



American Pharmacists Association
Improving medication use. Advancing patient care.

**Statement by the
American Pharmacists Association
to the Institute of Medicine
Committee on Identifying and Preventing Medication Errors**

June 2005

The American Pharmacists Association (APhA) welcomes the opportunity to submit comments to the Institute of Medicine (IOM) Committee on Identifying and Preventing Medication Errors on issues of importance to the pharmacy profession related to medication errors. APhA, founded in 1852 as the American Pharmaceutical Association, represents more than 52,000 pharmacists, pharmaceutical scientists, student pharmacists, pharmacy technicians, and others interested in advancing the profession. APhA, dedicated to helping all pharmacists improve medication use and advance patient care, is the first-established and largest association of pharmacists in the United States.

Medications have become a primary form of treatment in today's health care system. But, we are using them with regulations and practice standards that were developed 50 to 150 years ago. Medication use outside of hospitals and nursing homes is self-care, and the patient is not well-trained or monitored to help make the best use of medications. This has led to a lack of established outcomes and resulted in drug misadventures. Studies indicate that the average admission rate because of drug misadventures may approach 10% of all hospital admissions.¹ Prescription drugs represent the third highest cost in health care (behind hospital care and physician and clinical services), accounting for 11% of the nation's health dollar in 2003.² A leading cost of illness study found that costs associated with drug-related problems in the ambulatory setting exceeded \$76.6 billion annually, and suggested that for every dollar spent on medications, another dollar in spending results from drug-related problems.³ As the Committee formulates its recommendations, consideration should be given to several important questions:

- Does the two-class system of drugs (prescription and over-the-counter) still serve the needs of our health care system? Would expanding the classes to include (1) a prescription class with pharmacist authority to authorize refills under a team-based approach to care, and (2) a pharmacist only" class, for medications that can be used without a prescription if appropriate supervision is provided by pharmacists, lead to a safer medication use system?
- How can the 150-year old standard for information on a prescription be improved to enhance the medication use process and accommodate the emergence of e-prescriptions?
- How can patients be empowered to take an active role in medication self-management?
- How can pharmacists, now trained at the Doctor of Pharmacy level, be best utilized to work with prescribers and patients to manage medications risks?
- How can financial incentives be aligned to foster the development of safe medication use systems?

APhA's comments will address the following 3 points as requested by the IOM Committee:

- Overview of APhA's medication safety and quality considerations
- Description of challenges to achieving optimal medication safety and quality along the care continuum, and strategies advocated by APhA to overcome them
- Key recommendations necessary to improve medication safety and quality in all care settings

I. Overview of APhA's Medication Safety and Quality Considerations

APhA's founding in 1852 was rooted in the need for additional efforts to assure the quality of drugs. Specifically, pharmacists were concerned about tainted chemicals imported from abroad for use in the compounding of pharmaceutical dosage forms. As the pharmacist's role has transitioned from compounding medications to dispensing proprietary products to assuming a patient care role in medication therapy management, APhA has continually advocated for health care systems and processes that lead to the safe and effective use of medications.

Background - APhA Policy on Medication Safety

APhA's policy guides the Association on issues of importance to the profession. The APhA House of Delegates, the official policy-making body of the Association, has addressed the issue of medication safety several times in recent years. APhA policy specific to medication errors and patient safety is detailed below. APhA also has extensive policy on other factors related to patient safety such as the pharmacist's role in therapeutic outcomes, quality assurance, technology and automation, and prescription processing.

Subject: Medication Errors (Adopted: 2000)

1. APhA, as the national professional society of pharmacists, will work to ensure that pharmacy is the profession responsible for providing leadership in developing a safe, error-free medication use process.
2. APhA supports continuation and expansion of medication error reporting programs.
3. Medication error reporting programs should be non-punitive in nature and allow appropriate anonymity to facilitate error reporting and development of solutions to eliminate error.
4. APhA supports identifying the system-based causes of errors and building systems to support safe medication practice.

Subject: Medication Error Reporting (Adopted: 2001)

1. APhA strongly encourages pharmacists' voluntary, non-punitive and anonymous participation in error reporting at the organizational (pharmacy/institution) level and in other established state and national reporting programs.
2. APhA encourages direct error reporting by the individual(s) involved in the incident to ensure that the most relevant and detailed information is available for evaluation of the incident and for systems improvement.
3. Error reporting programs should regularly analyze and report information about the leading types and causes of errors reported to their system so that practitioners can utilize this information for systems enhancements and quality improvement.

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4. APhA encourages state boards of pharmacy and other responsible entities to consider pharmacists' participation in reporting of errors as a mitigating factor in determining any legal or disciplinary action related to the incident.

Subject: Patient Safety (adopted 2005)

1. Patient safety is influenced by patients, caregivers, health care providers, and health care systems. APhA recognizes that improving patient safety requires a comprehensive, continuous, and collaborative approach to health care.
2. APhA should promote public and provider awareness of and encourage participation in patient safety initiatives.
3. APhA supports research on a more effective, proactive, and integrated health care system focused on improving patient safety. APhA encourages implementation of appropriate recommendations from that research.

APhA has strongly supported the development of a “culture of safety” to reduce and eliminate medication errors. Through publications in the *Journal of the American Pharmacists Association (JAPhA)*, and participation in medication error focused initiatives such as serving as a founding steering committee member on the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) and as a working group member on the *Guiding Principles for Effective Electronic Messaging* released by the Academy of Managed Care Pharmacy, APhA has advocated for improvements in the medication dispensing process.

In 2001, APhA and the APhA Foundation collaborated with the Institute for Safe Medication Practices (ISMP) and the National Association of Chain Drug Stores (NACDS) to develop and distribute the *Medication Safety Self Assessment for Community/Ambulatory Pharmacy*. The voluntary survey provided a comprehensive tool for assessing the safety of medication practices within a community pharmacy. After completing the survey, participants were provided feedback on areas for improvement within their practices. ISMP has also made survey results available in aggregate as a mechanism for identifying areas of vulnerability and raising awareness about incorporating a systems-based approach to medication safety within community practice. Even though the survey was disseminated broadly within community pharmacy practice, the response rate was lower than expected when compared to the institutional setting. Concern about discoverability of survey information was an often-cited factor by community pharmacists and corporations reluctant to complete the survey. Pharmacists in the community pharmacy setting also express similar concerns about reporting medication errors. Creating an environment supportive of reporting medication errors without retribution from State Boards of Pharmacy is important to improving the medication use process. APhA encourages the IOM Committee to advocate for promotion of error reporting programs that are voluntary, non-punitive, and anonymous, in order to facilitate error reporting and the development of solutions to eliminate error.

The 1999 IOM report, *To Err is Human: Building a Safer Health System*, garnered significant public attention for using a systems-based approach to create a “culture of safety” within the healthcare system. Although pharmacists have always been accountable for ensuring that patients receive the correct medication, *To Err is Human* resulted in an enhanced examination of pharmacy systems to identify areas for improvement. At approximately the same time, the pharmacy profession adopted the 6-year entry level Doctor of Pharmacy degree (PharmD), and pharmacists in many settings assumed increasing responsibility for optimal medication use. A systems-based approach to medication safety combined with pharmacists working collaboratively with patients and physicians to achieve optimal medication therapy

outcomes are central to APhA's vision of *pharmacists and patients working together to improve medication use and health*.

The 2001 IOM report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, outlines the following six aims for improvements in health care: safe, effective, patient-centered, timely, efficient, and equitable. In the 2003 IOM report, *Health Professions Education: A Bridge to Quality*, five core competencies for all health clinicians were proposed. These include providing patient-centered care, working in interdisciplinary teams, employing evidence-based practice, applying quality improvement, and utilizing informatics. Effective use of the systems-based approach advocated in *To Err is Human* to support the aims for improvement in health care and prepare the health clinicians of the future will be instrumental to achieving a safe medication use process. APhA's efforts and recommendations for addressing medication safety and quality are in alignment with the aforementioned IOM reports and detailed in the following comments.

II. Description of Challenges to Achieving Medication Safety Along the Care Continuum and Strategies Advocated by APhA

A summary of important reports on medication use and the role of pharmacists, pharmaceutical scientists, and educators has been developed and submitted to the Committee by the American Association Colleges of Pharmacy (AACCP), on behalf of APhA and several other collaborating pharmacy organizations. Building on that important background information, APhA's comments will focus on four areas identified as important to addressing patient safety and quality of care:

- A coordinated interdisciplinary team approach to healthcare delivery that optimizes medication use, facilitates continuity of care, and creates a culture of safety
- Patient involvement in self-managing medications
- Access to complete, accurate, and timely health information
- Aligned financial incentives to support quality improvement in the medication use process

A. Coordinated Interdisciplinary Team Approach to Health Care Delivery

Recommendation: An interdisciplinary team approach to patient care in all settings is needed in order to realize optimal medication use, facilitate continuity of care, and create a culture of safety. The pharmacist's role as medication therapy management expert must be recognized and fully utilized within the health care team.

Pharmacists' working collaboratively with patients, physicians, and other health care providers to optimize medication therapy outcomes is a central theme in APhA's work. The objective of Project ImPACT: Hyperlipidemia, a 2-year project conducted by the APhA Foundation, was to demonstrate that pharmacists, working collaboratively with patients and physicians and having immediate access to objective point of care patient data, promote patient persistence and compliance with prescribed dyslipidemic therapy that enables patients to achieve their National Cholesterol Education Program (NCEP) goals. In this study, observed rates for persistence and compliance with medication therapy were

93.6% and 90.1%, respectively, and 62.5% of patients reached NCEP goals.⁴ These results exceed those previously reported in the medical literature and have been duplicated in other projects. The framework for the Project ImPACT practice model was a collaborative care process involving regular communications between patients, pharmacists, and physicians. This collaborative care process has been used successfully in subsequent APhA Foundation projects, Project ImPACT: Osteoporosis⁵ and the Patient Self-Management Program for Diabetes.⁶

APhA has also spearheaded efforts to change state pharmacy practice acts to expand pharmacists' scope of practice. Currently, 42 states have adopted collaborative drug therapy management (CDTM) authority for pharmacists. This authority allows pharmacists to enter into agreements with physicians to jointly manage a patient's medication therapy. In addition, 44 states currently allow pharmacists to administer immunizations through collaborative practice agreements with physicians. A team-based approach to patient care has been integral to the success of both the Project ImPACT and CDTM programs. The pharmacist is well-positioned to serve as the medication expert on the team. Numerous studies demonstrate that pharmacist involvement in managing medication therapy can lead to improved clinical, economic, and humanistic outcomes. Appendix A provides a summary of evidence-based studies on the value of pharmacist-provided medication therapy services compiled by the Lewin Consulting Group as part of a larger analysis commissioned by APhA.

The Medicare Prescription Drug Improvement and Modernization Act of 2003 (MMA) provides for a new Part D prescription drug benefit within the Medicare program. One component of Part D calls for medication therapy management (MTM) services to be provided to targeted beneficiaries with multiple conditions, multiple medications, and high drug costs. Medication therapy management, as defined by 11 national pharmacy organizations, is a distinct service or group of services that optimize therapeutic outcomes for individual patients. According to the profession's consensus definition, an MTM program should include processes to improve continuity of care, outcomes, and outcome measures. To prepare for implementation of MTM programs within the community pharmacy setting, APhA and the National Association of Chain Drug Stores (NACDS) Foundation have developed a model, *Medication Therapy Management in Community Pharmacy Practice – Core Elements of an MTM Service*. (Appendix B) The model is designed to improve collaboration among providers, reduce the risk of complications created by inappropriate medication use, and optimize medication use for improved patient outcomes. A team-based approach to patient care is advocated in the model.

Within some institutional settings, the Veterans Administration system, and managed care settings like Kaiser Permanente, patient-centric models of care that involve an interdisciplinary team approach have been implemented. Best practices learned from these settings should be widely shared to encourage adoption of these models. However, challenges such as professional turf issues, communication barriers, and lack of time (which may be exacerbated in the future by shortages of health care workers) have hindered efforts to create effective interdisciplinary teams on a widespread basis. In the outpatient setting, for example, an interdisciplinary team approach has been slower to evolve. The additional challenge of health care providers separated by physical distance can inhibit the development of collaborative working relationships. To initiate these working relationships, community pharmacists often make appointments with community physicians to talk about physician and/or patient needs in the community that both could work collaboratively to address, as well as discuss medication therapy management services offered by the pharmacy. Some community pharmacists work with dieticians and

nurses to offer diabetes management programs and health and wellness services. Other community pharmacists spend time practicing in the physician's office assisting with the management of patients' medication therapies as a mechanism to build collaborative working relationships.

Lessons learned from the Project ImPACT practice model provide insight into activities that can lead to safe and optimal medication use as a result of a collaborative process of care. Examples cited by pharmacists participating in Project ImPACT include regular communications between and among all parties, referrals of patients (to pharmacists by physicians and to physicians and other health care providers from pharmacists), increased availability and use of objective clinical measures, sharing treatment data, and timely adjustments in patients' treatment plans.⁴ Much work still needs to be done to help the health care team understand the important roles of team members, and to identify best practices for forging productive working relationships. Once in place, mechanisms need to be developed for fostering continued collaborations to assure ongoing evidence-based quality health care, especially in settings where team members are not in the same physical location. This is important within a setting such as the community environment, and also across practice settings, where health care provider collaboration is needed to assure continuity of care for patients transitioning from inpatient to outpatient or long term care settings and vice versa.

APhA has heard from pharmacists that an interdisciplinary team approach to patient care needs to begin at the student level as an integral part of health care provider curricula. Interdisciplinary experiences for health care students need to be "institutionalized" and integrated throughout the curricula, and should include working as a team during experiential rotations, both in the inpatient and outpatient settings. APhA is currently participating in the Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) Health Care Professional Educational expert roundtable panel and educational symposium, *Transforming Health Professional Education: Core Competencies, Microsystems, and New Training Venues* (currently planned for September 14-15, 2005). Best practices and recommendations from this interdisciplinary effort will be useful in developing tools and materials for fostering interdisciplinary team practice.

B. Patient Involvement in Self-Managing Medications

Recommendation: Patients should be empowered to accept responsibility for safe, effective medication self-management by working with pharmacists, physicians, and other members of the health care team.

A patient-centered approach to appropriate medication therapy management is an essential factor in the medication use process. Through Project ImPACT, pharmacists have learned that by empowering patients to have a more active role in their health care, the quality of health outcomes is improved. A new and integral component of the APhA Foundation Patient Self-Management Program for Diabetes was the development of a patient self-management training and assessment program to equip patients with the knowledge and skills needed to actively participate in managing their diabetes. Although this component of the project is currently undergoing analysis, patients and pharmacists indicated that the tool used for training and assessment was valuable for individualizing patient education sessions.⁶

The MTM in Community Pharmacy Core Elements document (Appendix B) advocates for pharmacists to work with the patient and prescriber to improve patients' self-management of their medications. As a result of a review and assessment of the patient's medications, the patient receives a personal medication record (PMR), a complete list of all medications, including prescription, nonprescription, herbal products, and other dietary supplements from the pharmacist. The patient also receives a medication action plan (MAP), a patient-centered document containing information the patient can use to improve medication self-management. The MAP is created collaboratively by the patient, pharmacist, physician, and other health care providers. The PMR and MAP are intended to be used by the patient to optimize medication therapy and share with other health care providers to enhance continuity of care. These examples provide insight into mechanisms for empowering patients to take an active role in their medication use, including medication safety. The Committee is strongly encouraged to stress the importance of patient responsibility for medication self-management in the final report.

C. Access to Complete, Accurate, and Timely Health Information

Recommendation: Pharmacists, physicians, nurses, and other health care providers need access to complete, accurate, and timely health information in order to reduce medication errors and provide quality care.

Access to complete, accurate, and timely patient health information is important to all health care providers, including pharmacists. Innovations in technology have resulted in some progress toward appropriate access to health information for improving the quality of patient care. Health systems have worked to create patient electronic medical records that are accessible to health care providers throughout the system. Computerized physician order entry is being adopted in the inpatient setting to address problems with the medication ordering process, and electronic prescriptions are also becoming more prevalent in the outpatient setting to address problems with illegible prescriptions orders. Development of an electronic medical record accessible to health care providers in all settings would help to address inconsistencies in patient information and improve continuity of care across health care settings. Complete and timely health information is especially important for effectively transitioning vulnerable patients discharged from the hospital to the outpatient setting on a new medication regimen and vice versa.

To improve the safety of the medication dispensing process, standard data elements for the prescription need to be developed and implemented. The Committee is encouraged to advocate for an examination of the common data elements currently found on prescriptions in order to identify information that would improve the safety of the medication dispensing process. For example, requiring the indication for the medication to be written on the prescription would better enable the pharmacist to perform appropriate and comprehensive drug utilization review, and to work with the patient to meet established treatment goals.

As pharmacists become more involved in medication therapy management, access to patient health data such as current and previous diseases/conditions and laboratory values, is critical to appropriate medication therapy assessment and monitoring. In the community pharmacy setting in particular, where pharmacists are often practicing in locations that are physically separated from physicians and other

health care providers, the ability to access important health data is currently very limited. Under current procedures, pharmacists must try to reach the busy physician or obtain the information directly from the patient, often with difficulty, especially if the patient is taking multiple medications. For medication therapy management programs delivered in the community pharmacy setting, access to disease state information and laboratory values would greatly enhance the pharmacist's ability to assess and make recommendations regarding medication therapy. Timely access to health data would also allow for more efficient care, since the pharmacist would not have to make formal requests to physicians' offices or laboratories, and health care providers would have comprehensive patient information to reference when discussing medication therapy problems and sharing information to optimize medication therapy outcomes.

D. Aligned Financial Incentives to Support Quality Improvement

Recommendation: Financial incentives to foster the development of safe medication use systems, and funding for research focused on best medication use practices, are needed to ensure the success of medication safety efforts.

The financial costs of medication misadventures have been documented in the literature. It has been estimated that for every dollar spent on pharmaceuticals, another dollar of spending results from drug misadventures.³ A proactive approach to developing safe medication use systems will require human, technological, and financial resources. The recommendations advocated in these comments require dedicated staff time and training, implementation of technology, and research to determine best medication use practices. Without financial incentives to stimulate widespread adoption of safe medication use systems, and funding for research on effective medication use processes, it will be difficult to achieve desired change. The Committee is encouraged to recommend a financial investment in the medication use system that provides incentives for health care provider collaboration, and funding mechanisms for organizations to implement technologies and other systems that enhance the medication use process. Funding for research studies on medication use practices that lead to best practice models and overall quality improvement is also critical to long term success. This research will need to include an examination of new technologies for possible problems leading to medication error.

III. Key Recommendations to Improve Medication Safety and Quality

In summary, the American Pharmacists Association recommends that the Institute of Medicine Committee on Identifying and Preventing Medication Errors consider the following recommendations when developing its report:

- *An interdisciplinary team approach to patient care in all settings is needed in order to realize optimal medication use, facilitate continuity of care, and create a culture of safety. The pharmacist's role as a medication therapy management expert must be recognized and fully utilized within the health care team.*

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- *Patients should be empowered to accept responsibility for safe, effective medication self-management by working with pharmacists, physicians, and other members of the health care team.*
- *Pharmacists, physicians, nurses and other health care providers need access to complete, accurate, and timely health information in order to reduce medication errors and provide quality care.*
- *Financial incentives to foster the development of safe medication use systems, and funding for research focused on best medication use practices, are needed to ensure the success of medication safety efforts.*

¹ Manasse HR. (1989). Medication use in an imperfect world: Drug misadventuring as an issue of public policy. Part 1. *Am J Hosp Pharm*, 46: 929–944.

² Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.

³ Johnson JA, Bootman JL. (1995) Drug-related morbidity and mortality: a cost-of-illness model. *Arch Int Med* 155:1949-1956.

⁴ Bluml B, McKenney J, Cziraky M. (2000). Pharmaceutical care services and results in project ImPACT: Hyperlipidemia. *J Am Pharm Assoc*, 40: 157–165.

⁵ Goode JK, Swiger K, Bluml BM. (Mar/Apr 2004). Regional osteoporosis screening, referral, and monitoring program in community pharmacies: Findings from Project ImPACT: Osteoporosis. *J Am Pharm Assoc*, 44(2): 152–160.

⁶ Garrett D, Bluml B. (2005). Patient self-management program for diabetes: First-year clinical, humanistic, and economic outcomes. *J Am Pharm Assoc*, 45: 130–137.

Appendix A

Evidence of the Pharmacist's Value: An Overview of Several Landmark Studies

From:

Medication Therapy Management Services: A Critical Review

Prepared for the American Pharmacists Association by

The Lewin Group

May 17, 2005



Citation	Study Type	Sample Population	Outcome Variables	Results (Conclusions)
Garrett D, Bluml B. (2005). Patient self-management program for diabetes: First-year clinical, humanistic, and economic outcomes. <i>J Am Pharm Assoc</i> , 45: 130–137.	Quasi-experimental, pre–post cohort study	256 patients with diabetes covered by self-insured employers' health plans	Changes in glycosylated hemoglobin (A1C); low-density lipoprotein cholesterol (LDL-C); blood pressure; influenza vaccinations; foot examinations; eye examinations; patient goals for nutrition, exercise, and weight; patient satisfaction; and changes in medical and medication use and costs	Over the initial year of the program, participants' mean A1C decreased from 7.9% at initial visit to 7.1%, mean LDL-C decreased from 113.4 mg/dL to 104.5 mg/dL, and mean systolic blood pressure decreased from 136.2 mm Hg to 131.4 mm Hg. During this time, influenza vaccination rate increased from 52% to 77%, the eye examination rate increased from 46% to 82%, and the foot examination rate increased from 38% to 80%. Patient satisfaction with overall diabetes care improved from 57% of responses in the highest range at baseline to 87% at this level after 6 months, and 95.7% of patients reported being very satisfied or satisfied with the diabetes care provided by their pharmacists. Total mean health care costs per patient were \$918.00 lower than projections for the initial year of enrollment.
Bluml B, McKenney J, Cziraky M. (2000). Pharmaceutical care services and results in project ImPACT: Hyperlipidemia. <i>J Am Pharm Assoc</i> , 40: 157–165.	Observational	397 patients of 26 community-based ambulatory care pharmacies, including: independent, chain–professional, chain–grocery store, home health/home infusion, clinic, health maintenance organization/managed care pharmacies	Rates of patient persistence and compliance with medication therapy and achievement of target therapeutic goals	Over an average period of 24.6 months, observed rates for persistence and compliance with medication therapy were 93.6% and 90.1%, respectively, and 62.5% of patients had reached and were maintained at their NCEP lipid goal at the end of the project.
Jameson J, VanNoord G, Vanderwoud K. (Nov 1995). The impact of a pharmacotherapy consultation on the cost and outcome of medical therapy. <i>J Fam Pract</i> , 1(5): 469–472.	Prospective randomized trial	56 hypertensive patients at risk for medication-related problems	Number of drugs, number of doses per day, 6-month drug costs, patient reported adverse effects	Six months after intervention (single consultation by clinical pharmacist with high-risk patients and primary physicians) measured outcome variables. Found decreased number of drugs ($P < .004$), decreased number of doses ($P < .007$) and decreased 6-month drug costs ($P < .008$) for intervention group. Side effects score improved in intervention group ($p = NS$).
Christensen D, Neil N, Fassett W, Smith D, Holmes G, Stergachis A. (2000). Frequency and characteristics of cognitive services provided in response to a financial incentive. <i>J Am Pharm Assoc</i> , 40: 609–617.	Prospective randomized trial	110 study pharmacies (financial intervention); 90 control pharmacies	Number of cognitive service (CS) interventions per 100 prescriptions over 20-month period	Study pharmacists documented an average of 1.59 CS interventions per 100 prescriptions versus controls documenting an average of 0.69 CS interventions per 100 prescriptions. The average self-reported time to perform CS was 7.5 minutes, with 75% lasting fewer than 6 minutes. Financial incentive associated with significantly more and different types of CS performed by pharmacists.
Manasse HR. (1989). Medication use in an imperfect world: Drug misadventuring as an issue of public policy. Part 1. <i>Am J Hosp Pharm</i> , 46: 929–944.	Review		Deaths and hospitalizations due to adverse drug reactions	Twelve thousand deaths and 15,000 hospitalizations were reported to the FDA, but the number of adverse drug reactions might be a small fraction—perhaps only 10% of the true number.
Bootman JL, Harrison DL, Cox E. (1997). The health care cost of drug-related morbidity and mortality in nursing facilities. <i>Arch Int Med</i> , 157: 2089–2096.	Decision analysis		Cost of drug-related morbidity in nursing facilities	Baseline estimates indicate that the cost of drug-related morbidity and mortality with the services of consultant pharmacists was \$4.0 billion versus \$7.6 billion without the services of consultant pharmacists.
Johnston AM, Doane K, Phipps K, Bell A. (Jan 1996). Outcomes of pharmacists' cognitive services in the long-term care setting. <i>Cons Pharm</i> , 11(1): 41–50.	Chart review	10,207 resident chart reviews of drug regimen collected over 1-month period of 122 long-term care facilities; chart review over 3-month monitoring period	Number and type of interventions, change in drug therapy, change in medication cost, change in patient health	Pharmacists made 3,464 interventions. Response rate for interventions requesting a response was 85.7%, with a 68% acceptance rate. Accepted recommendations resulted in a total cost savings of \$15,111.38 for the 1-month period. Accepted recommendations resulted in favorable health outcomes 99.5% of the time.

Citation	Study Type	Sample Population	Outcome Variables	Results (Conclusions)
McMullin ST, Hennenfent JA, Ritchie D, Huey WY, Loneragan T, Schaiff R, Tonn M, Bailey TC. (1999). A prospective randomized trial to assess the cost impact of pharmacist-initiated interventions. Arch Int Med, 159: 2306–2309.	Prospective randomized controlled trial	1,226 interventions by six pharmacists at large university hospital	Drug costs	Cost-saving interventions involved streamlining therapy to less expensive agents (39%), discontinuing an unnecessary medication (25%), and modifying route of administration (24%). Intervention group had drug costs 41% lower than control group ($P < .001$). Mean \$43.40 versus \$73.75.
Schmader KE, Hanlon JT, Pieper CF, Sloane R, Ruby CM, Twersky J, Francis MA, Weinberger M, Feussner J, Cohen HJ. (2004). Effects of geriatric evaluation and management on adverse drug reactions and suboptimal prescribing in the frail elderly. Amer J Med, 116: 394–401.	Randomized 2x2 factorial controlled study	834 patients in 11 VA hospitals over age 65 who met criteria for frail followed for 12 months – blinded physician-pharmacist pairs	Risk of serious adverse drug reactions, unnecessary and inappropriate drug use and underuse	Outpatient geriatric clinic care resulted in 35% reduction in the risk of serious drug reaction (adjusted relative risk, 0.65; 95% CI, 0.45–0.93). Inpatient geriatric unit care reduced unnecessary and inappropriate drug use and underuse significantly ($P < .05$). Outpatient geriatric care reduced the number of omitted drugs ($P < .05$).
Brooks JM, McDonough RP, Doucette WR. (June 2000). Cost analysis: Pharmacist reimbursement for pharmaceutical care services: Why insurers may flinch. Drug Benefit Trends 45–62.	Economic cost analysis			Researchers developed complex economic model describing moral hazard, proving that enrolling high-risk patients into pharmaceutical care programs can be of value to insurers if the savings incurred is more than the program expense. Based on the model, authors conclude that reimbursing pharmacists to provide pharmaceutical care is optimal if a relatively inexpensive patient screening method is available that enables insurers to limit visits to those patients who offer cost savings to the insurer.
Christensen D, Trygstad T, Sullivan R, Garmise J, Wegner S. (Dec 2004). A pharmacy management intervention for optimizing drug therapy for nursing home patients. Am J Geriatric Pharmacotherapy, 2(4): 248–256.	Before-after design	Documented DRR for 9,208 residents in 253 nursing homes receiving 18 or more prescription refills in 90 days	Number of prescriptions per month, drug costs	Baseline mean was 9.52 prescriptions per month, with mean drug cost of \$502.96 to North Carolina Medicaid program. After intervention, mean reduction of 0.21 occurred in number of prescriptions per month, with mean reduction in drug cost of \$30.33 patient per month.
Lipton HL, Bero LA, Bird JA, McPhee SJ. (Jul 1992). The impact of clinical pharmacists' consultations on physicians' geriatric drug prescribing. Med Care, 30(7): 646–658.	Prospective randomized controlled trial	236 patients age 65+ with three+ medications, 123 experimental, 113 controls from a 450-bed hospital	Drug therapy problems, regimen appropriateness	Experimentals were less likely to have one or more prescribing problems ($P < .05$); experimental drug regimens were more appropriate than those of controls ($P < .01$).
Cranor CW, Bunting BA, Christensen DB. (Mar/Apr 2003). The Asheville project: Long-term clinical and economic outcomes of a community pharmacy diabetes care program. J Am Pharm Assoc, 43(2): 173–190.	Quasi-experimental longitudinal pre-post cohort study	136 employees having diabetes followed for 5 years – intervention of education, consultations, clinical assessment, goal setting, collaborative drug therapy management with physicians	Changes in glycosylated hemoglobin (A1c) and serum lipid concentrations, changes in diabetes-related and total medical use, costs over time	Mean A1c decreased at all follow-ups, more than 50% of patients demonstrated improvements at each follow-up, number of patients with optimal A1c increased at each follow-up, and > 50% improved in lipid levels. Costs shifted from inpatient and outpatient services from physicians to prescriptions, mean direct medical costs decreased by \$1,200.00 to \$1,872.00 per patient per year, and sick days decreased for one employer group with increases in productivity estimated at \$18,000.00 annually.
Walker S, Willey CW. (2004). Impact on drug costs and utilization of a clinical pharmacist in a multisite primary care medical group. J Manag Care Pharm, 10(4): 345–354.	Retrospective pretest posttest study	Independent, nonacademic, ambulatory, primary care medical practice of 65 physicians	Net medical group drug cost per enrolled member per year over 2-year period	Drug costs per patient per year increased 1.7% versus national increase of 31.2%. Prescriptions per patient per year increased 4% versus unchanged national rate. Cost per prescription decreased 2.1% versus national increase of 31.2%. Results due to increase in use of generics.

Citation	Study Type	Sample Population	Outcome Variables	Results (Conclusions)
Weinberger M, Murray M, Marrero D, Brewer N, Lykens M, Harris LE, Seshadri R, Caffrey H, Roesner JF, Smith F, Newell AJ, Collins JC, McDonald CJ, Tierney WM. (2002). Effectiveness of pharmacist care for patients with reactive airways disease. <i>JAMA</i> , 288: 1594–1602.	Randomized controlled trial	1,113 participants with active COPD or asthma. Outcomes were assessed in 947 (85.1%) participants at 6 months and 898 (80.7%) at 12 months.	Peak expiratory flow rates, breathing-related ED or hospital visits, health-related quality of life (HRQOL), medication compliance, and patient satisfaction.	At 12 months, patients receiving pharmaceutical care had significantly higher peak flow rates than the usual care group ($P = .02$) but not than PEFR monitoring controls ($P = .28$). No significant between-group differences occurred in medication compliance or HRQOL. Asthma patients receiving pharmaceutical care had significantly more breathing-related ED or hospital visits than the usual care group (OR, 2.16; 95% CI, 1.76–2.63; $P < .001$). Patients receiving pharmaceutical care were more satisfied with their pharmacist than the usual care group ($P = .03$) and the PEFR monitoring group ($P = .001$) and were more satisfied with their health care than the usual care group at 6 months only ($P = .01$). Despite ample opportunities to implement the program, pharmacists accessed patient-specific data only about half of the time and documented actions about half of the time that records were accessed.
Goode JK, Swiger K, Bluml BM. (Mar/Apr 2004). Regional osteoporosis screening, referral, and monitoring program in community pharmacies: Findings from Project ImPACT: Osteoporosis. <i>J Am Pharm Assoc</i> , 44(2): 152–160.	Single cohort observational study	Consumers with one or more known risk factors for osteoporosis	Results of screenings, responses of patients and physicians to notifications, and long-term results during collaborative care	The pharmacists screened 532 patients and were able to contact 305 of these patients for follow-up interviews 3 months to 6 months later. The stratification for risk of fracture was 37%, high risk; 33%, moderate risk; and 30%, low risk. A total of 78% of patients indicated that they had no prior knowledge of their risk for future fracture. In the moderate- and high-risk categories, 37% of patients scheduled and completed a physician visit, 19% had a diagnostic scan, and 24% of those patients were initiated on osteoporosis therapy subsequent to the screening. Participating pharmacies received payment for both the osteoporosis screening and the collaborative health management services.
Hanlon JT, Artz MB, Pieper CF, Lindblad CI, Sloane RJ, Ruby CM, Schnader KE. (2004). Inappropriate medication use among frail elderly inpatients. <i>Ann Pharmacother</i> , 38(1): 9–14.	Observational	397 frail elderly inpatients in eleven VA facilities	Prevalence of inappropriate prescribing for hospitalized frail elderly patients	Three hundred sixty-five (91.9%) patients had ≥ 1 medication with ≥ 1 MAI criteria rated as inappropriate. The most common problems involved expensive drugs (70.0%), impractical directions (55.2%), and incorrect dosages (50.9%). The most common drug classes with appropriateness problems were gastric (50.6%), cardiovascular (47.6%), and central nervous system (23.9%). The mean \pm SD MAI score per person was 8.9 ± 7.6 . Stepwise ordinal logistic regression analyses revealed that both the number of prescription (adjusted OR, 1.28; 95% CI, 1.21–1.36) and nonprescription drugs (adjusted OR, 1.17; 95% CI, 1.06–1.29) were related to higher MAI scores. Analyses excluding the number of drugs revealed that the Charlson index (adjusted OR, 1.62; 95% CI, 1.12–2.35) and fair/poor self-rated health (adjusted OR, 1.15; 95% CI, 1.05–1.26) were related to higher MAI scores.

CI = confidence interval; COPD = chronic obstructive pulmonary disease; DRR = drug regimen review; ED = emergency department; FDA = Food and Drug Administration; MAI = Medication Appropriateness Index; NCEP = National Cholesterol Education Program; OR = odds ratio; PEFR = peak expiratory flow rate.

Appendix B

Medication Therapy Management in Community Pharmacy Practice

Core Elements of an MTM Service

Version 1.0



*A joint initiative of the American Pharmacists Association
and
the National Association of Chain Drug Stores Foundation*

April 29, 2005

Medication Therapy Management in Community Pharmacy Practice

Core Elements of an MTM Service

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April 29, 2005

APhA and the NACDS Foundation would like to acknowledge those individuals and organizations participating in the review of this document.

Introduction

Eleven national pharmacy organizations achieved consensus on a definition of medication therapy management (MTM) in July 2004 (Appendix A). Building on the consensus definition, the American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) Foundation have developed a model framework for implementing effective MTM services in a community pharmacy setting. This model describes core elements of MTM services that can be provided by pharmacists across the spectrum of community pharmacy.

Although adoption of this model is voluntary, it is important to note that it has been developed with the input of an advisory panel of community pharmacy practice leaders (page 10) and is crafted to maximize both effectiveness and efficiency in the community pharmacy practice setting.

The model services are designed to improve care, enhance communication among patients and providers, improve collaboration among providers, and optimize medication use for improved patient outcomes. MTM services are distinct from dispensing. This framework describes core components of MTM service delivery in community pharmacy, but it does not represent all MTM services that could be delivered by the community pharmacist, such as health and wellness services and disease management programs.

Recognition of the pharmacist as a provider of MTM under the Medicare Modernization Act of 2003 (effective January 2006) represents a valuable opportunity for community pharmacists to enhance patient care and address the nationally recognized need to identify and resolve medication therapy problems.¹ The success of MTM services currently contracted through self-insured employers and state Medicaid programs provides additional support for the delivery of MTM services to diverse patient populations in the community setting.²⁻⁴ As new opportunities arise, all pharmacists

in community practice must share a common vision for patient-centered MTM that enhances pharmacists' role in our nation's health care system.

This model is intended for pharmacists to use with all patients in need of MTM services, whether or not they are covered by a private or public health benefit. The model is in agreement with Centers for Medicare and Medicaid Services (CMS) expectations that MTM services will enhance patients' understanding of appropriate drug use, increase compliance with medication therapy, result in collaboration between pharmacists and prescribers, and improve detection of adverse drug events.⁵

CMS, other payers, and many others in health care have recognized the importance of MTM services, but consistently defined parameters are lacking. APhA and the NACDS Foundation believe that a unified vision of the core components of MTM in community pharmacy will enhance the efficiency and efficacy of these services for all patients. Our collective vision is the advancement of sustainable community pharmacy services that are supportive of improved patient outcomes and are recognized by patients, payers, and providers for their value.

Framework for Community Pharmacy-Based MTM Services

The APhA/NACDS Foundation model framework of Medication Therapy Management (MTM) in community pharmacy is designed to improve care, enhance communication among patients and providers, improve collaboration among providers, and optimize medication use that leads to improved patient outcomes. Ideally, patients* or caregivers will receive MTM services at the

**When the term "patient" is used in this document, it refers to the patient, the caregiver, or other persons involved in the care of the patient.*

pharmacy where they have filled their prescriptions and from a pharmacist with whom they have an ongoing relationship.

These services will be provided in a private or semiprivate area, as required by the Health Insurance Portability and Accountability Act, by a pharmacist whose time is devoted to the patient during this service. MTM services typically are provided by appointment but may be provided on a walk-in basis. The pharmacist can initiate MTM services when complex medication therapy problems are identified through the dispensing process.

In this model, the patient meets with the pharmacist for an annual comprehensive medication therapy review and has additional visits with the pharmacist throughout the year to address ongoing medication monitoring issues and event-based medication therapy problems. The number of visits required to successfully manage a patient's therapy will likely be determined by the complexity of the patient's medication therapy problems, the extent of coverage by the patient's health plan, or both. A typical patient might need up to four visits per year, but additional visits would be available when necessitated by individual patient circumstances. During the year, a significant event such as a hospital or emergency room discharge would necessitate an additional comprehensive medication therapy review.

MTM in community pharmacy includes five core components, described on the following pages:

- Medication therapy review,
- A personal medication record,
- A medication action plan,
- Intervention and referral, and
- Documentation and follow-up.

The framework includes these core elements of MTM services, but community pharmacists may offer many other innovative MTM services, such as health and wellness services and disease management programs.

Core Components of Community Pharmacy MTM

Medication Therapy Review:

The pharmacist completes a medication therapy review (MTR) consultation with the patient or caregiver.

MTR is conducted between the patient or caregiver and the pharmacist, preferably in person and face-to-face. The face-to-face interaction establishes or enhances the pharmacist-patient relationship. This interaction allows the pharmacist the optimal ability to observe signs of and visual cues to the patient's health problems, such as adverse reactions to medications, lethargy, alopecia, extrapyramidal symptoms, jaundice, and disorientation. The pharmacist's observations can result in early detection of medication-related problems and thus can reduce emergency room visits, hospitalizations, and medication misadventuring.

Pharmacist-provided MTR and consultation in various settings has resulted in reductions in unscheduled physician visits, emergency room visits, hospital days, and overall costs.^{2,3,6-13} Pharmacists have been shown to obtain more accurate medication-related information from patients.¹⁴

The MTR can be comprehensive or targeted to a specific medication problem. Ideally, in a comprehensive MTR, the patient presents all current medications to the pharmacist, including all prescription and nonprescription medications, herbal products, and other dietary supplements. The pharmacist then assesses the medication therapy for appropriateness and works with the patient, the prescriber, or both, providing education and information to improve patients' self-management of their medications.

Targeted MTRs are used to address new medication problems identified by the pharmacist or for ongoing medication monitoring during follow-up visits. The pharmacist assesses the specific therapy problem, intervenes, and provides education and information to the patient, the prescriber, or both, as appropriate.

The MTR is tailored to the individual needs of the patient at each visit. Depending on its scope, the MTR can include any of the following:

- Assessing, on the basis of all relevant clinical information available to the pharmacist, the patient's physical and overall health status, including current and previous diseases or conditions
- Assessing cultural issues, patient preferences, education level, language barriers, and other characteristics of the patient's communication abilities that could adversely affect outcomes
- Interviewing the patient or caregiver to detect symptoms that could be attributed to adverse events caused by any of the current medications
- Assessing, identifying, and resolving medication therapy problems related to:
 - The clinical appropriateness of each medication being taken by the patient
 - The appropriateness of the dose and dosing regimen of each medication, including consideration of indications, contraindications, potential adverse effects, and potential problems with concomitant medications
 - Therapeutic duplication or other unnecessary medications
 - Adherence to medication therapy (persistence and compliance)
 - Untreated diseases or conditions
 - Medication cost considerations
 - Timely monitoring and feedback of results
- Monitoring and evaluating the patient's response to therapy, including safety and effectiveness
- Interpreting, monitoring, and assessing patient laboratory results, when available
- Providing education and training on the appropriate use of medications and monitoring devices, the importance of medication adherence, and understanding treatment goals
- Communicating appropriate information to the physician or other health care provider, including consultation on the selection of medications

For optimal health outcomes, a patient would receive an annual comprehensive MTR and targeted MTRs

throughout the year to address new medication problems or ongoing medication therapy issues. During the year, a significant event such as a hospital or emergency room discharge would result in the need for an additional comprehensive MTR.

Personal Medication Record: The patient receives a personal medication record (PMR; Appendix B) after a comprehensive MTR.

At the end of a comprehensive MTR, the patient receives a portable record of all his or her medications (prescription and nonprescription medications, herbal products, and other dietary supplements) that contains information such as that reflected in Appendix B. This includes:

- Patient name or identifier
- Medication name and strength
- The intended use, if known, of the medication (e.g., "for high blood pressure")
- Directions for use (e.g., "one tablet twice daily"), including regimen times, if needed (e.g., "8 am and 8 pm")
- Discretionary information, such as precautions (e.g., "avoid exposure to sunlight")
- Start date of currently used medications (if known)
- Stop date of discontinued medications (if known)
- Pharmacist's name and contact information
- Prescriber's name and contact information
- Date of PMR creation and of most recent update

The PMR is intended for patients to use in medication self-management and to voluntarily share with health care providers to enhance continuity of care. The patient is instructed to show the PMR to health care providers at all appointments to help ensure that each practitioner is aware of the patient's current medication regimen. Patients are instructed to take the PMR with them if they are being admitted to a hospital or other institution or if they must visit an emergency room.

Patients are also instructed to bring the PMR to all visits to the pharmacy. Each time the patient receives a new medication, has a current medication discontinued, has an instruction change, begins using

a new nonprescription medication or dietary supplement, or has any other changes to the medication regimen, the PMR should be updated to ensure a complete and accurate record. Ideally, the pharmacist should be an active participant in this process.

The patient's PMR can be generated electronically or manually. Widespread use of the PMR will support uniformity of information, while facilitating flexibility for local variations.

Medication Action Plan: The patient receives a medication action plan (MAP; Appendix C) at the end of an MTM visit.

A care plan is an important component of the patient care process.^{15,16} At the end of the MTM visit, the patient receives a MAP, a patient-centered document containing information such as that reflected in Appendix C. The MAP includes:

- Patient identifier
- Patient date of birth
- Physician identifier
- Pharmacist identifier
- Date of MAP
- Medication-related issues identified
- Proposed actions
- Individual responsible for action
- Result of action, when known, including result date

The MAP, created collaboratively by the patient, pharmacist, physician, and other health care providers as appropriate, contains information the patient can use to improve medication self-management. Patients can be encouraged to voluntarily share the MAP with health care providers to enhance continuity of care and to help ensure that each practitioner is aware of the patient's current medication-related issues and actions being taken to resolve them. Patients can be instructed to take the MAP with them if they are being admitted to a hospital or other institution or if they must visit an emergency room. In addition, the pharmacist can serve as a resource to the patient's physician and other health care providers, communicating

MAP information in a health care provider-specific format.

Patients are instructed to bring the MAP with them to all visits to the pharmacy. Each time a medication-related issue is resolved, the result and date should be recorded on the MAP. Ideally, the pharmacist should be an active participant in this process.

A patient's MAP can be generated electronically or manually. Widespread use of the MAP will support uniformity and consistency in information sharing among members of the health care team, while facilitating flexibility for local variations.

Intervention and/or Referral: The pharmacist provides consultative services and intervenes to address medication-related problems; when necessary, the pharmacist refers the patient to other health care providers.

During the course of an MTM visit, medication therapy problems may be identified that require the pharmacist to intervene on the patient's behalf. Interventions may include working with the patient or caregiver to address specific medication problems or collaborating with physicians or other health care providers to resolve existing or potential medication-related problems.

The positive impact of pharmacist interventions on outcomes related to medication therapy problems has been demonstrated in numerous studies.¹⁷⁻²⁰ Pharmacists can intervene to resolve medication therapy problems as part of any pharmacy service, including dispensing. Resolving medication therapy problems may involve collaboration between the pharmacist and the patient's physician or other health care provider.

Some patients' medical conditions or medication therapy may be highly specialized or complex, and the patients' needs may extend beyond core MTM services. In such cases, pharmacists may provide additional care according to their level of expertise, or they may need to refer the patient to the most appropriate health care provider, such as a physician, a pharmacist with additional qualifications, or another member of the health care team.

Circumstances that may require referral to additional health care providers include the following:

- New problems discovered during MTR may necessitate referral to a physician for evaluation and diagnosis.
- Patients may require disease management education from pharmacists or other health care providers to help them manage chronic diseases such as diabetes.
- Patients who require monitoring for high-risk medications, such as warfarin, may need referrals to pharmacists with advanced experience, training, or credentials.

The intent of intervention or referral is to optimize medication use, enhance continuity of care, and encourage patients to fully utilize available health care services to prevent future adverse outcomes, whether clinical, humanistic, or economic.

Documentation and Follow-up: MTM services are documented in a consistent manner, and a follow-up MTM visit is scheduled with the patient or caregiver.

Documentation is an essential component of patient care.^{21,22} The pharmacist is responsible for documenting services in a manner appropriate for evaluating patient progress and sufficient for billing purposes. The use of core documentation elements will help to create consistency in professional documentation and information sharing among members of the health care team, while facilitating practitioner, organization, or regional variations.

Documentation of MTM services should include the following categories of information:

- Patient demographics
- Known allergies, diseases, or conditions
- A record of all medications, including prescription, nonprescription, herbal, and other dietary supplement products
- Assessment of medication therapy problems and plans for resolution
- Therapeutic monitoring performed

- Interventions or referrals made
- Education received
- Schedule and plan for follow-up appointment
- Amount of time spent with patient
- Feedback to providers or patients

Timely feedback to prescribers and other professionals involved in a patient's care is part of thorough MTM documentation. At the end of an MTM visit, the pharmacist schedules a follow-up appointment with the patient or caregiver according to individual patient requirements. Documentation and consistent follow-up enhance continuity of care.

General Patient Eligibility Considerations

All patients using prescription medications would benefit from the core MTM services outlined in this document, but it is likely that priority will be given to complex patients who would benefit most from these services. Patients should be recruited for MTM services through health plan identification, physician referral, and identification by the pharmacist. Pharmacists may wish to notify area physicians of their MTM services so that the physicians may refer patients for those services. Pharmacists can utilize one or more of the following factors in targeting patients who are likely to benefit most from MTM services in their practice:

- Patient is referred for MTM services by a health care provider.
- Patient is receiving medications from more than one prescriber.
- Patient is on four or more chronic medications.
- Patient has at least one chronic disease (e.g., congestive heart failure, diabetes, hypertension, hyperlipidemia, asthma, osteoporosis, depression, osteoarthritis, chronic obstructive pulmonary disease).
- Patient has laboratory values outside the normal range that could be improved with medication therapy.
- Patient has demonstrated nonadherence to the medication regimen for more than three months.

- Patient has issues of limited health literacy or cultural differences, and intensive communication is needed to maximize care.
- Total monthly cost of medication exceeds \$200.
- Patient has been discharged from a hospital or skilled-nursing facility within 14 days and prescribed a new medication regimen.

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Appendix A: Definition of Medication Therapy Management

Medication Therapy Management is a distinct service or group of services that optimize therapeutic outcomes for individual patients. Medication Therapy Management Services are independent of, but can occur in conjunction with, the provision of a medication product.

Medication Therapy Management encompasses a broad range of professional activities and responsibilities within the licensed pharmacist's, or other qualified health care provider's, scope of practice. These services include but are not limited to the following, according to the individual needs of the patient:

- a. Performing or obtaining necessary assessments of the patient's health status;
- b. Formulating a medication treatment plan;
- c. Selecting, initiating, modifying, or administering medication therapy;
- d. Monitoring and evaluating the patient's response to therapy, including safety and effectiveness;
- e. Performing a comprehensive medication review to identify, resolve, and prevent medication-related problems, including adverse drug events;
- f. Documenting the care delivered and communicating essential information to the patient's other primary care providers;
- g. Providing verbal education and training designed to enhance patient understanding and appropriate use of his/her medications;
- h. Providing information, support services and resources designed to enhance patient adherence with his/her therapeutic regimens;
- i. Coordinating and integrating medication therapy management services within the broader health care-management services being provided to the patient.

A program that provides coverage for Medication Therapy Management services shall include:

- a. Patient-specific and individualized services or sets of services provided directly by a pharmacist to the patient.* These services are distinct from formulary development and use, generalized patient education and information activities, and other population-focused quality assurance measures for medication use.
- b. Face-to-face interaction between the patient* and the pharmacist as the preferred method of delivery. When patient-specific barriers to face-to-face communication exist, patients shall have equal access to appropriate alternative delivery methods. Medication Therapy Management programs shall include structures supporting the establishment and maintenance of the patient*-pharmacist relationship.
- c. Opportunities for pharmacists and other qualified health care providers to identify patients who should receive medication therapy management services.
- d. Payment for medication therapy management services consistent with contemporary provider payment rates that are based on the time, clinical intensity, and resources required to provide services (e.g., Medicare Part A and/or Part B for CPT & RBRVS).
- e. Processes to improve continuity of care, outcomes, and outcome measures.

* In some situations, medication therapy management services may be provided to the caregiver or other persons involved in the care of the patient.

Approved July 27, 2004, by the Academy of Managed Care Pharmacy, the American Association of Colleges of Pharmacy, the American College of Apothecaries, the American College of Clinical Pharmacy, the American Society of Consultant Pharmacists, the American Pharmacists Association, the American Society of Health-System Pharmacists, the National Association of Boards of Pharmacy,** the National Association of Chain Drug Stores, the National Community Pharmacists Association, and the National Council of State Pharmacy Association Executives.

** Organization policy does not allow NABP to take a position on payment issues.

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MTM Model Advisory Panel members provided expert advice. This document does not necessarily represent all of their opinions or those of their organizations.