Ontario

Ministry of Health

Administration of AstraZeneca COVID-19 Vaccine/COVISHIELD Vaccine

Version 2.0 April 15, 2021

Highlights of changes

- Clarification of dose intervals (Page 3)
- Updated Considerations for Administration section to reflect eligible ages in Ontario, NACI recommendations and inclusion of vaccine effectiveness for severe disease (Pages 4-5)
- Clarification on receiving another vaccine following the COVID-19 vaccine (Page 6)
- Updated information on Side Effects including details on blood clots (Pages 8-10)
- Clarification on vaccine interchangeability (Page 11)
- Updated Vaccine Preparation section to reflect updated product monographs (Pages 11-13)
- Clarification on the requirement of safety-engineered needles (Page 13)

This guidance provides basic information only. This document is not intended to provide or take the place of medical advice, diagnosis or treatment or legal advice.

In the event of any conflict between this guidance document and any applicable emergency orders, or directives issued by the Minister of Health, Minister of Long-Term Care, or the Chief Medical Officer of Health (CMOH), the order or directive prevails.

- Please check the Ministry of Health (MOH) COVID-19 website regularly for updates to this document.

What is COVID-19?

COVID-19 is a novel coronavirus disease 2019 that is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

Anyone can be infected with SARS-CoV-2 (COVID-19). However, some populations are at increased risk of exposure to the virus (e.g., due to living or work settings), and some populations are at increased risk of severe disease and death due to biological (e.g., advanced age, pre-existing medical conditions) and social (e.g., socioeconomic status, belonging to a racialized population) factors.

The AstraZeneca COVID-19 vaccine (manufactured by AstraZeneca) and COVISHIELD vaccine (manufactured by Verity Pharmaceuticals and the Serum Institute of India (SSI)) are COVID-19 ChAdOx1-S recombinant vaccines developed by AstraZeneca and Oxford University. Additional information about the AstraZeneca COVID-19 vaccine can be found in the product monograph. Additional information about the COVISHIELD vaccine can be found in the product monograph.

General Clinic Precautions

All staff working in the clinic must take appropriate infection prevention and control measures, including donning appropriate personal protective equipment (PPE) when interacting with clients as they move through the immunization clinic and when responding to any adverse events following immunization (AEFI).

The Vaccine

AstraZeneca COVID-19 Vaccine/COVISHIELD (vaccine (ChAdOx1-S [recombinant])	
Type of vaccine	Non-replicating viral vector (ChAd)
Date of authorization in Canada	February 26, 2021
Authorized ages for use	Health Canada has authorized this product for 18 years of age and older. The safety and efficacy in children under 18 years of age have not yet been established.
Dose	0.5 mL (5×10^{10} viral particles)

Schedule	2 doses	
	Minimum Interval[1]	28 days
	Authorized Interval[2]	4 to 12 weeks
	Recommended Interval	4 months*^ To increase the number of individuals benefiting from the first dose of vaccine, the province is following recommendations from the National Advisory Committee on Immunization (NACI) to extend the second dose of AstraZeneca COVID-19 Vaccine/COVISHIELD vaccine to 4 months after receipt of the first dose. *Note: Residents of long-term care homes, retirement homes, Elder Care Lodges, Assisted Living facilities, on-reserve First Nation members, and remote and isolated First Nation communities (being supported by Operation Remote Immunity) should be maintained at 4-12 weeks. ^There is specific guidance for Medical exceptions to Extended Dose Intervals for COVID-19 vaccines
Booster doses	At present, no evidence for additional boosters after the 2-dose series	

[1] National Advisory Committee on Immunizations (NACI). Recommendation on the use of COVID-19 vaccines

[2] Health Canada Product Monographs: **COVISHIELD** vaccine & **AstraZeneca** COVID-19 Vaccine

Route of administration	Intramuscular (IM) into the deltoid muscle
Nature of the antigen	Transmembrane spike protein
Adjuvant (if present)	None
Storage requirements	
Primary storage requirements, pre-puncture	+2 to +8 °C
Diluent	No
Formats available	Multi-dose vial (8- and 10- dose presentations). Preservative free.
Usage limit post-puncture	6 hours when stored at room temperature (up to +30°C) OR 48 hours when stored in a refrigerator (+2 to +8°C).
Drug Interactions	No interaction studies have been performed.

Considerations For Administration

- In alignment with the updated recommendations from NACI the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine is currently being offered to people living in Ontario aged 55 and over without contraindications if:
    - the advantages of earlier vaccination outweigh the limitations of vaccinating with a less efficacious vaccine;
    - the ease of transport, storage and handling of this vaccine facilitates access to vaccination which may otherwise be challenging; and
    - informed consent is provided which includes discussion about current vaccine options and the timing of future vaccine options (NACI).

Summary of estimated vaccine efficacy for COVID-19 vaccines currently authorized for use in Canada

Vaccine	14 days after dose 1 and before dose 2 (95% CI)	> 7-14 days after dose 2 (95% CI)
Pfizer-BioNTech COVID-19 Vaccine	93% (69-98%)	95% (90-98%)
COVID-19 Vaccine Moderna	92% (69-99%)	94% (89-97%)
AstraZeneca COVID-19 vaccine/COVISHIELD vaccine	76% (59-86%)*	82% (47 to 94%)^

CI = confidence interval; *Estimate of vaccine efficacy from ≥ 22 days (up to 90 days) after dose 1. ^Estimate of vaccine efficacy ≥ 15 days after dose 2, for a dosing interval of >12 weeks

- In clinical trials, the estimated vaccine efficacy of the AstraZeneca COVID-19 vaccine/COVISHIELD against COVID-19-associated hospitalization following the first dose was 100% (NACI). Similarly, real-world vaccine effectiveness data supports this robust protective effect with preliminary data indicating an estimated vaccine effectiveness of approximately 80% against COVID-19-associated hospitalization following the first dose (Hyams et al. (2021), Lopez Bernal et. al (2021)) .
- The National Advisory Committee on Immunization (NACI) recommends that AstraZeneca COVID-19 vaccine should not be used in adults under 55 years of age at this time while the safety signal of Vaccine-Induced Prothrombotic Immune Thrombocytopenia (VIPIT) following vaccination with AstraZeneca COVID-19 vaccine is investigated further. See Side Effects below for additional details.

Who Should Delay Receiving the Vaccine

- Vaccination should be deferred in symptomatic individuals with confirmed or suspected SARS-CoV-2 infection, those with an acute illness, or those with symptoms of COVID-19 in order to avoid attributing any complications resulting from infection with SARS-CoV-2, or other illnesses, to vaccine-related adverse events and to minimize the risk of COVID-19 transmission at

an immunization clinic. It would be prudent to wait for all symptoms of an acute illness to completely resolve before receiving vaccine.

- Individuals who have been advised to self-isolate due to suspected or confirmed SARS-CoV- 2 infection or due to close contact with a COVID-19 positive case should not attend a vaccine clinic and should wait to get their vaccine until their isolation period is over.
    - Note: Please refer to Guidance for COVID-19 Immunization in Long-Term Care Homes and Retirement Homes for specific guidance on vaccinating high risk contacts, those with symptoms or confirmed SARS-CoV-2 infection in long-term care and retirement homes.
- Individuals who have recently (within the past 14 days) received another vaccine.
- Individuals who intend to receive a vaccine within 4 weeks of receiving the COVID-19 vaccine.
    - Anyone who receives a dose of a COVID-19 vaccine should wait 28 days before receiving another vaccine (except in the case when another vaccine is required for post-exposure prophylaxis).

Considerations for Other Patient Groups

- The AstraZeneca COVID-19 vaccine/COVISHIELD vaccine can safely be given to persons with evidence of a prior SARS-CoV-2 infection. Vaccination should be offered to persons regardless of history of prior symptomatic or asymptomatic SARS-CoV-2 infection.
- Having prolonged COVID–19 symptoms (sometimes called Long COVID or Post-Acute COVID-19 Syndrome) is not a contraindication to receiving the COVID-19 vaccine.
    - If the patient is seriously debilitated, still under active investigation, or has evidence of recent deterioration, deferral of vaccination may be considered to avoid incorrect attribution of any change in the person's underlying condition to the vaccine. Common side effects of the vaccine (e.g., fatigue, myalgia, arthralgia) may be similar to ongoing prolonged COVID-19 symptoms.
- Information on immunizing special populations, including breastfeeding or pregnant individuals, those with allergies, with autoimmune conditions, or those who are immunocompromised due to disease or treatment, is available in the Vaccination Recommendations for Special Populations guidance

document. Point of care guidance for these individuals can be found in the COVID-19 Vaccine – Pre-Screening Assessment Tool for Health Care Providers (gov.on.ca)

Precautions During Vaccination Should Be Taken For:

- Refer to Vaccination Recommendations for Special Populations for information on vaccination for all patients with allergies (including those with allergic reactions to previous doses of any COVID-19 vaccine, or vaccine components).
    - The components of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine that may cause type I hypersensitivity reactions include polysorbate 80. Due to potential cross-reactivity with polysorbate, allergies to polyethylene glycol (PEG) must also be considered.
        - Polysorbate 80 can rarely cause allergic reactions and is found in products such as medical preparations (such as vitamin oils, tablets, and anticancer agents) or cosmetics
        - PEG can rarely cause allergic reactions and is found in products such as medications, bowel preparation products for colonoscopy, laxatives, cough syrups, cosmetics, skin creams, medical products used on the skin and during operations, toothpaste, contact lenses and contact lens solution. PEG also can be found in foods or drinks but is not known to cause allergic reactions from foods or drinks.
- Individuals who fainted or became dizzy after receiving a vaccine or medical procedure, or those with high levels of fear about injections. These individuals can receive the vaccine. To reduce injuries due to fainting, people should be immunized while seated, or if considered at high-risk, while lying down. These individuals are also advised they may bring a support person.
- Individuals who have a bleeding disorder, bruise easily or are taking blood-thinners can safely receive the vaccine. Individuals taking long-term anticoagulation (e.g. warfarin or heparin therapy) are not considered to be at higher risk of bleeding complications following immunization and may be safely immunized through the intramuscular route as recommended, without discontinuation of their anticoagulation therapy. In individuals with bleeding

disorders, the condition should be optimally managed prior to immunization to minimize the risk of bleeding.

    - There is some evidence to suggest that IM administration with a small gauge needle (23 gauge or smaller) may be preferred to minimize the risk of bleeding, with firm pressure applied to the injection site for 5 to 10 minutes.
- For more detailed recommendations on people with allergies, as well as breastfeeding or pregnant individuals, those with autoimmune conditions, or individuals who are immunocompromised due to disease or treatment, please consult the Vaccination Recommendations for Special Populations guidance document.

Side Effects

The AstraZeneca COVID-19 vaccine/COVISHIELD vaccines, like other medicines and vaccines can cause side effects.

Very common side effects	May affect more than 1 in 10 people	• Pain, tenderness, warmth at the injection site • Fatigue • Chills (common after second dose) • Headache • Muscle pain • Nausea (common after second dose) • Joint pain • Fever (uncommon after second dose), Feverishness
Common side effects	May affect 1 to less than 10 in 100 people	• Localized redness, swelling, and pruritis • Induration (uncommon after second dose) • Vomiting (uncommon after second dose)
Uncommon side effects	May affect up to 1 in 100 people	• Enlarged lymph nodes

Source: National Advisory Committee on Immunizations, Appendix D

In clinical trials most of the side effects experienced were mild to moderate and on average did not last longer than three days. Please see the product monographs for AstraZeneca COVID-19 vaccine and COVISHIELD vaccine for a complete list of reported side effects/ adverse reactions.

- There have been very rare reports of severe blood clots, including cerebral sinus vein thrombosis (CSVT), associated thrombocytopenia (low platelets) in individuals who received AstraZeneca COVID-19 vaccine. This phenomenon has been named vaccine-induced prothrombotic immune thrombocytopenia (VIPIT) (Science Advisory Table). There is considerable variability in the estimated incidence of VIPIT, ranging from between 1 in 100, 000 and 1 in 1 million (NACI).
- Health Canada has assessed the available data and found that the benefits of the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine in protecting Canadians from COVID-19 in the context of the COVID-19 pandemic continue to outweigh the risks. The National Advisory Committee on Immunization (NACI) recommends that AstraZeneca COVID-19 vaccine should not be used in adults under 55 years of age at this time while the safety signal of Vaccine-Induced Prothrombotic Immune Thrombocytopenia (VIPIT) following vaccination with AstraZeneca COVID-19 vaccine is investigated further. Vaccine regulators for Canada and internationally will continue to closely monitor the safety of all COVID-19 vaccines.
- Healthcare providers administering the AstraZeneca/COVISHIELD vaccine should inform clients to seek immediate medical attention for symptoms of thromboembolism and early signs of thrombocytopenia and cerebral blood clots (e.g., shortness of breath, chest pain, leg swelling, persistent abdominal pain, easy bruising or bleeding (petechiae); persistent, severe or worsening headaches, blurred vision, or dizziness) particularly those persisting or occurring >3 days after vaccination.
- Healthcare providers should maintain vigilance for thrombosis and thrombocytopenia in vaccinated individuals and report any suspected adverse events following immunization (AEFI) to their local public health unit (as outlined in the section on "Adverse Events Following Immunization" below).
- Guidance for health care providers in diagnosing and treating VIPIT are available from Ontario's Science Advisory Table Science Brief.

Adverse Events Following Immunization

All health care providers administering vaccines must be familiar with the anaphylaxis protocols for their clinic sites and ensure availability of anaphylaxis management kits (Refer to the Canadian Immunization Guide for additional information).

Those administering vaccines should ensure that the vaccine recipients or their parents/guardians are advised to notify clinic staff, or if they have left the clinic, call their doctor/nurse practitioner or go to the nearest hospital emergency department

- Hives
- Swelling of the mouth and throat
- Trouble breathing, hoarseness or wheezing
- High fever (over 40˚C or 104˚F)
- Convulsions (seizures)
- Other serious reactions

Health care providers administering vaccines should ensure that vaccine recipients or their parent/guardian are informed of the need to report adverse events following immunization to their health care provider. They may also contact their local public health unit to ask questions or to report an adverse event following immunization.

Guidance on reporting adverse events following immunization (AEFI) for healthcare providers

- Health care providers who administer immunizations (e.g., physicians, nurses and pharmacists) are required under the *Health Protection and Promotion Act*, s. 38 to report adverse events following immunizations (AEFIs), as defined in s. 38 of the HPPA to their local public health unit. Reports should be made using the Ontario AEFI Reporting Form. See Public Health Ontario's vaccine safety webpage and Fact Sheet - Adverse Event Following Immunization Reporting For Health Care Providers In Ontario (publichealthontario.ca) for additional guidance.
- The Ontario Ministry of Health in collaboration with Public Health Ontario monitors reports of AEFIs. This monitoring is done in collaboration with the Public Health Agency of Canada and Health Canada.

Point-of-care Guidance

- This is a two-dose series; maximum protection will be attained in up to 2 weeks following the completion of the vaccine series.
- Do not mix the AstraZeneca COVID-19 vaccine/COVISHIELD vaccine with other vaccines/products in the same syringe.
- AstraZeneca COVID-19 vaccine/COVISHIELD vaccine should not be given simultaneously with other live or inactivated vaccines (except in the case when another vaccine is required for post-exposure prophylaxis).
- Individuals who have received one dose of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine should receive a second dose of AstraZeneca COVID-19 vaccine/COVISHIELD vaccine to complete the vaccination series
    - The AstraZeneca COVID-19 vaccine and COVISHIELD vaccine are interchangeable
    - There are no safety, immunogenicity or efficacy data to support interchangeability of AstraZeneca COVID-19 Vaccine or COVISHIELD vaccine with other non-ChAdOx1-S (recombinant) COVID-19 vaccines (e.g. mRNA vaccine)

Vaccine Preparation:

Health Canada has authorized two manufacturers of the COVID-19 ChAdOx1-S vaccine:

- AstraZeneca (brand name **AstraZeneca** COVID-19 Vaccine)
- Verity Pharmaceuticals and Serum Institute of India in collaboration with AstraZeneca (brand name **COVISHIELD** vaccine)

Additional information on vaccine preparation can be found in the product monographs for AstraZeneca COVID-19 vaccine and COVISHIELD vaccine.

- AstraZeneca COVID-19 Vaccine/COVISHIELD vaccine must not be reconstituted, mixed with other medicinal products, or diluted
- The unopened multi-dose vial can be stored in a refrigerator (+2°C to +8°C)
- Do not freeze
- Store in original packaging in order to protect from light.
- Use the product before the expiration date on the vial label.

- The vaccine does not contain any preservative. After first opening, use the vial within:
    - 6 hours when stored at room temperature (up to +30°C), or
    - 48 hours when stored in a refrigerator (+2°C to +8°C).
- The vial can be re-refrigerated, but the cumulative storage time at room temperature must not exceed 6 hours, and the total cumulative storage time must not exceed 48 hours. After this time, the vial must be discarded.

AstraZeneca COVID-19 vaccine	**COVISHIELD**
AstraZeneca COVID-19 vaccine is packaged in (not all pack sizes may be available): • 5 mL of solution in a **10-dose vial** (clear type I glass) with stopper (elastomeric with aluminium overseal). • 4 mL of solution in an **8-dose vial** (clear type I glass) with stopper (elastomeric with aluminium overseal).	COVISHIELD vaccine is packaged in: • 5 mL of solution in a **10-dose vial** (clear type I glass) with stopper (elastomeric with aluminium overseal).

- Vaccines should be mixed with a careful swirling motion until a uniform suspension is achieved prior to administration. Unless otherwise instructed by the manufacturer, the vaccine should not be shaken before use.
- Each vaccine dose of 0.5 mL is withdrawn into a syringe for injection to be administered intramuscularly. Use a separate sterile needle and syringe for each individual.
- Each vial contains at least the number of doses stated. It is normal for residual liquid to remain in the vial after withdrawing the final dose. When low dead volume syringes and/or needles are used, the amount remaining in the vial may be sufficient for an additional dose.
- Care should be taken to ensure a full 0.5 ml dose is observed.
    - Where a full dose cannot be extracted, the remaining volume should be discarded.
- Strict adherence to aseptic techniques must be followed.

Vaccine Administration:

- It is important that proper sized syringes are chosen to ensure the correct volume is accurately drawn up. Safety engineered needles must be used as required under O. Reg 474/07.
- Visually inspect each dose in the dosing syringe prior to administration.

AstraZeneca COVID-19 vaccine	COVISHIELD
•clear to slightly opaque, colourless to slightly brown, sterile, particle free, preservative-free, solution for intramuscular injection	•clear to slightly opaque, colourless to slightly brown essentially free from visible particles, preservative-free, solution for intramuscular injection

- Discard the vial if the solution is discoloured or visible particles are observed.
- During the visual inspection:
    - Verify the final dosing volume of **0.5 mL** and
    - Confirm there are no particulates and that no discolouration is observed.
- **If the visual inspection fails, do not administer the vaccine**.
- Administer the vaccine intramuscularly in the deltoid muscle.
- Do not inject the vaccine intravascularly, subcutaneously or intradermally.

All clients should be reminded to continue to practice recommended public health measures for prevention and control of COVID-19 infection and transmission regardless of receipt of COVID-19 vaccine.

Information on vaccine storage, stability and disposal can be found in the product monographs for AstraZeneca COVID-19 vaccine and COVISHIELD vaccine or the COVID-19 Vaccine Storage and Handling Guidance document