

PHARMACIST & TECHNICIAN CE:

Expanding Immunization Access in Wisconsin Community Pharmacies

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According to Healthy People 2020, around 42,000 adults and 300 children die each year from vaccine-preventable diseases in the United States.¹ To address these preventable deaths, Healthy People 2020 includes goals to increase immunization rates and decrease preventable infectious diseases.¹ Thus, these goals target the 17 vaccine-preventable diseases addressed by the current immunization recommendations in the United States.¹ The state of Wisconsin echoes these goals in Healthiest Wisconsin 2020, with objectives to increase the state's rates of vaccinations recommended by the Advisory Committee on Immunization Practices (ACIP).² While on the right track towards these federal and state goals, Wisconsin's current immunization and vaccine-preventable disease rates leave room for significant improvement. In 2016, Wisconsin ranked 47th in the United States for cases of pertussis, a vaccine-preventable disease, and 39th in childhood immunization rates according to America's Health Ranking.³ With only 68.8% of children receiving the seven vaccine series, Wisconsin is missing the Healthy People 2020 goal of 80% by over 10%.^{1,3} These deficits extend to adolescents in Wisconsin

CE FOR PHARMACISTS & TECHNICIANS

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Learning Objectives

- Identify Wisconsin's immunization areas for improvement
- List CDC recommended interventions to improve vaccination rates
- Describe current trends in pharmacist authority to immunize
- Elaborate patient preferences for immunization location, including acceptability of pharmacy-based immunization
- Explain how interprofessional partnerships benefit immunization practice

as well. Wisconsin was below the top 10 for every measure of adolescent immunization (measures of human papilloma virus (HPV); tetanus, diphtheria, and pertussis (Tdap); and meningococcal vaccination rates) and missing the Healthy People 2020 goals for female and male HPV vaccination by 30% and 45%, respectively.^{1,3} As for adults, in 2016, almost all 72 Wisconsin counties fell below Healthy People 2020's influenza immunization goal of 70% for children, adolescents, and adults over 65.^{1,4} With a focused approach, Wisconsin can increase immunization rates and decrease vaccine-preventable diseases across multiple patient populations. This data shows Wisconsin has ample opportunity for improvement on the road to becoming a

healthier state.

Access

An Evidence-based Approach to Increase Immunization Rates

The National Vaccine Advisory Committee recommends best practices to reduce barriers to immunization; barriers include cost, access to care, prerequisites for receiving immunization, assessing a patient's vaccination status and needs, and inadequate education/knowledge about vaccination amongst patients and providers.⁵ The Centers for Disease Control and Prevention's (CDC) Task Force on Community Preventive Services reviews available research and provides evidence-based ratings of a variety of interventions aimed to improve vaccination

rates.⁶ While a wide variety of interventions were recommended, those which utilized systems-based changes were more likely to be effective than those based in individual patient or provider behavior change. Multiple types of interventions to improve vaccine access were evaluated, including home visits and community-based vaccination at worksites, childcare programs, schools, and Women, Infants and Children (WIC) sites. The Task Force found adequate evidence to recommend each of these access-based interventions.⁷ Implementation of standing orders was also an intervention recommended to increase immunization.⁷ Early evidence suggests that pharmacy-based immunization is another access-based intervention that improves vaccination rates.⁸⁻⁹ Based on the CDC's review, implementation of a consistent standing order or vaccination protocol for use at pharmacies is expected to increase efficacy of this pharmacy-based intervention.

The Pharmacist's Role in Immunizations

Pharmacists have historically been advocates for expanded public health services including health screenings and vaccine administration. In the past twenty years, with the appropriate requisite training as authorized by states and supported by the pharmacy profession, pharmacists have gained greater authority as immunizers. However, for various reasons, great variability remains in the pharmacist approach to immunization and, thus, opportunities to enhance pharmacist immunization practices exist.

Pharmacists are permitted to administer vaccines to varying extents in all states, based on pharmacist scope-of-practice regulations and reimbursement for the administration of authorized vaccines. At present, the majority of states (n=35) have laws which require a standing order to vaccinate patients, whereas ten states allow a pharmacist to administer a vaccine without an intermediary prescriber (e.g., a physician). While five states do not have statutes or regulations explicitly permitting pharmacists to immunize, these states also do not have laws that prohibit pharmacists from administering immunizations.¹⁰ State laws with immunization type and patient age restrictions remain a barrier to pharmacists administering vaccines as recommended by ACIP. Adult vaccine administration is more commonly observed, though the majority of states have no

patient age restrictions.

Despite these lingering restrictions, the trend observed nationally is that states have expanded the role of pharmacists as immunizers in recent years. With reductions in physician oversight, minimum patient age restrictions removed, and the addition of new vaccines recommended by ACIP,¹⁰ pharmacists' ability to immunize has expanded. Many states have also directly authorized pharmacists to administer any vaccine recommended by ACIP, some by statewide standing order. Such advancements provide greater opportunities for patients to receive currently recommended vaccinations, as the ACIP Immunization Schedules are adjusted regularly and not subject to the legislative process of a state. Within the United States, the most common vaccines administered by pharmacists include influenza, pneumococcal, Tdap, zoster, and HPV. Vaccines less commonly administered by pharmacists (hepatitis A, hepatitis B, and measles, mumps, and rubella (MMR)) present further opportunities for unmet vaccination needs.¹¹

These expansions of pharmacist immunizers have increased the number of healthcare providers who can provide vaccinations to the public, thereby increasing accessibility and convenience for patients and caregivers, especially through community pharmacies. A systematic review and meta-analysis of pharmacists as immunizers demonstrated an increase in vaccine coverage when pharmacists were involved in the immunization process, regardless of role or vaccine administered when compared to vaccine provision by traditional providers without pharmacist involvement.¹²

Currently, pharmacists in the state of Wisconsin can administer all ACIP recommended vaccines to patients aged 6 years and older with an authorized vaccination protocol in place from a physician. The most commonly administered immunizations in Wisconsin under such agreements have been influenza, zoster, pneumococcal, and Tdap.¹³ While the process of executing vaccination protocols and collaborative practice agreements are common place in the pharmacy profession, constantly changing public health areas like immunizations can be challenging to all stakeholders. For example, ACIP recommends that adolescents receive HPV vaccinations between the ages of 11 and 13, yet many states that authorized pharmacists

to administer the HPV vaccine initially limited the administration to adult patients only. Some of those states subsequently expanded the authorization to allow pharmacists to administer HPV for the recommended patient age, necessitating a new vaccination protocol for the adolescent population.¹⁰ Under a vaccination protocol allowing pharmacists to immunize according to ACIP recommendations, a revised CPA would be unnecessary and consistent patient access to vaccines is achieved.

The majority of academic pharmacy programs in the United States are supporting this expansion by instructing pharmacy students on the proper administration of immunizations through state or nationally recognized training programs. This consistent level of education aids immunization expansion by increasing the number of immunizers trained, approximately 15,000 new immunizers per year at schools of pharmacy. Allowing pharmacy students to administer immunizations while in school has been demonstrated to build confidence in administration technique and aid in immunization administration to the public.¹⁴ The University of Colorado at Denver and Health Sciences Center has even developed an immunization approach that begins in students' introductory pharmacy practice experiences (IPPEs).¹⁴

After completion of an immunization training program, pharmacy students in Wisconsin are able to administer vaccinations to patients aged 6 years and older under the direct supervision of a registered pharmacist certified to immunize. Allowing pharmacy students to be actively engaged in immunization administration on a consistent basis not only assists in their understanding of immunizations, but provides a needed public health service when incorporated into pharmacy workflow.

What Patients Think & Want When Getting Vaccines

As pharmacist immunizers expand, the patient perspective on immunization remains paramount. Several patient surveys have shown community pharmacies are perceived as convenient sites to receive vaccinations. More than half of patients who have been immunized at a local pharmacy agree it is more convenient than immunization at their primary care provider's (PCP) office.¹⁵ Many

patients agreed it was both quicker and closer for them to receive their immunizations at the local pharmacy.¹⁵ The expanded “off-clinic” hours and time efficiency offered by pharmacies likely contributes to this convenience for patients. In a retrospective study examining immunizations in a national community pharmacy chain, 30% of patients received one or more vaccines during “off-clinic” hours (between 6PM and 9AM Monday through Friday, on weekends, or on holidays).¹⁶ The same community pharmacies also administered 150,000 vaccines between 10PM and 9AM, likely increasing access to immunizations for nightshift workers and others working non-traditional hours.¹⁶ The same study also revealed that one million vaccines were administered between 11AM and 1PM during weekdays.¹⁶ These immunizations were administered to patients likely on a typical workday schedule (9AM-5PM), demonstrating other access benefits of immunizations at a local pharmacy.

Not only are local pharmacies more convenient for patients to access than PCP offices, but 62% of patients surveyed explicitly prefer to visit their local pharmacy for immunizations and other health needs.¹⁷ Reasons included the pharmacy is a one-stop shop for health and wellness needs, easier to get to than the PCP’s office, they receive faster service, and it is more convenient for parents when they have the kids with them.¹⁷ Furthermore, over half of adult patients prefer to be immunized at a local pharmacy over their PCP’s office.¹⁷ Reasons included those previously mentioned, in addition to being an easy way to get the whole family immunized at once.¹⁷ As shown through these surveys, patients clearly value convenience when it comes to vaccination. Whether for faster service or expanded hours, patients and their families prefer to visit their local pharmacy for immunizations.

Expanding the Medical Home Model

The concept of the primary care medical home is well established and at its core represents the idea that an interdisciplinary team of medical professionals—nurses, medical assistants, physicians, pharmacists, nurse practitioners, physician assistants—when properly coordinated, has the potential to deliver care with superior outcomes and efficiency. The medical home model is

associated with improved outcomes in a wide variety of clinical areas, including lower rates of hospital admissions and improved rates of preventive screenings.¹⁸

Expanding immunization access in community pharmacies is a logical evolution of the vision of the medical home model towards the “medical neighborhood.” The medical neighborhood includes other health professionals beyond the walls of the medical home, with pharmacists as a prime example. In the medical neighborhood, pharmacists complement and augment what is possible in the medical home. With regard to immunizations, this means there are many options beyond the medical clinic to receive needed immunizations. In effect, this brings us closer to the reality of there being no “wrong door” for immunizations in our state. This concept is operational to some extent currently for influenza vaccines in Wisconsin; many pharmacies offer flu shots and are an important part of increasing access to, and uptake of, this lifesaving vaccine. However, Wisconsin immunization rates remain low for many other vaccines.³ Expanding the types of vaccines offered and the locations at which they are offered in the medical neighborhood is one strategy to improve preventive care in Wisconsin and reduce the rates of vaccine-preventable diseases.

Some have expressed concern that providing vaccines in settings outside of medical clinics will lead to lower rates of preventive health visits with PCPs and, thereby, other important aspects of prevention may not be addressed.¹⁹ Currently, the evidence does not support this concern.²⁰ There is also evidence that a significant proportion of individuals receiving vaccines in non-traditional settings, including pharmacies, do not have PCPs.¹⁶ As such, pharmacy-based immunization may fulfill unmet needs for patients facing healthcare access barriers. In the end, a state-level comparison study found that pharmacy-based immunization statutes led to higher per capita influenza immunization rates without changing the overall rate of preventive health services, including PCP office visits.²¹

In fact, pharmacists who provide immunizations can play an important role in identifying patients who are not yet established with a PCP and, partnering with providers in their communities, can connect these patients to medical homes. Such communication is a key component of the medical neighborhood,

especially with regard to immunizations. Research shows that over 50% of parents incorrectly believe a PCP will reach out when a teen needs a vaccine, and 90% incorrectly believe their teen is up to date on vaccines. And yet, HPV, meningitis, and influenza vaccines rates for teens remain under 50%.²² These communication barriers must be addressed if immunization rates are to be improved.

Communication between all members of the medical neighborhood is critical to serving patients well across multiple practice sites, and use of the Wisconsin Immunization Registry (WIR) is key to facilitating this communication. The WIR is a bi-directional immunization information system that allows any immunizer (whether a PCP, pharmacist, or other provider) to enter a patient’s vaccination history into a database which can be viewed by patients and edited by any immunizer. This bi-directional communication among providers in the medical community improves patient care and patient safety. Access to a bi-directional immunization platform has even been associated with a 41% increase in vaccine administration.¹¹ Further opportunities for collaboration between PCPs and pharmacists also exist, including “handoffs” (e.g., receive first dose of HPV from PCP and second dose from a community pharmacist).

Expanding Immunization Access in Wisconsin: A Statewide Project

Over the next two and a half years, Pharmacy Society of Wisconsin (PSW), through the Wisconsin Pharmacy Foundation, is working in conjunction with the Medical College of Wisconsin (MCW) Schools of Medicine and Pharmacy on the project Expanding Immunization Access in Wisconsin. This project aims to improve population health in Wisconsin by reducing the prevalence of vaccine-preventable disease. Through policy, systems, and environmental changes to enable greater vaccine administration via pharmacies, access to ACIP recommended vaccines will increase for patients ages 6 and older, thereby reducing the prevalence of vaccine-preventable disease in Wisconsin.

PSW’s focus will be on creating a consistent immunization protocol throughout the state, updating trainings, and removing claim-submission barriers to pharmacist vaccine administration. PSW will work with the Wisconsin Department of Health

Services (DHS) to redesign the Wisconsin Immunization Registry (WIR) training to increase access for healthcare professionals across multiple disciplines. PSW revised its immunization administration training program into a refreshed, condensed format, while also adding training on non-vaccine injections. The new program premiered at the 2018 PSW Annual Meeting and will continue to be offered periodically by PSW. Throughout this project, a range of partners will be engaged including Wisconsin Medicaid, other payers, pharmacists, technology systems, patients, community immunization coalitions, and vaccine experts.

MCW researchers from the Schools of Medicine and Pharmacy will organize the data collection and analysis process, measuring project progress via data from surveys. MCW will also facilitate key dialogue with physicians, student pharmacist engagement, and material compilation. Through these targeted activities, PSW and MCW aim to enable increased access to immunizations through Wisconsin's pharmacies and decrease vaccine-preventable disease throughout the state.

Improvement of Wisconsin's immunization rates is not only possible, but necessary, to improve the health of our state. With knowledge of access as an evidence-based approach to increase immunization rates, current pharmacist immunization roles, and patient perspectives, Wisconsin can expand the medical home model to improve immunization rates for patients of all ages.

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

Disclosure: Kimberly McKeirnan, PharmD, BCACP, served as principal investigator of a study that trained technicians in Idaho to immunize patients and subsequently vaccinated. Dr. McKeirnan authored the sidebar describing results of the study.

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Immunizing Technicians

by Kimberly McKeirnan, PharmD, BCACP

For the first time in the United States, Administrative Rule 330.03 now allows pharmacy technicians in Idaho to administer immunizations. In order to meet the requirements, technicians must be Basic Life Support (BLS) certified, be nationally certified as a pharmacy technician, and complete an ACPE-accredited immunization administration training program. More than 200 technicians in Idaho have now completed the Pharmacy Technician Immunization Training Program offered by Washington State University. Recent research conducted with the first 25 immunization-trained technicians showed that 953 immunizations were administered by these technicians in the first 6 months after training.²³ Pharmacists who work with these technicians report that immunization numbers are increasing as a result of having trained technicians who are knowledgeable and excited about immunizing. Many pharmacists also report an improvement in pharmacy workflow and technician job satisfaction.

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Pharmacists and Immunization Coalitions

Did you know Wisconsin has 17 local immunization coalitions? All coalitions focus on increasing immunization rates and reducing vaccine-preventable diseases in their communities all over the state. Efforts have included education and outreach to high-risk populations, influenza and pneumococcal vaccination to African Americans and Hispanics over 65, and the continuing effort to vaccinate children.¹ Local coalitions use both federal Healthy People and state guidance documents to strive for immunization goals.¹

How can you get involved with your local immunization coalition?

Search the directory of immunization coalitions on the Wisconsin Department of Health Services website to find your local coalition. (<https://www.dhs.wisconsin.gov/immunization/coalition.htm>)

Contact your local coalition for community-specific resources and outreach ideas.

Attend coalition meetings and summits.

Volunteer at coalition events.

While these coalitions are immunization champions in their communities, other local coalitions exist in Wisconsin surrounding tobacco use, stroke, nutrition and physical activity, asthma, and more.

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technicians to administer immunizations. *J Am Pharm Assoc.* 2018;58(2):174-178.

Assessment Questions

1. Which of the following areas does NOT need improvement in Wisconsin?
 - a. New cases of pertussis
 - b. Childhood 7-vaccine series completion
 - c. Male and female HPV vaccination rates
 - d. All of the above need improvement in Wisconsin
2. Which of the following was NOT recommended by the CDC to affect large improvements on vaccination rates?
 - a. Vaccination at Women, Infants, and Children (WIC) sites
 - b. Home visit vaccination programs
 - c. Educating a local PCP on immunization recommendation behaviors
 - d. Immunization standing order implementation
3. **True or False:** Pharmacists have gained greater authority as immunizers over the last 20 years, so no opportunities remain to enhance pharmacist immunization practice.
 - a. True
 - b. False
4. **True or False:** Pharmacists can administer vaccines in all states.
 - a. True
 - b. False
5. **True or False:** Restrictions on immunization type and patient age for pharmacist-administered immunizations remain in some states.
 - a. True
 - b. False
6. Which of the following is true of patient immunization preferences?
 - a. Over half of adult patients prefer to be immunized at a local pharmacy.
 - b. Patients prefer to visit their PCP's office over a local pharmacy.
 - c. Expanded "off clinic" hours for immunizations at community pharmacies do not affect patient convenience.
 - d. Patients receive faster service at their PCP's office than at their local pharmacy.
7. **True or False:** Some patients prefer to be immunized at a local pharmacy over a PCP's office because it is an easy way to get the whole family immunized at once.

- a. True
b. False
8. Which of the following is NOT true of interprofessional partnerships and immunization?
- There is currently no evidence that vaccination outside of medical clinics leads to lower rates of preventive health visits with PCPs.
 - Immunization rates would not benefit from interprofessional partnerships.
 - Immunizing pharmacists can identify patients without a PCP and connect them to providers in their communities.
 - PCPs and pharmacists can collaborate on handoffs (e.g., receive first dose of HPV from PCP and second dose from a community pharmacist).
9. **True or False:** The WIR is a bi-directional immunization information system which allows only PCPs to enter patient vaccination history.
- a. True
b. False
10. Did the activity meet the stated learning objectives? (if you answer no, please email sarahs@pswi.org to explain)
- Yes
 - No
11. On a scale of 1 – 10 (1-no impact; 10-strong impact), please rate how this program will impact the medication therapy management outcomes or safety of your patients.
12. On a scale of 1 – 10 (1-did not enhance; 10-greatly enhanced), please rate how this program enhanced your competence in the clinical areas covered.
13. On a scale of 1 – 10 (1-did not help; 10-great help), please rate how this program helped to build your management and leadership skills.
14. How useful was the educational material?
- Very useful
 - Somewhat useful
 - Not useful
15. How effective were the learning methods used for this activity?
- Very effective
 - Somewhat effective
 - Not effective
16. Learning assessment questions were appropriate.
- Yes
 - No
17. Were the authors free from bias?
- Yes
 - No
18. If you answered “no” to question 17, please comment (email info@pswi.org).
19. Please indicate the amount of time it took you to read the article and complete the assessment questions.

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| 5) a b | 15) a b c |
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