PublicHealth
WELLINGTON-DUFFERIN-GUELPH
Stay Well.

UPDATE

SUBJECT:	**COVID-19 Variants of Concern (VOCs)**
Date:	February 9, 2021
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To:	Physicians, Nurse Practitioners, Hospitals, and Assessment Centres
From:	Dr. Matthew Tenenbaum

COVID-19 Variants

- SARS-Co-V-2 undergoes genetic mutations regularly with estimates of about one to two mutations per month.
- Most mutations do not result in any change in the amino acid sequence that code the viral proteins. However, some mutations do change the amino acid sequence and result in changes in the viral (spike) proteins.
- COVID-19 variants of concern (VOCs) have undergone mutations that have changed the spike protein. Spike protein mutations may alter the virus in terms of its transmissibility (ability to pass from one person to another), disease severity, diagnostic test performance ("diagnostic escape"), response to therapeutics, ability to evade natural immunity ("immune escape") and ability to evade vaccine-induced immunity ("vaccine escape").

Main Types of Variants of Concern

The following table provides an overview of the three main types of VOCs that are currently being monitored. Please note that the information in this table is rapidly changing.

Name	**B.1.1.7 or VOC 202012/01**	**B.1.351 or 501Y.V2**	**P.1 (formerly P.1.1.28)**
Country First Identified	United Kingdom	South Africa	Brazil
When Identified	Earliest case identified from September 2020	Earliest case identified from October 2020	Earliest case identified from December 2020
Transmissibility, Disease Severity, & Reinfection	Estimated to be 36% to 75% more transmissible. May be associated with higher mortality rate.	Estimated to be 50% more transmissible. Currently no evidence that it has any impact on disease severity.	No evidence of increased transmissibility but mutations suggest that it is plausible.

Name	B.1.1.7 or VOC 202012/01	B.1.351 or 501Y.V2	P.1 (formerly P.1.1.28)
	Currently, no evidence of difference in the risk of reinfection.	May be an increased risk of reinfection.	No evidence of impact on disease severity or reinfection rates.
Testing	Current diagnostic tests are still likely to detect	Current diagnostic tests are still likely to detect	Current diagnostic tests are still likely to detect
Effectiveness of Vaccines	No indication that current vaccines will be less effective	Current vaccines may be less protective	TBD
How Widespread	Cases identified in 60 countries including Canada	Cases identified in 23 countries including Canada	Cases identified in Brazil and in travelers from Brazil
Cases Identified in Ontario (Feb 7)	Ontario: 219 Central West area: 3	Ontario: 1	None identified

Efficacy of COVID-19 Vaccines

- Pfizer and Moderna both target the spike protein where these variants have mutations. However, researchers theorize that the immune response initiated by the current COVID-19 vaccines is robust enough to provide at least some protection against new variants although in some cases it could be reduced.
- Pfizer and Moderna vaccines have shown evidence to be effective against the B117 and B1351 variants.
- Moderna and Pfizer are currently working on adjustments to their current vaccine to increase their effectiveness against the B.1.351 variant.

VOC Surveillance

- Public Health Ontario (PHO) provides daily and weekly epidemiological summaries that include variant COVID-19 cases found in Ontario and by each health unit, and the number of specimens screened.
- PHO will be conducting known VOC screening on **all** positive COVID-19 tests beginning on February 3 within two to three days of initial processing. This initiative will continue for up to four weeks.
- Positive specimens from individuals who meet criteria for VOC screening (e.g., travel history) will routinely have their specimens screened for the duration of this initiative. **Health care providers DO NOT need to notify WDG Public Health or complete a *SARS-CoV-2 VOC Screening Information Form* while PHO is undertaking universal screening of all positive COVID-19 tests**. Any changes to this direction will be communicated. Please refer to Public Health Ontario's Test Information Sheet for the most up-to-date information.

- Positive VOC screen results will be communicated to the ordering health care provider in addition to WDG Public Health. In order to ensure rapid response, **health care providers are asked to notify WDG Public Health if they receive a positive VOC laboratory result at: 1-800-265-7293, ext. 7006, 9 am to 4 pm (after hours 1-877-884-8653).**
- PHO will also undertake genomic sequencing efforts to identify new and emerging variants by sequencing up to 10% of all positive tests starting February 17, 2021.

Updates to Case and Contact Management

- Enhanced case and contact management measures should be applied to individuals who are **confirmed or probable cases of COVID-19 who also screen positive for VOCs including having an epidemiological link to a VOC case through close contact or outbreak**.
- Main changes to case management include:
    - Prioritizing VOC cases for more timely action.
    - Increased emphasis on acquisition assessment, including source case investigation where possible.
    - Greater emphasis on identifying and addressing barriers to strict self-isolation.
- Main changes to contact management include:
    - A lower threshold for classifying contacts as high-risk/close contacts.
    - **Repeat testing of all high-risk contacts after day 10 of self-isolation, following an initial test done earlier in the self-isolation period.**
    - Close contacts who develop symptoms will be managed as probable cases unless/until they have a negative swab.
    - **Household members of isolating close contacts will also be told to stay home except for essential reasons.** The definition of essential reasons will be similar to that used during the provincial stay-at-home order.
- Recommendations for case and contact management will continue to evolve based on guidance from Public Health Ontario and other expert bodies.

Infection Prevention and Control

- At this time, there are no changes to current recommendations regarding IPAC or PPE when dealing with VOCs. There is no evidence that VOCs are transmitted in fundamentally different ways from more familiar variants.
- Since VOCs are more transmissible, there is a greater likelihood of infection following a given exposure. This emphasizes the important of robust IPAC practices.

Challenges Ahead

- Modelling suggests that the B.1.1.7 could become the dominant strain of SARS-Co-V-2 as early as March 2021.

- All public health measures to reduce transmission of the SARS-Co-V-2 virus continue to apply to the new variants but require more rigorous application due to the increased transmission risk. It is important that every effort is made to implement effective mitigation measures in all settings where people interact.

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All physician advisories/updates are available on our website (wdgpublichealth.ca) in the COVID-19 Information for Health Care Providers section.