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The Essential Role of Community Pharmacies in Expanding Access to Vaccines

IT IS WELL DOCUMENTED that the rate of adult vaccination in the United States is suboptimal. Particularly when compared with childhood vaccination rates, which are often higher than 90%, adult vaccination rates remain low for most vaccines recommended by the Centers for Disease Control and Prevention (CDC).^{1,2} Stakeholders have been studying this discrepancy, seeking a way to improve compliance with immunization recommendations and patients' access to vaccinations. Barriers abound to improving adult vaccination rates, from a lack of public awareness regarding the need for vaccines and the ongoing threat of vaccine-preventable diseases, to challenges regard financial/reimbursement systems for providers. Pharmacists are ideally positioned to overcome some of these barriers.

Gaps In Adult Vaccination

The success of childhood vaccination programs in the United States has seen the prevalence of vaccine-preventable disease in children plummet when compared with adults. Among adults, rates of vaccination coverage vary by condition, but generally remain low (Figure).³ Rates of vaccine-preventable disease in older adults, however is high.³

Gaps in vaccination coverage are reflected in the statistics for influenza vaccination. In the 2014-2015 season, 32.5% of adults aged 20 to 49 reported receiving the influenza vaccine. The coverage rates improve slightly for the group aged 50 to 64 at 48.7%, and are significantly better in older adults (≥65 years) at 73.5% (Table).³ Looking at early season influenza coverage for 2017-2018, approximately 38% of eligible individuals, in all age groups, had received the vaccination.⁴ A closer look at vaccination rates for influenza among children

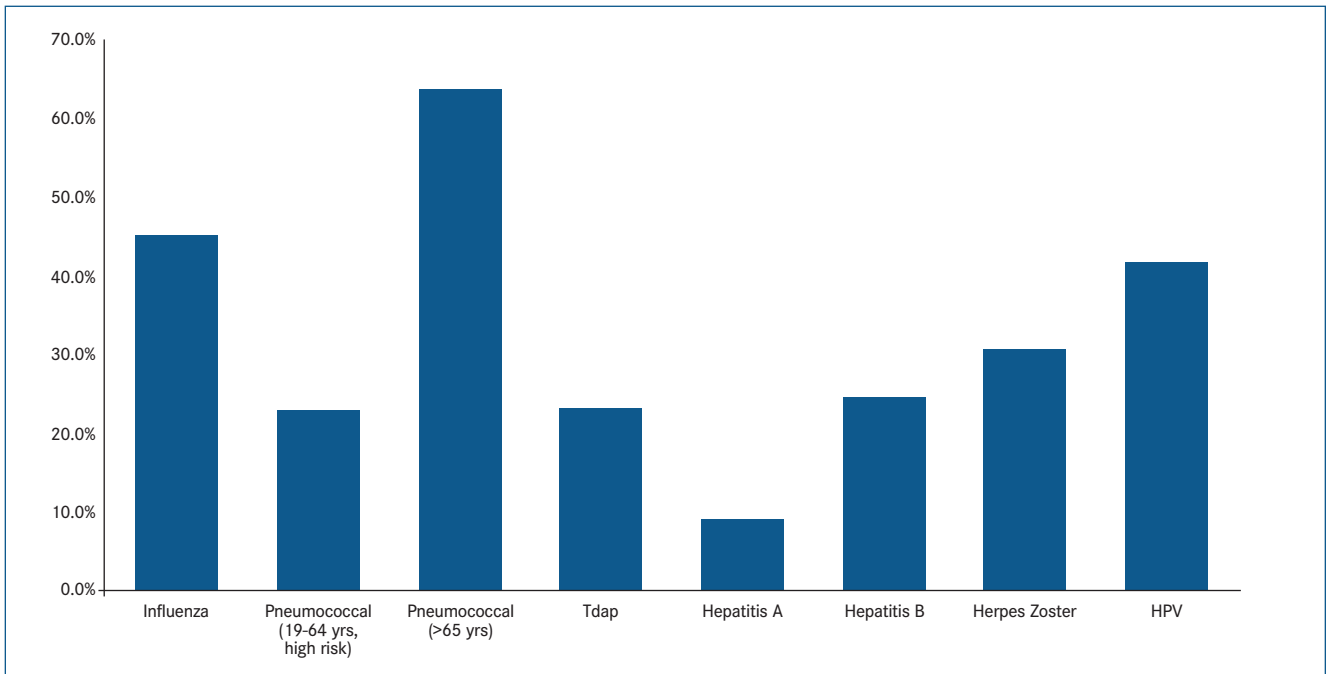
ages 6 months through 17 years in the 2015 to 2016 season show decreased coverage with increasing age: aged 6 to 23 months: 75.3%; aged 2 to 4 years: 66.8%; aged 5 to 12 years: 61.8%; and aged 13 to 17 years: 46.8%.⁵ It is clear from recent surveillance information that efforts to increase influenza vaccination compliance are needed across all age groups.

Other common vaccinations suffering shortfalls in adult immunization are pneumococcal vaccination, herpes zoster, tetanus or Tdap, and human papillomavirus (HPV). Adults aged 19 to 64 years who are at increased risk for pneumococcal disease should be vaccinated; however, according to CDC reports of the 2014-2015 season, only 23.0% had been inoculated. For adults aged 65 years and older, the vaccination rate for pneumococcal disease was significantly better at 63.6%.³

Herpes zoster vaccination is important in older adults to prevent shingles. In the same 2014-2015 analysis, adult vaccination rates, of adults aged 60 years or older, 30.6% reported being vaccinated for herpes zoster. Among those aged 60 to 64, 21.7% received the vaccine, increasing to 34.2% among those 65 and older.³

In 2015, 61.6% of adults aged 19 years or older said they had had a tetanus shot of some type within 10 years. This percentage did not vary significantly when broken down by age groups of adults.³ When investigators could assess Tdap specifically, they found that coverage in the past 10 years was 23.1% among adults aged 19 and older. Coverage was 41.9% for adults who said they lived with a child younger than 1 year.³

Review of 2015 CDC data on HPV shows that of women and men who reported receiving a least 1 dose, 41.6% of

Figure. US Adult Vaccination Rates 2015.³

HPV indicates human papillomavirus; Tdap, tetanus-diphtheria-acellular pertussis; yrs, years.

Source: Williams WW, Lu P, O'Halloran A, et al. Surveillance of vaccination coverage among adult populations - United States, 2015. *MMWR*. 2017;66(11):1-28. <https://www.cdc.gov/mmwr/volumes/66/ss/ss6611a1.htm>.

women aged 19 to 26 had received the vaccine compared with 10% of men in the same age group.³

When considering current vaccination recommendations, the above surveillance of vaccine coverage among US adults regarding influenza, pneumococcal disease, tetanus, herpes zoster, and HPV reveals a large opportunity for pharmacist intervention.

Pharmacists Are: Accessible Healthcare Providers

The above shows how dramatically vaccines are underutilized, particularly among adults and high-risk individuals. To improve the rate of vaccination among adults, communities need to provide more education about and access points for vaccination services. Patients need to know why vaccination is important. This challenge has created widespread interest in the role pharmacists can play in creating and implementing measures aimed at improving the administration of recommended vaccines and, ultimately, stopping vaccine-preventable diseases.

More pharmacies than ever are offering vaccination services, increasing the numbers of providers and access points for patients. More than 90% of Americans live within 5 miles of a pharmacy, and as of the 2011-2012 influenza season, more than 20% of adults reported receiving a flu vaccine from a drug store or supermarket pharmacy.⁶ Not only are pharmacies plentiful in all types of urban and suburban areas, they offer the convenience of extended hours, including holidays, and often for a lower cost. There

are many benefits of pharmacy-based immunization (PBI), and pharmacists and community pharmacies are central to any plan for improving vaccination rates.⁶

What do patients say? They report preferring the convenience of receiving vaccinations in a pharmacy compared with a physician's office or other traditional environment. In most cases, patients do not have to make an appointment, experience shorter waiting times, and pay nothing out-of-pocket for the visit. Younger, healthier adults in particular—who also have lower immunization rates—seek convenience for their healthcare.⁶ A pharmacy's expanded hours translates directly to patients' increased access to vaccination services.

To specifically look at immunization services given in pharmacies during hours outside of those for a traditional medical clinic, investigators in 1 study looked at more than 6.25 million vaccinations administered during a 1-year period in more than 7500 pharmacies across the country.⁷ Approximately 30% of the individuals in the study received 1 or more vaccinations during off-clinic hours. The most common vaccination was influenza (85%), although vaccines were also administered for herpes zoster; pneumonia; tetanus, diphtheria, and acellular pertussis (Tdap); meningitis; typhoid; hepatitis A and/or B; varicella zoster (chicken pox); HPV; measles, mumps and rubella (MMR); polio; and Japanese encephalitis, in descending order of frequency.⁷ Almost 200,000 study participants visited the pharmacy on a federal holiday, most often in the fall influenza season.⁷

The doctor’s office remains the most common place to receive an influenza vaccine. Specifically, as of early 2017, 64.6% of children and 34.7% of adults were vaccinated in their physicians’ office. Other medical settings where patients receive influenza vaccinations include hospitals or emergency departments, clinics, and health centers. Only 4.9% of children received influenza inoculations at a pharmacy or store, compared with 28% of adults. CDC’s early 2017 estimates indicated that 28.3% of adults were vaccinated at a pharmacy or store, up from 24.3% in the 2016 season.⁴

Pharmacists Are: Educated Healthcare Providers

In their reviews of pharmacy-based vaccination’s role in improving adult immunization rates, Bach and Goad note that specific aspects of pharmacists’ training outlined by the Accreditation Council for Pharmacy Education (ACPE) uniquely prepare them to aid in public health efforts.⁶ Certainly, maximizing the use of pharmacists and pharmacy-based immunization services (PBIS) to increase

immunization rates, reach at-risk populations, and decrease the incidences and mortality of vaccine-preventable diseases is an obvious strategy.

Pharmacy graduates in the United States receive an ACPE-accredited doctor of pharmacy (PharmD) degree.⁷ ACPE Standards include immunization delivery as a required element of any PharmD curriculum.⁶

Pharmacists who administer vaccines must also adhere to a CDC-recognized American Pharmacists Association (APhA) training program that involves 12 hours of self-study, a live 8-hour program, and a practicum covering injection techniques.⁶ According to the APhA website, there are currently 280,000 pharmacists trained to vaccinate. Although state regulations vary, all 50 states, Puerto Rico, and the District of Columbia allow pharmacists to administer vaccinations.

The American College of Physicians supports pharmacists in their role as immunizers, in accordance with state laws and regulations.⁸ The National Vaccine Advisory Committee’s recommendations call for all

TABLE. Estimated Proportion of Adults Aged 19 Years and Older Who Received Vaccinations for Influenza in the 2014-2015 Season³

Vaccination, Age Group, Increased-risk Status, and Race/Ethnicity	Sample Size	%	(95% CI)	Simple Difference From 2014
20-49 years				
Total	15,785	32.5	(31.1–33.9)	1.0
White	8635	34.6	(32.8–36.4)	1.8
Black	2073	29.1	(26.1–32.4)	-0.7
Hispanic or Latino	3529	25.1	(22.7–27.7)	-1.9
Asian	1054	43.1	(37.6–49.1)	7.1
Other	494	32.2	(24.2–41.9)	-0.2
50-64 years				
Total	8296	48.7	(46.6–50.8)	1.0
White	5542	50.2	(47.7–52.7)	0.4
Black	1166	41.9	(37.3–46.9)	2.0
Hispanic or Latino	1035	44.9	(38.2–52.3)	4.2
Asian	370	45.9	(37.5–55.2)	-5.7
Other	183	61.3	(46.1–76.7)	17.4
≥65 years				
Total	7816	73.5	(71.7–75.2)	2.0
White	5728	75.1	(73.2–77.0)	1.7
Black	920	64.3	(58.1–70.6)	3.8
Hispanic or Latino	722	64.1	(57.9–70.4)	0.1
Asian	309	83.5	(71.6–92.5)	11.0
Other	137	77.2	(65.0–87.6)	13.6

Table adapted from Williams WW, et al. Surveillance of Vaccination Coverage Among Adult Populations – United States, 2015. Centers for Disease Control and Prevention: MMWR Surveill Summ. 66(11); 1-28, May 5, 2017; <https://www.cdc.gov/mmwr/volumes/66/ss/ss6611a1.htm>

providers—including pharmacists—to implement policies and processes that increase adult vaccination rates. Most healthcare provider organizations have agreed to support this statement.⁶

Pharmacists Are: Poised to Increase Immunization Rates

The APhA's 20-year old guidelines for pharmacy-based immunization advocacy remain relevant. All pharmacists should get involved in aspects of vaccination efforts, including as educators and immunizers. Community pharmacists are important leaders when it comes to recommending and initiating immunization programs.⁶

With awareness among adults about needed vaccinations lacking, pharmacists are more than qualified to fill that need. In their interactions with patients, pharmacists can provide up-to-date information about the importance of vaccines and which are recommended. Community pharmacies and pharmacists act as community educators not only by providing literature on vaccinations and where to receive them, but by screening all patients for missing or recommended immunizations.

Pharmacists have access to patients' medication history from the patient's pharmacy profile and prescription history in the pharmacy information management system (PIMS). That information, along with patient interviews, make pharmacists ideal for identifying patients at risk for vaccine preventable diseases. Pharmacists and their staff can review prescription records and surmise vaccination needs. For example, a screen of records could target those in need of a certain vaccine by age and by other medications being taken. The Tdap vaccine, for example, might be recommended to pregnant women who are prescribed prenatal products.⁶ On the Isle of Wight in England, pharmacist administration of influenza vaccinations amounted to nearly ten percent of all vaccinations during the 2010-2011 influenza season.⁶

Pharmacists and their staff can also provide reminders as they interact with patients (eg, during influenza season or about shingles). Pharmacist-driven interventions increase vaccination rates. In the example of the immunization campaign on the Isle of Wight, two-thirds of pharmacy-based vaccinations were the result of pharmacy staff reminders.⁶

Pharmacists Are: Immunizers

The APhA Annual Pharmacy-Based Influenza and Adult Immunization Survey recently found that pharmacists provide vaccinations in 86% of community pharmacy settings.⁹ As pharmacists are authorized to administer vaccines throughout the United States, an effective and efficient way for pharmacists to increase vaccinations is as immunizers. Rates of pharmacist-administered influenza vaccinations are increasing, rising from 20% in 2010-2011, to 25% at the beginning of the 2014-2015 season. Community

pharmacies are significantly underutilized in other adult immunization efforts.¹⁰

Pharmacy-based immunization services connect the dots by being a location for information about immunizations, as well as a place to receive them.

Supporting Reimbursement For Pharmacy-Based Immunization Services

Costs

Community PBIS represent a convenient, accessible, and cost-effective alternative for the public to receive vaccinations. One study of a national pharmacy chain administering over 6 million vaccines per year found that nearly a third of those inoculations took place at night, and on weekends and holidays; more than a million were administered during the lunch hour.¹⁰

Pharmacy-based immunization services can be cost-effective for both patients and insurers, and can increase adult vaccination rates.¹⁰ For example, zoster, pneumococcal, and influenza vaccinations were shown to be more cost-effective for both insurers and patients when administered in pharmacies compared with any other medical setting.¹¹ One reason for this might be the added convenience of receiving vaccination at community pharmacies, which do not require appointments and can be more accessible to patients than medical practices.

Optimizing Reimbursement

Optimizing reimbursement for PBIS will increase vaccination rates.¹ A 2013 study reported that pharmacy patients had significantly higher influenza vaccination rates than those who did not visit pharmacies.¹¹ As evidenced by data showing the numbers of patients who are regularly vaccinated outside of normal physicians' hours, pharmacy-based immunization expands access to more patients.^{7,10}

Individuals who are responsible for making benefits-related decisions, both at the payer and purchaser level, can help increase immunization rates by recognizing the barriers that exist for patients. Currently, there are 2 distinct pathways for pharmacies to process claims: commercial medical coverage and commercial pharmacy coverage. Although most health plans allow pharmacy vaccinations under a medical benefit, it is worth noting that some of these adjudications are rejected for various reasons. Currently, a limited number of commercial health plans offer a pharmacy-based immunization benefit, which are known for having a higher conversion rate. Thus, an expansion of pharmacy benefits may represent another path to improved adult vaccination.¹

Although employers can request that their health plans include pharmacy-based vaccination benefit, many purchasers remain unconvinced of the need for and cost-effectiveness of PBIS.¹ Education and outreach to business organizations and large employers could open up access

to a significant portion of the population at risk of serious, potentially expensive illnesses. Benefits managers could be important allies in this effort.¹

Another problem with benefits plans is the difficulty patients have in understanding their benefits: whether vaccinations are covered, which ones and where they can be accessed. Benefits managers should consider making their products more user-friendly and offering tools that simplify their members' benefits, making it easier for them to identify "what" and "where."¹ To further optimize reimbursement and access to vaccinations, those who design benefits, as well as the employer representatives who purchase them, should avoid piecemeal approaches. When services are integrated and consistent in a health plan, members have an easier time receiving needed vaccinations.

Conclusions

Pharmacists are in a unique and highly beneficial position when it comes to helping public health efforts aimed at closing the vaccination gap for adults. Pharmacists are easily accessible healthcare providers whose training and certification prepares them for fully participating in all aspects of community vaccination delivery. Most importantly, pharmacists can readily connect the dots for patients, from offering education, advice, and guidance to providing the venue for and the administration of important adult vaccinations.

There are obstacles to widespread availability of PBIS. First, misinformation about the importance of adult vaccinations must be addressed, not only among patients, but also among those who provide healthcare benefits, and among healthcare personnel. Second, to maximize the potential cost-benefit, pharmacies must be able to access reimbursement for their services. With improved awareness, vaccination benefits for patients, and easier billing and payment processes for immunizers, significant improvements could be made in current adult vaccination rates. ♦

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