

# Medication therapy management in pharmacy practice: Core elements of an MTM service model (version 2.0)

American Pharmacists Association and the  
National Association of Chain Drug Stores Foundation

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## Abstract

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**Objective:** To further develop the service model for medication therapy management (MTM) delivery by pharmacists in settings where patients or their caregivers can be actively involved in managing their medications.

**Data sources:** Peer-reviewed literature, structured discussions with pharmacy leaders from diverse patient care settings, input from pharmacists and pharmacy associations, recommendations on patient-centered documents (personal medication record and medication-related action plan) from experts in the field of health literacy, and incorporation of extensive feedback received during an extended public comment period open to all MTM stakeholders and interested parties.

**Summary:** Built on an MTM consensus definition adopted by 11 national pharmacy organizations in July 2004, Medication Therapy Management in Community Pharmacy Practice: Core Elements of an MTM Service (Version 1.0) described core elements of an MTM service model that can be provided by pharmacists across the spectrum of community pharmacy. Version 2.0 of that model, presented in this article, maintains the original five core elements of an MTM service: medication therapy review (MTR), a personal medication record (PMR), a medication-related action plan (MAP), intervention and referral, and documentation and follow-up. The MTR can be comprehensive or targeted, depending on the needs of the patient. In Version 2.0, the PMR and MAP have been redesigned with the assistance of a health literacy expert to be more "patient friendly," effective, and efficient for patients to use in medication self-management.

**Conclusion:** The developing service model presented in this article for use by pharmacists involved in providing MTM services in diverse patient care settings consists of five core elements. The service model provides a consistent and recognizable framework for MTM service delivery by pharmacists that enhances efficient delivery of the service and improves patient outcomes.

**Keywords:** Medication therapy management, Medicare, pharmaceutical care, medication self-management, coordination of care.

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Eleven national pharmacy organizations achieved consensus on a definition of medication therapy management (MTM) in July 2004 (Appendix 3). Building on the consensus definition, the American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) Foundation developed a model framework for implementing effective MTM services in a community pharmacy setting by publishing Medication Therapy Management in Community Pharmacy Practice: Core Elements of an MTM Service (version 1.0). The original Version 1.0 document described the foundational or core elements of MTM services that could be provided by pharmacists across the spectrum of community pharmacy.<sup>1</sup>

Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model (version 2.0) is an evolutionary document that focuses on the provision of MTM services in settings where patients<sup>a</sup> or their caregivers can be actively involved in managing their medications. This service model was developed with the input of an advisory panel of pharmacy leaders representing diverse pharmacy practice settings (listed in Appendix 1). While adoption of this model is voluntary, it is important to note that this model is crafted to maximize both effectiveness and efficiency of MTM service delivery across pharmacy practice settings in an effort to improve continuity of care and patient outcomes.<sup>b</sup>

### At a Glance

**Synopsis:** Working with an expert advisory panel, and with input from national pharmacy organizations and other stakeholders, the American Pharmacists Association and the National Association of Chain Drug Stores Foundation have refined version 1.0 of the core elements of a medication therapy management (MTM) service model. The resulting version 2.0 contains the five core elements from the version 1.0 model: medication therapy review (MTR), a personal medication record (PMR), a medication-related action plan (MAP), intervention and referral, and documentation and follow-up. The new version can be implemented in more diverse patient care settings and places a greater emphasis on patient transitions of care, health care provider collaboration, and documentation requirements.

**Analysis:** As reflected in environmental scans of providers and payers being published in this and the next issue of JAPhA, MTM is taking hold in cities and towns across the country. The adoption of these core elements by pharmacists when providing MTM will advance comprehension by prescribers and patients of what they can expect during and following MTM visits. The result will be widespread availability of a consistent MTM service that increases opportunities for pharmacists and improves care for patients.

Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model (Version 2.0) is designed to improve collaboration among pharmacists, physicians, and other health care professionals; enhance communication between patients and their health care team; and optimize medication use for improved patient outcomes. The MTM services described in this model empower patients to take an active role in managing their medications. The services are dependent on pharmacists working collaboratively with physicians and other health care professionals to optimize medication use in accordance with evidence-based guidelines.<sup>2,3</sup>

MTM services, as described in this model, are distinct from medication dispensing and focus on a patient-centered, rather than an individual product-centered, process of care.<sup>4,c</sup>

MTM services encompass the assessment and evaluation of the patient's complete medication therapy regimen, rather than focusing on an individual medication product. This model framework describes core elements of MTM service delivery in pharmacy practice and does not represent a specific minimum or maximum level of all services that could be delivered by pharmacists.<sup>5</sup>

Medication-related problems are a significant public health issue within the health care system. Incidence estimates suggest that more than 1.5 million preventable medication-related adverse events occur each year in the United States, accounting for an excess of \$177 billion in terms of medication-related morbidity and mortality.<sup>6,7</sup> The Institute of Medicine advocates that health care should be safe, effective, patient centered, timely, efficient, and effective to meet patients' needs and that patients should be active participants in the health care process to prevent medication-related problems.<sup>3,7</sup>

MTM services, as described in this service model, may help address the urgent public health need for the prevention of medication-related morbidity and mortality.<sup>3</sup> MTM services may contribute to medication error prevention, result in improved reliability of health care delivery, and enable patients to take an active role in medication and health care self-management.<sup>7</sup> The MTM services outlined in this model are aligned with the expectations of the Centers for Medicare & Medicaid Services, as stated in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, that MTM services will enhance patient understanding of appropriate drug use, increase adherence to medication therapy, and improve detection of adverse drug events.<sup>8</sup>

MTM programs are demonstrating positive clinical, economic, and humanistic outcomes across diverse patient populations in various patient care settings.<sup>9-15</sup> MTM services are currently being delivered in both the public and private sectors. In the public sector, some state Medicaid and Medicare Part D plans have focused on a comprehensive medication therapy review as the foundation of their MTM programs. Pharmacists participating in these programs often provide patients with an initial comprehensive assessment and ongoing follow-up assessments to identify and resolve medication-related problems.<sup>11,16-20</sup>

In the private sector, MTM programs are beginning to emerge nationwide, offering MTM services to traditional insured groups, managed care populations, self-insured employers, and self-paying individual patients.<sup>9,10,12</sup>

Any patient who uses prescription and nonprescription medications, herbal products, or other dietary supplements could potentially benefit from the MTM core elements outlined in this model. As part of the effort to effectively address the urgent public health issue of medication-related morbidity and mortality, MTM services should be considered for any patient with actual or potential medication-related problems, regardless of the number of medications they use, their specific disease states, or their health plan coverage. Although MTM program structure and the needs of individual patients may vary, the use of a consistent and recognizable framework for core MTM services, as described in this model, will enhance their efficient delivery and effective quality measurement. As new opportunities arise, pharmacists in all practice settings must share a common vision for patient-centered MTM services that improve medication therapy outcomes and provide value within our nation's health care system.

### **Framework for pharmacist-provided MTM services**

This framework for MTM service delivery in pharmacy practice is designed to facilitate collaboration among the pharmacist, patient, physician, and other health care professionals to promote safe and effective medication use and achieve optimal patient outcomes. MTM services in all patient care settings should include structures supporting the establishment and maintenance of the patient–pharmacist relationship.

### **Providing MTM services in various patient care settings**

Patients with a potential need for MTM services can be identified by the pharmacist, physician, or other health care professionals; the health plan; or patients themselves when medication-related problems are suspected. Appendix 4 provides considerations for identification of patients who may benefit from MTM services. Patients may be especially vulnerable to medication-related problems during transitions of care, such as when their health care setting changes, when they change physicians, or when their payer status changes.<sup>4</sup>

These transitions of care often result in medication therapy changes that may be due to changes in the patient's needs or resources, the patient's health status or condition, or formulary requirements. It is important that systems be established so that pharmacist-provided MTM services can focus on reconciling the patient's medications and ensuring the provision of appropriate medication management during transitions of care.

For ambulatory patients, MTM services typically are offered by appointment but may be provided on a walk-in basis. MTM services should be delivered in a private or semiprivate area, as

required by the Health Insurance Portability and Accountability Act, by a pharmacist whose time can be devoted to the patient during this service.<sup>21</sup> In other patient care settings (e.g., acute care, long-term care, home care, managed care), the environment in which MTM services are delivered may differ because of variability in structure and facilities design. Even so, to the extent that MTM core elements are implemented, a consistent approach to their delivery should be maintained.

### **The delivery of MTM services by the pharmacist**

Within the MTM core elements service model, the patient receives an annual comprehensive medication therapy review and additional medication therapy reviews according to the patient's needs. The patient may require ongoing monitoring by the pharmacist to address new or recurring medication-related problems.

The total number of reviews required to successfully manage a patient's therapy will vary from patient to patient and will be ultimately determined by the complexity of the individual patient's medication-related problems. The extent of health plan benefits or other limitations imposed by the patient's payer may affect coverage for MTM services; however, this would not preclude additional services provided by the pharmacist for which the patient pays on a fee-for-service basis.

To perform the most comprehensive assessment of a patient, personal interaction with direct contact between a health care professional and a patient is optimal. A face-to-face interaction optimizes the pharmacist's ability to observe signs of and visual cues to the patient's health problems (e.g., adverse reactions to medications, lethargy, alopecia, extrapyramidal symptoms, jaundice, disorientation) and can enhance the patient–pharmacist relationship.<sup>22</sup> The pharmacist's observations may result in early detection of medication-related problems and thus have the potential to reduce inappropriate medication use, emergency department visits, and hospitalizations. It is recognized, however, that alternative methods of patient contact and interaction, such as telephonic, may be necessary for those patients for whom a face-to-face interaction is not possible or not desired (e.g., homebound patients) or in pharmacy practice settings in which the pharmacist serves in a consultative role on the health care team. Irrespective of whether the MTM service is provided by the pharmacist to the patient face to face or by alternative means, the service is intended to support the establishment and maintenance of the patient–pharmacist relationship.

### **Core elements of an MTM service model in pharmacy practice**

The MTM service model in pharmacy practice includes the following five core elements:

- Medication therapy review (MTR)
- Personal medication record (PMR)
- Medication-related action plan (MAP)

- Intervention and/or referral
- Documentation and follow-up

These five core elements form a framework for the delivery of MTM services in pharmacy practice. Every core element is integral to the provision of MTM; however, the sequence and delivery of the core elements may be modified to meet an individual patient's needs.

### Medication therapy review

The medication therapy review (MTR) is a systematic process of collecting patient-specific information, assessing medication therapies to identify medication-related problems, developing a prioritized list of medication-related problems, and creating a plan to resolve them.

An MTR is conducted between the patient and the pharmacist. Pharmacist-provided MTR and consultation in various settings has resulted in reductions in physician visits, emergency department visits, hospital days, and overall health care costs.<sup>9,10,12,14,20,23–25</sup> In addition, pharmacists have been shown to obtain accurate and efficient medication-related information from patients.<sup>10,26,27</sup> The MTR is designed to improve patients' knowledge of their medications, address problems or concerns that patients may have, and empower patients to self-manage their medications and their health condition(s).

The MTR can be comprehensive or targeted to an actual or potential medication-related problem. Regardless of whether the MTR is comprehensive or targeted, patients may be identified as requiring this service in a variety of ways. Commonly, patients may be referred to a pharmacist by their health plan, another pharmacist, physician, or other health care professionals. Patients may also request an MTR independent of any referral. Additional opportunities for providing an MTR include when a patient is experiencing a transition of care, when actual or potential medication-related problems are identified, or if the patient is suspected to be at higher risk for medication-related problems.

In a comprehensive MTR, ideally the patient presents all current medications to the pharmacist, including all prescription and nonprescription medications, herbal products, and other dietary supplements. The pharmacist then assesses the patient's medications for the presence of any medication-related problems, including adherence, and works with the patient, the physician, or other health care professionals to determine appropriate options for resolving identified problems. In addition, the pharmacist supplies the patient with education and information to improve the patient's self-management of his or her medications.

Targeted MTRs are used to address an actual or potential medication-related problem. Ideally, targeted MTRs are performed for patients who have received a comprehensive MTR. Whether for a new problem or subsequent monitoring, the pharmacist assesses the specific therapy problem in the context of the patient's complete medical and medication history. Follow-

ing assessment, the pharmacist intervenes and provides education and information to the patient, the physician or other health care professionals, or both, as appropriate. The MTR is tailored to the individual needs of the patient at each encounter.

Depending on its scope, the MTR may include the following:

- Interviewing the patient to gather data, including demographic information, general health and activity status, medical history, medication history, immunization history, and patients' thoughts or feelings about their conditions and medication use<sup>28</sup>
- Assessing, on the basis of all relevant clinical information available to the pharmacist, the patient's physical and overall health status, including current and previous diseases or conditions
- Assessing the patient's values, preferences, quality of life, and goals of therapy
- Assessing cultural issues, education level, language barriers, literacy level, and other characteristics of the patient's communication abilities that could affect outcomes
- Evaluating the patient to detect symptoms that could be attributed to adverse events caused by any of his or her current medications
- Interpreting, monitoring, and assessing the patient's laboratory results
- Assessing, identifying, and prioritizing medication-related problems related to
  - The clinical appropriateness of each medication being taken by the patient, including benefit versus risk
  - The appropriateness of the dose and dosing regimen of each medication, including consideration of indications, contraindications, potential adverse effects, and potential problems with concomitant medications
  - Therapeutic duplication or other unnecessary medications
  - Adherence to the therapy
  - Untreated diseases or conditions
  - Medication cost considerations
  - Health care/medication access considerations
- Developing a plan for resolving each medication-related problem identified
- Providing education and training on the appropriate use of medications and monitoring devices and the importance of medication adherence and understanding treatment goals
- Coaching patients to be empowered to manage their medications
- Monitoring and evaluating the patient's response to therapy, including safety and effectiveness
- Communicating appropriate information to the physician or other health care professionals, including consultation on the selection of medications, suggestions to address identified medication problems, updates on the patient's progress, and recommended follow-up care<sup>29</sup>

In this service model, a patient would receive an annual comprehensive MTR and additional targeted MTRs to address

new or ongoing medication-related problem(s). Significant events such as important changes in the patient's medication therapy, changes in the patient's needs or resources, changes in the patient's health status or condition, a hospital admission or discharge, an emergency department visit, or an admission or discharge from a long-term care or assisted-living facility could necessitate additional comprehensive MTRs.

### Personal medication record

The personal medication record (PMR) is a comprehensive record of the patient's medications (prescription and nonprescription medications, herbal products, and other dietary supplements).

Within the MTM core elements service model, the patient receives a comprehensive record of his or her medications (prescription and nonprescription medications, herbal products, and other dietary supplements) that has been completed either by the patient with the assistance of the pharmacist or by the pharmacist, or the patient's existing PMR is updated. Ideally, the patient's PMR would be generated electronically, but it also may be produced manually. Whether the pharmacist provides the PMR manually or electronically, the information should be written at a literacy level that is appropriate for and easily understood by the patient. In institutional settings, the PMR may be created at discharge from the medication administration record or patient chart for use by the patient in the outpatient setting. The PMR contains information to assist the patient in his or her overall medication therapy self-management. A sample PMR is shown in Figure 1.

The PMR, which is intended for use by the patient, may include the following information<sup>30</sup>:

- Patient name
- Patient birth date
- Patient telephone number
- Emergency contact information (name, relationship, and telephone number)
- Primary care physician (name and telephone number)
- Pharmacy/pharmacist (name and telephone number)
- Allergies (e.g., What allergies do I have? What happened when I had the allergy or reaction?)
- Other medication-related problems (e.g., What medication caused the problem? What was the problem I had?)
- Potential questions for patients to ask about their medications (e.g., When you are prescribed a new drug, ask your doctor or pharmacist...)
- Date last updated
- Date last reviewed by the pharmacist, physician, or other health care professional
- Patient's signature
- Health care provider's signature
- For each medication, inclusion of the following:
  - Medication (e.g., drug name and dose)
  - Indication (e.g., Take for...)

- Instructions for use (e.g., When do I take it?)
- Start date
- Stop date
- Ordering prescriber/contact information (e.g., doctor)
- Special instructions

The PMR is intended for patients to use in medication self-management. The maintenance of the PMR is a collaborative effort among the patient, pharmacist, physician, and other health care professionals. Patients should be encouraged to maintain and update this perpetual document. Patients should be educated to carry the PMR with them at all times and share it at all health care visits and at all admissions to or discharges from institutional settings to help ensure that all health care professionals are aware of their current medication regimen.

Each time the patient receives a new medication; has a current medication discontinued; has an instruction change; begins using a new prescription or nonprescription medication, herbal product, or other dietary supplement; or has any other changes to the medication regimen, the patient should update the PMR to help ensure a current and accurate record. Ideally, the pharmacist, physician, and other health care professionals can actively assist the patient with the PMR revision process.

Pharmacists may use the PMR to communicate and collaborate with physicians and other health care professionals to achieve optimal patient outcomes. Widespread use of the PMR will support uniformity of information provided to all health care professionals and enhance the continuity of care provided to patients while facilitating flexibility to account for pharmacy- or institution-specific variations.

### Medication-related action plan

The medication-related action plan (MAP) is a patient-centric document containing a list of actions for the patient to use in tracking progress for self-management.

A care plan is the health professional's course of action for helping a patient achieve specific health goals.<sup>31</sup> The care plan is an important component of the documentation core element outlined in this service model. In addition to the care plan, which is developed by the pharmacist and used in the collaborative care of the patient, the patient receives an individualized MAP for use in medication self-management. Completion of the MAP is a collaborative effort between the patient and the pharmacist. The patient MAP includes only items that the patient can act on that are within the pharmacist's scope of practice or that have been agreed to by relevant members of the health care team. The MAP should not include outstanding action items that still require physician or other health care professional review or approval. The patient can use the MAP as a simple guide to track his or her progress. The Institute of Medicine has advocated the need for a patient-centered model of health care.<sup>7</sup> The patient MAP, coupled with education, is an essential element for incorporating the patient-centered approach into the MTM service model. The MAP reinforces a sense of patient empowerment and



encourages the patient's active participation in his or her medication-adherence behavior and overall MTM. A sample MAP is shown in Figure 2.

The MAP, which is intended for use by the patient, may include the following information:

- Patient name
- Primary care physician (doctor's name and telephone number)
- Pharmacy/pharmacist (pharmacy/pharmacist name and telephone number)
- Date of MAP creation (date prepared)
- Action steps for the patient: "What I need to do..."
- Notes for the patient: "What I did and when I did it..."
- Appointment information for follow-up with pharmacist, if applicable

Specific items that require intervention and that have been approved by other members of the health care team and any new items within the pharmacist's scope of practice should be included on a MAP distributed to the patient on a follow-up visit. In institutional settings, the MAP could be established at the time the patient is discharged for use by the patient in medication self-management.

**Intervention and/or referral**

The pharmacist provides consultative services and intervenes to address medication-related problems; when necessary, the pharmacist refers the patient to a physician or other health care professional.

During the course of an MTM encounter, medication-related problems may be identified that require the pharmacist to intervene on the patient's behalf. Interventions may include collaborating with physicians or other health care professionals to resolve existing or potential medication-related problems or working with the patient directly. The communication of appropriate information to the physician or other health care professional, including consultation on the selection of medications, suggestions to address medication problems, and recommended follow-up care, is integral to the intervention component of the MTM service model.<sup>29</sup>

The positive impact of pharmacist interventions on outcomes related to medication-related problems has been demonstrated in numerous studies.<sup>32-37</sup> Appropriate resolution of medication-related problems involves collaboration and communication between the patient, the pharmacist, and the patient's physician or other health care professionals.

Some patients' medical conditions or medication therapy may be highly specialized or complex, and their needs may extend beyond the core elements of MTM service delivery. In such cases, pharmacists may provide additional services according to their expertise or refer the patient to a physician, another pharmacist, or other health care professional.

Examples of circumstances that may require referral include the following:

**MY MEDICATION-RELATED ACTION PLAN**

Patient: \_\_\_\_\_  
 Doctor (Phone): \_\_\_\_\_  
 Pharmacy/Pharmacist (Phone): \_\_\_\_\_  
 Date Prepared: \_\_\_\_\_

The list below has important Action Steps to help you get the most from your medications. Follow the checklist to help you work with your pharmacist and doctor to manage your medications AND make notes of your actions next to each item on your list.

Action Steps → What I need to do...	Notes → What I did and when I did it...
<input type="checkbox"/>	

My Next Appointment with My Pharmacist is on: \_\_\_\_\_ (date) at \_\_\_\_\_  AM  PM

**Figure 2.** Sample medication-related action plan (for the patient). Patients, health care professionals, payers, and health information technology system vendors are encouraged to develop a format that meets individual and customer needs, collecting elements such as those included in this sample medication-related action plan.

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- A patient may exhibit potential problems discovered during the MTR that may necessitate referral for evaluation and diagnosis.
- A patient may require disease management education to help him or her manage chronic diseases such as diabetes.
- A patient may require monitoring for high-risk medications (e.g., warfarin, phenytoin, methotrexate).

The intent of intervention and/or referral is to optimize medication use, enhance continuity of care, and encourage patients to avail themselves of health care services to prevent future adverse outcomes.

**Documentation and follow-up**

MTM services are documented in a consistent manner, and a follow-up MTM visit is scheduled based on the patient’s medication-related needs or the patient is transitioned from one care setting to another.

Documentation is an essential element of the MTM service model. The pharmacist documents services and intervention(s) performed in a manner appropriate for evaluating patient progress and sufficient for billing purposes. Proper documentation of MTM services may serve several purposes, including, but not limited to, the following:

- Facilitating communication between the pharmacist and the patient’s other health care professionals regarding recommendations intended to resolve or monitor actual or potential medication-related problems
- Improving patient care and outcomes
- Enhancing the continuity of patient care among providers and care settings
- Ensuring compliance with laws and regulations for the maintenance of patient records
- Protecting against professional liability
- Capturing services provided for justification of billing or reimbursement (e.g., payer audits)
- Demonstrating the value of pharmacist-provided MTM services
- Demonstrating clinical, economic, and humanistic outcomes

MTM documentation includes creating and maintaining an ongoing patient-specific record that contains, in chronological order, a record of all provided care in an established standard

health care professional format (e.g., the SOAP [subjective observations, objective observations, assessment, and plan] note<sup>38</sup>).

Ideally, documentation will be completed electronically or, alternatively, on paper. The inclusion of resources such as a PMR, a MAP, and other practice-specific forms will assist the pharmacist in maintaining consistent professional documentation. The use of consistent documentation will help facilitate collaboration among members of the health care team while accommodating practitioner, facility, organizational, or regional variations.

Documentation elements for the patient record may include, but are not limited to, the items listed in Table 1.<sup>22,29,38–40</sup>

**External communication of MTM documentation**

Following documentation of the MTM encounter, appropriate external communication should be provided or sent to key audiences, including patients, physicians, and payers. Providing the patient with applicable documentation that he or she can easily understand is vital to facilitating active involvement in the care process. Documentation provided to the patient at the MTM encounter may include the PMR, MAP, and additional education materials. Documentation to physicians and other health care professionals may include a cover letter, the patient’s PMR, the SOAP note, and the care plan. Communicating with payers and providing appropriate billing information may also be necessary and could include the name of the pharmacist or pharmacy and appropriate identifier, services provided, time spent on patient care, and appropriate billing codes.

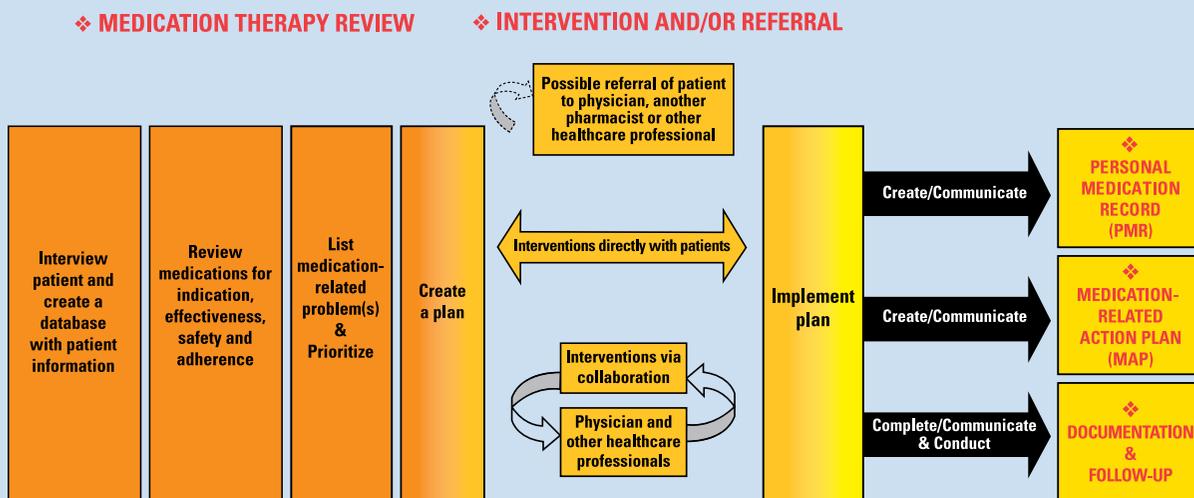
**Table 1.** Examples of documentation elements for patient record

Patient demographics/basic information: Address, telephone number, e-mail address, gender, age, ethnicity, educational status, patient’s special needs, health plan benefit/insurance coverage
Subjective observations: Pertinent patient-reported information: previous medical history, family history, social history, chief complaints, allergies, previous adverse drug reactions
Objective observations: Known allergies, diseases, conditions, laboratory results, vital signs, diagnostic signs, physical exam results, review of systems
Assessment: Problem list, assessment of medication-related problems
Plan: A care plan is the health care professional’s course of action for helping a patient achieve specific health goals
Education: Goal setting and instruction provided to the patient with verification of understanding
Collaboration: Communication with other health care professionals: recommendations, referrals, and correspondence with other professionals (cover letter, SOAP note)
PMR: A record of all medications, including prescription and nonprescription medications, herbal products, and other dietary supplements
MAP: Patient-centric document containing a list of actions to use in tracking progress for self-management
Follow-up: Transition plan or scheduling of next follow-up visit
Billing: Amount of time spent on patient care, level of complexity, amount charged

Abbreviations used: MAP, medication-related action plan; PMR, personal medication record; SOAP, subjective observations, objective observations, assessment, and plan.

## The Medication Therapy Management Core Elements Service Model

The diagram below depicts how the MTM Core Elements (✦) interface with the patient care process to create an MTM Service Model.



**Figure 3.** Flow chart of a medication therapy management service model

Abbreviation used: MTM, medication therapy management.

### Follow-up

When a patient’s care setting changes (e.g., hospital admission, hospital to home, hospital to long-term care facility, home to long-term care facility), the pharmacist transitions the patient to another pharmacist in the patient’s new care setting to facilitate continued MTM services. In these situations, the initial pharmacist providing MTM services participates cooperatively with the patient’s new pharmacist provider to facilitate the coordinated transition of the patient, including the transfer of relevant medication and other health-related information.

If the patient will be remaining in the same care setting, the pharmacist should arrange for consistent follow-up MTM services in accordance with the patient’s unique medication-related needs. All follow-up evaluations and interactions with the patient and his or her other health care professional(s) should be included in MTM documentation.

### Conclusion

The MTM core elements, as presented in this document, are intended to be applicable to patients in all care settings where the patients or their caregivers can be actively involved with managing their medication therapy, taking full advantage of the pharmacist’s role as the “medication therapy expert.” Figure 3 presents a flow chart of the core elements of an MTM service

model contained in this document. As the core elements service model continues to evolve to meet diverse patient needs, pharmacists are encouraged to make the most of the framework provided to improve patient outcomes and medication use.

<sup>a</sup>In this document, the term *patient* refers to the patient, caregiver, or other persons involved in the care of the patient.

<sup>b</sup>Notice: The materials in this service model are provided for general informational purposes only and do not constitute business or legal advice. The NACDS Foundation and APhA assume no responsibility for the accuracy or timeliness of any information provided herein. The reader should not under any circumstances solely rely on, or act on the basis of, the materials in this service model. These materials and information are not a substitute for obtaining business or legal advice in the appropriate jurisdiction or state.

The materials in this service model do not represent a standard of care or standard business practices. This service model may not be appropriate for all pharmacists or pharmacies. Service programs should be designed based on unique needs and circumstances, and model examples should be modified as appropriate.

Nothing contained in this service model shall be construed as an express or implicit invitation to engage in any illegal or anticompetitive activity. Nothing contained in this service model shall, or should be, construed as an endorsement of any particular method of treatment or pharmacy practice in general.

<sup>c</sup>MTM services are built on the philosophy and process of pharmaceutical care that was first implemented in pharmacy practice in the early 1990s. As pharmacy education, training, and practice continue to evolve to a primarily clinical “patient-centered” focus, pharmacists are gaining recognition from other health care professionals and the public

as “medication therapy experts.” Recognizing the pharmacist’s role as the medication therapy expert, the pharmacy profession has developed a consensus definition for MTM and is increasingly using this term to describe the services provided by pharmacists to patients.

“Examples of transitions of care may include but are not limited

to changes in health care setting (e.g., hospital admission, hospital to home, hospital to long-term care facility, home to long-term care facility), changes in health care professionals and/or level of care (e.g., treatment by a specialist), or changes in payer status (e.g., change or loss of health plan benefits/insurance).

## Appendix 1. Medication therapy management model advisory panel

Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model (Version 2.0) was developed with the input of an advisory panel of pharmacy leaders representing diverse pharmacy practice settings. The pharmacy practice setting areas represented by members of the advisory panel included ambulatory care, community, government technical support services, hospital, long-term care, managed care health systems, managed care organization plan administration, and outpatient clinics. Advisory panel members provided expert advice. The content of this document does not necessarily represent all of their opinions or those of their affiliated organizations.

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Abbreviations used: BCBS, BlueCross BlueShield; HRSA, Health Resources and Services Administration.

## Appendix 2. Organizations contributing to medication therapy management model

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APhA and the NACDS Foundation respectfully acknowledge the contributions of all individuals and organizations that participated in the development of Medication Therapy Management in Pharmacy Practice: Core Elements of an MTM Service Model (Version 2.0). This service model is supported by the following seven organizations:

- American Association of Colleges of Pharmacy
- American College of Apothecaries
- American College of Clinical Pharmacy
- American Society of Consultant Pharmacists
- American Society of Health-System Pharmacists
- National Alliance of State Pharmacy Associations
- National Community Pharmacists Association

## Appendix 3. Definition of medication therapy management<sup>a</sup>

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Medication therapy management (MTM) is a distinct service or group of services that optimize therapeutic outcomes for individual patients. MTM services are independent of, but can occur in conjunction with, the provision of a medication product. MTM encompasses a broad range of professional activities and responsibilities within the licensed pharmacist's or other qualified health care provider's scope of practice. These services include but are not limited to the following, according to the individual needs of the patient:

- Performing or obtaining necessary assessments of the patient's health status
  - Formulating a medication treatment plan
  - Selecting, initiating, modifying, or administering medication therapy
  - Monitoring and evaluating the patient's response to therapy, including safety and effectiveness
  - Performing a comprehensive medication review to identify, resolve, and prevent medication-related problems, including adverse drug events
  - Documenting the care delivered and communicating essential information to the patient's other primary care providers
  - Providing verbal education and training designed to enhance patient understanding and appropriate use of his/her medications
  - Providing information, support services, and resources designed to enhance patient adherence with his/her therapeutic regimens
  - Coordinating and integrating MTM services within the broader health care management services being provided to the patient
- A program that provides coverage for MTM services shall include the following:
- Patient-specific and individualized services or sets of services provided directly by a pharmacist to the patient.<sup>b</sup> These services are distinct from formulary development and use, generalized patient education and information activities, and other population-focused quality-assurance measures for medication use
  - Face-to-face interaction between the patient<sup>b</sup> and the pharmacist as the preferred method of delivery. When patient-specific barriers to face-to-face communication exist, patients shall have equal access to appropriate alternative delivery methods.
- MTM programs shall include structures supporting the establishment and maintenance of the patient<sup>b</sup>-pharmacist relationship
- Opportunities for pharmacists and other qualified health care providers to identify patients who should receive MTM services
  - Payment for MTM services consistent with contemporary provider payment rates that are based on the time, clinical intensity, and resources required to provide services (e.g., Medicare Part A and/or Part B for CPT and RBRVS)
  - Processes to improve continuity of care, outcomes, and outcome measures

Approved July 27, 2004, by the Academy of Managed Care Pharmacy, the American Association of Colleges of Pharmacy, the American College of Apothecaries, the American College of Clinical Pharmacy, the American Society of Consultant Pharmacists, the American Pharmacists Association, the American Society of Health-System Pharmacists, the National Association of Boards of Pharmacy,<sup>c</sup> the National Association of Chain Drug Stores, the National Community Pharmacists Association, and the National Council of State Pharmacy Association Executives (now the National Alliance of State Pharmacy Associations).

Abbreviations used: CPT, Current Procedural Terminology; MTM, medication therapy management; RBRVS, resource-based relative value scale.

<sup>a</sup>Bluml BM. Definition of medication therapy management: development of professionwide consensus. *J Am Pharm Assoc.* 2005;45:566-72.

<sup>b</sup>In some situations, MTM services may be provided to the caregiver or other persons involved in the care of the patient.

<sup>c</sup>Organization policy does not allow the National Association of Boards of Pharmacy to take a position on payment issues.

## Appendix 4. Considerations for identification of patients who may benefit from MTM services

Any patients using prescription and nonprescription medications, herbal products, and other dietary supplements could potentially benefit from the medication therapy management (MTM) services described in the core elements outlined in this service model, especially if medication-related problems or issues are discovered or suspected. Patients may be evaluated for MTM services regardless of the number of medications they use, their specific disease state(s), or their health plan coverage.

Opportunities for the identification of patients targeted for MTM services may result from many sources, including, but not limited to, pharmacist identification, physician referral, patient self-referral, and health plan or other payer referral. Pharmacists may wish to notify physicians or other health care professionals in their community or physicians within their facility, if applicable, of their MTM services, so that physicians may refer patients for MTM services.

To provide assistance in prioritizing who may benefit most from MTM services, pharmacists, health plans, physicians, other health care professionals, and health systems may consider using one or more of the following factors to target patients who are likely to benefit most from MTM services:

- Patient has experienced a transition of care, and his or her regimen has changed
- Patient is receiving care from more than one prescriber
- Patient is taking five or more chronic medications (including prescription and nonprescription medications, herbal products, and other dietary supplements)
- Patient has at least one chronic disease or chronic health condition (e.g., heart failure, diabetes, hypertension, hyperlipidemia, asthma, osteoporosis, depression, osteoarthritis, chronic obstructive pulmonary disease)
- Patient has laboratory values outside the normal range that could be caused by or may be improved with medication therapy
- Patient has demonstrated nonadherence (including underuse and overuse) to a medication regimen
- Patient has limited health literacy or cultural differences and therefore requires special communication strategies to optimize care
- Patient wants or needs to reduce out-of-pocket medication costs
- Patient has experienced a loss of or significant change in health plan benefit or insurance coverage
- Patient has recently experienced an adverse event (medication- or non-medication-related) while receiving care
- Patient is taking high-risk medication(s), including narrow therapeutic index drugs (e.g., warfarin, phenytoin, methotrexate)
- Patient self-identifies and presents with perceived need for MTM services

Abbreviation used: MTM, medication therapy management.

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