# Indiana Health Alert Network Notification

## Delta Variant and Vaccine Effectiveness

July 2, 2021

**Delta Variant Update**

The B.1.617.2/Delta variant, first identified in India, has multiple mutations in its spike protein allowing it to be more transmissible than any other variant to date. According to the World Health Organization (WHO), it has spread to at least 85 countries since it was first identified; in the United States, it has been reported in all 50 states and Washington, D.C. The Delta variant is estimated to be up to 60% more transmissible than B.117/Alpha, which was already more transmissible than previous viral strains. As of June 19, the Delta variant accounted for at least 26% of new COVID-19 infections in the U.S. and has now become proportionally the most commonly sequenced strain Indiana. **It is critical that Hoosiers get vaccinated when eligible and that providers encourage patients to get vaccinated.**

While the Delta variant is more infectious, preliminary data suggest that after **two** doses, the Pfizer-BioNTech vaccine is 88% effective against symptomatic disease and 96% effective against hospitalization from the Delta variant. Those receiving **one** dose only saw 36% reduced risk of symptomatic infection. The AstraZeneca vaccine showed 67% reduced risk of symptomatic disease and 92% reduced risk for hospitalization **after two doses**; one dose was only 30% effective at preventing symptomatic disease from the Delta variant. While there has not been reported data on the vaccine efficacy (VE) of the Moderna and Johnson & Johnson vaccines against the Delta variant, effectiveness for two doses of the Moderna vaccine is expected to be similar to two doses of the Pfizer-BioNTech vaccine and the Johnson & Johnson vaccine is expected to show similar VE as a single dose of the AstraZeneca vaccine. Moderna is reporting a modest reduction in neutralizing titers against the B.1.617.2.

The most common symptoms associated with COVID-19 infections from the Delta variant may be different than previously reported COVID-19 symptoms. Using a self-reporting system, headache, sore throat, runny nose, fever, and cough were the top five reported symptoms in the UK during a surge in Delta variant cases. A runny nose, which has always been a rarely reported symptom was more common, and loss of taste and smell was less commonly reported.

Limited data is currently available on the severity of disease caused by the Delta variant. Preliminary data from a study in Scotland, published in the *Lancet*, found that the hospitalization rate of patients with the Delta variant was about 85% higher than that of patients with the Alpha variant, but the study had limitations and could not prove whether the Delta variant is more severe than other variants. Surges in COVID-19 infections caused by the Delta variant have been observed in the United Kingdom and Israel; however, both countries have vaccine coverage >60% and large surges in hospitalizations and deaths following uptick in cases did not occur.

**Updated Variant Names**

As a practical way to assist non-scientific discussions of SARS-CoV-2 variants, the WHO proposed using labels consisting of the Greek alphabet (i.e., Alpha, Beta, Gamma, etc.). Following the recommendation, the Centers for Disease Control and Prevention (CDC) adopted the WHO labels. The CDC has updated their list of SARS-CoV-2 variants of concern (VOC) to include new WHO labels and the Delta variant.

VOC may cause more severe infection, have increased transmissibility, or potentially impact COVID-19 diagnostics, treatments, and vaccines. More cases, hospitalizations, and deaths are expected to occur as the COVID-19 pandemic continues and VOC increase.

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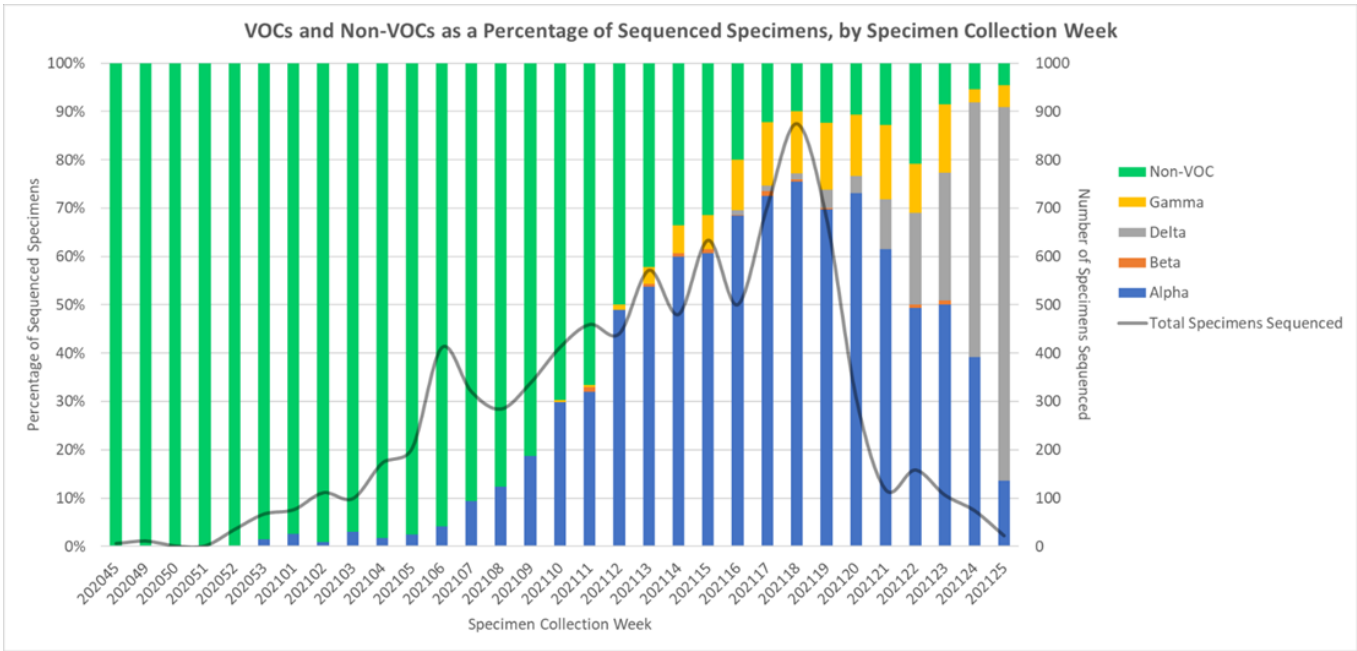
CDC and IDOH are tracking four VOCs :

| Pango Lineage | WHO Label | Clade | Location First Identified | Date First Reported in the U.S. | Cases Reported in Indiana* |
|---|---|---|---|---|---|
| B.1.1.7 | Alpha | 201/501Y.V1 | United Kingdom | December 2020 | 3,869 |
| B.1.351 | Beta | 20H/501Y.V2 | South Africa | January 2021 | 29 |
| B.1.617.2 | Delta | 20A/S:478K | India | March 2021 | 196 |
| P.1 | Gamma | 20J/501Y.V3 | Brazil | January 2021 | 516 |

*Cases reported in Indiana through July 1, 2021

The CDC has reclassified B.1.427/B.1.429 (Epsilon) variants as variants of interest (VOI) and have been removed from the IDOH COVID-19 VOC dashboard. At least one confirmed VOC has been reported in all ten Indiana public health districts and in 91 Indiana counties.

To view Indiana's VOC data, visit https://www.coronavirus.in.gov/2393.htm. VOC data can be found at the bottom right of the IDOH COVID-19 dashboard. The epidemiological curve below shows results for total sequenced specimens reported through July 1. This depicts proportions of sequenced specimens in Indiana by week of specimen collection according to the CDC *Morbidity and Mortality Weekly Report* (MMWR).




**Submitting Specimens for Variant Detection**

Because of the presumed widespread distribution of variants within the United States, routine variant identification is neither feasible nor recommended at this time. CDC is advocating that healthcare

providers proceed as if all COVID-19 cases are variant cases, encouraging heightened use of precautions and vaccination as the best mechanism to prevent variant spread.

The IDOH and CDC are conducting enhanced surveillance for SARS-CoV-2 variants; the goal of these efforts is to describe vaccine impact and to help predict infection surges. The IDOH Laboratory (IDOHL) performs sequencing for authorized SARS-CoV-2 specimens. Sequenced specimens are representative of Indiana by geography, clinical presentation, demographics, and date of collection; they are collected as part of the State's current clinical diagnostic testing initiatives.

Laboratories performing variant sequencing are required to report VOC as defined by the CDC, within 24 hours of variant confirmation. Laboratories performing variant sequencing must notify the IDOHL of their capability within one week of initiating this technology.

Clinical specimens for sequencing must have a CT value, if known, of <28. A minimum of 500 µL of the original specimen is needed.

**To initiate specimen submission, please fill out the IDOH COVID-19 Variant Testing Authorizations provider survey at the following link: https://redcap.isdh.in.gov/surveys/?s=97PTWFEAYD**

Providers will receive a notification with an authorization ID and further instructions when a specimen is approved for sequencing. Please enter the unique authorization ID into the Limsnet specimen submission form. Specimens must be frozen at ≤-70°C within 72 hours of specimen collection. Ship any specimens to IDOHL on dry ice in an insulated Category B shipper. The IDOHL is closed on weekends and holidays.

If the specimen is confirmed to have a variant strain, the IDOH will notify the local health department of jurisdiction to interview the case-patient according to CDC protocol. The CDC recommends the same isolation and quarantine guidance for these cases and their close contacts. Sequencing results are intended for public health purposes only. These results should **NOT** be used for diagnosis, treatment, or assessment of patient health or management.

For further information on approved specimen testing, please call 317-921-5500 or email isdh-lab-info@isdh.IN.gov

For questions about COVID-19 re-infections or vaccine breakthrough cases please contact Lauren Milroy, Vaccine-Preventable Disease Epidemiologist, at 317-234-2807 or lmilroy@isdh.in.gov.

For further information on the epidemiology of variant SARS-CoV-2 strains, please contact Sara Hallyburton, Respiratory Epidemiologist, at 317-234-2809 or shallyburton@isdh.in.gov during normal business hours (M-F 8:15 a.m. - 4:45 p.m. EDT). Based on the number of specimens and epidemiology of the virus, not all requests may be approved for sequencing.