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Author Manuscript
Med Care. Author manuscript; available in PMC 2009 December 8.

Published in final edited form as:
Med Care. 2009 July ; 47(7): 714–722. doi:10.1097/MLR.0b013e3181a469b0.

Medical Homes: Challenges in Translating Theory Into Practice

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Abstract

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.

Keywords

medical home; practice redesign; health reform

HISTORY OF THE “MEDICAL HOME”

The concept of a medical home originated in the 1960s among pediatricians caring for children with chronic illness. At the time, a medical home was a primary care (PC) pediatric practice offering central coordination for specialists and a repository for a patient’s clinical data.[1] At the same time, general internists were emphasizing the role of PC in new strategies for the care of adult patients with chronic illness.[2] Although continuity with a primary physician was the norm in pediatrics, it was much less common among adults; one 1983 study found that only 36% of a typical patient’s visits were to their PC provider.[3] The rise of managed care increased emphasis on PC providers as care coordinators.[4] The Wagner Chronic Care model (Fig. 1) described a series of new approaches to chronic illness, emphasizing patient self-management and care provided by an integrated team.[5,6]

The chronic care model required practices to redistribute the tasks of providing care, and to take on the new task of building patient self-efficacy rather than simply offering advice. However, it did not guarantee additional reimbursement for these tasks.[7,8] In 2003, more than

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5 years after the inception of the Wagner Chronic Care model, patients were still receiving only half of the preventive and chronic care indicated for their conditions.[9]

In response to these shortcomings in providing comprehensive, high-quality patient-centered care, the American Academy of Family Physicians (AAFP) in 2004 called for the establishment of "a personal medical home for each patient, ensuring access to comprehensive, integrated care through an ongoing relationship."[10] Their model of the medical home would provide "a basket of acute, chronic, and preventive medical care services" for each patient, and would serve as a repository of patients' health-related information. The American College of Physicians (ACP) endorsed the AAFP position, describing the medical home as providing a framework within which the chronic care model could successfully be implemented. ACP emphasized that a revised reimbursement strategy would be necessary for the medical home's success.[11,12]

Providers were not the only interested groups; in 2005, a group of large corporations began working with providers to form the Patient-Centered Primary Care Collaborative (PCPCC). The National Committee for Quality Assurance (NCQA), a PCPCC member, adopted eligibility criteria set forth by the PCPCC to allow practices to define themselves as medical homes, with the ultimate goal of being better reimbursed for the services they provide.

Along with the call for adoption of medical homes have come calls for rigorous standards for their evaluation.[13,14] The complexity of the medical home poses a challenge to health services researchers. How can "a basket of services" be defined and its contents measured? Does the medical home as it is now being described offer unique benefits that would not be found in the chronic care model, or in a high-quality primary care practice? Most importantly, what outcomes can best measure the broad benefits anticipated by advocates of the medical home?

This article aims to provide health services researchers with an overview of these unanswered questions, their implications for the implementation of medical homes, and ways in which the research community can begin to address them. Many stakeholders will be affected by how these abstract concepts are defined. Providers will need specific direction for redesigning their practice. Payers will need specific criteria for reimbursement. Policymakers will need concrete end points to evaluate success or failure of medical homes.

HOW HAS DEFINING THE MEDICAL HOME SHAPED HEALTH POLICY?

Most models of the medical home emphasize patient-centered care, gathering and storing information, and enhancing access and communication between patients and providers. There is currently no single governing definition; leading models include the NCQA standards and eligibility criteria[15] and the Commonwealth Fund study frequently cited as evidence that medical homes improve patient care.[16] The NCQA standards have emerged as the basis for provider "recognition" as a medical home and will likely drive reimbursement.

The Commonwealth Fund study used a patient-centered definition in its 2007 survey, one of the largest assessments of health outcomes of medical homes (Fig. 2).

Patients with access to a practice meeting the definition of a medical home reported higher satisfaction with care and better access to screening and preventive services. The assessment relied entirely on patient recall of practice patterns; further study is needed to transform its findings into concrete end points for practice redesign.

The NCQA/PCPCC principles of the medical home are broadly-defined attributes of the role of the PC physician and the primacy of the patient-physician relationship across the entire spectrum of illness (Fig. 2).

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The principles include enhancing patient access to their physicians, for example, same-day scheduling for visits and communication by e-mail and other means. They call for aligning quality with reimbursement, through pay-for-performance and value-based designs. The NCQA eligibility guidelines include specific "must-pass" criteria and optional elements that practices can fulfill to receive NCQA medical home recognition. Practices with a greater number of elements will be classified as higher level medical homes (and may be eligible for greater reimbursement).

HOW HAVE POLICY-MAKERS RESHAPED THE DEFINITION OF THE MEDICAL HOME?

The NCQA and Commonwealth Fund models of the medical home differ in important ways. The Commonwealth Fund definition reflects outcome-oriented end points, for example, "I have no difficulty contacting my provider by telephone"; "I have no difficulty getting care or medical advice on weekends or evenings." North Carolina's cost-saving [http:www.pcpcc.net/files/mercer%2osfy04.pdf, accessed 5/12/09] Medicaid Managed Care Program, Community Care of North Carolina, which describes its practices as medical homes, follows a similar approach. The program offers members "a PCP you can call for help when you need to" and "treatment and/or medical advice 24 hours a day, 7 days a week." [http:/www.ncdhhs.gov/dma/ca/carechandbook.pdf, accessed 5/12/09]. The NCQA principles are more process-oriented and open-ended: for example, stipulating that "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." NCQA eligibility guidelines are less demanding: to attain the must-pass "Access and Communication" standard, a practice must only show that it "has written standards for patient access and patient communication" and demonstrate "data to show that it meets its standards."

The NCQA scoring system defines elements comprised of specific items.[17] These standards tend to emphasize electronic infrastructure over access and coordination of care compared with the Commonwealth Fund model. "Scheduling each patient with a personal clinician for continuity of care" is only one of twelve items in a single element (PPC-PCMH 1), with a weight equal to "providing an interactive practice Web site" or "providing secure e-mail consultations," and practices can "pass" the element without meeting this criterion. In fact, a practice could be certified as the highest level of medical home without assigning patients a primary provider or providing patients with access to clinicians on nights and weekends by telephone. Of the 100 possible points attainable under the NCQA standards, as many as 50 can be attained simply by using an electronic health record (EHR) with electronic prescribing and decision support (Table 1).

By comparison, the maximum number of points a practice could attain by meeting every standard for access to providers is 9 (PPC-PCMH 1, elements A and B). The maximum number of points a practice could attain by meeting every standard for continuity of care is 5 (PPC-PCMH 3, element E). The NCQA's emphasis on electronic infrastructure over access and continuity has raised concerns,[18,19] but their standards have nonetheless been widely accepted and will likely guide policy.

In 2008, there were 22 active or planned medical home pilot and demonstration projects in 17 states.[20] Some are funded by private insurers, while others are supported by multiple stakeholders including employers and provider organizations. Fifteen use the PCPCC standards to establish medical home status (Table 2).

The Centers for Medicare and Medicaid (CMS) is also planning a medical home demonstration, using a modification on the PPC-PCMH scoring system created for their demonstration and

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called PPC-PCMH-CMS.[15] The CMS modification uses the same 9 standards and allows providers to be classified as tier 1 or tier 2 medical homes (with corresponding levels of reimbursement) based on their completion of required and optional elements. The CMS scoring system differs from NCQA and Commonwealth models and could lead to very different medical homes. For example, unlike NCQA, CMS would specifically require practices to schedule each patient with a personal clinician, maintain the capacity to see patients on the day they request an appointment, and provide clinician support 24 hours a day, 7 days a week (standard 1, element A).

HOW WILL DEFINING THE MEDICAL HOME SHAPE CLINICAL PRACTICE? HOW WILL IT CHALLENGE HEALTH SERVICES RESEARCH?

Each of the key elements of the medical home, including access, continuity of care, and adoption of health information technology are ideas with broad support that will likely improve health care in the long run. However, the evidence for each is complex and difficult to interpret. Practices aiming for recognition will have a clear path before them: NCQA standards will provide them with a variety of approaches they can choose from based on their individual strengths and limitations. Health services researchers face a more challenging task: they must evaluate the impact of practices' efforts to meet these standards on clinical outcomes and costs.

HEALTH INFORMATION TECHNOLOGY

EHR may vary from a simple registry of patient contact information to an integrated system of data storage and decision support that helps manage patients and generates provider- and practice-level feedback. NCQA enumerates individual components of the EHR and assigns point values to each. (A notable omission from the current standards, however, is any standard for interoperability.)[17] This degree of precision may benefit health services researchers, as it will allow them to compare costs to practices and payers, as well as performance, based on the specific functionalities of the EHR.

Currently, approximately one-third of ambulatory practices use EHRs of any sort,[21–23] and only a small proportion regularly use the disease-management and decision-support applications recommended for the highest level medical homes.[24–26] Providers cite up-front cost and inadequate reimbursement as barriers to EHR adoption.[27,67] Although the NCQA standards may lead to studies defining which EHR capabilities are most cost-effective and at what point cost savings can begin to be realized, such investigations have not yet yielded results. Even when EHRs including full decision support have been studied, results are mixed, with some showing improved outcomes[28] while others show minimal or no change.[29,30]

With evidence to support the benefits of broad EHR adoption limited, and providers reluctant to implement an EHR without protection from financial risk, researchers face a challenge in developing the evidence base to support more widespread and rapid implementation.

ACCESS AND SCHEDULING

For most practices, the recommendations of the most ambitious medical home guidelines would entail a considerable shift in daily routine. The NCQA principles call for open scheduling (in which patients can make same-day appointments) and expanded hours. A shortage of PC providers may still limit access to timely health care; the number of generalist physicians has been declining, and researchers anticipate the shortage of PC providers is expected to worsen.[30] However, some studies suggest that allowing patients to access care immediately can decrease waiting time with no additional manpower requirement.[31–34]

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Although many practices have adopted open access, they remain in the minority.[35,36] The main barrier to adoption is the commitment necessary for a practice to work through its appointment backlog so that enough slots are open each day to meet expected demand. This process of "working down the backlog" can take months and may require extra hours or temporary staff. Open-access scheduling also decreases physicians' autonomy: the practice schedule is determined by the expected demand for appointments on each day, rather than by providers' preferences or outside commitments.[37–39] The evidence linking open access to decreased no-show rates and increased patient satisfaction is mixed, although many groups have been able to eliminate visit backlogs.[40,41] Yet no large studies link the practice improvements associated with open access scheduling to improved outcomes or decreased costs.[42,43]

As with health information technology, policymakers may have difficulty determining how best to incentivize and then reimburse practices for adopting advanced-access scheduling. The challenge to health services researchers is to demonstrate the benefits of improved practice configurations on health care outcomes and costs.

CONTINUITY OF CARE

Continuity of care is fundamental to almost every definition of a medical home and is the most-studied of the medical home's component principles. The evidence suggests that while continuity of care can be associated with improved clinical outcomes and patient satisfaction, it is also difficult to define and quantify. A review by Saultz concluded that the literature "reflects no consensus about how to define continuity of care, even though this methodological problem has been discussed for more than 20 years."[44] The author, listing 21 different instruments measuring continuity, proposes a "hierarchical definition" containing 3 levels: informational, longitudinal and interpersonal. Informational continuity describes a centralized collection of patient information that is accessible to all providers caring for the patient and to which all providers can contribute. Longitudinal continuity describes a physical site where a patient receives the preponderance of care by an individual or a team that coordinates diverse services, such as a comprehensive PC clinic. Interpersonal continuity is a subset of longitudinal continuity in which the patient has a continuous relationship with a single provider.

Patients' choice of provider is subject to the changing constraints of insurance and life circumstances as well as the unpredictable demands of acute illness. For many, true interpersonal and even longitudinal continuity of care may be impossible to maintain. Saultz's definitions describe abstract ideals of continuity. Defining continuity for research purposes is more complex. Jee and Cabana[45] describe 32 separate indices that measure continuity, and classify them into 4 groups. The largest group measures the density of care, or the proportion of all visits that are to a designated provider. A second group measures the dispersion of care, or the number of providers seen by each patient. Fewer indices rely on the duration of care, or the length of the relationship between a patient and a provider, and the sequence, or the order in which a patient sees his or her providers. Although density and dispersion indices are most commonly used, no single measure has been accepted as the gold standard.

What is the impact of continuity of care on outcomes? The evidence is mixed, with provider continuity showing some benefits but site continuity most often linked to improved outcomes when compared with no usual source of care.[46–48]

Provider continuity implies site continuity, which poses an additional methodologic challenge to reviews evaluating the impact of provider continuity: few studies compare patients who have provider continuity with those who have site continuity alone, rather than with all who do not have a longitudinal relationship with a single provider. No consistent improvement in outcomes or cost savings has been demonstrated across the studies comparing provider continuity with site continuity, although patient satisfaction is generally higher.[49–53]

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For most practices, guaranteeing provider continuity would place higher demands on scheduling systems and permit less flexibility in the lives of clinicians than site continuity. Therefore, site continuity may be a more feasible objective. The PCMH-CMS criteria require provider continuity while the PMCH criteria do not, which may confuse practices working with CMS and other payers. And neither set of criteria requires site continuity. Rather, the continuity of care element in the NCQA criteria requires the practice to identify patients who have been admitted to inpatient facilities and follow-up with them on discharge, as well as coordinate with disease management organizations or case managers. The NCQA eligibility guidelines do not stipulate that the practice provide any minimum proportion of the patient's PC. A practice may be certified as a medical home even if its patients routinely seek care at another site or an emergency department.

As with the EHR and access elements of the medical home, the specific aspects of continuity associated with improved health outcomes and costs are not specified. There is tremendous need for rigorous health services research to define how interventions to improve continuity should be targeted, and whether the resources required to achieve improved provider or site continuity are justified by improved outcomes.

PATIENT-CENTERED CARE

Patient-centered care is at the heart of most medical home definitions. Yet despite this emphasis, it remains challenging to measure "patient-centeredness," a concept that "may be most commonly understood for what it is not–technology centered, doctor centered, hospital centered, disease centered."[54] Patient-centered care describes a collaborative approach that joins patient and provider to confront disease. The Commonwealth Fund's study defines the medical home by asking directly about patients' experiences of care, making its definition the most explicitly "patient-centered." NCQA principles call for a "whole-person approach" without addressing patient-centeredness directly. All data required for medical home recognition are derived from the practice, not from patients; although practices may submit patient questionnaires, they are not required to do so.

In an effort to address this shortcoming, the Commonwealth Fund's ongoing pilot study of medical homes is using the Consumer Assessment of Healthcare Providers and Systems (CAHPS)[55] to evaluate the performance of their demonstration sites. (Personal communication with Elizabeth Hodgeman of the Commonwealth Fund, 9/29/08). The CAHPS, a measure of patient satisfaction with care, captures some elements of patient-centeredness including communication, collaboration, and timeliness of care. However, patient satisfaction is itself complex to measure. Patients' satisfaction ratings vary by age, gender, race and ethnicity, overall health, and demographic concordance with their provider.[56,57] Although some practices should perhaps be allowed to adjust their patient satisfaction scores to reflect their case mix, low scores may also reflect real disparities in care. Given the importance of identifying such disparities, health services researchers will need to find a way to measure the patient satisfaction component of patient-centeredness in a more robust and outcome-related fashion.

The CAHPS was initially designed in the mid-1990s to allow enrollees and policymakers to compare health plans, and was expanded to cover inpatient providers and other groups.[58–60] Yet CAHPS, which addresses patient satisfaction, makes no pretense of measuring patient-centeredness as a whole. Indeed, no such broadly-aimed, systematically-developed measure of patient-centeredness exists. Given the emphasis of the medical homes movement on this core principle, health services researchers must develop the capacity to measure patient-centeredness and to define its impact on key health and cost outcomes.

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HOW HAVE MEDICAL HOMES AFFECTED HEALTH CARE OUTCOMES?

There is little research evaluating the impact of the medical home on adult patients. Many studies that refer to medical homes are only describing continuity of care.[61,62] Research in the pediatric population has not demonstrated significant cost savings.[63,64] North Carolina's CCNC program has demonstrated significant cost-savings with a model that also involved other elements such as the development of public-private partnerships and local networks. (http://www.communitycarenc.com/PDFDocs/Sheps%20Eval.pdf, accessed on 5/12/09.) A report of Results of ongoing demonstration projects are not yet published innovations at Geisinger Health System provides only limited, preliminary data.[65] Other Western health systems do not use the name "medical home," but many incorporate elements that are associated with some medical home definitions. The Commonwealth Fund surveyed adults in Australia, Canada, Germany, the Netherlands, New Zealand, the United Kingdom, and the United States. Rather than applying the NCQA criteria, the Commonwealth Fund used a definition similar to the one found in its US survey. The authors found that between 40% and 50% of subjects had medical homes, ranging from 45% (Germany) to 61% (New Zealand). Fifty percent of US subjects reported having medical homes. The authors did not directly examine costs or outcomes associated with medical homes, but they did find that within each country subjects with medical homes reported better communication with their providers and easier access to care.[66] The pilot and CMS demonstration projects will provide a wealth of data, but most are years away from completion and preliminary data have not been published. They will also provide insight into how the medical home has influenced the organization of PC services in various settings.

CONCLUSION AND FUTURE DIRECTIONS FOR RESEARCH

Many groups are expressing support for medical homes, asserting with confidence that improved care and decreased costs will accompany their adoption. Yet the presence of multiple definitions of the medical home means that practices could lay claim to medical home status while emphasizing different elements and evolving in different directions. Each element of the medical home merits further research, and adoption of most will demand effort or even financial risk on the part of providers themselves. No matter how carefully managed, there is not yet evidence to suggest that turning individual practices into medical homes as defined by the NCQA metric will bring about large-scale improvement in improved health outcomes or cost savings in the short or medium term. It is problematic that NCQA eligibility guidelines do not reflect many aspects of the medical home models of such major supporters of PC as the AAFP or the ACP.

Advocates for medical homes should be wary of overstating its short-term benefits, or of minimizing the commitment required for its implementation on the part of payers and providers. Health services researchers will need to play a critical role in identifying and refining evaluation metrics and in determining how best to interpret the findings. Tremendous opportunities exist to conduct large-scale research on the outcomes associated with EHR adoption and practice redesign. Future research can assess whether NCQA scores are correlated with patient-oriented measures such as CAHPS scores, and compare practices that have chosen to adopt different medical home elements with respect to quality and cost of care. The number of medical home eligibility criteria will create a series of natural experiments in which the effect of individual standards and elements can be measured. In doing so, health services researchers can answer the question: are the key elements of a medical home fundamentally different from the key elements of chronic care, or simply from high-quality PC? Because such research has not preceded but rather will follow spread of the medical home concept, it may lead to a reexamination of the NCQA eligibility criteria. Providers, advocates and researchers are only at the beginning of determining what truly constitutes a medical home.

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Acknowledgments

The authors thank Mack Lipkin, MD, Mark Schwartz, MD, and Betsy Carrier for their helpful comments on the manuscript.

This article was funded in part by CDC Training Grant 1-T01-CD000146-01.

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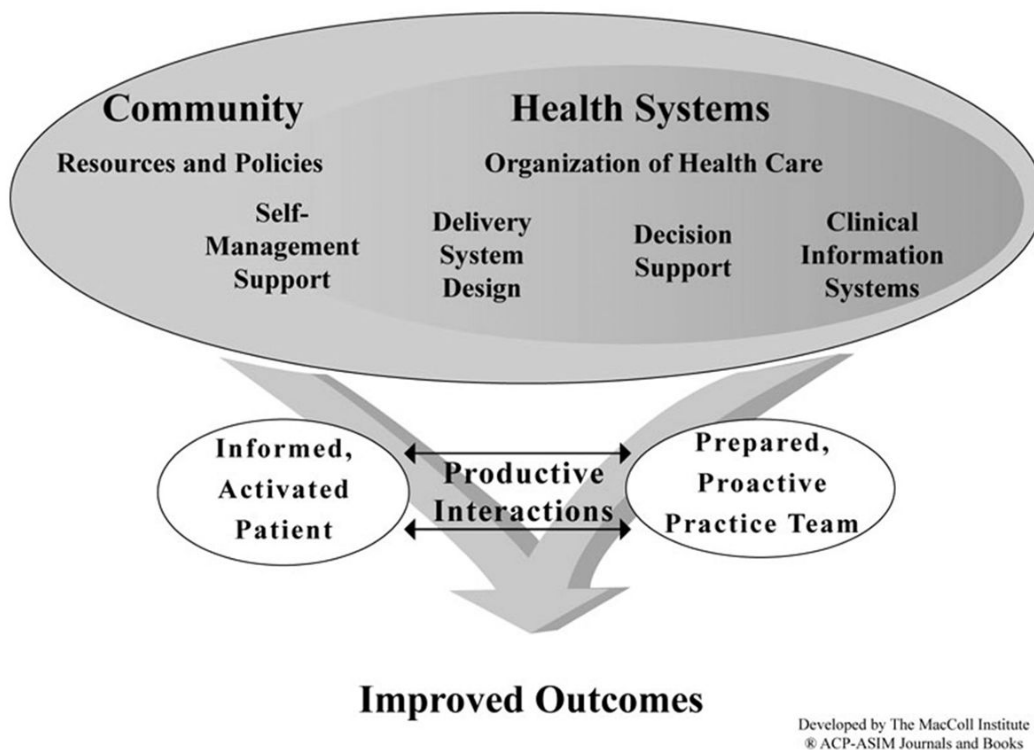

FIGURE 1.
The Wagner care model. Reprinted with permission from *Milbank Q*. 1996;74:511–544.[68]

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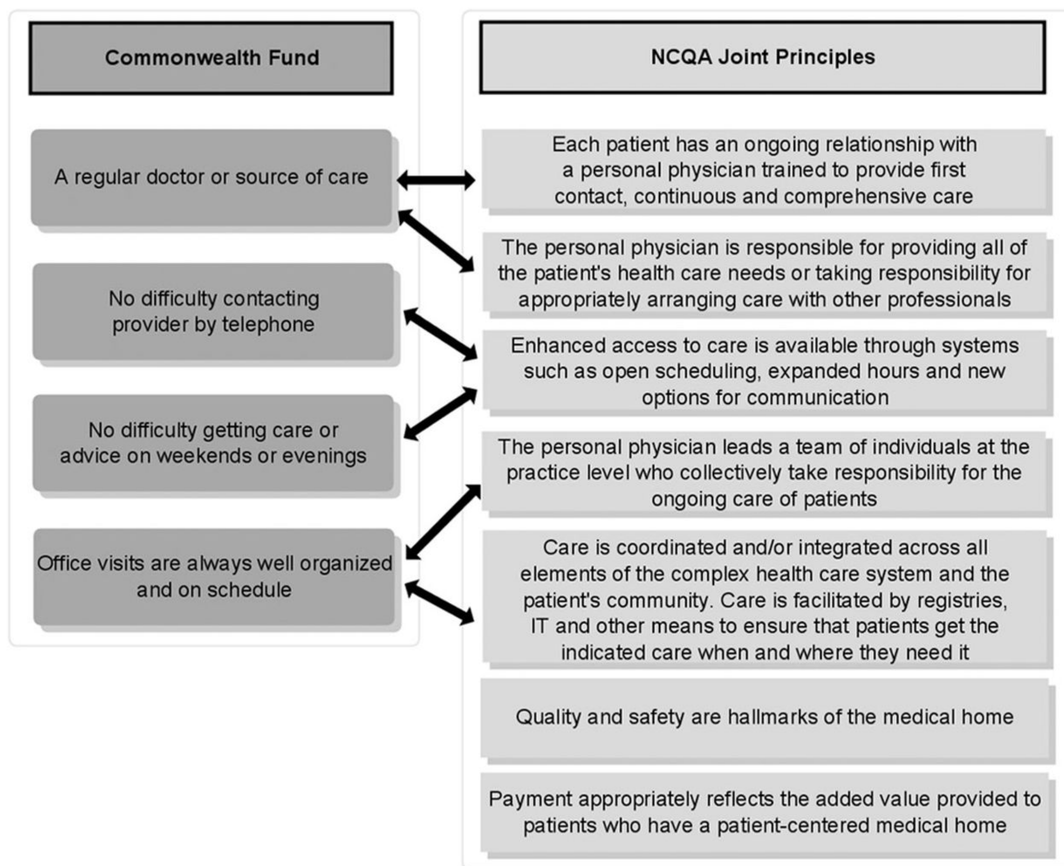

FIGURE 2.
Comparing Commonwealth Fund and NCQA Joint Principles Models of the Medical Home.

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TABLE 1

Points for Adoption of EHR Based on Eligibility Criteria of the National Committee for Quality Assurance*

Element	Points
PPC 2 Element A (basic system for managing patient data)	**2**
PPC 2 Element B (electronic system for clinical data)	**3**
PPC 2 Element C (use of electronic clinical data)	**3**
PPC 2 Element D (organizing clinical data)	**6**
PPC 2 Element E (identifying important conditions)	4
PPC 2 Element F (use of system for population management)	**3**
PPC 3 Element B (preventive service clinician reminders)	**4**
PPC 5 Element A (electronic prescription writing)	**3**
PPC 5 Element B (prescribing decision support—safety)	**3**
PPC 5 Element C (prescribing decision support—efficiency)	**2**
PPC 6 Element B (electronic system for managing tests)	**6**
PPC 7 Element A (referral tracking)	4
PPC 8 Element A (measures of performance)	3
PPC 8 Element F (electronic reporting—external entities)	1
PPC 9 Element B (electronic patient identification)	**2**
PPC 9 Element C (electronic care management support)	**1**
Points that require or would be prohibitively difficult without an EHR	**39**
Total Points (points where EHR is required OR would greatly facilitate)	50

*PPC refers to Physician Practice Connection. Elements listed in bold font are those for which eligibility criteria explicitly require the use of an EHR or include tasks that would be prohibitively difficult if done by hand. Elements listed in standard font are those for which eligibility criteria include tasks that could be done by hand or with the use of an EHR, although an EHR would greatly facilitate their completion.

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TABLE 2

Medical Home Demonstration Projects as of February17, 2009[*]

Project	State	Funder	Criteria	Start Date	Duration	Covered Lives
United Health Group PCMH[†] Demonstration Program	AZ	Insurer (United Health Group)	NCQA PPC-PCMH[‡] United Health Premium Designation	1/1/09	36 mo	6000
Colorado Mult- Stakeholder Multi- State PCMH Pilot	CO	Multi-Stakeholder (Private, Medicaid, Medicare)	NCQA PPC-PCMH	4/1/09	2 yr	30,000
Wellstar Health System	GA	Insurer (Wellstar)	NCQA PPC-PCMH	5/1/09	1 yr (initial)	850
Quality Quest Medical Home	IL	Multi-Stakeholder (Private insurers, employers, public health)	Undecided	2/09	1 yr	Undecided
Louisiana Health Care Quality Forum Medical Home Initiative	LA	Multi-stakeholder (Public, private, employers, VA)	NCQA PPC-PCMH	9/2007	3 yr	1,200,000
Maine Multi-Payer Patient-Centered Medical Home Pilot	ME	Multi-Stakeholders (Private, public, FQHC[§])	MHIQ,[¶] PPC-PCMH	Early 2009	3 yr	30,000–50,000
Aligning PCMH Stakeholders in Michigan	MI	Multi-stakeholders (Private)	NQCA PPC-PCMH, undecided, BCBS[//] criteria	Undecided	Undecided	Undecided
Blue Cross Blue Shield of Michigan—Physician Group Incentive Program	MI	Insurer (BCBS)	PCMH domains of function, performance on evidence- based care measures, attributed population use rates of generics, ED,[**] inpatient, imaging, mini- CAHPS[††] survey	2005	Mid-2010	1,700,000
Cigna and Dartmouth- Hitchcock Patient- Centered Medical Home Pilot	NH	Insurer (Cigna)	NCQA PPC-PCMH	6/1/08	Ongoing	>17,000
NH Multi- Stakeholder Medical Home Pilot	NH	Multi-stakeholder (Private insurers, CMS[‡‡])	NCQA PPC-PCMH Adult Medical Home Index[§§]	1/1/09 (payment start 4/1/09)	2 yr from payment start	30,000
Patient-Centered Medical Home—Diabetes Management	ND	Insurer (BCBS)	Review of patient history, development of care plan, tracking of care needs, patient education on self- management, medication adherence, preventive testing and self- management	9/1/07	2 yr	1100
MediQhome Quality Project: Patient-Centered Advanced Medical Home Quality Improvement Initiative	ND	Insurer (BCBS), may include Medicare, Medicaid and other payers	Participation in a web portal: supplying data, using portal for updated patient information, modifying practice to enhance quality performance	2009	3 yr	40,000–60,000
CDPHP[¶¶] Patient- Centered Medical Home Pilot	NY	Insurer (CDPHP) but will function as virtual multipayer demo by offering bonuses for quality outcomes of all patients in pilot practices	NCQA PPC-PCMH	5/22/08	3 yr	35,000
EmblemHealth Medical Home High Value Network Project	NY	Insurer (Emblem Health)	NCQA PPC-PCMH + supplementary questions	2008	2 yr	20,000
New York Hudson Valley p4p[////] Medical Home Project	NY	Multistakeholder (private, employers)	NCQA PPC-PCMH	2008	5 yr	1,000,000
Cincinnati Medical Home Pilot Initiative	OH/KY	Insurer (Humana)	NCQA PPC-PCMH	12/1/08	12 mo	5,000
Greater Cincinnati Aligning Forces for Quality Medical Home Pilot	OH/KY	Multistakeholder (insurer)	NCQA PPC-PCMH	Spring 2009	2 yr	30,000
Southeastern Pennsylvania Rollout of the Chronic Care Initiative	PA	Multistakeholder (public, insurers)	NCQA PPC-PCMH "used as validation tool showing that practices have transformed care delivery to the Chronic Care Model"	5/2008	3 yr	230,000
Rhode Island Chronic Care Sustainability Initiative	RI	Multistakeholder (private, Medicaid, employer)	NCQA PPC-PCMH	10/1/08	2 yr	28,000
Memphis Multi-Payer Patient-Centered Medical Home	TN	Multistakeholder (private, employers)	NCQA PPC-PCMH	Undecided	Undecided	Undecided
Texas Patient- Centered Medical Home Demonstration Project	TX	Multistakeholder (private, Medicaid-CHIP, employers)	Undecided	Undecided	Undecided	Undecided

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Project	State	Funder	Criteria	Start Date	Duration	Covered Lives
Patient-Centered Medical Home—Vermont	VT	Insurer (BCBS), expanding to other payers	Chronic care model, Vermont blueprint for health	7/1/05	Undecided	15,000
CMS Demonstration Projects	8 regions	Medicare	PPC-PCMH-CMS	2010	2012	Unknown

[*] http://www.pcpcc.net/content/pcpcc-pilot-projects.

[†] PCMH = Patient-centered medical home.

[‡] NCQA PPC-PCMH = National Committee on Quality Assurance Physician Practice Connections-Patient Centered Medical Home Eligibility Criteria.

[§] FQHC = Federally Qualified Health Center.

[¶] MHIQ = Medical home IQ, accessible at: http://www.transformed.com/MHIQ/welcome.cfm.

[//] BCBS = Blue cross blue shield.

[**] ED = Emergency department.

[††] CAHPS = Consumer Assessment of Healthcare Providers and Systems.

[‡‡] CMS = Centers for Medicare and Medicaid Services.

[§§] http://www.health.state.mn.us/divs/fh/mcshn/medhm/docs/mhiadult.pdf.

[¶¶] Capital district physicians' health plan.

[////] P4P = Pay for performance.