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Measles Outbreak — New Mexico, 2025

Emma Stanislawski, MPH[1]; Andrea Romero[1]; Nora Holzinger, MA, MPH[1]; Ruth Healy, MPH[1]; Nathaniel J. Webb, PhD[1]; Kathryn Cruz[1]; Marla Sievers, MPH[1]; Su Aung, MD[2]; Samantha Swisher, DVM[3,4]; Ruth Stefanos, MD[5]; Jennifer Yara-Zelenski, MPH[6]; Aaron D. Kofman, MD[7]; Rebecca Pierce, PhD[7]; Chisom Onyeuku, MSPH[8]; Kara McGinnis Pilote, MPH, MA[8]; Jessica Leung, MPH[5]; Chad Smelser, MD[1]

Abstract

Measles is a highly contagious respiratory virus with the potential to cause large outbreaks, as well as serious complications, hospitalization, and death. Receipt of 2 doses of measles vaccine is 97% effective at preventing disease and is recommended for all persons aged ≥12 months to ensure high levels of population immunity and reduce the risk for outbreaks. In January 2025, a large measles outbreak began in a west Texas community and quickly spread to nearby jurisdictions, including New Mexico. The New Mexico Department of Health (NMDOH) eventually reported 99 outbreak-related measles cases, approximately one half of which occurred in adults. To facilitate dissemination of information and distribution of resources across a geographically large, rural state, NMDOH implemented a multimodal communication and vaccination outreach strategy, including a centralized webpage, a telephone helpline, and mobile vaccination clinics. The outreach strategy coincided with a statewide 55% increase in MMR vaccine doses administered during January 1–September 26, 2025, compared with the same period in 2024. Coordinating public communication and improving access to MMR vaccine can support vaccine administration across large, rural areas and contribute to a measles outbreak response.

Introduction

Measles (rubeola) is a highly contagious respiratory virus that has the potential to cause large outbreaks, as well as serious complications, hospitalization, and death; measles was declared eliminated from the United States in 2000. Symptoms of measles include fever, malaise, cough, coryza, and conjunctivitis, as well as a pathognomonic enanthem (Koplik spots) followed by a maculopapular rash. The incubation period is typically 11–12 days (range = 7–21 days) from exposure to measles virus until the first symptoms appear (*1*). Two doses of measles, mumps, and rubella (MMR) vaccine are estimated to be 97% effective at preventing measles (*2*). In 2025, the United States experienced the largest number of measles cases and outbreaks since 1992, including the first outbreak in New Mexico since 1996. Among 99 confirmed measles cases in New Mexico, 14 (14%) patients had documentation of receipt of ≥1 dose of a measles vaccine. The New Mexico Department of Health (NMDOH) implemented a multimodal communication and vaccination response to reduce transmission. This report describes the response to the New Mexico outbreak.

Investigation and Outcomes

Notification of Confirmed Measles Cases in Texas

On January 30, 2025, NMDOH was notified by the Texas Department of State Health Services of two confirmed measles cases in Gaines County, Texas. Gaines County, located in west Texas, is bordered on the west by Lea County, New Mexico, and is an area where frequent bidirectional travel occurs across the state line. NMDOH distributed a first statewide Health Alert Network (HAN) message on January 31, and a first press release on February 3 regarding the increased risk for exposure to measles in Lea County.

Continuing Education examination available at https://www.cdc.gov/mmwr/mmwr_continuingEducation.html

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

Notification of First Measles Cases in New Mexico

On February 9, 2025, NMDOH was notified of a suspected case of measles in an unvaccinated school-aged child in Lea County. The child had not recently travelled outside New Mexico and had no known exposure to close contacts with measles. A nasopharyngeal swab collected for real-time reverse transcription–polymerase chain reaction measles testing at the Scientific Laboratory Division (SLD), New Mexico's public health laboratory, was confirmed positive for measles on February 11. Later that week, two Lea County adults whose measles vaccination history was unknown also received positive measles test results at SLD. Although one patient had visited Texas during the 3 weeks preceding illness onset (i.e., during the patient's incubation period), apart from living in Lea County, none of the three patients had a known connection with one another. NMDOH declared a measles outbreak on February 14 and began an investigation. This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.*

Characteristics of Outbreak-Related Measles Cases

During February 9–August 10, 2025, a total of 99 outbreak-related measles cases† were reported from eight New Mexico counties; two thirds (67.7%) of patients lived in Lea County.§ Sixteen (16.2%) persons with measles, including 20.9% of cases in Lea County residents, reported travel to Texas during their incubation period. The median patient age was 20 years (range = 4 months–62 years), and most (85.8%) cases occurred in persons who were unvaccinated (57.6%) or whose vaccination status was unknown (28.3%) (Table). No school or child care center outbreaks were reported. Seven patients with measles were confirmed to have been hospitalized, including five unvaccinated children, one unvaccinated adult, and one adult whose vaccination history was unknown; the median length of hospitalization was 1 day (range = 1–5 days). One death attributed to measles was reported in an unvaccinated adult. The New Mexico outbreak was declared over on September 26, 2025, after two 21-day measles incubation periods had elapsed since the last reported patient's infectious period ended on August 14.

Public Health Response

Communication Activities and Coordination Strategies

To facilitate distribution of information and resources across the large, rural state of New Mexico, NMDOH implemented a multimodal communication strategy. Outbreak information and vaccination recommendations were distributed via 12 HAN advisories, 26 press releases, 184 social media

*45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

†An outbreak-related measles case was defined as the occurrence of an acute febrile rash illness with either laboratory confirmation of infection or an epidemiologic linkage to a laboratory-confirmed measles case.

§One additional case from a ninth New Mexico county was included in the total state case count, but that case was unrelated to the regional outbreak.

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TABLE. Characteristics and vaccination status of persons with confirmed measles — New Mexico, February 9–September 26, 2025

Characteristic	No. (%)
Total	**99* (100.0)**
Sex	
Female	54 (54.5)
Male	45 (45.5)
Age group	
Median (range)	20 yrs (4 mos–62 yrs)
<6 mos	2 (2.0)
6 mos–4 yrs	21 (21.2)
5–19 yrs	25 (25.3)
20–49 yrs	38 (38.4)
≥50 yrs	13 (13.1)
No. of measles vaccine doses received†	
2	11 (11.1)
1	3 (3.0)
None	57 (57.6)
Unknown	28 (28.3)

* One additional case unrelated to the outbreak (not included in this table) was later included in the total state count.

† Vaccination records were verified by using the New Mexico Statewide Immunization Information System (13 patients) and another state's immunization information system (one patient).

posts, the New Mexico Statewide Immunization Information System (NMSIIS) newsfeed and email notifications, television public service announcements, and local radio (*3*). On February 21, NMDOH launched a measles webpage, which included regularly updated case counts; guidance for vaccination, preparedness, and response to measles exposures in various settings and populations (e.g., health care settings, workplaces, and schools); and information about upcoming vaccination clinics (*4*). Messaging in English and Spanish referred members of the public to the NMDOH helpline number, which was established during the COVID-19 pandemic to connect New Mexicans with health information and services. Helpline staff members could check callers' measles vaccination status in New Mexico by using NMSIIS, notify contacts about their exposure to persons with measles, and assist in identifying nearby locations where vaccines could be administered. The helpline received 2,004 measles-related calls during January 31–August 24, 2025.

Vaccination Clinics and MMR Vaccine Doses Administered

Providers participating in the Vaccines for Children Program and Section 317 Immunization Program for adults¶ could order MMR vaccine for immediate administration at no cost and without waiting for the usual scheduled monthly order. NMSIIS was used to assess local vaccination coverage data and vaccine inventory, prioritizing areas for mobile vaccine delivery, including those areas with identified cases of measles or below-average MMR vaccination coverage. On April 14, 2025, NMDOH recommended early vaccination for infants aged 6–11 months who lived in or had visited areas with an increased risk for exposure to measles.**

During February 15–August 24, NMDOH hosted 60 mobile MMR vaccination clinics in 11 counties. These were located mainly at schools, public health offices, correctional facilities, and community centers or events and were conducted in collaboration with local partners. The clinics were initially held in counties with reported cases (and surrounding areas), but communities with no reported cases could also request mobile clinics as a preventive measure. At the start of the outbreak, statewide coverage with ≥1 dose of MMR vaccine was 92% among children and 51% among adults (NMSIIS data). Additional vaccination outreach and communications coincided with a 55% increase in MMR doses administered during January 1–September 26 (61,592) compared with the same period in 2024 (39,847) (Figure). From February 14, when the measles outbreak was declared, through September 26, first and second MMR doses were received by 15,123 and 16,622 children, respectively, and 16,164 and 3,711 adults, respectively. Compared with 2024, the number of doses administered to children aged <18 years increased 18%, from 27,988 in 2024 to 32,890 in 2025; doses administered to adults aged ≥18 years increased 291%, from 5,748 in 2024 to 22,500 in 2025. Within 2 weeks of the outbreak declaration, the number of vaccine doses administered in all regions of the state began to exceed the number delivered during the previous year. Region-specific increases in vaccine doses administered also occurred during the week after the first cases in a given region were announced compared with the preceding week (e.g., 82.7% and 77.7% increases in the Southwest and metropolitan public health regions, respectively). As of September 26, 2025, single-dose MMR vaccination coverage among Lea County residents aged 1–18 years had increased from 94.0% to 95.1%. However, because Lea County accounts for approximately 3% of the state population, statewide coverage among children and adults did not change significantly.

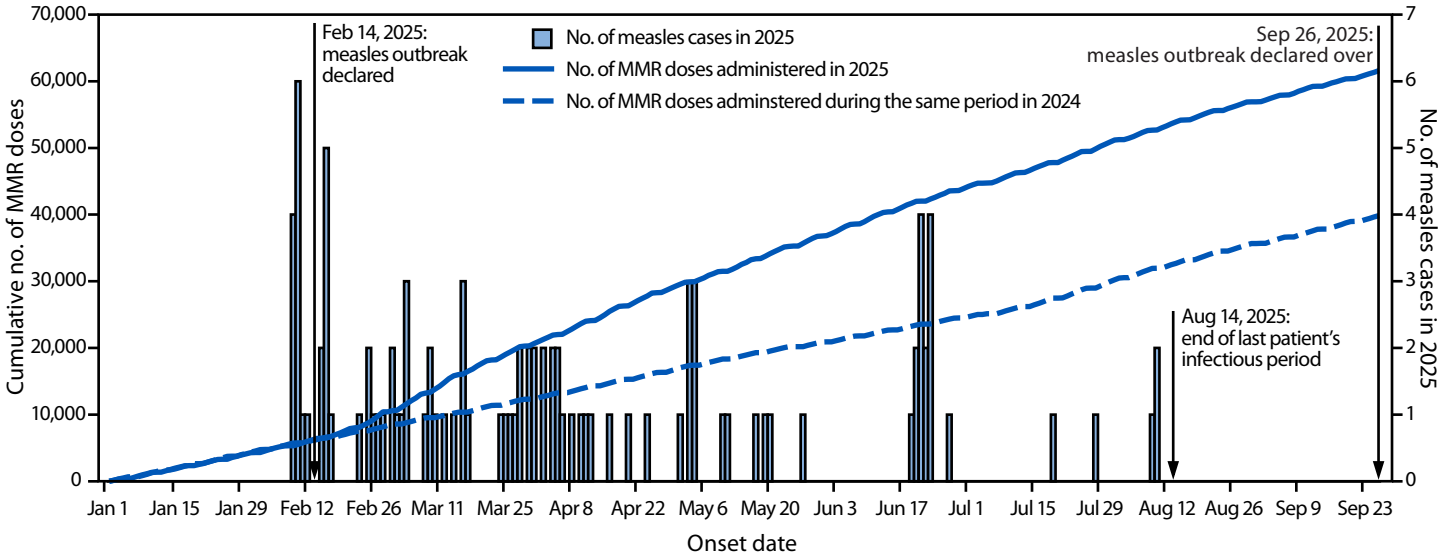
Discussion

This measles outbreak was the first in New Mexico since 1996 (*5*). Most outbreak-related cases occurred among persons who were unvaccinated or whose vaccination status was

¶ The 317 program provides grants to states for the purchase of vaccines for underinsured or uninsured adults and for outbreak response.

** At the time, this included Lea County and Dona Ana County, New Mexico; El Paso, Texas; and Ciudad Juarez, Mexico. On June 10, 2025, NMDOH expanded this early dose recommendation to include Sandoval County, New Mexico, and infants with planned domestic or international travel. MMR doses administered before age 12 months do not count toward the recommended 2 MMR doses; therefore, infants receiving an MMR dose before age 12 months still need 2 appropriately spaced doses of MMR administered beginning at age ≥12 months.

FIGURE. Number of laboratory-confirmed measles cases, by onset date,* and cumulative number of measles, mumps, and rubella vaccine doses administered — New Mexico, 2024 and 2025†



Abbreviation: MMR = measles, mumps, and rubella.

* If date of rash onset was not available, the following dates were used to determine onset date: symptom onset date, specimen collection date, hospital admission date, or date reported.

† During January 1–September 26, a total of 39,847, and 61,592 MMR doses were administered in 2024 and 2025, respectively. During February 14–September 26, 2025, a first and second MMR dose was received by 15,123 and 16,622 children, respectively, and by 16,164 and 3,711 adults, respectively. Doses administered to children and adolescents aged <18 years increased 17.5% from 27,988 (2024) to 32,890 (2025); doses administered to adults (aged ≥18 years) increased 291%, from 5,748 (2024) to 22,500 (2025).

Summary

What is already known about this topic?

High 2-dose measles vaccination coverage provides the best protection against measles. A measles outbreak that began in west Texas in January 2025 spread to other jurisdictions, including New Mexico, a large, rural state where 99 outbreak-related measles cases occurred during February–August.

What is added by this report?

To increase population immunity and interrupt transmission, the New Mexico Department of Health implemented a comprehensive public messaging strategy and enhanced access to measles, mumps, and rubella (MMR) vaccines statewide. This coincided with a 55% increase in MMR vaccine doses administered during January–September 2025 compared with the same period during 2024. The outbreak ended on September 26 after two measles incubation periods with no new cases.

What are the implications for public health practice?

Coordinating public communication and improving access to MMR vaccination can support vaccine administration in large, rural areas and contribute to a measles outbreak response.

unknown. Despite known community transmission, no school outbreaks were reported from Lea County, likely because of high MMR vaccination coverage (94% coverage with ≥1 dose among persons aged 1–18 years in schools [NMSIIS data] and 96.6% coverage with 2 doses among Lea County kindergarteners [New Mexico school immunization survey, unpublished data, 2025]). The 51% documented coverage among adults statewide likely underestimates immunity among adults, because information about past measles infection or vaccinations occurring before the immunization registry's creation is not captured in NMSIIS. However, the preponderance of measles cases reported among adults and sustained community transmission suggests that high county-level immunization coverage obscured areas of undervaccination. Increasing and maintaining high 2-dose measles vaccination coverage strengthens herd immunity and can limit community transmission and outbreak size (*6*). NMDOH recommends that all persons aged ≥12 months receive 2 doses of measles vaccine for best protection against measles (*3*).

The 2025 measles outbreak response in New Mexico benefited from coordinated operations for communication and vaccination, building on experience developed during the COVID-19 pandemic. Implementation of a range of communication strategies, including the measles webpage and the centralized telephone helpline, facilitated resident access to updated measles information and recommendations while the outbreak evolved and supported access to vaccination services, bolstering the outbreak response statewide. A comprehensive messaging strategy prompted community interest in vaccination and in protecting both children and adults from measles.

Despite challenges associated with distributing resources across the large, rural state of New Mexico, after identification and declaration of a measles outbreak in a single county, the number of MMR doses administered rapidly increased statewide. The strategies implemented in New Mexico could serve as a model for other states that are addressing measles cases or outbreaks.

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Corresponding author: Emma Stanislawski, Emma.Stanislawski@doh.nm.gov.

[1]New Mexico Department of Health; [2]Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD, and Tuberculosis Prevention, CDC; [3]Epidemic Intelligence Service, CDC; [4]Division of Global Migration Health, National Center for Emerging and Zoonotic Infectious Diseases, CDC; [5]Division of Viral Diseases, National Center for Immunization and Respiratory Diseases, CDC; [6]Immunization Services Division, National Center for Immunization and Respiratory Diseases, CDC; [7]Division of Healthcare Quality Promotion, National Center for Emerging and Zoonotic Infectious Diseases, CDC; [8]Division of State and Local Readiness, Office of Readiness and Response, CDC.

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References

1. CDC. Clinical overview of measles. Atlanta, GA: US Department of Health and Human Services, CDC; 2026. https://www.cdc.gov/measles/hcp/clinical-overview/index.html
2. McLean HQ, Fiebelkorn AP, Temte JL, Wallace GS; CDC. Prevention of measles, rubella, congenital rubella syndrome, and mumps, 2013: summary recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep 2013;62(RR-04):1–34. PMID:23760231
3. New Mexico Department of Health. New Mexico Health Alert Network (HAN) Advisory: updated measles vaccine recommendations. Santa Fe, NM: New Mexico Department of Health; 2025. https://www.nmhealth.org/publication/view/general/9315/
4. New Mexico Department of Health. 2025 measles outbreak guidance. Santa Fe, NM: New Mexico Department of Health; 2025. https://www.nmhealth.org/about/erd/ideb/mog/
5. CDC. Measles—United States, 1995. MMWR Morb Mortal Wkly Rep 1996;45:305–7. PMID:8602128
6. Gressick K, Nham A, Filardo TD, et al.; Chicago Department of Public Health Measles Response Team. Measles outbreak associated with a migrant shelter—Chicago, Illinois, February–May 2024. MMWR Morb Mortal Wkly Rep 2024;73:424–9. PMID:38753539 https://doi.org/10.15585/mmwr.mm7319a1

Interim Estimates of 2025–26 Seasonal Influenza Vaccine Effectiveness — United States, September 2025–February 2026

Patrick Maloney, PhD[1,2]; Emily L. Reeves, MPH[1]; Kristina Wielgosz, MPH[1]; Ashley M. Price, MPH[1]; Karthik Natarajan, PhD[3,4]; Malini B. DeSilva, MD[5]; Kristin Dascomb, MD, PhD[6]; Nicola P. Klein, MD, PhD[7]; Sara Y. Tartof, PhD[8,9]; Stephanie A. Irving, MHS[10]; Shaun J. Grannis, MD[11,12]; Toan C. Ong, PhD[13]; Zachary A. Weber, PhD[14]; Jennifer E. Schuster, MD[15]; Danielle M. Zerr, MD[16]; Marian G. Michaels, MD[17]; Julie A. Boom, MD[18]; Natasha B. Halasa, MD[19]; Mary A. Staat, MD[20]; Geoffrey A. Weinberg, MD[21]; Stacey L. House, MD, PhD[22]; Elie A. Saade, MD[23]; Krissy Moehling Geffel, PhD[24]; Manjusha Gaglani, MBBS[25]; Karen J. Wernli, PhD[9,26]; Vel Murugan, PhD[27]; Emily T. Martin, PhD[28]; Natalie A. B. Bontrager, MPH[29], Marie K. Kirby, PhD[1]; Amanda B. Payne, PhD[30]; Fatimah S. Dawood, MD[30]; Ayzsa Tannis, MPH[30]; Heidi L. Moline, MD[30]; Sifang Kathy Zhao, PhD[1]; Katherine Adams, DrPH[1]; Jennifer DeCuir, MD, PhD[1]; Samantha M. Olson, MPH[1]; Jessie R. Chung, MPH[1]; Nathaniel Lewis, PhD[1]; Brendan Flannery, PhD[1]; Carrie Reed, DSc[1]; Shikha Garg, MD[1]; Sascha Ellington, PhD[1]; CDC Influenza Vaccine Effectiveness Collaborators

Abstract

In the United States, annual influenza vaccination has been recommended for all persons aged ≥6 months, including during the 2025–26 season. Interim influenza vaccine effectiveness (VE) estimates were calculated for patients with acute respiratory illness–associated outpatient visits and hospitalizations from three U.S. respiratory virus VE networks during the 2025–26 influenza season, using a test-negative case-control design. Among children and adolescents aged <18 years, VE was 38%–41% against influenza outpatient visits and 41% against influenza-associated hospitalization. Among adults aged ≥18 years, VE was 22%–34% against influenza outpatient visits and 30% against influenza-associated hospitalization. Among children and adolescents, VE against influenza A ranged from 37% (against outpatient visits) to 42% (against hospitalization) across settings; among adults, VE against influenza A ranged from 30% (against hospitalization) to 34% (against outpatient visits) across settings. Among children and adolescents, VE against influenza A(H3N2)–associated outpatient visits was 35% and against influenza A(H3N2)–associated hospitalization was 38%. VE against influenza B outpatient visits ranged from 45%–71% among children and adolescents and was 63% among adults. Other estimates of VE were not statistically significant or were not reportable. Although interim influenza VE is lower during the 2025–26 influenza season than it was during recent influenza seasons, these findings demonstrate that influenza vaccination still provides protection against influenza. CDC recommends influenza vaccination; U.S. influenza vaccines remain available for persons aged ≥6 months.

Introduction

CDC estimates that at least 26,000,000 illnesses, 340,000 hospitalizations, and 21,000 deaths resulting from influenza occurred in the United States during October 1, 2025–February 28, 2026. CDC's Advisory Committee on Immunization Practices has recommended annual seasonal influenza vaccination for all persons aged ≥6 months, including during the 2025–26 influenza season (*1*). During the 2024–25 influenza season, influenza vaccination prevented an estimated 5 million medical visits, 180,000 hospitalizations, and 12,000 deaths caused by influenza viruses. During the current 2025–26 influenza season, 88% of subtyped influenza A–positive specimens were influenza A(H3N2); among those, 93% of genetically characterized samples were clade 2a.3a.1 subclade K (J.2.4.1), an antigenically drifted influenza virus that was first identified by CDC in June 2025 after selection of the 2025–26 vaccine viruses and that differs from the 2025–26 A(H3N2) influenza vaccine virus (*1*). Among sequenced influenza B viruses, 64% were clade C.3.1, which also differs antigenically from the 2025–26 influenza B vaccine virus. As of February 21, 2026, an estimated 48% of U.S. children and adolescents aged 6 months–17 years and 47% of U.S. adults aged ≥18 years had received an influenza vaccination during the 2025–26 season. CDC has monitored influenza vaccine effectiveness (VE) since 2004. This report provides interim estimates of 2025–26 influenza VE against outpatient visits and hospitalization for laboratory-confirmed influenza among children, adolescents, and adults from three U.S. surveillance networks.

Methods

Data Source and Collection

Data from three CDC-affiliated surveillance networks were used to assess influenza VE during September 2025–February 2026: 1) the New Vaccine Surveillance Network (NVSN), 2) the U.S. Flu VE Network (U.S. Flu VE), and 3) the Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network (VISION). Patient ages and care settings differ by network (Box). U.S. Flu VE enrolls only outpatients, NVSN* enrolls both outpatients and inpatients, and VISION retrospectively analyzes medical records of eligible outpatients and inpatients. All three networks include children and adolescents; U.S. Flu VE and VISION also include adults.

* Patients included as outpatients in NVSN might have progressed to a more acute level of care; those data might not be reflected in this analysis.

BOX. Characteristics of three influenza vaccine effectiveness networks — United States, 2025–26 influenza season

New Vaccine Surveillance Network (NVSN)

- **Population:** Children and adolescents aged 6 months–17 years
- **Settings:** Outpatient (outpatient clinics, urgent care clinics, primary care offices, and emergency departments) and inpatient
- **Inclusion dates:** September 20, 2025–February 6, 2026
- **Type of surveillance:** Primarily active*
- **Medical centers (state):** Children's Mercy (Missouri), University of Rochester Medical Center (New York), Cincinnati Children's Hospital Medical Center (Ohio), UPMC Children's Hospital of Pittsburgh (Pennsylvania), Vanderbilt University Medical Center (Tennessee), Texas Children's Hospital (Texas), and Seattle Children's Hospital (Washington)
- **Determination of influenza vaccination status:** Jurisdictional immunization registries, medical records, or parent/guardian/self-report
- **Acute respiratory illness (ARI) definition:** Symptoms of ARI (e.g., cough, fever, or other symptoms) ≤10 days of illness onset
- **Influenza A subtype available:** Yes

U.S. Flu Vaccine Effectiveness Network

- **Population:** Children and adolescents aged 8 months–17 years and adults aged ≥18 years
- **Settings:** Outpatient (outpatient clinics, urgent care clinics, and emergency departments)
- **Inclusion dates:** September 28, 2025–January 23, 2026
- **Type of surveillance:** Active
- **Medical centers (state):** Arizona State University Tempe, Phoenix Children's Hospital, and Valleywise Health Medical Center (Arizona); University of Michigan and Henry Ford Health (Michigan); Washington University in St. Louis (Missouri); University Hospitals Cleveland Medical Center (Ohio); University of Pittsburgh and University of Pittsburgh Medical Center (Pennsylvania); Baylor Scott and White Health (Texas); and Kaiser Permanente Washington (Washington)
- **Determination of influenza vaccination status:** Jurisdictional immunization registries, medical records, or parent/guardian/self-report
- **ARI definition:** Illness ≤7 days in duration with new or worsening cough
- **Influenza A subtype available:** Yes

Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network

- **Population:** Children and adolescents aged 6 months–17 years and adults aged ≥18 years
- **Settings:** Outpatient (urgent care clinics and emergency departments) and inpatient
- **Inclusion dates:** October 1, 2025–January 23, 2026
- **Type of surveillance:** Passive
- **Medical centers (state):** Kaiser Permanente Northern California and Kaiser Permanente Southern California (California), UCHealth (Colorado), Regenstrief Institute (Indiana), HealthPartners (Minnesota and Wisconsin), and Kaiser Permanente Northwest (Oregon and Washington)
- **Determination of influenza vaccination status:** Jurisdictional immunization registries, electronic health records, and claims data
- **ARI definition:** Acute respiratory clinical diagnoses or respiratory signs or symptoms based on *International Classification of Diseases, Tenth Revision* codes
- **Influenza A subtype available:** No

* The majority of NVSN patients are actively enrolled. For this analysis, 1% of NVSN patients were passively enrolled.

Test-negative, case-control designs were used to estimate influenza VE among case-patients and control patients receiving outpatient or inpatient care for an acute respiratory illness (ARI) during the 2025–26 influenza season. ARI definitions varied by network. Case-patients were those with ARI who received a positive influenza virus molecular assay test result,[†] and control patients were those with ARI who received a negative influenza virus test result.

[†] To reduce potential case misclassification, all influenza case-patients received a positive reverse transcription–polymerase chain reaction test result from a clinical or surveillance respiratory laboratory specimen for NVSN and U.S. Flu VE. For VISION, influenza case-patients received a positive molecular assay result from a clinical respiratory laboratory specimen.

Data Analysis

To assess the association between influenza vaccination and influenza-associated outpatient visits or hospitalization, multivariable logistic regression was used. Odds ratios were calculated and adjusted for study site, patient age, date of illness, and other potential confounders.[§] VE was estimated as (1 – adjusted odds ratio) × 100(%). Patients were considered vaccinated if they had received ≥1 dose of any 2025–26 influenza vaccine ≥14 days before the index date (ARI onset or clinical encounter).[¶]

[§] VISION also adjusted for sex and race and ethnicity.

[¶] NVSN and U.S. Flu VE used date of ARI onset. VISION used the earliest of the following dates: outpatient visit, hospital admission, or influenza clinical testing.

Patients were excluded if they were vaccinated <14 days before the index date or had received a positive SARS-CoV-2 molecular test result at the time of testing for influenza** (*2*).

VE against an outpatient medical encounter and against hospitalization was calculated for any influenza, influenza A and B, and influenza A subtypes (A[H1N1]pdm09 and A[H3N2]) across networks and care settings, when possible. VE point estimates and 95% CIs are included in this report; CIs that exclude zero were considered statistically significant. VE estimates were not reported for strata with sparse data resulting in unstable model estimates, indicated by very wide CIs (range ≥100), even when case count thresholds were met (*3*).

Analyses were conducted using SAS software (version 9.4; SAS Institute) and R (version 4.5; R Foundation). NVSN and U.S. Flu VE activities were reviewed by CDC, deemed not research, and were conducted consistent with applicable federal law and CDC policy.†† VISION activities were reviewed by CDC, deemed not research or research not involving human subjects, and were conducted consistent with applicable federal law and CDC policy.§§

Results

The analysis sample comprised 142,494 persons from all three surveillance networks, including 3,692 (3%) from NVSN, 3,380 (2%) from U.S. Flu VE, and 135,422 (95%) from VISION (Table 1) (Supplementary Table 1). Among the 3,692 children and adolescents aged 6 months–17 years included in NVSN, 2,296 (62%) were enrolled from outpatient settings, and 1,396 (38%) were hospitalized (Table 1). U.S. Flu VE included 3,380 outpatients aged ≥8 months. Among 135,422 VISION encounters for persons aged ≥6 months, 108,539 (80%) were outpatient and 26,883 (20%) were inpatient encounters.

Influenza Vaccination Status

Among patients aged 6 months–17 years (NVSN and VISION) and 8 months–17 years (U.S. Flu VE) evaluated in outpatient settings, 17%–26% of case-patients and 22%–31% of control patients had received an influenza vaccination; among those who were hospitalized, 20%–33% of case-patients and 29%–43% of control patients had received an influenza vaccination (Table 2). Among adults evaluated in outpatient settings, 26%–32% of case-patients and 35%–40% of control patients had been vaccinated. Among those who were hospitalized, 37% of case-patients and 40% of control patients had received an influenza vaccination. Among adults aged ≥65 years evaluated in outpatient settings, 48%–61% of case-patients and 54%–68% of control patients had been vaccinated; 44% of case-patients and 46% of control patients who were hospitalized had received an influenza vaccination.

VE Among Pediatric Patients

Among children and adolescents, VE against an outpatient visit for any influenza ranged from 38% (VISION) to 41% (NVSN); for influenza A, VE ranged from 37% (NVSN) to

** VISION also excluded patients who received a negative influenza test result but a clinical diagnosis of influenza, patients who received a clinical diagnosis of COVID-19, influenza case-patients who received a positive molecular test result for respiratory syncytial virus, and patients with missing information on sex.

†† 45 C.F.R. part 46.102(l)(2), 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

§§ 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

TABLE 1. Number and percentage of patients who received medical care for an acute respiratory illness, by outpatient or inpatient setting, surveillance network, age group, and influenza test result — United States, 2025–26 influenza season

Network and patient age group (N = 142,494)	Outpatient setting*			Inpatient setting (hospitalization)		
		Influenza test result, no. (row %)			Influenza test result, no. (row %)	
	Total	Positive (case-patients)	Negative (control patients)	Total	Positive (case-patients)	Negative (control patients)
NVSN						
6 mos–17 yrs	**2,296**	729 (32)	1,567 (68)	**1,396**	248 (18)	1,148 (82)
U.S. Flu VE	**3,380**	731	2,649	—	—	—
8 mos–17 yrs	**1,069**	289 (27)	780 (73)	—	—	—
≥18 yrs	**2,311**	442 (19)	1,869 (81)	—	—	—
18–64 yrs	**1,784**	358 (20)	1,426 (80)	—	—	—
≥65 yrs	**527**	84 (16)	443 (84)	—	—	—
VISION	**108,539**	21,801	86,738	**26,883**	2,038	24,845
6 mos–17 yrs	**31,232**	8,253 (26)	22,979 (74)	**1,272**	93 (7)	1,179 (93)
≥18 yrs	**77,307**	13,548 (18)	63,759 (82)	**25,611**	1,945 (8)	23,666 (92)
18–64 yrs	**48,427**	9,973 (21)	38,454 (79)	**7,665**	639 (8)	7,026 (92)
≥65 yrs	**28,880**	3,575 (12)	25,305 (88)	**17,946**	1,306 (7)	16,640 (93)

Abbreviations: NVSN = New Vaccine Surveillance Network; U.S. Flu VE = U.S. Flu Vaccine Effectiveness Network; VISION = Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network.

* Outpatients received care in outpatient clinics, urgent care centers, primary care offices, and emergency departments (NVSN and U.S. Flu VE); and urgent care and emergency departments (VISION). Patients enrolled as outpatients in NVSN might have progressed to a more acute level of care; those data might not be reflected in this analysis.

TABLE 2. Influenza vaccine effectiveness* among patients who received a 2025–26 influenza vaccine, by age group,† percentage of patients vaccinated, influenza test result, and influenza type and subtype§ — United States, 2025–26 influenza season

	Outpatient setting¶					Inpatient setting (hospitalization)				
	Influenza test result					Influenza test result				
	Positive (case-patients)		Negative (control patients)			Positive (case-patients)		Negative (control patients)		
Age group, influenza virus assessed, and network	Total	No. vaccinated (%)	Total	No. vaccinated (%)	VE (95% CI)**	Total	No. vaccinated (%)	Total	No. vaccinated (%)	VE (95% CI)**
All age groups										
Any influenza††										
U.S. Flu VE	731	214 (29)	2,649	949 (36)	24 (8 to 38)	NA	NA	NA	NA	NA
VISION	21,801	4,943 (23)	86,738	27,338 (32)	36 (33 to 39)	2,038	735 (36)	24,845	9,779 (39)	31 (23 to 39)
6 mos–17 yrs†										
Any influenza††										
NVSN§§	729	149 (20)	1,567	485 (31)	41 (25 to 53)	248	81 (33)	1,148	490 (43)	41 (20 to 56)
U.S. Flu VE	289	74 (26)	780	193 (25)	14 (–20 to 39)	NA	NA	NA	NA	NA
VISION	8,253	1,432 (17)	22,979	4,958 (22)	38 (33 to 43)	93	19 (20)	1,179	339 (29)	48 (–12 to 78)
Influenza A										
NVSN§§	652	141 (22)	1,567	485 (31)	37 (20 to 50)	230	75 (33)	1,148	490 (43)	42 (21 to 57)
U.S. Flu VE	194	53 (27)	780	193 (25)	10 (–32 to 39)	NA	NA	NA	NA	NA
VISION	7,992	1,394 (17)	22,979	4,958 (22)	38 (33 to 43)	93	19 (20)	1,179	339 (29)	48 (–12 to 78)
Influenza A(H3N2)										
NVSN§§	598	132 (22)	1,567	485 (31)	35 (17 to 49)	187	63 (34)	1,148	490 (43)	38 (13 to 55)
U.S. Flu VE	147	43 (29)	780	193 (25)	2 (–49 to 37)	NA	NA	NA	NA	NA
Influenza B										
NVSN§§	80	8 (10)	1,567	485 (31)	71 (41 to 86)	19	7 (37)	1,148	490 (43)	—¶¶
U.S. Flu VE	95	21 (22)	780	193 (25)	20 (–41 to 56)	NA	NA	NA	NA	NA
VISION	272	39 (14)	22,979	4,958 (22)	45 (22 to 62)	—***	—***	1,179	339 (29)	—¶¶
≥18 yrs										
Any influenza††										
U.S. Flu VE	442	140 (32)	1,869	756 (40)	22 (1 to 39)	NA	NA	NA	NA	NA
VISION	13,548	3,511 (26)	63,759	22,380 (35)	34 (31 to 38)	1,945	716 (37)	23,666	9,440 (40)	30 (21 to 38)
Influenza A										
U.S. Flu VE	381	123 (32)	1,869	756 (40)	21 (–2 to 39)	NA	NA	NA	NA	NA
VISION	13,308	3,479 (26)	63,759	22,380 (35)	34 (30 to 37)	1,927	712 (37)	23,666	9,440 (40)	30 (21 to 38)
Influenza A(H3N2)										
U.S. Flu VE	295	103 (35)	1,869	756 (40)	11 (–18 to 33)	NA	NA	NA	NA	NA
Influenza B										
U.S. Flu VE	61	17 (28)	1,869	756 (40)	23 (–40 to 59)	NA	NA	NA	NA	NA
VISION	250	36 (14)	63,759	22,380 (35)	63 (48 to 75)	—***	—***	23,666	9,440 (40)	—¶¶
18–64 yrs										
Any influenza††										
U.S. Flu VE	358	89 (25)	1,426	455 (32)	24 (–1 to 42)	NA	NA	NA	NA	NA
VISION	9,973	1,778 (18)	38,454	8,832 (23)	36 (31 to 40)	639	135 (21)	7,026	1,710 (24)	29 (11 to 45)
Influenza A										
U.S. Flu VE	301	74 (25)	1,426	455 (32)	23 (–4 to 43)	NA	NA	NA	NA	NA
VISION	9,759	1,756 (18)	38,454	8,832 (23)	35 (30 to 39)	627	134 (21)	7,026	1,710 (24)	28 (8 to 43)
Influenza A(H3N2)										
U.S. Flu VE	232	64 (28)	1,426	455 (32)	12 (–22 to 37)	NA	NA	NA	NA	NA
Influenza B										
U.S. Flu VE	57	15 (26)	1,426	455 (32)	—†††	NA	NA	NA	NA	NA
VISION	220	24 (11)	38,454	8,832 (23)	66 (50 to 78)	—***	—***	7,026	1,710 (24)	—¶¶
≥65 yrs										
Any influenza††										
U.S. Flu VE	84	51 (61)	443	301 (68)	41 (1 to 64)	NA	NA	NA	NA	NA
VISION	3,575	1,733 (48)	25,305	13,548 (54)	30 (24 to 36)	1,306	581 (44)	16,640	7,730 (46)	31 (21 to 39)
Influenza A										
U.S. Flu VE	80	49 (61)	443	301 (68)	40 (–2 to 64)	NA	NA	NA	NA	NA
VISION	3,549	1,723 (49)	25,305	13,548 (54)	30 (24 to 36)	1,300	578 (44)	16,640	7,730 (46)	31 (20 to 40)

See table footnotes on the next page.

TABLE 2. (*Continued*) Influenza vaccine effectiveness* among patients who received a 2025–26 influenza vaccine, by age group,† percentage of patients vaccinated, influenza test result, and influenza type and subtype§ — United States, 2025–26 influenza season

Age group, influenza virus assessed, and network	Outpatient setting¶					Inpatient setting (hospitalization)				
	Influenza test result					Influenza test result				
	Positive (case-patients)		Negative (control patients)			Positive (case-patients)		Negative (control patients)		
	Total	No. vaccinated (%)	Total	No. vaccinated (%)	VE (95% CI)**	Total	No. vaccinated (%)	Total	No. vaccinated (%)	VE (95% CI)**
Influenza A(H3N2)										
U.S. Flu VE	63	39 (62)	443	301 (68)	37 (−14 to 65)	NA	NA	NA	NA	NA
Influenza B										
U.S. Flu VE	4	2 (50)	443	301 (68)	—¶¶	NA	NA	NA	NA	NA
VISION	30	12 (40)	25,305	13,548 (54)	—¶¶	—***	—***	16,640	7,730 (46)	—¶¶

Abbreviations: NA = not applicable; NVSN = New Vaccine Surveillance Network; OR = odds ratio; U.S. Flu VE = U.S. Flu Vaccine Effectiveness Network; VE = vaccine effectiveness; VISION = Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network.

* VE was estimated using the test-negative design comparing odds of receipt of 2025–26 influenza vaccination among persons with an acute respiratory illness who received a negative influenza or SARS-CoV-2 test result. Adjusted ORs were estimated using logistic regression; VE was calculated as (1 − adjusted OR) × 100(%). Firth logistic regression was used for estimates from NVSN.

† Age group = 6 months–17 years (NVSN and VISION) and 8 months–17 years (U.S. Flu VE). All estimates were adjusted for geographic region, age, and date of illness. VISION also adjusted for sex and race and ethnicity.

§ Influenza A subtype was not available for VISION.

¶ Outpatients received care in outpatient clinics, urgent care centers, primary care offices, and emergency departments (NVSN and U.S. Flu VE) and in urgent care and emergency departments (VISION).

** CIs that exclude zero are considered statistically significant.

†† As of February 28, 2026, most influenza viruses detected were influenza A viruses (93%). Weekly US Influenza Surveillance Report: Key Updates for Week 8, ending February 28, 2026 | FluView | CDC

§§ Patients enrolled as outpatients in NVSN might have progressed to a more acute level of care; those data might not be reflected in this analysis.

¶¶ Estimates were not reported if there were fewer than 50 cases.

*** For VISION, cells with counts <5 were suppressed.

††† Estimates were not reported if VE CI range was ≥100.

38% (VISION); and for influenza B, VE ranged from 45% (VISION) to 71% (NVSN) (Table 2). VE against an outpatient visit for influenza A(H3N2) was 35% (NVSN). In U.S. Flu VE, estimates of VE against an outpatient visit for any influenza (14%), influenza A (10%), influenza A(H3N2) (2%), and influenza B (20%) were not statistically significant. VE against hospitalization for any influenza was 41%, for influenza A was 42%, and for influenza A(H3N2) was 38% (NVSN). In VISION, VE against hospitalization for any influenza and influenza A (48%) was not statistically significant. VE against hospitalization for influenza B was not reportable because of unstable model estimates resulting from sparsity of data.

VE Among Adult Patients

Adults aged ≥18 years. Among all adults aged ≥18 years, influenza VE against an outpatient visit for any influenza ranged from 22% (U.S. Flu VE) to 34% (VISION), for influenza A was 34% (VISION), and for influenza B was 63% (VISION). In U.S. Flu VE, estimates of influenza VE against an outpatient visit for influenza A (21%), influenza A(H3N2) (11%), and influenza B (23%) were not statistically significant. In VISION, influenza VE against hospitalization for any influenza and influenza A was 30%. VE against hospitalization for influenza B was not reportable.

Adults aged 18–64 years. Among adults aged 18–64 years in VISION, influenza VE against an outpatient visit for any influenza was 36%, for influenza A was 35%, and for influenza B was 66%. In U.S. Flu VE, estimates of VE against an outpatient visit for any influenza (24%), influenza A (23%), and influenza A(H3N2) (12%) were not statistically significant. In VISION, VE against hospitalization for any influenza was 29% and for influenza A was 28%. Influenza B VE against outpatient visits (U.S. Flu VE) and hospitalization (VISION) were not reportable.

Adults aged ≥65 years. Among adults aged ≥65 years, influenza VE against an outpatient visit for any influenza ranged from 30% (VISION) to 41% (U.S. Flu VE). VE against an outpatient visit for influenza A was 30% (VISION). In U.S. Flu VE, estimates of VE against an outpatient visit for influenza A (40%) and influenza A(H3N2) (37%) were not statistically significant. VE against hospitalization for any influenza and influenza A was 31% (VISION). VE estimates for influenza B were not reportable.

Genetic Characterization of Influenza Viruses

As of February 18, 2026, a total of 572 influenza A(H3N2) viruses had been genetically characterized at CDC. Subclade K was detected in 474 (83%) samples (Supplementary Table 2) and was antigenically distinct from the 2025–26 A(H3N2)

Summary

What is already known about this topic?

CDC routinely monitors influenza vaccine effectiveness (VE). Annual influenza vaccination is available for all eligible persons aged ≥6 months.

What is added by this report?

Interim 2025–26 seasonal influenza VE estimates were derived from three U.S. VE networks. Among children and adolescents, VE was 38%–41% against influenza-associated outpatient visits and 41% against influenza-associated hospitalization. Among adults aged ≥18 years, VE was 22%–34% against influenza-associated outpatient visits and 30% against influenza-associated hospitalization.

What are the implications for public health practice?

Receipt of a 2025–26 influenza vaccine reduced the risk for influenza-associated outpatient visits and hospitalizations. These findings support CDC's influenza vaccination recommendations.

influenza vaccine virus (A/Croatia/10136RV/2023). Among 47 sequenced A(H1N1)pdm09 viruses and 108 sequenced B/Victoria viruses, clades D.3.1 (51%) and C.3.1 (81%) predominated, respectively. The B/Victoria clade C.3.1 differs from the influenza vaccine virus in the 2025–26 influenza season, whereas circulating A(H1N1) pdm09 viruses are similar to the selected vaccine virus (*1*).

Discussion

Receipt of a 2025–26 seasonal influenza vaccine reduced the risk for influenza-associated outpatient visits (VE = 24%–36%) and influenza-associated hospitalization (VE = 31%) across all age groups. VE against outpatient visits was, on average, highest in children and adolescents (VE = 38%–41%). Protection against influenza-associated hospitalization was also highest in children and adolescents (VE = 41%), whereas VE against hospitalization in adults aged 18–64 years (VE = 29%) and ≥65 years (VE = 31%) was lower. Lower VE among older adults compared with that in younger persons has been observed in past influenza seasons, especially against A(H3N2) viruses (*4*).

Overall U.S. interim VE estimates against outpatient visits are comparable to estimates from China (24%), Canada (38% [influenza A]), and Europe (37%–40%) (*5*–*7*). U.S. interim estimates of VE against hospitalization are also comparable to estimates of VE in hospital settings in Europe (21%–42%) (*7*).

Sequencing data indicate that most influenza viruses circulating in the United States are A(H3N2) subclade K, an antigenically drifted virus predominant in the current season in most countries with available VE estimates. Lower influenza VE has been observed in some seasons when antigenically drifted viruses have circulated, but influenza vaccines have also been determined to provide protection against drifted viruses in previous recent influenza seasons (*4*). During the 2018–19 influenza season, a drifted A(H3N2) virus circulated, and an overall VE of 29% was observed (*8*).

U.S. interim VE estimates against influenza B outpatient visits are higher than estimates from Europe (–10%–35%) (*7*). VE against influenza B was high in both children and adults, consistent with the 2019–20 influenza season in the United States, during which influenza B viruses circulated and were antigenically drifted from the 2019–20 influenza B vaccine virus (*9*).

Influenza vaccination reduced the likelihood of both influenza-associated outpatient visits and hospitalizations, even with a circulating influenza A(H3N2) virus that is antigenically drifted from the vaccine virus. These findings support CDC's recommendation for annual influenza vaccination (*1*). While influenza viruses continue to circulate, vaccination of eligible persons who have not yet received a 2025–26 influenza vaccine could reduce influenza-associated morbidity and mortality. CDC will continue to monitor influenza VE throughout the 2025–26 influenza season.

Limitations

These findings are subject to at least four limitations. First, VE results are preliminary, and end-of-season estimates might change as influenza continues to spread during the 2025–26 season. Second, because factors such as underlying medical conditions and prior season influenza vaccination status were not modeled, the potential for unmeasured confounding exists. Third, self-reported vaccination data, receipt of vaccinations outside the medical system that were not documented, and the recommendation for administration of 2 influenza vaccine doses for children aged 6 months–8 years the first time they are vaccinated could have resulted in misclassification of vaccination status and biased VE estimates downward. Finally, small sample sizes precluded estimation of VE across all strata and VE against influenza A(H1N1)pdm09. Differences in VE estimates across networks might be the result of differences in ARI case definitions, active versus passive surveillance approaches that determine influenza testing practices and vaccination ascertainment (i.e., inclusion of self-report), outpatient care settings, and underlying site populations.

Implications for Public Health Practice

As of February 21, 2026, fewer than one half of U.S. adults and children had received a 2025–26 influenza vaccine. Influenza vaccination can prevent medically attended illnesses and serious disease that might result in hospitalization or death. Even in seasons when overall VE is reduced, influenza vaccination has prevented thousands of hospitalizations and deaths, as observed in the 2022–23 influenza season when influenza VE was just 30%, yet influenza vaccines prevented an estimated

71,000 hospitalizations and 4,300 deaths. CDC recommends that eligible persons receive influenza vaccination (*1*); U.S. influenza vaccines remain available for persons aged ≥6 months. Influenza antiviral medications are an additional important public health tool, particularly during seasons with lower VE. Administration of antiviral medication is recommended as soon as possible for any patient with suspected or confirmed influenza who is hospitalized; has severe, complicated, or progressive illness; or is at higher risk for influenza complications. Receipt of a 2025–26 influenza vaccine reduced the risk for influenza-associated outpatient visits and hospitalizations.

CDC Influenza Vaccine Effectiveness Collaborators

Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network collaborators

Omobosola Akinsete, HealthPartners Institute; Sarah W. Ball, Westat, Inc.; Michelle A. Barron, University of Colorado Anschutz Medical Campus; Daniel Bride, Intermountain Health; Brian E. Dixon, Regenstrief Institute; John Hansen, Kaiser Permanente Northern California; David Mayer, University of Colorado Anschutz Medical Campus; Charlene McEvoy, HealthPartners Institute; Allison L. Naleway, Kaiser Permanente Center for Health Research; Varsha Neelam, National Center for Immunization and Respiratory Diseases, CDC; Caitlin Ray, National Center for Immunization and Respiratory Diseases, CDC; Colin Rogerson, Regenstrief Institute; S. Bianca Salas, Kaiser Permanente Southern California; Tamara Sheffield, Intermountain Health; Lina S. Sy, Kaiser Permanente Southern California; Duck-Hye Yang, Westat, Inc.; Ousseny Zerbo, Kaiser Permanente Northern California.

U.S. Flu Vaccine Effectiveness Network collaborators

Tara Curley, Washington University School of Medicine in St. Louis; Kiran A. Faryar, University Hospitals Cleveland Medical Center; Joanna Kramer, Phoenix Children's Hospital; Jay Krishnan, University Hospitals Cleveland Medical Center; Taylor Kristicevich, Washington University School of Medicine in St. Louis; Aleda M. Leis, University of Michigan; Amanda McKillop, Baylor Scott & White Health; Lora Nordstrom, Valleywise Health; Leah Odame-Bamfo, Baylor Scott & White Health; Ivana A. Vaughn, Henry Ford Health; Emmanuel B. Walter, Duke Human Vaccine Institute; Elizabeth Wettick, University of Pittsburgh Student Health Services; Brianna M. Wickersham, Kaiser Permanente Washington Health Research Institute; Olivia L. Williams, Duke Human Vaccine Institute; Brian D. Williamson, Kaiser Permanente Washington Health Research Institute; Richard K. Zimmerman, University of Pittsburgh School of Medicine.

New Vaccine Surveillance Network collaborators

Haris M. Ahmad, National Center for Immunization and Respiratory Diseases, CDC; Christina Albertin, University of Rochester School of Medicine and Dentistry; Vasanthi Avadhanula, Baylor College of Medicine and Texas Children's Hospital; James D. Chappell, Vanderbilt University Medical Center; Juliana DaSilva, National Center for Immunization and Respiratory Diseases, CDC; Janet A. Englund, Seattle Children's Research Institute; Megan C. Freeman, UPMC Children's Hospital of Pittsburgh and University of Pittsburgh School of Medicine; Lisa M. Keong, National Center for Immunization and Respiratory Diseases, CDC; Eileen J. Klein, Seattle Children's Research Institute; Mary E. Moffatt, Children's Mercy and University of Missouri-Kansas City School of Medicine; Daniel C. Payne, Cincinnati Children's Hospital Medical Center and University of Cincinnati College of Medicine; Leila C. Sahni, Baylor College of Medicine and Texas Children's Hospital; Elizabeth P. Schlaudecker, Cincinnati Children's Hospital Medical Center and University of Cincinnati College of Medicine; Rangaraj Selvarangan, Children's Mercy and University of Missouri-Kansas City School of Medicine; Laura S. Stewart, Vanderbilt University Medical Center; Peter G. Szilagyi, University of Rochester School of Medicine and Dentistry and UCLA Department of Pediatrics; John V. Williams, UPMC Children's Hospital of Pittsburgh and University of Pittsburgh School of Medicine and University of Wisconsin School of Medicine and Public Health.

Corresponding author: Patrick Maloney, pmaloney@cdc.gov.

[1]Influenza Division, National Center for Immunization and Respiratory Diseases, CDC; [2]Epidemic Intelligence Service, CDC; [3]Department of Biomedical Informatics, Columbia University Irving Medical Center, New York, New York; [4]Medical Informatics Services, New York-Presbyterian Hospital, New York, New York; [5]HealthPartners Institute, Minneapolis, Minnesota; [6]Division of Infectious Diseases and Clinical Epidemiology, Intermountain Health, Salt Lake City, Utah; [7]Kaiser Permanente Vaccine Study Center, Kaiser Permanente Northern California Division of Research, Oakland, California; [8]Department of Research & Evaluation, Kaiser Permanente Southern California, Pasadena, California; [9]Kaiser Permanente Bernard J. Tyson School of Medicine, Pasadena, California; [10]Kaiser Permanente Center for Health Research, Portland, Oregon; [11]Center for Biomedical Informatics, Regenstrief Institute, Indianapolis, Indiana; [12]School of Medicine, Indiana University, Indianapolis, Indiana; [13]Department of Biomedical Informatics, University of Colorado Anschutz Medical Campus, Aurora, Colorado; [14]Westat, Inc., Rockville, Maryland; [15]Children's Mercy Kansas City and University of Missouri—Kansas City School of Medicine, Kansas City, Missouri; [16]Seattle Children's Research Institute and University of Washington School of Medicine, Seattle, Washington; [17]UPMC Children's Hospital of Pittsburgh and University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; [18]Department of Pediatrics, Baylor College of Medicine and Texas Children's Hospital, Houston, Texas; [19]Department of Pediatrics, Vanderbilt University Medical Center, Nashville, Tennessee; [20]Cincinnati Children's Hospital Medical Center and Department of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, Ohio; [21]University of Rochester School of Medicine and Dentistry, Rochester, New York; [22]Washington University School of Medicine, Department of Emergency Medicine, St. Louis, Missouri; [23]University Hospitals Cleveland Medical Center, Case Western Reserve University School of Medicine, Cleveland, Ohio; [24]University of Pittsburgh, School of Medicine, Department of Family Medicine, Pittsburgh, Pennsylvania; [25]Baylor Scott & White Health, Department of Pediatrics, Temple, Texas; Baylor College of Medicine, Department of Pediatrics, Temple, Texas; [26]Kaiser Permanente Washington Health Research Institute, Seattle, Washington; [27]Arizona State University, Biodesign Center for Personalized Diagnostics, College of Health Solutions and Health Observatory, Tempe, Arizona; [28]University of Michigan School of Public Health, Ann Arbor, Michigan; [29]Duke University, Duke Human Vaccine Institute, Durham, North Carolina; [30]Coronaviruses and Other Respiratory Viruses Division, National Center for Immunization and Respiratory Diseases, CDC.

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References

1. Grohskopf LA, Blanton LH, Ferdinands JM, Reed C, Dugan VG, Daskalakis DC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2025–26 influenza season. MMWR Morb Mortal Wkly Rep 2025;74:500–7. PMID:40879559 https://doi.org/10.15585/mmwr.mm7432a2
2. Doll MK, Pettigrew SM, Ma J, Verma A. Effects of confounding bias in coronavirus disease 2019 (COVID-19) and influenza vaccine effectiveness test-negative designs due to correlated influenza and COVID-19 vaccination behaviors. Clin Infect Dis 2022;75:e564–71. PMID:35325923 https://doi.org/10.1093/cid/ciac234
3. Greenland S, Mansournia MA, Altman DG. Sparse data bias: a problem hiding in plain sight. BMJ 2016;352:i1981. PMID:27121591 https://doi.org/10.1136/bmj.i1981
4. Belongia EA, Simpson MD, King JP, et al. Variable influenza vaccine effectiveness by subtype: a systematic review and meta-analysis of test-negative design studies. Lancet Infect Dis 2016;16:942–51. PMID:27061888 https://doi.org/10.1016/S1473-3099(16)00129-8
5. Shen Y, Zhang D, Feng Z, et al. Modest protection from vaccination against influenza A(H3N2) subclade K, Beijing, China, 2025/26 season. Euro Surveill 2026;31:2600096. PMID:41716086 https://doi.org/10.2807/1560-7917.ES.2026.31.7.2600096
6. Separovic L, Sabaiduc S, Zhan Y, et al. Interim 2025/26 influenza vaccine effectiveness estimates with immuno-epidemiological considerations for A(H3N2) subclade K protection, Canada, January 2026. Euro Surveill 2026;31:2600068. PMID:41645799 https://doi.org/10.2807/1560-7917.ES.2026.31.5.2600068
7. Lucaccioni H, Marques DF, Kirsebom F, et al.; European IVE group. Influenza vaccine effectiveness from nine studies during drifted A(H3N2) subclade K predominance, Europe, September 2025 to January 2026. Euro Surveill 2026;31:2600109. PMID:41716088 https://doi.org/10.2807/1560-7917.ES.2026.31.7.2600109
8. Flannery B, Kondor RJG, Chung JR, et al. Spread of antigenically drifted influenza A(H3N2) viruses and vaccine effectiveness in the United States during the 2018–2019 season. J Infect Dis 2020;221:8–15. PMID:31665373 https://doi.org/10.1093/infdis/jiz543
9. Tenforde MW, Kondor RJG, Chung JR, et al. Effect of antigenic drift on influenza vaccine effectiveness in the United States–2019–2020. Clin Infect Dis 2021;73:e4244–50. PMID:33367650 https://doi.org/10.1093/cid/ciaa1884

Interim Estimates of 2025–26 Seasonal Influenza Vaccine Effectiveness — California, October 2025–January 2026

Sophie Zhu, PhD[1]; Joshua Quint, PhD[1]; Tomás M. León, PhD[1]; Nancy J. Li, MS[1]; Shantel Muldrew, MPH[1]; Charsey Porse, PhD[1]; Brendan Flannery, PhD[2]; Sascha Ellington, PhD[2]; Erin L. Murray, PhD[1]; Darpun Sachdev, MD[1]; Kalyani McCullough, MD[1]; Robert Schechter, MD[1]

Abstract

Interim estimates of state-level influenza vaccine effectiveness (VE) can help guide timely local public health actions for prevention and treatment of influenza. Linked influenza vaccination and public health influenza surveillance data from California allowed estimation of interim influenza VE by comparing the odds of seasonal influenza vaccination among persons who received positive and negative influenza test results reported to the California Department of Public Health (CDPH) using a case-control study design. During October 1, 2025–January 31, 2026, a total of 952,765 influenza laboratory test results were reported to CDPH. These data were analyzed, including results for 86,369 (9%) persons with receipt of a positive influenza test result (case-patients) and 866,396 (91%) with receipt of a negative test result (control patients). Overall, 22% of case-patients and 27% of control patients were vaccinated against influenza. Interim VE against any influenza was 33% for all age groups, 39% for children and adolescents aged 6 months–17 years, and 22% for adults aged ≥65 years; VE was 32% against a positive influenza A test result, and 47% against a positive influenza B test result. These results suggest that influenza vaccination was associated with reduced odds for laboratory-confirmed influenza among children and adults. CDPH recommends annual influenza vaccination for all persons aged ≥6 months to reduce the risk for influenza and influenza-associated adverse health outcomes.

Introduction

During October 1, 2025–January 31, 2026, influenza virus infection has caused approximately 22–38 million illnesses, 280,000–590,000 hospitalizations, and 12,000–60,000 deaths across the United States (*1*). In California, influenza activity during the 2025–26 season has been comparable to that in the rest of the United States and has been characterized by moderate disease severity. Influenza vaccines reduce the risk for influenza complications, and antiviral treatment decreases risk for severe disease among persons who are hospitalized, have severe or progressive illness, or are at increased risk for influenza-associated complications.

Seasonal influenza vaccine effectiveness (VE) varies by season, antigenic similarity between vaccine and circulating viruses, and patient characteristics (*2*). Early reports of circulation of antigenically drifted influenza A(H3N2) subclade K viruses raised concerns about potentially low seasonal influenza VE; 92% of genetically characterized viruses in the United States were subclade K *(3)*. However, initial estimates suggested protection against A(H3N2) hospitalization (*4*).

Since the 2023–24 influenza season, the California Department of Public Health (CDPH) has estimated influenza VE in California using linked laboratory reporting and state vaccination data (*5*,*6*). Reporting of positive influenza laboratory test results in California began on October 1, 2019, and negative results have been reported since June 15, 2023. Since January 1, 2023, California state law has required providers to document administered influenza vaccines in California's immunization information system (IIS), permitting estimation of VE against circulating influenza viruses to guide timely local public health action for prevention and treatment of influenza. This report provides interim estimates of 2025–26 seasonal influenza VE against a positive laboratory test result for influenza A or B in California during October 2025–January 2026.

Methods

Data Source and Study Design

VE against laboratory-confirmed influenza was estimated using a case-control design comparing the odds of current season influenza vaccination among persons aged ≥6 months with receipt of a positive influenza test result (case-patients) and those with a negative result (control patients). All persons who received testing for influenza using molecular nucleic acid amplification tests at laboratory, hospital, pharmacy, ambulatory, or community-based testing facilities in California and were reported to CDPH during October 1, 2025–January 31, 2026, were eligible for inclusion. Persons who received a positive SARS-CoV-2 test result were not systematically excluded.

Data Analysis

Information on patient age, race and ethnicity, county of residence, week of specimen collection, and influenza virus type and subtype results (if available) were extracted from influenza laboratory test reports. Subtyping was performed primarily by local public health laboratories and CDPH, as well as clinical laboratories; approximately 10% of influenza A–positive samples at these laboratories were subtyped. Influenza A samples were

selected for sequencing based on sample cycle threshold (an indirect measure of the concentration of virus in the sample) and regional representativeness. As previously reported (*5*,*6*), influenza test results and vaccination records were linked using fuzzy matching.* Among persons with receipt of more than one influenza test result during a season, the earliest positive test result was used to identify influenza case-patients, and among persons who never received a positive test result, the earliest negative test result was used to identify control patients. Negative results were considered likely to be underreported because the level of test positivity (≥50%) was inconsistent with trends for laboratories with comparable test volume and statewide trends; therefore, results from laboratories that reported ≥50% positive influenza test results and those that did not report consistently (i.e., reported varying results from week to week) were excluded. These excluded results represented approximately 5% of total laboratory reports. A person was considered to be vaccinated against influenza if vaccination records from California's IIS documented receipt of ≥1 dose of 2025–26 seasonal influenza vaccine ≥14 days before influenza testing during August 1, 2025–January 31, 2026. Persons who were vaccinated <14 days before their test date were excluded.

VE Calculation

Adjusted VE against laboratory-confirmed influenza was estimated as (1 – adjusted odds ratio [aOR] × 100%), where aOR is the odds of vaccination among influenza test-positive case-patients compared with that among test-negative control patients. Using mixed-effects logistic regression, estimates were adjusted for age and race and ethnicity as fixed effects, and for specimen collection week and county of residence as random effects. Separate analyses were conducted to estimate VE by influenza type (A or B), age group, and vaccine type among certain age groups. All analyses were performed using R software (version 4.5.1; R Foundation). This activity was reviewed by CDPH and CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.†

Results

Influenza Test Results and Virus Type Among Those who Received Positive Results

During October 1, 2025–January 31, 2026, a total of 952,765 influenza laboratory test results meeting inclusion criteria were reported to CDPH, including 86,369 (9%) positive and 866,396 (91%) negative test results. Among positive influenza test results, 82,763 (96%) were influenza type A, and 3,606 (4%) were type B (Table 1). Among 8,071 (10%) influenza A–positive results with subtype information available, 1,954 (24%) were A(H1N1)pdm09, and 6,117 (76%) were A(H3N2). Among 116 A(H3N2) viruses sequenced, 108 (93%) were subclade K, similar to national patterns.

Percentage of Positive and Negative Influenza Test Results Among Vaccinated Patients

Overall, 254,155 (27%) persons had documentation of receipt of the 2025–26 influenza vaccine, including

TABLE 1. Number and percentage of patients who received positive and negative influenza test results, by demographic characteristics, influenza virus type, and vaccination status — California, October 2025–January 2026

Characteristic	Total	Influenza test result, no. (%)	
		Positive (case-patients)	Negative (control patients)
Total	**952,765 (100.0)**	**86,369 (9.0)**	**866,396 (91.0)**
Median age, yrs (IQR)	**44 (18–69)**	23 (9–51)	46 (20–70)
Race			
American Indian or Alaska Native	**5,442 (0.6)**	457 (0.5)	4,985 (0.6)
Asian	**82,867 (8.8)**	9,489 (11.0)	73,378 (8.5)
Black or African American	**73,554 (7.7)**	5,126 (5.9)	68,428 (7.9)
Native Hawaiian or Pacific Islander	**6,809 (0.7)**	636 (0.7)	6,173 (0.7)
White	**397,449 (41.7)**	30,767 (35.6)	366,682 (42.3)
Other	**223,163 (23.4)**	23,412 (27.1)	199,751 (23.1)
Unknown	**162,481 (17.1)**	16,482 (19.2)	146,999 (16.9)
Ethnicity			
Hispanic or Latino	**252,860 (26.5)**	26,505 (30.7)	226,355 (26.1)
Not Hispanic or Latino	**529,824 (55.6)**	43,621 (50.5)	486,203 (56.1)
Unknown	**170,081 (17.9)**	16,243 (18.8)	153,838 (17.8)
Sex (n = 952,665)			
Female	**519,184 (54.5)**	46,565 (53.9)	472,619 (54.6)
Male	**432,544 (45.4)**	39,647 (45.9)	392,897 (45.3)
Unknown	**937 (0.1)**	154 (0.2)	783 (0.1)
Influenza virus type			
A	—	82,763 (95.8)*	—
B	—	3,606 (4.2)	—
Month vaccinated			
Oct 1–31	**26,862 (14.3)**	207 (10.7)	26,655 (14.3)
Nov 1–30	**48,772 (25.3)**	662 (16.7)	48,110 (25.3)
Dec 1–30	**81,141 (30.3)**	6,258 (20.6)	74,883 (31.6)
Jan 1–31	**97,380 (32.2)**	11,561 (23.0)	85,819 (34.0)
Total	**254,155 (26.7)**	18,688 (21.6)	235,467 (27.2)
No. of days between vaccination and receipt of test result, median (IQR)	**68 (42–96)**	87 (61–108)	67 (41–95)
Receipt of high-dose, adjuvanted, or recombinant vaccine (patients aged ≥65 yrs)			
Received	**112,699 (92.8)**	5,173 (91.7)	107,526 (92.9)
Did not receive	**8,530 (7.2)**	465 (8.3)	8,065 (7.1)

* Among 8,071 (10%) influenza A–positive results with subtype information available, 1,954 (24%) were A(H1N1)pdm09, and 6,117 (76%) were A(H3N2). Among 116 A(H3N2) viruses sequenced, 108 (93%) were subclade K.

* California influenza testing and immunization registries were matched using a probabilistic algorithm with exact match for date of birth and fuzzy match (similar and partially matching, but not identical) with a 95% cutoff for first name, last name, and county of residence.

† 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

18,688 (22%) persons with receipt of a positive influenza test result and 235,467 (27%) with receipt of a negative result. A majority of vaccinated adults aged ≥65 years (112,699 of 121,229; 93%) had documentation of receiving a preferentially recommended vaccine (high-dose, adjuvanted, or recombinant vaccine), per the recommendation from CDC's Advisory Committee on Immunization Practices (*7*).

VE

Adjusted VE was 33% against receiving a positive influenza (A or B) test result, 32% against receiving a positive influenza A test result, and 47% against receiving a positive influenza B test result (Table 2). By age group, VE was 39% among persons aged <18 years, 34% among adults aged 18–49 years, 31% among adults aged 50–64 years, and 22% among adults aged ≥65 years. Among children and adolescents aged 2–17 years who were eligible for live attenuated influenza vaccine (LAIV), VE was 55% for LAIV and 39% for standard-dose inactivated influenza vaccine. VE by vaccine product type among adults aged ≥65 years was 39% for recombinant vaccine, 22% for adjuvanted and high-dose vaccines, and 16% for standard-dose inactivated influenza vaccines.

Discussion

Analysis of California surveillance data from influenza vaccination and laboratory reporting systems suggests that seasonal influenza vaccination provided protection against laboratory-confirmed influenza across all age groups during October 2025–January 2026. VE was higher among younger age groups and declined with increasing age, was higher against influenza B viruses, and was slightly higher for LAIV among children aged 2–17 years. VE estimates are consistent with California influenza VE from previous years (*5*,*6*). Influenza vaccination has been demonstrated to reduce the risk for influenza illness and severe outcomes associated with influenza, including hospitalization and death among children and adults (*8*,*9*). Influenza vaccination was recommended for the 2025–26 influenza season for all persons aged ≥6 months (*7*).

Interim VE estimates against influenza A–positive test results suggest that influenza vaccination has provided protection

TABLE 2. Vaccine effectiveness among patients who received a 2025–26 influenza vaccine, by influenza test result, influenza virus type and vaccine received, and age group — California, October 2025–January 2026

Influenza virus type, vaccine received, and age group	Influenza test result				Vaccine effectiveness*
	Positive (case-patients)		Negative (control patients)		
	Total	Vaccinated, no. (row %)†	Total	Vaccinated, no. (row %)†	% (95% CI)
Any influenza (A or B)	**86,369**	18,688 (22)	**866,396**	235,467 (27)	33 (32–34)
6 mos–17 yrs	**36,726**	6,897 (19)	**198,561**	40,248 (20)	39 (37–41)
2–17 yrs§	**32,614**	5,897 (18)	**153,836**	29,697 (19)	40 (38–42)
LAIV	**170**	170 (3)¶	—	1,166 (4)¶	55 (46–62)
IIV–SD	—	5,472 (93)¶	—	27,003 (96)¶	39 (36–41)
18–49 yrs	**27,660**	4,074 (15)	**263,387**	45,001 (17)	34 (31–36)
50–64 yrs	**8,513**	2,079 (24)	**131,337**	34,627 (26)	31 (27–34)
≥65 yrs**	**13,470**	5,638 (42)	**273,111**	115,591 (42)	22 (19–25)
IIV–HD	—	3,673 (65)¶	—	76,986 (67)¶	22 (19–26)
RIV	—	116 (2)¶	—	2,734 (2)¶	39 (26–49)
aIIV	—	1,384 (25)¶	—	27,806 (24)¶	22 (17–27)
IIV–SD	—	465 (8)¶	—	8,065 (7)¶	16 (7–23)
Influenza A	**82,763**	18,145 (22)	**866,396**	235,467 (27)	32 (31–33)
6 mos–17 yrs	**34,806**	6,591 (19)	**198,561**	40,248 (20)	39 (37–40)
18–49 yrs	**26,278**	3,900 (15)	**263,387**	45,001 (17)	33 (30–35)
50–64 yrs	**8,326**	2,045 (25)	**131,337**	34,627 (26)	31 (27–34)
≥65 yrs	**13,353**	5,609 (42)	**273,111**	115,591 (42)	22 (19–25)
Influenza B	**3,606**	543 (15)	**866,396**	235,467 (27)	47 (42–52)
6 mos–17 yrs	**1,920**	306 (16)	**198,561**	40,248 (20)	46 (39–53)
18–49 yrs	**1,382**	174 (13)	**263,387**	45,001 (17)	47 (38–55)
50–64 yrs	**187**	34 (18)	**131,337**	34,627 (26)	47 (23–63)
≥65 yrs	**117**	29 (25)	**273,111**	115,591 (42)	56 (32–71)

Abbreviations: aIIV = adjuvanted inactivated influenza vaccine; IIV-HD = inactivated influenza vaccine, high dose; IIV-SD = inactivated influenza vaccine, standard dose; LAIV = live attenuated influenza vaccine; RIV = recombinant influenza vaccine.

* Adjusted for age (natural cubic spline) and race and ethnicity as fixed effects and specimen collection week, and county of residence as random effects using mixed-effects logistic regression.

† Row percent, except as indicated (percentage who received each vaccine calculated from among persons vaccinated).

§ Children aged <2 years are not eligible for LAIV and were not included in this analysis. All vaccines, including IIV-SD, were compared with no influenza vaccination as the referent group.

¶ Calculated as percentage of persons vaccinated (column %).

** Adults aged ≥65 years are preferentially recommended to receive IIV-HD, RIV, or aIIV (https://dx.doi.org/10.15585/mmwr.mm7432a2). All vaccines, including IIV-SD, were compared with no influenza vaccination as the referent group.

Summary

What is already known about this topic?

Influenza vaccine effectiveness (VE) varies annually by season, antigenic similarity between vaccine and circulating viruses, and patient characteristics. VE can be estimated using paired laboratory surveillance and vaccination data. Annual influenza vaccination is recommended; U.S. influenza vaccines remain available for persons aged ≥6 months.

What is added by this report?

In California, estimated influenza VE against laboratory-confirmed influenza for all age groups in California during October 2025–January 2026 was 33% (32% against influenza A and 47% against influenza B).

What are the implications for public health practice?

State reporting requirements for laboratory surveillance and vaccination data allow for early-season influenza VE estimates. Influenza vaccination is recommended for eligible persons while seasonal influenza viruses are circulating. State-level interim VE estimates provide information to public health officials to facilitate timely local public health actions for prevention and treatment.

against antigenically drifted A(H3N2) clade K viruses that have predominated in California and in other areas of the United States during the current season. Estimates were consistent with interim VE estimates from Canada (40% overall against A[H3N2]) (*10*).

California's influenza vaccination and laboratory reporting requirements permit interim VE estimates using routine surveillance data; these estimates contribute state-level data to national estimates and can be considered alongside CDC VE surveillance systems (*6*). Interim VE estimates were shared with California local health jurisdictions during January 2026 to help guide influenza vaccination and treatment messaging and actions.

Limitations

The findings in this report are subject to at least five limitations. First, VE estimates are preliminary and are limited to California; multiple influenza viruses circulate nationally, and VE might vary geographically. Second, influenza test result and vaccination data might be incomplete and affect the calculated VE. Third, children and adolescents aged 6 months–8 years who received only 1 dose of 2025–26 vaccine during their first influenza season, when 2 doses are required to be considered fully vaccinated (*7*), might be misclassified as fully vaccinated, which could have resulted in an underestimate of VE. Fourth, data on clinical outcomes (e.g., hospitalization or death) and testing settings (e.g., outpatient, inpatient, or intensive care unit) were not available to compare VE by setting. Finally, other potential sources of confounding, including previous influenza vaccination, preexisting conditions, and health-seeking behavior, were not controlled for in the analyses.

Implications for Public Health Practice

VE estimates from surveillance systems based on different approaches contribute to evaluation of influenza vaccine benefit. Interim estimates of state-level influenza VE calculated while influenza viruses are still circulating can provide information to public health officials to facilitate timely local public health actions for prevention and treatment of influenza, such as reinforced vaccination messaging, and contribute data to national estimates.

Annual influenza vaccination is recommended by the Advisory Committee on Immunization Practices and CDPH; influenza vaccines remain available for persons aged ≥6 months. Eligible persons who have not yet been vaccinated are recommended to receive influenza vaccine while influenza viruses are circulating. Influenza vaccines protect against influenza and its complications, and early treatment with influenza antiviral medications decreases risk for severe disease and hospitalization.

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Cora Hoover, Monica Sun, Cynthia Yen, California Department of Public Health; Seema Jain, San Francisco Department of Public Health.

Corresponding author: Sophie Zhu, sophie.zhu@cdph.ca.gov.

[1]California Department of Public Health, Richmond, California; [2]Influenza Division, National Center for Immunization and Respiratory Diseases, CDC.

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References

1. CDC. Preliminary estimated flu disease burden 2025–2026 flu season. Atlanta, GA: US Department of Health and Human Services, CDC; 2025. Accessed January 4, 2026. https://www.cdc.gov/flu-burden/php/php/data-vis/2025-2026.html
2. Dhakal S, Klein SL. Host factors impact vaccine efficacy: implications for seasonal and universal influenza vaccine programs. J Virol 2019;93:e00797–19. PMID:31391269 https://doi.org/10.1128/JVI.00797-19
3. World Health Organization. Recommended composition of influenza virus vaccines for use in the 2026 southern hemisphere influenza season 2025. Geneva, Switzerland: World Health Organization; 2025. https://cdn.who.int/media/docs/default-source/influenza/who-influenza-recommendations/vcm-sh-2025/a.-26-september-2025-recommended-composition-of-influenza-virus-vaccines-for-use-in-the-2026-southern-hemisphere-influenza-season---full-report.pdf
4. Kirsebom FC, Thompson C, Talts T, et al. Early influenza virus characterisation and vaccine effectiveness in England in autumn 2025, a period dominated by influenza A(H3N2) subclade K. Euro Surveill 2025;30:2500854. PMID:41267661 https://doi.org/10.2807/1560-7917.ES.2025.30.46.2500854

5. Zhu S, Quint J, León TM, et al. Interim influenza vaccine effectiveness against laboratory-confirmed influenza—California, October 2023–January 2024. MMWR Morb Mortal Wkly Rep 2024;73:175–9. PMID:38421946 https://doi.org/10.15585/mmwr.mm7308a4
6. Zhu S, Quint J, León TM, et al. Estimating influenza vaccine effectiveness against laboratory-confirmed influenza using linked public health information systems, California, 2023–2024 season. J Infect Dis 2025;232:1249–57. PMID:40359401 https://doi.org/10.1093/infdis/jiaf248
7. Grohskopf LA, Blanton LH, Ferdinands JM, Reed C, Dugan VG, Daskalakis DC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2025–26 influenza season. MMWR Morb Mortal Wkly Rep 2025;74:500–7. PMID:40879559 https://doi.org/10.15585/mmwr.mm7432a2
8. Tenforde MW, Reeves EL, Weber ZA, et al. Influenza vaccine effectiveness against hospitalizations and emergency department or urgent care encounters for children, adolescents, and adults during the 2023–2024 season, United States. Clin Infect Dis 2025;81:667–78. PMID:39656838 https://doi.org/10.1093/cid/ciae597
9. Yegorov S, Patel OD, Sharma H, et al. Effectiveness of influenza vaccination to prevent severe disease: a systematic review and meta-analysis of test-negative design studies. Clin Microbiol Infect 2026;32:219–29. PMID:41093140 https://doi.org/10.1016/j.cmi.2025.09.023
10. Separovic L, Sabaiduc S, Zhan Y, et al. Interim 2025/26 influenza vaccine effectiveness estimates with immuno-epidemiological considerations for A(H3N2) subclade K protection, Canada, January 2026. Euro Surveill 2026;31:2600068. PMID:41645799 https://doi.org/10.2807/1560-7917.ES.2026.31.5.2600068

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