

Influenza Hospitalization Surveillance Network (FluSurv-NET)

Purpose and Methods

About FluSurv-NET

Population-based surveillance is the collection, analysis and interpretation of data on a population in a specified area.

FluSurv-NET is a population-based surveillance system.

The Influenza Hospitalization Surveillance Network (FluSurv-NET) is a population-based surveillance system that collects data on laboratory-confirmed influenza-associated hospitalizations among children and adults through a network of acute care hospitals in 14 states.

Why FluSurv-NET Data is Important

FluSurv-NET is one of CDC's source's for important data on hospitalization rates associated with flu. FluSurv-NET also provides demographic and clinical information including age, sex and underlying medical conditions among persons hospitalized with flu. Data gathered are used to estimate age-specific hospitalization rates on a weekly basis and to describe characteristics of persons hospitalized with influenza illness.



Hospitalization Rates



Patient Characteristics

FluSurv-NET Case Definition

For FluSurv-NET, a case is defined as a person who is a resident in a defined FluSurv-NET catchment area and tests positive for influenza by a laboratory test ordered by a health care professional within 14 days prior to or during hospitalization. Laboratory confirmation is defined by a positive result of a viral culture, direct or indirect fluorescent antibody staining, rapid antigen test, or molecular assay.

How FluSurv-NET Calculates Hospitalization Rates

A minimum set of data are collected on all identified cases to produce weekly hospitalization rates:

- age
- sex
- race and ethnicity
- surveillance site
- date of hospital admission
- positive influenza test result/date

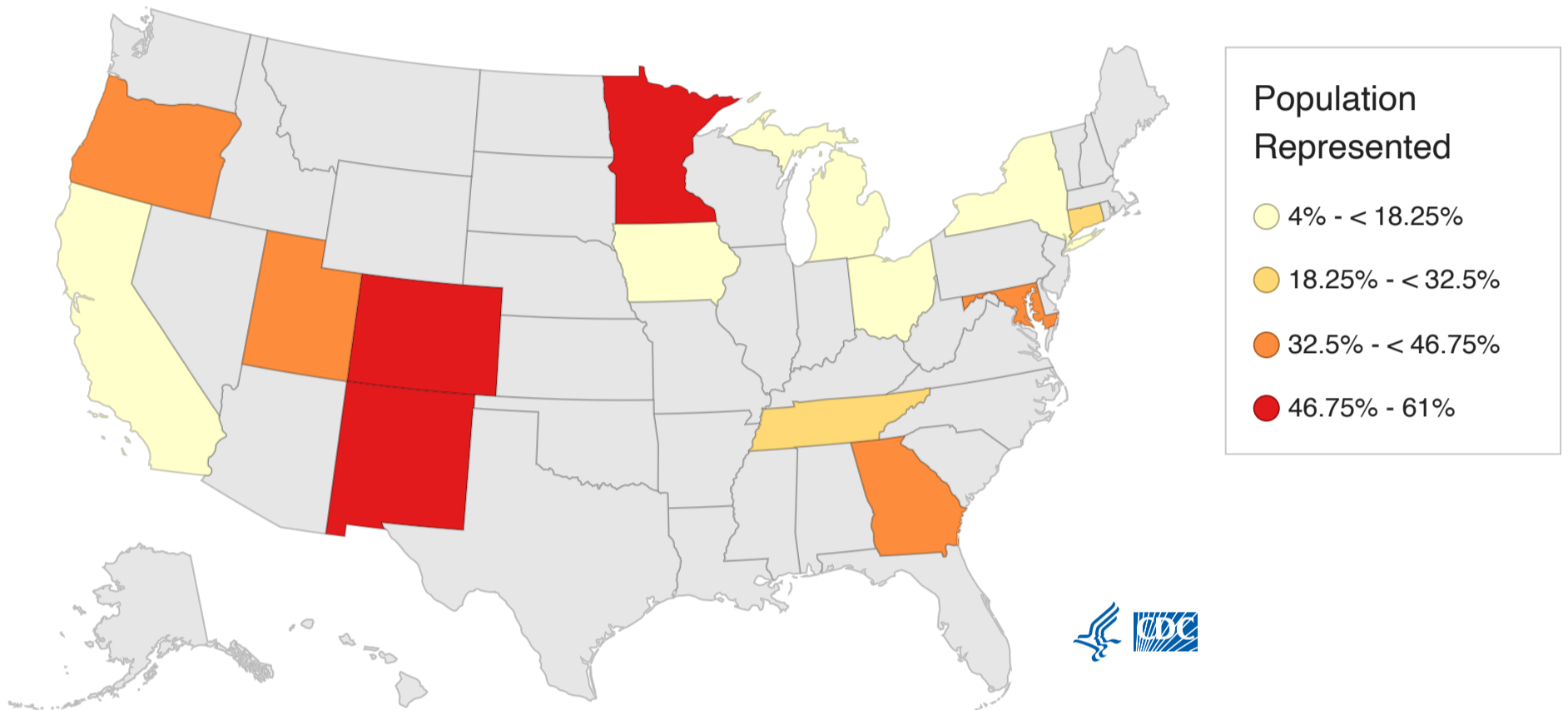
Hospitalization rates are calculated as the number of residents of a defined area who are hospitalized with a positive influenza laboratory test divided by the total population within the defined area. [NCHS bridged-race population estimates](#) are used as denominators.

FluSurv-NET Coverage

FluSurv-NET coverage area includes more than 70 counties in 14 states that participate in the [Emerging Infections Program \(EIP\)](#) and the Influenza Hospitalization Surveillance Program (IHSP). Participating states include: California, Colorado, Connecticut, Georgia, Iowa, Maryland, Michigan, Minnesota, New Mexico, New York, Ohio, Oregon, Tennessee and Utah.

FluSurv-NET covers more than 29 million people and includes an estimated 9 percent of the U.S. population. The counties covered are located in all 10 [Health and Human Services \(HHS\) regions](#) [↗](#). The designated FluSurv-NET surveillance area is generally similar to the U.S. population by demographics; however, the information might not be generalizable to the entire country.

Percentage of state population represented by participating FluSurv-NET counties



Location	% of State Populatio...	Number of Participati...
California	9%	3
Colorado	49%	5
Connecticut	29%	2
Georgia	39%	8
Iowa	4%	1
Maryland	46%	6
Michigan	13%	5
Minnesota	55%	7
New Mexico	61%	7
New York	11%	15
Ohio	18%	10
Oregon	44%	3
Tennessee	26%	8
Utah	36%	1

*Data from Iowa not included in overall FluSurv-NET rate calculations for the 2022-23 season.

Accessing FluSurv-NET Data

Influenza-associated hospitalization rates are reported to CDC on a weekly basis from October 1 through April 30 of each influenza season. FluSurv-NET data, including hospitalization rates for different age groups and data on patient characteristics, are available on [Fluview](#) and [Fluview Interactive](#).

FluSurv-NET hospitalization data are preliminary during each season; data presented may change as more reports are received. In particular, case counts for recent hospital admissions are subject to reporting lags. As data are received each week during the influenza season, prior case counts and rates may be updated.

FluSurv-Net Sampling Methodology for Collection of Clinical Data

Starting with the 2017-18 influenza season, FluSurv-NET implemented a sampling strategy for collection of clinical data. Clinical data were collected for a random sample of cases ≥ 18 years of age stratified by age and surveillance site. Random numbers were auto-generated and assigned to each case upon entry into the surveillance database. Trained surveillance staff conducted medical chart abstractions on sampled cases using a standardized case report form.

The following types of clinical data are collected for sampled cases:


- current season influenza vaccination status
- clinical (medical) history (underlying health conditions)
- clinical course (admission to intensive care unit)
- medical interventions (e.g., receipt of antiviral treatment, mechanical ventilation)
- outcomes (e.g., discharged from the hospital, in-hospital death)


How FluSurv-NET contributes to CDC's Influenza Burden Estimates

CDC uses FluSurv-NET data in combination with other data sources to estimate annual and weekly disease burden of influenza in the United States. Estimates are made of symptomatic illnesses, medically attended illnesses, hospitalizations and deaths. Reported rates are adjusted in an attempt to correct for the under-detection of influenza. This adjustment is done by using the percent of people hospitalized with respiratory illnesses who were tested for influenza and the average sensitivity of influenza tests used in the participating FluSurv-NET hospitals. Weekly estimates of influenza burden are available during each influenza season. Annual estimates of US influenza [burden](#) [flu burden averted](#) by influenza vaccination are available online.

FluSurv-Net Publications


2020 – Present 

Delahoy M, Ujamaa D, Taylor C, et al. [Comparison of influenza and COVID-19-associated hospitalizations among children < 18 years old in the United States—FluSurv-NET \(October–April 2017–2021\) and COVID-NET \(October 2020–September 2021\)](#) . *Clinical Infectious Diseases*. 2022.


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Additional Resources

[FluView Interactive](#)

[FluView](#)

[Emerging Infections Program](#)