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The Patient Centered Medical Home

*History, Seven Core Features,
Evidence and
Transformational Change*

ROBERT GRAHAM CENTER



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The Patient Centered Medical Home

The Patient Centered Medical Home (PCMH) is a model of care articulated by principles that embrace the aspirations of the Institute of Medicine, the design of the Future of Family Medicine new model of care and The Wagner Care Model, and the relationship desired by some of this Country's largest employers for their employees.⁽¹²⁻¹⁴⁾ It is also a political construct that takes advantage of a 40 year-old name and organizing these previous articulations into a mutually agreeable model that has now begun to capture the collective psyche of Federal and State Government, employers and health plans.^(16;17) It is likely to be the best opportunity for aligning physician and patient frustration, demonstrated models for improving care, and private and public payment systems to produce the most profound transformation of the health care system in anyone's memory.

This paper is not simply a restatement of the medical home, but an effort to organize some of the evidence that is foundational to the concept. It is also an effort to identify key elements of a medical home for delivering a patient-centered experience. And finally, it will revisit some of the reasons for managed care's failure lest the patient centered medical home be similarly twisted to other goals for health care.

Patient centeredness refers to health care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they require to make decisions and participate in their own care.

Institute of Medicine
Envisioning a National Healthcare Quality Report⁽⁵⁾

A Brief History and Explanation

The American Academy of Pediatrics (AAP) introduced the term “medical home” in 1967 and within a decade it was AAP policy.⁽¹⁸⁻²⁰⁾ Initially it was used to describe a single source of medical information about a patient but gradually grew to include a partnership approach with families to provide primary health care that is accessible, family-centered, coordinated, comprehensive, continuous, compassionate, and culturally effective. In 2002, AAP added an operational definition that lists 37 specific activities that should occur within a medical home.⁽²¹⁾

In 1978 the World Health Organization met at Alma Ata and laid down some of the basic tenets of the medical home and the important role of primary care in its provision.⁽²²⁾ The Alma Ata declaration specifically states that primary care “is the key” to attaining “adequate health”, which they further defined as, “a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal.” The WHO located primary care at the center of the health system, and close to home:

“Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community ... It forms an integral part both of the country’s health system, of which it is the central function and main focus ... It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.”

They further described primary care using language now incorporated in the Patient Centered Medical Home concept, saying that primary care:

- Reflects and evolves from the economic conditions and sociocultural and political characteristics of the country and its communities and is based on the application of the relevant results of social, biomedical and health services research and public health experience;
- Addresses the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly;
- Includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs;
- Involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors; and demands the coordinated efforts of all those sectors;
- Requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making fullest use of local, national and other available resources; and to this end develops through appropriate education the ability of communities to participate;
- Should be sustained by integrated, functional and mutually supportive referral systems, lead-

ing to the progressive improvement of comprehensive health care for all, and giving priority to those most in need;

- Relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.

These precepts about primary care were embraced in the 1990's by the Institute of Medicine (IOM) which specifically mentioned 'medical home'.⁽²³⁾ The IOM reports later influenced the specialty of Family Medicine, and the term 'Medical Home' began to appear in the family medicine literature. In 2002, family medicine undertook a study and effort to develop a strategy to transform and renew the discipline of family medicine to meet the needs of patients in a changing health care environment. The result was *The Future of Family Medicine: A Collaborative Project of the Family Medicine Community*. *The Future of Family Medicine Project* states that every American should have a Personal Medical Home that serves as the focal point through which all individuals—regardless of age, sex, race, or socioeconomic status—receive their acute, chronic, and preventive medical care services.

The Chronic Care Model was another important contributor to the development of the Patient

Centered Medical Home. For more than a decade, Ed Wagner, MD, MPH, Director of the MacColl Institute for Healthcare Innovation, Group Health Cooperative of Puget Sound, has promoted this as a model for improving chronic health care.⁽²⁴⁾ The elements of this model have been shown to improve the quality and cost-effectiveness of care for patients with chronic diseases.⁽²⁵⁾ In 2004, the AAFP used the elements of the model to describe how it might apply more broadly to models of primary care, and needed changes in how care is paid for to sustain it.⁽²⁶⁾ This model also contributed to thinking about new models of care that can commit to being a medical home, particularly those that will care for patients with complex and chronic conditions.

These important efforts and studies have distilled the core features that need to be present

Core Features of the Medical Home⁽¹⁾

- Personal Physician
- Physician Directed Medical Practice
- Whole Person Orientation
- Care is Coordinated and/or Integrated
- Quality and Safety
- Enhanced Access
- Payment Reform

in a Patient Centered Medical Home. The seven core features of a medical home have been agreed upon by the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association. This model is an aspiration that is not currently found

in most clinical practices and is unavailable to most people in the US. This important evolution of care will require active demonstrations, change facilitation, and a business plan that can either survive in the current payment environment or that is specifically financed. When it is found commonly throughout the US, patients can be assured

of care that is not only accessible but also accountable, comprehensive, integrated, patient-centered, safe, scientifically valid, and satisfying to both patients and their physicians.⁽²⁷⁾

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

but to the quality of care they receive as well.

⁽³¹⁾ Unfortunately, the ability of primary care to create sustained clinician-patient partnerships and provide whole-person oriented care is already eroding according to Medicare beneficiaries.⁽³²⁾ Without financing that specifically supports the integration care for people with chronic diseases into primary care, and that supports sustained integrative relationships, patients' experiences

“The patient brings into the office a unique understanding about his or her own personal and health issues. No one knows about it more than he or she does. The doctor brings into the office a carefully developed body of expert knowledge. The basic notion is that the two get together with their own expertise and negotiate a shared plan and understanding ... if you get to know people over time...you can fill in the blanks and complete a rather organized review that gives a good picture of the patient above and beyond the purely biomedical or even psychosocial issues.”

Dr. Tom Delbanco⁽⁷⁾

People who become patients value relationship above all else, even tolerating poor service and considerable inconvenience to sustain relationships with their doctor.⁽²⁸⁾ More than half of people who choose to enroll in and pay extra for health plans that allowed self-referral exercised this option to see a primary care physician--the implication being that they did so to retain their relationships with their regular doctor in a system permitting or promoting fragmentation instead of integration.⁽²⁹⁾ The IOM described medical homes in the context of “continuous healing relationships” in which the patient needs and values are central.⁽³⁰⁾ The value of continuous healing relationships between patients and physicians is not only related to patient’s perceptions,

in the fragmented healthcare system are likely to grow worse, particularly for people with multiple conditions.

Having a usual source of care, the most essential element of a medical home, is extremely influential in the care people receive. In fact, having a usual source of care, independent of other factors such as health insurance, is associated with a greater likelihood that people receive care in nearly every setting. People who utilize care but do not have a usual source of care experience real barriers to getting care when they need it.⁽³³⁾ This is true for children and adults. People who have a usual source of care are also more likely to receive preventive care services, independent of having insurance.⁽³⁴⁾ For many people, the usual

source of care will be a personal physician, and having chosen one's physician is the single predictor most strongly related to having high overall satisfaction.^(35;36) Interpersonal continuity of care is important to a majority of patients, particularly those from vulnerable groups. Patients value the relationship with their physician, their physician's knowledge about them, and the ability to communicate their concerns.⁽³⁷⁾ Recent studies have shown that three-quarters of patients want to see their physician when they need medical care and just 16% value appointment convenience over continuity.⁽³⁸⁾ Practices that change their scheduling to better accommodate continuity have experienced significant improvements in patient satisfaction and perception of quality.⁽³⁸⁾

It is well established that having a regular source of care and continuous care with the same physician over time has been associated with better health outcomes and lower total costs.⁽³⁹⁻⁴¹⁾ States and counties with more primary care physicians show more efficient and effective use of care, leading to lower overall health care spending.⁽⁴²⁾ It has also been demonstrated that among 18 wealthy Organization for Economic Cooperation and Development countries a strong primary care system and practice characteristics such as patient registries, continuity, coordination, and community orientation were associated with improved population health.⁽⁴³⁾ There is also substantial evidence that increased use of primary care physicians resulted in reduced hospitalizations and reduced spending for other non-primary-care specialist services with improvements in morbidity and mortality rates.^(39;44) While most primary care practices in the US are not yet able to perform as a medical home, the evidence-based functions of primary care are core to the medical home. (See [Table 1](#) on page 8)

Having a personal physician influences health outcomes. A review of 40 studies addressing the relationship between interpersonal continuity and care outcomes found that nearly 2/3rds of outcomes were significantly improved.⁽⁴⁵⁾ Similarly, having strong interpersonal continuity with a personal physician likewise has significant reduction in costs. It can be difficult for patients to sort through lots of health data and to choose therapeutic options. Patients value clinicians who can help them weigh options and choose courses of action.⁽⁴⁶⁾

The value of the relationship between provider and patient holds true for children as well as adults, but for children it is also important for their to be a continuous relationship between the provider and the parent. Only half of young children in the United States are reported to have a specific clinician for well-child care. Low rates of continuity are found across health care settings.⁽⁴⁷⁾ A 2004 study found that children with a usual source of care were more likely to meet the AAP criteria for having a medical home; however, simply having a usual source of care was not highly predictive of whether a child experienced the other core qualities of a medical home.⁽⁴⁸⁾ This study suggests that the medical home capacities and components will be transformational for many practices—it should not be an expectation of current practice in the current health system.

Americans value choice. The Future of Family Medicine study found that care organized around a primary care relationship results in better outcomes at lower cost with higher satisfaction. Individuals should be able to choose or change their medical home through an easy, well defined process. Maintaining a continuous relationship with an identified personal medical home should be supported. A standard health care covenant

should describe explicitly the mutual expectations of the individual and the medical home.⁽⁴⁹⁾

The Commonwealth Fund 2006 Health Care Quality Survey found that health care settings with features of a medical home—those that offer patients a regular source of care, enhanced access to physicians, and timely, well-organized care—have the potential to eliminate disparities in terms of access to quality care among racial and

ethnic minorities. This suggests that expanding access to medical homes could improve quality and increase equity in the health care system.⁽⁵⁰⁾

A strong emphasis on person-focused care^(51;52) projects beyond the patient–physician dyad to support important system goals such as quality of care^(53;54) and efficient use of services.^(55;56)

Person-focused care also helps caregivers reach decisions that meet the needs of the patient.⁽⁵⁷⁾

Table 1.

Table: Health Care Functions Provided by Primary Care

Primary Care Function	Function	Example
Patient Level		
Provide personal health care	Diagnose and treat illness	Care for diabetes mellitus in context of continuous relationship
Focus on person rather than disease	Understand patient's overarching goals	Balance treatment intensity and quality of life
Focus on decisions congruent with goals of patient rather than health care system	Elicit informed preferences	Discuss marginal benefit of additional testing, intervention
Develop continuous healing relationship	Enhance trust and understanding	Address fears about surgery stemming from experiences
Focus on trajectories of personal health	Anticipate future problems	Risk for family violence
Place patient in context of family/community	Understand contextual risks and perceptions	Address medical practices that conflict with culture
Integrate needs of patients with multiple conditions	Manage conflicts and burden of multiple recommendations	Discuss effect of steroid use for lupus on diabetes mellitus
Health care system level		
Point of entry for initial evaluation	Access and initial triage of symptoms	Differentiate coronary artery disease from panic disorder
Match patient needs with system resources	Avoid over- or undertreatment	Manage asthma in primary care vs. referral to pulmonologist
Increase mutual understanding of patient and health care system	Provide contextual information	Tell consultant that patient is very stoic and minimizes systems
Coordination of services	Coordinate care from multiple disciplines	Coordinate mental health and support group services for patients with cancer
Provide capacity for acute and chronic illness not requiring specialty care	Provide source of clinical care manpower	Care for major depression
Population level		
Link geographies of community and tertiary care	Supply decentralized source of local health care	Refer patients needing tertiary care intervention
Match population needs with health resources	Enhance efficiency and appropriateness of care	Buffer supply-side drivers of overuse
Promote equity and counter market dynamics	Provide access and understand sources of bias	Distribution matches geographical distribution of U.S. population
Locus of primary and secondary prevention	Augment public health	Provide recommended immunizations

From: Ferrer RL, Hambidge SJ, Maly RC. The Essential Role of Generalists in Health Care Systems. *Annals of Family Medicine*.⁽⁹⁾ Used with Permission

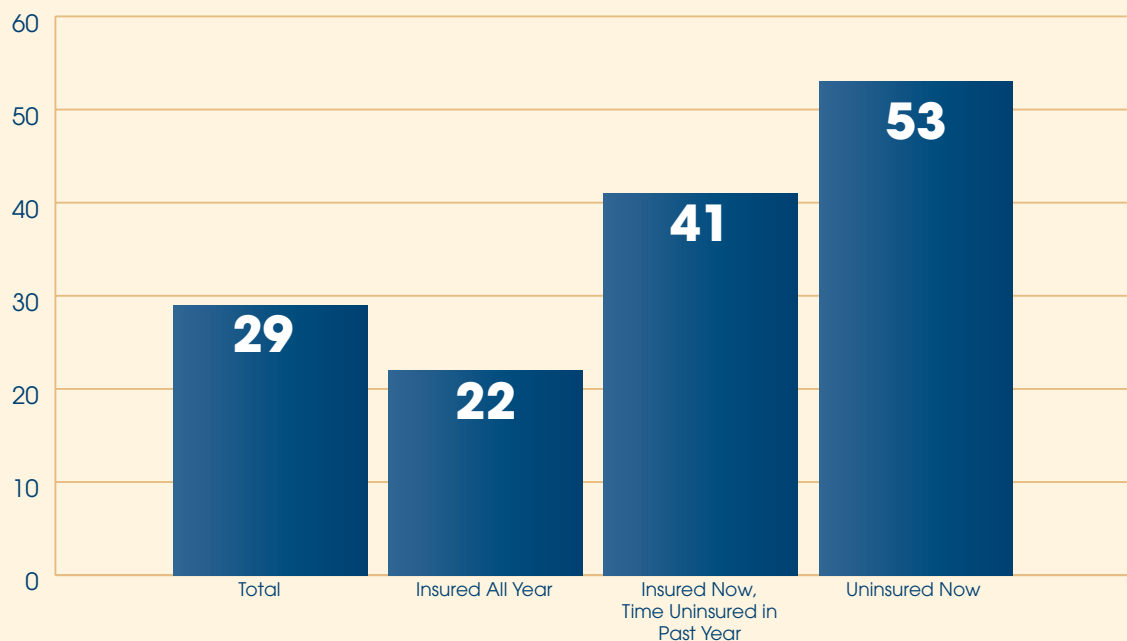
Unfortunately, continuity has been found to be quite low, particularly for Medicare Beneficiaries—many of whom have chronic health conditions that would benefit most from having a personal physician. One study of Medicare beneficiaries found that they saw a median of two primary care physicians and five specialists working in four different practices. A median of 35% of beneficiaries' visits each year were with their assigned physicians; for 33% of beneficiaries, the assigned physician changed from one year to another.⁽⁵⁸⁾ When the Commonwealth Fund study team combined four characteristics of a medical home in combination, only 27 percent of working-age adults—an estimated 47 million people—had a medical home. Another 54 percent of adults

have a regular doctor or source of care, but they do not have the enhanced access to care provided by a medical home.⁽⁵⁹⁾ The system will have to address the looming imbalance between the number of chronically ill elderly and available caregivers. If very sick elderly people cannot receive competent and caring day-to-day assistance, other health care reforms are unlikely to have much impact.⁽⁵⁹⁾ More than half of people with insurance lack confidence in their ability to get high quality care, and more than one in five with insurance share this same concern (Figure 1).⁽⁶⁰⁾ At least two studies reveal significant erosion in the quality of the primary care relationship between 1996 and 2000—we may be losing ground in the capacity to give people a PCMH in the current health care environment.⁽⁶²⁾

Figure 1.

Many Americans Express a Lack of Confidence in Ability to Get High-Quality Care

Percent of adults ages 19-64 who are not too/not at all confident



Source: The Commonwealth Fund Biennial Health Insurance Survey (2005)

Collins SR, et al. Gaps in Health Insurance: An All-American Problem Findings From The Commonwealth Fund Biennial Health Insurance Survey. Commonwealth Fund. April 2006. Used with permission

All of this evidence should also be considered in the context of a hazardous environment for the primary care physicians who are the personal physicians for most Americans. The Future of Family Medicine report concluded in 2004 that, “Unless there are changes in the broader health care system and within the specialty, the position of family medicine in the United States will be untenable in a 10- to 20-year time frame.”⁽⁶¹⁾ Internal medicine has recently reached similar conclusions and is witnessing an unprecedented migration of their young trainees away from primary care.^(62;63) The medical home will have to be hospitable to this country’s next generation of physicians if it is to be realized for patients.

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

Patient care in the New Model will be provided through a multidisciplinary team approach and will be dependent on a deep understanding of the population served by the practice. A cooperative effort among all practice providers and staff will be the cultural norm, and it will be understood that the practice is more than the sum of its individual parts. Practice staff will share in decision making regarding patient care, with explicit accountability for their work to patients, to each other, and to each patient’s personal physician.

FFM Task Force 1 Report⁽¹⁵⁾

Previously articulated principles for primary care teams hold for medical homes as well: First, the patients need health care teams that flex depending on the complexity of the needed care. Adding people with varied skills to the team increases the number of possible solutions that will be generated. Specialists, pharmacists, mental health providers and others can provide focused recommendations when they are needed, while repetitive low-complexity clinical tasks should be handled by members of the primary care team other than the physician. In the one case, patients receive care from a broader base of knowledge and expertise, and physician-level expertise is reserved for individualizing and integrating care.⁽⁶⁴⁾

Most primary care physicians probably have established relationships with all the different types of health care personnel that are required to deliver excellent care. One problem is, to

quote Safran, “nobody told the patients.”⁽³⁸⁾ Another is that there is little support to organize these interactions to optimize outcomes. To function as a coherent team requires an additional set of skills and deliberate attention from each team member to the performance of the whole.⁽³⁸⁾ There is evidence that in the current primary care practice patients value the roles of clinicians other than their physician, but they experience it as a ‘bewildering stream’ of people who ‘are not my doctor’, who don’t know them well, and whose roles are unclear.⁽³⁸⁾ The PCMH could remove some of the bewilderment, and permit more purposeful and planned

team functions that support a sustained relationship with patients. The PCMH permits changing interactions—whether they are for changing behaviors, teaching tools for managing anxiety, or learning how to take their medications—within a single setting or at least within a network of organized relationships. The patient has a relationship with the PCMH team, some of whom will be outside of the practice, but which readily share information and are able to maintain a focus on the patient as the locus of control. Teams will have to develop explicit strategies and systems to ensure clarity of roles and how they contribute to sustained relationships—and they will have to communicate this clearly to patients. More elements of the PCMH will be externally supported for some practices than others, for example rural, underserved inner-city, and solo-practice clinicians may have to rely more on external team members, care management teams, or electronic health record support. In some cases, organizing and sustaining these virtual homes will require payment systems that support such homes rather than fragmenting care as they have in the past. Virtual homes may also require active support from payers, for instance one of the most effective functions of the North Carolina Medicaid Program (Access II) is creation of local care management agencies that can maintain relationships with patients and physicians regardless of location or size of practice.⁽⁶⁵⁾

Effective team functions for the PCMH will require feedback mechanisms that inform practices and team members about the outcomes of their behavior. Without feedback, components or interactions cannot purposefully evolve. All primary care teams require feedback on their collective performance so that the team can learn.

⁽⁶⁶⁾ Finding metrics suitable for measuring the

health effects of primary care has been difficult, but progress may require the generalist community to choose a few “good enough” measures that will be routinely collected, and to begin to track and compare outcomes.⁽⁹⁾ The Ambulatory Care Quality Alliance has created a ‘starter set’ of such measures. The Pediatric community has developed 37 measurable activities that should occur in the medical home.⁽²¹⁾ Similarly, NCQA has been working with physician specialty organizations and other experts to develop a set of measures for PCMH accreditation.⁽⁶⁷⁾ England is ahead of the US in developing and using its practice quality measurement tools, and offer us the lesson that we need to start somewhere and be open to revision and retesting as an ongoing process.⁽⁶⁸⁾

Ferrer has raised important questions about teams in the medical home that will need to be tested in the course of movement to this model. Some have been sufficiently answered to not hold up this needed movement, but they remain to be formally tested⁽⁹⁾:

- To what extent can teams of physicians and other clinicians provide first-contact care without interfering with the benefits of continuing interpersonal relationships between particular practitioners and patients?
- Ongoing person-focused care means that care should be focused on the person rather than on the disease. Can teams of practitioners fulfill this function?
- Comprehensiveness means that all problems in the population should be cared for in primary care, except those that are too unusual for the primary care practitioner or team to treat competently. How can data systems provide the information needed to decide when problems are best met in primary care, when they can be

best dealt with in primary care with appropriate specialty backup, and when patients need to be seen by a specialist?

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

Primary care differentiates itself from other areas of medicine by attending to the whole person, in the context of the patient’s personal and medical history and life circumstances, rather than focusing on a particular disease, organ, or system.

Dana Gelb Safran, ScD⁽²⁾

Ideally, whole person orientation by the PCMH will include dealing with both the mind and body, considering clinical priorities in the context of personal values, integrating and organizing care across settings (including the person’s home), and having a hand in community and public health. The PCMH will be accountable for the right care at the right time, whatever the problem. Health-care in the US has moved steadily toward reduction—people receiving care for specific diseases and organs and increasingly absent consideration of their quality of life, their priorities, or potential treatment interactions. Several studies suggest that whole-person care is a weak link in primary care performance, consistently ranking lowest among measures of interpersonal care.^(32;69)

In a patient-centered practice, the doctor works to ascertain the patient’s reasons for coming and to resolve the patient’s concerns. Ideally, the patient feels understood and their symptoms are resolved. The impact of a whole person approach may be part of a package of care, consisting of a doctor whose overall practice allows for the development of personal relationships with patients over time through continuity of care.⁽⁷⁰⁾ Patients that don’t receive a positive, patient centered approach are at

risk for being less satisfied, less enabled, and may have greater symptom burden and use more health service resources.⁽⁷¹⁾

Evidence of the health-promoting influence of primary care has been accumulating ever since researchers have been able to distinguish primary care from other aspects of the health services delivery system.⁽³⁹⁾ This evidence shows that primary care helps prevent illness and

death, regardless of whether the care is characterized by supply of primary care physicians, a relationship with a source of primary care, or the receipt of important features of primary care. The evidence also shows that primary care (in contrast to specialty care) is associated with a more equitable distribution of health in populations, a finding that holds in both cross-national and within-national studies.⁽⁷²⁻⁷⁴⁾ The means by which primary care improves health have been identified, thus suggesting ways to improve overall health and reduce differences in health across major population subgroups.⁽⁷⁵⁾ A significant portion of this effect is the whole-person orientation of primary care and the capacity to integrate organs into people, mind and body, and care across a variety of settings.

Many things contribute to the quality chasms related to the dis-integration of health care, but mental health is particularly important to the context of the whole person. This is not only unfortunate but a tragedy since these conditions are the leading cause of combined disability and death of women and the second highest of men.⁽⁷⁶⁾ Depressed patients were three times more likely than non-depressed patients to be non-compliant with medical treatment recommendation.⁽⁷⁷⁾ Patients who have depression after a myocardial infarction have recurrent events and die sooner than those who are effectively treated for depression.⁽⁷⁸⁾ Yet mental health is the collection of conditions for which the most purposeful and damaging barriers to whole person care have been constructed. These barriers include carve-out payment and referral processes, insufficient time for visits, poor team development, and reinforced stigmas.

In looking at the whole person, the PCMH also needs to look at the community, especially when addressing social determinants of health. This means that the PCMH will need to have capacity for the integration of primary health care with public health-approaches.⁽⁸⁾ Primary care is best poised for this role but there is little support for this function.^(79;80) Community, the social environment we live in and its capacity for both harm and good are integral to personal health. In caring for the whole person, the PCMH will need to consider where people live, their exposure to disease, their capacity for changing behaviors, and available public health resources. To accomplish this task the PCMH will need to forge three community linkages: 1) with community agencies that can help indigent patients receive clinical and social services; 2) with local health departments to share data on local patterns of disease and death, and to plan interventions; 3) to target prevention goals, offering programs that address

behavioral risk factors.⁽⁹⁾ The health care teams of the PCMH will have a role as the “natural attorneys of the disadvantaged”—that is we function well as advocates for our individual patients, but need to extend this natural advocacy to the socially deprived populations of our community—if they are to succeed at the mission of whole person orientation.⁽⁸¹⁾

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

Integration is complex, time-consuming work; improving primary care’s performance in integrating care will involve an effort akin to that of improving safety.

Robert Ferrer, et al⁽⁹⁾

One of the most unfair ironies of a health care system that now spends \$2 trillion per year—nearly \$7000 per citizen—on health care is the burden it places on patients to transfer information between their health care providers. The most vulnerable person in the equation, the one least trained in the complex culture and language of medicine is asked to verbally relate their

sequence of care. If they are lucky, it is on bits of paper or the electronic equivalent. It is no wonder that these hand offs of care are among the most dangerous of events for patients. The standards for organizing patient information are still being developed in the country while other developing countries already enjoy interoperable systems. The PCMH should ensure that the health care team pulls together to best serve patient needs in all arenas. In the PCMH, integration will have to be a system property, with information systems, teams, and organizational linkages promoting integration.⁽⁹⁾ They should create communication patterns that support the proper selection of steps along the referral continuum. It will also have to assist patients in making sense of the advice, tests, diagnoses, and procedures they face along the way.

Serious chronic illnesses, in particular, require continuity and comprehensiveness of care. Flexibility is also important—adjusting care to family and patient resources, to varying needs, and to patient and family preferences.⁽⁵⁹⁾

As part of its coordination and integration functions, the PCMH will necessarily need to be an arbiter of subspecialty care—facilitating when it is needed, protecting when it is not. Free access to subspecialists may be an individual psychic good, but if it comes at the expense of a rational system of matching population needs with health care resources, and promoting generalist–specialist interdependence, then free access to specialists may endanger long-term health system sustainability.⁽⁹⁾ The PCMH should reduce the need for subspecialty care, but that will be an outcome and not a limiting role. The PCMH cannot afford to repeat the mistakes of the Managed Care movement, making an obstacle of the patient’s provider. The health system will have to manage or limit access—rationally ration—to subspecialty care if

population health goals are to be realized. What Ferrer maintains is the main task of primary care holds true for the medical home:

“The main task is organizational: enhancing primary care’s performance as an essential hub in the network formed by patients, health care organizations, and communities. Modern understanding of systems ranging from metabolic pathways to corporations to the Internet has emphasized that robust networks are characterized by a small set of nodes with disproportionately high connectedness.⁽⁸²⁾ These well-connected nodes greatly decrease the number of times that information must travel from node to node to traverse the network.⁽⁸³⁾ Effective primary care provides the well-connected nodes in the health care network, and many of the needed design improvements in primary care relate to enhancing its network functions. A successful design should address the following key questions:

1. How should people be linked to [medical homes] to promote the systems functions of [medical homes]?
2. How should [medical homes] be linked to other services within the health care system to optimize the functioning of the overall system?
3. How should [medical homes] be linked to communities to best integrate community needs with health care system services?”⁽⁹⁾

Quality and safety—are hallmarks of the medical home.

- Practices advocate for their patients to support the attainment of optimal, patient-centered outcomes that are defined by a care planning process driven by a compassionate, robust partnership between physicians, patients, and the patient’s family.
- Evidence-based medicine and clinical decision-

support tools guide decision making

- Physicians in the practice accept accountability for continuous quality improvement through voluntary engagement in performance measurement and improvement.
- Patients actively participate in decision-making and feedback is sought to ensure patients' expectations are being met
- Information technology is utilized appropriately to support optimal patient care, performance measurement, patient education, and enhanced communication
- Practices go through a voluntary recognition process by an appropriate non-governmental entity to demonstrate that they have the capabilities to provide patient centered services consistent with the medical home model.
- Patients and families participate in quality improvement activities at the practice level.

As the point of entry into the health system, primary care enhances the efficiency of downstream providers in several ways. First, primary care is a mechanism to evaluate patients with undifferentiated symptoms, so that, for example, patients with chest pain from panic disorder do not end up in the angiography laboratory, while those with chest pain from angina do. This benefit accrues not only to patients; the aggregate effect of this triage function at the health system level is to match patients' needs with system resources, thus minimizing potential overtreatment or undertreatment.^(9;84) Ferrer points out that quality and efficiency in primary care emerges from the 'mathematics of clinical epidemiology': Specialist testing strategies for ruling in serious disease function well only when the prior probability of disease is reasonably high; primary care can ensure that this is so with appropriate screening of referrals.⁽⁹⁾ A PCMH in primary care looks at the patient through a different lens of probabilit-

ity, reducing costs of testing and, in many cases, the risk of unnecessary testing. Specialists often use strategies designed to make the best of the worst-case scenario, strategies that may be inappropriate for patients with less severe illness. On the other hand, patients with complex illnesses often require specialist care, and primary care triage helps to ensure that specialists spend most of their time applying their skills where they are critically needed. This is both a coordination and quality function. In the case of illnesses such as major depressive disorder, primary care also provides a major source of system capacity for a disorder that would otherwise overwhelm the supply of specialist mental health clinicians.

For many PCMH functions, but particularly quality and safety, electronic health records will need to promote, rather than impede, the concept of a personal medical home. High priority must be given to assuring that information from multiple, diverse sources can be pulled together into a single system to support the comprehensive information needs on which primary care practices depend. Similarly, EHR systems must permit the collection, analysis, and reporting of the clinical decisions, and their outcomes, that primary care physicians must make every day. Key audiences for this recommendation include family physicians and other clinicians, standards developers, vendors, payers and policy makers.⁽⁸⁵⁾ Electronic systems can enhance or inhibit quality; designing systems for the setting, but that exchange information interoperably is key. Ideally these systems will also be patient-centered, tailoring decision-support tools to the patient and giving them access to their own information. Well-designed EHR's will also enhance continuity by clearly identifying the patient's provider and facilitating communication of important health information with that provider.

Unwarranted variation in costs and outcomes is a ubiquitous feature of US health care. The obstacles standing in the way of widespread adoption of these remedies include the poor state of development for clinical (and patient) decision support tools, poor alignment of financial incentives, the poor state of research in clinical settings, and the slow transfer of what we do know into practice. Reducing variation and improving quality in the PCMH will require support for a more robust quality agenda for outpatient care. Wennberg points out that the PCMH will also have to “grapple with the cultural bias that more care is better and that physicians must know best.”⁽⁸⁶⁾ He also points out that modifying the reimbursement system to promote shared decision making and higher quality patient decision making for preference-sensitive care presents a much greater challenge. “The economic incentives now inherent in Medicare’s FFS reimbursement system must be modified if shared decision making is to be successfully implemented among enrollees in traditional Medicare.”⁽⁸⁶⁾

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.

Primary care is the best location for the PCMH in most cases since it is fundamental for enhanced access. Primary care, and particularly family medicine, is the most geographically and financially accessible form of health care. Whether there is a shortage of physicians is a current debate, but the problems of physician maldistribution are well recognized.⁽⁸⁷⁾ Primary care helps to minimize inequities due to the geographic distribution and high costs of health resources.⁽⁸⁸⁻⁹⁰⁾ Primary care physicians, and particularly family physicians, are more likely to be located in rural areas

or economically disadvantaged urban areas than specialist physicians.⁽⁹⁰⁾ Primary care’s association with reductions in health inequity is well documented and measurable at the population level.⁽⁹¹⁻⁹³⁾ Offering more people enhanced access to a primary care PCMH will likely expand primary care’s known beneficial effects.

A pervasive US focus on “access” to health services rather than on the type of health services has detracted from the need to ensure that services are provided in the most appropriate places.⁽⁷⁵⁾ Enhanced access also means facilitated access—giving patients ready access to care when they need it, but also guiding them to the most appropriate care and protecting them from overtreatment. In the context of the PCMH, this is a function of primary care and a risk for one interpretation of “advanced medical home” if that term is used to mean that any physician can serve as the PCMH. Patients who are referred for procedures by primary care physicians have better outcomes than do patients who have gone directly to specialists.⁽⁹⁴⁾ Primary care can also function to direct patients toward higher-quality, volume-critical procedures. A broader interpretation of ‘advanced access’ might bring more intensive diagnosis and therapy leading to patient harm, both through detection of unimportant abnormalities with little prognostic meaning, and increased risk for harm from medications or surgery.^(95,96)

Open access is a specific form of enhanced access that does not over-schedule clinic time and allows patients to be seen the day they need care. Open access scheduling has been demonstrated to improve timely care, patient satisfaction, continuity, and outcomes.^(97,98) The transition to open access is not easy for busy practices but there are proven strategies for making the change. The PCMH will require some form of open access so that patients

experience minimal barriers to seeing their personal physician when they need to.

Enhanced access also means providing care in a format other than face-to-face. It can include creating opportunities for patients to communicate with providers by phone and by email.⁽⁹⁹⁾ The latter suggests that some of these interactions are asynchronous, fitting the needs of patients and their schedules for non-urgent issues. Enhanced access can also include group visits, which are particularly useful for patients with chronic conditions. It can mean intensive visits that are longer or that involve more than one care team member. Finally the PCMH also needs to be available 24/7. Being accessible is a full time commitment. Primary care is best suited to these enhanced access functions, and but for payment problems, especially fee-for-service, these elements might already be more common.

Payment—appropriately recognizes the added value provided to patients who have a patient-centered medical home.

The creation of patient-centered systems of care, like the PCMH, will require new financing systems developed in parallel.⁽⁴⁾ The current healthcare payment system rewards drivers of consumption and utilization. Clinicians and hospitals are in daily competition to offer slightly better technologies and procedures that can sustain their bottom line rather than to work to maximizing personal or population health outcomes. Net savings revert to payers and the objective is to extract as much money from prepaid plans or public insurance as possible. To counter this, Wennberg suggests, “Reform of the payment system must be undertaken to enable providers to deal with the complicated and interrelated financial, organizational, and behavioral issues that need to be resolved if the quality of patient decision making is to be improved and inefficiencies and waste in the treatment of chronic illness remedied.”⁽¹⁰⁰⁾ The current financial disincentives toward adequate primary care will have to be eliminated, and a new financing system that rewards continuity, patient-centered care and accountability will be needed if the PCMH is to be realized.

The current reimbursement system for primary care practices is not sustainable. Practice resources are insufficient in the current system to accomplish many of the tasks essential for an improved and transformed health care system.

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Although incentives to improve quality could be strengthened through incremental improvements in existing payment methods, more significant reform of the payment system will be needed over the long term.

IOM, Crossing the Quality Chasm, p. 201⁽¹²⁾

The payment structure should be based on the following framework:

- It should reflect the value of physician and non-physician staff patient-centered care management work that falls outside of the face-to-face visit.
- It should pay for services associated with coordination of care both within a given practice and between consultants, ancillary providers, and community resources.
- It should support adoption and use of health information technology for quality improvement.
- It should support provision of enhanced communication access such as secure e-mail and telephone consultation.
- It should recognize the value of physician work associated with remote monitoring of clinical data using technology.
- It should allow for separate fee-for-service payments for face-to-face visits. (Payments for care management services that fall outside of the

face-to-face visit, as described above, should not result in a reduction in the payments for face-to-face visits). It should recognize case mix differences in the patient population being treated within the practice.

- It should allow physicians to share in savings from reduced hospitalizations associated with physician-guided care management in the office setting.
- It should allow for additional payments for achieving measurable and continuous quality improvements.

Primary care is an essential component of a rational health care system, because it delivers health care to populations with both equity and efficiency.⁽¹⁰¹⁾ Since efficiency is not rewarded by most payers, primary care cannot exert either benefit to the same degree in this country as it does in other developed nations. Indeed, the outcome is a wide disparity in payment between primary care

To date, the evidence indicates that market Forces are not truly efficient in medicine because, if anything, they tend to promote more care, often with unintended consequences. In fact more care can be worse, especially at the extremes when it is based on the proliferation of specialty care. More care, when poorly organized, seems to produce results that are worse from both an economic and social perspective, actually leading to inferior outcomes. Instead, we need to build on the principles that good, generalist-based primary care offers an alternative to wasteful and inflationary system. **Rather than uncoordinated, episodic care, we need to offer care that is well organized, coordinated, integrated, characterized by effective communication, and based on continuous healing relationships.**

Eric Larson⁽⁶⁾

and most procedural based subspecialties that is devastating to the primary care workforce. Efforts to improve payment support to primary care have largely been thwarted by Medicare and the legacy of a decade of predictable over-spending.^(102;103) If primary care is to be the base for the PCMH, this payment milieu will have to change.

The agenda for improving Medicare's methods of paying physicians needs to be broader than the development of more accurate relative values. An increasing proportion of these services are devoted to treating chronic disease, and the absence of payment for activities such as coordinating care and educating patients means that these services are likely to be underprovided. It also means that the payment mechanism won't support a team that can do care coordination and patient education. The increasing role of major equipment in medical practice argues for payment schedules that vary with service volume, with sharp increases in volume indicating a need for payment based on episodes of care or capitation. The RBRVS-based fee schedule, which has been on automatic pilot, needs much greater attention to ensure that its objectives are again achieved.^(102;104)

There are few situations in medicine like caring for a dying patient that both relies on and strengthens the sustained healing relationship at the center of the PCMH. Medicare is the main financing mechanism for medical services in the last phase of life, covering 83 percent of all who die in the United States. The usual fee-for-service program encourages billable services, but not continuity of care. No coverage is ordinarily available for caregiver training, classroom education of patients, on-call advice, bereavement support, or spiritual counseling, so they are ordinarily unavailable as well. The PCMH should be the place where people are able to get care or turn to for

coordination of palliation as they die with dignity. For this to happen, Medicare and other payers could support practices that are able to demonstrate continuity, symptom relief, and advance-care planning.⁽⁵⁹⁾

We must avoid the painful and political pitfalls experienced by primary care in the 1990's with 'gatekeeper' models. As Ferrer reminds us, "setting primary care as a barrier to obtaining services was distasteful to both patients and clinicians, and was unfaithful to the dual responsibility of primary care to remedy undertreatment as well as restrain overtreatment...to maintain credibility as care coordinators, primary care physicians must shun the financial conflicts of interest that sabotaged public confidence in their objectivity as gatekeepers."⁽⁹⁾ As mentioned before, the medical home can be a source of considerable cost-efficiencies, but only if it is focused on being patient-centered, on supporting sustained, healing relationships, and on investing in the infrastructure that is currently lacking in most front-line practice.

Nearly a decade ago the Institute of Medicine went on record as saying that fee-for-service payments do not favor primary care services and that alternative payment options, including blended models of payment, were needed.⁽¹⁰⁵⁾ Bodenheimer et al. suggest that through blended payments Medicare, specifically, could best make the business case to primary care for taking on chronic care management by: paying for chronic care start-up costs (including IT); reimbursing nonphysician personnel provision of chronic care services; and paying for performance through reimbursement enhancements. Others have made similar recommendations to Medicare for blended payments that support additional coordination responsibilities, electronic communication and documentation, and community-based care, as well.⁽¹⁰⁴⁾

Blended payment models are one means of offering a mix of incentives and asynchronous care support. Specifically, the AAFP has called for investment in primary care in the form of a care management fee in addition to fee-for-service payments.⁽¹⁰⁶⁾ It is unreasonable, however, to expect that a shift to these new payment models will be sufficient to produce all of the elements and outcomes of a medical home. North Carolina's Access II and III programs are helpful examples of what is needed to support the PCMH financially and by supporting care management functions in the community. North Carolina has had more than 16 years invested in the development of local/regional plans that got buy-in from providers, perform care-management functions in collaboration with practices, and permit personal relationships between care-management and patients.^(63;107) This effort was supported by a blended model of payment that helped improve the primary care infrastructure and medical "homeness" but that supplemented it with external care management functions. It may not be an idealized model of the medical home but is a good example of a model that may work in some areas or for some sizes of medical practice. North Carolina has reaped considerable benefit in terms of improved access, outcomes and cost. An external accounting suggests that North Carolina Medicaid saved \$124 million over what it would have spent otherwise in 2006.⁽⁶⁵⁾ The North Carolina model offers evidence about what the PCMH can do for outcomes and costs, that providers will support such change, and that it requires new payment models that can ultimately reduce costs. It is still only partial implementation of the PCMH from which even greater outcomes might be possible.

Davis has suggested other potential models include a global fee for "care episodes."⁽¹⁰⁸⁾ Under

this financing scheme, the total cost of hospital services, physician services, and other services required for treating an acute condition or the total cost for all the care required during a given year for a patient with chronic conditions would be covered by the global fee. With appropriate adjustment for complexity of the case mix, she feels that this could increase accountability by rewarding providers who have lower costs while penalizing higher-cost providers. She says that, **"ultimately, the payment of primary care physicians might be a blend of fee for service, monthly fees for practices serving as patient centered medical homes, and additional bonuses for meeting quality and efficiency performance goals."**⁽¹⁰⁹⁾ Goroll and colleagues have also outlined a practical payment model that could greatly facilitate the PCMH for just \$500 per person per year.⁽¹⁰³⁾ There are several viable models ripe for experimentation.

Mental health and substance abuse care are important aspects of the PCMH that suffer in the current health care payment environment. Mental health carve-outs—which most often exclude primary care physicians from payment for mental health diagnoses—are alive and well. They are a source of variation within and across states that can leave physicians unsure about whether they will be paid. The success of PCMHs will likely require both the achievement of payment parity, as well as reversal of carve outs. Both outcomes will require focused advocacy.

The payment structures that support graduate medical education will also need to be revised or at least given some flexibility. Most primary care education occurs in settings that are not structured to provide optimal care.^(4;110;111) Residency and fellowship training programs should be leaders in testing and implementing new and

innovative ways to deliver high-quality care. This will help graduates decide that primary care careers can be rewarding. It will build a culture and generation of providers who know how to work in a PCMH. Medicare and Medicaid provide a great deal of the funding for health care training and both mechanisms could be bent to supporting a revolution in care. Both could be involved in demonstration projects, supporting intense and longitudinal experimentation. They could also be purposeful in paying for innovative training done in models shown to support the PCMH. The US Council on Graduate Medical Education is in favor of Medicare using its authority and funding in this way.⁽¹¹²⁾

There are many potential payment schemes that could secure the benefits of the PCMH that range between the polar, and undesirable, extremes of pure capitation models and pure fee for service. The time is ripe for experimentation with different models to test whether they can support the functions of a PCMH.

Why does this matter? How do we avoid pitfalls of the past?

Health outcomes in the United States continue to fall behind those of other developed—and some less developed—countries, despite unrivaled spending.^(11;113) Our slippage in general health and longevity relates largely to the fact that we permit

large chunks of our population to go without insurance and access to care.⁽¹¹⁾ People, payers, and physicians are looking for ways to improve care, improve value, and transform practice. The PCMH offers a model to all three audiences that can actively be tested and refined—and that may help the US improve its health relative to the rest of the world. The Patient Centered Medical Home may be a political construct but it is also an important evolutionary model derived from extensive evidence for its components. As such it has attracted support from all three major constituencies, and has inspired both Federal and State legislation. Under Section 204 of the Tax Relief and Health Care Act of 2006, Medicare was directed to support a Medical Home Medicare Demonstration Project. This three year project will involve care management reimbursement and incentive payments to physicians. It will evaluate the health and economic benefits of providing targeted, accessible, continuous, and coordinated, family-centered care to high need populations. Medicare's lead in testing this model is vital, but there is ample room for other experimentation. The next major health care crisis is cresting on the horizon; let's hope this model, or something like it, will be sufficiently developed and ready for implementation when it arrives.

As a political construct, there is real risk that the medical home principles will be turned to the

It appears that the dominance of specialty care is increasing and interest in primary care as a career has waned, and changes in reimbursement and health care organization, such as the advent of managed care, have been relatively negative for primary care.

Showstack et al. Primary Care the Next Renaissance⁽⁴⁾

specific task of cost containment, threatening the intent and potential to improve the experience each person has in the course of their care. This was the experience of another well-intentioned construct called managed care, which was modified until it created an ethical rift between patient and physician. Great care will be required to maintain a unified vision and direction for the patient centered medical home if we are to avoid similar large scale rejection as a model for health system reform.

Finally, the very workforce best poised to staff the Patient Centered Medical Home is currently under siege. Primary care is being abandoned by US medical students who see that it is a path to difficulty paying off student loans, and in a model whose expenses often exceed its revenue. While the United Kingdom reaps the cost and quality benefits of 20 years' investment in primary care, the US has slowly strangled this vital function and the people who deliver it.⁽⁶⁸⁾ The Patient Centered Medical Home may be a model without a workforce if efforts to develop it are delayed much longer.

The rationale for the benefits for primary care for health has been found in (1) greater access to needed services, (2) better quality of care, (3) a greater focus on prevention, (4) early management of health problems, (5) the cumulative effect of the main primary care delivery characteristics, and (6) the role of primary care in reducing unnecessary and potentially harmful specialist care. Where the [primary care]-team functions as a “navigator” through secondary and tertiary care and other sectors, it can be a strategy for achieving cost-effectiveness.

De Maeseneer J, et al. World Health Organization⁽⁸⁾

“Other nations ensure the accessibility of care through universal health insurance systems and through better ties between patients and the physician practices that serve as their long-term “medical home.” It is not surprising, therefore, that the U.S. substantially underperforms other countries on measures of access to care and equity in health care between populations with above-average and below-average incomes.”

Karen Davis, Commonwealth Fund⁽¹¹⁾

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How can a country as idealistic and generous as the United States fail repeatedly to accomplish in health care coverage what every other industrialized nation has achieved?

Mongan JJ, Lee TH. Do We Really Want Broad Access to Health Care?⁽³⁾

The relationship between doctor and patient partakes of a peculiar intimacy. It presupposes on the part of the physician not only knowledge of his fellow men, but sympathy. He sits, not as a judge of morals or conduct, but rather as an impersonal repository for confession. The patient, on his part, must feel the need of aid, and few patients come to doctors except with this incentive. This aspect of the practice of medicine has been designed as the art; yet I wonder whether it should not, most properly, be called the Essence.

Warfield Theobald Longcope (1877-1953)

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