Pharmacy Technicians and Immunizations

MARY F POWERS AND KENNETH C HOHMEIER

Objective: To provide background on immunizations and community pharmacies and identify opportunities for pharmacy technicians to assist pharmacists in providing community pharmacy–based immunization programs.

Methods: Articles were identified through searches of MEDLINE/PubMed (1950-July 2010) with the following search terms: vaccination and technician, immunization and technician, vaccination and pharmacist, and immunization and pharmacist. Additionally, immunization resources from the American Pharmacists Association, the American Society of Health-System Pharmacists, and the Centers for Disease Control and Prevention were used.

Results: Pharmacy technicians can help facilitate immunization programs and help reduce some of the barriers to providing superior services. Specific tasks that can be performed by pharmacy technicians include documentation, billing, assisting in the reporting of adverse events, and facilitating communication. Technicians can also take an active role in pharmacy-based immunization programs by obtaining cardiopulmonary resuscitation training and certification.

Conclusions: Pharmacy technicians can help facilitate immunization programs and help pharmacists offer more robust and comprehensive immunization services.

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Pharmacists have been involved with immunizations since the middle of the nineteenth century. Despite this, pharmacists have not always been legally authorized to administer immunizations. The first documented pharmacy participation with vaccinations dates back to the mid-1800s, with smallpox vaccine distribution.[1] Later, pharmacies in the late nineteenth century served as dispensaries for diphtheria antitoxin.[1] However, in the early- and mid-twentieth century, state practice limitations halted further progress in the role of community pharmacies and vaccinations. In 1993, the US Department of Health and Human Services contacted the American Pharmaceutical Association, now the American Pharmacists Association (APhA), to help define the role of the pharmacist in a nationwide childhood immunization program.[2] Progress was rapid over the next decade, and as of June 2009, with the passage of legislation in Maine, all 50 states allow pharmacists to administer immunizations.[3] Colleges of pharmacy now train students to do so. According to 1 survey, students are confident in their ability to immunize and are willing to provide this service.[4]

In general, and across all health-care settings, vaccination programs are fraught with barriers to success. These barriers include lack of communication among health-care professionals, long wait times at clinics, lack of proper screening for individuals who should be vaccinated, and poor follow-up for patients who miss appointments.[5] The challenges in a community pharmacy are unique, and in addition to the barriers listed above, include high prescription volume, resulting in lack of time to administer immunizations.[6]

The purpose of this article is to provide a background on immunizations and community pharmacies and to identify and suggest opportunities for pharmacy technicians to assist pharmacists in providing community pharmacy–based immunization programs.

In this review, articles pertaining to pharmacy technicians and immunizations were identified through searches of MEDLINE/PubMed (1950-July 2010) and immunization resources from APhA, the American Society of Health-System Pharmacists (ASHP), and the Centers for Disease Control and Prevention (CDC) were used.

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Immunity and Immunizations

Development of immunity to diseases is a concept that dates back thousands of years. However, it was not until 1796 that the first clues as to how to prevent diseases from developing in individuals were discovered.[7] That year Edward Jenner acted on his observation that milkmaids had greater resistance to smallpox and that their resistance arose from exposure to a similar disease called cowpox.[7,8] From this origin, the concept of the vaccine (from *vacca*, Latin for *cow*) was developed. Progress was slow, as microbes and infectious diseases would not be understood until almost 100 years later. However, the concepts that disease is caused by microbial organisms and that exposure to those organisms induces resistance and subsequent immunity to them led to more rapid advancements in immunization throughout the twentieth century (Table 1).

The widespread use of vaccines is important for individuals as well as society as a whole. Epidemics swept through the world for centuries without a means of preventing or halting their spread. Immunization against epidemic-causing diseases was the first meaningful weapon against epidemics. It was vaccines that brought about the almost complete eradication of diseases such as smallpox and polio.[9,10] However, one vaccination is not always enough to prevent disease. With certain vaccinations, the body loses its ability to respond as strongly to a disease, and although a previous immunization has been administered, an immune booster is necessary. Furthermore, some pathogens, such as HIV, constantly change their chemical makeup and it is currently impossible to completely eradicate diseases caused by these pathogens.[11]

A community pharmacist is at the front line of disease prevention, as an easily accessible health-care professional.[12,13] The service of pharmacist-administered immunizations helps to ensure that the greatest number of persons have immunity to diseases, and the chance of epidemics is minimized.

Table 1. Chronology of Development of Selected Vaccines[8]

VACCINE	YEAR
Viral	
pandemic A2 influenza	1957
purified poliovirus	1960
measles	1963, 1968
mumps	1967
rubella	1969
purified influenza	1969, 1970
measles, mumps, rubella	1971
adjuvant influenza	1973
hepatitis B	1981, 1986
varicella	1995
hepatitis A	1996
Bacterial	
meningococcus A	1974
meningococcus C	1975
pneumococcus	1977, 1983
Haemophilus influenzae	1989

Immunization Regulations

The regulation of pharmacist-provided immunizations varies by state.[14] For example, the types of vaccinations a pharmacist can provide for a patient in Ohio are different from the types of vaccinations that a pharmacist can provide in New York. Variations among states include educational and certification requirements of immunization providers, types of immunizations that can be administered, ages of patients who can be immunized, routes of administration, and necessity to adhere to a predetermined protocol. In general, immunizations can be provided to patients as part of a written protocol agreed upon by the pharmacist and a physician. Although most vaccinations can be given as part of these physician-authorized standing orders, others may require an individual prescription. It is important to check the laws and the rules administered by state boards of pharmacy to ensure that all state regulations are followed.

APhA Immunization Guidelines

In an effort to standardize the pharmacist's role in immunization programs, APhA developed 5 guidelines to provide a basis for pharmacist-provided immunization practices: (1) prevention, (2) partnership, (3) quality, (4) documentation, and (5) empowerment.[15] These guidelines provide a framework for pharmacists to develop successful and patient-centered community pharmacy–based immunization programs.

PREVENTION

The role of the pharmacist is that of an educator, facilitator, and immunizer for vaccine-preventable diseases.[15] However, community pharmacies are easily accessible to the public, and individuals who work in pharmacies can be disease carriers with the potential to accelerate the transmission and spread of communicable diseases, given the sheer number of patients served each day. Every member of the pharmacy staff should be adequately immunized. Pharmacists should routinely identify high-risk patients in need of immunizations and regularly identify the immunization status of patients.[15]

PARTNERSHIP

Immunization programs need to be based on the immunization goals advocated by city, county, and state governments.[15] Vaccinations made accessible through a

partnership involving local prescribers and health departments could decrease the size of the public pool in which a disease may reside.

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APhA developed 5 guidelines to provide a basis for pharmacist-provided immunization practices.

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Partnership must also exist with patient-centered medical homes (PCMHs).[15] A PCMH uses a team-based approach to providing care, in which the family physician, or primary care physician, is the team leader and directs the health care of the patient. The focus is on keeping healthy patients healthy, instead of waiting until people become sick and then trying to improve their health. PCMHs provide a means for physicians to collaborate with other health-care providers, including pharmacists, to improve the overall quality of patient care and outcomes.[16] Patients' immunization records should reside with a central health professional, such as the patient's family physician, to ensure that accurate records are maintained and that all health-care providers can access complete patient records. Pharmacists are uniquely positioned to be active participants in the medical home model and should play a key role within it.[17]

QUALITY

Pharmacists should receive formalized training or education before being able to immunize. In certain states, additional continuing education may be necessary. Despite legal variations among states, the pharmacy profession holds itself to a consistent standard through guidelines on immunization education developed by ASHP (Table 2).[14]

DOCUMENTATION

Once an immunization is given, records must be kept for each patient.[15] Immunization records should be shared with each patient's primary care provider in a timely manner, and an individual immunization record should be given to the patient. Any adverse events experienced as a result of an immunization should also be recorded.

EMPOWERMENT

Before pharmacists were given the authority to immunize, their primary role regarding immunizations was to educate the public.[18] Pharmacists should continue to advocate for the appropriate use of vaccinations for at-risk patient populations. Prior to administering an immunization, pharmacists should document the education provided to the patient, and a signed informed consent form should be obtained, consistent with state law.

Barriers to Immunization Programs

Pharmacy practice has changed immensely in the past few decades. While pharmacists once simply compounded, dispensed, and sold medications and medical treatments, they are now also responsible for direct patient care and must exercise clinical judgment. With these added responsibilities, new time constraints are hindering the full potential of pharmacy services. As a result, it may be difficult for a community pharmacist to adhere to all of the APhA guidelines for pharmacy-based immunizations. A survey by Capurso and Powers identified time constraints as a major barrier to community pharmacists adopting an immunization program.[6]

The Pharmacy Technician's Role

Just as pharmacy technicians have historically provided assistance to pharmacists in filling and dispensing prescriptions, they can assist the pharmacist in providing immunization services. As pharmacists continue to take a more active role as participants in a patient's health-care team, pharmacy technicians are incorporating additional tasks into their daily routines. These tasks may not be related to dispensing of drug products , as is the case for immunization programs and other clinical pharmacy services.

Table 2. ASHP Guidelines for Pharmacist Immunization Training[14]

Epidemiology of vaccine-preventable diseases
Public health goals for immunization
Vaccine safety
Screening for contraindications and precautions of vaccination in each pt.
Vaccine stability and transportation and storage requirements
Immunologic drug interactions
Vaccine dosing
Proper dose preparation and injection technique
Signs and symptoms of adverse reactions to vaccines, adverse reaction reporting, and emergency procedures
Documentation
Reporting to the primary care provider or local health department
Billing

ASHP = American Society of Health-System Pharmacists.

Pharmacy technicians can assist pharmacists in the delivery of immunization services in the areas of documentation, billing, reporting adverse events, facilitating communication, and obtaining additional certifications.

DOCUMENTATION

Pharmacy technicians should ensure that all required forms are completed prior to administration of an immunization. If the desired vaccine requires, by law, a separate physician order, they can verify that a valid prescription has been obtained. Following immunization, a record of the vaccination can be entered into the pharmacy's computer system and billing can be processed.

BILLING

Due to time constraints on the pharmacist, pharmacy technicians must develop a good working knowledge of billing practices within the pharmacy to resolve processing issues. Depending on a pharmacy's specific patient population, there may be several third-party payers who will reimburse the cost of a vaccination. Vaccination payers can be grouped into 2 broad categories, private payer or government payer. Medicaid is the primary payer for patients between the ages of 19 and 64 years who are receiving government assistance. However, with varying health-care plans within each state administering Medicaid benefits, coverage of the cost of vaccinations varies, and not all plans reimburse the cost of all immunizations. For patients who are disabled or older than 65 years, Medicare is the primary payer for immunizations. Coverage is guaranteed, by statute, for influenza, pneumonia, and hepatitis B vaccinations for all Medicare beneficiaries.[19] Although influenza vaccinations are covered annually for these patients, hepatitis B immunizations are only covered for persons at medium or high risk of developing the infection, and pneumococcal pneumonia vaccinations are covered once per lifetime or on a risk-based assessment.[19] If the patient does not meet the requirements for part B coverage, it may be possible to bill the patient's Medicare part D plan. For example, if a patient does not meet the requirements for hepatitis B vaccination under Medicare part B, billing should be completed through Medicare part D. Patients' copayments vary from one Medicare part D plan to the next and between Medicare part B and Medicare part D coverage. As of 2008, other vaccinations necessary for Medicare recipients, in addition to the 3 noted above, are covered under Medicare part D under the Tax Relief and Health Care Act of 2006.[20]

Patients may inquire as to why they should receive immunizations from a pharmacy or why their physician referred them to a pharmacy. Most physicians do not have contracts with Medicare part D plans so beneficiaries are charged out-of-pocket for the full amount of the vaccine. Reimbursement may be received after the immunization if the patient contacts Medicare; however, predetermined reimbursement rates have been established and full reimbursement may not be received by the beneficiary. Thus patients might pay some out-of-pocket costs after Medicare reimburses for the vaccine. For this reason, it is not only more convenient for a Medicare patient to receive immunizations at a community pharmacy, but it may also be more cost effective since the only charge to the patient at the point of service is, at most, the copayment set by the patient's Medicare part D plan.

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Pharmacy technicians must develop a good working knowledge of billing practices to resolve processing issues.

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Private insurers have the most variance among coverage, and unlike Medicare, may not cover any costs associated with immunizations. A cross-sectional national survey noted that, of the insurance plans surveyed, 84% covered influenza vaccines; 81% covered pneumococcal vaccines; 75% covered hepatitis B vaccines; and 77% covered measles, mumps, and rubella (MMR) vaccines.[21] Additionally, self-insured entities were less likely to cover hepatitis B, MMR, and varicella immunizations for employees versus those who purchased commercial insurance plans.[21]

ASSISTING WITH REPORTING ADVERSE EVENTS

After documentation and billing are completed, the pharmacist administers the vaccination. If a patient is to experience a serious reaction, it will most likely occur within 15 minutes of the injection.[22] For this reason, the patient must remain in the vicinity of the pharmacy for that duration. However, other adverse effects may occur later. If an adverse reaction occurs, it is necessary to document the event online or via fax or mail using the vaccine adverse event reporting system (VAERS). VAERS is a national postmarketing safety surveillance program sponsored by the CDC and the FDA. The program is used to collect information about adverse events that occur after the administration of an immunization. All significant adverse reactions should be reported using VAERS, even if it is not certain that the vaccine caused the adverse reactions.

FACILITATING COMMUNICATION

A pharmacy has daily contact with physicians, medical offices, and patients to ensure that drugs are dis-

pensed in a safe, accurate, and timely manner. However, good communication is essential to the operation of an immunization program, to provide optimal health care for patients. After an immunization has been administered, the patient's immunization record should be communicated to the primary care provider to ensure that a centrally located, complete, and accurate immunization record is maintained and that all of the patient's health providers have access to that record. In keeping with the medical home model, a pharmacy technician can communicate information by fax, mail, or telephone to ensure that the patient's family physician is up to date on his or her patient's most current vaccination history. Pharmacy technicians are integral in relaying health-care information about immunizations to primary care physicians' offices. Additionally, pharmacy technicians can facilitate communication with patients through such things as reminder phone calls.

OBTAINING ADDITIONAL CERTIFICATION

Pharmacy technicians are eligible to obtain cardiopulmonary resuscitation certification provided by the American Heart Association or the American Red Cross. Cardiopulmonary resuscitation certification can assist in both the event of an adverse reaction to an immunization and in general day-to-day emergencies that may arise within a pharmacy setting.

Discussion

The measure of success of an immunization program in a community pharmacy can be correlated to the number of barriers that exist in that practice site. Barriers such as a lack of adequate time due to high prescription volume may prohibit a pharmacist from accomplishing all of the necessary duties to adhere to the pharmacy profession's standards for an immunization program. By incorporating pharmacy technicians into immunization workflow, a community pharmacist can delegate work among pharmacists and pharmacy technicians in a manner that optimizes time utilized by both and ensures the best possible experience for the patient.

As the services provided by a community pharmacy continue to expand, it will be essential for the role of pharmacy technicians to continue to evolve as well. Many exciting opportunities for increased patient care services are on the horizon for pharmacists and pharmacy technicians. In the case of immunization services, pharmacy technicians will need to work with pharmacists to ensure the successful roll-out of these services by aiding in contacting patients, facilitating communication between medical offices and pharmacies, and assisting with billing and documentation. In addition, pharmacy technicians can help the pharmacist to be prepared for emergencies by obtaining cardiopulmonary resuscitation training and certification. In these ways, pharmacy technicians' assistance in providing immunization services can lead to improved immunization programs.

Pharmacy technicians can facilitate coordination of other pharmacy services as well, such as community health screenings and medication therapy management. It is also important that pharmacy technicians continue to inform patients about the variety of pharmacy services available to patients (eg, counseling, immunizations, medication therapy management, community health screenings). In these ways, a pharmacy technician can continue to help pharmacy become a more integrated part of a patient's health-care team.

Summary

Pharmacy technicians can assist pharmacists in community pharmacy immunization programs and, consequently, remove barriers to the provision of immunization services. Specifically, by aiding in contacting patients, facilitating communication between medical offices and the pharmacy, helping with billing and documentation, and obtaining cardiopulmonary resuscitation training and certification, pharmacy technicians can become integral members of an immunization program. ≏

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