



Arkansas Department of Health

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Delta Variant of SARS-CoV-2 in Arkansas

The Arkansas Department of Health (ADH) is issuing this Health Advisory to provide the latest information regarding the emergence of the Delta variant. The increase in this highly transmissible variant underscores the importance of continued testing for COVID-19 for patients with compatible symptoms, as well as individuals who are not fully vaccinated and have been exposed to SARS-CoV-2 but may be asymptomatic. Social distancing and appropriate masking remain very important countermeasures. Vaccination is the most effective and long-lasting tool for protection from this infection. ADH continues to encourage all eligible persons to get vaccinated against COVID-19.

The Delta variant (B.1.617.2, formerly India variant) of SARS-CoV-2 originated and rapidly spread in India, and is emerging in the United States, as well as in many other countries. On June 15, 2021, the CDC designated the Delta variant a variant of concern (VOC) in the United States. As of mid-June 2021, the CDC estimates the Delta variant accounts for 20% of new cases in the United States. The Delta variant virus comprises 30.6% of all variant viruses detected, based on the CDC sequence data, from human samples shows in HHS Region 6 (Arkansas, Louisiana, Texas, Oklahoma and New Mexico) (1). This is an increase from 4.3% observed on May 22. Genetic surveillance of COVID-19 cases by ADH detected at least one case of Delta variant in 57 counties across all regions of the State (2). However, as there is considerable lag time in return of sequencing results, it is most probable that the Delta variant already spread to nearly all counties in Arkansas.

Viral mutations naturally occur in the genome of many viruses, including SARS-CoV-2 which causes COVID-19. Unlike the human genome, which is slow to mutate, RNA viruses, such as SARS-CoV-2, are able to quickly mutate. Once the mutation occurs, it may alter the viral function (for example, enhance receptor binding), or may have no effect on how the virus functions. A new virus variant emerges when the virus develops one or more mutations that differentiate it from the predominant virus variants circulating in a population.

Accumulating data shows that Delta virus may have increased binding with human ACE receptors and increased transmissibility when compared to previously emerged variant viruses. New Public Health England (PHE) research suggests the Delta variant is associated with a 64%

increased risk of household transmission compared with the Alpha variant (B.1.1.7, formerly UK variant), and is 40% more transmissible outdoors. Analysis of data from Scotland recently published in *The Lancet* indicated that Delta variant approximately doubles the risk of hospitalization compared with the Alpha variant (3).

Variants of concern, such as Delta, may also reduce vaccine effectiveness, which may be evident by a high number of vaccine breakthrough cases or a very low vaccine-induced protection against severe disease. An updated technical briefing (5) from June 25, 2021 to a pre-print study (4) released by PHE found that two doses of the Pfizer-BioNTech vaccine were 79% effective against symptomatic infection with the Delta variant versus 89% for the Alpha variant (4). However, one dose was only 35% effective against symptomatic infection with the Delta variant versus 49% for the Alpha variant. The PHE data also shows the Pfizer-BioNTech vaccine is 96% effective against hospitalization, after two doses, in those who experience Delta virus infection (5). These new findings underscore the importance of receiving two doses of COVID-19 vaccine (where appropriate) and adhering to the typical regimen of injections.

Clinical knowledge regarding differences in symptoms caused by the Delta virus infection is currently limited. According to the patient data from the UK, where the Delta variant now accounts for 91% of the Covid-19 cases, disease caused by this variant may not present in typical fashion with cough and fever. An ongoing U.K.-based study (Zoe Covid Symptom Study) enables public to enter their COVID symptoms on a smartphone application for the scientists to then analyze the data.

Analysis of such data shows that top symptoms of Delta variant infection are headache, followed by runny nose and sore throat, while fever and cough were less common; loss of smell was not in the top ten. Most cases were in young people who had not yet been vaccinated, and the variant appeared to be far more transmissible with every person infecting several others. Implications of such findings are that infected persons may not perceive themselves as having COVID-19 symptoms and, accordingly, not seek health care, and health providers may not pursue an appropriate testing.

ADH urges health care providers and the public to be vigilant for the possibility of Delta virus infection. Social distancing and appropriate masking remain very important countermeasures. Vaccination is the most effective and long-lasting tool for protection from this infection. ADH continues to urge all eligible persons to get vaccinated against COVID-19. Also, ADH urges health care providers to maintain a high index of suspicion for COVID-19 in patients with any compatible symptom as well as a low threshold for obtaining SARS-CoV-2 viral testing.

Healthcare providers who suspect their patient's positive result may be due to the Delta or another variant and would like to have a sample sequenced can send it to ADH for sequencing

(see the other attachments, one to fill out and one with instructions for shipping). On the PDF attachment titled “SARS-CoV-2 Sequencing Form Instructions”, please note the link in the first paragraph to fill out in order to get authorization to send sample to ADH. This link will take you to a webform in REDCAP that will allow our staff to track the request and the sample when it arrives. Please fill out all requested items on the webform *and* on the fillable part of the PDF (that should then be printed out and shipped with the sample). If needed, shipping to ADH’s Public Health Lab can even be arranged by contacting the local health unit nearest you (<https://www.healthy.arkansas.gov/local-health-units>).

Much of the content for this communication was borrowed from Missouri Department of Health and Senior Services (DHSS).

References:

1. https://covid.cdc.gov/covid-data-tracker/?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcases-updates%2Fvariant-proportions.html#variant-proportions
2. ADH Variant of Concern Report
https://www.healthy.arkansas.gov/images/uploads/pdf/Weekly_COVID-19_Variant_of_Concern_VOC,_Week_Ending_Saturday_June_26,_2021.pdf
3. Sheikh A, McMenamin J, Taylor B, Robertson C. SARS COV2 delta VoC in Scotland: demographics, risk of hospital admission, and vaccine effectiveness. *Lancet* 397, 10293:2461-62.
4. Bernal JL, Andrews N, Gower C, et al. Effectiveness of COVID 19 vaccines against the B.1.617.2 variant. *MedRxIV Posted May 24 2021*
5. Public Health England. SARS COV 2 variants of concern and variants under investigation in England Technical Briefing 17 June 25 2021.