



MEDICATION THERAPY MANAGEMENT

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■ LEARNING OBJECTIVES

After reading this chapter, the pharmacy student, community practice resident, or pharmacist should be able to:

1. Explain how pharmacists are in a unique position to provide medication therapy management (MTM) services.
2. Recognize the differences between MTM and pharmaceutical care.
3. Explain how MTM services are implemented with the five core elements.
4. Discuss how innovative patient care programs have assisted in the development of MTM.
5. Recognize how implementation of MTM services is evolving into the overall health-care structure.

■ INTRODUCTION

Nearly half of all Americans have at least one chronic illness¹ resulting in millions of patients relying on prescription medications to help maintain their health. This prevalence of medication use creates a significant opportunity for both medical and monetary consequences if these agents are not managed safely and effectively. Unfortunately, evidence suggests that our health system is not performing well in this regard. It is estimated that 1.5 million preventable adverse drug events (ADEs) occur in our health system each year² and the Institute of Medicine (IOM) has declared that for every dollar spent on ambulatory medications, another dollar is spent to treat new health problems caused by the medication.³ Despite the presence of these avoidable adverse events and costs, it has been determined that potentially up to half of patients on persistent medication receive no drug monitoring in 1 year.^{4–5} The IOM predicts that with these trends, the number and costs of outpatient ADEs will increase unless effective interventions to improve health-care system delivery and outpatient safety are implemented.

There are multiple factors that contribute to the medication use problems and their negative outcomes. These include patient-centered factors, therapy-related factors, social and economic factors, and disease factors.⁶ Health literacy, cost, concern about adverse effects, lack of urgency about the disease, and an impaired perception of the efficacy of the medications are just a few specific patient-centered examples. Societal issues like poverty, cultural differences, and a lack of a social support structure create obstacles for treating the population as a whole. Lastly, problems with the health-care system such as lack of accessibility, long waiting times, difficulties filling prescriptions, or unpleasant interactions with health-care professionals also affect patient's medication use experience and may result in medication-related problems.

Pharmacists are in an excellent position to address these problems due to their focused training, unique perspective, and unparalleled access. Pharmacists have the most specific training in drug therapy of all health-care professionals, which creates an opportunity to evaluate a patient's medication needs in a manner that

is unique to the health-care team. In the ambulatory care environment, pharmacists are the most accessible health-care professionals. While most health-care professionals require an appointment or emergency situation to be accessible to patients, the ease of access to community pharmacists allows them to often serve as the first and/or the most frequent point of contact between a patient and their health-care team.

However, to take advantage of these differentiating characteristics and fully meet the medication-related needs of individual patients and society, the profession must actively engage the health-care reform principles that are underway in the United States. The services that pharmacists deliver must align with “the Triple Aim” of achieving better patient health, improved quality of care, and lower costs. In order to accomplish this, new practice models must be adopted.

The adoption of new practice models more focused on ensuring that patients achieve desired drug therapy outcomes has been occurring over the past 20 years; however, large-scale adoption of this type of practice remains elusive. Despite over two decades of debate and development, there still remains ambiguity and inconsistency in defining the core role of pharmacists and the services through which this role serves patients.

■ MEDICATION THERAPY MANAGEMENT AND PHARMACEUTICAL CARE—SAME PRACTICE WITH DIFFERENT NAMES?

Pharmaceutical Care: A Definition

In 1990, Hepler and Strand defined pharmaceutical care as “the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life.”⁷ This definition served as a foundation for Strand, Cipolle, and Morley to define responsibilities of a pharmaceutical care practitioner. These include (1) to assure that all of a patient's drug therapy is appropriate, effective, safe, and convenient to take as indicated and (2) to identify, resolve, and prevent any drug therapy problems.⁸ As a pharmaceutical care practitioner, the pharmacist takes

responsibility for a patient's drug-related needs and is held accountable for this commitment.⁹ Pharmaceutical care is a patient-centered practice with three components: philosophy of practice, patient care process, and a management system.¹⁰

Philosophy of Practice

All pharmaceutical care practitioners share a set of values that guide behaviors, clinical decisions, and professional standards. It is this set of values that unites practitioners and provides the foundation for the other two components of pharmaceutical care: patient care process and a management system. The philosophy of pharmaceutical care practice calls for the practitioner to accept the social responsibility to reduce medication-related morbidity and mortality. This responsibility is met by assessing a patient's medication-related needs, bringing the necessary resources to meet those needs, and follow up with the patient to determine that these needs have been met. The core element of this philosophy is the patient-centered approach taken to meet a patient's needs. In other words, the patient remains at the center of attention at all times despite a practitioner's preferences.¹¹

Patient Care Process

Although each practitioner may carry out the patient care process differently, pharmaceutical care has only one patient care process. This is essential to provide consistent quality care to patients across care settings and to educate future practitioners. As the name implies, the patient care process is patient centered and driven by an individual patient's needs. However, in order to maintain quality and consistency, the process is practiced systematically. Three steps comprise the process: assessment, care plan, and evaluation. These steps occur continuously to meet a patient's medication-related needs. During the assessment, the pharmacist determines the patient's medication-related problems. Drug therapy is evaluated for indication, effectiveness, safety, and convenience. Problems related to medications are identified, including those problems that have potential to cause harm. Before medication-related problems can be solved, a therapeutic relationship must exist between the pharmacist and the patient to

ensure that medications are assessed comprehensively. The second step of the patient care process is the care plan. The care plan is created to define goals, determine interventions, and agree upon responsibilities for the practitioner and the patient to meet goals of therapy. The objective of the patient-centered care plan is to identify, resolve, and prevent medication-related problems. The care plan is complete when goals have been set, interventions agreed upon, and responsibilities of the patient and practitioner accepted. The final step of the patient care process is the follow-up evaluation. During the follow-up evaluation, the practitioner collects information from the patient to determine if interventions have been successful in meeting goals set during the assessment and care plan. The follow-up evaluation is also an opportunity to determine if any new medication-related problems have developed. Patients with chronic diseases will require a series of follow-up evaluations.¹⁰

Management System

The third component of pharmaceutical care is a practice management system. In order to have a financially successful practice, new patients must be added to the practice. As described, a systematic approach exists to providing pharmaceutical care to individual patients; likewise, a systematic approach exists for managing a pharmaceutical care practice. A practice management system includes the following: mission statement; physical, financial, and human resources to support the practice; means by which to evaluate the practice; documentation system; and the means by which to reward the practitioner and financially support the practice. The long-term success of the practice relies on a supportive practice management system.¹⁰

MEDICATION THERAPY MANAGEMENT: A DEFINITION

After the Medicare Prescription Drug Improvement and Modernization Act passage in 2003, the pharmacy profession needed to define MTM. In 2004, 11 national pharmacy organizations developed a consensus definition of MTM. The American Pharmacists

Association (APhA) facilitated the group's work and had three objectives for the process. The definition had to be inclusive of services and programs provided in diverse pharmacy practice settings and had to document examples of services that could be implemented by a majority of practitioners. Lastly, APhA wanted to create a consensus that all involved organizations could support and utilize as they worked for regulatory changes. The consensus definition states that 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."⁶

APhA/NACDS Core Elements

In 2004, the APhA and the National Association of Chain Drug Stores (NACDS) created a framework within which MTM could be provided in a community setting. This model framework of MTM in community pharmacies was created to improve care, enhance communication among providers, improve collaboration among providers, and optimize medication use leading to improved patient outcomes. In 2004, the framework defined five core elements comprising MTM in the community.^{12,13} In 2008, the framework was revised; however, the core elements remained the same. The features of the updated framework include a broad focus on patients in diverse care settings and patients transitioning through health-care settings, collaborating with physicians, and empowering patients. The five core elements of an MTM service model in pharmacy practice include medication therapy review (MTR), personal medication record (PMR), medication-related action plan (MAP), intervention and/or referral, and documentation and follow-up. All elements are essential to provide MTM; however, elements may be modified to meet a patient's needs.¹⁴

An MTR is defined as "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." The purpose of the MTR is to educate patients about their

medications, address medication-related problems, and motivate patients to manage their medications and conditions. An MTR may be a comprehensive assessment of all medications or it may be targeted at one particular disease state. In addition to obtaining a medication history, a pharmacist conducting an MTR may assess the following of the patient: physical and overall health, preferences and values, goals of therapy, cultural or socioeconomic issues, and laboratory values. A pharmacist will also identify and prioritize medication-related problems related to clinical appropriateness, safety, efficacy, and accessibility to the patient. A plan to resolve medication-related problems will be devised that may include patient education, monitoring of therapy, and communication to other providers. Ideally, a patient would receive one comprehensive MTR annually and additional, more focused MTRs throughout the year to address specific problems.¹⁴ A PMR is defined as "a comprehensive record of the patient's medications (prescription and nonprescription medications, herbal products, and other dietary supplements)." The PMR may be generated manually or electronically; however, it should be written at a literacy level that can be understood by the patient. Information that should be a part of the PMR includes primary care physician, pharmacy/pharmacist, allergies, adverse drug reactions, date last updated and reviewed, and medications. The purpose of the PMR is to give the patient a tool to manage his/her medications. If a medication or any other information related to the PMR changes, the patient should update the PMR; however, the maintenance of the PMR may be seen as a collaborative effort among the patient and his/her pharmacist and physicians. By sharing the PMR with all health-care providers, continuity of care may be facilitated.¹⁴ A MAP is a patient-centered document that lists interventions the patient may employ to self-manage medications. A MAP contains only the actions that the patient will do; however, these actions do not include anything that is outside of a pharmacist's scope of practice or has not been approved by an appropriate health-care team member. The MAP is an important core element as it promotes patient-centered care and patient self-management of health.¹⁴

Intervention and/or referral represents the fourth core element of MTM. While providing MTM, the pharmacist may need to intervene to resolve medication-related problems. Examples of interventions include collaborating with the patient's other health-care providers or providing education to a patient. In some instances, the resolution of medication-related problems requires a referral to another provider. For example, a pharmacist may discover a medical problem, a patient is experiencing that needs further evaluation. Resolution of all medication-related problems requires collaboration among health-care providers and self-management by the patient. The final element of MTM is documentation and follow-up. Documentation is essential to MTM delivery because documents provide reports of patient progress and support billing for services. Additionally, documentation has purposes in communication, quality improvement, and continuity of care. Documentation may be paper or electronic, but a consistent format should be used. The PMR and MAP should be included in documentation. Follow-up care is also documented and should be scheduled according to a patient's medication-related needs.¹⁴

Are Pharmaceutical Care and Medication Therapy Management Interchangeable?

Although pharmaceutical care and MTM may be used interchangeably, it is important not to lose sight of their differences. As previously described, pharmaceutical care is a patient-centered approach taken by a pharmacist who accepts responsibility for a patient's medication-related needs. Pharmaceutical care has three components, including a philosophy. The philosophy is the foundation of pharmaceutical care and forms the basis for the process and the practice management system. In contrast, MTM lacks a philosophy and relates to a practice management system by way of requiring a documentation system. Components of the patient care process of pharmaceutical care and the five core elements of MTM are similar. Both require an assessment of medication-related needs, development of a care plan, and appropriate follow-up. However, the pharmaceutical care process

recommends that the assessment be done in-person, while core elements of MTM suggest that patients may be assessed via telephone. MTM may be aptly described as the strategy to care out the philosophy of pharmaceutical care into everyday practice.^{14,15} Patients with medication-related problems may exist in all care settings, including community pharmacies, ambulatory care clinics, hospitals, nursing homes, and within home care agencies. More importantly, patients may experience medication-related problems as they transition across settings of care. Although settings may differ where MTM is delivered, a consistent approach should be used. The core elements of MTM were developed with the consideration that MTM could be delivered in many health-care settings. In 2006, the American College of Clinical Pharmacy (ACCP) released a commentary recommending how core elements could be implemented in the ambulatory care setting. Their major recommendations included expanding the elements to include more guidance on collecting patient information, assessing this information, monitoring and evaluating drug therapy, and documenting services. ACCP recommended that the core elements place greater emphasis on collaboration among health-care providers.¹⁶

■ RESEARCH SUPPORTING PHARMACISTS AS MTM PROVIDERS

MTM provides many opportunities for pharmacists to improve medication use. Organizations such as the US Department of Veterans Affairs and Kaiser Permanente Colorado have utilized clinical pharmacists for decades to manage pharmacotherapy related to dyslipidemia, smoking cessation, anticoagulation, and solid organ transplant. Both organizations have reported data illustrating positive health outcomes and cost savings. Estimates from a Veterans Affairs pharmacist-run smoking cessation clinic included an annual savings of \$691,200 and a net cost benefit to the Veterans Affairs of \$551,200.¹⁷ Pharmacists may play a pivotal role in the management of chronic diseases by monitoring and modifying drug therapy and by educating patients.

Because pharmacists are present in acute care, community, ambulatory, and home care settings, they are positioned to be a valuable member of the health-care team. A 2008 systematic review evaluated 21 clinical trials to determine the effect of pharmacists' interventions on diabetes management. Interventions included medication and lifestyle counseling and medication management through in-person visits or telephone follow-up. The primary outcome of interest was change in hemoglobin A_{1c} (HbA_{1c}). Measurements of HbA_{1c} improved by 0.1–2.1 across all trials with greatest improvement shown when pharmacists were given prescriptive authority.¹⁸ Pharmacists' impact is not limited to the management of diabetes. Evidence supports pharmacists' interventions as a means to improve medication adherence, blood pressure control, and other cardiovascular risk factors in ambulatory care patients. In an analysis of 30 randomized controlled trials involving approximately 12,000 patients, pharmacists' interventions were associated with significant reductions in systolic and diastolic blood pressures with a reduction of 8 mm Hg in systolic blood pressure. Significant reduction in low-density lipoprotein cholesterol (–13 mg/L) and tobacco use was also demonstrated. A review of 15 studies involving almost 3500 hypertensive patients illustrated significantly improved medication adherence in 43.8% of patients.^{19,20} MTM involves the identification, resolution, and prevention of medication-related problems. Pharmacists' interventions made as a part of an MTM encounter can improve clinical outcomes; however, MTM interventions can also result in cost savings. As part of a demonstration project in Connecticut, 9 pharmacists worked closely with 88 Medicaid patients providing MTM. Over 10 months, the pharmacists identified 917 drug therapy problems and resolved nearly 80% of them after four encounters. The project resulted in an estimated annual savings of \$1123 per patient on medication claims and \$472 per patient on medical, hospital, and emergency department expenses.²¹ Similarly, positive outcomes were shown by an analysis of 10 years of experience implementing pharmaceutical care services in a large integrated health-care system. Data from MTM services provided to 9068 patients over 10 years were retrospectively analyzed for economic, clinical,

and humanistic outcomes. During the 10-year period, there were 33,706 documented encounters (mean 3.7 per per patient). In the clinical status assessment of the 12,851 medical conditions in 4849 patients who were not at goal when they enrolled in the program, 55% of the conditions improved, 23% were unchanged, and 22% worsened during the course of MTM services. Pharmacist-estimated cost savings to the health system over the 10-year period were \$2,913,850 (\$86 per encounter) and the total cost of MTM was \$2,258,302 (\$67 per encounter), for an estimated return of investment of \$1.29 per \$1 in MTM administrative costs.²² Evidence supporting pharmacists as MTM providers is further demonstrated by a systematic review and meta-analysis done by Chisolm-Burns and colleagues in 2010.²³ The objective of the review was to examine the effects of pharmacist-provided direct patient care on therapeutic, safety, and humanistic outcomes. Nearly 300 articles were included in the analysis with a majority, 65%, conducted in an outpatient setting. Favorable results were found in therapeutic and safety outcomes, and meta-analyses conducted for HbA_{1c}, LDL cholesterol, blood pressure, and ADEs were significant ($p < 0.05$), favoring pharmacists' direct patient care over comparative services. Likewise, medication adherence, patient knowledge, and quality of life-general health meta-analyses were significant ($p < 0.05$), favoring pharmacists' direct patient care. As discussed, there is a body of evidence supporting pharmacists' contributions to clinical, economic, and humanistic outcomes. However, several noteworthy initiatives involving pharmaceutical care and MTM merit discussion.

■ NOTEWORTHY INITIATIVES IN THE EVOLUTION OF MTM SERVICES

Over the past two decades, MTM services have been implemented in a variety of care models across the country, and the evidence shows that MTM services have positive clinical and economic outcomes on patient care. Over this time frame, a variety of noteworthy initiatives, including payment models, have been explored. In this section, how these noteworthy

initiatives have created an evolutionary time line in MTM services is described.

Minnesota Pharmaceutical Care Project

An early example of multi-site research in community pharmacy: The Minnesota Pharmaceutical Care Project was conducted between June 1992 and November 1995 through the University of Minnesota. This implementation project included 54 pharmacists from 20 community pharmacy practice sites in Minnesota. The study was designed to implement the pharmaceutical care philosophy in the community pharmacy setting. After 3 years, a total of 9000 patients representing approximately 25,000 encounters were cared for in this project. A subanalysis of the patients seen in the last year of the program identified 5480 patients, seen for 12,376 encounters, with a total of 7223 drug therapy problems identified. The collective experience of the researchers in this project and their data analysis helped to shape the pharmaceutical care practice defined by Cipolle, Strand, and Morley. As described earlier, this pharmaceutical care practice definition became the basis for defining MTM. The Minnesota Pharmaceutical Care Project proved that this care process can be successfully integrated into community pharmacies across chain, independent, rural, and urban settings.²⁴

Mississippi Medicaid Disease Management Program

An early state program paying for pharmacist services: Mississippi Medicaid program was the first state to offer payment to pharmacists for cognitive services in 1998 through a disease management program.²⁵ The Mississippi Medicaid program has credentialed pharmacists in specific chronic disease states of asthma, diabetes, hyperlipidemia, or others. In order to be credentialed, pharmacists complete specific educational programs for each of the disease states available. Physicians order a written referral to pharmacy disease management to a credentialed pharmacist provider. The primary components of this service, as defined by Mississippi Medicaid include patient evaluation, compliance assessment, drug therapy review, and disease state management according to clinical practice guidelines, patient/caregiver education.²⁶

This program did not achieve rapid uptake from the Mississippi pharmacy community. In a preliminary report in 2003, only 25 pharmacists in the state were submitting claims for caring for Medicaid patients under this model. The challenges of this model include the necessity to be credentialed in each disease state, and the financial gain for pharmacists was felt to not meet costs for some pharmacies.²⁷

HRSA Clinical Pharmacy Demonstration Grant Program—An early federal initiative supporting clinical pharmacy services: The first federal initiative to recognize MTM services was launched through the Health Resources and Services Administration in the form of Clinical Pharmacy Demonstration Projects (CPDP). This initiative began in 2000, and funded 18 demonstration projects across the country. A final report of the initial projects was released in 2004.²⁸ These projects included Disease Management and Other Clinical Pharmacy Services, Expanding Access to Pharmaceuticals, Efficiency Activities, and Training. The disease management programs in these demonstration projects were focused primarily on diabetes. The clinical results illustrated statistically and clinically significant improvements in diabetes control in the patient groups who received care from the pharmacist (A_{1c} 's decreased from 9.1% to 7.7%; Percent of patients at optimal glucose control increased from 18% to 37%). Although this was an early demonstration project only, the successful results were critical in launching HRSA's commitment to support and develop clinical pharmacy services in community health centers across the country. Additional programming through HRSA developed into the Patient Safety and Clinical Pharmacy Services Collaborative (PSPC). The PSPC is described by HRSA as "a breakthrough effort to improve the quality of health-care across America by integrating evidence-based clinical pharmacy services into the care and management of high-risk, high-cost, complex patients."²⁹ The PSPC works with health-care teams in community-based clinics to integrate evidence-based clinical pharmacy services to improve patient health outcomes. This initiative is responsible for significant growth of clinical pharmacy services, including MTM, in underserved populations across the country.

Medicare Part D

First Federal Payment Program: In 2003, the Medicare Prescription Drug Improvement and Modernization Act was put into law. As part of this act, MTM services were defined at the federal level for the first time, and it opened an opportunity for pharmacists across the country to receive payment for MTM services. General requirements for MTM services provided for Medicare Part D are developed and updated regularly from CMS. Third-party insurers apply to be included as a Part D provider and must offer an MTM services program, which meets the documented requirements. Since Medicare Part D was first offered in 2004, CMS has revised the requirements of the Part D Plan sponsors. Most notably, in 2010, the Part D Plans were required to implement an “opt-out” model of MTM delivery rather than “opt-in.” Plans are required to identify targeted beneficiaries at least quarterly. In addition, CMS has more clearly defined the MTM services in 2010. Each beneficiary will receive a comprehensive medication review and a quarterly medication review. These reviews can be done over the phone or face-to-face. In 2010, approximately 25% of the medication reviews were completed face-to-face. As CMS continues to evaluate the results of this program, it is expected that the requirements of the Part D plans will continue to change.³⁰ Although Part D MTM coverage has opened significant opportunities for pharmacists to provide MTM services to elderly patients, it is still challenging for a single pharmacy and/or pharmacist to participate in all Part D Plans. Many of the Part D plan sponsors will provide MTM internally through their own employees, which limit the ability of community or clinic-based pharmacists to receive reimbursement to care for these patients in their own environments.

North Carolina and New Mexico Certified Pharmacy Practitioners

Evolution of pharmacy practitioner recognition and credentialing: In New Mexico, a category of pharmacist clinician was established in 1993 under the Pharmacist Prescriptive Authority Act.³¹ Once certified as a pharmacist clinician, the pharmacist is granted prescrip-

tive authority under a collaborative practice agreement through a supervising clinician, similar to other mid-level practitioners. This prescriptive authority includes controlled substances, if appropriate DEA registration is obtained. A major requirement to become a certified pharmacist clinician includes completion of approved training in physical assessment skills.³² North Carolina has a similar program, started in 2000,³³ in which a clinical pharmacist practitioner (CPP) is a licensed pharmacist approved to provide drug therapy management, including controlled substances, under the direction of, or under the supervision of, a licensed physician.³⁴ Only a pharmacist approved by the Pharmacy Board and the Medical Board may legally identify himself/herself as a CPP. In order to be approved as a CPP, the pharmacist must complete a certificate program approved by the NC Board of Pharmacy.

The movement to recognize pharmacists as mid-level providers with prescriptive authority is unique to these two states, although most states grant pharmacists the authority to prescribe under collaborative practice agreements, with the details varying from state to state. Unfortunately, even in these progressive states, the additional credential does not guarantee payment for services.

Medicaid Programs

Expansion of state programs reimbursing for MTM: In 2008, ASHP published a policy analysis detailing the pharmacist provider status in 11-state health programs in the country. The states included as currently providing some form of reimbursement for MTM services for the Medicaid population were Iowa, Florida, Minnesota, Mississippi, Montana, North Carolina, Ohio, Vermont, and Wyoming. Each of these states has followed a different methodology in setting up payment for medical assistance patients to receive MTM services. Each state has a different set of eligibility criteria, different mechanisms for billing, and varying amounts of reimbursement.³⁵

Employer-Based Programs

Expansion of payment for MTM by self-insured employer groups: One of the most often cited examples of MTM

is the Asheville Project. The Asheville Project was initiated in Asheville, North Carolina with two self-insured employer groups: the City of Asheville and the Mission-St. Joseph's Health System. The employer groups began offering to pay for pharmacist's pharmaceutical care services to care for members with diabetes. Patients received consultation with a community pharmacist, and also received waivers on co-pays for diabetes medications and supplies as an incentive to participate.³⁶

The clinical and economic benefits of the initial diabetes study were convincing enough for the employers to expand the benefit to include asthma, dyslipidemia, and hypertension.^{37,38} In addition, this model for self-insured employers to offer pharmaceutical care as a benefit grew across the country. Through the support of the American Pharmacists Association Foundation, the Ten City Challenge was initiated. The Ten City Challenge replicated the care model and reimbursement model developed in Asheville across 10 other cities. The results of the Ten City Challenge were able to replicate the positive impact seen in the initial Asheville studies.³⁹

The successful implementation of these employer-based programs has had a significant impact on the pharmacy community across the country. It has served as the impetus for many other self-insured employers to consider offering a pharmaceutical care benefit to their employees. In the state of Minnesota alone, MTM service is a covered benefit by 12 major self-insured employers.

The pharmacy profession has evolved significantly over the last two decades to be recognized as providers of MTM service. Many pharmacists across the country are dedicating their careers to providing this service. However, the challenge continues to exist that widespread payment of MTM service across majority of payer groups does not yet exist. Therefore, except in unusual circumstances, it is not yet possible for a pharmacist to bring in enough financial revenue to fully support a full-time, independently economically sustainable model of pharmacist-provided, face-to-face MTM. Given this present reality, pharmacists continue to create MTM services successfully and to integrate

themselves with other members of the health-care team in creative ways for patient care endeavors.

■ INTEGRATING MTM INTO AN EVOLVING HEALTH SYSTEM—FUTURE DIRECTIONS

The Affordable Care Act of 2010 created unprecedented changes for the manner in which health-care services would be delivered and health-care providers and systems would be compensated. As the programs established within this act are implemented, it is critical that pharmacists seek to understand the changes that will evolve from this law and seek to align medication management services with the systems that are created. Two models that are currently being developed rapidly and are highlighted briefly are the patient-centered medical home (PCMH) and accountable care organizations (ACO).

Patient-Centered Medical Home

The "medical home" is a phrase originally used in the 1960s and described a model of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety. The concepts embedded in this model have gained a renewed and widespread interest in the early 2000s. In 2007, the leading primary care associations endorsed a set of principles that define the PCMH in the context of the current health system.⁴⁰

Many states Medicaid programs as well as several national organizations have established programs or criteria for recognizing health-care provider organizations as PCMHs. For example, the National Committee on Quality Assurance (NCQA) and URAC (formerly the Utilization Review Accreditation Commission) have established programs that recognize organizations for achieving a set of standards and processes consistent with PCMH principles.

Currently, the degree to which PCMH recognition programs have clear criteria for medication management within its overall criteria is quite limited.

As a result, recognized PCMHs may not have a specific process for effectively coordinating and managing medication use by patients on complicated medication regimens as they transition from various systems and providers within their course of medical care. The presence of direct pharmacist involvement in the services provided by a recognized PCMH is rarely required or expected. As a result, engagement of pharmacists in the PCMH environment is a significant opportunity to facilitate team-based care and significantly impact the quality of patient care services.⁴¹ One outlet for this effort, on a national scale, is the Patient Centered Primary Care Collaborative (PCPCC), which has recognized the importance of integrated medication management services into a PCMH.⁴²

Accountable Care Organizations

ACOs are a form of integrated care and payment model that bring together providers across care settings in a “risk-sharing” arrangement. These care settings include hospitals, primary care clinics, long-term care facilities, or other organizations as deemed appropriate by the founding entities. A key element of ACOs is the expectation that health-care provider performance and patient outcomes are tied to compensation opportunities.

As a result, quality metrics like hospital readmission rates and ADEs will influence compensation within ACOs. This model has the potential to increase opportunities for pharmacists as fee-for-service payment will become less of a focus, and services that achieve improved outcomes and cost savings will increase in value. Medication management services in ACOs may occur through integration of employed pharmacists with the various service centers of large health systems that serve as the hub of an ACO or through contractual relationships between health systems and local pharmacy organizations. At the time of writing this chapter, both of these models are evolving.

CONCLUSION

Pharmacists are in a position to address medication-use problems due to their unique training, perspec-

tive, and access to patients. MTM was embraced by the pharmacy profession after passage of the Medicare Prescription Drug Improvement and Modernization Act in 2003. Consisting of five core elements that are essential for patient care, MTM services provided by pharmacists have been well documented. The present use of MTM services has developed roots from a variety of patient care models implemented in the past and is being integrated into the evolving overall health-care system.

SUMMARY POINTS

- Pharmacists are in a unique position to address medication-use problems due to their unique training, perspective, and regular access to patients.
- Pharmaceutical care is defined as “the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient’s quality of life” and contains three components: (1) philosophy of practice, (2) patient care process, and (3) a management system.
- MTM, which consists of five core elements that are essential for patient care, was embraced by the pharmacy profession after passage of the Medicare Prescription Drug Improvement and Modernization Act in 2003.
- Although the terms pharmaceutical care and MTM may be used interchangeably, there are differences. MTM does not have a philosophy, and the management system involves documentation.
- Much research has been completed documenting the effectiveness of pharmacists as MTM providers for economic, clinical, and humanistic outcomes for a variety of disease states.
- In the evolution of MTM services, early initiatives that had a significant impact include the Minnesota Pharmaceutical Care Project, Mississippi Medicaid Disease Management Program, and the HRSA Clinical Pharmacy Demonstration Grant Program.
- As MTM is integrated into an evolving health-care system, future directions may include PCMHs and ACOs.

■ STUDY QUESTIONS

1. Patient-centered factors that contribute to medication-use problems and their negative outcomes include all of the following *except*:
 - a. Lack of urgency about the disease
 - b. Concern about adverse effects
 - c. Long waiting times
 - d. Health literacy
2. Which of the following statements accurately describe the concept of pharmaceutical care?
 - a. Practitioners accept the responsibility to reduce medication-related morbidity and mortality.
 - b. Multiple patient care processes are involved, with each practitioner carrying out the processes differently.
 - c. The long-term success of an established practice relies on establishing a pharmacist-centered care plan.
 - d. The management system and patient care process require an intuitive approach rather than a systematic approach.
3. The five core elements of MTM service model include:
 - a. PMR, provider referral, personnel review, payment plan, and documentation
 - b. MTR, PMR, action plan, intervention, and documentation
 - c. Intervention, MTR, adverse event monitoring, intervention, and provider referral
 - d. Documentation, systematic provider contact, MTR, PMR, and payment plan
4. Which of the following outcomes have been demonstrated through pharmacists' use of MTM services?
 - a. Economic
 - b. Humanistic
 - c. Clinical
 - d. All of the above
5. In which of the following states can a pharmacist become certified as a pharmacist clinician in order to have prescriptive authority?
 - a. Mississippi
 - b. Minnesota
 - c. New Mexico
 - d. All of the above
6. A project in which state was designed to prove that the pharmaceutical care process could be implemented in community pharmacies?
 - a. Mississippi
 - b. Minnesota
 - c. New Mexico
 - d. All of the above
7. The Ten City Challenge replicated the patient care model of which of the following projects?
 - a. Pharmacy Demonstration Projects
 - b. Ashville Project in North Carolina
 - c. Mississippi Disease State Management Project
 - d. Minnesota Pharmaceutical Care Project
8. Clinical pharmacist practitioners . . .
 - a. Are licensed practitioners with prescriptive authority in Ohio
 - b. Can prescribe any medication except for narcotics
 - c. Must complete a certificate program with the Board of Medicine
 - d. Legally must be approved by the Boards of Pharmacy and Medicine
9. A patient care model that centers on one personal physician taking care of all aspects of a patient's health is _____.
 - a. An ACO
 - b. A PCMH
 - c. A Primary Care Initiated Service
 - d. An Evidence-Based Medicine Approach

10. A performance-based model of reimbursement . . .
 - a. Encourages providers to work in a collaborative care environment
 - b. Provides incentives to offer care that may not be in the patient's best interest
 - c. Ensures an increased payment system because a patient undergoes many tests
 - d. Encourages patients to seek higher-cost services to increase provider revenue

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