



The Patient-Centered Medical Home:

**Integrating Comprehensive
Medication Management to
Optimize Patient Outcomes**

RESOURCE GUIDE

SECOND EDITION | JUNE 2012

DEAR COLLEAGUES:

Founded in 2006, the Patient-Centered Primary Care Collaborative (PCPCC) is a coalition of more than 1,000 organizations and individuals. It includes employers, physicians and other health professionals, consumer and patient/family advocacy groups, patient quality organizations, health plans, hospitals and unions, all of whom have joined together to advance an effective and efficient health system built on a strong foundation of primary care and the patient-centered medical home (PCMH). The Collaborative serves as a broad-based national advocacy organization for the primary care patient-centered medical home, providing timely information and networking opportunities to support transformation of the US health system.

The goal of this resource guide, developed by the PCPCC's Medication Management Task Force, is to provide information that facilitates the appropriate use of medications in order to control illness and promote health, which are critical elements to the PCMH's success. Too often patients simply do not understand what their medications are for or how to take them. Improving communication with patients will change that. Health literacy is the capacity to understand basic health information and make appropriate health decisions. It ties directly to the PCMH because the care delivery team is focused on improving communication to engage the patient and family and enhance care coordination. According to one comprehensive national study¹, only 12 percent of US adults have proficient health literacy, and more than a third have difficulty with common health tasks, such as following directions on a prescription drug label or adhering to a childhood immunization schedule. Information from health professionals is one of the most important sources of information for patients on health topics, regardless of their respective health literacy level.

This guide outlines the rationale for including comprehensive medication management services in integrated patient-centered care. 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's *Meaningful Connections*, which explores current uses of health information technology and covers many of the elements necessary for appropriate medication management. In addition, *A Purchaser Guide*, also from the PCPCC, 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 pleased to offer another practical resource that can be broadly used in putting the patient at 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.



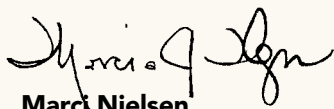
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¹"America's Health Literacy: Why We Need Accessible Health Information, "U.S. Department of Health and Human Services, 2008 (<http://www.health.gov/communication/literacy/issuebrief/2008IssueBrief.pdf>)

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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.¹

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 underway must include the comprehensive management of medications to identify, resolve, and, most importantly, 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,² and four out of five patients who

visit a physician leave with at least one prescription.³ Medications are involved in 80 percent of all treatments and impact every aspect of a patient's life. The two most commonly identified drug therapy problems in patients receiving comprehensive medication management services 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.⁴ According to the World Health Organization, adherence to therapy for chronic diseases in developed countries averages 50 percent, and the major consequences of poor adherence to therapies are poor health outcomes and increased health care costs.⁵

Drug therapy problems occur every day and add substantial costs to the health care system. Drug-related morbidity and mortality costs exceed \$200 billion annually in the U.S., exceeding the amount spent on the medications themselves.⁶⁻⁸ For example, Medicare beneficiaries with multiple chronic illnesses see an average of 13 different physicians, have 50 different prescriptions filled 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.⁹ 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.¹⁰

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.¹¹

This resource guide was developed to provide a framework for integrating comprehensive medication management within 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 comprehensive 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 of the medications themselves.

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.¹²⁻¹⁴

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.¹⁵ 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, Minnesota, and some other states. 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, particularly in patients who may often have as many as five comorbidities and take an average of eight medications concurrently. To achieve better outcomes from the use of medications in such patients, 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 services¹² and the definition provided by legislation for Minnesota Medicaid recipients.¹⁴ 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.

A core 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 effective medications available to them.¹⁶⁻¹⁷

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

Patients 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 the 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. Further, 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 have a prescription filled, 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 as to whether 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
 - 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 itself.
- 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

Measurable 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.¹⁸⁻²⁰ Patients who benefit most include:

- 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 many patients are able to benefit from comprehensive medication management, patients with greater numbers of medical conditions and 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.²¹⁻²³

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 and other care team members benefit when pharmacists apply their pharmacotherapeutic expertise in a collaborative process 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.²⁴

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 important—and cost-effective—goals of the PCMH. Providing comprehensive medication management to complex patients is one way to help accomplish this goal.²⁵

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 12:1²⁶ and an average of 3:1 to 5:1.²⁷ 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 PCMH meet its patient care goals and control health care costs. To control costs and improve patient outcomes in the PCMH, 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 (i.e., education, tools, etc.).** A major reason why patients are not adherent (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 medical 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 high 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 comprehensive 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 (i.e., adherence tools, record keeping, etc.).
- H. Provide patients with medication information that is individualized and complements the therapeutic care plan.

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 pharmacist/medication-management practitioner. The way the service is delivered depends on the proximity of the practitioner, the specific structure of the PCMH, 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 PCMH (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, who then 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.

Another structure allows the patient to request the medication management service directly and set an appointment with the pharmacist 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 who 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,²⁸⁻³⁰ 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 is important as well. Outcome measures are a necessary and significant part of the quality evaluation of medication management services in the PCMH.

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 patients' questions, concerns, preferences, wants, and needs as they relate to medications because patients' 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. Patients gain 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 the pharmacist, the physician/clinician can be more 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 more often 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.³¹

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, workplace safety, 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 comprehensive medication management provides 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. Incorporation of comprehensive medication management services within the PCMH is a rational and effective solution to the problem, benefiting 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 medication 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 comprehensive medication management requires academic preparation and professional experience in pharmacology, pharmacokinetics, and biopharmaceutics, to mention a few of the many knowledge areas relevant to drug therapy decision making. Health professionals that possess this knowledge, an understanding of the comprehensive taxonomy of drug therapy problems, and the ability to apply the rational and systematic decision-making process for drug therapy are capable of providing medication management as described in this resource 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 resource guide. Many pharmacists now provide this service and are being paid by federal and state governments and private insurers. No longer a "new" or "non-traditional" service, comprehensive medication management 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 pharmacists who can manage difficult, complex patients with medication problems will make the entire patient care team more effective and efficient. Medical homes now must absorb some of 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 PCMH itself. Documented improvement in clinical measures, such as diabetes and hypercholesterolemia, occurs even when the service is delivered for only a short time period.¹⁸ 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):³²

- 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.³³

Realigning payment incentives to promote care coordination among providers can be particularly important in the process of comprehensive 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 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.³⁴

Both private sector (Asheville Project, 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 recognize and reward the clinical outcomes, enhanced safety, cost management, and patient satisfaction that effective medication 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 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. Appendix B provides a description of the CPT codes available for use by pharmacists in providing comprehensive medication management services.

Some payers have adapted these 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 Appendix B).

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 (e.g., Kaiser Permanente) and public (e.g., Veterans Administration, Indian Health Service) sectors that seek to address “all-cost” health care expenditures, the incorporation (“coverage”) of medication 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 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 at least one 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 PCMH 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 an individual PCMH 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 provides essential information that demonstrates the value and importance of a comprehensive approach to team-based medication management services in a successful PCMH. These services are necessary

for patients who experience drug therapy problems that prevent them from achieving the intended therapy goals desired by the patient and the PCMH team.

Significant evidence has accumulated to demonstrate that medication management services, frequently provided by pharmacists as part of the interprofessional team, 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 table below provides a clear illustration of how comprehensive medication management services are not only consistent with the PCMH Joint Principles, but are necessary to achieve the full potential of these principles.

Principle	Description of Principle	Contribution of Medication Management
Personal Relationship With Physician or Other Licensed Practitioner	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.
Team Approach	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.
Comprehensive/ Whole-Person Approach	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.
Coordination and Integration of Care	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.
Quality and Safety Hallmarks	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.
Expanded Access to Care	Enhanced access to care is available.	Physicians are extended and made more efficient and effective through the optimal management of a patient's medications.
Recognition of Added Value	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.



SECTION 7: References

1. Patient-Centered Primary Care Collaborative. <http://www.pccpc.net>.
2. Sommers JP. Prescription drug expenditures in the 10 largest states for persons under age 65, 2005. 2008. Agency for Healthcare Research and Quality. Available at: http://meps.ahrq.gov/mepsweb/data_files/publications/st196/stat196.pdf.
3. *The chain pharmacy industry profile*. National Association of Chain Drug Stores. 2001.
4. Cipolle R, Strand L, Morley P. *Pharmaceutical care practice: The clinician's guide*. McGraw-Hill; 2004.
5. World Health Organization. Adherence to long-term therapies: Evidence for action. 2003. Available at: <http://whqlibdoc.who.int/publications/2003/9241545992.pdf>.
6. Johnson J, Bootman JL. Drug-related morbidity and mortality. *Arch Intern Med*. 1995;155(18):1949-1956.
7. Johnson JA, Bootman JL. Drug-related morbidity and mortality. *Am J Health Syst Pharm*. 1997; 54(5):554-558.
8. Ernst, FR, Grizzle AJ. Drug-related morbidity and mortality: Updating the cost-of-illness model. *J Am Pharm Assoc*. 2001;41(2):192-199.
9. Anderson GF. Testimony before the Senate Special Committee on Aging. The Future of Medicare: Recognizing the Need for Chronic Care Coordination. Serial No. 110-7, pp 19-20 (May 9, 2007).
10. Centers for Medicare & Medicaid Services. National Health Expenditures. January 2008.
11. Institute of Medicine, National Academy of Science. *Informing the Future: Critical Issues in Health*. 4th ed.:13, Available at: <http://www.nap.edu/catalog/12014.html>.
12. American Medical Association. *Current Procedural Terminology*. Chicago, IL, 2007.
13. CMS. Prescription Drug Coverage 2010 Call Letter. Available at: <http://www.cms.hhs.gov/PrescriptionDrugCovContra/Downloads/2010CallLetter.pdf>.
14. Minnesota Statute 256B.0625 Subd. 13h, 2005. Available at: <https://www.revisor.mn.gov/statutes/?id=256B.0625>.
15. Medicare Part D legislation.
16. Carter BL, Rogers M, Daly J, Zheng S, James PA. The potency of team-based care interventions for hypertension. *Arch Intern Med*. 2009;169(19): 1746-1755.
17. Harris IM, Westberg SM, Frakes MJ, VanVooren JS. Outcomes of medication therapy review in a family medicine clinic. *J Am Pharm Assoc*. 2009;49:623-627.
18. Isetts BJ. *Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program*. Final report. Available at: http://www.dhs.state.mn.us/main/groups/business_partners/documents/pub/dhs16_140283.pdf.
19. Fera T, Bluml BM, Ellis WM. Diabetes ten-city challenge: Final economic and clinical results. *J Am Pharm Assoc*. 2009;49:383-91.
20. Cranor CW, Bunting BA, Christensen DB. The Asheville Project: Long-term clinical and economic outcomes of a community pharmacy diabetes care program. *J Am Pharm Assoc*. 2003;43:173-84.
21. Roughead EE, Barratt JD, Ramsay E, et al. The effectiveness of collaborative medicine reviews in delaying time to next hospitalization for patients

- with heart failure in the practice setting. Results of a cohort study. *Circ Heart Fail.* 2009;2:424-8.
22. Tsuyuki RT, Johnson JA, Teo KK, et al. A randomized trial of the effect of community pharmacist intervention on cholesterol risk management. The study of cardiovascular risk intervention by pharmacists (SCRIP). *Arch Intern Med.* 2002;162:1149-55.
 23. Chiquette E, Amoato MG, Bussey HI. Comparison of an anticoagulation clinic with usual medical care: Anticoagulation control, patient outcomes, and health care costs. *Arch Intern Med.* 1998;158:1641-47.
 24. Nichol A, Downs G. The pharmacist as physician extender in family medicine office practice. *J Am Pharm Assoc.* 2006;46:77-83.
 25. Roughead EE, Barratt JD, Ramsay E, et al. The effectiveness of collaborative medicine reviews in delaying time to next hospitalization for patients with heart failure in the practice setting. Results of a cohort study. *Circ Heart Fail.* 2009;2:424-8.
 26. Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, et al. Clinical and economic outcomes of medication therapy management services: The Minnesota experience. *J Am Pharm Assoc.* 2008;48:203-211.
 27. Cipolle R, Strand L, Morley P. *Pharmaceutical care practice: The clinician's guide.* McGraw-Hill; 2004.
 28. Rao D, Gilbert A, Strand L, Cipolle RJ. Drug therapy problems found in ambulatory patient populations in Minnesota and South Australia. *Pharm World Sci.* 2007;29:647-654.
 29. Duran I, Martinez Romero F, Faus MJ. Problemas relacionados con medicamentos resueltos en una farmacia comunitaria. *Pharmaceutical Care Espana.* Vol 1, No 1, Febrero 1999.
 30. Nickerson A, MacKinnon NJ, Roberts N, Saulnier L. Drug-therapy problems, inconsistencies and omissions identified during a medication reconciliation and seamless care service. *Healthcare Quarterly.* 8(Sp)2005:65-72.
 31. Isetts BJ. *Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program.* Final report. Available at: http://www.dhs.state.mn.s/main/groups/buiness_partners/documents/pub/dhs16_140283.pdf.
 32. Proposed Hybrid Reimbursement Model." Available at <http://www.pcpcc.net/content/proposed-model>.
 33. Integration of Pharmacists' Clinical Services in the Patient-Centered Medical Home: Policy Issues and Principles. Available at <http://www.accp.com>.
 34. Economic Evaluations of Clinical Pharmacy Services: 2001–2005. *Pharmacotherapy.* 2008;28(11):285e–323e.

APPENDIX A:

Guidelines

Guidelines for the Practice and Documentation of Comprehensive Medication Management in the Patient-Centered Medical Home

Based on Information Contained in the PCPCC Resource Guide:
“Integrating Comprehensive Medication Management to Optimize Patient Outcomes”

Background

The Patient-Centered Primary Care Collaborative (PCPCC) provides an open forum for the full range of health care stakeholders seeking to advance the quality of care for all Americans through the implementation of the patient-centered medical home (PCMH) as the principal platform for a reformed system for the delivery of primary care health services. More than 1,000 stakeholders now participate in the work of the PCPCC, representing essentially all health professions, patients and patient advocacy groups, employers, policy-makers, and public and private payers.

As part of its activities, the PCPCC develops informational materials and Resource Guides on a wide range of topics in health care (e.g., health information technology integration, payment policy reform, building and sustaining successful team-based care structures, and continuity and coordination of care) as they relate to the PCMH, Accountable Care Organizations (ACOs), and other coordinated care systems. The Resource Guides are developed with input from all interested parties who wish to engage. The goal is to promote a better understanding of how these topics relate to the broad purpose and objectives of the PCMH.

The topic of “comprehensive medication management” (CMM) within the PCMH is fully described in a Resource Guide developed by the PCPCC Medication Management Task Force and first made available by the PCPCC in 2010. The guide—*“Integrating Comprehensive Medication Management to Optimize Patient Outcomes”*—has proved to be among the most popular of all the guides developed thus far by the PCPCC. A second printing, released in 2012 with only minor editorial up-

dates, incorporates the information presented here as an Appendix to highlight suggested guidelines for the practice and documentation of CMM services. The information is derived directly from the Resource Guide and intended to be used with it for a more complete understanding of the practice of comprehensive medication management.

As efforts to transform America’s health care delivery system continue, patients must be both informed and actively engaged in decisions concerning the medications that represent the best choices for them in preventing and controlling disease. These decisions can best be made when the cultural needs and beliefs of the patient are considered and incorporated with the best knowledge and recommendations of the PCMH team members, particularly prescribers, pharmacists, care managers, and others, who provide and are responsible for the patient’s medication-related care.

As outlined in the Resource Guide, a consistently delivered and validated approach to the provision of CMM services is necessary to assure appropriate and optimized medication therapy in a patient-centered fashion.¹ A consistent process of care, together with access to (and the ability of patients to afford) the “best” medications, i.e., those that best meet a patient’s individual, specific needs and clinical goals of therapy, has been shown to result in vastly improved clinical outcomes and reduced overall health care costs, while also addressing “patient safety” related to adverse drug reactions, interactions, and toxicities.^{2,3,4}

Patients who are at clinical goal with their medication regimens often have their therapy effectively managed by their primary care providers and will find the

application of the information found in the Resource Guide helpful in assuring clinical goals of therapy are met and maintained. For more complex regimens when patients are not at goal or are experiencing adverse medication effects, however, the primary care physician or a member of the medical home/coordinated care 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 and collaboratively with other members of the PCMH team through the application of these principles.

The guidelines that follow provide more explicit explanation regarding the essential components of the practice and documentation processes that are part

of the practice of CMM as described in the Resource Guide. Those seeking a more in-depth delineation and explanation of the practice of comprehensive medication management may wish to consult *Pharmaceutical Care Practice—The Clinician’s Guide*² which served as a primary, evidence-based reference in the development of the PCPCC Resource Guide.

Health plans, government payers, employers, integrated delivery systems, medical providers, pharmacists, and patients should find this document useful as a companion document to the existing Resource Guide, upon which all the following information is based. Both documents should be considered together in seeking to better understand the practice and documentation of comprehensive medication management services.

Guidelines for the **Practice** of Comprehensive Medication Management in the Patient-Centered Medical Home

1) An assessment of the patient’s medication-related needs

- a) All medications are reviewed and documented with the patient including prescription/OTC’s/herbals/etc.
- b) The medication experience of the patient is discussed and recorded. (The patient’s attitudes, beliefs, and preferences about drug therapy, which are shaped by experiences, culture, traditions, religious beliefs, etc., apply here).
- c) The patient’s medication history, including allergies/reactions is taken (include what medications have been taken for which medical conditions in the past, which have worked and not worked, which have caused the patient concerns or problems and should be avoided).
- d) All current medications, their doses (the way they are actually being taken by the patient) are reviewed with the patient and documented.
- e) 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.)

f) The clinical status of the patient is assessed/determined for each drug/condition treated/prevented (e.g., current BP level and cholesterol levels for hypertensive and hyperlipidemic patients, respectively). Without a determination of the current clinical status of a patient, the indication, appropriateness, and effectiveness of most medications **cannot** be determined.

g) The clinical goals of therapy for each medication—national guidelines, prescriber goals, and whenever applicable, patient goals are ascertained and documented.

2) Identification of the patient’s medication-related problems

All drug therapy problems (DTPs) related to indication, effectiveness, safety, and adherence are determined and documented for each medical condition or preventive therapy, based on the accepted clinical pharmaceutical taxonomy of drug therapy problems. The following questions serve to determine if any of the seven major categories of drug therapy problems are identified:

- a) Appropriateness of the medication
 - 1) Is the medication appropriate for the medical condition being treated?
 - 2) Does the patient have an indication for a medication that is not being treated or prevented?

- b) Effectiveness of the medication
 - 3) Is the most effective drug product being used for the medical condition?
 - 4) Is the dose appropriate and able to achieve the intended goals of therapy?
- c) Safety of the medication
 - 5) Is the patient experiencing an adverse event from the medication?
 - 6) Is the dose so high it could cause toxicity in the patient?
- d) Adherence to the medication
 - 7) Is the patient able and willing to take the medication as intended?

Significant drug therapy problems identified from the preceding questions are systematically documented in the same framework:

INDICATION:

- (1) The drug therapy is unnecessary because the patient does not have a clinical indication at this time.
- (2) Additional drug therapy is required to treat or prevent a medical condition in the patient.

EFFECTIVENESS:

- (3) The drug product is not being effective at producing the desired response in the patient.
- (4) The dosage is too low to produce the desired response in the patient.

SAFETY:

- (5) The drug is causing an adverse reaction in the patient.
- (6) The dosage is too high, resulting in undesirable effects experienced by the patient.

COMPLIANCE/ADHERENCE:

- (7) The patient is not able or willing to take the drug therapy as intended.

3) Develop a Care Plan with individualized therapy goals and personalized interventions

The medication care plan is developed by the pharmaceutical care practitioner directly with the patient and in collaboration with the PCMH team

or the patient's other 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, co-morbidities, other drug therapies, patient preferences, and physician/PCMH team 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 evaluations allow the pharmaceutical care practitioner in collaboration with the PCMH team to determine the actual outcomes resulting from the recommended 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. These follow-up evaluations occur in a time frame that is clinically appropriate for the specific patient, the medical conditions being monitored, and the drug therapy being taken. They may well vary with each patient, but should be coordinated with the PCMH team to minimize interference with other care activities, and are particularly important when major care transitions (such as hospitalization admission/discharge) occur.

Guidelines for the **Documentation** of Comprehensive Medication Management in the Patient-Centered Medical Home

Background

This section outlines the essential components of documentation that support the practice of comprehensive medication management in the PCMH. The information is drawn from various PCPCC sources, primarily the *PCPCC CMM Resource Guide* (pp 11-12) and the PCPCC Meaningful Connections Resource Document⁵, as well as the Minnesota MTM Medicaid Law provisions.⁶

A discussion of the relationship of these documentation parameters to the evolving development of standards for electronic health records (EHR), HIT meaningful use criteria, e-prescribing standards, clinical data exchange/integration, and related technological issues that impact the PCMH and pharmacists' practice is beyond the scope of the Resource Guide. However, as these systems continue to evolve, the effective integration of CMM-related data and documentation parameters will be an important and ongoing objective for the PCPCC and its Medication Management Task Force.

In addition, documentation activities should be supportable through electronic billing functions consistent with current CPT codes established for Pharmacists' Medication Management Services, Evaluation and Management (E&M) CPT Codes, and other widely utilized codes, such as the *Minnesota DHS, MHCP Provider Manual, Medication Management Therapy Services, HIPAA—Compliant MTMS CPT Codes, Revised 1/5/2010*, in settings that require fee-for-service billing.⁶

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 and provided/communicated). 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:

APPROPRIATENESS:

 - Eliminate unnecessary medications
 - Initiate necessary medications not being taken.

EFFECTIVENESS:

 - Identify most effective medication in specific patient.
 - Increase dosages to effective levels.

SAFETY:

 - Eliminate toxicities.
 - Identify adverse reactions.

ADHERENCE:

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

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, recordkeeping, etc.).
 - (h) Provide patients with medication information that is individualized and complements the therapeutic care plan.
2. Cipolle, R., Strand, L., Morley, P. *Pharmaceutical Care Practice—The Clinician’s Guide*, 2004—2nd edition. McGraw-Hill; Cipolle RJ, Strand LM, Morley PC. *Pharmaceutical Care Practice: The Patient-centered Approach to Medication Management*. McGraw Hill, 2012 is the 3rd revised edition (in press).
 3. “The Opportunity for Comprehensive Medication Management Within the Patient-Centered Medical Home Structure” http://www.pcpcc.net/files/medication_management_in_pcmh_with_practice_profiles.pdf.
 4. Isetts, B. et al. Clinical and economic outcomes of medication therapy management services: The Minnesota experience- *J Am Pharm Assoc*. 2008;48(2):203-211.

References:

1. Isetts, B.; Brown, L.; Schondelmeyer S. Quality Assessment of a Collaborative Approach for Decreasing Drug-Related Morbidity and Achieving Therapeutic Goals. *Arch. Intern Med* 2003; 163; 1813-20.
5. PCPCC Resource Document, Meaningful Connections—A Resource Guide for using health IT to support the patient centered medical home. http://pcpcc.net/files/cehia_mc.pdf.
6. Minn. Stat. §256B.0625, subd. 13h in 2005 <https://www.revisor.mn.gov/statutes/?id=256b.0625>.

This document (Appendix A) has been prepared with the input and endorsement of the PCPCC Medication Management Taskforce representing a broad range of stakeholders dedicated to the advancement of patient care by assuring the medications that are taken represent the most appropriate and safest available to improve clinical outcomes and patient self-care. As with all other PCPCC resource guides and documents, this document is intended as a guidance document to assist interested readers and others in better understanding the issues surrounding the topic of comprehensive medication management as it relates to the advancement of principles of the PCMH. The PCPCC and its resource documents do not have the purpose of defining a “professional standard of practice” for any health profession or organization.

Medication Management Services: Resource-Based Relative Value Scale

Level of Service Provided	Level #1	Level #2	Level #3	Level #4	Level #5
Assessment of Drug-Related Needs	Problem-Focused 1 Medication	Expanded Problem 2 Medications	Detailed 3–5 Medications	Expanded Detailed 6–8 Medications	Comprehensive ≥9 Medications
Identification of Drug Therapy Problems	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
Complexity of Care Planning and Follow-Up Evaluation	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
CPT Codes	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
Face-to-Face Time	15 Minutes	16–30 Minutes	31–45 Minutes	46–60 Minutes	>60 Minutes
Payment Amount	\$	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$

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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