

## COVID-19 Vaccine Bulletin #13

### Vaccine Efficacy & AstraZeneca

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 NACI updates, vaccine efficacy and the AstraZeneca vaccine.

#### Quick Updates

- Check out [Wellington-Dufferin-Guelph's vaccination dashboard](#). The total number of single doses that have been administered in Wellington-Dufferin-Guelph is **19,294**.
- Vaccine pre-registration information is now available on our website: [www.wdgppublichealth.ca/register](http://www.wdgppublichealth.ca/register). There is a **NEW Vaccine Registration and Booking Helpline: 1-844-780-0202**.
- See WDGPH's "[at-a-glance](#)" [graphic](#) that summarizes the local vaccination plan.
- [AstraZeneca](#) and [Janssen \(Johnson and Johnson\)](#) vaccine have been approved by Health Canada. **This Bulletin includes important information on AstraZeneca efficacy questions.**
- The WDGPH-led mass vaccination clinic in Guelph will be changing locations from Chancellor's Way (Public Health office) to the West End Community Centre starting March 16 to improve accessibility.

#### NACI Updates

- The National Advisory Committee on Immunization (NACI) has updated its [Recommendations on the use of COVID-19 Vaccines](#) to include the AstraZeneca vaccine.
- NACI does not currently recommend the use of the AstraZeneca vaccine in individuals 65 years of age and older due to limited information on the efficacy of this vaccine in this age group.
- Due to current evidence of higher efficacy, NACI recommends that **mRNA** COVID-19 vaccines are preferentially given to those at highest risk of severe illness and death and at highest risk of exposure to COVID-19 (those prioritized for early vaccination).
- The dosing intervals have been updated for all COVID-19 vaccines for up to a 4-month interval between doses

## Extended Dose Intervals

Source: [NACI Rapid Response: Extended Dose Intervals for COVID-19 Vaccines to Optimize Early Vaccine Rollout and Population Protection in Canada](#)

- NACI reviewed the evidence on the efficacy and effectiveness of COVID-19 vaccines in preventing infections, symptomatic disease, hospitalizations, and death from COVID-19.
- The first two months of data on vaccine effectiveness are showing sustained high levels of protection.
- Modelling has shown that extending the interval between doses to be a good strategy, even in scenarios with a six-month interval and in theoretical scenarios where waning protection was considered.
- **NACI recommends that in the context of limited vaccine supply, jurisdictions should maximize the number of individuals benefiting from the first dose of vaccine by extending the interval for the second dose of vaccine to four months.**
- Extending the interval between doses will mean that the entire adult population can be vaccinated within a shorter timeframe.

## Updated – Recommendations for Special Populations

- The Ministry of Health's (MOH) [COVID-19 Vaccination Recommendations for Special populations](#) will be updated in the near future to eliminate the requirement for those who are pregnant or immunocompromised to provide a verbal attestation of receive counselling by a health care provider.

## Vaccine Rollout in Pharmacies

- The MOH is moving ahead with vaccinations in pharmacies.
- Pharmacy vaccinations in Toronto, Kingston, and Windsor will begin as early as Monday. Other regions will begin vaccinations shortly.
- Pharmacies will be using the AstraZeneca vaccine which is fridge-friendly and requires similar conditions to that of the flu shot vaccine.
- Vaccinations will be restricted to those between the ages of 60-64 during this initial phase.

## Vaccine Pre-registration Information

- [Pre-register for COVID-19 vaccination](#) if you are a health care worker (HCW).
- WDGPH will use the information provided on the pre-registration form to further prioritize HCWs into sub-groups based on the Ministry of Health's [Guidance for Prioritizing Health Care Workers for COVID-19 Vaccination](#).
- Please familiarize yourself with the eligibility criteria and encourage your patients/clients who are [eligible to pre-register](#) for the vaccine.
- There is a **NEW Vaccine Registration and Booking Helpline: 1-844-780-0202**.
- **The wait time from pre-registration to receiving an email/text with the appointment booking information will vary from person to person. You may need to wait a week or more before receiving this information.**
- For anyone have trouble with the pre-registration portal please direct them to our troubleshooting webpage: [how to book your vaccination appointment online](#).
- Individuals waiting for their vaccination appointment can review WDGPH's webpage: [preparing for your COVID-19 vaccination](#).

## Vaccine Efficacy Questions

### *What does vaccine efficacy mean?*

- 95% efficacy **does not** necessarily mean that, in the clinical trial, 5% of vaccinated people got COVID-19. Instead, it is the percent reduction of disease in the vaccinated clinical trial group when compared to the placebo group.
- In each of the clinical trials for the COVID-19 vaccines there are two groups: those who received the vaccine and those who received a placebo shot. Researchers followed each of these groups and recorded those who experienced symptoms and tested positive for COVID-19. Researchers then calculated the fraction (or percentage) of those in each of the two groups who got sick with COVID-19 or infected with the virus. The relative difference between these two numbers is the vaccine efficacy.

### *What should you consider when comparing efficacy rates across different vaccines?*

- Comparing efficacy across different vaccines is difficult because the trials occurred in different geographic regions, with different populations and at different points of time in the pandemic (when cases were higher/lower and when different COVID-19 variants were circulating).

### **What is the difference between vaccine efficacy and vaccine effectiveness?**

- Vaccine effectiveness refers to how well the vaccine works in the “real world” outside of clinical trials. It is typically measured after the vaccine has been approved and is being given to the general population.
- Many factors can influence how a vaccine does outside of clinical trials such as underlying health conditions in the general population, the level of exposure to the circulating virus, and the prevalence of COVID-19 variants.

### **References**

Live Science (February 2021). COVID-19 vaccines: What does 95% efficacy actually mean? Available at: [www.livescience.com/covid-19-vaccine-efficacy-explained.html](http://www.livescience.com/covid-19-vaccine-efficacy-explained.html).

The New York Times (November 2020). Two companies say their vaccines are 95% effective. What does that mean? Available at: [www.nytimes.com/2020/11/20/health/covid-vaccine-95-effective.html](http://www.nytimes.com/2020/11/20/health/covid-vaccine-95-effective.html).

## **AstraZeneca/Oxford COVID-19 Vaccine (ChAdOx1-S)**

### **Summary Table of the AstraZeneca Vaccine**

<b>Platform</b>	<ul style="list-style-type: none"> <li>• Viral vector-based vaccine (see <a href="#">Vaccine Bulletin #6</a>)</li> </ul>
<b>Age approved for</b>	<ul style="list-style-type: none"> <li>• 18 years of age and older</li> </ul>
<b>Dosage</b>	<ul style="list-style-type: none"> <li>• 2 doses (0.5 ml) given intramuscularly, 4 to 12 weeks apart</li> <li>• 12 weeks is the preferred interval</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• Stored at 2-8°C (6 months)</li> </ul>
<b>Side effects</b>	<ul style="list-style-type: none"> <li>• Mild to moderate</li> <li>• Most common: pain/swelling at injection site, feeling unwell, fatigue, chills or feeling feverish, headache, nausea and joint pain or muscle ache</li> <li>• Side effects were milder and less frequent after second dose (when compared to first dose) and in older adults (when compared to younger adults).</li> </ul>
<b>Contraindications</b>	<ul style="list-style-type: none"> <li>• Severe allergy to any ingredients in the vaccine</li> <li>• Had allergic reaction to previous dose of AstraZeneca vaccine</li> </ul>
<b>Vaccine Efficacy (based on clinical trials)</b>	<ul style="list-style-type: none"> <li>• Based on clinical trials, vaccine efficacy is 62.5% for preventing symptomatic COVID-19 beginning 2 weeks after the second dose</li> </ul>

and efficacy is 100% for preventing hospitalizations due to COVID-19.

- Vaccine efficacy increased with increasing intervals between the first and second doses (reaching 81.6% with dosing interval >12 weeks).
- Limited efficacy data from clinical trials on individuals 65 years of age and older.

Note that WDGPH will follow the guidance from the Ministry of Health regarding use of the AstraZeneca vaccine.

### ***Emerging Data from the “Real World”***

- Emerging data from “real world” studies have shown promising results about the effectiveness of the AstraZeneca vaccine in older adults.
- Public Health England (Lopez Bernal, et al., 2021) has submitted a [pre-print research article](#) that finds in a “real world” study (over 7.5 million people), the AstraZeneca vaccine is highly effective at reducing COVID-19 infections among people aged 70 and over. Their study showed that after a **single dose** of AstraZeneca vaccine, vaccine effectiveness for those aged 70 and over was 60% at 28-34 days after vaccination and increased to 73% from day 35 onwards. Furthermore, a single dose of the AstraZeneca vaccine was approximately 80% effective at preventing hospitalization in this older population.
- Another [pre-print study](#) from Scotland (5.4 million people) (Vasileiou, et al., 2021) showed that a **single dose** of the AstraZeneca vaccine had a 94% effectiveness rate for preventing COVID-19 related hospitalization 28-34 days post-vaccination among the general population and 81% effectiveness rate of preventing hospitalization for those 80 years of age and older.

### ***References***

Lopez Bernal, J., Andrews, A., Gower, C. Stowe, J., Robertson, C., Tessier, E., Simmons, R. Cottrell, S., Roberts, R. O’Doherty, M., Brown, K. Cameron, C., Stockton, D., McMenemy, J., & Ramsay, M. (2021). Early effectiveness of COVID-19 vaccination with BNT162b2 mRNA vaccine and ChAdOx1 adenovirus vector vaccine on symptomatic disease, hospitalisations and mortality in older adults in England. MedRxiv pre-print doi: <https://doi.org/10.1101/2021.03.01.21252652>.

Vasileiou, E. et al. (2021). Effectiveness of first dose of COVID-19 vaccines against hospital admissions in Scotland: National prospective cohort study of 5.4 million people. Pre-print: [https://www.ed.ac.uk/files/atoms/files/scotland\\_firstvaccinedata\\_preprint.pdf](https://www.ed.ac.uk/files/atoms/files/scotland_firstvaccinedata_preprint.pdf).

## Vaccine Hesitancy

Source: [The COVID-19 Vaccine Communication Handbook](#) (available in multiple languages)

### *What variables increase vaccine hesitancy?*

- Some people are committed vaccination opponents and often believe in conspiracy theories.
- Some people oppose the vaccine for ideological reasons because COVID-19 and the response to it have become politicized.
- Some people understand the need for a vaccine but have safety concerns
- Some young and healthy people believe they are not at risk from COVID-19.
- Some people intend to become free-riders, letting others have the vaccine while they receive the benefits of herd immunity without getting the vaccine.
- Some people face language or cultural barriers when accessing health care or experience other inequities due to social determinants of health (e.g., race, ethnicity, immigrant status, LGBTQ status, homelessness, poverty, or disability).
- Some groups of people may have had a collective history of negative experiences with health authorities that affects current trust.

### *Reference*

Lewandowsky, S., Cook, J., Schmid, P., Holford, D. L., Finn, A., Leask, J., Thomson, A., Lombardi, D., Al-Rawi, A. K., Amazeen, M. A., Anderson, E. C., Armaos, K. D., Betsch, C., Bruns, H. H. B., Ecker, U. K. H., Gavaruzzi, T., Hahn, U., Herzog, S., Juanchich, M., Kendeou, P., Newman, E. J., Pennycook, G., Rapp, D. N., Sah, S., Sinatra, G. M., Tapper, K., Vraga, E. K (2021). The COVID-19 Vaccine Communication Handbook. A practical guide for improving vaccine communication and fighting misinformation.

Available at: <https://sks.to/c19vax>

## Adverse Events Following Immunization (AEFIs) in Ontario

Public Health Ontario Summary Report – [AEFIs for COVID-19 in Ontario: December 13, 2020 to February 27, 2021](#)

## COVID-19 Vaccine Multi-Language Information Sheets

Women's College Hospital has created [multi-language information sheets](#) on the mRNA COVID-19 vaccines.

## Status of Doses Administered in Ontario

[Ontario's COVID-19 Vaccine Distribution Plan](#)

Total doses administered = **860,412**

Daily doses administered = **36,698**

People fully vaccinated = **270,625**

## Vaccine Webinars

### Upcoming

- March 16 – [Good Practice in Interactive Vaccination Communication](#) (International Federation on Aging)

### Recorded

- [Vaccine Hesitancy and First Nations, Inuit, and Métis populations: Potential Implications During COVID-19](#) (NCCID and NCCIH)
- [COVID-19 Vaccines: Allergies and LDV Syringe Discussion](#) (PHAC and NCCID)
- [COVID-19 Vaccine Foundational Webinar](#) (PHAC and NCCID)

## Vaccine Resources for Health Care Providers

[Toolkit for Health Care Providers](#) (PHAC)

[COVID-19 Vaccine Questions and Answers for Healthcare Providers](#) (CANVAX)

[Learning Module - Our Best Shot at Beating COVID-19: Overcoming Vaccine Hesitancy in 2021](#) (Canadian Paediatric Society)

## 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 \(CDC\)](#)