Official websites use .gov A .gov website belongs to an official government organization in the United States. Secure .gov websites use HTTPS A lock ( ) or https:// means you've safely connected to the .gov website. Share sensitive information only on official, secure websites. The Influenza Division at CDC collects, compiles, and analyzes information on influenza activity year-round in the United States. FluView, a weekly influenza surveillance report, and FluView Interactive, an online application that allows for more in-depth exploration of influenza surveillance data, are updated each week. The data presented each week are preliminary and may change as more data are received. The U.S. influenza surveillance system is a collaborative effort between CDC and its many partners in state, local, and territorial health departments, public health and clinical laboratories, vital statistics offices, health care providers, hospitals, clinics, emergency departments, and long-term care facilities. Information in five categories is collected from nine data sources in order to: It is important to maintain a comprehensive system for influenza surveillance for the following reasons: 1. Virologic Surveillance U.S. World Health Organization (WHO) Collaborating Laboratories System and the National Respiratory and Enteric Virus Surveillance System (NREVSS) – Approximately 100 public health and approximately 300 clinical laboratories located throughout all 50 states, Puerto Rico, Guam, and the District of Columbia participate in virologic surveillance for influenza through either the U.S. WHO Collaborating Laboratories System or NREVSS. Influenza testing practices differ between public health and clinical laboratories, and each network provides valuable information for monitoring influenza activity. Clinical laboratories primarily test respiratory specimens for diagnostic purposes, and data from these laboratories provide useful information on the timing and intensity of influenza activity. Public health laboratories primarily test specimens for surveillance purposes to understand what influenza virus types, subtypes, and lineages are circulating and the ages of people that are infected. All public health and clinical laboratories report each week to CDC the total number of

respiratory specimens tested for influenza and the number positive for influenza viruses, along with age or age group of the person, if available. CDC presents data from clinical laboratories that include the weekly total number of specimens tested for influenza, the number of positive influenza tests, and the percent positive by influenza virus type. For public health laboratories, CDC presents the weekly total number of specimens tested and the number positive by influenza virus type and subtype/lineage. In order to obtain specimens in an efficient manner, public health laboratories often receive samples that have already tested positive for influenza at a clinical laboratory. As a result, monitoring the percent of specimens testing positive for influenza in a public health laboratory is less useful (i.e., we expect a higher percent positive than what is actually occurring in the community). In order to use each data source most appropriately and to avoid duplication, reports from public health and clinical laboratories are presented separately in both FluView and FluView Interactive. The age distribution of people who have tested positive for influenza reported from public health laboratories can be visualized in FluView Interactive. The number and proportion of influenza virus-positive specimens by influenza A subtype and influenza B lineage are presented by age group (0-4 years, 5-24 years, 25-64 years, and ≥65 years) each week and cumulative totals are provided for the season. Additional laboratory data for current and past seasons and by geographic level (national, Department of Health and Human Services (HHS) region, and state) are available on FluView Interactive. Virus Characterization – This includes genetic and antigenic characterization. Most viruses submitted for virus characterization in the United States come from state and local public health laboratories. Due to Right Size considerations, public health laboratories are asked to submit to CDC the following specimens, if available, every other week during the 2023-2024 season: 4 influenza A(H1N1)pdm09, 6 influenza A(H3N2), 4 influenza B/Victoria-lineage, and all influenza B/Yamagata-lineage viruses. Therefore, the number of viruses characterized will not reflect the actual proportion of circulating

viruses. The goals of genetic and antigenic characterization are to assess how similar the currently circulating influenza viruses are to viruses used to produce current influenza vaccines and to monitor evolutionary changes that continually occur in influenza viruses circulating in humans. Specimens received from public health laboratories for virus characterization also serve as an important source of viruses to create candidate vaccine viruses for use in future influenza seasons.
For genetic characterization, all influenza-positive surveillance samples received at CDC undergo next-generation sequencing to determine their genetic identity. This analysis identifies circulating influenza viruses and helps monitor the evolutionary trajectory of viruses circulating in the human population. Sequences of virus gene segments are used for phylogenetic analysis, which allows categorization of viruses by genetic clades/subclades based on the similarity of the hemagglutinin gene segment and changes in the protein sequence. However, genetic changes that classify the clades/subclades do not always result in antigenic changes. Antigenic characterization is performed on a subset of viruses representing the genetic diversity in the population. Analysis includes hemagglutination inhibition and/or neutralization assays to compare antigenic properties of circulating viruses to those of cell culture- and egg-propagated reference viruses that represent viruses used in the current influenza vaccines. This allows for the detection of “antigenic drift”, a term that describes the gradual antigenic change that occurs as viruses evolve to escape host immune pressure. CDC also analyzes influenza viruses collected by public health laboratories for susceptibility to influenza antivirals, including neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) and a PA cap-dependent endonuclease inhibitor (baloxavir). Susceptibility to the neuraminidase inhibitors is assessed using next-generation sequencing analysis. Neuraminidase sequences of viruses are inspected to detect the presence of amino acid substitutions previously associated with reduced or highly reduced inhibition by any of the three neuraminidase inhibitors. In addition, a subset of viruses is tested using a

neuraminidase inhibition assay. The level of neuraminidase activity inhibition is reported using the thresholds recommended by the WHO Expert Working Group of the Global Influenza Surveillance and Response System (GISRS). Susceptibility to baloxavir is assessed using next-generation sequencing analysis to identify amino acid substitutions in the PA protein previously associated with reduced susceptibility to this antiviral. A subset of representative viruses is also tested phenotypically using a cell culture-based assay (e.g., influenza replication inhibition neuraminidase-based assay – IRINA). For surveillance purposes, antiviral susceptibility is typically conducted on viruses that are collected from patients not treated with influenza antivirals or before initiation of treatment. Results of genetic and antigenic characterization and antiviral susceptibility testing are presented in the virus characterization and antiviral resistance sections of the FluView report. Surveillance for Novel Influenza A Viruses – In 2007, human infection with a novel influenza A virus became a nationally notifiable condition in the United States. Novel influenza A virus infections include all human infections with influenza A viruses that are different from currently circulating human seasonal influenza H1 and H3 viruses. These viruses include those that are subtyped as nonhuman in origin and those that cannot be subtyped with standard laboratory methods and reagents. Rapid detection and reporting of human infections with novel influenza A viruses – viruses against which there is often little to no pre-existing immunity in the population – is important to facilitate prompt awareness and characterization of influenza A viruses with pandemic potential and accelerate the implementation of public health responses to limit the transmission and impact of these viruses. Newly identified cases of human infections with novel influenza A viruses in the United States are reported in FluView and additional information, including case counts by geographic location, virus subtype, and calendar year or season, are available on FluView Interactive. 2. Outpatient Illness Surveillance Information on outpatient visits to health care providers for respiratory illness referred to as influenza-like illness

[ILI) is collected through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet). ILINet consists of outpatient healthcare providers in all 50 states, Puerto Rico, the District of Columbia, and the U.S. Virgin Islands. More than 110 million patient visits were reported during the 2022-23 season. Each week, more than 3,400 outpatient health care providers around the country report to CDC the number of patient visits for ILI by age group (0-4 years, 5-24 years, 25-49 years, 50-64 years, and ≥65 years) and the total number of visits for any reason. A subset of providers also reports total visits by age group. For this system, ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat. Since the 2021-22 season, the case definition no longer includes “without a known cause other than influenza”. Since ILINet monitors visits for ILI and not laboratory-confirmed respiratory viruses, it will capture visits due to any respiratory pathogen that presents with the symptoms of fever plus cough or sore throat. These data should be evaluated in the context of other surveillance data to obtain a complete and accurate picture of influenza activity. Additional data on medically attended visits for ILI for current and past seasons and by geographic level (national, HHS region, and state) are available on FluView Interactive. The national percentage of patient visits to healthcare providers for ILI reported each week is calculated by combining state-specific data weighted by state population. This percentage is compared each week with to the national baseline, which is 2.9% for the 2023-2024 influenza season. The baseline is developed by calculating the mean percentage of patient visits for ILI during non-influenza weeks for the most recent two seasons and adding two standard deviations (2021-2022 and 2022-2023). A non-influenza time period (e.g., a “non-influenza week”) is defined as two or more consecutive weeks in which each week accounted for less than 2% of the season’s total number of specimens that tested positive for influenza in public health laboratories. Region-specific baselines are calculated using the same methodology. Due to the wide variability in regional level data, it is not appropriate to apply the national baseline to

regional data. Regional baselines for the 2023-2024 influenza season are: Region 1 —1.9%

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont Region 2 — 4.2%

New Jersey, New York, Puerto Rico, and the U.S. Virgin Islands Region 3 — 2.4%

Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia Region 4 — 3.3%

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee Region 5 — 2.3%

Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin Region 6 — 3.7%

Arkansas, Louisiana, New Mexico, Oklahoma, and Texas Region 7 — 2.0%

Iowa, Kansas, Missouri, and Nebraska Region 8 — 3.2%

Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming Region 9 — 3.6%

Arizona, California, Hawaii, and Nevada Region 10 — 1.9%

Alaska, Idaho, Oregon, and Washington ILI Activity Indicator Map: — Activity levels in a jurisdiction are based on the percent of outpatient visits due to ILI compared to the average percent of ILI visits that occur during weeks with little or no influenza virus circulation (non-influenza weeks) in that jurisdiction. The number of sites reporting each week is variable; therefore, baselines are adjusted each week based on which sites within each jurisdiction provide data. To perform this adjustment, provider level baseline ILI ratios are calculated for providers that have a sufficient reporting history. Providers that do not have the required reporting history to calculate a provider-specific baseline are assigned the baseline ratio for their practice type. The jurisdiction level baseline is then calculated using a weighted sum of the baseline ratios for each contributing provider. The activity levels compare the mean reported percent of visits due to ILI during the current week to the mean reported percent of visits due to ILI during non-influenza weeks. The 13 activity levels correspond to the number of

standard deviations below, at, or above the mean for the current week compared to the mean during non-influenza weeks. Activity levels are classified as minimal (levels 1-3), low (levels 4-5), moderate (levels 6-7), high (levels 8-10), and very high (levels 11-13). An activity level of 1 corresponds to an ILI percentage below the mean, level 2 corresponds to an ILI percentage less than 1 standard deviation above the mean, level 3 corresponds to an ILI percentage more than 1 but less than 2 standard deviations above the mean, and so on, with an activity level of 10 corresponding to an ILI percentage 8 to 11 standard deviations above the mean. The very high levels correspond to an ILI percentage 12 to 15 standard deviations above the mean for level 11, 16 to 19 standard deviations above the mean for level 12, and 20 or more standard deviations above the mean for level 13. The ILI Activity Indicator map reflects the intensity of ILI activity, not the extent of geographic spread of ILI, within a jurisdiction. Therefore, outbreaks occurring in a single area could cause the entire jurisdiction to display high or very high activity levels. In addition, data collected in ILINet may disproportionally represent certain populations within a jurisdiction, and therefore, may not accurately depict the full picture of respiratory illness activity for the entire jurisdiction. Differences in the data presented here by CDC and independently by some health departments likely represent differing levels of data completeness with data presented by the health department likely being more complete. The ILI Activity Indicator Map displays state-specific and core-based statistical area (CBSA) specific activity levels by week for multiple seasons and allows a visual representation of relative levels of ILI activity from state to state. More information is available on FluView Interactive. 3. Hospitalization Surveillance FluSurv-NET Laboratory-confirmed influenza-associated hospitalizations are monitored through the Influenza Hospitalization Surveillance Network (FluSurv-NET). FluSurv-NET has conducted population-based surveillance for laboratory-confirmed influenza-related hospitalizations in children younger than 18 years of age since the 2003-2004 influenza

season and in adults since the 2005-2006 influenza season. The current network covers over 90 counties or county equivalents in the 10 Emerging Infections Program (EIP) states (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and four additional states through the Influenza Hospitalization Surveillance Project (MI, NC, OH, and UT). The network represents approximately 9% of US population (~30 million people). A full description of this system is available at Influenza Hospitalization Surveillance Network (FluSurv-NET). FluSurv-NET data including hospitalization rates for multiple seasons and different age groups and data on patient characteristics (such as virus type, demographic, and clinical information) are available on FluView Interactive. National Healthcare Safety Network (NHSN) Hospitalization Surveillance During the COVID-19 pandemic, all hospitals registered with CMS and non-CMS hospitals were required to report COVID-19 and influenza information on laboratory testing, capacity and utilization, and patient flows to facilitate the public health response to the 2019 Novel Coronavirus (COVID-19) pandemic. As of December 15, 2022, these data are required to be reported to CDC's NHSN, which monitors national and local trends in healthcare system stress, capacity, and community disease levels for approximately 6,000 hospitals in the United States. The detailed list of reported data elements are provided here. More information on the transition to the NHSN system can be found here: https://www.cdc.gov/nhsn/covid19/transition.html. Influenza data elements include: The numbers of new hospital admissions with laboratory-confirmed influenza virus infection reported to NHSN are aggregated by week at the national and HHS region level. New hospital admissions are defined as patients who were admitted to an inpatient bed on the previous calendar day and had a positive influenza test at admission or during the 14 days prior. Laboratory confirmation includes detection of influenza virus infection through molecular tests (e.g., polymerase chain reaction, nucleic acid amplification), antigen detection tests, immunofluorescence tests, and virus culture. For hospital reporting, laboratory-confirmed influenza is categorized as

influenza A or B. These datafiles are available to the public at https://data.cdc.gov/Public-Health-Surveillance/Respiratory-Virus-Response-RVR-United-States-Hospi/9t9r-e5a3. Number of hospital admissions, ICU hospitalizations, and hospital admissions rates for the current season and the 2022-2023 season by geographic level (national and HHS region) are available on FluView Interactive 4. Mortality Surveillance National Center for Health Statistics (NCHS) Mortality Surveillance Data – NCHS collects death certificate data from state vital statistics offices for all deaths occurring in the United States. Deaths included in this component of the U.S. Influenza Surveillance System are those which are classified based on ICD-10 multiple cause of death codes as associated with influenza, COVID-19, or pneumonia. Data are aggregated by the week of death occurrence. NCHS surveillance data are included in FluView one week after the week of death and percentages for earlier weeks are continually revised and may increase or decrease as new and updated death certificate data are received by NCHS. Three measures have been used to monitor influenza mortality: pneumonia and/or influenza (P&I); pneumonia, influenza, and/or COVID-19 (PIC); and influenza (I). Prior to the 2020-2021 influenza season, the NCHS surveillance data were used to calculate the percent of all deaths occurring each week that had pneumonia and/or influenza (P&I) listed as a cause of death. Since many influenza deaths and many COVID-19 deaths have pneumonia included on the death certificate, P&I does not measure the impact of influenza in the same way that it had prior to the COVID-19 pandemic. This is because the proportion of pneumonia deaths associated with influenza is now influenced by COVID-19-related pneumonia. Beginning in the 2020-2021 influenza season, COVID-19 coded deaths were added to P&I to create the PIC (pneumonia, influenza, and/or COVID-19) classification. PIC includes all deaths with pneumonia, influenza, and/or COVID-19 listed on the death certificate. Starting with the 2023-2024 influenza season, the percent of deaths with influenza listed on the death certificate will be displayed in FluView. P&I no longer measures the impact of influenza

in the same way it had prior to the COVID-19 pandemic, and the PIC measure is largely being driven COVID-19 activity making it difficult to monitor the impact of influenza using that measure. Although monitoring influenza-only coded deaths will underestimate the full impact of influenza mortality, this measure allows for tracking trends in the impact of influenza on mortality and is not as influenced by COVID-19 as the other two measures. Additionally, influenza burden estimates are calculated that account for underreporting of influenza on death certificates. All three measures will be available on FluView Interactive, including baselines and thresholds for P&I and PIC. The PIC and P&I percentages are compared to a seasonal baseline of P&I deaths that is calculated using a periodic regression model incorporating a robust regression procedure applied to data from the four years prior to the COVID-19 pandemic (2015 week 10 through 2020 week 9) and the 2022-2023 influenza season. An increase of 1.645 standard deviations above the seasonal baseline of P&I deaths is considered the "epidemic threshold," (i.e., the point at which the observed proportion of deaths attributed to pneumonia, influenza, or COVID-19 was significantly higher than would be expected at that time of the year in the absence of substantial influenza- or COVID-19-related mortality). Additional influenza, P&I and PIC mortality data for current and past seasons and by geographic level (national, HHS region, and state) are available on FluView Interactive. Data displayed on the regional and state-level are aggregated by the state of residence of the decedent. Influenza-Associated Pediatric Mortality Surveillance System — Influenza-associated pediatric mortality became a nationally notifiable condition in 2004. For surveillance purposes, an influenza-associated pediatric death is defined as a death in a person less than 18 years of age, resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory diagnostic test. There should be no period of complete recovery between the illness and death. Demographic and clinical information is collected on each case and reported to CDC. Information on influenza-associated

pediatric deaths including basic demographics, underlying medical conditions, bacterial co-infections, and place of death, is available on FluView Interactive for the current and past seasons. 5. Long-term Care Facilities The NHSN Long-term Care Facility influenza surveillance was reported during the 2021-2022 and 2022-2023 influenza seasons. This component was discontinued in 2023. Data from previous seasons influenza seasons will remain available in past weekly surveillance reports. It is important to remember the following about influenza surveillance in the United States. To receive weekly email updates about Seasonal Flu, enter your email address:

Source URL: https://www.cdc.gov/flu/weekly/overview.htm