ADVANCES IN PHARMACY PRACTICE

An appointment-based model to systematically assess and administer vaccinations

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ABSTRACT

Objectives: To incorporate the assessment of vaccination status and administration of vaccines in an appointment-based model (ABM) and measure the impact on vaccinations administered and patient and pharmacist satisfaction with the appointment-based model.

Practice description: An ABM was implemented to systematically assess vaccination status and administer vaccines. Patients made an appointment to pick up synchronized prescriptions, and pharmacists assessed vaccination histories and administered vaccinations during the appointment. In addition, pharmacists could access the statewide immunization information system to objectively determine vaccination histories and document administered vaccines.

Settings and participants: This project was conducted at 24 Kroger Pharmacies in the Cincinnati-Dayton Area. Any patient filling more than 1 maintenance medication was eligible for the ABM program. Pharmacists were encouraged to target patients at high risk for medication problems and vaccine-preventable diseases, including patients 60 years of age or older with more than 5 medications and high-risk disease states such as diabetes, asthma, and chronic obstructive pulmonary disease.

Evaluation: Pharmacies were randomized, and an a priori analysis was conducted to ensure that the 24 intervention and 78 control stores were similar at baseline. Postimplementation data on the mean number of vaccines per store were compared between the intervention stores and the control stores from September 2014 through December 2015. Patient and pharmacist satisfaction with the ABM was assessed via surveys.

Results: The pharmacist vaccine assessment as part of the ABM program showed higher overall mean vaccinations per store compared with the control group during the project period (1810.71 ± 500.88 vs. 1455.09 ± 754.43; $P = 0.01$). Patients and pharmacists felt that the ABM program facilitated vaccine discussions.

Conclusion: The ABM program with a focus on vaccinations allowed pharmacists to systematically assess patient vaccination histories and administer vaccines in the pharmacy. Patients and pharmacists appreciated the dedicated time to discuss vaccinations.

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In 2014, the Centers for Disease Control and Prevention reported that, in the United States, about 30% of individuals more than 65 years of age did not receive the yearly influenza vaccine.[1] In addition, in the same year, 38.7% of patients older than 65 years did not receive a pneumococcal vaccine.[1] The Healthy People 2020 goal is to have 90% of these older adults receive the pneumococcal and influenza vaccinations.[2] Thus, additional opportunities for vaccination programs exist to achieve these vaccination goals.

Patients face several barriers to receiving appropriate vaccinations, which contributes to less than ideal vaccination rates. A main barrier is a patient's lack of knowledge of the vaccine.[3] This lack of knowledge may cause a misunderstanding of the risks versus the benefits of vaccination. In addition, patients may have a misunderstanding of the recommended immunization schedules as approved by the Advisory Committee on Immunization Practices and may not know which vaccines are needed.[3] Furthermore, vaccine accessibility is a potential barrier, because physician offices may have inconvenient hours.[4]

Key Points

Background:

- The Healthy People 2020 goal is to have 90% of older adults receive the pneumococcal and influenza vaccinations.
- Many barriers exist to vaccinations, such as accessibility, fear of vaccinations, and lack of patients' knowledge of which vaccines are necessary.
- An appointment-based model synchronizes a patient's medications and establishes an appointment with the pharmacist, which can increase patient access to pharmacist-provided services, such as vaccinations.

Findings:

- The appointment-based model can be used to focus on obtaining vaccine histories and administering vaccines.
- Patients and pharmacists agreed that the appointment-based model facilitated conversations about vaccinations and was a convenient method to vaccinate patients.

Community pharmacists have a significant role in administering vaccinations, and a recommendation by a pharmacist to receive a vaccination can increase vaccination rates.[5] There are several opportunities for pharmacists to promote vaccinations at the pharmacy counter, such as when patients drop off or pick up prescriptions. However, in the traditional pharmacy workflow, there is not a standardized system for promoting vaccines at the pharmacy counter. Especially for refills, patients can receive prescriptions without speaking with the pharmacist if counseling is not required or requested. Because of a lack of patient understanding of which vaccines are necessary and misconceptions of the risk versus benefits, increased pharmacist engagement with patients at the pharmacy could increase vaccination rates.

The appointment-based model (ABM) increases the pharmacist's engagement with patients.[6] In an ABM, medication refills that are due at differing times in the month are synchronized to a selected date (the sync date). An appointment is scheduled with the pharmacist for a consultation on the sync date. Studies have demonstrated that an ABM significantly improves patient's adherence.[6-9] Although the ABM is known to improve medication use and adherence, it is not known whether the model could be used as a strategy to promote immunization at the pharmacy. In the previous literature, the ABM appointment has focused on medication management.[7] The present project included not only a comprehensive medication review but also a comprehensive vaccine assessment to encourage and facilitate vaccine administration. This project included the ABM to increase pharmacist engagement and improve the quality of the interactions between the patient and pharmacist. In addition, a statewide immunization information system (IIS) was used to improve the quality of the assessment of vaccine histories and assist pharmacists with the appropriate administration of necessary vaccines.

Objective

The goal of this project was to incorporate the assessment of vaccination status and vaccines into an ABM. In addition, we sought to evaluate the impact of the project on vaccinations administered and patient and pharmacist satisfaction with the ABM.

Practice setting

This project was conducted at Kroger pharmacies from September 2014 through December 2015. Kroger Pharmacy is a large national grocery store pharmacy chain with 102 pharmacy locations in the Cincinnati/Dayton area, which spans Dayton, Cincinnati, Southeastern Indiana, and Northern Kentucky. Kroger Pharmacy offers a wide variety of pharmacy services, such as medication therapy management (MTM), transition-of-care services, and diabetes and heart-healthy coaching, in private counseling rooms in all of the pharmacies. For this pilot project, 24 pharmacies were randomly selected as the intervention group. This number of pharmacies was selected because it met the anticipated workload capabilities for the implementation of the ABM. For the randomization process, all regional Kroger pharmacies were randomly assigned a number. With the use of a random number generator, 24 numbers were selected. The remaining 78 pharmacies in the area that were not thus selected continued usual care and did not implement the ABM program, and they composed the control group.

An a priori analysis of the number of vaccinations in the intervention and control groups was used to determine if groups were balanced and the random assignment of stores to participate in the intervention group was successful. Based on the a priori analysis, there was no difference in the total mean number of vaccines administered per store during a similar time frame before the project, indicating that the intervention and control stores were similar at baseline. However, there was a statistical difference in the mean number of influenza vaccines per store in the a priori analysis. This project was approved by the University of Cincinnati Institutional Review Board.

Pharmacy personnel, including the pharmacists and the store technicians, were trained in the project protocol and all process changes. All Kroger pharmacists in both intervention and control group stores had previously received training to administer vaccines and perform MTM services and were required to perform both services as part of their job responsibilities.

Practice innovation

In the 24 intervention stores, workflow changes were made to facilitate the assessment and administration of vaccinations by pharmacists. ABM was used, which included medication synchronization and scheduling appointments for patients to pick up their medications.