

Improving Immunization Rates in Long-Term Care Facilities: A Pilot Study

by Alexandra M Vecchia, 2020 PharmD Candidate, Lindsey C Skubitz, 2020 PharmD Candidate, Courtney J McGee, 2020 PharmD Candidate, Matthew K Tourdot, 2020 PharmD Candidate, Herolind Jusufi, 2020 PharmD Candidate, Kristin K Niemi, 2020 PharmD Candidate

Every year, patients in long-term care (LTC) and nursing home facilities fail to receive vaccinations for which they are eligible. These vaccinations provide protection against diseases including influenza, pneumonia, and shingles, which can all have a profound impact on the LTC population and lead to hospitalizations and increased healthcare spending. In the United States, pneumococcal infections alone result in more than 240,000 hospitalizations of older adults each year.¹ This number is expected to increase dramatically as the population ages. Ensuring that older adults receive indicated vaccinations can help prevent these hospitalizations and cut costs. However, immunization rates in Wisconsin are below national goals set by Healthy People 2020 despite current efforts of pharmacists across the spectrum of the healthcare system.² Specifically, only 40% of Wisconsin residents received an influenza vaccination during the 2018-2019 season, which is far below the goal of 70% for noninstitutionalized adults.³ Additionally, only about 58% of patients over the age of 65 had received a dose of pneumococcal polysaccharide vaccine in Wisconsin according to 2018 data.⁴ Pharmacists are an essential member of the

healthcare team when it comes to meeting these immunization targets, and they can play a vital role in increasing immunization coverage in the LTC population.

This article describes the workflow of a new, pharmacy-led initiative to increase vaccination rates in LTC facilities served by an independent LTC pharmacy in Wisconsin. Additionally, results from a small pilot study are presented. The goals of this initiative are three-fold: 1) increase vaccination screening in patients 50 years and older residing in LTC facilities, 2) improve immunization rates in this patient population, and 3) increase awareness in patients and providers of the role of a pharmacist.

Background

This new program was developed in coordination with an independent LTC pharmacy located in Wisconsin. The pharmacy serves over 30 skilled and non-skilled assisted living facilities, and it offers a multitude of services including medication therapy management, pill packaging, and psychotropic medication reviews for all facilities. Prior to this pilot study, the pharmacy held an annual influenza clinic at each LTC facility. However, screening patients for eligibility for other vaccinations was

not included in the pharmacy's regular workflow. Expanding the current annual influenza clinic to include screening for other vaccines would ensure patients are protected against the broad array of preventable diseases.

Methods

The immunization program consists of six steps: screen patients for vaccine eligibility using the Wisconsin Immunization Registry (WIR), obtain consent from the patient to receive the vaccines, submit the vaccines for reimbursement, administer the vaccinations, update the patient's profile in the WIR, and notify the patient's primary care provider. To assess the feasibility of this program, a pilot study was conducted. The pilot study consisted of screening all patients at one non-skilled nursing facility during April 2019. The workflow of the immunization program is described in detail below.

Screen for Eligibility

Prior to the annual influenza clinics held by the LTC pharmacy at each of the contracted LTC facilities, the pharmacy intern will screen each patient for vaccine eligibility using the WIR. Vaccines included in the screening are tetanus, diphtheria, and

TABLE 1. Vaccine Recommendations Made for Patients at One Non-skilled Nursing Facility n (%)

Vaccine	RZV	Td	Tdap	PCV13	PPSV23	Influenza
Recommendations	13 (100%)	5 (38%)	2 (15%)	2 (15%)	3 (23%)	0 (0%)

Number and percent of patients for which vaccine recommendations were made. Thirteen of the 15 LTC patients were included in the pilot study based on criteria of being over the age of 50 and having a profile in the WIR. RZV: recombinant zoster vaccine; Td: tetanus and diphtheria; Tdap: tetanus, diphtheria, and pertussis; PCV13: pneumococcal conjugate; PPSV23: pneumococcal polysaccharide.

pertussis (Tdap), tetanus and diphtheria (Td), pneumococcal conjugate (PCV13), pneumococcal polysaccharide (PPSV23), and recombinant zoster (RZV). To assist the intern in the screening process, an “Immunization Screening Flowchart for Patients 50 and Older” was created. This flowchart is designed to walk the intern through inclusion and exclusion criteria for each of the vaccines included in this program.

Obtain Consent

During the screening process, the pharmacy intern will fill out an “Immunization Recommendations” form. This form includes the name and date of birth of each patient along with the names of the vaccines for which they are eligible. This form will be faxed to a nurse or care coordinator at each of the facilities. A nurse will speak with each patient about the vaccinations and complete the fax form to indicate if the patient accepts or rejects the immunizations. This form will then be faxed back to the pharmacy.

Reimbursement

A pharmacy technician will submit a claim to the patient’s insurance prior to vaccine administration to be reimbursed for the vaccines.

Administration

To prevent added burden on the pharmacy, it was determined that the vaccinations would be administered at the annual influenza clinic that is already part of the current workflow. This eliminates additional trips to each LTC facility, which would be unsustainable. Prior to administration, the pharmacist will provide the patient with a Vaccine Information Statement (VIS) for each vaccine. After administering the vaccinations, the pharmacist will complete a “Vaccine

Administration Record,” which includes the name and date of birth of each patient; name, lot number, and expiration of the vaccine administered; site the vaccine was administered; the date of administration; the date the VIS was published; the date the VIS was provided to the patient; and the initials of the pharmacist administering the vaccinations.

Update the Wisconsin Immunization Registry

Upon returning from the annual influenza clinic, the pharmacist will provide the pharmacy intern with the “Vaccine Administration Record.” The pharmacy intern will use this information to update each patient’s profile in the WIR.

Notify the Primary Care Provider

The pharmacy intern will complete a “Vaccination Record” form for each vaccine administered to each patient. The intern will fax this form to the primary care provider to make them aware that the patient has received the vaccines and that the WIR has been updated.

Results

The pilot of the immunization program consisted of screening all patients at one non-skilled nursing facility contracted with the LTC pharmacy. At the time of the pilot, 15 patients were residing in the non-skilled nursing facility. Upon screening for vaccine eligibility, it was discovered that two patients did not have a profile in the WIR. These patients were therefore excluded from the pilot test. The results are presented in Table 1. This pilot study revealed that there is an unmet need for vaccination coverage in this patient population since recommendations were made for all 13 patients that had a profile in the WIR. There were no recommendations made for influenza vaccinations because all patients

had received appropriate vaccinations during the previous annual influenza clinic. A total of 25 vaccine recommendations were made for the 13 residents of the non-skilled nursing facility included in this pilot study.

Discussion

Despite being a high-touch population within the healthcare system, this pilot study indicates that there is a significant gap in vaccination coverage for LTC patients for pneumococcal, zoster, tetanus, and diphtheria. This gap provides ample opportunity for expanding pharmacy services in the elderly population. With margins on dispensing prescriptions shrinking each year, vaccinations have become another way to increase pharmacy revenue. Medicare reimburses vaccines with a favorable margin, which would provide a positive return on investment for pharmacist time and effort to implement a large program across multiple facilities. Merging this new expanded immunization program with the existing fall influenza clinics can help to maximize efficiency and decrease costs. This immunization program also utilizes pharmacy interns as an integral part of the workflow, which decreases pharmacist time and expense for screening and documentation. The pharmacy intern that completed the pilot study provided verbal feedback that the additional workload was feasible for pharmacy students and interns to fit into their existing workflow.

There are additional considerations that need to be taken into account prior to expanding this pilot program. First, the flowchart that was created to help the intern screen for vaccine eligibility will need to be updated annually. This task will be completed by the pharmacy intern prior to beginning to screen patients each year, and it will be approved by the pharmacist.

Second, each intern participating in this project needs to obtain access to the WIR. The site administrator will enroll each intern who will then create a login and password and sign the WIR User Agreement. Additionally, training on using the WIR will need to be provided to new interns. Finally, there may be patients that are unable to provide consent for their vaccine due to the state of their physical or mental health. A procedure for obtaining consent from the patient's agent or guardian will need to be created in coordination with each nursing facility. Although these additional steps will require extra time and resources, the positive results of this pilot suggest that it would be a worth-while investment.

This immunization program is not without limitations. For instance, vaccine screening is done solely using the WIR. If a vaccine was administered to a patient outside of Wisconsin, or if a patient's past vaccinations were not recorded in the WIR, this program could lead to unnecessary vaccinations. However, some of this risk can be mitigated during the consent process by asking the patient if they have received the vaccine in the past or if they have ever received vaccines outside of Wisconsin. Similarly, if a patient does not have a profile in the WIR, the current workflow of this immunization program does not apply, and a patient may not receive indicated immunizations. The pilot study was also limited by a small sample size. However, given the clear need for immunizations demonstrated by the pilot study, implementation of the full immunization program is warranted.

Conclusion

Vaccination rates among residents in LTC facilities remain below the Healthy People 2020 goals.² Interdisciplinary strategies and communication between providers, pharmacy, and nursing home staff can facilitate immunization coverage and protect this vulnerable population against vaccine-preventable diseases. Our pilot study of one LTC facility showed that 100% of patients with a profile in the WIR were indicated for at least one vaccination. These results can be used to encourage the development of screening processes and programs to improve immunization rates

in nursing home facilities throughout the state.

Alexandra M Vecchia, Lindsey C Skubitz, Courtney J McGee, Matthew K Tourdot, Herolind Jusufi, and Kristin K Niemi are 4th Year Doctor of Pharmacy Candidates at the University of Wisconsin-Madison School of Pharmacy in Madison, WI.

PR This article has been peer-reviewed.
The contribution in reviewing is greatly appreciated!

Acknowledgments: The authors would like to thank Darcy Coddington, PharmD, Pharmacy Manager for her contribution. The authors would also like to thank Betty Chewing, Ph.D., Joanne Peters, Ph.D., and Yolanda Tolson, RPh, from the University of Wisconsin School of Pharmacy.

Disclosures: The authors declare no real or potential conflicts or financial interest in any product or service mentioned in the manuscript, including grants, equipment, medications, employment, gifts, and honoraria.

References

1. Burke M, Rowe T. Vaccinations in older adults. *Clin Geriatr Med.* 2018;34(1):131-143.
2. Healthy People 2020. Immunization and infectious diseases. <https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives>. Updated July 12, 2019. Accessed July 22, 2019.
3. Wisconsin Department of Health Services. Respiratory virus surveillance report. <https://www.dhs.wisconsin.gov/publications/p02346.pdf>. Updated May 18, 2019. Accessed July 22, 2019.
4. Wisconsin Department of Health Services. Vaccination coverage among Wisconsin adults by vaccine, county of residence and year. <https://www.dhs.wisconsin.gov/publications/p02005a.pdf>. Updated March 2019. Accessed July 22, 2019.

2020 Conference Calendar

Midwest Pharmacy Expo

Friday-Sunday, February 7-9
Hilton Des Moines Downtown,
Des Moines, Iowa

PSW Legislative Day

Wednesday, February 12
Monona Terrace Convention Center,
Madison

Immunization Summit

Wednesday, February 26
Glacier Canyon Lodge, Wisconsin Dells

PSW Educational Conference

Thursday-Friday, April 2-3
Monona Terrace Convention Center,
Madison

PSW Senior Care Conference

Thursday-Friday, May 14-15
Milwaukee Marriott West, Waukesha

Immunization Delivery for Pharmacists

Date TBD
Milwaukee Marriott West, Mau

Leadership Pharmacy Conference

Date TBD
Eagle Ridge Inn & Resort,
Galena, IL

Immunization Delivery for Pharmacists

Thursday, August 27
Kalahari Resort & Conventions
Center, Wisconsin Dells

PSW Annual Meeting

Thursday-Saturday, August 27-29
Kalahari Resort & Conventions
Center, Wisconsin Dells

PSW Technician Educational Forum

Friday-Saturday, October 23-24
Holiday Inn, Manitowoc