

Feasibility and Impact of Integrating Position-Specific Roles for Comprehensive Medication Reviews into Community Pharmacy Workflow

Background:

A quarter of Americans have at least two chronic conditions requiring continued care and/or limiting daily activities for a period of at least a year.[1] Even though Americans are now living longer, a greater number of older Americans are living with several chronic conditions that involve multiple medications. As prescription drug use increases, so do concerns about polypharmacy. Polypharmacy— which is commonly defined as taking five or more drugs— increases the risk of drug interactions, adverse drug events, non-adherence, and reduced functional capacity. [1] Between 1988–1994 and 2013–2014, the percent of older adults reporting the use of five or more prescription drugs in the past 30 days rose from 13.8 percent to 42.2 percent. [2] These statistics demonstrate the need for continuous monitoring and education of patients to ensure appropriate quality of care.

Comprehensive Medication Reviews (CMRs), a component of medication therapy management (MTM), improve patient care, strengthen pharmacist-patient relationships, and improve pharmacist-provider relationships.[3] Pharmacist-provided CMRs have demonstrated positive effects on clinical outcomes, adherence to medication therapy, hospital readmission rates, mortality, patient satisfaction, and cost savings.[3] Ramalho de Oliveira and colleagues reported that pharmacists at a large integrated healthcare system identified 38,631 drug therapy problems over a 10-year period and the most common interventions identified during these CMR encounters were the need for an additional drug therapy (28.1%) and sub-therapeutic dosage (26.1%). When assessing the 12,851 medical conditions found amongst the 4,849 enrolled patients who were not at goal, 55% of the medical conditions improved with the pharmacist intervention. [4] MTM services, including CMRs, are becoming more commonly available in community pharmacy settings due to initiatives within the Medicare Modernization Act of 2003 and the Affordable Care Act, which pushed Medicare advantage plans and prescription plans to offer patients with chronic diseases access to annual CMRs and targeted medication reviews with the end goal to improve quality of care and reduce health care costs. [5,6,7]

Despite the benefits of CMRs, these are often not completed in community pharmacies. A survey of 776 out-patient pharmacists that provided MTM to patients showed that the most commonly encountered barrier in providing these services were time and staffing. [8] In their study that focused on community pharmacies, Stafford et al identified insufficient time and staffing to complete the services, low compensation, low patient interest in services, inadequate training/experience for pharmacy staff, and lack of support from management as the barriers to completing MTM. [9] In order to provide CMRs, pharmacists need to balance CMR preparation, delivery, and documentation while simultaneously maintaining all other pharmacy-related activities such as accurate and timely dispensing of medications, immunizations, and patient counseling. A potential solution to this problem is to better incorporate CMR completion into pharmacy workflow. Integration of technicians and interns into CMR workflow requires position-specific responsibilities and training.[10] Additionally, these position-specific responsibilities will help in establishing consistent CMR workflow that prompts pharmacy teams to focus on improving the number and quality of CMRs provided, battle anticipated barriers, and encourage patient engagement.[11] Thus, the purpose of this study was to determine the feasibility of including the whole pharmacy team in providing CMRs by integrating this into the pharmacy workflow and to determine the impact of role-specific workflow integration. The study hypothesis was that when the non-clinical components of CMR such as collection and documentation of patient intake information and CMR results can be completed by pharmacy technicians and interns, the pharmacists can increase the number of completed CMRs, which in turn will result in improved patient outcomes. Additionally, this will also empower technicians and interns thereby increasing their impact on patient care. [12]

Objectives:

The study had three specific objectives: 1) To determine the change in CMR completion rates after position-specific roles and workflow integration is executed, 2) To examine the quantity and quality of medication related action plans (MAPs) and interventions generated from the CMRs, and 3) To determine the feasibility of this program by identifying the barriers to program implementation and satisfaction with provided services.

Methods:

Research Setting:

The study was approved by the Roseman University Institutional Review Board and was a prospective, randomized, controlled trial at 20 Utah-based pharmacies within the Smith's Food and Drug division of The Kroger Company. In mid-2018 Kroger implemented the #ClinicalStrong training program in all divisions. This program trained and empowered all in-store pharmacists to engage in completing CMRs and also involved at least one technician from each pharmacy. Prior to this initiative, in the Smith's division in particular, CMRs were primarily performed by a select group of pharmacists, each offering services in several locations, but with the growing number of CMR opportunities the clinical team was unable to keep up with demand, patient engagement was more effective, and labor was more manageable when services are provided by the pharmacist who is regularly staffing that location. A pharmacist provided CMR consists of 5 core elements: 1) Medication therapy review (both comprehensive and targeted medication reviews); 2) Personal medication record; 3) Medication related action plan (MAP); 4) Intervention/referral where, if needed; and 5) Documentation and follow-up. [13] For this study, the MAP will be used to evaluate the quality of the CMR. A MAP is created by the pharmacist and includes recommendations of medication additions, deletions, modifications, and explanations to be shared with the patient and his or her health care team. [13].

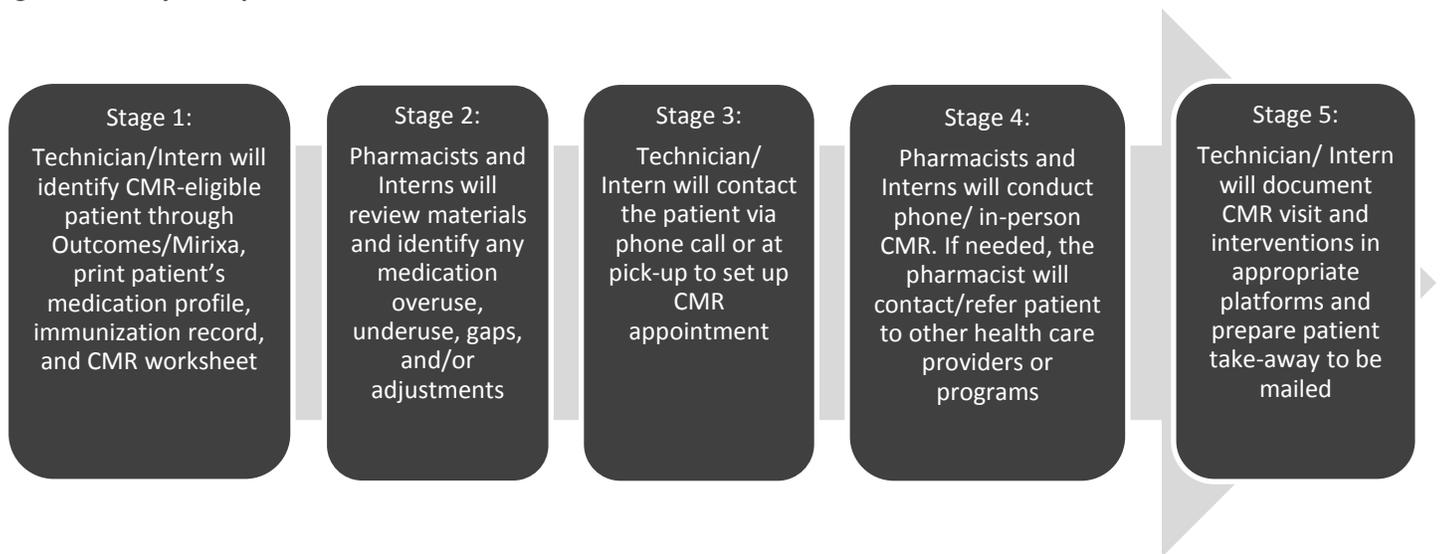
Intervention Study Design:

The study had two arms – intervention and control groups. Ten pharmacies out of the 55 Smith's pharmacies in Utah were randomly chosen by Excel random number generator to be in the intervention group and were matched to ten control group pharmacies based on prescription volume, CMR opportunities, and CMR completion rates from the same period in the previous year. The study period was between October 15th and December 31st 2018. CMR identification, CMR completion rates, and MAP data were collected from third party platforms OutcomesMTM and Mirixa during the study period. CMR completion rates were determined by dividing completed CMRs by CMR opportunities during the study time period. As an incentive to increase participation, the pharmacy with the highest CMR completion rate during the study period in both the intervention group and control group were rewarded with 10 \$20 Amazon gift cards, to be distributed among their staff. After the study period, completed CMRs were reviewed and classified by having a completed MAPs vs none. If a CMR had a completed MAP, the number of interventions were counted and classified. Upon CMR review, all interventions were classified into one of nine categories: immunizations, adverse drug reaction, disease state management, adherence, drug alternative, new drug therapy, and instructions for use. These MAP intervention categories were determined by examining the possible claims billed by OutcomesMTM/Mirixa for MTM patients. [14]

Intervention Group Protocol:

All intervention group pharmacy team members were invited to attend a 1-hour live video conference training and were provided with paper/electronic materials. Attending this training was optional. Paper materials consisted of a CMR worksheet that divided the CMR into 5 steps with job specific roles (Figure 1), a disease state review, Kroger MTM policies and procedures, and the primary author's contact information. After the initial training, bi-monthly check-ins via email/phone were conducted to help reinforce training and help with best practices.

Figure 1: Study Group Workflow:



Control Group Protocol:

Pharmacies were provided with a 1-hour question and answer conference call (optional) with Smith's Pharmacy Practice Coordinator, equivalent to a district pharmacy manager, to answer pharmacist and technician questions about CMRs. After the initial question and answer period, bi-monthly check-ins were conducted to help reinforce training and help with best practices.

Survey Design:

To determine the feasibility of the integration, two anonymous cross-sectional Qualtrics surveys, one for pharmacists and another for technicians/interns, were sent to all intervention group and control group pharmacies via email/fax after the study period completion in January 2019. The survey was open for two weeks, from January 15 to 29, 2019, and four reminders were sent to participants via work emails and store faxes.

Both surveys were adapted from Lengel and colleagues' study on technician MTM involvement in community pharmacies. [12] The 47-item pharmacist survey (Appendix 1) was divided into six sections. The first section evaluated pharmacists' general beliefs about CMRs using nine items on a 5-point Likert-type scale (e.g.: I believe that CMR services are important for our patients). The second section evaluated pharmacists' beliefs in technicians/intern roles in CMRs using eight items on a 5-point Likert-type scale (e.g.: I believe that CMR services are important for our patients). The third section evaluated the frequency of CMR-specific responsibilities performed by technicians/interns using seven items on a 4-point frequency scale ranging from never to often (e.g.: identified CMR opportunities through conversations with patients). The fourth section evaluated the frequency of CMR-specific leadership & teamwork responsibilities performed by technicians/interns using six items on a 4-point frequency scale ranging from never to often (e.g.: taught other technicians about CMR services). The fifth section determined the overall satisfaction using one item on a Likert scale. All sections had one free response question to collect any open thoughts. The last section was used to collect personal (e.g.: age) and professional (e.g.: number of years in practice) demographic information, as well as practice-site characteristics

The 43-item technician/intern survey (Appendix 2) was divided into four sections. The first section evaluated technicians'/interns' general personal beliefs about CMRs using nine items on a 5-Point Likert-type scale (e.g.: I believe that CMR services are important for our patients.) The second section evaluated the frequency of CMR-specific

leadership & teamwork responsibilities performed by technicians/interns using six items on a 4-point frequency scale ranging from never to often (e.g.: I have taught other technicians/interns about CMR services). The third section evaluated technicians'/interns' overall satisfaction with their roles in CMRs using fifteen items on a 5-point Likert-type scale (e.g.: Overall, I am satisfied with the trained technician's/interns role in CMR services). All three sections had one free response question to collect any open thoughts. The last section was used to collect personal (e.g.: age) and professional (e.g.: number of years in practice) demographic information, as well as practice-site characteristics

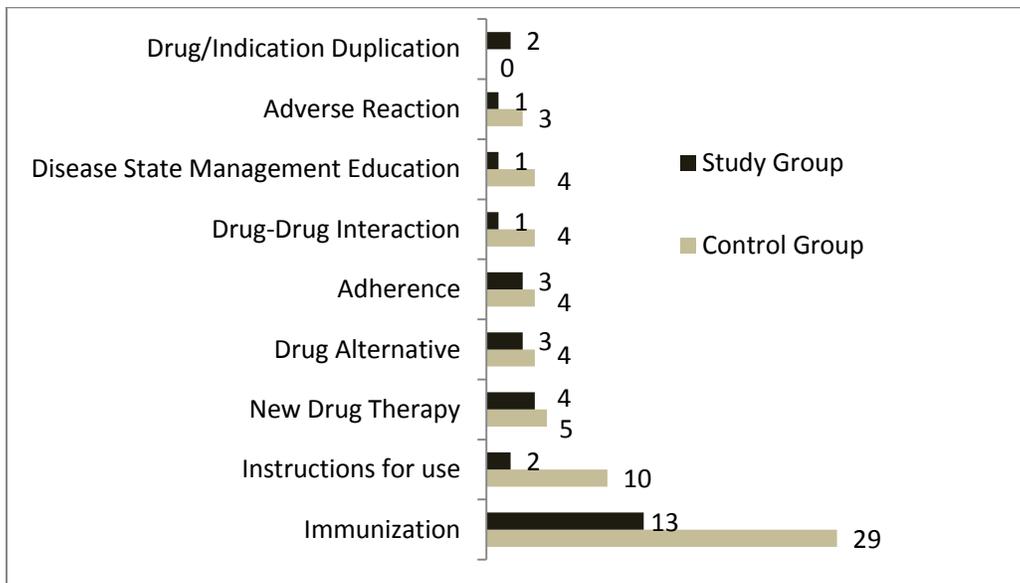
Data Analysis:

Statistical analysis was performed using SPSS version 23[®]. Descriptive statistics, such as means (and standard deviations) and frequencies (reported as percentages), were used to describe the data. To compare the completed CMRs and MAPs between the study intervention group and control group pharmacies, independent samples t-tests were used. ANOVA and chi-square tests were used to determine if there was a significant difference in the survey responses between the intervention and control group pharmacists and technicians/interns for all the surveyed domains such as pharmacists' beliefs about CMRs and pharmacists' beliefs in technicians/intern roles in CMRs. To find the mean of domain, each response was designated a value to be added together and averaged. For the 5-point scale, the following are the point designations: strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, and strongly disagree = 1. Thus, for domain 1 (pharmacist's beliefs about CMR values), the score can range from 9 to 45 and for domain 2 (pharmacists' belief in technician/intern roles in CMRs), the scores can range from 8 to 40. For the 4-point scale, the following are the point designations: often = 4, sometimes = 3, rarely = 2, and never = 1. Thus, for domain 3 (CMR-specific responsibilities performed by technicians/interns), the scores can range from 7 to 28 and for domain 4 (CMR-specific leadership and teamwork responsibilities performed by technicians/interns), the score can range from 6 to 24. In order to compare the values amongst the groups, the normalized mean was calculated by dividing the domain's mean and by the number of 5-point or 4-point questions. The type I error was maintained at 0.1.

Results:

The rate of CMR completion was higher in the control group at 46.8% (37/79) compared to the study group at 40.0% (30/75), and there was no significant difference between the groups ($p = 0.76$). Of the completed CMRs, 48.6% of CMRs completed by control group pharmacies included MAPs compared to 50% (15/30) of CMRs completed by the intervention group; no statistically significant difference between the two groups ($p = 0.92$). When examining the completed MAPs the total number of interventions in the control group was 62 compared to 30 in the study group ($p = 0.12$). The range of interventions per completed MAP ranged from 1 to 7 interventions. Figure 2 depicts the quantity and type of interventions in the completed MAPs. The highest numbers of interventions were in the categories of immunization recommendations, instructions for medication use, and new drug therapy.

Figure 2: Classification of Interventions in CMRs



For determining the feasibility of the program by identifying the barriers to program implementation and satisfaction, the response rate to the surveys was quite low. For the intervention group, 9 of 36 pharmacists opened the survey with 6 completed surveys (response rate = 16.67%) and 5 of 134 technicians opened the survey with 1 completed survey (response rate = 0.74%). The free response sections were attempted by 3 of the 6 intervention pharmacists and 1 of 1 intervention technicians/interns. In the intervention group, 3 of 4 free responses cited needing additional labor hours to help implement CMRs and 1 of 4 cited the pharmacist’s attitude as a barrier to completion. For the control group, 15 of 41 pharmacists opened the survey with 12 completed surveys (response rate = 29.27%) and 1 of 125 technicians opened the survey with 1 completed survey (response rate = 0.8%). The free response sections were attempted by 5 of 12 of the control pharmacists and 0 of 1 of the control technicians/interns. In the control group, 4 of the 5 free responses cited low patient/provider belief in the service, 1 of 5 cited needing additional labor hours, and 1 of 5 citing workflow constraints as barriers to completion.

When comparing the responses in the four surveyed domains (Table 1) there was no statistical difference in between the control and intervention group in terms of pharmacist belief in the value of the CMR or pharmacists’ belief in technician/intern roles in CMRs. However, there was a higher rate of CMR-specific responsibilities performed by technicians/interns and CMR-specific leadership (2.46 vs 1.57 p=0.093), and teamwork responsibilities performed by technicians/interns (2.42 vs. 1.73 p=0.066) in the control group.

Table 1: Pharmacists' Perspective of Integrated Technician/Intern Roles in CMRs

Theme (Number of Items)	Control Group Mean	Normalized Mean	Intervention Group Mean	Normalized Mean	P-value
Pharmacists' belief in CMR values (9) ⁺	31.83	3.54	29.00	3.22	0.742
Pharmacists' belief in Technician/Intern roles in CMRs (8) ⁺	34.10	4.26	26.80	3.35	0.107
CMR-specific responsibilities performed by Technicians/Interns (7) [~]	17.20	2.46	11.00	1.57	0.093
CMR-specific leadership & teamwork responsibilities performed by Technicians/Interns (6) [~]	14.60	2.43	10.40	1.73	0.066

⁺ Based on a 1-5 rating scale

[~]Based on a 1-4 rating scale

Further analysis was carried out to determine what pharmacist characteristics influenced their responses to the four survey domains. The characteristics analyzed were the subject's position in the pharmacy (pharmacy manager vs. staff pharmacist), years as licensed pharmacist (Less than 1 year, 1-3 years, 4-5 years, 6-10 years, and more than 10 years), age (40 or below and above 40) and gender. This analysis was carried out for pharmacists in the control group only since there were only 6 responses from the intervention group pharmacists. The pharmacy managers had a higher score related to the pharmacists' belief in CMR values (3.8 vs 3.6 p= 0.098) and belief in technician/intern roles in CMRs (4.85 vs 3.78 p=0.88) (Table 2). The managers also reported a higher frequency CMR-specific leadership & teamwork responsibilities performed by technicians/interns (2.93 vs 1.75 p=0.029) (Table 2).

Table 2: Control Pharmacist Responses – Role Specific

Theme (Number of Items)	Role	Mean	Normalized Mean	P-value
Pharmacists' belief in CMR values (9) ⁺	Pharmacy Manager	34.60	3.8	0.098*
	Staff Pharmacist	28.80	3.6	
Pharmacists' belief in Technician/Intern roles in CMRs (8) ⁺	Pharmacy Manager	38.80	4.85	0.088*
	Staff Pharmacist	30.20	3.78	
CMR-specific responsibilities performed by Technicians/Interns (7) [~]	Pharmacy Manager	20.20	2.89	0.100
	Staff Pharmacist	13.60	1.94	
CMR-specific leadership & teamwork responsibilities performed by Technicians/Interns (6) [~]	Pharmacy Manager	17.60	2.93	0.029*
	Staff Pharmacist	10.50	1.75	

⁺ Based on a 1-5 rating scale

[~]Based on a 1-4 rating scale

Several trends were observed when examining the frequency of CMR responsibilities performed by technicians/interns and CMR leadership roles taken on by technicians/interns reported by control pharmacists. First, at least 50% of control pharmacists report technicians/interns often or sometimes engage with patients, identifying CMR candidates through clinical reports, dispensing software, and speaking with patients (Figure 3). These same pharmacists reported their technicians and interns never or rarely participated in searching third party platforms (OutcomesMTM and Mirixa) for CMRs or help with documentation of CMRS. Second, at least 50% of control pharmacists stated that technicians/interns often or sometimes communicate with pharmacists and other technicians/interns regarding CMR services (Figure 4). Although control pharmacists reported technicians/interns engaged in those two aspects, they also stated that technicians/interns, at least 50% of the time, never or rarely took initiative to work on CMR tasks, trained others on CMR services, generated ideas to improve services, and implemented ideas for improving CMR services.

Figure 3: Frequency of CMR Responsibilities by Technicians/Interns (Control Only)

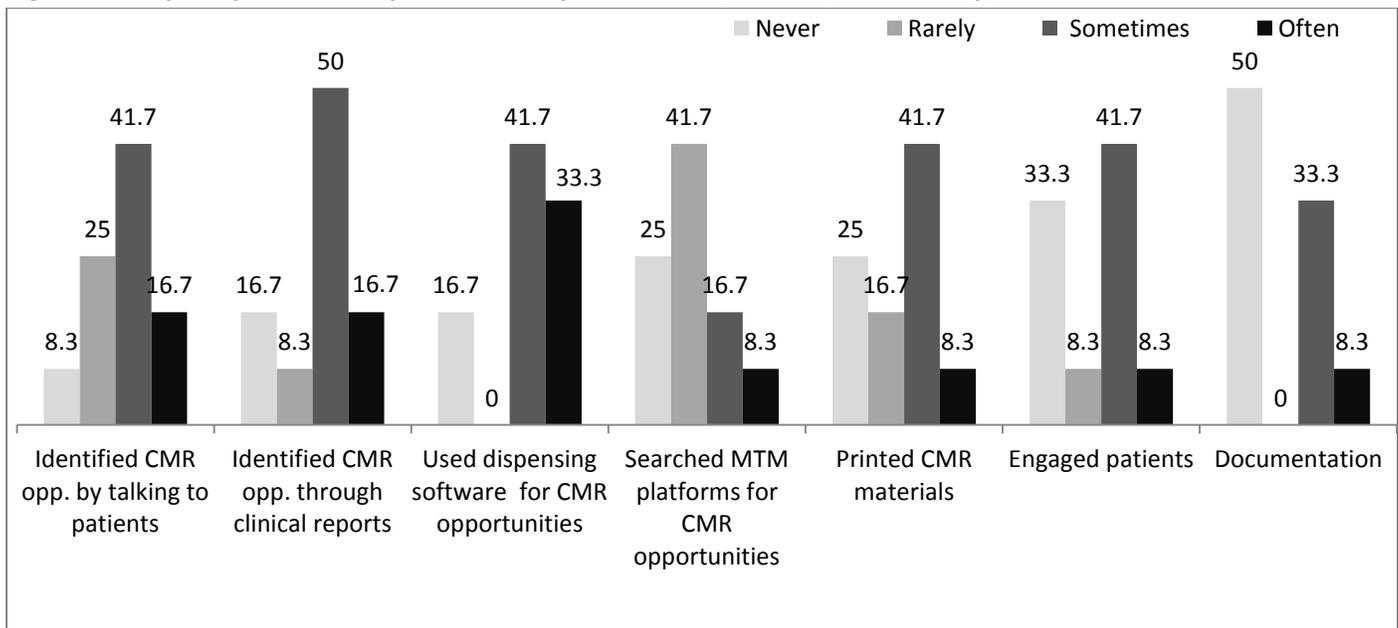
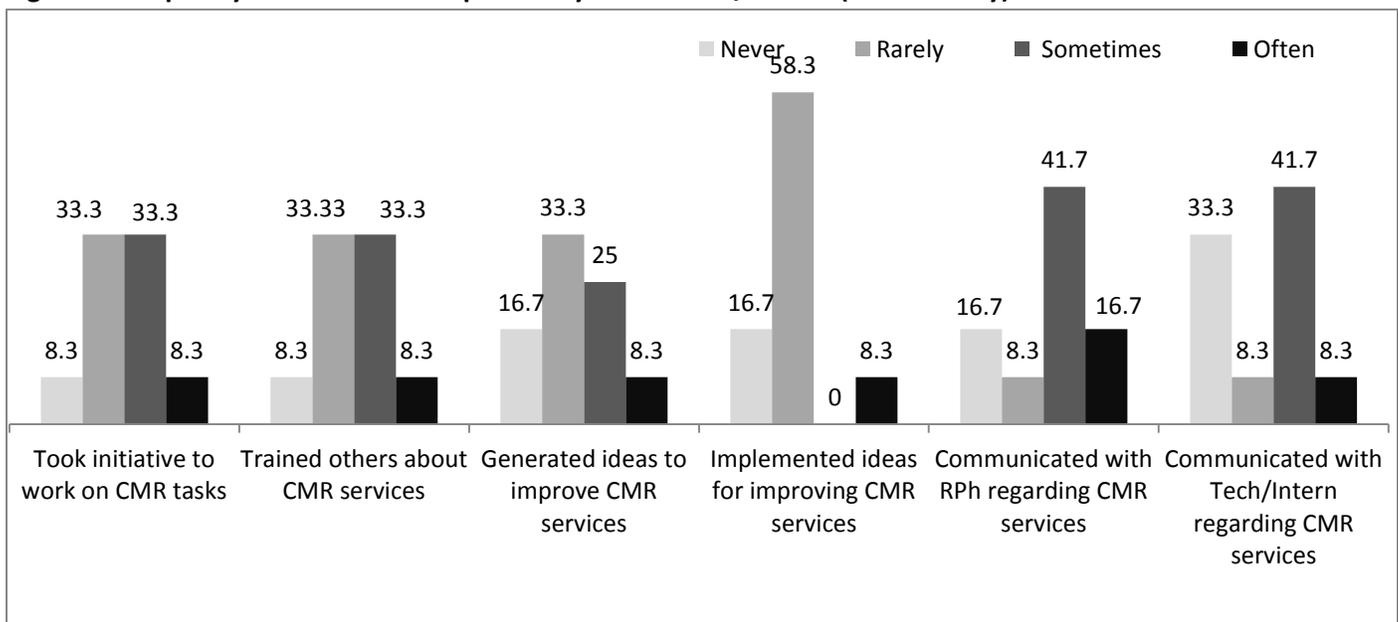


Figure 4: Frequency of CMR Leadership Roles by Technicians/Interns (Control Only)



Discussion:

The CMR completion rate may have been greatly impacted by several factors. The study had low participation in training sessions for both control and study groups. Although all stores received the paper and electronic training material, only five pharmacists and one technician from each group participated in video and conference call trainings. Additionally, the study was implemented between October 15th and December 31st, which coincides with flu season and increased workload for pharmacies. It is possible that pharmacies may have intentionally completed CMRs earlier in the year in anticipation of this increased workload, and the CMRs remaining at the end of the year may have had more barriers to completion thus resulting in a lower CMR completion rates during the study period. Barriers for the end of year CMRs may include: incorrect contact information or patients moved to other pharmacies, language barriers, transportation issues etc. Another factor that may have impacted the CMR completion rate was the recent implementation of #ClinicalStrong training for all Smith's division pharmacists. As pharmacists were adapting to the new expectation that all pharmacists engage in completing CMRs vs. a select team of pharmacists, completion rates may have been negatively affected due to low self-confidence in providing the service and difficulty prioritizing MTM/CMRs in workflow. The low rate of CMRs with completed MAPs may have resulted from an inordinate focus given to CMR completion rates rather than the quality of CMRs, also reflecting a lack of experience in identifying interventions and creating MAPs and/or a failure to capture all interventions in documentation.

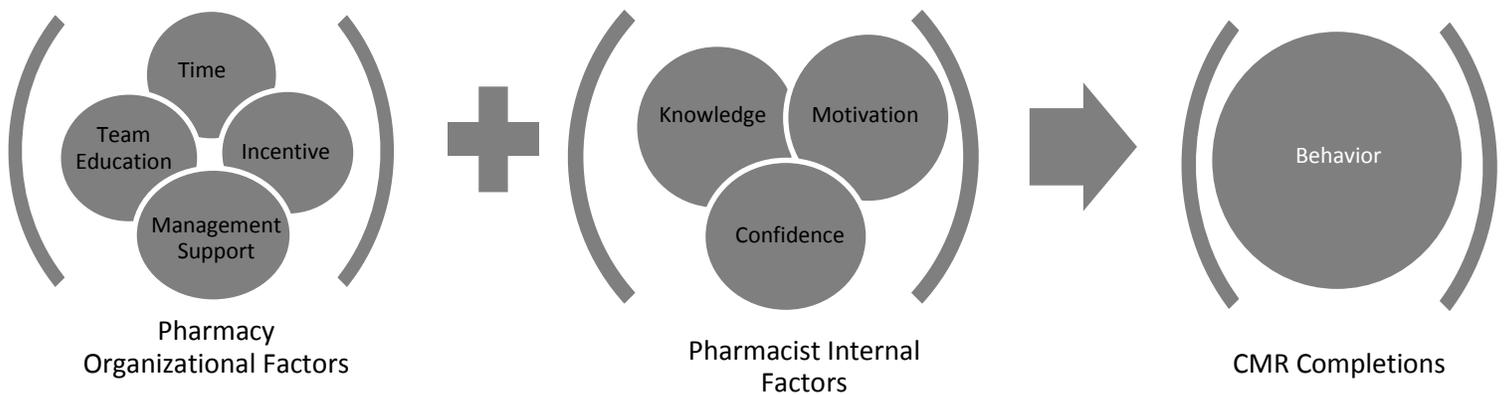
The higher frequency of control pharmacist reported CMR-specific responsibilities and teamwork responsibilities performed by technicians/interns may have driven the higher CMR completion trend in the control group. Technicians/interns in the control group may have taken on more of these roles for a variety of possible reasons such as personal belief of CMRs, belief in CMRs positively impacting patient care, CMRs providing more job satisfaction, etc. However, further studies are needed to better understand this observation. Due to the small sample size of and low survey response rates of this study, pharmacist surveys information cannot be generalized to all community pharmacy team members.

When examining what characteristics of the pharmacists influence their responses to the survey domains, the pharmacy managers had a stronger belief in the value of technician/intern roles impacting CMRs compared to the staff pharmacists. Having a pharmacy manager with a strong belief in CMRs may have contributed to the higher completion rate, although this was not a statistically significant finding. The views of the pharmacy manager, the team leader, may have provided the team with a broader vision about the use of resources within the pharmacy to attain the end goal. This supports that the attitude of the pharmacy leader has an important impact on CMR completion in the community pharmacy.

In taking a closer look at the specific responsibilities that technicians/interns sometimes or often participate in during the CMR process, it appears that they are more comfortable engaging patients in CMRs and identifying patients when only utilizing the dispensing software. Further training may be needed to utilize third party platforms like OutcomesMTM and Mirixa to further improve CMR completion rates. Another area with low participation for technicians/interns was CMR documentation. This could be due to technicians/interns lacking the skill and/or confidence on how to document visits, technicians/interns having difficulty interpreting pharmacists' CMR notes, or pharmacists having low confidence in technicians/interns to perform this step. When examining reported leadership responsibilities, technicians/interns communicate with pharmacists and other technicians/interns regarding CMR services but are still developing their initiative to work on CMR tasks, train others on CMR services, generate ideas to improve services, and implement ideas for improving CMR services. A higher response rate and additional studies may help provide more insight on how to further engage technicians/interns to take on more leadership roles in CMRs.

Conclusions

Although there were no significant differences in CMR completion rates, number of CMRs with MAPs, or the number of interventions between the control and study group, there is still more to investigate about CMRs in the future. This study focused primarily on providing team education to integrate position-specific roles into CMRs, but the education provided was not enough to increase CMR completion rates. Other pharmacy organizational factors that may impact CMR completions include time allowed to complete this service while also balancing workflow, pharmacy incentive to engage in the service, and management support in these initiatives. In addition to organizational factors, internal factors also impact the final outcomes. Personal factors for both pharmacists and technicians/interns include knowledge and understanding of the benefits of the service, internal motivation to provide the service, and confidence in one's abilities to provide the service. In order to change behavior, multiple elements that impact pharmacy organizational factors and pharmacist internal factors will need to be studied. Future studies may need to look at a longer periods of time, different modes of training, and/or other interventions to help integrate CMRs in community pharmacy practice.



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Appendix 1

Pharmacist Survey:

1. The following are statements about your beliefs in CMRs. Please indicate your level of agreement with each of the following statement. There is no right or wrong answer. (a-i strongly agree, agree, neither agree or disagree, disagree, strongly disagree)
 - a) I believe that CMR services are important for our patients
 - b) I believe that pharmacy technicians/interns have a role in CMR services
 - c) I am knowledgeable about CMR services
 - d) I am knowledgeable about MTM platforms (OutcomesMTM and Mirixa)
 - e) I have the skills to assist with CMR services
 - f) I have the time to facilitate CMR services
 - g) I believe that patients value clinical services like CMRs
 - h) I believe that providers value the pharmacy's contribution to clinical services
 - i) My role in CMR services is clearly defined
 - j) If you have any additional thoughts or wish to elaborate on any of your responses regarding YOUR BELIEFS ABOUT CMR, please provide comments here

2. The following are statements made by pharmacists with regards to perceptions of technicians/intern's role, knowledge, and skills in CMRs. Please indicate your level of agreement with each of the following statement. There is no right or wrong answer. (a-h strongly agree, agree, neither agree or disagree, disagree, strongly disagree)
 - a) Pharmacy technicians/interns have a role in CMRs services
 - b) Trained technicians/interns at my pharmacy feel that CMR services are important for our patients
 - c) Trained technicians/interns are knowledgeable about CMR services at my pharmacy
 - d) Trained technicians/interns are knowledgeable about MTM platforms (OutcomesMTM and Mirixa)
 - e) Trained technicians/interns have the skills to assist with CMR services at my pharmacy
 - f) Trained technician/intern roles in CMR services are clearly defined
 - g) Trained technician/intern assistance has increased the amount of CMR services provided
 - h) Trained technicians/interns assistance with CMR services has provided me more time to use my clinical skills
 - i) If you have any additional thoughts or wish to elaborate on any of your responses regarding PERCEPTIONS OF TECHNICIAN'S/INTERN'S ROLE, KNOWLEDGE, AND SKILLS in CMR, please provide comments here.

3. The following are responsibilities that can be undertaken by technicians and interns to impact the CMR workflow. Please indicate how often this happens in your pharmacy. (a-g never, rarely, sometimes, or often)
Trained technicians/interns have:
 - a) identified CMR opportunities through conversations with patients
 - b) identified CMR opportunities using clinical opportunity reports
 - c) identified CMR opportunities using icons and notes within the dispensing software (EPRN)
 - d) searched MTM platforms (OutcomesMTM and Mirixa) for CMR opportunities
 - e) printed out CMR material for the pharmacist(s)

- f) spent time engaging patients regarding their eligibility for CMR services
 - g) helped document patients' medication lists in MTM platforms
 - h) If you have any additional thoughts or wish to elaborate on any of your responses regarding the TECHNICIAN'S/INTERN'S IMPACT OF CMR WORKFLOW, please provide comments here.
4. The following are leadership and teamwork responsibilities that can be undertaken by technicians and interns. Please indicate how often this happens in your pharmacy. (a-f never, rarely, sometimes, or often)
Trained technicians/interns have:
- a) taken the initiative to work on CMR tasks
 - b) taught other technicians about CMR services
 - c) generated ideas for improving CMR services
 - d) implemented ideas for improving CMR services
 - e) communicated with pharmacists regarding CMR services
 - f) communicated with other technicians regarding CMR services
 - g) If you have any additional thoughts or wish to elaborate on any of your responses regarding the TECHNICIAN'S/INTERN'S LEADERSHIP AND TEAMWORK WITH MTM SERVICES, please provide comments here
5. Overall, I am satisfied with the trained technician's/interns role in CMR services (strongly agree, agree, neither agree or disagree, disagree, strongly disagree)
6. If you have any additional thoughts or wish to elaborate on any of your responses regarding the satisfaction with the TECHNICIAN'S/INTERN'S ROLES IN CMR SERVICES, please provide comments here
7. Age (Years)
8. What gender do you identify as: Male or Female
9. How many years have you worked for Smith's as a pharmacist?
- a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-10 years
 - e. More than 10 years
10. How many years have you been a licensed pharmacist?
- a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-10 years
 - e. More than 10 years
11. What is your position at Smiths Pharmacy?
- a. Pharmacy Manager

- b. Staff Pharmacist
- c. Part-time Pharmacist
- d. Per-Diem Pharmacist

12. On average, how many hours do you work at Smith's each week? (hours)

13. Which professional degrees do you have? (select all that apply)

- a. Bachelor's in Pharmacy Degree
- b. Professional/Graduate Degree (i.e. PharmD or Phd)
- c. Residency Trained (PGY-1 or PGY-2)
- d. Other

14. How many full-time pharmacists (including yourself) regularly work at your pharmacy?

15. How many part-time pharmacists (including yourself) regularly work at your pharmacy?

16. How many full-time technicians/interns work at your pharmacy (35 or more hours per week)?

17. How many part-time technicians/interns work at your pharmacy (less than 35 hours per week)?

Appendix 2

Technician/Intern Survey

1. The following are statements about your beliefs in CMRs. Please indicate your level of agreement with each of the following statement. There is no right or wrong answer. (a-i strongly agree, agree, neither agree or disagree, disagree, strongly disagree)
 - a) I believe that CMR services are important for our patients
 - b) I believe that pharmacy technicians/interns have a role in CMR services
 - c) I am knowledgeable about CMR services
 - d) I am knowledgeable about MTM platforms (OutcomesMTM and Mirixa)
 - e) I have the skills to assist with CMR services
 - f) I have the time to facilitate CMR services
 - g) I believe that patients value clinical services like CMRs
 - h) I believe that providers value the pharmacy's contribution to clinical services
 - i) My role in CMR services is clearly defined
 - j) If you have any additional thoughts or wish to elaborate on any of your responses regarding YOUR BELIEFS ABOUT CMR, please provide comments here

2. The following are responsibilities that can be undertaken by pharmacy personal with regards to leadership and teamwork with CMR services. Please indicate how often you have done this task. (a-f never, rarely, sometimes, or often)
 - a) I have taken the initiative to work on CMR tasks
 - b) I have taught other technicians/interns about CMR services
 - c) I have generated ideas for improving CMR services
 - d) I have implemented ideas for improving CMR services
 - e) I have communicated with pharmacists regarding CMR services
 - f) I have communicated with other technicians/interns regarding CMR services
 - g) If you have any additional thoughts or wish to elaborate on any of your responses regarding YOUR LEADERSHIP AND TEAMWORK WITH MTM SERVICES, please provide comments here

3. The following are statements made by pharmacy personal with regards to satisfaction with their role in CMR services. Please indicate your level of agreement with each of the following statement. There is no right or wrong answer. (a-l strongly agree, agree, neither agree or disagree, disagree, strongly disagree)

My role within CMR services provides me:

- a) An additional challenge in my job
- b) The feeling of accomplishment
- c) The feeling of job security
- d) Recognition for my job achievements
- e) Prestige and status within the pharmacy
- f) The opportunity to develop a sense of responsibility
- g) The opportunity for independent thought and action at my job

- h) The feeling of being “in the know” or having access to important and useful information at my job
 - i) The opportunity for me to participate in establishing goals and objectives at my job
 - j) The opportunity to do something that makes use of my abilities
 - k) The opportunity to receive praise for doing a good job
 - l) The opportunity to do different things from time to time
4. Overall, I am satisfied with the trained technician's/interns role in CMR services
- a. strongly agree
 - b. agree
 - c. neither agree or disagree
 - d. disagree
 - e. strongly disagree
5. Overall, since my involvement in CMR, I am more satisfied with my work at the pharmacy
- a. strongly agree
 - b. agree
 - c. neither agree or disagree
 - d. disagree
 - e. strongly disagree
6. If you have any additional thoughts or wish to elaborate on any of your responses have regarding THE SATISFACTION WITH YOUR ROLE IN CMR SERVICES, please provide comments here
7. Age (Years)
8. What gender do you identify as: Male or Female
9. How many years have you worked for Smith's as a technician or intern?
- a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-10 years
 - e. More than 10 years
10. How many years have you been a technician or intern?
- a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-10 years
 - e. More than 10 years
11. On average, how many hours do you work at Smith's each week? (hours)
12. Which professional degrees do you have? (select all that apply)
- a. High School Degree or equivalent

- b. Some college but no degree
- c. Associate Degree
- d. Bachelor's Degree
- e. Graduate Degree
- f. Other

13. Are you full time (35 or more hours per week) or part time in your position?

- a. Full time (35 or more hours per week)
- b. Part Time (less than 35 hours per week)

14. How many full-time technicians/interns (if applicable, including yourself) work at your pharmacy (36 or more hours per week)?

15. How many part-time technicians/interns (if applicable, including yourself) work at your pharmacy (less than 36 hours per week)?

16. How many part-time pharmacists regularly work at your pharmacy?