

Health Matters: Adult Immunization Status

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Overview

In recent years there has been increased focus on the role of immunizations to prevent adult disease, especially in older individuals who are more immunocompromised, typically have more comorbidities, and therefore are more at risk from the morbidity and mortality of these infections. In some cases, protection from childhood vaccinations has waned, and a booster vaccination is required. Unfortunately, adoption of these adult-focused immunizations has not met expectations and gaps in quality care remain.^{1, 2, 3} For these reasons, OPM has elected to place increased emphasis on adult immunizations and the National Adult Immunization Plan (NAIP).⁴ The NAIP is a component of HHS' National Vaccine Plan⁵ and is a result of the recognition of low adult immunization rates, slow progress in improving these rates, the presence of racial and ethnic disparities, and a need for a plan that will bring together a wide range of federal and non-federal partners in a coordinated effort.

Background

Immunizations are one of the most cost-effective disease prevention strategies known to medicine.⁶ Over the last 75 years, they have greatly reduced many former childhood scourges such as polio, diphtheria, pertussis, measles, and mumps. In the last 30 years, new vaccines for varicella (i.e., chicken pox), rotavirus, Haemophilus influenzae and pneumococcus have reduced the morbidity and mortality for these lesser known diseases. In fact, the widespread adoption of the pneumococcal vaccine in children in this century has contributed to a herd immunity effect, decreasing the incidence of pneumococcal disease in adult populations as well as children.

Immunizations are commonly thought of as childhood medical interventions and admission to public schools is often not allowed until immunizations have been completed. Adult

¹ Williams W.W., P. Lu, A. O'Halloran, et al. 2017. "Surveillance of Vaccination Coverage among Adult Populations—United States, 2015." *MMWR Surveill Summ.* 66(No. SS-11):1–28. DOI: <http://dx.doi.org/10.15585/mmwr.ss6611a1>.

² Ventola, C.L. 2016. "Immunization in the United States: Recommendations, Barriers, and Measures to Improve Compliance: Part 2: Adult Vaccinations." *Pharmacy and Therapeutics.* 41(8), 492–506.

³ Tan, L. 2015. "Adult vaccination: Now is the time to realize an unfulfilled potential." *Human Vaccines & Immunotherapeutics.* 11(9), 2158–66. <http://doi.org/10.4161/21645515.2014.982998>.

⁴ <https://www.hhs.gov/sites/default/files/nvpo/national-adult-immunization-plan/naip.pdf>

⁵ <https://www.hhs.gov/vaccines/national-vaccine-plan/index.html>

⁶ Doherty M, Buduch P, Standaert B, et al. Vaccine Impact: Benefits for human health. *Vaccine.* 2016. 34(52): 6707-14.

immunizations are also a critical part of preventive medicine; however, many adults are not fully vaccinated.

The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommends four immunizations for the adult population. They are Herpes Zoster (Shingrix™), Pneumococcus (PPV 13 and/or PPSV 23), Influenza, and the combined Diphtheria, Tetanus, and/or Pertussis vaccinations (Td or Tdap). A National Committee on Quality Assurance (NCQA) Healthcare Effectiveness and Data Set (HEDIS) measure on Adult Immunization Status (AIS) also references these four immunizations.

Herpes Zoster results from reactivation of the varicella (i.e., chicken pox) virus that can result in post-herpetic neuralgia (PHN), a neuropathic pain without cure that often requires long-term pain medications. CDC estimates that one third of the United States population will develop herpes zoster over their lifetime, resulting in one million new cases of herpes zoster each year.⁷ A person's risk for developing herpes zoster increases sharply after age 50 and as people age, they are also more likely to develop PHN, which can occur in a third of untreated adults 60 and older.⁸

The Shingrix™ vaccine was FDA approved in 2017 for adults 50 years and older.⁸ Because of the improved effectiveness of this new vaccine with associated high demand, there were initial shortages, but these shortages have eased and the vaccine is no longer on the CDC's shortage list.⁹

Pneumococcal disease is a common cause of pneumonia, meningitis, and bacteremia (sepsis). Adults 65 years or older are at increased risk. The CDC estimates 150,000 hospitalizations annually for pneumococcal pneumonia with a case fatality rate of 5-7%; 5,000 cases of pneumococcal bacteremia annually with a case fatality rate of 20%; and 2,000 cases of pneumococcal meningitis annually with a case fatality rate of 22%. Neurological sequelae are common among survivors of meningitis. In all of these examples, the case fatality rate is higher in adults 65 years of age or greater.¹⁰

Two vaccines are currently available to prevent pneumococcal disease, PPSV 23 and PPV 13. ACIP recommends the PPSV 23 for adults over 60, with PSV 13 optional (e.g., shared decision making between member and provider).¹¹

Influenza is a disease caused by the influenza virus. Different strains of influenza generally circulate in the population each year based on variations in the hemagglutinin and neuraminidase receptors on the virus, providing us with familiar terms such as H1N1 and H3N2 influenzas. As with the pneumococcal disease, influenza usually causes its greatest morbidity and mortality

⁷ <https://www.cdc.gov/shingles/hcp/clinical-overview.html>

⁸ <https://www.fda.gov/vaccines-blood-biologics/vaccines/shingrix>

⁹ <https://www.fiercepharma.com/pharma/gsk-s-shingrix-supply-recovers-due-to-drop-vaccinations-uninterrupted-production>

¹⁰ <https://www.cdc.gov/pneumococcal/index.html>

¹¹ <https://www.cdc.gov/pneumococcal/vaccination.html>

among the very young and the very old. The CDC estimates that the annual number of influenza cases range from 9.2 – 35.6 million per year with 140,000 to 710,000 hospitalizations and 12,000–56,000 deaths.¹² Estimates from the 2018-2019 influenza season reflect an “average” season with 490,600 hospitalizations and 34,200 deaths attributed to influenza. Close to 280,000 (or roughly 57% of those hospitalized) adults 65 years or older were hospitalized. Older adults also accounted for 75% of the 34,200 influenza-associated deaths during the 2018-2019 season;¹³ this is similar to an analysis of the 2012-13 influenza season that estimated 71-85% of deaths were among adults 65 and older.¹⁴

A study involving six consecutive flu seasons concluded that influenza vaccination programs in the US produce a substantial health benefit in terms of averted cases, clinic visits and hospitalizations.¹⁵ There are two new vaccines approved for use during the 2020-2021 flu season for use in adults 65 years and older. The first is a quadrivalent high-dose vaccine that replaces the previously licensed trivalent high-dose vaccine. The second new vaccine is a quadrivalent adjuvanted vaccine similar to the previous trivalent vaccine containing MF59 adjuvant, but it has one additional influenza B component.¹⁶

Pertussis (aka whooping cough) is a disease caused by the *Bordetella pertussis* bacteria. Before the vaccine was introduced in the 1940s, there were about 200,000 cases of pertussis annually. Since widespread use of the vaccine, pertussis cases have decreased by 80 percent. However, pertussis cases have been increasing since the 1980s. Currently, there are 10,000–40,000 pertussis cases and up to 20 deaths reported each year. Pertussis is usually milder in children, adolescents and adults than in infants and young children who may not be fully immunized.¹⁷ ACIP recommends maternal Tdap vaccination during each pregnancy because newborns are particularly susceptible to pertussis and depend on passively acquired maternal antibodies for protection until they are old enough to be vaccinated.¹⁸ **Older adults are often the source of infection for infants and children** because of waning immunity and nasal carriage of the bacteria. McGarry et al. found that vaccinating all adults ages 65 and older with Tdap is a cost-effective intervention that would prevent 97,000 cases of pertussis annually—from the payer perspective, it would provide a net cost savings of \$44.8 million.¹⁹

¹² *Key Facts About Seasonal Flu Vaccine*. <https://www.cdc.gov/flu/protect/keyfacts.htm>

¹³ *Estimated Influenza Illnesses, Medical visits, Hospitalizations, and Deaths in the United States — 2018–2019 influenza season*. <https://www.cdc.gov/flu/about/burden/2018-2019.html>

¹⁴ Grohskopf, L.A., L.Z. Sokolow, K.R. Broder, et al. 2016. “Prevention and Control of Seasonal Influenza with Vaccines.” *CDC MMWR Recomm Rep*. 55(No. RR-5):1–54. DOI: <http://dx.doi.org/10.15585/mmwr.rr6505a1>.

¹⁵ Kostova, D., Reed, C., Finelli, L., Cheng, P-Y, Gargiullo, P.M., et al, 2013. “Influenza Illness and Hospitalizations Averted by Influenza Vaccination in the United States, 2005–2011.” *PLoS ONE* 8(6): e66312. doi:10.1371/journal.pone.0066312

¹⁶ *Frequently Asked Influenza (Flu) Questions: 2020-2021 Season*. <https://www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm>

¹⁷ “Pertussis.” In *Epidemiology and Prevention of Vaccine-Preventable Diseases*, 13th Edition. <http://www.cdc.gov/vaccines/pubs/pinkbook/pert.html>

¹⁸ Liang, Jennifer L., Tiwari, Tejpratap, Moro, Pedro Moro, et al. *Prevention of Pertussis, Tetanus, and Diphtheria with Vaccines in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP)*. *MMWR Recomm Rep* 2018;67(2):22-23, 26. <https://www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6702a1-H.pdf>

¹⁹ McGarry, L., G. Krishnarajah, M. Weinstein, et al. January 9, 2014. “Cost-effectiveness of Tdap vaccination of adults aged ≥65 years in the prevention of pertussis in the US: a dynamic model of disease transmission.” *Plos One* [serial online]. 9(1):e72723. Available from: MEDLINE with Full Text, Ipswich, MA.

What FEHB Plans Can Do

There are several evidence-based practices that FEHB plans can support or implement to improve adult vaccination rates. These include increased provider and patient focus on patient immunization status, reminder and recall systems,²⁰ improved communication efforts and expanded access, as well as better use of health information system technologies.

Patient Immunization Status: Consider incorporating adult immunization screening and awareness into FEHB enrollment or during the annual Open Season. Assessing adult vaccination status during the transitions of care process (e.g., hospital discharge to home, transfer to a skilled nursing or rehabilitation facility, admission to a nursing home, etc.), for adults is another opportunity to address gaps and disparities within adult immunization status.

Reminder and Recall Systems: If you are not already doing so, conduct mailings and telephone calls to members to serve as reminders for necessary vaccines. The [myhealthfinder tool](#) is also available in all FEHB plan brochures and can serve as an individualized preventive services checklist for beneficiaries as they prepare for their annual wellness visits. Remind beneficiaries of that resource. Patient portals should also include access to immunization records.

Communication Efforts and Expanded Access: FEHB plans should partner with physician practices, state and local public health agencies, pharmacies, and other alternate sites of care, such as workplace clinics, urgent care centers and clinics in retail locations to increase awareness and availability of vaccines, improve vaccine confidence, and to address system barriers that impact access. Partnering with community groups that work with diverse populations to better raise awareness about the importance of vaccinations, how vaccines can be accessed, and to actively address possible vaccine hesitancy concerns is also an important practice. Multiple communication channels such as social media can be used to amplify positive messaging about adult vaccine safety, efficacy, and public health benefits. This supports providers in their vaccination efforts by educating members and the media and encourages adults, including diverse populations, to get appropriate vaccines.

Examples of expanded access include physician office walk-in visits or extended hours specifically for immunization, and the ability to receive these vaccinations in non-health care settings such as a place of work.²¹ Health plans may also work with physician practices to ensure that prevention and wellness and age-appropriate vaccines are given equal attention—similar to chronic and acute care needs—by offering vaccines during any office visit. The August 2020 amendment to the Declaration under the Public Readiness and Emergency Preparedness Act (PREP Act)²² allow pharmacists to practice at the top of their license by authorizing State-licensed pharmacists (and pharmacy interns acting under their supervision to administer vaccines, if the pharmacy intern is licensed or registered by his or her State board of pharmacy)

²⁰ See footnote 3

²¹ See footnote 2

²² <https://www.phe.gov/Preparedness/legal/prepact/Pages/default.aspx>

to order and administer vaccines to individuals ages 3 through 18 years. This authorization stipulates several requirements that are consistent with States that already permit licensed pharmacists to order and administer vaccines to children.²³ This authorization provides the opportunity for parents and guardians to model healthy behavior by getting vaccinations with their children. Carriers should seek ways to increase uptake of adult vaccines by reimbursing and including retail pharmacies that provide immunization services in their pharmacy network.

Health Information System Technologies: The CDC encourages the use of vaccine registries given their value in coordinating patient care and ensuring patients get the right vaccines at the right time. As discussed in the 2018 Technical Guidance,²⁴ the most reliable method for tracking current and accurate immunization schedules on your intranet or consumer portal/website is through the use of content syndication from the CDC. Use of content syndication requires a one-time step that ensures an organization’s website displays current schedules as soon as they are published or revised. Instructions for the syndication code are available on CDC’s [website](#).²⁵ There should be continued emphasis on promoting and tracking preventive services including vaccines for adults, consistent with ACIP recommendations to increase adult immunization rates. FEHB plans can support provider and member access to records to determine and track member immunization status and present providers with feedback on coverage rates and gaps in necessary vaccines, similar to notices on opioid and antibiotic prescribing practices.

FEHB plans can use a variety of tools to ensure adults get the vaccines they need, can support providers by processing claims quickly, and continue to implement value-based incentive payment arrangements that reward preventive care, such as adult vaccines to improve performance and encourage the distribution of preventive care services.

It will be important to leverage these technologies to share immunization data as a key strategy for tracking patients’ immunization history and keeping them up to date on vaccines.²⁶ The recent HHS rule mandating interoperability standards along a specific timeline should make this task easier.²⁷

Conclusion

OPM firmly believes that there are significant opportunities to improve population health by improving both the quality and value of care for FEHB members by an increased focus on adult immunizations. Well established, robust vaccine services are especially critical during a pandemic. The CDC provides specific guidance on vaccine programs aimed at reducing the burden on health systems, communities, and individuals that we ask you to review and

²³ <https://www.hhs.gov/about/news/2020/08/19/hhs-expands-access-childhood-vaccines-during-covid-19-pandemic.html>

²⁴ <https://www.opm.gov/healthcare-insurance/healthcare/carriers/2018/2018-05c.pdf>

²⁵ https://www.cdc.gov/vaccines/schedules/resource-library/syndicate.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fvaccines%2Fschedules%2Fsyndicate.html

²⁶ America’s Health Insurance Plans. 2015. “Stakeholder Roundtable: Improving Adult Immunization Rates.” https://www.ahip.org/wp-content/uploads/2016/04/Vaccine_Report_8.26.15-1.pdf

²⁷ <https://www.federalregister.gov/documents/2020-07419/21st-century-cures-act-interoperability-information-blocking-and-the-onc-health-it-certification>

incorporate into your vaccination planning.²⁸ We expect that FEHB Plans will take this opportunity to reassess their work in this area and make additional efforts as appropriate.

Key Resources

U.S. Department of Health and Human Services National Vaccine Program Office. 2019. “National Adult Immunization Plan.” <https://www.hhs.gov/sites/default/files/nvpo/national-adult-immunization-plan/naip.pdf>

Vaccination Guidance During a Pandemic: <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>

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²⁸ CDC Pandemic Guidance <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>