



Utilizing medical homes to manage chronic conditions

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KEYWORDS:

Chronic;
Disease;
Health care;
Medical home;
Physicians;
Primary care;
PCMH

Summary There is a quality chasm in American health care. The increasing prevalence of chronic disease (including obesity) among members of the US population is by itself sufficient motivation to change the structure of the nation's current health care system. Studies that have tracked the quality of health care services reflect—across the board—a lack of efficiency. The consensus among researchers is that care delivered by physicians working within a Primary Care Medical Home (PCMH) model consistently leads to better outcomes for patients with chronic diseases. Change, it would seem, is required.

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Introduction

Current challenges faced by the medical sector call for a dramatic shift in how professionals across the United States deliver health care. Primary Care Medical Home (PCMH) models provide physicians with excellent opportunities to co-create competent portals to health care that are positive and beneficial for both patients and physicians. Our nation's current health care system works well for neither physicians nor consumers. By returning to the "home" of health care, doctors can begin truly caring for and forging mutually supportive relationships with their patients.

Consumers need change

There is a quality chasm in health care. Although Americans have been paying more and the American government has been investing more, we discuss here that their spending has not yielded better quality of care or improved health outcomes.

An Overview—What the U.S. spends on healthcare

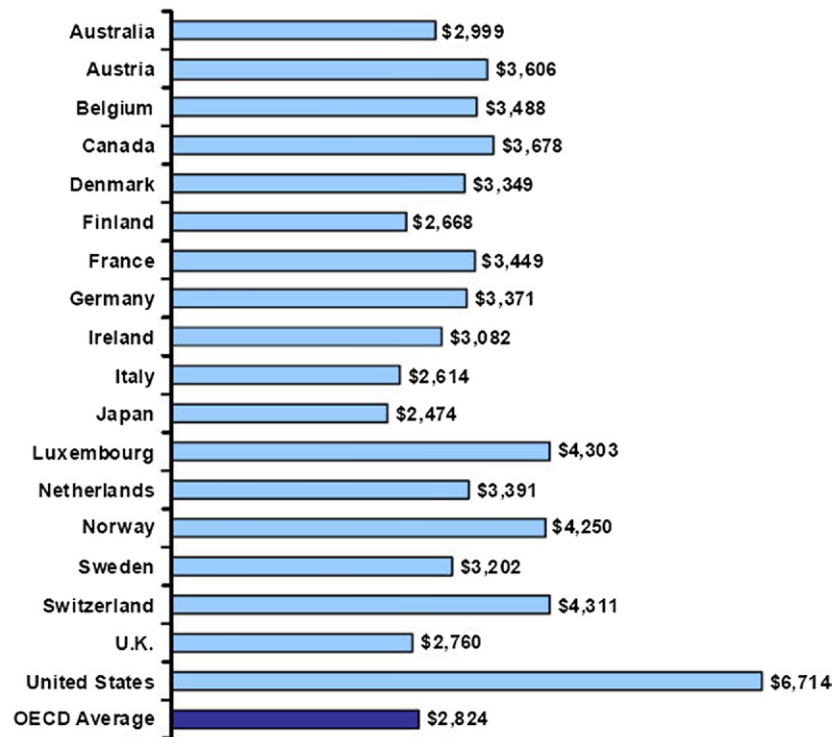
- \$2.5 trillion (or 17.6% of the nation's Gross Domestic Product [GDP]) will have been spent on health care in the United States by the end of 2009
- \$4 trillion (or nearly 20% of its GDP) will have been spent on health care by the end of 2015
- In 2006, the United States ranked highest in per-capita spending on health care among Organization for Economic Cooperation and Development (OECD) member nations—spending 48% more than Norway, which was ranked third highest

In the United States, there is no link between higher health care costs and levels of quality or safety (Fig. 1):

- 98,000 to 195,000 people die annually, in the United States because of medical errors
- 57,000+ die annually as a result of receiving inadequate care
- Two million hospital-acquired infections cause 90,000 deaths each year
- Americans pay four times more than those who receive similar quality of care elsewhere around the world
- The United States' health system was ranked 37th in overall performance by the World Health Organization (WHO) in its *World Health Report 2000*.
- Among all 30 OECD member nations, the United States ranked 22nd in terms of life expectancy, 28th for its

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Amounts in U.S.D. Source: Organisation for Economic Co-operation and Development, OECD Health Data 2008, updated August 26, 2008.

Figure 1 Total health expenditures per capita, United States and selected countries (2006).

efforts to stave off infant mortality, and 30th (or last) in its success at controlling obesity¹

The increasing prevalence of chronic diseases among members of the US population is, by itself, sufficient motivation to change the structure of the nation's current health care system. Studies that have tracked the quality of health care services reflect—across the board—a lack of efficiency. Uncoordinated care cost patients and health care providers dearly and adds greatly to the financial burdens of patients and care facilities alike. Peter Orszag, director of the Congressional Budget Office, estimates that 5% of the nation's GDP, or \$700 billion per year, is spent on tests and procedures that do not actually improve health outcomes (Fig. 2).²

Physicians need change

Results of an October 2008 survey of US physicians who were asked to assess their profession paint a grim picture. For example, a majority of currently practicing physician respondents stated that they would not recommend medicine as a career, and a majority of allopathic medical students responded that they are choosing not to become primary care doctors. Efficiency in US primary care settings is not being rewarded, and broad gaps exist among payments made to primary care providers and those issued to providers of subspecialty care. Medicare's physician payment methods

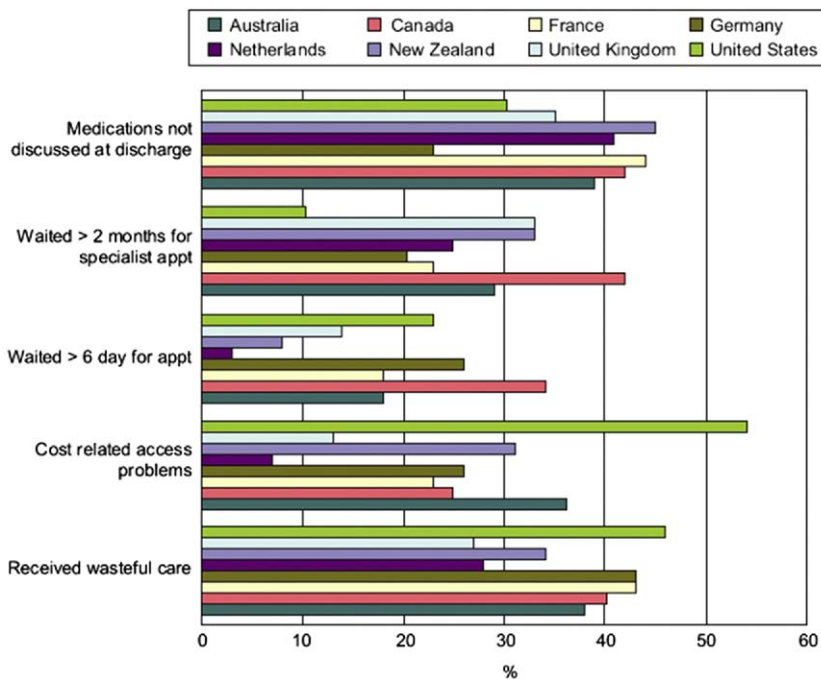
focus on chronic disease care rather than patient education—the kind of preventive measures that help divert the need for such care. Such payment methods support neither patient education nor efforts toward improving coordinated care but are instead offered in support of episodic care and capitation.³

A survey issued to 161 attending physicians and 101 residents practicing at a large urban teaching hospital and an additional 21 suburban primary care practices found that:

- 100% of respondents believed it was important to notify patients of abnormal results
- 36% said they did not always follow through with notification
- 72% said they do not notify patients if results are normal
- 77% said there was no reliable method for tracking whether patients with abnormal test results had received recommended follow-up care
- 97% did not know whether patients took their prescribed medications⁴⁻⁷

Background on PCMH

The use of the term *medical home* spans across four decades and was first used by the American Academy of Pediatrics (AAP) in 1967. MassGeneral Hospital for Children (MGHfC) has defined a medical home as a facility for “primary care that is accessible, continuous, comprehen-



Source: RAND, Schoen C, Osborn R, How SKH, Doty MM, Peugh J, "In Chronic Condition: Experiences of Patients with Complex Health Care Needs, In Eight Countries, 2008," Health Affairs [Epub, November 13, 2008], Vol. 28, No. 1, 2009, pp. w1–w16.

Figure 2 Eight country rankings of patient experience with complex health care needs, 2008.

sive, family centered, coordinated, compassionate, and culturally effective.” WHO (1978) has embraced the term since its inception and the Institute of Medicine (IOM) provided the tenets that established a framework for defining the concept of the PCMH in 2007 when it held a consortium of several leading organizations—including the American Osteopathic Association (AOA), the American Academy of Family Practice (AAFP), the American Academy of Pediatrics (AAP), and the American College of Physicians (ACP).⁸ The consortium also sought to promote aspects of the Chronic Care Model, which have been shown to enhance cost effectiveness in providing patient care and improve quality of care as a mechanism for improving primary care delivery.

PCMH core features

The PCMH model possesses several attractive core features that appeal to both patients and physicians. Although seemingly simple, the establishment of these core features has shown just what PCMH can contribute to the current US health care landscape.⁹⁻¹¹ They call on physicians to unite with one another, with their associations, and with their government leaders in an effort to shake up the health care system status quo.

PCMH core features include the following:

- **Enhanced Access**—Enhanced access encourages improved communication between patients and health care delivery systems

- **Payment Reform**—Payment reform practices are designed to reduce waste and inefficiency while enhancing patient-centered care and promoting accountability
- **Personal Physicians**—One “personal” physician oversees the care provided by all others involved in the process to encourage collaboration and teamwork
- **Physician-Directed Medical Practice**—The personal physician leads a team (at the practice level) that collectively takes responsibility for the ongoing care of patients
- **Quality and Safety**—Physicians engage in performance measures that promote continual improvement and accountability
- **Whole-Person Orientation**—A whole-person approach is adopted to tackle issues dealing with mind and body; integrated care blends family and health care services to meet varying cultural and linguistic needs

Evidence that PCMH works

PCMH models provide physicians with excellent opportunities to co-create competent portals to health care. In 2008, the Patient-Centered Primary Care Collaborative (PCPCC) compiled a report that summarized research conducted on ongoing, nationwide efforts evidencing that PCMH adoption leads to cost savings, better health outcomes, and higher levels of patient satisfaction. The PCPCC ultimately found that care delivered by primary care physicians working within a PCMH framework was consistently associated with better outcomes: Reductions in preventable hospital

admissions for patients with chronic diseases, reduced mortality rates, reduced utilization rates, increased patient compliance rates, and reduced medical expenses.^{12,13}

In an article entitled “Contribution of Primary Care to Health Systems and Health,” Starfield et al.¹⁴ detailed the role primary care has played in influencing health promotion. Other publications have also outlined the vital function primary care plays in promoting the equitable distribution of health and the prevention of illness and death.¹⁵ The medical home concept posits that a primary care physician’s direct and trusted relationship with patients, when coupled with deep and broad clinical training across body systems, positions them to assess individuals’ health care needs and tailor comprehensive approaches to care across conditions, care settings, and providers.¹⁶

A strong starting point for reducing US health care expenses overall is the implementation of a long-term strategy that reduces the costs associated with unmanaged chronic conditions. As RAND and Dartmouth researchers have documented, the return on that investment is potentially significant—enough to fund expansion of insurance coverage (thereby increasing access) and reducing the demand for specialty care and acute services (thereby reducing costs). Unfortunately, incentives to arrest the progression of chronic disease do not exist within today’s health care system. In fact, that very system rewards acute episodic care, whereas proactive care, care management, active integrated interspecialty management, and a number of preventive care services go unreimbursed.¹⁷

“We have made major improvements in prevention . . . but it’s difficult,” Dr. Gregg W. Stone, Director Cardiovascular Research at Columbia University, has said. “It takes frequent visits, a close relationship between a physician and a patient and a very committed patient.”¹⁸ He and other cardiologists believe that with access to the right form of preventive care, patients could reduce their risk of heart attack by as much as 80%.

National demonstration project results

To date, more than 30 PCMH pilot programs have been launched. Many, such as those described next, have demonstrated improvements in the areas of health care cost, quality, and access.

A Summary of Savings¹⁹:

Voice of Detroit Initiative—with 25,000 uninsured

- Greater than 60% reduction in emergency department use
- 42% reduction in costs from uncompensated care
- 55% reduction in hospitalizations and 24% reduction in cost of care among homeless and substance-abusing patients

Community Care of North Carolina (CCNC)—with 785,000 Medicaid enrollees

- \$244 million reduction in North Carolina Medicaid spending over a 2-year period

- Overall improvement in health outcomes between 2004 and 2006
- 40% reduction in hospital admissions attributed to adoption of an asthma program
- 16% reduction in emergency department visits
- 93% increase in usage of appropriate maintenance medications
- \$231 million saved during Fiscal Year 2005-2006

Blue Cross–Blue Shield (BCBS) of North Dakota—Diabetes care management

- 24% reduction in emergency department visits
- 6% reduction in hospital admissions
- Overall improvements in patient satisfaction with care
- \$1213 saved per patient (\$233,000 total) in 2006

Geisinger Health System—Integrated delivery network in Western Pennsylvania

- 20% reduction in hospital admissions
- 7% reduction in costs

Horizon Blue Cross–Blue Shield (BCBS) of New Jersey—7300 diabetics

- 10% reduction in costs
- Overall increases in patient compliance

Chronic conditions and the PCMH model

A major contributor to escalating health care costs is the growing prevalence of chronic conditions that now affect every subgroup of the population—from children to the elderly.

According to reports published by the Center for Evaluative Clinical Sciences at Dartmouth²⁰ (serving patients with severe chronic diseases), Americans who live in states that rely heavily on primary care experience lower Medicare spending (because of inpatient reimbursements and Part B payment), lower resource inputs (hospital beds, intensive care unit [ICU] beds, total physician labor, primary care labor, and medical specialist labor), lower utilization rates (physician visits, days in ICU, days in the hospital, and fewer patients seeing 10 or more physicians), and better quality of care (fewer ICU deaths and a high composite quality score) (Table 1).

The Commonwealth Fund found that when adults had access to a medical home model, their access to needed care, receipt of routine preventive screenings, and management of chronic conditions improved substantially.²¹ The Fund also reported that when primary care physicians working within the United States effectively managed care in the office setting, patients with chronic disease (such as diabetes, obesity, congestive heart failure, and adult asthma) suffered fewer complications and experienced a reduction in avoidable hospitalizations (Fig. 3).²²

Table 1 PCMH issues and barriers

The best workforce poised to staff the PCMH is currently under siege	Matching patients to medical homes: ensuring patient and physician choice
Specialists and hospitals determined to maintain the status quo	Educating the public
Innovative technology is cost prohibitive without adequate incentives	End of life
Unfriendly reimbursement policies	Resolving the on-call problem
Congressional opinion is fragmented	Preserving economic systems
Educating the next generation of doctors	Increased costs, decreased quality
	Improving patient safety
	Chronic conditions

Obesity

Obesity is one of the most prevalent chronic conditions facing the United States, where 31% of the population is considered obese. It is a leading cause of morbidity and mortality; one that is associated with high medical expenditure and an increased risk for the development of diseases that are in turn responsible for the rising costs of health care, as documented in the 2000 Medical Expenditures Panel Survey.²³

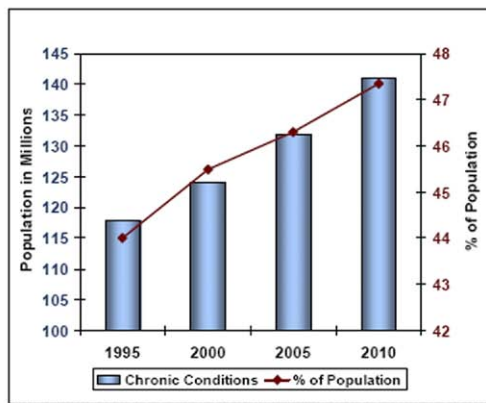
Obesity, as a chronic condition, is an ideal target for PCMH practice, because it is widespread enough to demonstrate impact, the data associated with obesity is easily tracked, and large cost-savings potentials exist. Obese patients often suffer from a variety of disorders and may have compliance issues, and they are at risk for many other diseases. Also there are well established standards

of care that already exist to help manage and maintain routine care.

Orlando Smith, one of the first patients to participate in Metro Health’s Lee-Harvard Health Center in Cleveland PCMH program, has credited the model with helping him in his struggle against diabetes and its associated risks. Regarding the new program that helped him lose weight and lower his cholesterol, Smith said, “You know when somebody is treating you with dignity.” A care coordinator at the Center managed Smith’s appointments, made sure he saw the same doctor every time he came in for a visit, and signed him up for a related class in proper nutrition.²⁴ Smith’s story has helped illustrate one of the key points behind the PCMH concept, one that calls for meaningful change in the daily habits of a population plagued by chronic disease. To affect this change, primary care physicians have been asked to lead teams of coaches (which are comprised of nurses, pharmacists, nutritionists, and other medical professionals), with the goal of providing a more “holistic” approach to health care.²⁵ “Eventually, a healthier population would reduce the number of medical procedures and costly hospital admissions—potentially lowering consumers’ insurance premiums,” IBM Director of Health Care, Technology and Strategic Initiatives Dr. Paul Grundy has said. “We have seen, in PCMH pilots, that if we focus on prevention, we really begin to see results.”²⁵

To that end, a research team from RAND (in partnership with the University of California at Berkley) undertook a rigorous evaluation of care provided according to PCMH principles. After evaluating nearly 4000 patients with diabetes, obesity, congestive heart failure, asthma, and depression, they found that patients with diabetes experienced significant reductions in cardiovascular risk, that congestive heart failure patients reduced their hospital days by 35%, and that asthma and diabetes patients were more likely to receive appropriate therapies.²⁶

More than 130 million Americans suffer from chronic conditions; that number will continue to rise



Chronic Condition	Prevalence U.S. Population	Annual Cost
Diabetes	20.8M	<ul style="list-style-type: none"> ▪ \$132B ▪ 11M lost work days
Heart Disease	60M	<ul style="list-style-type: none"> ▪ \$277B ▪ 5.9M lost work days
Asthma	30M	<ul style="list-style-type: none"> ▪ \$14B ▪ 6.3M lost work days ▪ 14M lost school days
Depression	21M	<ul style="list-style-type: none"> ▪ \$43B ▪ 13.2M lost work days ▪ \$30B in lost productivity

Source: NCQA State of HealthCare Quality Report, 2007.

Figure 3 U.S. population chronic care conditions increases since 1995 and annual cost breakdown for the top 4 chronic conditions.

Conclusion

A significant transformation of the US health care system appears to be imminent and will include investments in the prevention of chronic care diseases as a basis of primary care and the PCMH model. Medical homes can be created *now* as part of that transformation. Existing research cited here and elsewhere has demonstrated that care delivered by primary care physicians working within PCMH parameters is consistently associated with better outcomes, reduced mortality rates, and fewer preventable hospital admissions for patients with chronic diseases.

In an article entitled “A House is Not a Home: Keeping Patients at the Center of Practice Redesign,” Robert Berenson stated that the PCMH model is a promising approach to chronic care that awaits more data. Berenson questions whether PCMH’s central tenet is to avoid expense in chronic illness and asks how the savings compare to the status quo. To date, no one knows. Although a generalizable, cost-effectiveness study on initiatives incorporating all of the PCMH’s elements does not yet exist,²⁷ it is certainly an area that is worthy of future research.²⁸ But change, it would seem, is still required.

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