

The Role of Pharmacists as Immunizers in North Carolina

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Pharmacists are well-equipped to provide information to other health care providers on immunizations that may benefit patients, and can administer these immunizations in the pharmacy setting. Pharmacists have positively impacted vaccination rates, especially among patients who infrequently visit other health care providers or have reduced access to care. North Carolina has expanded the list of vaccinations pharmacists can provide, which helps to promote disease prevention and improve population health.

In recent years, pharmacists have played an increasingly large role in public health and have contributed to improvements in population-based care. Pharmacists influence provision of vaccines through a variety of mechanisms. Pharmacists act as educators for other health care providers, facilitate the delivery of vaccines given by others, and administer vaccines themselves [1]. These efforts coincide with the immunization goals found in Healthy People 2020, a national effort to improve the health of Americans. The goals of increasing adult and childhood vaccination rates are meant to decrease the diagnosis of vaccine-preventable illnesses. Healthy People 2020 also stresses the importance of providing vaccines in a culturally and age-appropriate manner to respond to the growing needs of our society.

Pharmacists are repeatedly seen as one of the most trusted professions and are uniquely positioned to reach patients that may otherwise have reduced access to care. For these reasons and many others, pharmacists have positively impacted public health, including through increases in immunization rates and decreases in vaccine-preventable diseases [2].

Pharmacists as Facilitators and Educators

Pharmacists provide valuable information on medications, including immunizations, to patients and other health care providers; this communication opens avenues for discussion and education and has increased vaccination rates [3]. Pharmacists have the ability to talk with patients in even greater detail through Medication Therapy Management (MTM) sessions [4]. During these sessions, pharmacists can ask targeted questions to identify, among other things, vaccinations patients may still need. In North Carolina, pharmacists also have the ability to check a patient's vaccination history through granted access to the online North

Carolina Immunization Registry (NCIR). Once a patient is scheduled for an MTM session, the pharmacist can check the NCIR prior to the appointment to gather that patient's immunization history to make more accurate and thorough recommendations.

In a meta-analysis performed by Isenor et al, 22 studies were identified where pharmacists acted as immunization facilitators and educators [1]. These studies looked at vaccination recommendations that pharmacists made to other health care providers and how often these recommendations were accepted. Outcome measures included number of patients vaccinated or the vaccination rate following pharmacist intervention. The majority of these studies were completed in a community pharmacy setting; immunizations assessed were influenza and pneumococcal. Pooled data for these 22 studies showed significant improvement in the number of immunizations provided in the intervention groups (RR 2.96, 95% CI:1.02-8.59).

Pharmacists as Administrators

It has become increasingly important for pharmacists practicing in the community to be certified immunizers—most employers, in fact, consider this a requirement for employment. The American Pharmacists Association (APhA) published a survey of community pharmacists in 2013 which found that vaccinations are provided in 86% of community pharmacies [5]. Patients are seeking out their pharmacist for information and advice on immunizations, and health care providers in other settings are referring their patients to pharmacists to receive their immunizations. These referrals reflect the growing emphasis on interprofessional collaboration in patient care.

Patients seek vaccination in the community pharmacy setting for a variety of reasons. First and foremost, community pharmacies are accessible to patients who may live a distance from other health care settings (93% of Americans live within 5 miles of a pharmacy) [6]. For patients receiving care in a pharmacy, which has extended hours and requires

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no appointment, is more convenient than visiting the doctor's office [7]. Fortunately, more and more insurance policies are covering vaccinations under prescription insurance; some insurance plans even prefer patients be immunized in a pharmacy setting, as vaccines can be provided at a lower cost. Some vaccines, such as herpes zoster (Zostavax), are usually administered in a pharmacy setting for billing purposes. For Medicare patients, the herpes zoster vaccine has to be billed through the patient's prescription insurance, Medicare Part D. Providers are unable to bill Part D in the office; thus, most primary care offices do not stock the herpes zoster vaccine, whereas pharmacists can bill and do stock the vaccine.

Referring back to the meta-analysis by Isenor et al, 14 studies were assessed looking at the value of pharmacists as vaccine administrators, with the primary study outcomes being increased immunization rates [1]. Pooled data for these 14 studies (which included 1 study completed in a hospital setting to add to heterogeneity) showed increased immunization rates and increased vaccine coverage in the pharmacist intervention groups. Morbidity and mortality data were not reported. Analyzed studies reported the positive impact pharmacists have on the rate of influenza and pneumococcal administration, but data has not been evaluated on the rate of tetanus-containing or herpes zoster vaccinations. Since these are two immunizations frequently provided by pharmacist-immunizers, it may be beneficial to evaluate the results of these efforts.

State Rules and Regulations

Pharmacists face the challenge of variability in immunization laws between states. All 50 states allow pharmacists to immunize, but differ in the age of patients that pharmacists can vaccinate, which vaccines can be administered, and the necessity of protocols or prescriptions [8]. All states but 4 allow pharmacists to administer all vaccines. Most states require an established protocol for vaccine administration, but 8 states allow pharmacist-initiated influenza vaccination without a protocol and 7 allow pharmacists to provide immunizations independent of a protocol or prescription.

Under North Carolina state law 2013-246, entitled *An Act to Protect the Public's Health by Increasing Access to Immunizations and Vaccines through the Expanded Role of Immunizing Pharmacists* (in effect October 1, 2013), North Carolina pharmacists are able to provide 6 vaccinations under protocol: influenza; pneumococcal; any tetanus-containing vaccination; herpes zoster; hepatitis B; and meningococcal. The remaining vaccinations require a prescription for pharmacist administration [9]. Pharmacists may only provide immunizations to adults 18 years old or older, with the exception of influenza which may be administered to anyone 14 years or older. Pharmacists who provide immunizations under this bill must maintain perpetual records of the immunization in the patient profile, communicate immunization records to the patient's primary care provider, and log receipt of the immunization in the NCIR. Pharmacists also

need to maintain 3 CEUs in the area of immunizations every 2 years and have an active CPR certification.

Despite these efforts, challenges still exist to increasing vaccination rates, especially in the adult population. Approximately 62-65% of adults over the age of 65 have received the pneumonia vaccine, and 20% of high-risk adults aged 19-64 years old received the pneumonia vaccine [10, 11]. Also, only 16% of adults over the age of 60 were immunized against the shingles. These low vaccination rates lead to an estimated 40,000 to 50,000 deaths annually, costing the healthcare system over \$10 billion, and are much lower than the goals set by Healthy People 2020 [10]. As stated, pharmacists have helped to increase vaccination rates, but there is still work to be done in this area. As pharmacists continue to take on an increasingly clinical role and integrate into the health care team as a vital member, they will have the opportunity to work with patients to ensure they are up to date with all recommended immunizations. NCMJ

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