

# THE PATIENT-CENTERED MEDICAL HOME



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## LEARNING OBJECTIVES

1. Classify medication use and safety issues within primary care.
2. Explore how pharmacists engage with patient-centered medical home (PCMH) models.
3. Demonstrate the compatibilities between pharmacist-provided medication management services and PCMH principles.
4. Justify the integration of a pharmacist-led medication therapy management (MTM) program within a PCMH model.
5. Analyze advantages and challenges of various pharmacist integration models in a PCMH.
6. Assess how health care reform initiatives may affect opportunities for pharmacists.
7. Compose strategies for establishing a pharmacist-led MTM program that can be implemented in a medical home model.
8. Develop a job description for a pharmacist who will provide MTM services in a medical home practice.

## INTRODUCTION

The patient-centered medical home (PCMH) model promises to transform the delivery and payment structure of primary care by improving the quality, safety, efficiency, and effectiveness of health care at the individual patient and population levels. This chapter focuses on the

pharmacist's role in delivering individual patient care in the medical home. However, of importance, pharmacists may also be involved in population health activities such as developing medication safety policies and procedures, identifying needs for new or expanded chronic care management programs, collaborating with quality improvement staff on educational programs, or working with information technology staff to enhance documentation and reporting of patient medication-related data.

### Terminology

The concept of a *medical home* refers not to a building, house, or hospital, but rather to an approach for providing comprehensive and coordinated primary care. Other terms that have been substituted for medical home include *patient-centered medical home* and *advanced primary care practice*. The term *health home* is used when an interdisciplinary clinician-led team approach is a central element. More recently, the term *medical neighborhood* was introduced to describe a concept that aligns the interests and incentives across primary care providers (PCPs), specialists, and hospitals for better patient care. This chapter uses the term *PCMH* in referring to a medical home.

### Medical Home Standards

In 2007, four primary care medical associations endorsed the Joint Principles of the Patient-Centered

## BASELINE REVIEW RESOURCES

The goal of PSAP is to provide only the most recent (past 3–5 years) information or topics. Chapters do not provide an overall review. Suggested resources for background information on this topic include:

- Smith M, Bates DW, Bodenheimer T, Cleary PD. Why pharmacists belong in the medical home. *Health Aff* 2010;29:906–13.
- Patient-Centered Primary Care Collaborative. Integrating Comprehensive Medication Management to Optimize Patient Outcomes: A Resource Guide. Washington, DC: Patient-Centered Primary Care Collaborative, 2010. Available at [www.pcpcc.net/files/medmanagepub.pdf](http://www.pcpcc.net/files/medmanagepub.pdf). Accessed August 17, 2011.
- Abrons J, Smith M. Patient-centered medical homes: primer for pharmacists. *J Am Pharm Assoc* 2011;51:e38–e50.

## ABBREVIATIONS IN THIS CHAPTER

CPT	Current Procedural Terminology
EHR	Electronic health record
HEDIS	Healthcare Effectiveness Data and Information Set
HIE	Health information exchange
HIT	Health information technology
MTM	Medication therapy management
NCQA	National Committee for Quality Assurance
PCMH	Patient-centered medical home

Medical Home; these principles promote physician-led coordination of a patient's health care needs and an integrated team approach to providing patient-centered care. In 2008, the National Committee for Quality Assurance (NCQA), the organization responsible for Healthcare Effectiveness Data and Information Set (HEDIS) measures, developed standards for recognizing a physician practice as a PCMH. Those standards specify that practices must implement evidence-based care-management plans, use nonphysicians to manage patient care, coordinate care transitions, support patient self-management, and track test results and patient referrals. In early 2011, the NCQA updated the PCMH standards to (1) provide greater emphasis on involving patients and

caregivers/families in care decision-making, (2) facilitate patient self-care management and access to community resources, and (3) reinforce federal "meaningful use" incentives for primary care practices to adopt health information technology (HIT).

The NCQA was the first organization to establish a formal recognition process. This program has 47 standard elements, including six must-pass elements that are evaluated for three levels of recognition. Other groups have recently announced alternative PCMH recognition or accreditation programs. The Joint Commission and the Accreditation Association for Ambulatory Health Care are developing medical home accreditation programs with on-site surveys. The Utilization Review Accreditation Commission is developing a health home program with a self-assessment toolkit used by the practice before an audit process. Although PCMH recognition or accreditation processes are optional, some health plans or payers have linked higher reimbursement levels to recognized or accredited practices.

### Characteristics of a Medical Home

The various accreditation or recognition organizations share several common principles that are characteristic of a PCMH (Table 1-1). The relevance of each principle to pharmacists is discussed later in the chapter. One central principle is that each patient has a personal PCP. When community or hospital pharmacists can identify

**Table 1-1.** Common Elements of PCMH Standards

Element	Description
Personal physician	Each patient with a personal physician who provides first-contact, continuous and comprehensive care
Health care team	Team with collective responsibility for the ongoing care of patients
Whole person care	Personal physician responsible for providing care through arrangements with other qualified team members; includes acute care, chronic care, preventive services, and end-of-life care
Coordinated care	Patient's care integrated across the complex health care system (e.g., subspecialty care, hospitals, home health agencies, nursing homes) and the patient's community (e.g., family, public, and private community-based services)
Information technology	Health information technology (e.g., electronic medical records, e-prescribing, patient registries, health information exchange) supports optimal patient care, performance measurement, patient education, and enhanced communication
Enhanced patient access	Open scheduling, expanded hours, and new options for communication between patients and their care teams
Quality and safety initiatives	Evidence-based medicine and continuous quality improvement principles for optimal patient outcomes
Patient engagement	Patients/families actively engaged in care decision-making that meets their expectations; they participate in quality improvement activities
Payment reform	New payment structure that sustains practice transformation and desired outcomes in patient experience, cost, quality, efficiency, patient safety, and professional satisfaction

PCMH = patient-centered medical home.

Information from the National Committee for Quality Assurance. Patient-Centered Medical Home (PCMH) 2011. Available at [www.ncqa.org/tabid/631/default.aspx](http://www.ncqa.org/tabid/631/default.aspx). Accessed August 17, 2011.

the patient's PCP, all interprofessional communications can be directed to the PCP for care coordination or collaborative decision-making.

## **PRIMARY CARE DRUG USE AND SAFETY ISSUES**

With the extent of drug use and safety issues in primary care, the pharmacist working with a PCMH practice can make a significant contribution to improved care quality and patient outcomes.

### **Drug Use**

Drugs are the most common treatment modality for chronic conditions in primary care settings. Around 70% of physician office visits for patients older than 45 years result in drugs being prescribed or continued. The 2008 International Health Care Survey reported that 71% of U.S. adults had two or more chronic conditions; 59% of U.S. adults with chronic conditions were seeing three or more physicians; and 48% of U.S. adults were taking four or more prescriptions for chronic diseases.

### **Medication Profile Problems**

The documentation of all current drugs used at home (e.g., prescription, nonprescription, herbals, vitamins and dietary supplements, physician samples) is often incomplete or inaccurate in medical records. This can be related to a lack of medication history-taking skills, poor verification of drug containers or patient medication lists, disparate sources of medication lists, poor patient recall, cultural or health literacy challenges, and discontinued therapies. The problem is magnified by the use of multiple prescribers (e.g., primary care physician, mid-level practitioners, medical subspecialists) or multiple pharmacies (e.g., community, mail order, Internet). In addition, cash-pay prescriptions (e.g., low-cost generic drugs; sensitive drugs for lifestyle choices, mental health, or sexually transmitted diseases) are often not recorded in prescription claims databases that generate electronic medication histories. Safe drug use can only be assessed with a complete list of all the patient's current drugs. Pharmacists working as PCMH team members can take the lead in creating and maintaining a comprehensive drug list, especially for health information exchange (HIE) or medication reconciliation with care transitions. An HIE is a database in which patients give permission for their health data to be shared with their providers in a secure environment.

### **Drug Therapy Problem Classification**

In the pharmaceutical care model, drug therapy problems are classified in the following categories: appropriateness, effectiveness, safety, and adherence. In primary care

settings, around 75% of drug therapy problems are attributed to categories related to clinician decision-making (e.g., appropriateness, effectiveness, safety). The remaining 25% of drug therapy problems are in the adherence category and are primarily influenced by patient behaviors.

Medication therapy management (MTM) services require evaluation of the comprehensive current drug list for appropriateness, effectiveness, safety, and adherence (in this sequence). Drug adherence should not be promoted in isolation; attention to adherence alone can be dangerous if a drug is inappropriate, ineffective, or unsafe.

### **Care Transition Drug Misadventures**

Medication discrepancies and misadventures can occur with care transitions between a patient's home and hospitals, emergency departments, urgent care centers, long-term care facilities, or short-term postacute facilities. A patient's drug regimen can be changed (e.g., new drug added, existing drug changed, drug stopped before surgery or discontinued altogether) with a care transition. For example, studies have found that 23% of patients experience an adverse event within 30 days of hospital discharge. Most of these adverse events are drug-related; 50% are considered preventable, and around 20% result in emergency department visits or hospital readmission. Deficiencies in communication between hospital care providers, PCPs, and patients have been identified as causes of post-discharge drug discrepancies. In a PCMH care model, improving provider-patient-caregiver communications and care coordination on care transition is likely to prevent drug errors.

## **IMPLEMENTING MEDICATION MANAGEMENT SERVICES IN THE PCMH**

### **Pharmacist Role Compatibility with Medical Home Principles**

Pharmacists are accessible and well-trained health professionals, yet they are often underused in the current primary care delivery system. The PCMH concept provides an opportunity for pharmacists to practice "at the top of their training" by expanding patient-centered pharmaceutical care in a collaborative, team-based practice model. Pharmacists may be part of a PCMH team as an employee or clinical faculty member (internal model) or may be involved through a contractual or consulting arrangement (external model).

When a patient's condition worsens, or when therapeutic goals are not achieved, the PCP usually refers the patient to a specialist for medication adjustments. In the absence of suspected new disease, the pharmacist working with a PCP can manage care for selected patients (e.g., the patient with diabetes transitioning from an oral hypoglycemic to insulin) rather than the PCP referring the patient to a specialist.

Pharmacist-provided MTM services are compatible with many principles of a PCMH, detailed as follows.

### **Team-Based Care**

Pharmacists working with a PCMH collaborate with patients, families, and health care providers to perform MTM services. They possess knowledge and skills that are complementary to other health care team members (Box 1-1).

One method of establishing team-based care in a medical home is through the development of collaborative drug-therapy management arrangements. In this model, a qualified pharmacist and a physician establish written guidelines authorizing the pharmacist to initiate, modify, or continue drug therapy for specific patients (usually those with chronic diseases). The physician delegates authority to the pharmacist under designated circumstances and delineates the functions, procedures, and decision-making criteria for managing drug therapy. In the PCMH, pharmacists working with collaborative drug-therapy management agreements typically perform drug-related patient assessments, order laboratory tests, and monitor and adjust therapy regimens for complex or chronic disease drugs.

### **Continuity of Care**

Pharmacists often provide MTM services to individual patients between scheduled PCP appointments. Most PCPs recognize that pharmacists have both the skills and time to elicit and assess a comprehensive drug list to ensure appropriate, safe, and cost-effective drug therapy. Pharmacists can schedule the frequency of follow-up patient visits on the basis of drug regimen complexity, number of drug therapy problems, and patient progress toward achievement of treatment and self-management goals.

#### **Box 1-1. Pharmacist Roles as Part of a PCMH Team**

- Identifying, resolving, preventing, and monitoring medication use and safety problems
- Reducing polypharmacy and optimizing medication regimens on the basis of evidence-based guidelines
- Recommending cost-effective therapies
- Designing tailored adherence and health literacy programs
- Developing patient medication action plans with self-management goals
- Communicating medication care plans to patients, providers, and other entities in the patient's health care delivery system

PCMH = patient-centered medical home.

When a patient is discharged from a hospital to home, it is prudent for the hospital pharmacist to communicate with the patient's community pharmacist. For example, the community pharmacist should know that a chronic drug was discontinued so that remaining refills are not dispensed.

### **Patient Engagement in Care Decision-making**

The provision of a medication action plan with specific self-management goals promotes a high level of patient engagement. Patients are actively involved in setting realistic and achievable medication self-management goals; they are empowered in their use and understanding of drugs, as well as in setting realistic goals for their treatment plan. Pharmacists use their skills in motivational interviewing to develop the patient's medication action plan.

### **Care Coordination**

The pharmacist's MTM model promotes sharing the medication action plan with the patient, the patient's providers, and the relevant pharmacists in community, hospital, or PCMH settings. The pharmacist monitors patient progress and any provider actions needed to achieve the health outcome goals. The pharmacist also makes recommendations to providers whenever evidence-based guidelines for drug therapy have not been initiated.

### **Use of HIT**

Pharmacists and PCMH clinicians may exchange a patient's health information through bi-directional electronic communications such as e-prescribing systems, electronic health records (EHRs), patient registries, telehealth applications, or HIEs. By having access to electronic medical records within the PCMH, the pharmacist can combine the patient's diagnoses and test results with a complete drug history to assess drug discrepancies and drug therapy problems. Whenever possible, the pharmacist should use an MTM documentation system that can export patient and provider reports electronically to patient health records, EHRs, or HIEs.

Using an HIE, the pharmacist can take the lead in updating a common, shared drug list each time the patient has a new, changed, or discontinued drug. A common drug database can also be used by pharmacists in a community, hospital, or skilled nursing facility setting for medication reconciliation or targeted MTM assessments upon care transitions. A shared database is a tool that clinicians can use to prevent problems that are introduced by incomplete or inaccurate drug histories, poor documentation, poor patient recall, disparate sources of drug lists, cultural or health literacy challenges, and discontinued therapies.

Electronic health records are being used in PCMHs to screen the practice's population for patients with

chronic diseases whose treatment goals are not achieved or for patients with gaps in care. Pharmacists use *e-consults* to review health histories for these patients and send drug recommendations to patients' PCPs between scheduled visits.

Finally, the newly formed Pharmacy e-Health Information Technology Collaborative ([www.pharmacyhit.org](http://www.pharmacyhit.org)) is developing a pharmacist/pharmacy provider EHR functional profile to support PCMH activities such as MTM, immunization tracking, quality improvement, and patient safety measures.

### **Enhanced Access to Care**

Expanded health reform coverage is anticipated to result in shortages of PCPs; pharmacists may assist with this problem by managing drug therapies between PCP visits. Pharmacist-provided MTM services extend the PCP's ability to ensure optimal and cost-effective drug therapy in an efficient and effective manner. Pharmacists working with a PCMH can provide MTM services in several locations (e.g., primary care offices, outpatient clinics, home visits, worksite health programs, senior centers, community pharmacies). When working outside a PCP's office setting, the pharmacist is considered a member of the PCMH community health team.

Initial patient visits should be conducted as face-to-face meetings. For follow-up visits, pharmacists can use a combination of face-to-face meetings, group sessions, telephone calls, and e-consults. The communication method depends on the complexity of the patient's drug regimen, drug adherence trends, the number and type of identified drug-related problems, or progress with medication self-management goals.

### **Quality and Safety Initiatives**

The pharmacist identifies, resolves, prevents, and monitors for drug therapy problems by systematically assessing a comprehensive patient drug profile to ensure appropriate, safe, and effective drug therapy. The pharmacist can detect instances of missing drugs according to evidence-based guidelines while monitoring for ineffective dosing regimens, preventable drug errors, waste and abuse potential with discontinued drugs, and opportunities for cost-effective treatment alternatives.

In addition to patient-specific MTM services, pharmacists may provide population-level quality assurance services across a practice, provider network, or health plan. Such services can include tools to measure the care quality and financial impact of MTM programs, query a patient registry or a patient's health plan data to implement widespread drug use and safety interventions, or create standardized tools for drug adherence counseling by nurses.

### **PCMH Pharmacist Practice Model**

When criteria are considered for effective implementation of the pharmacist practice model outlined in Box 1-2, it is recommended that pharmacists be assessed for the following qualifications: evidence-based pharmacotherapy knowledge base; direct patient care experience; excellent written and oral communication skills; MTM training; pharmacy specialty board certifications; residency training in ambulatory care,

#### **Box 1-2. Practice Model for the Pharmacist in a PCMH**

1. Develop a comprehensive, active medication profile to identify the actual use of all drugs (e.g., prescribed, over-the-counter, herbals, dietary supplements, physician samples, administered in outpatient sites) obtained from multiple prescribers and multiple pharmacies)
2. Perform a systematic assessment of each drug for appropriateness, effectiveness, safety, and adherence (in this sequence) to achieve optimal treatment goals; identify, resolve, monitor, and prevent drug therapy problems in collaboration with the patient, prescribers, and retail pharmacists. Drug therapy problems include allergies, inappropriate drug selection, omissions, duplications, low or excessive dosages, drug interactions, adverse events, cultural competency and health literacy challenges, adherence issues, and costly regimens
3. Collaborate with the patient's health care professionals (e.g., physicians, nurses, dietitians) to optimize medication therapy and achieve treatment goals
4. Coordinate the patient's drug therapy across multiple prescribers and multiple pharmacies
5. Provide patients with a personal medication record that can be shared with caregivers, with prescribers, and across care transitions
6. Provide patients with a medication action plan to empower them to work on medication self-management goals and share decision-making with their prescribers
7. Provide a copy of the pharmacist's care plan, including evidence-based recommendations for identified drug therapy problems, with the patient's providers for review and action before inclusion in the patient's medical record
8. Schedule follow-up patient encounters as needed to resolve drug therapy problems or evaluate the patient's progress toward achievement of medication self-management goals

PCMH = patient-centered medical home.

Information incorporates elements from American Pharmacists Association and the National Association of Chain Drug Stores Foundation. Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model, Version 2.0, 2008. Available at [www.pharmacist.com/MTM/CoreElements2/](http://www.pharmacist.com/MTM/CoreElements2/). Accessed August 18, 2011.

primary care, or family medicine practice settings; and a basic understanding of continuous quality improvement principles and HIT applications.

This practice model can apply to various types of PCMH workflow patterns that incorporate pharmacists in direct patient-care roles. Differences in drug data sources, pharmacist documentation systems, PCMH workflow patterns, HIT capabilities, and pharmacist integration configurations (e.g., employee, contractor, consultant) may require modifications in the practice model outlined in Box 1-2.

### Pharmacist Integration Models

This section describes the various models used for pharmacist integration in a PCMH practice. Some common examples of integration are listed in Box 1-3.

#### Employed Model

The pharmacist works in the PCMH office as a clinician staff member. In this model, the pharmacist can provide MTM services by meeting with the patient, performing e-consults using the patient's EHR, or following up with the patient by telephone. This employee model may only be feasible for large group practices or

a PCMH within an integrated delivery system that can afford to hire one or more pharmacists.

#### Embedded Model

In this model, the pharmacist practices in the PCMH office setting through a partnership between the PCMH and a hospital pharmacy or pharmacy school. The pharmacist provides MTM services in the same manner as described in the employed model. The embedded model can involve training Pharm.D. students and pharmacy residents. Although the embedded model requires a longer-term financial commitment, its major advantage is that the pharmacist salary may be shared between the PCMH and the hospital or pharmacy school, thus providing a more affordable model for some PCMHs. If the pharmacist is unable to work at the PCMH on a full-time basis, having a regular schedule will assist the PCMH providers and staff with planning pharmacist visits.

#### Regional Model

In this model, the pharmacist usually works in a health system or health plan central office that serves several PCMHs in a geographic area. Using a population health approach, the pharmacist identifies, develops, and perhaps delivers medication management programs. A regional pharmacist may be involved in educational programs, evaluation services, and outcomes research. This is a cost-effective model for a population health approach to medication services, yet it may require contracting the pharmacist for direct patient care services with PCMH practices in the region.

#### Contracted Model

In this model, the pharmacist is contracted, either as an individual or a member of a shared-resources pharmacist network, by a PCMH or payer to provide MTM services. A contracted pharmacist may meet with patients in the PCMH, at a community pharmacy, by telehealth connections, or in the patient's home, depending on the complexity of the individual's drug regimen and the intensity of pharmacist services required. Pharmacist networks are attractive to small physician practices, independent physician associations, and payers because the networks assume administrative responsibilities (e.g., credentialing and selecting pharmacists, scheduling patient-pharmacist visits, coordinating patient information exchange, sending pharmacist reports to the patient's providers, billing for pharmacist services).

#### Pharmacists Working Externally to a PCMH

In addition to the employment models previously described, pharmacists working in hospitals, in community pharmacies, or as consultants will have opportunities to interact with PCMH practices. Hospital pharmacists may communicate with a medical home on elective

#### Box 1-3. Integrating Medication Management Services in the PCMH Workflow

1. Preappointment planning: The pharmacist talks with the patient or reviews the patient's medical chart and makes care plan recommendations that are shared with the PCP *before* the patient's primary care appointment
2. Coincident referral (sometimes called a "warm handoff"): The pharmacist meets with the patient and makes care plan recommendations to the referring provider *during* or *at the conclusion of* a primary care appointment
3. Follow-up referral: The provider refers the patient to the pharmacist for a separate follow-up visit after the patient's primary care appointment; care plan recommendations are sent to the referring PCP *between* primary care appointments
4. Targeted consults: The pharmacist initiates (or the provider requests) medication management services for selected patients. Targeted consults can occur at times of care transition or when patients have not achieved therapeutic goals, are taking patient selection medications with a high risk of adverse events, have complex drug regimens, or see multiple prescribers. Patients may be identified on the basis of provider-patient relationships, predetermined criteria for disease registries and population health databases, quality improvement initiatives, or performance target programs

PCMH = patient-centered medical home; PCP = primary care provider.

or emergency hospital admissions to review or evaluate drugs used at home; they may also review the regimen at time of discharge to reconcile discharge and preadmission drug use. Community pharmacists are often called on by medical practices to verify current drugs or adherence trends. Consultant pharmacists may be in contact with medical home practices to reconcile drugs for patients in long-term care or assisted living facilities.

## CHALLENGES TO STARTING A PCMH PRACTICE

### Needs Assessment

The pharmacist working with a PCMH should meet with clinical and administrative leaders to discuss the PCMH's needs for new, expanded, or revised drug-related services. Box 1-4 lists activities that may identify potential opportunities for pharmacist services.

#### Box 1-4. Activities to Identify PCMH Needs for Pharmacist Services

1. Review accreditation reports, standing committee meeting minutes (e.g., pharmacy and therapeutics, quality improvement, patient education), and newsletters
2. Learn about ongoing or planned quality improvement initiatives and payer-performance improvement programs
3. Attend provider meetings, clinician seminars, and pertinent committee meetings
4. Participate in team "huddles"
5. Observe practice workflows for prescribing new or renewal drugs, medication monitoring, and communications with pharmacies
6. Hold focus groups with practice staff (e.g., physicians, nurse practitioners, nurses, medical assistants), patients/family members, and local community pharmacists
7. Meet with HIT staff to review standard or ad hoc drug-related reports
8. Scan medical charts for the documentation of active medication lists, drug allergies, quality of encounter notes on drug-related problems, and inclusion of patient medication action plans
9. Read patient outcomes reports or publications of medication-related studies conducted at the practice or written by the practice's providers
10. Review the policy and procedures for handling patient medication needs with care transitions
11. Talk with providers about achieving maximal levels of performance targets, quality improvement incentives, or meaningful use payments

HIT = health information technology; PCMH = patient-centered medical home.

### Patient Selection

Of importance, patient selection should be balanced with the practice's needs and available pharmacist resources before starting medication services. Most PCMHs would welcome pharmacist services that enhance patient outcomes or practice performance goals required in NCQA, HEDIS, meaningful use, or health-plan incentive programs. Box 1-5 lists some of the factors that can be used to identify patients who would benefit the most from pharmacist-provided medication management services.

### Planning Considerations

In addition to identifying patients for pharmacist services, there are program considerations that must be planned to inform eligible patients, provide adequate resources (e.g., personnel, financial, facilities, supplies/equipment), and ensure the program's overall success. Box 1-6 lists some questions that should be considered in the planning phase of PCMH services.

### Sustainable Payment Models

Several payment reform methods, from increased use of existing methods to major restructuring, could support a sustainable role for pharmacists in PCMHs. The four most common payment models are discussed in the following paragraphs.

#### *Fee-for-service*

One simple payment reform would be implementing widespread use of the existing pharmacist-specific Current Procedural Terminology (CPT) codes for MTM services and negotiating reasonable payments with payers. The Pharmacist Services Technical Advisory Coalition

#### Box 1-5. Patient Factors Indicating a Need for Pharmacist-Provided Medication Management

- Large number or type of drugs
- Large number or type of chronic diseases
- High complexity of drug regimens
- Lack of drug adherence/persistence
- Use of drugs with high risk of adverse events
- Older age or compromised physiology (e.g., renal or liver function)
- Lack of therapeutic response or treatment goal achievement
- Multiple providers or multiple pharmacies
- Frequency of care transitions
- High total health care expenditures, hospital admissions, ED visits

ED = emergency department.

**Box 1-6. Planning Considerations for PCMH Medication Therapy Management Services**

- What is the most effective method to inform eligible patients of pharmacists' services (e.g., letter, telephone call, e-mail, newsletter, open enrollment package, promotional campaign, health screenings)?
- Who should contact patients for enrollment in pharmacists' services (e.g., payer/health plan, primary care provider, pharmacist, community agency, public health department)?
- What is the optimal method for initial and follow-up pharmacist interventions (e.g., face-to-face individual visit, group visit, home visit, community health-team visit, telephone conversation, interactive voice response, remote monitoring device, e-consult, telehealth session)?
- What is the optimal frequency for pharmacists' services (e.g., annual comprehensive medication regimen review, ongoing medication management to resolve identified drug problems, regular monitoring to achieve desired clinical outcomes for chronic therapies, intervention with any care transition)?

PCMH = patient-centered medical home.

established three CPT codes (i.e., 99605, 99606, and 99607) and guidelines for pharmacist-provided MTM services. These services can be initiated at the request of the patient, caregiver, payer, pharmacist, or other health care provider.

The CPT code 99605 is used to report the initial and more intensive encounter. For subsequent encounters, the code 99606 is used to report services provided that are similar to the initial encounter, with an emphasis on updating information, evaluating any new or changed drugs, assessing patient adherence, and making follow-up recommendations from the initial encounter. The code 99607 is used with codes 99605 and 99606 for each additional 15 minutes of service beyond the initial service.

Table 1-2 provides an example of a fee-for-service payment framework that uses the CPT codes in a resource-based relative value scale. Although fee-for-service payments alone are not a sustainable payment model in PCMH reimbursement formulas, pharmacists may find the relative value model useful in negotiating payment rates according to time and intensity of MTM services.

**Global Payment/Care Coordination Fees**

A basic capitation or global budgeting method is payment per member in the practice per month (PMPM).

**Table 1-2. Medication Management Services: Resource-Based Relative Value Scale**

Services Provided	Level 1	Level 2	Level 3	Level 4	Level 5
Assessment of drug-related needs	Problem-focused: at least one medication	Expanded problem: at least two medications	Detailed: at least three to five medications	Expanded detailed: at least six to eight medications	Comprehensive: nine or more medications
Identification of drug therapy problems	Problem-focused: no drug therapy problems	Expanded problem: at least one drug therapy problem	Detailed: at least two drug therapy problems	Expanded detailed: at least three drug therapy problems	Comprehensive: four or more drug therapy problems
Complexity-of-care planning and follow-up evaluation	Straightforward: one medical condition	Straightforward: one medical condition	Low complexity: at least two medical conditions	Moderate complexity: at least three medical conditions	High complexity: four or more medical conditions
Approx. face-to-face time	15 minutes	16–30 minutes	31–45 minutes	46–60 minutes	> 60 minutes
CPT codes	99605 (initial encounter with new patient) or 99606 (all follow-up encounters)	99605 (or 99606) and 99607	99605 (or 99606) and 2 x 99607	99605 (or 99606) and 3 x 99607	99605 (or 99606) and 4 x 99607
Payment amount	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$

CPT = Current Procedural Technology.

Information from Isetts BJ. Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program: Final Report [report on the Internet]. St. Paul, MN: Minnesota Department of Human Services, 2007. Available at [www.dhs.state.mn.us/main/groups/business\\_partners/documents/pub/dhs16\\_140283.pdf](http://www.dhs.state.mn.us/main/groups/business_partners/documents/pub/dhs16_140283.pdf). Accessed September 6, 2011.



This approach gives the practice incentives to delegate care from physicians to other health care professional team members whenever appropriate for selected patients. Physicians working in a PCMH may be more inclined to refer patients with complex drug regimens, high-cost health care, lack of desired clinical outcomes, high risk of adverse events, poor adherence, or drug-related health literacy issues to a pharmacist for comprehensive MTM services. The pharmacist would then be compensated from the practice's PMPM payments.

### ***Performance Targets/Incentives***

With financial incentives for the care of patients with chronic conditions, PCMHs may employ or contract pharmacists for MTM services. Pharmacists would perform drug-related care coordination and quality improvement functions that physicians lack the time to accomplish. In addition, pharmacists may help the practice maximize performance targets or shared-savings goals offered by health plans or employer groups to reduce unnecessary emergency department visits, specialty consultations, and hospitalizations. Today, many practices receive sizable performance-target incentive payments, which could be a funding source for pharmacist services.

### ***Additional Patient Visits***

When pharmacists manage care for time-intensive patients, physician schedules are open for additional patient visits. Pharmacists may focus on patients with complex drug regimens who require more time for MTM visits. Pharmacists may also focus on care transition coordination with community or hospital pharmacists, specialists, or home health nurses.

For the payment reform options previously discussed, or a combination of the options, the business case for including pharmacists in PCMHs should be calculated on the basis of actual expenses and revenue. A business case could be developed for reimbursing pharmacist services in primary care practices from pay-for-performance revenues, care coordination fees, shared savings, or fees from additional physician visits.

## **SUCCESS DRIVERS FOR PHARMACIST SERVICES**

Many factors can be considered drivers for the successful implementation and provision of ongoing MTM services in the PCMH.

### **PCMH Resources**

Several PCMH staff members can assist the pharmacist with necessary resources. An office manager can assist with setting up workspaces, devising patient scheduling logistics, reviewing the practice's policies and

procedures, and orienting PCMH staff members to the pharmacist-provided patient care services. A payment specialist can assist in coding requirements to accurately bill for MTM services with various patient health plans or payers. The HIT specialist may be involved in training to access EHRs or generating practice population reports to track the PCMH's progress toward treatment goals. The receptionist can place reminder calls to the pharmacist's patients for upcoming patient appointments, reschedule "no-show" patients, and check in patients for their appointment.

### **Patient-Provider-Pharmacist Relationships**

In the PCMH, the advantages of a face-to-face appointment with the patient include the following: (1) working in direct collaboration with patients' PCPs and other health care professionals who have knowledge of the patients and their caregivers; (2) building a trust relationship with patients and providers as they observe the pharmacist's contribution to each patient's overall health care; (3) talking directly with patients' PCPs about treatment plan clarifications or MTM recommendations; and (4) fostering an environment in which patients know that the pharmacist is an active participant on their health care team.

When pharmacists work with PCMHs, most patients and health care professionals become more knowledgeable about the pharmacist's clinical skills and direct patient care services. The PCMH fosters collaborative teamwork between the pharmacist and other health care professionals; it is also a way to engage patients or family members/caregivers who may be otherwise reluctant to ask the pharmacist drug-related questions in a busy community pharmacy or by a telephone call.

### **HIT and Shared Patient Care Plans**

With the growth of EHRs and the emergence of HIEs, pharmacists working with a PCMH can access and contribute relevant patient-specific and practice-population health information. The EHR allows the pharmacist to review current diagnoses, treatment plans, laboratory data, home monitoring device data, and progress notes.

Disparate patient drug histories are common when comparing pharmacy information databases, e-prescribing systems, EHRs, payer and pharmacy benefit databases, and patient-generated lists. The pharmacist can verify and update a drug profile with all the drugs the patient is using at home or receiving at outpatient sites. If the PCMH is part of an HIE, the pharmacist can upload the patient's updated drug profile so that a centralized, current drug profile is available to all licensed health care professionals (with the patient's permission) for medication reconciliation, especially at care transitions.

In general, the EHR is used for documentation and billing transaction processes; it is less-than-optimal at enabling care coordination and sharing real-time care plans across care settings and among health professionals. It would be desirable if EHR functions allowed health care team members, and patients, to establish shared health care goals, track progress toward meeting these goals, and communicate effectively among PCMH team members.

## HEALTH CARE REFORM OPPORTUNITIES

New health care delivery and payment reform initiatives should incorporate pharmacist-provided medication management services to ensure optimal patient outcomes, better care coordination, and cost-effective therapies. The Affordable Care Act recognizes medication use as a societal problem and supports pharmacist-provided MTM services. The most promising opportunities for pharmacist services that are outlined in the Affordable Care Act include the provision of MTM services in chronic diseases (Section 3503), medical homes/advanced primary care practice models (Section 2703), community health teams to support PCMHs (Section 3502), and community-based care transition models (Section 3026).

The newly developed Centers for Medicare & Medicaid Services (CMS) Innovation Center supports better care coordination and improvement in patient health outcomes. The Innovation Center focuses on delivery and payment reforms with the goal of (1) providing better patient care in all care settings to improve quality and safety; (2) coordinating care for improved health outcomes; and (3) exploring community care models that address public health issues and chronic conditions. Current initiatives involve multiple payers (Medicare, Medicaid, and private health plans), federally qualified health centers, Medicaid state plans, dual eligibles (patients eligible for both Medicare and Medicaid coverage), and community-based care transition teams. All of these innovation areas present opportunities for pharmacist-provided MTM services. Health-system pharmacy leaders, pharmacist professional organizations, and pharmacy faculty members should collaborate with state Medicaid programs, CMS regional offices, and the CMS Innovation Center to include pharmacists in demonstration projects.

## CONCLUSION

Practical topics to consider in starting or expanding medication management services in a PCMH include defining the practice model; selecting the best pharmacist integration model; and understanding the operational challenges of medication management needs, patient selection, and reimbursement models. The

climate of health care reform presents unparalleled opportunities for pharmacist-provided patient care services within a medical home.

The pharmacy profession and academia must consider the best way to prepare current and future pharmacists for emerging practice opportunities that align with the PCMH care model. In addition to improving skill development for individual patient medication management and clinical outcomes, training pharmacists for population-level roles that involve drug use merits equal attention. Health care delivery reform initiatives will present emerging opportunities for pharmacists to become more involved in practice- or population-level roles. Sufficient pharmacist training is needed on clinical informatics applications (e.g., EHRs, treatment algorithms, disease registries, clinical decision support tools, HIEs), team-based care management programs, continuous quality improvement principles, and health policy topics. The Joint Commission of Pharmacy Practitioners' 2015 vision for pharmacy practice states that pharmacists will be prepared and responsible for patient-centered and population-based care that optimizes drug therapy by managing health care system resources, improves therapeutic outcomes, and promotes health improvement, wellness, and disease prevention. Such a vision statement presents us with a call to examine the knowledge and skill development needs of pharmacists so that they are fully prepared for patient-specific, practice-level, and population health roles.

## ANNOTATED BIBLIOGRAPHY

1. American Pharmacists Association and the National Association of Chain Drug Stores Foundation. Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model, version 2.0, 2008. Available at [www.pharmacist.com/MTM/CoreElements2/](http://www.pharmacist.com/MTM/CoreElements2/). Accessed August 18, 2011.

This introduction to the MTM process, produced by two national pharmacy organizations, provides a framework for developing and documenting clinical pharmacy services. The four core elements described can be used across multiple practice settings, allowing a uniform approach to pharmaceutical care among pharmacists. The MTM process provides guidance for pharmacists who work within a PCMH. This document was written by pharmacists for pharmacists and does not provide input from the medical community. The document does not suggest specific standards for pharmacists with respect to training, performance, or evaluation. This resource would be best used by those who are new to the terminology and principles of MTM.

2. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm* 1990;47:533-43.

This seminal article delineated the comprehensive taxonomy of drug therapy problems. The authors defined a new way of looking at the responsibilities of the pharmacist and pharmacy services, coined the term *pharmaceutical care*, and created the framework for MTM. Pharmaceutical care, consistent with the medical home model, is based on patient-centered practice. In the medical home, pharmacists are allowed to practice at the top of their license through identifying and resolving drug-related problems. This article has helped shift the primary function of a pharmacist from the role of dispenser to a dynamic member of the health care team.

3. Smith MA, Bates DW, Bodenheimer T, Cleary PB. Why pharmacists belong in the medical home. *Health Aff* 2010;29:906–13.

This reference provides valuable insight into the need for pharmacists to be integrated within a PCMH. The authors describe the fundamental principles of the PCMH model, highlighting a multidisciplinary approach to patient care. Although the role of the pharmacist in team-based care has been firmly established, evidence is limited on the impact of integrating the pharmacist in primary care settings. In this article, innovative medication management programs (e.g., the Asheville Project) are highlighted, together with a review of MTM services. The development of new delivery and payment models requires ingenuity and is often a barrier to implementation. The authors review considerations for planning MTM services in a PCMH and suggest ways to identify patients suitable for such services. The impact of health care reform is explored, together with considerations for reimbursement and cost reductions. The authors believe that pharmacists can greatly affect patient care while practicing within a medical home model.

4. Bates DW, Bitton A. The future of health information technology in the patient-centered medical home. *Health Aff* 2010;29:614–21.

This reference focuses on the use of HIT in primary care. The EHR is central to the PCMH model. Many commercially available EHRs have limited functionality and may not contribute to optimal patient outcomes. The authors of this article present seven domains that EHRs should address to ensure the success of the PCMH: clinical decision support, registries, team care, care transitions, personal health records, telehealth technologies, and measurement. In describing the seven domains, the authors provide practical examples of how each will improve the efficiency of PCPs and organizations. It is implied that a high-functioning EHR will benefit multidisciplinary teams including physicians, nurses, medical assistants, and pharmacists. The authors believe that personal health records and telehealth technologies are reasonably developed at this time but that care coordination and care transitions are lacking. Future research is needed to evaluate the impact of HIT in the medical home specifically.

5. Bodenheimer T, Chen E, Bennett HD. Confronting the growing burden of chronic disease: can the U.S. health care workforce do the job? *Health Aff* 2009;28:64–74.

This article focuses on the need for an interdisciplinary primary care workforce to help manage chronic disease and health care costs. Around 78% of all health care costs are related to chronic disease. The authors pose four critical questions that may help improve policy-making. One question is whether chronic disease management should be delivered by specialists, primary care physicians, or multidisciplinary teams. The authors state that without multidisciplinary teams, achieving consistently good chronic care is impossible. Medical assistants, nurses, and pharmacists have shown positive patient outcomes when they are made part of the multidisciplinary team coordinating care. The principles captured in this article mirror the spirit of the PCMH and further show the need to shift the paradigm of primary care.

6. Devine EB, Hoang S, Fisk AW, Wilson-Norton JL, Lawless NM, Louie C. Strategies to optimize medication use in the physician group practice: the role of the clinical pharmacist. *J Am Pharm Assoc* 2009;49:181–91.

This article describes an innovative pharmacist-led practice model within a primary care setting. The study took place at a clinic that employed two clinical pharmacists to improve quality of care, improve drug use, and reduce overall health care costs as members of a multidisciplinary team. The pharmacists also collaborated with physicians to maximize pay-for-performance goals focused on hypertension and deep venous thrombosis (DVT). The goal was to minimize costs by using generic and over-the-counter drugs when appropriate. Pharmacists also helped lower the payment per member per month cost benchmarks for pharmaceuticals. The pharmacists were able to show a 15% increase in the number of patients who reached their blood pressure goals as well as a \$450,000 savings in hospital costs related to DVT. This model serves as a reminder of the pharmacist's crucial role in chronic disease management.

7. Yee HF. The patient-centered medical home neighbor: a subspecialty physician's view. *Ann Intern Med* 2011;154:63–4.

Written by a physician subspecialist, this opinion article shares a response with the American College of Physicians' position paper titled "The Patient-Centered Medical Home Neighbor: The Interface of the Patient-Centered Medical Home with Specialty/Subspecialty Practices." The author describes his personal concerns with the position paper, which include (1) the need for innovative forms of interaction, (2) the barriers to care coordination, and (3) the need for improved communication between medical professionals. Although the paper was intended for physician groups, the concerns described are applicable to all health care professionals, including pharmacists. As drug experts, pharmacists can provide valuable drug information as

well as therapeutic recommendations. It is crucial that this information be communicated to both patients and providers. Although it reflects the opinion of just one physician, this article reinforces the need for improved care coordination among all members and “neighbors” of the medical home.

8. Patient-Centered Primary Care Collaborative. Integrating Comprehensive Medication Management to Optimize Patient Outcomes: A Resource Guide [guide on the Internet]. Washington, DC: Patient-Centered Primary Care Collaborative. Available at [www.pcpcc.net/files/medmanagepub.pdf](http://www.pcpcc.net/files/medmanagepub.pdf). Accessed January 31, 2011.

Written by a multidisciplinary team, this reference focuses on the role of medication management within the medical home. Drugs are pivotal in the treatment of many chronic diseases, yet they can contribute to increased health care costs, hospitalizations, and preventable adverse drug reactions. This comprehensive guide describes the process of medication management and suggests that pharmacists are in a unique position to provide such services. As the medication experts, pharmacists can ensure safe and effective drug use. The authors provide a detailed review of how drug-related problems are identified, which patients may benefit the most from such services, the perceived benefits to the health care system, and opportunities for payment reimbursement. This article incorporates the principles described in the first annotation.

9. Patient-Centered Primary Care Collaborative. Payment Reform to Support High-Performing Practice. Washington, DC: Patient-Centered Primary Care Collaborative, 2010. Available at [www.pcpcc.net/files/payreform\\_web\\_0.pdf](http://www.pcpcc.net/files/payreform_web_0.pdf). Accessed August 19, 2011.

This report explores payment reform as a means of supporting the PCMH model to transform primary care. The Patient-Centered Primary Care Collaborative task force, comprising medical professionals, payer groups, pharmaceutical companies, and other stakeholders, identified the strengths and potential weaknesses of different payment approaches. The payment options described as most common are the fee-for-service, management service, and pay-for-performance models. The Prometheus evidence-informed case rate, accountable care organization, and risk-adjusted comprehensive payment models are also critically reviewed. The third model includes the costs of hiring a multidisciplinary team to help support the medical home. The coalition does not advocate any single approach because the needs of organizations vary.

10. Safety Net Medical Home Initiative. Bailit M, Phillips K, Long A. Paying for the Medical Home: Payment Models to Support Patient-Centered Medical Home Transformation in the Safety Net. Seattle: Bailit Health Purchasing and Qualis Health, 2010. Available at [www.qhmedicalhome.org/safety-net/upload/SNMHI\\_PolicyBrief\\_Issue1.pdf](http://www.qhmedicalhome.org/safety-net/upload/SNMHI_PolicyBrief_Issue1.pdf). Accessed August 19, 2011.

This concise resource describes methods for achieving a sustainable PCMH model. Much of the care coordination and case management required may not necessarily translate into direct reimbursement. Lack of reimbursement for time and services rendered may decrease team morale and incentive. The authors discuss 10 payment opportunities and the advantages and disadvantages of each. The alignment of services with direct reimbursement will help support infrastructure and create incentive among health care teams.

11. Cassidy A. Health Policy Brief: Patient-Centered Medical Homes. Health Aff September 14, 2010. Available at [www.rwjf.org/files/research/68929.pdf](http://www.rwjf.org/files/research/68929.pdf). Accessed August 19, 2011.

This brief report describes the basic principles of the PCMH model. Using a question-and-answer format, the author shares the history of model, present-day demonstration projects and addresses frequently asked questions about universal adaptation of the model. Other primary sources are needed to explore the depth of the model further. This reference is best suited to those needing an update on the progress of the medical home movement.

# SELF-ASSESSMENT QUESTIONS

**Questions 1–3 pertain to the following case.**

You are a clinical faculty member employed at a federally qualified health center. The chief quality assurance officer has charged you with designing a medication therapy management (MTM) program that will improve blood pressure control across the organization. You have decided to provide electronic consults (e-consults) with drug therapy recommendations to the responsible primary care provider (PCP).

- 1. Which one of the following is the most appropriate first step in designing your program?**
  - A. Develop a contract for reimbursement of your services.
  - B. Identify the target patient population.
  - C. Determine the intervention mode for MTM delivery.
  - D. Create a data collection tool to analyze your outcomes.
- 2. Which one of the following patients would benefit the most from this pharmacist-led service?**
  - A. A 37-year-old man recently discharged from the hospital after a myocardial infarction.
  - B. A 68-year-old woman actively engaged in smoking cessation.
  - C. A 44-year-old man with newly diagnosed hypertension managed only with sodium restriction.
  - D. A 51-year-old woman with a recent blood pressure of 118/80 mm Hg on dual antihypertensive therapy.
- 3. Which one of the following outcome measures would best evaluate the success of this MTM program?**
  - A. Number of drug therapy recommendations accepted by PCPs.
  - B. Percentage of PCPs who were satisfied with the program.
  - C. Change in blood pressure before and after the consult.
  - D. Number of patients adhering to DASH (Dietary Approaches to Stop Hypertension) diet.

**Questions 4–6 pertain to the following case.**

J.T. is a 67-year-old woman new to your health center. She made an appointment with a physician in your practice to establish care. After the patient-centered medical home (PCMH) morning care planning meeting, the

PCP asks you to prepare an MTM report for J.T. The electronic health record (EHR) provides information on the patient's medical history and recent laboratory results and indicates the patient takes several prescription and over-the-counter medications.

- 4. Which one of the following is the best first step in providing MTM service for J.T.?**
  - A. Conduct a drug interaction check to identify any safety concerns.
  - B. Calculate creatinine clearance to determine whether dose reductions are necessary.
  - C. Call the patient's pharmacy to see whether she is refilling her drugs on time.
  - D. Obtain a comprehensive medication history.
- 5. Which one of the following represents the best order for a systematic evaluation of J.T.'s drugs?**
  - A. Effectiveness, appropriateness, safety, adherence.
  - B. Appropriateness, effectiveness, safety, adherence.
  - C. Adherence, safety, effectiveness, appropriateness.
  - D. Safety, appropriateness, adherence, effectiveness.
- 6. Which one of the following PCMH principles is best represented by this pharmacist-provided MTM service for J.T.?**
  - A. Cultural competence.
  - B. Patient engagement.
  - C. Enhanced access to care.
  - D. Team-based care.

**Questions 7–9 pertain to the following case.**

A newly established small physician group is interested in starting a pilot program for a diabetes management service. The PCMH medical director wants to build a multidisciplinary team that can provide direct patient care services as well as offer group visits. You are asked to write a job description for a new pharmacist to join the practice.

- 7. To hire the most qualified pharmacist for this position, which one of the following, in addition to a Pharm.D. degree, would be best to include in the job description?**
  - A. Long-term care experience, team-based care experience, completed drug information fellowship, BCPS certification.

- B. Completed pharmacy practice residency, strong oral and written communication skills, completed teaching certificate program.
  - C. Completed managed care pharmacy residency, direct patient care experience, completed MTM training program.
  - D. Strong communication skills, completed MTM training program, team-based care experience, completed ambulatory care residency.
8. **Which one of the following pharmacist integration models would best meet the needs of the physician group?**
- A. Employed model.
  - B. Embedded model.
  - C. Contracted model.
  - D. Regional model.
9. **Which one of the following roles within a group visit team would best align with the training and expertise of the hired pharmacist?**
- A. Setting self-management goals for physical activity.
  - B. Coordinating insulin and drug titration.
  - C. Performing a monofilament foot examination.
  - D. Demonstrating the use of a glucometer.
- Questions 10 and 11 pertain to the following case.**  
 J.N. is a 58-year-old woman who was recently discharged from the hospital after having her third asthma attack this year. She has a follow-up appointment with her PCP this afternoon at your PCMH. During the morning team huddle, you (the pharmacist), the PCP, the nurse, and the medical assistant meet to discuss J.N.'s plan of care. The PCP asks you to review J.N.'s EHR and provide an e-consult with recommendations to improve her asthma control.
10. **Which one of the following best describes this method of incorporating a pharmacist into a PCMH?**
- A. Preappointment planning.
  - B. Follow-up referral.
  - C. Targeted intervention.
  - D. Coincident referral.
11. **After assessing J.N. during her visit, the PCP determines she needs additional care coordination and services. Which one of the following team roles is best suited for you as the pharmacist?**
- A. Schedule a pulmonologist referral.
  - B. Develop a treatment action plan for asthma.
  - C. Conduct spirometry testing.
  - D. Administer a pneumococcal vaccine.
12. **Your employer, a PCMH, has received a medical home-quality improvement grant with pay-for-performance incentives based on a goal of 80% of all patients with diabetes served by the health center having a hemoglobin A1C of less than 7%. You are asked to develop an MTM service that will assist the health center in achieving this performance goal. Which one of the following is the most appropriate first step in implementing this MTM service?**
- A. Convene a focus group of patients with diabetes to identify their drug adherence challenges.
  - B. Conduct a 5-year literature search on diabetes performance-based incentive programs.
  - C. Interview physicians to evaluate their achievement of pay-for-performance targets for the past 2 years.
  - D. Review the health center's patient with diabetes outcome reports for the past year.
13. **Which one of the following statements best justifies why pharmacists belong in a PCMH?**
- A. Pharmacists collaborate with patients and health care providers to provide disease state education.
  - B. Pharmacists ensure the appropriate, safe, and effective use of drugs by identifying and resolving drug-related problems.
  - C. Pharmacists are the only health care professionals trained in pharmacotherapy and patient assessment.
  - D. Pharmacists work to improve drug adherence rates among patients with poorly managed conditions.
14. **Which one of the following roles best illustrates pharmacists practicing at the top of their license within a PCMH?**
- A. Processing and filling a patient's prescription.
  - B. Demonstrating the use of medical devices.
  - C. Counseling a patient on the adverse effects of a newly prescribed drug.
  - D. Providing drug therapy consults for physician groups.
15. **Which one of the following elements of a pharmacist reimbursement model for MTM services is most consistent with PCMH payment reform initiatives?**
- A. Approximate length of patient visit and National Committee for Quality Assurance level of PCMH recognition.
  - B. Number of drug therapy problems identified and approximate time of patient visit.

- C. Complexity of the patient's care plan and number of providers in the PCMH.
- D. Number of providers in the PCMH and number of drug therapy problems.
16. A 54-year-old man with elevated blood pressure is a patient at your clinic. For the past 6 months, his PCMH health care providers have encouraged him to remove sodium from his diet to better control his blood pressure. When you (the pharmacist) meet with this patient, one of his first comments is, "I am not doing that. I love salt, and to cut it out entirely is not going to happen. People think it is so easy to just change." Later, you give the patient examples of how to reduce sodium in his diet. He likes the idea of using a salt substitute while cooking and offers to try it for the next few weeks. **This encounter best shows which one of the following PCMH principles?**
- A. Patient engagement.
- B. Team-based care.
- C. Quality and safety initiatives.
- D. Care coordination.
17. A pharmacist has initiated MTM services within a PCMH for the past 6 months. The greatest challenge from the pharmacist's perspective is the patient no-show rate for an initial scheduled appointment. **Which one of the following would best address this challenge?**
- A. Meet with the PCMH administrator to extend PCMH hours.
- B. Review patient referral criteria and processes.
- C. Consider making home visits.
- D. Distribute flyers in the waiting room promoting MTM services.
18. **Which one of the following pharmacist-provided program topics would be the most relevant for a PCMH grant submission funded by the Centers for Medicare & Medicaid Services Innovation Center?**
- A. Developing collaborative drug-therapy management protocols.
- B. Piloting a hospital-to-home care transition program.
- C. Building adherence programs using motivational interviewing techniques.
- D. Creating a pharmacist reimbursement model with a commercial health plan.
19. A 66-year-old man with hyperlipidemia presents to your PCMH for a follow-up appointment. He takes 40 mg of simvastatin daily. After 3 months of therapy, his low-density lipoprotein cholesterol remains elevated despite a low-fat diet and regular physical activity. Pill counts and refill history suggest the patient is taking the drug as instructed. **Which one of the following drug categories best fits this drug therapy problem?**
- A. Appropriateness.
- B. Effectiveness.
- C. Safety.
- D. Adherence.
20. **Which one of the following benefits of pharmacist integration is most likely seen in a PCMH?**
- A. Redefinition of the PCMH workforce roles.
- B. Improved patient outcomes and reduced health care costs.
- C. Increased health information technology needs.
- D. Improved reimbursement rates for the PCMH.

