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A Description of Medication Therapy Management Services in Minnesota

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Key words: medication therapy management, Minnesota, survey, ambulatory pharmacy, rural pharmacy

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Abstract

Objective: To describe Medication Therapy Management (MTM) services in Minnesota, quantifying how many patient encounters occur per week and compiling provider and practice site characteristics.

Design: Cross-sectional study.

Setting: Minnesota practice sites surveyed in June and July 2010.

Participants: MTM providers in Minnesota who are registered users of the Assurance[®] documentation system or are members of the Minnesota Pharmacists Association MTM Academy.

Intervention: Self-administered online questionnaire completed by study participants.

Main Outcome Measures: The number of patient encounters per week, practice site location, practitioner length of time as a MTM service provider, and the motivating factors for providing direct patient care services.

Results: There were 56 respondents, reporting a median of 5 MTM patient encounters per week (range 0 to 35) and a median length of service of 4 years (range <1 to 15). Clinic-based practices were reported by 66% of providers and community pharmacy-based practices by 30%. Eighty-five percent practice in an urban setting, 9% in a large rural town and 6% in a small rural town. Nearly half (46%) of providers are the sole practitioner at their site. The most commonly cited motivation for providing direct patient care services was to improve patient outcomes.

Conclusion: MTM service providers in Minnesota were more likely to report practicing in an urban area and in a clinic. Many practices were low-volume or newly established, with half of all respondents reporting 5 or fewer MTM patient encounters per week and a length of service of four years or less.

Medication Therapy Management (MTM) services are becoming more common throughout the state of Minnesota due to an increase in reimbursement pathways for MTM providers. As MTM services develop, pharmacists are often called on to provide data supporting and describing their practices in order to establish contracts with third-party payers and to secure participation in interprofessional healthcare teams. Some relationships with payers currently exist, such as with UPlan, Medicaid, and Medicare Part D and are generating information about the utility of these services. At this time, however, there is still limited information regarding MTM services specifically in Minnesota (i.e. whether there is a difference in provision of services in rural versus urban areas, how these services are provided, and why practitioners choose to provide direct patient care services like MTM). This information is especially relevant to graduating pharmacists as they finalize their decisions regarding future practice.

MTM services (MTMS) has been defined by the American Medical Association as a

“...face-to-face patient assessment and intervention as appropriate, by a pharmacist. MTMS is provided to optimize the response to medications or to manage treatment-related medication interactions or complications.

MTMS includes the following documented elements: review of the pertinent patient history, medication profile (prescription and non-prescription), and recommendations for improving health outcomes and treatment compliance.”¹

MTM service is distinct from the patient education and counseling services that are associated with the dispensing process. It is a comprehensive assessment of the patient's medication use that includes the creation of a care plan and follow-up.

Most literature relating to pharmaceutical care specific to Minnesota describes the benefits and costs of pharmaceutical care. Isetts and colleagues conducted a prospective trial comparing clinical and economic outcomes of pharmacist-

provided MTM services in six Minnesota ambulatory care clinics. This study provided data regarding the number of drug therapy problems identified and resolved, changes in clinical outcomes, and the change in health related expenditures.² Another article detailed a Minnesota-based health maintenance organization (HMO) MTM program where the effectiveness of pharmacist-provided care services for patients with either cardiac or pulmonary disease were assessed.³ This study found that medication use increased in patients in the MTM study group, but that no differences were found for the number of clinic visits within one year nor for expenditures between clients served and not served by MTM pharmacists.³ Other literature has reported the progress made in the establishment of payment systems. The use of CPT codes by Minnesota pharmacists was first noted in the American Journal of Health-Systems Pharmacy in 2006.⁴

The migration of MTM CPT codes to Category I status (permanent) was influenced by a nationwide survey of MTM providers and payers in 2006 that attempted to quantify the number of MTM visits over a two year period.⁵ This study used a nine-item survey delivered online to 240 providers throughout the United States. The survey found that over 850,000 patient visits were conducted nationwide by the responding sites. In addition, the average length of time that the respondents reported providing MTM services was 6 years.

Each year since 2007, the American Pharmacists Association has conducted a nationwide survey of MTM providers and payers that assessed the value, availability, and delivery of MTM services.⁶ The most recent survey found that independent community and national chain pharmacies were the most common settings for MTM services nationwide, but did not address state-specific practices. The researchers also noted the top two reasons pharmacists provided MTM services were to fulfill their responsibility as a healthcare provider and to respond to patient health needs.

The objective of this study was to describe the practice of medication therapy management services in Minnesota in terms of how many patient encounters are conducted per week and in what settings MTM services occur. The growth of practices was assessed by determining what recent improvements to each practice had been made and what improvements were being planned. This study also assessed how long practitioners had provided MTM services, where they had received their most recent pharmacy degree, and what each practitioner's personal motivation was for providing these services.

Methods

Participants were asked to complete an online survey that collected information regarding the volume, setting, and development of MTM practices as well as provider-specific information (Appendix). Survey questions were evaluated by researchers familiar with MTM services in Minnesota and survey design. Approval for this research project was sought and granted by the University of Minnesota Research Subjects Protection Program (#1005E82872) prior to the distribution of surveys electronically to members of the MTM Academy of the Minnesota Pharmacists Association and registered users of the Assurance[®] documentation system in Minnesota. Surveys were accompanied by a letter of introduction inviting MTM service providers to participate in the study. The survey was conducted during the months of June and July 2010.

Practice site information was collected including where services were provided (for example, a clinic or retail pharmacy), the zip code for the primary practice site, and the number of practitioners at each site. Participants were also provided with the description of MTMS as defined by the CPT billing codes and data were collected with respect to how many visits fitting this definition were conducted per week. The numbers of additional face-to-face visits per week with patients not consistent with this definition, patient phone calls per week, and patient or provider letters written per week were also collected. Practitioners also selected from a list of potential practice improvements those which had been made in the preceding year and those which were intended during the next year. Multiple selections for each category could be made. Finally, data concerning the length of time that practitioners have been providing MTM services, in which state they had received their most recent pharmacy degree, and the practitioner's motivation for providing MTM services were collected. Participants were allowed to submit a free text response describing their motivating factors which were then grouped together into six common themes by the researcher after viewing the responses. Participants were also allowed to cite multiple motivations, but ranking of these factors was not required.

The survey was created and responses were collected with SurveyMonkey[®] software available at www.surveymonkey.com. Statistical analyses and figures were generated using Microsoft Excel 2010[®] and OpenOffice.org 3.2.1[®] software. The statistical analyses included calculation of the median, mean, and standard deviation for all responses quantifying patient care activities and provider length of service. Percentages were calculated for the remainder of responses.

Results

The survey was distributed to two non-exclusive e-mail lists. The Minnesota Pharmacists Association MTM Academy listed 107 pharmacist members, while the Minnesota-based users of Assurance[®] list contained an unknown number of users. A total of 56 total responses were received, of which 46 (82%) were complete. The response rate can be estimated to be not more than 52%, but the absolute rate cannot be calculated due to the unknown total number of surveys distributed. All responses were considered for each question and calculations were based on the number of respondents for each individual question.

Table 1 summarizes the demographics of the survey respondents and their practice sites. Minnesota MTM practices are still young, as indicated by the median length of service of 3 years (range <1-15). The mean value of 4.5 years is reflective of the presence of a few long-standing providers within the provider population. The majority of MTM practitioners responding (60%) earned their most recent pharmacy degree in Minnesota. An additional 30% earned their degrees in a Midwestern state other than Minnesota. The Midwest, as defined by the United States Census Bureau, includes North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, and Ohio.⁷

The most commonly reported primary practice site was in a clinic (66%). Community pharmacies were the next most common practice site (30%). The majority of respondents (62%) practiced in only one setting (location). For those nineteen respondents who did report an additional practice site, a community pharmacy site was the most common response (58%). Home visits were the next most common additional practice site (21%). Respondents were allowed to select multiple additional sites. Survey respondents also reported the zip code for their primary practice site, which was then used to determine the type of community as classified by the Rural-Urban Commuting Area (RUCA) codes.⁸ The majority of MTM practitioners were found at primary sites located in urban areas (85%). An additional 9% of respondents practiced in large rural cities or towns, with only 6% of practitioners reporting a primary practice site in a small or isolated rural town.

Forty-six percent of respondents were the only practitioner at their practice site. An additional 26% practiced at a site with one other practitioner. The greatest number of practitioners reported at a single site was nine.

Table 2 summarizes the number of patient care activities per week conducted by MTM providers in Minnesota. Activities

were divided into four types: MTM services as described in the CPT codes, other face-to-face patient encounters, telephone encounters, and letter writing. For each type, the total number of encounters, median, and range was compiled. The mean and standard deviation was also calculated for each type of activity.

For each type of activity the mean was greater than the median and indicated the presence of outlier values in the upper half of the range. The responses were clustered near the low and high values of the reported range and did not follow a normal distribution. The median thus provided the most pertinent measure of the central tendency of the data set. The median number of face-to-face patient encounters defined by the CPT codes as MTM services was 5 (range 0-35). The median number of other face-to-face patient encounters not qualifying under the CPT codes definition was 2 (range 0-150). Practitioners conducted a median of 4 (range 0-60) patient phone calls per week and wrote a median of 1.25 (range 0-40) letters to or on behalf of patients per week.

Table 3 shows a comparison of patient care activities per week between urban and rural sites. Urban practitioners reported a median of 5 MTM patient encounters per week (range 0-35) while rural providers reported 2 encounters per week (range 1-6). Rural practitioners conducted an increased number of other face-to-face patient encounters, however, reporting a median of 2.5 encounters (range 0-80) versus 2 encounters per week by urban providers (range 0-150). Rural providers also reported fewer phone encounters and letters written per week. The median number of each patient care activity calculated for urban providers was similar to the median number for all providers, likely due to the imbalance of urban providers participating the study (n=49) as compared with the number of rural providers (n=7). Like their urban counterparts, rural practitioners were more likely to cite a clinic (57%) as opposed to a community pharmacy (43%) for their primary practice site. Rural providers reported slightly newer practices, with the median length of service of 3 years (range 2-3) compared with 4 years (range 0-15) for urban practitioners.

The growth and development of MTM practices was assessed by collecting information regarding recent and future planned practice improvements. Practice improvements reported for the preceding year and during the next year are summarized in Figure 1. Multiple responses were allowed for each respondent. Only 8% of respondents did not make any improvements to their practice in the preceding year and 15% had no plans for improvements in the next year. The most frequent improvements reported for both the

preceding and the coming year were participation in practitioner meetings (66% and 53%, respectively) and increased marketing efforts (53% and 51%). About one-quarter of practitioners (26%) reported adding an additional site to their practice in the preceding year, and another one-quarter (25%) expected to do so in the next year. Only 9% added another practitioner to their site in the preceding year, but 19% intended to do so during the next year. Practitioners also reported growing their knowledge base with MTM-specific continuing education programs (38% in the preceding year and 25% during the next year) and gaining additional certifications (21% in the preceding year and 25% planned during the next year). Physical improvements to sites occurred in 19% of practices in the preceding year, and were planned for 9% of sites during the next year.

Figure 2 summarizes the factors motivating pharmacists to provide direct patient care services. The majority of practitioners (78%) reported the improvement of patient outcomes as their motivation for providing direct patient care services. Free text responses grouped in this category included educating and empowering patients, optimizing medication use, and providing more complete care for patients, in addition to helping patients meet their healthcare goals. Forty-one percent cited professional satisfaction as a motivating factor. Responses in this category included increased career satisfaction, a sense of purpose, the ability to use clinical knowledge and expertise to solve complex problems, and an inherent enthusiasm for the work. Building relationships with patients was reported as a factor by 18% and building relationships with other healthcare professionals by 10%. Twelve percent cited the importance of pharmacist-provided direct patient care services as a public health initiative as motivation. Lastly, 6% reported the advancement of the profession as a motivation to provide MTM services.

Discussion

With the incorporation of MTM services into Medicare Part D benefits, the inclusion of pharmacists in the patient-centered medical home, and health care reform working to improve patient outcomes, there is increased interest in these pharmacist-provided services and a demand for such providers. Minnesota pharmacists are engaged in this expansion of MTM services, but the lack of a comprehensive description of the current level of services could hinder growth, especially as new graduates begin their professional careers. A current description of MTM practices and practitioner characteristics is needed to maintain progress. At this time, a variety of MTM practices exist in Minnesota, from urban clinic-based pharmacists who work with physicians to identify patients who may benefit from the

service to pharmacists in rural community practice who assist in the management of hospice patient medication therapy.⁹

This study has outlined some of the basic characteristics of current MTM services and practitioners in Minnesota. In a “typical” practice, the practitioner is most likely to conduct five face-to-face patient visits per week involving a comprehensive medication review and resulting in recommendations to improve health outcomes. This practitioner will have two additional face-to-face patient encounters that do not involve a comprehensive analysis of the patient's medication-related needs and four telephone encounters with patients (for example, to conduct appropriate follow-up). One or two letters to the patient or patient's physician will be written each week. Despite the fact that the majority of practitioners will work at a site where they are the sole MTM provider, the typical practitioner still meets with other practitioners throughout the year and plans to increase marketing efforts in order to recruit more patients. The typical provider is in an urban clinic-based practice, has completed his or her most recent pharmacy degree in Minnesota, and has been providing MTM services for four years. This practitioner is motivated to improve patient outcomes and feels a strong professional satisfaction in providing direct patient care.

There are some “extraordinary” providers who responded to the survey. These providers may see up to 35 patients face-to-face per week, providing comprehensive MTM services to each. Others conduct nearly 150 other face-to-face patient encounters each week, recommending over-the-counter therapies or providing disease state management services, in addition to maintaining an MTM practice. There are practice sites which have added practitioners in the past year and others that intend to grow during the next year by adding another provider. Some pioneering pharmacists report that they have been providing MTM services for 10 to 15 years. A few providers practice in small or isolated rural towns and a few more in large rural towns and cities. These “extraordinary” pioneers are on the leading edge of MTM services in Minnesota.

Limitations of this study include a small sample size inherent in most survey designs. It is questionable whether the study results are generalizable to all MTM providers since a representative sample was not taken. The study may also be biased towards the motivated, pioneering MTM providers who were more likely to respond to the survey than more typical MTM providers. The study also focused solely on Minnesota providers and the results cannot be applied to other states. Survey delivery method is another limitation of the study. The e-mail invitation and online survey did not

reach every MTM provider in Minnesota and was limited to members of the Minnesota Pharmacists Association MTM Academy and users of the Assurance[®] documentation system. There was no incentive to participate in the survey and this may have contributed to the modest response rate.

Strengths of the study included the survey structure allowance for free text answers for most questions. Respondents were able to report their motivations in their own words and to quantify practice activities as they saw fit. This provided more accurate information which the researcher was able to group appropriately.

This study provides several opportunities for further research. Payment information was not collected for patient encounters and could be assessed in a future study to determine the extent of pharmacist use of CPT codes or other methods of billing. Time studies of pharmacists could provide more information about how specific practices are structured. Many of the respondents were individual practitioners, so an assessment of MTM programs provided by third-party payers may be warranted. Finally, patient perspectives of MTM services was not assessed and could be addressed by future research.

Conclusion

MTM providers in Minnesota reported demographic information regarding the volume of various types of patient encounters, recent and planned practice improvements, and their personal motivation for providing direct patient care services. Although the volume of patient encounters remains low for many practitioners, improvements are continually being planned, including practice expansion. Minnesota MTM practitioners most commonly cite the improvement of patient outcomes as their motivation for providing these services. It is hoped that other pharmacists and recent and future Doctor of Pharmacy graduates will also develop similar practices.

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Table 1. MTM Provider and Site Demographics		
Length of Time as a MTM Provider, in years (n=51)		
Median		4
Range		<1-15
Mean		4.5 ± 3.5
State of Completion of Most Recent Pharmacy Degree (n=50)		
Minnesota (MN)	30	(60%)
Midwestern State (other than MN)	15	(30%)
Outside Midwestern United States	5	(10%)
Primary Practice Setting (n=50)		
Clinic	33	(66%)
Community Pharmacy	14	(28%)
Office (not affiliated with a clinic or community pharmacy)	2	(4%)
Other	1	(2%)
Additional Practice Setting (n=50)		
None	31	(62%)
Any	19	(38%)
Additional Settings (n=19)*		
<i>Community Pharmacy</i>	11	(58%)
<i>Home visits</i>	4	(21%)
<i>Clinic</i>	3	(16%)
<i>Hospital</i>	3	(16%)
<i>Office (not affiliated with a clinic or community pharmacy)</i>	3	(16%)
<i>Long Term Care Facility</i>	2	(10%)
<i>Mail-Order Pharmacy</i>	1	(5%)
<i>Call Center</i>	1	(5%)
<i>Academia</i>	1	(5%)
Primary Practice Site Location (n=46)		
Urban	39	(85%)
Large rural city/town	4	(9%)
Small or isolated rural town	3	(6%)
Number of Practitioners per Site (n=46)		
1 (respondent only)	21	(46%)
2	12	(26%)
3	6	(13%)
4+	7	(15%)

*Multiple responses allowed

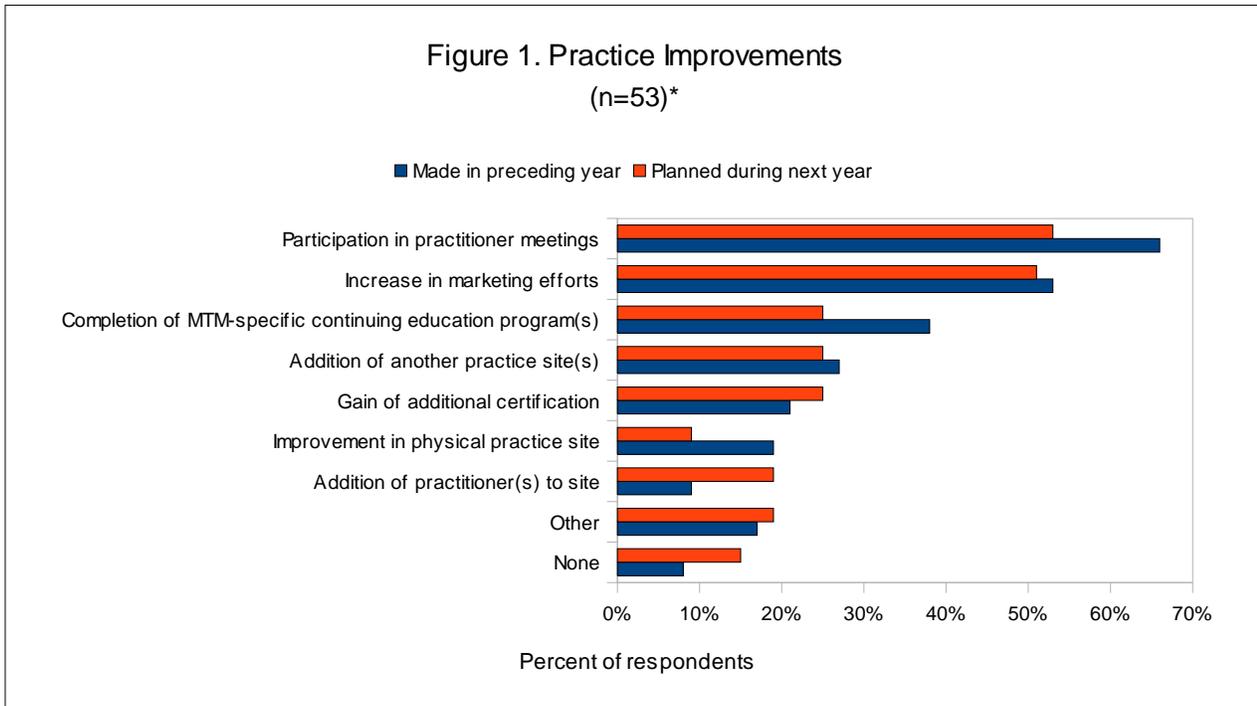
Table 2. Number of Patient Care Activities per Week

(n=56)			
Activity Types	Total	Median (Range)	Deviation
Face-to-face MTM encounter	455	5 (0-35)	8.1 ± 8.6
Other face-to-face encounter	679	2 (0-150)	12.1 ± 29.9
Telephone encounter	419	4 (0-60)	7.5 ± 11.1
Letter writing	200	1.25 (0-40)	3.6 ± 6.5

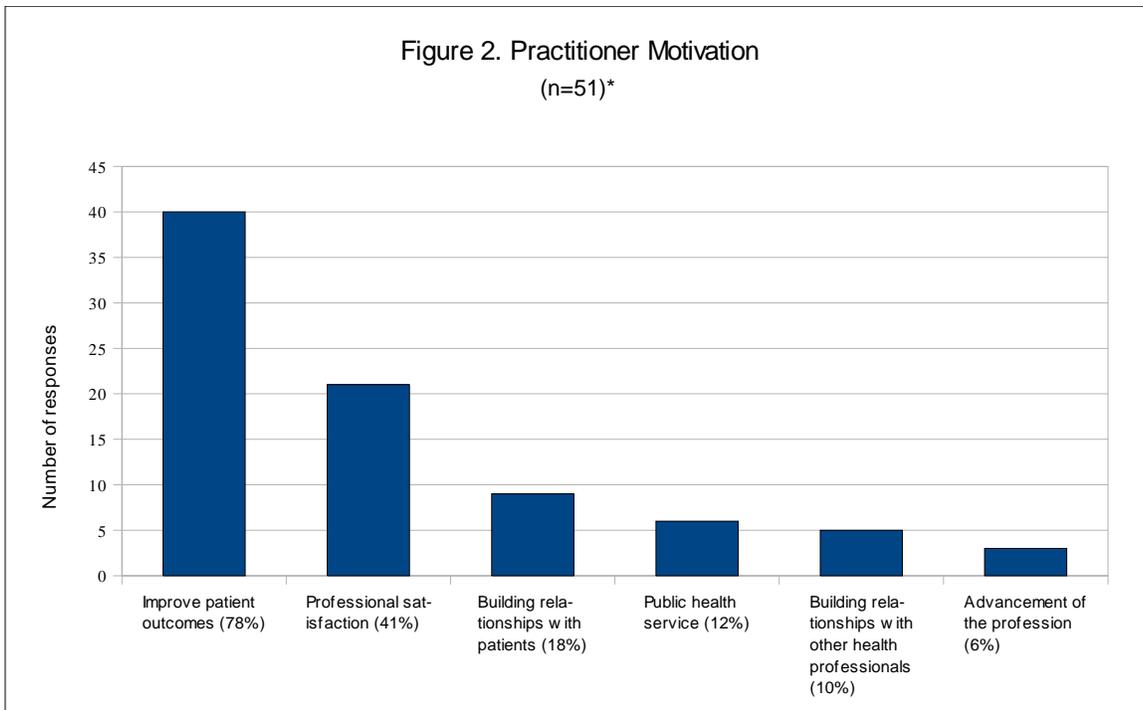
Table 3. Comparison of Patient Care Activities per Week for Urban versus Rural Sites^a

Activity Types	Rural (n=7)	Urban (n=49)	
Face-to-face MTM encounter	2 (1-6)	5 (0-35)	P < 0.001
Other face-to-face encounter	2.5 (0-80)	2 (0-150)	P = 0.89
Telephone encounter	2 (0-10)	5 (0-60)	P = 0.02
Letter writing	1 (0-4)	1.5 (0-40)	P = 0.04

^aReported as median (range)



*Multiple responses allowed



*Multiple responses allowed

Appendix. Survey Questionnaire

Description of Provided Services

MTM services (MTMS) are defined by the American Medical Association as a “. . .face-to-face patient assessment and intervention as appropriate, by a pharmacist. MTMS is provided to optimize the response to medications or to manage treatment-related medication interactions or complications. MTMS includes the following documented elements: review of the pertinent patient history, medication profile (prescription and non-prescription), and recommendations for improving health outcomes and treatment compliance.”

1. How many patient visits per week do you conduct that qualify as MTMS as defined above by the AMA?
[##]
2. How many other types of face-to-face patient visits per week do you conduct, not qualifying as MTMS as defined by the AMA?
[##]
3. How many telephonic patient encounters do you conduct each week?
[##]
4. How many letters written to/on behalf of patients do you write per week?
[##]
5. What improvements to your practice HAVE YOU MADE in the last year? (check all that apply)
 - Increased marketing efforts
 - Improved physical practice site
 - Added practitioner(s) to site (other than yourself)
 - Added additional practice site(s)
 - Gained additional certification
 - Participated in practitioner meetings
 - Completed MTM-specific continuing education program(s)
 - I have not made any improvements to my practice in the last year
 - Other: [free text]
6. What improvements do you PLAN TO MAKE to your practice in the next year?
(check all that apply)
 - Increase marketing efforts
 - Improve physical practice site
 - Add practitioner(s) to site (other than yourself)
 - Add additional practice site(s)
 - Seek additional certification
 - Participate in practitioner meetings
 - Complete MTM-specific continuing education program(s)
 - I have not planned any improvements to my practice in the last year
 - Other: [free text]

Practitioner Information

7. How long have you provided medication therapy management services?
[##] years
8. In which state did you complete your most recent pharmacy degree?
[free text]
9. What is your personal motivation for providing direct patient care services?
[free text]

Practice Site Information

10. What is the primary setting for your patient care practice? (check only one)
- Clinic
 - Community pharmacy (not mail-order)
 - Mail-order pharmacy
 - Hospital
 - Call center
 - Office not affiliated with a clinic or community pharmacy
 - Home visits
 - Other: [free text]
11. What other settings, if any, do you also practice in? (check all that apply)
- Clinic
 - Community pharmacy (not mail-order)
 - Mail-order pharmacy
 - Hospital
 - Call center
 - Office not affiliated with a clinic or community pharmacy
 - Home visits
 - Other: [free text]
12. What is the five-digit zip code for your primary practice site?
[#####]
13. How many pharmaceutical care practitioners are at your primary site (include yourself)?
[##]