



***The Patient-Centered Medical Home:***

Integrating Comprehensive  
Medication Management to  
Optimize Patient Outcomes

## DEAR COLLEAGUES:

The Patient-Centered Primary Care Collaborative (PCPCC) is an open forum where health care stakeholders freely communicate and work together to improve the quality of care and ultimately the health of all Americans. To date, more than 700 PCPCC members believe that the patient-centered medical home (PCMH) model holds promise to improve the health of patients and the viability of the health care delivery system by reducing total health care costs.

To accomplish this goal, the PCPCC is structured to maximize the human resources and knowledge base of our dedicated membership. PCPCC's work is organized under five collaborative centers, each with goals, objectives, and functions. The centers fit together like pieces of a puzzle; the tasks and functions they perform support one another to create a full picture of the PCPCC and its work.

This report was developed by the PCPCC Medication Management Task Force under the Center for Public Payer Implementation, which is charged with promoting the PCMH concept in all facets of the public payer system. The center believes that the ability to maximize the appropriate use of medications to prevent and control disease is critical to the success of the PCMH. With 75 percent of health care cost related to chronic conditions, we must maximize appropriate use of our weapons (medications) in conjunction with prevention and lifestyle approaches to achieve meaningful disease control, or we will fail. Too often patients simply do not understand their medications and, consequently, the need to take them. This guide not only discusses the rationale for including comprehensive medication management services in integrated patient-centered care, but it also delineates the key steps necessary to promote best practices and achieve meaningful quality improvements for patients while reducing costs associated with poor-quality outcomes.

We encourage you also to review the PCPCC-endorsed *Meaningful Connections*, which explores current uses of health information technology and covers many of the information items that need to be included for medication management. Also, *A Purchaser Guide* provides information on benefit designs that encourage better alignment of incentives for providers and patients while removing financial barriers to better patient engagement and quality care.

The PCPCC leadership is very excited to offer another excellent resource that can be broadly used in putting the patient in the center of care in a team-based approach—one that includes all providers, such as pharmacists working at “the top of their licenses,” as we transform our delivery system.



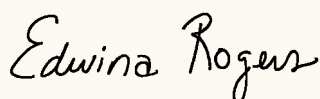
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# Foreword

**N**ow is an important time in health care. Medications hold the promise to significantly improve the health of all Americans by effectively preventing and controlling many diseases, but they have fallen far short of this goal. Our current health care system rewards splintered, episodic care, which cripples our primary care system and silos medication use and costs from medical care and costs. As we truly coordinate care, we must also deliver on the promise of modern medications to prevent and control disease by directly linking their use to clinical goals and outcomes in a patient-centered fashion in a primary care team-based approach. Only with appropriate and optimal medication use will we see real quality of care improve and health care costs decrease in the patient-centered medical home (PCMH). Adherence to medications and recommended therapies is optimized when patients have a thorough understanding of all of their medications, including over-the-counter drugs, and how they impact their health when incentives are fairly aligned. Whole-person, patient-centered care—considering the mental and physical aspects of health—can be advanced by fully integrated care that includes clinically linked, comprehensive medication management.

This task force has produced three important works so far. The first, “The Opportunity for Medication Management in the Patient-Centered Medical Home,” is a short document that clearly articulates the facts that support the need for a comprehensive approach to medication management, including clinical and economic factors, patient and provider perceptions of this approach, and actual practice profiles. The second, “The Opportunity for Medication Management in the PCMH,” is a general slide deck that is customizable for use in presentations. This final work is a more comprehensive guide that is intended as a resource for payers (both public and private), plans, provider groups, patient advocacy groups, and all medication therapy management service providers as they pursue integration of medication management through collaboration in the PCMH.

We would like to thank the members of the Patient-Centered Primary Care Collaborative (PCPCC) Medication Management Task Force for all of their efforts and comments on these collaborative documents and Foong-Kwhan Siew as our consultant facilitator. We would also like to thank GlaxoSmithKline for generously sponsoring this effort.

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## SECTION 1: Introduction

### What Is the Patient-Centered Medical Home?

The patient-centered medical home (PCMH) strives to provide care to patients that is structured, delivered, and coordinated around the specific needs of each patient. The care is based on an effective, sustained relationship between patients and their physicians and other health care practitioners on the PCMH team. The PCMH offers significant promise for improving health care value. When consumers or patients have this type of relationship and coordination with their health care practitioner and practice, they have a PCMH.<sup>1</sup>

A critical factor in the success of the PCMH for both adults and children is maximizing the benefits medications offer in improving outcomes related to chronic conditions. Therefore, the health care reform and delivery system changes now under discussion must include the comprehensive management of medications to identify, resolve, and, most important, prevent medication-related problems. This document presents the rationale for including comprehensive medication management services in integrated patient-centered care within the structure of the PCMH.

### The Need for Comprehensive Medication Management Services

More than 3.5 billion prescriptions are written annually in the United States,<sup>2</sup> and four out of five patients who visit a physician leave with at least one prescription.<sup>3</sup> Medications are involved in 80 percent of all treatments and impact every aspect of a patient's life. The two most common drug therapy problems that patients receiving comprehensive medication management experience are (1) the patient requires additional drug therapy for prevention, synergistic, or palliative care; and (2) the drug dosages need to be titrated to achieve therapeutic levels that reach the intended therapy goals.<sup>4</sup> According to the World Health Organization, adherence to therapy for chronic diseases in developed countries averages 50 percent, and the consequences of poor adherence to therapies are poor health outcomes and increased health care costs.<sup>5</sup>

Drug therapy problems occur every day and cost money; drug-related morbidity and mortality cost this country almost \$200 billion annually, exceeding the amount spent on the medications themselves.<sup>6-8</sup> For example, Medicare beneficiaries with multiple chronic illnesses see an average of 13 different physicians, fill 50 different prescriptions per year, account for 76 percent of all hospital admissions, and are 100 times more likely to have a preventable hospitalization than those with no chronic conditions.<sup>9</sup> The Institute of Medicine noted that while only 10 percent of total health care costs are spent on medications, their ability to control disease and impact overall cost, morbidity, and productivity—when appropriately used—is enormous.<sup>10</sup>

*Pharmaceuticals are the most common medical intervention, and their potential for both help and harm is enormous. Ensuring that the American people get the most benefit from advances in pharmacology is a critical component of improving the national health care system.<sup>11</sup>*

This guide was developed to provide a framework for integrating medication management in the PCMH as part of the practice redesign that needs to occur when individual and group practices transform into the PCMH. This guide also reinforces the need for payment reform to support the PCMH to include payment for medication management as an essential professional activity for effective integrated care.

While the processes of writing and filling a prescription are important components of using medications, the technical aspects of these activities are not addressed

in this document. It should be clear that both activities need to occur with timeliness and accuracy for patients to be well served. This document focuses on the decisions surrounding the comprehensive management of a patient's medications, regardless of source, method of delivery, or form of administration.

## Comprehensive Medication Management in the PCMH: What Is It and Why Does It Matter?

Comprehensive medication management is defined as the standard of care that ensures each patient's medications (whether they are prescription, nonprescription, alternative, traditional, vitamins, or nutritional supplements) are individually assessed to determine that each medication is appropriate for the patient, effective for the medical condition, safe given the comorbidities and other medications being taken, and able to be taken by the patient as intended. Comprehensive medication management includes an individualized care plan that achieves the intended goals of therapy with appropriate follow-up to determine actual patient outcomes. This all occurs because the patient understands, agrees with, and actively participates in the treatment regimen, thus optimizing each patient's medication experience and clinical outcomes.<sup>12-14</sup>

The concept and definition of comprehensive medication management has evolved over the years. The term medication (therapy) management became most widely used when the Centers for Medicare & Medicaid Services (CMS) adopted it in January 2003 legislation to refer to the new, additional service required for certain patients receiving Medicare Part D benefits.<sup>15</sup> Medication management has expanded since then as state Medicaid programs have recognized and provided payment for the service, employers have added the service as an employee benefit, and the service has been added to medical homes functioning in North Carolina and Minnesota. Comprehensive medication management is accepted and provided around the world, resulting in a new standard for medication use in our societies.

Medication management now occurs at varying levels in all patient care practices on a daily basis. However, medication regimens are becoming very complex and specialized in patients who have an average of five comorbidities and are taking an average of eight medications concurrently. To achieve better patient outcomes from the use of medications, the systematic and comprehensive management of medications is necessary. For the purposes of this document, we refer to comprehensive medication management in the

context of the medical home, where it is delivered as a service to an individual patient and is fully integrated with work of the PCMH team to achieve coordinated patient care.

We use the common elements of two definitions that describe this service in the medical home—the definition offered by the American Medical Association (AMA) when it provided current procedural terminology (CPT) payment codes for the delivery of medication management services<sup>12</sup> and the definition provided by legislation for Minnesota Medicaid recipients.<sup>14</sup> These definitions have the following five elements in common relevant to the needs of patients being cared for in the medical home:

1. The service (medication management) needs to be delivered directly to a specific patient.
2. The service must include an assessment of the specific patient's medication-related needs to determine if the patient is experiencing any drug therapy problems. A care plan is developed to resolve the problems, establish specific therapy goals, implement personalized interventions and education, and follow up to determine the actual outcomes the patient experienced from taking the medications.
3. The care must be comprehensive because medications impact all other medications and all medical conditions.
4. The work of pharmacists and medication therapy practitioners needs to be coordinated with other team members in the PCMH.
5. The service is expected to add unique value to the care of the patient.

One principle of the PCMH is the team approach, and the composition of the PCMH team will vary based on a range of factors, including the specific needs of patients and the scope of services to be offered and/or coordinated. For patients on multiple or chronic medications, pharmacists, who are trained to provide comprehensive medication management services, have the necessary expertise to help them and their health care team in the PCMH maximize the benefits from the very effective medications available in this country.<sup>16-17</sup>

Comprehensive medication management is best accomplished when the PCMH is flexible in its design, allowing access to this expertise for complex patients or those not at clinical goal when it is needed.



## SECTION 2:

# Comprehensive Medication Management Services

**P**atients with less-complex drug regimens who are at clinical goal may have their medications effectively managed by their primary care providers using the steps in this document. For more complex regimens when patients are not at goal or are experiencing adverse effects, however, the primary care physician or a member of the medical home team may seek medication management services to achieve clinical goals and minimize adverse events. Such services optimally require a clinically oriented pharmacist trained to work directly with patients. The work and service delivered are described in this document.

## What Specific Procedures Are Performed in Medication Management in the Medical Home?

Medication management in the medical home needs to be a comprehensive, systematic service to produce positive patient outcomes and add value to patient care. Therefore, all of the steps described below must be completed for each patient receiving medication management services. Incomplete provision of service—by completing selected steps only or partially fulfilling

the responsibilities described—will not optimize the patient's medication experience, achieve therapy goals in a predictable manner, or lead to positive patient outcomes.

The following process leads to optimal outcomes from drug therapy:

### 1. An assessment of the patient's medication-related needs

This comprehensive assessment includes all of the patient's medications (prescription, nonprescription, alternative, traditional, supplements, vitamins, samples, medications from friends and family, etc.), regardless of who prescribed them, and where they were dispensed, purchased, or obtained. This is necessary because current electronic systems of dispensing and e-prescribing miss a significant number of medications purchased and taken by patients. Also, these systems contain idealized prescription information (i.e., how the prescription was written), but do not contain information about how the medications are actually being taken.

The assessment begins with uncovering the patient's medication experience. That includes the patient's beliefs, concerns, understanding, and expectations about his or her medications. This experience helps define how patients make decisions about a) whether to fill a prescription, b) whether to take it, c) how to take it, and d) how long to take it. The goal of medication management is to positively impact the health outcomes of the patient, which necessitates actively engaging them in the decision-making process. Therefore, it is necessary to first understand the patient's medication experience.

The assessment includes the patient's medication history. The following questions need to be answered: Which medications have been taken in the past and for which medical conditions? Which have worked and which have not worked? Which medications have caused the patient problems or concerns? Which medications would the patient like to avoid in the future? Why?

The assessment includes the patient's current medication record. The primary focus is how the patient actually takes his or her medications and why. Changes, discrepancies, and any concerns or questions about the medications are noted.

Each medication is assessed for the medical condition or indication for which it is taken.

To produce clinically useful data, the indication for the medication must be electronically linked with the product being used, dose, duration, manner in which the medication is being taken, therapy goals, clinical parameters that will determine progress toward these goals, and actual outcomes. This allows for a comprehensive service to be delivered and new, clinically useful data to be generated.

## **2. Identification of the patient's medication-related problems**

Once the assessment (described above) is completed, a determination can be made if any medication-related problems are interfering with the patient achieving the intended therapy goals. This determination must be completed in logical order, it must be done systematically, and it must be comprehensive to be of value to the team. The following medication-related categories are evaluated (in order) for each medication being taken:

### **A. Appropriateness of the medication**

- i. Is the medication appropriate for the medical condition being treated?
- ii. Does the patient have an indication for a medication that is not being treated or prevented?

### **B. Effectiveness of the medication**

- i. Is the most effective drug product being used for the medical condition?
- ii. Is the dose appropriate and able to achieve the intended goals of therapy?

### **C. Safety of the medication**

- i. Is the patient experiencing an adverse event from the medication?
- ii. Is the dose so high it could cause toxicity in the patient?

### **D. Adherence to the medication**

- i. Is the patient able and willing to take the medication as intended?

There are many reasons patients may experience one or more of the medication-related problems described above. It is necessary to determine whether medication-related problems are present and the causes of the problems so that each can be resolved and the therapy goals can be met in an efficient and effective manner. These medication-related problems will be prioritized to reflect the patient's preferences, clinical needs, and logistical realities of the patient's situation.

## **3. Development of a care plan with individualized therapy goals and personalized interventions**

The care plan is developed in conjunction with the patient and the patient's health care providers. The care plan allows a provider to do the following:

- A. Intervene to solve the patient's medication-related problems (interventions include initiating needed drug therapy, changing drug products or doses, discontinuing medications, and educating the patient).
- B. Establish individualized therapy goals for each medical condition. Although national guidelines dictate population-level goals, each therapy goal must be individualized for each patient based on risk, comorbidities, other drug therapies, patient preferences, and physician intentions.
- C. Design personalized education and interventions that will optimize each patient's medication experience.
- D. Establish measurable outcome parameters that can be monitored and evaluated at follow-up to determine the impact of the therapies and the service.
- E. Determine appropriate follow-up time frames to ensure the interventions were effective and determine if any safety issues have developed since the last evaluation.

## **4) Follow-up evaluation to determine actual patient outcomes**

The follow-up evaluation allows the practitioner to determine the actual outcomes resulting from the interventions. The outcome parameters are evaluated against the intended outcomes (individualized therapy goals) and the patient is reassessed to determine if any new medication-related problems have developed that might interfere with the safe and effective use of the medications. This follow-up occurs in a time frame that is clinically appropriate for the specific patient, the medical conditions being monitored, and the drug therapy being taken. This will vary with each patient. These follow-ups should be coordinated with the medical team to minimize interference with other care activities.



## SECTION 3:

# Benefits and Outcomes of Integrated Medication Management

**M**easurable parameters are determined for each medical condition. Clinical, economic, and behavioral parameters are created for each condition because outcomes in patient care cannot be measured accurately without establishing an individualized therapy goal for each patient. Examples of these parameters include hemoglobin A1C levels in patients with diabetes, international normalized ratio (INR) levels in anticoagulation management, asthma control test (ACT) score for asthma control, and depression scales. Economic measures may include hospitalizations prevented, emergency room visits eliminated, clinical visits avoided, fewer sick days used, and any impact on drug costs.

## How Does Medication Management Help Engage the Patient and Address Drug-Related Morbidity and Mortality?

The patient and his or her medication experience is the starting place for managing medications. An active process of identifying medication-related problems occurs so that specific, effective interventions can be designed.

Measurement of actual outcomes allows determination of what is and is not effective in practice. Assessments of need are done on an individual basis and personal solutions are provided. Comprehensive medication management in the medical home is based on this principle.

## Which Patients Benefit Most From Comprehensive Medication Management?

Significant evidence is accumulating to establish the positive impact that comprehensive medication therapy management has on patient outcomes.<sup>18-20</sup> Patients who benefit most are the following:

- Those who have not reached or are not maintaining the intended therapy goal
- Those who are experiencing adverse effects from their medications
- Those who have difficulty understanding and following their medication regimen
- Those in need of preventive therapy
- Those who are frequently readmitted to the hospital

Although the data suggest that few patients are not able to benefit from comprehensive medication management, patients with greater numbers of medical conditions taking greater numbers of medications have the potential to benefit the most. Data accumulated to date are not able to identify predictors of medication-related problems (patient variables, disease variables, or drug variables) because so many drug therapy problems are present. However, it stands to reason that the medical conditions that are the most costly and are associated with the use of multiple medications (diabetes, cardiovascular disease, chronic obstructive pulmonary disease (COPD), asthma (in children), cancer chemotherapy, depression, pain, and hypothyroidism) are great candidates with which to begin the service.<sup>21-23</sup>

## What Is the Value of Comprehensive Medication Management in the Medical Home?

The value of this service can be measured in a number of ways. First, the patient benefits from improved outcomes. In addition, the patient benefits directly from the increased individualized attention to medications and the role they play in his or her daily life. Third, physicians benefit when someone with pharmacotherapeutic expertise is able to help manage complex drug therapies.

Physicians are able to dedicate more time to the diagnostic and treatment selection process, enabling them to be more efficient, see more patients, and spend more time providing medical care.<sup>24</sup>

In general, health plans, employers, and payers benefit tremendously when they pay only for medications that are safe, appropriate, and effective for the patient and his or her medical problem and are used as intended. Keeping patients out of the hospital is one of the most cost-effective outcomes, and providing comprehensive medication management to complex patients is one way to accomplish this.<sup>25</sup>

Another way to measure value is through the calculation of return on investment (ROI), or how much value the service adds compared to the cost of delivering the service. ROI data are frequently difficult to obtain and vary significantly, depending on the patient population being evaluated. However the ROI of medication management services has been established. The data from the delivery of this service are positive, with a demonstrated ROI of as high as 12:1<sup>26</sup> and an average of 3:1 to 5:1.<sup>27</sup> ROI reflects an ability to decrease hospital admissions, physician visits, and emergency room admissions and reduce the use of unnecessary and inappropriate medications. This is a conservative estimate; the ROI is likely to be much greater because practitioners routinely underestimate the impact on a patient's life and it is not easy to put a number on high patient satisfaction and physician acceptance.



## SECTION 4:

# Implementation Considerations

## How Does This Service Integrate With the Service of the Medical Home Team?

The services provided in medication management integrate well with the services provided by other health care providers. Just as the services of physical therapists, behavioral health workers, dietitians, and others are necessary to provide the patient with coordinated, comprehensive care, medication management strengthens the ability of the team and makes everyone more effective. Medication management, when delivered in the manner described, contributes unique data, quality decisions, and new solutions for patients and important new knowledge about the effectiveness and safety of medications for the medical home team.

Specifically, the following medication management services represent added value that will help the medical home meet its patient care goals and control health care costs. To control costs and improve patient outcomes in the medical home, each medication management encounter should include the following:

**1. A description of the patient's medication experience.** This includes a description of how a patient makes decisions about the medications

he or she takes in a cultural and holistic context. This information provides a complete medication history and current medication record, complete with how the patient actually takes the medications. A complete medication record is provided to both the patient and the prescribing providers so everyone is aware of all medications and how they are being taken.

**2. A list of medication-related problems that need to be addressed.** These problems interfere with the achievement of the patient's therapy goals. Without a clear definition of the issues a patient is experiencing or might be at risk to experience, it is not possible to individualize the interventions in a manner that will optimize the desired outcomes. When no medication-related problems are determined to be present, the medical team can be assured that all of the patient's medications are appropriate, effective, safe, and being taken as intended.

**3. Care plan goals of therapy individualized to the patient.** Even though most care plans begin with goals from national guidelines, they may not be appropriate or achievable if they are not based on patient-specific information (risk factors, comorbidities, other concurrent medications, etc.).

**4. Measurable outcome parameters personalized for each patient** so he or she can participate in the care plan in a patient-centered approach. Appropriate parameters for both effectiveness and safety are determined, such as laboratory values, quality metrics, symptom alleviation, improvement or prevention, daily living activities, and any other parameter deemed by the patient or health care team to be representative of improvement.

**5. Interventions personalized for each patient (education, tools, etc.).** A major explanation of why patients are not compliant (after the medication has been determined to be appropriate, effective, and safe) is because the patient is not able to understand the instructions or physically accomplish the delivery of the drug product. This can be overcome when the patient participates in determining how the goals will be met.

**6. Routine follow-up evaluation of actual outcomes related to medication use.** Specific follow-up is necessary to determine if appropriate progress is being made toward the therapy goal, any safety issues have arisen, and the patient has any concerns about taking the medication as intended. The follow-up evaluation also adds new data to the use of

medications in practice. The level of information collected in medication management is critical to post-marketing surveillance of new products and continued evaluation of medications in practice.

## Why Would a Primary Care Provider Consider the Need for Additional Medication Management Services From a Pharmacist in Clinical Care?

Most physicians and providers have the training and experience to manage medications effectively within their area of general or specialist knowledge, but they may seek additional consultation in managing medications outside their usual scope of care or when patients do not reach clinical therapy goals. Primary care providers frequently refer patients to a specialist for medication adjustments, although the diagnosis is well established. Common examples include referral to a pulmonologist for worsening asthma or COPD or a cardiologist for poorly controlled hypertension. In the absence of newly suspected disease or interventions, drug therapy problems could be effectively resolved with comprehensive medication management services delivered by a pharmacist.

In addition, the need to coordinate medications prescribed by multiple specialists and the ever-increasing use of herbals, supplements, nutraceuticals, and foods that interfere or enhance a drug's effect in complex patients may result in a request for a more comprehensive medication review. Adverse reactions and interactions are seen frequently with multiple medications and are compounded by the effects of chronic disease on organ systems. For example, the primary care provider may seek a comprehensive medication review from a clinical pharmacist to determine medication interactions and adjustments in a patient undergoing chemotherapy for cancer, a patient taking antiseizure medications, or even a patient on multiple medications to treat a condition such as high blood pressure who is still not at goal. As the team approach in the PCMH evolves, this focus on chronic disease management, as well as an emphasis on preventive therapies with documented evidence of improved outcomes, will result in more comprehensive medication management as a cornerstone of quality care.

## What Are the Electronic Therapeutic Record Requirements for This Practice?

*Meaningful Connections*, a health information technology document prepared by the PCPCC, includes many of the

information items that need to be included for medication management. However, a number of items deserve special consideration here because they are specific to medication management or are not routinely included in electronic health records. The comprehensive management of a patient's medications requires an electronic therapeutic record that supports these functions.

The following information items are necessary for comprehensive medication management:

1. A record of the patient's medication experience (understanding, concerns, preferences, beliefs, behavior)
2. Medication allergies (along with a description of the allergy, time frame, and severity) and adverse reactions (separated into dose-related and preventable)
3. Medication history (including immunizations), complete with dates, effectiveness information, record of issues, problems, etc.
4. Current medication record (including all medications regardless of source, mode of administration, or prescriber), indication for use, product, dose, duration, and how the medication is actually being taken
5. Active drug therapy problem list, complete with the cause of each problem (associated with the medical condition and medications relating to the drug therapy problem)
6. Therapeutic treatment plans for the patient and practitioner (a patient and prescriber version of the treatment plan needs to be available). The following specific functionality must be available in the electronic therapeutic record to provide medication management services:
  - A. Connect indication for medication (reason for use) to specific drug product, dose, duration, and actual outcomes for each medical condition.
  - B. Identify, resolve, and prevent drug therapy problems:
    - I. **Appropriateness:**  
Eliminate unnecessary medications.  
Initiate necessary medications not being taken.
    - II. **Effectiveness:**  
Identify most effective medication in specific patient.  
Increase dosages to effective levels.

### III. Safety:

- Eliminate toxicities.
- Identify adverse reactions.

### IV. Adherence:

- Increase patient's willingness to adhere to medication regimen.

The cause of each of the drug therapy problems described above also needs to be documented.

- C. Record and evaluate actual outcomes from drug therapy.  
Record personalized therapy goals and evaluate against outcome measures for each medical condition.  
Graph laboratory levels against changes in drug therapy and doses.  
Record outcome changes with changes in medication details.
- D. Provide post-marketing surveillance on appropriateness, effectiveness, safety, and adherence variables.
- E. Record drug therapy problems specific to drug product, medical condition, and patient parameters.
- F. Offer clinical decision support and analysis.
- G. Support patient participation and decision making in drug therapy (adherence tools, record keeping, etc.).
- H. Provide patients with medication information that is individualized and complements the therapeutic care plan.
- I. Provide a Web site for patients to participate in managing their medication.

Electronic therapeutic records are available that support the functions described above.

## How Is This Service Requested and Delivered?

When a prescriber identifies a patient in need of comprehensive medication management, a referral is made to the qualified practitioner. The way the service is delivered depends on the proximity of the practitioner, the specific structure of the medical home, and the service delivery design of the practitioner providing the service. In many practices, the medication management practitioner is employed by the medical home and

resides full time or part time in the clinic or practice. In this scenario, the practitioner is available at any time to deliver the service and functions inside the medical home structure.

Other medication management practices are established outside the medical home clinic (associated with a community pharmacy, health plan, or hospital entity) where the referral is made to the practitioner. After a patient appointment is set, the patient meets with the practitioner delivering medication management services off the premises, and the medication management practitioner provides the referring physician with documentation of the assessment, details on the need for any changes, and a record of all of the clinical outcomes achieved. The patient is followed until the therapy goals are met or until the physician determines this level of care is no longer necessary. This structure frequently involves the use of collaborative practice agreements between the physician and the practitioner providing medication management. Such agreements are allowed in 46 states.

Yet another structure allows the patient to request the medication management service directly and set an appointment with the practitioner. Even in this situation, communication between the medication management practitioner and the primary care physician occurs after each patient encounter. Medication management cannot be done effectively unless all of the patient's providers are informed and care is coordinated with the team.

Medication management services can also be provided by telephone or through a virtual clinic structure. The medication management practitioner must be in direct communication with the patient (in person, by telephone, or through telemedicine or a virtual clinic) to deliver the services as described. Information technology systems necessary to support telephonic or telemedicine/virtual clinic arrangements must include accurate and reliable ways to identify medications and dosages the patient is taking as well as a clear means to determine the patient's response to the medications. When this service is provided by telephone or through a virtual clinic structure, it should be done by medication management practitioners who have experience with these media, skill in interview techniques, and use standardized methods to ensure a quality service is delivered.

The schedule and means of follow-up are determined by the drug therapy problems identified and the need to modify or evaluate the effects of the therapy recommendations. In all of the scenarios described above, continual written (and, when necessary, verbal) communication occurs with the patient, the prescriber (and/or

referring primary care clinician), and the medication management practitioner. This occurs electronically when those facilities are available and in writing when they are not available. (See the section above on electronic record system requirements.)

## How Will Service Quality Be Evaluated?

Documentation of the service and reported results will allow the quality of services to be evaluated. National and international data are now available on the number and type of drug therapy problems that exist,<sup>28-30</sup> so a practitioner's ability to identify these problems can be compared to national averages. In addition, outcome measures reflect the quality of the services provided. Quality metrics, such as the number of patients whose hypertension, diabetes, cholesterol, and other medical conditions are controlled, all reflect the outcomes of the care provided. Patient and physician acceptance of the service will be important as well. Outcome measures are a necessary and large part of the quality evaluation of medication management services in the medical home.

## What Are the Business and Cultural Implications for Key Stakeholders When a Clinical Pharmacist Delivers Medication Management for Complex Patients?

**Patients:** The practitioner providing medication management addresses the patient's questions, concerns, preferences, wants, and needs as they relate to medications (their beliefs and concerns play a major role in their behavior and must be understood). Patients are educated and collaborate in their care plan, following individualized goals and personalized interventions to meet their needs. Fewer adverse reactions and side effects occur and positive clinical outcomes and better health are realized. The patient gains confidence in the medications and the practitioner, which leads to increased adherence and persistence.

**Physicians and clinicians:** Effective medication management provides physicians and clinicians with more time to diagnose and effectively manage patient problems and formulate treatment goals because they are reassured that the patient better understands his or her medication regimen and is taking the medications as prescribed. Physicians and clinicians frequently change or add medications, not realizing in some

cases that patients are not taking the medication as prescribed. Prescribers also are frequently unaware of other prescriptions or diagnoses that involve other physicians and lack a complete picture of the patient's situation and risk profile when prescribing new medications. With informed and educated patients and a comprehensive medication list coupled with therapeutic recommendations from a medication manager, the physician/clinician can be very effective in moving a patient toward clinical therapy goals and achieving performance outcomes.

**Health plans:** Effective medication management has been linked to lower total health care costs. Although medication costs typically rise as appropriate adherence increases, hospital and emergency room services decrease as patients reach clinical therapy goals. The substitution of less-costly medications and elimination of duplicate and unnecessary medications decrease medication costs. This service is recognized by patients as effective and positive, and quality indicators such as the Healthcare Effectiveness Data and Information Set (HEDIS) measures improve with the service.<sup>31</sup>

**Employers and payers:** In addition to lower total health care costs, patients experience fewer emergency room visits and hospitalizations, so they lose fewer workdays. Side effects such as drowsiness or decreased mental alertness are minimized, so productivity and quality of life improve. This is a health care benefit patients relate to personally and benefit from individually. It is a very popular benefit when it is offered to employees.

**Pharmacists:** Pharmacists are able to contribute measurable value directly to the care of patients. This occurs because they are using their expertise in medications to educate patients and help minimize interactions and side effects, while recommending drug therapy regimens to physicians and clinicians that move patients more quickly toward clinical goals. The health care system benefits from the pharmacist's expertise, and medication management is the structure that enables patients and physicians to gain from it.

The level of drug-related morbidity and mortality patients experience in the health care system has reached the point at which something must be done to better manage how medications are used. The medication management service in the medical home is a rational, comprehensive solution to the problem and benefits everyone.

## The 10 Steps to Achieve Comprehensive Medication Management

- 1 Identify patients that have not achieved clinical goals of therapy.
- 2 Understand the patient's personal medication experience/history and preferences/beliefs.
- 3 Identify actual use patterns of all medications including OTCs, bioactive supplements, and prescribed medications.
- 4 Assess each medication (in the following order) for appropriateness, effectiveness, safety (including drug interactions), and adherence, focused on achievement of the clinical goals for each therapy.
- 5 Identify all drug therapy problems (the gap between current therapy and that needed to achieve optimal clinical outcomes).
- 6 Develop a care plan addressing recommended steps, including therapeutic changes needed to achieve optimal outcomes.
- 7 Patient agrees with and understands care plan, which is communicated to the prescriber/provider for his/her consent/support.
- 8 Document all steps and current clinical status versus goals of therapy.
- 9 Follow-up evaluations with the patient are critical to determine effects of changes, reassess actual outcomes, and recommend further therapeutic changes to achieve desired clinical goals/outcomes.
- 10 Comprehensive medical management is a reiterative process—care is coordinated with other team members and personalized (patient-unique) goals of therapy are understood by all team members.

## Is a Well-Prepared Workforce Available to Deliver This Service? How Can It Be Delivered Broadly in a Reasonable Amount of Time?

The delivery of medication management as described in this document requires academic preparation in pharmacology, pharmacokinetics, and biopharmaceutics, to mention a few of the many knowledge areas relevant to drug therapy decision making. Any health professional that possesses this knowledge, knowledge of the comprehensive taxonomy of drug therapy problems, and the ability to apply the rational and systematic decision-making process for drug therapy is capable of providing medication management as described in this guide.

The current academic preparation of pharmacists qualifies them to deliver medication management services. All practicing pharmacists are capable of providing this service, although additional training may be required to meet the standards described in this document. Many pharmacists now provide this service and are being paid by federal and state governments and private insurers. This service can no longer be considered a new service. The service is scalable and can be delivered in a PCMH when appropriate financial support exists in the organizational structure.

## What Is the Business Impact of Adding the Pharmacist to the Medical Home Team?

Using an individual who can manage difficult, complex patients with medication problems will make the entire patient care team more effective and efficient. Medical homes absorb the costs associated with drug-related morbidity and mortality, and this can be significant. Medication management optimizes drug therapy in patients who need additional time and attention, which results in better management of health care costs.

Producing better clinical results in patients is always a positive reflection on the practice itself. Documented improvement in clinical measures, such as diabetes and hypercholesterolemia, occurs even when the service is delivered for only a short time period.<sup>18</sup> All therapeutic outcomes can be improved with medication management because goals are individualized, all medications are assessed, drug therapy problems are identified and solved, and actual outcomes are continuously evaluated until appropriate outcomes are achieved.



## SECTION 5:

# Payment and Coverage for Medication Management Services

One of the core principles of the PCPCC's framework for health care reform involves changing payment policies and realigning payment incentives to more appropriately recognize and reward primary care health services provided by physicians and other health professionals whose services are or may be delivered in a PCMH. One such payment model encompasses a three-part methodology ([www.pcpcc.net](http://www.pcpcc.net)):<sup>32</sup>

- A monthly care coordination payment for the physician's work that falls outside of a face-to-face visit and the health information technologies needed to achieve better outcomes
- A visit-based fee-for-service component for services recognized and paid for under the existing fee-for-service payment system
- A performance-based component that recognizes achievement of service, patient-centeredness, quality, and efficiency goals

This blended-payment model aligns effectively with recommendations for payment reform for medication management services contained in a jointly developed document on integration of pharmacists' services in the PCMH in 2009:

Payment policies should be aligned to (1) effectively support the medical home, (2) provide reasonable and adequate payment for pharmacists' clinical services as an element of the scope of services that are eligible for payment to either the providers or the [medical home] practice, and (3) promote the achievement of higher quality, safer, and more effective therapeutic outcomes from medication use through enhanced provider collaboration.<sup>33</sup>

Realigning payment incentives to promote care coordination among providers can be particularly important in the process of medication management because of (1) the central role of medication use in the treatment of chronic conditions, (2) the likelihood of multiple prescribers involved in the patient's care, and (3) the need for patients to occasionally transition from one care setting to another, even when their care is being coordinated by the PCMH.

As described in this document, the activities associated with effective medication therapy management are expected to be key elements in the ability of the PCMH to provide comprehensive and coordinated care. Effective medication management contributes to enhanced clinical outcomes, patient safety, cost effectiveness, and better patient involvement in and understanding of medications and their appropriate use to achieve desired clinical outcomes and care goals. Comprehensive medication management, especially for patients with complex medication regimens or multiple diseases that require the effective management of multiple medications, has the potential to contribute substantially to the achievement of these objectives. Accordingly, coverage and payment for such services should be a component of payment reform efforts that seek to promote collaborative, patient-centered care.

## How Are Medication Therapy Management Services Recognized Through Payment?

Payment approaches for medication therapy management services have expanded substantially in recent years as the value of these services, commonly provided by pharmacists as members of interprofessional teams, has been more fully recognized.<sup>34</sup>

Both private sector (Asheville model, Diabetes Ten-City Challenge, Kaiser Permanente) and public sector (Medicare Part D, state Medicaid programs such as Minnesota, Community Care of North Carolina, Veterans Administration) programs have stimulated the development of coverage and payment approaches that recog-

nize and reward the clinical outcomes, enhanced safety, cost management, and patient satisfaction that effective medication therapy management services can provide. All use payment or cost management strategies that are consistent with one or more of the primary care payment reform elements described in this document.

## Background on Established Approaches for Medication Therapy Management Payment

### Medication therapy management and CPT codes.

The AMA Current Procedural Terminology Editorial Panel has approved three CPT codes for use when pharmacists provide face-to-face medication therapy management services to patients. The codes may be used to document service delivery and bill any health plan that provides a medication therapy management benefit, including those covered under Medicare Part D.

The time-based codes are designated for use for medication therapy management services performed face-to-face for a patient. As now constructed, the codes do not incorporate practice expense or liability components of the typical physician/provider evaluation and management (E&M) CPT codes. See the Appendix for a description of the codes issued for medication therapy management provided by pharmacists.

Some payers have adapted the medication therapy management CPT codes in ways that can account for various additional factors, such as patient complexity, number of medication-related problems identified or addressed, number of chronic diseases, or other criteria. For example, the Minnesota Medicaid program has developed a framework for documentation and payment for medication therapy management services that expands on this basic framework. See the Appendix for a description of the payment structure.

**Coverage and payment for medication therapy management services in integrated or capitated care systems.** Because of the greater alignment of financial incentives in integrated health care delivery systems in the private (Kaiser Permanente) and public (Veterans Administration, Indian Health Service) sectors responsible for all-cost health care expenditures, the incorporation (“coverage”) of medication therapy management services, frequently provided by pharmacists as part of the clinical team, has advanced more rapidly in such settings than in the fee-for-service payment environment. This has been strongly aided by the use of shared and accessible health records (increasingly electronic) and information systems that support team-based work in patient care.

Capitated approaches to payment for medication management services take several forms. One approach employers are accepting is to pay a capitated per-member-per-month fee for employees actually receiving the service (not the total covered lives or the eligible lives). Another approach, used by a state government, pays for medication management on an annual capitated basis for employees receiving the service.

**Importance of aligning payment approaches for medication management services with the core purposes of the PCMH.** Reasonably effective and recognized payment methodologies and procedures for coverage and provision of medication management services have been developed and can be adapted to a patient-centered medical home practice, but they, like other aspects of health care provider payment in primary care, need substantial reform to be effective.

It is likely that the breadth and depth of medication management services a particular medical home practice can provide to patients will vary, based on factors such as practice size and location, patient needs and complexities, and the clinical goals, quality objectives, and other parameters the practice has agreed to be accountable for both qualitatively and economically.

Nevertheless, the integral place of medications in effectively serving the needs and goals of most patients likely to be cared for in a PCMH suggests that it is essential to include the medication management services of pharmacists as members of the PCMH team. Whether through direct staffing structures, consultation arrangements, virtual or shared providers, or other types of community linkages, medication management services should be recognized, incorporated, and appropriately compensated in a reformed payment structure that supports the full scope of services necessary for the highly performing PCMH.



## SECTION 6: Summary

This document suggests that the full potential of the PCMH requires comprehensive medication management services. These services are necessary for patients who experience drug therapy problems that prevent them from achieving intended therapy goals.

Significant evidence has accumulated to demonstrate that medication management services improve clinical outcomes, generate a positive ROI, are accepted by patients and physicians, and need to be expanded to all patients who can benefit from the service. The federal government requires that the service be provided to certain Medicare Part D recipients, and the service is recognized and paid for by many Medicaid programs. Some Fortune 500 companies provide the service as an employee benefit because of the positive impact it has on productivity and clinical outcomes. It is appropriate for the PCMH to integrate comprehensive medication management into the mix of services required to achieve the seven principles outlined in the Joint Principles of the Patient-Centered Medical Home.

The following is an illustration of how comprehensive medication management services are not only consistent with the joint principles, but are necessary to achieve the full potential of these principles.

Principle	Description of Principle	Contribution of Medication Management
<b>Personal Relationship With Physician or Other Licensed Practitioner</b>	Each person has an ongoing relationship with a personal physician or other licensed health care practitioner.	The therapeutic relationship is established and the patient's medication experience is revealed and used to improve care.
<b>Team Approach</b>	The personal physician leads a team at the practice level that collectively takes responsibility for ongoing patient care, including disease and/or case management.	The rational decision-making process for drug therapy is used and the assessment, care plan, and follow-up of drug therapy is integrated with the team's efforts.
<b>Comprehensive/ Whole-Person Approach</b>	The personal physician or other licensed health care practitioner is responsible for providing for all of the patient's health care needs or taking responsibility for appropriately arranging for them.	Patients are engaged and empowered in their use and understanding of the medications prescribed in their therapy. All patient medications (regardless of source) are coordinated, evaluated, appropriate, effective, safe, convenient, and linked to clinical outcomes and improved health.
<b>Coordination and Integration of Care</b>	Care is coordinated and integrated across all domains of the health care system.	The intended therapeutic goals, which are measurable and individualized to the patient, serve to coordinate and integrate the patient's care with other team members.
<b>Quality and Safety Hallmarks</b>	Quality and safety are hallmarks of the medical home.	Drug therapy problems are identified, resolved, and prevented in a systematic and comprehensive manner so everyone is working most effectively to realize appropriate, effective, safe, and convenient drug therapy for the patient.
<b>Expanded Access to Care</b>	Enhanced access to care is available.	Physicians are extended and made more efficient and effective through the optimal management of a patient's medications.
<b>Recognition of Added Value</b>	Payment of physician practices appropriately recognizes added value.	Clinical outcomes are improved, ROI is positive, acceptance by patients is high, and physicians support the practice.



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# Appendix

Medication Management Services: Resource-Based Relative Value Scale					
Level of Service Provided	Level #1	Level #2	Level #3	Level #4	Level #5
<b>Assessment of Drug-Related Needs</b>	Problem-Focused 1 Medication	Expanded Problem 2 Medications	Detailed 3–5 Medications	Expanded Detailed 6–8 Medications	Comprehensive ≥9 Medications
<b>Identification of Drug Therapy Problems</b>	Problem-Focused 0 Drug Therapy Problems	Expanded Problem 1 Drug Therapy Problem	Detailed 2 Drug Therapy Problems	Expanded Detailed 3 Drug Therapy Problems	Comprehensive ≥4 Drug Therapy Problems
<b>Complexity of Care Planning and Follow-Up Evaluation</b>	Straight-forward 1 Medical Condition	Straight-forward 1 Medical Condition	Low Complexity 2 Medical Conditions	Moderate Complexity 3 Medical Conditions	High Complexity ≥4 Medical Conditions
<b>CPT Codes</b>	99605 Initial Encounter With New Patient (or 99606 for 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
<b>Face-to-Face Time</b>	15 Minutes	16–30 Minutes	31–45 Minutes	46–60 Minutes	>60 Minutes
<b>Payment Amount</b>	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$

SOURCE: Minnesota Department of Human Services, MHCP Provider Manual, Medication Management Therapy Services, HIPAA–Compliant MTMS CPT Codes, Revised 1/5/2010.





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