



The Leadership Series

# Focus on the Patient-Centered Medical Home



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# A Joint Message From NCQA and Pfizer

The National Committee for Quality Assurance (NCQA) and Pfizer are pleased to introduce the ninth edition of *Quality Profiles™: The Leadership Series—Focus on the Patient-Centered Medical Home*.

Patient-centered medical homes (PCMH) offer care that is organized around a patient and coordinated by a primary care practitioner. This model of care is showing positive results in improving health care quality and health outcomes and in reducing overall costs. Various stakeholders—purchasers, state and federal government agencies, physician societies and others—are recognizing the potential of this model and its early results. They are starting new initiatives and expanding older ones. The Affordable Care Act (ACA) supports the PCMH specifically and includes other policies to support primary care more broadly, including higher payment for primary care practitioners in Medicaid, the health home option in Medicaid and support and training for primary care practitioners. The Center for Medicare & Medicaid Innovation (created by the ACA) has contributed funding to support a number of multipayer initiatives around the country.

NCQA and Pfizer hope that this edition of *Quality Profiles: The Leadership Series* will provide examples of effective strategies to help create the PCMH initiatives, help a practice prepare to become a PCMH or improve an existing PCMH practice, with the ultimate goal of providing primary health care that is more effective.

The PCMH model seeks to provide comprehensive primary care in a setting that facilitates partnerships between patients, their personal practitioners and, when appropriate, the patient's family. In this model, the practitioner works closely with the patient and coordinates a cooperative team of health care professionals who take collective responsibility for care, including arranging for appropriate care with other qualified practitioners as needed.

In March 2007, the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians and the American Osteopathic Association adopted the Joint Principles of the Patient-Centered Medical Home, which define the basic tenets of a PCMH. These principles lay out the framework for the specific measures that are the basis on which the PCMH is defined and measured. The primary goals outlined in the Principles are to ensure a team-based approach to care that is coordinated by a primary care practitioner and improves quality and safety of patient care, enhances patient access to care and facilitates payment to practitioners.

This approach to care has been tested and evaluated in numerous pilot and demonstration projects. The benefits observed across these projects have included improvements in quality and safety of care, increased patient, family and practitioner satisfaction, reduced costs and reduced hospital admissions and readmissions. The PCMH model also encourages patient and family involvement in care, including self-management and patient and family education.

This edition, *Quality Profiles: The Leadership Series—Focus on the Patient-Centered Medical Home*, describes the goals of a PCMH and how it can help address the current health care crisis, specific strategies that can help lead to successful PCMH programs, the potential role of health information technology in enhancing them, barriers to the PCMH and how they might be overcome and benefits of the PCMH for patients, practitioners and the overall health care system.

NCQA and Pfizer are sharing this edition of *Quality Profiles: The Leadership Series* to help practitioners, hospitals, health care organizations, health plans, employers, consumer advocates and other stakeholders start, improve or contribute to successful PCMH programs.



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# The Patient-Centered Medical Home: Perspectives From New York State

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New York State Commissioner of Health

Despite the fact that New York spends more on health care than any other state in the country, its quality and health outcomes are at best in the middle of the pack, and in some areas, at the very bottom. For example, New York ranks last in the country on avoidable hospitalizations. That ranking is costly in both human and financial terms, and it is not acceptable. As the New York State Commissioner of Health, I aim to improve the quality of health care for all New Yorkers.

We must find ways to strengthen primary care services for New Yorkers by improving chronic care management, integrating care for individuals with complex conditions and reducing avoidable costs. I believe that the patient-centered medical home (PCMH) model, combined with many other reforms and initiatives, will help us achieve these goals.

The value of an ongoing relationship with a clinician associated with a high-functioning team of health professionals equipped with the details of our personal and family health history, our preferences and our goals and armed with the new “tools of the trade”—which include embedded care management, electronic health records and information exchange (among others) should not be trivialized, nor should this value be underestimated. When coupled with innovative payment reform to support movement from volume-based care to value-based care, the PCMH can be a valuable tool moving us from health care as it is, to the health care system we need. It can help us across the quality and the cost chasm.

In New York we have promoted through legislation, our budget initiatives and our applications for federal innovation programs, the development of multipayer initiatives in the PCMH. We view this as an important strategy to share resources, promote learning and create a “critical mass” for action with a unified, identifiable signal to practitioners regarding the desired direction of practice change. We have also worked closely with the Centers for Medicare & Medicaid Services (CMS) through our 1115 Waiver process to generate substantial direct support to those hospital centers and community sites that train our future workforce in primary care to promote

their development of PCMHs in their ambulatory/continuity delivery systems where patients receive primary and continuity care and residents and students receive training in and experience with the PCMH model.

We initially implemented two PCMH pilot programs in New York based on several compelling reasons. First, we had historically underinvested in primary care and overinvested in higher-cost institutional care, particularly in our Medicaid program. In addition, for our multipayer initiative in upstate rural counties, we were faced with an impending crisis of recruitment and retention within the primary care community that would have adversely impacted patients, employers, hospitals, clinicians and payers.

Based upon findings from the pilot programs, an initiative was developed to promote the implementation of PCMHs statewide. As a result, we have seen significant uptake of PCMH recognition across the entire state and across all types of practices. Currently, more than 50 percent of our Medicaid population receives care in a recognized PCMH, and that number is continuing to grow. Although leading this initiative within Medicaid is important, we must find ways to bring other payers and practitioners into these reform efforts.

Evaluations of our programs are still in an early phase, but we are encouraged by what we are seeing with respect to patient experience, standardized measures of quality and some small, but promising, reductions in preventable hospital admissions. Our overall costs in Medicaid are finally under control, and while hundreds of initiatives have contributed to these results, PCMH adoption is a key reform.

The PCMH is also a critical component of our strategy to strengthen and increase the accountability of our primary care delivery system. Improving access to coordinated care settings, which can provide consistent preventive services coupled with intensive outreach to highest-risk patients, is an important centerpiece to many of our reform efforts. At their best, PCMHs are more likely to develop functional “receptor sites” (electronic health records connected to regional exchanges, care management teams and patient registries) that position them to better coordinate care with specialists, hospitals, nursing homes, home care and other community practitioners and settings at a much higher level than is generally available to most patients.

Other key strategies include our statewide health information technology/health information exchange plan to put timely and actionable health information within reach of all health care professionals for improved decision making and resource use, expanding our use of managed care (and care management) and creating an evidence-based, high-value benefit package for Medicaid that could be a model for other payers and programs.

I understand that there are challenges to implementation of a PCMH. Each type of practice has unique issues. Smaller practices may face resource or investment barriers or be hard pressed to create a “team” to support their efforts. Larger, institutionally based sites may face bureaucratic hurdles to making timely system changes that may involve many layers of approval and action. That said, each type of practice also has a unique set of resources from which to draw. I would encourage each organization to find these resources—through federal initiatives such as meaningful use incentives, through Medicaid and local private payer incentives for the PCMH and through its own professional society programs. Certainly, for many professionals, maintenance of board certification requirements can align with the standards contained within the PCMH model.

Other challenges exist. Electronic health records, while fast evolving, are still far behind what we need to be able to assist practices in managing their patients at the highest level of their aspirations. Innovations like the PCMH, while largely welcomed by practices, still introduce a “disruption” that can impact productivity and staff morale during the time of transition from one form of practice to another.

Despite these challenges, we are heartened that all types of practices have found ways to succeed. Leadership from within practices, resources from the state and federal government, private payers, foundations and professional organizations have helped immensely to facilitate their efforts.

Health care is changing at a rapid pace. This is a time in which the importance of primary care is again being recognized. The PCMH is rapidly becoming a standard of care for many payers and employers. Practices that embrace and lead these changes can be successful in every way that counts—improving the health of their patients and the well-being of their practice. Do not stand by and lose this moment.

# Introduction

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## *Quality Profiles™: The Leadership Series*

### Supporting the Health Care Industry

*Quality Profiles: The Leadership Series* is the result of a collaborative effort by two organizations—the National Committee for Quality Assurance (NCQA) and Pfizer Inc—that share a deep and profound interest in promoting quality health care. Pfizer and NCQA are committed to offering resources to health care organizations and other interested stakeholders, with the goal of promoting and improving quality of care.

The United States has one of the most expensive health care systems among industrialized countries, with health care costs continuing to rise faster than average income.<sup>1</sup> Despite high spending on health care, however, the United States ranks last on several measures of quality, access, efficiency, equity and healthy lives.<sup>2</sup> The last several years have seen major changes to the U.S. health care system aimed at addressing the issues of high cost and opportunities to improve quality, especially supporting workforce development and primary care.<sup>3</sup>

In order to address some of the issues of cost and quality, many organizations in the public and private sectors are sponsoring initiatives at the delivery system level (e.g., physician and other independent practices, community health centers and health systems). The Affordable Care Act has added more momentum to these activities. Measurement and evaluation are at the core of what purchasers and sponsors need to gauge the success of these initiatives, and the patient-centered medical home (PCMH) is one model that has helped with implementation and evaluation.

This ninth edition of *Quality Profiles: The Leadership Series* examines the PCMH, a model that focuses on primary care practitioner (PCP)-directed coordination of care aimed at organizing care around a patient's unique needs and that improves quality and reduces costs.<sup>4,6</sup> In a PCMH, a PCP coordinates a multidisciplinary team, takes responsibility for the care provided to the patient and tracks care over time and across settings, including with other practitioners.<sup>4,7</sup> The model may help to address some of the challenges facing primary care, such as fragmented care, unnecessary use of emergency rooms and specialists for primary care and poor coordination.<sup>4,8,9</sup> This model has shown benefits for patients and practitioners.

By highlighting successful ways in which organizations have designed and implemented PCMH initiatives, we hope that this edition of *Quality Profiles* will help to stimulate the commitment to and development of more PCMH initiatives and provide new ideas for ways that established PCMH initiatives can improve quality of care, patient involvement and outcomes.

#### NCQA's PCMH Recognition

Program was developed to operationalize the concepts into specific and measurable elements so that sponsors of PCMH initiatives can figure out which practices are successfully using the model—including information technology—to enhance the quality of patient care. The Program has grown exponentially from 28 recognized sites and 214 recognized clinicians at the end of 2008 to 5,200 recognized sites and 24,544 recognized clinicians as of December 31, 2012. (see **Figure 1**) More than 150 practices apply for recognition each month.

#### Key Benefits of a PCMH

- Significant improvements in patient experiences and access<sup>10</sup>
- Focus on quality and safety<sup>5</sup>
- Team approach to care coordination<sup>5</sup>
- Improved care for people with chronic illness<sup>8</sup>
- Emphasis on prevention of acute health crises and preventative services<sup>5,11</sup>
- Facilitation of patient education/enhancement of self-care<sup>8,10</sup>
- Demonstrated cost savings<sup>10,12,13</sup>
- Contributes to decreased staff burnout<sup>10</sup>

## Evolution of *Quality Profiles: The Leadership Series*

*Quality Profiles: The Leadership Series* has explored many facets of quality improvement, from examining issues that affect the health of patients with chronic diseases, such as cardiovascular disease, diabetes and depression, to showcasing practical ways to address the unique health needs of specific patient populations, such as older adults and those with multiple chronic conditions.

- The 2007 edition of *Quality Profiles* addressed the importance of positive lifestyle choices to enhance health; a previous edition explored what health plans, employers and others are doing to encourage wellness and prevention.
- The 2008 edition of *Quality Profiles* addressed tobacco dependence and offered evidence-based interventions to encourage smoking cessation.
- The 2009 edition focused less directly on patient care and more on incorporating various forms of health information technology to facilitate improvements in the quality of care.

- The 2011 edition explored patient engagement and its role in improving quality of care for patients.

This edition of the series focuses on improving quality of care through the adoption of the medical home model. It highlights ways organizations have developed and enhanced PCMH programs and explores how a PCMH can improve patient experience, care and health outcomes.

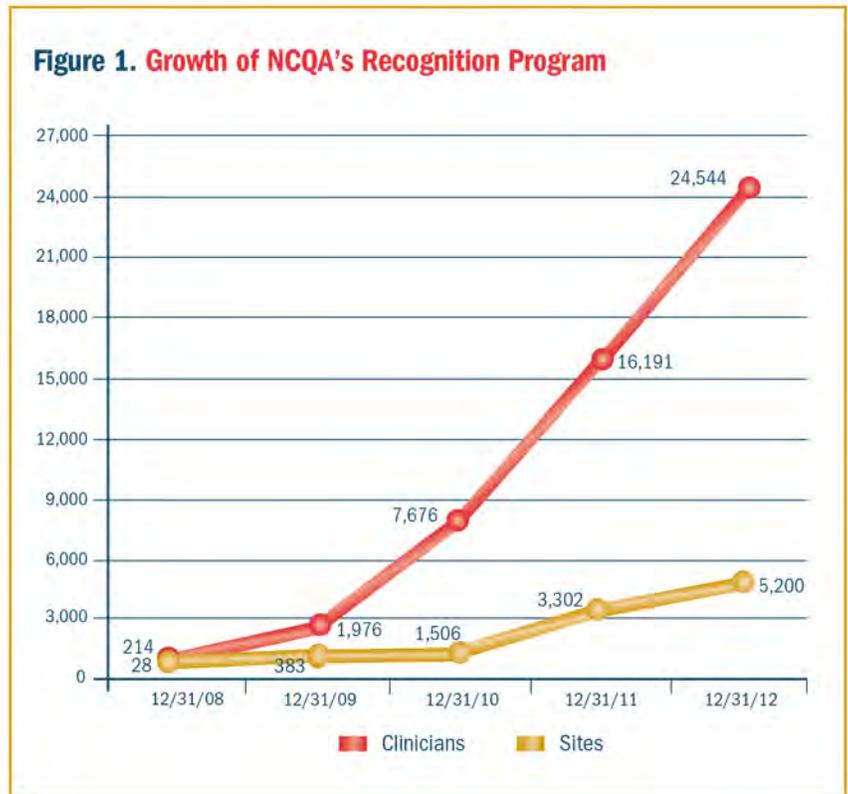
### A Snapshot of the Organization Profiles

In *Quality Profiles: The Leadership Series—Focus on the Patient-Centered*

*Medical Home*, we provide comprehensive descriptions (Profiles) of six initiatives that demonstrate advancements in the delivery of quality care through the design and implementation of PCMH models. The format of the Profiles is designed to make them easy to understand, adapt and implement. The comprehensive Profile descriptions include any or all of the following:

- Background
- Overview
- Program Description
- Challenges
- Outcomes
- Lessons Learned
- Future Directions

The initiatives highlighted in this edition were selected through a review process led by NCQA.



## Expert Advisors

To gain insights into the most important issues surrounding the PCMH, Pfizer and NCQA enlisted Michael Edbauer, D.O., M.B.A., an expert in this field, who provided his expertise by critically reviewing and refining the content contained in this edition. Dr. Edbauer is the Chief Medical Officer for Catholic Medical Partners, IPA (CMP) and serves as Vice President of Medical Affairs for Home Care and Primary Care for the Catholic Health System in Buffalo. He is also the President/CEO of Trinity Medical WNY, PC. Dr. Edbauer has over 15 years of experience in medical management and health care consulting. In his current role as CMO of CMP, he is responsible for the development and implementation of the Clinical Integration Program for the over 930 physicians and 5 hospitals within the IPA. This has included the transformation of over 30 primary care practices to PCMH Level 3 status. In 2011, under his leadership, CMP received NCQA Accreditation for disease management in cardiovascular disease, congestive heart failure and diabetes.

## NCQA and Pfizer: The *Quality Profiles Partnership*

*Quality Profiles: The Leadership Series* is a resource for organizations undertaking quality improvement activities. It provides the rationale for improvement and examples of challenges and successes of specific initiatives. The series is the product of a partnership between two organizations that share a deep commitment to advancing quality in health care.

NCQA is a private, nonprofit organization dedicated to improving health care quality. A key offering of NCQA is its Accreditation and Certification Programs for a wide range of health care organizations and its Recognition Programs for clinicians in key clinical areas. NCQA's Healthcare Effectiveness Data and Information Set (HEDIS®) is the most widely used performance measurement tool in health care. NCQA is committed to providing health care quality information through the Web, media and data licensing agreements to help consumers, employers and others make more informed health care choices. For more information, visit <http://www.ncqa.org>.

*and*

Pfizer Inc is the world's leading research-based biopharmaceutical company, which partners with health plans, medical groups and other health care organizations to facilitate clinical excellence and improve outcomes. Pfizer applies science and its global resources to improve health and well-being at every stage of life. It strives to set the standard for quality, safety and value in the discovery, development and manufacturing of medicines for people and animals. Pfizer has also long been a supporter of NCQA and its mission to improve the quality of health care.

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# The Patient-Centered Medical Home Uniquely Addresses Challenges Facing Primary Care in the United States Today

More than ever, the United States is facing a variety of challenges to its health care system. One of the most striking is the current state of the primary care system. As we will explore in this chapter, primary care is the backbone of the health care system. However, a growing and aging population combined with a shortage of primary care practitioners (PCP), reduced staff and resources are putting increasing burdens on the way primary care is delivered in this nation. Because of its focus on care coordination, efficiency and improved quality of care, patient-centered medical homes (PCMH) may help offset some of the major challenges facing primary care today.

## Primary Care Is the Foundation of the U.S. Health Care System

At its most basic level, primary care is care delivered by a practitioner (**see Table 1**) who is specifically trained and skilled in achieving the following hallmarks<sup>1,2</sup>:

- First contact care
- Continuity of care
- Comprehensive care
- Coordinated care

<b>PCPs</b>	<b>Primary Care Services</b>	<b>Primary Care Setting</b>
Family medicine specialist	Health promotion	Office
General internal medicine physician	Disease prevention	Long-term care
General pediatric physician	Health maintenance	Home care
Nurse practitioner	Counseling	Day care
Physician assistant	Patient education	
	Diagnosis and treatment of acute and chronic illnesses	

## High Demand and Low Capacity in Primary Care Are Leading to Practitioner Shortages

An expanding and aging U.S. population—together with the increasing prevalence of chronic conditions like high blood pressure and diabetes—has resulted in a growing demand for primary care.<sup>2</sup> However, PCPs are finding it increasingly difficult to manage the mounting patient load. Currently, 5,721 areas have been designated by the U.S. Health Resources and Services Administration (HRSA) as “health professional shortage areas (HPSA).” HPSAs may be designated as having a shortage of primary care, dental or mental health practitioners. They may be found in urban or rural areas, population groups or medical or other public facilities and serve 54.4 million people across the United States. According to the HRSA, it would take an additional 15,162 practitioners to meet the current need for PCPs in the designated shortage areas. That equates to a population to practitioner ratio of 2,000:1.<sup>6</sup>

### Predicted Changes in Primary Care Workforce<sup>3-5</sup>

- **29 percent increase** in work load for general internists between 2005 and 2025
- **13 percent increase** in work load for pediatricians and family practitioners between 2005 and 2025
- **9 percent decrease** in number of PCPs (family physicians, general internists, nurse practitioners and physician assistants) between 2005 and 2020

Currently, for many primary care practices, there simply are not enough physicians or hours in the day to meet the growing demand. According to an analysis of the National Ambulatory Medical Care Survey, the time required to deliver recommended primary care is almost three times more than what is available per physician. To meet guidelines for chronic disease management and prevention, physicians would need to<sup>7</sup>

- Work 22-hour days
- Reorganize their practices to spend almost 50 percent of their time on chronic disease management
- Spend a third of their time on prevention

An increase in the supply and use of non-physician clinicians, such as nurse practitioners and physician assistants, has the potential to reduce projected shortages for physicians. In fact, in 2010, the Council on Graduate Medical Education called for Congress and the Department of Health and Human Services to implement policies that specifically increase the supply of physician assistants, nurse practitioners, nurses and other staff positions necessary for coordinated, integrated practice in primary care teams.<sup>5,8</sup>

### Concerning Trends in Primary Care

- The PCP income is growing at a much slower rate compared with other specialties.<sup>8</sup>
- 25 percent of third-year residents chose general primary care vs. 53 percent who chose specialty.<sup>9</sup>
- The number of general internal medicine graduates dropped 16 percent between 1995 and 2005.<sup>3</sup>

These trends also lead to growing concerns regarding primary care access across the United States. Many patients already face long wait times for visits and difficulties gaining access to care. According to a 2011 telephone survey performed by the Massachusetts Medical Society, the average wait time for a new patient visit to a primary care office is 48 days—a longer period of time than for all other specialties surveyed.<sup>10</sup> The results of an international survey found that in 2008 only 43 percent of patients in the United States who were sick and needed medical attention could obtain access to care promptly, down from 47 percent in 2005.<sup>11</sup>

Even though there is evidence of shortages of primary care, there is also recognition that primary care is a critical part of effective health care. Studies have shown that areas of the country with a higher concentration of PCPs provide care at a lower cost and with better outcomes. For example, one study of Medicare beneficiaries and Medicare spending at the state level found that states with more general practitioners compared with specialists have higher quality care and lower cost per beneficiary. The study concluded that by increasing the number of general practitioners in a state by 1 per 10,000 population (while decreasing the number of specialists to hold constant the total number of physicians) is associated with a significant rise in quality of care and reduction in overall spending of \$684 per beneficiary. Comparatively, states with more specialists have lower-quality care and higher cost per beneficiary.<sup>12</sup> Another national study of Medicare beneficiaries aged 65 years or older found that areas with the highest number of PCPs per population who treat adults had lower mortality and fewer hospitalizations compared with those with the lowest number of PCPs per population.<sup>13</sup>

## Lack of Coordinated Care in Primary Care Poses One of the Greatest Challenges

Primary care faces more than just practitioner capacity challenges. Care coordination, which is one of the hallmarks of excellent primary care, also continues to be problematic across the U.S. health system.<sup>11,14,15</sup>

Care coordination supports information sharing across multiple practitioners, patients, sites and time frames. Its purpose is to ensure the delivery of efficient, high-quality care.<sup>16</sup> In a fragmented health care system, coordinated care among the multiple practitioners that patients see is essential.<sup>2,17</sup> However, consistent coordination among practitioners is lacking. Patients often receive care from numerous practitioners at different locations.<sup>17,18</sup>

Beyond a fragmented delivery system, poor coordination can be caused by several other factors, including<sup>11,17</sup>

- A lack of incentives for integrating care across practitioners
- Poor patient-practitioner relationships
- Communication gaps across sites
- An overstressed primary care base
- A lack of interoperable, computerized systems
- A lack of integrated system care
- Lack of community resources

The **average** Medicare patient sees **two** PCPs and **five** specialists working in **four** different practices.<sup>17,18</sup>

In addition, the logistics of care coordination are challenging and complex. One issue is the number and variety of practitioners involved in patient care. Coordination may be needed among a variety of practitioners who may practice in a variety of different facilities. These practitioners and facilities may include<sup>17</sup>

- |   |                      |                              |
|---|----------------------|------------------------------|
| • PCPs                                    | • Specialists        | • Acute care hospitals       |
| • Nurses                                  | • Diagnostic centers | • Skilled nursing facilities |
| • Medical assistants and other caregivers | • Pharmacists        | • Emergency rooms (ER)       |
|   | • Home care agencies |                              |

## Lack of Coordination in Primary Care Can Affect Quality of Patient Care

Failure to coordinate care can lead to serious outcome and quality concerns, including medical errors (e.g., harmful drug interactions resulting from inappropriate polypharmacy), wasteful duplication of tests and patient confusion and frustration.<sup>17,19</sup> A study of patient follow-up with a PCP after hospitalization concluded that the prevalence of medical errors related to discontinuity of care are high and may lead to rehospitalization. Medical errors included medication discontinuity errors (e.g., if a medication was documented at discharge in the medical chart but was not in the medication list at the first postdischarge visit), test follow-up errors (e.g., if a test result was pending at discharge but not acknowledged in the outpatient chart) and work-up errors (e.g., an inpatient practitioner scheduled or suggested a test or procedure that was not adequately followed-up on by the outpatient practitioner). Nearly half of the patients in the study experienced medical errors and 42 percent had a least one medication error, both attributable to patients discontinuing care. In addition, 22 percent of patients who had a planned outpatient work-up had at least one work-up error related to discontinuity of care, which was significantly associated with the likelihood of rehospitalization within three months following the postdischarge PCP visit.<sup>14</sup> Similarly, a review of observational studies that examined the transfer of information to PCPs following hospital discharge concluded that deficits in communication and information transfer are common and may adversely affect patient care. In the study, poor transfer communication affected the quality of care in approximately 25 percent of follow-up visits and contributed to PCP dissatisfaction.<sup>15</sup>

Care coordination takes on even more importance in patients with complex needs, such as the frail elderly and adults with physical disabilities. Because they have more health care problems, these patients typically use more health services than the general population, putting them at greater risk of receiving fragmented or poor-quality care.<sup>20</sup>

## Improved Care Coordination in Primary Care Is Beneficial for Patients

Improved primary care and care coordination can have several benefits for both patients and practitioners and may lead to better outcomes and lower costs.<sup>11</sup> For example, according to a survey conducted by the Centers for Disease Control and Prevention, 12.1 percent of visits to ERs are for nonurgent reasons. Many patients present with emergency conditions that might have been prevented or mitigated if not for patient difficulties with access to primary care.

That is why the American College of Emergency Physicians advocates a coordinated care model in which every person has access to a personal practitioner with whom he or she has an ongoing relationship and who can help him or her navigate the complexities of the health care system.<sup>21,22</sup>

## A Whole-System Approach Is Needed to Improve Primary Care

According to the National Scorecard on U.S. Health System Performance, the lack of improvement across areas such as preventive care, adults and children with strong primary care connections and hospital readmissions likely stems from the nation's weak primary care foundation and inadequate care coordination. Consequently, a whole-system approach is needed, whereby practitioners are held accountable for performance across the continuum of care.<sup>11</sup>

### Benefits of Coordinated Care in Primary Care<sup>11</sup>

- Prevents hospitalization or rehospitalization
- Improves discharge planning
- Ensures appropriate treatment and follow-up care for patients
- Minimizes the risk of medical error
- Prevents complications that can lead to costly ER visits and hospitalizations
- Reduces patients' stress and confusion
- Saves patient time navigating a complex health system

Fostering a primary care workforce that coordinates patient care could have many significant benefits for the health care system, including<sup>23</sup>

- Strengthened safety net infrastructures
- Improved access to care
- Improved quality of care
- Reduced costs
- Bolstered emphasis on prevention
- Improved population health

In countries where patient-physician relationships focus on primary care, the role of the PCP is often vastly different than it is in the United States today. In countries with a strong primary care foundation, PCPs perform more preventive health counseling, conduct screenings and immunizations and provide care advocacy and coordination. These types of PCP-centered services can lead to lower rates of death attributed to heart disease, cancer, and stroke as well as reduced hospitalizations, chronic condition management and medical errors and omissions.<sup>24</sup>

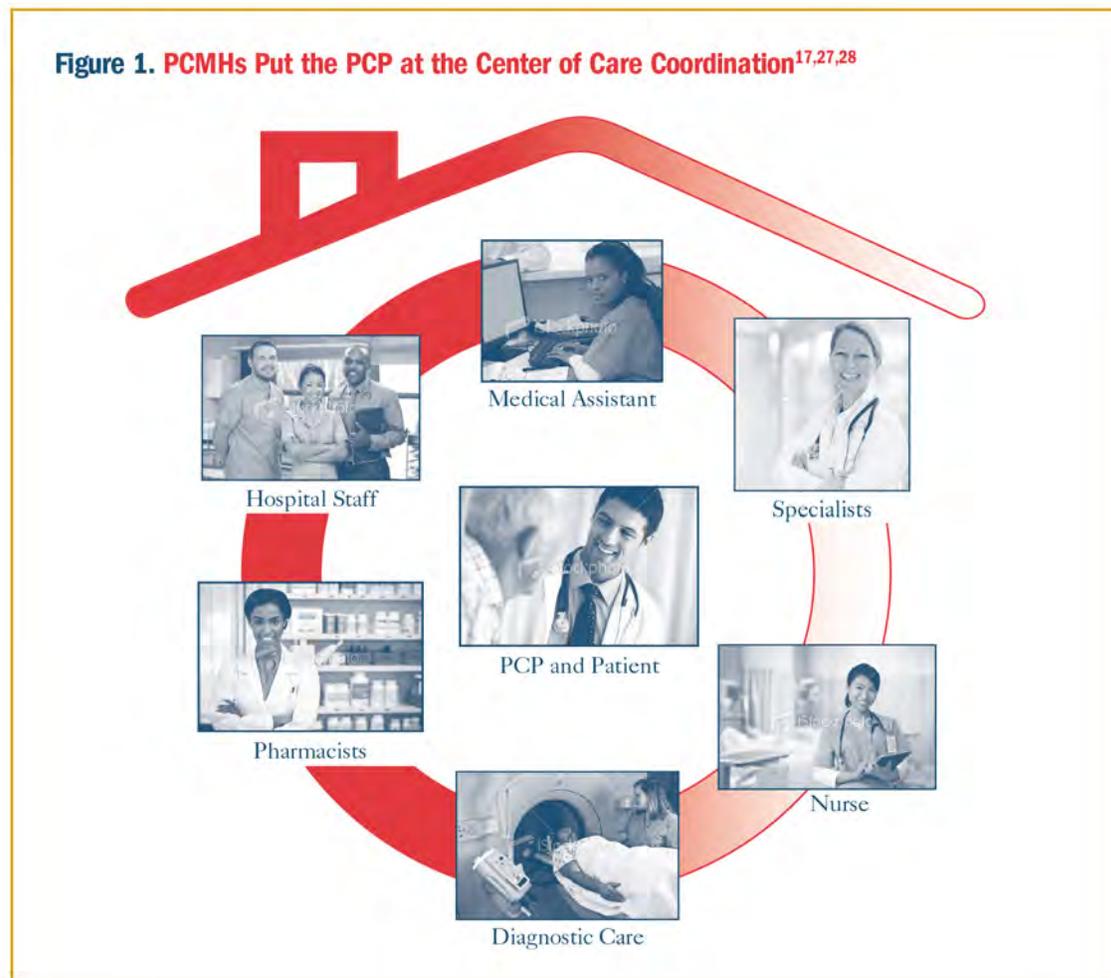
For example, the Netherlands has a strong primary care base with practitioner-led coordination. In a 2008 international survey of chronically ill adults, it ranked first for positive patient experiences and access to care when compared with eight other developed countries, including Australia, Canada, France, Germany, New Zealand, the United Kingdom and the United States. Compared with other countries, it was the least likely country to have ER visits and had the lowest rates of patient-reported errors, duplication or perceptions of wasteful care. The Netherlands also reported low rates of patients going without medication due to cost.<sup>25</sup>

## The PCMH Model Can Help Address Current Primary Care Challenges

The core of the PCMH model is the PCP and patient relationship. The PCMH standards established by the National Committee for Quality Assurance (NCQA) were developed to reflect elements that make primary care successful.<sup>26</sup> The key objective of the PCMH model is to put the PCP at the center of coordinating patient care (see **Figure 1**). In a PCMH, PCPs have a direct and trusted relationship with patients. They are responsible for assessing an *individual's* health needs and developing a tailored, comprehensive approach to care across conditions, care settings and practitioners. The PCP coordinates a team of health care professionals, takes collective responsibility for the care provided to the patient and arranges for appropriate care with other qualified practitioners as needed.<sup>27,28</sup> Based on this model of care, PCMHs are poised to potentially address some of the challenges facing primary care.

## A PCMH Can Achieve a Variety of Goals in Primary Care

Wide-spread adoption of the PCMH model may be able to help to mitigate the crisis in primary care. The enhancement of office practice systems, patient relationships and reimbursement proposed in the PCMH model may help to overcome some of the current barriers to initiating and maintaining careers in primary care by physicians.<sup>29</sup>



While a key objective of the PCMH is to create a team-based system, coordinated by a PCP, which is centered around the patient,<sup>27,28</sup> key stakeholders—namely practitioners and practices, patients and payers—are each looking to a PCMH to accomplish more specific goals that address many of the current challenges facing primary care.

## Practitioners and Practices

Practitioners and practices often turn to a PCMH as a solution to<sup>30-32</sup>

- Improve quality and safety
- Foster a payment structure that ensures appropriate reimbursement
- Increase patient and physician satisfaction
- Prevent complications
- Improve communication

## Patients

A recent series of focus groups aimed at determining patient goals for the PCMH found general consensus that patients want a PCMH model to include<sup>33</sup>

- Timely, clear and courteous communication
- An ongoing patient/practitioner relationship
- A relationship that enables the patient to trust the practitioner and practice guidance and engage more fully in his or her own care

A survey of patients at large U.S. academic medical centers found that the ability to coordinate care, help patients to manage their own disease and track laboratory results were paramount goals of a PCMH for patients.<sup>34</sup>

## Payers

Private and public payers, such as insurers and health plans, are also using the PCMH model to advance care. For example, as discussed in chapter 2, New York State is among the nation's leaders in adopting and implementing the PCMH model with practitioners and commercial payers (single and multipayer) working together to establish PCMH demonstration projects in communities across the state. As a result of its efforts, New York State has one of the highest number of NCQA-recognized PCMHs in the country. Many payers in other states across the country hope to achieve improved costs and increased patient and practitioner satisfaction with the PCMH model.<sup>35,36</sup> With these goals in mind, payers are often a vital support mechanism for PCMHs.<sup>27,35</sup> For example, practices may rely on payers to help provide the resources to implement and sustain a PCMH.<sup>35</sup> Payers also often partner with practitioners to achieve PCMH goals and can play an important role in the development of programs.<sup>27,35</sup> Payers can provide valuable financial, technical and organizational support for PCMH programs (see **Table 2**).<sup>27,29,37</sup>

**Table 2. The Role of a Payer in the PCMH<sup>27,29,37</sup>**

- Develop and implement programs to help support and educate patients in a PCMH
- Help practices prepare to meet and document medical home requirements
- Provide financial rewards for implementing PCMH principles
- Collaborate with physicians to measure quality and costs
- Provide aggregated and comparative data across health plans
- Support adoption and use tools for information sharing
- Link patients to physicians to track patient-specific changes and outcomes
- Integrate and coordinate involvement of other stakeholders (e.g., practitioners, health plans)

Patients, practices, practitioners and payers must all work together to ensure the success of a PCMH. The following Profile explores how the Shands Jacksonville Medical Center, an established PCMH in Jacksonville, Florida, caring for an underserved, chronically ill population, employs several different tactics to ensure all stakeholders involved in the PCMH are engaged and committed to providing patient-centered care for patients.

# Profile: Implementing a Patient-Centered Medical Home Model for Underserved Patients With Chronic Diseases

## Background

Close collaboration between patients and health care practitioners is critical for the effective management of chronic disease. Disease outcomes are frequently suboptimal because patients often lack access to quality medical care and have an inadequate understanding of their condition or other essential disease management resources. Shands Jacksonville Medical Center in Jacksonville, Florida, in partnership with the University of Florida, has developed a model designed to improve disease outcomes for the large, underserved population in Jacksonville, primarily via elimination of barriers that inhibit access to and continuity of care. With this model, Shands hopes also to improve overall quality of care, reduce health care costs and facilitate ongoing research for continual improvement.

## Overview

Shands Commonwealth Group is part of the larger University of Florida (UF) Health Science Center Jacksonville and Shands Jacksonville, which consists of over 20 patient-centered medical home (PCMH) practices. The Shands Commonwealth Group PCMHs include three National Committee for Quality Assurance–recognized clinics that are specifically geared toward treating patients with chronic care illnesses, many of which are underserved. The Shands Commonwealth Group chronic care PCMH practices utilize nonphysician practitioners, such as nurse practitioners or physician assistants, as the main practitioners of patient-centered care. Other practitioners such as pharmacists, psychologists and social workers are also employed and utilized depending on the needs of the patient. Shands also employs a clinical disease manager who is responsible for monitoring the patient’s progress in between primary care practitioner (PCP) visits. The clinical disease manager works with patients in five areas: diabetes, hypertension, hyperlipidemia, asthma and chronic obstructive pulmonary disease (COPD).

Patients with one or more of these chronic diseases are either referred to the chronic care PCMH program from one of the other UF or Shands PCMH clinics or via analysis of registry data. Patients are placed into one of the chronic care PCMH programs, regardless of their ability to pay. Upon entering the program, the patient receives education on lifestyle modification, nutrition, medication adherence and exercise. If patients cannot afford medication, resources are provided to help them obtain their medications at low or no cost, either through the clinic,

a partner in the community or a patient assistance program through the drug manufacturer. The clinic stays in contact with the PCP through use of the electronic health record (EHR) so everyone is kept apprised of the patient's status.

## Program Description

One of the Shands Commonwealth Group's overarching goals is to provide enhanced care to chronic care patients, many of whom face obstacles to care such as financial restrictions or difficulties with access to care. Most of the programs and policies put in place at the chronic care PCMH clinics are aimed at identifying these patients and ensuring they have access to quality care and are receiving the education and support they need.

Crucial to the success of the Shands' chronic care PCMH program is a patient registry. Every patient across all of the PCMH clinics, whether or not he or she has a chronic disease, is entered into the registry. Tracking the progress of a disease is facilitated by updating the health indicators (i.e., vital signs and lab values) of each patient at every visit. The medical assistant (MA) is responsible for most of this documentation process, including completing encounter forms, which document the patient's visit with the practitioner. These forms are faxed to a registry specialist, who is trained to enter discrete data into the registry. This process ensures that the registry data are as reliable as possible. The data analyst at the chronic care clinic uses the registry to generate a weekly report containing patients directly referred by the primary care clinics and patients that have health parameters considered to be outliers, such as a patient with an indication of blood pressure that is not being well controlled. The patients identified through this registry report who are in need of services are contacted and brought in at no charge. If necessary, their treatment plan is modified. Other reports are generated for patients who are due for a visit with their PCP.

As part of the Shands goal to improve access to care for patients, it implemented the Shands Home Evaluation Assessment and Treatment (HEAT) Program. Most of the patients in the chronic care PCMH clinic services do not have access to convenient transportation. HEAT was started to reach those patients who need careful management of one or more chronic diseases but who cannot come into the office for follow-up visits. MAs are specifically trained for home visits, including training on data collection and protocols for various difficult situations that might arise in home visits (e.g., vicious dogs, domestic problems or other unsafe situations). Templates were also developed for the MAs to gather standardized data on each patient. After the training, the MA is able to do in-house testing of blood pressure, glucose levels, hemoglobin A1c and creatine kinase. They collect data, perform any needed tests and relay the information back to the clinical disease manager. The clinical disease manager then can call the patient to discuss the lab results, ask questions about medication compliance and determine if the dosage or medication must be adjusted. He or she can collaborate on and arrange for implementation of a new treatment plan

that same day. If a new prescription is needed, the clinical disease manager can arrange to have it delivered to the patient's house. This allows patients to be treated without the wait times and expenses of traditional office visits.

Often patients at the Shands clinics are unable to pay for either the prescription or the co-pay even if they have insurance. In order to help allay some of the financial difficulties of many of its patients, Shands instituted a prescription assistance program, through which it has distributed over 40,000 prescriptions.

When the practice provides patients with assistance in obtaining or paying for medications, it demonstrates to the patient the vital importance of managing the disease, generally increasing adherence to the treatment plan.

Shands views ensuring patient follow-up, engagement and education as critical goals of patient care and has developed and implemented specific processes to ensure that these goals are met.

These include:

- **Clinical disease manager follow-up:** The clinical disease manager conducts phone updates with patients when needed. For example, if a patient's blood sugar levels were not controlled on a given day, the clinical disease manager will call to obtain the new numbers the next day and each day until the levels are under control. In addition to controlling the disease, the process also gives patients a sense of security and helps ensure consistent and appropriate future office visits.
- **Educational initiatives:** Shands has also instituted educational initiatives to ensure patients are informed and engaged about their disease. Once a month, it holds a diabetes education class, led by a registered dietitian, for patients with diabetes. In addition, educational modules, specific to the patient's disease, are provided either in group settings or reviewed with individual patients. These modules walk patients through the steps for managing their specific chronic disease.

## Challenges

One obstacle faced by the practice in implementing a PCMH model was physician buy-in. Since in the model, ownership of a patient's care is shared among a team of practitioners, it was difficult for many physicians to move to a team-based care format. However, once the process was initiated and patient outcomes were clearly improving, acceptance significantly increased.

Another obstacle was developing protocols so that treatment decisions were standardized across the designated practitioners. In order to address this challenge, monthly meetings with the group

of over 100 practitioners were held to establish standard practice protocols. Specialists frequently come in to review these protocols for treating hypertension, hyperlipidemia, diabetes, asthma and COPD. These protocols are based on national guidelines but are customized to the clinic's patient population. Shands found that establishment of the protocols allowed each designated practitioner more autonomy, relieved the burden on the physician to guide and determine all decisions in patient care and improved workflow.

## Outcomes

Shands' monitoring of chronic diseases by the designated practitioner has improved patient outcomes. Currently 75 percent of its patients with diabetes have an A1c of 9 percent or less. In patients with hypertension, 70 percent have an average blood pressure of 140/90 mm Hg or less. In patients with hyperlipidemia, 53 percent have a low-density lipoprotein of 100 mg/dL or less. These outcomes are reviewed on a continual basis, usually monthly, to make adjustments to patient care.

A study group of 457 patients was identified by registry specialists at Shands and enrolled in the Diabetes Rapid Access Program (DRAP). The Shands' DRAP program is designed to identify and treat residents in the community who are at risk for diabetes. The members of the study group were retrospectively evaluated from June 2006 to December 2009 for impact on diabetes outcomes. Patients from DRAP were enrolled in the study if they had type 2 diabetes mellitus and any of the following:

1. Hemoglobin A1c of at least 8 percent,
2. Fasting blood glucose of at least 130 mg/dL,
3. Random blood glucose of at least 200 mg/dL or
4. No hemoglobin A1c measured in the last three months or longer and at least two blood glucose readings recorded within a two-year period.

The study found that the average hemoglobin A1c at the beginning of the study was 8.2 percent ( $\pm 2.3$ ) and decreased significantly by an average of 0.5 percent ( $P < .005$ ).<sup>1</sup>

Among Shands' uninsured patients, the average length of hospital stay has gone from seven days to four days. Management of these patients by the clinical disease manager also resulted in fewer referrals to the specialist. The practice also sought to reduce wait times for specialist appointments. It focused on mental health and pain management, since wait times for those specialties were over a year for uninsured and Medicaid patients. A psychologist and a pharmacist were hired to perform those services to patients at no charge. This has cut wait times for those two specialties down to four to six weeks. Also, because much of the workup for these patients

with chronic diseases has been done in the PCMH setting, specialist visit time is often reduced. Improvement of patient access to specialist care, along with more proactive management of patients in the designated practitioner model, has contributed to the decrease in the number of visits to the ER (see Figure 1).



Through the use of surveys, Shands is continuing to assess patient satisfaction and is measuring patient opinions on the clinic's ability to

- Educate patients on disease self-management
- Assist patients in obtaining medication and supplies
- Assist with disease management goals setting
- Increase access to the disease manager
- Connect patients to support groups
- Proactively contact patients between appointments
- Provide useful and complete information

## Lessons Learned

One lesson the clinic learned was the importance of developing templates in the EHR before implementing a new process. With the increase in the number of practitioners inputting patient data, it became difficult to find needed information quickly.

A template was created to display the patient's medical history chronologically. This allowed the PCP to review all decisions made between the last visit and the current visit.

Another lesson was the importance of obtaining funding, which is essential to the implementation and continued success of these programs. Shands does this through a few different sources. Buy-in from insurance companies and other payers is generally obtained by demonstrating a substantial reduction in costs. For those patients without insurance, other sources are used, primarily hospital and academic center community programs. Similarly, since the practitioner clinic is able to demonstrate that its programs help thousands of patients avoid making emergency room visits and save these hospitals millions of dollars, they are typically willing to invest in prevention (see Figure 2). Obtaining grants has also been facilitated by demonstrating this cost reduction.

**Figure 2. ER Impact on an Annual Basis With an Average Cost Per Visit Saved**

Clinic	Overall Number of Walk-ins by Clinic 2008-2010	Cost Savings
Eastside	5,003	\$1,625,975
Brentwood	4,671	\$1,709,959
Number of ER Follow-ups by Clinic 2008-2010		Cost Savings
Eastside	1,352	\$439,400
Brentwood	552	\$202,076
Number of Hospital Discharges by Clinic 2008-2010		Cost Savings
Eastside	442	\$842,010
Brentwood	271	\$5,516,255

## Future Directions

Shands also plans on continual improvement of its PCMH model through a pilot project called Jacksonville Urban Disparities Initiative (JUDI). JUDI seeks to overcome and prevent disparities in access to and quality of health care that can lead to poorer outcomes. It provides education and resources for self-management of chronic conditions and employs an EHR, registries and dynamic database that can be refined to accommodate a range of health care practitioners, from single practitioner practices to large institutions that conduct research. Shands will be using these newly developed data registry tools to collect preliminary data for more than 20,000 patients to further enhance its model and improve patient outcomes.

Another aspect of care that the practice is looking to improve is that of patient transition at the point of discharge. Its goal is that after patients see the physician, they will be sent to a social worker or transition specialist who makes sure all the appropriate referrals are done and refers them to the pharmacist or designated practitioner. The social worker also connects them to community resources that can enhance the patients' health care. The pharmacist then reviews and updates the discharge medication list, looking for potential drug interactions and ways to save on cost. At all points, the decisions and actions taken are entered into the EHR. Resolving these issues outside of the office visit allows the physician to spend more time addressing the patient's medical issues.

The practice is also starting on-site cooking classes for patients who need to make changes in their diet. Instead of using costly foods that patients wouldn't be able to buy, it will use food the patients typically buy and help the patients prepare the meal in a more healthy way.

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## Summary

The overarching goal of all stakeholders invested in a PCMH is to improve patient care. The PCMH model aims to continuously improve care through a systems-based approach to quality and safety.<sup>38</sup> Proponents of the PCMH advocate that the practices it promotes—such as, improved patient relationships, better reimbursement strategies and enhanced office workflow—overcome some of the current barriers to both initiating and maintaining careers in primary care by physicians. Successful implementation of a PCMH may not only be the cornerstone for improving patient care but also help address the growing crisis in primary care.<sup>29</sup>

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## Implementing and Advancing a Patient-Centered Medical Home

Although implementing and advancing a patient-centered medical home (PCMH) may often feel like a daunting endeavor, it is a journey that can be undertaken successfully with the right tools and resources. Several groups and organizations are dedicated to assisting practices with implementing a PCMH and to helping established PCMHs improve over time. These organizations have drawn on lessons from established PCMH practices to provide helpful guidance to practices. In this chapter, we will explore the experiences of several of these organizations and examine the components that help PCMHs develop, grow, adapt and succeed.

### PCMH Recognition Is a Key Aspect of Implementation and Advancement

Recognition by an accrediting body, such as the National Committee for Quality Assurance (NCQA), is the most common way that practices demonstrate that they are functioning as a PCMH. Not only does a recognition program provide an outline for PCMH requirements, it may result in increased reimbursement from payers.<sup>1</sup>

There are several national and state recognition programs available (see **Figure 1**).

#### **Figure 1. National Organizations That Provide PCMH Certification<sup>1</sup>**

1. The Accreditation Association for Ambulatory Health Care: 2011 Medical Home Standards
2. The Joint Commission: Primary Care Medical Home 2011 Standards and Elements of Performance
3. The National Committee for Quality Assurance: Patient-Centered Medical Home 2011 Standards
4. URAC: Patient Centered Health Care Home (PCHCH) Practice Achievement Version 1.0 (Published June 2011)

However, NCQA was the first national organization to develop a PCMH recognition program, and many payers and organizations rely on NCQA to evaluate practices.<sup>1,2</sup> NCQA established its PCMH Recognition Program in 2008 as Physician Practice Connections®—Patient-Centered Medical Home and founded it on the Joint Principles of the Patient-Centered Medical Home (see **Appendix**). An update to the standards in the original 2008 program was released in 2011.<sup>3,4</sup>

NCQA’s goal for its Recognition Program is “to move the transformation of primary care practices forward while ensuring that Recognition is within reach of practices of varying sizes, configurations (e.g., solo, multisite and community health center), electronic capabilities, populations served and locations (e.g., urban and rural).” To accomplish this goal, NCQA identified six standards for a PCMH, each of which aligns with the core components of primary care<sup>4</sup>:

1. **Enhance Access and Continuity:** The practice provides access to culturally and linguistically appropriate routine care and urgent, team-based care that meets the needs of patients/families.
2. **Identify and Manage Patient Populations:** The practice systematically records patient information and uses it for population management to support patient care.
3. **Plan and Manage Care:** The practice systematically identifies individual patients and plans and manages and coordinates their care based on their condition and needs and on evidence-based guidelines.
4. **Provide Self-Care Support and Community Resources:** The practice acts to improve patients’ ability to manage their health by providing a self-care plan, tools, educational resources and ongoing support.
5. **Track and Coordinate Care:** The practice systematically tracks tests and coordinates care across specialty care, facility-based care and community organizations.
6. **Measure and Improve Performance:** The practice uses performance data to identify opportunities for improvement and acts to improve clinical quality, efficiency and patient experience.

For more information on the NCQA PCMH 2011 Recognition standards, please visit <http://www.ncqa.org/Programs/Recognition/PatientCenteredMedicalHomePCMH.aspx>.

There are three Levels of NCQA PCMH Recognition. These Recognition Levels allow practices with a range of capabilities and sophistication to meet the standards’ requirements successfully. Established PCMH practices can also continue to enhance their programs and upgrade from Level 1 up to Level 3.<sup>4,5</sup>

To receive PCMH certification or recognition, specific goals must be met and outcomes reached. In this way, a certification or recognition program often provides the backbone on which many of the major steps of PCMH implementation and enhancement are based.

## PCMH Implementation Is a Continuous Cycle

Whether a PCMH is in the early stages of development or whether it is an established PCMH looking to make improvements and refinements, there are always opportunities to improve by introducing new processes, procedures and tools into the practice. A PCMH's ability to continuously measure, evaluate and adapt accordingly is part of what makes it successful.

This systematic cycle of planning, implementing, reviewing outcomes and modifying practice as needed has been dubbed PDSA, for<sup>6</sup>

- Plan
- Do
- Study
- Act

In this chapter, we will discuss how these elements are critical to all stages of PCMH implementation and can help lead to success.

## Factors Influencing Successful PCMH Programs

Transformation is a multistep process that can be achieved by practices of any size. It simply requires evaluation, assessment and change to be effective.<sup>6,7</sup> The Patient-Centered Primary Care Collaborative (PCPCC), a coalition of diverse organizations aimed at advancing primary care and the PCMH, has identified five key factors that have proven to be paramount for the success of a PCMH.<sup>8,9</sup>

- 1. Effective Leadership:** Effective leadership can make or break advancement of a PCMH program. To be successful, leadership must oversee all decisions and make course corrections. The main responsibilities of leadership are to develop a compelling and inspiring vision and to continually communicate with key stakeholders, define practice values and foster a culture open to change.<sup>6,9</sup>
- 2. Staff Engagement and Empowerment:** It is important to shift the practice from being practitioner oriented to team oriented. Empowered and engaged staff can lead to active participation in change management.<sup>9</sup>
- 3. Active Monitoring:** Successful PCMH implementation requires constant evaluation and modification. Actively monitoring change is important to help make adjustments as needed. During all phases of implementation, it is critical to build on what works well and to modify what does not.<sup>9</sup>

- 4. A Plan for Measuring Impact:** To determine success, it is important to first determine what success will look like. Practices should establish a common framework to measure the impact of the transformation that is agreed on by all stakeholders.<sup>9</sup>
- 5. Active Solicitation of Feedback:** Making change is easy, but sustaining change can be much more challenging. To fully understand how things are progressing, practices should solicit honest and candid feedback. This can be done in several ways, including using print or electronic surveys or holding regularly scheduled meetings to discuss and share best practices and feedback.<sup>9</sup> This feedback is essential for informing change and refining a PCMH.

In addition to these five factors identified by the PCPCC, several other factors may influence the success of a PCMH. These include

- Planning and change management
- Training of staff
- Engaging patients and family
- Fostering a supportive work environment
- Tracking and measurement

**“A goal without a plan is just a wish.”  
—Antoine de Saint-Exupéry**

We will now take a closer look at each of these.

## Strategic Planning and Change Management

The pioneering aviator Antoine de Saint-Exupéry once said that “a goal without a plan is just a wish.” The goals of the PCMH are well established, but without a thorough plan and commitment to change management, success will be difficult. The entire process of transforming a practice into a PCMH must have a solid foundation. In other words, a strategic, long-term plan that starts with a strong structural core is needed.<sup>7</sup> As we stated earlier, the first step for ensuring continuous change and growth is planning; it is the P in the PDSA.<sup>6</sup>

Implementing and maintaining change requires a plan developed and championed by leadership.<sup>1,10</sup> It is up to leadership to develop a clear vision that takes into account how patient-centered care will fit into the practice’s daily processes and values regarding the creation of a medical home.<sup>6,10</sup> To accomplish this, leadership must share a cohesive vision of what the practice can and should be.<sup>1</sup>

As part of developing the plan for change, leadership will need to make some important decisions, the first of which is to determine and gain consensus on the project goals. Project goals will influence many other aspects of the plan and serve as the basis for ensuring that team members understand and agree with the aims of the project. Therefore, it is important that the goals are clear, measurable and achievable and that they consider any requirements for PCMH recognition.<sup>10,11</sup>

Once project goals are established, leadership will need to determine how to meet them.<sup>1</sup> This is where the D (“Do”) in PDSA begins.<sup>6</sup> At this point, leadership may choose to conduct a gap analysis (i.e., where you are vs. where you want to be) that can help to identify strengths and challenges that can then be addressed in the change plan.<sup>11</sup>

As coordinated and integrated care, such as team-based care, is a cornerstone of the PCMH, establishing a foundation of support for care delivery teams during the planning phase is an important responsibility of leadership that will have long-lasting effects.<sup>10,12</sup> To provide a foundation for these relationships, leaders should work with managers and other necessary staff to<sup>10</sup>

- Link patients to a practitioner and care team so that patients and practitioner/care teams recognize each other as partners in care
- Develop and maintain a structure that assures that patients are able to see their practitioner or care team whenever possible
- Define roles and distribute tasks among care team members to reflect the skills, abilities and credentials of team members

These are not the only elements of the PCMH strategy for which leadership is responsible. Several other factors need to be accounted for in the planning stages, including determining if, when and how to do the following<sup>1,7,10,11</sup>:

- Implement new PCMH recognition elements
- Modify structure of the practice redesign

### Questions That Can Facilitate Goal Development<sup>11</sup>

- What are the proposed outcomes of each project?
- How adept has your organization been at identifying and dedicating staff and other resources to support these projects?
- How challenging do you think it will be to get practitioners and staff on board with this project?
- How familiar is the organization with health information technology (HIT)?
- Where do you hope to see the organization next year?
- What is your vision for the organization in the next five years?

- Implement specific strategies to improve quality and sustain change
- Create working groups
- Utilize external assistance
- Roll out data systems and technology

Once a plan is in place, leadership does not stop working. It has the responsibility of managing and maintaining change. On a global level, leadership should continually encourage and reinforce the established plan. At a more granular level, leadership must continually ensure that resources are available and allocated properly and that the staff are empowered and have adequate time to conduct all of the necessary medical home activities.<sup>10,13</sup>

Leadership must also keep a close eye on the adaptive reserve of the practice—that is, the ability of a practice to keep pace with change. Practices with a healthy infrastructure, alignment

#### **Establishing Collaboration Through Effective Communication in PCMHs<sup>10,11,13-15</sup>**

- Communicate with and engage staff at all levels
- Work to reduce communication barriers
- Encourage and develop buy-in to the values of the PCMH
- Share information openly
- Empower staff to identify and suggest new ideas
- Ensure staff feel safe raising concerns
- Show respect for all members of the practice

of management systems and facilitative leadership often have a strong adaptive reserve. Adaptive reserve fluctuates, however, particularly during times of rapid change or stress. Throughout the process, leadership should make monitoring and strengthening adaptive reserve a priority.<sup>14</sup>

As the designer and champion of the plan, leadership also plays a critical role in achieving or increasing the number

of standards that the practice meets. Not only does it oversee this process, but leadership's responsibilities directly reflect specific components of the chosen recognition program.<sup>1,10,11</sup> For example, NCQA's Recognition Program includes several key requirements that may fall under leadership's responsibility (see **Table 1**).<sup>4</sup> Other recognition programs also focus on leadership as being a key element in success of transformation.<sup>2</sup>

**Table 1. NCQA Requirements With Potential Leadership Responsibility (NCQA Section PCMH 1: Element G—the Practice Team)<sup>4</sup>**

Defining roles for clinical and nonclinical team members
Having regular team meetings or a structured communication process
Assigning care teams to coordinate care for individual patients
Assigning care teams to support patients and families in self-management, self-efficacy and behavior change
Assigning care teams for patient population management
Involving care team staff in the practice's performance evaluation and quality improvement activities

## Training

A PCMH model requires a paradigm shift within practices that affects all work processes and individual roles.<sup>7</sup> Consequently, continuous and appropriate training for each staff member is crucial.<sup>1,10</sup> Training at all levels, another part of the D (“Do”) in PDSA, may not only increase efficiency but also enhance buy-in from staff, which is critical to success.<sup>1,6</sup>

**Leadership should make monitoring and strengthening adaptive reserve a priority.<sup>14</sup>**

Training can come in many forms, ranging from education on techniques, processes and guidelines, to technology and job requirements.<sup>11,16-18</sup> Practices also must be ready to hire and train any additional staff needed to fulfill the continually changing needs of a PCMH.<sup>17,18</sup>

Many practice employees may be unfamiliar with the basic principles of a PCMH. There could also be a significant amount of misinformation surrounding how a PCMH works, what it does and what it is trying to accomplish. An evaluation of nine family medicine residency training programs in Colorado transitioning to a PCMH model found that many of the staff members knew little about the PCMH and that misinformation or lack of information about the PCMH contributed to misunderstandings and overwhelmed feelings on the part of the staff.<sup>15</sup> Therefore, one of the first steps in training may be educating current or new staff about the essential principles and importance of a PCMH.

Training will also likely need to be tailored to each staff member as roles and responsibilities vary; however, quality improvement (QI) is one area of training that is needed at all levels. Many managers possess some knowledge of clinical guidelines and QI, but oftentimes these skills are not systematically applied to improving patient care. Training on QI concepts and methods will enable all staff members to effectively make, measure and manage change, all of which are key to the success of a PCMH.<sup>6</sup>

While much of the training may focus on the processes or techniques needed to perform a specific role or function, some training may need to be more abstract in nature. For example, a PCMH is dependent on successful relationships among staff members, patients and families, making a team approach critical. Historically, however, physicians have been trained to succeed as individuals and not as members of a team. To function in a team-based environment, physician skills may need to change, and physicians may benefit from training on facilitative leadership skills. New tools, workshops and other learning and personal development formats can help physicians transform within themselves and in their relationships with their practice partners, patients, health care systems and communities.<sup>6,7</sup>

There is no wrong approach to training, nor does there need to be one single approach. Practices should employ those training methods that best fit their specific needs. A vast number of training options are available, including training forums or seminars, internal training programs or the use of outside experts, such as a medical home facilitator.<sup>16,17</sup> There are also several professional societies that provide resources and training on their Web sites to assist in becoming and enhancing PCMHs (see **Table 2**). Regardless of approach, the practice should always incorporate the organization's values regarding creating a medical home for patients in staff hiring and training processes.<sup>10</sup>

Professional Organization	Web Site
American College of Physicians (ACP)	<a href="http://www.acponline.org/running_practice/delivery_and_payment_models/pcmh/">http://www.acponline.org/running_practice/delivery_and_payment_models/pcmh/</a>
American Academy of Family Physicians (AAFP)	<a href="http://www.aafp.org/online/en/home/membership/initiatives/pcmh.html">http://www.aafp.org/online/en/home/membership/initiatives/pcmh.html</a>
American Osteopathic Association (AOA)	<a href="http://www.osteopathic.org/osteopathic-health/about-your-health/Pages/patient-centered-medical-home.aspx">http://www.osteopathic.org/osteopathic-health/about-your-health/Pages/patient-centered-medical-home.aspx</a>
American Academy of Pediatrics (AAP)	<a href="http://www.pediatricmedhome.org/">http://www.pediatricmedhome.org/</a>

### **The U.S. Veterans Health Administration Training Example**

The U.S. Veterans Health Administration (VA) PCMH model, called Patient Aligned Care Teams (PACT), launched a program in 2010 aimed at transitioning over 900 primary care clinics to PCMHs in just a three-year period. This large-scale effort required extensive training that can be used as a springboard for other practices to draw from.<sup>17</sup>

PACT's central approach is to train a core group of practitioners, who, in turn, serve as coaches for other teams within each clinic. The core training focuses on<sup>17</sup>

- Staff development
- Measurement techniques
- Methods of integrating practitioners into the primary care team
- Use of technology to enhance communication with patients
- Coordination of care
- Use of health coaching and motivational interviewing to enhance patient engagement
- Best practices for treating specific conditions

The PACT program also uses ongoing live and online training opportunities. It provides week-long training sessions every three months, at which representatives from over 250 practices learn and share new methods of practice redesign and performance improvement. It also employs the use of smaller, three-day intensive training sessions that focus on patient-centered care, care coordination, care management and team dynamics and a once-weekly “fireside chat” webinar that features presentations by expert faculty.<sup>17</sup>

PACT also uses records and performance reporting information as a training tool. The program uses its intranet to record and report on the performance of all teams around the country. Each team is required to post its interventions and results so that other medical teams can quickly identify and learn about the most successful approaches to practice redesign.<sup>17</sup>

While every practice is different, and such large-scale training efforts may not be practical or may not be needed for everyone, the PACT program provides examples of various topics and techniques that can be employed to train staff members at clinics of any size.

**For more information on the PACT program, please visit  
<http://www.va.gov/primarycare/pact/>.**

## Engaging Patients and Family

The team-based approach advocated by PCMH principles puts the relationship between health professional and patient/family at the core of care.<sup>12,13</sup> Therefore, another part of “Doing” is employing thoughtful, patient-centered processes that encourage patient and family involvement in a PCMH.

Patient and family involvement can be accomplished in several ways. The Commonwealth Fund’s Safety Net Medical Home Initiative identified five key changes that practices can implement to facilitate patient-centered interactions.<sup>10</sup> They are

1. Respect patient and family values and expressed needs
2. Encourage patients to expand their role in decision making, health-related behaviors and self-management
3. Communicate with patients in a culturally appropriate manner, in a language and at a level that the patient understands
4. Provide self-management support at every visit through goal setting and action planning
5. Obtain feedback from patients/families about their health care experience and use this information for quality improvement

It is also important for patients to understand what it means to be part of a PCMH. As is the case with practice staff, patients may be unfamiliar with the PCMH concept. Therefore, it is important to communicate to patients how a PCMH works, the roles of patients and practitioners within this model and what they can expect.<sup>19</sup>

Shared decision making is a tool often advocated to increase patient involvement in care and one on which a PCMH can rely. It involves providing patients with evidence-based decision aids that describe the potential outcomes of treatment. Patients then discuss with their practitioners what is personally important to them about the risks and benefits. Together, the patient and practitioner decide how to proceed. This approach can help to improve care decisions and further engage patients in their care.<sup>19</sup>

Families are also an important part of patient-centered care. If patients are to be truly involved, so must their families. “Family” may mean many things to many people, from relatives, to significant others to even close friends—essentially, anyone who can provide support and information throughout the care process.<sup>6</sup>

Patients and families have a lot to contribute to care at all levels of a PCMH. They can play a role in the process of gathering information and analyzing and responding to treatment strategies. The perspectives of patients and families are critical to quality improvement, planning and policy. One way to obtain these perspectives is to involve patients and families in key leadership committees or quality improvement and redesign teams.<sup>6</sup>

To help foster patient and family involvement, practitioners and PCMH's senior leadership may want to consider employing some of the following strategies for engaging patients and families<sup>16</sup>:

- Daily conversations with patients focusing on PCMH progress and patient input
- Practitioner walk-arounds, allowing for interaction with families, patients and staff
- Integration of patients and families into existing structures, committees and projects

HIT can also play an integral role in fostering patient and family involvement at all levels. Incorporation of HIT—such as patient portals and personal health records—may help to engage patients directly in their care.<sup>13</sup> Therefore, meaningful use of HIT as it relates to patient and family involvement in care is a key consideration when implementing a PCMH. Chapter 6 further explores the role and benefits of using HIT in a PCMH.

## Supportive Work Environment

In a PCMH, a key element for the “Do” portion of PDSA is making patients feel supported. At the same time, patients are not the only ones who require support. If health care organizations want to become patient centered, they must create and nurture an environment in which their workforce is also highly valued. Team members should all be treated with the same level of dignity and respect that is afforded to patients and families.<sup>6</sup>

An important way to foster support and achieve commitment and engagement among staff is to involve employees in the process of implementation and enhancement. All staff (including managers, medical staff, nurses, administrative staff, etc) should be engaged in creating effective, responsive systems of care.<sup>6</sup> Support for staff can also be achieved through more practical means. For example a structured, well-defined work environment in which roles and goals are clearly delineated and understood often gets the staff on the same page and more comfortable with the process.<sup>20</sup>

A supportive environment is needed in order for everyone involved to flourish and is an integral piece of implementing a PCMH model.

## Tracking and Measurement

When discussing health care quality improvement, there is a saying that “you cannot manage what you cannot measure.”<sup>6</sup> The same holds true for a PCMH. To know if a PCMH model is working, the stakeholders involved must know what is happening. In other words, after “Planning” and “Doing,” a PCMH must then “Study” the effects the changes are having on the practice. This is why tracking, monitoring and measuring are built into several of the requirements for the NCQA PCMH Recognition Program. The program also requires practices to implement continuous QI processes by<sup>4</sup>

- Setting goals that help improve performance
- Setting goals and addressing at least one identified disparity in care or service for vulnerable populations
- Involving patients/families in QI teams or on the practice’s advisory council

**You cannot manage what you cannot measure.<sup>6</sup>**

To do this, there must be a system in place to collect data. The AAFP suggests that the best way to do this is to first assemble a project team to help define core measures, determine how to collect data and define what changes need to be made. It also suggests starting off slowly, that is, instead of trying to measure all possible conditions, begin with just a few of the most common conditions in the practice. Finally, the AAFP recommends setting up a patient registry database, which allows the care team to proactively manage patients with chronic diseases.<sup>21</sup> Once the practice collects the data, they must be analyzed and used to set goals for improvement. The AAFP recommends assembling a project team that reviews, discusses and analyzes the data.<sup>21</sup>

Patient feedback is one of the key ways to measure how a PCMH is performing. To obtain data on patient satisfaction with care, a practice could use patient experience surveys or complaints or “patient loyalty” assessments based on rates of voluntary disenrollment from a practice. Implementation of a patient/family advisor council is another option. This is a group of patients or families who represent the constituents served by the practice who meet regularly with PCMH leadership.<sup>6</sup>

One way for practices to track progress is to use a checklist, which can serve as a helpful tool for practices to track where they are vs. where they want to be. Several checklists are available from a variety of sources dedicated to the PCMH. For example, the AAFP provides a checklist that helps practices track how they are doing in areas such as quality measures, HIT, patient experience and practice organization and family medicine core values. The checklist prompts

practices to track how they are progressing by assessing measures, such as clinical information systems, cultural improvement, reminders and care plans.<sup>22</sup>

Finally, after analyzing the data, it is time to “Act.”

This means that the practice uses the data to help drive change in the organization. For example, data on patient experience may prompt practices to design and implement specific interventions or processes to improve the patient experience. The process does not stop once interventions are implemented, however. Periodically in the process, the data should be checked and rechecked for change to establish if there has been any improvement. This continuous cycle of planning, measuring if change is working and making modifications based on those findings can lead to better results.<sup>6,21</sup> The success of this process depends on having real-time feedback to be able to trace results back to specific actions or processes that can be studied, altered if necessary and shared throughout the organization if successful.<sup>6</sup>

**To view the AAFP PCMH checklist please visit <http://www.aafp.org/online/en/home/membership/initiatives/pcmh.html>.**

Measuring the effectiveness of the PCMH presents some challenges, including variability among practices and limitation of current resources that may prohibit or hinder consistent collection and assessment of data.<sup>23</sup> There is also no set of standardized outcomes measurements for all PCMH practices. NCQA provides standards and guidelines for the PCMH that are used by many programs to demonstrate and document measurement and outcomes. There are also other sources for measurement available.<sup>4,24</sup>

A recent 2011 joint statement from the AAFP, AAP, ACP and AOA provides guidelines for recognition and accreditation programs related to the PCMH to actively work to align their standards, elements, characteristics and measures. Establishing reasonable documentation and data collection requirements and conducting evaluations of a PCMH’s effectiveness and improvement over time are advocated as part of the guidance.<sup>25</sup>

#### **Models Used for Measurement of the PCMH<sup>24</sup>**

- Primary Care Assessment Survey (PCAS)
- Ambulatory Care Experiences Survey (ACES)
- Primary Care Assessment Tool (PCAT)
- Clinician-Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS®) for PCMH
- Assessment of Chronic Illness Care (ACIC)
- Medical Home Index (MHI)

CAHPS® is a registered trademark of the Agency for Healthcare Research and Quality (AHRQ).

Measuring the impact of a PCMH at the population level is also important. The Joint Principles (see **Appendix**) requires the PCMHs to coordinate with other practitioners and to provide integrated care, meaning that a PCMH must engage in care on a community level. In addition, as the PCMH becomes the standard model of primary care in a community, there may be changes in practice patterns across the continuum of care that can only be assessed by measurement at the community level. These could include measuring the reduction in risk behaviors or increase in the proportion of the population with an identified primary care practitioner. As with other measurements, however, there is no standard set for community outcomes, and the type and composition of the community for each PCMH program will likely differ.<sup>12,23</sup>

A PCMH environment with multiple payers can also compound the issue of disparate outcomes measures. Practitioners have noted that the diversity among payers in the measures being used to evaluate overall performance, which can also drive incentive payments, presents many operational and logistical challenges. It is exceedingly difficult for practitioners operating in a multipayer environment to track and report multiple measurement methodologies and harder still to respond to incentives that differ from one payer to another. Achieving some level of consistency across payers in measures and incentives could help to accelerate the implementation of the PCMH model in primary care practices.<sup>26</sup>

## Ensuring PCMH Success Involves Realistic Expectations and Planning

Transformation to a PCMH model and the continual refinement of the practice may require the commitment of time, resources and effort on the part of practices.<sup>7,27</sup> Moving primary care practitioners into a central role in the PCMH means that additional time must be allotted for activities that are traditionally outside the scope of primary care, such as<sup>7,28</sup>

- Working in practice teams
- Incorporating population management
- Facilitating leadership skills
- Integrating change management
- Training staff as peers

Proper planning and funding are needed for operational and personnel changes.<sup>7,27</sup> It is important for all practices to work toward success as a PCMH with realistic expectations about the time and financial effort required. Practices must have the financial resources necessary before undertaking the transformation.<sup>7,27</sup> In addition, looking at lessons learned from already established PCMHs, such as the National Demonstration Project, can help practices be efficient and strategic in their approach to the PCMH. Learning from these models may help to alleviate unnecessary time and financial costs (see **Figure 2**).

### **Figure 2. Recommendations for PCMH Practices From the National Demonstration Project<sup>7</sup>**

- |  |                                   |
|--|-----------------------------------|
| 1. Assure adequate financial resources                             | 5. Be flexible and reflective     |
| 2. Tailor the approach to the practice                             | 6. Monitor change fatigue         |
| 3. Develop an overall practice plan and a specific technology plan | 7. Become a learning organization |
| 4. Assist physicians with their personal transformation            |                                   |

The Mt. Airy Family Practice in Philadelphia, Pennsylvania, is a PCMH that focuses on improving outcomes in patients with chronic diseases. The Profile on the following page highlights the systematic processes used by Mt. Airy to successfully transform its practice into a PCMH.

### **Funding Transformation**

As discussed, it is important to ensure adequate financial resources to enact change. There are several ways practices can obtain financial assistance or funding for PCMH transformation.

1. **Pilot programs:** Pilot and demonstration projects are often funded by public and private health insurers and health plans. For example, Medicare, the nation's largest health plan, has spent several years laying the groundwork to test the medical home model among its beneficiaries by funding numerous large-scale demonstration initiatives.<sup>29</sup>
2. **Technical assistance:** Several not-for-profit agencies, such as the Robert Wood Johnson Foundation and the Commonwealth Fund, offer financial assistance for transformation to practices by way of technical assistance.<sup>29</sup>
3. **Grants:** Numerous not-for-profit organizations also offer grants to help practices with transformation. These funding opportunities are often listed on organization Web sites.<sup>30,31</sup> Please visit the following Web sites for more information on grant funding for PCMH transformation.
  - [http://www.medicalhomeinfo.org/how/payment\\_and\\_finance/funding\\_opportunities.aspx](http://www.medicalhomeinfo.org/how/payment_and_finance/funding_opportunities.aspx)
  - [http://www.acponline.org/running\\_practice/delivery\\_and\\_payment\\_models/pcmh/understanding/grant\\_activities.htm](http://www.acponline.org/running_practice/delivery_and_payment_models/pcmh/understanding/grant_activities.htm)

# Profile: Improving Chronic and Preventative Care in a Family Practice Setting

## Background

The Mt. Airy Family Practice (Mt. Airy) in Philadelphia, Pennsylvania, has been working for over five years on improving outcomes in its patient population with chronic diseases through gradual, systematic adoption of a patient-centered medical home (PCMH) model. The practice initially received National Committee for Quality Assurance (NCQA) Recognition in 2008 and was one of the first to receive NCQA Recognition again in 2011 under the new requirements. Recently, Mt. Airy has expanded its preventive health services as part of its efforts to improve quality of care.

## Overview

Mt. Airy is a single-site clinic, with five family physicians, a nurse manager, a nurse care manager, six medical assistants and office staff. Long before seeking NCQA Recognition, the practice had sought to improve quality of care through the implementation of ideas identified in publications from family practice journals. In 2008, the practice became part of the Pennsylvania Chronic Care Initiative—originally a three-year and now a six-year program—that encouraged participants to receive NCQA PCMH Recognition. Through concerted effort, the practice was able to gain Recognition that same year.

The implementation of its PCMH has been a long process, involving a broad scope of initiatives in multiple areas within and outside the practice. These initiatives have required continual refinement, progressively providing better patient care, which has been assessed through internally developed outcomes measures and patient satisfaction ratings.

## Program Description

Implementation of a PCMH model into an existing practice is not a simple task. It requires constant assessment of workload distribution to ensure staff members are utilized at their highest level of training. This assessment assures the practice is both effective in realizing the goal of improved patient outcomes and providing increased efficiency over previous models. For example, medical assistants (MAs) were hired and trained to manage tasks formerly assigned to the nurses, physicians or office manager. Duties of the MA include health coaching, one-on-one triage and addressing gaps in care, with a registered nurse stationed in the triage center for supervision. This task redistribution allowed the nurses more time to devote to chronic care management and prevention efforts. One of the nurses became a care manager whose main duties include keeping patients out of the emergency room by focusing on follow-up, medication

management and reconciliation and creating care plans. PCMH protocols were introduced that allow the nurses to place orders for health maintenance measures such as mammograms, colonoscopies and diabetes labs and to authorize medication refills in certain specific circumstances with physician notification afterwards.

Currently, weekly meetings are held with the nurse manager, nurse care manager, front desk manager, office manager and two physicians, one of whom has information technology expertise. They discuss methods to achieve outcome goals for both chronic care and the newer preventive care initiatives. Progress is reviewed on 15–20 measures of various programs, including mammogram rates, colorectal cancer screening rates, rates of optimal hemoglobin A1c (HbA1c) levels in patients with diabetes, optimal low-density lipoprotein (LDL) levels in patients with diabetes and blood pressure levels in patients with hypertension. Standard reports are printed regularly to show whether care has improved and the results are discussed at these meetings. Results are sorted by physician, so each one can see what areas need extra attention. From these reports, physicians will focus on improving their patients' outcomes in that area in the following weeks. For example, if a physician sees on his or her report that too many patients with diabetes have not had their LDL cholesterol lab work done, he or she may go through the list and create a plan for each patient and enlist staff to assist in carrying it out. Such lists generated in the practice's electronic medical record (EMR) allow direct "clicking into" a patient chart from the report.

The practice implemented an EMR in 2005. At that time, it had already begun using electronic scheduling and billing, so many of the staff were more willing to make the transition. The EMR was introduced in steps. One of the initial steps was documentation of messages taken by the front desk staff into the triage section of the EMR. After a few weeks, laboratory results were added. Physicians began ordering labs through the computer, even though their progress notes were still handwritten. One of the physicians then created electronic templates for progress notes, facilitating the note entry process for his colleagues. Over six months, during which time the electronic and scanned handwritten notes were used side-by-side, the physicians gradually eliminated the paper charts in favor of the electronic ones.

During the EMR transition period, patient visit times increased due to the extra data entry time needed. Extended appointment times were incorporated into the schedule, which reduced patient volume temporarily.

Several years before the practice implemented the PCMH model, one of its payers offered financial incentives for achieving certain quality measures, such as rates of mammograms, pap smears and child immunizations for that payer's patients. Once the PCMH initiative began, the practice worked to improve those rates for the entire practice population. This has been facilitated by the use of registries generated by the EMR. Each registry is attached to an outreach protocol. These

protocols include different parameters for patients with chronic diseases such as diabetes or hypertension and patients who are due for mammograms, colonoscopies, pap smears or other cancer screenings. Some registries might be updated as frequently as once monthly, while other registries might be used only once a year, such as for colonoscopies. The staff reaches out to patients to make these appointments, either through mailings, which include digital patient portal messages or by phone. These outreach activities are mainly the responsibility of trained MAs, overseen by the nurse managers. The assistants also verify patient compliance and obtain results of screenings and other exams.

The practice has found it effective to bring certain specialty services and resources to the office; this increases convenience to the patient and maintains continuity of care, which improves compliance. An on-site nutritionist has been added to the practice to consult with patients referred by the primary care physicians. Also, in an effort to improve their eye exam rate among patients with diabetes, it has partnered with a local eye practice to conduct retinal exams in the clinic three mornings a week. While providing space and front desk support for these services, these providers were not employed by the practice, helping to keep costs down.

For those services that cannot be brought into the office, the practice partners with many local organizations and individuals to assist patients. They coordinate with programs for seniors, such as meals on wheels and senior centers. They find financial assistance for uninsured patients and education programs for patients with chronic diseases. Additional resources used by the practice include smoking cessation programs (at local hospitals and online), fitness programs, mental health therapists and nutritionists.

Surveys are conducted one to two times per year to assess patient experience. In the last few years, the practice has been able to segment the results by physician, so that each physician can look at his or her own patients' experience. The surveys have shown increases in patient satisfaction resulting from the chronic care and preventative care initiatives and have been instrumental in targeting areas for improvement. For example, when the surveys were first administered, they showed a high level of dissatisfaction with the phone system. Although installing a new system was a huge financial undertaking, the consistently high level of dissatisfaction across surveys necessitated the change. Patient feedback subsequently improved in this area.

A yearly staff survey is also administered to gather feedback on improvements in the office, which is then used to define an annual set of goals.

## Challenges

A hurdle faced by the practice in implementing an EMR was transferring patient information from the paper chart into the EMR. The process evolved over time. At first, paper charts were scanned into the EMR. After a few months, staff found that only four or five key items (e.g., medications, medical problem and allergies) were needed from each paper chart. The charts were still available for reference if needed but were no longer scanned. Instead, at the end of the day, the physicians would review the paper charts of patients scheduled for the next day and enter relevant information into the EMR.

Some members of the staff were more adaptable to the constant evolution of the EMR transition processes than others. Resistance was present, especially throughout early implementation, but this lessened as the benefits became apparent.

## Outcomes

Mt. Airy's most significant improvement in outcomes have been in the diabetic population. In 2008, 37 percent of patients with diabetes had an HbA1c over 9 percent. In November 2012, only 12 percent of patients were in the >9 percent range. In the same time period, the percentage of patients with blood pressure <130/80 mm Hg increased from 33 percent to 48 percent and the percentage of patients with LDL <100 mg/dL increased from 39 percent to 55 percent. Additionally, eye exam rates increased from 33 percent to 88 percent, foot exam rates increased from 4 percent to 83 percent and the percentage of patients with self-management goals increased from 2 percent to 78 percent.

The practice has also improved its mammogram rates in the year since its increased focus on preventive care. In May 2012, 65.8 percent of patients who were due for a mammogram had received one. By November 2012, the rate rose to 70.4 percent, an increase of 4.6 percentage points over five months. The practice attributes this rise to the increase in reminder mailings and its electronic scripts program.

The physicians and staff feel that patients respond positively to the extra attention and care they are getting and are responding with increased compliance to the screening reminders.

## Lessons Learned

During implementation, the practice decided to rollout changes in an incremental fashion. Therefore, transformation took place over a five-year period of time, using a step-by-step method rather than making changes all at once. The practice felt this was key to its success.

The constant change and innovation inherent in implementing a PCMH requires a lot of flexibility. Staff job descriptions can change almost daily. Thus, it is crucial to have a staff that is adept at learning new skills and adjusting to protocol changes. The practice fortunately had physicians and staff willing to be challenged, helping ease the transition.

Also important to the smooth implementation of a medical home model is having an EMR already in place. The practice adopted its EMR and integrated it solidly into the practice's workflow well before focusing on the chronic care initiative and gaining NCQA recognition.

### **Future Directions**

While the practice conducts both patient and staff surveys, staff are not surveyed for specific feedback on implementation of the medical home model. That is something they hope to introduce moving forward.

## Key Stakeholders Can Be Resources for Implementing and Supporting a PCMH

As previously discussed, patients, practitioners and payers are major stakeholders in a PCMH, and each has a unique outlook on the PCMH. However, other organizations have a stake in fostering PCMHs and can provide tools and resources to help practices implement and sustain a PCMH program. These include:

- Government agencies
- Professional societies
- Independent and collaborative not-for-profit organizations

### Government Agencies Help Support the PCMH

Many state and federal government agencies support the PCMH as a model to support primary care, improve quality and reduce costs. State and government agencies support the adoption of PCMH programs and take part in the development of demonstration and pilot programs. These agencies also offer programs and resources that can help practices through various stages of PCMH development, from understanding the PCMH concept to implementation, through maintenance and refinement. The government agencies listed below provide PCMH tools and resources that can be easily accessed through their Web sites.

- CMS<sup>32</sup>
- AHRQ<sup>33</sup>
- VA<sup>34</sup>
- Department of Defense<sup>35</sup>
- Health Resources and Services Administration<sup>35</sup>
- Substance Abuse and Mental Health Services Administration<sup>35</sup>
- National Institutes of Health, National Cancer Institute<sup>35</sup>

### Selected CMS PCMH Demonstration Projects

- Comprehensive Primary Care (CPC) initiative is a multipayer initiative fostering collaboration between public and private health care payers to strengthen primary care. Medicare will work with commercial and state health insurance plans and offer bonus payments to primary care doctors who better coordinate care for their patients. There are 500 primary care practices participating in the CPC initiative.<sup>36</sup>
- For more information please visit <http://innovation.cms.gov/Files/fact-sheet/CPCI-Fact-Sheet.pdf>.
- The Federally Qualified Health Center (FQHC) Advanced Primary Care Practice demonstration is a pilot PCMH project operated by the CMS in partnership with the Health Resources and Services Administration. It is evaluating how the PCMH model can improve quality of care, promote better health and lower costs. To help participating FQHCs make these investments in patient care and infrastructure, they will be paid a monthly care management fee for each eligible Medicare beneficiary. In return, FQHCs agree to adopt care coordination practices that are assessed by NCQA and provide technical assistance. There are 500 FQHCs participating in this demonstration.<sup>37</sup>
- For more information please visit [http://www.cms.gov/Medicare/Demonstration-Projects/DemoProjects/EvalRpts/downloads/FQHC\\_Fact\\_Sheet.pdf](http://www.cms.gov/Medicare/Demonstration-Projects/DemoProjects/EvalRpts/downloads/FQHC_Fact_Sheet.pdf).

### State Agencies That Provide Support and Resources for PCMH

- Vermont Blueprint for Health (<http://healthvermont.gov/blueprint.aspx>)
- Community Care of North Carolina (<https://www.communitycarenc.org/>)
- New York Department of Health (<http://www.nyc.gov/html/doh/html/hcp/pcip-pcmh.shtml>)
- Maine Quality Counts (<http://www.mainequalitycounts.org/page/896-659/patient-centered-medical-home>)
- Office of the Commissioner of Securities & Insurance (<http://www.csi.mt.gov/medicalhomes/index.asp>)
- Maryland Health Care Commission (<http://mhcc.maryland.gov/pcmh/>)

### Professional Societies Offer PCMH Tools and Resources

As evidenced by the Joint Principles of the Patient-Centered Medical Home (see Appendix), which were codified and adopted by the AAFP, AAP, ACP and the AOA, many professional societies are strong supporters of the PCMH<sup>12</sup> and serve as a resource that practices can turn to for PCMH information and guidance. Many of these societies have developed tools and resources to help practices implement a PCMH. The following societies provide resources for PCMH programs on their Web sites:

- AAFP<sup>38</sup>
- ACP<sup>39</sup>
- Society of General Internal Medicine<sup>40</sup>
- AOA<sup>41</sup>
- AAP<sup>42</sup>

**AAP and NCQA have developed a PCMH fact sheet for practices interested in becoming recognized PCMHs.**

**Please visit [http://www.ncqa.org/portals/0/Programs/Recognition/PCMH\\_2011\\_Pediatric\\_FAqs\\_FINAL.pdf](http://www.ncqa.org/portals/0/Programs/Recognition/PCMH_2011_Pediatric_FAqs_FINAL.pdf) for more information.**

### Independent and Collaborative Not-for-Profit Organizations Also Have a Vested Interest in PCMH Programs

Several independent and collaborative not-for-profit organizations are dedicated to providing education and advancing PCMH programs. These stakeholders also offer a wealth of information, resources and tools that can help PCMH programs thrive.

These organizations include:

- **PCPCC:** The PCPCC consists of more than 1,000 diverse organizations dedicated to advancing primary care and the PCMH. These groups include, but are not limited to, employers, patients, insurance companies, pharmaceutical companies and care practitioners, such as doctors and nurses.<sup>8</sup>

–<http://www.pcpcc.net>

- **National Academy of State Health Policy (NASHP):** The NASHP is an organization that tracks and supports state efforts to advance the medical home. It is currently providing direct technical assistance to 23 states and NASHP is supporting 14 states to strengthen, expand and sustain current medical home programs.<sup>43</sup>

–<http://www.nashp.org/med-home-map>

- **National Center for Medical Home Implementation (NCMHI):** The NCMHI is a cooperative agreement between the Maternal and Child Health Bureau (MCHB) and the AAP. The mission of the NCMHI is to work in cooperation with federal agencies, particularly the MCHB, and other partners and stakeholders to ensure that all children and youth, including children with special needs, have access to a medical home.<sup>44</sup>

–<http://www.medicalhomeinfo.org>

### **National Medical Home Initiative Programs Can Provide a Wealth of Information**

Several large, not-for-profit medical home initiatives, such as Safety Net and TransformMED, are also resources for primary care practices looking to establish or enhance a PCMH.<sup>45-47</sup>

#### **Safety Net**

The Safety Net Medical Home Initiative is a five-year initiative aimed at helping 65 primary care safety net sites in five states become high-performing PCMHs. The Initiative developed a framework for PCMH transformation, the “Change Concepts for Practice Transformation,” and has published a library of resources and tools to help practices understand and implement the PCMH model. All materials produced by the Initiative are in the public domain. Its Web site provides access to implementation guides, assessment tools, presentations and other materials on the “Change Concepts” and PCMH payment and policy topics.<sup>45</sup>

#### **Resources Offered on the Safety Net Web Site<sup>48</sup>**

- PCMH assessment
- *Change Concepts* resources: implementation guides and webinars
- Coaching guide
- Medical home digest
- PCMH recognition
- Peer learning

(cont'd on the next page)

**Resource Topics Offered on the Safety Net Web Site<sup>48</sup>**

- Empanelment
- Continuous and team-based healing relationships
- Patient-centered interactions
- Engaged leadership
- QI strategy
- Enhanced access
- Care coordination
- Organized, evidence-based care

**TransforMED**

TransforMED is a subsidiary of the AAFP that supports PCMH transformation projects for any practice size throughout the country. It provides ongoing consultation, support, tools and resources to physicians and practice leaders looking to transform their practices, many of which are available to the public on its Web site.<sup>46,47,49,50</sup>

**Resource Topics Offered on the TransforMED Web Site<sup>50</sup>**

- Access to care and information
- Care management
- Change management
- Continuity of care services
- Disease registries
- e-visits/online services
- Group visits
- HIT
- Practice-based care team
- Practice management
- Practice services
- Quality and safety

## Summary

Implementing and sustaining a PCMH is possible for any practice. There are numerous resources and tools available to help in the process and guide practices toward success. While there can be challenges associated with implementation, with good planning, leadership and perseverance, the PCMH model is not only sustainable, but, as we will explore in chapter 7, has been shown to be beneficial.<sup>7,13,14,51,52</sup>

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## Use of Health Information Technology in the Patient-Centered Medical Home

Health information technology (HIT) refers to a broad range of technology that transmits and manages health information for use by consumers, practitioners, payers, insurers and all other stakeholders in health care. It is a key tool supporting improvements in health care quality, safety, efficiency and access. Use of patient-centered HIT has enhanced physician-patient partnerships in care.<sup>1-3</sup>

### The Role of HIT in the Patient-Centered Medical Home

A key element for the implementation and sustainability of a patient-centered medical home (PCMH) is appropriate and meaningful use of HIT. HIT can play a crucial role in achieving many of the key aspects of a PCMH. For example, it can help<sup>3</sup>

- Provide patient information to the entire care coordination team across all stages of care
- Support physician-patient communication
- Alert care teams to duplicative services, tests and medications or overdue aspects of the care plan
- Enable more timely and accurate performance measurement and improvement
- Improve accessibility of the practitioner practice to the patient
- Facilitate population management

Specific HIT functions can help promote coordination of care, encourage evidence-based decisions and preventative care and engage patients in their own care, all of which support the goals of a PCMH.<sup>3,4</sup>

HIT functions that support patient self-management and access include<sup>3</sup>

- Interactive Web portals
- Online communications platforms
- Online scheduling
- Access to personal health record (PHR)
- Home monitoring system
- Monitoring and messaging technologies
- Email communication with practitioner

HIT functions that can help practitioners make evidence-based decisions and foster preventative care include<sup>3</sup>

- Guideline integration into workflow, such as flow sheets, standing orders and training
- Decision support mechanisms (e.g., medications, immunizations)
- Electronic health records (EHR) equipped with alerts and reminders
- PHRs that provide decision support tools
- Online services that accept and process personal health data

HIT functions that promote coordination, communication and teamwork include<sup>3,5</sup>

- Clinical messaging
- List creation (e.g., medication, allergy or drug therapy problem lists)
- Task sorting
- Flow sheets
- Referral tracking
- Developing, maintaining and disseminating care and transition plans
- Assigning and tracking responsibilities
- Communication documentation

For additional information on HIT and how it can be incorporated into a practice, please see the seventh edition of *Quality Profiles™: The Leadership Series—Focus on Supporting Quality Improvement Through the Use of Health Information Technology* at [http://www.qualityprofiles.org/leadership\\_series/HIT/index.asp](http://www.qualityprofiles.org/leadership_series/HIT/index.asp).

## HIT Can Help Achieve Many of the Goals of a PCMH

The value of using HIT in a PCMH goes beyond making data available to practitioners and patients. It also lies in its ability to provide access, analytics and the exchange of information in real time.<sup>6</sup>

The major capabilities of HIT can help PCMHs achieve many of the Joint Principles of the Patient-Centered Medical Home, including coordinated care, whole person orientation, quality and safety and enhanced access (see **Table 1**).<sup>3,7</sup>

**Table 1: HIT Capabilities and PCMH Joint Principles<sup>3,7</sup>**

HIT Capability	Core PCMH Principle
Ability to collect, store, search, manage and exchange relevant personal health information	<ul style="list-style-type: none"> <li>■ Care coordination/integration</li> <li>■ Physician-directed medical practice</li> </ul>
Ability of clinicians, consumers and other members of the health team to communicate with each other throughout the process of care delivery	<ul style="list-style-type: none"> <li>■ Care coordination/integration</li> <li>■ Whole-person orientation</li> <li>■ Physician-directed medical practice</li> </ul>
Ability to collect, store, measure and report on the processes and outcomes of individual and population performance and quality of care	<ul style="list-style-type: none"> <li>■ Care coordination/integration</li> <li>■ Quality and safety</li> </ul>
Ability of clinicians and their practices to engage in decision support for evidence-based treatments and tests	<ul style="list-style-type: none"> <li>■ Quality and safety</li> </ul>
Ability of consumers to be informed and literate about their health and medical conditions and appropriately self-manage with monitoring and coaching from practitioners	<ul style="list-style-type: none"> <li>■ Enhanced access</li> </ul>

## Current Challenges to HIT Implementation in a PCMH

Use of HIT is an important component of a PCMH. However, a number of organizations and practices implementing HIT have experienced some challenges, including

- Costs associated with HIT<sup>6,8-10</sup>
- Lack of an interoperable HIT system, which hinders collaboration<sup>5,6,11</sup>
- Absence of a standardized platform for communication and coordination of care that can be shared across organizations<sup>6,9</sup>

Another challenge related to use of HIT is the limitations of many EHRs, a staple of HIT. Historically, EHRs were developed to support a traditional visit model and to facilitate billing functions. For a PCMH, however, EHRs are often needed to fulfill a much wider range of activities, such as shared decision making and patient preferences, clinical decision support and measurement of quality and efficiency.<sup>6,10,12</sup>

### Challenges With HIT: Lessons From the National Demonstration Project

**The program:** The National Demonstration Project (NDP) is a PCMH pilot project encompassing 36 family practices. The NDP decided from the outset to include technological enhancements that support a PCMH and to use them to reconfigure work patterns.<sup>11</sup>

#### Main components of the NDP's HIT program<sup>13</sup>

- EHR
- Practice Web site
- Population management/registry
- Electronic prescribing
- Patient portal

**HIT implementation:** During the implementation process, the NDP found that incorporation of new technology was more difficult and time consuming than originally envisioned. The available technology was often not integrated or interoperable. For example, the disease registry was awkward to activate and required complicated workarounds to have it work with other components. Even with discounted pricing and more than usual technical support from vendors, the challenges proved daunting.<sup>11</sup>

**Lesson learned:** NDP evaluated these challenges and determined how best to anticipate and plan for the future. Its recommendations focus on developing a technology plan that is specific to the needs of the practice.<sup>11</sup> Individual practices should

- Develop their own plan that maps out which technology components they will implement
- Determine in what sequence they prefer to achieve the care capabilities they desire
- Review and update technology plans frequently because the technology landscape is changing so rapidly

**Outcomes:** Although the NDP encountered difficulties, ultimately, many practices were able to implement several forms of HIT that helped enhance their PCMHs. In fact, many smaller and even rural practices had an easier time implementing HIT components, likely because they are able to be more adaptable and flexible.<sup>14,15</sup>

- >50 percent of practices successfully implemented a patient portal, registry or both.
  - 82 percent of these practices were either small, rural or both.<sup>15</sup>
- Every rural, small ( $\leq 4$  physicians) and independent practice had successfully implemented an EHR at the end of the NDP.<sup>15</sup>
- Fifteen practices successfully implemented disease registries, 10 of which were small, private practices.<sup>14</sup>

While there have been challenges associated with HIT, many PCMH practices have been able to effectively utilize HIT to modify and enhance patient access and quality of care. The following case describes how the Children's Hospital of Philadelphia (CHOP) Care Network HighPoint in Chalfont, Pennsylvania, a pediatric PCMH, successfully used HIT to improve delivery of care and patient outcomes in pediatric patients with asthma.

# Profile: Asthma Care Improvements in a Patient-Centered Medical Home

## Background

Asthma is one of the most common chronic diseases among children, affecting 7.1 percent of patients under 18 nationally. It is also the third leading cause of hospitalization among children under 15.<sup>1</sup> The majority of current asthma treatment focuses on symptom management to improve daily function and to prevent exacerbations that can lead to emergency room (ER) visits and subsequent hospitalizations. However, a patient care model that promotes preventative measures such as patient education, trigger avoidance and compliance with drug therapy regimens can greatly improve outcomes over routine symptom management. Children's Hospital of Philadelphia (CHOP) Care Network HighPoint in Chalfont, Pennsylvania, is a pediatric patient-centered medical home (PCMH) with National Committee for Quality Assurance Recognition that is enhancing its practice with the goal of improving delivery of care and patient outcomes in pediatric patients with asthma.

## Overview

The CHOP Care Network HighPoint uses its electronic medical record (EMR) to enhance patient encounters and further the use of the PCMH principles in patient care. Care Assistant is an EMR program developed by CHOP to assist health care practitioners during patient visits. HighPoint is piloting this tool. When a patient's file has the word asthma placed in its problem list in the EMR, it triggers the Care Assistant program to populate any visit encounters, regardless of the purpose of the visit. The Care Assistant tool appears at the top of the first page of the patient's EMR and has six tabs related to asthma care: the Asthma Control Tool, severity classification, the Asthma Care Plan, medications, pulmonary function tests (PFTs) and education. Each field will appear in red if it must be updated and green if it has been updated. The frequency with which the fields need to be updated is based on the severity of the child's asthma. In this way, the clinician is prompted to initiate a review of the child's symptoms and the family's understanding of how to manage them, medications and any hospital or ER visits and specialist visits or missed school days. The EMR is updated with the patient during the visit. If there are additional instructions from specialists regarding a change in medication or other treatment, the nurses will enter the information into the EMR and reformulate the care plan based on the specialist's changes.

The Asthma Control Tool captures the patient-reported functioning portion of the interview. The final page of the Asthma Care Plan indicates any asthma triggers the child may have, including weather changes, cigarette smoke and environmental allergens. The education tab includes general information about asthma, how to use nebulizers, spacers and inhalers, and approximately 20 handouts on various asthma-related topics, such as quitting smoking or handling dust mites, mold or pets. These handouts can be easily printed out along with the care plan to help families manage a patient's specific asthma triggers.

The Asthma Care Plan is a printout given to the patient with instructions on managing asthma based on the severity of symptoms. With newly diagnosed patients, HighPoint has found it helpful for the health care practitioner and the parent or caregiver to sit down with the care plan and read it together. They manually highlight the sections in different colors as they discuss them: green for steps the family can take every day to improve the child's asthma, yellow for steps to take when the child starts to have symptoms and red for more urgent responses necessary when the child has an attack. Additional printouts are available to reinforce topics discussed during the visit.

## Program Description

HighPoint began this initiative by first standardizing its classification of asthma across the practice. It followed the National Institutes of Health (NIH)/National Heart, Lung, and Blood Institute (NHLBI) criteria, which grade asthma severity as intermittent and mild, moderate or severe persistent. The practice set up monthly meetings to discuss outcomes, concerns and next steps relating to the program. It set a goal of achieving a 90 percent compliance rate in the following areas: patients with an updated Asthma Control Tool, patients on medication levels appropriate to the severity of their asthma and patients with an updated Asthma Care Plan. A monthly data report is generated on these patients to allow the practice to measure progress in these areas.

Staff training was a key component in realizing these improvements. Three staff members took an asthma educators course, and two of them took the National Asthma Educator Certification Board examination to become Certified Asthma Educators. Nurses were trained to implement new protocols for extracting asthma care information from specialist visit records and entering them into the EMR and for using the telephone triage system. This triage system handles medication refills and can also capture patients who are due for a follow-up visit. The nurses can make determinations about whether the family understands how to use the medication or whether there are outstanding problems that would require a scheduled visit. They answer any questions the family may have and then forward the telephone call to the physician for final review. While the nursing staff was initially resistant to taking on the extra responsibilities, they have since embraced the program because it allows them to be more directly involved in patient care.

Pulmonary function testing was also introduced as a screening tool to identify more patients at risk for asthma.

A notable approach to improve patient outcomes was to institute an outpatient version of morning rounds. In an inpatient setting, morning rounds are conducted to discuss the patients, but this process is not always in place in a primary care setting. The practice determined that a morning “huddle” to discuss the panel of patients to be seen each day would help improve communication, coordination and thus quality of care and would optimize appointment time. A physician and nurse are paired as a team and look through every patient scheduled for an appointment to discuss the following questions:

- What is the reason for the visit?
- What other recent visits has the patient had?
- Does the patient need any vaccinations or tests performed?
- If it is not a well visit, is the patient due for one?
- Does he or she have asthma? If so, does he or she need a PFT? What handouts or other information might he or she need?

Initially, compliance with the “huddle” system was met with some resistance, especially among physicians. Huddles were thus first instituted among nurse-doctor teams that were willing to participate. The nurses saw the benefits of the system, and, as they rotated teams, they encouraged the physicians they were working with to participate. The patient service representatives (PSR) then saw the benefits in this daily routine because it identified patients that needed more time allotted for their appointment and patients who were due for a well visit.

Since the establishment of HighPoint’s asthma initiative, the primary goal has been ensuring patients with asthma receive the appropriate amount of follow-up consistent with their level of asthma severity. Patients with intermittent asthma should have one asthma visit a year. Those with mild, persistent asthma should have two visits, those with moderate persistent should have three and those with severe persistent should have four. HighPoint has made an effort to improve adherence to this goal through discussions with families during visits, phone calls to the families to remind them to schedule a check-in visit and by controlling the amount of refills so that parents or caregivers are encouraged to use the telephone triage system.

## Challenges

The biggest challenge faced by HighPoint in implementing these programs was staff buy-in. Physicians had concerns about prematurely diagnosing young children with a history of bronchiolitis as asthmatics. Nurses were concerned that the various aspects of the initiative would increase their workload. PSRs, who handle scheduling, had concerns that the Care Assessment program would require a significant amount of extra time during visits. To address these concerns, monthly asthma meetings were established to discuss problems, identify solutions and assess progress. One-on-one encouragement was effective in achieving buy-in from the nurses. Additionally, the morning physician-nurse huddle instituted to discuss the panel of patients scheduled for that day helped optimize time spent with the patients and led to improved workflow.

Another challenge was implementing in-office PFTs. There were concerns that it would be too costly, too time consuming and too difficult to interpret the results. HighPoint met this challenge by inviting a pulmonary nurse practitioner to come to the office for an in-service on PFTs. The practice also set up an arrangement with its hospital pulmonary department to review any PFTs that were more difficult to interpret.

## Outcomes

HighPoint has made a great deal of progress toward achieving its asthma care goals. The percentage of patients who have had their Asthma Control Tool updated appropriately has increased from 86 percent to 94 percent, and the percentage of patients with persistent asthma being treated with appropriate medication has increased from 84 percent to 95 percent. The percentage of patients who have an Asthma Care Plan on file has increased from 29 percent to 85 percent. The practice has also been able to identify more undiagnosed patients with asthma, with the number of patients diagnosed increasing from 351 to 521.

Other improvements not specifically targeted in this initiative include a decrease in asthma-related hospitalizations or ER visits, down to zero to one visit per month on average. Additionally, increased efforts have led to 86 percent of HighPoint's patients with asthma receiving the flu vaccination.

In addition to the achievement of these measurable goals, there has been a marked improvement in staff confidence in treating asthma, and patients have remarked that they feel more comfortable having the PCMH manage their asthma and feel less need to see a specialist. The practice is looking at ways to capture these data.

Encouraged by the success seen in improving the care of patients with asthma, HighPoint is expanding its efforts to improve care to children with obesity, attention deficit hyperactivity disorder (ADHD), well visits, transition to adult care and children with special health care needs.

## Lessons Learned

Although a good portion of the success of HighPoint's asthma program can be attributed to use of the Care Assistant EMR tool, the practice learned that the most important drivers of change have been the

- Practice-wide consensus to improve care for children with asthma
- Enriched roles of nursing staff and PSRs
- Integration of new technology into workflows
- Continual expansion of asthma care knowledge, including education on the guidelines (National Asthma Education and Prevention Program Expert Panel Report 3), new medications, motivational interviewing techniques, management of the most at-risk patients and ER tracking

Implementing a PCMH model has dramatically improved HighPoint's asthma care, its confidence to implement other changes and the overall quality and efficiency of its practice.

Another lesson HighPoint learned was the importance of the standardizing and centralizing processes. All protocols, procedures, templates and algorithms are housed in a central location to ensure that the staff has full access to the tools they need to deliver the highest quality of care to the patient. This requires more time investment up front, but organization and dissemination of information is key to empowering staff and managing an effective PCMH. HighPoint is looking to correct inefficiencies in document centralization that have somewhat hindered the optimization of its quality improvement efforts.

A third lesson the practice learned is the importance of obtaining ongoing staff feedback, either through confidential staff surveys or some other means. If no complaints are received, it is natural to assume no problems are present. However, some staff may find it difficult to voice concerns or give feedback, especially in a group practice setting where physicians are often responsible for final decision making. The results from these surveys conducted by the practice often challenge assumptions and have been very empowering in effecting change.

## Future Directions

CHOP is developing a patient engagement tool through a Web portal called MyChart, where patients can access portions of their medical record online, including an interactive asthma assessment. HighPoint is piloting this tool. Often physicians have a vision of how they want a patient's asthma managed, but it may differ from that of the patient or parent. The practice wanted to ensure it was capturing the families' main concerns. In the portal, there are sections for parents and patients to set goals. The practice is currently in the patient recruitment stage of this project.

HighPoint is working on several other projects to improve its ability to provide quality care, including increasing the percentage of adolescent patients coming in for their yearly well visit (currently at 71 percent), developing programs targeting ADHD and obesity, improving toddler immunization rates and transitioning its pediatric patients to adult care.

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## Incorporating HIT Into a PCMH

Incorporation of HIT can happen at any stage of development of a PCMH. To facilitate adoption, practices are encouraged to roll out applications gradually; this can help to alleviate the fear that new technology will abruptly undermine the quality of the patient-caregiver interaction.<sup>2</sup>

Practices should also keep in mind the HIT requirements that must be met to obtain or improve PCMH recognition. For example, the National Committee on Quality Assurance (NCQA)'s PCMH 2011 Recognition Program standards identify several uses of HIT and these align with many elements of the federal program that rewards clinicians for using HIT to improve quality (i.e., Centers for Medicare & Medicaid Meaningful Use Requirements).<sup>16</sup>

NCQA's PCMH 2011 Recognition Program allows for different levels of HIT integration. In some cases, use of HIT is necessary to fulfill the "must pass" requirements of a discrete element.<sup>16,17</sup>

NCQA has allowed for different approaches and intensity of reliance on HIT in its Recognition Program to reflect an understanding of PCMH's different levels of readiness for HIT, ranging from the most basic aspects to complete integration.<sup>16</sup> It is important for practices to identify the level of HIT adoption that will support their goals.<sup>3</sup>

## Summary

Use of HIT in PCMH can have many benefits for patients, including increased access to practitioners, improved coordination of care and facilitation of self-management. With proper planning and a reflective attitude that fosters evaluation and adaptation, HIT can help enhance the PCMH and achieve better higher quality of care.

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# The Patient-Centered Medical Home Is a Sustainable Model of Care Delivery That Can Improve Patient and Practice Outcomes

Many organizations and practices involved in patient-centered medical home (PCMH) pilots and demonstration programs have evaluated their practices and found significant improvements in patient access to care, experiences, quality of care, efficiency within the health care system and reduced costs. In this chapter, we will explore how these PCMH practices have positively affected patients, practitioners, staff and overall care.

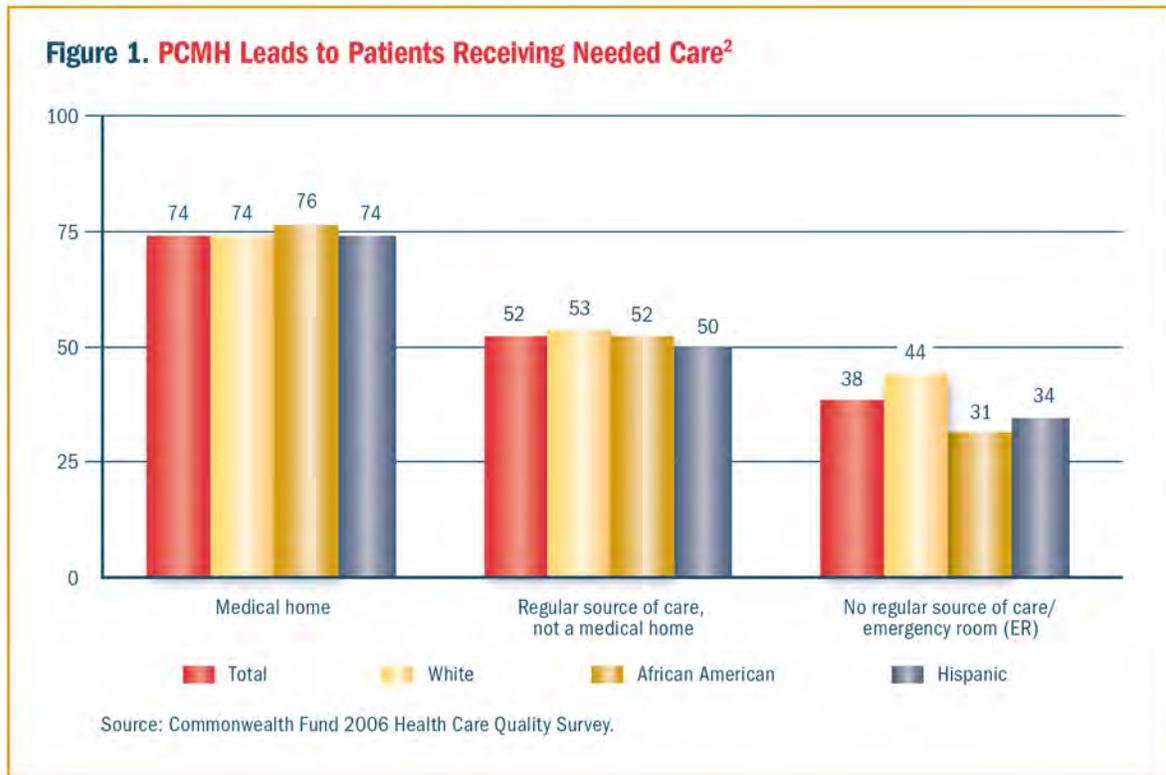
## PCMH Leads to Increased Patient Access to Care

The Joint Principles of the Patient-Centered Medical Home advocates enhanced access to care through systems such as open scheduling, expanded hours and new options for communication between patients, their personal physician and practice staff.<sup>1</sup>

Historically, some people have had problems with access to primary care. According to the Commonwealth Fund 2006 Health Care Quality Survey<sup>2</sup>

- Many practitioners do not offer medical care or advice during evenings or weekends.
- Only two-thirds of adults who have a regular practitioner or source of care say that it is easy to get care or advice after hours.
- Compared with other populations, Hispanics are least likely to have access to after-hours care.

Use of PCMH, however, has been shown to reduce these disparities. The Commonwealth Fund Survey also found that the vast majority (74 percent) of adults with a PCMH always get the care they need compared with only 52 percent of those with a regular practitioner that is not a medical home and 38 percent of adults without any regular source of care or practitioner. In addition, the survey noted that when minorities have a PCMH, racial and ethnic differences in terms of access to medical care are eliminated. In fact, three-fourths of whites, African Americans and Hispanics with PCMHs reported getting the care they need when they need (see **Figure 1**).<sup>2</sup>



## Patient Experience Is Measurable and Provides Insight Into PCMH Success

One of the hallmarks of a PCMH is improved quality of care for patients.<sup>1</sup> Quality can be determined in many different ways, one of which is by measuring patient experiences.<sup>3</sup> Research has consistently demonstrated that patient experience correlates with clinical processes of care for prevention and disease management and with better health outcomes.<sup>4</sup> Patients who have had poor experiences with care can have worse outcomes. A study of patients hospitalized following a heart attack evaluated the relationship between patient outcomes and patient-centered care experiences. Patients in the study completed a survey at 1 and 12 months following discharge to report experiences with patient centered-care and health status. Seven dimensions of patient-centered hospital care were evaluated: respect for patient preferences, coordination of care, information and education, physical comfort, emotional support, involvement of family and friends and continuity of care. The surveys also included functional health questions. Based on a problem score aggregated from the initial survey, patients were stratified to either a “better care” or a “worse care” group. Patients in the “worse care” group had the highest problem scores across all seven dimensions.

The most frequent problems in the group occurred with the information and education given by practitioners, emotional support, involvement of family and friends and continuity of care. “Worse care” patients experienced poorer outcomes compared with “better care” patients. They were significantly more likely to be rehospitalized within six months and experienced poorer health outcomes, including lower scores in reported overall health, mental health and physical health and greater odds of chest pain and shortness of breath.<sup>5</sup> Although this study occurred in the hospital setting, it highlights the importance of the effect of patient-centered care on patient outcomes, which is a hallmark of the PCMH. In contrast, positive patient experiences have been shown to improve outcomes. For example, in patients with HIV, positive patient experiences with patient-centered care, defined as the patient’s perception of the HIV practitioner’s involvement in care, were associated with increased adherence to medications and improved health outcomes.<sup>6</sup>

Measuring patient experience not only provides insight into patient satisfaction and outcomes, it is also one of the best indicators of how well a PCMH is working. For example, it can reveal system problems, gaps in coordination of care and communication issues that may be occurring. Once the practice learns about these issues, it can take action, such as instituting new processes, to improve care.<sup>3,4</sup>

## Patient Engagement Is a Key Factor of Patient Experience

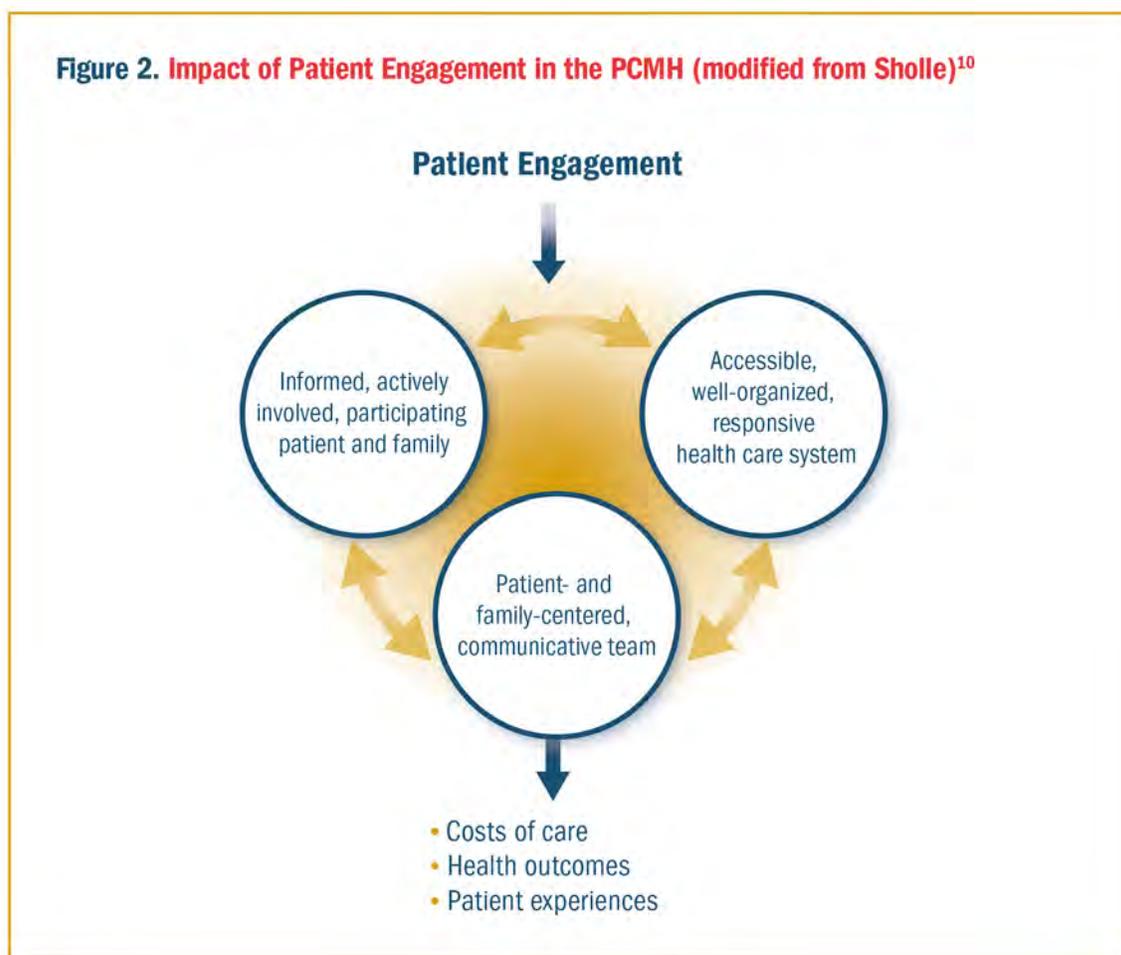
An important component of the patient experience in the PCMH is ensuring that patients understand their health care problem and options for treatment and are actively involved in the development and implementation of their care plan (see **Figure 2**).<sup>1,7</sup> In general, engaged patients report higher quality care, fewer errors and more positive views of the health care system.<sup>8</sup> Patient interaction has also been positively associated with quality measures, such as disease prevention and management.<sup>4,9</sup>

Patient engagement can come in many forms, ranging from patients’ increasing self-care to direct involvement with developing policies and activities in the medical practice site that they utilize. Practices can also employ aids, such as shared decision making and health information technology (HIT) to help involve patients.<sup>10</sup> As patient engagement is one of the major tenets of the Joint Principles of the Patient-Centered Medical Home, many of the PCMH programs have incorporated patient engagement strategies into their models. Tools and programs implemented by PCMH programs to encourage patient engagement have included<sup>7,10</sup>

- After-visit summaries
- Patient-directed posters and brochures available in multiple languages

- Motivational interviewing
- Group visits
- Self-management workshops
- Patient-oriented interactive, computer-based programs

Please see the eighth edition of *Quality Profiles™: Leadership Series—Focus on Patient Engagement* for more information and resources on how to engage patients in their own care.



## The PCMHs Can Measure Patient Experience Using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Survey

One of the best means of obtaining information regarding patient experiences with a PCMH is surveying. However, developing a survey can be costly and time consuming for a practice. Fortunately, a standardized survey is available nationally that takes into account many of the PCMH principles related to patient-centered care— CAHPS Clinician and Group Survey for PCMH (CAHPS PCMH). This survey was developed based on the validated Agency for Healthcare Research and Quality’s CAHPS Clinician and Group Survey, which was originally designed to measure patients’ experiences in primary care practices.<sup>4,11</sup>

After noting the growth of PCMHs in primary care and the need to assess how the medical home model affects patients, the CAHPS Consortium developed a set of supplemental items that, when used in conjunction with the CAHPS Clinician and Group Survey, assesses patient experience with the domains of the medical home. The items address the following six topic areas<sup>12</sup>:

- Access to care
- Comprehensiveness (adult only)
- Self-management support
- Shared decision making (adult only)
- Coordination of care
- Information about care and appointments

The National Committee on Quality Assurance (NCQA) requires use of the CAHPS PCMH survey as part of its PCMH Recognition Program. Practices not only earn points toward Recognition, but, as of 2012, they can also earn special distinction in collecting and reporting consumer experience data by using the CAHPS PCMH survey.<sup>4,13</sup> This distinction encourages practices to use the CAHPS PCMH survey to capture patient and family feedback. Because the patient experience is a critical component of quality of care, giving this experience more prominence is a crucial evolution in the PCMH Recognition Program.

## Group Health Cooperative's PCMH Pilot Program Shows Positive Patient Experiences With the PCMH

As we have established, patient experience can be a key measurement for determining the success of a PCMH. One program that evaluated patient experiences was a medical home pilot initiated by Group Health Cooperative in 2006. Group Health Cooperative is a nonprofit, integrated health insurance and care delivery system based in Seattle, Washington. Group Health Cooperative compared patient experiences from 6,187 adults in the PCMH and non-PCMH clinics. A survey was used to evaluate patient experiences with the care provided by Group Health Cooperative and covered areas such as quality of interactions, shared decision making, coordination and access to care.<sup>14</sup>

Overall, patients in the PCMH clinics had positive experiences with the program. At the one-year assessment, medical home patients reported significantly better experiences in six of the seven measures: doctor-patient interactions, shared decision making, coordination of care, access to care, patient activation and involvement and goal setting or tailoring. There was no difference in patient experience regarding helpfulness of office staff. These findings were similar at two years. The survey also determined that, compared with its non-PCMH counterpart, the PCMH clinic performed better at the outset of the program and showed significantly greater improvements at one year in terms of quality of care for patients.<sup>14</sup> A recent subanalysis of seniors aged 65 and older in the Group Health Cooperative program had similar findings; the older-adult patients in the PCMH clinic reported higher satisfaction with their experiences compared with those who received care at the non-PCMH clinic.<sup>15</sup>

## Models Demonstrate That the PCMH Is Sustainable and Improves Care and Efficiency

The PCMH model has been shown to improve quality of care and generate savings by reducing unnecessary emergency department (ED) visits and hospital admissions. Many PCMH programs have demonstrated these benefits.<sup>16-19</sup>

## The National Demonstration Project Provides Extensive Insight Into PCMH Success and Learnings

The National Demonstration Project (NDP) was a two-year project launched in 2006 and funded by the American Academy of Family Physicians. The NDP was designed to help primary care practices adopt a defined set of PCMH elements, including access, care management, HIT, quality improvement, team care, practice management and integration with other health care organizations and the community.<sup>19</sup>

The NDP was a large-scale effort, spanning 36 family medicine practices across the United States. The project evaluated two types of PCMH programs—facilitated and self-directed. Facilitated practices received ongoing assistance from a change facilitator, guidance from expert consultants and assistance in HIT, quality improvement and training. Self-directed practices were given access to Web-based practice improvement tools and services but did not receive facilitator assistance. Given its breadth and availability of information, the NDP has generated several evaluations and assessments that provide insight into implementation and outcomes of the PCMH.<sup>19-22</sup>

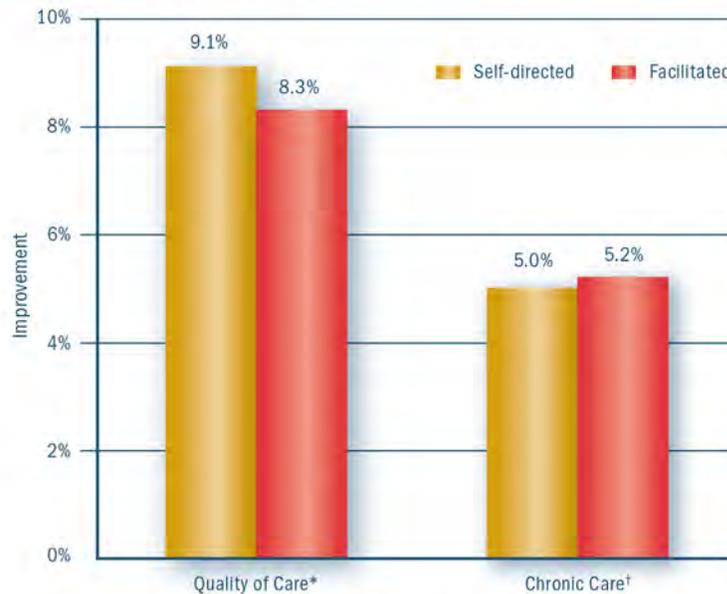
### Practice Experience Analysis

One of the first analyses of the NDP program looked at practices' experience and success with the implementation of the PCMH. At the end of the two-year time frame of the NDP, the facilitated and self-directed groups had successfully implemented 70 percent of the 39 model components, demonstrating that implementation of the PCMH is indeed achievable using either method.<sup>20</sup>

### Patient Outcomes Analysis

Patient outcomes and care were evaluated throughout the program using patient surveys. These evaluations were conducted when the NDP program was first implemented and then repeated at specific intervals over a two-year period. Based on the survey results, adoption of PCMH components by either a facilitated or self-directed practice was associated with significant improvements in condition-specific quality of care and chronic care (**see Figure 3**). In addition, practices that adopted more of the NDP model components achieved better quality of care. Adoption of model components during the NDP was associated with improved access, prevention, quality of care and higher chronic disease scores.<sup>19</sup>

**Figure 3. NDP Quality Improvements Were Observed After Two Years in Both Self-Directed and Facilitated Practices<sup>19</sup>**



\*Based on 16 Ambulatory Care Quality Assurance measures: 7 prevention measures, 2 coronary artery disease measures, 6 diabetes measures, 1 acute care measure; †based on chronic disease care measures: Percentages of patients having a diagnosis of diabetes, hypertension, coronary artery disease and hyperlipidemia receiving recommended treatments and assessments.

## PCMH Programs Improve Outcomes in Special Populations

The benefits of a PCMH can be further illustrated by looking at patients with specific conditions. For example, a study of children with attention deficit hyperactivity disorder (ADHD) found a positive correlation between the use of a PCMH and patient outcomes. To determine how PCMH care relates to the treatment of children with ADHD, a cross-sectional analysis of the 2007 National Survey of Children's Health was evaluated. The study measured receipt of ADHD medication, involvement of mental health specialists and functional outcomes such as difficulties with participation in activities, attending school or making friends. Of the 5,169 children represented by the survey, 44 percent received care in a PCMH, defined as practices meeting the criteria laid out in the Joint Principles.<sup>1,23</sup>

The study found that across all of the parameters evaluated, children using a PCMH had significantly better outcomes compared with those using more traditional care methods. Of those children using a PCMH, 72 percent received ADHD medication, compared with 65 percent of children not associated with a PCMH. Use of a PCMH was also associated with fewer social and behavioral problems (see **Figure 4**).<sup>23</sup>

**Figure 4. PCMH Care and Outcomes in Children With ADHD<sup>23</sup>**

Outcomes	Non-PCMH (weighted %)	PCMH (weighted %)	P Value
Mental health specialist involvement	56	38	<i>P</i> < .001
Presence of problem behaviors	32	19	<i>P</i> < .001
Problems with participation in activities	28	14	<i>P</i> < .001
Problem with making friends	34	21	<i>P</i> < .001
Problems with school attendance	19	6	<i>P</i> < .001
Missed school days	6.5	4.4	<i>P</i> < .001
Parent contacted by school for school problems	1.4	1.1	<i>P</i> < .001

Other studies have found similar benefits related to care in a PCMH in special populations of patients. For example, a large, observational cohort study compared patients receiving care from a PCMH (n = 31,032) with non-PCMH patients (n = 350,015) based on data from Empire Blue Cross and Blue Shield.

The study found that among PCMH-treated patients

- Patients with diabetes had higher rates of glycated hemoglobin testing.
- Patients with cardiovascular disease had higher rates of testing and better low-density lipoprotein cholesterol control.
- Imaging rates for low back pain were lower.
- Inappropriate antibiotic use for nonspecific or viral respiratory infections was lower among pediatric patients.

In addition, PCMH-treated adults and children had 12 percent and 23 percent lower odds of hospitalizations, respectively, and required 11 percent and 17 percent fewer ED services, respectively, than non-PCMH patients.<sup>24</sup>

The following case explores the approach of the El Rio Health Center, a non-profit PCMH in Tucson, Arizona, for improving care for special populations such as patients with chronic disease (e.g., hypertension, dyslipidemia) through use of specific adherence measures and interventions.

# Profile: Improving Medication Adherence and Chronic Disease Outcomes in the Patient-Centered Medical Home

## Background

Nonadherence to treatment is a leading cause of poor patient outcomes, the causes for which are as complex and as numerous as the patients themselves. Health care practitioners generally do not have the resources to address barriers to adherence to taking medication during each office visit, a problem that can often prevent these issues from being managed appropriately throughout the course of a patient's treatment. The El Rio Health Center in Tucson, Arizona, determined that these gaps in patient adherence could be addressed through the use of the patient-centered medical home (PCMH) model, specifically by implementing an interdisciplinary team that could target these challenges. Physicians and nurse practitioners partnered with pharmacists, behavioral health specialists and community health advisors to improve patient outcomes by addressing adherence to treatment, with mechanisms put into place for evaluating the program's results and its potential to expand to other disease states beyond diabetes, hypertension and dyslipidemia.

## Overview

El Rio is a nonprofit health center serving over 76,000 people in Tucson. It has seven sites that have National Committee for Quality Assurance Level 3 PCMH Recognition and two more that are in the process of becoming a PCMH. The distribution of resources among the clinics is fairly uniform, although the services are tailored to the site, the space available and the needs of the practitioner and patient. There is a behavioral health service, clinical pharmacy and a panel of community health advisors at each of the affiliated major medical sites. Currently, the practice as a whole has five clinical pharmacists and two pharmacy residents on staff, with plans to hire two additional pharmacists. The Southeast Clinic building was specifically designed for interdisciplinary care, with larger exam rooms and more integrated office space for the practitioner, medical assistants and pharmacy groups.

## Program Description

El Rio first initiated this program in response to the perception that there were missed opportunities to improve care for each individual patient and the idea that pharmacists can play an integral role in improving chronic disease outcomes for these patients. The practice sought and obtained funding through a grant from the National Alliance of State Pharmacy

Association's Adherence Discovery Projects. Buy-in was obtained from administration, practitioners and support staff and the initiative was rolled out over six months. Progress was assessed through weekly team meetings (which have since been scaled back to once monthly). The first step was the establishment of an interdisciplinary "adherence team." This included the pharmacist, behavioral health specialist and the community health advisor who targeted reasons for patient nonadherence. The roles and objectives of the team members were then established. These roles were established as follows:

- Pharmacist: Addresses knowledge barriers relating to medication, encourages the use of medication reminder methods and tailors administration of the medication regimen to optimize adherence
- Behavioral health consultant: Targets motivational and mental health factors that result in nonadherence, conducts motivational interviewing and, if needed, refers patients to services either at the clinic or with a specialist
- Community health advisor: Identifies and helps remove barriers to adherence that may be due to lack of resources, which could include problems with transportation, insurance, unemployment or homelessness and connects patients to grant programs, pharmaceutical assistance programs, local shelters, employment centers or other community resources

As part of the El Rio program, each patient is introduced to the adherence team at the beginning of treatment and meets with at least one of them at subsequent visits. Initially, each patient is asked a series of questions about his or her disease to ascertain his or her understanding and address any gaps in knowledge. The pharmacist determines if the patient has a gap in treatment, that is, if the patient has missed one or more refills of his or her medication(s) based on the Pharmacy Quality Alliance (PQA) measure of gaps in therapy as assessed by the dispensing pharmacist. If the patient has missed one or more refills of medication, the pharmacist performs an assessment and forwards it to the interdisciplinary team. Patients are then scheduled for a team visit to address barriers to adherence. During this visit, the behavioral health specialist, community health advisor and pharmacist assess the underlying issues affecting each patient's adherence and disease management. The community health advisor assesses financial factors impacting adherence, while the behavioral health consultant addresses motivational factors and environmental factors. The pharmacist addresses knowledge barriers, provides information about each medication, encourages use of medication reminder methods and ensures that the medication regimen is tailored for adherence. The team and the patient create a management plan with goals involving, for example, lab results, nutrition, weight and activity level. These discussions are reinforced with handouts and adherence tools, including a patient plan and list of goals, instructions to help him or her take his or her medication properly and an updated medication list.

In addition to consulting with practitioners during tandem visits with the patient, the adherence team also reviews the daily schedule for every practitioner in the clinic so that a proactive effort is made to check in with patients that need extra support. It also schedules interim appointments with patients, during which it can assess patient outcomes, monitor adherence, order laboratory tests or adjust medication.

The clinic then follows up with patients about their experience. The El Rio health care system has a very robust data collection method for surveying patients about their experience. Phone calls are made to selected patients after their visits and more informal surveys are used for staff regarding the intervention.

## Challenges

The central challenge faced by the clinic was developing an effective workflow. Since each practitioner had a heavy patient volume of around 20–25 patients daily, there was much discussion about how to effectively utilize the team without burdening each individual practitioner or patient. The workflow went through several iterations before the practitioners and staff became comfortable with the process, after which use by the team increased significantly.

Another challenge involved documentation of the adherence visits. A sizeable fraction of the team's responsibilities involve informal tandem consults during a patient's visit with another practitioner. Often, this encounter was not entered into the system, so no record of information exchanged or action taken by the team member existed, resulting in an inability to track outcomes. To address this, a standardized process was instituted wherein the adherence team members could add their perceptions and recommendations from their visits into the electronic medical record (EMR). Additionally, phone consults between patients and the adherence team to discuss lab results or patient concerns were not formally documented. Adding a telephone encounter section to the EMR to document the discussion of lab results, patient concerns and actions taken solved this issue.

## Outcomes

Over a period of six months, the clinic studied a group of 100 patients (50 in the treatment group and 50 in the control group) aged 18 or older who had at least one chronic disease and who had documented gaps in medication treatment across one of six medication classes. Enrollment was restricted to those patients who utilized the clinic's outpatient pharmacy services. Each patient in the intervention group was matched with a control patient of similar age, race, sex and health parameters. The study used the PQA definition of gaps in therapy.

These interventions showed benefits across patient groups. In patients with hypertension, the average reduction in systolic blood pressure was 24 mm Hg for the treatment group and 4 mm Hg for the control group. The average reduction in diastolic blood pressure was 12 mm Hg for the treatment group, whereas an increase of 0.12 mm Hg was shown in the control group. In patients with diabetes, the average reduction in A1C was 1.33 points for the treatment group, but the level worsened by 0.2 points in the control group. In patients with dyslipidemia, the average reduction in total cholesterol for the treatment group was 37 mg/dL, while it increased by 6 mg/dL in the control group. The reduction in triglycerides for the treatment group was 20 mg/dL, but the level increased in the control group by 48 mg/dL, and the reduction in low-density lipoprotein for the treatment group was 33 mg/dL, while the control group average increased by 2 mg/dL. However, there was no improvement seen in the parameter of high-density lipoprotein. The average increase in high-density lipoprotein was 1.7 and 3.6 mg/dL in the treatment vs. control group. In addition, on average, treatment groups experienced fewer 30-day treatment gaps during the six months than the control group of patients not receiving behavioral health interventions.

A patient's adherence to one medication or lack thereof is not necessarily an indicator of the adherence level across all medications. Nevertheless, these data included several patients who improved on all parameters and some who had frequent gaps in therapy occurring for multiple medications. A secondary analysis is planned for those patients who failed to respond to the interdisciplinary team's efforts.

The implementation of the adherence team also resulted in higher patient satisfaction. Before the study began, satisfaction scores for this clinic location were among the lowest in the health system. In the two quarters after the study began, the clinic has been ranked number one in patient satisfaction. In addition, the individual practitioner with the highest satisfaction scores in the clinic was found to have utilized the team most frequently and appropriately. The qualitative feedback from the patient and practitioner surveys was also very positive and reinforced the benefits of the PCMH model. While the practice cannot directly attribute increases in satisfaction scores to the interventions made by the clinic, clinicians have noted that patients have responded positively to the practice's quality of care improvements.

## Lessons Learned

In the beginning, implementation was difficult because each practitioner utilized the adherence team very differently. One helpful modification, particularly during program development, would be to invest time in educating each practitioner individually about the services the team offered. Also, tracking the utilization of the specific services in the program helped the practice identify which needs were not being met and which services needed to be expanded.

Another lesson the clinic learned was the importance of identifying each member of the team by name and title to the patient and limiting the number of team members meeting with the patient at each visit. This reduced patients' confusion and made the experience more positive.

## Future Directions

A main push for the El Rio clinic is to increase utilization of the interdisciplinary adherence team by all practitioners. Though the team has the ability to independently identify patients who are at risk, referral of patients by the physicians is vital to improving patient adherence and outcomes.

The clinic is looking to expand its collaborative efforts to other areas of care. One of these is mental health. It is seeking to do this by partnering with its affiliated mental health clinics to ensure that the patients receive seamless care with no gaps in coverage. This includes follow-up appointments to gauge adherence to medication use. Additionally, the practice has expanded its screening of patients with diabetes and depression using the Patient Health Questionnaire nine-item depression scale (PHQ-9). All patients with diabetes are screened for depression. If a patient's depression is not being controlled, as indicated by the PHQ-9 score, he or she is able to get his or her therapy modified in the clinic without having to wait for a specialist appointment.

Another potential area of improvement is chronic pain management, specifically the optimal way to provide pain management to patients without contributing to dependence or abuse problems or putting the practitioner at risk. First steps here included institution of a mandatory urine drug screening for each new narcotic prescription and use of the state prescription monitoring program.

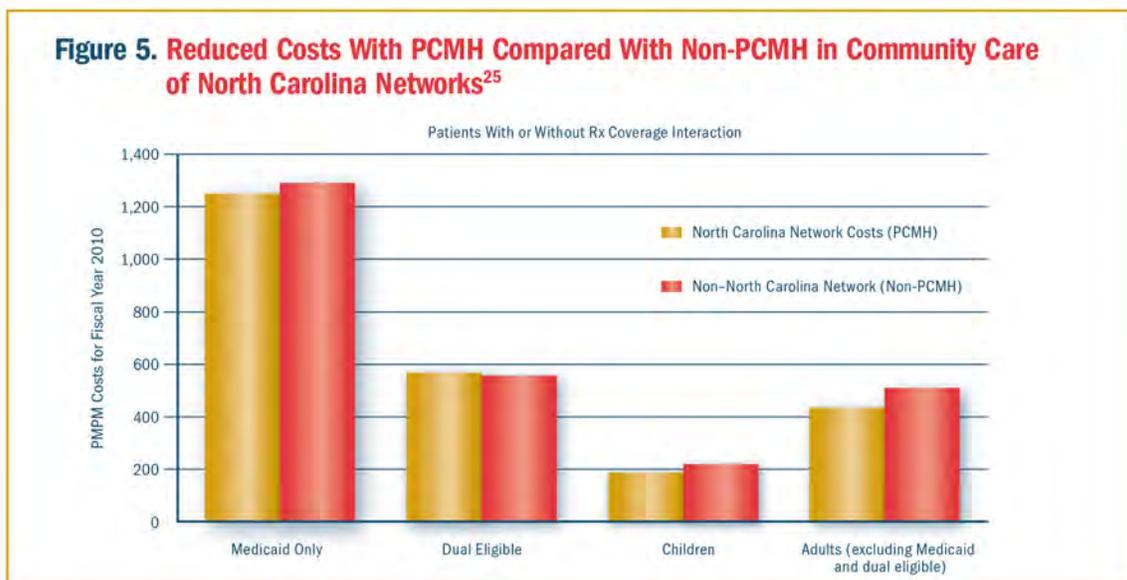
Currently the focus of these interventions has been on patients who use the on-site pharmacy, but the practice is looking to partner with local pharmacies to expand the program to all the clinic's patients. The primary obstacle in achieving this endeavor is overcoming EMR compatibility issues with the participating pharmacies.

The clinic also has plans to enhance its EMR to more efficiently identify patients who are experiencing gaps in therapy. Adding the ability to search by drug class or other parameters would help capture patients who have not returned to the practice after their initial appointment. The clinic is also working to identify those factors that place a patient in the high-risk category for therapy gaps or identifying groups that responded well to the initial intervention—especially those who are experiencing transitions in care, are new to the clinic or have a new diagnosis.

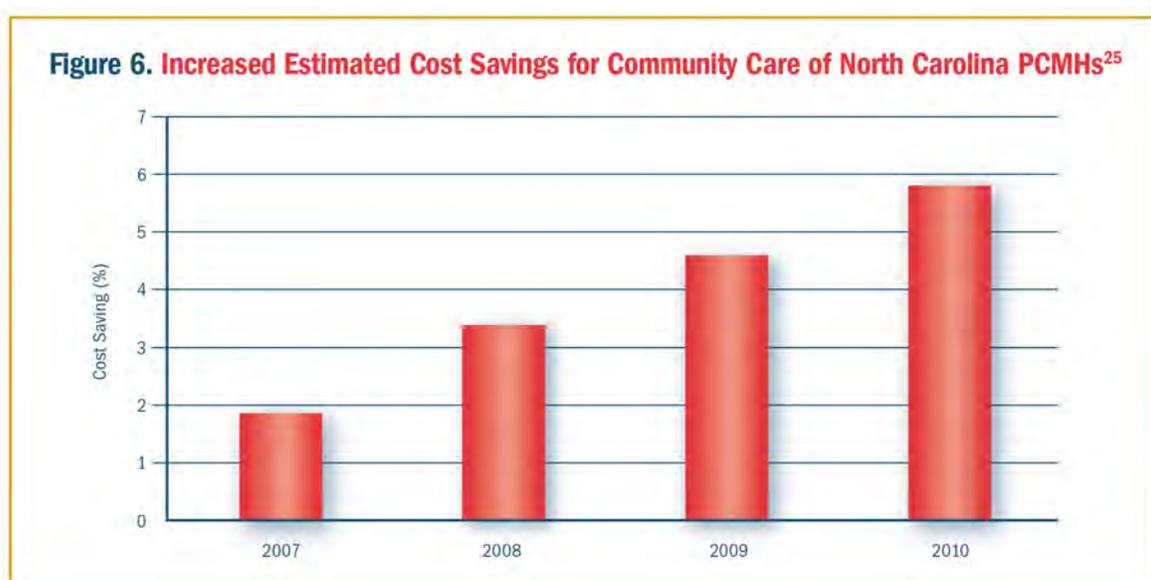
## Hospital and ED Admissions Are Associated With the Largest Reduction in Costs

The hope that a PCMH will help realize cost savings through reduced hospital and ED admissions has been demonstrated in many of the PCMH projects.<sup>17</sup> Group Health Cooperative of Puget Sound's PCMH had a \$10 per member per month (PMPM) reduction in total costs, a \$14 PMPM reduction in inpatient hospital costs and a \$4 PMPM reduction in ED costs, when compared with the non-PCMH practices. On average, the total PMPM cost was \$488 for the PCMH patients vs. \$498 for patients not in a medical home ( $P = .076$ ). This cost reduction was also associated with a 16 percent reduction in hospital admissions ( $P < .001$ ) and a 29 percent reduction in ED use ( $P < .001$ ).<sup>17</sup>

The Community Care of North Carolina networks is another example of cost reductions in a PCMH achieved mainly through reductions in hospitalization and ER admissions. Community Care of North Carolina, which during 2007 to 2010 focused efforts on membership-wide initiatives to advance the medical home model, sought to determine the effect of the PCMH care management activities on PMPM costs during that time using claims data. The network evaluated 2010 claims data for the beneficiaries who were, and were not, enrolled in the network and found that, in general, costs were lower for the group in the North Carolina network when compared with those not in the network (see Figure 5). The PMPM North Carolina network costs for fiscal year 2010 are about 15 percent lower than the nonnetwork costs for children and adult eligibility groups. For the Medicaid-only eligibility group, PMPM costs were about 3.3 percent lower than the nonnetwork PMPM costs. One group, the dual-eligible group had higher costs in the network group compared with the nonnetwork group (1.8 percent).<sup>25</sup>



Based on the 2010 PMPM savings estimates, North Carolina calculated total cost savings estimates for prior fiscal years (see **Figure 6**). This suggests the savings potentially attributable to the North Carolina Network have grown during the four-year study period. Note that all savings estimates are net of the PMPM payments paid to Community Care of North Carolina (i.e., Community Care of North Carolina management fees have been included in the expenses).<sup>25</sup>



Community Care of North Carolina attributed the majority of the cost savings to reductions seen in hospital and ER costs.<sup>25</sup>

Many other PCMH programs have demonstrated benefits similar to those seen by Group Health Cooperative of Puget Sound and Community Care of North Carolina (see **Table 1**).

### **Geisinger Health System’s Proven Health Navigator Shows Significant Cost Reductions With Continued Participation in the PCMH**

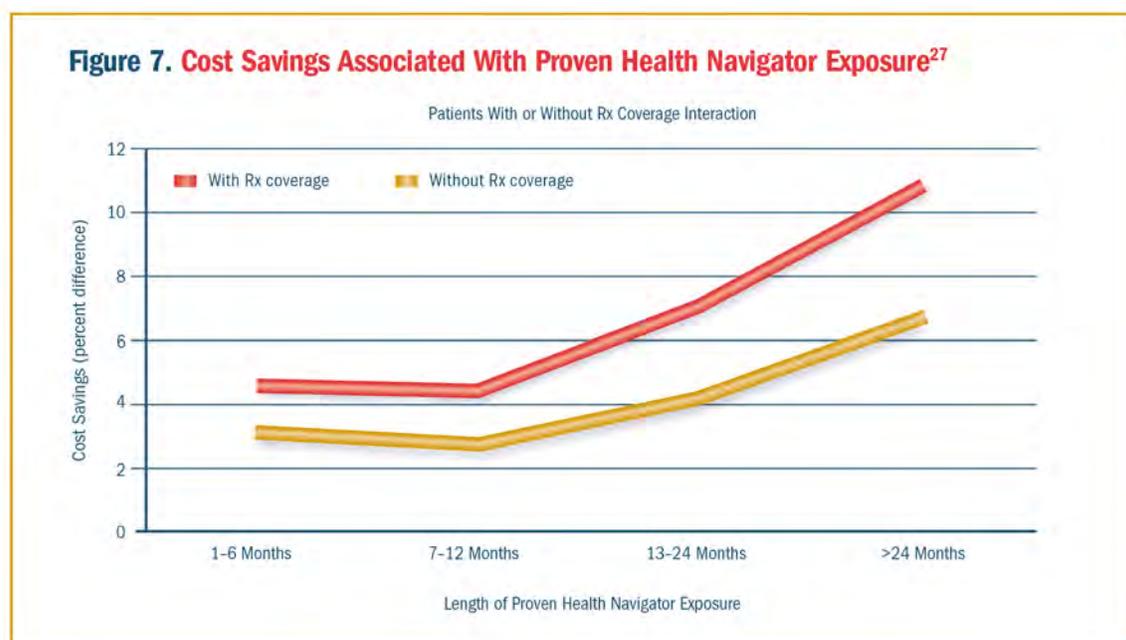
Geisinger Health System is a not-for-profit, integrated health care organization that includes 800 physicians and two acute tertiary/quaternary care hospitals serving 190,000 commercial and 38,000 Medicare patients. The Geisinger Health Plan also has a network of more than 18,000 non-Geisinger practitioners and 80 non-Geisinger hospitals. Since 2006, Geisinger has been implementing the Proven Health Navigator, an advanced PCMH model for care, across many of its practices. Early evaluations of the model showed a significant improvement in quality outcomes, such as reduced diabetic amputations and cases of end-stage renal disease. At the same time, the program has demonstrated significant reductions in hospital admissions and costs.

**Table 1. Hospital Admissions and ED Reductions and Cost Savings in the PCMH<sup>26</sup>**

Initiative	Year(s) of Data Review	Hospital Admissions and ED Reductions	Cost Savings
Air Force (2011)	2009-2011	<ul style="list-style-type: none"> <li>14% fewer ED and urgent care visits</li> </ul>	\$300,000 saved annually through improved diabetes care management
Minnesota: HealthPartners	2004-2009	<ul style="list-style-type: none"> <li>39% decrease in ED visits</li> <li>24% decrease in hospital admissions</li> </ul>	Overall costs decreased to 92% of state average in 2008
Blue Cross Blue Shield of New Jersey (Horizon BCBSNJ)	2011	<ul style="list-style-type: none"> <li>26% decrease in ED visits</li> <li>21% decrease in hospital admissions</li> </ul>	10% lower PMPM costs
New York: Capital District Physicians' Health Plan	Not available	<ul style="list-style-type: none"> <li>24% decrease in hospital admissions</li> </ul>	9% lower overall medical cost increases, resulting in savings of \$32 PMPM
Pennsylvania: Geisinger Health System Proven Health Navigator PCMH model	2005-2010	<ul style="list-style-type: none"> <li>25% decrease in hospital admissions</li> </ul>	<ul style="list-style-type: none"> <li>7.1% lower cumulative health care cost savings (2006-2010)</li> <li>7% lower cumulative total spending (2005-2008)</li> </ul>
Pennsylvania: University of Pittsburgh Medical Center	2009	<ul style="list-style-type: none"> <li>13% decrease in hospitalizations</li> </ul>	<ul style="list-style-type: none"> <li>4% decrease in medical costs</li> </ul>
Blue Cross Blue Shield of South Carolina (Palmetto Primary Care Physicians)	2008-2011	<ul style="list-style-type: none"> <li>25.9% decrease in ED visits</li> </ul>	<ul style="list-style-type: none"> <li>6.5% lower total PMPM medical costs</li> </ul>
Vermont Medicaid	2008-2010	<ul style="list-style-type: none"> <li>21% decrease in hospital inpatient use</li> <li>31% decrease in ED use</li> </ul>	<ul style="list-style-type: none"> <li>22% decrease in PMPM inpatient costs</li> <li>36% decrease in PMPM ED costs</li> </ul>
Group Health of Washington	2006-2008	<ul style="list-style-type: none"> <li>29% decrease in ED visits</li> <li>11% decrease in hospitalizations for ambulatory care-sensitive conditions</li> </ul>	<ul style="list-style-type: none"> <li>Net cost savings of \$17 PMPM</li> </ul>

During an assessment of the program in 2009, it was found that over the previous two years, total hospital admissions were reduced by 18 percent ( $P < .01$ ) and readmissions were reduced by 36 percent ( $P < .02$ ), conferring a 7 percent reduction in spending.<sup>18,27,28</sup>

Not only does the Geisinger Proven Health Navigator model demonstrate quality, efficiency and overall cost improvements, it also shows that these cost reductions increase with continued participation in a PCMH. Data were evaluated in 2010 to determine the effect of continued participation in a PCMH on cost. It was determined that cost savings increased with increased patient duration in the Proven Health Navigator program in patients with and without drug coverage, with the largest and statistically most significant percent savings observed in the highest category of Proven Health Navigator exposure (>24 months) (see Figure 7).<sup>27</sup>



## PCMHs Have Demonstrated Cost Savings While Improving Quality of Care

As stated previously, the United States continues to face rising health care costs across the country despite its lower quality of care compared with other industrialized nations.<sup>29,30</sup> More widespread use of the PCMH model could help stem the tide of these rising costs while simultaneously improving quality of care through modifications to primary care clinical systems, better coordination and increased patient focus. Many policy makers, payers, purchasers and primary care leaders see the model as one of the most important vehicles for achieving these goals.<sup>31-34</sup> So far, many outcomes from PCMH programs indicate that the model has the potential to live up to these high expectations. For example, Group

Health Cooperative's PCMH pilot program (discussed earlier in the chapter), demonstrated improvement in patient experiences and quality of care and also estimated a total savings of \$123.60 per patient per year.<sup>14</sup> The Empire Blue Cross and Blue Shield study discussed previously, which also demonstrated significant improvements in patient outcomes and reduced hospitalization and ER visits, also had significant reductions in PMPM medical and PMPM total cost associated with PCMH- treated pediatric and adult patients compared with those not treated in a PCMH.<sup>24</sup>

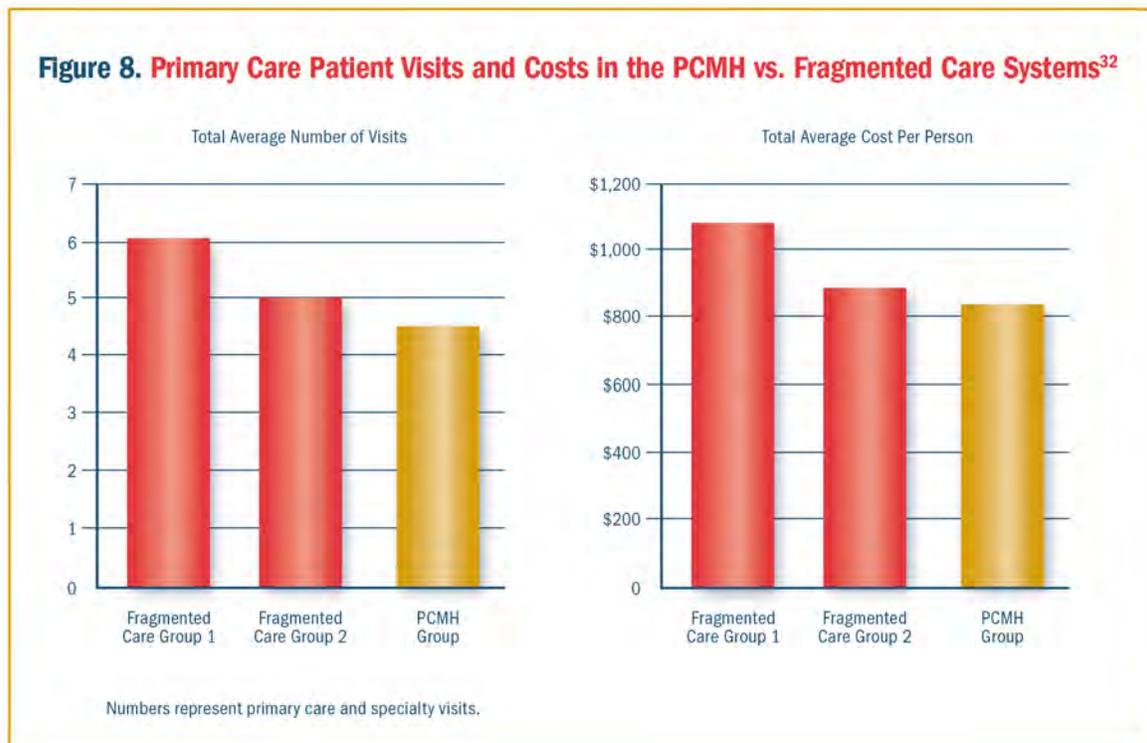
### **PCMHs May Reduce Costs in Complex and Costly Patients**

The HealthPartners health plan, a large, nonprofit Minnesota insurer, whose services are integrated with the 700-physician, multispecialty HealthPartners Medical Group, examined patient-level cost data to determine how implementation of its PCMH system affected medical costs. The PCMH systems were measured using the Physician Practice Connections®-Readiness Survey™ (PPC®-RS™) developed by NCQA. The survey uses 53 questions on practice systems related to preventive services, depression, diabetes, cardiovascular disease and asthma; these questions are then categorized into domains such as delivery system redesign, decision support and health care organization. Improvement in these elements was scored and compared with cost outcomes.<sup>31</sup>

Overall, the analysis found that better PPC®-RS™ scores were not associated with lower costs. But better scores were associated with lower costs for subgroups of patients taking multiple medications. Among patients taking an average of 4.6 medications, a 10 percent increase in the total PPC®-RS™ score was associated with a 0.6 percent decrease in total costs. The study found that, as medication use increased, this impact became more pronounced. For those patients with no medication use, the expected cost savings was minimal. But, for patients taking between three and six medications, the impact was a cost reduction of approximately \$200 to \$400 over the 12-month study period (1.8 percent to 2.5 percent of total costs). For patients taking 11 or more prescriptions, the estimated impact jumps significantly to \$2,378 per person ( $P = .002$ ), or 4.4 percent of total costs. This suggests that higher-functioning PCMHs may help to reduce costs among the most complex and costly patients.<sup>31</sup>

## PCMHs Are Associated With Fewer Office Visits and Lower Costs per Patient

HealthPartners Medical Group conducted a study of utilization and cost over a 12-month period among patients participating in a PCMH program compared with two fragmented care groups to determine the frequency of patient visits and its effect on costs. The study found that, in general, the costs per person closely mirrored the number of visits. Fragmented care groups had a higher number of total visits and the highest total costs (\$1079.90 and \$866.90, respectively); these costs were significantly higher than those of the PCMH patients, who averaged \$838.40 ( $P < .0001$ ) (see Figure 8). The study concluded that patients in the PCMH programs made significantly fewer primary care and specialist visits than did those in the two fragmented groups. Associated professional fees were also significantly lower for the PCMH patients than for enrollees receiving less consistent primary care.<sup>32</sup> While this finding might seem to contradict other findings where primary care visits increased for patients in a PCMH, the authors noted that the findings were consistent with a previous study that found U.S. health plan members who visited more than one primary care physician were also more likely to see a greater number of specialists, undergo more procedures and incur more costs.<sup>32,35</sup>



## Not All Components of the PCMH Programs Have Demonstrated Cost Savings

In the short term, implementing some elements of the PCMH may be associated with financial expenditures for some practices.<sup>35</sup> A study of the 696 PCMHs funded by the U.S. Health Resources and Services Administration sought to determine whether the PCMH ratings, compiled based on survey results from health center administrators conducted by Harris Interactive of all 1,009 Health Resources and Services Administration–funded community health centers, were associated with operating costs. The survey was used to rate programs from 0 (worst) to 100 (best) based on access/communication, care management, external coordination, patient tracking, test/referral tracking and quality improvement. The cost data were obtained from the Uniform Data System reports submitted to the U.S. Health Resources and Services Administration. The study found that, for the average health center, a 10-point higher, total PCMH score was associated with a \$2.26 (4.6 percent) higher operating cost per patient per month. However, the study did find that one of the subscales was not associated with higher operating costs but rather a lower one. A 10-point higher PCMH subscale score for access/communication was associated with lower operating cost per physician full-time equivalent.<sup>36</sup>

However, findings from many other PCMH programs, indicate the PCMH will lead to savings in the total cost of care through decreased redundancies, medical errors, ED visits, hospitalizations and costly complications.<sup>24,31,32</sup>

## The PCMHs Result in Better Patient Outcomes and Reduced Costs

According to a 2010 report commissioned by the Patient-Centered Primary Care Collaborative that reviewed PCMH initiatives serving over a million patients, investing in primary care PCMHs results in improved quality of care and patient experiences and reductions in expensive hospital and ED utilization. There is strong evidence that investments in primary care can bend the cost curve, with several major evaluations showing that PCMH initiatives have produced a net savings in total health care expenditures for the patients served by these initiatives.<sup>17</sup>

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## A Look to the Future

The demonstrated success of patient-centered medical home (PCMH) pilots has opened the door for expansion of the PCMH concept and framework. The future of the PCMH is likely to include revision and refinement of the model and extension of the concept to incorporate health care tools and services not traditionally considered part of primary care, such as including a mental and behavioral health practitioner or pharmacist on the PCMH care team. Additionally, the PCMH principles are expanding beyond primary care and are being applied to specialties and even more globally across the health care field.

### Accountable Care Organizations

The Accountable Care Organization (ACO) model represents a new way of organizing care that builds on the PCMH. While the PCMH is designed to improve the coordination of care among practitioners, ACOs have the broader goal of coordinating care across the entire continuum of health care, from physicians to hospitals to other clinicians. An ACO is a group of health care practitioners who agree to take on a shared responsibility for the care of a defined population of patients while assuring active management of the quality and cost of that care. The health care reform law (Affordable Care Act) has helped bring ACOs to center stage by encouraging their formation of ACOs.<sup>1,2</sup>

ACOs and PCMHs share a common goal of improving care by coordinating care across services and providing a higher quality of care at a lower cost. Like PCMH, the ACO model advocates principles of patient-centered care that are similar to those outlined in the Joint Principles of the Patient-Centered Medical Home (see Table 1).<sup>1,3,4</sup>

ACOs can take different forms depending on the needs and qualities of practitioners and providers involved. They can be formed to take advantage of opportunities provided by either government agencies such as the Centers for Medicare & Medicaid Services (CMS) or states or by private health plans.<sup>2</sup>

In November 2011, the CMS published a final rule to implement ACOs for Medicare patients called “the shared savings program.” The final rule has a three-part aim that closely mirrors many of the goals of the PCMHs and identifies the PCMH as the key primary care foundation of the ACO model<sup>1,4</sup>:

1. Better care for individuals
2. Better health for populations
3. Lower growth in Medicare Parts A and B expenditures

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Millions of patients in the United States are already receiving care through public and private ACOs.<sup>5,6</sup>

- Over two million Medicare patients are cared for by an ACO.
- Fifteen million non-Medicare patients are receiving care within a medical practice that is part of a Medicare ACO.
- Eight million to 14 million commercially insured patients are in non-Medicare ACOs.

To learn more about ACOs and the CMS final rule, visit <http://www.gpo.gov/fdsys/pkg/FR-2011-11-02/pdf/2011-27461.pdf>.

The National Committee for Quality Assurance (NCQA) also offers an Accreditation Program for ACOs. For more information on this Program, please visit <http://www.ncqa.org/Programs/Accreditation/AccountableCareOrganizationACO.aspx>.

**Table 1. The ACO and PCMH Share Similar Patient-Centered Principles<sup>1,3</sup>**

ACO Patient-Centered Aspects	PCMH Principles
Beneficiary involvement in governance	Patients and families participate in quality improvement activities at the practice level.
Process for beneficiary engagement in decision making	Evidence-based medicine and clinical decision support tools guide decision making.
Individual care plans for high-risk patients	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 clinicians, patients and the patient's family.
Mechanisms for care coordination	Care is coordinated and/or integrated across all elements of the complex health care system and the patient's community.
Clear patient-practitioner communication	Enhanced access to care is available through systems such as open scheduling, expanded hours and new options for communication between patients, their personal clinician and practice staff.
Measure of physician and clinical service performance	Clinicians in the practice accept accountability for continuous quality improvement through voluntary engagement in performance measurement and improvement.
Surveys of beneficiaries to assess satisfaction with care	Patients actively participate in decision making, and feedback is sought to ensure patients' expectations are being met.

## Incorporating Mental and Behavioral Health in a PCMH

As discussed in previous chapters, implementing and sustaining a PCMH requires a process of continual assessment and modification. Practices must make changes and refine processes or tools based on the needs of the practice and to ensure the best patient-centered care possible. Often, this involves expanding the PCMH team to provide improved options and care for patients.

The PCMH advocates a whole-person, team-based approach centered around a primary care practitioner and including a variety of health care professionals.<sup>3,7</sup> However, the PCMH team is not limited to traditional, physical health care practitioners. Many practices are beginning to enhance their services by including additional support staff to ensure patients receive the whole-person care outlined in the PCMH model. This may include incorporating the following health care professionals as part of the PCMH team<sup>8</sup>:

- Social workers
- Care coordinators
- Palliative care practitioners
- Physical, occupational and speech therapists
- Community health workers
- Behavioral health practitioners
- Dieticians
- Pharmacists

While incorporating any additional health care professionals into a PCMH team is dependent on the needs of the specific PCMH and its patients, recently there has been growing interest in the integration of behavioral health services. Some maintain that the PCMHs cannot reach their full potential without incorporation of these services.<sup>8-10</sup>

Because behavioral health and physical health are intertwined, many believe that both types of care should be provided and linked together within health care delivery systems.<sup>11</sup> Failure to treat physical and mental health conditions can yield poorer outcomes and higher costs.<sup>9</sup> In addition, patients treated for mental illness, particularly those with severe illness that are treated outside the primary care setting, often are at a greater risk of developing life-threatening physical ailments.<sup>9</sup> One study of eight states (Arizona, Missouri, Oklahoma, Rhode Island, Texas, Utah,

Vermont and Virginia) showed that patients who receive treatment through the state public mental health authorities were at a higher risk of dying compared with the general population of those states, mainly due to the lack of appropriate primary care.<sup>9,11</sup> Mental health and substance abuse problems are among the most common conditions seen in primary care settings and frequently occur with other medical problems; accordingly, primary care practitioners (PCPs) are often in the best position to identify, diagnose and treat these conditions.<sup>10</sup>

Therefore, to address the patient's physical and mental health needs, incorporation of behavioral health care practitioners is important. It may not only improve care provided to patients, but it may also reduce costs.<sup>9,10</sup> In acknowledgement of these opportunities, the Standards and Guidelines for NCQA's Patient-Centered Medical Home (PCMH) 2011 Recognition have placed a stronger focus on integrating behavioral health care and care management than was present in the earlier versions.<sup>12</sup>

Incorporating behavioral health into PCMH is a critical component for patient care. The Barre Family Health Center in Barre, Massachusetts, which is part of the University of Massachusetts (UMass) health system, has made it one of its key objectives. As evidenced in the following Profile, Barre has instituted several procedures and policies that help to integrate behavioral and mental health into care for patients as part of its PCMH initiative.

# Profile: Incorporating Routine Behavioral Health Screenings Into the Patient-Centered Medical Home

## Background

Management of chronic diseases can be challenging in primary care, for the health care practitioner and the patient, and can be even more difficult when behavioral health issues are present. A patient suffering from depression, for example, may not have the ability or motivation to be diligent about self-care, medication adherence or seeking out clinical services. All of these factors can lead to poorer outcomes. Barre Family Health Center (BFHC), located in Barre, Massachusetts, is a patient-centered medical home (PCMH) with Level 3 Recognition from the National Committee for Quality Assurance (NCQA) with a history of commitment to integrating behavioral health services into its practice. It recognizes that the more complete the integration, the better unmet behavioral health needs can be addressed, resulting in better outcomes for all patients, particularly those with chronic medical conditions. A fundamental aspect of such integration is emphasis on earlier recognition and treatment of behavioral health disorders.

## Overview

BFHC, which is part of UMass Memorial Health Care, consists of four teams, each with its own staff of at least two attending physicians, family medicine residents and a combination of registered nurses, licensed practical nurses and medical assistants. Each team has a designated physical space in the practice to service patients. The behavioral health service is located in the center of these practice areas so that all teams have physical access to its services. All four team areas and the behavioral health service share the waiting room and the electronic health record (EHR) system. This allows all teams access to behavioral health services. The behavioral health team consists of two psychologists, one psychology fellow and a consulting psychiatrist. By incorporating these behavioral health staff members into the PCMH, BFHC is able to provide convenient access to behavioral services with same-day appointments for patients who come in for a routine checkup.

As part of a larger initiative to build a system wherein behavioral health is incorporated into the flow of the PCMH, a screening program was initiated to proactively identify patients with depression, anxiety or alcohol-use disorders. Once those patients were identified, the goal of this program was to improve patient health, relieve the burden of the specialty mental health system and to reduce emergency department visits due to behavioral health diagnoses. Before

this initiative, screening of adults for unidentified or untreated behavioral health needs was left up to the individual practitioner and his or her interpretation of screening recommendations, resulting in a great deal of variability. BFHC sought to align its practice with the United States Preventive Services Task Force recommendations to screen adults in primary care for depression and misuse of alcohol. Additionally, the practice made the decision to include screening for comorbid anxiety disorders, as they not only negatively affect a patient's general health but can complicate treatment of depression and alcohol misuse.

## Program Description

In December 2010, this project was initiated by the health center's PCMH leadership team. Included on the team were a clinical psychologist, family physician, family medicine resident, nurse, clinical care manager, medical assistant, pharmacist, medical records staff, an information systems consultant, practice manager and medical director. Three primary tasks were identified and assigned. The first task was to develop a unified screener composed of items on depression, anxiety and alcohol misuse. The questionnaire was based on a combination of the nine-item depression scale of the Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder 7-Item Scale (GAD-7) and Alcohol Use Disorders Identification Test (AUDIT).

A second task was to create a workflow to incorporate the screener. Much of the effort in accomplishing this task involved working with the EHR vendor to create a flow sheet with customized fields to enter screener data and a process to scan in and title the test appropriately. Because the EHR system already contained established flow sheets that tracked measures such as weight and blood pressure, adding a behavioral health flow sheet was a relatively easy task for the EHR vendor. A scanning process was already in place, as well, which the vendor customized to accommodate the screener.

A third task was to use the scores from the screening tool to create registries of patients who are at high risk for behavioral health needs. The BFHC was able to use UMass Memorial's Medical Center Medical Management Department as a resource, which has extensive experience in creating and maintaining registries for all practices.

One of the four teams in the health center was chosen to implement the pilot program. Buy-in was obtained from all team members, including physicians, nursing staff, medical assistants and personnel from Medical Records and the EHR. The questionnaire and workflow went through a revision process of four PDSA cycles of plan, do, study and act, during which they were refined until all staff members approved. Questionnaire drafts were written and revised with input from the patients and staff. Early drafts were very complicated and required more work from the nursing staff to answer questions from patients who were sometimes confused. More work was

also required from the Medical Records staff, who entered the results. After this pilot period, the screening program was then implemented in the other three teams. Each team had a project “champion” to facilitate use of the screener. As the nurses were the ones to administer the questionnaire, their input was highly valued and the screening process was adjusted as needed based on their continual feedback.

The workflow for administering the screener was also adjusted based on feedback and finalized as follows:

1. After a nurse administers the screener and the patient completes it, the physician adds up the scores for the PHQ-9, GAD-7 and AUDIT separately.
2. The physician and patient review the results and collaboratively determine whether any behavioral health services are needed.
3. The screener is then given to the medical records staff, who enter the scores into the EHR in discrete fields for depression, anxiety and alcohol use.
4. The EHR generates a flow sheet for the patient to track his or her progress and response to treatment over time.
5. Then the hard copy of the screener is scanned into the EHR and shredded once scanning is complete.
6. The entered scores can then be used to indicate whether an individual patient is due for a screening, to generate lists of patients due for a screening and to create registries of patients who are at high risk for behavioral health needs.

## Challenges

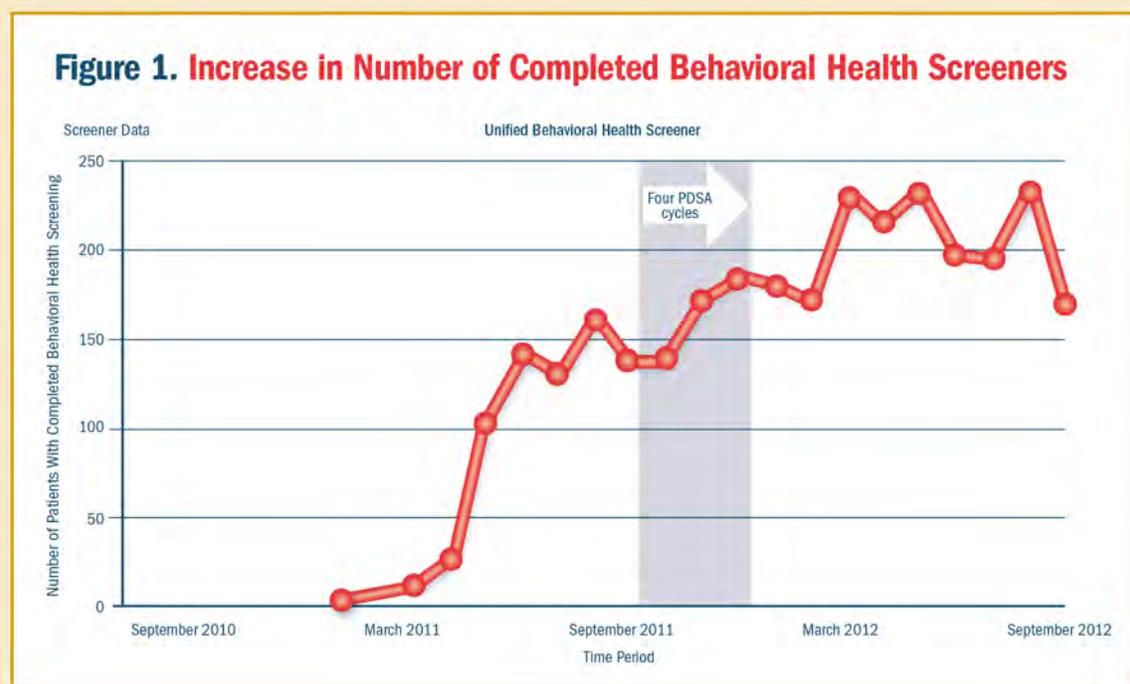
Retraining is an important hurdle for BFHC to overcome in the shift to a PCMH model of care and the integration of behavioral health care. First, with PCMH implementation, staff needed to be retrained to work as a team. The previous model of care was physician centric; staff received direction from the physician on virtually every step in the process of care. In the PCMH model, the physician is the team leader, but nurses, medical assistants and registration staff are empowered to be proactive partners in the process of care. Second, with the integration of behavioral health care, the behavioral staff needed to be retrained to orient themselves to work in the primary care setting. The BFHC used a Web-based training program developed by UMass Medical School, which has trained over 1,000 behavioral health practitioners to reorient their skills to work in primary care.

The BFHC also experienced financial challenges, one of which was the difference in billing between mental health and primary care services. Any primary care practice that seeks to

integrate a behavioral health practitioner should consider investing time and money in training its own staff or enlisting a third party to assist in billing. Because the BFHC is part of UMass Memorial Health Care, it was able to partner with the Department of Psychiatry and leverage its expertise in billing for mental health services.

## Outcomes

Originally, the team set a goal that 90 percent of adult patients presenting for an annual physical exam would complete the screener. However, since the EHR system cannot currently track the number of exams conducted, there is no way to concretely determine if this goal has been reached. Consequently, this goal has been adjusted to simply increasing the raw number of screenings completed from month to month. A run chart showing these data was generated (see **Figure 1**), and the number of screenings completed has increased dramatically.



The increase in the number of adults screened has led to improvements in prevention, chronic care and patient engagement. Making the screening routine and the results trackable allowed the practice to find and manage patients with behavioral health needs in the primary care setting. This system also assists in the monitoring of patients with chronic behavioral health needs. The physician and patient can monitor symptoms with the help of the screening mechanism and can discuss the screening results during the visit. This monitoring can reinforce to the patient that the primary care center is invested in his or her overall health.

Additionally, the screening process has enabled nursing staff to involve themselves more directly in patient care. It has become a tool to facilitate communication between nursing staff and physicians regarding the patient. The program also resulted in greater coordination of care between the primary care physicians and the behavioral health practitioners. Since the behavioral health care integration at the BFHC allows for same-day care for patients who screened positive on the questionnaire, patients' behavioral health needs can be addressed immediately.

The screening initiative implemented at the BFHC has served as a model for other practices in the UMass Memorial Health Care system working toward NCQA PCMH Recognition. The aspects of the initiative that have been most influential are the mechanisms used to manage depression as a chronic condition and the system of inputting screening results into the EHR system.

## Lessons Learned

An important lesson learned was the value of starting off simply when implementing behavioral health initiatives into a PCMH. BFHC began by focusing on the behavioral health interventions of one specific disease it was already trying to improve, rather than applying the new approach to all diseases. This helped BFHC to focus and refine the approach before rolling it out to a larger group of patients. For example, if a practice is working on improving patients' control of diabetes, it can start by recognizing that many patients with diabetes will have co-occurring depression and anxiety. It makes more sense and increases the likelihood of buy-in from staff to target screening toward those patients because they are able to treat a patient's depression and diabetes together as a team. Focusing early efforts around health behavior issues is an easy first step.

Another simple step is to implement just the PHQ-9 screening as part of the routine care for all adults. A practice can then gradually find ways to build those results into its EHR. Then, later, it can focus on creating registries as a mechanism to start providing more proactive care.

## Future Directions

In the next year, the center plans to integrate billing into its EHR so that it can track how many patients are presenting for their annual exam and other outcomes more effectively. Additional data, such as number of referrals to the behavioral health service generated by the screener, would help inform decisions on the optimal frequency of screening and also help identify areas for improvement.

Currently, most of the BFHC's patients see the behavioral health practitioner through referrals or transfers. A future goal of the practice is to use the high-risk registries created through the EHR to identify patients with behavioral health needs who are not meeting with the BFHC staff. With these registries and the hiring of additional staff, the center would be able to proactively reach out to these patients to offer preventive care and possibly avoid emergency room visits. This would be part of a larger movement in behavioral health integration toward more population-based care.

In the last year and a half, BFHC has added a care manager as part of its PCMH team. Optimizing this role in the PCMH is an ongoing process. The care manager plays a critical role in integration between the PCMH and the behavioral health service by

- Following up with patients admitted to the hospital or seen in the emergency room for behavioral and mental health needs
- Working with patients with chronic medical conditions, a very high percentage of whom have comorbid behavioral health needs, and help identify those at risk
- Connecting patients with behavioral and mental health needs to a member of the PCMH team
- Locating additional outside resources for patients with behavioral and mental health needs

## Beyond the “Primary Care” of the PCMH

The core of the PCMH model is the relationship between the PCP and the patient.<sup>3</sup> Beyond the primary care setting, the PCMH also coordinates the care of patients across health care settings and transitions, including specialty care and inpatient hospital services.<sup>8</sup>

### The Foundation for the PCMH-Neighborhood Concept Has Been Established by the American College of Physicians

Most primary care medical societies support the PCMH concept. However, some specialty societies have questioned how specialists will be integrated into the model.<sup>13-15</sup> The Council of Subspecialty Societies of the American College of Physicians (ACP) sought to address this question by establishing a Workgroup to elucidate the relationship between the PCMH care model and specialty practices. The Workgroup findings highlight the importance of specialty and subspecialty practices within the PCMH and provide a definition of the PCMH Neighbor (PCMH-N) concept (see **Table 2**).<sup>16</sup>

The PCMH-N concept recognizes the importance of effectively coordinating and integrating services provided by specialists and subspecialists with the services provided by the PCMH. The ACP also outlines the types of clinical interactions between the PCMH and the PCMH-N. These include preconsultation exchanges to expedite/prioritize care or clarify the need for a referral, formal consultations or comanagement. It also defines a specialty PCMH, which would be a medical home equipped to handle a specific condition of the patient, for example, an infectious disease practice caring for a patient with HIV/AIDS with complex medical and treatment issues or a nephrology practice caring for a patient on dialysis with end-stage renal disease.<sup>16</sup>

**On March 25, 2013, NCQA will offer a new Recognition Program for specialty practices engaged in the patient-centered model. NCQA's Patient-Centered Specialty Practice Recognition will help specialty practices coordinate care with their primary care colleagues and with each other and meet the goals of providing timely access to care and continuous quality improvement. The Program also aims to reduce duplication of tests, improve measure performance and enhance communication with patients, families and caregivers.**

**Table 2. The ACP Definition of a PCMH-N<sup>16</sup>****A specialty/subspecialty practice recognized as a PCMH-N engages in processes that**

- Ensure effective communication, coordination and integration with the PCMH practices in a bidirectional manner to provide high-quality and efficient care
- Ensure appropriate and timely consultations and referrals that complement the aims of the PCMH
- Ensure the efficient, appropriate and effective flow of patient and care information
- Effectively guide determination of responsibility in comanagement situations
- Support patient-centered care, enhanced care access and high levels of care quality and safety
- Support the PCMH practice as the provider of whole-person primary care to the patient and have overall responsibility for ensuring the coordination and integration of the care provided by all involved physicians and other health care professionals

**The ACP position paper on PCMH-N can be found at**

**[http://www.acponline.org/acp\\_policy/policies/pcmh\\_interface\\_subspecialty\\_practices\\_2010.pdf](http://www.acponline.org/acp_policy/policies/pcmh_interface_subspecialty_practices_2010.pdf)**

The intent of the PCMH model is not to restrict access to specialty care but to help coordinate and deliver quality care for patients. It will be important to establish guidelines between the PCMHs and PCMH-Ns that foster proper referrals, communication and care while ensuring that quality of care is valued over cost saving.

### **Non-Primary Care Practices Can Implement PCMH Principles**

To obtain NCQA Recognition as a PCMH, a practice must demonstrate that<sup>17</sup>

- Care is not limited to a specific time period.
- Whole-person, first-contact, continuous, comprehensive care is provided for at least 75 percent of patients.

Based on these criteria, many specialty practices are not eligible for PCMH Recognition. That does not mean, however, that implementation of the principles of the PCMH is limited to only primary care practices. Specialty practices may achieve the same benefits of coordination, better quality of care and patient satisfaction by incorporating the PCMH elements into practice.

The following Profile explores how a community-based oncology practice in Drexel Hill, Pennsylvania—Consultants in Medical Oncology and Hematology—implements PCMH principles and works with PCPs and PCMHs to ensure patient-centered, quality care for patients with cancer.

# Profile: Adapting Patient-Centered Medical Home Principles and Tools for an Oncology Practice

## Background

The patient-centered medical home (PCMH) model of care has emerged as a possible answer to some of the challenges currently facing the health care delivery and payment system, including fragmentation of care and rising costs. Primary care practices have been adopting the model and, in some cases, have been compensated for improving care when they otherwise may have realized decreasing reimbursement. Some specialty practices have seen the benefits of this coordinated model of care and are customizing the PCMH model, which is focused around primary care, to fit the needs of specialty practices. Consultants in Medical Oncology and Hematology (CMOH), a community-based hematology-oncology practice in Drexel Hill, Pennsylvania, recognized that many of the gaps between the quality standards and care delivery standards found in the oncology setting could be addressed by the PCMH model. By applying the principles of PCMH to oncology, it has created a care team approach that encourages rational utilization of health care resources through the use of evidence-based guidelines; reduces hospitalization, emergency room (ER) visits and use of imaging services and increased engagement with patients regarding end-of-life care decisions. CMOH has labeled this model of care the Oncology Patient Centered Medical Home® (OPCMH).

## Overview

Over the last five years, CMOH has implemented or enhanced several processes and tools to help it achieve the principles of the OPCMH. These tools include a nurse triage symptom algorithm system, improved documentation, coordination of care agreements with primary care practices and additional focus on patient engagement. To accommodate these changes, it needed to effectively use electronic health records (EHR) to track the progress of measurable goals and improve workflow to

- Maintain a patient-centric approach
- Minimize clinically irrelevant physician activity
- Improve accountability
- Address deficiencies of coordination, communication, access and engagements

Oncology Patient Centered Medical Home® is a registered trademark of Consultants in Medical Oncology and Hematology.

## Program Description

In 2003, CMOH implemented an EHR in its four-office practice. While the EHR addressed the immediate needs of nursing and office staff, it did not meet the needs of the physicians who wanted to use it for compiling and presenting patient data that could inform their clinical decisions and facilitate systematic measurement and process improvement. CMOH sought to achieve this through the synchronization of the EHR and clinical operations workflow. In 2004, the CMOH formed a team made up of a lead physician, the clinical nursing director and the information technology (IT) engineer to address inefficiencies in the EHR system and workflow that were impacting CMOH's ability to deliver efficient, patient-centered care. The first step was to identify areas for improvement in the day-to-day use of the EHR. The IT engineer observed a physician using the EHR and found it took 23 steps to gather relevant information on a patient's history, treatment and current condition. The practice reviewed available literature from various sources to incorporate decisions regarding best practices. These sources included the Institute of Medicine, National Comprehensive Cancer Network (NCCN), American Society of Clinical Oncology's Quality Oncology Practice Initiative, Oncology Nursing Society (ONS), American College of Surgeons Commission on Cancer and the National Committee for Quality Assurance (NCQA)'s PCMH Recognition Standards and Guidelines.

Within six months, the team developed a new workflow by integrating the EHR with internally developed clinical decision support software, which created efficiencies for the physician. It also promptly disseminated progress notes, thus informing all practitioners involved in the patient's care of current treatment or any changes in the patient's condition.

The software is constantly being modified to enhance CMOH workflow, process of care, documentation and communication. It is also a vehicle to provide real-time data regarding physician and staff performance and is able to measure requirements to meet NCQA's PCMH Recognition Standards and Elements. These IT solutions allow CMOH to set clinical, operational and quality goals. All staff members have access to the ongoing monitoring of process performance results, which can appear as soon as they log in. This serves as a reminder of the practice's priorities. Refinements of policies and procedures are ongoing and facilitated by the continuous improvements.

Improvement in workflow, specifically document completion and turnaround, has increased the effectiveness of CMOH's nurse triage system, which serves all four practice locations and is an essential resource for patients. Patients with questions or concerns about symptoms can call the triage number and speak to a seasoned oncology nurse. This nurse can access the patient's current information through the EHR, including documentation from the last appointment and the most current treatment decisions. Based on this information, the nurse can offer direct

symptom management when appropriate by following a set of algorithms that were adapted and expanded from the ONS symptom management tools. Having access to the most recent data means nurses are able to act more independently to resolve patients' concerns. Skilled oncology nurses are effective in discerning the patient's needs and providing advice within the level of their license. Prompt decision making improved patient satisfaction resulting in increased use of the system. As patients have become more familiar with the phone triage system, the number of patient calls early in the day has increased, eliminating the need for extending the weekday hours or adding weekend hours.

The practice references NCCN Guidelines<sup>®</sup> when building the care plans in the EHR. Assessment and documentation of patients' Eastern Cooperative Oncology Group (ECOG) Performance Status is a driver in determining treatment decisions. ECOG Performance Status is an indicator of the functional status of a patient with cancer. It is used to determine the impact of the disease, therapy and comorbid conditions on a patient's daily living abilities and quality of life. Focusing on a patient's Performance Status, rather than number of therapies, has been very valuable in making end-of-life care decisions. It sets the tone for a realistic discussion with patients and their families regarding patient function, quality of life and the impact of disease and therapy.

Adjustments to the IT systems were made so that CMOH could conduct chart audits for all patients with an ECOG Performance Status of 3 or higher to ensure the end-of-life–related section of the patient's progress note, entitled "Goals of Therapy," was updated based on status changes. Physicians are encouraged to communicate regularly with patients and their families about the natural history of their disease and treatment options, including the eventuality of hospice enrollment.

## Challenges

For CMOH, there were challenging aspects to the integration of the EHR and clinical operations workflow. The limitations of the EHR system required new software to be developed and staff needed to understand why and how their roles were changing. While the practice understood the need to distinguish itself and remain competitive, it was still sometimes difficult to find ways to incentivize the staff to modify their behavior. Once the physicians realized this new workflow would increase their efficiency, there was enthusiastic buy-in. All of the staff now see the concept of patient-centered care as the way that cancer care should be delivered.

NCCN Guidelines<sup>®</sup> is a registered trademark of the National Comprehensive Cancer Network.

## Outcomes

Over the past five years, the continuous adaptation of the PCMH model in the oncology setting has led to many improvements. Specifically, CMOH was able to reduce the incidence of hospitalization and ER visits, reduce the use of imaging services and other diagnostic tools, better coordinate services with other care practitioners and improve communication with patients regarding their care, especially palliative and hospice care options during later stages of disease. The practice was able to gather performance data in all of these areas. They were also able to demonstrate improved practice efficiency. In the past five years, the practice increased its patient base by 30 percent, while reducing its staff-to-physician ratio from 8.3 full-time equivalents (FTE) to 5.5 FTEs. In the same time period, ER visits decreased by 68 percent and hospital admissions decreased by 51 percent. The hospital length of stay decreased by 21 percent, while hospice length of stay increased by 26 percent. Reductions have also been seen in ER evaluations and hospital admissions occurring during the last 30 days of life (see **Table 1**).

**Table 1. OPCMH® Results at Consultants in Medical Oncology and Hematology**

	2007	2008	2009	2010	2011	Change
<b>Clinical Nurse Triage Management and Enhanced Access</b>						
Number of calls	2,102	2,594	3,261	3,965	4,375	52%
Patients seen within 24 hours	197	261	345	435	352	44%
Symptoms managed at home (%)	76.10	77.10	77.60	75.80	81.20	
<b>Utilization Measures</b>						
NCCN Guidelines® compliance (%)	87	90	93	94	96	
ER utilization (per chemotherapy patient per year [PCPPY])	1.64	1.27	1.11	0.91	0.81	-51%
Hospital admissions (PCPPY)	1.08	1.05	0.87	0.6	0.53	-51%
Hospice length of stay (days)	NM	NM	26	32	35	26%
ER evaluations occurring in last 30 days of life (%)	~	~	~	23	20	
Admissions occurring in last 30 days of life (%)	~	~	~	39	36	
Documentation turnaround time (days)	~	>28	28	3.8	1.9	

~ = Not measured.

The use of the clinical nurse triage system during the same five-year period has increased by 52 percent, and the number of patients seen within 24 hours has increased by 44 percent. As of 2011, 81 percent of patient-initiated symptom calls were able to be managed at home.

These improvements are attributable to the improvements in the telephone triage algorithms, staff training and the availability of real-time data made available through the IT solutions. Compliance with the NCCN Guidelines® has increased from 87 percent to 96 percent, and documentation turnaround time has decreased from over 28 days to 1.9 days.

These efforts have had a significant financial impact on the total cost of cancer care. According to CMOH's estimates based on internal data, the OPCMH model of care has saved \$1 million per physician per year, mainly from reduced utilization of unnecessary resources.

## Lessons Learned

CMOH learned several valuable lessons through this process. First, adopting an EHR does not guarantee improvements in outcomes. Coordination between a practice's clinical operations workflow and the EHR to deliver useful, actionable data is necessary to inform decisions and track progress. For CMOH this was achieved through a software overlay to a vendor's EHR. Second, secure physician support for change. The lead physician at the practice secured his colleagues' "buy-in" for standardized care processes by emphasizing the positive impact the program would have on quality, physician efficiency and practice sustainability.

Third, work collaboratively with payers to share goals, review data and identify new payment systems. Practices adopting this model may develop new programs (such as telephone triage symptom algorithms) that improve quality but do not qualify for reimbursement on their own or that reduce the need for reimbursable services (such as office visits). As a result, practices adopting this model may suffer financially unless payment models are revamped. To that end, would-be adopters should contact payers to discuss development of shared-savings programs, pay for performance/value or other payment methodologies that reward practices financially for improving quality and reducing costs and utilization.

## Future Directions

Typically, new payment methodologies have been driven by the payers, not practices. As a result, historic payment methodologies have not kept pace with the transformation of specialty practices into PCMH-like specialty operations. CMOH is working with payers to negotiate new reimbursement terms that reflect the value of the new system. The practice has one payer contract that recognizes the model and it is expecting to soon add more. Ideally, as suggested by Barr et al,<sup>1</sup> a contract that supports the model should include

1. An initial increase in evaluation and management payments to support the changes to IT system, duties and workflow of the new care model,
2. A shift toward payment for disease management when new services are added and
3. A shared savings component based on the practice's performance when compared with its market.

Each payer has unique internal roadblocks toward adapting its payment structure to the new model, but CMOH anticipates that a growing body of supporting literature, combined with the practice's own data, will help in the continuing negotiation process. Another future plan is to track the impact of these changes on the patient experience. In 2013, the practice plans to introduce new patient surveys based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey for PCMH customized for hematology-oncology practices. Since patients' wants overlap to a great degree with payer and practice goals (e.g., best outcomes, preservation of quality of life, fewer ER and hospital visits and rational end-of-life care), these survey results should be very useful in highlighting further areas for improvement.

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## The Current Payment Structure in the PCMH Model Is Evolving

Payment reform is a central tenet of the PCMH model and is even imbedded in the Joint Principles, which state that a PCMH should have a payment structure that supports the added level of service and value provided to patients.<sup>3,18</sup>

In the current U.S. health care system, however, a fee-for-service (FFS) (e.g., patient visit) and procedure structure still dominates. Very few practitioners have the opportunity for incentives based on quality of care (see **Figure 1**). Rather, the general approach to payment today reimburses for episodic services and rewards performing a high volume of care. This type of system does not reimburse practitioners and practices for many essential elements of the PCMH model, such as coordination of care and enhanced access via phone or email consultations. It is also viewed as one of the major barriers to initiating systems changes related to quality improvement.<sup>18-22</sup>

**Figure 1. Percentage of U.S. Physicians Reporting They Receive or Have the Potential to Receive Payment Based on Quality<sup>22</sup>** (Modified from Abrams)



\*Can receive financial incentives for any of the following six items: high patient satisfaction ratings, achieve clinical care targets, managing patients with chronic disease/complex needs, enhanced preventive care (includes counseling or group visits), adding nonphysician clinicians to practice and non-face-to-face interactions with patients.  
Source: 2009 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.

Recently, payers and health plans have begun modifying payment strategies. For example, numerous payers now pay a per member per month amount for achieving NCQA PCMH Recognition or pay some or a part of the application fees for the NCQA Recognition process.<sup>23,24</sup>

While such steps are a step toward payment reform, movement away from a FFS structure toward shared savings and incentive pay-based approaches is needed to realize the full potential of a PCMH. This could mean combining FFS, pay-for-performance and a separate payment for care coordination and integration. This modified payment structure would compensate for work provided outside the traditional face-to-face visit and the outcomes achieved. For example, primary care practices could receive incentives for demonstrating quality improvements and reducing health care costs by helping to avoid unnecessary emergency room visits and hospital admissions.<sup>19,20</sup>

The best reimbursement system to achieve this payment reform is yet to be determined. However, several different options have been explored in PCMH pilots, including modified FFS, capitation and shared savings reimbursement strategies (see **Table 3**).<sup>21,24</sup>

Payers (states, federal, plans and employers) need to adopt the kinds of payment systems that have been successfully used in the pilots and demonstration projects.

**Table 3. Options for Modified Reimbursement for PCMH Services<sup>24,25</sup>**

PCMH Reimbursement Option	Description
Higher rates for existing fees (enhanced FFS payment)	Increase FFS payments for office visits to practices that are recognized as medical homes
FFS payment for additional PCMH activities	Reimburse practitioners for specific activities associated with the medical home, such as time spent communicating with other practitioners to coordinate patients' care
Lump sum fee per patient per month	Pay practices a lump sum fee per patient per month to pay for all activities medical homes are expected to engage in (e.g., care coordination, proactive population management of patients with chronic diseases, emailing patients and so on)
Standard or reduced FFS payment for office visits and per patient per month for medical home activities	FFS reimbursement would continue at established or reduced rates for all reimbursable services in the physician fee schedule; monthly medical home payments would reward practices that demonstrate PCMH capabilities
Comprehensive payments combining capitation for traditional primary care medical services and new medical home services	Pay practices a larger capitated fee per patient to pay for all services the patient receives—newly reimbursable medical home activities and traditional health care services
Bonuses for quality measures	Pay practices bonuses if practices meet targets for quality measures that attempt to assess performance
Shared savings	Pay practices a share of any savings they generate relative to the costs that their patients would have otherwise been expected to generate, based on past trends

## Summary

The future of the PCMH looks promising. Many PCMHs have demonstrated improved quality of care and savings and programs and practices continue to grow and evolve. As we look to the future, the PCMH is likely to continue to influence how care is delivered to provide the best primary care possible and influence health care beyond primary care.

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**Appendix 1**

American Academy of Family Physicians, American Academy of Pediatrics,  
American College of Physicians, American Osteopathic Association

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## Joint Principles of the Patient-Centered Medical Home—March 2007

### Principles

- **Personal physician**—Each patient has an ongoing relationship with a personal physician trained to provide first contact, continuous and comprehensive care.
- **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.
- **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.
- **Care is coordinated and/or integrated** across all elements of the complex health care system (e.g., subspecialty care, hospitals, home health agencies and 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.
- **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.

**Appendix 1 (cont'd)**

- 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 nongovernmental 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.
- **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.
- **Payment** appropriately recognizes the added value provided to patients who have a patient-centered medical home. The payment structure should be based on the following framework:
  - It should reflect the value of physician and nonphysician 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 email 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.

