

Patient-Centered Medical Home From Vision to Reality

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Abstract (100 words): While the basic term “medical home” is three decades old, a refined formulation, the Patient Centered Medical Home (PCMH), has been touted as an approach that could relieve the looming crisis in primary care, improve clinical quality and patient experience, and moderate cost increases. This paper explores the concept of the PCMH, its relationship to the planned care model, the growing support for the concept from purchasers, consumers, physicians and insurers, and plans for demonstration and pilot projects in the private and public sectors. Finally some concerns that have been expressed about the PCMH are explored and policy implications noted.

Key words: Patient Centered Medical Home, Primary Care, Quality of Care

Medical Home: Concept and History

The formulation of the patient centered medical home outlined in this paper encompasses the clinician attitudes, knowledge, skills and the critical practice support systems that professional groups and others have identified as potentially leading to higher value care (enhanced quality and lower resource use) for patients with chronic illness or preventative service needs. The first use of the term “medical home” was in a book published by the American Academy of Pediatrics (AAP) in 1967 (1). The initial premise was that children with special needs (defined as children with severe chronic illness, developmental disabilities and birth defects or others with high care needs) should have care coordinated by a practice that provided “accessible, coordinated, family centered, culturally effective care by a pediatrician who in addition provides primary care and manages and/or facilitates all aspects of the care for these children” (2). Projects implementing various aspects of the medical home have occurred in a number of states supported in part by the Department of Health and Human Services Maternal and Child Health Bureau and linked to strong advocacy programs led by parent groups. In recent years the AAP has broadened the focus to recognize that all children, given chronic care and/or preventive needs, are likely to benefit from care provided in medical homes. The AAP has also created a web based resource center focused on the medical home (3).

The American Academy of Family Physicians (AAFP), as part of its effort to define the future of family medicine created an expanded set of medical home characteristics embedded in what the AAFP termed the “personal” medical home (4-5). A recent monograph from the AAFP’s Robert Graham Center for Policy Studies describes in detail the links between the benefits of primary care and the PCMH concepts (6).

The American College of Physicians described the “advanced medical home” in a position paper released in January 2006 (7) and then linked this model to a framework for reimbursement reform (8). In March 2007, the AAP, AAFP and ACP, joined by the American Osteopathic Association (AOA), further refined the elements of the medical home, including a greater focus on the patient’s perspective, and applied the designation “patient centered medical home” (PCMH) in a jointly published statement of principles (9). The key principles of the PCMH statement stipulate that PMCH practices will provide:

- 1) access to care based on an ongoing relationship with a personal physician who is able to provide first contact, continuous and comprehensive care,
- 2) care provided by a physician led team of individuals within the practice who collectively take responsibility for the ongoing needs of patients
- 3) care based on a whole person orientation in which the practice team takes responsibility for either providing care that encompasses all patient needs or arranges for the care to be done by other qualified professionals,
- 4) care coordinated and/or integrated across all elements of the complex health care system and the patient’s community.
- 5) care facilitated by the use of office practice systems such as registries, information technology, health information exchange and other systems to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner. Finally, the principles call for a reimbursement structure that supports and encourages this model of care.

Evidence of effectiveness of PCMH

Because the formulation of the PCMH is relatively very recent, there is little published scientific evidence of its overall effectiveness. However, there is substantial evidence for the effectiveness and importance of many of its key characteristics given that most of them align with the empirically derived framework of the Wagner Chronic Care Model (10). This model is based on a substantial and growing body of literature that has linked use of clinical information systems and registries, decision support, performance measurement and feedback, delivery system interventions and patient self management support to improved clinical outcomes and patient experience of care (11-12). Additional studies, including RCT's of various components, such as quality measurement, benchmarking and feedback also have been published (13-16)).

The Community Care of North Carolina (CCNC) project implemented in 94 counties across North Carolina which has modeled an approach incorporating many of the principles of the PCMH for NC Medicaid patients (650,000) has posted data on two evaluation studies (17). These evaluations based on changes in historical trends suggest substantial cost savings to the state Medicaid program. Beyond the cost savings, the program has also identified substantial improvements in the quality of care for Medicaid patients with asthma, congestive heart failure and diabetes. Similarly in pediatrics there have been studies published documenting positive impact of the medical home as formulated by the AAP, including an RCT and evaluation of two Medical Home Learning Collaboratives conducted by the National Initiative for Children's Healthcare Quality and the Maternal and Child Health Bureau showing a decrease of Emergency Department visits, unplanned Hospitalizations, missed school and work days for Children with Special Needs with increasing medical home principle adoption by practices (19).

A recent study published by the Commonwealth Fund suggests that the PCMH may also have a role in reducing disparities. Their study, in which the definition of "medical home" referred to a

practice that offers patients a regular source of care, enhanced access to physicians, and timely, well-organized care (based on a patient experience of care survey), revealed that patients who reported having access to their definition of a medical home received a higher level of preventive and chronic illness services regardless of insurance status, race or gender versus patients cared for in practices that lacked those characteristics (20). Finally, there are a number of countries in Europe, including England and Denmark, that have implemented aspects of the medical home with reports of positive results (21-22). In a paper which compared the U.S. health care system to health care in twelve other countries the ACP concluded that, "...many countries have better functioning, lower cost health care systems that outperform the United States. We must learn from them." (23)

Possible amelioration of decline in primary care

While the principle focus of the PCMH is to improve quality of patient care and if possible to moderate costs, implementation of the PCMH, both in terms of organization of care and linkage to enhanced reimbursement, is seen by some as helping to mitigate the growing crisis in primary care. Starfield and others have provided extensive evidence suggesting that a high ratio of primary care to specialty physicians, both within the United States and in international comparisons, is associated with higher quality and lower costs than the reverse (24-27).

In contrast with this evidence of utility, there has been a substantial downturn in the number of physicians choosing primary care as a career and predictions of a shortage of primary care physicians (28-29). Dissatisfaction with reimbursement, disparities in compensation for cognitive services compared to procedures, increasing administrative burdens, escalating costs, medical malpractice premium hikes and life style issues all appear to be contributing to both

declining student interest and a high rate of departure from practice by those in primary care practice (30). While as yet there is only qualitative evidence that primary care practices that have undergone the changes inherent in the PCMH provide a higher level of practitioner satisfaction (31), it is posited that the enhancement of office practice systems, patient relationships and reimbursement proposed in the PCMH model will overcome some of the current barriers to both initiating and maintaining careers in primary care by physicians.

Linkage to enhanced payment for evaluation and management services

If the PCMH represents a more desirable design for delivery of ambulatory care services in chronic illness and prevention, then what system of reimbursement would support its use?

One of the major barriers identified by practices to initiating systems changes related to quality improvement is imposed by our current reimbursement system which generally pays on an episodic, fee schedule or fee for service (visit, procedure) basis. FFS is seen as driving costs and many of the defects in how care is delivered in the US especially in relationship to evaluation and management services (32-33). Bodenheimer and his colleagues have carefully documented the failure of payment reform within fee for service in terms of readjustment of the RBRVS and, in fact have shown a worsening of the gap. This disparity has been especially troublesome in the primary care areas of pediatrics and general adult medicine resulting in the systematic undervaluing of primary care (34).

In their joint policy statement, the four primary care groups state that successful and wide spread implementation of the PCMH must be linked to more rational and enhanced payment for primary care services – and recognition of the value of services described by the PCMH model for which there is currently no reimbursement. Recent evidence that a substantial amount of time and effort

in caring for patients with chronic illness takes place between visits related to unreimbursed time for care coordination, providing further evidence of the need for reimbursement change (35-36). While pay for performance has been promulgated as a means to address some of the problems with current reimbursement, its effects are unclear (37) and major problems remain with measurement of quality or cost at the individual physician or practice (site) level. Linking reimbursement more closely to the practice changes required by adherence to a PCMH model might create more fundamental change in the quality of care. This could be accomplished through a set payment per month or year for each patient choosing a given practice as their “PCMH” (38). To create more accountability for the payment, this payment could be linked to how well a practice could demonstrate that it fully functional PCMH. Practices could continue to receive payment based on fee for service as well as reimbursement for various existing or future pay for performance programs. The ACP has suggested a payment model which has three components: a) a prospective payment stratified based on the complexity of the patient population (risk-adjustment) and breadth of services provided (based on a voluntary recognition process); b) fee-for-service with improved relative value units; c) performance-based compensation associated with improvement in metrics of quality, cost and satisfaction (8). The three layer reimbursement system is similar to what is used to pay GP’s in the British Health Service and provides a balanced reimbursement that might overcome the problems seen with a single mode of reimbursement (capitation, FFS, pay for performance). Whether changing the mode or the total level of reimbursement or both is critical to adaptation of the PCMH and the related primary care issues remains to be seen.

Identifying a practice as a PCMH

If implementation of the PCMH is to be linked to a change in the mode of reimbursement to include payments based on the degree to which a practice is functioning as a PCMH, there needs to be some means to determine the degree to which that is the case. A major step in defining measures (or standards) to determine if a practice is using the key aspects of a PCMH was accomplished during 2007 by the four medical groups working with NCQA in revising and enhancing an existing instrument, the Physician Practice Connections® (PPC).

The development of the PPC was informed by two processes, research funded by the Robert Wood Johnson Foundation on the creation and testing of a practical means to assess the degree to which the Wagner Chronic Care Model was being used in ambulatory care practice and an assessment of defects in office practice using the six sigma approach conducted in the early phases of what became the Bridges to Excellence (BTE) program (39). The results of the two efforts were merged into a set of standards or structural measures, called the Physician Practice Connections® (PPC). Finally, as a result of work funded by the Commonwealth Fund by NCQA to define and create measures to evaluate “patient centeredness”, some additional standards were added to the PPC based on testing and empiric evidence of their relationship to established concepts of patient centeredness.

Published studies of the PPC to determine how well it measures the extent to which practices are using the Chronic Care Model have shown that the survey has adequate comprehension, internal validity (as compared to an on site audit) (40-41). In a cross sectional study, scores on the PPC correlate with higher levels of quality on clinical measures in patients with diabetes (42).

Concurrent with this research, the structural measures were embedded in a web based tool which

allows the entity completing the on line assessment to attach documentation to each of the structural measures addressed in the survey tool. Along with the requirement for documentation, the tool includes a scoring function that is based on the degree of adherence to a given measure and the weight assigned to that standard. This web-based version and process using the PPC, with the additional requirement that the practices agree to participate, if required, in a randomly determined (5% of submissions) on site audit, is called the Physician Practice Connections Physician Recognition Program (43). Based on the research, the unit of evaluation for the PPC was determined to be a practice site, defined as a single geographic location using a common medical record systems and common personnel practices. For reasons noted below, the PPC tool also requires that practices attach documentation for each standard/structural measure. The documentation and overall scoring is subsequently reviewed by NCQA and if the practice reaches or exceeds the preset threshold score, the practice is given PPC recognition.

While a full description of the use of the PPC recognition program is beyond the scope of this paper, in areas where BTE is operating, practices that are recognized by NCQA using the PPC qualify for a bonus payment from BTE of \$50 per patient per year for those patients who are employed by a BTE participating employer. This payment is based on data from the participating employers indicating an estimated savings of \$110 per patient per year for patients getting care from NCQA recognized offices versus those getting care in offices that have not been recognized (6). By November 2007, 275 practice sites with nearly 4000 physicians had been recognized by NCQA primarily in states or regions with active Bridges to Excellence (BTE) or health plan pay-for-performance programs. The median size of a recognized practice site is six physicians (range 1- 130) and sites with a single physician (solo practice) constitute 15% of the sites recognized. Most of the sites recognized are single specialty primary care practices, but cardiology, ob-gyn

and multi-specialty practice sites have also received recognition. Finally, a version of the PPC has been incorporated into practice assessment modules used in determination of individual physician knowledge and competence in relationship to systems by the American Board of Internal Medicine and by the American Board of Family Medicine in part 4 of their “maintenance of certification” programs.

Recognizing the close relationship of many of the PCMH concepts, the Wagner Chronic Care Model and the PPC, the AAFP, AAP, ACP and AOA worked with NCQA to determine if an adaptation of the PPC could serve as a tool to assess the degree to which a practice was functioning as a PCMH. The product of this collaboration was a modification of the current version of the PPC which has been termed the PPC-PCMH. The governing bodies of these four organizations have subsequently endorsed the PCC-PCMH as a tool that can be used to “recognize” or determine, along with an attestation by the practice of its adherence to the overall principles of the PCMH agreement, if practices are functioning as patient centered medical homes in PCMH demonstration and pilot projects.

Implementation and evaluation of the PCMH

Nearly all involved in with the PCMH agree that even though there is substantial empirical evidence underpinning the elements of the PCMH, its efficacy in terms of clinical quality, patient experience or resource use is largely unknown. Health plans have shown an interest in part because there is a shortage of primary care physicians in many areas and plans would like to attract and retain these physicians because of the value they add to the system. The size (number

of practices included)of the projects , how they will define the concept, or what measures or approach to evaluation these demonstration projects will take is as yet unknown.

Private Sector

In addition to advocacy by the four medical groups, an employer driven collaboration has formed to support and promote the concept of the PCMH. The “Patient-Centered Primary Care Collaborative,” (PCPCC) which was started by a coalition of consumer groups and large purchasers led by IBM but now includes multiple employers, most major national health plans and the four medical organizations (44). The PCPCC has obtained the agreement of the major national health plans to participate in multi-payer regional or state wide pilot programs related to the PCMH. The PCPCC along with the four medical organization and others have also been working with state and federal legislators and regional coalitions, encouraging the implementation of PCMH pilot or demonstration projects in the public sector.

Public Sector

With the encouragement of the four physician groups and the PCPCC, Congress passed, and the President signed, in December of 2006, the Tax Relief and Healthcare Act (TRHCA) of 2006 that included a section directing the Centers for Medicare and Medicaid Services (CMS) to implement and evaluate a Medicare PCMH demonstration. A number of modifications to expand the number of sites participating in the Medicare medical home project and to include Medicaid as well have been introduced as separate legislation or as provisions in broader legislation related to Medicaid, Medicare or SCHIP. Some state Medicaid programs or legislatures have passed or are considering some type of patient-centered medical home demonstration.

ACP, AAFP, AAP or AOA have endorsed the use of the PPC-PCMH as a tool that can be used to “recognize” practices at PCMH practices in the pilots. This may provide at least a starting point for determining the existence of the required PCMH capabilities.

Goals and proposed structure of PCMH Demonstrations

A general outline of how a demonstration might be constructed has emerged through the Patient Centered Primary Care Coalition, NCQA and the four medical organizations. In addition, the Commonwealth Fund, which continues to provide support for development of the PCMH including evaluation of pilots and demonstrations, has been working with evaluators to shape the overall design of the projects. It is anticipated that the scope and scale of the projects will vary from a few physician practices working with a single health plan, to state wide or regional programs with many physician practices and all, or nearly all commercial payers, perhaps even including Medicare and Medicaid. A proposed design is as follows:

A. Proposed Components of PCMH Demonstration Projects

1. Practices would
 - a. Provide an attestation that they agree to operationalize the core principles
 - b. Be recognized as a “PCMH” by completing and submitting a standardized tool that assesses the degree to which a practice uses systems that have been shown to improve patient case. As noted, the four medical groups and the PCPCC have endorsed the PPC-PCMH for this purpose in pilots and demonstration projects.

- c. Share result of the PPC-PCMH evaluation and participate, as contractually specified, with health plans participating in the payment programs related to the project.
2. Plans (payers) would
 - a. Commit to, or support others, in helping practices prepare to meet and document that they meet the medical home requirements.
 - b. Work with physicians to measure both the quality and relative resource use/costs of medical homes relative to other practices, using standardized measures. Due to issues with small numbers, plans may need to measure PCMHs in their networks as an aggregate and compare the performance of the aggregate against the performance of the rest of the network.
 - c. Make financial rewards available to medical homes that qualify based on the standardized tool.
3. In at least in some of the projects an independent organization would evaluate the program including studies of the change in practice systems over time, impact on reimbursement, clinical quality of care, resource use and surveys of both physician experience of practice and the patient in the PCMH setting versus non PCMH practices or “usual” care.

B. Some hypotheses that should be considered in PCMH Demonstrations

The formally specified goals for the PCMH demonstrations are yet to be clearly articulated, but the following hypotheses are likely to be primary:

1. Will providing an incentive payment for PCMHs result in more rapid adoption of systems in PCMH functionalities in demonstration sites than control sites?

2. Is there sustainability of PCMH functionalities in the demonstration sites?
3. Is there a correlation between higher scores on the PPC and higher quality (both in technical quality and in patient perceptions of care)?
4. Is there a negative correlation between scores on the PPC-PCMH and resource use for patients cared for by PCMHs?

Concerns about the PCMH

While we are not aware of any organized opposition to the PCMH concepts, there are likely to be some physician and hospital organizations whose revenues are tied to procedures and inpatient stays, which will have major concerns if reimbursement is substantially altered with implementation of the PCMH. There is also likely to be concerns raised by primary care physicians, if there is not an immediate return on investment in practice transformation, or who feel they are already a “patient centered medical home practice” regardless of how they are currently practicing. Emerging critics of the medical home have expressed a number of concerns including that the approach will not adequately address the fragmentation and quality problems of our health care delivery system. While the PCMH is not a sufficient response to all the problems related to fragmentation, quality or costs in the U.S. health care system, it does offer an approach with a reasonably empiric basis, for improving the quality of care, reducing fragmentation and potentially mitigating costs. As conceptualized, the PCMH is a system for overcoming the over reliance on specialty care versus primary care, the duplication and waste created by poor coordination of care between health care providers, and easing the patient’s sense of being adrift in a complex and difficult-to-navigate system. When coupled with improvements in insurance coverage and coordination of care between hospital and outpatient settings, the PCMH has the potential to have a substantial impact on these problems.

Another concern that has been raised is that the PCMH is just another version of capitation and gatekeeper care and will drive a wedge between patients and specialists. The core of the PCMH is the chronic care model, and nothing that has been formulated to date related to the PCMH involves a gatekeeper function. While the PCMH would encourage patients to identify a medical home, the physician practice would function to inform, coordinate and facilitate specialty care where that care is likely to be of benefit to the patient. Moreover, while the proposed hybrid model of reimbursement does include a per patient per month or year payment, that payment would be based on the degree to which the practice was using the technology, systems and care coordination specified in the PMCH. While the pay for performance component of the reimbursement might in part be based on resource use/cost, it would not necessarily differ in degree or focus from the same elements applied to sub-specialty practice.

Conclusions and policy implications

While there is still much to be learned concerning the relationship of the PCMH principles and visions to a variety of policy issues including the close ties to the empiric base of the Chronic Care Model indicating some degree of face validity to policy makers, consumers, purchasers and physicians, is encouraging. The longer term policy questions center around determining if practices that evolve to being PCMH's have 1) a substantial impact on improving the quality of care for those with chronic illness or preventive needs, 2) can mitigate the rate of rise in resource use/cost or at least increase the value of care that is provided, 3) improve patient experiences of care in the ambulatory care setting, 4) provide a tangible benefit that will drive changes in the reimbursement for evaluation and management services and finally 5) favorably impact the rapid decline in access to primary care. If it is even modestly successful in addressing one of these

major issues facing the US health care system, it will have a lasting impact on how we deliver and reimburse office-based care in the US.

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