COVID-19 and RSV Impact and Integrated Surveillance

Benjamin Silk, PhD
Lead, Surveillance and Analytics Team

Coronavirus and Other Respiratory Viruses Division
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National Respiratory and Enteric Virus Surveillance System (NREVSS)

Laboratory Surveillance (Respiratory Virus Activity)
Passive, laboratory-based surveillance system developed in the early 1980s
~600 participating laboratories report tests
Monitors real-time circulation and trends in seasonality of respiratory and enteric viruses
Data sources:
- State and local public health laboratories
- Commercial labs, hospitals, universities
Diagnostic Method Categories:
- Antigen
- Virus isolation
- PCR
Weekly reporting of total tested and # positive

Circulation = \frac{\# \text{ positive detections}}{\# \text{ tests performed}}

National Respiratory and Enteric Virus Surveillance System

National weekly respiratory viruses percent positive, including influenza virus, NREVSS, April 29, 2023, through April 27, 2024

Adenovirus
HCOV
HMPV
Influenza
PIV
RV/EV
RSV
SARS-COV-2
National trends in PCR test percent positivity for SARS-COV-2 reported to NREVSS, June 2, 2022 – May 4, 2024

National Respiratory and Enteric Virus Surveillance System (NREVSS). The data are generated from SARS-COV-2 positive test amplification product (AMP) results, which include reverse transcription polymerase chain reaction (RT-PCR) tests from a sentinel network of NREVSS reporting laboratories in the United States, including clinical, public health and commercial laboratories. These laboratories report results of SARS-COV-2 RT-PCR tests from specimens collected in the United States, including the District of Columbia, to the NREVSS system. For more information on NREVSS, please see: https://www.cdc.gov/surveillance/nrevss/index.html

The data represent SARS-COV-2 nucleic acid amplification test (NAAT) results from a sentinel network of NREVSS-reporting laboratories in the United States, including clinical, public health and commercial laboratories (https://www.cdc.gov/surveillance/nrevss/labs/index.html). All data are provisional and subject to change. Reporting is less complete for the past 1 week, and more complete for the period 2 weeks earlier (>90%). Because the data are from a sentinel network, not all laboratories report data on a consistent weekly basis. The data represent laboratory tests performed, not individual people. In the table and upon hovering on the map, the total test counts in the data reflect the latest reported data as of May 11, 2023. The data are archived at health.data.gov. For more information about NREVSS, please see: https://www.cdc.gov/surveillance/nrevss/index.html. For downloading the NREVSS COVID-19 testing data displayed here: https://data.cdc.gov/Laboratory-Surveillance/Percent-Positivity-of-COVID-19-Nucleic-Acid-Amplifying-Tests.--/gvsb-yw6g

NREVSS Dashboard
National Syndromic Surveillance Program (NSSP)

- >6,000 healthcare facilities covering 49 states and DC
  - >90% of ED in US participating
- Objective:
  - Near-real time influenza-like illness, COVID-19-like illness and inpatient status
- Data Source:
  - 6 million EHR messages, including chief complaint, diagnosis codes, patient demographics
National Weekly Percentage of U.S. Emergency Department (ED) Visits with Respiratory Illness Discharge Diagnosis Codes by Age Group, May 7, 2023 – May 4, 2024

Data Source: Discharge diagnosis (DD) codes from ED visits, National Syndromic Surveillance Program (NSSP). Fewer than 50% of facilities in CA, HI, IA, MN, OK, and OH report to NSSP. Limited to facilities that have consistently reported high-quality visit data over the entire period as emergency departments that consistently reported ≤40 in visit counts and discharge diagnoses averaging ≥75% completed per week over the past year. Additional details on inclusion criterion and specific diagnostic codes included for the definitions are listed in the Companion Guide for NSSP here: https://www.cdc.gov/ncird/surveillance/respiratory-illnesses/index.html#companion-guide

Respiratory Virus Hospitalization Surveillance Network (RESP-NET)

Hospitalization Rates
Respiratory Virus Hospitalization Surveillance Network (RESP-NET)

- Active, population-based surveillance network of acute care hospitals in select counties or county equivalents in 12 states for RSV surveillance, 13 states for COVID-19 surveillance, and 14 states for influenza surveillance (8-10% of the U.S. population.)
- Surveillance for laboratory-confirmed hospitalizations (within 14 days before or during hospitalization) among residents of the catchment area.

Overall Rates of Hospitalizations associated with COVID-19, Influenza, and RSV — RESP-NET, October 2022–May 4, 2024
COVID-19-Associated Hospitalization Rates by Age Group – COVID-NET, January 1, 2023–May 4, 2024

The most recent two weeks of data consist of data with likely backfill. Rates for the most recent two weeks should be interpreted with caution.


RSV-Associated Hospitalization Rates by Age Group – RSV-NET, January 1, 2023–May 4, 2024

The most recent two weeks of data consist of data with likely backfill. Rates for the most recent two weeks should be interpreted with caution.

*Respiratory syncytial virus hospitalization surveillance network (RSV-NET) conducts active, population-based surveillance for laboratory-confirmed RSV-associated hospitalizations in children and adults in 300 hospitals in 54 counties in 12 states, covering approximately 8% of the U.S. population.
Nowcast

Genomic Surveillance

National SARS-CoV-2 genomic surveillance system: data workflow

Sequencing Pathway 1: National SARS-CoV-2 Strain Surveillance (N53)
CDC receives samples for sequencing from states/public health laboratories

Sequencing Pathway 2: CDC Contract Sequencing Network
Private and academic sequencing institutions in the US

Sequencing Pathway 3: Repository Tagged Sequences
Surveillance sequences tagged in GISAID/GenBank by US public health, academic, clinical, & research laboratories
Nowcast Estimates in the United States through May 11, 2023

Weighted and Nowcast Estimates in United States for 2-Week Periods in
1/21/2024 – 5/11/2024

Collection date, two-week period ending

Nowcast: Model-based projected estimates of covalent proportions

USA

<table>
<thead>
<tr>
<th>Virus type</th>
<th>1/19/2024</th>
<th>2/2/2024</th>
<th>2/11/2024</th>
<th>3/24/2024</th>
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<tr>
<td>H1N1</td>
<td>70%</td>
<td>75%</td>
<td>70%</td>
<td>60%</td>
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<tr>
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<tr>
<td>B</td>
<td>15%</td>
<td>10%</td>
<td>15%</td>
<td>15%</td>
</tr>
</tbody>
</table>

These data reflect the most recent estimates, which are readily accessible, for monitoring and planning.

1/19/2024: The most recent estimates for 1/19/2024 are based on data as of 1/19/2024. The estimates for 1/21/2024 and 1/23/2024 are based on data as of 1/23/2024. For other time periods, estimates are based on data as of the estimated date of epidemic wave onset in the region.

National Center for Health Statistics (NCHS)

Mortality
Overall Percentages of Deaths associated with COVID-19, Influenza, and RSV — NCHS, October 1, 2022–April 27, 2024

Questions?

Ben Silk: bsilk@cdc.gov

For more information, contact CDC Emergency Operations Center
770-488-7100
www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.