

COVID Data Tracker

Maps, charts, and data provided by CDC, updates Mondays and Fridays by 8 p.m. ET

**United States at a Glance** 

Trend in % Emergency Department Visits Trend in % Test Positivity +7.1% in most recent week +0.1% in most recent week

Trend in % COVID-19 Deaths +9.1% in most recent week

**Total Hospitalizations Total Deaths** 6,484,329 1,153,910

**CLICK TO VIEW OTHER PAGES:** Variants & Genomic Surveillance < Back to Variants & Genomic Surveillance

SARS-CoV-2, the virus that causes COVID-19, is constantly changing and accumulating mutations in its genetic code over time. New variants of SARS-CoV-2 are expected to continue to emerge. Some variants will emerge and disappear, while others will emerge and continue to spread and may replace previous variants.

Variant Proportions

## To identify and track <u>SARS-CoV-2 variants</u>, CDC uses <u>genomic surveillance</u>. CDC's national genomic surveillance

**Monitoring Variant Proportions** 

program, as well as SARS-CoV-2 sequences generated by commercial or academic laboratories contracted by CDC and state or local public health laboratories. Virus genetic sequences are analyzed and classified as a particular lineage. The proportions of SARS-CoV-2 variants in a population are calculated nationally, by HHS region, and by jurisdiction. The sequences analyzed through CDC's national genomic sequencing and

bioinformatics efforts fuel the comprehensive and population-based U.S. surveillance system established to

system collects SARS-CoV-2 specimens for sequencing through the National SARS-CoV-2 Strain Surveillance (NS3)

identify and monitor the spread of variants. Rapid virus genomic sequencing data combined with phenotypic data are further used to determine whether COVID-19 tests, treatments, and vaccines authorized or approved for use in the United States will work against emerging variants. Types of Variant Proportion Data CDC provides estimates of variant proportions for two-week periods. These proportions are calculated in two ways: weighted estimates and Nowcast estimates.

Lineages with weighted estimates less than 1% of all circulating variants are combined with their parent lineage. When the weighted estimate of a lineage crosses the 1% threshold and has substitutions in the spike protein that could affect vaccine efficacy, transmission, or severity, it may be separated from its parent lineage and

Weighted estimates (provided for all two-week periods except the most recent two, two-week periods) are

variant proportions that are based on empirical (observed) genomic sequencing data. These estimates are not

available for the most recent two-week periods because of the time it takes to generate the sequencing data,

including sample collection, specimen treatment, shipping, analysis, and upload into public databases.

## displayed on its own in the variant proportions data.

recent two-week periods may be substantially higher than 1%.

Weighted and Nowcast Estimates in United States for

Hover over (or tap in mobile) any lineage of interest to see the amount of uncertainty in

Nowcast Estimates for 10/29/2023 – 11/11/2023 by HHS Region

2-Week Periods in 7/23/2023 - 11/11/2023

Weighted Estimates: Variant proportions based on reported

Friday.

On This Page

**About These Data** 

11/11/2023(Nowcast) if available.

that lineage's estimate.

genomic sequencing results

**Highlight Variant** 

Highlight V...

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Download Data 🕹

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More About Variants

CDC's Role in Tracking Variants

**About These Data** 

Published SARS-CoV-2 Sequences

What You Need to Know about Variants

Genomic Surveillance for SARS-CoV-2 Variants

• <u>Science Brief: Emerging SARS-CoV-2 Variants</u>

All Variants in the United States

table showing proportions of other variants will also show up).

**Instructions**: Data in the chart and table show the estimated variant proportions for the most common

variants and timeframe. The U.S. map shows the estimated biweekly proportions of the most common SARS-

week periods), and national or HHS region from the drop-down controls on the top. If a specific timeframe is

selected in the chart, the data will change in the table and map to reflect the selected timeframe. If a specific

region is selected in the U.S. map, the data will change in the table and map to reflect the selected region. For

example, if Region 4 is selected, data will reflect estimates based on reported results from MS, GA, AL, TN, KY,

Variant" box in the left bottom corner of U.S. map, or in the chart, table or pie chart in the U.S. map. To see the

timeframe, hover pointer over a bar (timeframe) in the chart. To see the change of the proportion of a variant

Because it can take 2-3 weeks from the time a specimen is collected to when its sequence data is available for

analysis, Nowcast is an important tool that can estimate variant proportions for more recent time intervals.

Nowcast does not predict future spread of the virus, but it does help estimate current prevalence of variants,

based on genomic surveillance data from previous weeks. Estimates of variant proportions for previous two-

To provide more representative national, regional, and jurisdiction-level estimates of variant proportions,

uses statistical weights for these estimates that are based on the total number of reverse transcription

polymerase chain reaction (RT-PCR) tests and number of SARS-CoV-2-positive RT-PCR test results received,

calculations are included to account for sampling of data over time and across or within states. For example,

sequences generated from outbreak investigations are often from a very narrow geographical region (such as

a school) and may skew proportions within its larger jurisdiction. Using a survey-design-based approach, CDC

stratified by state, specimen collection date, and by genomic surveillance data source. Variant proportions are

estimated based on genomic sequences obtained through CDC (NS3 and CDC-funded sequencing contracts)

in different timeframes in a specific region, hover pointer to that variant in the specific region in U.S. map (a

**Nowcasting:** The default setting for the chart, table, and U.S. map is to display <u>CDC's Nowcast estimates</u>.

NC, SC, and FL. Data for a specific variant can be highlighted in all figures by selecting it in the "Highlight

proportions and their confidence intervals/prediction intervals for all the common variants in the specific

CoV-2 variants circulating in the United States, divided by HHS regions. Data can be filtered by timeframe (two-

• SARS-CoV-2 Variant Classifications and Definitions

Download Data

Lineages called using pangolin v4.3.1, pangolin-data v1.23 and usher v0.6.2.

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estimates are available for a given two-week period.

Nowcast estimates (provided for the most recent two two-week periods when the "Nowcast on" option is selected below) are model-based projections of variant proportions for the most recent two-week periods to

enable timely public health action. CDC uses the Nowcast to forecast variant proportions before the weighted

uncertainty (wider predictive interval) when it is just beginning to spread and still has low weighted estimates. Projections may also be biased during times of delayed reporting (e.g., around holidays). CDC performs frequent evaluations of Nowcast to inform performance improvements. Nowcast estimates for a parent lineage include projected changes in its child lineages until a child lineage's weighted estimate crosses the 1% threshold. Once the weighted estimate crosses the 1% threshold for the two-

week period with sequences available, the initial Nowcast projections for the child lineage proportion for the two

CDC provides updated variant proportions for weighted estimates and Nowcast estimates every other week on

Projections for an emerging lineage with a high growth rate may have a higher degree of

**Monitoring Variant Proportions Nowcast More About Variants** 

Data for the 2-Week Period **HHS Region: Ending on: USA** 11/11/2023(Nowcast) This shows weighted and Nowcast estimates for the United States. The table and map show estimates for the 2-week period ending on

Nowcast:

of variant

proportions

Model-based

projected estimates

WHO label

Omicron

Nowcast Estimates in United States

**USA** 

%Total

29.0%

21.7%

95%PI

US Territories not shown are

AS, FM, GU, MH, MP, PW - Region

Updated November 13, 2023

included in HHS regions:

PR, VI - Region 2

26.0-32.1%

19.3-24.2%

for 10/29/2023 - 11/11/2023

Lineage #

HV.1

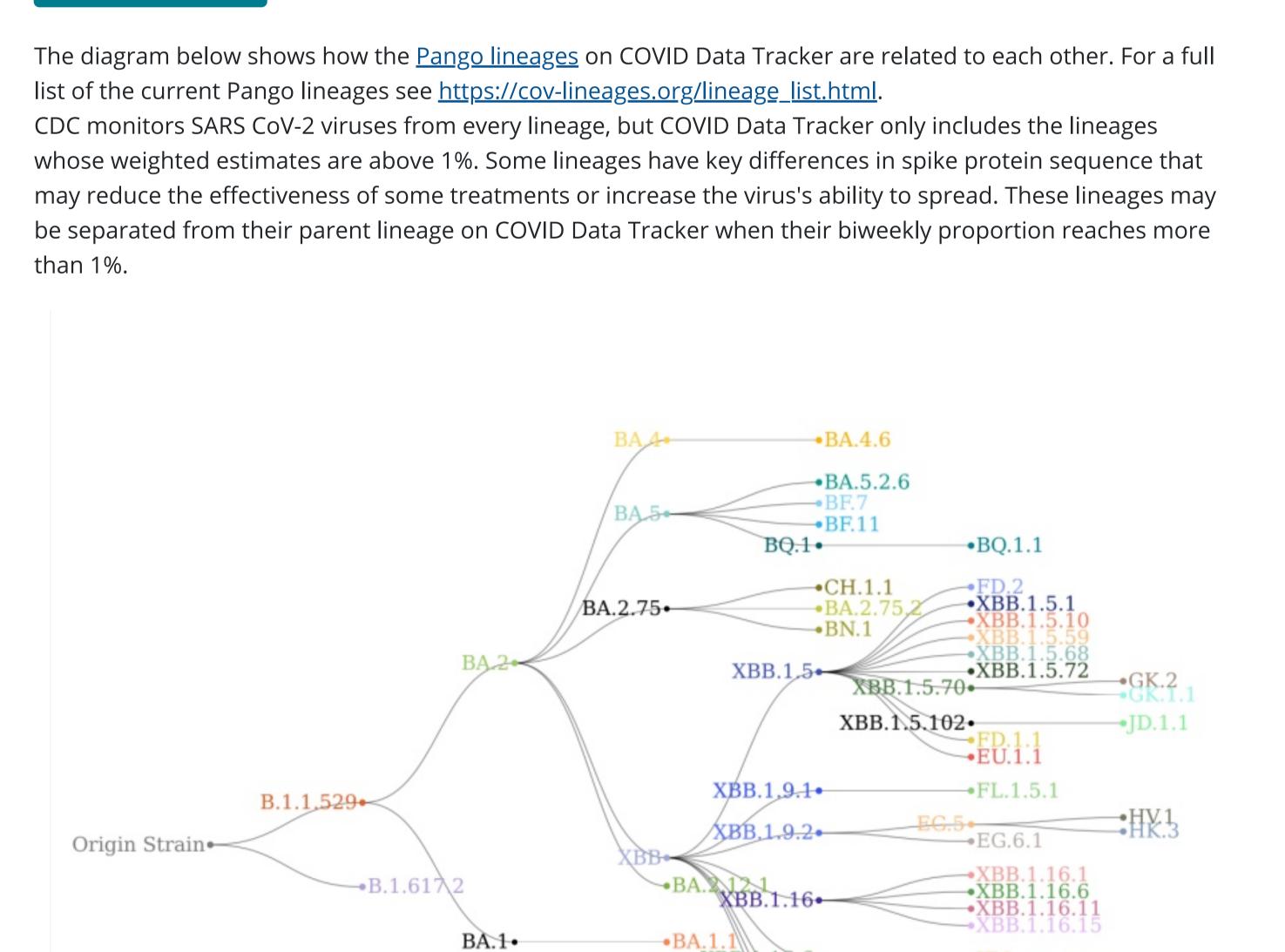
EG.5

FL.1.5.1 9.3% 8.0-10.8% 100% HK.3 7.8% 6.2-9.9% EG.5 XBB.1.16.6 5.6% 4.7-6.6% 3.4-6.1% JD.1.1 4.6% JF.1 3.5% 2.7-4.5% % Viral Lineages Among Infections 80% XBB.1.16.11 2.0-3.2% 2.5% 1.9% 1.5-2.3% XBB.2.3 GK.1.1 1.6% 1.2-2.3% HF.1 1.4% 0.9-2.1% XBB.1.16.15 1.4% 1.0-1.9% 60% XBB.1.16 1.2% 0.9-1.6% XBB.1.5.70 1.2% 0.6-2.2% BA.2 1.0% 0.5-2.1% GE.1 0.9% 0.6-1.3% XBB.1.16.1 0.8% 0.6-1.1% 40% **XBB** 0.8% 0.6-1.0% GK.2 0.5-0.9% 0.6% EG.6.1 0.5% 0.3-0.7% XBB.1.5 0.3% 0.2-0.4% 0.3% XBB.1.9.1 0.2-0.4% 20% 0.2% 0.1-0.3% XBB.1.42.2 0.2% XBB.1.5.68 0.1-0.3% XBB.1.9.2 0.2% 0.1-0.2% XBB.1.5.72 0.2% 0.1-0.2% 0% CH.1.1 0.2% 0.1-0.3% 8/19/23 XBB.2.3.8 0.1% 0.0-0.2% XBB.1.5.10 0.1% 0.0-0.1% XBB.1.5.59 0.0% 0.0-0.1% FD.1.1 0.0% 0.0-0.0% 0.0% XBB.1.5.1 0.0-0.0% FE.1.1 0.0% 0.0-0.0% EU.1.1 0.0% 0.0-0.0% Other' 0.6-2.0% Other Collection date, two-week period ending 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 period. BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75, XBB and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.2.75.2, CH.1.1 and BN.1, BA.2.75 sublineages are aggregated with BA.2.75. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, BF.11, BA.5.2.6, BQ.1 and BQ.1.1, sublineages of BA.5 are aggregated to BA.5. Except the lineages shown and their sublineages, sublineages of XBB are aggregated to XBB. Except XBB.1.5.1,XBB.1.5.10,FD.2,EU.1.1,XBB.1.5.68 and XBB.1.5.70 sublineages of XBB.1.5 are aggregated to XBB.1.5. Except FL.1.5.1, sublineages of XBB.1.9.1 are aggregated to XBB.1.9.1. Except XBB.1.16.1, XBB.1.16.15 sublineages of XBB.1.16 are aggregated to XBB.1.16, sublineages of XBB.1.42.2 are aggregated to XBB. Except FE.1.1, sublineages of XBB.1.18.1 are aggregated to XBB. For all the other lineages listed, their sublineages are aggregated to the listed parental lineages respectively. Previously, FL.1.5.1, GE.1, EG.6.1 and HV.1, FD.1.1, XBB.2.3.8, HF.1, GK.2, GK.1.1, HK.3, JD.1.1, JF.1 was aggregated to XBB.1.9.1, XBB.2.3.10, XBB.1.9.2, XBB.1.5.15, XBB.2.3, XBB.1.16.13, XBB.1.5.70, XBB.1.9.2.5.1.1, XBB.1.5.102 and XBB.1.16.6 respectively. Lineages BA.2.75.2, XBB, XBB.1.5.1, XBB.1.5.1, XBB.1.5.10, FD.2, XBB.1.9.1, XBB.1.9.2, XBB.1.16.1, XBB.2.3, BN.1, BA.4.6, BF.7, BF.11, BA.5.2.6, BQ.1.1, EU.1.1, XBB.1.5.68, FE.1.1, EG.5, XBB.1.5.72, FL.1.5.1, GE.1, EG.6.1, XBB.1.16.11, FD.1.1, XBB.1.5.70, XBB.2.3.8, HV.1, XBB.1.42.2, GK.2, HF.1, XBB.1.16.15, GK.1.1, HK.3, JF.1 contain the spike substitution R346T.

Regional proportions from specimens collected in the 2-week period ending on 11/11/2023(Nowcast).

Nowcast estimates are only available for

HHS regions 2, 3, 4, 5, 8 ,and 9



•FE.1.1

•XBB.1.42.2

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## week period may change as more data are reported. Nowcast estimates consistently align with the weighted proportions based on reported sequencing data, which are published 2-3 weeks later. Weighted Proportions

and tagged baseline surveillance sequencing submitted to public repositories by state, local, academic, or commercial laboratories. Sequences used in this analysis are intended to be a representative sample of all cases during the selected timeframe and location. They may not match cases reported by states, territorial, tribal, and local officials. Estimates of weighted variant proportions are subject to change, as sequence data from specimens previously collected continues to increase over time. The variant data reported for the jurisdiction-level estimates are limited to those designated as a <u>variant of</u> concern (VOC), variant of interest (VOI), or variant being monitored (VBM) by the U.S. government SARS-CoV-2 Interagency Group (SIG). Differences in the number of SARS-CoV-2 positive RT-PCR tests, sources of sequence data, and number of sequences available during a period affects the degree of certainty in the weighted proportion estimates. Confidence intervals are provided to describe these uncertainties. These data will be updated every other week on Friday.

Why do we use genomic surveillance to monitor SARS-CoV-2 variants?

How is CDC using genomic sequencing to track SARS-CoV-2 variants?

Want to know more about variants of the virus that causes COVID-19?

Visit the Genomic Surveillance for SARS-CoV-2 Variants page to learn more

Visit the About Variants of the Virus that Causes COVID-19 page to learn more

Sign up to receive the COVID Data Tracker Weekly Review.

Visit CDC's Role in Tracking Variants page to learn more

What SARS-CoV-2 variants are being monitored? Visit the SARS-CoV-2 Variant Classifications and Definitions page to learn more about variant attributes and their classifications.

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Trend in Hospital Admissions +8.6% in most recent week

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