Patient-centered medical homes: Primer for pharmacists
Jeanine P. Abrons and Marie Smith

Abstract

Objective: To provide a patient-centered medical home (PCMH) primer for pharmacists, including basic background information, key terminology, and examples of success stories.

Data sources: PCMH literature and resources obtained through search strategies by authors including but not limited to PubMed and Google Scholar.

Summary: PCMHs are a potential means of achieving cost reduction in health care and providing collaborative and comprehensive care, and they represent a promising option for achieving health care reform. Medication therapy management and collaborative drug therapy management are possible means for pharmacists to fulfill the goals of PCMHs.

Conclusion: Pharmacists must become knowledgeable of standards of PCMH and their abilities to fulfill these standards. Advocacy at local, state, and national levels is needed to achieve recognition of the value of pharmacists in PCMHs.

Keywords: Patient-centered care, pharmacists, role perceptions, patient-centered medical homes, medication therapy management.

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Learning objectives
At the conclusion of this knowledge-based activity, the pharmacist will be able to:

- Describe recognized elements of patient-centered care.
- Identify organizations involved in the development of standards of patient-centered medical homes (PCMHs).
- Explain potential barriers and facilitators to pharmacist involvement in patient-centered care.
- Discuss success stories of pharmacist involvement in PCMHs.
In recent years, health care reform (HCR) has become a hot topic of discussion, increasingly so since the passing of the Affordable Care Act (ACA) in 2010. The current U.S. health care system consists of large numbers of underinsured patients, overuse of health care resources, and silos of practice among health care providers. The modern practice of medicine typically results in patients using multiple medications (prescriptions, over-the-counter [OTC] products, and herbal remedies) and health-related services. Patients with chronic conditions may have multiple prescribers and may use multiple pharmacies (i.e., community, mail service, Internet). As a result, many pharmacists and other health professionals may not have a comprehensive, consolidated, and current record of the medications that patients use at home. This can create numerous concerns for patient safety and quality of care.

In 2001, as part of its Crossing the Quality Chasm report, the Institute of Medicine (IOM) identified six elements of quality care: (1) patient safety, (2) effectiveness, (3) patient centeredness, (4) timeliness, (5) efficiency, and (6) equity. These elements of quality are visible within the patient-centered medical home (PCMH), which represents a viable and promising practice model. Since the release of Crossing the Quality Chasm, the PCMH model has gained momentum as a popular HCR solution. The term medical home was first described in 1967 by the American Academy of Pediatrics and focuses on comprehensive care for every patient. Although a universal definition is lacking, organizations supporting use of the PCMH model provide similar core elements. Common themes within these elements include ready access to care, patient engagement, implementation of clinical information systems supporting high-quality care, practice-based learning and quality improvement, care coordination, integrated or multidisciplinary care, comprehensive and ongoing care, and routine patient feedback.

As pharmacists, a critical opportunity exists to further the discussion of PCMHs and advocate for involving the profession in this practice model.

**Objectives**

This primer describes opportunities for improving the current model of health care practice by focusing on key elements of PCMHs. Organizations providing PCMH standards of care or practice site accreditation are discussed to identify elements that should be incorporated by practices transitioning into PCMHs. We describe facilitators of and barriers to successful recognition of pharmacists as members of PCMHs. Examples of successful incorporation of pharmacists into this model are highlighted, and potential roles for pharmacists in the PCMH are examined.

**Developing standards for PCMH practice**

Numerous organizations have been involved in the creation of standards for PCMHs. Although these standards have slight differences, they share similar values and elements. Some common elements of the PCMH model focus on improved patient access, better care planning and coordination, team-based care, continuity of care, self-care and patient engagement, and measuring quality improvement. Figure 1 provides a historical summary of milestones of several key organizations working toward standards, universally accepted elements, and accreditation of PCMHs. Elements of standards created by one organization, the National Committee for Quality Assurance (NCQA), will serve as a basis for comparison with other organizations involved in defining PCMHs. NCQA’s standards contain the most commonly discussed elements and, as such, may serve as a standard for comparison of other organizations’ elements for pharmacists. Table 1 highlights the elements of the NCQA standards for PCMH practice.

**NCQA**

NCQA remains a recognized leader in developing PCMH standards. Pharmacists interested in PCMHs should be familiar with the NCQA standards for guidance on incorporating pharmacist-provided services into the PCMH. The initial NCQA standards for PCMH practice appeared in 2008 and were revised in early 2011. The revised standards place greater emphasis on patient involvement in care decision making, patient self-care management, and patient access to community resources, and they reinforce the federal “meaningful use” incentives for primary care practices to adopt health information technology (HIT).

Fulfillment of the 2011 standards must be completed to receive one of three levels of recognition: basic, intermediate, and
Table 1. NCQA PCMH components and essential elements

| Enhance access and continuity | Access to culturally / linguistically appropriate care during and after office hours |
| Electronic access | Autonomy to select clinician |
| Team-based care | |

| Identify and manage patient populations | Collection of demographic / clinical data |
| Assessment of patient risk factors | Proactive/point-of-care reminders identified |

| Plan and manage care | Identification of specific conditions of management |
| Emphasis on previsit planning, progression toward goals, and addressing barriers toward goals | |
| Medication reconciliation at all visits | Use of e-prescribing |

| Provide self-care and community support | Patient/family self-management ability assessment |
| Development of patient/family self-care plans and provision of resources | Counseling on healthy behaviors |
| Assessment/provision of mental health/substance abuse treatment | |

| Track and coordinate care | Tracking/following/coordination of tests/referrals/care at other facilities |
| Follow-up with discharged patients | Use of patient experience/performance data for quality improvement |

| Measure and improve performance | Tracking use measures |
| "Must-pass" elements | Identification of vulnerable patient populations |

Access during office hours | Use data for population management |
Care management | Support self-care process |
Referral tracking and follow-up | Implement continuous quality improvement |

Abbreviations used: NCQA, National Committee for Quality Assurance; PCMH, patient-centered medical home.

Shown are standard care components of primary care and examples of elements fulfilling each component.

Essential to complete and score of 50% required for recognition as a PCMH.

See reference 5 for components and other resources.

advanced. Pharmacists can assist their practice sites in achieving PCMH recognition by working on the content areas related to medication workflow, processes, and quality measures. The 2011 standards of practice can be viewed free of charge on the NCQA website (www.ncqa.org).

As an example, one element of the NCQA 2011 PCMH standards, helping patients with self-care, may be a natural role for community- and ambulatory-based pharmacists. In the MTM process, pharmacists facilitate patient engagement through the creation of medication-related action plans. Supporting the self-care process also may be accomplished through counseling on health behaviors and management. Another must-pass element for PCMHs is increased access to care, and pharmacists can facilitate this by serving as additional patient care providers in a team-based approach to care. NCQA recognizes four additional must-pass elements: (1) use of data for population management, (2) referral tracking and follow-up, (3) implementation of continuous quality improvement initiatives, and (4) care management. Other potential roles of pharmacists, such as medication therapy management (MTM), and their ability to achieve these elements also are highlighted in the discussion of facilitators of pharmacist involvement in the PCMH.

Agency for Healthcare Research and Quality
The Agency for Healthcare Research and Quality (AHRQ) is another leader in providing information on PCMHs. The agency's website (www.pcmh.ahrq.gov) is a useful resource for pharmacists interested in PCMH practice. AHRQ specifies five values that should be included in PCMH care: (1) patient centeredness, (2) comprehensiveness, (3) coordination, (4) superb access, and (5) systems-based approaches to safety. According to AHRQ, practitioners establishing a PCMH practice should implement a team-based approach for providing and coordinating care. This team-based approach should include various health professionals and may include pharmacists. Similar to NCQA standards, patient-centered care is a focus of AHRQ's PCMH values. Comprehensive care may correspond with the NCQA elements of planning and managing care, providing self-care, and tracking and coordinating care. Access to care may be achieved by emphasizing collaboration, and HIT may represent another common aspect of NCQA standards and AHRQ values.

Joint principles by physician organizations
An updated version of the joint principles for providing PCMH care was released by a group of physician organizations in March 2011. The updated principles further the group's aim of standardizing elements of PCMHs and expand upon its joint principles released in 2007. The 2011 principles were shared with NCQA because the group was involved in creating the initial NCQA standards. Pharmacists should be aware of the connection of these guidelines to NCQA.

Accreditation Association for Ambulatory Health Care
In addition to creating standards for PCMHs, other organizations have been involved in establishing accreditation processes for PCMH practices. In March 2011, the Accreditation Association for Ambulatory Health Care (AAAHC) joined an expanding list of organizations accrediting PCMHs when it announced a pilot accreditation project. Pharmacists should note that AAAHC plans to seek community health centers and other primary care practices to participate in this upcoming project. The AAAHC accreditation project is unique because it will be peer led. Components of the accreditation will include on-site surveys. Fulfillment of the following NCQA standards provide
Table 2. Seven principles for incorporation of pharmacists’ clinical services within the framework of PCMH

<table>
<thead>
<tr>
<th>Principle for incorporation of pharmacists’ clinical services</th>
<th>Description of principle</th>
<th>Example standard to which the NCQA principle is similar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to pharmacists’ clinical services</td>
<td>Emphasizes that provision of pharmacists’ clinical services should be a fundamental component of PCMH; patient–pharmacist visits between the patient’s scheduled appointments with his/her provider for continuity of care.</td>
<td>Enhance access and continuity</td>
</tr>
<tr>
<td>Patient-focused collaborative care</td>
<td>(1) States that the development, implementation, and monitoring of medication treatment plans should be included. (2) Further elaboration includes that this should include an effective system for medication reconciliation supporting patient care transitions. (3) Plans and system should be accomplished through patient-focused and collaborative care. (4) Complementary knowledge and skills of the pharmacist should be included in accomplishing this principle.</td>
<td>Plan and manage care</td>
</tr>
<tr>
<td>Flexibility in the medical home design</td>
<td>Incorporation and integration of pharmacists’ clinical services should be innovative and flexible to meet the needs of individual practices and patients. “Community linkages” or shared resources that use pharmacist networks should be considered in the incorporation of pharmacists into PCMH practice while meeting geographic and setting needs.</td>
<td>Various standards incorporate principle through focus on autonomy of physician, appropriate care, and development of plans by individual patients.</td>
</tr>
<tr>
<td>Development of outcome measures</td>
<td>Assessment of clinical outcomes, safety, and cost-effectiveness of medication use in PCMH are considered essential components of quality assessment. Other performance measures can include overall health care use and impact on physician productivity.</td>
<td>Measure and improve performance</td>
</tr>
<tr>
<td>Access to relevant patient information</td>
<td>(1) Includes access for all members of PCMH team (including pharmacists). (2) Recognizes the importance of having medical and medication-related data to support and clinical decision making and coordination of team-based care.</td>
<td>Plan and manage care; track and coordinate care</td>
</tr>
<tr>
<td>Effective HIT</td>
<td>(1) Need for greater adoption, implementation, and use of EHR and E-prescribing systems. (2) HIT must support full integration of medication-related data elements for meaningful use of HIT.</td>
<td>(1) Enhance access and continuity; (2) plan and manage care</td>
</tr>
<tr>
<td>Aligned payment policies</td>
<td>Stresses three components that should be incorporated into payment policy: (1) effective support of the medical home, (2) provision of reasonable and adequate payment of pharmacists’ services, and (3) promotion of high-quality and safe therapeutic outcomes of medication use.</td>
<td>Plan and manage care</td>
</tr>
</tbody>
</table>

Abbreviations used: HIT, health information technology; NCQA, National Committee for Quality Assurance; PCMH, patient-centered medical home.
Principles included in table are endorsed by the Academy of Managed Care Pharmacy, American Association of College of Pharmacy, American College of Clinical Pharmacy, American Pharmacists’ Association, American Society of Consultant Pharmacists, American Society of Health-System Pharmacists, College of Psychiatric and Neurologic Pharmacists, National Association of Chain Drug Stores, and National Community Pharmacists’ Association.
Summarized based on reference 13.

Achievement of elements assessed by AAAHC¹⁰:
- Patient-centeredness (AAAHC standard of relationship with patient)
- Tracking and coordinating care (AAAHC standard of continuity of care)
- Elements of planning and managing care, providing self-care, and tracking and coordinating care (AAAHC standard of comprehensive care)
- Enhanced access and continuity (AAAHC standard of accessibility of care and electronic data management)
- Measure and improve performance (within AAAHC standard of quality, physician-directed care)

Joint Commission
The Joint Commission recently announced plans to join the list of organizations seeking to accredit PCMHs. The Joint Commission will provide this accreditation through its primary care home option. The organization is well known as an accreditation body to pharmacists practicing in hospital settings. An initial release of Joint Commission’s accreditation criteria is planned for 2011.¹¹

Utilization Review Accreditation Commission
The Utilization Review Accreditation Commission (URAC) rounds out the list of organizations accrediting PCMHs. URAC uses a very similar term: patient-centered health care home. The commission also attempts to provide clarity and guidance to organizations journeying toward patient-centered care. A toolkit created by URAC helps practices to implement changes in practice culture, infrastructure, and operations to become a patient-centered practice.¹² The toolkit (available at www.urac.org/healthcare/prog_accred_pchhp_toolkit.aspx) may be useful to pharmacists for self-assessment of their practice’s readiness for PCMH care.
Important of knowing organization standards
Pharmacists may be asked to assist with the PCMH accreditation process. Therefore, being aware of the organizations involved with PCMH standards and accreditation is important. Although practices are not required to achieve PCMH accreditation now, it is logical that achievement of standards or accreditation may be required in the future.

Pharmacy organizations
Major pharmacy organizations urge pharmacists to advocate for the profession’s inclusion in PCMH. Leading pharmacy organizations proposed seven principles for incorporating pharmacists’ clinical services within the PCMH. The document contains noticeable similarities to standards provided by NCQA (Table 2). In addition, it advocates that pharmacists’ clinical services enhance the safety and effectiveness of medication use. Preventing or resolving medication-related issues, through services such as MTM and collaborative drug therapy management (CDTM), improve quality of care and may create a place for pharmacists within the PCMH model.

Patient Centered Primary Care Collaborative
Although the Patient Centered Primary Care Collaborative (PCPCC) is not involved with creating standards or accreditation, it does warrant mention. Established in 2006, PCPCC is a major advocate for the implementation of PCMHs. PCPCC includes representatives from several health care sectors (i.e., health plans, large employers, physician and health care practitioner associations, HIT firms, hospitals, medical schools, retail clinics, pharmaceutical firms). It has established a multidisciplinary Medication Management Taskforce to address medication-related patient outcomes.

PCPCC recognizes successful achievement of patient clinical outcomes by pharmacists. In addition, PCPCC discusses pharmacists’ clinical training and patient care roles in providing MTM services. Recognition of the pharmacist’s role in providing MTM services by PCPCC is important because it represents the viewpoints of a coalition that includes members outside the profession of pharmacy. This type of support and recognition by nonpharmacy practitioners and organizations will facilitate the inclusion of pharmacists within PCMHs.

Mapping the route to patient-centered practice
Standards and accreditation provide pharmacists with common elements of PCMHs that a practice transitioning to this model would need to implement. In addition, an examination of PCMH facilitators and barriers may provide the direction that is needed to achieve a recognized role for pharmacists in PCMHs. Pharmacists should be aware of facilitators, as they may be used to advocate for pharmacist involvement in fulfilling standards for PCMHs. Awareness of barriers is important because pharmacists can assist in overcoming these barriers, thereby achieving elements and standards of PCMH practice.

Facilitators
Discussion of facilitators of pharmacist involvement in the PCMH can create awareness of potential opportunities. Recent legislation most notably creates a timely opportunity. Demonstrating pharmacists’ ability to improve patient outcomes and disseminating this information further facilitates recognition of pharmacists’ value in the PCMH.

Passing of ACA
The passing of the ACA (PL 111-148) in 2010 culminated recent legislative attempts to establish improvements in quality and safety of health care. The act includes such provisions as increased access to services, improvement of health care quality and efficiency, and strengthening of the primary care workforce. ACA also specifically increases commitment to PCMH as an HCR mechanism. Commitment is demonstrated through allocation of resources and initiatives instituted through government organizations.

The Center for Medicare & Medicaid Innovation (i.e., Innovation Center) of the Centers for Medicare & Medicaid Services (CMS) (http://innovations.cms.gov) is driving ACA directives forward. As a result of ACA, the Innovation Center will work to develop “seamless and coordinated care models.” These new models will aim to encourage collaboration of practitioners in various settings for beneficiaries of Medicare, Medicaid, and the Children’s Health Insurance Program. In November 2010, CMS announced the awarding of the Multi-payer Advanced Primary Care Practice Demonstration Projects to eight states (Maine, Vermont, Rhode Island, New York, Pennsylvania, North Carolina, Michigan, and Minnesota), where Medicare, Medicaid, and private health plans will join forces to develop state-based HCR initiatives to improve the delivery of primary care. In April 2011, CMS announced the award of 15 state planning grants to design strategies for implementing patient-centered models that fully coordinate primary, acute, behavioral and long-term care for dual-eligible Medicare and Medicaid recipients. Another recent announcement is the Community-based Care Transitions Program, mandated by section 3026 of ACA, which provides funding to test models for improving care transitions for high-risk Medicare beneficiaries.

In section 3503 (Medication Management Services in the Treatment of Chronic Disease), ACA also authorizes AHRQ’s Center for Quality Improvement and Safety to provide grants to “implement medication management services provided by licensed pharmacists, as a part of a collaborative, inter-disciplinary, inter-professional approach to the treatment of chronic diseases for targeted individuals, to improve the quality of care and reduce overall cost in the treatment of such diseases.” At the heart of medication delivery and assessment are pharmacists. Pharmacists can reduce the incidence of medication-related errors through MTM to improve quality of care provided to patients. Pharmacists should inform administrators and clinicians of their expertise to improve quality of care and need for establishment of additional medication management services. Although the ACA funding for medication management grants has not been appropriated, it is important to note that pharmacists are already involved in MTM services within PCMHs.
Establishing cost-effective therapeutic regimens. The American College of Physicians (ACP) emphasized that the continued escalation of health care costs will create an environment for change. Chronic health conditions will continue to increase. Multiple medications may be required to manage these chronic health conditions. Failure to use medications appropriately or treat drug-related problems may further stress the resources of the American health care system. Ernst and Grizzle estimated that the mean cost of treatment failures (of drug therapy) was $977. For a new medical problem from drug therapy, a mean cost of $1,105 was estimated, and the cost of combined treatment failure and a new medical problem resulting from drug therapy was $1,488. The researchers further estimated that the annual cost of drug-related morbidity and mortality exceeded $177.4 billion in 2001 and were more than double the estimated costs associated with drug-related problems from 1995. The costs of drug therapy, including drug-related problems, are likely to continue to rise. Pharmacists may help to establish cost-effective therapeutic regimens and decrease health care cost escalation. However, demonstration of pharmacists’ ability to implement these cost-effectiveness medication interventions is critical and urgently needed. Establishing cost-effective regimens will not only reduce the financial burden of health care but also further benefit the system through increasing quality outcomes.

Improved outcomes. Reducing drug-related morbidity and mortality not only reduces costs but also helps to improve outcomes of patient care. Pharmacist collaboration in an interdisciplinary health care has been shown to improve patient care. In the interdisciplinary PCMH model, physicians could serve as the diagnostic experts and pharmacists as medication experts. Benefiting patient populations may be consistent with many of the areas in which pharmacists already have knowledge/additional training (e.g., anticoagulation, hypertension management, diabetes).

MTM and CDTM may serve as possible means to improve outcomes within PCMHs and have been provided by pharmacists. MTM programs such as the Asheville Project and the Minnesota Medicaid experience have demonstrated improvement of clinical and economic outcomes by community pharmacists. These services, although not new, can be integrated into PCMHs to enhance patient care.

Dissemination of information and research. Open, transparent, and continued communication will help progress toward recognition of pharmacists’ beneficial involvement in PCMH. Provisions of ACA established the Patient-Centered Outcomes Research Institute, with the goal of providing individuals with public and private sector funding while coordinating agencies support patient-centered outcomes research. Although not specifically targeted at researchers in pharmacy, the institute may provide much-needed funds to provide evidence of the clinical efficacy, quality improvement abilities, and cost-effectiveness potential of pharmacists in PCMHs to policy makers and stakeholders. This evidence shows pharmacists’ ability in helping to achieve improved patient outcomes, establish cost-effective therapeutic regimens, and achieve quality care and patient safety. Incorporating pharmacists into PCMHs would provide these added benefits. However, disseminating information and research regarding these benefits is critical for the recognition of pharmacists by leading organizations involved in PCMH standards. ACA not only creates opportunities in practice but also in dissemination of research.

Barriers faced

Anticipating roadblocks or barriers in the journey to pharmacist-provided PCMH services is important. The following section describes potential barriers that may be encountered by pharmacists participating in a practice shift toward PCMHs, in order to facilitate discussion of ways to overcome these barriers.

Forgetting to include the pharmacist. The focus on physicians as drivers of PCMHs may cause other health professionals, such as pharmacists, to be overlooked. Pharmacists are generally recognized as valuable sources of medication-related expertise; however, they are not mentioned in many PCMH discussions. Additional advocacy at local, state, and national levels will be needed to increase inclusion of pharmacists in discussions regarding relevant roles in PCMHs. These advocacy efforts must include communication of facilitators and benefits of pharmacist involvement in PCMH teams. Pharmacists must display forward thinking and envision themselves as primary care providers before others will view them in this light. Further, pharmacists must communicate to other health care providers their desire to be included in PCMHs and must continue to demonstrate the value of their involvement to these providers and their patients.

Payment. One of the most commonly identified barriers to broader adoption of PCMHs is payment for services. Current payment structures focus on rewarding volume rather than value. Implementation of PCMHs requires restructuring of reimbursement practices, and means of paying pharmacists for provision of services is lacking. Current payment models for pharmacists’ services are considered highly variable and have not fully addressed payment models for nonphysician health professionals. Demonstrating the value of pharmacists’ services will be important. The impact of pharmacists’ services in PCMH models on medication use, patient safety, health care service use, quality improvement measures, care coordination, physician productivity, and total health care costs are needed to better develop appropriate payment models for pharmacists’ services.

HIT. Current HIT systems in primary care practices are evolving toward more integrated electronic health records (EHRs) and e-prescribing applications. However, adoption of EHRs and e-prescribing has progressed slowly, and CMS is trying to accelerate the adoption, implementation, and use of HIT with its e-prescribing and meaningful use incentive programs. When a PCMH is considering HIT implementation, pharmacists can help ensure that basic medication-related data for active medication lists, allergies, and drug interactions are included and will facilitate efficient workflow between the pri-
mary care practice and pharmacy. As an example, Warholak and Rupp found that pharmacists’ interventions were often required to resolve problems related to the omission of patient medication use directions with e-prescriptions.

The Pharmacy e-Health Information Technology Collaborative (also known as the Pharmacy e-HIT Collaborative) was launched in 2010 by nine national pharmacy organizations (Academy of Managed Care Pharmacy, Accreditation Council for Pharmacy Education, American Association of Colleges of Pharmacy [AACP], American College of Clinical Pharmacy, American Pharmacists Association, American Society of Consultant Pharmacists, American Society of Health-System Pharmacists, National Alliance of State Pharmacy Associations, and National Community Pharmacists Association). The resource website of this collaborative is available at www.pharmacy-e-hit.org. The collaborative’s efforts will emphasize the need for functional electronic exchange of information “in order to deliver, document, and bill services provided by pharmacists in all patient care settings through the meaningful use of HIT.” The collaborative works to define minimum standards for a functional pharmacy practitioner EHR, serves as a unified pharmacy voice in national HIT-related discussions, and will continue to highlight needed recognition of pharmacists and their services.

Continued change in culture. Another roadblock that may be experienced is a culture of health professionals protecting their “turf.” Many primary care providers have not trained with pharmacists in direct patient care roles and may be unfamiliar with the knowledge, training, and abilities of pharmacists to manage medication therapies effectively. In a medical home practice, health professionals need to discuss and clarify roles. Many physicians and nurses require further education on (1) the practice model that pharmacists use to deliver MTM patient care services and (2) the pharmacist’s role in detecting, resolving, monitoring, and preventing medication-related problems.

In addition, Davis et al. argued that a “cultural barrier” of information sharing or transparency to patients may exist in health care. The principles of a medical home support patient engagement and development of self-management goals. Pharmacists who provide comprehensive MTM services have an opportunity to address this barrier by engaging patients in

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1967</td>
<td>Concept of medical home first introduced by American Academy of Pediatrics²</td>
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<tr>
<td>2001</td>
<td>IOM releases Crossing the Quality Chasm¹</td>
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<tr>
<td>2004</td>
<td>Joint principles on PCMH released by physician groups⁹</td>
</tr>
<tr>
<td>2006</td>
<td>NCQA Releases initial standards for PCMH⁴</td>
</tr>
<tr>
<td>2008</td>
<td>Principles of inclusion of pharmacists’ clinical services in patient-centered medical home released by nine major pharmacy organizations³</td>
</tr>
<tr>
<td>2009</td>
<td>NCQA PPC-PCMH program and revision of standards released⁷</td>
</tr>
<tr>
<td>2010</td>
<td>APhA releases MTM Core Elements 2.0²⁸</td>
</tr>
<tr>
<td>2011</td>
<td>Signing of Affordable Care Act (components of PCMH model included)</td>
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</tbody>
</table>

**Figure 1. Partial timeline relating to pharmacist patient care services and PCMH**

Abbreviations used: MTM, medication therapy management; IOM, Institute of Medicine, NCQA, National Committee for Quality Assurance; PCMH, patient-centered medical home; PPC, Physician Practice Connections.
the development and discussion of their personal medication record and medication action plan.

**Success stories of establishing patient-centered care**

Success stories may motivate pharmacists to participate in PCMHs, provide resources for education of others on the benefits of inclusion of pharmacists within PCMHs, and illustrate lessons learned by pharmacists currently practicing in PCMHs. Many successful examples of pharmacist-provided medication management models are described and can be used to inform successful patient-centered programs in our own practices. The March/April 2011 theme issue of *JPhA* dedicated additional focus to disseminating information about integrated practices and successful implementation of PCMHs. Each of the practices highlights achievement of elements of the standards of PCMHs. The practice sites effectively use facilitators to encourage their involvement within the PCMH model. The examples highlight the ability of pharmacists to overcome or bypass commonly recognized barriers to involvement in and adoption of PCMHs. These practices are summarized below to highlight examples of success and offer lessons for pharmacists wishing to become part of PCMH practice.

**Creighton University**

Although not specifically a PCMH, a community pharmacy located in the Creighton University Medical Center and maintained by the School of Pharmacy and Health Professions provides patient-centered care, which is a component of a PCMH model. The site located in Omaha, NE, implemented tools that improved patient-centered care. Enhanced outcomes of participating patients at the pharmacy are described, including adherence journals, blogs, support groups, and various forms of self-monitoring. The community pharmacy implemented a cardiovascular risk reduction program using the tools described. Most participants of the program (14 of 15 patients) shifted to a lower category or maintained blood pressure and met goals for low-density lipoprotein cholesterol goals at completion of a 12-month period. Other noted successes included participants commenting on their new-found “awareness of personal health needs” and that the program “made them more accountable for lifestyle actions.” Improved communications between participants and providers also was noted.

Quality care was achieved through monitoring, and self-care was promoted for the patient similar to elements of NCQA standards. Collaboration—another component of the NCQA standards—was visible though improvement in communication with providers. The use of various tools also highlights individualized patient care.

**Mountain Area Health Education Family Health Center**

Mountain Area Health Education (MAHEC) Family Health Center (FHC), which is part of the North Carolina Area Health Education Center system, represents another insight into successful PCMH services. The practice site offers additional credibility because it is recognized as a level III PCMH by NCQA. At the end of the 2010 calendar year, only 1,506 practices nationwide were recognized as meeting the standards of practice for PCMH according to NCQA. Level III represents the highest level of recognition according to these standards. (Practices achieving recognition as PCMHs by NCQA are shown in the U.S. map at the “New PCMH 2011 Overview” link at www.ncqa.org/tabid/631/default.aspx.)

Pharmacists at MAHEC FHC provide valuable services through their role as team members of PCMH practice. Specific services offered by the MAHEC FHC pharmacists include services in such areas as pharmacotherapy, anticoagulation management, osteoporosis screening, and collaborative vaccination programs. This North Carolina–based program is truly interprofessional, as it incorporates pharmacists, nurses, nutritionists, care managers, Spanish translators, and behavioral medicine specialists in the provision of patient-centered care. Quality of care of services provided by team members is assessed through a continuous quality improvement team approach in which each team focuses on a specific disease. Other elements specific to PCMH care delivery noted in the article are focused on transitions of care, creation of communities of care, and use of HIT to exchange patient information.

Unlike many other articles describing pharmacists in a PCMH, Scott et al. described reimbursement and billing models used. MAHEC FHC used incident code billing primarily; 99211 was the code used most often, while other codes (e.g., 99213, 99214) also were billed to achieve approximately $70,000 in annual billing revenues. The billable codes were submitted under the consulting physician.

The authors stated the following: “In the new era of the PCMH model and in the wake of national health care reform, the profession of pharmacy must seize opportunities to demonstrate the value of the provision of MTM services within physician practices.” Successful achievement of quality services, collaborative care, and payment for services illustrates the value provided by pharmacists. Scott et al. recognize that “the face of pharmacy would be forever changed” if more physician-led practices would incorporate pharmacists into PCMH primary care practices.

**Valley View Primary Care Clinic**

Erickson and Hambleton provided a longitudinal perspective of patient-centered care that has been evolving since 1981. Valley View Clinical Pharmacists (VVCP) represents a leader in collaborative practice. Since 2000, the clinic and pharmacy, located in Monroe, WA, have promoted collaboration with a focus on efficiency and reduction of costs resulting from common ownership between a clinic and pharmacy. Early payment for services provided pharmacists with monthly consultative fees, but the practice now also uses a combination of incident code billing and subsidized revenues from dispensing to fund continuation of pharmacists’ services.

A shift of focus from billing of services to enhancing physician productivity may be a facilitator for successfully overcoming the barrier of payment for service. Enhanced physician productivity was realized at VVCP through a 17-hour, monthly...
reduce physician time involvement through a “value-added refill authorization service.” The authors and pharmacists of VVCP recognize that “financial success is the key to sustainability” and continue to brainstorm additional means of supporting pharmacists’ activities.37

The experience of Erickson and Hambleton indicates that shifting toward a focus on coordinated care to facilitate physician productivity will help overcome recognized barriers of physician workforce readiness and payment. Training and ongoing communication through weekly meetings seem to facilitate the delivery of comprehensive, coordinated care. HIT, specifically EHRs, is used along with direct communication to remedy therapeutic issues. Just as the practice of VVCP and its pharmacists has evolved in the previous 2 decades, opportunities available through PCMH care will continue to grow as the model expands.

Academic pharmacy and patient-centered health care

Haines et al.38 examined successful practice models involving pharmacists providing patient-centered health care (PCMH). The report further focused on programs participating in residency programs or experiential education while providing PCHC. The article by Haines et al. differs from other articles in focusing on pharmacist training through residency and experiential education to achieve PCHC.

The authors summarized findings of a 2009–10 AACP Professional Affairs Committee Report. A total of 25 (of 151) reports were examples of PCHC that included residency training and experiential education at the site. A majority or reports had some relationship with a school or college of pharmacy. Most frequently, ambulatory care clinics served as PCHC sites, followed by Department of Veterans Affairs hospital clinics. Patient-centered care was provided in these settings through disease management services (e.g., diabetes, hypertension, dyslipidemia), MTM services, and education programs. Improved patient outcomes were demonstrated in 60% of reports analyzed and included analysis of both qualitative and quantitative measures (n = 137).

In summarizing the AACP report, Haines et al. reported that collaboration was most commonly seen with family and internal medicine physicians, although specialists also collaborated. This is noteworthy because delivery of PCMH care is typically accomplished through a primary care setting under the leadership of a physician. The authors noted the following: “Pharmacy educators clearly are taking an active role not only in directing patient care in primary care setting but also in disseminating information concerning the impact of such services.”38 However, one should note that pharmacist involvement in all practice settings is needed to accomplish this practice shift. To thrive and continue to travel on the road toward PCMH, practitioners need to continue to integrate this information into their own practices.

The article by Haines et al. provides additional reference to literature highlighting pharmacist training in practices providing patient-centered care. This knowledge can be used to advocate preparedness for a role in the PCMH team. The article provides further basis for including pharmacist services as a means of “redeployment of the workforce within the PCHC team was recognized.”38 Shifting of service completion from the physicians to the pharmacist may help to overcome the barrier of physician workforce readiness.

Conclusion

Pharmacy organizations and practitioners are key players in health care’s efforts to successfully build an ideal PCMH. Although barriers exist, successful practices and practitioners providing patient-centered care demonstrate a commitment to principles of PCMH. These successes provide the profession and others with evidence that barriers can be overcome. The PCMH discussion began long ago, but recent events bring the model to the forefront of discussion. Many will continue the debate.

Pharmacists must continue to advocate for inclusion as essential members of the PCMH team. Before advocacy, however, pharmacists should review potential barriers and facilitators to incorporating the roles of pharmacists into PCMH, in order to anticipate future directions in dialogue and practice. Further research disseminating successes and benefits to patient outcomes will be critical to providing a rational basis to advocacy efforts. Disseminating this information to key organizations involved with defining PCMH will be an important aspect of this advocacy. This dissemination needs to start at a local level and progress within state and local organizations, as well as among individual practitioners. Pharmacists are strongly encouraged to get involved in their work sites and to remember that information is power—you too can drive the change in your practice and environment.

Pharmacists wishing to achieve success in becoming a member of a PCMH within their community should incorporate lessons learned from previous examples of practice into their strategies for success. Important guidance toward achieving a PCMH practice includes the following:

- Communicate regularly within your profession and to other professionals, locally and beyond. For example, become an active member in your local or state pharmacy association or create or participate in a working group on pharmacists’ roles in PCMH or accountable care organizations.
- Talk with your local or state medical association about pharmacists’ roles in PCMHs. For example, communicate the benefits that pharmacists can provide.
- Advocate for implementation of structures, such as HIT and payment models that support PCMH practice.
- Use the resources of leading health care organizations. Many of these organizations, such as NCQA, target resources at practitioners interested in providing care in PCMH.
- Provide patient-centered care and collaborate with physicians to secure a role in PCMH.
- Use ingenuity in achieving sustainable payment of services.
Highlights from the reading: Your passport to successful roles in PCMH

Know your destination

- PCMH: A patient-centered care model that is evidence based and uses increased accountability in medicine to provide team-based, collaborative, and comprehensive care to patients in a primary care setting.

Signs that will keep you moving in the right direction

- Focusing on quality and safety of care
- Establishing cost-saving therapeutic regimens
- Proving your outcomes
- Disseminating information and research

Caution—detours ahead: Barriers to reaching your destination "on time"

- Getting paid for services—no easy solution
- HIT—inefficiencies in the current system
- Workforces that aren’t ready

Stop and ask directions: Guidance on getting where you need to go

- NCOA
- AHRQ
- ACP
- Major pharmacy organizations (local, state, and national)
- Joint Commission
- Numerous other organizations or practice sites that have already reached where want to go

References


CPE exam

Instructions: The assessment test for this activity must be taken online; please see “CPE information” below for further instructions. There is only one correct answer to each question. This CPE activity will be available online at www.pharmacist.com no later than May 31, 2011.

1. A universally accepted definition for a patient-centered medical home (PCMH) currently exists.
   a. True
   b. False

2. Which of the following organizations released standards of practice for PCMH in 2008 and revisions in 2011?
   a. American Pharmacists Association (APhA)
   b. American College of Physicians (ACP)
   c. National Committee for Quality Assurance (NCQA)
   d. Institute of Medicine (IOM)

3. Which of the following represents a current practice of pharmacists that may demonstrate potential use in PCMH?
   a. Medication therapy management (MTM)
   b. Collaborative drug therapy management
   c. None of the above alternatives are correct.
   d. All of the above alternatives are correct.

4. Which of the following represents a potential benefit of pharmacist involvement in PCMH?
   a. Payment issues
   b. Potential improved outcomes
   c. Workforce restructuring
   d. New health information technology needs

5. The term “medical home” was first mentioned in what year?
   a. 1967
   b. 1983
   c. 2001
   d. 2009

6. Principles for incorporating pharmacists’ clinical services within the framework of PCMH are endorsed by which of the following pharmacy organizations?
   a. APhA
   b. Academy of Managed Care Pharmacy (AMCP)
   c. American Society of Health-System Pharmacists (ASHP)
   d. All of the above alternatives are correct.

7. What year marked the release of the report “Integration of pharmacists’ clinical services in the patient-centered primary care medical home” by major pharmacy organizations?
   a. 1967
   b. 1983
   c. 2001
   d. 2009

8. Which physician organization recently joined organizations certifying medical home models through its announcement of a pilot project?
   a. ACP
   b. Accreditation Association for Ambulatory Health Care (AAAHC)
   c. American College of Clinical Pharmacy
   d. NCQA

9. Which state is recognized by NCQA as having more than 200 Physician Practice Connections Patient-Centered Medical Home sites?
   a. Montana
   b. Kansas
   c. New York
   d. Florida

10. The Joint Commission plans to join organizations seeking to provide accreditation of PCMH practice.
    a. True
    b. False

11. Which of the following represents the most recent legislation that furthered discussion of PCMH as a model of practice?
    a. Omnibus Budget Reconciliation Act of 1990
    b. Medicare Modernization Act
    c. Affordable Care Act
    d. Drug Price Competition and Patent Term Restoration Act

12. Which of the following represents an example of the element “enhanced access to care” in the NCQA 2011 PCMH standards?
    a. Team-based care
    b. Use of e-prescribing
    c. Counseling on healthy behaviors
    d. Tracking use measures
13. A 2009–10 American Association of Colleges of Pharmacy Professional Affairs Committee Report identified how many examples of PCMH, including residency training and experiential education?
   a. 25  
   b. 75  
   c. 125  
   d. 175

14. The Agency for Healthcare Research and Quality cites the following five values that it believes should be included in PCMHs.
   a. Enhanced access and continuity, identify and manage patient populations, track and coordinate care, measure and improve performance, provide self-care and community support  
   b. Patient centeredness, comprehensive care, coordinated care, superb access to care, systems-based approaches to safety and care  
   c. Patient-focused collaborative care, flexibility in the medical home design, development of outcome measures, access to relevant patient information, aligned payment policies  
   d. Identify and manage patient populations, patient centeredness, access to relevant patient information, provide self-care, provide community support

15. The objectives of the Patient-Centered Primary Care Collaborative objectives include:
   a. Facilitating improvements in patient–physician relations.  
   b. Creating a more effective and efficient model of health care delivery.  
   c. All of the above alternatives are correct.  
   d. None of the above alternatives are correct.

16. Which of the following NCQA 2011 standards has similarities to the AAAHC standard of relationship with patient?
   a. Patient centeredness  
   b. Enhanced access and continuity  
   c. Tracking and coordinating care  
   d. All of the above alternatives are correct.

17. Which of the following represents one (or more) of the seven principles for incorporation of pharmacists’ clinical services within the framework of the PCMH?
   a. Patient-focused collaborative care  
   b. Flexibility in medical home design  
   c. Development of outcome measures  
   d. All of the above alternatives are correct.

18. Which of the following incident billing codes may be used to secure reimbursement for MTM services?
   a. 99211  
   b. 99213  
   c. 99214  
   d. All of the above alternatives are correct.

19. Pharmacists are frequently mentioned in discussion of the PCMH.
   a. True  
   b. False

20. Which of the following is considered the recognized leader in the journey toward standards of practice for PCMH?
   a. APhA  
   b. ACP  
   c. NCQA  
   d. IOM

CPE information
To obtain 2.0 contact hours of CPE credit (0.2 CEUs) for this activity, complete and submit the CPE exam online at www.pharmacist.com/education. A Statement of Credit will be awarded for a passing grade of 70% or better. You will have two opportunities to successfully complete the CPE exam. Pharmacists and pharmacy technicians who successfully complete this activity before May 15, 2014, can receive credit. Your Statement of Credit will be available online immediately upon successful completion of the CPE exam.

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1. Go to Online CPE Quick List and click on the title of this activity.  
2. Log in. APhA members enter your user name and password. Not an APhA member? Just click “Create one now” to open an account. No fee is required to register.  
3. Successfully complete the CPE exam and evaluation form to gain immediate access to your documentation of credit.  
   Live step-by-step assistance is available Monday through Friday 8:30 am to 5:00 pm ET at APhA Member Services at 800-237-APhA (2742) or by e-mailing InfoCenter@pharmacist.com.