The Patient-Centered Medical Home:
A Future Standard for American Healthcare?

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Abstract

The patient-centered medical home has been promoted as a way of organizing health services delivery to reduce costs while offering superior health outcomes and coordination of care. The Affordable Care Act promotes the patient-centered medical home as a tool to reshape the delivery of health care in the U.S. Preliminary findings from demonstration projects indicate overall positive results in terms of access and quality of care as well as cost containment, and the model should continue to be reviewed for potential national adoption. However, there is significant variation in individual medical home setups, their reimbursement arrangements and evaluation methods, making it difficult to assess, compare and implement. When developing and evaluating this model, policymakers need to provide continuous support for practice transformation, adopt consistent outcome measures, and have realistic expectations about the timeline for such transformation.

Key words: Patient-Centered Medical Home, Patient Protection and Affordable Care Act, Health Care Reform, Health Care Costs, United States.
Introduction

Within the contentious landscape of United States’ health care reform, the patient-centered medical home (PCMH) has emerged as an alternative practice model aimed at reducing costs, coordinating care efforts, utilizing health information technology and, ultimately, obtaining higher quality and better health outcomes for patients. The concept of PCMHs is woven into the Patient Protection and Affordable Care Act (ACA) and broadly defined in Section 3502 to further population health initiatives for communities, as well as preventive health and ongoing care for chronic illnesses, among other care aspirations. As stated in Section 3502 of the ACA, healthcare providers involved in medical homes should “develop and implement interdisciplinary, interprofessional care plans that integrate clinical and community preventive and health promotion services for patients” (The Patient Protection and Affordable Care Act 2010). The purpose of this paper is to describe the concept of the PCMH and discuss its goals, potential benefits, and challenges. We also shed light on whether the PCMH model is a suitable healthcare delivery model for more widespread adoption. We based our discussion on an analysis of recent literature regarding this model, including materials from recent and ongoing national demonstration projects. In particular, we seek to answer the following three questions:

(1) What is a patient-centered medical home?

(2) Is the patient-centered medical home a valuable and effective model for U.S. healthcare?

(3) Are Affordable Care Act demonstration projects and guidelines and current private recognition bodies’ standards sufficient and appropriate for encouraging the national adoption of patient-centered medical homes?
To organize our discussion, we start with describing the history of PCMH and its connection to governance and policy, which is followed by an introduction to the basic features of PCMHs. Then, we discuss the benefits and challenges presented by such a practice setup. We reflect on several recent PCMH demonstration projects, including the National Demonstration Project, which is the first national evaluation of the PCMHs, as well as three major ongoing federal PCMH initiatives run by the Centers for Medicare and Medicaid Services. Finally, we conclude the paper with policy implications and recommendations for research and practice.

**Background**

The patient-centered medical home aims to engage patients and their providers into a collaborative partnership that places the patient as its focal point. The American Academy of Pediatrics originally introduced the concept of a medical home in 1967 as a coordinated-care model for children (Patient-Centered Primary Care Collaborative 2007). The model was adopted by a number of specialty pediatric clinics to facilitate the management of patients with complex medical problems. Subsequently, the concept entered the American healthcare discussion in the early 2000s in response to some common problems with primary care: lack of care coordination and communication with or among providers, frustration reaching physicians for questions or obtaining follow-up appointments, and perverse incentives with fee-for-service payment schemes. With its more focused and cohesive provision of care, the PCMH model aims to offer higher quality care for patients, while achieving lower costs through timely, preventive services with providers and enhanced patient engagement throughout the continuum of care.

Most recently, the ACA broadly defines patient-centered medical home in Section 3502 (discussed below). The legislation's broad definition of the PCMH provides the flexibility needed to meet the health care needs of diverse communities and encourages adoption. Federal
funding for demonstration projects is designed to encourage the diffusion of the model nationally and beyond pediatrics; such an expansion would be unlikely without such support. For instance, half of the states have been implementing PCMHs for their Medicaid populations (Nutting et al. 2010). Regarding the scale and scope of the current PCMH demonstration projects, a 2012 report found that the number of medical home providers has grown to tens of thousands of providers across the U.S., serving millions of people (Patient-Centered Primary Care Collaborative 2012). If we focus on those pilots with payment reform attached, a recent study found that such pilots included 14,494 physicians in 4,707 practices, with almost five million patients as of the start of 2010 (Bitton, Martin, and Landon 2010). Though the exact number of PCMHs is unknown as many of the surveys only contain a subset of the entire spectrum of PCMH practices, it is clear that the adoption of PCMH practices is spreading fast over the whole U.S. Some PCMHs are housed in large integrated health systems such as accountable care organizations. We will discuss their relationship later, but our focus is on the PCMH itself.

A patient has a “medical home” if she has a personal physician who provides a first point of contact as well as ongoing, comprehensive and coordinated care that moves away from the traditional, referral-based gatekeeper system (Starfield and Shi 2004). The Starfield-Shi definition emphasizes the contribution of primary care to a high functioning health care system, but it does not prescribe all the essential elements of a medical home. These elements include teams of providers from a diverse array of professional backgrounds, utilizing health information technology to manage a defined panel of patients for both acute and chronic conditions in a proactive, patient-centered manner. We review these essential elements in the next section.
Features of the Patient-Centered Medical Home

The PCMH model has a few basic features that distinguish it from the traditional care delivery model: integration of health information technology, patient-centered engagement in care, and a team-practice approach. If practices have all of these characteristics, they can apply for recognition as PCMHs from a number of organizations. This process is much like an accreditation process. One non-profit organization, the National Committee on Quality Assurance is the main organization involved in PCMH recognition. As a private organization, the National Committee on Quality Assurance maintains a unique governance role because it develops its own standards and accreditation guidelines for many government (and private) healthcare initiatives: medical homes, accountable care organizations, disease management and even health plan evaluations, among other offerings. Practices can also apply to other organizations such as The Joint Commission, and the American Accreditation Healthcare Commission, which have also crafted recognition standards for medical homes. Some states, such as Oregon, have standards for practices as well. Given that there are a number of bodies setting criteria for medical homes, no single organization is responsible for recognizing the PCMH. To keep our discussion coherent and succinct, we have chosen to focus on the National Committee on Quality Assurance process because it is considered the “market leader” in this area (Rittenhouse and Shortell 2009).

The National Committee on Quality Assurance’s recognition process is a three-tier process (tier three is the highest), with six “must pass” elements, including: access during office hours, use of data for patient population management, care management supporting the self-care process for patients, referral tracking and follow-up, and implementation of continuous quality improvement
(National Committee for Quality Assurance 2011b). Practices can be recognized at any tier at the start of the process, and can also improve by meeting more of the criteria over time.

These recognition criteria are also aligned well with the ACA PCMH definition. Section 3502 of the ACA defines PCMH as a mode of care with six core features, including the use of personal physicians; “a whole person orientation; coordinated and integrated care; safe and high-quality care through evidence informed medicine, appropriate use of health information technology, and continuous quality improvements; expanded access to care; and payment that recognizes added value from additional components of patient-centered care” (The Patient Protection and Affordable Care Act 2010).

To sum up, a PCMH is a health care delivery practice that actively engages patients in care and provides coordinated and integrated care; such a practice is equipped with an integrated health information technology system, and supported by an appropriate payment arrangement that recognizes the added value of patient-centered components.

**Health Information Technology**

For PCMHs, the electronic health record and other technological components are fundamental. Proper utilization of health information technology allows for integration of processes across every aspect of the medical home, from appointment scheduling and follow-up to analysis and evaluation of patient populations. Use of health information technology is essential for successful recognition from the National Committee on Quality Assurance.

Electronic health record implementation is a critical step in the practice transformation process because the system will tie together team coordination, care transition, self-management
processes, and patient registries, which will aid in eventual measurement of outcomes for patient populations (Bates and Bitton 2010). Patient registries are lists of patients that share a set of conditions such as diabetes or asthma, or characteristics such as a specific treatment plan. To help track patients through their plan of care, practices achieve continuity through “desktop medicine,” a fully-integrated approach of information technology that includes outreach, coordination and follow-up protocols (Patient-Centered Primary Care Collaborative 2009). PCMHs also utilize health information technology for secure online communication with patients, access to records and lab results, and appointment reminders for preventive screenings and follow-up. With proper implementation, electronic health records can be used to monitor specific patient populations for trends, such as glycated hemoglobin (HbA1c) readings for diabetics, which provides a platform to analyze reports, identify changes, and target care practices to improve population health. In a 2011 study through the New York City Primary Care Information Project, use of electronic health records was linked to increased utilization of preventive services because the providers had ready access to up-to-date patient records (De Leon and Shih 2011).

Likewise, chronic disease management is another potential area for improved outcomes from electronic health record use. Further adoption could lead to savings, with shorter inpatient stays and fewer emergency room and office visits; at 100% participation for 282.1 million patients, the net savings is estimated at $147 billion each year (Hillestad et al. 2005). More targeted prevention efforts through electronic health records would also help curb unnecessary morbidity and mortality. Prevention is targeted toward more aggressive vaccination and screening efforts. Although estimates from Hillestad et al. (2005) are idealistic (the model depends on 100%
participation), the point is that using electronic health records may improve the quality of preventive and chronic disease care for patients.

**Patient Engagement in Care**

The patient-centered focus is another key element of the medical home concept. In order to build long-term relationships with patients, practices must adapt to patient needs and focus on access and patient involvement in care, including steps towards self-management of disease. Many practices adopt an open-access system (Murray and Tantau 2000) and allow for a certain number of same-day appointments in order to accommodate patients quickly and prevent unnecessary lapses in care or preventable ER visits (Patient-Centered Primary Care Collaborative 2009). Indeed, providing same-day appointments is mandatory for National Committee on Quality Assurance recognition (National Committee for Quality Assurance 2011c). Unlike the traditional gatekeeper model, many PCMHs utilize more generous scheduling to arrange for patient appointments during peak-demand periods and then schedule physicians to meet patient demand. The patient also has access to 24-hour contact with practice representatives, usually on-call nurse consultants who can answer patient questions via phone (Reid 2009).

The medical home model emphasizes patient involvement through shared decision-making. The goal is to maximize adherence to a course of treatment or self-management through proper education and consistent follow-up. Essentially, patients are encouraged to be more educated about their illness and proactive in maintaining improved health outcomes. Some PCMHs track patient engagement and satisfaction through follow-up surveys and monitor patient health status between visits (Goldberg and Kuzel 2009). Indeed, surveys of patient satisfaction and
engagement play an increasingly important role in the assessment by payers and the public. National Committee on Quality Assurance now has standards on how these measures should be documented and reported.

Since January 2012, medical homes have been able to earn a “Distinction in Patient Experience Reporting” from the National Committee on Quality Assurance. The last 12 months of patient feedback is assessed through the specialized Consumer Assessment of Healthcare Providers and Systems PCMH surveys developed between both the National Committee on Quality Assurance and the Agency for Healthcare Research and Quality (National Committee for Quality Assurance 2011a). The Agency for Healthcare Research and Quality is part of the Department of Health and Human Services. The agency serves the public by providing objective information for their healthcare decisions and by supporting research initiatives aimed at improved quality and effectiveness, such as PCMHs. For medical homes, these particular survey data provide measures of patient engagement in a number of areas, including access, information, communication, coordination of care, comprehensiveness and self-management support, and shared decision making (National Committee for Quality Assurance 2011a). The distinction will be listed in PCMH directories, and the National Committee on Quality Assurance will also be able to build a database and use these data to help track and compare practices (National Committee for Quality Assurance 2011a).

**Team Approach**

One of the key differences between medical homes and the traditional gatekeeper model is that PCMHs institute a team approach to patient care. Rather than referring patients systematically from generalist to specialist, practices coordinate care efforts through a diverse team of primary
care physicians, specialists, nurses, social workers, physician assistants, and other non-clinical staff. In many practices, it is common to have daily team “huddles” to preview cases, review lab results, and coordinate the expertise of necessary team members (Health2 Resources 2010). Similar to the traditional gatekeeper model, there is a principal physician or nurse practitioner in charge of a patient’s care. In medical homes, the coordination of care is implemented through one of these principals, but the principal can be a generalist or specialist, or a nurse practitioner, who acts as the point-person for care (AAFP et al. 2010).

The logic behind the team approach is that a patient may require more resources per visit but will necessitate fewer visits and prevent future emergencies. Some medical homes even use secure messaging through electronic health records for real-time specialist consultation during primary care visits (Reid 2009). Additionally, through proper pre-visit preparation and post-visit follow-up (by nursing or non-clinical staff), the model allows for patient needs to be met, while requiring the same or fewer total medical resources (due to timely screening and other preventive care). The team utilizes clinical decision support, and team members review the patients’ health records to compare with evidence-based guidelines and care alternatives (Patient-Centered Primary Care Collaborative 2008).

While health information technology, patient engagement in care, and the team approach are touchstones of the medical home model, they depend on an appropriate reimbursement method. The future success of PCMHs will be dependent on finding the right mix of payment options in order to adequately compensate staff and induce the right incentives.

**Reimbursement Methods**
Reimbursement methods vary for PCMHs, but nearly all approaches utilize a blend of pay-for-performance, monthly per-enrollee payments (paid for all enrolled in the practice, not just those seen by providers), and fee-for-service. A blended model has been broadly advocated for medical home demonstration projects. The Patient-Centered Primary Care Collaborative, a diverse, independent group examining medical home “best practices,” recommends a payment model with three essential components: “a monthly care coordination payment to support the medical home structure, a visit-based fee-for-service component relying on the current volume-rewarded system, and a performance-based components that recognizes the achievement of quality and efficiency goals” (Merrell and Berenson 2010). Monthly care coordination payments provide predictable funding for practices; fee-for-service payments give practices an incentive to provide services (rather than skimp on visits); the performance-based component encourages practices to improve quality and efficiency.

As the recommended blended payment model suggests, the traditional fee-for-service reimbursement model is based on office visits and does not always compensate physicians for services that are integral to the PCMH concept, particularly time outside of the face-to-face encounter. For example, if a physician answers patient questions via email, he or she would traditionally not be reimbursed for this time because insurers do not always pay for these services (Merrell and Berenson 2010). Therefore payers need to reimburse physicians for these activities—or pay higher monthly fees to give physicians incentives to provide these services.

Both performance-based and the monthly per-enrollee payments compensate for this “off-the-clock” effort. Performance-based incentives reward PCMHs generally for improvements in patient care measures related to diabetes, hypertension and other chronic illnesses (Merrell and Berenson 2010). The monthly per-enrollee payment helps physicians subsidize care
coordination and costs of hiring new staff because it does not vary according to how many patients are seen by providers; it is also designed to encourage practices to improve access to care, and to develop patient education and other services that support chronically ill patients but fall outside face-to-face interactions.

After reviewing these key features of PCMHs, next we discuss the benefits and challenges presented by the medical home model. The PCMH setup has been linked to lower ER visits, fewer hospitalizations, and reductions in health care costs, as well as improved management of patient populations (Patient-Centered Primary Care Collaborative 2012).

**Potential Benefits of the PCMH Model**

**Access and Coordination**

Patients in the U.S. typically do not have timely access to primary care, and there is a lack of clear communication between providers and patients in the care delivery process. Other countries are far ahead of the curve on these two outcomes compared to the U.S. In a recent study by the Commonwealth Fund, more than 70 percent of patients were able to schedule same or next-day appointments with their primary clinicians in the United Kingdom, Switzerland, France, New Zealand, and the Netherlands. In Sweden and Canada, half those surveyed were able to schedule same or next-day appointments (Mahon and Fox 2011). However, Americans lack this same level of access. A 2007 survey showed that only 27 percent of American adults can easily reach their primary care physician on the phone, obtain care needs or advice after hours, or schedule timely office appointments (Cassidy 2010).
The PCMH aims to alleviate these scheduling, communication and care coordination issues through open scheduling, post-visit follow-up, and 24-hour access to primary care advice. Equipped with electronic health records, the PCMH has the capability of mining historical data and implementing advanced patient scheduling algorithms to reduce waste, increase operational efficiency, and thus improve access (Wang and Gupta 2011). The entire PCMH model is built around patient-centeredness; with a focus on patient needs and outcomes, improved quality of care should follow. “By emphasizing access, health information technology and partnerships between clinicians and patients to improve health, these new standards raise the bar in defining high-quality care” (Merrill 2011).

**Timely Primary Care and Cost Containment**

Some preliminary PCMH pilot projects have demonstrated positive results for both patient care and cost savings. Table 1 shows a selection of measures from the 2012 Patient-Centered Primary Care Collaborative report based on multiple PCMH initiatives nationwide (see detailed citations below the table). The Patient-Centered Primary Care Collaborative was established in 2006 and aims to strengthen the delivery of primary care through the medical home. As part of its mission, the collaborative also offers five “stakeholder centers” to advise practices during transformation (Patient-Centered Primary Care Collaborative 2012).

We should caution that different PCMH pilots have unique advantages and challenges. Here we focused on the results related to publicly funded programs, e.g., Medicaid and CHIP (Children’s Health Insurance Program), and readers may refer to the 2012 report for results in other settings. Each program uses slightly different measures, and extrapolation of these results to different settings needs to be careful. The report includes results from peer-reviewed sources, as well as
industry reported findings from individual practices and larger, multi-location groups. We recognize that these results are quite positive, but we caution that many practices may not experience this level of success for years, if at all. It is important to consider the total number of practices that are participating in these pilots. Some are not reporting results, let alone indicators as strong as these. Still, these results are impressive, and sharing of best practices could allow for scalable, replicable patterns for the future.

In the Community Care of North Carolina program, emergency room utilization and costs were reduced 23 percent, outpatient care costs decreased by 25 percent, and pharmacy costs fell by 11 percent. In a New York-based program, emergency room spending dropped by 35 percent and hospital spending by 27 percent. Vermont's program saw decreases in emergency room use of 31 percent, and emergency room expenditures also declined by 36 percent. At the same time, health outcomes and access to care improved in these programs. The North Carolina program reported a significant improvement in asthma care, and the Oklahoma Medicaid program saw a large increase in patient access to care.

Besides these Medicaid programs, other pilots also show promising preliminary results. For example, WellPoint predicts that its new PCMH program could reduce its projected medical costs in 2015 by up to 20 percent based on analysis of its current medical home pilot projects; UnitedHealthcare estimates that its new efforts in PCMHs will save twice as much as they cost (Patient-Centered Primary Care Collaborative 2012). Clearly, health care cost savings of this magnitude would help achieve the cost containment objectives of the ACA. If implemented at a national level, the PCMH model could lead to a 5.6 percent decrease in healthcare costs, which was estimated in 2004 to save $67 billion (Spann and others 2004).
The information technology component of medical homes dovetails with the federal meaningful use standards, creating a virtuous cycle (Merrill 2011). The three stages of meaningful use require that providers first utilize a certified electronic health record system in a substantive manner, then meet a number of objectives, including e-prescriptions, medication reconciliation, recording of demographic information and ultimately exchange of health data along with reporting of quality measures (Center for Medicare and Medicaid Services 2011). Practices that undergo transformation to meet the medical home criteria should be able to meet meaningful use standards, and, conversely, those who meet meaningful use criteria will be well equipped for the challenges of medical home conversion.

In an effort to spur further adoption of information technology, the federal government is paying practices meeting meaningful use standards up to $44,000 and $63,000 per year for Medicare and Medicaid, respectively (Center for Medicare and Medicaid Services 2011). Given the virtuous cycle of the transformation process for medical homes, practices would likely qualify for meaningful use funds. Likewise, if a practice has implemented an electronic health record through meaningful use, it will already be prepared for the initial stages of PCMH transformation. Ideally, the PCMH recognition program will make the meaningful use initiative more effective in inducing organizations to implement health information technology.

Overall, the practices involved in PCMH transformation have reported positive results, with findings that benefit both patients and top-line healthcare expenditures (See Table 1). One holistic way to evaluate the PCMH model is via the lens of the “Triple Aim,” which is a blueprint for changing the U.S. health care developed by the Institute for Healthcare
Improvement, a non-profit organization with a mission targeted to optimize care delivery for patients and families. The Triple Aim encompasses three integrated goals, i.e., improvements to population health, increased patient satisfaction through improving quality, access, and reliability, and reductions in the per capita cost of healthcare (Berwick, Nolan, and Whittington 2008). The Centers for Medicare and Medicaid Services and many private payers have embraced the goals of the Triple Aim (Mosquera 2012; Kaiser Permanente 2012; Gilfillan 2010). Table 1 shows that many medical home pilots are able to meet the Triple Aim by improving health outcomes and access to care while also reducing healthcare spending.

However, researchers also note that some PCMHs still have mixed and often inconclusive success in terms of achieving cost containment, and it is difficult to draw clear conclusions given the limited data, lack of an appropriate comparison group or rigorous evaluation methods (Bitton, Martin, and Landon 2010; Peikes et al. 2012). In addition to these concerns, there are a number of challenges for national adoption of the PCMH model. Of particular concerns are financial and professional support for implementation, variability of practice models, and non-uniform reimbursement, which we will outline below.

**Challenges for the PCMH Model**

**Variability**

Among medical homes, there is a wide range of variability in practice setup. Requirements for PCMH funding through PCMH pilots are purposefully vague in order to encourage provider adoption and innovation, but model inconsistency could be a major setback for long-term adoption (Cassidy 2010). A recent survey found that PCMHs can vary significantly in their clinical focus, transformation processes, and payment arrangements, making it difficult to
compare best practices across successful pilots (Bitton, Martin, and Landon 2010). “The standards and principles used to guide medical home development allow for a wide range of models. This flexibility is considered important to avoid stifling innovation, but it means it is difficult to generalize about results” (Cassidy 2010). What further complicates the governance and implementation of PCMHs at a national level is that there is even a high degree of variation in methodologies to evaluate practices, as researchers found when reviewing the transformation processes of 26 practices in 18 states, and many of the existing evaluations are not rigorous enough to provide reliable results (Peikes et al. 2012). This means there is a lack of standards to assess, compare and benchmark the performance of different PCMHs due to such variations.

Because practices vary enormously in culture, resources and setup, we recognize that some flexibility is necessary to encourage adoption, particularly for those medical homes independent from large integrated organizations and multi-specialty groups. Still, how do researchers and administrators verify, compare and manage performance when practices are highly variable? There is a delicate balance between standardization and innovation. If the goal of national pilots is to establish a standardized model for widespread adoption, then the transformation requirements should be defined more uniformly, and more rigorous evaluation plans need to be developed and implemented.

**Low Threshold for Medical Home Criteria**

A separate but related issue is the “low bar” for National Committee on Quality Assurance recognition levels. Practices could potentially qualify for recognition, even if they are only meeting minimum standards. If the standard is too low, then we may see less impact on costs and quality than expected. The criteria allow for recognition based on scoring only 50% of the
six must pass elements mentioned before (National Committee for Quality Assurance 2011c). Among the requirements for recognition, the only two mandatory factors are providing same-day appointments and developing and documenting self-management plans and goals in collaboration with at least 50 percent of patients/families. This type of scoring system could allow for considerable variability, even among medical homes that have achieved the highest level of recognition (level 3) by meeting the PCMH standards of the National Committee on Quality Assurance. Again, variability could result in implementation problems if the medical home program is expanded to a national scale, and it also complicates measurability and comparability between practices.

**Reimbursement Methods**

PCMH reimbursement methods vary, which could also hinder an eventual national rollout. Some blended reimbursement schemes may be ineffective for some practices and result in the undervaluation of the true cost of non-face-to-face interactions. The monthly per-enrollee payment will cover care coordination, improved access, patient education, and other services to support chronically ill patients, but payment may not be sufficient compared to the actual costs incurred. The timeframe is also a factor, as performance-based incentives may reward PCMHs based on improved outcome measures related to diabetes and other chronic illnesses, but practices may not see these types of quality improvements for years (Merrell and Berenson 2010). Some critics claim the current reimbursement setup is not adaptive enough for the wide range of PCMH practices. Dr. Michael Barr, Vice President for Practice Advocacy and Improvement for the American College of Physicians, believes that reimbursement methods should progress from fee-for-service during the first stages of medical home transformation to
per-enrollee payments and pay for performance as the practice progresses to meet tier-2 and tier-3 recognition standards from the National Committee on Quality Assurance (Barr 2010). While this approach could assist practices during the early stages of transformation, it could also add to the level of variability among PCMHs. Bitton et al. (2010) found that monthly per-enrollee payments in PCMH demonstration projects vary substantially throughout the nation, indicating that this progression of reimbursement schemes would have to be executed systemically through recognition bodies to allow for proper comparability of practices and right incentives for them to grow.

Indeed, some of these payments are tied with recognition to incentivize the transformation of PCMHs. But only 58 percent of PCMH demonstrations tied monthly per-enrollee reimbursement levels to National Committee on Quality Assurance attainment as found in a recent survey (Bitton, Martin, and Landon 2010). To encourage practices to continue the transformation into PCMHs, other financial incentives may also be helpful. For example, under New York Medicaid, the incentive payment to physicians for a patient office visit ranges from an additional $7.00 for level-1 PCMH recognition up to $21.25 for level-3 compared to non-recognition (New York State Department of Health 2009). Scaling the reimbursement to reward further progress of transformation could provide incentives for practices to complete tier-3 recognition.

**Realistic Costs and Time for Transformation**

Implementation requires ample time and significant financial resources. For demonstration projects, practices need to be aware of the true resource needs for transformation; many healthcare providers believe both meaningful use and federal and state funding are wholly
inadequate (Goedert 2010). There are limited data regarding the direct and indirect costs of PCMH implementation. Therefore, we refer to traditional practice data for integration of health information technology. According to an extensive study of implementation in Texas-based practices (traditional primary care practices, not PCMHs), it is estimated that the *first year* cost of system implementation is $162,000 for a five-physician practice, with $85,000 in maintenance (Fleming et al. 2011). Maintenance costs are often a significant financial burden and include hardware replacement and software upgrades or optimization, as well as ongoing training and support for end-users through specialized external contractors or information technology professionals. These estimates are for traditional practice models, not medical homes. Given the additional challenges inherent in medical home transformation, these figures are likely an underestimate for the needs of PCMHs.

**Vulnerable Populations**

While not a focus of this paper, it is important to note that some patients may not be active in a patient-clinician relationship, or they may lack the resources to do so. The impact of introducing PCMHs on such populations is not known. Implementation of PCMHs may therefore benefit those who are already healthier or more educated, increasing existing health disparities. Some early evidence has shown that children were less likely to have access to a medical home if they were from less socially cohesive neighborhoods, less safe neighborhoods, or neighborhoods with fewer amenities (Aysola, Orav, and Ayanian 2011). Special attention should be paid to those who are more vulnerable.
Recent PCMH Demonstration Projects

There are still many unanswered questions about medical homes, and their value is yet to be definitively tested. Of particular interest is their value for patients and return on investment in the form of cost savings downstream, especially in the long-term. As a more definitive test in this regard, the federal government has launched several important demonstrations to validate best practices, fill knowledge gaps and guide policy going forward. We will discuss some of the recent PCMH demonstration projects and their findings. We start with the National Demonstration Project, which is the first national evaluation of the PCMH, and then discuss current demonstrations. The results of the National Demonstration Project may not be reflective of future reforms, since these practices made the transformations without any payment reform, and without initial health information technology capacities. Since that time, meaningful use initiatives and funding, along with a rapidly changing payment environment mean these findings may not be as applicable today. However, we still offer the National Demonstration Project findings for discussion, because it is one of the earliest completed demonstration projects for the PCMH.

National Demonstration Project

In June 2006, the National Demonstration Project was launched as the first national evaluation of the Patient-Centered Medical Home, with 36 family practices randomly appointed to either an independent transformation group or a facilitated group that received guidance throughout the practice changes (Crabtree et al. 2010). The demonstration found that external support improved adoption. The advantage was primarily seen in the amount of so-called adaptive reserve, which allowed the practices to maintain capacity to learn and develop during the ongoing changes (Crabtree et al. 2010). Facilitated practices received support from an outsider organization,
which helped them implement more technological components, maintain motivation and develop their adaptive reserve. Compared to independent practices, facilitated practices were more likely to avoid burnout and encourage staff to meet or exceed expectations. For the National Demonstration Project, adoption of the PCMH was associated with improved timeliness of patient access and availability of services for both chronic disease and preventive care (Jaén et al. 2010). However, even with improved care and access, patients did not rate the PCMH well for overall experience. The practices, whether part of the facilitated or independent group, were associated with no improvement in the level of patient satisfaction (Jaén et al. 2010). The study did not detail the possible reasons for the level of satisfaction, but their recommendation that practices should reduce patient panels and increase appointment lengths suggests the patient-centeredness of these practices fell short.

Fortunately, other researchers have found more positive results for patient engagement in medical home pilots. As Reid et al. (2010) showed, the Seattle-based Group Health Cooperative PCMH maintained increases in patient engagement and involvement at both 12 months and 24 months. Additionally, some recent changes made after the National Demonstration Project could further improve patient experience. For one, the updated 2011 National Committee on Quality Assurance guidelines for medical home transformation do incorporate “Patient/Family Experience” into the “must-pass” elements of Part 6 for measuring and improving performance of the medical home (National Committee for Quality Assurance 2011c). Another change has been the focus on patient and family engagement from the Center for Medicare and Medicaid Innovation, as well as the National Priorities Partnership and key policy organizations. The goal is to target multiple levels of care, including clinical encounters at the organization, community
or policy level to foster “meaningful partnerships with patients and families in the redesign of primary care” (Patient-Centered Primary Care Collaborative 2012; Peikes et al. 2012).

**Current PCMH Demonstration Projects**

There are three major state and federal initiatives run by the Centers for Medicare and Medicaid Services to encourage practices to adopt the PCMH model that are currently covering millions of patients and thousands of providers. These demonstration projects are major tests of the PCMH model: they are on a larger scale than the National Demonstration Project and therefore potentially could have more impact. The Federally Qualified Health Center PCMH demonstration includes 500 practices; there is the Multi-Payer Advanced Primary Care Practice demonstration in eight states, and the new Comprehensive Primary Care Initiative run by the Center for Medicare and Medicaid Innovation (Robeznieks 2012). The Comprehensive Primary Care Initiative demonstration is broader than the Multi-Payer Advanced Primary Care Practice and offers the potential for significant impact. It is a multi-payer initiative in seven states encompassing 500 practices (Baron 2012). Of key importance is that, given a successful pilot demonstration for any of these three programs, the ACA statute for the Innovation Center enables projects to be scaled up without Congressional approval (Baron 2012).

In addition to these demonstration projects, there are also a number of separate, state initiatives around medical homes in Oregon, Ohio, Maine, Massachusetts, Pennsylvania, and Michigan, which will help expand the role of states in making policies for PCMHs. We focus on the federal PCMH pilots that are at an early stage. We describe the key features of these pilot projects, since evaluation results are not yet available.
Multi-Payer Advanced Primary Care Practice. In September 2009, the U.S. Department of Health and Human Services announced the Multi-Payer Advanced Primary Care Practice demonstration. This project is tasked with establishing, funding and evaluating medical home pilots. The Multi-Payer Advanced Primary Care Practice is investigating whether the medical home can truly achieve coordinated, higher quality care at lower cost, in order to meet the goals of the ACA (Center for Medicare and Medicaid Services 2010). Demonstrations are being implemented in 8 states: Maine, Vermont, Rhode Island, New York, Pennsylvania, North Carolina, Michigan, and Minnesota (U.S. Department of Health & Human Services 2010). These demonstrations encompass pilots of various sizes with different patient populations. The pilot programs began in late 2010 and early 2011 and will run for 3 years; the length of time will allow assessment over a longer term (Center for Medicare and Medicaid Services 2010). Providers will continue to be reimbursed on a fee-for-service basis, with state-based bonus payments for practices that acceptably advance in their transformation to medical homes (HHS 2010).

Comprehensive Primary Care Initiative. The Comprehensive Primary Care Initiative demonstration project will take place over four years and is being implemented across 7 states with 500 practices, which will provide care for about 313,000 Medicare beneficiaries in total (Robeznieks 2012). The Comprehensive Primary Care Initiative is offering $20 per enrollee per month in addition to customary fee-for-service charges; the monthly payment will be reduced to $15 for years three and four of the pilot, but there will be opportunities for provider compensation in the form of shared savings (Robeznieks 2012). This setup fits with the recommended payment arrangement discussed above which progressively shifts payment towards pay for performance and away from traditional reimbursement mechanisms.
The Federally Qualified Health Center Demonstration. Since July 2011, a number of Federally Qualified Health Centers partnered with the Health Resources and Services Administration to transform practices into medical home pilots. Like the Comprehensive Primary Care Initiative, this program will reach 500 Federally Qualified Health Centers throughout the U.S., which amounts to 195,000 Medicare beneficiaries (Baron 2012). Practices will follow the criteria for recognition and will receive a monthly payment of $6 per patient enrolled in the practice to help offset costs associated with transformation; like the Comprehensive Primary Care Initiative and the Multi-Payer Advanced Primary Care Practice, if it demonstrates a successful pilot, the program can be expanded to a wider implementation without Congressional approval (Baron 2012).

Discussion

We will now revisit our initial questions. We offer a discussion of ways to bring forward the optimal setting for successful PCMH implementation in terms of governance, best practices and, ultimately, superior quality of care for patients.

(1) Is the patient-centered medical home a valuable and effective model for U.S. healthcare?

Potentially, yes. There seem to be a number of qualities that allow the medical home to achieve impressive cost savings through coordinated, preventive care. Successful practices construct an integrated, informed circle of clinicians that constantly assess and engage patients. When the pieces fall in place, patients receive timely appointments, understand their plan of care and take the initiative for preventive measures, which is especially important for those with chronic illnesses. In terms of economics, the return on investment seems to be favorable in some pilots. There is also evidence of cost containment through lower downstream costs and utilization. We
must recognize, however, that providers, systems and patients have imperfections and limitations. There are well-intentioned practices that are underfunded, understaffed, or under-supported. Many lack proper knowledge and resources to transform to the extent of the top performers. The above question is perhaps more fully answered with an exploration of the next question.

(2) *Are Affordable Care Act demonstration projects and guidelines, and current private recognition bodies’ standards sufficient and appropriate for encouraging the national adoption of patient-centered medical homes?*

Not yet. Successful future adoption of the medical home rests on the response to demonstration projects and the nature of the amendments made by recognition bodies such as the National Committee on Quality Assurance. We feel that necessary changes may be needed to further the right level of adoption and ensure comparability, as well as to promote more rigorous standards for governance and implementation consistency. Policies should be amended in terms of funding, timeline and practice setup. We will offer our thoughts on each of these three areas for improvement.

The first area for improvement is funding methodology. It is critical to maintain ongoing funding and continuous financial support for the long-term transformation into a PCMH. Nutting et al. (2009) suggest that “[incentive] programs should include up-front capital dollars to help purchase and implement new information technologies and additional ongoing operational dollars to support the personnel changes need to implement better care management.” This sentiment is echoed among many medical home practices; even well-supported pilots from earlier demonstrations are “challenged financially by the projects” (Nutting et al. 2009). Indeed,
many ongoing pilots receive financial assistance to meet the large upfront costs of transformation. A study of 26 demonstrations in 18 states showed over half of the practices had upfront funding available for the transformation, and the amounts ranged from $1000 to $100,000 per practice, depending on the extend of infrastructure change (Bitton, Martin, and Landon 2010). Such support needs to be continued.

The second area for improvement is the expected timeline for transformation. Many political and healthcare leaders want to see immediate results for medical home projects, but they must have realistic expectations. After 2 or 3 years, many PCMHs can accurately assess the progress made for their patient populations, while some projects could take longer to see results. Full transformation to PCMH is a long, challenging process for team development, technological implementation and financial stability. Underlying the entire challenge of PCMHs is the need to do more in managing many neglected functions related to chronic disease care, which involves reorganization and teamwork to manage time and resources more effectively. Some adept and experienced integrated practices, such as Group Health Cooperative of Puget Sound, have been able to shrink patient panels and offer longer visits of 30 minute instead of 20 minute appointments (Grumbach and Grundy 2010). Realistically, these kinds of integrated organizations are in a privileged position because most practices, especially non-integrated ones, have less flexibility with resources. Movements like cutting patient panels are dramatic cultural and financial changes demanding a large investment of resources.

The Veterans Health Administration is another integrated provider and successful PCMH, which offers the largest integrated health delivery system in the U.S. Additionally, it maintains a robust and time-tested system of management for chronic illnesses (Grumbach and Grundy 2010). The Veterans Health Administration began to lay the groundwork for such capabilities in 2006, and
they were more prepared than other integrated practices to develop medical homes. Proponents of the PCMH, particularly those eagerly awaiting pilot results, should understand that many practices do not have this level of resources. It takes time to build such competencies, and even integrated provider networks could struggle to show improvement in the first two to three years of transformation.

The third issue for improvement is variation in reimbursement methods and medical home setups. Variations could make comparisons difficult. There is an understandable conundrum; policymakers want practices to participate, but they also need to measure improvement to determine whether the PCMH is worth pursuing on a larger scale. Still, an inconsistent yardstick could be problematic. Some practices could show “improvement” from the baseline while others could be hampered by inconsistency, immeasurability, and inadequate governance. To address these issues, standards for PCMH recognition may need to be tightened. As discussed previously, the current criteria allow for recognition based on scoring just 50 percent of the 6 must pass elements. More stringent, fine-tuned requirements, especially from large recognition bodies such as the National Committee on Quality Assurance, would lead to better comparability of outcomes across PCMHs. Criteria could also be ranked in order of importance, allocating more points for the transformative steps deemed to be most important. For instance, if evidence-based guidelines, health information technology, and improvements in patient access are the three most important initial components, then these three criteria should command greater weight in the assessment or simply be required for tier-1 recognition. In this manner, standards used to assess progress by organizations such as the National Committee on Quality Assurance could achieve comparability across practices, no matter how they differ in terms of patient population, geography and other factors.
The success of medical homes also rests on fine-tuning guidelines for reimbursement methods. PCMH reimbursement ranges from fee-for-service to monthly per-enrollee and pay-for-performance. A progressive shift toward per-enrollee payments and pay-for-performance could produce ongoing funding and appropriate incentives for practices. Robust performance-based arrangements could help encourage adoption and continuous transformation, particularly for smaller medical homes. Practices that operate within accountable care organizations or other integrated systems committed to preventive care, such as the Group Health Cooperative of Puget Sound and the Veterans Health Administration discussed above, usually enjoy more resources compared to those outside. These large integrated health systems typically have superior care coordination and established infrastructure (e.g., greater use of information technology) and thus are able to dedicate resources and mobilize both specialty and primary care services to support the system needs (Crabtree et al. 2010). With greater system cohesiveness and proper, timely use of data, integrated systems can more successfully manage and adapt to population health needs. Of course, some medical homes will not have the resources of integrated systems. When attempting to roll out a national model for the PCMH, guidelines, funding and support should be more generous for these practices. Pay for performance could be an especially compelling tool. Coordinated care can be challenging, particularly with chronically ill patients who require frequent, ongoing care, and these challenges are often greater outside of an integrated system. These small providers need to be encouraged and incentivized.

Aside from frustrations with time constraints, comparability and limited support, there are clear potential benefits of the PCMH model. The model highlights the goals of the ACA as well as those of the Institute for Healthcare Improvement’s Triple Aim; it effectively integrates information technology with a focus on primary care. Initial projects have illustrated cost
containment and improved quality of healthcare delivery through fewer ER visits, lower hospital spending and improved access to care (see Table 1). The new large-scale pilots such as the Multi-Payer Advanced Primary Care Practice, Comprehensive Primary Care Initiative and Federally Qualified Health Center may continuously improve and narrow the variation among PCMHs, eventually setting the stage for a national rollout.

**Conclusion**

The ACA and the meaningful use initiative have created a favorable environment for the PCMH to be tested. While the transformation process is resource-intensive and requires collaboration from the many parties involved in healthcare delivery, in many ways the model represents the future vision of American healthcare outlined in the ACA and the Triple Aim. With preliminary evidence of cost reduction, improved care coordination and more timely patient access, its potential for national expansion should continue to be evaluated. These practices “emphasize the value of primary care as the keystone to a high quality, efficient health care system” (Arvantes 2010). Financial and instructional support for demonstration projects should be provided to offset the challenges of practice transformation, variation in medical home setups needs to be carefully managed, and rigorous, consistent evaluation methods should be developed and implemented. With the patient as its focal point, the medical home could be a promising future direction for American healthcare.
### Table 1. Key indicators following implementation of Primary Care Medical Home model

<table>
<thead>
<tr>
<th>Utilization of Hospital Services</th>
<th>Health Outcomes &amp; Quality of Care</th>
<th>Overall Healthcare Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency room utilization and cost</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>-23%</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency room spending</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>-35%</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency room use</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>-31%</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency room per member per month cost</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>-36%</td>
<td></td>
</tr>
<tr>
<td><strong>Outpatient care costs</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>-25%</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacy costs</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>-11%</td>
<td></td>
</tr>
<tr>
<td><strong>Hospital spending</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>-27%</td>
<td></td>
</tr>
<tr>
<td><strong>Inpatient utilization</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>-21%</td>
<td></td>
</tr>
<tr>
<td><strong>Inpatient per member per month costs</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>-22%</td>
<td></td>
</tr>
<tr>
<td><strong>Access to care</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td>+8%</td>
<td></td>
</tr>
<tr>
<td><strong>Asthma staging</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>+21%</td>
<td></td>
</tr>
<tr>
<td><strong>Influenza inoculations</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>+112%</td>
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<tr>
<td><strong>Annual savings per member for children</strong>&lt;sup&gt;3&lt;/sup&gt;</td>
<td>$215</td>
<td></td>
</tr>
<tr>
<td><strong>Annual savings per patient enrolled</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td>$29</td>
<td></td>
</tr>
<tr>
<td><strong>Per member per month cost</strong>&lt;sup&gt;6&lt;/sup&gt;</td>
<td>-9%, -$89</td>
<td></td>
</tr>
<tr>
<td><strong>Estimated overall savings</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>11%</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Patient-Centered Primary Care Collaborative 2012)

**Notes:**

*Access to Care is measured as always receiving timely treatment.*

(1) Community Care of North Carolina (Medicaid)

(2) New York Priority Community Healthcare Center Medicaid Program

(3) Colorado Medicaid and SCHIP

(4) Oklahoma Medicaid

(5) Vermont Medicaid

(6) CareOregon Medicaid and Dual Eligibles
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