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Coronavirus Disease 2019 (COVID-19) Outbreak, Update # 35 *SARS-CoV-2 Variants of Concern*

Key Points and Recommendations:

- The SARS-CoV-2 B.1.1.7 variant has been identified for the first time in a NH resident related to international travel. Public health contact tracing has identified close household contacts, but no other community exposures. Public health isolation, quarantine and testing guidance was followed, including testing of household contacts.
 - Healthcare providers should continue to refer to our [Isolation](#) and [Quarantine](#) guidance for people infected with (Isolation) or exposed to (Quarantine) COVID-19. We continue to recommend testing (with a PCR-based test) all asymptomatic close contacts within 5-7 days after exposure.
- Three primary SARS-CoV-2 variants are circulating globally, including in the U.S. These are named the B.1.1.7, B.1.351, and P.1 variants (see sections below for more information). Compared with the current predominant SARS-CoV-2 strain in the U.S., all three variants are more easily transmitted. In addition, some variants may cause more severe disease, and immunity from prior infection or vaccination appears to be decreased, especially against the B.1.351 and P.1 variants.
- DPHS continues to strongly recommend that any person with new or unexplained [symptoms of COVID-19](#) be tested, [including](#) people who are 14 days past completion of a COVID-19 vaccination series and people known to have been infected in the prior 90 days if there was recent travel or an identified COVID-19 exposure. Therefore, all healthcare providers should routinely ask any patient being evaluated for COVID-19 testing about:
 - Travel outside of New England (ME, VT, MA, RI, CT) in the prior 14 days
 - Previous SARS-CoV-2 infection in prior 90 days
 - Completion of an approved COVID-19 vaccination series
- Any person being tested for COVID-19 who meets any of the above criteria should have their specimen sent to the NH Public Health Laboratories (PHL) for COVID-19 testing and for genetic testing for these variants.
 - The PHL has revised the laboratory [COVID-19 Test Requisition form](#) to include ability to indicate if any of the above criteria are met.
 - Follow instructions for [specimen collection, handling and transport](#) to the NH PHL (also see information below).
- Providers who provide pre-/post-travel medical services should ensure that any international travelers are informed about these new variants and the requirements for pre- and post- travel testing per [CDC's international travel guidance](#). People that participate in international air travel need to be tested on day 3-5 after travel (even if asymptomatic); testing should be conducted with a PCR-based test, and travel-related specimens can be sent to the NH PHL for SARS-CoV-2 testing.

Epidemiology:

There are three primary SARS-CoV-2 Variants of Concern (VOC) circulating globally: the B.1.1.7 variant first identified in the United Kingdom; the B.1.351 variant first identified in South Africa, and the P.1 variant first identified in Japan and widely circulating in Brazil. See CDC's [Science Brief](#) on Emerging SARS-CoV-2 Variants for more background information.

To date, the B.1.1.7 variant has been identified in about 86 countries, the B.1.351 variant in 44 countries, and the P.1 variant in 15 countries globally (see [WHO Situation Reports](#)). In the United States, B.1.1.7 has been the primary VOC identified and has been found now in more than 37 states with more than 980 cases. The B.1.351 variant has been identified in 5 different states (13 cases), and the P.1 variant has been identified in 2 different states (3 cases). See the CDC website of [COVID-19 Cases Caused by Variants](#) for updated case counts.

New Hampshire has identified our first case of SARS-CoV-2 infection with the B.1.1.7 variant. This person is an adult resident of Hillsborough County and was a close contact to a person diagnosed with COVID-19 after international travel. No additional community exposures have been identified. However, NH and surrounding states will likely see increasing numbers of infections from the B.1.1.7 variant, and CDC has estimated that the B.1.1.7 is likely to become the predominant circulating variant in the U.S. in the coming months ([Galloway et al. MMWR Morb Mortal Wkly Rep. 2021 Jan 22;70\(3\):95-99](#)), similar to the situation in the UK.

Public Health and Clinical Significance of New SARS-Cov-2 Variants of Concern (VOC):

All three variants are more transmissible due to mutations in the viral spike protein, specifically in the region of the receptor binding domain (RBD) which is believed to enhance binding affinity to human ACE2 receptors. One modeling study by the London School of Hygiene and Tropical Medicine has estimated that the B.1.1.7 variant is 43-82% more transmissible than the preexisting/original strain of SARS-CoV-2 ([Davies et al. medRxiv. 2021 Feb 7](#)). Other early studies and epidemiologic data suggest that the B.1.351 and P.1 variants are similarly more infectious and highly transmissible.

There is also emerging evidence that the variants, particularly the B.1.1.7 variant, may cause more serious disease and increase risk of death (see UK [NERVTAG report](#) and preprint [Davies et al. medRxiv. 2021 Feb 11](#)). Even if the new variants do not directly increase the risk for severe disease, if variants spread unchecked in a population, the increased transmissibility will lead to more cases, hospitalizations, and deaths.

Multiple studies and epidemiologic observations also suggest that immunity from prior infection or vaccination may be less effective at preventing infection from these SARS-CoV-2 variants, especially the B.1.351 and P.1 variants, but to a lesser extent also the B.1.1.7 variant. This includes preliminary evidence of vaccine effectiveness from both the Pfizer-BioNTech and Moderna (mRNA) COVID-19 vaccines, but also vaccines under study including the Novavax (recombinant protein/adjuvant-based) COVID-19 vaccine, and the Johnson & Johnson (adenovirus vector) COVID-19 vaccine. See the Table in the [NH DPHS webinar presentation](#) from February 4, 2021 for more details on recent studies.

Emergence of these variants highlights the importance of COVID-19 vaccination combined with continued adherence to the mitigation measures, even for people previously infected or fully vaccinated. Everybody needs to continue to practice social distancing, wear face masks, avoid group and social gatherings, and avoid non-essential travel.

Instructions for Specimen Handling and Transport to the Public Health Laboratories (PHL):

SPECIMEN HANDLING: Place swab immediately into tube containing sterile 2-3 ml of transport media. Aseptically, cut or break applicator stick off near the tip to permit proper closure of the cap. Tighten cap

securely. Label specimen with the patient's name, ID number, specimen type, and date collected. To help prevent leaking, assure caps are threaded properly, then place the tube into a zipper lock, leak-proof specimen transport bag. Place completed paper [COVID-19 Test Requisition form](#) into document sleeve of specimen transport bag. Store specimens at 2-8°C for up to 72 hours after collection. If a delay in testing or transportation is expected, store specimens at -70°C or below.

TRANSPORT OF SPECIMEN: The NH PHL uses a courier service to pick up specimens. Call 603-271-0305 to request a pickup. The specimen should remain cold during transport. Use of dry ice or frozen ice packs are acceptable to maintain a cold temperature during transport. If shipping a specimen via a commercial delivery service, such as FedEx, send overnight, Monday – Thursday using dry ice. The NH PHL cannot accept shipped specimens over a weekend or on holidays. Follow packaging instructions of the delivery service as these may differ from one service to another. The NH PHL can accept hand-delivered specimens at their facility 24/7. Specimens should be placed in the refrigerator at their specimen receiving location at 29 Hazen Drive, Concord, NH. If delivery is after business hours, please follow instructions posted in the specimen receiving location.

NH DPHS Continues to Host and Participate in Weekly Partner Calls, Including For:

- **Long-term care facilities and congregate living settings** every Wednesday from 11:45 am – 1:00 pm, in partnership with the NH Healthcare Association (NHHCA):
 - Zoom link: <https://zoom.us/j/511075725>
 - Call-in phone number: (929) 205-6099
 - Meeting ID: 511 075 725
 - Password: 092020

- **Educational and childcare partners** every Wednesday from 3:30 – 4:30 pm:
 - Zoom link: <https://nh-dhhs.zoom.us/j/98062195081>
 - Call-in phone number: (646) 558-8656
 - Meeting ID: 980 6219 5081
 - Password: 197445

- **Healthcare and other public health partners** every Thursday from 12:00 – 1:00 pm; these calls focus on new science, medical, and vaccine updates:
 - Zoom link: <https://zoom.us/s/94841259025>
 - Call-in phone number: (646) 558-8656
 - Meeting ID: 948 4125 9025
 - Password: 003270

- For any questions regarding this notification, please call the NH DHHS, DPHS, Bureau of Infectious Disease Control at (603) 271-4496 during business hours (8:00 a.m. – 4:30 p.m.).
- If you are calling after hours or on the weekend, please call the New Hampshire Hospital switchboard at (603) 271-5300 and request the Public Health Professional on-call.
- To change your contact information in the NH Health Alert Network, please send an email to DHHS.Health.Alert@dhhs.nh.gov.

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Originating Agency: NH Department of Health and Human Services, Division of Public Health Services

Attachments: None