcomes of the NDP for practices and patients. Data were collected by an ethnographic analyst and a research nurse who visited each practice, and from multiple data sources including a medical record audit, patient and staff surveys, direct observation, interviews, and text review. Analyses aimed to provide real-time feedback to the NDP implementation team and lessons that would be transferable to the larger practice, policy, education, and research communities.

**RESULTS:** Real-time analyses and feedback appeared to be helpful to the facilitators. Medical record audits provided data on process-of-care outcomes. Patient surveys contributed important information about patient-rated primary care attributes and patient-centered outcomes. Clinician and staff surveys provided important practice experience and organizational data. Ethnographic observations supplied insights about the process of practice development. Most practices were not able to provide detailed financial information.

**CONCLUSIONS:** A multi-method approach is challenging, but feasible and vital to understanding the process and outcome of a practice development process. Additional longitudinal follow-up of NDP practices and their patients is needed.


The Patient Protection and Affordable Care Act of 2010 provides for a number of major payment and delivery system initiatives. These potential changes need to be tested, scaled, and adapted with an urgency not evident in previous demonstration projects of the Centers for Medicare and Medicaid Services. We discuss lessons learned from our iterative tests of care reengineering at Geisinger—specifically, through our advanced medical home model, ProvenHealth Navigator, and the way we continuously modified the model to improve quality and value. We hypothesize that the most important ingredient in our model has been the embedding of nurse case managers into our community practices and the real-time feedback of data on the use of health services by the most complex patients.


One of the primary goals of the patient-centered medical home (PCMH) is to provide higher quality care that leads to better patient outcomes. Currently, there is only limited evidence regarding the ability of PCMHs to achieve this goal. This article demonstrates the effect of PCMHs in improving certain clinical outcomes, as shown by the ProvenHealth Navigator (PHN), an advanced PCMH model developed and implemented by Geisinger Health System. In this study, the authors examined the claims data from Geisinger Health Plan between 2005 and 2009 and estimated the effect of PHN on reducing amputation rates among patients with diabetes, end-stage renal disease, myocardial infarction, and stroke. The results show that, despite its relatively short period of existence, PHN has led to significant improvements in certain outcomes, further illustrating its potential as a care delivery model to be adopted on a wider scale.


**OBJECTIVES:** To estimate cost savings associated with ProvenHealth Navigator (PHN), which is an advanced model of patient-centered medical homes (PCMHs) developed by Geisinger Health System, and determine whether those savings increase over time.
STUDY DESIGN: A retrospective claims data analysis of 43 primary care clinics that were converted into PHN sites between 2006 and 2010. The study population included Geisinger Health Plan’s Medicare Advantage plan enrollees who were 65 years or older treated in these clinics (26,303 unique members).

METHODS: Two patient-level multivariate regression models (with and without interaction effects between prescription drug coverage and PHN exposure) with member fixed effects were used to estimate the effect of members’ exposure to PHN on per-member per-month total cost, controlling for member risk, seasonality, yearly trend, and a set of baseline clinic characteristics.

RESULTS: In both models, a longer period of PHN exposure was significantly associated with a lower total cost. The total cumulative cost savings over the study period was 7.1% (95% confidence interval [CI] 2.6-11.6) using the model with the prescription drug coverage interaction effects and 4.3% (95% CI 0.4-8.3) using the model without the interaction effects. Corresponding return on investment was 1.7 (95% CI 0.3-3.0) and 1.0 (95% CI -0.1 to 2.0), respectively.

CONCLUSIONS: Our finding suggests that PCMHs can lead to significant and sustainable cost savings over time.


This article provides an overview of the Patient-Centered Medical Home (PCMH) care model. It provides a history and definition of the concept, a discussion of its growing acceptance by the health-care community, and a review of current public and public-private demonstration projects testing the concept. The role of specialty/subspecialty practices within the PCMH model is described, with a focus on the potential for these practices to serve as a PCMH for a subgroup of patients or, alternatively, as a PCMH "neighbor" that interfaces effectively with PCMH practices. The authors conclude that the model for effective connections between the PCMH and specialty/subspecialty practices requires further development, including the cross-specialty establishment of guidelines and processes regarding referrals, information flow, transitions in care, and accountability. The efforts of the American College of Physicians’ Council of Subspecialty Societies PCMH Workgroup to further develop this model are described. The authors encourage involvement from all interested stakeholders to ensure that the issues and challenges identified are addressed through collaboration and consensus based on available evidence.


Improving health literacy is one key to buoying our nation’s troubled health care system. As system-level health literacy improvement strategies take the stage among national priorities for health care, the patient-centered medical home (PCMH) model of care emerges as a compelling avenue for their widespread implementation. With a shared focus on effective communication and team-based care organized around patient needs, health literacy principles and the PCMH are well aligned. However, their synergy has received little attention, even as PCMH demonstration projects and health literacy interventions spring up nationwide. While many health literacy interventions are limited by their focus on a single point along the continuum of care, creating a “room” for health literacy within the PCMH may finally provide a multi-dimensional, system-level approach to tackling the full range of health literacy challenges. Increasing uptake coupled with federal support and financial incentives further boost the model’s potential for advancing health literacy. On the journey toward a revitalized health care system, integrating health literacy into the PCMH presents a promising opportunity that deserves consideration.


RESULTS: Content analysis identified two main domains for practice improvement related to: (1) the process of care, and (2) patients’ involvement in their disease management. Examples of desired process of care changes included improvement in patient tracking and follow-up, standardization of processes of care and overall clinic documentation. Changes related to patients’ involvement in their care included improving (a) health education, and (b) self-care management. Among the internal barriers were: staff readiness for change, poor communication and relationship difficulties among team members. External barriers were insurance regulations, finances and patient health literacy.
CONCLUSIONS: Transforming practices to more patient-centered models of care will be a priority for primary care providers. Identifying opportunities and challenges associated with implementing change is critical for successful improvement programs. Successful strategies for enhancing the adoption and uptake of PCMH elements should leverage areas of concordance between practice members' perceived needs and planned improvement efforts.


OBJECTIVE: To examine the importance of patient-based measures and practice infrastructure measures of the patient-centered medical home (PCMH).

DATA SOURCES: A total of 3,671 patient surveys of 202 physicians completing the American Board of Internal Medicine (ABIM) 2006 Comprehensive Care Practice Improvement Module and 14,457 patient chart reviews from 592 physicians completing ABIM's 2007 Diabetes and Hypertension Practice Improvement Module.

METHODOLOGY: We estimated the association of patient-centered care and practice infrastructure measures with patient rating of physician quality. We then estimated the association of practice infrastructure and patient rating of care quality with blood pressure (BP) control.

RESULTS: Patient-centered care measures dominated practice infrastructure as predictors of patient rating of physician quality. Having all patient-centered care measures in place versus none was associated with an absolute 75.2 percent increase in the likelihood of receiving a top rating. Both patient rating of care quality and practice infrastructure predicted BP control. Receiving a rating of excellent on care quality from all patients was associated with an absolute 4.2 percent improvement in BP control. For reaching the maximum practice-infrastructure score, this figure was 4.5 percent.

CONCLUSION: Assessment of physician practices for PCMH qualification should consider both patient based patient-centered care measures and practice infrastructure measures.


BACKGROUND: A unique statewide multipayer initiative in Pennsylvania was undertaken to implement the Patient-Centered Medical Home (PCMH) guided by the Chronic Care Model (CCM) with diabetes as an initial target disease. This project represents the first broad-scale CCM implementation with payment reform across a diverse range of practice organizations and one of the largest PCMH multipayer initiatives.

METHODS: Practices implemented the CCM and PCMH through regional Breakthrough Series learning collaboratives, supported by Improving Performance in Practice (IPP) practice coaches, with required monthly quality reporting enhanced by multipayer infrastructure payments. Some 105 practices, representing 382 primary care providers, were engaged in the four regional collaboratives. The practices from the Southeast region of Pennsylvania focused on diabetes patients (n = 10,016).

RESULTS: During the first intervention year (May 2008-May 2009), all practices achieved at least Level 1 National Committee for Quality Assurance (NCQA) Physician Practice Connections Patient-Centered Medical Home (PPC-PCMH) recognition. There was significant improvement in the percentage of patients who had evidence-based complications screening and who were on therapies to reduce morbidity and mortality (statins, angiotensin-converting enzyme inhibitors). In addition, there were small but statistically significant improvements in key clinical parameters for blood pressure and cholesterol levels, with the greatest absolute improvement in the highest-risk patients.

CONCLUSIONS: Transforming primary care delivery through implementation of the PCMH and CCM supported by multipayer infrastructure payments holds significant promise to improve diabetes care.

BACKGROUND: The Patient-Centered Medical Home (PCMH) is a widely endorsed model of delivery system reform that emphasizes primary care. Pilot demonstration projects are underway in many states, sponsored by Medicare, Medicaid, major health plans and multi-payer coalitions.

METHODS: In this paper we consider the development of a long-term policy-relevant research agenda on outcomes of the PCMH. We provide an overview of potential measures of PCMH impact, identify measurement challenges and recommend areas for further study. Although the PCMH should not be expected to solve every problem in the health care system, developing a research agenda for measuring outcomes of delivery system innovations such as the PCMH should be considered in the context of the larger effort to improve the US health care system, with the ultimate goal to improve population health.

RESULTS: As a framework for our discussion, we have chosen the Institute of Medicine's six specific aims for 21st century health care: (1) safe, (2) effective, (3) patient-centered, (4) timely, (5) efficient and (6) equitable. In addition, we include potential areas of PCMH outcomes that do not easily fall under this framework and consider unintended consequences.

CONCLUSION: Multi-stakeholder involvement will be essential in developing a long-term policy-relevant research agenda for outcomes of the PCMH.


PURPOSE We describe changes over time in performance on measures of technical quality and patient experience as a group of primary care clinics transformed themselves into level III patient-centered medical homes. METHODS A group of 21 Minnesota primary care clinics achieving level III recognition as medical homes by the National Committee for Quality Assurance has been tracking a variety of quality and patient satisfaction measures for years. We analyzed trends in these measures and compared them with those of other medical groups in the community to estimate what we might expect as other primary care sites gear up to achieve medical home status. RESULTS The clinics in this group achieved a 1% to 3% increase per year in patient satisfaction and a 2% to 7% increase per year in performance on quality measures for diabetes, coronary artery disease, preventive services, and generic medication use. When compared with the average for other medical groups in the region, the rates of increase were greater for satisfaction, but similar for the quality measures. CONCLUSIONS Achieving medical home recognition was associated with improvements in quality and patient satisfaction for these clinics, but the rate of improvement is slow and does not always exceed levels in the surrounding community in Minnesota (which are also improving). Expectations for large and rapid change are probably unrealistic.


The concept of the medical home has existed since the 1960s, but has recently become a focus for discussion and innovation in the health care system. The most prominent definitions of the medical home are those presented by the Patient-Centered Primary Care Collaborative, the National Committee for Quality Assurance, and the Commonwealth Fund. These definitions share: adoption of health information technology and decision support systems, modification of clinical practice patterns, and ensuring continuity of care. Each of these components is a complex undertaking, and there is scant evidence to guide assessment of diverse strategies for achieving their integration into a medical home. Without a shared vocabulary and common definitions, policy-makers seeking to encourage the development of medical homes, providers seeking to improve patient care, and payers seeking to develop appropriate systems of reimbursement will face challenges in evaluating and disseminating the medical home model.


The medical home is a potentially transformative strategy to address issues of access, quality, and efficiency in the delivery of health care in the United States. While numerous organizations support a physician-driven definition, it is by no means the universally accepted definition. Several professional groups, payers, and researchers have offered differing, or nuanced definitions of medical homes. This lack of consensus has contributed to uncertainty among providers about the medical home. We conducted a systematic review of the literature on the medical home and identified 29 professional, government, and academic sources offering definitions. While consensus appears to exist around a core of selected features, the medical home
means different things to different people. The variation in definitions can be partly explained by the obligation of organizations to their members and whether the focus is on the patient or provider. Differences in definitions have implications at both the policy and practice levels.


Many commentators view the conversion of small, independent primary care practices into patient-centered medical homes as a vital step in creating a better-performing health care system. The country’s first national medical home demonstration, which ran from June 1, 2006, to May 31, 2008, and involved thirty-six practices, showed that this transformation can be lengthy and complex. Among other features, the transformation process requires an internal capability for organizational learning and development; changes in the way primary care clinicians think about themselves and their relationships with patients as well as other clinicians on the care team; and awareness on the part of primary care clinicians that they will need to make long-term commitments to change that may require three to five years of external assistance. Additionally, transforming primary care requires synchronizing practice redesign with development of the health care “neighborhood,” which is made up of a broad range of health and health care resources available to patients. It also requires payment reform that supports practice development and a policy environment that sets reasonable expectations and time frames for the adoption of appropriate innovations.


Many are calling for the expansion of the patient-centered medical home model into rural and underserved populations as a transformative strategy to address issues of access, efficiency, quality, and sustainability in the delivery of health care. Patient-centered medical homes have been touted as a promising cost-saving model for comprehensive management of persons with chronic diseases and disabilities, but it is unclear how rural practitioners in medically underserved areas will implement the patient-centered medical home. This article examines how the Patient Protection & Affordable Care Act of 2010 will enhance rural providers’ ability to provide patient-centered care and services contemplated under the Act in a comprehensive, coordinated, cost-effective way despite leaner budgets and health workforce shortages.

**Medscape**


**BACKGROUND AND OBJECTIVES:** Residency programs face inevitable challenges as they redesign their practices for higher quality care and resident training. Identifying and addressing early barriers can help align priorities and thereby augment the capacity to change.

**METHODS:** Evaluation of the Colorado Family Medicine Residency PCMH Project included iterative qualitative analysis of field notes, interviews, and documents to identify early barriers to change and strategies to overcome them.

**RESULTS:** Nine common but not universal barriers were identified: (1) a practice’s history reflected some negative past experiences with quality improvement or routines incompatible with transformative change, (2) leadership gaps were evident in unprepared practice leaders or hierarchical leadership, (3) resistance and skepticism about change were expressed through cynicism aimed at change or ability to change, (4) unproductive team processes were reflected in patterns of canceled meetings, absentee leaders, or lack of accountability, (5) knowledge gaps about the Patient-centered Medical Home (PCMH) were apparent from incomplete dissemination about the project or planned changes, (6) EHR implementation distracted focus or stalled improvement activity, (7) sponsoring organizations’ constraints emerged from staffing rules and differing priorities, (8) insufficient staff participation resulted from traditional role expectations and structures, and (9) communication was
hampered by ineffective methods and part-time faculty and residents. Early barriers responded to varying degrees to specific interventions by practice coaches.

CONCLUSIONS: Some barriers that interfere with practices getting started with cultural and structural transformation can be addressed with persistent attention and reflection from on-site coaches and by realigning the talents, leaders, and priorities already in these residency programs.


The Medical Services Initiative program—a safety net-based system of care—in Orange County included assignment of uninsured, low-income residents to a patient-centered medical home. The medical home provided case management, a team-based approach for treating disease, and increased access to primary and specialty care among other elements of a patient-centered medical home. Providers were paid an enhanced fee and pay-for-performance incentives to ensure delivery of comprehensive treatment. Medical Services Initiative enrollees who were assigned to a medical home for longer time periods were less likely to have any emergency room (ER) visits or multiple ER visits. Switching medical homes three or more times was associated with enrollees being more likely to have any ER visits or multiple ER visits. The findings provide evidence that successful implementation of the patient-centered medical home model in a county-based safety net system is possible and can reduce unnecessary ER use.


PURPOSE: The purpose of this study was to implement and evaluate a care delivery model integrating the registered nurse-certified diabetes educator into the patient-centered medical home to assist in achieving positive clinical and cost outcomes in diabetes care.

METHODS: A 1-group pretest-posttest research design was used. Patients were recruited from 2 patient-centered medical home designated/nominated primary care offices. Inclusion criteria were as follows: diagnosis of type 1 or type 2 diabetes, aged 18 to 80 years, A1C ≥ 8%, English speaking, and no diabetes education within 6 months. There were 34 participants (men, n = 22; women, n = 12) with a mean age of 53.24. The intervention incorporated an assessment, 4 patient-centered monthly group sessions, and 4 individual follow-up sessions. Study measures included program surveys, participation and satisfaction rates, Healthcare Effectiveness Data and Information Set attainment rates, and the following physiologic measures obtained from the medical record: A1C, fasting blood glucose, LDL, urine microalbumin, blood pressure, retinal eye exam, and body mass index. Cost-effectiveness measures included program costs, performance incentives, revenue, provider time saved, and patient health care utilization.

RESULTS: Paired-samples t tests identified significant improvements in A1C, fasting blood glucose, and LDL. Patients and providers were highly satisfied with the program. Cost-benefit analysis revealed a net pretax program benefit.

CONCLUSIONS: Results of the study indicated that integrating the registered nurse-certified diabetes educator in the patient-centered medical home improves clinical outcomes and is cost-effective. Diabetes education and support are integral components of diabetes management.


The process of applying for National Committee for Quality Assurance recognition as a Physician Practice Connections—Patient-Centered Medical Home (PPC-PCMH) can enrich even those practices already solidly committed to providing patient-centric care based on evidence-based medical guidelines. The goal is to leverage information technology to transform both operational and patient care procedures. But even with robust technology, PCMH certification requires team commitment and an unremitting big-picture focus. This article provides an in-depth case study that shows how one groundbreaking Arizona practice used technology to reach the pinnacle of PCMH certification—and continues to use it to improve the quality of patient care.
