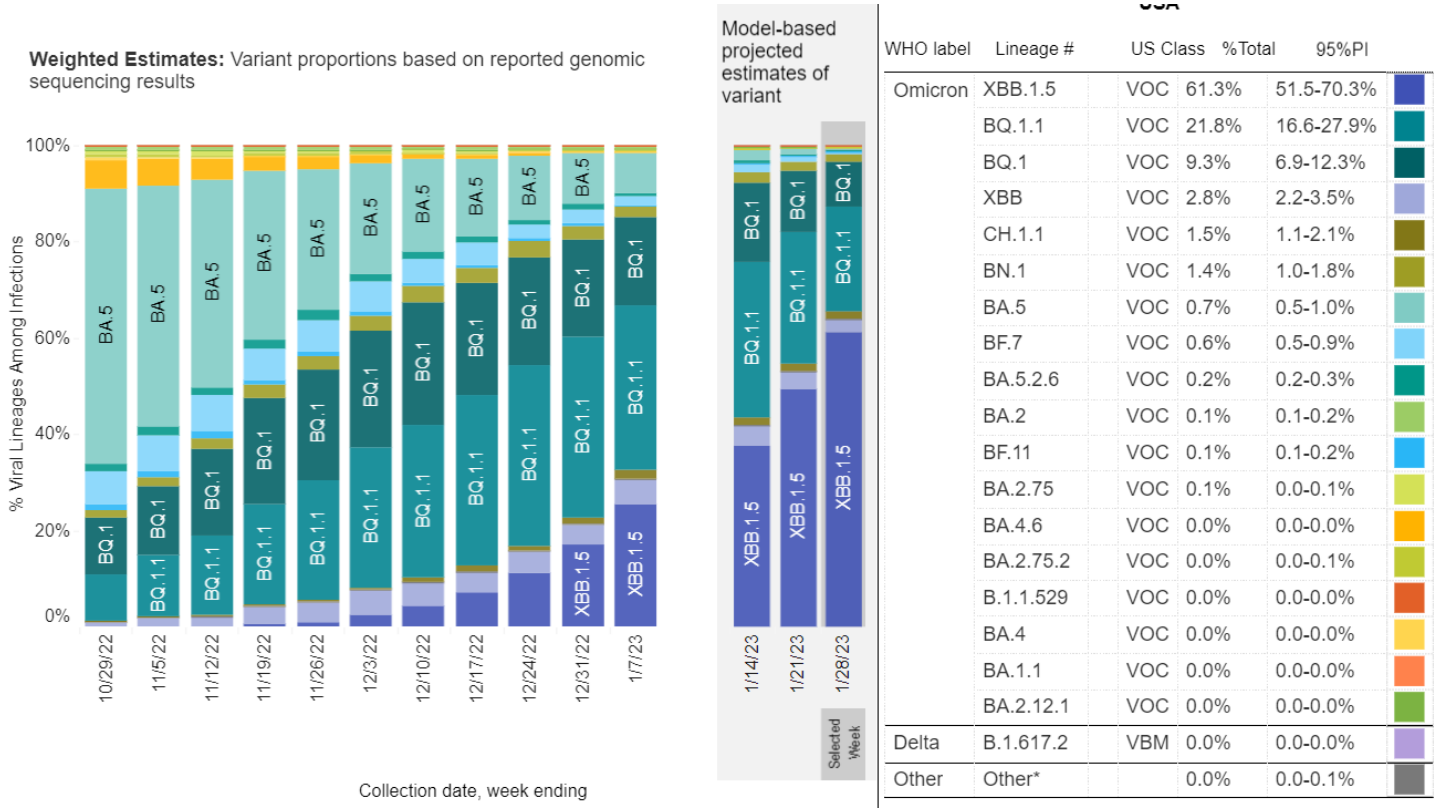
COVID-19 Variants, Subvariants, Drug Activity, and Information

Updated February 1, 2023 5:00 PM

CDC Nowcast as of January 28, 2023 – Nationwide Data



Drug Activity Against SARS-CoV-2 Variants and Subvariants – as of 2/1/2023

	Omicron BA.5	Omicron BA.4.6	Omicron BQ.1	Omicron BQ.1.1	Omicron BF.7	Omicron XBB	Omicron XBB.1.5	Omicron BA.4
EVUSHELD (mAb for PrEP, given intramuscularly)	Evusheld Emergency Use Authorization (EUA) amended by FDA on Jan 26, 2023. Evusheld only authorized for use when the combined frequency of non-susceptible variants nationally is less than or equal to 90%. Evusheld is not currently authorized for use in any U.S. Region.							
Bebtelovimab (mAb for Covid-19 treatment, given IV)	Due to the high frequency of variants/subvariants that are resistant to it, as of Nov 30, 2022, Bebtelovimab is not authorized for use in any U.S. Region							
Paxlovid (nirmatrelvir with ritonavir) (oral Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active
Lagevrio (molnupiravir) (oral Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active
Veklury (remdesivir) (IV Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active

Key:

- Active = drug is currently active or believed to be active against this variant/subvariant
- Not likely to be active = based on testing, drug is not likely to be active against this variant/subvariant
- Not active = based on testing, drug is **inactive** against this variant/subvariant
- No data at this time = no current testing has been reported about this drug against this variant/subvariant

Recent Developments / Talking Points:

- Mutations of the SARS-CoV-2 virus are an expected occurrence and have taken place since the virus was originally discovered (e.g., alpha, beta, delta variants).
- Changing epidemiology of Omicron variants and subvariants has had effects on monoclonal antibody neutralizing activity against specific Omicron variants and subvariants.
- According to CDC Nowcast dated 1/28/2023, Omicron XBB.1.5 subvariant is the dominant SARS-CoV-2 viral variant nationwide. Estimated prevalence of BQ.1 and BQ.1.1 variants is declining.
- As of January 28, 2023, in HHS Region 3 (includes VA, DE, D.C., MD, PA, WV):
    - BA.5 estimated prevalence 0.5%
    - BQ.1.1 estimated prevalence 14.6%
    - BQ.1 estimated prevalence 6.6%
    - BA.4.6 estimated prevalence 0.0%

    (BQ.1.1 + BQ.1 + BA.4.6 = 21.2%)
    - BF.7 estimated prevalence 0.4%
    - XBB estimated prevalence 2.8%
    - XBB.1.5 estimated prevalence 72.5%

    (XBB + XBB.1.5 = 75.3%)
- **EVUSHELD**:
    - On January 26, 2023, FDA amended the drug's Emergency Use Authorization stating that Evusheld is only authorized when the combined frequency of non-susceptible variants is less than or equal to 90% according to the CDC Nowcast. Currently, approximately 96% of variants are resistant to Evusheld and the drug is not authorized for use in any U.S. Region.
    - Evusheld Fact Sheet updated on January 26, 2023. Table 6 (see page 20) notes that Evusheld is not likely to be active against Omicron subvariant XBB.1.5.
    - On December 21, 2022, EVUSHELD Fact Sheet was updated (see Table 6 on pages 20-22) indicating that the product is not likely to be active against the Omicron XBB subvariant.
    - On November 18, 2022, FDA issued an updated fact sheet about EVUSHELD stating the drug was not likely to be active against Omicron BQ.1, BQ.1.1, and BF.7. While current data is not available for XBB.1.5, it is felt that EVUSHELD will likely not be effective in neutralizing this subvariant.
    - On January 6, 2023, FDA issued a release that EVUSHELD was not likely to be active against XBB.1.5, that healthcare providers should inform individuals who received EVUSHELD that they may be at increased risk for developing COVID-19, and if people develops symptoms/signs of COVID-19 they should test themselves and seek medical attention.
- On November 30, 2022, FDA paused the Emergency Use Authorization for Bebtelovimab. The drug is now not authorized for use in any U.S. region due to the high frequency of SARS-CoV-2 variants that are non-susceptible to Bebtelovimab.
- Oral Paxlovid continues to be NIH's first-choice drug and IV remdesivir (brand name = Veklury) the next preferred option for treatment of COVID-19. See the NIH Treatment Panel's Update on Bebtelovimab.
- Prescribers are advised to monitor variant frequency in their area and refer to FDA fact sheets to see if a specific drug is expected to be active against specific variants/subvariants.
- **Immunocompromised patients**: Currently, Evusheld is not authorized for use in any U.S. Region. Therefore, patients with moderate to severe immunocompromise should have a plan of action in place if they become ill with COVID-19-like symptoms. They are advised to: 1) have a supply of home COVID-

19 tests available, 2) test themselves right away if they develop symptoms and/or signs of COVID-19, 3) if the patient is ill, contact their medical provider promptly with the result of the COVID-19 test, 4) have a mechanism in place to obtain Paxlovid promptly if the patient's healthcare provider prescribes it, and 5) if the patient is unable to take oral Paxlovid, talk with their medical provider about using an alternate drug such as remdesivir, Lagevrio, or COVID-19 convalescent plasma for treatment.

- Currently, antiviral drugs Paxlovid (nirmatrelvir plus ritonavir), Lagevrio (molnupiravir), and Veklury (remdesivir) are felt to have activity against all Omicron variants/subvariants in the table on the previous page.
- "Legacy" monoclonal antibodies (Bamlanivimab/Etesevimab, REGEN-COV [casirivimab plus imdevimab], and sotrovimab), do NOT have an EUA for any current use including treatment of COVID-19 or postexposure prophylaxis. These drugs are not active against newer Omicron variants.
- The federal government has resumed distribution of free at-home COVID-19 tests.

Sources:

- CDC COVID Data Tracker
- Bebtelovimab
  - FDA. FDA Announces Bebtelovimab is Not Currently Authorized in Any U.S. Region (11/30/22)
  - FDA. Fact Sheet for Healthcare Providers: Emergency Use Authorization for Bebtelovimab (revised 11/2022)
- EVUSHELD
  - FDA. Fact Sheet for Healthcare Providers: Emergency Use Authorization for EVUSHELD (tixagevimab co-packaged with cilgavimab) (revised 1/26/2023) **NEW**
  - CDC. Pre-exposure Prophylaxis with EVUSHELD
- National Institutes of Health (NIH)
  - NIH COVID-19 Treatment Guidelines. The COVID-19 Treatment Guidelines Panel's Update on Bebtelovimab.