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INSTRUCTIONS

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Improving Workflow Efficiency in the Pharmacy

by Barbara Violo, B.Sc.H.Msc.Phm.R.Ph and Deven Saxena

Learning objectives

After completing this lesson, the pharmacy technician will be able to:

1. Outline basic concepts to improve pharmacy workflow efficiency.
2. Recognize ways to optimize the role of pharmacy technicians to improve pharmacy workflow.
3. Describe how different methods of analysis can improve pharmacy workflow efficiency.
4. Discuss the importance of improving pharmacy workflow efficiency in order to maximize pharmacist-patient interactions.

Introduction

What is pharmacy workflow, exactly? Pharmacy workflow can be described as the entire process of dispensing a prescription—from receipt of a prescription over the phone, by fax or e-prescribing, or a written prescription, to processing the prescription, preparing products for dispensing and counselling the patient.

Despite being pillars of health care across the country, pharmacies can often descend into organizational chaos if the appropriate measures are not taken to ensure their efficient operation. It may seem obvious that an efficient workflow process is needed in every pharmacy, but many of the everyday issues that pharmacy technicians and pharmacists face can be traced

back to an ineffective workflow process. In fact, a study found that Nova Scotia pharmacies made close to 100,000 medication errors between October 2010 and June 2017, and many of these can be attributed to pharmacy workflow.[1]

On top of this, another frequent issue caused by poor pharmacy workflow is long patient wait times. Excessive wait times can be a source of frustration for both patients as well as pharmacy technicians and other staff.[2] Overall, as the number of pharmacy workflow errors build up, patients face longer wait times as the day goes on. This can result in patients leaving the pharmacy without medication, or even leaving the pharmacy without proper counselling.

Patients leaving the pharmacy without medication or without proper counselling can have dangerous consequences to their health. It can also result in unnecessary drug waste that disrupts inventory systems and leads to further workflow issues.[2]

Improving workflow efficiency entails optimizing the involvement of pharmacy technicians in the dispensing process in an effort to maximize the amount of time the pharmacist can spend on patient interactions. The importance of pharmacist-patient interactions and improving workflow is evident when considering that approximately 82% of all medication errors are discovered and can be corrected during workflow safety checks and during counselling before the patient even leaves the pharmacy. [1] This statistic highlights the importance of maximizing pharmacist-patient interaction time and technician-pharmacist interaction, as well as technician-patient interaction to minimize pharmacy errors.

This lesson will go through a variety of methods to help increase workflow efficiency and reduce workflow errors. It will first highlight some general, basic concepts to help improve pharmacy workflow efficiencies, and then explore some more complex ways to analyse and improve workflow.

Finally, a case study is given to demonstrate possible ways to incorporate new workflow-modifying techniques into practice.

Basic Concepts to Improve Workplace Efficiency

Measure

Measuring workflow and inventory flow can be important first steps toward increasing efficiency. If workflow is not measured, there is no concrete way to discern if your pharmacy is making progress or improving on previous efficiency.[3] Establishing a performance baseline is crucial as this allows pharmacy staff to track increases and decreases in overall performance. Once a performance baseline has been established, it is then important to pick specific variables to target and improve on, and hold pharmacy staff accountable. For example, this could be a certain number of prescriptions filled per day, or quantitative patient satisfaction ratings from surveys.[3]

Movement from Work Station

This aspect of workplace efficiency is often overlooked by pharmacy technicians and pharmacists alike. Pharmacy technicians often have to leave their workstations to retrieve medication, scan documents and communicate with other staff members.

Questions to ask technicians and staff to help improve Movement from Work Station:[3]

- ✔ How far do the pharmacy technicians have to move while performing daily tasks?
- ✔ Could there be a more effective way to layout areas of the pharmacy?
- ✔ Are technicians often having to leave their workstations in order to fulfill basic tasks?

Operational efficiency in the workplace can be improved by moving the pharmacy technicians closer to their work. Some examples of assisting pharmacy technicians include:

- creating a fast-moving medication station closer to the technician's work bench,
- ensuring that printers, vial label printers, vials and stickers are in convenient vicinity of each other
- and ensuring that all pharmacy technicians have access to essential tools, such as computers and medication without being forced to cross through another technician or pharmacist's work area.

Communication

Communication can be a powerful tool in managing expensive or rare inventory and fostering important pharmacy-patient relationships. Encouraging patients with expensive or rare medications to advise the pharmacy when they will need more can help to manage inventory in a more cost-effective way and maintain a positive relationship with patients.[3] Communication is essential in optimizing pharmacy efficiency since patient feedback can be used to improve it.

Moreover, an effective, two-way communication channel between the pharmacy technician and the pharmacist is fundamental in allowing for pharmacy efficiency optimization.[3] Effective intraprofessional communication among the entire pharmacy team will improve pharmacy efficiency.

Improving pharmacy efficiency and workflow can often feel like a daunting task during day-to-day work, however, holding meetings and encouraging pharmacy technicians and staff to share ideas on how to improve efficiency can be a small but powerful tool. There is never a one-size-fits-all solution and improving workplace efficiency varies individually from pharmacy to pharmacy.

Automation

Automation can be a powerful tool for pharmacies to use, such as automated inventory tracking, automated dispensing machines, and more. Robotic dispensing systems can streamline and increase the efficiency of drug dispensing processes within pharmacies, allowing pharmacists and pharmacy technicians to put more time and effort into quality patient care.[4] One simple, cost-effective solution can be to set up automatic reminders in the pharmacy software system to remind patients a few days before their medication is due for renewal. This could be in the form of a text message, email, or phone message. This allows patients to feel more in control of their medication dispensing by not necessarily having to come in to get refills once they notice their vial is empty.

While these tools can be incredibly effective, they come at a high cost. One way to utilize automation concepts without necessarily paying for expensive machinery is to consider what strategies automated systems use and try to replicate them in the workplace. For example, creating designated stations for fast-moving medications will allow technicians to rapidly fill prescriptions without leaving their workstations.[4]

Advanced Methods of Workplace Efficiency Analysis and Improvement

Pharmacy Activity Categorization

One method of analyzing workflow efficiency is to categorize dispensing activities in the pharmacy. Observe pharmacists' dispensing-oriented activities and classify their actions as either value-added activities or non-value-added activities. [5] Value-added activities are those centred on pharmacist-patient contact, thus providing additional direct value to the patient (e.g., patient engagement upon entry to the pharmacy, patient counselling). Non-value-added activities are classified as the opposite (e.g., pharmacist technical dispensing activities).[5]

Classifying pharmacists' daily activities in this way can help to isolate which activities could be done by pharmacy technicians. Expanding the pharmacy technician's role within the pharmacy to assist the pharmacist with technical activities, such as prescription verification, can help improve the efficiency of the pharmacy and allow pharmacists to interact with patients as much as possible.[5]

By minimizing the pharmacist's non-value-added activities and maximizing the pharmacy technician's technical dispensing activities, pharmacist-patient interaction is highlighted, and the dispensing process can be optimized. The same is true for pharmacy technician's daily activities, as these tasks could be performed by pharmacy assistants or clerical staff, to enable technicians to spend more time on key workflow activities. For example, clerical staff could keep track of medication inventory, and be tasked with patient communication over the phone and by email.

Lean Six Sigma

Lean Six Sigma is a strategy that combines two analysis processes (lean and six sigma), and is a team-focused managerial approach that focuses on eliminating wasteful practices and streamlining workplace efficiency. [6] It involves a combination of **(1)** asking employees to identify what problems are causing medication waste and workflow inefficiencies (Lean process) and **(2)** using data to identify problems in a business's workflow (Six Sigma process). Using a combination of both processes allows for businesses to improve efficiency of their operations.[6]

What is the Lean process?

The lean process focuses on allowing pharmacy technicians and other pharmacy staff to investigate the drug dispensing process. Often, these are the people best equipped to reveal unnecessary complexities that contribute to delays in delivering medications to patients.[7] This process relies on two subsets of concepts, DMAIC and 5S. DMAIC, stands for Define, Measure, Analyze, Improve, Control. It outlines a general approach to analyzing workflow. 5S (Sort, Set-in-order, Shine, Standardize, Sustain) is used to implement the findings of analysis. When the drug dispensing process is optimized using these steps, it can lead to a 45% savings in both time and resources.[7]

What is the Six Sigma process?

The Six Sigma process aims to use data in order to guide efforts in optimizing the pharmacy workflow process. Several key tools include service blueprints, gap analysis and cause-effect diagrams.[8]

Service blueprints are diagrams that visualize the relationship between various services in the pharmacy and within the dispensing process itself.

Gap analysis involves assessing the performance of the pharmacy to determine if objectives are being met, and if not, which areas need to be improved. This means taking data from customer and employee surveys and examining the results to determine which areas of the pharmacy need the most improvement, in order to engage in a more focused effort to improve workflow efficiency. Gap analysis can be particularly effective if derived from not only employee but customer surveys.

Cause-effect diagrams are diagrams used to isolate potential causes for a specific problem. These can be usefully applied after analyzing results from gap analysis.[8] Results of these methods are then further analyzed and used to propose various improvements in the pharmacy workflow process. When the Six Sigma process was applied to improve the pharmacy dispensing process at several different pharmacies in the United States, it was found to decrease patient wait times by nearly 50%.[9]

Focused Analysis

In certain cases, an effective way to implement the lean Six Sigma strategies is to create a team that can use a dedicated portion of time to focus on analyzing the pharmacy's problems and on problem-solving. This dedicated team can be composed of staff volunteers or assigned staff—each pharmacy will find unique solutions to best fit their needs or their environment.

In order to give the team time to work on the focused analysis, the pharmacy could pay employees for an additional hour of work for two to three days so they can examine pharmacy workflow without customer interruptions. Establishing a dedicated team to problem-solve is essential. Asking staff to think about and solve problems throughout their day-to-day work can be incredibly time-consuming, ineffective and distract from their primary responsibilities, potentially leading to dispensing errors.[6]

CASE STUDY: Implementing Advanced Methods into a Community Pharmacy Setting

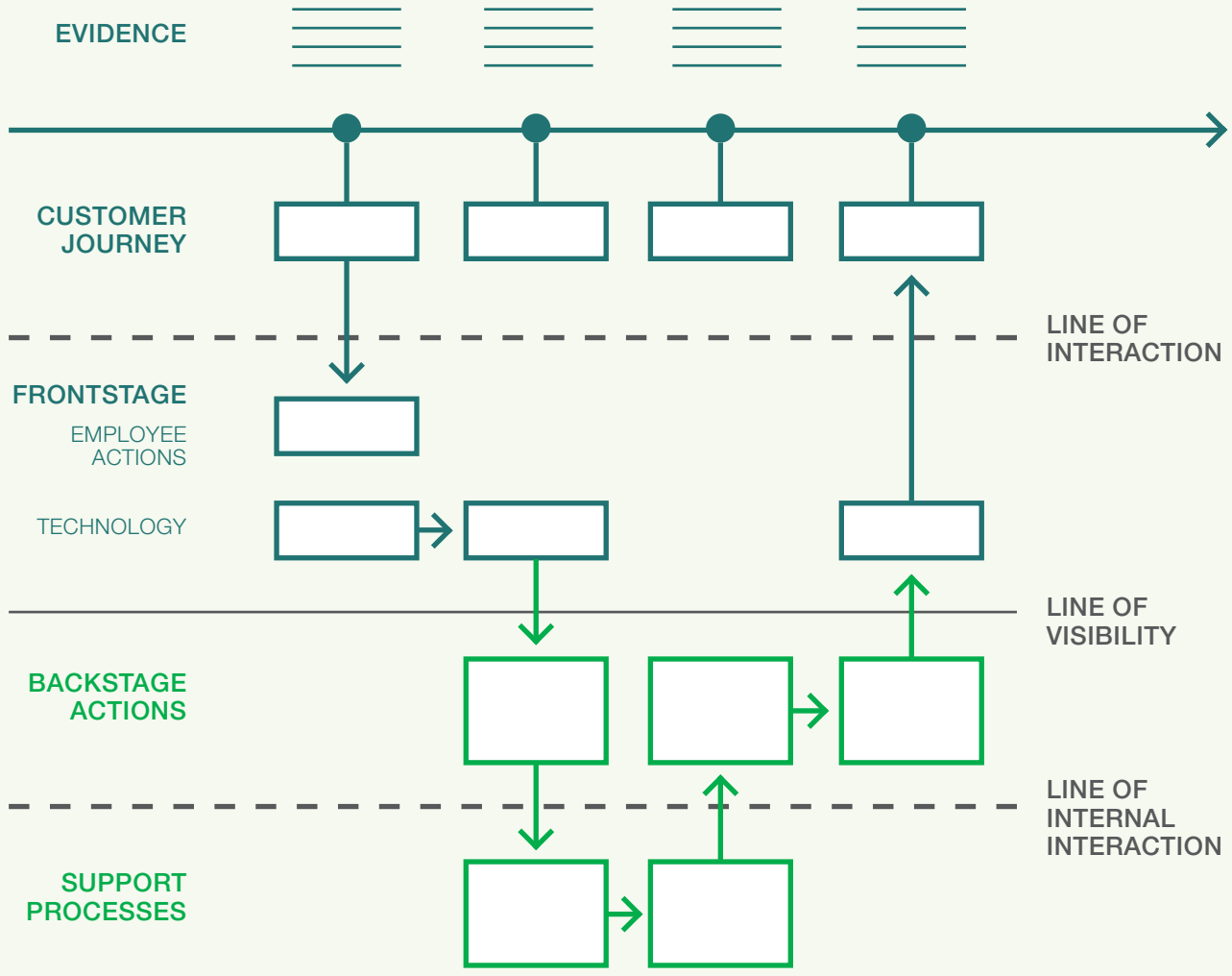
Consider the following scenario: a community pharmacy has been operating for several years. Throughout the large boost in COVID-19 vaccine administration and testing, there was significantly less time being spent on quality attention to prescription filling. Now, with only a few shots and COVID-19 tests being administered in a day, the pharmacy often finds itself struggling to meet patient expectations.

The pharmacy manager at the community pharmacy decided to implement some of the strategies outlined in this lesson to help improve the pharmacy's workflow efficiency. First the manager met with the pharmacy technicians and other pharmacy staff and outlined their ideas on how to analyse workplace issues and to see if they had any additional suggestions for improvement. The pharmacy manager decided that they would close the store two hours early on Monday and Friday that week, and the staff would meet as a team for those hours (with pay).

One of the first steps taken was to create a customer satisfaction survey with the answers ranked on a scale of 1-10. Some survey questions related to patient experience, such as "How satisfied are you with your typical wait time when picking up a prescription?" or "How satisfied are you with the pharmacy staff's attentiveness to your needs as a patient?" The pharmacist distributed these surveys to customers as they

FIGURE 1 - Service Blueprint 101

A diagram that visualizes the relationships between different service components (people, props and processes) that are directly tied to the touchpoints throughout the customer's journey.



https://www.nngroup.com/articles/service-blueprints-definition/

came in, as well as to pharmacy staff. The pharmacist asked the staff to respond to the survey based on what they interpreted the average customer's answer would be and provide a rationale for each answer.

On Monday, the pharmacy manager met with the team at the end of the day to discuss survey responses (gap analysis), and had the technicians create service blueprints and cause-effect diagrams for workflow activities they found particularly hindering. A recurring theme regarding issues with medication supply and inventory was discovered.

Pharmacy technicians reported frequent incidents of insufficient inventory to fill refill requests. What's more, the pharmacist felt that they were often having to correct and rebill certain prescriptions in front of the patient upon arrival for pick-up due to errors when the prescription was processed in the system. They also collectively agreed that patients were waiting too long for prescriptions to be filled, which heightened tension among patients.

The technicians took the time throughout the week to determine whether the issues they discussed on Monday were accurate, and on Friday, met again as a collective team. In this meeting, they outlined several solutions to the problems discussed on Monday.

First, they decided that pharmacy assistants would be tasked with medication ordering and stocking and would take orders from the pharmacy technicians on which medication to order, so that the technicians could concentrate on their key workflow activities and patient interaction.

Second, they decided that after a technician had filled a prescription and it was waiting to be verified by the pharmacist, a second technician (who was uninvolved in the original prescription filling) would dou-

ble-check the original script and fill to complete the final technical check. This would help minimize the number of errors carried over to the pharmacist's station for their final therapeutic check.

Third, they decided that every Sunday, the pharmacy technician(s) on duty would print a future drug usage report for the week and create a list of medications that needed to be checked on by the pharmacy assistants, who would then order and stock medications that were running low in anticipation of prescriptions needed for the following week.

Fourth, they decided to create a comfortable and larger designated seating area for patients so they could be more comfortable while waiting for prescriptions.

Fifth, they decided to ask customers to call 24 hours before their prescription is due to allow the pharmacy staff time to have the prescription prepared and ready for the patient. Training patients to call 24 hours in advance for refills could also ensure adequate inventory (and if there is not enough inventory, the opportunity for pharmacy staff to notify patients on when their Rx would be ready for pickup). This would allow new prescriptions to be prioritized and help improve workflow overall.

Pharmacy staff can train patients to request refills 24 hours in advance by simply prompting the patients when a refill is requested. For example, they could ask: Would you like to pick that up tomorrow? Over time, patients will start to ask for their refill for the following day.

This case study illustrates how implementing one course of action to analyze and improve a community pharmacy's workflow activities can have positive effects.

Conclusion

It is important to note that many of the above strategies proposed to improve pharmacy workplace efficiency are contingent upon proper staffing and resources in a pharmacy. Individual pharmacy needs will vary, and not all strategies will be effective at improving workflow efficiency in every pharmacy. What's more, the positive results obtained from the implementation of these strategies are largely based on the focused efforts of a dedicated task force. [7]

Optimizing a pharmacy's workplace efficiency must be individualized and can vary greatly based on location, demographics and pharmacy specializations. This fact emphasizes the importance of communication among staff and with patients to identify workflow inefficiencies. Individual pharmacy needs will vary, and it is important to tailor the processes or integrating frameworks to individual pharmacies in order to maximize success.

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QUESTIONS

Please select the best answer for each question and answer online at eCortex.ca for instant results.

1. The majority of pharmacy errors are discovered:
a) Once the patient is home
b) Before the patient leaves the pharmacy
c) By a computer system
d) Never

2. Patients leaving the pharmacy without medication due to long wait times is undesirable because:
a) It can be dangerous
b) It can lead to drug waste
c) It is never undesirable
d) A & B

3. Why is establishing a performance baseline crucial?
a) It dictates pharmacy technician work hours
b) It allows pharmacy staff to track increases and decreases in overall performance
c) It encourages pharmacy technicians to dispense medication early
d) None of the above

4. Consider the question: Are technicians often having to leave their workstations in order to fulfill basic tasks? This question is most related to which basic concept of workflow efficiency:
a) Motion
b) Communication
c) Temperature
d) Technology

5. Communication in a pharmacy is most important between which groups?
a) Pharmacists and pharmacy staff, as they are the most important people in the pharmacy
b) Pharmacists and patients
c) Pharmacy technicians or other pharmacy staff and patients
d) All of the above

6. There is never a one-size-fits-all solution and improving workplace efficiency varies individually from pharmacy to pharmacy.
a) True
b) False

7. Automation in the pharmacy can be extremely useful, but expensive. How can pharmacies adapt?
a) There is no way to adapt
b) Charge patients a higher co-pay to finance more expensive technology
c) Consider what strategies automated systems use and try to replicate them in the workplace (e.g., creating designated stations for fast-moving medications)
d) None of the above

8. According to pharmacy activity categorization principles, patient engagement by the pharmacist upon entry to the pharmacy would be considered a:
a) Value-added activity
b) Non-value-added activity
c) None of the above

9. In the case study outlined in the course, the most powerful, unspoken aspect of improving workflow efficiency that was displayed by the in-depth communication between pharmacist and technicians, was communication.
a) True
b) False

10. Which statement is true about implementing Lean Six Sigma strategies to improve pharmacy workflow processes?
a) Pharmacy staff always have time in their day to spend rethinking the dispensing process and workflow
b) The principles are very straightforward and can be applied to any pharmacy without much thought
c) A dedicated team cannot be comprised of volunteers and is therefore too expensive
d) None of the above

11. When the Six Sigma process was applied to improve the pharmacy dispensing process at several different pharmacies in the United States, it was found to reduce medication errors by nearly 50%.
a) True
b) False

12. Gap analysis is particularly effective in providing insight on improving pharmacy efficiency when derived from:
a) Client surveys
b) Pharmacy staff surveys
c) Pharmacist opinion alone
d) A & B

13. Lean Six Sigma is a combination of (1) asking employees to identify what problems are causing inefficiencies and (2) using data to identify problems in a business workflow
a) True
b) False

14. Due to the fact that individual pharmacy needs in optimizing workplace efficiency will vary, it is important to:
a) Use a rigid framework without adapting it to the individual pharmacy
b) Tailor the integrating frameworks to individual pharmacies in order to maximize success.
c) Use instinct rather than any framework building tools
d) Replicate one pharmacy's strategy in another pharmacy without changing it at all

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3. a b c d	**6.** a b	**9.** a b	**12.** a b c d	

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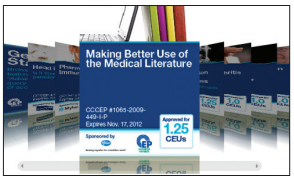

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