CDC Centers for Disease
Control and Prevention

COVID-19

Coronavirus Disease 2019 (COVID-19)-Associated Hospitalization Surveillance Network (COVID-NET)

A RESP-NET Platform

Updated Jan. 19, 2023

About COVID-NET

The Coronavirus Disease 2019 (COVID-19) Hospitalization Surveillance Network (COVID-NET) is designed to conduct population-based surveillance for laboratory-confirmed COVID-19-associated hospitalizations among children and adults.

COVID-NET, along with the Respiratory Syncytial Virus Hospitalization Surveillance Network (RSV-NET) and the Influenza Hospitalization Surveillance Network (FluSurv-NET), comprise the Respiratory Virus Hospitalization Surveillance Network (RESP-NET). The RESP-NET platforms have overlapping surveillance areas and use similar methods to collect data.

COVID-NET is CDC's source for important data on rates of hospitalizations associated with COVID-19. Hospitalization rates show how many people in the surveillance area are hospitalized with COVID-19, compared to the total number of people residing in that area.

Why COVID-NET Data Are Important

Tracking COVID-19-associated hospitalization rates helps public health professionals understand trends in virus circulation, estimate disease burden, and respond to outbreaks. Hospitalization rates are updated weekly on COVID-NET interactive. Collecting demographic and more detailed clinical information, including underlying conditions, allows CDC to better understand COVID-19-associated hospitalization trends and determine who is most at risk.

Hospitalization Rates	Patient Characteristics

Hospitalization Rates by Vaccination Status

Case Definition

A case is defined by laboratory confirmed SARS-CoV-2 in a person who:

- Lives in a defined COVID-NET surveillance area AND
- Tests positive for SARS-CoV-2 within 14 days before or during hospitalization.

Evidence of COVID-19 infection can be obtained through several laboratory tests:

- Molecular assays, such as reverse transcription polymerase chain reaction (RT-PCR)
- Commercially available rapid antigen detection tests
- Serology (antibody) tests (must be paired acute and convalescent specimens)

Calculating Hospitalization Rates

To calculate COVID-19-associated hospitalization rates, COVID-NET collects the following data from identified cases:

- Age
- Sex
- Race and ethnicity
- County of residence
- Date of hospital admission
- Date of SARS-CoV-2 test
- Positive SARS-CoV-2 test result

Hospitalization rates are calculated as the number of residents in a surveillance area who are hospitalized with laboratory-confirmed COVID-19, divided by the total population estimate for that area. NCHS bridged-race population estimates are used as denominators for rate calculations.

How COVID-NET Hospitalization Data Are Different from Hospitalizations Reported in National and State Case Counts

COVID-NET data differ from hospitalizations reported in national and state case counts in multiple ways. First, state and national COVID-19 case reporting is based on all people who test positive using a healthcare provider-administered test for COVID-19 in the United States. COVID-NET is limited to COVID-19-associated hospitalizations captured in the COVID-NET surveillance area. Second, COVID-NET reports rates, not just counts. These rates show how many people are hospitalized with COVID-19 in the surveillance area, compared to the population residing in that area.

Collecting Clinical Data

COVID-NET surveillance began tracking COVID-19-associated hospitalizations in adults in March of 2020.

Cases are identified by reviewing state surveillance system databases, health information exchanges, hospital admission and laboratory databases, and infection control logs for patients hospitalized with a positive SARS-CoV-2 test result. Data collected are used to estimate age-specific hospitalization rates on a weekly and monthly basis and describe demographic and clinical characteristics of patients hospitalized with COVID-19.

Trained surveillance officers collect clinical data using a standardized case reporting form. Clinical data collected include:

- Medical history (e.g., underlying health conditions)
- Clinical course (i.e., progression of the COVID-19 illness such as admission to an ICU)
- Medical interventions (i.e., medical care for the COVID-19 illness such as need for mechanical ventilation)
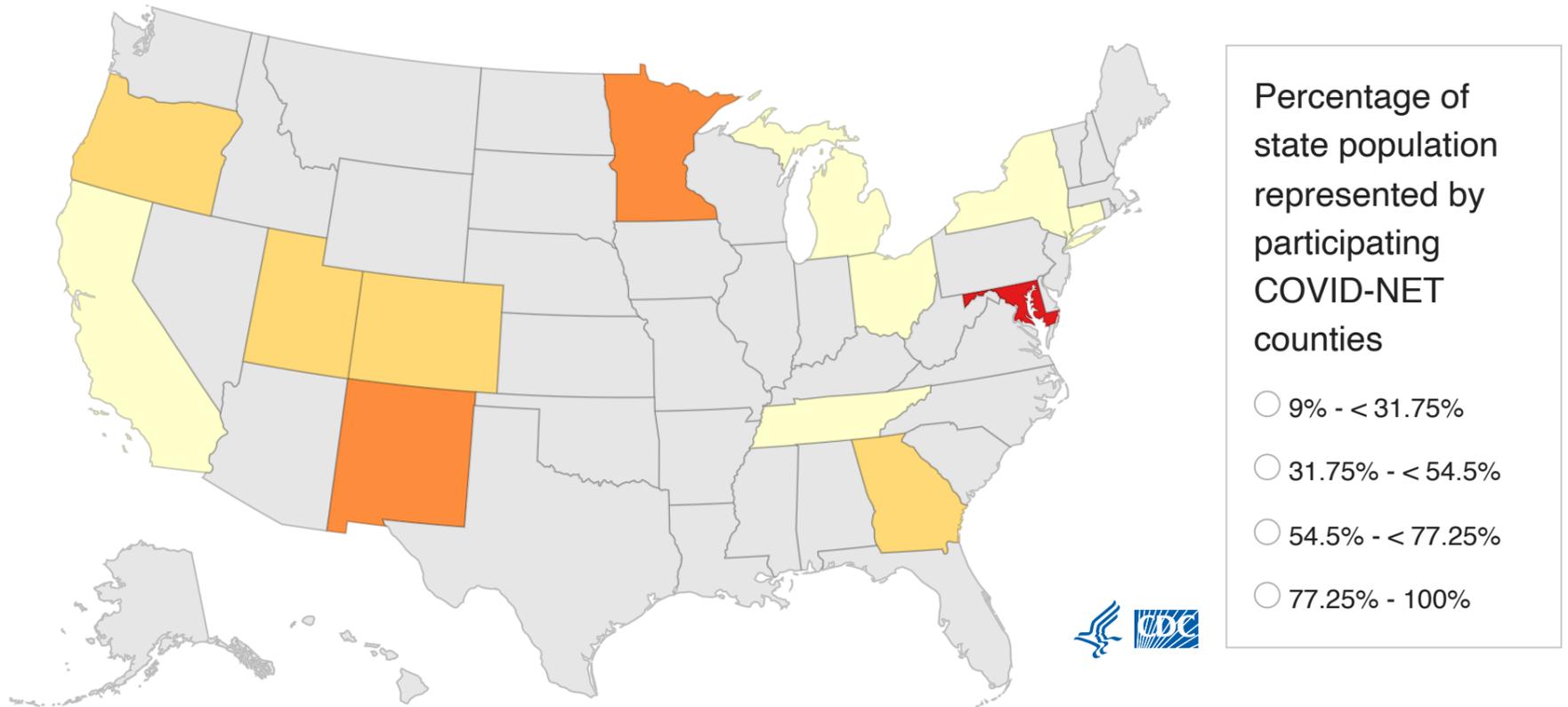
- Outcomes (i.e., discharged from the hospital, or death)
- COVID-19 vaccination history

COVID-NET Surveillance Area

COVID-NET currently comprises 98 counties in the 13 states participating in the Emerging Infections Program (EIP) and the Influenza Hospitalization Surveillance Project (IHSP). The participating states are California, Colorado, Connecticut, Georgia, Maryland, Michigan, Minnesota, New Mexico, New York, Ohio, Oregon, Tennessee, and Utah.

COVID-NET covers approximately 10 percent of the U.S. population. The counties covered are located in nine of the 10 Health and Human Services (HHS) regions ⧉ . The designated COVID-NET surveillance area is generally similar to the U.S. population by demographics; however, the statistics generated using COVID-NET data might not be generalizable to the entire country.

COVID-NET Surveillance Area

Percentage of state population represented by participating COVID-NET counties

- ○ 9% - < 31.75%
- ○ 31.75% - < 54.5%
- ○ 54.5% - < 77.25%
- ○ 77.25% - 100%

Download Data (CSV)

COVID-NET Sites		
Location	% of State Population Represented	Number of Participating Counties
○ California	9%	3
○ Colorado	49%	5
○ Connecticut	29%	2
○ Georgia	39%	8
○ Maryland	100%	24
○ 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

Accessing COVID-NET Data

COVID-19-associated hospitalization rates are reported to CDC on a weekly basis. COVID-NET data, including hospitalization rates for different age groups, data on patient characteristics, and hospitalization rates by vaccination status are available on the CDC COVID Data Tracker.

COVID-NET hospitalization data are preliminary and may change as more data is received. In particular, case counts and rates for recent hospital admissions are subject to lag. As data are received each week, prior case counts and rates are updated accordingly.

COVID-NET Publications

2023 ⌃

- O'Halloran A, Whitaker M, Patel K, et al. Developing a sampling methodology for timely reporting of population-based COVID-19-associated hospitalization surveillance in the United States, COVID-NET 2020–2021 ↗ . *Influenza Other Respi Viruses.* 2023 Jan 10; 1-8.

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- Taylor CA, Whitaker M, Anglin O, et al. COVID-19–Associated Hospitalizations Among Adults During SARS-CoV-2 Delta and Omicron Variant Predominance, by Race/Ethnicity and Vaccination Status — COVID-NET, 14 States, July 2021–January 2022. MMWR Morb Mortal Wkly Rep. 2022 Mar 25; 71(12):466-473.

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Resources

COVID Data Tracker Weekly Review

Cases, Data, and Surveillance

Emerging Infections Program

Respiratory Syncytial Virus Hospitalization Surveillance Network (RSV-NET)

Respiratory Virus Hospitalization Surveillance Network (RESP-NET)

Influenza Hospitalization Surveillance Network (FluSurv-NET)

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