Medication Therapy Management: An Evolution of Change

By Stacey R. Schneider, PharmD

Upon successful completion of this continuing education activity, the pharmacist should be able to:
1. Discuss the development of medication therapy management (MTM) services, including government initiatives as well as specific criteria set forth by pharmacy organizations defining MTM services.
2. Examine MTM services that are currently being delivered in the community pharmacy setting.
3. Describe the perceptions of patients, payers, physicians, and pharmacists about MTM services.
4. List barriers to providing MTM services as experienced in the community pharmacy.
5. Discuss elements of a Medical Home Model and the role of a pharmacist within that structure.
6. Describe the challenges to pharmacy educators in preparing competent pharmacists for the future.
7. Understand how MTM services will be affected by the introduction of the Patient Protection and Affordable Health Care Act.

INTRODUCTION
Pharmacists have historically been seen as medication dispensers. As the need for improved clinical and economic outcomes in relation to the U.S. health care system became apparent, pharmacists began to take on an integral role as part of a health care team contributing to patient-centered care. Medication therapy management (MTM) services were officially recognized by Congress in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003. MTM services began to be offered in the community, but there was little consistency and a lack of reimbursement for the pharmacist. However, things have changed. Pharmacist education has evolved to incorporate a highly clinical skill set, and pharmacist competency to deliver such services has dramatically increased as a result. The view of pharmacists as medication therapy experts has long been recognized by patients and providers. With the provisions established in the new health care reform act, MTM services have been more clearly defined, and pharmacists have obtained the support necessary to establish MTM services. All these elements are factors in establishing that pharmacists are key contributors to improving patient care in the health care system.
HISTORY OF MTM SERVICES
The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 required that Medicare Part D insurers provide MTM services to selected beneficiaries. This legislation called for a number of specific elements to be contained within the services. These included education of beneficiaries to improve knowledge about their medication, improving medication adherence, detecting adverse drug reactions, and preventing misuse of medications. This bill did not clearly define how these services were to be delivered to the patient. This document also stated that the providers should be paid for their services but did not establish a fee schedule, and left the details of the service to be determined by the plan administrators. The Centers for Medicare & Medicaid Services (CMS) was tasked with serving as the governmental agency to approve MTM services. CMS required each Medicare Part D plan to establish an MTM program for targeted beneficiaries. Each plan could specify its own requirements but had to offer MTM services to beneficiaries who have multiple disease states, are taking multiple drugs, and are likely to incur extensive annual costs for all Part D covered drugs. Even though this bill did not establish a clear set of guidelines for providing MTM, it did acknowledge the value of these services and the value of the providers’ time in delivering them.

In July 2004, 11 national pharmacy organizations achieved consensus on a definition of MTM services. They defined MTM as “a distinct service or group of services that optimize therapeutic outcomes for individual patients [that] are independent of, but can occur in conjunction with, the provision of a drug product.” Based on the 11-group consensus definition, the American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) Foundation determined the core elements to be delivered within each program. A list of these elements can be found in Table 1. This provided a framework that gave community pharmacists a basis for establishing their services. The Academy of Managed Care Pharmacy (AMCP) also developed a set of MTM guidelines based on the consensus of a panel consisting of physicians, pharmacists, and government organizations. Compared with the first set of guidelines, these recommendations were focused on the perspective of the insurer. AMCP guidelines suggested MTM services should focus on coordination of care, outcomes assessment, establishing eligibility of patients, and using an interdisciplinary team approach to patient care.

The AMCP document has since been amended to include new recommendations pertaining to MTM services. The second version of this document stated that the term MTM should apply to all programs that improve medication management, not just programs meeting Medicare Part D criteria. This group felt that more specific criteria should be used to identify eligible patients for MTM services. They also recommended that MTM programs measure results on a population basis as well as for individual patients. This consensus stated that MTM services do not always necessitate a face-to-face encounter. It was recognized that this type of interaction is not always feasible and that, in some circumstances, other means of contact are considered acceptable. However, it remains the consensus of APhA and the NACDS Foundation that, in order to perform the most comprehensive assessment of the patient, a face-to-face interaction is required. It is the belief of these groups that this type of encounter optimizes the pharmacist’s ability to assess nonverbal cues as well as to enhance the pharmacist-patient relationship.

CURRENT MTM SERVICES IN THE COMMUNITY PHARMACY SETTING
What distinguishes MTM services from other services the pharmacist is already performing, including patient counseling and disease state manage-

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<th>Table 1. Core Elements of MTM Service Model in Pharmacy Practice</th>
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<td><strong>Core Elements</strong></td>
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<tr>
<td>Medication Therapy Review (MTR)</td>
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<td>Personal Medication Record (PMR)</td>
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<td>Medication Action Plan (MAP)</td>
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Patient counseling is a tool for delivering information to the patient to ensure safe and effective use of prescription medication. Disease state management is a mechanism that gives patients the knowledge and resources necessary to manage a particular disease. MTM is patient-specific and encompasses the patient’s comprehensive drug therapy needs. MTM can encompass a broad list of services, including (but not limited to) medication reviews, complex medication consults, health and wellness services, immunization, disease education, and health coaching.

A number of these types of programs have been established by pharmacists within the community. The Asheville Project began in 1996 as an effort by the city of Asheville, N.C., to provide education to its employees with chronic health problems, such as diabetes, asthma, hypertension, and high cholesterol. Patients were also teamed with community pharmacists, who made sure they were using their medications correctly. One positive aspect for the profession was that the pharmacists were reimbursed for this project’s cognitive services. This type of reimbursement for pharmacists was a new and developing concept at this time. Another similar innovative approach to delivering MTM services was demonstrated through the Ten City Challenge. This was a program sponsored by the APhA Foundation, with support from Glaxo-SmithKline. Participating employers provided a voluntary health benefit and waived co-pays for diabetes medications and supplies for employees, dependents, and retirees with diabetes. Challenge participants were assigned to a specially trained pharmacist to help them manage their diabetes on a day-to-day basis. Both of these programs have documented improvement in clinical as well as economical outcomes, and have been landmarks in the delivery of MTM services in the community pharmacy.

Several studies have been conducted to look at different aspects of MTM programs in the community pharmacy. One study examined claims in a database that was developed as an early innovation for MTM services. Benefit plans hired an MTM administrative service company to serve as a business partner in the administration of MTM services. The administrative company created a database that consisted of MTM services collected from pharmacy-submitted claims for pharmacist-provided interventions. This study analyzed claims that had been submitted over a seven-year time period (Jan. 1, 2000–Dec. 31, 2006) by participating pharmacies. The network of pharmacies for this MTM administrative services company included a mix of independent, franchise, chain, health system, and consultant providers located in 47 states during the time of the study. Data analysis from this study indicated that the most common reason for MTM intervention was new or changed therapy. The most common action taken by the pharmacist was patient education/monitoring, and the most common result was therapeutic success, which was determined by the pharmacist.

Other analysis of the database provided some interesting information. The average age of the patients increased from 30.4 years to 57.6 years. There was a decrease in interventions for acute medications and an increase in interventions for chronic medications. Changes were also observed in drug categories over time, with decreases in antimicrobials and increases in cardiovascular and central nervous system agents. The most common agents associated with MTM services in 2000 were penicillins, versus statins and other lipid-lowering medication in 2006. Other notable changes included the reason for the intervention shifting from new or changed drug therapy to cost efficacy management. MTM interventions provided from 2000 to 2006 included a shift from patient education/monitoring to prescriber consultation. Patient refusal of MTM services also declined steadily over this same time period. Finally, examination of MTM reimbursement showed a greater than 60 percent increase in the mean pharmacy payment.

Another study analyzed data obtained from Fairview Health Services of Minneapolis/St. Paul, which implemented the Collaborative Practice of Pharmaceutical Care at six of 15 primary care clinics beginning in 1999. The intervention consisted of MTM services provided by pharmacists to Blue Cross BlueShield health plan beneficiaries in collaboration with primary care providers. This study examined the effectiveness of these services as offered by the pharmacist over a one-year period. Results indicated about 40 percent of the drug therapy problems were related to indication, 30 percent to effectiveness, 20 percent to safety...
concerns, and 10 percent to adherence. Twenty percent of the drug therapy problems involved a dosage that was too low to be effective for the indication being treated, and 10 percent were a result of ineffective therapy. Chart audits for patients with hypertension management indicated that 71 percent of patients in the intervention group had reached their goals of therapy, while only 59 percent in the nonintervention group met the therapeutic goals. For patients with hyperlipidemia, 52 percent of intervention patients met their therapeutic goals, while only 30 percent of the nonintervention group met their goals. Of the drug therapy problems, 78 percent were resolved without the direct involvement of a physician, while 22 percent were resolved through collaboration with a physician or another primary provider. This study was able to demonstrate that total health expenditures were reduced by 31.5 percent. Results from this study continue to support the growing body of evidence that indicates improvements in both clinical and economic outcomes are attributable to MTM services.

CMS gives plans flexibility in determining who will deliver MTM services. However, there are certain requirements that each plan must meet. In 2010, expanded requirements were enacted to increase the number of beneficiaries eligible for MTM services. CMS released a fact sheet in June 2010 that analyzed the data obtained from these enhanced programs and addressed some of the changing eligibility criteria. For 2010, CMS allowed a plan sponsor to determine whether to target beneficiaries with at least two chronic diseases or at least three chronic diseases. Data indicated that approximately 72 percent of the programs required a minimum of three chronic disease states. At a minimum, sponsors had to target at least four of the seven defined chronic diseases. Table 2 lists these identified disease states. Of these, diabetes, hyperlipidemia, and hypertension are the top targeted diseases. The second criterion establishing MTM eligibility requires a plan member to be taking multiple covered Part D drugs. This data revealed that approximately two-thirds of MTM programs targeted beneficiaries who are taking at least eight covered Part D drugs. CMS also required beneficiaries to incur an annual cost of at least $3,000 for all covered Part D drugs, lowered from $4,000 in 2009. Sponsors were required to offer a minimum level of MTM services for each eligible beneficiary, which included a comprehensive medication review (CMR) annually and quarterly medication reviews, with follow-up interventions when necessary.

The end result of the CMR, after reviewing the beneficiary’s medications—including prescription and over-the-counter medications, as well as herbal and dietary supplements—is that providers produce a personal medication record (PMR), a medication action plan (MAP), and recommendations for monitoring, education, or self-management. Notice that the CMR closely resembles the MTM core elements previously discussed. The 2010 data showed that recommendations to current drug therapy, followed by a personal medication record, were the most common type of written summary supplied to the beneficiary at the time of the CMR. These new requirements allowed for more valuable services to be included in an MTM consultation, such as general education about medication regimens, refill reminders to increase compliance, and referrals to improve overall patient care.

As evident in the previously mentioned studies, MTM services have evolved from delivering patient education involving acute medication to providing more consultation services related to chronic medications. These shifts in MTM services have allowed for greater estimated cost savings and have increased the reimbursement amounts to pharmacists. These shifts suggest that MTM services will become increasingly important as we see the aging of the popula-

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<th>Table 2. CMS-Defined Chronic Diseases</th>
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<td>Hypertension</td>
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<td>Heart Failure</td>
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<td>Dyslipidemia</td>
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<td>Diabetes</td>
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<tr>
<td>Respiratory Disease (such as asthma, chronic obstructive pulmonary disease [COPD], or chronic lung disorders)</td>
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<tr>
<td>Bone Disease–Arthritis (such as osteoporosis, osteoarthritis, or rheumatoid arthritis)</td>
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<tr>
<td>Mental Health Disease (such as depression, schizophrenia, bipolar disorder, or other chronic and disabling disorders)</td>
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tion. The increase in demands for MTM services will also be evident due to the greater number of beneficiaries eligible to receive MTM services under Medicare Part D.

THE PERCEPTION OF MTM SERVICES
For pharmacists to successfully deliver MTM services in a community pharmacy setting, many factors must come into play. These include the acceptance of pharmacist-delivered services by the patient, physician, payer, and pharmacists themselves. Several studies have attempted to determine the acceptance of MTM services in this setting. The Lewin Group provided a review of MTM services by examining peer-reviewed literature; studying existing MTM practices; interviewing pharmacists, pharmacy benefit providers, health plans, and policy makers; and holding discussions with industry experts. From patient interviews, it was evident that patients are generally highly supportive of MTM services. Many patients find that their pharmacist is easier to approach and can spend more time answering questions than their physician. Interviewees relayed that physicians tend to be skeptical of MTM services at first. However, many physicians who are open-minded and accept pharmacist-initiated efforts to coordinate patient drug therapy now realize the value of pharmacist-provided services. In fact, often the pharmacist can provide answers to patient questions in a timely manner. Physicians noted that pharmacists have in numerous cases improved patient wellness by improving health outcomes. This included reducing the need for additional medications and ensuring appropriate medication use. It is evident by the formation of collaborative practice agreements between physicians and pharmacists that the physician is willing to acknowledge the pharmacist as a partner in the overall health care of the patient.

One study surveyed customers at four community chain pharmacies to determine the patients’ perceptions and expectations regarding MTM services. This study demonstrated that patients had little knowledge about the core elements of MTM services. After reviewing the definitions of the MTM components, the respondents agreed that these services were valuable, but they showed concerns regarding pharmacist time and privacy issues. These findings confirm the importance of providing MTM services on a more consistent basis, as it appears patients would be receptive to these services. In most cases, patients believed that these services would help improve their relationship with a pharmacist as well as improve their overall health and medication use.

Several studies have attempted to look at the value of MTM services from the perspective of the payer. One 2007 study was performed to elicit payer perspectives and provider views on MTM contracts. Part 1 of the study attempted to obtain the provider perspectives in relation to contracting with certain health plans. This study concluded that providers varied widely on what types of services they provided, and had not established any means by which to assess the costs and benefits of MTM services. Instead, they associated the value of such services with their professional role in the health care system. Part 2 focused on the perspective of the payer alone. The results of this analysis further demonstrated that, similar to providers, payers varied widely on how they implemented and monitored MTM services. The associated value of these programs was reported to be cost avoidance, improved member satisfaction, and improved medication adherence.

From a separate perspective, other studies have attempted to determine the attitudes affecting MTM services by community pharmacists. A survey attempted to determine the barriers of performing MTM services perceived by pharmacists. The survey assessed pharmacist comfort level with providing cognitive services, pharmacist perceived value of providing these services to patients, perceived facilitators and barriers to providing these services to a patient, potential utilization of development resources, and current involvement in MTM services. Respondents indicated that the greatest facilitators of these services were patient willingness to participate and the educational background of the pharmacist. Lack of time was the greatest barrier, and physician acceptance was also noted as a barrier to implementation of these services. This study demonstrated the importance of the pharmacists’ confidence and educational background in driving the likelihood of the pharmacist to become involved in delivering MTM services. For example, a survey
of fourth year pharmacy students regarding knowledge and attitudes toward MTM services found that almost all respondents believed that participation in such programs was important to pharmacy advancement. The students generally believed that these services would foster an improved patient-pharmacist relationship by allowing the pharmacist to achieve higher levels of care. Most respondents agreed that they were equipped with the knowledge base and skills to be successful in a practice setting engaged in delivering these services, with 60 percent agreeing or strongly agreeing that they intended to provide MTM. However, willingness to seek employment where they could provide these services dropped slightly to 54 percent, and only 37 percent agreed or strongly agreed when asked if they would take initiative to get approval to offer the Medicare Medication Therapy Management Program if their employer did not plan to offer MTM.

Another study displayed similar findings: The confidence level of the pharmacist was the greatest facilitator to involvement in delivering this higher level of care. This emphasizes the importance of role-playing in the dispensing lab, supervised internship experience(s) with constructive feedback on patient counseling technique, the need for community pharmacy residency programs, certificate programs, and advanced practice sites that allow the pharmacy extern to develop the necessary competencies to deliver MTM services to community patients. This study was also able to demonstrate that students who were exposed to settings in which these services were being delivered were more likely to choose a future practice site that enabled them to perform such activities. The majority of respondents indicated that they were more likely to choose to practice in a setting that provided these services over a practice setting that did not offer MTM services. Other studies have similarly shown a trend toward less interest in dispensing medications and more interest in providing clinical services to patients.

A research brief published in Science Direct surveyed the willingness of community pharmacists to provide MTM services. The survey was linked to the electronic weekly newsletter of the National Community Pharmacists Association (NCPA). The majority of the respondents reported having some form of advanced training, ranging from specialized certification programs to a residency or fellowship. Most respondents reported being adequately prepared to deliver MTM services from a knowledge base, as well as having clinical expertise in the specialized area. Those surveyed believed that most pharmacists are willing to and should implement such services. Most believed their pharmacy is currently able to deliver a higher level of services and that they had access to adequate information enabling them to deliver such services. Three specific challenges were commonly cited that affected the delivery of these services: different requirements by each health plan, lack of staffing, and uncertainty in reimbursement procedures. Also noted was lack of uniform systems for documentation purposes. To date, many new software systems are available to support the pharmacist in documenting their outcomes. In comparison with pharmacists in the current workforce, the respondents in this survey had a higher percentage of advanced training. Despite this limitation, the authors concluded that their findings have been similar to other recently published data.

Several factors come into play when determining the success of an established MTM service in the community pharmacy practice setting. The chronic care model suggests that the likelihood for the success of MTM programs depends on preparedness and willingness of the pharmacist to provide such services to the patient. Also important is Medicare Part D enrollees’ knowledge about available programs and their perceived need for such a program. Acceptance of pharmacists as providers of MTM and support from health plans for these programs also are key to the success of these services. Most data to date shows a willingness of pharmacists to provide MTM services, but they are in need of assistance in the process, possibly including standardized protocols, documentation, and billing.

**MOVING FORWARD WITH MTM SERVICES**

There is no doubt that the majority of individuals who seek or need medical care will eventually require medication. Medications have become the main intervention in the health care arena. As prescription drug use continues to grow and medication regimens become more complex,
our health care system has become more prone to medication errors and adverse drug events. Medication-related problems are a major public health problem in the United States. The 2006 Institute of Medicine report on preventing medication errors noted that an estimated 1.5 million preventable adverse drug errors occur in the United States each year. It is estimated that these adverse events result in $177 billion in injury and death. Table 3 lists some statistics available on the Centers for Disease Control and Prevention (CDC) website in relation to therapeutic drug use.

According to this data, there is an obvious need for interventions relating to medication therapy, and pharmacists have the most comprehensive knowledge regarding medications. Pharmacists have become an essential resource in this growing complexity of medication regimens, and their expertise makes them the obvious choice as the key player in delivering MTM services. These services have been documented to improve clinical as well as economical outcomes in the health care system. It is necessary to strive to make MTM an essential part of the health care experience, not simply an option. The public image of the pharmacist as a product-driven health care provider is rapidly changing. The pharmacist is quickly being seen as the professional who is optimally placed within the health care arena to ensure appropriate and safe use of medication, by providing enhanced clinical services. Unfortunately, pharmacists have historically provided their consultation services free of charge, contributing to the lack of value attributed to clinical services. It is important for those who want to see change to continue—or start—lobbying health care policymakers, to ensure that pharmacists are seen as indispensable members of the health care team, and thus deserving of reimbursement for their cognitive services.

Once pharmacists are recognized as a critical member of the health care team by payers, their role as a provider may be increased. Pharmacists can help to eliminate the poor management of disease states that results from fragmented care. The solution to uncoordinated care would be a regional or national health information exchange that facilitates access by prescriber, lab, and pharmacy (and other parties certified to participate) to current and historical health records. One model to improve management of chronic diseases and foster this concept for centralized patient care is the primary care medical home. This concept for centralized patient care has evolved since it was first described in 1967. A primary care practitioner is responsible for facilitating continuous care for the patient. Although a relatively new concept in the health care arena, the primary care medical home has been implemented in various settings, mostly showing improvements in health outcomes. Research has provided some data, but they are limited, and the optimal model for the primary care medical home has yet to emerge. With a patient’s comprehensive medical history accessible electronically, providers would be better equipped to handle patient care issues, including preventive and chronic care. With a long-term relationship developing between patient and facilitator, the patient would receive better coordinated care and better access to other providers.

The idea of a pharmacist being the facilitator of the primary care medical home is currently being explored. There is strong evidence to support this role, as the pharmacist is key to promoting increased awareness and to improving outcomes related to medication management. The infrastructure of pharmacy networks already exists within the community and is easily accessible in most communities. Year after year, pharmacists are consistently rated among the most trusted professions and are recognized as competent health care professionals. Taking into account the central role medication plays in a patient’s overall approach to achieving good health outcomes, a pharmacist seems the logical choice to be the key player in developing a primary care medical home. The patient would schedule drug therapy

### Table 3. CDC Facts on Therapeutic Drug Use

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<tr>
<td>Percent of visits to MD office involving drug therapy</td>
<td>71%</td>
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<tr>
<td>Hospital outpatient department visits involving drug therapy</td>
<td>75%</td>
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<tr>
<td>Hospital emergency department visits involving drug therapy</td>
<td>77%</td>
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monitoring with the clinical pharmacist at the pharmacy between physician visits or, in some models, at the clinic in conjunction with the clinic visit. The pharmacist would be responsible for a variety of functions, including blood pressure monitoring, blood glucose screening, lipid test administration, and overall assessment of the medication regimen as related to disease states. These are functions that pharmacists are currently performing as part of providing MTM services. The pharmacist would then document relevant information from the encounter, ideally using an EHR-capable system allowing the primary care provider instant access to the new lab data and pharmacist notes. This system could be an extension of an existing MTM platform being used by the pharmacy. It seems apparent that pharmacists are ideally situated within the community setting to play a central role in the primary care medical home. As well as having the necessary clinical skills and knowledge, pharmacists are at a key position to reduce overall health care costs by managing complex medication regimens.

The challenge to implementing these services in the community pharmacy setting is building a business model that ensures successful MTM services delivery. Developing a business plan is the first step toward implementing MTM services, and several considerations are required before finalizing it. First, it is imperative to remember that quality patient care is always the main goal. Know your patient population and their individual needs. The MTM service may include any of a number of services, such as vaccinations, risk assessments, diabetes education, comprehensive medication review, case management, chronic care management, and wellness and self-care measures. Consider workflow and where the services can be implemented. Will appointments need to be scheduled, or could patients request your services on a walk-in basis? Identify payer sources, which may include a list of Medicare Part D plans, other health plans, medical practices, and grant funding. Identify key associations or other health care professionals to partner with to help build your services. This will also aid in resource utilization. Be aware of all costs associated with every aspect of the service, including salary, training, and other overhead expenses. Finally, an effective marketing plan is important in making the service a success. This may include physician detailing, community education programs, or in-store advertisement. The key to being successful is to document to the payers your return on their investment. This makes it essential for any MTM service to constantly and consistently document all interventions and perform outcomes assessments, as listed in the core elements.

HOW DO WE PREPARE?
The Joint Commission of Pharmacy Practitioners, a group of chief executive and chief elected officers of 11 national pharmacy organizations, developed the Future Vision of Pharmacy Practice 2015. This document states that “Pharmacists will be the health care professionals responsible for providing patient care that ensures optimal medication therapy outcomes.” It is commonly recognized that the population is aging as a result of longer life expectancy, and an increased number of elderly will be living longer. It has been estimated that the number of people older than 65 will double from the year 2000 to 2030. This will increase the need for greater care in settings such as patient homes, assisted living facilities, skilled nursing facilities, and group homes. Thus, the community-based practice model for pharmacy will become increasingly important as this aging of America continues. More point-of-care testing may be required in this type of practice, with pharmacists measuring the outcomes of more chronic disease states such as diabetes, hypertension, and hyperlipidemia.

It will be essential for future pharmacists to be knowledgeable in the field of geriatrics and proficient at implementing evidence-based medicine. Often a gap exists between evidence-based medicine and what actually happens in the community. Pharmacists are ideally situated to make a major impact in this area by improving standards of care, based on current literature. As discussed previously, health care is often fragmented, with a resultant increase in medication errors and inadequately treated patients. The urban population has been noted to suffer from an increased prevalence of chronic conditions as a result of poor access to health care. It has been postulated that 75 percent of the population will live in urban areas by the year 2030. Consumers are beginning to take a considerable amount of ownership for their health care and have become
increasingly intolerant of mistakes. With the continued aging of the population, there will be a greater need to focus on the quality of life and the cost of chronic diseases. Pharmacists need to be prepared to work within systems to improve health care quality and patient safety. There will be a need to critically evaluate the scientific literature and use evidence-based approaches to optimally treat patients. Pharmacists need to promote self-care and encourage healthy lifestyles to prevent complications from chronic diseases. Patients need to empower themselves to take the initiative to optimize their own care in order to promote positive outcomes.

Pharmacy educators should provide sufficient educational and clinical experiences to prepare pharmacists for the upcoming challenges. Educators should serve as a resource for conducting research in community pharmacy and prepare students to incorporate a facet of this research into their own future practice sites. Population health issues represent an ideal collaboration for interdisciplinary education opportunities, not only in the pharmacy curriculum but also in research. Innovative methods will need to be developed to successfully integrate new technological advances into the pharmacy curriculum. The continued growth of informatics, leading to health information exchanges, will profoundly affect many practice environments. Pharmacists must be equipped to handle these technological advances to be a successful member of the diverse health care team. The world functions today by having the patient physically seek out medical services. As the population ages, there will be an increasing need to move these services to the patient. Pharmacists must prepare for these innovations and commit to self-directed learning, if they are to be successful.

With the implementation of MTM services, there is an increasing need for pharmacists who practice in a patient-center care environment. The need for this specialized competency will further impact the state of pharmacy education. As a result of these higher-level clinical services, there will be an increasing need for the interdependence of the different health care disciplines. As noted earlier, the full value of a pharmacist beyond the role of dispensing medications has not yet been realized. Many practitioners are unaware of the depth of the contributions a pharmacist can make to improve patient outcomes. Pharmacy education is empowered to take a lead role in strengthening a pharmacist’s image. The pharmacist will need to be seen as a fully valued member of the health care team to establish MTM services, along with being effectively compensated for these services. Inter-professional education experiences will be crucial to enabling the pharmacy student to see the value and appreciate each discipline’s unique contributions to the overall care of the patient.

Along with a focus on inter-professional course work, an emphasis on competence in meeting the demands of the aging population will need to be incorporated into the pharmacy curriculum. This includes competence in the field of geriatrics, palliative care, public/population health domains, urban health needs, alternative medicines, ethics, and using scientific technology effectively. There will be an increased need to develop more community-based education and training sites, and unique areas that encourage community-based research. Pharmacists should be trained to be effective facilitators of MTM services, including implementing, evaluating, and obtaining reimbursement for them. All of these items will continue to be a challenge with the ever-growing need of pharmacists to become health educators at a college of pharmacy.

The education and professional growth of a pharmacist does not end upon graduation from pharmacy school. As the demands on pharmacists to become a more integrated and valued member of the health care team increase, the profession must strive to maintain continual professional development (CPD). CPD is defined by the International Pharmaceutical Federation as “the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a profession, throughout their careers.” Pharmacists who engage in CPD commit to the development and broadening of their knowledge and skill base to ensure their competency as pharmacists throughout their careers. The elements of a successful CPD program include self-directed learning and outcomes-focused development of knowledge, skills, and attitudes to ensure professional competence. Pharmacists are presented with an enormous challenge: not only to
establish their position as an essential and valued member of the health care team but also to challenge themselves to maintain professional competency, in order to function with this higher level of clinical skill set.

**IMPACT OF HEALTH CARE REFORM ON MTM SERVICES**

Compared with other developed countries, the United States has been criticized for the inefficiency, poor outcomes, and costs associated with the delivery of U.S. health care. This is partly due to low accessibility to medical care for a substantial portion of the population. The fragmented delivery system also leads to excessive costs and administrative waste. There is agreement among patients and providers that the U.S. health care system should be more efficient and more accessible, although the means to provide universal coverage for all U.S. citizens—regardless of employment, disability status, or age—is the subject of debate. Ideally, a reformed health care system should integrate preventive health, acute care, and chronic medical care, along with public health and population health initiatives. Currently, only a small percentage of health care dollars is invested in preventive health, despite evidence that such investments can greatly improve outcomes and decrease costs. Interventions at the community level to reduce behaviors that promote chronic diseases have shown high levels of return on investment. The current structure of the health care system has incentives in place to treat illness once it develops, as opposed to preventing or delaying its occurrence. Only a few health care policies encourage wellness and prevention. To create a more efficient system, the United States needed a health care system overhaul that would address patient safety and efficacy, provide coverage for uninsured and underinsured Americans that cannot afford better health coverage, and meet the needs of an aging American population. On March 21, 2010, the U.S. House of Representatives passed H.R. 3590—The Patient Protection and Affordable Care Act—designed to do just that.

Changes relating to the Medicare Part D “donut hole” will reduce the amount that Medicare Part D enrollees are required to pay for their prescriptions when they reach the coverage gap, gradually phasing in different levels

| Table 4. Section 3503: Medication Management Services in Treatment of Chronic Diseases |
|---------------------------------|-------------------------------------|
| Provisions                      | Reform Measures                     |
| Establishes a New Medication Therapy Management Grant Program | • Provides grants to eligible entities to implement MTM services provided by licensed pharmacists, as a collaborative, multidisciplinary, inter-professional approach to the treatment of chronic diseases. |
| Defines Targeted Individuals (meeting one of the four criteria) | • Takes 4 or more prescribed medications  
• Takes any “high risk” medication  
• Has two or more chronic diseases  
• Has undergone transition of care or other factors likely to create a high risk of medication related problems |
| Secretary Will Submit a Report on Quality Measures | • Assess clinical effectiveness of pharmacist-provided services  
• Assess change in overall health care resources  
• Assess patient and prescriber satisfaction with MTM services  
• Assess impact of patient-cost sharing requirements on medication adherence  
• Identify other factors that may affect clinical and economic outcomes |
of subsidies for brand and generic drugs. Beginning in 2011, patients in the donut hole will receive an automatic 50 percent discount on the price of their brand name medications. By 2020, 75 percent of the cost of generic drugs in the gap will be subsidized by manufacturers, and Medicare and beneficiaries will pay the remaining 25 percent.

In addition to these reform initiatives, the specific issue of MTM services was also addressed by the Patient Protection and Affordable Care Act. In particular, it was important to the pharmacy community to establish pharmacists as vital players in any collaborative care model, and to include pharmacists in a payment structure for any transition of care activities. Another goal was to ensure that pharmacists were provided with the resources necessary to establish and support MTM services in any health plan and request grant funding to aid in the development of these services. Section 3503 addressed MTM services in treatment of chronic diseases, and Section 10328 addressed improvement in Part D MTM programs. Tables 4 and 5 illustrate the key provisions associated with these sections. Section 3503 addressed the issue of MTM services by providing grants or contracts to implement MTM provided by pharmacists, to improve the clinical and economic outcomes of chronic diseases. Requirements for targeted individuals were defined as illustrated in Table 4. Besides defining targeted individuals, this section specified certain criteria for an MTM service. This provision stated that MTM services should include formulation of a medication treatment plan consistent with the therapeutic goals agreed on by the patient and prescriber. The pharmacist is permitted to select, initiate, and monitor any medication therapy as allowed by state law, including applicable collaborative pharmacy practice agreements. Performing an initial comprehensive medication review is required to identify and resolve any preventable medication related problems. This also included quarterly targeted medication reviews for ongoing monitoring or as deemed necessary by the provider. Documentation is required of all communication, including a summary of the medication review and the recommendations of the pharmacist to other appropriate health care providers in a timely fashion.

As part of the MTM services, a pharmacist is required to provide appropriate educational materials designed to enhance the patient’s knowledge of the medication regimen. The pharmacist is also responsible for coordinating and integrating MTM services within the broader health care management team. This grant program is not yet funded and the focus of the grants remains to be determined.

Section 10328 (Table 5) addressed improving MTM programs in relation to Medicare Part D. The section addressed those who were currently receiving MTM services, adding new required interventions, as well as those who did not currently receive services. For those beneficiaries who are not receiving any MTM services, the plan is now required to assess these patients on a quarterly basis to see if they become eligible for MTM services.
services. This includes those who have experienced a transition in care, if the sponsor has access to such information. Plan sponsors are required to automatically enroll targeted beneficiaries, who are subsequently permitted to opt out of enrollment in the MTM program. At a minimum, the MTM services offered by a plan sponsor to beneficiaries must include a comprehensive medication review (CMR) by a licensed pharmacist or other qualified provider. This intervention must be person-to-person, or by using telehealth technologies, and the beneficiary must be provided a written summary of the interaction.

CONCLUSION

There is no doubt that the role of a pharmacist is so much more than dispensing a product, and many pharmacists in the community are key players in patient-centered care. With the aging of the U.S. population, it is crucial to implement systems that improve clinical and economical outcomes. There is a critical need to increase access to health care and decrease the fragmented delivery of health care. Medication regimens have become a key component of medical care. These regimens have increased in complexity, and a need for monitoring this therapy to improve outcomes and decrease costs has become apparent. Pharmacists have the most comprehensive knowledge regarding medication therapy, and this expertise makes them an indispensable agent to provide MTM services. With the higher level of pharmacy education and increased clinical skill level of pharmacists, they are in a position to provide these services to patients. The role of the pharmacist as one of medication manager has become more accepted in the eyes of the patient and provider, along with the payer. With the health care reform act supporting the implementation and delivery of MTM services by pharmacists, the profession is likely to see a vast array of opportunities to truly practice to the best of their ability to improve quality of patient care in the health care system.

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CONTINUING EDUCATION QUIZ
Select the correct answer.

1. Which of the following was the first piece of legislation that required Medicare Part D insurers to provide medication therapy management (MTM) services to selected beneficiaries?
   b. The Patient Protection and Affordable Care Act
   c. The Health Care and Education Reconciliation Act
   d. Omnibus Budget Reconciliation Act of 1990

2. Which government agency is required to approve MTM programs?
   a. Agency for Healthcare Research and Quality
   b. Agency for Healthcare Administration
   c. Centers for Medicare & Medicaid Services
   d. Advisory Council on Medicare Part D Program

3. Which of the following is NOT considered a core element of an MTM program?
   a. Medication Therapy Review
   b. Personal Medication Record
   c. Medication Action Plan
   d. Coordination of Care Documentation

4. What statement best describes Medication Therapy Management?
   a. It’s a tool used to describe the delivery of information to the patient to ensure safe and effective use of prescription medication.
   b. It’s a program used to describe a broad list of services that is patient-specific and focuses on the patient’s broad drug therapy needs.
   c. It’s a program that delivers complex medication consults but does not focus on health and wellness services.
   d. It’s a mechanism to deliver patient knowledge and resources necessary for the patient to manage a particular disease.

5. Which professional organization developed a set of MTM guidelines focused on coordination of care, outcomes assessment, establishing patient eligibility, and an interdisciplinary approach to patient care?
   a. APhA
   b. NACDS
   c. AMCP
   d. NCPA

6. According to the studies that looked at current MTM services in the community pharmacy setting, which of the following was NOT a finding of these studies?
   a. The average age of the patients receiving MTM services has continued to increase.
   b. Patient refusal of MTM services has continued to increase.
   c. There was a decrease in interventions for acute medications and an increase in interventions for chronic medications.
   d. MTM interventions have shifted from patient education to more prescriber consultation.

7. In 2010, CMS revised the requirements for a Medicare Part D program. At a minimum, sponsors had to target at least four of the seven defined chronic disease states. Which of the following was NOT listed as a chronic disease state?
   a. Bipolar disorder
   b. Asthma
   c. Osteoporosis
   d. Hypothyroidism

8. All of the following have been cited as a barrier or challenge to providing MTM services, except:
   a. Uncertainty in reimbursement
   b. Varying requirements by health plans
   c. Lack of clinical expertise, or inadequate training
   d. Understaffing
9. Which of the following is true regarding the perception of MTM services in the community setting?
   a. Patients were generally favorable of participating in an MTM program, stating that pharmacists were easy to approach and had more time to answer their health care questions.
   b. Physicians remain skeptical of the services and are not in favor of pharmacists delivering such services.
   c. The patients were not supportive of MTM services because they felt the relationship they had with the pharmacist was not applicable to foster these types of programs.
   d. Payers were supportive of these services despite the fact that there has been no documentation relating to cost avoidance and improved medication adherence.

10. Which of the following is true regarding the concept of the primary care medical home?
   a. Numerous practitioners would be responsible for facilitating continuous care for the patient and maintaining the centralized database system.
   b. The medical home model has never been shown to improve outcomes.
   c. A potential advantage of this model is use of electronic health records (EHRs), allowing patients to be seen by various health care providers at connected practice sites.
   d. Practicing health care in this way would lead to fragmentation of patient care.

11. Which of the following is true when building a business model to ensure the success of an MTM service?
   a. The only measure of success is increased revenue.
   b. Look at the population as a whole to determine broad patient needs.
   c. It is not necessary to measure wellness and patient self-care outcomes.
   d. Examining the current workflow is important.

12. Due to the aging of the population, the Joint Commission of Pharmacy Practitioners suggests that pharmacists will need to increase their knowledge and skill levels to be comfortable to practice in which of the following locations?
   a. Skilled nursing facilities or group homes
   b. Emergency rooms
   c. Rural communities
   d. Surgery centers

13. Challenges pharmacy educators may face in preparing pharmacists for future practice include all of the following except which?
   a. Increasing assessment of acute diseases in the curriculum
   b. Successfully integrating new technological advances into the curriculum
   c. Preparing students to incorporate research into community practice sites
   d. Population health issues as an opportunity for inter-professional education

14. Which of the following is NOT an element of a successful continuous professional development (CPD) program?
   a. Self-directed learning
   b. Commitment to maintain professional competency
   c. Maintaining a broad base of knowledge and skills
   d. Online testing to avoid live CE programs

15. Which of the following would be considered a goal of health care reform?
   a. Limit coverage
   b. Improve quality of health care
   c. Increase costs
   d. Increase revenue
16. How much has the change in the Medicaid generic drug reimbursement plan been projected to increase revenues in the community pharmacy?
a. $5 billion  
b. $10 million  
c. $3 billion  
d. $10,000

17. Beginning in 2011, patients in the “donut hole” will receive what percentage discount on the price of their brand name medications?
a. 50 percent  
b. 25 percent  
c. 65 percent  
d. 75 percent

18. Which section of the Patient Protection and Affordable Care Act addressed improvements in MTM programs in relation to Medicare Part D?
a. Section 3502  
b. Section 3503  
c. Section 10320  
d. Section 10328

19. Which section of the Patient Protection and Affordable Care Act established a grant program to support MTM programs?
a. Section 3502  
b. Section 3503  
c. Section 10320  
d. Section 10328

20. According to the new health care reform act, which patient would be targeted to receive MTM services?
a. A patient with diabetes only  
b. A patient with diabetes who recently experienced a diabetic foot ulcer  
c. A patient who is taking lisinopril and hydrochlorothiazide only  
d. A patient who has recently moved from an assisted living facility to a skilled nursing facility

Medication Therapy Management: An Evolution of Change
Oct. 1, 2010 (expires Oct. 1, 2013) • Activity Type: Knowledge-based

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Quiz: Shade in your choice

1.  2.  3.  4.  5.  6.  7.  8.  9.  10.

Quiz: Circle your choice

21. Is this program used to meet your mandatory C.E. requirements?  
an. yes  
b. no

22. Type of pharmacist:  
a. owner  
b. manager  
c. employee

23. Age group:  
a. 21–30  
b. 31–40  
c. 41–50  
d. 51–60  
e. Over 60

24. Did this article achieve its stated objectives?  
an. yes  
b. no

25. How much of this program can you apply in practice?  
a. all  
b. some  
c. very little  
d. none

How long did it take you to complete both the reading and the quiz? _____ minutes