

COVID-19 Vaccine Bulletin #9

Variants of Concern

The purpose of the Vaccine Bulletin is to give you the latest information about COVID-19 vaccines. For this bulletin, the focus will be on the COVID-19 variants of concern (VOCs) and the impact on the immunization strategy. A **physician update on VOCs** with more information on case and contact management and community impact, will be coming in the near future.

Quick Updates

- The [total number of doses](#) that have been administered in **Wellington-Dufferin-Guelph** is **6553**.
- Second dose vaccination clinics in long-term care and retirement homes are scheduled to begin on February 4, 2021.
- All COVID-19 second dose vaccinations—except those in residents of long-term care and retirement homes—will be rescheduled due to the delays in shipments announced by Pfizer and more recently, Moderna.
- The province is expecting 26,000 doses during the first week of February and 310,000 doses to be delivered in the remaining weeks of February.
- As soon as local vaccine supply permits, Public Health will work quickly to reschedule cancelled appointments and schedule second dose appointments.
- Once second doses have been completed new first doses will begin as vaccine supplies allow.
- Community-led clinic planning, in partnership with Public Health, is also underway. The capacity will be built to immunize our entire community as quickly as possible once supplies of vaccine are readily available.

COVID-19 Variants of Concern (VOCs) and Impact on the Immunization Strategy

The Basics

- SARS-Co-V-2 undergo 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 transmissibility (ability to pass from one person to another), infectivity (ability to establish an infection), or its disease severity.

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. Currently, no evidence of difference in the risk of reinfection.	Estimated to be 50% more transmissible. Currently no evidence that it has any impact on disease severity. May be increased risk of reinfection.	No evidence of increased transmissibility but mutations suggest that it is plausible. 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	Early indication is that current vaccines will be 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 2)	Ontario: 106 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 B1351 variant.

VOC Surveillance

- Public Health Ontario (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.
- 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.
- 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.

References

Centers for Disease Control and Prevention (January 2021.) [Emerging SARS-CoV-2 Variants.](#)

European Centre for Disease Prevention and Control (January 2021). [Risk Related to the Spread of New SARS-CoV-2 Variants of Concern in the EU/EEA – first update.](#)

Government of Ontario (January 2021). [Ontario Takes Immediate Action to Address COVID-19 Variants.](#)

Moderna (Press release January 2021). [Moderna COVID-19 Vaccine Retains Neutralizing Activity Against Emerging Variants First Identified in the U.K. and the Republic of South Africa.](#)

Pfizer (Press release January 2021). [In Vitro Studies Demonstrate Pfizer and BioNTech COVID-19 Vaccine Elicits Antibodies that Neutralize SARS-CoV-2 with Key Mutations Present in U.K. and South African Variants.](#)

Public Health Ontario (December 2020). [COVID-19 UK Variant VOC-202012/01—What We Know So Far.](#)

Public Health Ontario (February 2021). [COVID-19 in Ontario: January 15, 2020 to February 01, 2021.](#)

Mahase, E. (January 2021). [COVID-19: What New Variants are Emerging and How are They Being Investigated?](#) BMJ 2021; 372:n158.

UK Government – New and Emerging Respiratory Virus Threats Advisory Group (January 2021). [NERVTAG note on B.1.1.7 severity.](#)

World Health Organization (December 2020). [SARS-CoV-2 Variants.](#)

Adverse Events Following Immunization (AEFIs) in Ontario

Public Health Ontario Summary Report – [AEFIs for COVID-19 in Ontario: December 13, 2020 to January 23, 2021](#)

Status of Doses Administered in Ontario

Total doses administered = **348,331**

Daily doses administered = **3,716**

People fully vaccinated = **74,994**

Reliable Sources of Information on Vaccines

[Public Health Agency of Canada](#)

[Government of Ontario](#)

[Public Health Ontario](#)

[Centre for Effective Practice \(CEP\)](#)

[World Health Organization](#)

[COVID-19 Studies from the World Health Organization Database](#)

[Centres for Disease Control and Prevention \(CDC\)](#)