

# Improving Workflow in an Outpatient Pharmacy at a Veterans Affairs Medical Center

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By continually reviewing its processes with the goal of increasing patient satisfaction, the pharmacy staff at the Fayetteville Veterans Affairs Medical Center was able to improve prescription processing time and create a better experience for veterans using the pharmacy.

Longer patient wait times are associated with a decrease in patient satisfaction related to the service.<sup>1</sup> One study found that today's patients are expecting shorter wait times in addition to increased service from their pharmacists and pharmacy technicians.<sup>2</sup> The VA pharmacies across the country are starting to feel pressures that historically were reserved for the private sector. As prescription volumes increase, pharmacies will need to adapt workflow models to better manage patient demands. The VA, along with other governmental agencies, has recently experienced a tightening in budgetary growth with a continued escalation in the growth of the veteran population.<sup>3</sup> Additional patients will need to be cared for in a reduced amount of time with similar staffing levels.

The pharmacy staff at the Fayette-

ville VA Medical Center (FVAMC) in North Carolina continually reassesses its processes to better serve the Southeastern North Carolina veteran population. Patients and employees have raised concerns about prescription processing times. Clinical personnel, with various experiences at other VA facilities, noticed inefficiencies in the current workflow of the FVAMC outpatient pharmacy. Originally, the patients would go to the outpatient pharmacy to pick up medications that they needed that same day after completion of their visit with the provider. The prescription was not processed until the patient made their way to the "check-in" technician at the main pharmacy. The patient at this point could discuss the medications they wanted to pick up at the pharmacy and those that they wanted to have mailed. This interaction is where patients bottlenecked, and the delay was very visible (Figure 1). The technician passed off the separated orders to the pharmacist to process those that were to be filled onsite. If the patient did not wait for their medication to be filled, it would be mailed locally. It was thought that the congestion might be alleviated

by removing the check-in step from the process, therefore, improving the overall workflow.

The improved workflow design designates a pharmacist to begin processing prescriptions as soon as they are entered by the provider, relying in part on accurate provider order entry. Bypassing the technician at the pharmacy check-in window allows for the process to start before patients arrive at the pharmacy. The pilot program was designed with slight modifications from a model used at the VA Hudson Valley Health Care System in Castle Point, New York (Figure 2).

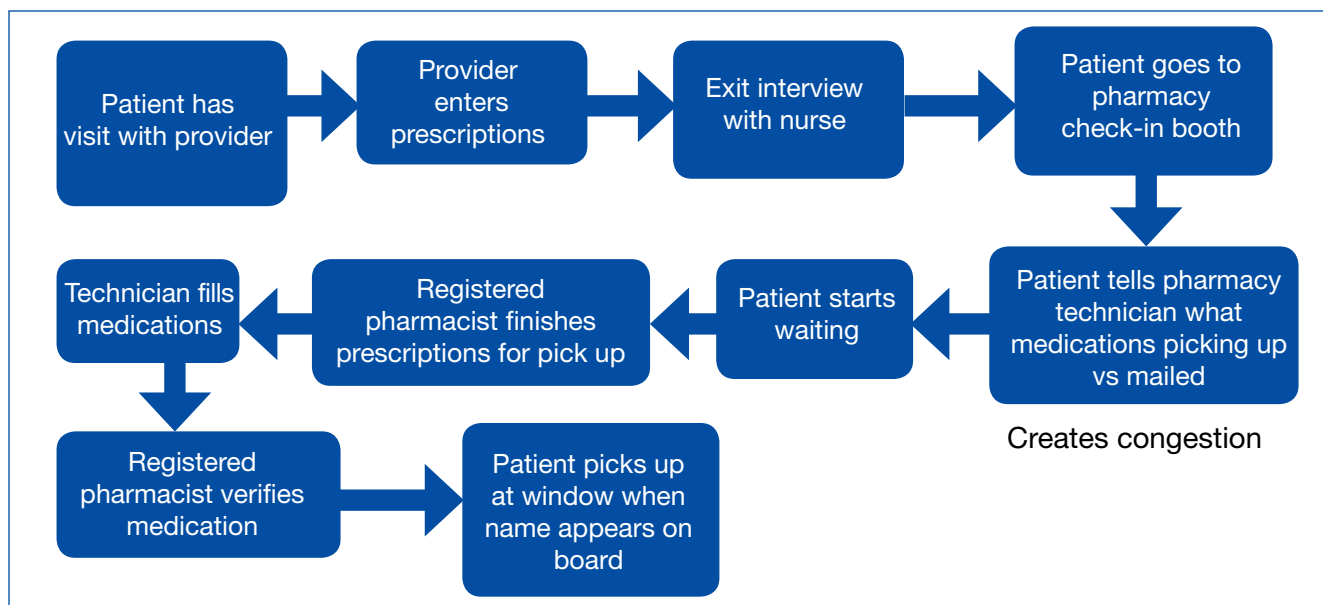
Other facilities within the VA health care system have adopted similar approaches in their workflow. With sufficient personnel, some facilities may elect to have their pharmacists in a decentralized capacity where they initiate workflow from their respective clinic locations. Due to current pharmacy personnel levels and the pilot nature of the project, the team decided to proceed with a more centralized model.

In January 2012, a group of providers volunteered to participate in the pilot project. The site that was selected for use was Village Green

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**Figure 1.** Former workflow process.

(VG), an off-site, community-based outpatient clinic, in Fayetteville, North Carolina, which does not contain an onsite pharmacy. This analysis looked at the change in prescription completion time and the impact that veterans perceived from this change in pharmacy service.

**METHODS**  
**Study Design**

This project was deemed to be a quality improvement project and did not require approval of an Institutional Review Board.

The project was conducted from December 2011 to February 2012. Providers at the VG clinic who volunteered to be in this project were given a 30-minute training session. The providers were educated on how to designate a prescription as mail vs window pickup and which medications would fall under each category. Examples of medications to pick up included, but were not limited to, antibiotics, steroid packs, and cough and cold medications. Nurses were educated to inform the patient of

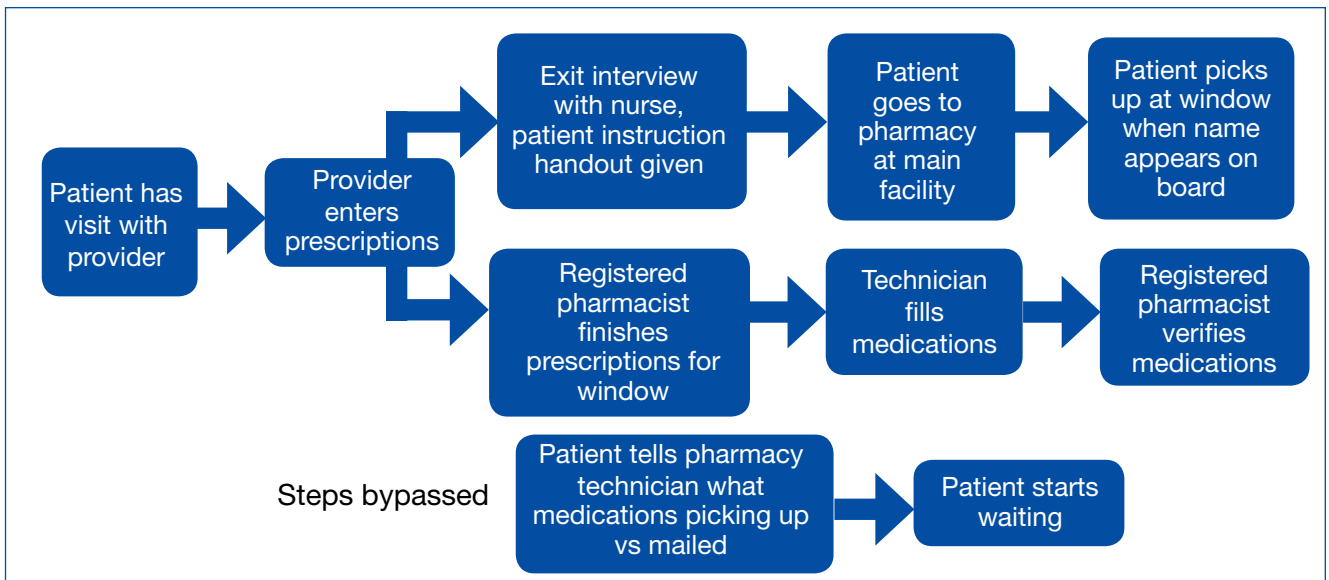
which prescriptions the patient was supposed to pick up that same day. Nurses also provided patients with a handout explaining how to pick up their medication (Figure 3). Pharmacists and technicians were educated on the new workflow design as well. A group within the pharmacy software system was created to include all prescriptions ordered by participating providers. One pharmacist was designated to process all window prescriptions within that group as they were ordered. If patients did not come to the facility to pick up their medication, it was mailed to them. The new workflow was initiated in February 2012. A survey (Figure 4) was administered to assess patient satisfaction and was given to patients at the time they picked up their medication. The survey was administered only in February as it assessed their satisfaction with previous visits to the pharmacy compared with that day.

Patients were deemed eligible if they were receiving prescriptions entered by providers who participated in the training session and needed

medications the same day they were prescribed. Patients were excluded if their provider did not elect to participate in the training session, if they picked up a partial fill or refill, or if their prescriptions were mailed.

**Outcomes**

The primary outcome was the difference in prescription processing time between pre- and postworkflow process changes. Prescription processing time was defined as the difference between the time the provider enters the order to the time the pharmacist verifies the filled medication is ready for pickup by the patient. The initial time was obtained from the prescription order, which is populated once the provider signs the order. The time the order was finished was obtained from ScriptPro (the computer system that VA pharmacies currently use), which records the time that the pharmacist finishes verifying the medication. The secondary outcome was the perceived change in patient satisfaction based on current vs past experiences.



**Figure 2.** New workflow process.

**Statistical Analysis**

Continuous, nonparametric data were analyzed using Wilcoxon 2-sample test, and ordinal data were analyzed by Wilcoxon paired signed rank test. A  $P < .05$  was considered statistically significant.

**RESULTS**

Prescriptions were reviewed for a 1-week period in December 2011 and in February 2012. Six out of 10 providers at VG participated in the training session, and only orders entered for the window by those 6 providers were reviewed. A total of 306 orders were reviewed, 211 were preimplementation and 95 postimplementation. The average prescription processing time decreased from 97 minutes to 48 minutes after implementation of the new workflow ( $P < .001$ ).

All the completed patient satisfaction surveys ( $n = 198$ ) were reviewed. The median and mean response time for perceived wait time preimplementation was 31 to 45 minutes and 0 to 15 minutes postimplementation. The median response time for their phar-

macy experience preimplementation was “good” and postimplementation was “excellent.” The mode was “excellent” for pre- and postimplementation. These results were statistically significant ( $P < .001$ ).

**DISCUSSION**

The average prescription processing time significantly decreased after the new workflow was implemented. Based on the survey results, patients perceived they spent less time waiting for their prescriptions to be ready for pickup. Veterans also had a better overall experience at the pharmacy after the new workflow was implemented, resulting in greater patient satisfaction.

**LIMITATIONS**

This project had several potential limitations. The participating providers had volunteered, making them more likely to be receptive to the changes, therefore, possibly improving outcomes. Certain factors could not be controlled, such as different pharmacy personnel processing prescriptions in December and Febru-

**Patient Instructions**

1. When you arrive at the pharmacy, go directly to the pickup window to obtain your medication.
2. If you have a hard copy (paper) prescription for pain medication, (eg, morphine, oxycodone, acetaminophen and oxycodone, or methadone), drop it off at the pharmacy pickup window.
3. When picking up medication at the window, tell the pharmacist you are a Village Green patient and need to pick up a survey. Please fill out the survey and drop it in the refill drop box.

**Figure 3.** Patient instructions for picking up medications.

ary and quantity of prescriptions that needed to be filled from providers not participating in the pilot project. Nonparticipating providers in the VG clinic and FVAMC continued to write prescriptions, which may have impacted the number of pharmacy personnel who were able to solely work on the prescriptions for the

pilot project. There was also possibly a recall bias as the patients had to answer questions on the survey pertaining to past experiences. In addition, survey submission was reliant on the patient.

Unfortunately, the time constraints of a first-year residency directly impacted the ability to extend the data collection segment of the project beyond the 2 months included. In addition, it is possible that a comparison of different months of the year might have had some impact on the intra-month volume variations. However, between the months where data were collected, no significant difference was noted in prescription volume. Further, subgroup analyses of a longer duration study might yield significant variation in volume between months due to holiday travel or personnel assignment. Prior to the new workflow, if the patient did not check in at the pharmacy, their prescriptions were processed and mailed via the consolidated mail-out pharmacy. Further studies will need to be performed to determine whether additional staff would be required to handle the new workflow.

**CONCLUSION**

The workflow modification pilot initiative for the VG facility achieved a statistically significant reduction in total prescription processing time. This increase in efficiency likely im-

**Pharmacy Patient Satisfaction Survey for Fayetteville VAMC**

1. In the <b>past</b> how long have you waited to pick up your medications at the pharmacy window?				
0-15 min	16-30 min	31-45 min	46-60 min	> 1 h
2. How would you rate your <b>previous</b> experiences at the pharmacy?				
Excellent	Good	Average	Poor	Very poor
3. During <b>this visit</b> how long did you wait for your medications?				
0-15 min	16-30 min	31-45 min	46-60 min	> 1 h
4. How would you rate the overall service you received at the pharmacy <b>today</b> ?				
Excellent	Good	Average	Poor	Very poor

**Figure 4.** Pharmacy Patient Satisfaction Survey.

acted the patient satisfaction survey that yielded a statistically significant improvement in the patients' perception of the processing time and overall experience with pharmacy service. If implemented hospital-wide, similar advantages might be expected, but obtaining more information from a larger and longer pilot study may be beneficial. ●

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