Identification and Characterization of Workflow Models for Medication Therapy Management in Community Pharmacies

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Abstract

Community pharmacists providing medication therapy management (MTM) services report difficulty incorporating MTM services with dispensing and other pharmacy services. A variety of approaches exist due to a lack of an ideal standard for service integration. This study seeks to identify and characterize MTM workflow models in pharmacies of one geographic area of a large community pharmacy chain. Thirteen semi-structured interviews were conducted with pharmacists from thirteen different pharmacies. Interviews were audio-recorded, transcribed, and analyzed for common themes using an inductive qualitative approach. We did not find a high level of MTM task integration into the dispensing workflow in this setting. However, three main strategies used to delegate work of MTM activities were identified and defined: shared teamwork, delegated teamwork, and single delegation. Few MTM tasks were integrated into the dispensing workflow among interviewed pharmacies; most tasks were performed outside of workflow. The most common integration was performing patient interviews at pick up. There were no trends identified among high performing or low performing pharmacies. This work may provide a basis to define workflow models for further research to test implementation strategies within community pharmacies.

Keywords: Medication therapy management, community pharmacy, workflow

Background

The scope of pharmacy practice is changing—from one focused on the delivery of a product to one that includes the provision of advanced patient care services. Despite this growth in scope, however, the profession has had a difficult time making the transition to a more service-oriented profession. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 established medication therapy management (MTM) as a reimbursable service for pharmacists through Medicare Part D in the United States, but uniform uptake has been difficult. MTM has been defined by the Centers for Disease Control as "distinct service or group of services provided by health care providers, including pharmacists, to ensure the best therapeutic outcomes for patients. MTM includes five core elements: medication therapy review, a personal medication record, a medication-related action plan, intervention or referral, and documentation and follow-up."[1]

A recent review Identified current challenges surrounding the implementation of MTM. Workflow for dispensing services in community pharmacies is well-defined and is similar among most pharmacies. However, there is not a universally agreed-upon method for completing MTM services within the day-to-day work of the pharmacy.[2] This lack of standardization could contribute to the lack of uptake for completed CMRs by pharmacies.[3] Additionally, poor implementation could also contribute to conflicting evidence in the literature regarding MTM's impact on patient outcomes.

There are examples of integrating MTM into pharmacy workflow processes using a variety of strategies in the literature.[4-12] Many examples have shown improvement in completing MTM and improving pharmacy metrics; however, workflow models have not been defined nor have they been directly compared for effectiveness. These types of comparisons may better allow pharmacies to decide on a workflow model and how to allocate resources. Previous work at the study site has described and measured the impact of an array of implementation strategies on the number of MTM services provided in these pharmacies. Strategies included a financial incentive, training, audit and feedback, and other individualization supports. The study did not include recommendations for how to incorporate MTM into daily workflow.[13] This current study serves as a qualitative implementation-focused process evaluation of the strategies used in the previous project. This study seeks to identify and characterize MTM workflow models in one geographic area of a large community pharmacy chain through qualitative interviews.

Methods

This study was conducted in one geographic area of a large community pharmacy chain. Qualitative interviews were conducted by the primary investigator (RS), who is employed by both the large community pharmacy chain and college of pharmacy. This author was involved in general day-to-day training of individual pharmacists and was known to

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participants, but was not in the day-to-day implementation of MTM services within pharmacies nor in any type of supervisor position to the participants. A convenience sample of thirteen pharmacies was used to complete semi-structured face-to-face interviews. All individuals interviewed were pharmacists that actively provided MTM services at the pharmacy. Student pharmacists and technicians participated minimally in MTM services at the time of this study and were not invited to participate. Participants were contacted by phone to participate and were explained the purpose of the study. All who were contacted agreed to participate. All interviews were conducted in the private counseling area at the pharmacy during work hours with only the researcher and participant present. For locations that did not have a private counseling room, the interview was conducted while the pharmacist was working and stopped for interruptions. All interviews were audio recorded and transcribed.

The medication management service definition described by Smith et al.[14] aided in the development of the interview questions and prompts (Appendix 1). Four coders were used to analyze transcripts in method described by Teeter et al.[15] The objective of the analysis was determined by the coding team, and an initial codebook was created to guide early reading of transcripts. The team read two transcripts and met to discuss themes and areas of interest that emerged from the transcript. The codebook was updated and further defined from what emerged from the transcripts and discussions of field notes from the interviewer. After the codebook was finalized (Appendix 2), transcripts were segmented and were analyzed independently by all members of the coding team using MaxQDA (MAXQDA12, Release 12.3.9). Coders met regularly to discuss coding until all disagreements were resolved. The team met 9 times to determine the code book and 5 times to resolve disagreements in coding through in-depth discussions of each discrepancy between coders. The study was approved as exempt from by the University's Institutional Review Board.

Results
Thirteen semi-structured interviews with 13 pharmacists were conducted in February and March 2017 including 6 pharmacy managers and 7 staff pharmacists. Interview times averaged 20:48 minutes (range 11:23-41:53).

Delegation of Work
Three main strategies used to delegate work of MTM activities were identified: shared teamwork, delegated teamwork, and single delegation. A description of these models is below and depicted in Figure 1. The most used workflow model was the shared model with 8 pharmacies using it, followed by shared delegation (3), and single delegation (2).

Model 1: Shared Teamwork
Pharmacies that used this model described a work delegation model in which all or most pharmacists working at that location initiate all types of MTM services from all platforms. In addition

to initiation, all or most pharmacists provide follow up and bill for all types of MTM services from all platforms. There was high variability of this model in how pharmacists initiated and followed up on work.

I would say that, obviously, [pharmacist 1] does the most. She works here the least, but she carries the weight. I try to do what I can, obviously if I'm not doing it why would anyone else want to do it. [Pharmacist 2] tries to get as much of it done as she can, and she does a really good job with it. [Pharmacist 3] puts a lot more time into some of the interactions than she has, which is good and bad. I mean it's good for the customers. Sometimes, I guess it's everybody's personality on how well you can balance everything else you have to do.

Model 2: Delegated Teamwork
In this model, pharmacists delegate work by MTM platforms (e.g. Mirixa, OutcomesMTM, or those flagged within the dispensing software). Other pharmacists may or may not participate in follow up, and the initiating pharmacists provide follow up and bills for delegated MTM platform or MTM service.

He is the leader of [MTM Platform 1]. So, we all work on everything, but he is the one to keep up with the expiration dates on [MTM Platform 1]. I would say [pharmacist 2] and I share [MTM Platform 2]. … I feel like that makes it less burdensome. So, if you have free time, you're not, like, worried about where to start, you go start with yours, the one that you're in charge of.

Model 3: Single Delegation
In the single delegation model, one pharmacist initiates all types/platforms MTM services, other pharmacists do not participate in MTM services or participate in a limited capacity, one pharmacist provides follow-up and bills for all types/platforms MTM services. Pharmacists using this model commented about attempting to include other staff members in the tasks but ultimately held the responsibility for getting the services done.

I would usually just say "I'm about to do MTM for a little bit". [The other pharmacists] or whoever would just take over, and I would just do MTM… I finally started adding patient notes, and I was printing off the papers and putting them in there, but I still wasn't, the education side wasn't exactly there. So… I wasn't getting all the details that I needed to answer them and bill them. So… I kinda talked to everybody else to let them know what I had to have to bill it.

In addition to these 3 models, 10 of the 13 pharmacies mentioned delegating some of the MTM services to pharmacists that did not regularly work in that pharmacy. These pharmacists historically performed the majority of the MTM services for their area, but their role had changed from completing MTM to training in-store pharmacists.[13]

> *Well, I call my people in [MTM Vender] and all I do is make an appointment and then email [outside pharmacist] and say, "Hey they can come this day." And then that's it. She takes care of them after that.*

At the time of this project, pharmacies reported no or minimal involvement from pharmacy technicians in the MTM process.

MTM Integration and Process
While these three models had similarities in *who* did the work, there was a wide variety in *where* and *how* the work was done. To describe *where* MTM tasks were carried out in each pharmacy, the coders delineated and defined the components of both the MTM process and dispensing process (**Table 1**). Using these definitions, coders identified where MTM services were completed within the dispensing workflow or if they were completed outside of workflow. In addition, important aspects of *how* the various MTM tasks were completed were coded.

Where MTM is Completed
Table 2 shows the number of pharmacies where pharmacists mentioned MTM tasks occurring during dispensing workflow. Some pharmacists indicated a task could be completed in multiple steps of the dispensing process. Few MTM tasks were integrated into the dispensing workflow; most tasks were performed outside of workflow. The most common integration was performing consultation at pick up. Single delegation stores had this as their only integration. The next most common workflow included Identify Service Needed at Verification (n=4) and Preparation at Verification (n=3).

> *When I see something come up. And you know, I look what the MTM is about, and then I go through their profile, and whatever it is if its adherence, then I'll put a counseling note, and I'll put "MTM adherence: Metformin Gaps in fill", and then I'll just say "here are the dates that are the gaps" so that when whoever gets to release to patient, and there's a counsel note, whichever pharmacist wants to go and counsel on it, they have that note there.*

Whether or not a task was "truly" integrated into the dispensing workflow was blurry. One pharmacist described a method where MTM tasks are not truly integrated but are incorporated throughout the workday:

> *It's just wherever you have time. Time is the thing that limits wherever you are. Sometimes I have more time in verification because I can let things stack up. If it's not a pressing prescription, then I can get them all checked whenever I want to get them checked… If it's in data entry, you have pockets where there are two people up there, where customers aren't coming up to you…That's the closest to being in workflow. We're standing in a station where workflow happens. But this is a separate thing that goes on.*

Another pharmacist described that the MTM tasks are part of the normal process that happens at a station.

> *At verification, if we see the red MTM symbol then we analyze the situation, put a counsel note…fairly detailed. You know like, "Oh it looks like she hadn't had her statin since June or whatever..." So then we have the most information we can for when the person shows up and we can counsel…If it's a 90-day conversion … I will usually stop and try to call them and try to get that done… If you don't just decide, "I'm gonna do it at one spot," everybody's looking at it, and it gets re-done. You're looking at it at pre-ver and verification so really you're just spinning your wheels. So we decided, okay, so that everybody's not going crazy, whoever's at verification is gonna look at it and take care of it there.*

Still other described that it's difficult to put into the normal routine:

> *You know how it's one of those things where it's like, you have a routine...When you're looking at your computer and you're doing all this stuff and there's all these things that you've got to consider. Well that one has, for some reason, I can't get in the habit. And I'm trying. Because when I'm at RTP I see it. But when I'm in pre-ver for some reason because my mind I guess is looking at the script…And if I'm at RTP, and I see an MTM symbol that's when I pull it up and I'm like, you know, "This patient's here. Let me try to knock this out while they're here." But in pre-ver I'm already looking at so much that sometimes I forget to look at that symbol.*

How MTM was completed
Aspects of *how* the various MTM tasks were completed varied among pharmacies. Identifying eligible patients originated from the MTM provider, which is located on a separate website outside of the dispensing software. Some pharmacists preferred to purposely access the website and access the list. Others preferred to put a "flag" or "note" in the dispensing software to alert them that the patient was eligible, so that it could be addressed when the patient was present in the pharmacy.

> *If I just go through the queue and see all the people that have "needs a statin" I'll just you know like, "[Patient]. Okay I'll type a note on [Patient]: "Inbound intervention. Needs a statin queue. Interested?"*

Many pharmacists spoke of preparing for interventions by reviewing the profile in the MTM platform, most of which documented what was learned from that preparation.

> *I look what the MTM is about, and then I go through their profile, and whatever it is if its adherence, then I'll put a counseling note, and I'll put "MTM adherence: Metformin, Gaps in fill", and then I'll just say "here are the dates that are the gaps" so that when whoever gets*

to release to patient, and there's a counsel note, whichever pharmacist wants to go and counsel on it, they have that note there.

Performing the consultation differed depending on the type of service. CMRs were more often delivered as an in-person scheduled appointment, while TMRs were delivered through impromptu discussions via phone or in-person. Most locations chose to bill and document services immediately after completing, but 6 pharmacies also noted that they may set the claim aside to be billed later. Each pharmacy used fax as a way to coordinate care for services that required it, but 6 indicated that they used phone as well for some providers.

Discussion

Our study attempts to define and characterize how MTM tasks are completed in the normal daily workflow of a community pharmacy. From this, we discovered three models of delegation of work and several methods of how the work is completed. Not all pharmacies fit neatly into a delegation category. For example, the delegated roles may not always be well-defined or well-intentioned. Few pharmacy teams pre-determined a plan of how to divide the work, but rather it organically unfolded into the current model. Several pharmacists interviewed mentioned that how they described how the tasks were done is how *they* did it, but they were unsure if other team members did the same thing. Additionally, this study was conducted one year after implementation of general pharmacy staff being held accountable for providing MTM. Some pharmacists were not fully comfortable with all tasks and may have still lacked confidence in their ability to perform them.

Inclusion of pharmacy technicians in the MTM process has been reported widely in the literature;[5,7,12,16-18] however, this type of delegation was not present in this context at the time of the study. The pharmacists in this study expressed hesitation from utilizing technicians for MTM. Some did not feel that their technicians had sufficient training or capacity, and for those staff members that did, they were hesitant to take them away from other responsibilities. Despite studies showing increased efficiency and possible profitability for utilizing technicians, barriers to scalability and sustainability are present. The pharmacy technician turnover rate is high. The complex nature and skills needed to contribute meaningfully poses a critical barrier to including technicians. While these models are helpful, more work may be needed to describe efficient training practices for pharmacy technicians to increase scalability. In addition, there may need to be transitional models that slowly incorporate technician utilization while the sustainable models are developing.

Integration of MTM tasks into daily dispensing workflow was limited with most tasks being in addition or outside of the dispensing workflow. How tasks were completed varied depending on personal preferences. This could be due to lack of recommendations or best practices on how to integrate

these services, even though the company provided incentives for completing MTM. MTM is one of the earliest services for which pharmacists can be reimbursed. As pharmacists continue to add more services to their scope of practice, it will be critical to successfully merge the delivery of dispensing and clinical services. This project operated with the premise that dispensing services are the primary task and others must integrate into that. However, other staffing or workflow models may need to be tested. Proper reimbursement and sufficient volume of other services will likely be needed to support other workflow models to drive change in a meaningful way.

To our knowledge, this is the first study that defines workflow models for completing MTM. This approach is similar to the Systems Engineering Initiative for Patient Safety (SEIPS) model, which is a human factors/ergonomics framework that can be used to study and improve systems and process that shape health-related work and outcomes.[19] This framework includes six interacting components to the work system: person, tasks, tools and technologies, organization, internal environment, and external environment. Our findings fit well in the "organization" and "tools and technologies" components. Chui et al identified most of their themes fell in the organization component in pharmacies that were trying to improve performance of cognitive services provided like MTM.[20] The SEIPS model espouses the concept of configuration, which means that "any number of work system components can interact simultaneously." Some interactions may be more relevant than others to influence performance and other outcomes. Future research could determine which configurations weakly or strongly shape the performance of a given process. The workflow models identified in our study could serve as a basis for developing configurations to compare performance of pharmacies using MTM claim completions.

Some limitations for this research exist. This study used convenience sampling by conducting with one company in one geographic area, so new models not defined in this study in other types of settings may be present. There was potential for interviewer bias due to the interviewer being the same person who trained the interviewees.

Conclusion

This study identified and characterized medication therapy management services within the day-to-day work of the pharmacy. Three main strategies used to delegate work of MTM activities were identified: shared teamwork, delegated teamwork, and single delegation. We did not find a high level of MTM task integration into the dispensing workflow in this setting. This work provides a basis to define workflow models for further research to test implementation strategies within community pharmacies.

The opinions expressed in this paper are those of the author(s).

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Figure 1. Description of Workflow Models
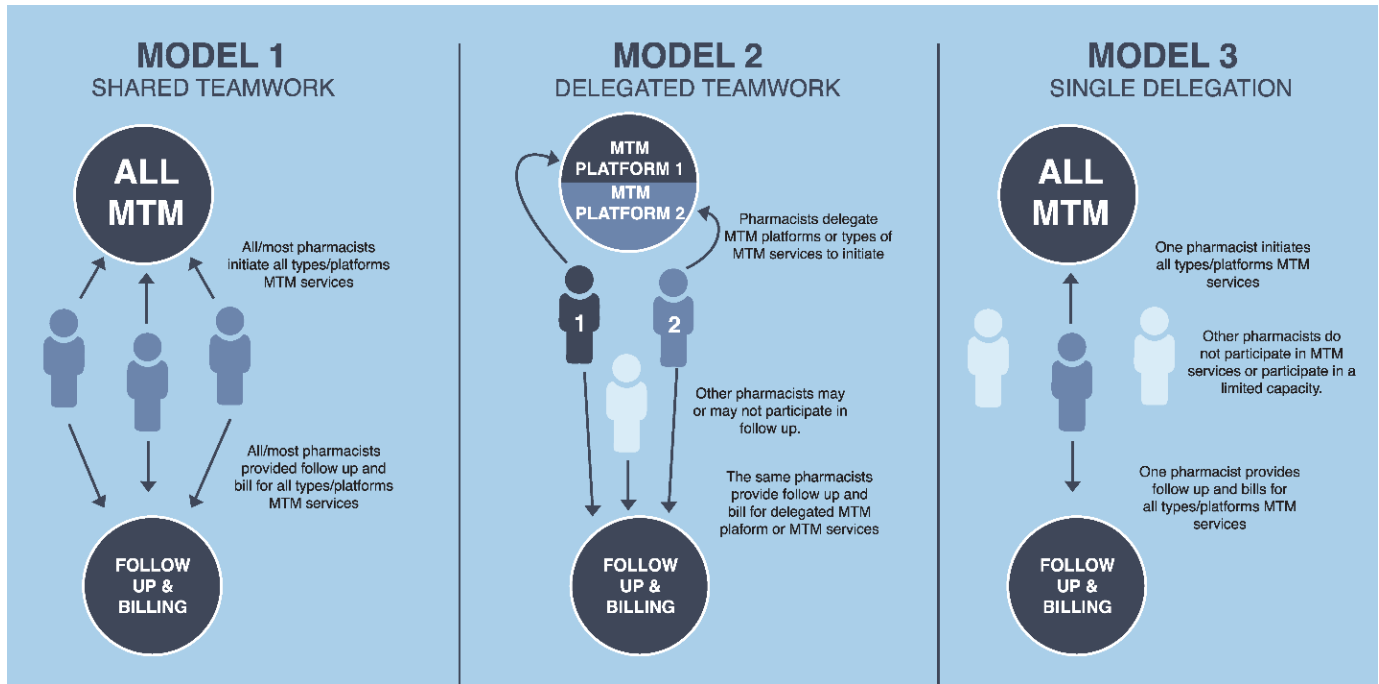
*MTM=Medication Therapy Management

Table 1 Definitions of MTM and Dispensing Processes

MTM Process Workflow	Definition
Identify service needed	Determining that a service needs to be provided to a patient
Initiating CMR services	Informing the patient they are eligible for service Initiation and performance of service will usually be at the same time for TMRs
Preparation	Accessing internal/external information related to the service to prepare for a patient interview
Performing patient consultation/interview	Talking with the patient and completing the service
Billing documentation	Documenting necessary information needs to submit a claim
Coordinating care	Initially reaching out to physicians, etc (for services that require it)
Follow up	Next steps after intervention is resolved to reach out to patient: (e.g. to let a patient know of med change, to look at next refill for adherence)
Dispensing Workflow	Definition
Drop off/intake	Patient drops off script (or escript sent)
Prescription entry	Technician or pharmacist enters prescription into dispensing software
Pre-verification	Pharmacist checks for accuracy of prescription entered into software
Product dispensing	Technician prepares and packages the medication
Verification	Pharmacist verifies correct product for correct patient
Pick up/will call	Technician completes sale with the patient and pharmacist counsels as needed

Table 2. MTM Tasks Mapped to Dispensing Workflow

Workflow Task	Drop off	Pre-Verification	Product Dispensing	Verification	Pick up/Will call	Outside of dispensing workflow
Identify service needed	0	1	0	4	1	9
Initiating CMR services	1	0	0	0	1	7
Preparation	0	0	0	3	2	7
Performing patient consultation/interview	1	0	0	1	9	9
Billing documentation	0	1	0	0	1	4
Coordinating care	0	0	0	0	0	3
Follow up	0	0	0	0	0	0

n=number of pharmacies mentioning task