COVID-19 Vaccine Uptake and Program Impact in Ontario: December 14, 2020 to December 19, 2021

This report describes vaccine uptake using data extracted from the Ontario Ministry of Health’s COVaxON application. Data in this report includes the most current information extracted from COVaxON as of December 20, 2021 at approximately 7:00 a.m., and describes vaccinations reported up to December 19, 2021.

Note that due to the Omicron variant emerging as the dominant COVID-19 strain in Ontario and the fact that there are currently no available vaccine effectiveness estimates for Omicron in Ontario, the previously included vaccine program impact analyses estimating the number of cases and severe outcomes prevented as a result of the direct effects of the vaccination program are under review and have temporarily been removed from the report.

Please visit the interactive Ontario COVID-19 Data Tool to explore COVID-19 vaccination uptake data by public health unit, age group and trends over time.

Background

The COVID-19 vaccination program began in Ontario on December 14, 2020 with a three-phased distribution plan. Currently, all individuals in the province five years of age and older are eligible for two doses of a Health Canada authorized COVID-19 vaccine, and population eligibility for a third dose continues to expand.

Highlights

- Overall, 76.8% (11,321,605 individuals) of the Ontario population is fully vaccinated and 81.8% (12,049,014 individuals) have received at least one dose of a COVID-19 vaccine.
- 81.1% (11,359,554 individuals) of the Ontario population 5 years of age and older are fully vaccinated and 86.4% (12,101,228 individuals) have received at least one dose of a COVID-19 vaccine.
- 13.1% (1,937,027 individuals) of the Ontario population have received three doses of a Health Canada authorized vaccine (Table 1). This is an increase of 812,007 individuals compared to last week.
- Over 40% of Ontarians aged 80 years and older (52.8%) and 70 to 79 years (45.6%) have received three doses of a Health Canada authorized vaccine. In addition, over 15% of those aged 60 to 69 years (24.7%) and 50 to 59 years (15.3%) have received three doses of a Health Canada authorized vaccine (Table 1).
Doses Administered Over Time

Figure 1a. Number of COVID-19 vaccine doses administered in Ontario by dose number and date

Notes:
1. Counts for the number of doses administered in Ontario exclude doses administered out of province and from non-Ontario stock.
2. Doses numbers are maintained in reported 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.
Figure 1b. Number of COVID-19 vaccine doses administered in Ontario by vaccine product and date

Notes:
1. Counts for the number of doses administered in Ontario exclude doses administered out of province and from non-Ontario stock.
Figure 1c. Number of COVID-19 vaccine doses administered in Ontario by vaccination setting and date

Notes:
1. The ‘mass immunization clinic’ group includes mass immunization, mobile, drive-through, and occupational clinics.
2. The ‘other/not reported’ category includes dose administration records where a vaccination setting was not specified (reported as ‘other’) or was missing (not reported).
3. Counts for the number of doses administered in Ontario exclude doses administered out of province and from non-Ontario stock.
Vaccination Coverage Over Time

Figure 2. Cumulative number of individuals who received a COVID-19 vaccine and provincial coverage estimates by date

Notes:
1. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
2. Counts are shown using the date of dose one administration for at least one dose coverage estimates and the date of dose two administration for fully vaccinated coverage estimates.
Figure 3a. Provincial COVID-19 vaccine coverage estimates for at least one dose by age group and date

Notes:
1. Counts are shown using the date of dose one administration.
2. Age is calculated using the date of data extraction.
3. Age-specific proportion indicates the proportion of the Ontario population within a specific age group that have received at least one dose of a COVID-19 vaccine. For example, the number of individuals that are 60-69 years of age who have received at least one dose is shown as the proportion of the Ontario population that is 60-69 years of age.
4. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
Figure 3b. Provincial COVID-19 vaccine coverage estimates for fully vaccinated by age group and date

Notes:
1. Counts are shown the date of dose two administration.
2. Age is calculated using the date of data extraction.
3. Children ages 5-11 are not shown due to small counts. Refer to Table 1.
4. Age-specific proportion indicates the proportion of the Ontario population within a specific age group that are fully vaccinated. For example, the number of individuals that are 60-69 years of age who are fully vaccinated is shown as the proportion of the Ontario population that is 60-69 years of age.
5. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
Figure 3c. Provincial COVID-19 vaccine coverage estimates for three Health Canada authorized doses by age group and date

Notes:
1. Counts are shown using the date of dose three administration.
2. Age is calculated using the date of data extraction.
3. Age-specific proportion indicates the proportion of the Ontario population within a specific age group that have received three doses of a Health Canada authorized COVID-19 vaccine. For example, the number of individuals that are 60-69 years of age who have received three doses is shown as the proportion of the Ontario population that is 60-69 years of age.
4. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
Vaccination Program Impact

Figure 4. Number of confirmed COVID-19 cases and provincial coverage estimates by date

Notes:
1. Interpret COVID-19 case counts for the most recent days with caution due to reporting lags. The light grey shading indicates the most recent period during which case counts are likely to be updated.
2. The decreases observed in cases cannot be attributed to the vaccination program alone. Public health measures have also had an impact on trends in cases.
3. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
4. Coverage estimates show the proportion of the total Ontario population that has been vaccinated.
5. Confirmed COVID-19 cases are shown using the episode date, an estimate of disease onset. Coverage estimates are shown using the date of dose one administration for at least one dose coverage estimates and the date of dose two administration for fully vaccinated coverage estimates.
Figure 5. Number of confirmed COVID-19 cases and provincial coverage estimates by date among individuals 80 years of age and older

Notes:
1. Interpret COVID-19 case counts for the most recent days with caution due to reporting lags. The light grey shading indicates the most recent period during which case counts are likely to be updated.
2. The decreases observed in cases cannot be attributed to the vaccination program alone. Public health measures have also had an impact on trends in cases.
3. Doses administered outside of Ontario and prior to December 14, 2020, when the vaccination program began in Ontario, are excluded from trends over time figures but are included in overall counts for coverage estimates.
4. Coverage estimates show the proportion of the Ontario population 80 years of age and older that have been vaccinated.
5. Confirmed COVID-19 cases are shown using the episode date, an estimate of disease onset. Coverage estimates are shown using the date of dose one administration for at least one dose coverage estimates and the date of dose two administration for fully vaccinated coverage estimates.
### Vaccination Coverage by Age Group and Gender

**Table 1. Number of individuals who received a COVID-19 vaccine and coverage estimates by gender or age group: Ontario, December 14, 2020 to December 19, 2021**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number of individuals: Partially vaccinated</th>
<th>Number of individuals: Fully vaccinated</th>
<th>Number of individuals: Vaccinated with 3 Health Canada authorized doses</th>
<th>Coverage (%): At least one dose</th>
<th>Coverage (%): Fully vaccinated</th>
<th>Coverage (%): Vaccinated with 3 Health Canada authorized doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>343,515</td>
<td>5,811,979</td>
<td>1,110,164</td>
<td>82.6</td>
<td>78.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Male</td>
<td>382,146</td>
<td>5,485,675</td>
<td>821,542</td>
<td>80.6</td>
<td>75.4</td>
<td>11.3</td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to 11</td>
<td>401,137</td>
<td>4,389</td>
<td>2</td>
<td>37.6</td>
<td>0.4</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>12 to 17</td>
<td>35,390</td>
<td>787,409</td>
<td>2,090</td>
<td>85.6</td>
<td>81.9</td>
<td>0.2</td>
</tr>
<tr>
<td>18 to 29</td>
<td>98,377</td>
<td>2,008,140</td>
<td>79,778</td>
<td>84.8</td>
<td>80.8</td>
<td>3.2</td>
</tr>
<tr>
<td>30 to 39</td>
<td>65,286</td>
<td>1,720,857</td>
<td>110,640</td>
<td>87.8</td>
<td>84.6</td>
<td>5.4</td>
</tr>
<tr>
<td>40 to 49</td>
<td>43,671</td>
<td>1,606,627</td>
<td>133,259</td>
<td>89.0</td>
<td>86.7</td>
<td>7.2</td>
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<tr>
<td>50 to 59</td>
<td>37,351</td>
<td>1,792,700</td>
<td>311,793</td>
<td>89.6</td>
<td>87.8</td>
<td>15.3</td>
</tr>
<tr>
<td>60 to 69</td>
<td>25,584</td>
<td>1,665,879</td>
<td>435,937</td>
<td>95.8</td>
<td>94.4</td>
<td>24.7</td>
</tr>
<tr>
<td>70 to 79</td>
<td>11,968</td>
<td>1,104,766</td>
<td>517,031</td>
<td>98.4</td>
<td>97.4</td>
<td>45.6</td>
</tr>
<tr>
<td>80 and over</td>
<td>7,177</td>
<td>628,705</td>
<td>346,465</td>
<td>97.0</td>
<td>95.9</td>
<td>52.8</td>
</tr>
<tr>
<td>Total</td>
<td>727,409</td>
<td>11,321,605</td>
<td>1,937,027</td>
<td>81.8</td>
<td>76.8</td>
<td>13.1</td>
</tr>
</tbody>
</table>

**Notes:**

1. Age is calculated using the date of data extraction.
2. Vaccination program eligibility may be based on birth year. For example, individuals turning 5 in 2021 are now eligible for immunization. Individuals that are 4 years of age at the time of vaccination are included in provincial totals, but not included in age specific stratum.
3. The ‘vaccinated with 3 Health Canada authorized doses’ category refers to individuals that have received 3 doses of a HC-authorised vaccine and includes individuals receiving a third dose based on Ontario’s edibility criteria (e.g. individuals residing in long-term care homes and immunocompromised individuals). It is a subset of individuals that are considered fully vaccinated. The fully vaccinated and vaccinated with three doses categories are not mutually exclusive.
4. Individuals that received a vaccination out of province or from non-Ontario stock are included in coverage estimates, as these individuals are residents of Ontario, but are not included in counts for the number of doses administered in Ontario. As a result, the counts reported for doses administered will not align with the number of individuals immunized.
5. Provincial totals include individuals with unknown age and/or gender.
6. The proportion of 5-11 years olds reported as fully vaccinated includes individuals that were eligible as part of the 12-17 year olds program roll-out in 2021 based on birth year (e.g. individuals 11 years of age at the time of dose 1 administration and turning 12 in 2021).
7. Individuals 5-11 years of age are not expected to be eligible for third doses. These third dose administration records are being investigated.
Figure 6. Provincial COVID-19 vaccine coverage estimates (partially and fully vaccinated) by gender and age group

Notes:
1. Individuals with unknown age and/or gender were excluded.
2. Age was calculated using the date of data extraction.
3. The proportion of 5-11 years olds reported as fully vaccinated includes individuals that were eligible as part of the 12-17 year olds program roll-out in 2021 based on birth year (e.g. individuals 11 years of age at the time of dose 1 administration and turning 12 in 2021).
Table 2. Number of doses administered in Ontario by product type and age group: Ontario, December 14, 2020 to December 19, 2021

<table>
<thead>
<tr>
<th>Number of doses</th>
<th>5 to 11</th>
<th>12 to 17</th>
<th>18 to 29</th>
<th>30 to 39</th>
<th>40 to 49</th>
<th>50 to 59</th>
<th>60 to 69</th>
<th>70 to 79</th>
<th>80 and over</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech Comirnaty COVID-19 vaccine - Dose 1</td>
<td>435,256</td>
<td>858,795</td>
<td>1,608,278</td>
<td>1,345,019</td>
<td>1,105,577</td>
<td>1,202,993</td>
<td>1,081,739</td>
<td>868,945</td>
<td>479,247</td>
<td>8,989,375</td>
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<tr>
<td>Pfizer-BioNTech Comirnaty COVID-19 vaccine - Dose 2</td>
<td>33,679</td>
<td>821,954</td>
<td>1,267,036</td>
<td>1,064,540</td>
<td>981,884</td>
<td>1,085,283</td>
<td>958,206</td>
<td>751,081</td>
<td>426,505</td>
<td>7,391,704</td>
</tr>
<tr>
<td>Pfizer-BioNTech Comirnaty COVID-19 vaccine - Dose 3</td>
<td>27</td>
<td>3,470</td>
<td>85,606</td>
<td>96,753</td>
<td>118,443</td>
<td>256,499</td>
<td>357,888</td>
<td>412,611</td>
<td>244,525</td>
<td>1,576,433</td>
</tr>
<tr>
<td>Moderna Spikevax COVID-19 vaccine - Dose 1</td>
<td>0</td>
<td>2,354</td>
<td>466,227</td>
<td>391,694</td>
<td>305,363</td>
<td>320,903</td>
<td>288,342</td>
<td>170,531</td>
<td>130,722</td>
<td>2,076,326</td>
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<tr>
<td>Moderna Spikevax COVID-19 vaccine - Dose 2</td>
<td>0</td>
<td>4,708</td>
<td>720,721</td>
<td>624,337</td>
<td>587,276</td>
<td>654,784</td>
<td>533,542</td>
<td>293,316</td>
<td>170,522</td>
<td>3,589,289</td>
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<tr>
<td>Moderna Spikevax COVID-19 vaccine - Dose 3</td>
<td>0</td>
<td>61</td>
<td>10,949</td>
<td>16,622</td>
<td>23,968</td>
<td>69,462</td>
<td>87,283</td>
<td>91,782</td>
<td>76,671</td>
<td>376,809</td>
</tr>
<tr>
<td>AstraZeneca Vaxzevria/COVISHIELD COVID-19 vaccine - Dose 1</td>
<td>0</td>
<td>0</td>
<td>499</td>
<td>14,278</td>
<td>224,952</td>
<td>309,166</td>
<td>275,962</td>
<td>36,495</td>
<td>3,411</td>
<td>864,788</td>
</tr>
<tr>
<td>AstraZeneca Vaxzevria/COVISHIELD COVID-19 vaccine - Dose 2</td>
<td>0</td>
<td>0</td>
<td>283</td>
<td>1,655</td>
<td>23,906</td>
<td>54,228</td>
<td>126,531</td>
<td>15,766</td>
<td>1,277</td>
<td>223,653</td>
</tr>
<tr>
<td>AstraZeneca Vaxzevria/COVISHIELD COVID-19 vaccine - Dose 3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Janssen (Johnson &amp; Johnson) COVID-19 vaccine - Dose 1</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>24</td>
<td>25</td>
<td>17</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>98</td>
</tr>
<tr>
<td>Janssen (Johnson &amp; Johnson) COVID-19 vaccine - Dose 2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Number of doses</td>
<td>5 to 11</td>
<td>12 to 17</td>
<td>18 to 29</td>
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<td>40 to 49</td>
<td>50 to 59</td>
<td>60 to 69</td>
<td>70 to 79</td>
<td>80 and over</td>
<td>Total</td>
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<td>-------</td>
</tr>
<tr>
<td>Janssen (Johnson &amp; Johnson) COVID-19 vaccine - Dose 3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total: Dose 1</td>
<td>435,256</td>
<td>861,149</td>
<td>2,075,019</td>
<td>1,751,015</td>
<td>1,635,917</td>
<td>1,833,079</td>
<td>1,646,057</td>
<td>1,075,973</td>
<td>613,381</td>
<td>11,930,587</td>
</tr>
<tr>
<td>Total: Dose 2</td>
<td>33,679</td>
<td>826,662</td>
<td>1,988,040</td>
<td>1,690,533</td>
<td>1,593,067</td>
<td>1,794,296</td>
<td>1,618,281</td>
<td>1,060,163</td>
<td>598,304</td>
<td>11,204,651</td>
</tr>
<tr>
<td>Total: Dose 3</td>
<td>27</td>
<td>3,531</td>
<td>96,556</td>
<td>113,375</td>
<td>142,411</td>
<td>325,962</td>
<td>445,173</td>
<td>504,395</td>
<td>321,196</td>
<td>1,953,248</td>
</tr>
<tr>
<td>Total: All doses</td>
<td>468,962</td>
<td>1,691,342</td>
<td>4,159,615</td>
<td>3,554,923</td>
<td>3,371,395</td>
<td>3,953,337</td>
<td>3,709,511</td>
<td>2,640,531</td>
<td>1,532,881</td>
<td>25,088,486</td>
</tr>
</tbody>
</table>

Notes:
1. 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, as these individuals are residents of Ontario. As a result, the counts reported for doses administered will not align with the number of individuals immunized.
2. Doses numbers are maintained in reported 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.
3. Age was calculated using the date of dose 1 administration.
4. Vaccination program eligibility may be based on birth year. For example, individuals turning 5 in 2021 are now eligible for immunization. Individuals that are 4 years of age at the time of vaccination are included in provincial totals, but not included in age specific stratum.
5. Provincial totals include individuals with unknown age.
6. Totals for dose 1, dose 2, and dose 3 include dose records where the dose was reported as administered in Ontario but the product was unknown/missing.
7. Pfizer-BioNTech Comirnaty COVID-19 vaccine product counts include doses of the Pfizer pediatric product.
8. Dose records reported among 5-11 years olds include individuals that were eligible in 2021 based on birth year (e.g. individuals 11 years of age at the time of dose 1 administration and turning 12 in 2021).
9. Individuals 5-11 years of age are not expected to be eligible for third doses. These third dose administration record are being investigated.
Figure 7. Number of individuals by product type received for dose 1 and dose 2

Note: Pfizer-BioNTech Comirnaty COVID-19 vaccine product counts include doses of the Pfizer-BioNTech Comirnaty pediatric product.
Table 3. Number of doses (dose 1, dose 2, and dose 3) administered in Ontario by vaccination setting and age group: Ontario, December 14, 2020 to December 19, 2021

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Number of doses: Congregate living/care</th>
<th>Number of doses: Hospital</th>
<th>Number of doses: Mass immunization clinic</th>
<th>Number of doses: Pharmacy</th>
<th>Number of doses: Physician’s office</th>
<th>Number of doses: Other/Not reported</th>
<th>Total doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 11</td>
<td>653</td>
<td>14,325</td>
<td>357,119</td>
<td>72,056</td>
<td>23,028</td>
<td>1,781</td>
<td>468,962</td>
</tr>
<tr>
<td>12 to 17</td>
<td>8,660</td>
<td>180,903</td>
<td>1,199,354</td>
<td>269,346</td>
<td>27,093</td>
<td>5,986</td>
<td>1,691,342</td>
</tr>
<tr>
<td>18 to 29</td>
<td>46,803</td>
<td>640,353</td>
<td>2,477,258</td>
<td>865,946</td>
<td>113,372</td>
<td>15,883</td>
<td>4,159,615</td>
</tr>
<tr>
<td>30 to 39</td>
<td>47,028</td>
<td>586,726</td>
<td>2,093,184</td>
<td>710,932</td>
<td>105,524</td>
<td>11,529</td>
<td>3,554,923</td>
</tr>
<tr>
<td>40 to 49</td>
<td>49,683</td>
<td>549,998</td>
<td>1,813,785</td>
<td>813,582</td>
<td>134,605</td>
<td>9,742</td>
<td>3,371,395</td>
</tr>
<tr>
<td>50 to 59</td>
<td>67,337</td>
<td>644,111</td>
<td>2,081,820</td>
<td>997,637</td>
<td>152,180</td>
<td>10,252</td>
<td>3,953,337</td>
</tr>
<tr>
<td>60 to 69</td>
<td>72,695</td>
<td>518,714</td>
<td>2,007,617</td>
<td>952,828</td>
<td>149,426</td>
<td>8,231</td>
<td>3,709,511</td>
</tr>
<tr>
<td>70 to 79</td>
<td>81,370</td>
<td>400,827</td>
<td>1,600,408</td>
<td>476,483</td>
<td>75,314</td>
<td>6,129</td>
<td>2,640,531</td>
</tr>
<tr>
<td>80 and over</td>
<td>251,535</td>
<td>272,943</td>
<td>790,150</td>
<td>170,522</td>
<td>44,653</td>
<td>3,078</td>
<td>1,532,881</td>
</tr>
<tr>
<td>Total</td>
<td>625,831</td>
<td>3,809,029</td>
<td>14,425,393</td>
<td>5,330,232</td>
<td>825,362</td>
<td>72,639</td>
<td>25,088,486</td>
</tr>
</tbody>
</table>

Notes:
1. 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, as these individuals are residents of Ontario. As a result, the counts reported for doses administered will not align with the number of individuals immunized.
2. Age was calculated using the date of dose 1 administration.
3. Vaccination program eligibility may be based on birth year. For example, individuals turning 5 in 2021 are now eligible for immunization. Individuals that are 4 years of age at the time of vaccination are included in provincial totals, but not included in age specific stratum.
4. The ‘mass immunization clinic’ group includes mass immunization, mobile, drive-through, and occupational clinics.
5. The ‘other/not reported’ category includes dose administration records where a vaccination setting was not specified (reported as ‘other’) or was missing (not reported).
6. Provincial totals include individuals with unknown age.
Technical Notes

Definition of Terms

**Vaccine series** refers to the number of vaccine doses within a schedule that has been approved by Health Canada. COVID-19 vaccine products currently available in Ontario have a two-dose (i.e. Moderna Spikevax, Pfizer-BioNTech Comirnaty, AstraZeneca Vaxzevria or COVISHIELD COVID-19 vaccines) 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 after receiving their first dose and before receiving their second dose.

**Partially vaccinated** refers to individuals that have received only the first dose of a two-dose Health Canada (HC) authorized vaccine, individuals that have received one or two doses of a non-HC authorized vaccine, and individuals that received one dose of a HC-authorized vaccine followed by a dose of a non-HC authorized vaccine.

**Fully vaccinated** refers to individuals that have received one dose of a one-dose HC-authorized vaccine product (i.e. dose one of one), both doses of a two-dose HC-authorized vaccine series (i.e. dose two of two), one dose of a non-HC authorized vaccine followed by a dose of a HC-authorized vaccine, or three doses of any vaccine product whether it is HC-authorized or not.

**Vaccinated with three doses** refers to individuals that have received three doses of a HC-authorized vaccine, and includes individuals receiving a third dose based on Ontario’s eligibility criteria. This category is a subset of individuals that are considered fully vaccinated. The **fully vaccinated** and **vaccinated with three doses** categories are not mutually exclusive. For example, individuals residing in long-term care that have received three doses of a HC-authorized vaccine are reported as **fully vaccinated** as well as **vaccinated with three doses**.

**Coverage estimate (at least one dose)** refers to the proportion of the population that has received at least one dose of a COVID-19 vaccine. Reflects individuals that are partially or fully vaccinated.

**Coverage estimate (fully vaccinated)** refers to the proportion of the population that is fully vaccinated.

*Note:* Coverage for individuals that have received three doses, as per Ontario’s eligibility criteria, are not included in the report at this time.
Data Sources

- COVID-19 vaccination data were based on information successfully extracted from the Ontario Ministry of Health’s COVaxON application as of **December 20, 2021 at approximately 7:00 a.m.** for vaccination records created on or after June 1, 2021 and **December 16, 2021 at approximately 7:00 a.m.** for vaccination records created up to May 31, 2021.

- COVID-19 case data were based on information successfully extracted from the Ontario Ministry of Health’s CCM application as of **December 20, 2021 at approximately 1:00 p.m.** for cases reported from Feb 1, 2021 on and as of **December 16, 2021 at approximately 9:00 a.m.** for cases reported up to Jan 31, 2021.

- Ontario population estimate data were sourced from Statistics Canada. Population estimates 2001-2020: Table 1 annual population estimates by age and sex for July 1, 2001 to 2020, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2021 [received April 22, 2021].

Data Caveats

- COVaxON and CCM are dynamic reporting systems, which allow ongoing updates to data previously entered. As a result, data extracted from COVaxON and CCM represent a snapshot at the time of extraction and may differ from previous or subsequent reports.

- The data represent vaccinations and case information reported and recorded in COVaxON or CCM. As a result, all counts may be subject to varying degrees of underreporting due to a variety of factors.

- 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 1 administration is used and age is interpreted as the age at the time of dose 1 administration. For individuals vaccinated and coverage estimates the date of data extraction is used and age is interpreted as the individual’s current age.

- 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. As a result, the counts reported for doses administered will not align with the number of individuals immunized.

  - In order to describe the individuals currently vaccinated in Ontario, counts for the number of individuals vaccinated and coverage estimates exclude individuals reported as deceased. However, doses administered to individuals later reported as deceased are included in dose counts.

  - Only cases meeting the confirmed case classification as listed in the MOH COVID-19 case definition are included. This includes persons with a positive detection of serum/plasma immunoglobulin G (IgG) antibodies to SARS-CoV-2, which was added to the confirmed case definition on August 6, 2020.
Methods: Vaccination Data

- Data presented may differ from other sources for various reasons, including differing extract times and methodologies for processing COVaxON data. Further details pertaining to the methodology for this report are described below.

- Data includes clients with a dose administration record recorded in COVaxON which includes 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 (i.e. LTCH) in Ontario.

- The following definitions were used to assign vaccination status to individuals:
  - **Partially vaccinated** refers to individuals that have received:
    - Only the first dose of a Health Canada (HC) authorized or non-HC authorized vaccine series; two doses of a non-HC authorized vaccine; and a first dose of an HC-authorized vaccine followed by a second dose of a non-HC authorized vaccine.
  - **Fully vaccinated** refers to individuals that have received:
    - One dose of a one-dose HC-authorized vaccine product (i.e. dose one of one); both doses of a two-dose HC-authorized vaccine series (i.e. dose two of two); one dose of a non-HC authorized vaccine followed by one dose of a HC authorized vaccine; and three doses of any vaccine product whether it is HC-authorized or not.
  - **Vaccinated with three doses** of HC authorized vaccine refers to individuals:
    - That have received three doses of a HC-authorized vaccine, and includes individuals eligible for a third dose based on Ontario’s eligibility criteria.
    - This category is a subset of individuals that are considered fully vaccinated. The fully vaccinated and vaccinated with three doses categories are not mutually exclusive.

- Out of province dose administration records as 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.

- Doses numbers are maintained in reported 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 are excluded when describing the number of individuals vaccinated and in coverage estimates, but are included when describing doses administered in the province.

- For missing dose administration dates and dose administration dates prior to December 14, 2020, the date the administration record was created was used as a proxy. It is possible that dose administration records could be created in advance of dose administration, and thus this may not reflect the true dose administration date.
• Dose administration date was used to determine the dose number (e.g. the first chronological
dose was considered dose 1) as well as the dose interval (e.g. number of days from first to
second dose).

• Non-valid dose records were excluded. Non-valid records included doses where the status was
reported as ‘entered in error’, ‘invalid’, or other similar variations, as well as doses where the
status was valid (e.g. ‘administered’) but that were 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).

• Duplicate dose administration records were excluded (i.e. clients with multiple dose
administration records with the same date). Duplicate dose records were 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 1, dose 2, and dose 3 were
    assigned based on the dose administration dates reported.
  • For clients with multiple doses reported with different administration dates, the first
    chronological dose was considered the first dose.

• To determine a date for the second dose, the first subsequent date on or after the
  product-specific recommended minimum interval of the first dose product, with a 4-day
  grace period, was used. Doses administered prior to the product-specific recommended
  minimum interval, with a 4-day grace period, were not considered valid. For example, if
  there were two subsequent doses that were 7 days and 21 days from a Moderna Spikevax
  COVID-19 vaccine first dose, respectively, then the dose that was 21 days from the first
dose was used as the second dose. Similarly, if there were two subsequent doses that were
  10 days and 12 days from the first dose, respectively, then neither dose was used and the
  individual was 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 COVID-19 vaccine: 15 days (19 days with a 4-day grace
      period).6 There is currently no maximum interval for second doses (i.e. no
      recommendation to restart a vaccine series regardless of the length of delay of the
      second dose).
    • Moderna Spikevax COVID-19 vaccine: 17 days (21 days with a 4-day grace period).6
      There is currently no maximum interval for second doses (i.e. no recommendation
      to restart a vaccine series regardless of delay of second dose).
    • AstraZeneca Vaxzevria/COVISHIELD COVID-19 vaccine: 24 days (28 days with a 4-day
      grace period).6 There is currently no maximum interval for second doses (i.e. no
      recommendation to restart a vaccine series regardless of delay of second dose).
    • Non-Health Canada authorized products or unspecified products: 17 days (21 days
      with a 4-day grace period).

• To determine a date for the third dose, the first subsequent date 28 days or more after the
  second dose was used, regardless of the vaccine product of the second dose (i.e. the dose 3
  interval was not product-specific). For example, if there were two subsequent doses that were
10 days and 28 days from a Pfizer Comirnaty COVID-19 vaccine second dose, respectively, then the dose that was 28 days from the second dose was used as the third dose. Similarly, if there were two subsequent doses that were 11 days and 13 days from the second dose, respectively, then neither dose was used and the individual was not assigned a third dose.

- A maximum of three doses were assigned for an individual. If multiple doses 28 days or more after the second dose were reported, then the first chronological dose after the second dose was used. For example, if there were two subsequent doses that were 30 days and 33 days from a Pfizer Comirnaty COVID-19 vaccine second dose, respectively, then the dose that was 30 days from the second dose was used as the third dose.

- Age at the time of dose 1 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.

  - Age at the time of dose 1 administration and age at the time of data extraction were calculated using the client date of birth and the date of dose 1 administration or date of data extraction, respectively. Ages reported as >=120 years, <0 years, or where date of birth was missing were considered unknown. In Canada, the Pfizer-BioNTech Comirnaty COVID-19 vaccine is authorized for use in individuals 5 and older. The Moderna Spikevax COVID-19 vaccine is authorized for use in individuals aged 12 years and older. The AstraZeneca Vaxzevria/COVISHIELD COVID-19 and Janssen vaccines are authorized for use in individuals aged 18 years and older. Based on expected vaccine product use as per NACI and product monographs, clients under 12 years of age that received the Moderna Spikevax COVID-19 vaccine, and clients under 18 years of age that received the AstraZeneca Vaxzevria/COVISHIELD COVID-19 and Janssen vaccines, were also considered to have unknown age.

- Clients reporting a gender of ‘Non-binary/third gender’ and ‘Other’ were combined into an ‘Other’ category. ‘Unknown’ gender included clients where gender was reported as ‘Prefer not to say’, ‘Unknown’, or where gender was missing.

- Organization postal code and public health unit were assigned using institution-specific IDs.

- Postal code of residence was extracted from the client residential address. For clients where the public health unit of residence was not reported and the postal code of residence was available, the postal code of residence was used to assign clients to a public health unit of residence.

- Priority population categories were informed by the MOH’s COVID-19: Guidance for Prioritization Health Care Workers for COVID-19 Vaccination.

  - The ‘reason for immunization’ field was used to assign individuals as LTCH/RH residents

Methods: Case Data

- Methods for processing the CCM case data are described in the Technical Notes of the COVID-19 Daily Epidemiological Summary.
References


