

SURVEILLANCE REPORT

COVID-19 Vaccine Uptake in Ontario: December 14, 2020 to December 3, 2023

Note: This report is no longer updated. You can view and download COVID-19 vaccine coverage data up to December 2, 2023 in the [Ontario Respiratory Virus Tool](#).

This report describes vaccine uptake using data extracted from the Ontario Ministry of Health's (MOH) COVaxON application. Data in this report includes the most current information extracted from COVaxON as of December 4, 2023 at approximately 7:00 a.m., and describes vaccinations reported up to December 3, 2023.

Please visit the interactive [Ontario Respiratory Virus Tool](#) to explore COVID-19 vaccination uptake data by public health unit, age group and trends over time.

This report is updated **every four weeks**.

Background

The COVID-19 vaccination program began in Ontario on December 14, 2020. Currently, all individuals in the province 6 months of age and older are eligible for a Health Canada (HC) authorized COVID-19 vaccine.¹ In accordance with guidance from the MOH, as of September 14, 2023 individuals 6 months of age and older who previously completed a COVID-19 vaccine series are recommended to receive a dose of XBB.1.5-containing COVID-19 vaccine if it has been at least 6 months from their previous COVID-19 vaccine dose or known SARS-CoV-2 infection (whichever is later).¹ Additionally, individuals who have not previously completed a COVID-19 vaccine series may use XBB.1.5-containing COVID-19 vaccine doses to initiate/complete a COVID-19 vaccine series (see Table 1 in the MOH guidance document for dose recommendations).¹

Definition of Terms

The following definitions are used to describe vaccination coverage among individuals **6 months of age and older**:

- **At least one XBB dose** refers to individuals who have received at least one dose of XBB.1.5-containing COVID-19 vaccine.
- **Non-XBB dose within the previous 6 months** refers to individuals who have not received any doses of XBB.1.5-containing COVID-19 vaccine, and who received their last dose of non-XBB.1.5 COVID-19 vaccine within the previous 6 months.

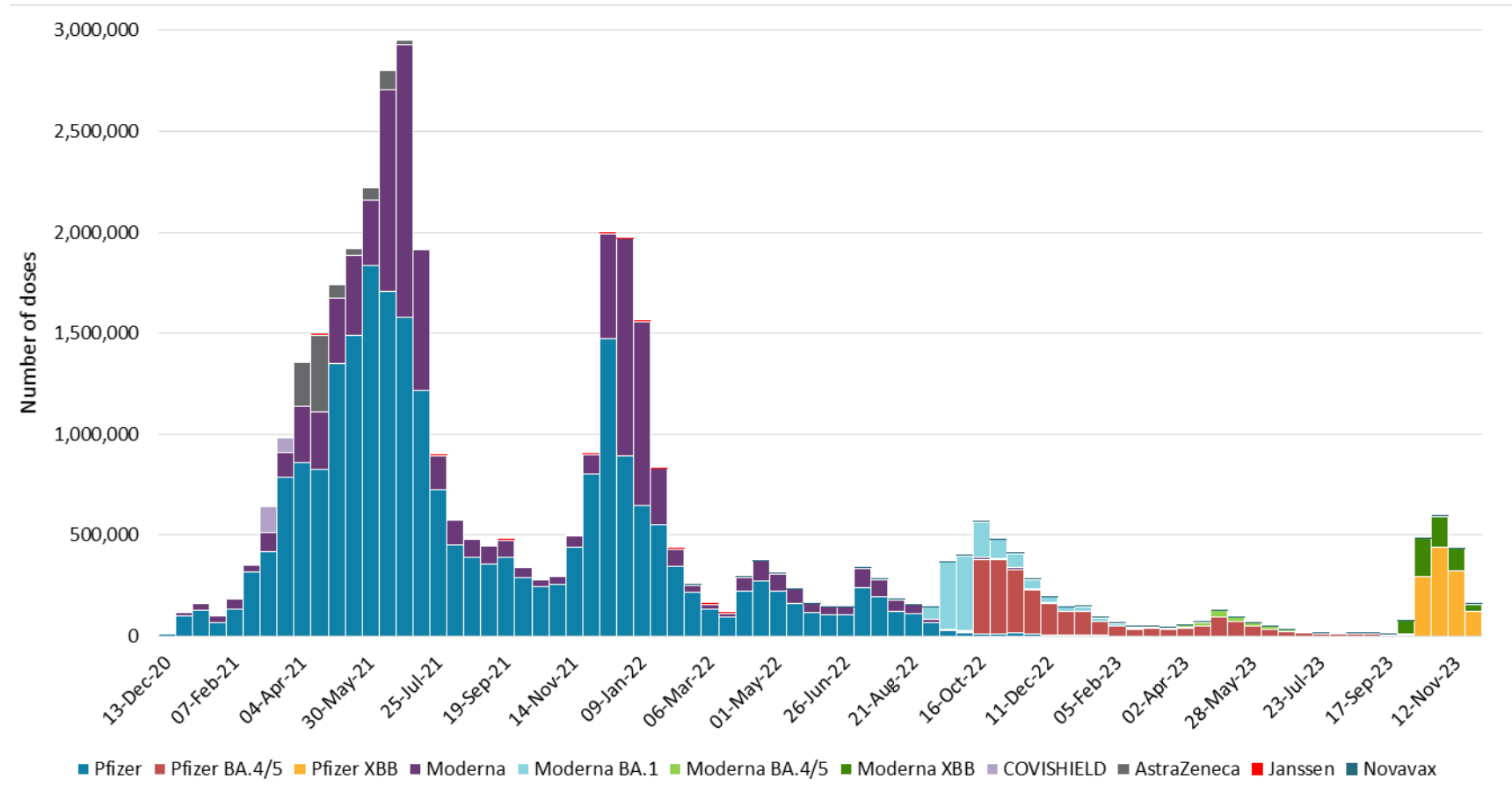
- **Non-XBB dose 6 to less than 12 months ago** refers to individuals who have not received any doses of XBB.1.5-containing COVID-19 vaccine, and who received their last dose of non-XBB.1.5 COVID-19 vaccine 6 to less than 12 months ago.
- **Non-XBB dose over 12 months ago** refers to individuals who have not received any doses of XBB.1.5-containing COVID-19 vaccine, and who received their last dose of non-XBB.1.5 COVID-19 vaccine over 12 months ago.

Highlights

- Since September 14, 2023, 1,756,440 doses of BA.4/5 and XBB.1.5 COVID-19 vaccines have been administered in Ontario (Table 1).
 - 1,732,884 XBB.1.5 COVID-19 vaccine doses have been administered (Table 1).
 - 23,556 BA.4/5 COVID-19 vaccine doses have been administered (Table 1).
- 11.3% of individuals 6 months of age and older have received at least one dose of XBB.1.5-containing COVID-19 vaccine (Figure 2, Table 2).
 - 1.1% of individuals 6 months of age and older received their last dose of non-XBB.1.5 COVID-19 vaccine in the previous 6 months (Figure 2, Table 2).
 - 3.9% of individuals 6 months of age and older received their last dose of non-XBB.1.5 COVID-19 vaccine 6 to less than 12 months ago (Figure 2, Table 2).
 - 66.1% of individuals 6 months of age and older received their last dose of non-XBB.1.5 COVID-19 vaccine dose over 12 months ago (Figure 2, Table 2).

Doses Administered

Figure 1. Number of COVID-19 vaccine doses administered over time by vaccine product: Ontario



Note:

1. Pfizer-BioNTech Comirnaty, AstraZeneca Vaxzevria/COVISHIELD, Janssen Jcovden, and Moderna Spikevax Bivalent BA.1 COVID-19 vaccine products have now been fully phased out in Ontario.¹

Table 1. Number of XBB.1.5 and BA.4/5 COVID-19 vaccine doses administered by age group and product: Ontario, September 14, 2023 to December 3, 2023

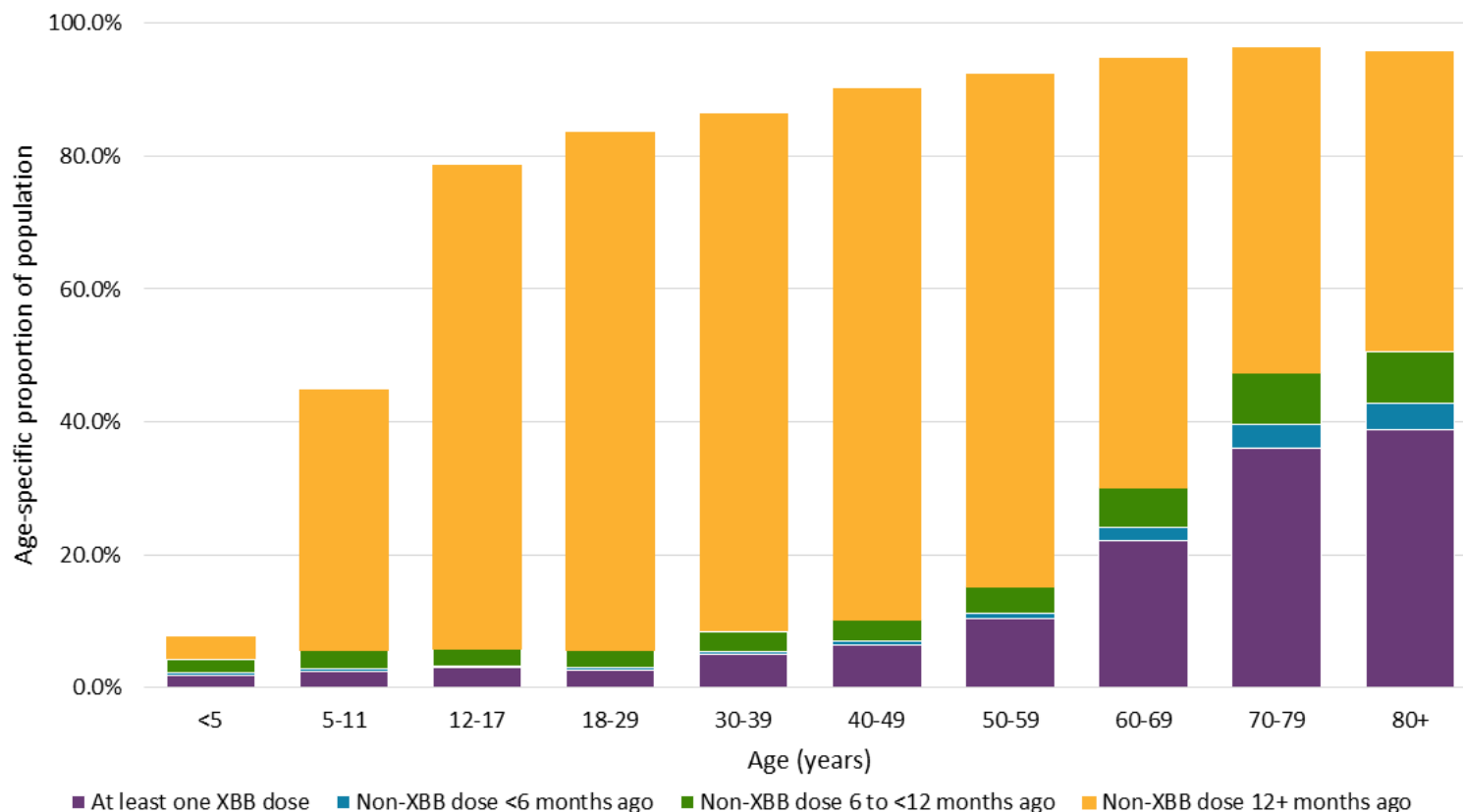
Age (years)	Moderna XBB.1.5	Pfizer XBB.1.5	Total XBB.1.5	Moderna BA.4/5	Pfizer BA.4/5	Total BA.4/5	Total
6 months-4*	12,749	762	13,511	513	N/A	513	14,024
5-11*	13,968	13,759	27,727	30	400	430	28,157
12-17	4,586	24,621	29,207	29	328	357	29,564
18-29	17,018	52,062	69,080	270	1,738	2,008	71,088
30-39	35,620	74,230	109,850	572	1,903	2,475	112,325
40-49	39,252	82,964	122,216	453	1,439	1,892	124,108
50-59	61,413	141,106	202,519	693	2,156	2,849	205,368
60-69	128,108	298,576	426,684	1,184	4,159	5,343	432,027
70-79	135,025	319,623	454,648	966	4,021	4,987	459,635
80+	99,974	177,468	277,442	489	2,213	2,702	280,144
Total: 6 months+	547,713	1,185,171	1,732,884	5,199	18,357	23,556	1,756,440

Note:

1. Individuals 6 months to 11 years of age are currently recommended to receive the infant/pediatric doses of Moderna Spikevax XBB.1.5 COVID-19 vaccine or the infant/pediatric formulation of Pfizer-BioNTech Comirnaty XBB.1.5 COVID-19 vaccine. Some individuals in this age group may still receive the pediatric formulation of Pfizer-BioNTech Comirnaty Bivalent BA.4/5 COVID-19 vaccine or the infant/pediatric doses of Moderna Spikevax Bivalent BA.4/5 COVID-19 vaccine, depending on availability of XBB.1.5 vaccines.¹
2. *For doses of Moderna BA.4/5 the age groups represented in the table are 6 months to 5 years of age and 6 to 11 years of age instead of 6 months to 4 years of age and 5 to 11 years of age, respectively, based on product-specific dose recommendations.¹

Vaccination Coverage

Figure 2. Provincial coverage estimates by age group and last dose status: Ontario, December 14, 2020 to December 3, 2023



Note:

1. The MOH has moved away from using the terms ‘primary series’ and ‘booster dose’ to align with the National Advisory Committee on Immunization (NACI) and product monographs. Individuals 6 months of age and older are recommended to receive a dose of XBB.1.5-containing COVID-19 vaccine if they previously completed a COVID-19 vaccine series or were infected with SARS-CoV-2 over 6 months ago.¹ Additionally, individuals 6 months of age and older who have not previously completed a COVID-19 series may use doses of XBB.1.5-containing COVID-19 vaccine to initiate/complete their series.¹ The number of XBB.1.5-containing COVID-19 vaccine doses recommended depends on the total number of doses received to date (see Table 1 in the MOH guidance document for dose recommendations).¹ Last dose status broken down by total number of doses received can be found in Table A1 in the Appendix.

Table 2. Number of individuals vaccinated and coverage estimates by age group and last dose status: Ontario, December 14, 2020 to December 3, 2023

Age (years)	Number of individuals: At least one XBB dose	Number of individuals: Non-XBB dose <6 months ago	Number of individuals: Non-XBB dose 6 to <12 months ago	Number of individuals: Non-XBB dose 12+ months ago	Coverage (%): At least one XBB dose	Coverage (%): Non-XBB dose <6 months ago	Coverage (%): Non-XBB dose 6 to <12 months ago	Coverage (%): Non-XBB dose 12+ months ago
6 months-4	13,300	2,928	15,413	24,230	1.8	0.4	2.1	3.3
5-11	27,697	3,308	29,456	428,095	2.5	0.3	2.7	39.4
12-17	29,177	3,085	23,624	716,969	3.0	0.3	2.4	72.9
18-29	68,769	9,246	65,134	2,028,233	2.6	0.4	2.5	78.1
30-39	109,524	10,720	65,910	1,731,456	4.9	0.5	3.0	78.1
40-49	122,140	10,341	60,921	1,525,524	6.4	0.5	3.2	80.1
50-59	201,195	15,330	78,473	1,510,678	10.3	0.8	4.0	77.3
60-69	424,911	37,176	113,423	1,237,475	22.2	1.9	5.9	64.8
70-79	455,923	46,700	96,028	623,517	36.0	3.7	7.6	49.2
80+	279,555	28,766	56,504	325,696	38.8	4.0	7.8	45.2
Total: 6 months+	1,732,191	167,600	604,886	10,151,873	11.3	1.1	3.9	66.1

Note:

1. The MOH has moved away from using the terms 'primary series' and 'booster dose' to align with the National Advisory Committee on Immunization (NACI) and product monographs. Individuals 6 months of age and older are recommended to receive a dose of XBB.1.5-containing COVID-19 vaccine if they previously completed a COVID-19 vaccine series or were infected with SARS-CoV-2 over 6 months ago.¹ Additionally, individuals 6 months of age and older who have not previously completed a COVID-19 series may use doses of XBB.1.5-containing COVID-19 vaccine to initiate/complete their series.¹ The number of XBB.1.5-containing COVID-19 vaccine doses recommended depends on the total number of doses received to date (see Table 1 in the MOH guidance document for dose recommendations).¹ Last dose status broken down by total number of doses received can be found in Table A1 in the Appendix.
2. Counts reported for number of individuals vaccinated (e.g. Table 2) and doses administered (e.g. Table 1) will not align due to different exclusions applied and different methods for calculating age. See Technical Notes for details.

Appendix

Table A1. Number of individuals vaccinated and proportion by total number of doses received, age group, and last dose status: Ontario, December 14, 2020 to December 3, 2023

Total number of doses received	Age group	At least one XBB dose (%)	Non-XBB dose <2 months ago (%)	Non-XBB dose 2-<6 months ago (%)	Non-XBB dose 6-<12 months ago (%)	Non-XBB dose >12 months ago (%)	Total
1 dose	6 months-4	3,490 (18.5)	15 (0.1)	961 (5.1)	3,514 (18.6)	10,921 (57.8)	18,901 (100.0)
1 dose	5-11	1,053 (0.9)	9 (<0.1)	406 (0.4)	3,338 (3.0)	108,082 (95.7)	112,888 (100.0)
1 dose	12-17	524 (1.0)	11 (<0.1)	149 (0.3)	752 (1.4)	52,466 (97.3)	53,902 (100.0)
1 dose	18-29	3,982 (4.5)	71 (0.1)	651 (0.7)	3,773 (4.3)	80,246 (90.4)	88,723 (100.0)
1 dose	30-39	3,982 (5.9)	50 (0.1)	558 (0.8)	2,786 (4.1)	60,213 (89.1)	67,589 (100.0)
1 dose	40-49	2,219 (5.1)	18 (<0.1)	343 (0.8)	1,585 (3.6)	39,710 (90.5)	43,875 (100.0)
1 dose	50-59	1,593 (4.5)	11 (<0.1)	292 (0.8)	1,626 (4.6)	32,194 (90.1)	35,716 (100.0)
1 dose	60-69	2,153 (6.8)	29 (0.1)	343 (1.1)	1,650 (5.2)	27,527 (86.8)	31,702 (100.0)
1 dose	70-79	1,544 (9.1)	19 (0.1)	292 (1.7)	863 (5.1)	14,190 (83.9)	16,908 (100.0)
1 dose	80+	821 (10.2)	9 (0.1)	123 (1.5)	331 (4.1)	6,738 (84.0)	8,022 (100.0)
1 dose	Total: 6+ months	21,361 (4.5)	242 (0.1)	4,118 (0.9)	20,218 (4.2)	432,287 (90.4)	478,226 (100.0)
2 doses	6 months-4	1,967 (7.1)	15 (0.1)	1,465 (5.3)	11,118 (39.9)	13,265 (47.7)	27,830 (100.0)

Total number of doses received	Age group	At least one XBB dose (%)	Non-XBB dose <2 months ago (%)	Non-XBB dose 2-<6 months ago (%)	Non-XBB dose 6-<12 months ago (%)	Non-XBB dose >12 months ago (%)	Total
2 doses	5-11	1,077 (0.4)	14 (<0.1)	702 (0.2)	10,018 (3.4)	284,236 (96.0)	296,047 (100.0)
2 doses	12-17	193 (<0.1)	6 (<0.1)	223 (<0.1)	1,764 (0.3)	524,459 (99.6)	526,645 (100.0)
2 doses	18-29	1,113 (0.1)	73 (<0.1)	575 (0.1)	2,597 (0.2)	1,092,210 (99.6)	1,096,568 (100.0)
2 doses	30-39	1,163 (0.1)	38 (<0.1)	457 (0.1)	2,232 (0.3)	831,085 (99.5)	834,975 (100.0)
2 doses	40-49	670 (0.1)	28 (<0.1)	259 (<0.1)	1,311 (0.2)	635,429 (99.6)	637,697 (100.0)
2 doses	50-59	595 (0.1)	15 (<0.1)	163 (<0.1)	967 (0.2)	516,610 (99.7)	518,350 (100.0)
2 doses	60-69	913 (0.3)	20 (<0.1)	211 (0.1)	877 (0.3)	325,737 (99.4)	327,758 (100.0)
2 doses	70-79	761 (0.6)	14 (<0.1)	160 (0.1)	455 (0.4)	123,592 (98.9)	124,982 (100.0)
2 doses	80+	450 (0.8)	6 (<0.1)	93 (0.2)	247 (0.5)	52,936 (98.5)	53,732 (100.0)
2 doses	Total: 6+ months	8,902 (0.2)	229 (<0.1)	4,308 (0.1)	31,586 (0.7)	4,399,559 (99.0)	4,444,584 (100.0)
3+ doses	6 months-4	7,843 (85.8)	9 (0.1)	463 (5.1)	781 (8.5)	44 (0.5)	9,140 (100.0)
3+ doses	5-11	25,567 (32.1)	91 (0.1)	2,086 (2.6)	16,100 (20.2)	35,777 (44.9)	79,621 (100.0)
3+ doses	12-17	28,460 (14.8)	96 (<0.1)	2,600 (1.4)	21,108 (11.0)	140,044 (72.8)	192,308 (100.0)
3+ doses	18-29	63,674 (6.5)	399 (<0.1)	7,477 (0.8)	58,764 (6.0)	855,777 (86.8)	986,091 (100.0)
3+ doses	30-39	104,379 (10.3)	538 (0.1)	9,079 (0.9)	60,892 (6.0)	840,158 (82.8)	1,015,046 (100.0)

Total number of doses received	Age group	At least one XBB dose (%)	Non-XBB dose <2 months ago (%)	Non-XBB dose 2-<6 months ago (%)	Non-XBB dose 6-<12 months ago (%)	Non-XBB dose >12 months ago (%)	Total
3+ doses	40-49	119,251 (11.5)	591 (0.1)	9,102 (0.9)	58,025 (5.6)	850,385 (82.0)	1,037,354 (100.0)
3+ doses	50-59	199,007 (15.9)	1,017 (0.1)	13,832 (1.1)	75,880 (6.1)	961,874 (76.9)	1,251,610 (100.0)
3+ doses	60-69	421,845 (29.0)	2,254 (0.2)	34,319 (2.4)	110,896 (7.6)	884,211 (60.8)	1,453,525 (100.0)
3+ doses	70-79	453,618 (42.0)	2,579 (0.2)	43,636 (4.0)	94,710 (8.8)	485,735 (45.0)	1,080,278 (100.0)
3+ doses	80+	278,284 (44.3)	1,530 (0.2)	27,005 (4.3)	55,926 (8.9)	266,022 (42.3)	628,767 (100.0)
3+ doses	Total: 6+ months	1,701,928 (22.0)	9,104 (0.1)	149,599 (1.9)	553,082 (7.2)	5,320,027 (68.8)	7,733,740 (100.0)
Total: 1 dose, 2 doses, and 3+ doses	Total: 6+ months	1,732,191 (13.7)	9,575 (0.1)	158,025 (1.2)	604,886 (4.8)	10,151,873 (80.2)	12,656,550 (100.0)

Note:

1. The number of XBB.1.5-containing COVID-19 vaccine doses recommended depends on the total number of doses received to date (see Table 1 in the MOH guidance document for dose recommendations).¹ A 2-month category split was added based on dose interval recommendations for those initiating/completing their COVID-19 vaccine series with doses of XBB.1.5-containing COVID-19 vaccine.¹
2. Counts reported for number of individuals vaccinated (e.g. Table A1) and doses administered (e.g. Table 1) will not align due to different exclusions applied and different methods for calculating age. See Technical Notes for details.

Table A2. Authorized ages for COVID-19 vaccine products administered in Ontario

Formulation	COVID-19 vaccine product	Authorized age	Notes
Latest	Moderna Spikevax XBB.1.5	6 months and older	<ul style="list-style-type: none"> • Infant dose for individuals 6 months to 4 years of age • Pediatric dose for individuals 5 to 11 years of age
Latest	Pfizer-BioNTech Comirnaty XBB.1.5	6 months and older	<ul style="list-style-type: none"> • Infant formulation for individuals 6 months to 4 years of age • Pediatric formulation for individuals 5 to 11 years of age
Earlier	Moderna Spikevax Bivalent BA.4/5	6 months and older	<ul style="list-style-type: none"> • Infant dose for individuals 6 months to 5 years of age • Pediatric dose for individuals 6 to 11 years of age
Earlier	Pfizer-BioNTech Comirnaty Bivalent BA.4/5	5 years and older	<ul style="list-style-type: none"> • Pediatric formulation for individuals 5 to 11 years of age
Earlier	Pfizer-BioNTech Comirnaty	6 months and older	<ul style="list-style-type: none"> • No longer in use in Ontario
Earlier	Moderna Spikevax	6 months and older	<ul style="list-style-type: none"> • Infant dose for individuals 6 months to 5 years of age • Pediatric dose for individuals 6 to 11 years of age
Earlier	Moderna Spikevax Bivalent BA.1	6 years and older	<ul style="list-style-type: none"> • Previously authorized as a booster dose but no longer in use in Ontario
Earlier	Novavax Nuvaxovid	12 years and older	<ul style="list-style-type: none"> • N/A
Earlier	AstraZeneca Vaxzevria/COVISHIELD	18 years and older	<ul style="list-style-type: none"> • No longer in use in Ontario
Earlier	Janssen Jcovden	18 years and older	<ul style="list-style-type: none"> • No longer in use in Ontario

Technical Notes

Definition of Terms

Vaccine series refers to the number of vaccine doses required to be considered complete. COVID-19 vaccine products currently approved by Health Canada (HC) and the World Health Organization (WHO) Emergency Use Listing have a two-dose (i.e. Moderna Spikevax, Moderna Spikevax Bivalent BA.4/5, Moderna Spikevax Bivalent BA.1, Moderna Spikevax XBB.1.5 for individuals under 5 years of age, Pfizer-BioNTech Comirnaty for individuals 5 years of age and older, Pfizer-BioNTech Comirnaty Bivalent BA.4/5, AstraZeneca Vaxzevria/COVISHIELD, Novavax Nuvaxovid, Covaxin, Sinopharm, CoronaVac, Skycovione), one-dose (i.e. Moderna Spikevax XBB.1.5 for individuals 5 years of age and older and Pfizer-BioNTech Comirnaty XBB.1.5 for individuals 5 years of age and older, Janssen Jcovden, Convidecia), or three-dose (i.e. Pfizer-BioNTech Comirnaty for individuals under 5 years of age and Pfizer-BioNTech Comirnaty XBB.1.5 for individuals under 5 years of age) schedule.

Interval refers to the period of time (e.g. number of days) between doses. For all available COVID-19 vaccines, there is a recommended minimum number of days that an individual must wait between doses.

Data Sources

- COVID-19 vaccination data were based on information successfully extracted from the Ontario Ministry of Health's COVaxON application as of **December 4, 2023 at approximately 7:00 a.m.**
- Ontario population estimate data were sourced from the Ministry of Finance.²

Data Caveats

- Data presented may differ from other sources for various reasons, including differing extract times and methodologies for processing COVaxON data.
- COVaxON is a dynamic reporting system, which allows ongoing updates to data previously entered. As a result, data extracted from COVaxON represents a snapshot at the time of extraction and may differ from previous or subsequent reports.
- The data represent vaccination information reported in COVaxON. As a result, all counts may be subject to varying degrees of underreporting due to a variety of factors.
- For certain populations (e.g. immunocompromised individuals) an additional dose is recommended to complete the vaccine series. Due to challenges in identifying these individuals in the COVaxON data, it was not possible to account for some of these extended vaccine series in the analysis.
- Counts reported for doses administered will not align with the number of individuals vaccinated for the following reasons:
 - Counts for the number of doses administered in Ontario exclude doses administered out of province and from non-Ontario stock. However, individuals that received a vaccination out of province or from non-Ontario stock are included in coverage estimates
 - Counts for the number of individuals vaccinated and coverage estimates exclude individuals reported as deceased or moved out of province. However, doses administered to individuals later reported as deceased or moved out of province are included in dose counts.

- Methods for calculating age differ when reporting on doses administered in the province and vaccinated individuals/coverage estimates. For doses administered, the date of dose administration is used to calculate age and age is interpreted as the age at the time of each dose administration. For individuals vaccinated and coverage estimates the date of data extraction is used to calculate age and age is interpreted as the individual's current age.
- Coverage estimates shown as 100% may represent estimates of 100% or more. Coverage estimates may be over 100% due to limitations in the vaccination data (numerator) or Ontario population estimates (denominator).
- Children 0-6 months of age are included in denominators used to calculate coverage estimates for the <5 age group. However, children 0-6 months of age not eligible for COVID-19 vaccination and therefore are not included in the numerator.

Vaccination Data Processing

- Data includes clients with a dose administration record recorded in COVaxON, which captures a small number of client records with a residential postal code outside of Ontario who may be eligible for vaccination on the basis of working in a high-risk setting (e.g. long-term care home) in Ontario.
- Non-valid dose records are excluded. Non-valid records include doses where the status is reported as 'entered in error', 'invalid', or other similar variations, as well as doses where the status is valid (e.g. 'administered') but that are identified as non-valid client records (e.g. client first and last name were reported as 'test', 'do not use', 'error', 'ignore', or other similar variations).
- For missing dose administration dates and dose administration dates prior to December 14, 2020, the date the administration record was created is used as a proxy.
- Duplicate dose administration records (i.e. clients with multiple dose administration records with the same date) are identified and excluded using personal identifiers, such as health card number, name, date of birth, and postal code, where available, as well as dose administration date.
- After removing duplicate dose administration records, dose number is assigned based on the dose administration dates reported. Dose administration date is also used to determine the dose interval.
 - For clients with multiple doses reported with different administration dates, the first chronological dose is considered the first dose.
 - To determine a date for the second dose, the first subsequent dose administered on or after the product-specific recommended minimum interval of the first dose product, with a 4-day grace period, is used. Doses administered prior to the product-specific recommended minimum interval, with a 4-day grace period, are not considered valid. For example, if there are two subsequent doses that were 7 days and 21 days from a Moderna Spikevax COVID-19 vaccine first dose, respectively, then the dose that is 21 days from the first dose is used as the second dose. Similarly, if there are two subsequent doses that are 10 days and 12 days from the first dose, respectively, then neither dose is used and the individual is not assigned a second dose. The recommended product specific minimum intervals, with a 4-day grace period, as outlined by the National Advisory Committee on Immunization (NACI) are as follows:

- Pfizer-BioNTech Comirnaty and Pfizer-BioNTech Comirnaty Bivalent BA.4/5 COVID-19 vaccines: 15 days (19 days with a 4-day grace period).³
- Pfizer-BioNTech Comirnaty XBB.1.5, Moderna Spikevax, Moderna Spikevax Bivalent BA.4/5, Moderna Spikevax Bivalent BA.1, Novavax Nuvaxovid, Janssen Jcovden, WHO-authorized, non-HC/non-WHO authorized COVID-19 vaccine products or unspecified/missing products: 17 days (21 days with a 4-day grace period).^{1,3}
- AstraZeneca Vaxzevria/COVISHIELD and Moderna Spikevax XBB.1.5 COVID-19 vaccines: 24 days (28 days with a 4-day grace period).^{1,3}
- To determine a date for the third dose, the first subsequent dose administered 21 days or more after the second dose is used, regardless of the HC-authorized vaccine product administered for the second dose (i.e. the dose 3 interval is not product-specific). If multiple valid doses after the second dose are reported, then the first chronological dose after the second dose is used.
- To determine dates for the fourth to eighth doses, the first subsequent dose administered 56 days or more after the previous dose is used, regardless of the HC-authorized vaccine product administered for the previous dose (i.e. the dose interval is not product-specific). If multiple valid doses after the previous dose are reported, then the first chronological dose after the previous dose is used.
- A maximum of eight doses are assigned for an individual.
- Clients reporting a gender of 'Non-binary/third gender' and 'Other' are combined into an 'Other' category. 'Unknown' gender included clients where gender is reported as 'Prefer not to say', 'Unknown', or where gender was missing.
- Age at the time of dose administration and age at the time of data extraction are calculated using the client date of birth and the date of dose administration or date of data extraction, respectively. Table A2 in the Appendix shows the authorized ages for each of the COVID-19 vaccine products administered in Ontario.¹ Individuals whose age was reported as below the minimum authorized age noted in Table A2 in the Appendix, ≥ 120 years, or missing date of birth were considered to have unknown age.

Vaccination Data Analysis and Reporting

- Out of province dose administration records well as doses administered from non-Ontario stock (e.g. doses from federal stock for populations such as the Armed Forces) are included in coverage estimates. However, out of province and non-Ontario stock dose administration records are not included in dose counts.
- Dose numbers are maintained in doses administered counts. For example, if an individual received doses 1 and 2 out of province and a third dose in Ontario, the third dose is counted as a dose 3 administered in Ontario and the first two doses are not counted as they were administered out of province.
- Clients reported as deceased or moved out of province are excluded when describing the number of individuals vaccinated and in coverage estimates, but are included when describing doses administered in the province.

- Age at the time of dose administration (e.g. age at dose 1, age at dose 2, etc.) is used when describing doses administered in Ontario.
- Age at the time of data extraction is used when describing the number of individuals vaccinated and in coverage estimates.
- Clients with unknown age/gender are excluded for age/gender specific analyses, but are included in provincial totals.
- Dose records where the product is reported as other/unknown/missing are excluded from product-specific analysis, but are included in provincial totals.
- Pfizer-BioNTech Comirnaty, Moderna Spikevax, Moderna Spikevax Bivalent BA.4/5, Moderna Spikevax XBB.1.5, and Pfizer-BioNTech Comirnaty XBB.1.5 vaccine product counts include infant (<5 years of age), pediatric (5-11 years of age), and 12+ years of age doses. Pfizer-BioNTech Comirnaty Bivalent BA.4/5 and Moderna Spikevax Bivalent BA.1 vaccine product counts include pediatric and 12+ years of age doses.
- 60 days is used as the 2-month interval, 180 days is used as the 6-month interval, and 360 days is used as the 12-month interval for last dose status.

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