Implementation and Evaluation of a Certified Technician Training Program for Advanced Technician Services in a Large Community Pharmacy Chain

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Background

The services provided by community pharmacies have evolved beyond solely the dispensing of medications. In addition to picking up their prescription, today a patient can walk into a community pharmacy and participate in medication therapy management (MTM) services. The term medication therapy management describes a patient-centered process used by pharmacists and other health care providers to improve medication use and medication-related outcomes.[i] Many national pharmacy organizations have collectively defined MTM as a distinct service or 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. Eleven national pharmacy organizations have previously determined the five core elements integral to the provision of an MTM Service Model in Pharmacy Practice: medication therapy review (MTR), personal medication record (PMR), medication-related action plan (MAP), intervention and/or referral, and documentation and follow-up. Central to the MTM process is a thorough medication therapy review, referred to by the Centers for Medicare and Medicaid services (CMS) as a comprehensive medication review (CMR). A CMR is a systematic process of collecting patient-specific information, assessing medication-related problems, developing a prioritized list of medication-related problems, and creating a plan to resolve them.[ii] CMRs are designed to increase patient knowledge of their medications and empower them to self-manage their medications and health conditions.

Both pharmacists and pharmacy technicians can play a role in successful delivery of a CMR. Specifically, pharmacy technicians can participate in the medication reconciliation component of a CMR. The American Society of Hospital Pharmacists 2016 national survey of pharmacy practice in hospitals found an increase in pharmacy technician involvement in two nontraditional areas, including supervisory roles and medication reconciliation activities.[iii] The Joint Commission defines medication reconciliation as the process of comparing the patient's medication orders to all the medications the patient has been taking.[iv] This process is critical as it helps to prevent medication discrepancies and medication errors. Per the Joint Commission, there are five standard steps for completing medication reconciliation, which include (1) developing a list of current medications (medication history), (2) developing a list of medications to be prescribed, (3) comparing the medications on both lists, (4) making clinical decisions and recommendations based on the comparison, and (5) communicating and providing education on the new list to the patient and their caregiver, as appropriate. Pharmacy technicians are equipped to complete steps one and two of this process as accreditation standards do not require that pharmacists exclusively complete these tasks.[v] Trained pharmacy technicians have proven they are able to collect medication histories with similar completeness and accuracy as physicians, nurses, and pharmacists.[vi] In previous literature, pharmacists have

noted a desire in having support from pharmacy technicians to gather initial information from patients.[vii]

In addition to medication reconciliation, pharmacy technicians play a key role in the delivery of other essential pharmacy services. Health systems and community pharmacies alike are expanding technician responsibilities to additional tasks previously performed exclusively by pharmacists, including administering vaccinations and completing vaccination assessments, completing technician order verification, accepting verbal prescription orders, transferring prescriptions, and processing orders remotely. Specifically, in Ohio, pursuant to recent changes in the Ohio Administrative Code, certified pharmacy technicians can accept new verbal prescription orders, including refill authorizations, for non-controlled drugs, and send or receive transfers of non-controlled prescriptions.[viii]

Expanding the scope of responsibility of technicians can increase operational efficiency within pharmacies and provides pharmacists an additional opportunity to perform clinical tasks and conduct direct patient care services. When pharmacists are engaged in patient care in the community setting, access to care is improved, physician time is saved, and clinical and economic outcomes are improved.[ix] Advanced roles for technicians may help with career development and greater job satisfaction. Pharmacists must facilitate the advancement of pharmacy technicians, further enabling pharmacists to achieve their rightful place as healthcare providers.[x]

Objectives

This study evaluated the impact of a standardized training program for advanced technician services implemented in a large community pharmacy chain. The primary objective was to determine the impact of a standardized advanced technician service training program on the number of medication history updates (MHU) and vaccine assessments (VA) completed by technicians during CMRs. The secondary objectives, include and evaluation of (1) the number of new non-controlled verbal and voicemail orders, and prescription transfers completed by technicians as a result of standardized operational task training, (2) the percentage of CMRs with identified DTPs as a result of a technician recorded medication history update, and (3) pharmacist and technician satisfaction and confidence with technician involvement in advanced pharmacy services.

Practice Description

The study was implemented in five pharmacies located within one regional division of a large community pharmacy chain. This chain operates over 2,300 pharmacies in 37 states across the United States and 215 convenience care clinics in nine states. This community pharmacy chain has received Community Pharmacy Practice Accreditation through the National Association Boards of Pharmacy.

Pharmacists in these settings routinely provide a wide variety of direct patient care services, including biometric healthcare screenings, immunization services, and MTM services.

Many of the pharmacy locations also offer advanced clinical services, including chronic disease state management programs and appointment-based medication synchronization services.

Practice Innovation

Pharmacy Technician Selection

All pharmacy technicians employed by the large community pharmacy chain completed organization-specific training upon employment as part of an existing technician training program. Technicians completed phases of training to ensure operational competency and introduce clinical services. In addition to this training, all technicians who participated in this study were certified through the Pharmacy Technician Certification Board (PTCB). Certified technicians specifically were chosen for this project to ensure compliance with local state pharmacy laws.

Pharmacy Technician Training

Certified pharmacy technicians completed the standardized training program prior to implementation of research. The training program was a two to three-hour session that took place off site. Training consisted of an informational session addressing the technician's role during a CMR as well as the technician's role in operational tasks, followed by application-based learning experiences. Following the initial training program, longitudinal support was provided to reinforce concepts presented and answer questions as needed.

Patient Selection

Patients, who were eligible for a CMR, were identified through an existing MTM platform within the pharmacy electronic dispensing system. Technicians interacted with patients face-to-face or telephonically. When a patient presented to the pharmacy to pick up a prescription, the pharmacy technician described the benefits of a CMR and attempted to initiate the CMR process. The technician then notified the pharmacist and proceeded with the initial steps of the CMR as appropriate. If the patient was not available at the time of pick up, the technician scheduled a more convenient time with the patient to complete the CMR.

Intervention – Clinical

To conduct the medication history update, technicians used a personal medication record generated by the electronic dispensing system. The technician reviewed the list with the patient, documented medication changes, additions, or deletions, and inquired about any other prescription, over-the-counter, or herbal medications the patient may be taking and documented the responses. Following the MHU, the technician used an organization-specific vaccination assessment tool to determine the patient's vaccine history and identify any vaccines the patient may have been eligible for. After completing the vaccination assessment, the technician reported their findings to the pharmacist.

Intervention – Operational

In addition to typical job responsibilities during the prescription filling process, such as data entry and product preparation, technicians also completed new verbal and voicemail prescription orders for non-controlled drugs, and facilitated the transfer of non-controlled prescriptions.

Evaluation

This study was a prospective, multisite study waived by the University of Cincinnati Institutional Review Board. The training period occurred in November 2019, with longitudinal project support provided following the training. The interventions and data collection started in November 2019 and were completed in June 2020.

Measurement of Primary Objectives

The primary objective, technician involvement in CMRs, was measured by the number of completed CMRs with a documented MHU or VA by a technician. A patient's acceptance of a CMR indicated that the patient was identified and offered the CMR by any pharmacy personnel. The number of completed interventions was collected via internal reports from the electronic dispensing system and reported using descriptive statistics to evaluate pharmacy technician intervention completion.

Measurement of Secondary Objectives

Pharmacy technicians utilized a paper log to record completed operational tasks, including new verbal and voicemail orders and transfer prescriptions. Technicians were required to update an excel sheet with their results once weekly. Drug therapy problems (DTPs), including vaccines needed, adherence (including both overuse and underuse of medications), and smoking cessation, identified as a result of technician involvement in a CMR were recorded in a patient specific action plan provided to the patient following completion of the CMR and documented in the MTM platform. Pharmacist and technician confidence with the advanced technician tasks were evaluated with paper surveys both prior to the advanced training program and at the conclusion of the project. The potential impact of participating in clinical services on technician job satisfaction was evaluated in the pre-survey as well.

Results

Intervention – Clinical

Certified pharmacy technicians from three of the five study pharmacies recorded involvement in a total of 51 CMRs, 45 of which had documented DTPs during the study period of November 2019 to June 2020 (Table 1).

Table 1. Clinical Results		
Pharmacy	Number of Completed CMRs	Number of CMRs with Documented DTPs
1	18	15 (83.3%)

2	9	8 (88.9%)
3	24	22 (91.7%)
Total	51	45 (88.2%)

Intervention – Operational

Certified pharmacy technicians in all five pharmacies recorded involvement in operational tasks, collectively completing 509 new verbal or voicemail non-controlled orders, 247 transferred in prescriptions, and 102 transferred out prescriptions, for a total of 858 operational tasks during the seven month intervention period (Table 2).

Table 2. Operational Results			
Pharmacy	New Verbal or Voicemail	Transfer In Prescriptions	Transfer Out Prescriptions
1	104	64	24
2	91	41	4
3	269	118	71
4	14	8	3
5	31	16	0
Total	509	247	102

Pharmacist and Technician Confidence

Eleven pharmacists and nineteen technicians recorded responses to the pre-survey, and ten technicians and nine pharmacists completed recorded responses to the post-survey evaluating confidence with technician involvement in advanced research tasks prior to standardized training (Table 3). The average pre-survey response among 19 pharmacy technicians indicated that they agreed they were confident in their ability to perform research tasks. In contrast, the average pre-survey response of eleven supervising pharmacists most closely reflects that they were neutral in their confidence of the pharmacy technicians, with their lowest confidence in the technician's ability to receive a new verbal order. Technicians' recorded higher average responses to all the operational tasks, but lower average responses for clinical tasks on the post-survey. Pharmacists recorded higher average responses for all research tasks on the post-survey.

Table 3. Confidence Pre-Responses				
Statement	Technician Average Response		Pharmacist Average Response	
	Pre-Survey (n=19)	Post-Survey (n=10)	Pre-Survey (n=11)	Post-Survey (n=9)
I am confident in my ability to successfully receive a new verbal order.	4.26	4.7	2.73	4

I am confident in my ability to successfully receive a voicemail order.	4.32	4.7	3.45	4.11
I am confident in my ability to successfully transfer a prescription out of the dispensing software to an outside pharmacy.	4.11	4.2	3.55	4.22
I am confident in my ability to successfully receive a prescription transfer from an outside pharmacy.	4.12	4.6	3.36	4.11
I am confident in my ability to perform a medication history update as part of the CMR process.	4.12	4	3.64	3.89
I am confident in my ability to perform a vaccine assessment as part of the CMR process.	4	3.9	3.27	3.67

1= strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree

Technician Satisfaction and Involvement

The answer chosen most frequently on the engagement question of the pre-survey among 19 technicians was "somewhat" (Figure 1). No technicians responded not at all or very little. Sixteen of the nineteen technicians reported current involvement of less than once per month or more than once per month, but not more than once per week (Figure 2).

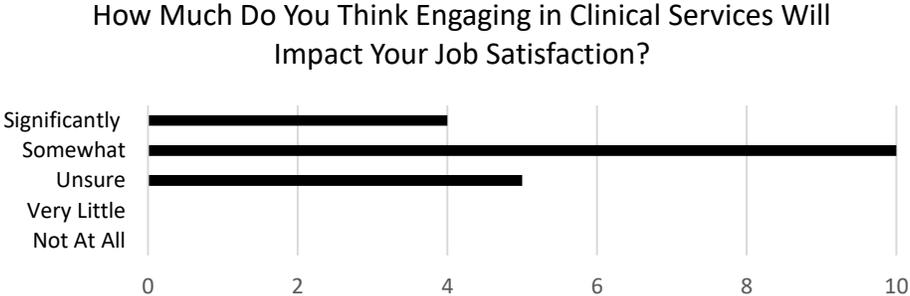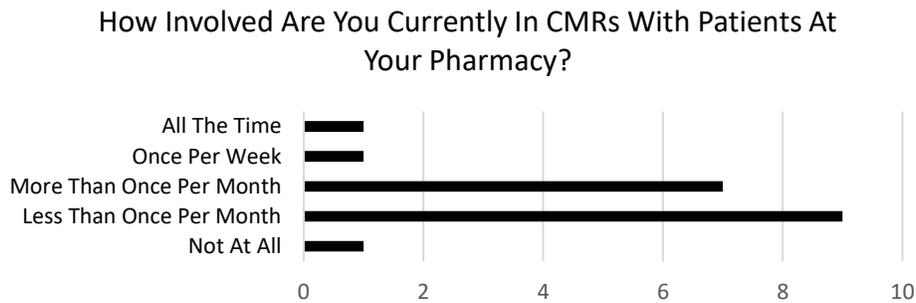**Figure 1. Pharmacy Technician Satisfaction Pre-Survey Responses**

How Much Do You Think Engaging in Clinical Services Will Impact Your Job Satisfaction?

Figure 2. Pharmacy Technician Clinical Involvement Pre-Survey Responses

How Involved Are You Currently In CMRs With Patients At
Your Pharmacy?

Discussion

Pharmacy technicians demonstrated that they could effectively engage in CMRs through medication history updates and vaccination assessments as a result of a standardized training program. Additionally, pharmacy technicians were successful in completing operational tasks, including receiving new non-controlled verbal and voicemail orders, and transferring prescriptions. The operational task results were consistent with the confidence that the pharmacy technicians reported in their preliminary surveys. The data from the study time period suggests that pharmacy technicians will continue to take the initiative to participate in operational tasks. Additionally, the confidence level of both pharmacy technicians and pharmacists who completed post-surveys increased during the study time period, reflecting the strong technician involvement.

While pharmacy technicians demonstrated successful involvement in clinical and operational tasks, some limitations were identified. As demonstrated in Table 3, only three research pharmacies recorded clinical involvement, with pharmacy 4 and 5 recording fewer operational tasks completed. Of note, these pharmacies were delayed in scheduling their training class. It was more difficult for the smaller research pharmacies to find time for all their technicians to attend training, without compromising necessary staffing for workflow. In addition, there was a lack of consistency with implementation and execution within the pharmacies due to transitions of both pharmacists and technicians. Technicians also were denied the opportunity to transfer prescriptions by outside pharmacy chains.

One major barrier encountered during the study time period was the presence of a global pandemic. The pandemic significantly increased pharmacy workload and shifted the provision of pharmacy services to mainly the preparing and dispensing of medications, with less of a focus on providing clinical services.

Although each pharmacy had ample opportunity to perform CMRs, there were only 51 documented CMRs with technician involvement. Despite recording initial confidence, some CPhTs were slow to adopt clinical responsibilities, and questioned their confidence, as reflected in their clinical task responses to the post-survey. Barriers to technician involvement included increased prescription volume during the study period, different levels of support and encouragement from supervising pharmacists, and lack of a standardized workflow process to force technician involvement in clinical tasks.

Conclusion

Upon implementation of a standardized technician training program for advanced clinical services, certified pharmacy technicians demonstrated successful participation in CMRs through medication history updates and vaccination assessments. Of the CMRS completed, 88.2% were documented with DTPs, attesting to high CMR quality. Technicians also demonstrated strong performance in operational research tasks, including new non-controlled verbal and voicemail orders and transfer prescriptions. Prior to this research study, pharmacy technicians indicated that they were confident in performing advanced clinical and operational tasks. Pharmacists, however, were less confident in their technicians performing these tasks. During the post-survey, the average responses of both technicians and pharmacists reflected increasing confidence in operational tasks, yet technicians reported lower confidence in their ability to perform clinical tasks at the conclusion of the research period. These findings are impactful because pharmacy technicians demonstrated they could increase their contribution to team-based care within the community pharmacy setting in a way that they had not prior to the training session. An advanced training program for clinical and operational tasks may be a viable strategy for increasing technician involvement in team-based care. Further research is needed to determine the most effective way to incorporate pharmacy technicians into the CMR process, with consideration for their comfort level and confidence.

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