

AMERICAN PHARMACISTS ASSOCIATION

Medication Therapy Management Digest

Perspectives on
MTM Service Implementation

MARCH 2008



Developed by:



Supported by:

Wyeth®



American Pharmacists Association®
Improving medication use. Advancing patient care.

APhA

Dear Colleague:

On behalf of the American Pharmacists Association (APhA), I am pleased to present to you the findings of the first national surveys to evaluate the strategies associated with medication therapy management service implementation and the value of medication therapy management services to pharmacist providers and payers. These surveys were conducted by APhA under the guidance of an expert advisory panel.

The data presented here paint a picture of an emerging movement with great potential to transform the patient care system in the United States. A substantial number of survey respondents indicated that they are involved with medication therapy management service provision and payment. Fewer are quantifying the impact of these services, but those who are report intriguing results. Even those who have not quantified a financial value for the benefit of medication therapy management recognize its value for patient satisfaction and professional rewards.

These surveys also found a number of interesting barriers to further expansion. For example, after patient and physician resistance, the third-most common barrier cited by payers was an insufficient number of pharmacists in their service area to provide medication therapy management. These results serve as a call to action for pharmacists to begin participating in medication therapy management services or expand the scope of their current activities. This service growth can happen in all patient care settings where patients or their caregivers can be active participants in their care.

If you choose this path, know that APhA will stand behind you every step of the way. We are dedicated to helping all pharmacists improve medication use and advance patient care. We aim to mainstream the provision of patient care services by pharmacists under financially viable business models. Our goal is to help expand the practice of medication therapy management services from a best practices model to a standard service that patients can expect to receive and rely on from their pharmacists regardless of the care setting. The results of this survey indicate that we are moving toward this goal, but there is more work to be done.

Finally, I would like to recognize Wyeth for their financial support of this digest and the surveys it describes. Wyeth's recognition of pharmacists' role in improving the care of patients through the support of initiatives such as this is vital to the advancement of pharmacy. I would also like to thank the researchers involved in the expert advisory panel for the countless hours they dedicated to this project.

Sincerely,

John A. Gans, PharmD
Executive Vice President and Chief Executive Officer
American Pharmacists Association

Medication Therapy Management Survey Advisory Board



Jon C. Schommer, PhD
Professor
University of Minnesota
College of Pharmacy
Minneapolis, Minnesota



Lourdes G. Planas, PhD
Assistant Professor
University of Oklahoma Health
Sciences Center
College of Pharmacy
Oklahoma City, Oklahoma



**Kathleen A. Johnson, PhD,
PharmD, MPH**
Associate Professor and
Department Chair
Clinical Pharmacy and
Pharmaceutical Economics
and Policy
University of Southern California
School of Pharmacy
Los Angeles, California



William R. Doucette, PhD
Professor
Director of the Center for
Improving Medication Use
in the Community
University of Iowa
College of Pharmacy
Iowa City, Iowa

Introduction

Health care costs are on the rise in the United States, increasing 6.7% in 2006 to \$2.1 trillion, or \$7,026 per person.¹ Prescription drug costs also continue to grow, amounting to \$217 billion in 2006.¹ Health care costs are expected to escalate as the population ages and increasing numbers of Americans are diagnosed with chronic diseases that call for management with ongoing prescription therapy. Perhaps even more concerning is the amount spent on treating problems caused by the use of medications. In 2000, the most recent year for which data are available, \$177 billion was spent to treat problems caused by prescription and nonprescription medications—more than was spent on the medications themselves that year.²

Reducing the number of medication-related problems could improve patient outcomes and reduce the costs associated with treating the results of suboptimal medication use (e.g., drug interactions, adverse events, nonadherence).

Because of pharmacists' unique role as experts in medication use, combined with their ongoing contact with patients, there has been an increased awareness of pharmacists' ability to improve the use of medications. Research studies have demonstrated that when pharmacists are involved in patients' care by helping them monitor and manage their medications, improvements are reported in medication use, overall patient care, and clinical and humanistic outcomes, and overall costs to the health care system are reduced.³⁻⁷

This clinical application of the pharmacist's expertise is now commonly referred to as medication therapy management. This phrase became widely known after medication therapy management (sometimes abbreviated as MTM) was included as a required component of prescription drug plans serving the Medicare population in the Medicare Modernization Act of 2003.⁸ However, activities in which pharmacists partnered with the patient and/or caregiver to identify existing or potential drug therapy problems and work to resolve or prevent such problems have been around for decades.

The evolution of the pharmacy profession to include patient care components began in settings such as hospitals and the Veterans Health Administration, where overall health care services were (and continue to be) paid in aggregate and where these professional services were often labeled "clinical

pharmacy." Gradually, these services became integrated into the health care system by promoting the appropriate use of medications through improving patients' adherence to prescribed medications; optimizing medication therapies; and avoiding other costly health care services through the identification and resolution of drug-related problems. In such scenarios, the amount spent on prescription drugs often, but not always, increases. Despite this increase, overall costs are reduced because patients' health is improved, and fewer physician visits, emergency room (ER) visits, and initial or extended hospitalizations are required.

As the benefits that pharmacists provided in hospitals and other settings became more apparent, efforts to expand pharmacists' services into additional settings increased. Since that time, innovative programs, including Project IMPACT,⁹ the Asheville Project,⁵ the Patient Self-Management Program for Diabetes,⁶ and the Diabetes Ten City Challenge (T. Fera, PharmD, unpublished data, 2008) have demonstrated that

pharmacists in community settings also improve patient care and reduce overall health care costs. Congress recognized the value of pharmacists in a variety of settings when they included medication therapy management in Medicare

Part D, and this action stimulated efforts to expand medication therapy management programs and services to meet the needs of targeted Medicare beneficiaries.

Today, more and more programs—particularly those that consider health care costs in aggregate rather than those that focus on the costs of prescription drugs alone—are exploring opportunities to maximize the value of pharmacists to address the complex issue of medication-related problems in their covered populations. A diverse set of payers, including self-insured employer groups, commercial insurers, managed care organizations, health maintenance organizations, state Medicaid programs, and other government health programs have established medication therapy management programs. As these programs continue to demonstrate encouraging returns on investment (ROI), more payers are recognizing pharmacists' value and are beginning to experiment with strategies to assess and measure this value.

The surveys described in this digest are the first national surveys conducted to gauge progress toward widespread implementation of services and determine how both providers of and payers for these services are assessing their value.

Today, more and more programs are exploring opportunities to maximize the value of pharmacists.

Survey Methods

The American Pharmacists Association, under the direction of an independent advisory board, conducted two distinct national surveys to evaluate strategies for medication therapy management service implementation and the value of these services to pharmacist providers and payers.^{10,11} The consensus definition of medication therapy management was used in this survey (see box). The primary goals of these surveys were to determine:

- Implementation strategies that have been used for medication therapy management services.
- The value of medication therapy management services to both providers and payers.
- Specific measures, if any, that are being used to quantify the costs and benefits of medication therapy management.

Provider E-mail Survey

- The survey was distributed to 6,873 providers who were likely to be involved with pharmacist-provided medication therapy management services.
- Data were collected via a self-administered online survey e-mailed to participants.
- 687 providers responded and were included for analysis. (N values reported for individual questions may be lower due to item nonresponse.)

Payer E-mail Survey

- The survey was distributed to 1,898 individuals who were likely to be involved in their organization's payment for medication therapy management services.
- Data were collected via a self-administered online survey e-mailed to participants.
- 132 payers responded and were included for analysis. (N values reported for individual questions may be lower due to item nonresponse.)

Payer Phone Survey

- 20 respondents to the payer e-mail survey participated in a telephone interview designed to obtain additional details about payer perspectives.
- These individuals represented 18 distinct organizations (n=18; n values reported for individual questions may be lower due to item nonresponse).

Consensus Definition of Medication Therapy Management

In a consensus definition, the pharmacy profession has defined medication therapy management (MTM) to be a distinct group of services that optimize therapeutic outcomes for individual patients. MTM services are independent of, but can occur in conjunction with, the provision of a medication product. MTM encompasses a broad range of professional activities and responsibilities within the licensed pharmacist's or other qualified health care provider's scope of practice.¹²

Please note: It is acknowledged that some health plans/organizations use different terms than medication therapy management (MTM) to describe the same services as those in the definition above. Other terms readily used include drug therapy management, medication use management, among others, and for the purposes of this survey are considered synonymous with medication therapy management.

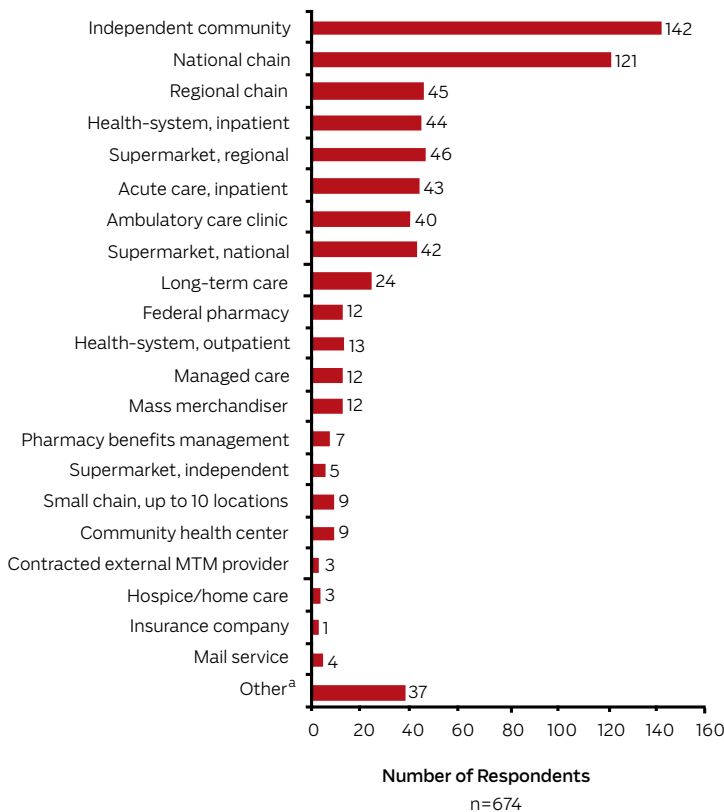
In this survey, MTM services encompass those services being provided either via face-to-face contact or telephonically by a pharmacist or other qualified health care professional, but do not include mailings to members.

Provider Survey Findings

Provider Characteristics

A total of 687 individuals responded to the survey and were included in the analysis. Survey respondents represented a diverse set of organizations and patient care settings, with the greatest representation from independent and chain pharmacies.

Patient Care Settings Represented in the Provider Survey



^a Other organization classifications included: compounding/intravenous specialty, consulting, outreach programs, physician office, specialty clinic, and university.

Survey respondents represented a diverse set of organizations and patient care settings.

Survey respondents included individuals involved with providing services themselves as well as those in management positions.

Provider Job Titles



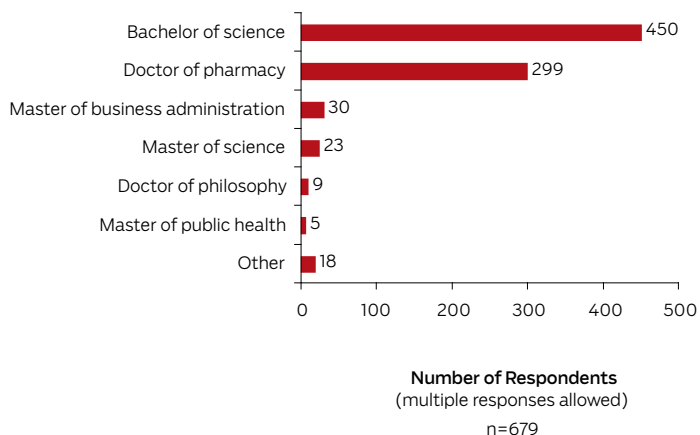
Survey respondents were fairly well distributed by geographic region.

Geographic Regions Where Respondents Provide Services



Most survey respondents hold bachelor of science in pharmacy degrees and/or doctor of pharmacy degrees. The majority do not have additional specialized training (e.g., residencies, certified diabetes educator training).

Academic Degrees Held by Survey Respondents



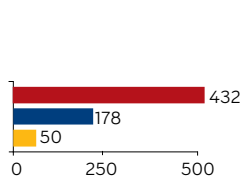
Providers Offering Medication Therapy Management Services

A large percentage of survey respondents (63%, n = 432) reported that they provided medication therapy management services in 2007, as defined in the consensus definition. This percentage is larger than results seen in other published surveys, but was expected because the survey population was drawn from a pool of providers who were likely to be engaged in medication therapy management.

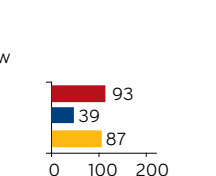
Many of those who answered “no” to whether they currently or planned to provide medication therapy management services stated that they were performing other services that did not fit the definition used in the survey and/or they had plans to implement in 2008 or were considering implementing services.

Current and Planned Medication Therapy Management Service Provision Reported by Providers

Are you currently offering services as defined in the consensus definition?



Are you considering offering consensus definition services?



To Implement or Not to Implement?

Respondents who were providing medication therapy management rated the importance of a number of factors influencing their decision to implement the service. Likewise, those not providing services also rated a number of reasons for this decision.

Among those *not* providing services, there were a few significant distinctions:

- Compared with respondents in independent community/ small chain or inpatient settings, those working in large chain settings reported the following as more significant in preventing them from providing medication therapy management:
 - “Inadequate training/experience”
 - “Inadequate space available”
- Work position (i.e., management compared with staff) did not significantly affect responses to any of these factors, however:
 - A few individual staff pharmacists reported that they were interested in pursuing the implementation of medication therapy management services but were not getting the managerial support needed to move services forward.

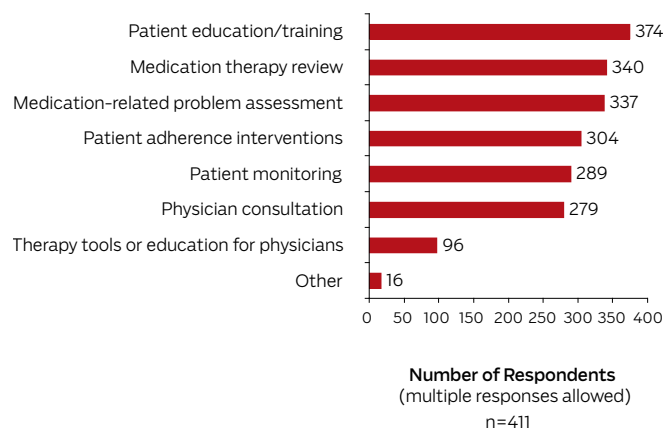
Those not currently providing services anticipated that implementing services would yield several benefits, including increases in the following:

- Professional satisfaction
- Quality of care
- Patient satisfaction

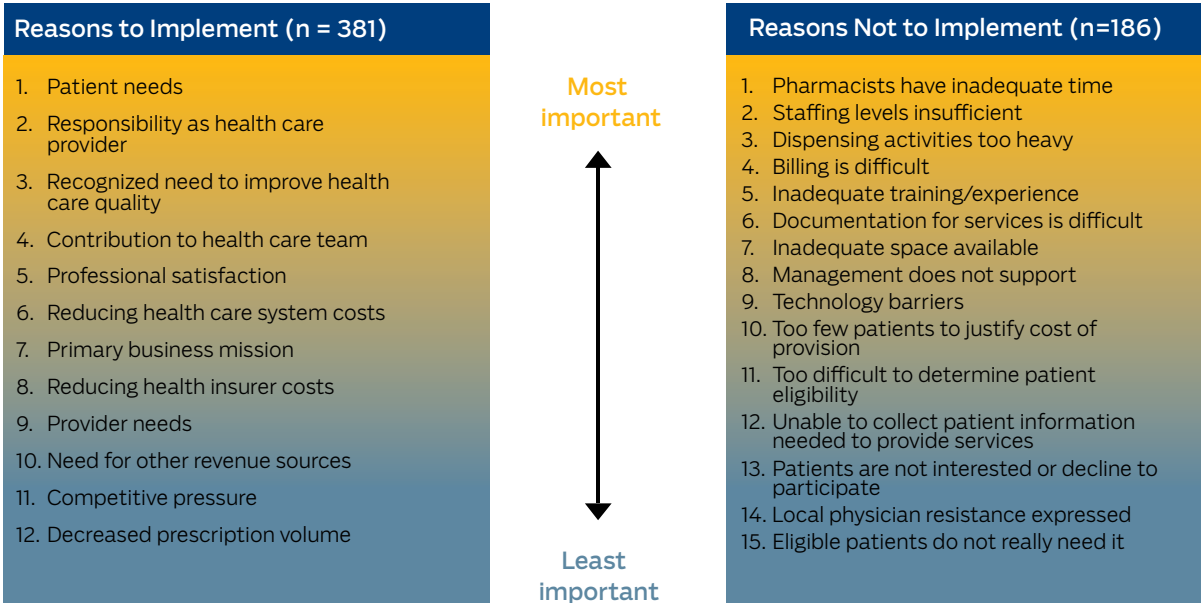
Services Provided

Survey respondents providing medication therapy management reported performing a variety of associated activities for a diverse array of patients.

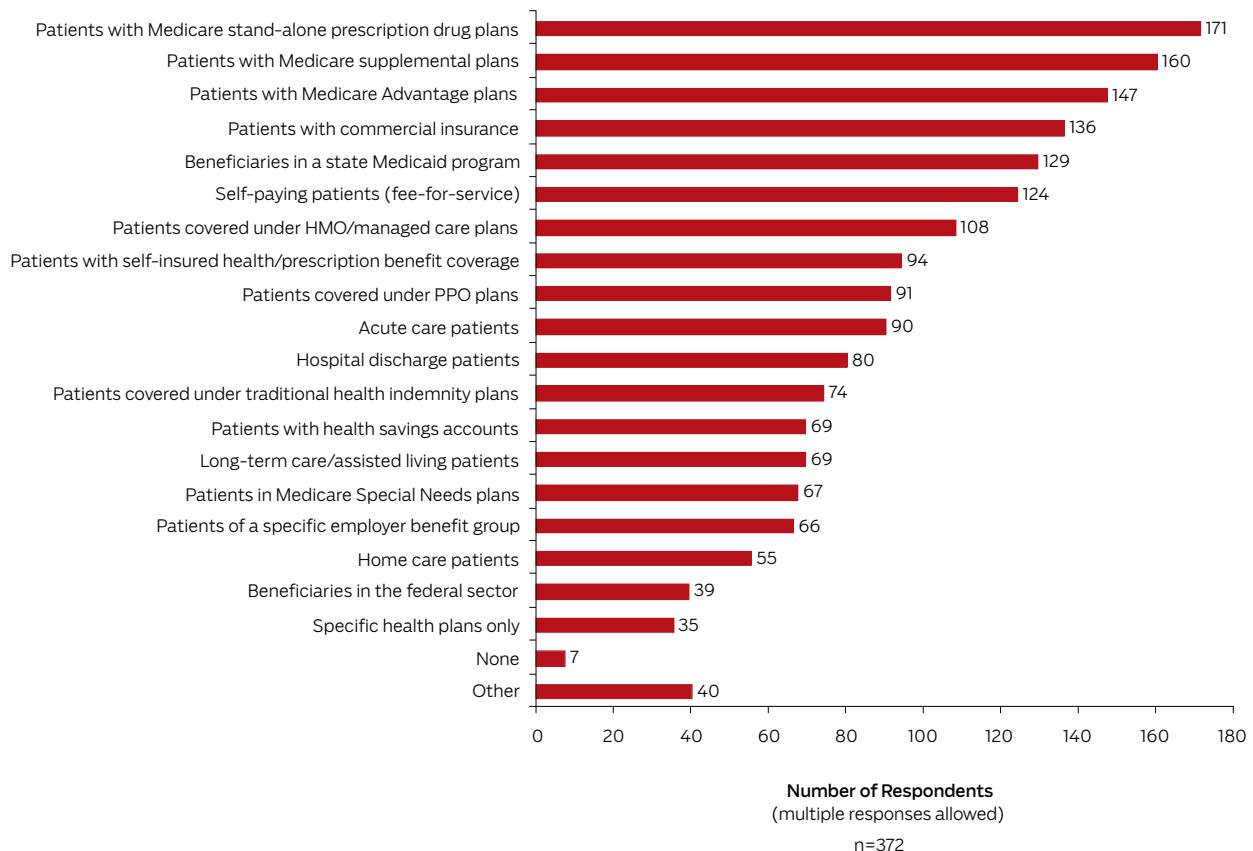
Medication Therapy Management Services Provided by Survey Respondents



Factors Influencing the Decision to Implement Services



Patient Populations Receiving Medication Therapy Management Services From Survey Respondents



HMO = health maintenance organization; PPO = preferred provider organization.

Identifying Patients

Respondents who provided medication therapy management used several strategies to identify patients for their services. Half (50%) identified patients themselves, while 41% relied on others (9% of respondents did not know).

Provider-Reported Methods for Identifying Patients for Medication Therapy Management

Category	Strategies
Providers relying on others to identify patients	<ul style="list-style-type: none"> ■ Referrals from: <ul style="list-style-type: none"> □ Health plans □ Part D plans □ Employer groups □ Other professionals ■ Patient self-referral ■ Chance
Providers identifying patients themselves	<ul style="list-style-type: none"> ■ Number of medications taken ■ Specific medications ■ Number of disease states ■ Specific disease states ■ Specific health plan ■ Specific drug spend ■ Emergency room or hospital discharges ■ Suspected adverse drug reaction ■ History of nonadherence ■ Suspected medication-related problem

Marketing Services

Many respondents (49%) were actively involved in marketing efforts. Services were reported to be marketed to the following groups of payers (n=369):

- Commercial insurance plans
- Medicare supplement plans
- Medicare Advantage plans
- Medicare stand-alone prescription drug plans
- Managed care plans
- Preferred provider organizations
- Health indemnity plans
- Self-insured employer groups
- Home care/hospice facilities
- Long-term care facilities
- Federal government entitlements
- State Medicaid programs

Providers used widely varying strategies ranging from marketing to any person who might benefit from their services to marketing only to a limited group (e.g., a company's employees who have diabetes). In general, providers planned to expand their marketing efforts in 2008. Several respondents also noted that marketing activities often were coordinated only at the corporate office level with none occurring at the individual pharmacy level.

Financial Aspects of Services

Few providers were able to supply detailed financial information about their medication therapy management services. However, those who did provided interesting insights.

COSTS ASSOCIATED WITH IMPLEMENTING THE SERVICE

Respondents reported the greatest costs associated with implementing medication therapy management services were for staff training or expansion. Other reported costs were remodeling facilities, installing technology, and purchasing supplies and equipment.

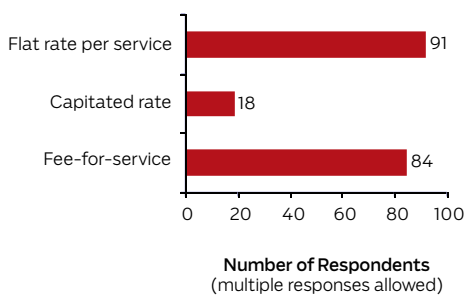
The majority of respondents were not able to state the amount invested to provide services. Only 4 of 289 individuals who answered the question gave a specific dollar amount. Likewise, the overwhelming majority of respondents were unable to quantify the monthly revenue generated from medication therapy management. The 8 respondents who were able to provide an answer, reported amounts ranging from a loss of \$1,500 to a profit of \$1,500 per month per location.

BILLING FOR SERVICES

Providers billed for services using a variety of methods, including time, type of service, and level of complexity, and different combinations of these methods.

- Time was mentioned alone or in combination with other methods by 74% of respondents.
- Type of service was mentioned alone or in combination with other methods by 61% of respondents.
- Level of complexity was mentioned alone or in combination with other methods by 34% of respondents.

Billing Methods Reported by Survey Respondents



When those who used a fee-for-service basis for billing were asked about their average rate, almost all of the respondents reported that they did not know. As of December 2007, when the provider survey was conducted, the 19 respondents who provided an answer reported fees ranging from \$1 to \$3 per minute (\$60 to \$180 per hour).

Pharmacists reported fees ranging from \$1 to \$3 per minute.

COMPENSATION RECEIVED BY PHARMACISTS

Pharmacists reported being compensated for providing services using a variety of strategies, the most common of which was that payment was part of their salary. (This response includes those pharmacists whose primary job function was to provide these services as well as those who provide services in addition to other duties, such as dispensing.)

Reported Methods of Pharmacist Compensation for Providing Medication Therapy Management Services



Specific responses given by providers included:

- “Pharmacists apply specifically for [the] MTM position, so these services are part of the position description.”
- “I meet with my patients sometimes on company time and sometimes on days off. I am only paid my regular salary. All the time I spend charting and preparing is on my time.”
- “If pharmacist[s] received bonuses for doing MTM, we’d probably have more participation.”

Several respondents who were in management indicated that they would like to provide additional compensation to pharmacists who provide medication therapy management services, but that payers would need to increase their rates to make this a reality.

Qualifying the Value

Although the majority of respondents were unable to report specific numerical descriptions of the value of medication therapy management services, many did report value:

- “Increased patient satisfaction—patients referring their friends [to] our pharmacy due to our above-the-rest care.”
- “Increased professional exposure in surrounding senior communities, by showing the value of pharmacist-patient MTM.”
- “Patient satisfaction surveys—95% agree or strongly agree that these services are beneficial.”
- “Patients are appreciative of MTM services and this does develop customer loyalty.”
- “Patient trust and rapport with pharmacist.”
- “My pharmacists have enjoyed adding this to their practice and my patients have seen value in the added service.”

On the other hand, some respondents reported that their services were not developed enough to measure value:

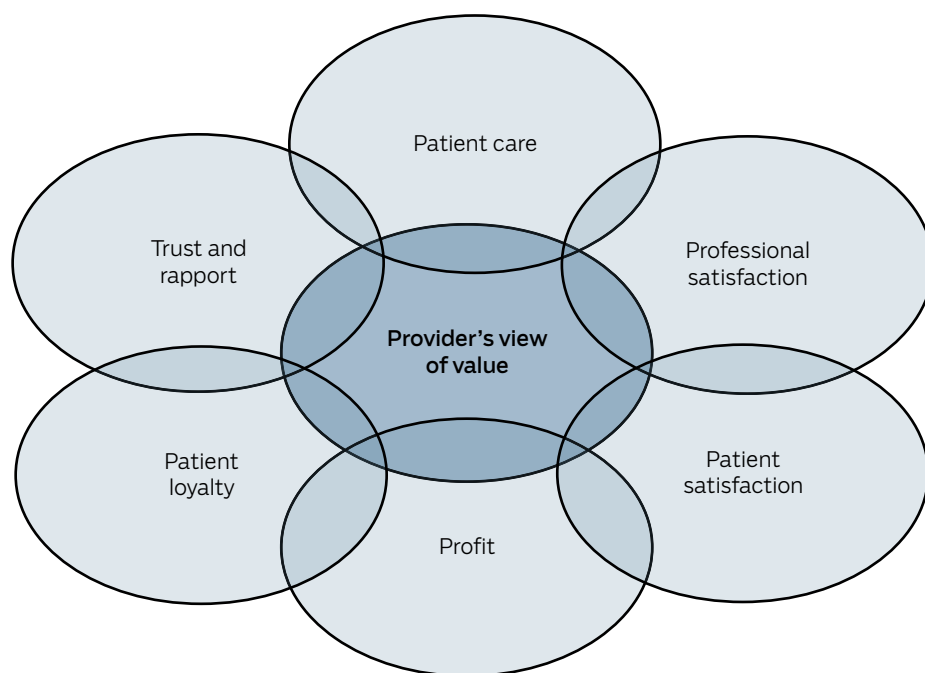
- “This is in the early stages and hard to say what the impact is.”
- “This is new for us. Just starting program.”
- “Since we are so early in our development, it’s difficult to estimate benefit at this time.”
- “We need to solve this for 2008.”

Evaluating Services

Among medication therapy management providers, 30% reported that they were able to identify and demonstrate improvement on specific quality measures, including clinical, financial, humanistic, and process measures.

Provider-Reported Improvements With Medication Therapy Management

Type of Measure	Specific Measures
Clinical	<ul style="list-style-type: none"> ■ Adherence ■ A1c ■ Blood pressure ■ Lipid profile ■ Weight control ■ Adverse drug reactions ■ Smoking cessation ■ Pain management ■ Diabetes management
Financial	<ul style="list-style-type: none"> ■ Absenteeism ■ Cost of medications ■ Overall health care costs ■ Cost savings ■ Hospitalizations ■ Length of stay in health facilities ■ Profit increase
Humanistic	<ul style="list-style-type: none"> ■ Patient satisfaction ■ Professional satisfaction
Process/Other	<ul style="list-style-type: none"> ■ Number of drug-related problems identified ■ Number of interventions provided ■ Inappropriate therapy identified ■ Wait times in pharmacy ■ Nurse/physician/patient education



Provider Profile: LeAnn Causey Boyd



LeAnn Causey Boyd, PharmD, BCPS, CDM, CDE, is Director of Clinical Services at Causey's Pharmacy in Natchitoches, Louisiana. She has been an innovative leader in providing medication therapy management services since taking on this role.

Dr. Boyd became interested in providing medication therapy management services as a student pharmacist. "I discovered the impact of clinical pharmacy services during a rotation," she recounts. She pursued her interest in clinical services with a residency in a pharmaceutical care clinic. "After that experience, I knew that I wanted to provide patient-focused services after finishing school," she explains.

When she graduated, opportunities to provide medication therapy management services were limited, but Dr. Boyd was persistent in pursuing all available options to make medication therapy management services financially viable. She began by offering diabetes education services and then steadily expanded the services offered.

Today, she is one of two pharmacists who provide medication therapy management services at Causey's Pharmacy, out of a staff of six pharmacists. Services provided include comprehensive medication therapy reviews, patient education, consultation with the patient's health care team, and ongoing follow-up. In addition, the pharmacy has a diabetes self-management education program, which includes an initial assessment, four group classes, and a consultation with a dietitian. Approximately 200 patients enrolled in Medicare Part D currently receive medication therapy management in the pharmacy, and over 600 patients have participated in the pharmacy's patient care programs.

Dr. Boyd is also involved in several innovative programs that expand the reach of medication therapy management services. She was instrumental in creating a network of pharmacists who provide medication therapy management services for other pharmacies that have not yet established their own programs. This network began in 2007 and includes 15 pharmacists who provide services to approximately 100 pharmacies.

The patients who receive these services are identified by their insurer (currently a Medicare Part D program), explains Dr. Boyd. "Patients are really grateful for the convenience of receiving medication therapy management services without having to travel to another pharmacy, and it helps the pharmacies involved take the first step toward incorporating medication therapy management services into their own practice models," she continues.

Dr. Boyd has also provided medication therapy management services at employer sites since 2002, and has contracts with 5 employers. There are currently 270 patients enrolled in these services; patients are tracked and followed as their medical conditions require. In addition, every patient in the program participates in an annual comprehensive medication review to identify any emerging issues and monitor ongoing ones.

She has tracked clinical outcomes and ROI for the employers. "The greatest annual ROI that we've had for an employer was 4.59:1, and their ROI for 2007 was 2.56:1," reports Dr. Boyd. "This shows that we were able to demonstrate both initial and sustained value for the MTM services," she continues.

Other services provided on-site to employers include wellness and screening programs as well as weight loss programs. "These programs have been very popular with employer groups," Dr. Boyd observes.

Dr. Boyd's advice for other pharmacists who want to provide medication therapy management? "Today, in 2008, there are many potential revenue streams for pharmacists who want to provide MTM services. They could work to contract with existing payers who offer MTM programs, or they could seek out innovative employers who are interested in improving the value of the health care services they offer to their employees," she notes. Regardless of the path, Dr. Boyd recommends that pharmacists aim to partner with other individuals who share the same goals and want to work together to move medication therapy management services forward.

Payer Survey Findings

Payer Characteristics

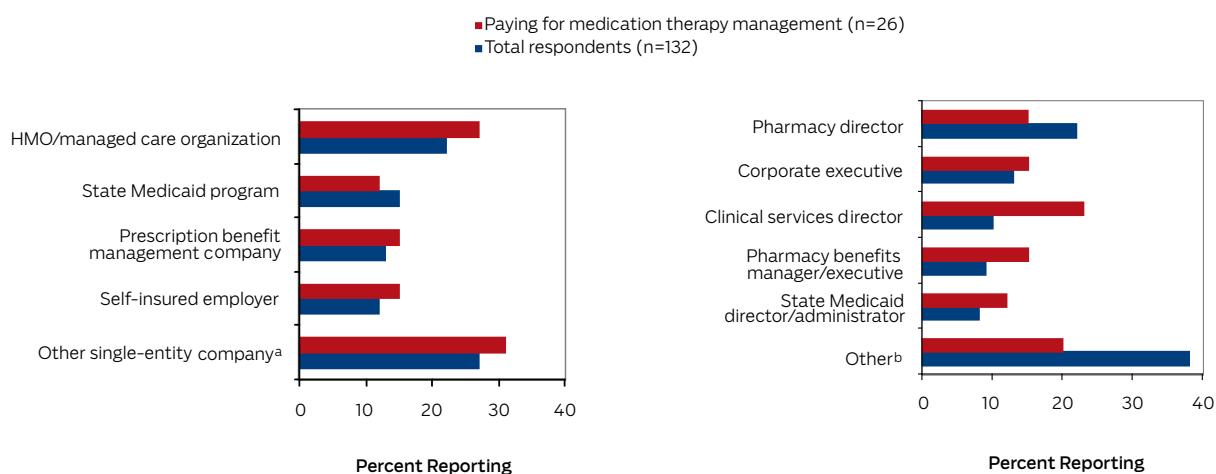
Payers who responded to the e-mail survey held a diverse set of positions and represented a variety of organizations.

Of the 132 respondents to the organization classification and job title question, 26 (20%) reported that they offered medication therapy management services, as described in the consensus definition, to their members. The information presented here reflects a combination of information from these 26 respondents

and the 20 individuals who participated in the phone surveys. (There was overlap between these two groups; however, the extent of overlap is unknown due to survey confidentiality.)

E-mail survey respondents represented organizations with a wide range of covered lives, which were reported to range from 0 to 12 million. The mean number of covered lives was 997,623, and the median as 20,000. (However, not all covered lives were individuals eligible for medication therapy management services.)

Payer Organization Classification and Job Titles in the Payer E-mail Survey



^a Other organization classifications included: academia, behavior change company, consulting organization, distribution and software development, medication therapy management contract vendor company, program evaluation research company, quality improvement organization.

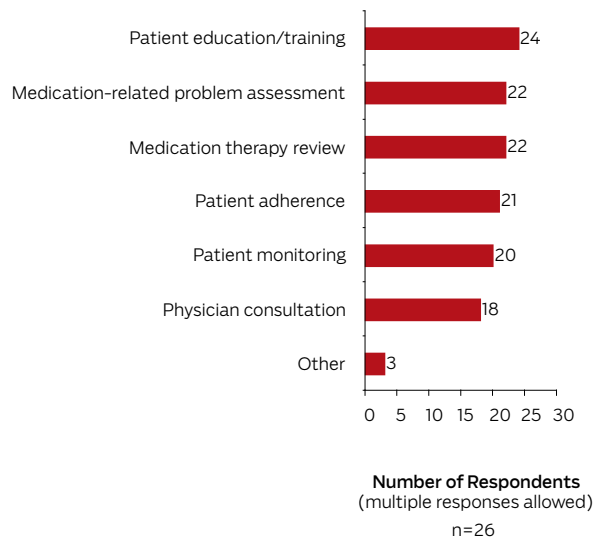
^b Other job titles included: clinical pharmacist, compliance/regulatory, quality management, provider network manager, marketing manager, medication therapy management specialist, pharmacist, project consultant.

**Payers held a diverse set of positions
and represented a variety of
organizations.**

Services Provided

Payer organizations provided multiple types of medication therapy management services and programs for their enrollees.

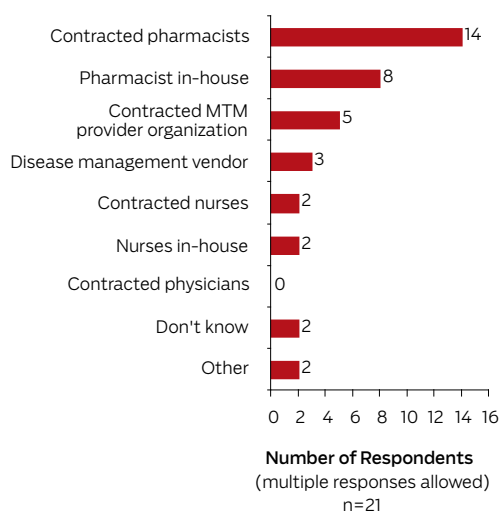
Services Included in Medication Therapy Management Programs in the Payer E-mail Survey



Provider Selection by Payers

E-mail survey participants were asked who they contract with to provide medication therapy management services. Respondents recognized the value of pharmacists for providing medication therapy management services in their contracting arrangements, and contracted primarily with pharmacists.

Providers Utilized for Service Delivery in the Payer E-mail Survey



MTM = medication therapy management.

In the phone survey, reasons given for selecting pharmacists as the providers of medication therapy management included:

- Training
- Expertise
- Availability
- Cost

Contract and Billing Details

Of the 14 respondents asked about contract details during the phone survey, which was conducted in December 2007, only 7 respondents provided information. Five of 7 respondents reported having a fee-for-service contract with providers.

Fees varied by organization:

- \$90.50 per encounter (state Medicaid program)
- \$86 per encounter (program administrator/contract vendor)
- \$70 per initial encounter and \$20–\$60 per follow-up encounters (self-insured employer)
- \$50.57 per initial encounter, \$34.35 for follow-up encounter, \$24.74 for additional follow-up time (insurer of children)
- \$2.00 per minute flat fee (2 of 7 respondents)

Respondents reported that in most cases provider fees are determined by a combination of factors: time, level of complexity, and/or type of service.

Claims Processing

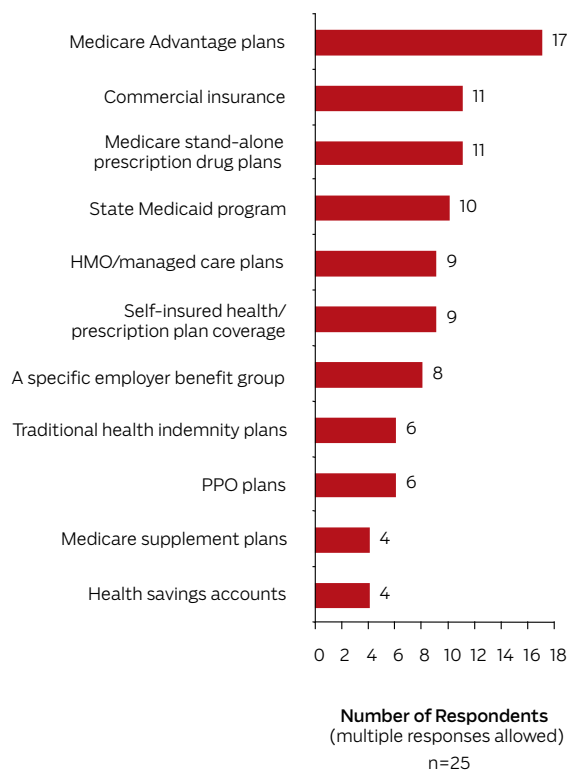
- Half of phone survey respondents reported using Current Procedural Terminology (CPT) codes for claims processing; 5 provided the CPT codes used by their organization.
 - 4 of these 5 reported using the medication therapy management CPT codes 99605, 99606, and 99607 (formerly 0115T, 0116T, and 0117T when the survey was conducted).
 - 1 respondent reported using the CPT codes 99211, 99212, 99213.

Payers primarily contracted with pharmacists to provide medication therapy management.

Member Eligibility for Services

Medication therapy management services were not limited to patients enrolled in Medicare Part D, but were provided to members with a diverse set of third-party payers.

Populations Eligible for Services in the Payer E-mail Survey: Coverage Type

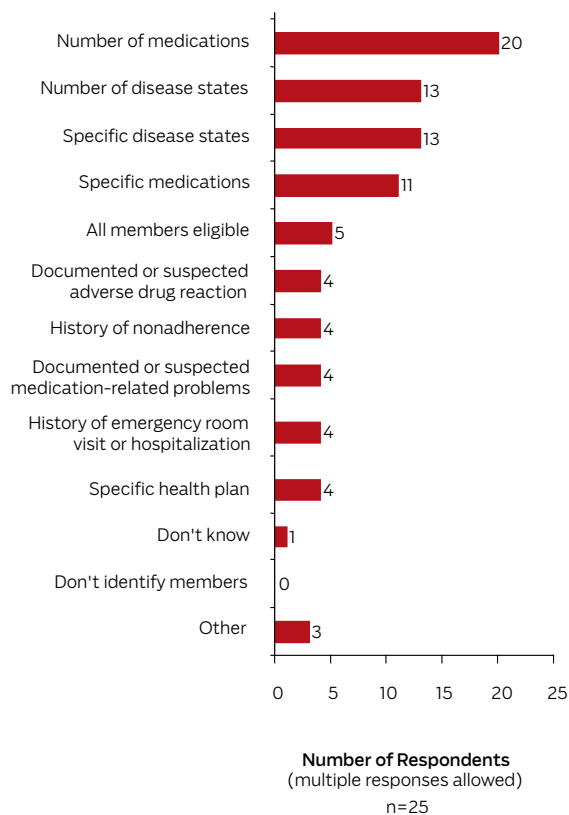


HMO = health maintenance organization; PPO = preferred provider organization.

Within these populations, payers used several criteria to identify patients who qualify for services.

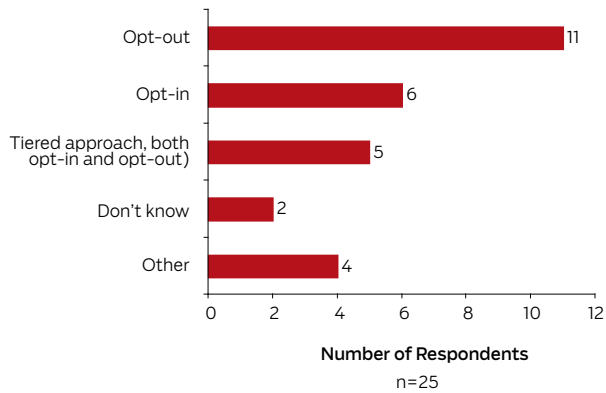
Some respondents provided additional comments, such as “all members are eligible” and “varies, depending on program administered.”

Criteria Used to Determine Eligibility for Services in the Payer E-mail Survey: Patient Characteristics



Respondents also used different strategies for patient enrollment in medication therapy management services.

Enrollment Strategies Reported in the Payer E-mail Survey

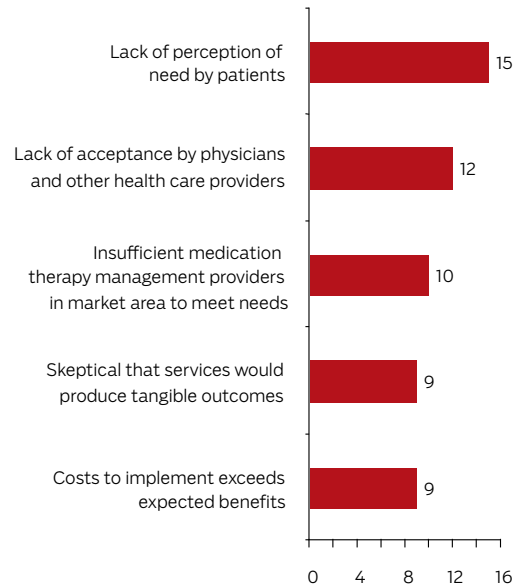


Barriers to Service Implementation

Respondents to the phone interview reported that the primary barrier to providing medication therapy management services was the lack of a perception of need by patients.

The most frequently reported barrier was patients' lack of perception of need.

Potential Barriers to Offering Medication Therapy Management Services Reported in the Payer Phone Survey



Number of Respondents Listing Barrier (multiple responses allowed)
n=18

Patient-related barriers reported by payers during the phone survey included:

- Patients mistake medication therapy management calls for sales calls.
- Patients are confused when pharmacist and physician provide conflicting recommendations.
- Patients do not understand the importance of medication therapy management services.

Regarding physicians, some payers indicated that physicians are skeptical of therapeutic recommendations made by pharmacists.³

Interestingly, the third most common barrier was that there were insufficient medication therapy management providers in the market area to meet needs.

³Other research indicates that patients who receive medication therapy management services from a pharmacist have increased satisfaction with their physicians, compared with patients not receiving such services.¹³

Defining the Value of Services

Payers in both the e-mail and phone surveys described using a number of criteria to determine the “value” associated with their programs. Responses included the following:

- “Reducing overall health care expenses, preventing adverse drug-related problems, reduced hospitalizations and ER visits, improved QOL [quality of life].”
- “Our members are dual-eligible. The value our plan derives from this program is better patient communication, better drug adherence, and less use of the medical side of the insurance.”
- “Providing a safe, high-quality, and clinically appropriate Part D program that keeps medications affordable and accessible.”
- “Coordinated and collaborative care with the patient’s physician.”
- “ROI.”
- “Value reduces the members’ costs as well as the organization’s. It also assists the member with adherence and safety.”

Interestingly, one respondent reported a lack of value seen providing medication therapy management through phone consultations:

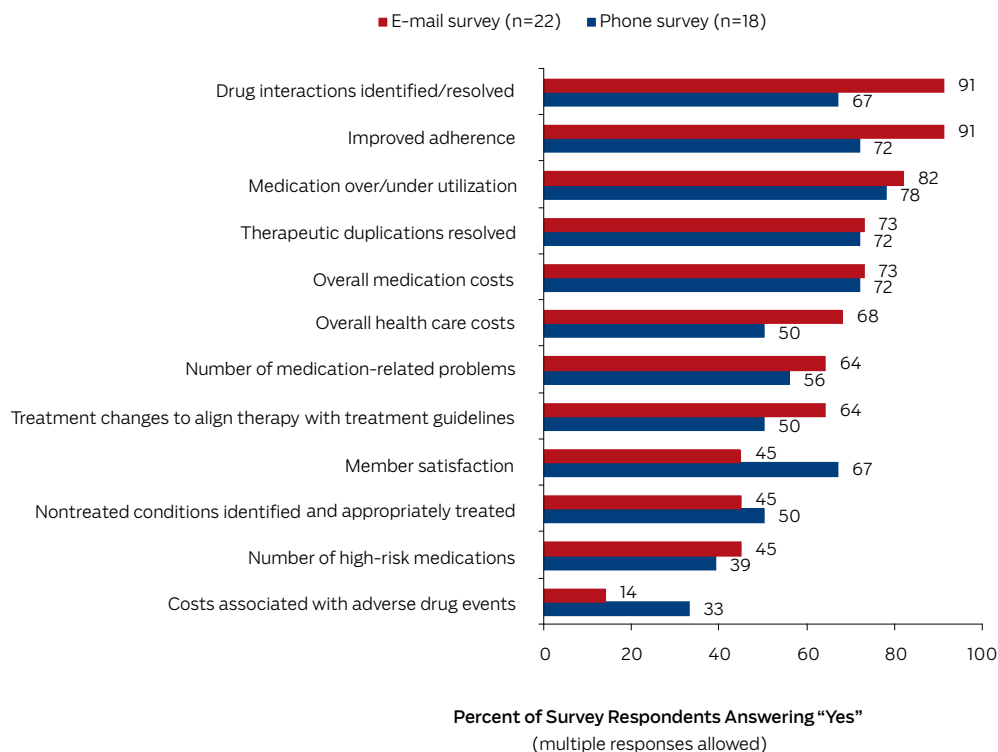
- “At this moment, we do not see any value since the interventions are by phone and the PBM [pharmacy benefits manager] did not provide detail data. Next year, we are contracting a local vendor for face-to-face interventions that will provide better outcomes.”

One payer reported plans to implement face-to-face interventions with a pharmacist with the expectation that this would “provide better outcomes” than phone consultations.

Criteria Measured by Payers

Respondents to both the e-mail survey and phone interviews reported using a variety of criteria to measure the benefits of medication therapy management services.

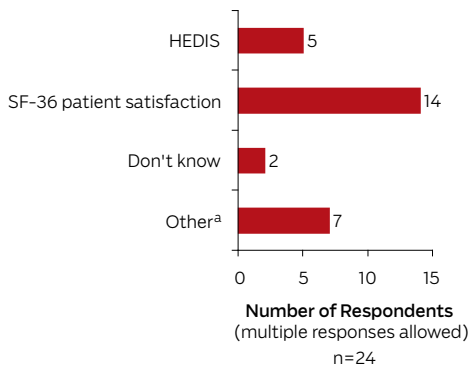
Types of Outcomes Used by Payers to Measure Benefits of Medication Therapy Management



Demonstrated Benefits

In the e-mail survey, most respondents did not have information about the impact of medication therapy management on quality indicators. However, a few reported that they had demonstrated a positive impact.

Health Care Quality Measures Improved by Medication Therapy Management in the Payer E-mail Survey



HEDIS = Healthcare Effectiveness Data Information Set;
SF-36 = Short Form-36 Health Survey.

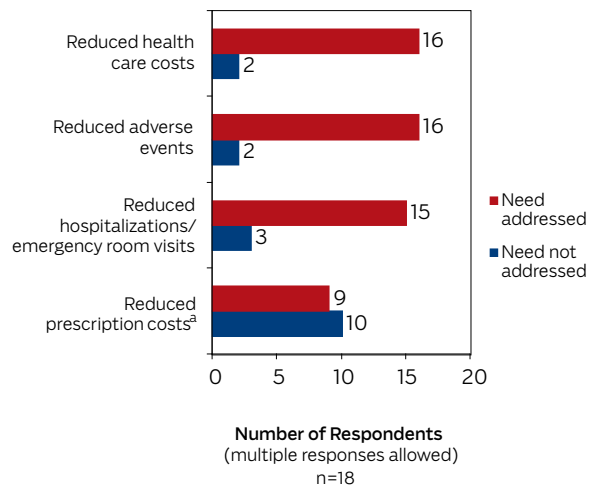
^aOther indicators included: the Short Form-8 Health Survey, the number of patients achieving the intended goals of therapy, and measures that were developed internally.

Patient + MTM = Improved HEDIS

Phone survey participants provided additional information about the impact of medication therapy management services on outcomes:

- 7 of 14 reported that they routinely track outcomes of medication-related problems.
- Companies that track outcomes reported savings on avoided hospitalizations, long-term care, home visits, prescription medications, office visits, specialty visits, and ER visits.
- In general, phone survey participants felt that medication therapy management services were meeting their organizations' needs.
 - About half reported that prescription drug costs were not reduced, but overall health care costs were.

Organization Needs Addressed by Medication Therapy Management Services in the Payer Phone Survey



^aOne respondent indicated that medication therapy management can impact prescription costs in both directions—increase cost because of better compliance or decrease cost because of increased use of low-cost alternatives.

Calculating Return on Investment

Ten respondents to the e-mail survey who provided services reported that their organization calculated an ROI for their programs. Seven respondents replied that their organizations do not calculate ROI, and seven reported that they did not know.

Seven e-mail survey respondents reported ROIs ranging from 2:1 to 12:1 with a median of 3:1. Similar data were reported in the phone survey.

Methods for calculating ROI in both surveys included:

- Pre/post models—change in costs/clinical outcomes before and after participation.
- Control group models—comparison of costs/outcomes between participants and nonparticipants.
- Cost avoidance models—estimate of costs avoided because of services.

ACTUAL SAVINGS

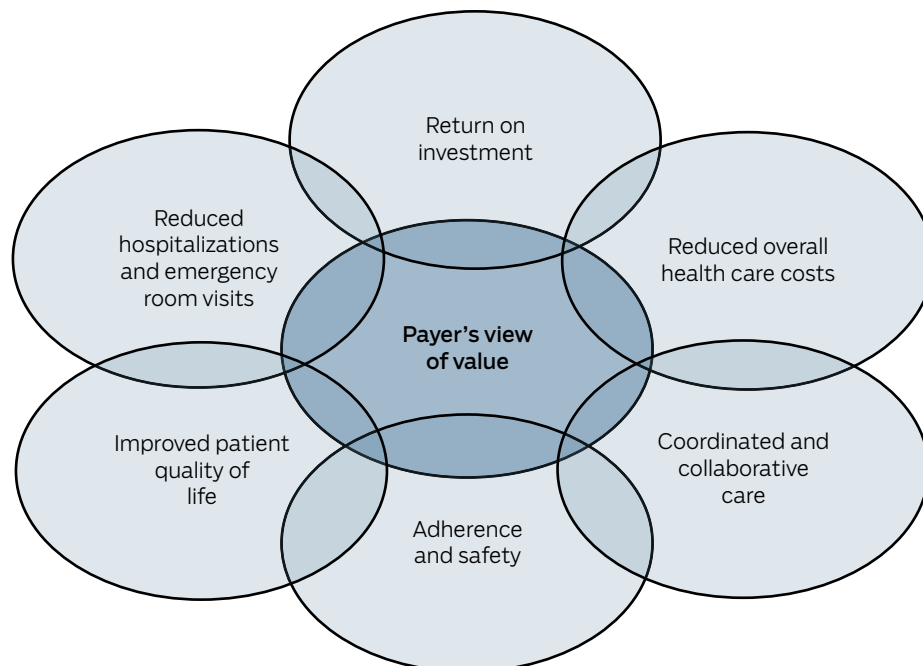
A few of the phone survey respondents were able to provide their actual amount saved with the program. These responses included:

- \$700,000 per year for 200 patients (insurer/medication therapy management contract vendor).
- \$4.5 million per year (self-insured employer).

The median ROI calculated by payers for medication therapy management services was 3:1.

Those who did not report ROIs commented that:

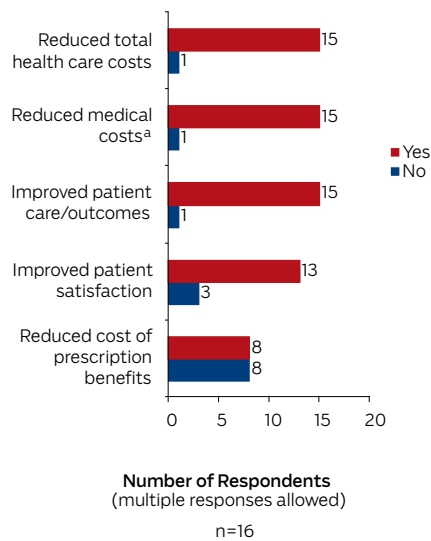
- The analysis was too complex for an evaluation.
- Participation in medication therapy management programs was too small for conducting the evaluation.
- They were not ready to publicly report their findings.



Predictions and Plans for the Future

In the phone survey, nearly all respondents were optimistic about the future of medication therapy management. In general, they expected medication therapy management services would reduce total health care costs and improve patient satisfaction and patient outcomes. Although respondents expected overall costs to decrease, expectations for the impact on the costs of prescription drugs were mixed.

Anticipated Impact of Medication Therapy Management on Future Outcomes Reported in the Payer Phone Survey



^aMedical costs include those for hospitalizations, emergency room visits, and physician visits.

Several respondents anticipated that prescription costs may actually increase rather than decrease, because of improved adherence rates. However, respondents noted that this increase would be offset by the decrease in other health care costs.

Payers anticipate that increased costs for prescription medications would be offset by reductions in other health care costs.

Some respondents noted that they intended to make their program offerings more robust. Most of the planned adjustments would increase the involvement of pharmacists and face-to-face interventions. Individual responses included:

- Plans to contract with a local vendor for face-to-face interventions that would “provide better outcomes.”
- Benefit design changes will be targeted to best practices and will use medical evidence to target interventions.
- Plans to implement programs using pharmacists and then provide information about their experiences to the government entitlements they service, even though the entitlements do not require sophisticated programs at this time.

Payer Profile: Mary Beth Reinke



In April 2006, the state of Minnesota began paying qualified pharmacists to provide medication therapy management services to patients enrolled in the state's Medicaid programs. The medication therapy management program was developed with input from an advisory committee representing pharmacy groups and other stakeholders.

The impact of the medication therapy management program has recently been evaluated, as required by the state legislature¹⁴. One of the important parameters included in the analysis is the impact on clinical outcomes. "We are going to be carefully looking at how well this program helps patients achieve quality of care goals that have been established for the state of Minnesota," explains Mary Beth Reinke, PharmD, MSA, Drug Utilization Review Coordinator for the Minnesota Medicaid Program.

The program includes several robust components of medication therapy management services, including its requirements for providers and patients in the program as well as the structure of services themselves.

To qualify to provide services, pharmacists must meet several criteria, including:

- Practicing in a pharmacy or ambulatory care setting as part of a multidisciplinary team.
- Having a structured patient care process that allows for patient assessment and development of a care plan.
- Having an electronic documentation system specifically designed to optimize therapeutic outcomes.
- Meeting requirements for privacy and space.

In the first year, the 34 pharmacists who were enrolled in the program treated 259 patients. Fully 97% of the patients in this initial group were under 65 years of age. Pharmacists identified and resolved 789 drug therapy problems during 431 encounters. Today, the number of pharmacists who provide services is over 100. "During the first year, most pharmacists were readily able to implement the service, although this may be because many of first-year implementers had already established MTM programs or other forms of patient care services," observes Dr. Reinke. Pharmacists bill for services using their National Provider Identifier number and CPT codes specific to medication therapy management provided by pharmacists. Reimbursement is based on a relative value system that considers the patient's number of disease conditions, the number of medications, and the number of drug therapy problems detected.

To be eligible for the service, patients must be taking four or more prescription medications to treat or prevent two or more chronic medical conditions. The state does not require any specific disease states for patients to

Payer Profile: Mary Beth Reinke (continued)

qualify for medication therapy management services. “Because it [the program] is not limited to specific disease states, a larger number of recipients may benefit from [medication therapy management services],” notes Dr. Reinke.

Patients are identified for the services by their pharmacist. “Because specific chronic medical conditions are not specified by the statute, [medication therapy management] pharmacists may identify appropriate patients and offer their service to them,” explains Dr. Reinke.

Services must be provided during a face-to-face encounter. Pharmacists perform a variety of medication therapy management activities during these visits, including:

- Conducting comprehensive medication therapy reviews to identify, resolve, and prevent medication-related problems.
- Providing patient education to support appropriate medication use and monitor and evaluate the patient’s response to therapy.
- Coordinating and integrating the medication therapy management services within the broader health care management services being provided to the patient.

“The requirement that services be provided in a face-to-face environment with a pharmacist is one of the most valuable features of the program,” remarks Dr. Reinke. “This setting allows pharmacists to develop better relationships with their patients, and allows them to better identify and solve drug-related problems,” she explains.

The services provided are evaluated according to both clinical and financial goals. Among 41 patients with diabetes, 36% of those enrolled in the program achieved all optimal care benchmark standards, compared with a statewide average of 6%.

Another essential feature is the program’s support of interdisciplinary communication among pharmacists and the patient’s entire health care team. “This program can enhance overall quality of care by helping to ensure that the patient’s primary care provider has comprehensive information about the patient’s medication therapy and potential MTM issues,” notes Dr. Reinke. “This program demonstrates how pharmacist expertise fits into the medical home concept of patient care, and that is really exciting to see,” she comments.

Looking forward, Dr. Reinke notes, “We are very supportive of continuing high quality interactions between pharmacists and patients. In addition, we aim to integrate [medication therapy management] findings with patients’ medical records and enhance prescribers’ response to and resolution of detected medication therapy management issues. We anticipate that this may provide better quality of care and improved clinical outcomes.”

Patient Perspectives: A Look at Other Research

The findings from the surveys reported in this digest indicate that patients' lack of awareness of the potential benefits from medication therapy management represents an important barrier to service implementation. A review of data from previously conducted patient surveys provide additional insights on this issue. These patient surveys revealed the following:

- *Patients value obtaining medication-related information from pharmacists.*¹⁵
 - 2005 survey (prior to the implementation of Medicare payment for medication therapy management services).
 - 1,086 individuals 65 years of age and older who were enrolled in Medicare.
 - Patients had a favorable opinion of pharmacists providing medication therapy management services.

- *Patients are generally unaware of medication therapy management services and do not understand how they could benefit from these services* (A.V. Law, BPharm, PhD, unpublished data, 2007).
 - February/March 2007 survey (after implementation of Medicare Part D coverage of medication therapy management services).
 - 504 Medicare enrollees in California.
 - Over 70% felt that their pharmacists could help them manage their medications, but these results were not as favorable as for more established activities such as counseling at the time of dispensing.
 - 92.5% had not heard of medication therapy management.
 - After reading a description of medication therapy management services, most (70%) did not think they needed it.

Overall, these results indicate that although patients thought pharmacists were capable of providing medication therapy management services, most did not perceive a need for it.

Patient's Perception of Medication Therapy Management (n=504)

Statement	Answer	Frequency (%)
Have you heard of the term MTM or medication therapy management before today?	Yes	7.5
	No	92.5
Do you think you fall into the group that needs medication therapy management, as defined?	Yes	7.3
	No	69.8
	Maybe	17.1
	Don't know	5.8
Do you think you will benefit from medication therapy management services?	Yes, a lot	2.0
	Yes, somewhat	19.0
	No	37.3
	Don't know/Not sure	41.7

Source: A.V. Law, BPharm, PhD, unpublished data, 2007.

■ Patients with prior exposure to practices where medication therapy management was provided by pharmacists have a more favorable opinion of such services.¹⁶

- 2006 survey distributed at four pharmacies in Maryland and Delaware, two of which had pharmacy patient care centers.
- 81 respondents 18 years of age and older.
- 40% were aware of medication therapy management services.
- These respondents felt that the services were important, and many had received the services themselves.

Respondents' Beliefs and Experiences Regarding Components of Medication Therapy Management (n=81)

Service Component	Think It Is Somewhat or Very Important (%)	Have Received Service Component (%)
Medication therapy review	90	20
Personal medication record	95	22
Medication action plan	91	14
Advice or recommendations about medication	99	77
Recommendation/referral to another health care provider	80	20

Source: Reference 16.

Respondents were also questioned regarding any concerns they had about receiving medication therapy management services, revealing the following:

- The greatest concern was the confidentiality and privacy of the service.
- Other concerns included collaboration with physicians, resources and training of the pharmacist, and the time involved.¹⁶

In summary, these data suggest that increasing patient awareness about medication therapy management may increase their appreciation of, and desire for, these services.

Summary of Key Provider and Payer Findings

These two national surveys have provided information about both strategies for medication therapy management service implementation and the value of medication therapy management services to pharmacist providers and payers for these services. Although these surveys were not conducted in a random fashion, which limits the ability to extrapolate the findings, they do provide interesting insights about the early implementation of medication therapy management and the development of these services in the United States.

Impressive diversity was noted in many aspects of services. There was substantial diversity among service providers, patient populations receiving services, and payers for these services. Among providers not performing medication therapy management services, as defined in the consensus definition, many either provided different services (i.e., those not included in the consensus definition) or had plans to implement services in the future.

Pharmacists provide medication therapy management because it is the right thing to do. In general, individual practitioners were motivated to provide medication therapy management services for professional fulfillment and satisfaction as a patient care provider, and to improve the quality of care provided rather than for financial gain. Most pharmacists were compensated for providing services as part of their regular salary and most were not familiar with details regarding billing for services. However, for the medication therapy management model to become more widespread, individual practitioners must become more involved in understanding the business aspects of medication therapy management service implementation and delivery. Among providers not currently offering services, the greatest reported barriers to service implementation were: lack of time, insufficient staffing, heavy medication dispensing responsibilities, and difficulty in billing for medication therapy management.

Although outcomes tracking remains in its early stages, results are positive. About one-third of providers were measuring the impact of services on outcomes. Those who were tracking these outcomes had positive results to report for a number of criteria including humanistic, clinical, and financial outcomes.

Payers were diverse in service offerings, but congruent regarding their perceptions of barriers. Data provided by payers indicated that medication therapy management

programs were provided throughout the country to patients with various clinical characteristics and enrolled with a variety of third-party payer types. The primary reported barriers to providing medication therapy management services were lack of perception of need by patients and resistance from physicians. The third most prominent barrier was a lack of available providers.

Payers primarily contract with pharmacists. Most payers utilized pharmacists to deliver services. Strategies for payment included factors such as time, level of complexity, and type of service, but differed among programs. Several payers reported using the newest CPT codes approved for medication therapy management services delivered face-to-face by a pharmacist (99605, 99606, 99607).

Payers are beginning to measure and report value associated with services. Payers used several different strategies to define the value provided by medication therapy management, including clinical, humanistic (e.g., patient satisfaction), and financial outcomes. However, in general, payers were in the early stages of selecting strategies for assessing services. A few payers used established health care quality indicators (e.g., HEDIS). Methods of measuring financial outcomes differed among organizations. Reported strategies included analysis of claims before and after service implementation, comparisons with non-enrolled individuals, and cost avoidance estimates. The median reported ROI was 3:1. Actual financial savings were reported by a few respondents, including one self-insured employer who saved \$4.5 million annually.

Payers recognize the value of face-to-face interactions with pharmacists. Some payers reported plans to increase the use of face-to-face service delivery by pharmacists, and predicted that this strategy could emerge as a preferred medication therapy management delivery option. This may be due to evidence/experience that shows pharmacist-provided medication therapy management results in better outcomes and ROI strategies than other strategies, such as mailings or national call centers.¹⁷

Payers are optimistic about the future of medication therapy management. In the future, payers anticipate that medication therapy management services will reduce overall health care costs, medical costs (including hospitalizations and ER visits), and adverse events, and improve patient care and satisfaction. Many acknowledged that there would likely be an increase in prescription costs as a result of improved patient adherence, but believed that this increase would be offset by decreases in other costs.

Looking to the Future

The “diffusion of innovations” theory describes how innovative new practices (e.g., medication therapy management services) become part of mainstream practice. This theory identifies categories of individuals based on how readily they adopt the new practice. The **adopter categories** are¹⁸:

- Innovators (venturesome)
- Early adopters (respectable)
- Early majority (deliberate)
- Late majority (skeptical)
- Laggards (traditional)

The results of the surveys presented here, combined with other data, indicate that the medication therapy management movement is in the early adopter stage and on the cusp of moving into the early majority stage. The data indicate that many innovative pharmacists are working to implement widespread use of medication therapy management, and they have made impressive strides in the past few years toward achieving this goal. Some pharmacists have already implemented financially and professionally rewarding medication therapy management services. Nevertheless, there is a need for greater advocacy at all levels to promote further growth.

The diverse respondents to the payer survey indicate that current payers for medication therapy management services are not limited to Medicare Part D plans. A wide variety of other organizations—including Medicaid programs and self-insured employer groups—have discovered and begun to quantify the value of medication therapy management.

Several market forces are currently aligned that support expansion of medication therapy management services, including the rising use of prescription drugs in an aging population, the expanding use of pharmacy technicians and robotics to free up pharmacists’ time from dispensing activities, and the abundance and variety of payers who are seeking strategies to improve care while reducing costs. However, this window of opportunity is not likely to be around forever. More pharmacists must seize this opportunity to make widespread service implementation a reality. Some payers have already noted a lack of available providers as a barrier to service implementation; it is time for pharmacists to step up to the plate.

These data indicate the need for several professional initiatives. For example, one of the greatest reported barriers is that patients do not realize that they could benefit from medication therapy management services. (In fact, this barrier was seen as more important than physician resistance.) Other data show that patients are more receptive to medication therapy management services when they know more about them. Medication therapy management is a voluntary program; therefore, patients need to believe that they will gain some benefit from it. The pharmacy profession needs to continue

efforts to improve public perceptions of the pharmacist as a patient care provider and foster awareness of medication therapy management. As more patients become exposed to these services, they are likely to develop more favorable opinions about them and develop an enhanced understanding of their benefits.

Furthermore, standards and practical tools for measuring the value of services both clinically and financially need to be designed. Although several survey respondents reported measuring these parameters, they used a wide array of specific criteria, and others were still working toward defining a set of criteria and strategy for evaluation. Standardized national measures and quality indicators will be important for making comparisons among, and informed choices about, various aspects of medication therapy management services.

Several stakeholders have begun the process of developing such measures. For example, the Pharmacy Quality Alliance (PQA) has established several quality measures that can be used to evaluate medication therapy management. In 2007, 37 measures were developed and tested by the National Committee for Quality Assurance; 14 of these have been approved for forwarding to the National Quality Forum for endorsement. It will be important for the profession of pharmacy to ensure that quality indicators accurately reflect the value of medication therapy management services, including their impact on a breadth of clinical outcomes.

National standards for monitoring and evaluating the effects of medication therapy management on desired outcomes will help determine the value aspects of services. The information from these surveys indicates that when outcomes are monitored, the data generated are positive for patients, pharmacists, and the health care system. Expanded tracking of this information will likely yield more robust data to support medication therapy management as a central component of patient care that improves outcomes and reduces overall health care costs. Ultimately the use of standardized, national measures to demonstrate positive outcomes will invigorate ongoing investments of time, money, and other resources in medication therapy management service expansion.

Financial performance of new pharmacy services needs to be tracked for the services to represent a sustainable business model. A number of different strategies are used for monitoring ROI. Most pharmacists surveyed were not tracking the impact of medication therapy management on their business. Standardized approaches to tracking finances will support both the development and advancement of viable business strategies, and the case for additional organization and payer investment in services.

These strategies and others, combined with the efforts of pharmacists committed to excellence in patient care, will help transform pharmacists’ delivery of patient care services throughout the country.

Conclusion

There are numerous opportunities for pharmacists who want to provide medication therapy management services in diverse patient care and pharmacy practice settings. The number of pharmacists providing these services, and payers who reimburse for them, is continuing to grow. Although Medicare Part D programs have an important role, these surveys demonstrate that medication therapy management services are available in diverse patient populations and varied care settings that are not limited to Medicare patients or by the parameters of Medicare Part D programs.

These surveys revealed that many pharmacists are restructuring their patient care practices and business models to focus on medication therapy management services. And a number of payers predict that they will reap substantial benefits from medication therapy management in the future. These payers recognize that having pharmacists provide services results in value for their organizations, even in the absence of sophisticated metrics to measure the impact. Advocacy must occur on all levels for this vision to become a reality, and for medication therapy management services to become a standard component of pharmacists' repertoire.

It is important for all stakeholders to recognize that as a profession, pharmacists are vital members of the health care team who possess expertise in medication use that can be applied to improve patient outcomes. Pharmacists are in the best position to create partnerships with other providers to develop patient care models that truly benefit patients to help them live healthier lives.

Stakeholders are beginning to explore a number of strategies to calculate ROI. Without an acceptable ROI for medication therapy management programs, such programs would not be sustainable in the long term. Ultimately, finding meaningful measures of the value of medication therapy management services and demonstrating an ROI is essential to developing a viable business model for the future.

Medication Therapy Management Resources

Web Sites

American Pharmacists Association MTM Resource Center

<http://www.pharmacist.com/mtm>

Pharmacist Services Technical Advisory Coalition

<http://www.pstac.org>

Pharmacy Quality Alliance

<http://www.pqaalliance.org>

Continuing Education Programs

American Pharmacists Association, American Society of Consultant Pharmacists. *Delivering Medication Therapy Management Services in the Community*. Certificate Training Program. 2007.

<http://www.pharmacist.com> and <http://www.ascp.com>

American Pharmacists Association, National Association of Chain Drug Stores Foundation. *Medication Therapy Management. Training & Techniques for Providing MTM Services in Community Pharmacy*. 2006.

<http://www.pharmacist.com> and

<http://www.nacdsfoundation.org>

Additional Reading

American Pharmacists Association, National Association of Chain Drug Stores Foundation. *Medication Therapy Management in Pharmacy Practice. Core Elements of an MTM Service Model*. Version 2.0. March 2008.

Berger BA. *Communication Skills for Pharmacists*. Washington, DC: American Pharmacists Association; 2005.

Holdford DA. *Marketing for Pharmacists*. Washington, DC: American Pharmacists Association; 2007.

The Lewin Group. Medication therapy management services: a critical review. *J Am Pharm Assoc*. 2005;45:580-7.

References

1. Catlin A, Cowan C, Hartman M, et al. National health spending in 2006: a year of change for prescription drugs. *Health Affairs*. 2008;27:1-16.
2. Ernst FR, Grizzle AJ. Drug-related morbidity and mortality: updating the cost-of-illness model. *J Am Pharm Assoc*. 2001;41:192-9.
3. Persell SD, Osborn CY, Richard R, et al. Limited health literacy is a barrier to medication reconciliation in ambulatory care. *J Gen Intern Med*. 2007;22:1523-6.
4. Chiquette E, Amato MG, Bussey HI. Comparison of an anticoagulation clinic with usual medical care. *Arch Intern Med*. 1998;158:1641-7.
5. Cranor CW, Bunting BA, Christensen DB. The Asheville Project: long-term clinical and economic outcomes of a community pharmacy diabetes care program. *J Am Pharm Assoc*. 2003;43:173-84.
6. Garrett DG, Bluml BM. Patient self-management program for diabetes: first-year clinical, humanistic, and economic outcomes. *J Am Pharm Assoc*. 2005;45:130-7.
7. Bunting BA, Cranor CW. The Asheville Project: long-term clinical, humanistic, and economic outcomes of a community-based medication therapy management program for asthma. *J Am Pharm Assoc*. 2006;46:133-47.
8. Smith SR, Clancy CM. Medication therapy management programs: forming a new cornerstone for quality and safety in Medicare. *Am J Med Quality*. 2006;21:276-9.
9. Bluml BM, McKenney JM, Cziraky MJ. Pharmaceutical care services and results in Project IMPACT: Hyperlipidemia. *J Am Pharm Assoc*. 2000;40:157-65.
10. Schommer JC, Planas LG, Johnson KA, Doucette WR. Pharmacist-provided medication therapy management (part 1): provider perspectives in 2007. *J Am Pharm Assoc*. In press.
11. Schommer JC, Planas LG, Johnson KA, Doucette WR. Pharmacist-provided medication therapy management (part 2): payer perspectives in 2007. *J Am Pharm Assoc*. In press.
12. Bluml BM. Definition of medication therapy management: development of professionwide consensus. *J Am Pharm Assoc*. 2005;45:566-72.
13. Johnson KA, Parker JP, Venturini F, et al. Impact of pharmacists' interventions in a pharmaceutical care demonstration project. Presented at: American Pharmaceutical Association Annual Meeting; March 1999; San Antonio, TX.
14. Isetts BJ. Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program. Final report. December 14, 2007. Available at: http://www.dhs.state.mn.us/main/groups/business_partners/documents/pub/dhs16_140283.pdf. Accessed February 22, 2008.
15. Doucette WR, Witry MJ, Alkhateeb F, et al. Attitudes of Medicare beneficiaries toward pharmacist-provided medication therapy management activities as part of the Medicare Part D benefit. *J Am Pharm Assoc*. 2007;47:758-62.
16. Truong HA, Layson-Wolf C, Rodriguez de Bittner M, et al. Perceptions of patients on medication therapy management (MTM) services pertaining to Medicare Part D. Presented at: American Pharmacists Association Annual Meeting; March 19, 2006; San Francisco, CA.
17. Guthrie RM. The effects of postal and telephone reminders on compliance with pravastatin therapy in a national registry: results of the First Myocardial Infarction Risk Reduction Program. *Clin Ther*. 2001;23:970-80.
18. Clark R. A Primer in Diffusion of Innovations Theory. 1999. Available at: <http://www.anu.edu.au/people/Roger.Clarke/SOS/InnDiff.html>. Accessed January 10, 2008.



American Pharmacists Association®

Improving medication use. Advancing patient care.

APhA

1100 15th Street, NW ■ Suite 400 ■ Washington, DC 20005-1707

800-237-APhA ■ www.pharmacist.com