National Center for Immunization and Respiratory Diseases

Update on the Epidemiology of COVID-19 and RSV

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National Adult and Influenza Immunization Summit Meeting
May 13, 2025

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COVID-19

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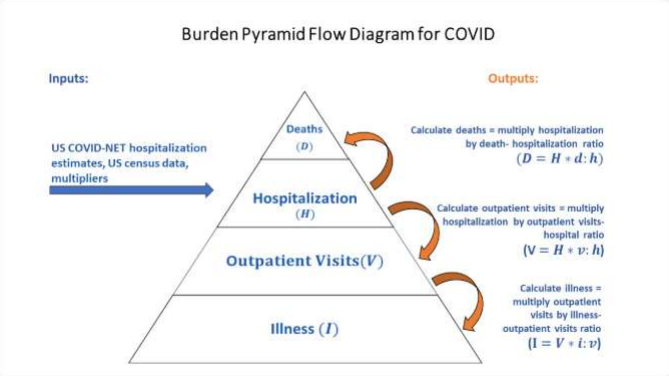
CDC uses a multiplier model approach to estimate the in-season burden of COVID-19- and RSV-associated outpatient visits, hospitalizations, and deaths in the United States



US COVID-Net Hospitalization Estimates

Source: https://www.cdc.gov/covid/php/surveillance/about-burden-estimates.html

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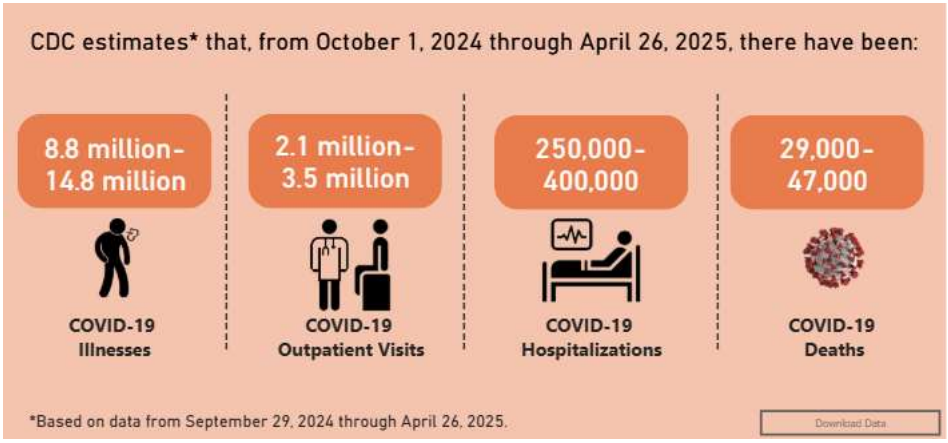
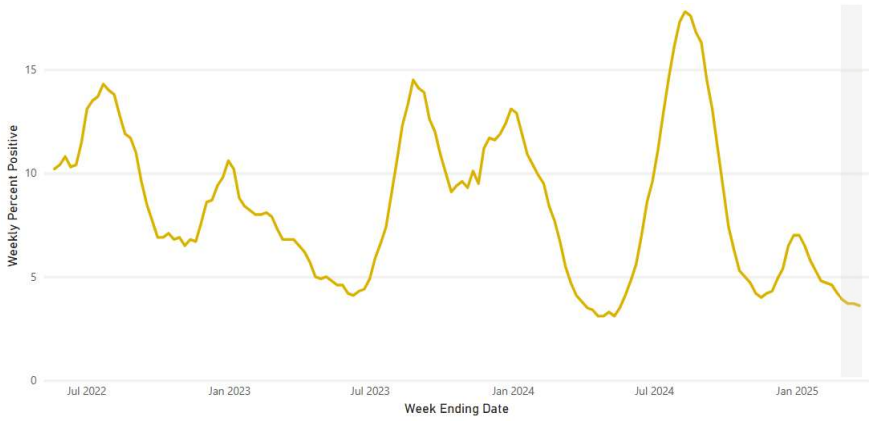
Preliminary Estimates of U.S. COVID-19 Burden for 2024-2025



Source: https://www.cdc.gov/covid/php/surveillance/burden-estimates.html

4

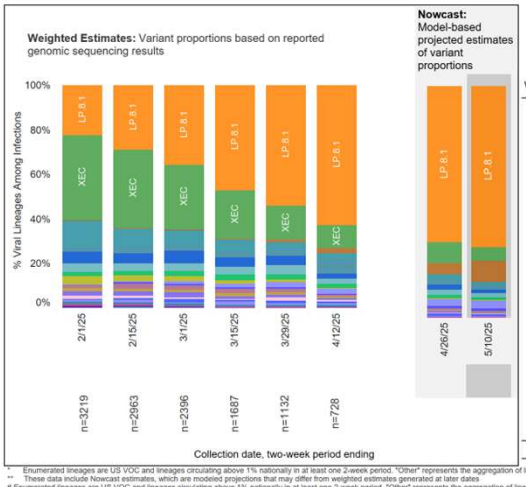
National trends in PCR test percent positivity for SARS-COV-2 reported to NREVSS, May 21, 2022 – March 22, 2025



National Respiratory and Enteric Virus Surveillance System (NREVSS). The data represent SARS-CoV-2 Nucleic Acid Amplification Test (NAAT) results, which include reverse transcriptase-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 (https://www.cdc.gov/surveillance/nrevss/labs/index.html). These data exclude antigen, antibody, and at-home test results. Test positivity data are displayed at the HHS Region level. All data are provisional and subject to change. Reporting is less complete for the past 1 week, and more complete for data reported for the period 2 weeks earlier (>90%). Because the data are from a sentinel network of laboratories, results may vary geographically. The data do not include all test results within a jurisdiction and therefore may not reflect all COVID-19 NAATs in the United States. There are data from all 50 states, including the District of Columbia, Puerto Rico and the U.S. Virgin Islands, across the 10 HHS regions. Test results from Puerto Rico and the U.S. Virgin Islands are reported as part of HHS Region 2. Data from other U.S. territories are not reported to NREVSS. Percent positivity is one of the metrics used to monitor COVID-19 transmission over time and by area. Percent positivity is calculated by dividing the number of positive NAATs by the total number of NAATs administered, then multiplying by 100 [(# of positive NAAT tests / total NAAT tests) x 100]. 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 from NREVSS laboratories and may not match the data presented by various jurisdictions. On May 11, 2023 CDC discontinued utilizing the COVID electronic laboratory reporting (CELR) platform as the primary laboratory source of COVID-19 results. These 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-Ampli/gvsb-yw6g

National NOWCAST Estimates of Proportions of SARS-CoV-2 Lineages 04/27/25 to 05/10/25, as of 05/06/25

Weighted and Nowcast Estimates in United States for 2-Week Periods in 1/19/2025 – 5/10/2025



Nowcast Estimates in United States for 4/27/2025 – 5/10/2025

USA

WHO label	Lineage #	%Total	95%PI
Omicron	LP.8.1	70%	64–75%
	XFC	9%	4–19%
	XEC	6%	4–8%
	LF.7.7.2	3%	0–16%
	LF.7	2%	1–3%
	MC.10.1	2%	1–3%
	LB.1.3.1	2%	1–3%
	KP.3.1.1	1%	1–2%
	XEC.4	1%	1–2%
	PA.1	1%	0–3%
	LF.7.7.1	1%	1–2%
	XEQ	0%	0–1%
	LF.7.2.1	0%	0–1%
	KP.3	0%	0–1%
	XEK	0%	0–1%
	MC.1	0%	NA
	JN.1.16	0%	NA
	MC.19	0%	NA
	JN.1	0%	NA
Other	Other*	0%	NA

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one 2-week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all 2-week periods displayed.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates.
# Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one 2-week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all 2-week periods displayed. While all lineages are tracked by CDC, those named lineages not enumerated in this graphic are aggregated with their parent lineages, based on Pango lineage definitions, described in more detail here: https://web.archive.org/web/20240116214031/https://www.pango.network/the-pango-nomenclature-system/statement-of-nomenclature-rules.

COVID-19–Associated Hospitalizations Among Adults Ages ≥18 Years

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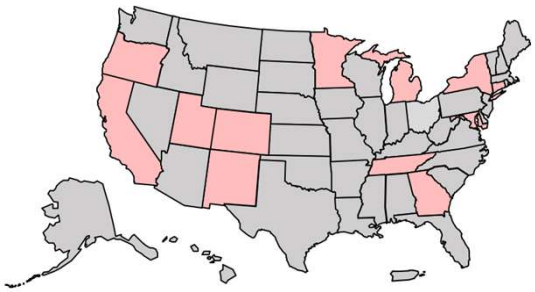
RESP-NET is a population-based hospitalization surveillance platform.

- **RESP-NET: COVID-NET, RSV-NET, FluSurv-NET**
- **>300 acute-care hospitals**
- **98 counties in 13 states**
  - Some slides display data from 90 counties in 12 states due to incomplete data
- **~10% of the U.S. population**
- **Positive SARS-CoV-2 test ≤14 days before admission or during hospitalization**
- **Screening or clinician-driven testing**
- **Clinical data: age- and site-stratified random sample**



COVID-NET: https://www.cdc.gov/covid/php/covid-net/index.html

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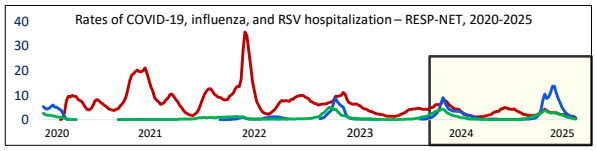
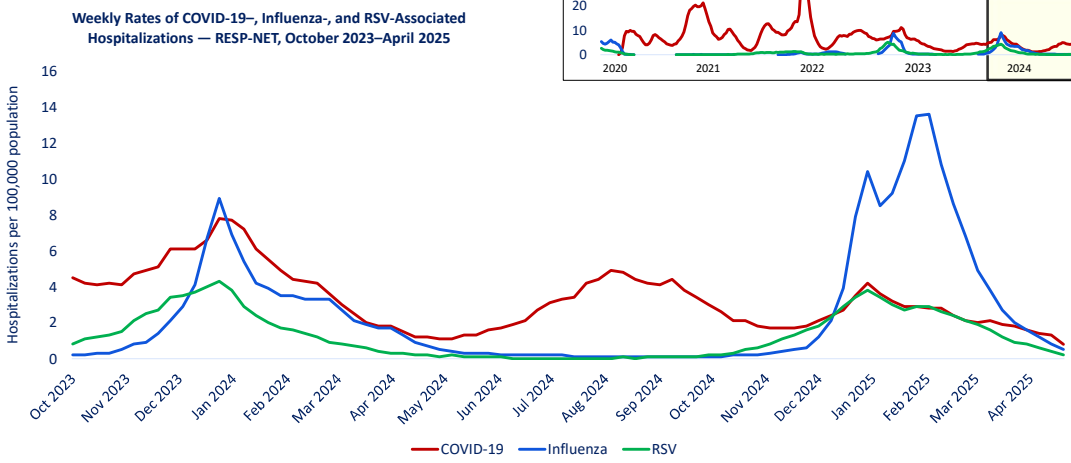
COVID-19 hospitalization rates have had both winter and summer peaks.





Rates for all three pathogens (COVID-19, influenza, and respiratory syncytial virus [RSV]) are laboratory-confirmed. Data source: https://www.cdc.gov/resp-net/dashboard/
Note that rates are not adjusted for testing or limited to admissions where the respiratory infection is the likely primary reason for admission.

RESP-NET

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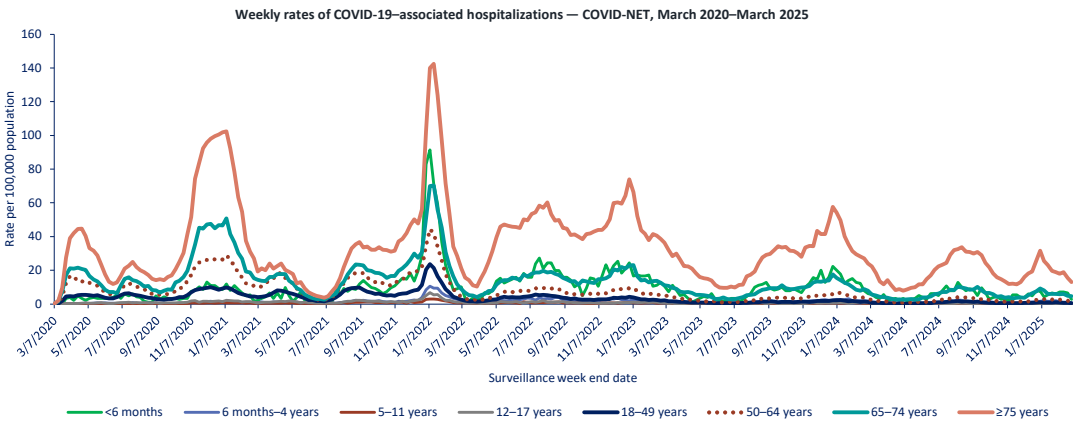
Among all age groups, rates of COVID-19–associated hospitalizations are highest among adults ages ≥75 years.



COVID-NET

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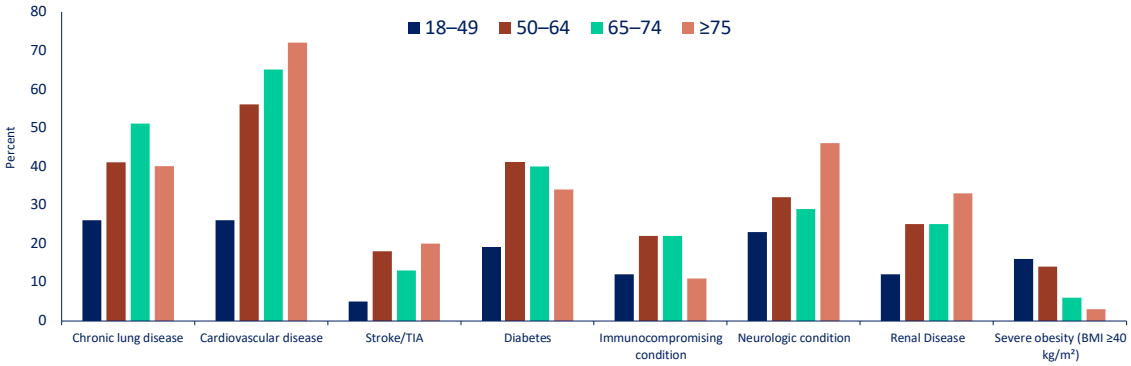
Across all age groups, the most common underlying conditions present in adults hospitalized with COVID-19 are similar.

Percent of COVID-19-associated Hospitalizations among Adults Ages ≥18 Years with Underlying Medical Conditions, by Age Group — COVID-NET, July 2023–March 2024



Underlying medical conditions

Abbreviation: TIA: transient ischemic attack. Data are limited to hospitalizations where COVID-19 is the primary reason for admission.

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COVID-19–Associated Deaths

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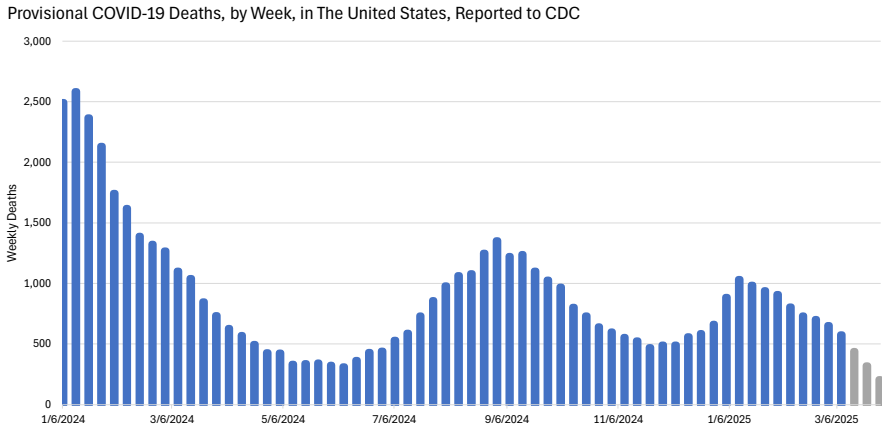
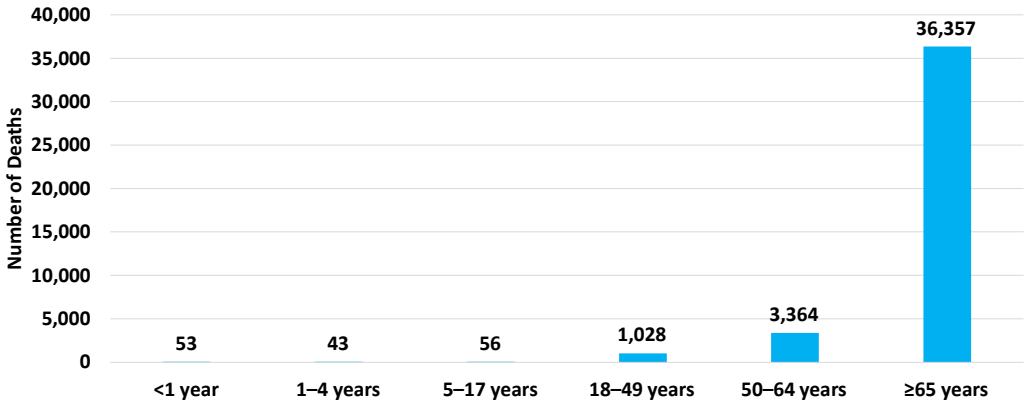
Weekly number of COVID-19 deaths reported to CDC, United States, January 1, 2024 – March 29, 2025



The most recent 3 weeks of mortality counts are shaded grey because NVSS reporting is <95% during this period.
Provisional data are non-final counts of deaths based on reported mortality data in NVSS. Deaths include those with COVID-19, coded as ICD–10 code U07.1, on the death certificate. Death data are displayed by date of death (event). Data include underlying and contributing causes of death.
CDC COVID Data Tracker. National Center for Health Statistics (NCHS) National Vital Statistics System (NVSS). https://covid.cdc.gov/covid-data-tracker/#trends_weeklydeaths_select_00 . Accessed April 7, 2025

20

Total number of COVID-19 deaths,[1,2] September 2023–August 2024, by age group, United States



1. Provisional data
2. Underlying cause of death Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Provisional Mortality on CDC WONDER Online Database. Data are from the final Underlying Cause of Death Files, 2018-2023, and from provisional data for 2024, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Number of deaths includes COVID-19 code (U07.1) as the underlying cause of death. http://wonder.cdc.gov/mcd-icd10-provisional.html, accessed January 16, 2025

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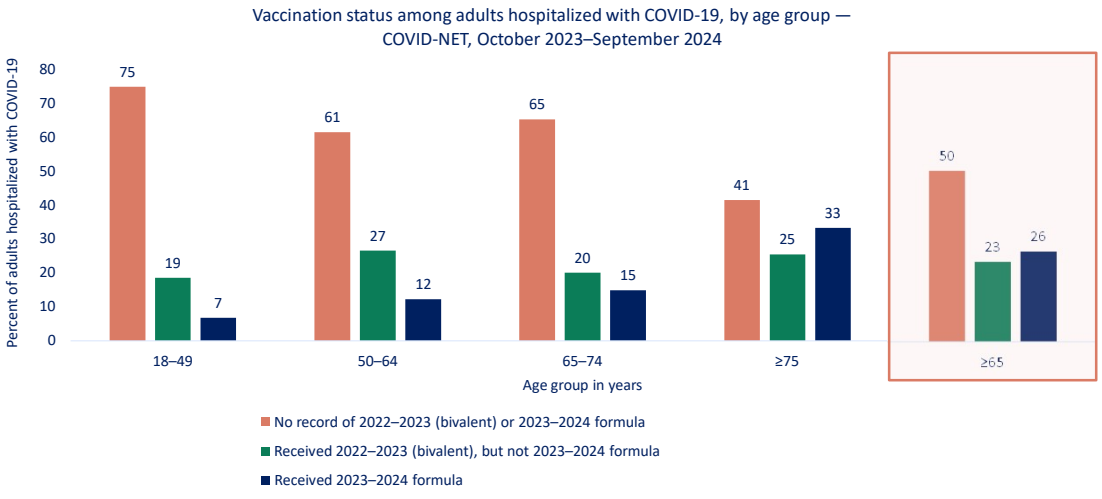
COVID-19 vaccination

Most adults hospitalized with COVID-19 had received no COVID-19 vaccine since September 2022.



Data are limited to hospitalizations where COVID-19 is a likely primary reason for admission.

COVID-NET

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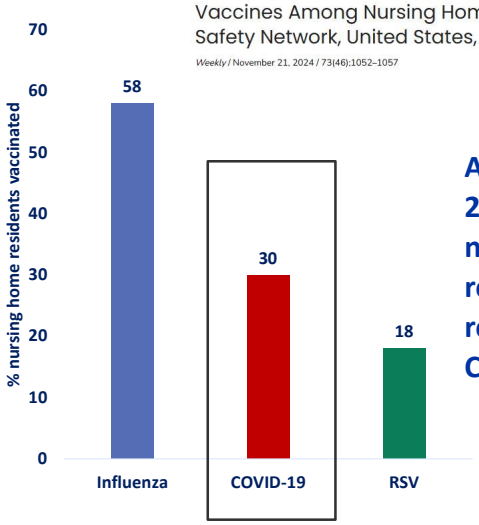
Morbidity and Mortality Weekly Report (*MMWR*)

Coverage with Influenza, Respiratory Syncytial Virus, and COVID-19 Vaccines Among Nursing Home Residents — National Healthcare Safety Network, United States, November 2024

Weekly / November 21, 2024 / 73(46):1052–1057



As of November 30, 2024, only 30% of nursing home residents had received a 2024–2025 COVID-19 vaccine.

* As of December 10, 2024. Reses et al. "Coverage with Influenza, Respiratory Syncytial Virus, and Updated COVID-19 Vaccines Among Nursing Home Residents - National Healthcare Safety Network, United States, November 2024". *MMWR*, November 21, 2024.

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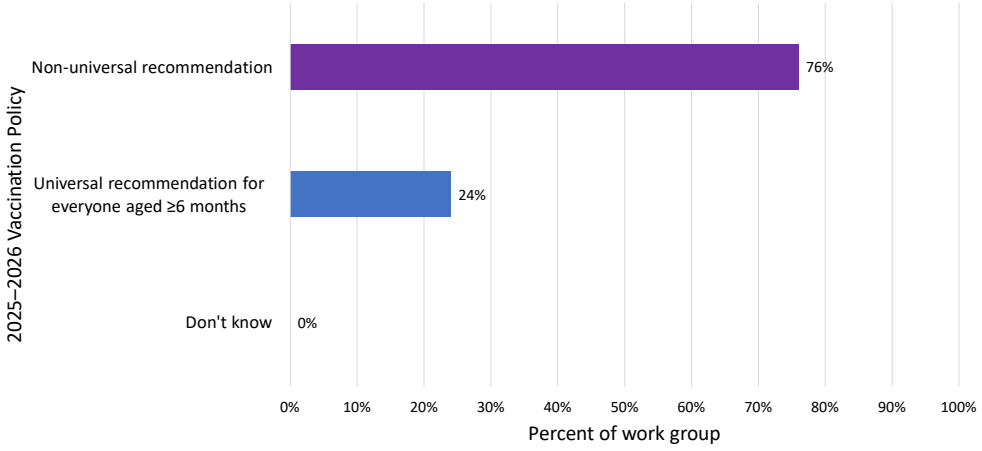
When polled on April 3, 2025, the majority of the work group continued to support a non-universal (risk-based) recommendation for 2025–2026 COVID-19 vaccination



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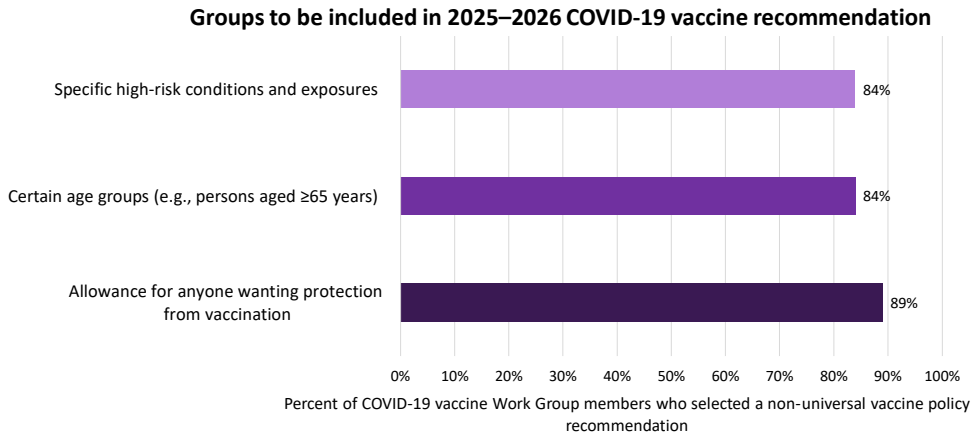
When polled on April 3, 2025, the Work Group continued to support all non-universal policy options*



* More than one response option could be selected.

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RSV

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Preliminary Estimates of U.S. RSV Burden for 2024-2025

Source: https://www.cdc.gov/rsv/php/surveillance/burden-estimates.html

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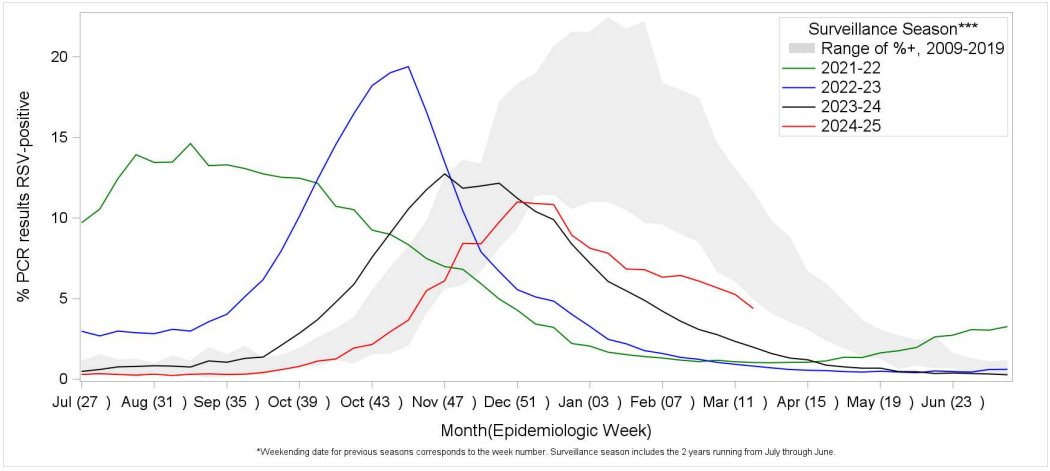
Percentage* of polymerase chain reaction test results positive for respiratory syncytial virus, by MMWR week — National Respiratory and Enteric Virus Surveillance System, United States, July 2009–March 2025**



Report was last updated on: 3/26/2025.
*All results presented are from nucleic acid amplification tests which represent >90% of the diagnostic tests reported to NREVSS. The last three weeks of data in 2023-24 may be less complete. NREVSS is an abbreviation for the National Respiratory and Enteric Virus Surveillance System. For more information on NREVSS, please visit National Respiratory and Enteric Virus Surveillance System | CDC.
**Respiratory syncytial virus types A and B are not shown separately in this report.
***The NREVSS surveillance season runs from the first week in July through June of the following year.

RSV-Associated Hospitalizations

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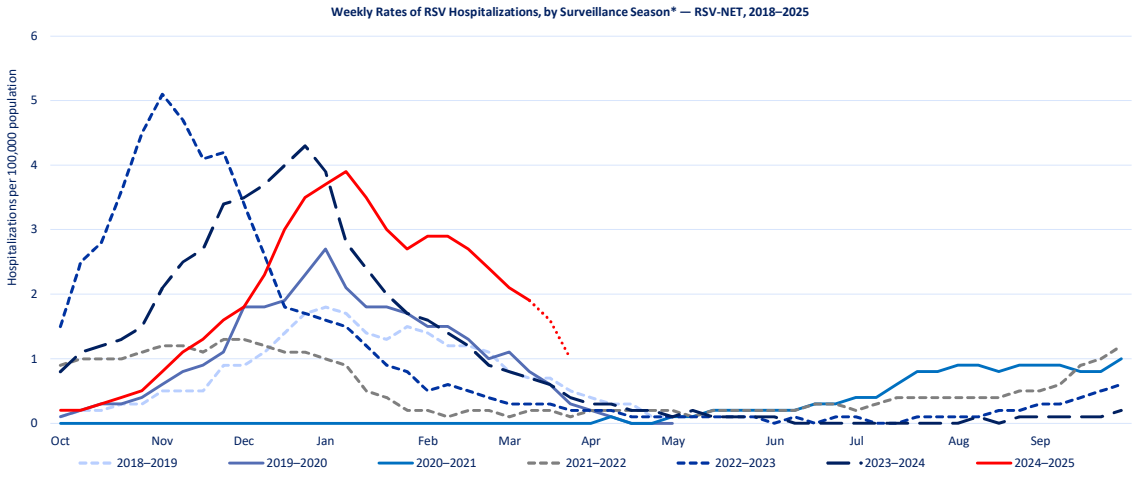
RSV hospitalization rates have been higher than historical (pre-pandemic) rates



* For seasons 2019–2020 and 2020–2021, surveillance was conducted from October through April of the following year. Beginning with the 2021–2022 season, surveillance was conducted year-round from October through September of the following year. Dotted lines for the current season indicate weeks most likely affected by reporting lag.

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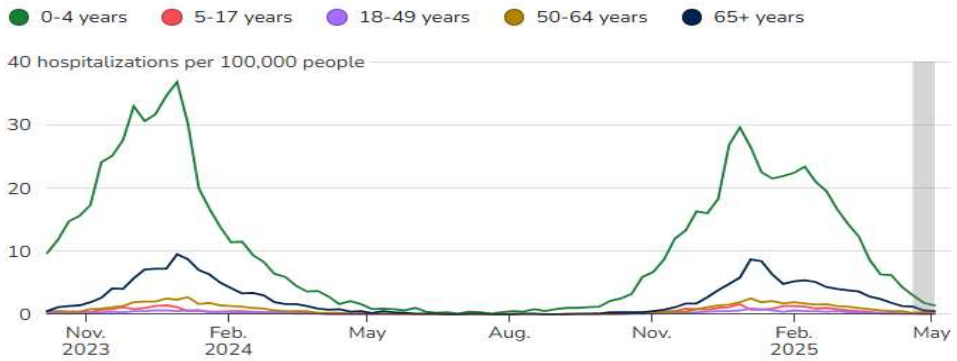
RSV hospitalization rates are highest among young children and older adults, RSV-NET, November 2023–May 2025



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RSV Vaccination

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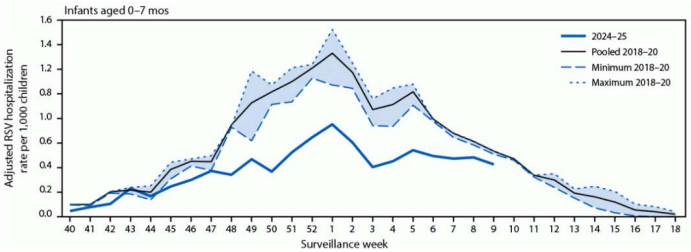
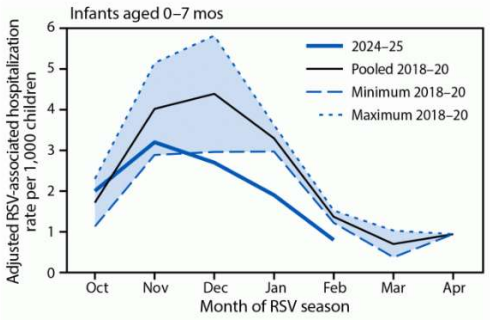
Interim Evaluation of RSV Hospitalization Rates Among Infants and Young Children After Introduction of Prevention Products — United States, October 2024–February 2025

RESP-NET



New Vaccine Surveillance Network (NVSN)



Source: https://www.cdc.gov/mmwr/volumes/74/wr/mm7416a1.htm

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ACIP Evidence to Recommendations (EtR) Framework

Domain	Among adults aged 50–59 years at increased risk of severe RSV disease	Work Group Majority Opinion
Public Health Problem	Is RSV of public health importance?	Yes/Probably yes
Benefits and Harms	How substantial are the desirable anticipated effects?	Moderate
	How substantial are the undesirable anticipated effects?	Small
	Do the desirable effects outweigh the undesirable effects?	Favors intervention
Values	Does the target population feel the desirable effects are large relative to the undesirable effects?	Probably yes
	Is there important variability in how patients value the outcomes?	Probably important uncertainty or variability
Acceptability	Is the intervention acceptable to key stakeholders?	Yes/Probably yes
Feasibility	Is the intervention feasible to implement?	Yes/Probably yes
Resource Use	Is the intervention a reasonable and efficient allocation of resources?	Yes/Probably yes
Equity	What would be the impact on health equity?	Probably increased

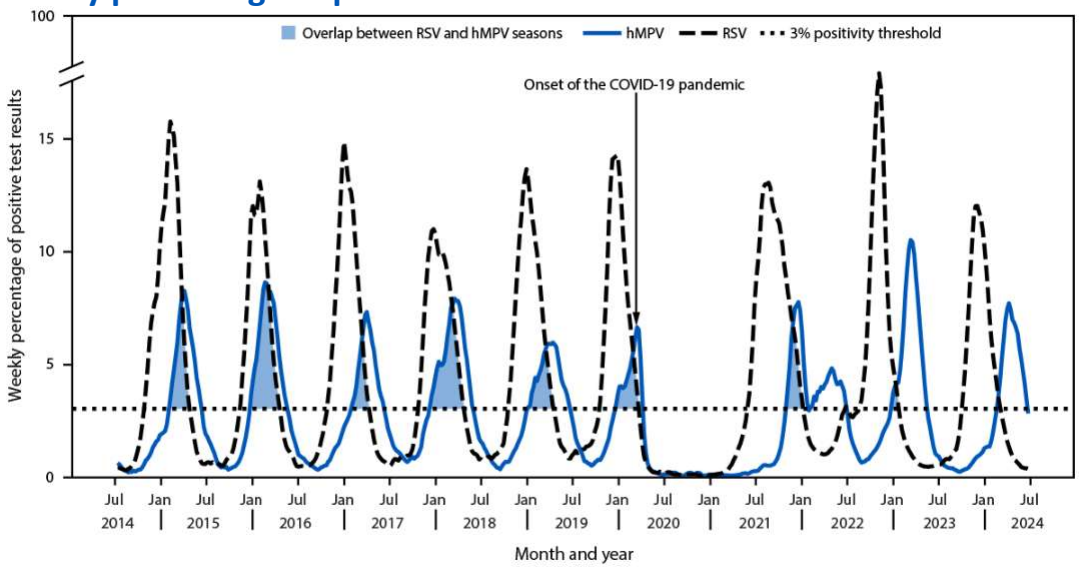
ACIP vote language

ACIP recommends that adults 50–59 years of age who are at increased risk of severe RSV disease[a] receive a single dose of RSV vaccine.[b,c]

a. CDC will publish Clinical Considerations that describe chronic medical conditions and other risk factors for severe RSV disease for use in this risk-based recommendation.
b. RSV vaccination is recommended as a single dose only. Persons who have already received RSV vaccination are NOT recommended to receive another dose.
c. RSV vaccine can be administered with any product licensed in this age group.

Human Metapneumovirus Seasonality and Co-Circulation with RSV

Weekly percentage of positive results for hMPV and RSV – National



Source: https://www.cdc.gov/mmwr/volumes/74/wr/mm7411a1.htm

Thank you!

Any questions?

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For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 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.