

Update: SARS-CoV-2 Variants of Concern



Brandy Darby, DVM, MPH
Veterinary Epidemiologist
Virginia Department of Health
brandy.darby@vdh.virginia.gov

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Overview

- New scientific knowledge of variants
 - Variant classification scheme
 - Risks posed by variants of concern
- Update on variants in Virginia

Variant Classification Scheme

- A U.S. government interagency group developed a [Variant Classification Scheme](#) that defines three classes of SARS-CoV-2 variants:
 - Variants of Interest
 - Variants of Concern
 - Variants of High Consequence

Variants of Interest

- A variant with genetic markers that have been **associated with:**
 - Changes to the way the virus attaches to host cells,
 - Reduced immune protection after vaccination or previous infection,
 - Reduced efficacy of antibody treatments,
 - Potential impact on the ability of diagnostic tests to detect the virus,
 - Predicted increase in transmissibility or disease severity.
- **Four variants of interest: B.1.526, B.1.526.1, B.1.529, P.2**

Variants of Concern

- A variant for which there is evidence of:
 - Increased transmissibility,
 - More severe disease,
 - Reduced immune protection after vaccination or previous infection,
 - Reduced efficacy of antibody treatments, or
 - Diagnostic detection failures.
- **Five variants of concern: B.1.1.7, B.1.351, P.1, B.1.427/B.1.429**

B.1.1.7

- First identified in the U.K. in November 2020
- This variant **spreads more easily and quickly (about 50% more transmissible)** than other variants
- Some evidence that B.1.1.7 is **associated with an increased risk of hospitalization and death** compared with previous variants
 - Absolute risk of death per infection remains low
- This has now become the dominant strain in the U.S.

B.1.351

- First identified in South Africa in October 2020
- This variant **spreads more easily and quickly (about 50% more transmissible)** than other variants
- Some studies suggest that antibodies generated through vaccination and natural infection might provide reduced protection against B.1.351
- To date, there is no evidence that this variant causes more serious illness

P.1

- First identified in travelers from Brazil who arrived in Japan in January 2021
- This variant **spreads more easily and quickly** than other variants (transmissibility rate not determined)
- Some studies suggest that antibodies generated through vaccination and natural infection might provide reduced protection against P.1
- To date, there is no evidence that this variant causes more serious illness

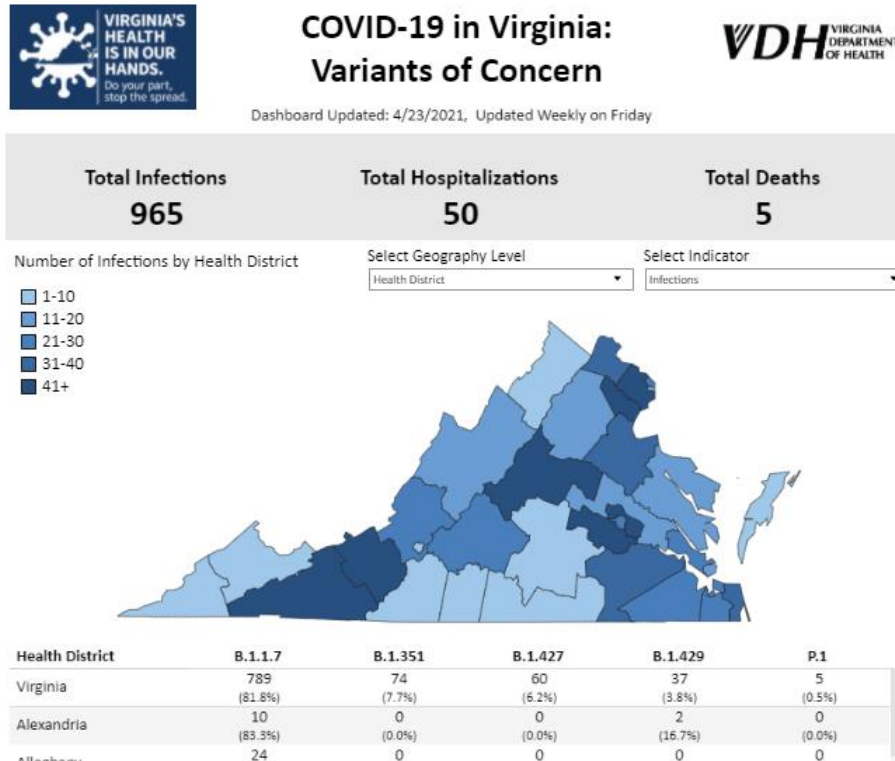
B.1.427 / B.1.429

- First identified in California and closely related to one another
- **Spread more easily and quickly (about 20% more transmissible)** than other variants
- Preliminary data show that these variants might be associated with an increased risk for serious illness
- Detected in nearly every state in the U.S. Given the national prevalence of these variants, B.1.427 and B.1.429 are not reportable to CDC

Variants of High Consequence

- A variant of high consequence has clear evidence that prevention measures or medical countermeasures have significantly reduced effectiveness relative to previously circulating variants
- Currently there are no SARS-CoV-2 variants that rise to the level of high consequence

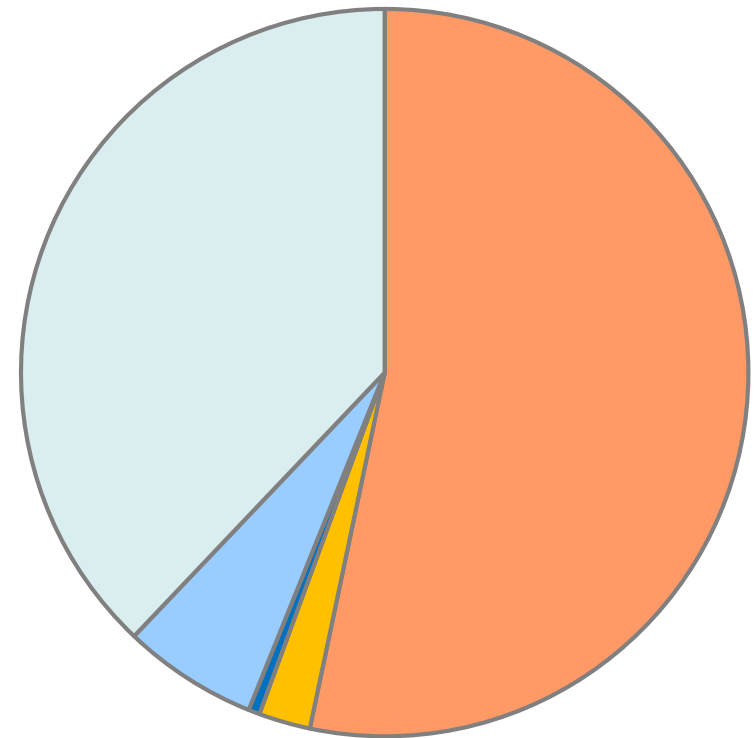
Variants in Virginia



- New VDH Variant Dashboard available at:
 - <https://www.vdh.virginia.gov/coronavirus/covid-19-data-insights/variants-of-concern/>
- Updated weekly on Fridays

CDC Website: Variant Proportions in Virginia

- Based on representative CDC sequence data collected over a 4-week period ending 4/10/21
- Proportions of variants do not represent the total number that may be circulating
- B.1.1.7 = 53.3%,
- B.1.351 = 2.3%
- P.1 = 0.5%
- B.1.427/B.1.429 = 6.0%
- Other lineages = 37.9%



■ B.1.1.7 ■ B.1.351 ■ P.1 ■ B.1.427/B.1.429 ■ Other lineages

Variant Resources

- VDH: [Variant Webpage](#) (new)
- VDH: [Variant Dashboard](#) (new)
- CDC: [SARS-CoV-2 Variant Classifications and Definitions](#) (new)
- CDC: [Variant Proportions in the U.S.](#) (new)

Additional CDC Resources

- CDC Consumer web page: [About Variants of the Virus that Causes COVID-19](#)
- CDC Scientific brief: [Genomic Surveillance for SARS-CoV-2 Variants](#)
- CDC Scientific brief: [Emerging SARS-CoV-2 Variants](#)
- Consumer web page: [Requirement for Proof of Negative COVID-19 Test or Recovery from COVID-19 for All Air Passengers Arriving in the United States](#)

Questions?

