Proposed Changes to Existing Measure for HEDIS®[1] MY 2027: Adult Immunization Status (AIS-E)

NCQA seeks comments on proposed modifications to the HEDIS Health Plan *Adult Immunization Status* (AIS-E) measure. NCQA proposes to update the pneumococcal indicator denominator age range and age stratifications.

The AIS-E measure assesses the percentage of adults who are up to date on vaccines recommended for adults by the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP). The measure includes separate indicators for influenza; tetanus and diphtheria (Td) or tetanus, diphtheria and acellular pertussis (Tdap); zoster; pneumococcal; hepatitis B; and coronavirus disease (COVID-19) immunization. AIS-E is specified for the commercial, Medicaid and Medicare product lines and uses the HEDIS Electronic Clinical Data Systems (ECDS) reporting standard. This method captures receipt of vaccinations using data from electronic sources including administrative claims, immunization registries and electronic health records (EHRs). The measure is stratified by age, race and ethnicity for each product line.

In October 2024, the ACIP voted to update pneumococcal vaccination guidelines. They now recommend a single dose of PCV for all adults ages 50 and older.[2] This recommendation expanded the age range from ages 65 and older. In addition to the ACIP, the AAFP also recommends pneumococcal vaccination for all adults ages 50 and older.[3]

Based on the updates to the guidelines outlined above, NCQA recommends two updates to the pneumococcal indicator specification which are detailed below in red:

- Denominator: 50 and older
- Exclusions: Hospice and Death
- Numerators:
    - Received at least one dose of adult pneumococcal vaccine on or after their 19th birthday, any time before or during the measurement period.
    - Had anaphylaxis due to the pneumococcal vaccine any time before or during the measurement period.
- Age Stratifications:
    - 50-64
    - 65 and older

Our expert panels supported updating the pneumococcal indicator to align with these guideline updates.

NCQA seeks general feedback on the proposed modifications.

Supporting documents include the current measure specification, evidence workup and performance data.

NCQA acknowledges the contributions of the Immunization and Technical Measurement Advisory Panels.

[1]HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).
[2]https://www.cdc.gov/mmwr/volumes/74/wr/mm7401a1.htm?s_cid=mm7401a1_e&ACSTrackingID=USCDC_921-DM143559&ACSTrackingLabel=This%20Week%20in%20MMWR%3A%20Vol.%2074%2C%20January%209%2C%202025&deliveryName=USCDC_921-DM143559
[3]https://www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines/immunization-schedules/adult-immunization-schedule.html?

Adult Immunization Status (AIS-E)

Measure title	Adult Immunization Status*	**Measure ID**	AIS-E
Description	The percentage of persons 19 years of age and older who are up to date on recommended routine vaccines for influenza, tetanus and diphtheria (Td) or tetanus, diphtheria and acellular pertussis (Tdap), zoster, pneumococcal, hepatitis B and coronavirus disease 2019 (COVID-19).		
Measurement period	January 1–December 31.		
Copyright and disclaimer notice	**Developed with support from the Department of Health and Human Services (DHHS), Office of the Assistant Secretary for Health (OASH), National Vaccine Program Office (NVPO) and The Hepatitis Education Project.* Refer to the complete copyright and disclaimer information at the front of this publication. NCQA website: www.ncqa.org. Submit policy clarification support questions via My NCQA (https://my.ncqa.org).		
Clinical recommendation statement/ rationale	The Advisory Committee on Immunization Practices and the American Academy of Family Physicians recommends annual influenza vaccination; and tetanus, diphtheria and acellular pertussis (Tdap) and/or tetanus and diphtheria (Td) vaccine; herpes zoster, pneumococcal, hepatitis B and COVID-19 vaccination for adults at various ages.		
Citations	Wodi, A.P, A.N. Issa, C.A. Moser, S. Cineas. 2025. "Advisory Committee on Immunization Practices Recommended Immunization Schedule for Adults Aged 19 Years or Older—United States, 2025." *MMWR Morb Mortal Wkly Rep* 74:30–33. doi: http://dx.doi.org/10.15585/mmwr.mm7402a3 AAFP. 2025. "Immunization Schedules." https://www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines/immunization-schedules.html		
Characteristics			
Scoring	Proportion.		
Type	Process.		
Product lines	• Commercial. • Medicaid. • Medicare.		
Stratifications	Influenza and Td/Tdap: Age as of the start of the measurement period. • 19–64 years. • 65 years and older.		

	Zoster and Pneumococcal: Age as of the start of the measurement period. • 50–64 years. 65 years and older. ~~Pneumococcal and COVID-19: Age as of the start of the measurement period.~~ ~~65 years and older.~~ Hepatitis B: Age as of the start of the measurement period. • 19–30 years. • 31–59 years. COVID-19: Age as of the start of the measurement period. • 65 years and older. Race. (Refer to *General Guideline: Race and Ethnicity Stratification*.) • American Indian or Alaska Native. • Asian. • Black or African American. • Middle Eastern or North African. • Native Hawaiian or Pacific Islander. • White. • Some Other Race. • Two or More Races. • Asked But No Answer. • Unknown. Ethnicity. (Refer to *General Guideline: Race and Ethnicity Stratification*.) • Hispanic or Latino. • Not Hispanic or Latino. • Asked But No Answer. • Unknown.
Risk adjustment	None.
Improvement notation	Increased score indicates improvement.
Guidance	**Data collection methodology:** ECDS. Refer to *General Guideline: Data Collection Methods* for additional information. **Date specificity:** Dates must be specific enough to determine the event occurred in the period being measured. **Which services count?** When using claims, include all paid, suspended, pending and denied claims. **Other guidance:** Measure rates are specific to clinical guideline recommendations for the age group included in the rates.

Initial population	*Measure item count:* Person. *Attribution basis:* Enrollment. • *Benefits:* Medical. • *Continuous enrollment:* The measurement period. • *Allowable gap:* No more than one gap of ≤45 days during the measurement period. No gaps on the last day of the measurement period. *Ages:* • *Initial populations 1 and 2:* 19 years of age and older at the start of the measurement period. • *Initial population 3 and 4*: 50 years of age and older at the start of the measurement period. • ~~*Initial populations 4 and 6*: 65 years of age and older at the start of the measurement period.~~ • *Initial population 5*: 19–59 years of age at the start of the measurement period. • *Initial populations 6*: 65 years of age and older at the start of the measurement period. *Event:* None.
Denominator exclusions	**Persons with a date of death.** Death in the measurement period, identified using data sources determined by the organization. Method and data sources are subject to review during the HEDIS audit. **Persons in hospice or using hospice services.** Persons who use hospice services (Hospice Encounter Value Set; Hospice Intervention Value Set) or elect to use a hospice benefit any time during the measurement period. Organizations that use the Monthly Membership Detail Data File to identify these persons must use only the run date of the file.
Denominator	**Denominator 1 and Denominator 2: Immunization status—Influenza and Td/Tdap.** The initial populations 1 and 2 minus denominator exclusions. **Denominator 3 and Denominator 4: Immunization status—Zoster and Pneumococcal.** The initial populations 3 and 4 minus denominator exclusions. ~~**Denominator 4 and Denominator 6: Immunization status—Pneumococcal and COVID-19.**~~ ~~The initial populations 4 and 6 minus denominator exclusions.~~ **Denominator 5: Immunization status—Hepatitis B.** The initial population 5 minus denominator exclusions. **Denominator 6: Immunization status—COVID-19.** The initial population 6 minus denominator exclusions.

Numerator	**Numerator 1: Immunization status—Influenza.** Persons who meet either of the following criteria: • Received the influenza vaccine (Adult Influenza Immunization Value Set; Adult Influenza Vaccine Procedure Value Set; Influenza Virus LAIV Immunization Value Set; Influenza Virus LAIV Vaccine Procedure Value Set) on or between July 1 of the year prior to the measurement period and June 30 of the measurement period. • Had anaphylaxis due to the influenza vaccine (SNOMED CT code 471361000124100) any time before or during the measurement period. **Numerator 2: Immunization status—Td/Tdap.** Persons who meet any of the following criteria: • Received at least one Td or Tdap vaccine (Td and Tdap Immunization Value Set; Td and Tdap Vaccine Procedure Value~~CPT code 90714, CVX code 115; CPT code 90715~~) between 9 years prior to the start of the measurement period and the last day of the measurement period. • Had anaphylaxis due to the diphtheria, tetanus or pertussis vaccine (Anaphylaxis Due to Diphtheria, Tetanus or Pertussis Vaccine Value Set) any time before or during the measurement period. • Had encephalitis due to the diphtheria, tetanus or pertussis vaccine (Encephalitis Due to Diphtheria, Tetanus or Pertussis Vaccine Value Set) any time before or during the measurement period. **Numerator 3: Immunization status—Zoster.** Persons who meet either of the following criteria: • Received two doses of the herpes zoster recombinant vaccine (CVX code 187; CPT code 90750) at least 28 days apart, on October 20, 2017, through the last day of the measurement period. • Had anaphylaxis due to the herpes zoster vaccine (Anaphylaxis Due to Herpes Zoster Vaccine Value Set) any time before or during the measurement period. **Numerator 4: Immunization status—Pneumococcal.** Persons who meet either of the following criteria: • Received at least one dose of adult pneumococcal vaccine (Adult Pneumococcal Immunization Value Set; Adult Pneumococcal Vaccine Procedure Value Set) on or after their 19th birthday**,** any time before or during the measurement period. • Had anaphylaxis due to the pneumococcal vaccine (SNOMED CT code 471141000124102) any time before or during the measurement period. **Numerator 5: Immunization status—Hepatitis B.** Persons who meet any of the following criteria: • Received at least three doses of the childhood Hepatitis B vaccine (Hepatitis B Immunization Value Set; Hepatitis B Vaccine Procedure Value Set) with different dates of service on or before their 19th birthday. – One of the three vaccinations can be a newborn hepatitis B vaccination (ICD-10-PCS code 3E0234Z) during the 8-day period that begins on the date of birth and ends 7 days after the date of birth.

	• Received Hepatitis B vaccine series on or after their 19th birthday, before or during the measurement period, including either of the following: – At least two doses of the recommended two-dose adult Hepatitis B vaccine (CVX code 189; Adult Hepatitis B Vaccine Procedure (2 dose) Value Set) administered at least 28 days apart; ***or*** – At least three doses of any other recommended adult Hepatitis B vaccine (Adult Hepatitis B Immunization (3 dose) Value Set; Adult Hepatitis B Vaccine Procedure (3 dose) Value Set) administered on different days of service. • Had a hepatitis B surface antigen, hepatitis B surface antibody or total antibody to hepatitis B core antigen test with a finding of immunity any time before or during the measurement period, including either of the following: – A test (Hepatitis B Tests With Threshold of 10 Value Set) with a result greater than 10 mIU/mL. – A test (Hepatitis B Prevaccination Tests Value Set) with a finding of immunity (Hepatitis B Immunity Finding Value Set). • History of hepatitis B illness (Hepatitis B and History of Hepatitis B Value Set*) any time before or during the measurement period. • Had anaphylaxis due to the hepatitis B vaccine (SNOMED CT code 428321000124101) any time before or during the measurement period. **Numerator 6: Immunization status—COVID-19.** Persons who meet either of the following criteria: • Received at least one dose of a COVID-19 vaccine (Adult COVID19 Immunization Value Set; Adult COVID19 Vaccine Procedure Value Set) that occurred **both** on or between July 1 of the year prior to the measurement period through June 30 of the measurement period **and** on or after their 65th birthday. • Had anaphylaxis due to the COVID-19 vaccine (SNOMED CT code 914587451000119107) any time before or during the measurement period. **Coding Guidance** *Do not include laboratory claims (claims with POS code 81).
Summary of changes	• -Updated the denominator age range and age stratifications for the pneumococcal indicator • Updated clinical recommendation statement/rationale and citations

Data element tables

Organizations that submit HEDIS data to NCQA must provide the following data elements.

Table AIS-E-A:-1/2/3 Data Elements for Adult Immunization Status

Metric	Age	Data Element	Reporting Instructions
Influenza	19-64	InitialPopulation	For each Metric and Stratification
TdTdap	65+	Exclusions	For each Metric and Stratification
	Total	Denominator	For each Metric and Stratification
		Numerator	For each Metric and Stratification
Zoster	50-64	Rate	(Percent)
Pneumococcal	65+		
	Total		
~~Pneumococcal~~COVID-19	65+		
~~COVID-19~~			
HepatitisB	19-30		
	31-59		
	Total		

Table AIS-E-B-1/2/3: Data Elements for Adult Immunization Status: Stratifications by Race

Metric	Race	Data Element	Reporting Instructions
Influenza	AmericanIndianOrAlaskaNative	InitialPopulation	For each Metric and Stratification
TdTdap	Asian	Exclusions	For each Metric and Stratification
Zoster	BlackOrAfricanAmerican	Denominator	For each Metric and Stratification
Pneumococcal	MiddleEasternOrNorthAfrican	Numerator	For each Metric and Stratification
HepatitisB	NativeHawaiianOrPacificIslander	Rate	(Percent)
COVID-19	White		
	SomeOtherRace		
	TwoOrMoreRaces		
	AskedButNoAnswer		
	Unknown		

Table AIS-E-C-1/2/3: Data Elements for Adult Immunization Status: Stratifications by Ethnicity

Metric	Ethnicity	Data Element	Reporting Instructions
Influenza	HispanicOrLatino	InitialPopulation	For each Metric and Stratification
TdTdap	NotHispanicOrLatino	Exclusions	For each Metric and Stratification
Zoster	AskedButNoAnswer	Denominator	For each Metric and Stratification
Pneumococcal	Unknown	Numerator	For each Metric and Stratification
HepatitisB		Rate	(Percent)
COVID-19			

Adult Immunization Status (AIS-E)
Measure Workup

Topic Overview

Importance and Prevalence

Routine vaccination against influenza, tetanus, diphtheria and pertussis, hepatitis B, herpes zoster, pneumococcal and COVID-19 disease are recommended for adults to prevent serious disease. The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP) publish vaccination recommendations for adults, including ages for receiving vaccines, number of doses, timing between doses and contraindications.

Influenza vaccine

The influenza vaccine protects against influenza, a serious disease that can lead to hospitalization and death (CDC, 2024a). It is characterized by a variety of symptoms related to the nose, throat and lungs that can range in severity (CDC, 2024b). Flu viruses spread mainly by droplets made when people with flu cough, sneeze or talk (CDC, 2024c). Flu season in the United States can start as early as October and last as late as May; peak influenza activity occurs most frequently between December and February (CDC, 2024d). Anyone can get the flu; however, people 65 and older, young children and those with chronic conditions are at higher risk of developing serious complications (CDC, 2024b).

The impact of influenza is variable because influenza seasons can vary in severity. The CDC estimates that between 2010 and 2024, yearly influenza cases have ranged from 9.3–41 million; influenza-related hospitalizations, from 120,000–710,000; and influenza-related deaths, from 6,300–52,000 (CDC, 2024e). Between October 2023 and April 2024, there was an estimated 40 million influenza cases, 18 million flu-related medical visits, 470,000 influenza-related hospitalizations and 28,000 influenza-related deaths (CDC, 2024x). Deaths associated with influenza are typically higher in older adults. In an analysis based on the 2022–2023 flu seasons, 68% of deaths from influenza were among adults 65 and older (CDC, 2024x).

Td/Tdap vaccine

There are three types of combination vaccines that protect against diphtheria, tetanus and pertussis (or whooping cough), including DTaP, Td and Tdap (CDC, 2024f). Tetanus results in painful muscle spasms that can cause fractures, difficulty breathing, arrhythmia and death (CDC, 2024g).

Diphtheria can present as a respiratory or cutaneous disease (CDC, 2024h). Complications include myocarditis, which can lead to heart failure, and neuritis, which may temporarily paralyze motor nerves. Death occurs in 5%–10% of cases (CDC, 2024h).

Pertussis, also known as whooping cough, is a respiratory infection characterized by a prolonged cough; it can spread easily and is transmitted via respiratory droplets from coughing or sneezing (CDC, 2024i).

There were 267 tetanus cases and 13 deaths reported from 2013–2022; only 16 cases were among adults who had been fully vaccinated (CDC, 2024j). Adults 20 through 64 years of age make up 61% of reported cases (CDC, 2024j). Tetanus is more prevalent in other countries. In 2024, 25,149 cases of diphtheria were reported to the World Health Organization. In 2023, 24,782 cases were reported (WHO, n.d.).

Pertussis is much more prevalent today than tetanus and diphtheria, even though vaccines offer protection against the disease. Before the vaccine was introduced in the 1940s, there were about 200,000 cases of pertussis annually (CDC, 2024k). Since widespread use of the vaccine, pertussis cases decreased by 75% but have been increasing since the 1980s, with 48,277 pertussis cases reported in 2012 (CDC, 2024k). Pertussis is usually milder in children, adolescents and adults than in infants and young children who may

not be fully immunized. Adults, adolescents or older school-age children are often found to be the source of infection for infants and children (CDC, 2024k).

Herpes zoster vaccine

The herpes zoster vaccine protects against herpes zoster, commonly known as shingles. Herpes zoster is a painful skin rash caused by reactivation of the varicella zoster virus (CDC, 2024l). After a person recovers from primary infection of varicella (chickenpox), the virus stays inactive in the body and can reactivate years later. Most people typically only have one episode of herpes zoster, but it can recur. People who are older and those with compromised immune systems are at higher risk of developing herpes zoster (CDC, 2024l).

The most common complication of herpes zoster is post-herpetic neuralgia (PHN), severe, debilitating pain at the site of the rash that has no treatment or cure (CDC, 2024m). Herpes zoster can also lead to serious complications of the eye, pneumonia, hearing problems, encephalitis or death (CDC, 2024m). In the U.S., there are 1 million new cases of herpes zoster each year; 1 of every 3 people will be diagnosed with herpes zoster in their lifetime (CDC, 2024l). A person's risk for developing herpes zoster increases sharply after age 50 (CDC, 2024l). As people age, they are more likely to develop PHN; it rarely occurs in people under 40 (CDC, 2024m).

Between 1% and 4% of adults with herpes zoster are hospitalized for complications, and an estimated 96 deaths each year are directly caused by the virus (CDC, 2024l). The vaccine can reduce the risk of developing herpes zoster and related complications (CDC, 2024l).

Pneumococcal vaccine

Vaccines protect against pneumococcal disease, which is a common cause of illness and death in older adults and in persons with certain underlying conditions (CDC, 2024o). The major clinical syndromes of pneumococcal disease include pneumonia, bacteremia and meningitis, with pneumonia being the most common (CDC, 2024n). Pneumonia symptoms generally include fever, chills, pleuritic chest pain, cough with sputum, dyspnea, tachypnea, hypoxia tachycardia, malaise and weakness (CDC, 2024n).

Bacteremia, a blood infection, is a complication of pneumococcal disease (CDC, 2024n). Bacteremia has a 20% mortality rate among all adults, and up to a 60% mortality rate among older adults (CDC, 2024n).

Pneumococcal disease can also cause meningitis (CDC, 2024n). Meningitis symptoms may include headache, lethargy, vomiting, irritability, fever, nuchal rigidity, cranial nerve signs, seizures and coma. Meningitis has a 22% mortality rate among adults (CDC, 2024n).

Hepatitis B vaccine

The hepatitis B vaccine protects against hepatitis B, a liver disease that causes illness in varying degrees of severity (CDC, 2023a). Acute hepatitis B is characterized by fever, fatigue, loss of appetite, jaundice and body pains (CDC, 2023a). Those with chronic hepatitis B are often asymptomatic, with threats of cirrhosis, liver cancer and death (CDC, 2023a).

In 2023, there were 2,214 new cases of acute hepatitis B, but since many people may be asymptomatic, this number was estimated to be about 14,400 acute cases (CDC, 2023b). In 2023, there were also 17,650 cases of newly reported chronic hepatitis B (CDC, 2023b). Also in 2023, 1,769 hepatitis-B related deaths were reported (CDC, 2023b). Adults aged 40-59 years made up 48% of acute cases, and adults aged 30-49 made up 46% of chronic cases in 2023 (CDC, 2023b).

COVID-19

COVID-19 infection can lead to severe illness and death when left untreated (CDC, 2024p). Infection with the disease is characterized by symptoms related to the nose, throat, lungs and muscles (CDC, 2024q). COVID-19 is spread person-to-person by droplets made when those infected with COVID-19 come into close contact with others (CDC, 2024r). Adults over age 65 and people with underlying medical conditions or

comorbidities are at highest risk (CDC, 2024s). For the 2024-2025 COVID-19 season, people 65 years of age and older had a cumulative hospitalization rate of 386.8 per 100,000 people (CDC, 2025b). Further, trends show people 75 years and older have higher rates of death compared to those younger than 75 years of age (CDC, 2024t).

As of June 1, 2024, nearly 1.2 million people have died of COVID-19 in the U.S. (CDC, 2024r). At the end of 2022, it was estimated that COVID-19 vaccines prevented 18.5 million hospitalizations and 3.2 million deaths in the United States (Regan et al., 2023).

Financial importance and cost-effectiveness

Influenza vaccine

Influenza is an important cause of outpatient medical visits and worker absenteeism among adults. The average annual burden of seasonal influenza is estimated to include approximately 9.3–41 million illnesses, 120,000–710,000 hospitalizations and 6,300–52,000 deaths (CDC, 2024e). A 2023 study estimated that the incremental cost-effectiveness ratio of the influenza vaccine was less than $95,000 per quality-adjusted life year (QALY) for all age and risk groups except for non-high risk adults 18–49 (Kim DeLuca, 2023).

Tdap/Td vaccine

Administering the Tdap vaccine to adults helps prevent the spread of pertussis to infants and prevents hospitalizations. Because of a rise in pertussis over decades in the U.S., studies have evaluated the cost-effectiveness of providing Tdap immunizations to adults.

One study found that that incremental cost-effectiveness ratio of vaccinating adults 19–85 with one Tdap dose ranged from $248,000 to $900,000 per QALY (Cho et al., 2020). A systematic review found that, out of 11 studies evaluating cost-effectiveness of adult Tdap vaccination programs across several countries, 6 were considered cost-effective and 2 were considered cost-saving (Fernandes et al., 2019).

Herpes zoster vaccine

In 2015, a systematic literature review estimated that total medical costs in the U.S. from zoster were $2.4 billion (Harvey et al., 2020). A CDC study estimated that vaccination with the recombinant zoster vaccine, compared with no vaccination, cost $31,000 per QALY, on average, for immunocompetent adults 50 and older. The number of people needed to be vaccinated with the recombinant zoster vaccine to prevent one case of zoster ranged from 11–17, and to prevent one case of PHN, ranged from 70–187 (Dooling et al., 2018). A study of the cost-effectiveness of the live herpes zoster vaccine among people 50 and older found that vaccination at age 60 would prevent the most cases (103,603 cases per 1 million people) (Curran et al., 2018).

Pneumococcal vaccine

Pneumococcal infections result in significant health care costs each year. Adult patients with pneumonia require hospitalization in nearly 10% of cases. (Isturiz et al., 2021). The annual aggregate burden for the fee-for-service Medicare population is approximately $13 billion (Brown et al., 2018).

Pneumococcal vaccines have been shown to be highly effective in preventing invasive pneumococcal disease. When comparing costs, outcomes and QALY, immunization with recommended pneumococcal vaccines was found to be economically efficient. In one study comparing all adults 65 and older, cost-effectiveness estimates ranged from $209,000–$544,000 per QALY gained for use of PCV20 alone, and from $531,000–$676,000 per QALY gained for use of PCV15 in series with PPSV23 (Smith et al., 2021).

Hepatitis B vaccine

With over 800,000 cases of chronic hepatitis B, vaccination against this disease will reduce burden and preserve medical resources. A National Center for HIV, Hepatitis, STD, and TB Prevention Epidemiologic and Economic Modeling Agreements study showed that universal vaccination against hepatitis B with the 3-dose series in adults reduces acute cases by about 25% and about 23% of hepatitis-B related deaths. This is approximately $152,722 per QALY gained (CDC, 2024u). Results were similar with the 2-dose strategy. The study also showed cost-effectiveness of $152,722 for the 3-dose strategy and $155,429 for the 2-dose strategy (CDC, 2024u).

COVID-19 vaccine

Administration of the COVID-19 vaccine can decrease overall health care costs by preventing severe disease and hospitalization. For the 2023-2024 formulation of the updated COVID-19 vaccine, vaccination was shown to be cost-effective. For adults 18-49 years of age, the incremental cost-effectiveness ratio for the updated COVID-19 vaccine was estimated to be $115,599 per quality-adjusted life year (QALY). For adults 50-64 years of age, the incremental cost-effectiveness ratio of the updated vaccine was estimated to be $25,787 per QALY. For adults 65 years and older, a dose of the vaccine was found to be cost saving (Regan et al., 2023). For the 2024-2025 formulation, preliminary estimates of incremental cost-effectiveness ratios provide a societal perspective of $212,225 per QALY for 18-49 years, $113,248 per QALY for 50-64 years and $23,308 per QALY for people 65 and older (University of Michigan, 2024).

Supporting Evidence

Age for vaccine administration

Influenza vaccine

ACIP recommends routine annual influenza vaccination for all people 6 months of age and older (Grohskopf et al., 2025). For people 19 years and older, any age-appropriate inactivated influenza vaccine (IIV) formulation or recombinant influenza vaccine (RIV) formulation are acceptable options. Vaccination should ideally be offered during September or October; however, vaccination efforts should continue throughout flu season (Grohskopf et al., 2025). People who have a history of severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine should not receive the influenza vaccine (CDC, 2024a).

AAFP also recommends routine annual influenza vaccination for all people 6 months of age and older (AAFP, 2025). For people 19 years or older, AAFP

recommends that they receive 1 dose of any influenza vaccine appropriate for their age and health status annually (AAFP, 2025).

Tdap/Td vaccine

ACIP recommends that regardless of the interval since their last tetanus or diphtheria toxoid–containing vaccine, persons aged 19 and older who have never received a dose of Tdap should receive one dose. To ensure continued protection against tetanus and diphtheria, booster doses of either Td or Tdap should be administered every 10 years throughout life (Havers et al., 2020). Pregnant women should receive a dose of Tdap during each pregnancy, irrespective of a history of receiving Tdap. Tdap should be administered at 27–36 weeks' gestation, preferably during the earlier part of this period, although it may be administered at any time during pregnancy.

For women not previously vaccinated with Tdap, if not administered during pregnancy, it should be administered immediately postpartum (Havers et al., 2020). People who have a history of severe allergic reaction (e.g., anaphylaxis) to any component of the Tdap or Td vaccine should not receive it. Tdap is contraindicated for adults with a history of encephalopathy (e.g., coma or prolonged seizures) not attributable to an identifiable cause within 7 days of administration of a vaccine with pertussis components (CDC, 2024v).

AAFP also recommends 1 dose of Tdap for each pregnancy, 1 dose of Td/Tdap for wound management and 1 dose of Td or Tdap as a booster every 10 years after initial Tdap dose for those 19 years and older (AAFP, 2025).

Herpes zoster vaccine

One type of zoster vaccine is currently recommended for older adults: the recombinant zoster vaccine (RZV). In October 2017, the FDA approved the RZV for adults 50 and older. In January 2018, ACIP published a guideline recommending RZV for immunocompetent adults 50 and older, irrespective of prior receipt of varicella vaccine or ZVL (Dooling et al., 2018). In July 2021, the FDA expanded the indication to include immunodeficient or immunosuppressed adults. In October 2021, ACIP published a guideline recommending two RZV doses for prevention of herpes zoster and related complications in immunodeficient or immunosuppressed adults ≥19 years (Anderson et al., 2022).

AAFP also recommends the 2-dose recombinant vaccine series 2-6 months apart for adults 50 years and older regardless of previous herpes zoster or history of zoster live vaccine vaccination (AAFP, 2025).

Pneumococcal vaccine

In 2021, two new pneumococcal vaccines were licensed for use in the U.S.: the 15-valent pneumococcal conjugate vaccine (PCV15) and the 20-valent pneumococcal conjugate vaccine (PCV20). Both include additional serotypes and therefore provide better coverage against pneumococcal disease than the 13-valent pneumococcal conjugate vaccine (PCV13) or 23-valent pneumococcal polysaccharide vaccine (PPSV23). In October 2021, ACIP approved new recommendations for pneumococcal disease, stating that a dose of the newer pneumococcal conjugate vaccine (either PCV20 or PCV15) is beneficial for immunocompetent adults 65 and older, and for adults 19–64 with certain underlying medical conditions or risk factors, given that both

populations account for over 90% of invasive pneumococcal disease cases in the U.S.[1] (Kobayashi et al., 2023).[2] In 2025, the ACIP recommended that all adults 50 and older be vaccinated with pneumococcal conjugate vaccines (Kobayashi et al., 2025). AAFP also recommends pneumococcal vaccination for adults 50 and older (AAFP, 2025).

Hepatitis B vaccine

ACIP recommends universal HepB vaccination for adults 19–59 years and adults aged 60 years and older with risk factors for HepB. Adults 60 years and older without known risk factors for HepB may also receive HepB vaccines (Weng et al. 2022). ACIP also states that persons who have completed a HepB vaccination series at any point, or who have a history of HBV infection, should not receive additional HepB vaccination, although there is no evidence that receiving additional vaccine doses is harmful (Weng et al., 2022), stating that providers should only accept dated records as evidence of HepB vaccination.

Additionally, in settings where the patient population has a high rate of previous HBV infection, prevaccination testing, which may be performed concomitantly with administration of the first dose of vaccine, might reduce costs by avoiding complete vaccination of persons who are already immune. Prevaccination testing consists of testing for HBsAg, antibody to HBsAg (anti-HBs), and antibody to hepatitis B core antigen (anti-HBc). The presence of HBsAg indicates current HBV infection. The presence of anti-HBs is generally interpreted as indicating immunity, either from HepB vaccination after a complete series or after recovery from HBV infection. The presence of total anti-HBc indicates previous or ongoing infection with HBV (Weng et al. 2022). There are five approved HepB vaccines for adults 19–59; the recommended dosage and schedule varies (Murthy et al., 2024):

- Two-dose series only applies when 2 doses of Heplisav-B are used at least 4 weeks apart.
- Three-dose series of Engerix-B, PreHevbrio or RecombivaxHB at 0, 1 and 6 months (minimum intervals: dose 1 to dose 2, 4 weeks; dose 2 to dose 3, 8 weeks; dose 1 to dose 3, 16 weeks).
- Three-dose series of HepA–HepB (Twinrix) standard schedule at 0, 1 and 6 months (minimum intervals: dose 1 to dose 2, 4 weeks; dose 2 to dose 3, 5 months).
- Four-dose series HepA–HepB (Twinrix) accelerated schedule of 3 doses at 0, 7 and 21–30 days, followed by a booster dose at 12 months.

Special situations: Patients on dialysis should complete a 3- or 4-dose series:

- Three-dose series of RecombivaxHB at 0, 1 and 6 months.
- Four-dose series of Engerix-B at 0, 1, 2 and 6 months.

AAFP also recommends hepatitis B vaccination using the 2-, 3- or 4-dose series for those 19 years to 59 years (AAFP, 2025).

[1] Includes alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak or cochlear implant.

[2] ACIP includes additional guidance on dosing and timing based on receipt of previous vaccinations at: https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html#note-pneumo

COVID-19 vaccine

In 2023, ACIP began recommending annual COVID-19 vaccination for all people 6 months of age and older. In October 2023, ACIP recommended vaccination with the updated 2023-2024 formulation of the COVID-19 vaccine for all persons aged 6 months and older (Regan et al., 2023). In April 2024, ACIP recommended that all people 65 years and older receive an additional dose of the updated 2023-2024 COVID-19 vaccine (Panagiotakopoulos et al., 2024a). In June 2024, ACIP recommended the updated 2024-2025 COVID-19 vaccine for all people 6 months of age or older whether or not they have ever previously been vaccinated with a COVID-19 vaccine (Panagiotakopoulos et al., 2024b). In October 2024, ACIP recommended all persons aged 65 years and older and immunocompromised persons aged 6 months-64 years of age receive a second dose of the COVID-19 vaccine (Roper et al., 2024). Most recently, in September 2025, ACIP recommended all persons 65 and older receive 2 or more doses of the 2025-2026 COVID-19 vaccine using shared clinical decision-making (CDC, 2025c).

AAFP also recommends routine vaccination for all adults 19 and older. They also recommend that adults 65 and older receive 2 or more doses of the 2025-2026 vaccine (AAFP, 2025).

Health care disparities

There are racial and ethnic disparities in adult vaccination coverage. The 2022 NHIS survey found that White adults 65 and older had higher pneumococcal vaccination coverage rates (69.1%) than Black (53.5%), Hispanic (41.7%) and Asian (50.2%) adults 65 and older (Hung et al., 2024). Further, White adults 50 and older reported higher herpes zoster vaccination coverage rates than Black, Hispanic and Asian adults 50 and over. Similar trends were seen for adults 60 and older who reported receiving a herpes zoster vaccine (Hung et al., 2024). Lastly, White adults had higher coverage of any tetanus toxoid-containing vaccination compared with Black, Hispanic and Asian adults. Tdap coverage showed similar trends with White adults 19 and older reporting higher coverage rates (32.6%) than Black (17.8%), Hispanic (21.2%) and Asian (28.9%) adults (Hung et al., 2024). The 2021 NHIS survey also found that White 19–49-year-olds were more likely to have received the HepB vaccine (48%) than Black (34%) and Hispanic (38%) adults, but less likely than Asian adults (54%) (Hung et al., 2023). White 30–59-year-olds were more likely to have received the HepB vaccine (38%) than Black (31%) and Hispanic (32%) adults, but less likely than Asian adults (47%) (Hung et al., 2023).

Vaccination coverage also varies by age for influenza. In the 2023–2024 influenza season the overall vaccination rate among adults was 45%; 33% of adults 18–49 reported receiving the flu vaccine, compared with 46% of adults 50–64 and 70% of adults 65 and older (CDC, 2024w). However, compared to the 2021–2022 influenza season, adult influenza vaccination coverage was lower for adults 65 and older than for adults 19–64 in the 2022–2023 season (CDC, 2024w).

There are also geographical and racial-ethnic disparities in adult HepB infection rates. In 2023, Florida, West Virginia, Kentucky, Maine and Tennessee had the highest rates of acute hepatitis B compared to the nationwide average (CDC, 2023b). Non-Hispanic Black adults had the highest rates of acute hepatitis B in 2023 (CDC, 2023b). The rate of newly reported

chronic hepatitis B cases was highest among non-Hispanic Asian/Pacific Islanders in 2023 (CDC, 2023b).

Gaps in care

Healthy People 2030, which provides science-based, 10-year national objectives for improving the health of all Americans, has established goals for routinely recommended adult vaccinations (U.S. Department of Health and Human Services, 2022):

- Reduce the rate of deaths with hepatitis B as a cause.
- Reduce the rate of acute hepatitis B.
- Reduce the rate of hepatitis A.
- Increase the proportion of adults age 19 years or older who get recommended vaccines.
- Increase the proportion of people who get the flu vaccine every year.

Estimates of national vaccination coverage are available through the National Health Interview Survey (NHIS), in which a sample of adults self-report receipt of vaccines. Data from 2021 indicate that:

- 49% of adults 19 and older reported receiving the influenza vaccine (Hung et al., 2024).
- 59% of adults 19 and older reported having received any tetanus toxoid-containing vaccination in the past 10 years, and 29% reported receiving the Tdap vaccine (Hung et al., 2024).
- 36% of adults 50 and older reported receiving one or more doses of any type of herpes zoster vaccine (Hung et al., 2024).
- 64% of adults 65 and older reported receiving one or more doses of any type of pneumococcal vaccine (Hung et al., 2024).

Additionally, NHIS data from 2021 found that 34% of adults 19 and older reported receiving the hepatitis B vaccines (Hung et al., 2023). Further, as of May 2023, 81% of the U.S. population have received at least one dose of any of the COVID-19 vaccines (USA Facts, 2023). More recent estimates of national vaccination coverage are available through the National Center for Immunization and Respiratory Diseases and show that for the 2024-2025 season, 23% of adults received an updated 2024-2025 COVID-19 vaccine (CDC, 2025a).

Barriers to adult vaccination in general include provider and patient lack of knowledge and awareness of the importance of vaccines, missed opportunities for vaccination and operational and systemic barriers (e.g., cost, lack of access to immunization records) (Chadi et al., 2023; Eiden et al., 2022; Kilich et al., 2020; Kolobova et al., 2022; Wang et al., 2023). Having health insurance coverage is also associated with higher vaccination coverage (Chadi et al., 2023; Kolobova et al., 2022). There are some unique barriers to COVID-19 vaccination. For example, one study found that one of the most quoted reasons for hesitancy towards COVID-19 vaccination is due to how fast the vaccines were developed and subsequently brought to market (Nawas et al., 2023). The same article also found that hesitancy is also related to a lack of understanding regarding the ingredients of the COVID-19 vaccines and how it works (Nawas et al., 2023). Some articles also cited politically motived skepticism towards the COVID-19 vaccine as a major barrier to vaccine uptake (Kuehn et al., 2022; Nawas et al., 2023).

There are evidence-based practices for improving adult vaccination coverage. Health care providers should routinely assess patients' vaccination history, offer needed vaccines to adults or refer patients to a provider who can administer the vaccine and document vaccinations received by their patients in an immunization information system (Lu et al., 2021). In addition, providing easy access and convenience for adult vaccination in and outside the health care setting is important for increasing equitable adult vaccine uptake (Kaiser Family Foundation 2020). Influenza vaccines are commonly offered at retail pharmacies; offering other types of adult vaccines at retail pharmacies could potentially increase uptake (Murray et al., 2021). For COVID-19 vaccination specifically, one of the major strategies to overcoming barriers was educating patients on the safety and efficacy of COVID-19 vaccination (Nawas et al., 2023). Sharing immunization related information between providers, health systems, public health agencies and patients is required to increase vaccination coverage and ensure high-quality data to inform clinical and public health interventions (Scharf et al., 2021). Leveraging health information technology, such as immunization information systems, is important for targeting and monitoring immunization program activities and providing clinical decision support at the point of care (Scharf et al., 2021).

Digital Considerations

As part of NCQA's strategic transition to a fully digital quality measurement portfolio, we conduct a feasibility assessment to inform eventual digital measure implementation. The assessment evaluates the measure's intent and associated clinical concepts within a digital framework.

The updates being considered for this measure reevaluation do not impact digital feasibility. Therefore, an assessment is not included.

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HEDIS Health Plan Performance Rates: Adult Immunization Status (AIS-E) Pneumococcal Indicator

This report only presents data for the pneumococcal indicator, as no other indicators have proposed updates.

Starting in Measurement Year 2023, all product lines report for each indicator and stratify by age (see table below).

Indicator	Commercial, Medicaid and Medicare
Influenza	19-65 66 and older Total
Td/Tdap	19-65 66 and older Total
Zoster	50-65 66 and older Total
Pneumococcal	66 and older (Tables 1, 2 and 3)

Pneumococcal Immunization Indicator

Table 1. HEDIS AIS-E Pneumococcal Indicator Performance—Commercial Plans, Ages 66+

Measurement Year	Total Number of Plans (N)	Number of Plans Reporting (N (%))	Performance Rates (%)						
			Mean	Standard Deviation	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2024*	398	377 (94.7)	54.5	14.5	33.8	43.6	55.8	65.3	72.4
2023	420	401 (95.5)	50.8	16.2	28.9	37.6	51.8	64.1	71.4

*For 2024 the average denominator across plans was 6,509.7 individuals, with a standard deviation of 10,907.9.

Table 2. HEDIS AIS-E Pneumococcal Indicator Performance—Medicaid Plans, Ages 66+

Measurement Year	Total Number of Plans (N)	Number of Plans Reporting (N (%))	Performance Rates (%)						
			Mean	Standard Deviation	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2024*	276	188 (68.1)	50.8	17.0	28.8	40.7	51.8	62.9	71.9
2023	278	182 (65.5)	45.7	17.1	21.0	35.1	44.4	58.2	68.1

*For 2024 the average denominator across plans was 5,842.8 individuals, with a standard deviation of 9,543.8.

Table 3. HEDIS AIS-E Pneumococcal Indicator Performance—Medicare Plans, Ages 66+

Measurement Year	Total Number of Plans (N)	Number of Plans Reporting (N (%))	Performance Rates (%)						
			Mean	Standard Deviation	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2024*	700	668 (95.4)	50.4	23.8	12.9	33.0	55.0	69.1	79.1
2023	760	713 (93.8)	44.0	23.2	11.8	26.4	43.9	62.2	75.5

*For 2024 the average denominator across plans was 37,161.2 individuals, with a standard deviation of 140,253.7.