

## WEEKLY EPIDEMIOLOGICAL SUMMARY

# COVID-19 in Ontario: Focus on May 23, 2021 to May 29, 2021

This report includes the most current information available from CCM as of **June 1, 2021**.

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

A [daily summary](#) is available and provides an epidemiologic summary of recent COVID-19 activity in Ontario. This weekly report provides an epidemiologic summary of COVID-19 activity in Ontario over time.

## Highlights

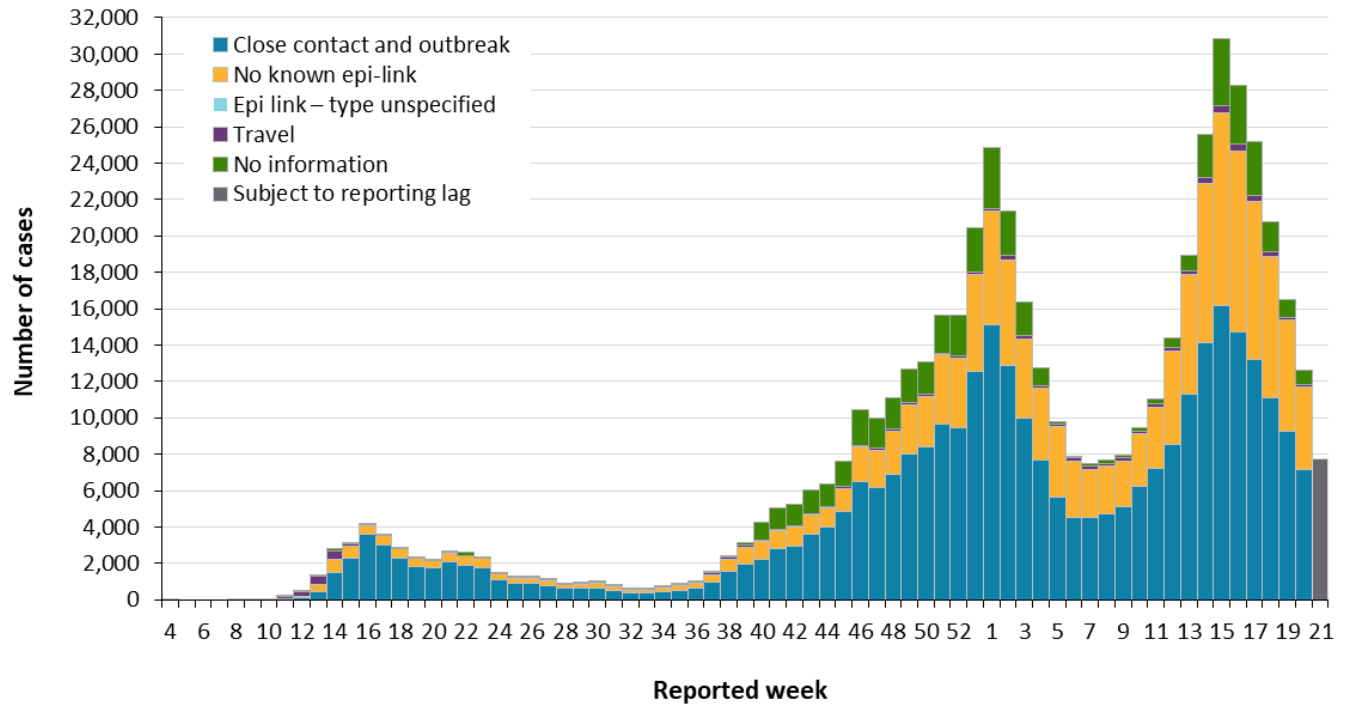
- There are a total of 531,125 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to May 29, 2021.
- For the period with a public health unit (PHU) reported date between May 23 to 29, 2021 (week 21):
  - A total of 7,766 cases were reported to public health compared to 12,645 cases the previous week (May 16 to 22, 2021).
  - The weekly incidence of COVID-19 cases has now decreased for six consecutive weeks. The 38.6% decrease in case count observed for week 21, compared to week 20, is the largest single-week decrease in case counts observed since widespread transmission was established in Ontario.
  - Porcupine Health Unit has had one of the highest rates of COVID-19 per 100,000 population in the province since week 19. In week 21, Porcupine reported the highest rate (270.9) followed by Peel (98.4), Hamilton (71.9), Durham (63.9), and Toronto (61.9).

The term public health unit reported date in this document refers to the date local public health units were first notified of the case.

Data corrections or updates can result in case records being removed and or updated from past reports. Thus comparisons of case counts by public health unit reported date may not align with daily change in cases publicly reported by the province for the same time period, which reflects the difference in cumulative counts between one day and the next.

# Cases Over Time

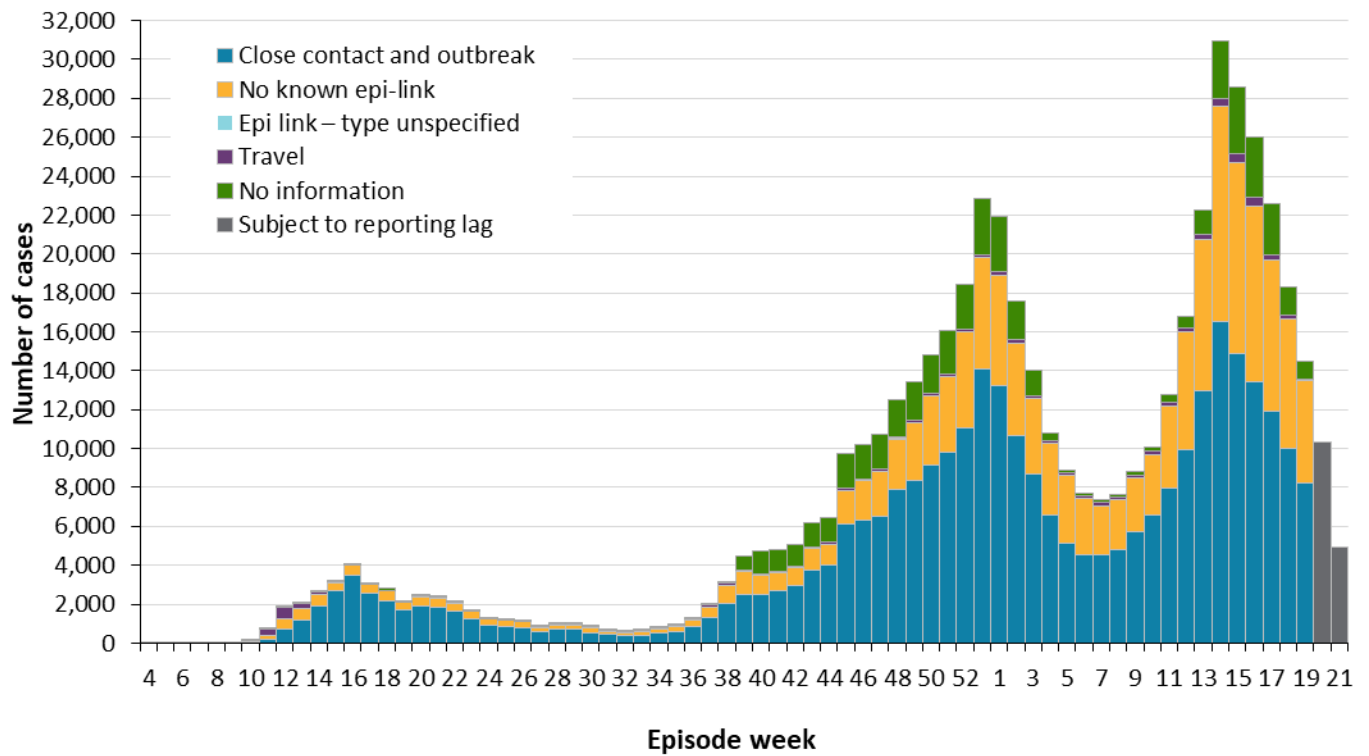
**Figure 1. Confirmed cases of COVID-19 by likely source of acquisition and public health unit reported week: Ontario**



**Note:** Include cases with reported dates ranging from week-4 (January 19 and 25, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM

**Figure 2. Confirmed cases of COVID-19 by likely source of acquisition and approximation of symptom onset week: Ontario**



**Note:** Not all cases have an episode date. Cases without an episode date are not included in the figure. The definition for how episode date is defined is available in the technical notes. Include cases with episode dates ranging from week-4 (January 19 and 25, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM

## Case Characteristics

**Table 1. Summary of confirmed cases of COVID-19 by public health unit reported date: Ontario**

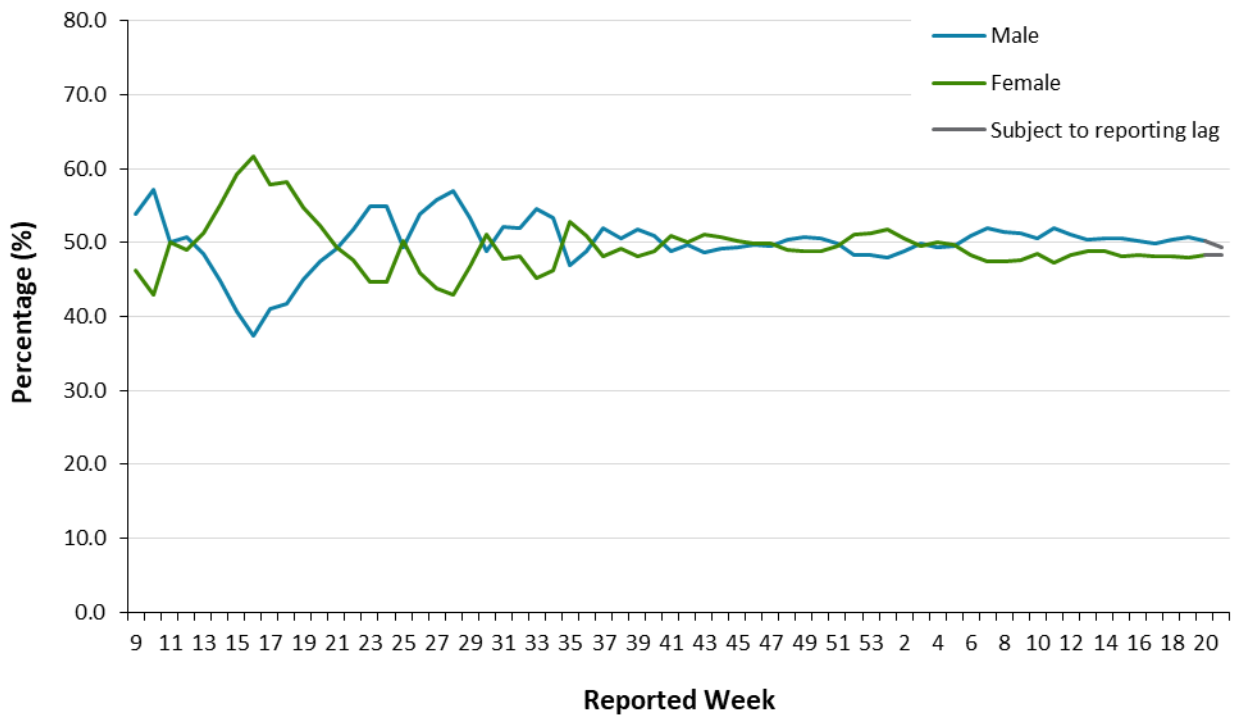
	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative case count up to May 29	Cumulative rate per 100,000 population
Total number of cases	12,645	7,766	531,125	3,573.1
Gender: Male	6,356	3,839	264,332	3,611.5
Gender: Female	6,118	3,750	262,541	3,479.6
Ages: 19 and under	2,626	1,642	84,399	2,690.9
Ages: 20-39	5,204	3,229	198,873	4,784.9
Ages: 40-59	3,255	1,949	152,136	3,863.7
Ages: 60-79	1,283	792	70,879	2,398.7
Ages: 80 and over	273	153	24,741	3,642.3
Number resolved	N/A	N/A	513,359	N/A

**Note:** Not all cases have an age or gender reported.

Interpret information for the most recent week with caution due to reporting lags.

**Data Source:** CCM

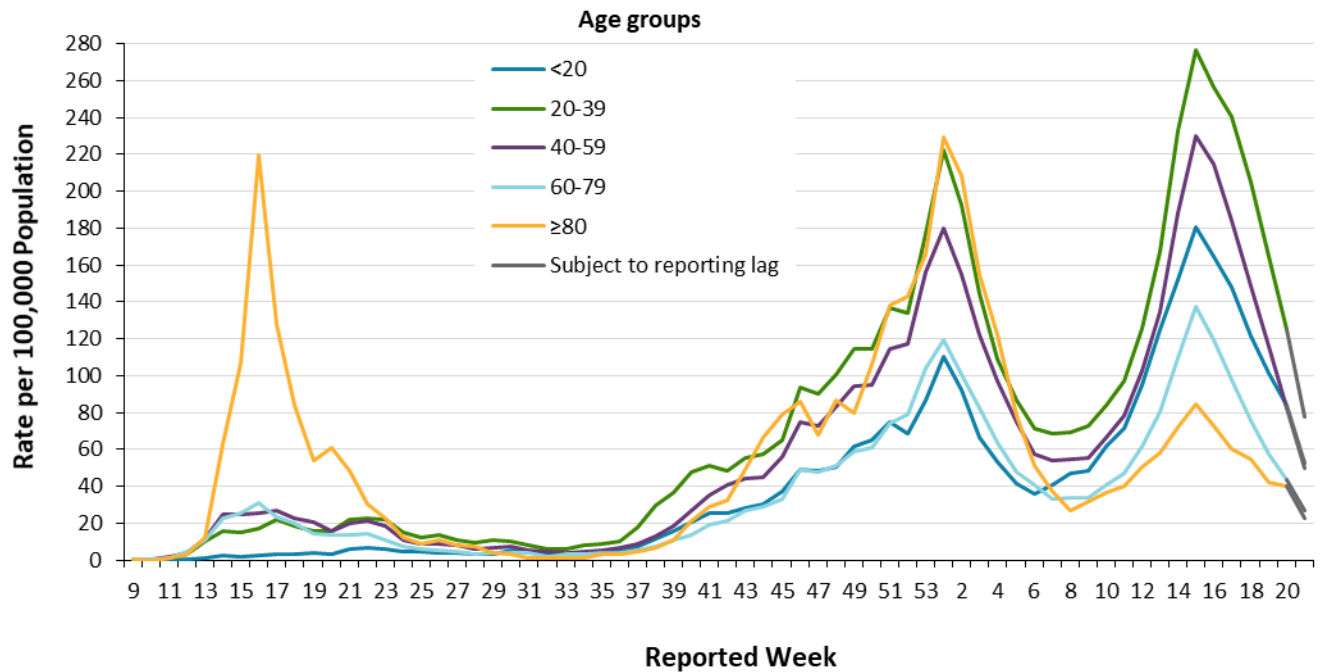
**Figure 3. Percentage of confirmed cases of COVID-19 by gender and public health unit reported week: Ontario**



**Note:** Not all cases have a gender reported. The denominator for calculating weekly percentages includes all cases. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM

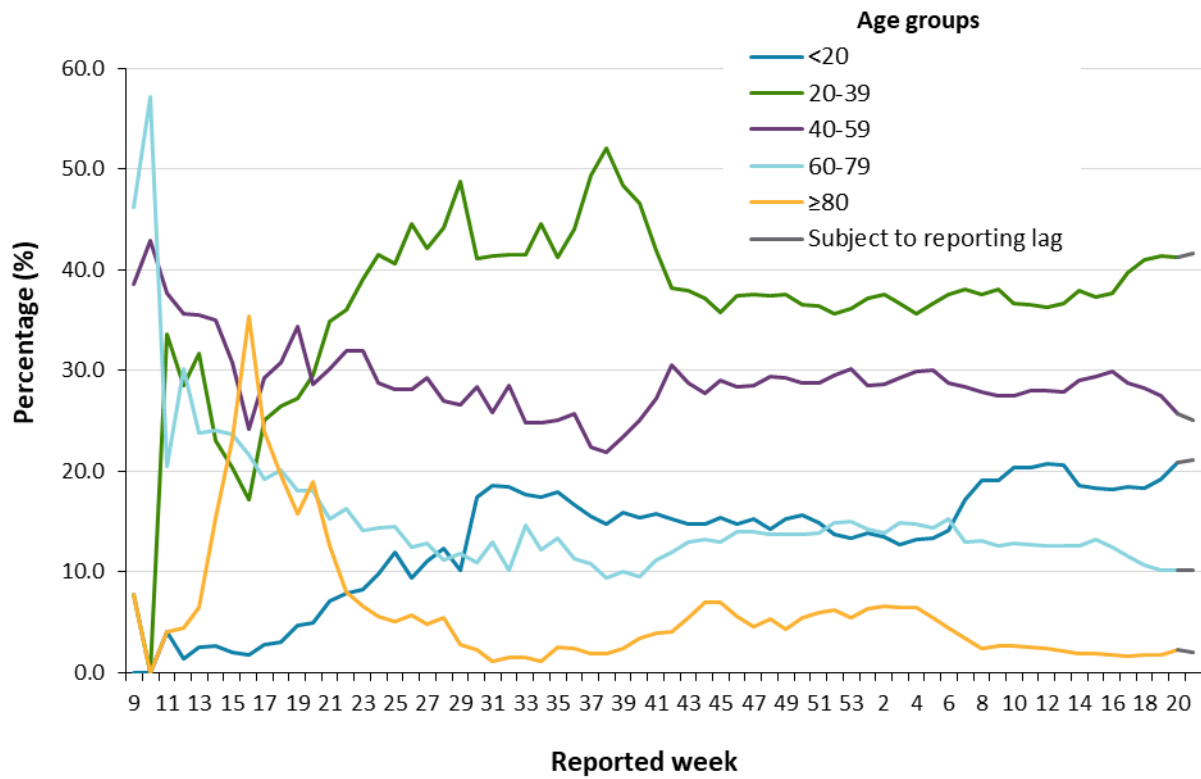
**Figure 4a. Rate of confirmed cases of COVID-19 per 100,000 population by age group and public health unit reported week: Ontario**



**Note:** Not all cases have an age reported. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from week 9 (February 23 and 29, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM

**Figure 4b. Percentage of confirmed cases of COVID-19 by age group and public health unit reported week: Ontario**

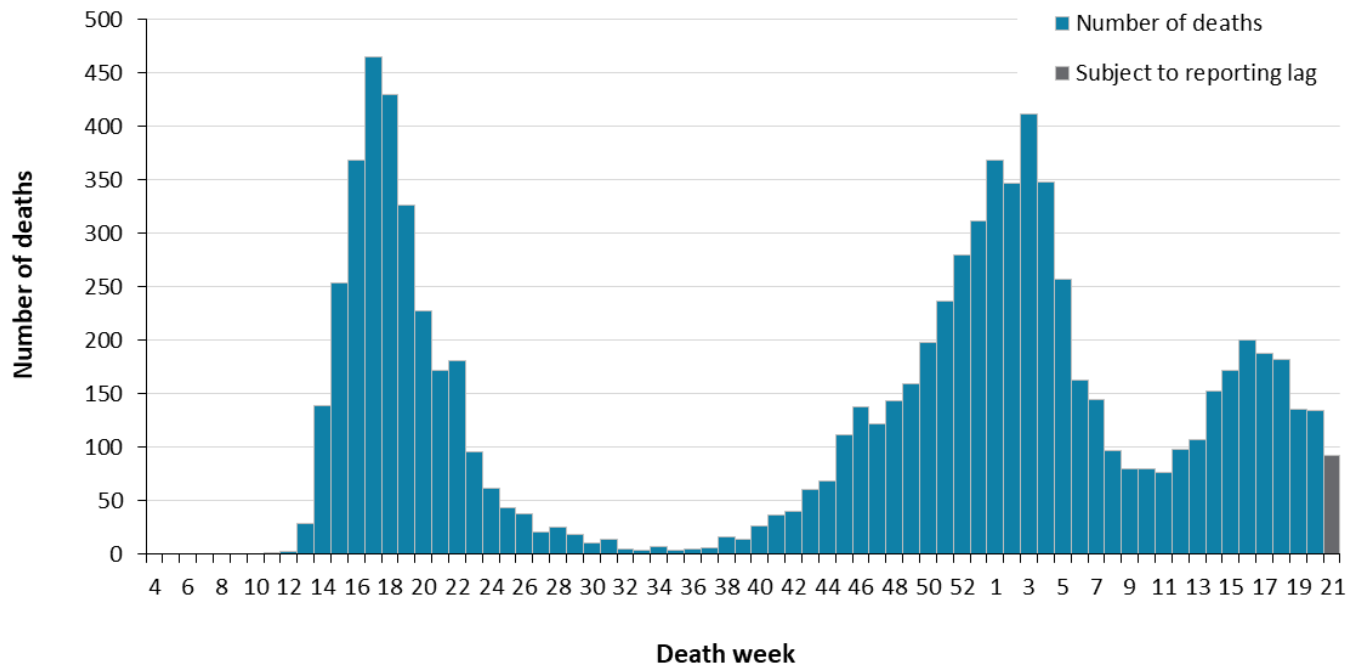


**Note:** Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from week 9 (February 23 and 29, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM

# Deaths

Figure 5. Deaths among confirmed cases of COVID-19 by week of death: Ontario



**Note:** Cases without a death date are not included in the figure. Include cases with date of death ranging from week-4 (January 19 and 25, 2020) to week 21 (May 23 and 29, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM



**Table 2. Summary of deaths among confirmed cases of COVID-19 by public health unit reported week: Ontario**

Deaths	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative case count up to May 29	Cumulative rate per 100,000 population
Number of deaths	42	17	8,791	59.1
Gender: Male	20	7	4,401	60.1
Gender: Female	22	8	4,325	57.3
Ages: 19 and under	0	0	4	0.1
Ages: 20-39	1	0	70	1.7
Ages: 40-59	3	6	515	13.1
Ages: 60-79	16	3	2,724	92.2
Ages: 80 and over	22	8	5,477	806.3

**Note:** Age and gender may not be reported for all cases. Reported week is the week the case was reported to the public health unit. This is different than the “week of death” presented in Figure 5 which reflects the week the case was reported to have a ‘Fatal’ outcome.

Interpret information for the most recent week with caution due to reporting lags.

**Data Source:** CCM

## Exposure

**Table 3. Confirmed cases of COVID-19 by likely source of acquisition and public health unit reported week: Ontario**

	Reported week 20 (May 16 to 22)	Percentage	Reported week 21 (May 23 to 29)	Percentage	Cumulative case count up to May 29	Cumulative percentage
Travel	93	0.7%	62	0.8%	8,465	1.6%
Outbreak-associated or close contact of a confirmed case	7,142	56.5%	4,237	54.6%	316,892	59.7%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	137	<0.1%
No known epidemiological link	4,570	36.1%	2,810	36.2%	153,963	29.0%
Information missing or unknown	840	6.6%	657	8.5%	51,668	9.7%
<b>Total</b>	<b>12,645</b>		<b>7,766</b>		<b>531,125</b>	

**Note:** Information for how cases are grouped within each category is available in the technical notes. Interpret information for the most recent week with caution due to reporting lags.

**Data Source:** CCM

## Sub-populations of interest

**Table 4. Summary of cases of COVID-19 among health care workers: Ontario**

Health care workers	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative case count up to May 29
Number of cases	224	160	23,289
Ever hospitalized	7	5	447
Ever in ICU	0	2	97

**Note:** Interpret information for the most recent week with caution due to reporting lags.

**Data Source:** CCM

**Table 5. Summary of cases of COVID-19 associated with long-term care home outbreaks: Ontario**

Long-term care home associated cases	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative case count up to May 29
Residents	47	14	15,304
Deaths among residents	4	1	3,951
Health care workers	25	17	7,103
Deaths among health care workers	0	0	10

**Note:** Information on how long-term care home residents and health care workers are identified is available in the technical notes. Interpret information for the most recent week with caution due to reporting lags.

**Data Source:** CCM

**Table 6: Summary of cases of COVID-19 among long-term care home (LTCH) residents and health care workers by vaccine category: Ontario**

Vaccine category	Number of resident cases	Percent of resident cases	Number of health care worker cases	Percent of health care worker cases	Total LTCH cases	Percent of LTCH cases
Breakthrough	81	12.9%	26	7.6%	107	11.0%
Partially vaccinated	142	22.6%	78	22.7%	220	22.6%
Not yet protected	405	64.5%	240	69.8%	645	66.4%
<b>Total post-vaccination cases</b>	<b>628</b>		<b>344</b>		<b>972</b>	

**Note:** Include cases reported from December 14, 2020 to May 31, 2021. The number of LTCH residents and health-care workers that have received at least one dose of vaccine can be found in the latest version of the [COVID-19 Vaccine Uptake in Ontario report](#).

**Data Source:** CCM/COVaxON

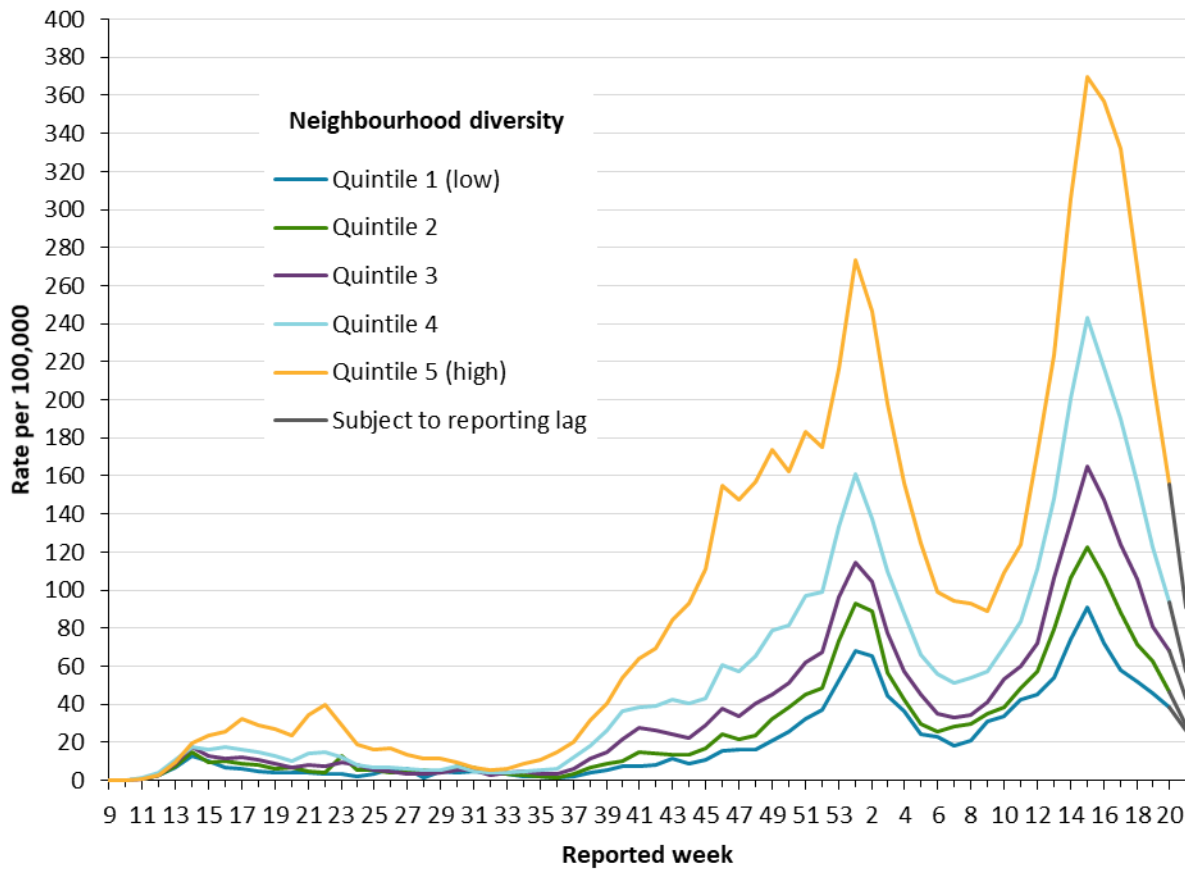
**Table 7: Summary of cases of COVID-19 among school aged children by age group: Ontario**

	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative case count from August 30 up to May 29
Ages: 4-8	538	318	15,482
Ages: 9-13	562	364	19,557
Ages: 14-17	611	427	19,908

**Note:** Interpret information for the most recent week with caution due to reporting lags. Includes all confirmed cases of COVID-19 for specified ages, regardless of school attendance. Cumulative counts include cases of COVID-19 reported starting week-36 (August 30 to September 5, 2020).

**Data Source:** CCM

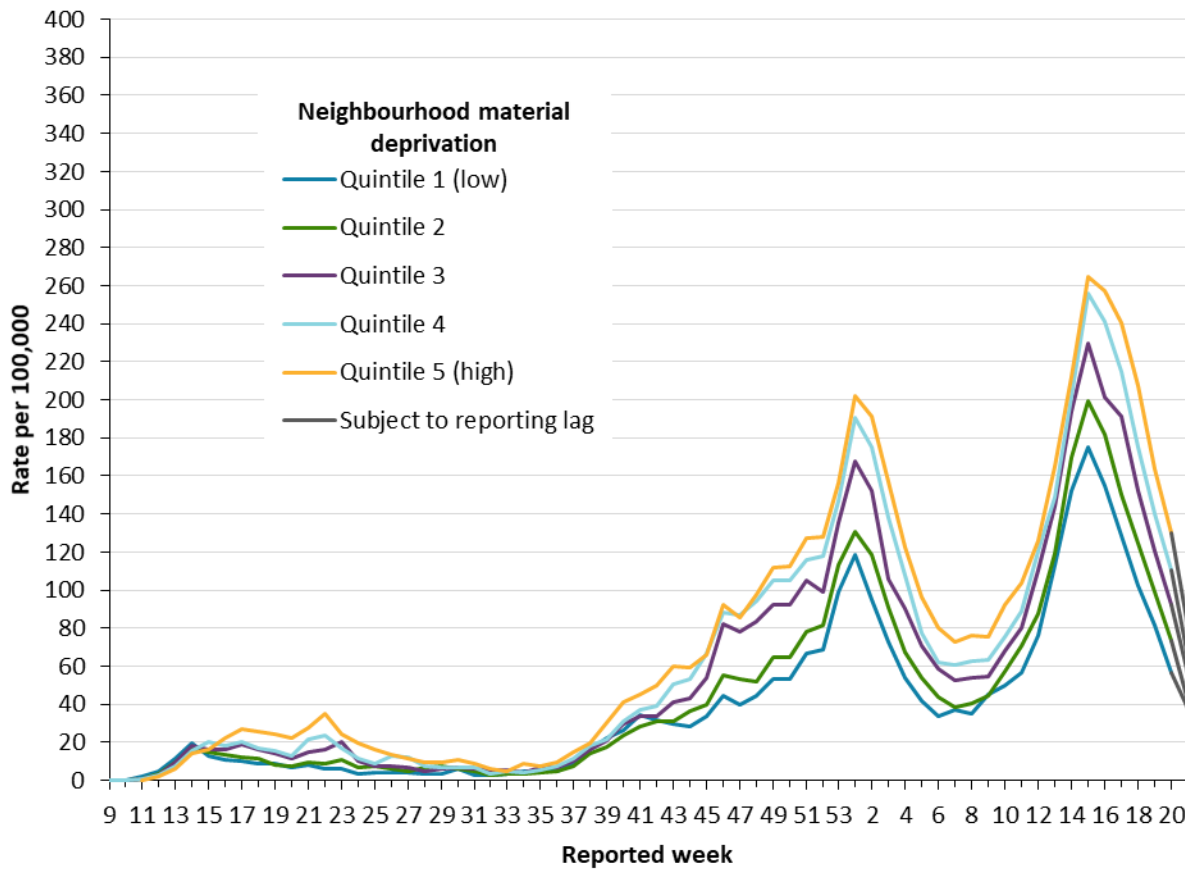
**Figure 6. Rate of confirmed cases of COVID-19 per 100,000 population by quintile of neighbourhood diversity and public health unit reported week: Ontario**



**Note:** Neighbourhood diversity is measured using the ethnic concentration dimension of the Ontario Marginalization Index. The ethnic concentration dimension is based on the proportion of non-white and non-Indigenous residents and/or the proportion of immigrants that arrived in Canada within the past five years. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to week 21 (May 23 to 29, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM, Ontario Marginalization Index

**Figure 7. Rate of confirmed cases of COVID-19 per 100,000 population by quintile of neighbourhood material deprivation and public health unit reported week: Ontario**

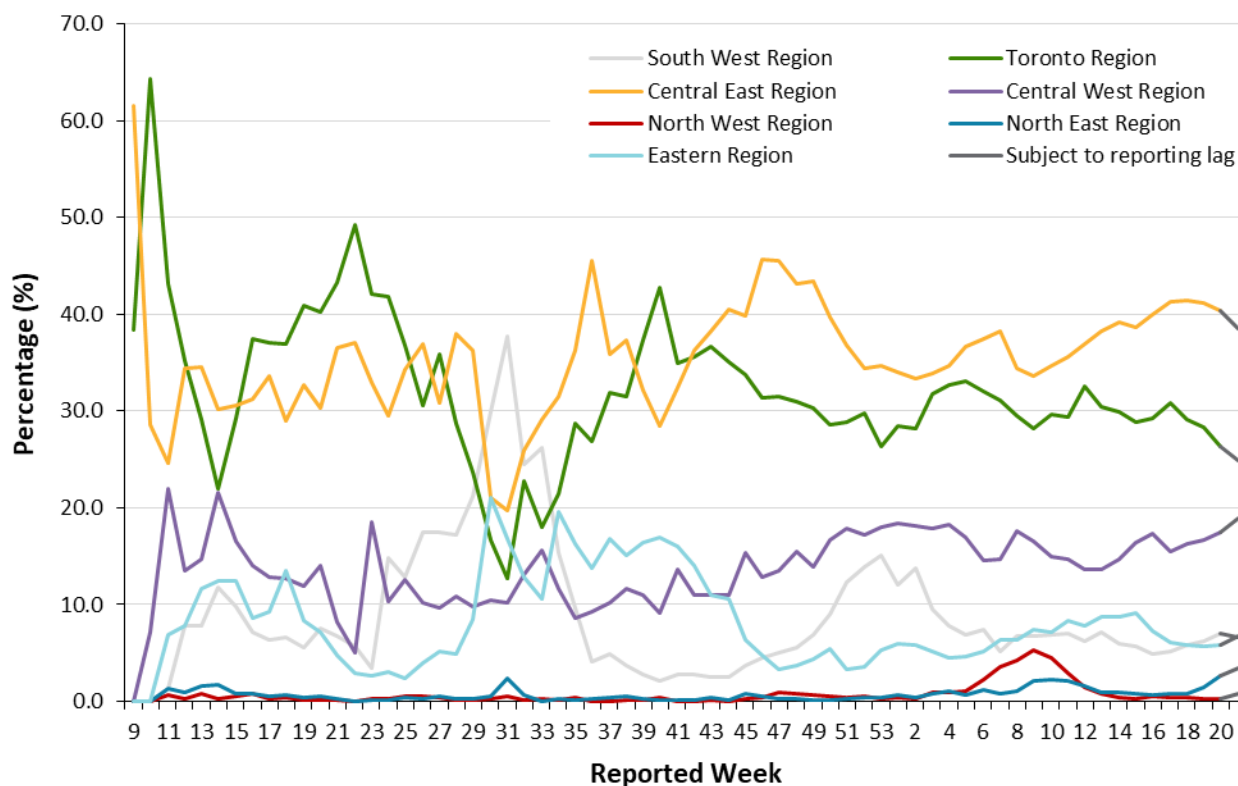


**Note:** Neighbourhood material deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability of individuals and communities to access and attain basic material needs. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to week 21 (May 23 to 29, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

**Data Source:** CCM, Ontario Marginalization Index

## Geography

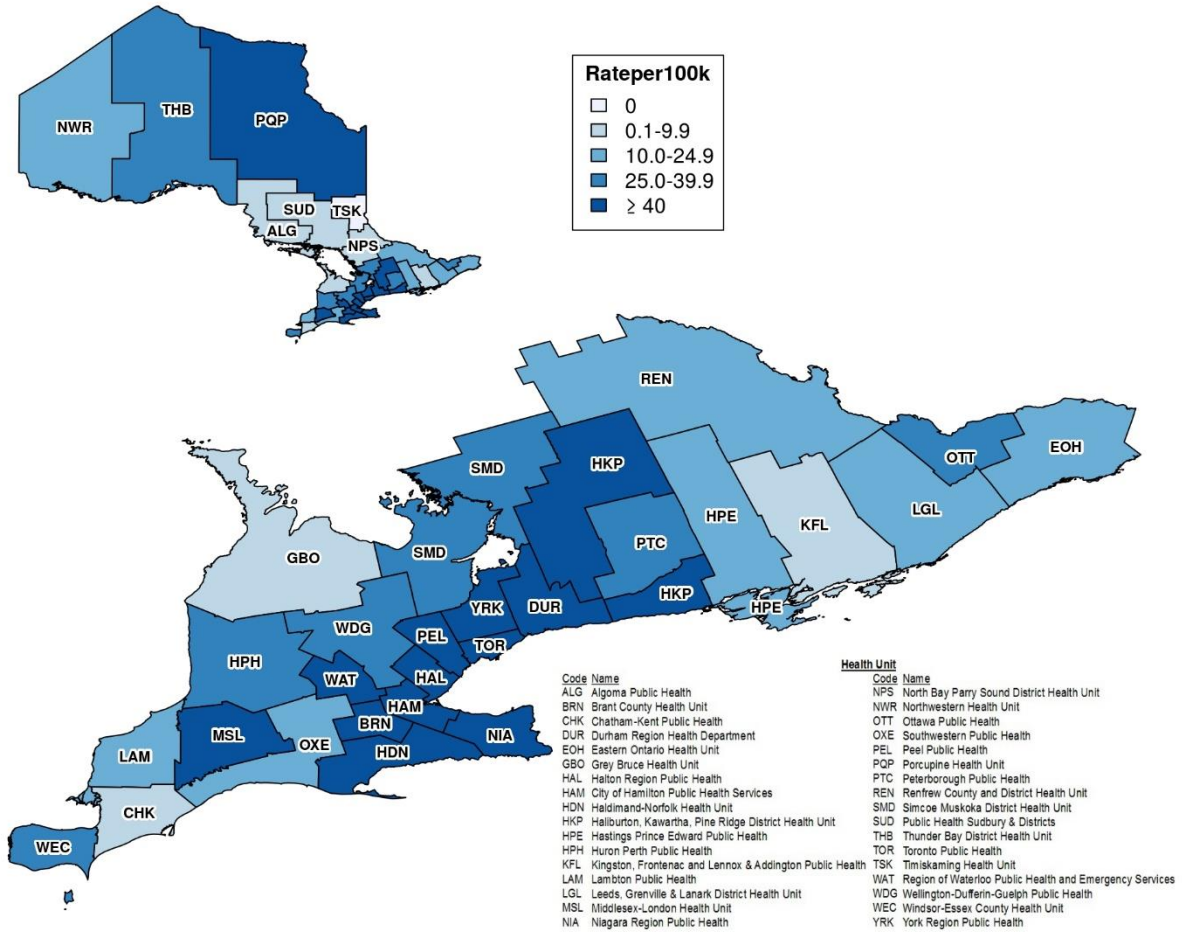
**Figure 8. Percentage of COVID-19 cases by geographic region and public health unit reported week: Ontario**



**Note:** Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 21 (May 23 and 29, 2021). [Table 2A](#) in Appendix A has a listing of public health units by region.

**Data Source:** CCM

**Figure 9. Rate of confirmed cases of COVID-19 in public health reported week 21 (May 23 to 29, 2021) by public health unit: Ontario**



**Note:** The provincial rate of confirmed cases of COVID-19 reported in week 21 was 52.2 cases per 100,000 population.

**Data Source:** CCM



## Outbreaks

**Table 8. Number of public health unit declared COVID-19 outbreaks by setting type: Ontario**

Setting Type	Reported week 21 (May 23 to 29)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to May 29
<b>Congregate Care</b>	<b>9</b>	<b>47</b>	<b>2,907</b>
Long-term care homes	3	24	1,474
Retirement homes	3	13	871
Hospitals	3	10	562
<b>Congregate Living</b>	<b>13</b>	<b>54</b>	<b>1,249</b>
Correctional facility	0	5	53
Shelter	2	16	257
Group Home/supportive housing	10	29	746
Short-term accommodations	0	0	33
Congregate other	1	4	160
<b>Education</b>	<b>11</b>	<b>43</b>	<b>2,379</b>
Child care	9	34	946
School – Elementary*	1	4	1,070
School – Elementary/secondary*	0	0	64
School – Secondary*	0	1	254
School – Post-secondary*	1	4	45
<b>Other settings</b>	<b>68</b>	<b>219</b>	<b>3,971</b>
Bar/restaurant/nightclub	5	13	317
Medical/health services	4	6	144
Personal service settings	0	0	28

Setting Type	Reported week 21 (May 23 to 29)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to May 29
Recreational fitness	1	2	89
Retail	12	32	440
Other recreation/community	1	11	213
Workplace – Farm	0	5	205
Workplace - Food processing	5	8	242
Other types of workplaces	39	133	2,253
Other	1	5	16
Unknown	0	4	24
<b>Total number of outbreaks</b>	<b>101</b>	<b>363</b>	<b>10,506</b>

**Note:** Reported week is based on the outbreak reported date, and if unavailable, the date the public health unit created the outbreak. Ongoing outbreaks includes all outbreaks that are 'Open' in CCM without a 'Declared Over Date' recorded or where the outbreak start date (determined by the onset date of first case, or if missing the reported date, or if missing the created date) is more than 5 months from the current date, even for outbreaks where the outbreak status value selected in CCM is 'OPEN'. Interpret information for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Retail includes settings such as grocery stores, pharmacies, malls, etc. Other types of workplaces include settings such as offices as well as warehousing, shipping and distribution, manufacturing facilities, mines and construction sites, etc. Other recreation/community includes settings such as entertainment and event venues, gatherings (e.g., weddings), religious facilities, etc. Medical/health services refer to settings such as doctor's office or clinic, wellness clinics, etc., and excludes categories listed in the congregate care setting group.

\*Cumulative counts include COVID-19 school outbreaks reported starting week-36 (August 30 to September 5, 2020).

Ongoing re-classification of settings for reported outbreaks can result in outbreak counts that may differ from previously reported counts. Outbreaks in settings outside of Ontario are excluded from all outbreak counts.

**Data Source:** CCM

**Table 9. Confirmed cases of COVID-19 associated with COVID-19 outbreaks by setting type and public health unit reported week: Ontario**

Cases associated with the outbreak setting type	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative number of cases
<b>Congregate Care</b>	<b>169</b>	<b>86</b>	<b>39,540</b>
Long-term care homes	101	62	26,001
Retirement homes	23	10	7,285
Hospitals	45	14	6,254
<b>Congregate Living</b>	<b>245</b>	<b>154</b>	<b>9,333</b>
Correctional facility	144	107	1,624
Shelter	46	21	2,622
Group Home/supportive housing	48	20	3,478
Short-term accommodations	1	0	195
Congregate other	6	6	1,414
<b>Education</b>	<b>165</b>	<b>60</b>	<b>10,114</b>
Child care	154	53	3,840
School – Elementary*	7	5	4,446
School – Elementary/secondary*	0	0	330
School – Secondary*	2	0	1,087
School – Post-secondary*	2	2	411
<b>Other settings</b>	<b>743</b>	<b>325</b>	<b>31,223</b>
Bar/restaurant/nightclub	48	7	1,381
Medical/health services	13	7	638
Personal service settings	0	0	106
Recreational fitness	7	0	703
Retail	114	52	2,289

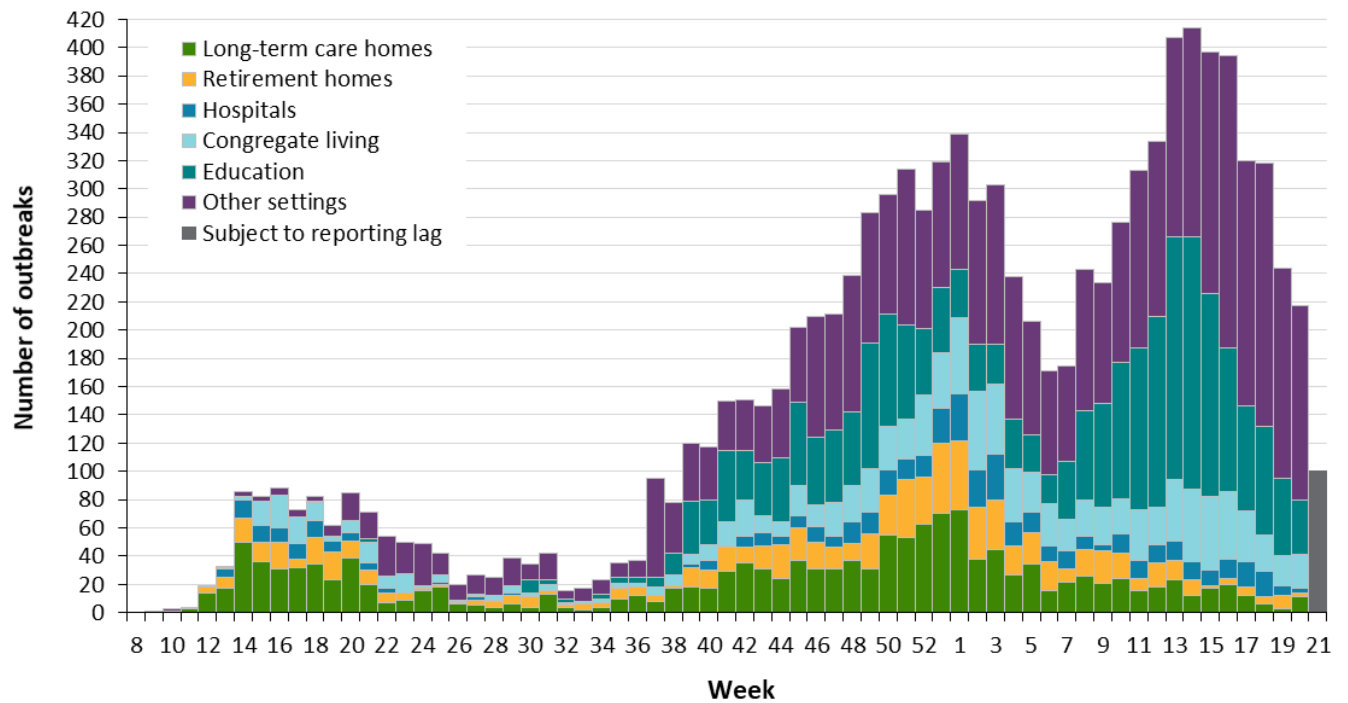
Cases associated with the outbreak setting type	Reported week 20 (May 16 to 22)	Reported week 21 (May 23 to 29)	Cumulative number of cases
Other recreation/community	22	39	2,688
Workplace - Farm	14	9	2,904
Workplace - Food processing	41	34	3,256
Other types of workplaces	451	153	16,964
Other	28	22	169
Unknown	5	2	125
<b>Total number of cases</b>	<b>1,322</b>	<b>625</b>	<b>90,210</b>

**Note:** Interpret case counts for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Retail includes settings such as grocery stores, pharmacies, malls, etc. Other types of workplaces include settings such as offices as well as warehousing, shipping and distribution, manufacturing facilities, mines, and construction sites, etc. Other recreation/community includes settings such as entertainment and event venues, gatherings (e.g., weddings), religious facilities, etc. Medical/health services refer to settings such as doctor's office or clinic, wellness clinics, etc., and excludes categories listed in the congregate care setting group. \*Cumulative counts include cases of COVID-19 associated with school outbreaks reported starting week-36 (August 30 to September 5, 2020).

Ongoing re-classification of settings for reported outbreaks can result in case counts that may differ from previously reported counts. Cases associated with outbreaks outside of Ontario are excluded from case counts in this table.

**Data Source:** CCM

**Figure 10. Public health unit declared COVID-19 outbreaks by outbreak setting type and public health unit reported week: Ontario**



**Note:** If public health unit outbreak reported date is unavailable, the date the public health unit created the outbreak is used. Week 8 refers to February 16 and 22, 2020 and week 21 refers to May 23 and 29, 2021. Congregate living include group homes, shelters, correctional facilities, etc. Other settings include outbreaks within workplaces, childcare, schools, restaurants, recreation etc.

**Data Source:** CCM

## Variant COVID-19 Cases

**Table 10. Summary of confirmed COVID-19 cases with a mutation or VOC detected by age group and gender: Ontario**

	Lineage B.1.1.7*	Lineage B.1.351	Lineage P.1	Mutations**	Cumulative case count as of May 29, 2021
Gender: Male	64,111	470	1,518	16,764	82,863
Gender: Female	62,037	479	1,366	15,661	79,543
Ages: 19 and under	23,873	153	498	6,296	30,820
Ages: 20-39	48,089	308	1,029	12,572	61,998
Ages: 40-59	37,649	317	927	9,231	48,124
Ages: 60-79	15,228	142	378	3,981	19,729
Ages: 80 and over	2,409	32	79	683	3,203

**Note:** Not all cases have an age or gender reported. Data corrections or updates can result in case records being removed and or updated from past reports and may result in subset totals (i.e., age group, gender) differing from past publicly reported case counts. Data for cases with a B.1.1.7, B.1.351, and P.1 lineage detected are determined using the Investigation Subtype field only. Changes to the VOC testing algorithm may impact counts and trends. Further details can be found in the data caveats section.

\* Includes all confirmed COVID-19 cases where lineage B.1.1.7 was identified by genomic analysis and those presumed to be B.1.1.7 based on a positive N501Y and negative E484K mutation.

\*\* Mutations includes all confirmed COVID-19 cases with the following mutations detected, reported from the Investigation Subtype field: N501Y and E484K, N501Y (E484K unknown), E484K (N501Y negative), E484K (N501Y unknown)

**Data Source:** CCM

**Table 11. Summary of confirmed COVID-19 cases with a mutation or VOC detected by likely source of acquisition: Ontario**

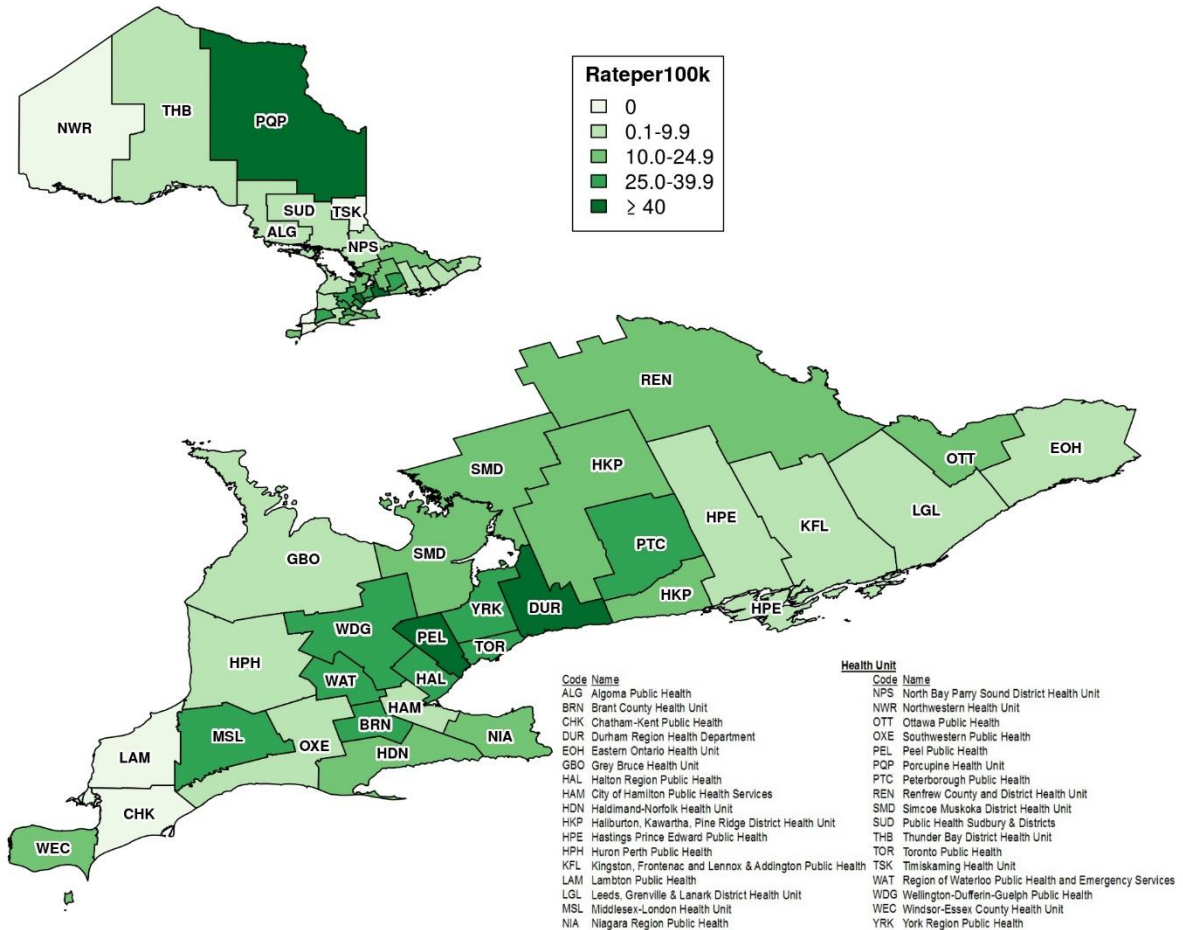
	Lineage B.1.1.7*	%	Lineage B.1.351	%	Lineage P.1	%	Mutations**	%	Cumulative case count up to May 29, 2021	Cumulative percentage
Travel	682	0.5%	25	2.6%	34	1.2%	335	1.0%	1,076	0.7%
Outbreak-associated or close contact of a confirmed case	69,915	54.9%	617	64.8%	1,811	62.2%	20,063	61.2%	92,406	56.4%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No known epidemiological link	45,498	35.8%	250	26.3%	923	31.7%	10,589	32.3%	57,260	34.9%
Information missing or unknown	11,163	8.8%	60	6.3%	143	4.9%	1,777	5.4%	13,143	8.0%
<b>Total</b>	<b>127,258</b>		<b>952</b>		<b>2,911</b>		<b>32,764</b>		<b>163,885</b>	

**Note:** Information for how cases are grouped within each category is available in the technical notes. Data for cases with a B.1.1.7, B.1.351, and P.1 lineage detected are determined using the Investigation Subtype field only.\* Includes all confirmed COVID-19 cases where lineage B.1.1.7 was identified by genomic analysis and those presumed to be B.1.1.7 based on a positive N501Y and negative E484K mutation.

\*\* Mutations includes all confirmed COVID-19 cases with the following mutations detected, reported from the Investigation Subtype field: N501Y and E484K, N501Y (E484K unknown), E484K (N501Y negative), E484K (N501Y unknown)

**Data Source:** CCM

**Figure 11. Rates of confirmed cases of COVID-19 with lineage B.1.1.7\* detected in public health reported week 21 (May 23 to 29, 2021) by public health unit: Ontario**



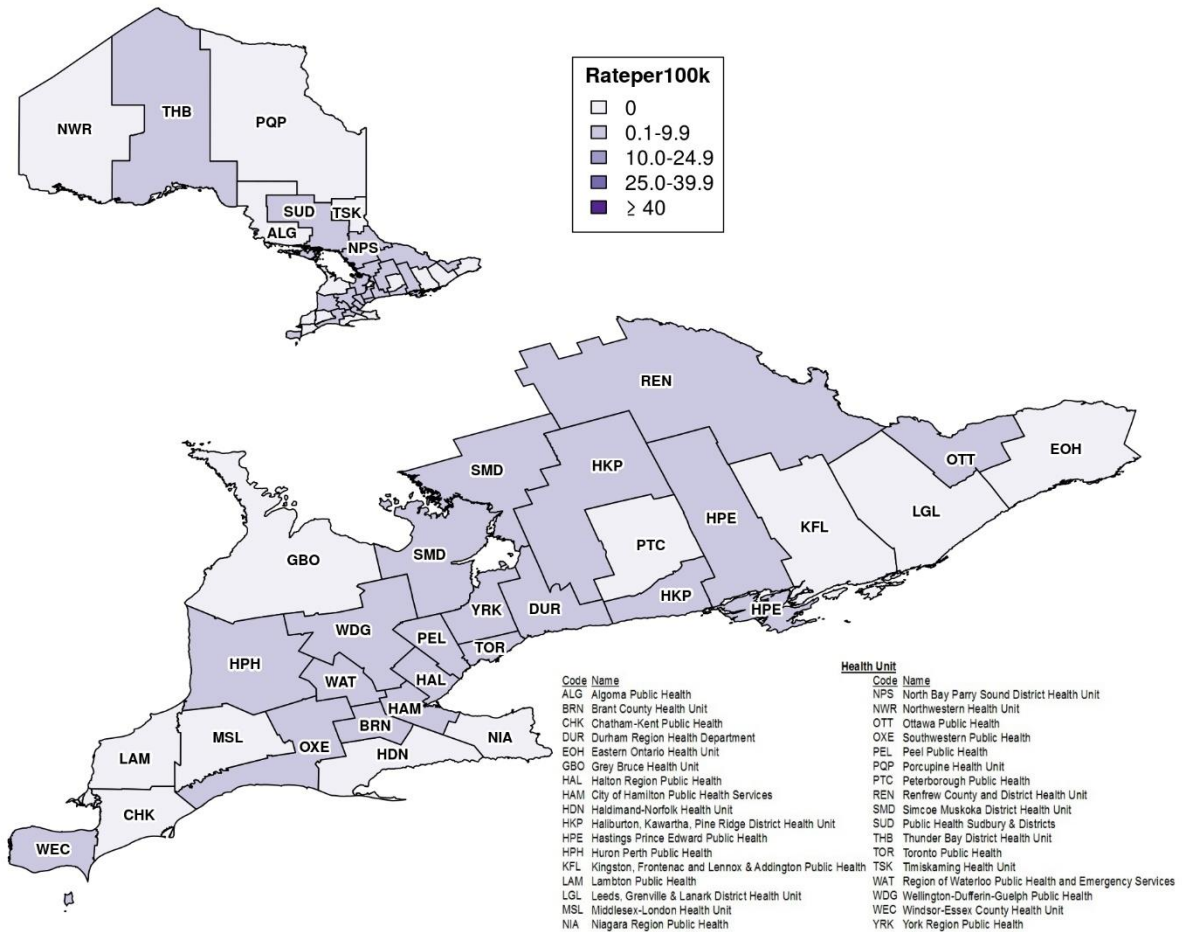
**Note:** The provincial rate of confirmed cases of COVID-19 with lineage B.1.1.7\* reported in week 21 was 27.0 cases per 100,000 population. Changes to the VOC testing algorithm may impact counts and trends. Further details can be found in the data caveats section.

\*Includes all confirmed COVID-19 cases where lineage B.1.1.7 was identified by genomic analysis and those presumed to be B.1.1.7 based on a positive N501Y and negative E484K mutation, using the Investigation Subtype field only.

**Data Source:** CCM



**Figure 12. Rates of confirmed cases of COVID-19 with lineage B.1.351, P.1 or mutation 'N501Y+ and E484K+' detected in public health reported week 21 (May 23 to 29, 2021) by public health unit: Ontario**



**Note:** The provincial rate of confirmed cases of COVID-19 with lineage B.1.351, P.1 or mutation N501Y+ and E484K+ reported in week 21 was 1.7 cases per 100,000 population. Data for cases with a B.1.351, P.1 lineage or an 'N501Y and E484K' mutation detected are determined using the Investigation Subtype field only. Changes to the VOC testing algorithm may impact counts and trends. Further details can be found in the data caveats section.

**Data Source:** CCM

# Technical Notes

## Data Sources

- The data for this report were based on:
  - Information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUS by PHO as of **June 1, 2021 at 1 p.m.** for cases reported from February 1, 2021 onwards and as of **May 31, 2021 at 9 a.m.** for cases reported up January 31, 2021.
  - COVID-19 vaccination data were based on information successfully extracted from the Ontario Ministry of Health's COVaxON application as of **May 31, 2021 at approximately 7 a.m.** COVaxON data was subsequently linked to COVID-19 case data based on information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUs by PHO as of **May 31, 2021 at 1 p.m.**
- CCM and COVaxON are dynamic disease reporting systems, which allow ongoing updates to data previously entered. As a result, data extracted from CCM and COVaxON represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- Ontario population projection data for 2020 were sourced from Ministry, IntelliHEALTH Ontario. Data were extracted on November 26, 2019.
- Statistics Canada Postal Code Conversion File (PCCF), reference date of February 2021.
- The health equity (neighbourhood-level diversity and material deprivation) analyses use data from the 2016 Ontario Marginalization Index and population counts from the 2016 Canada Census:
  - Matheson FI; van Ingen T. 2016 Ontario marginalization index. Toronto, ON: Providence St. Joseph's and St. Michael's Healthcare; 2018. Joint publication with Public Health Ontario.
  - Statistics Canada. Census of Population, 2016: Profile for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas. Retrieved from: [https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/download-telecharger/comp/GetFile.cfm?Lang=E&FILETYPE=CSV&GEONO=044\\_ONTARIO](https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/download-telecharger/comp/GetFile.cfm?Lang=E&FILETYPE=CSV&GEONO=044_ONTARIO).

## Data Caveats and Methods: Case Data

- The data represent case and vaccination information reported to public health units and recorded in CCM or COVaxON. As a result, all counts are subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours, which may depend on severity of illness, clinical practice, changes in laboratory testing, and reporting behaviours.
- Observed trends over time should be interpreted with caution for the most recent period due to reporting and/or data entry lags.
- Only cases meeting the confirmed case classification as listed in the [MOH Case Definition – Coronavirus Disease \(COVID-19\) document](#) are included in the report counts from CCM. This includes persons with:

- laboratory confirmation by a validated NAAT assay
  - a validated point-of-care (POC) assay deemed acceptable to provide a final result
  - a validated laboratory-based serological assay SARS-CoV-2
- Cases of confirmed reinfection, as defined in the provincial case definitions, are counted as unique investigations.
  - Case classification information may be updated for individuals with a positive result issued from a point-of-care assays.
  - COVID-19 cases from CCM for which the Classification and/or Disposition was reported as ENTERED IN ERROR, DOES NOT MEET DEFINITION, IGNORE, DUPLICATE, or any variation on these values have been excluded. The provincial case count for COVID-19 may include some duplicate records, if these records were not identified and resolved.
  - Reported date is the date the case was reported to the public health unit. This is different than the daily change in cases released by the Province for the same time period, which reflects the difference in cumulative counts reported to the Province between one day and the next.
  - Reported weeks were created to align with the Public Health Agency of Canada (PHAC) influenza surveillance weeks.
  - Case episode date represents an estimate of disease onset. This date is calculated based on the earliest date of symptom onset, specimen collection/test date, or the date reported to the public health unit.
  - Cases with unknown or missing ages were excluded from age-specific analyses.
  - Health care worker includes cases that reported 'Yes' to any of the following occupations: health care worker, doctor, nurse, dentist, dental hygienist, midwife, other medical technicians, personal support worker, respiratory therapist, first responder.
  - Resolved cases are determined only for COVID-19 cases that have not died. Cases that have died are considered fatal and not resolved. The following cases are considered resolved:
    - Cases that are reported as 'recovered' in CCM based on local public health unit assessment
    - Cases that are not hospitalized and are 14 days past their symptom onset date or specimen collection date (where symptom onset date is not known)
    - Cases that are currently hospitalized (no hospitalization end date entered) and have a case status of 'closed' indicating that public health follow up is complete and are 14 days past their symptom onset date or specimen collection date
  - Data on hospital admissions, ICU admissions and deaths are likely under-reported as these events may occur after the completion of public health follow up of cases. Cases that were admitted to hospital or died after follow-up was completed may not be captured in CCM.
  - Deaths are determined by using the outcome field in CCM. Any case marked 'Fatal' is included in the deaths data. The CCM field Type of Death is not used to further categorize the data.

- The date of death is determined using the outcome date field for cases marked as 'Fatal' in the outcome field.
- Hospitalization includes all cases for which a hospital admission date was reported or hospitalization/ICU was reported as 'Yes' at the time of data extraction. It includes cases that have been discharged from hospital as well as cases that are currently hospitalized. Emergency room visits are not included in the number of reported hospitalizations.
- ICU admission includes all cases for which an ICU admission date was reported at the time of data extraction. It is a subset of the count of hospitalized cases. It includes cases that have been treated or that are currently being treated in an ICU.
- Likely source of acquisition is determined by examining the epidemiologic link and epidemiologic link status fields in CCM and local systems. If no epidemiologic link is identified in those fields the risk factor fields are examined to determine whether a case travelled, was associated with a confirmed outbreak, was a contact of a case, had an Epidemiological link with type unspecified, had no known epidemiological link (sporadic community transmission) or was reported to have an unknown source/no information was reported. Some cases may have no information reported if the case is untraceable, was lost to follow-up or referred to FNIHB. Cases with multiple risk factors were assigned to a single likely acquisition source group which was determined hierarchically in the following order:
  - For cases with an episode date *on or after* April 1, 2020: Outbreak-associated > close contact of a confirmed case > travel > no known epidemiological link > information missing or unknown
  - For cases with an episode date *before* April 1, 2020: Travel > outbreak-associated > close contact of a confirmed case > no known epidemiological link > information missing or unknown
- 'Long-term care home residents' includes cases that reported 'Yes' to the risk factor 'Resident of a long-term care home'; or 'Yes' to the risk factor 'Resident of nursing home or other chronic care facility' and reported to be part of an outbreak assigned as a long-term care home (via the Outbreak number or case comments field); or were reported to be part of an outbreak assigned as a long-term care home (via the outbreak number or case comments field) with an age over 70 years and did not report 'No' to the risk factors 'Resident of long-term care home' or 'Resident of nursing home or other chronic care facility'. 'Long-term care home residents' excludes cases that reported 'Yes' to any of the health care worker occupational risk factors.
- 'Health care workers associated with long-term care outbreaks' includes 'health care workers' reported to be part of an outbreak assigned as a long-term care home (via the outbreak number or case comments field). Excludes cases that reported 'Yes' to risk factors 'Resident of long-term care home' or 'Resident of nursing home or other chronic care facility' and 'Yes' to the calculated 'health care workers' variable.
- 'Cases associated with school outbreaks' includes cases that are linked to an outbreak, by school classification type (Elementary, Elementary/Secondary, Secondary, Post-Secondary), that met the definition of a [school outbreak](#).
- School classification types are defined by the Ministry of Education.

- Elementary/Secondary schools include public or private schools educating children in a combination of elementary and secondary grades (e.g., Kindergarten to Grade 8, Grades 9 to 12, and Kindergarten to Grade 12).
- Orientation of case counts by geography is based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset and not necessarily the location of exposure. Cases for which the DHU was reported as MOH (to signify a case that is not a resident of Ontario) have been excluded from the analyses.
  - GTA health units include: Durham Region Health Department, Peel Public Health, Toronto Public Health and York Region Public Health
- Ongoing outbreaks are those that are reported in CCM as 'Open' and without a 'Declared Over Date' recorded. Closed outbreaks are 'Closed' or have a 'Declared Over Date' recorded in CCM or where the outbreak start date (determined by the onset date of first case, or if missing the reported date, or if missing the created date) is more than 5 months from the current date, even for outbreaks where the outbreak status value selected in CCM is 'OPEN'.
- Outbreaks are declared by the local medical officer of health or their designate in accordance to the Health Protection and Promotion Act and criteria outlined in [Ministry guidance documents](#).
- School outbreaks include outbreaks declared on or after week-36 (August 30 to September 5, 2020).
- PANGO lineage B.1.1.7: This lineage was first detected in England in September, 2020. Early evidence suggests that the N501Y mutation may increase SARS-CoV-2 transmissibility. The PANGO lineage B.1.1.7 is assigned to genome sequences with at least 5 of the 17 defining B.1.1.7 SNPs.
- PANGO lineage B.1.351 (also known as 501Y.V2): This lineage was first detected October, 2020 in South Africa and has several mutations of concern, including spike (S) gene: N501Y, K417N, and E484K. Early evidence suggests that these mutations may increase SARS-CoV-2 transmissibility and decrease vaccine efficacy. The PANGO lineage B.1.351 will be assigned to genome sequences at least 5 of the 9 defining B.1.351 SNPs.
- PANGO lineage P.1 (also known as 501Y.V3): This lineage was first detected January, 2021 in Brazil and has several mutations of concern, including spike (S) gene N501Y, K417T, and E484K. Early evidence suggests that these mutations may increase SARS-CoV-2 transmissibility and decrease vaccine efficacy. The PANGO lineage P.1 is assigned to genome sequences with more than 10 of the 17 defining P.1 SNPs.
- Public Health Ontario conducts testing and genomic analyses for SARS-CoV-2 positive specimens using the criteria outlined here: <https://www.publichealthontario.ca/en/laboratory-services/test-information-index/covid-19-voc>
- Changes to the VOC testing algorithm may occur over time and trends should be interpreted with caution. Since February 3, 2021 all PCR positive SARS-CoV-2 specimens with CT values  $\leq 35$  are tested for a N501Y mutation. Starting March 22, 2021, these specimens are tested for the E484K mutation as well. Specimens that are positive for the N501Y mutation only are not being forwarded for further genomic analysis. Specimens that are E484K positive (with or without N501Y) are forwarded for genomic analysis.

- The laboratory detection of a variant of concern is a multi-step process. Samples that test positive for SARS-CoV-2 and have a cycle threshold (Ct) value  $\leq 35$  can be tested for mutations common to variants of concern. If positive for the mutation of interest these samples may then undergo genomic analyses to identify the VOC. VOC lineages may still be confirmed using genomic analysis despite specific S gene mutation(s) being documented as 'unable to complete' due to poor sequence quality at the genome position.
- If a VOC is identified through genomic analysis cases initially classified as a mutation may be updated and moved to the appropriate lineage (B.1.1.7, B.1.351 and P.1).

## Data Caveats and Methods: COVaxON

- Linking COVaxON and CCM data is dependent on availability of personal identifiers reported in both databases. For example, if a client was reported in both COVaxON and CCM, but personal identifiers (e.g. such as health card number, date of birth) were not available, then sufficient information would not have been available to identify the client and the client would not have been included in the linkage.
- The following COVID-19 cases were excluded from the primary analysis as the timing of infection (i.e. date of symptom onset) relative to vaccination (i.e. date of dose administration) could not be determined.
  - Cases reported as asymptomatic and where no symptom information was reported.
  - Cases where no symptoms onset date was reported.
  - Cases reported as re-positive or remote positive.
    - Re-positive cases are defined as cases that test positive again after a negative test result based on an approved method or after being cleared/resolved (based on either time from symptom onset or having two negative tests). This may include cases that were asymptomatic at the time of the initial positive result and later developed symptoms which lead to subsequent testing. As a result, the timing of infection may be unclear.
    - Remote positive cases are defined as asymptomatic positive cases with a low pre-test probability (e.g., no epidemiologic link to a confirmed case or an outbreak) and a repeat test that is negative. For these cases, the timing of infection may be unclear.
- The definitions for partially vaccinated and breakthrough cases used in this report were modelled after proposed national definitions, and do not necessarily align with those used in other jurisdictions. Further, the definitions may be revised over time.
  - **Cases not yet protected by vaccination:** Individuals with a symptom onset date that was 0 to <14 days following the first dose of a COVID-19 vaccine. This time period from vaccination is not sufficient to develop immunity, therefore these individuals are not considered protected from vaccination.
  - **Partially vaccinated case:** Individuals with a symptom onset date that was 14 or more days following the first dose of a COVID-19 vaccine or 0 to <7 days after receiving the second dose. This time period from vaccination may be sufficient to develop some degree of

immunity, but these individuals are not considered fully protected as they have not yet received the second dose or have only recently received the second dose.

- **Breakthrough (i.e., fully vaccinated) case:** Individuals with a symptom onset date that was 7 or more days following receipt of the second dose of a COVID-19 vaccine. These individuals are considered fully protected from vaccination, however, as VE is not 100%, it is expected that a small number of individuals become infected following complete vaccination.
- For breakthrough cases, the time interval between doses was not assessed to determine if the second dose was administered as per the product-specific recommended minimum interval.

## Data Caveats and Methods: ON-Marg

- ON-Marg is a data tool that combines a wide range of demographic indicators into multiple distinct dimensions of marginalization. It is an area-based index which assigns a measure of marginalization based on neighbourhood versus individual characteristics. As such, the broader demographic trends of an area may not reflect all residents of a neighbourhood owing to the inherent heterogeneity of demographic characteristics which can vary substantially especially across large rural geographies. For more information, please visit [PHO's ON-Marg website](#).
- Neighbourhood diversity is defined using the ethnic concentration dimension of ON-Marg, which measures populations who may experience marginalization related to racism and discrimination. It is based on the proportion of non-white and non-Indigenous residents (visible minority) and/or the proportion of immigrants that arrived in Canada within the past five years. 'Visible minority' is a term used by Statistics Canada that, although is considered to be outdated, is used here to be consistent with the Canadian census.
- Neighbourhood material deprivation is defined using the material deprivation dimension of ON-Marg, which is closely connected to poverty. It refers to the inability of individuals and communities to access and attain basic material needs. The indicators included in this dimension measure income, quality of housing, educational attainment and family structure characteristics.
- "Neighbourhoods" are considered to be Statistic Canada dissemination areas (DA). The Single Link Indicator Postal Code Conversion File (PCCF) was used to match individuals to a DA based on their postal code, which were subsequently assigned to a quintile of marginalization that contained 20% of Ontario neighbourhoods. The quintiles for the ethnic concentration and the material deprivation dimensions are ordered from quintiles 1 to 5, with quintile 1 having the lowest level of marginalization (i.e., least diverse or least deprived) and quintile 5 having the highest level of marginalization (i.e., most diverse or most deprived).
- The following were not included in analyses that summarize the impact of COVID-19 among Ontarians who may experience marginalization:
  - People who have tested positive for COVID-19 that reside in institutional and congregate settings are not included in the census data from which the marginalization indicators (ethnic concentration and material deprivation) are derived. Although these cases represent a large number of cases overall and deaths, their exclusion ensures appropriate comparisons since institutional and congregate setting residents are excluded from ON-Marg.

- People who have tested positive for COVID-19 that reside in census dissemination areas where data has been suppressed, and cases that have missing or invalid postal codes could not be assigned to a quintile of marginalization.
- Due to data suppression for some census indicators on Indian Reserves in Ontario, residents of Indian Reserves could not be included in ON-Marg and therefore people who have tested positive for COVID-19 and are living on Indian Reserves could not be assigned to a quintile of marginalization. While Indigenous individuals living off reserves are included in this analysis, Indigeneity data is not currently collected or captured in dimensions of ON-Marg.



## Appendix A

**Table 1A. Confirmed cases of COVID-19 by public health unit reported week: Ontario**

Reported Week	Start date	End date	Number of cases	Cumulative count
2	January 5, 2020	January 11, 2020	0	0
3	January 12, 2020	January 18, 2020	0	0
4	January 19, 2020	January 25, 2020	3	3
5	January 26, 2020	February 1, 2020	0	3
6	February 2, 2020	February 8, 2020	0	3
7	February 9, 2020	February 15, 2020	0	3
8	February 16, 2020	February 22, 2020	1	4
9	February 23, 2020	February 29, 2020	13	17
10	March 1, 2020	March 7, 2020	14	31
11	March 8, 2020	March 14, 2020	146	177
12	March 15, 2020	March 21, 2020	435	612
13	March 22, 2020	March 28, 2020	1,307	1,919
14	March 29, 2020	April 4, 2020	2,778	4,697
15	April 5, 2020	April 11, 2020	3,134	7,831
16	April 12, 2020	April 18, 2020	4,204	12,035
17	April 19, 2020	April 25, 2020	3,630	15,665
18	April 26, 2020	May 2, 2020	2,889	18,554
19	May 3, 2020	May 9, 2020	2,344	20,898
20	May 10, 2020	May 16, 2020	2,188	23,086
21	May 17, 2020	May 23, 2020	2,614	25,700
22	May 24, 2020	May 30, 2020	2,598	28,298
23	May 31, 2020	June 6, 2020	2,304	30,602

Reported Week	Start date	End date	Number of cases	Cumulative count
24	June 7, 2020	June 13, 2020	1,473	32,075
25	June 14, 2020	June 20, 2020	1,228	33,303
26	June 21, 2020	June 27, 2020	1,250	34,553
27	June 28, 2020	July 4, 2020	1,084	35,637
28	July 5, 2020	July 11, 2020	869	36,506
29	July 12, 2020	July 18, 2020	930	37,436
30	July 19, 2020	July 25, 2020	991	38,427
31	July 26, 2020	August 1, 2020	806	39,233
32	August 2, 2020	August 8, 2020	593	39,826
33	August 9, 2020	August 15, 2020	610	40,436
34	August 16, 2020	August 22, 2020	730	41,166
35	August 23, 2020	August 29, 2020	851	42,017
36	August 30, 2020	September 5, 2020	977	42,994
37	September 6, 2020	September 12, 2020	1,502	44,496
38	September 13, 2020	September 19, 2020	2,372	46,868
39	September 20, 2020	September 26, 2020	3,121	49,989
40	September 27, 2020	October 3, 2020	4,224	54,213
41	October 4, 2020	October 10, 2020	5,037	59,250
42	October 11, 2020	October 17, 2020	5,276	64,526
43	October 18, 2020	October 24, 2020	6,037	70,563
44	October 25, 2020	October 31, 2020	6,388	76,951
45	November 1, 2020	November 7, 2020	7,610	84,561
46	November 8, 2020	November 14, 2020	10,428	94,989
47	November 15, 2020	November 21, 2020	9,990	104,979
48	November 22, 2020	November 28, 2020	11,127	116,106

Reported Week	Start date	End date	Number of cases	Cumulative count
49	November 29, 2020	December 5, 2020	12,686	128,792
50	December 6, 2020	December 12, 2020	13,059	141,851
51	December 13, 2020	December 19, 2020	15,653	157,504
52	December 20, 2020	December 26, 2020	15,624	173,128
53	December 27, 2020	January 2, 2021	20,446	193,574
1	January 3, 2021	January 9, 2021	24,866	218,440
2	January 10, 2021	January 16, 2021	21,371	239,811
3	January 17, 2021	January 23, 2021	16,394	256,205
4	January 24, 2021	January 30, 2021	12,736	268,941
5	January 31, 2021	February 6, 2021	9,773	278,714
6	February 7, 2021	February 13, 2021	7,894	286,608
7	February 14, 2021	February 20, 2021	7,454	294,062
8	February 21, 2021	February 27, 2021	7,678	301,740
9	February 28, 2021	March 6, 2021	7,934	309,674
10	March 7, 2021	March 13, 2021	9,476	319,150
11	March 14, 2021	March 20, 2021	11,027	330,177
12	March 21, 2021	March 27, 2021	14,398	344,575
13	March 28, 2021	April 3, 2021	18,959	363,534
14	April 4, 2021	April 10, 2021	25,577	389,111
15	April 11, 2021	April 17, 2021	30,837	419,948
16	April 18, 2021	April 24, 2021	28,280	448,228
17	April 25, 2021	May 1, 2021	25,183	473,411
18	May 2, 2021	May 8, 2021	20,775	494,186
19	May 9, 2021	May 15, 2021	16,528	510,714
20	May 16, 2021	May 22, 2021	12,645	523,359

Reported Week	Start date	End date	Number of cases	Cumulative count
21	May 23, 2021	May 29, 2021	7,766	531,125

**Table 2A. Confirmed cases of COVID-19 by public health unit and region: Ontario**

Public Health Unit Name	Cases reported week 20	Rate per 100,000 population Reported week 20	Cases reported week 21	Rate per 100,000 population Reported week 21
	Northwestern Health Unit	21	24.0	11
Thunder Bay District Health Unit	16	10.7	53	35.3
<b>TOTAL NORTH WEST</b>	<b>37</b>	<b>15.6</b>	<b>64</b>	<b>26.9</b>
Algoma Public Health	21	18.4	8	7.0
North Bay Parry Sound District Health Unit	31	23.9	11	8.5
Porcupine Health Unit	249	298.4	226	270.9
Public Health Sudbury & Districts	21	10.6	18	9.0
Timiskaming Health Unit	8	24.5	0	0.0
<b>TOTAL NORTH EAST</b>	<b>330</b>	<b>59.0</b>	<b>263</b>	<b>47.0</b>
Ottawa Public Health	552	52.3	415	39.3
Eastern Ontario Health Unit	63	30.2	38	18.2
Hastings Prince Edward Public Health	40	23.7	26	15.4
Kingston, Frontenac and Lennox & Addington Public Health	38	17.9	7	3.3
Leeds, Grenville & Lanark District Health Unit	20	11.5	21	12.1

Public Health Unit Name	Cases reported week 20	Rate per 100,000 population Reported week 20	Cases reported week 21	Rate per 100,000 population Reported week 21
Renfrew County and District Health Unit	17	15.6	22	20.3
<b>TOTAL EASTERN</b>	<b>730</b>	<b>37.9</b>	<b>529</b>	<b>27.5</b>
Durham Region Health Department	751	105.4	455	63.9
Haliburton, Kawartha, Pine Ridge District Health Unit	147	77.8	96	50.8
Peel Public Health	2,831	176.3	1,581	98.4
Peterborough Public Health	68	46.0	45	30.4
Simcoe Muskoka District Health Unit	306	51.0	204	34.0
York Region Public Health	1,008	82.2	612	49.9
<b>TOTAL CENTRAL EAST</b>	<b>5,111</b>	<b>114.1</b>	<b>2,993</b>	<b>66.8</b>
Toronto Public Health	3,335	106.9	1,933	61.9
<b>TOTAL TORONTO</b>	<b>3,335</b>	<b>106.9</b>	<b>1,933</b>	<b>61.9</b>
Chatham-Kent Public Health	17	16.0	5	4.7
Grey Bruce Health Unit	36	21.2	7	4.1
Huron Perth Public Health	42	30.1	43	30.8
Lambton Public Health	53	40.5	32	24.4
Middlesex-London Health Unit	383	75.5	225	44.3
Southwestern Public Health	81	38.3	52	24.6
Windsor-Essex County Health Unit	277	65.2	154	36.2
<b>TOTAL SOUTH WEST</b>	<b>889</b>	<b>52.6</b>	<b>518</b>	<b>30.6</b>
Brant County Health Unit	105	67.7	87	56.1

Public Health Unit Name	Cases reported week 20	Rate per 100,000 population Reported week 20	Cases reported week 21	Rate per 100,000 population Reported week 21
City of Hamilton Public Health Services	728	122.9	426	71.9
Haldimand-Norfolk Health Unit	52	45.6	47	41.2
Halton Region Public Health	440	71.1	268	43.3
Niagara Region Public Health	308	65.2	230	48.7
Region of Waterloo Public Health and Emergency Services	392	67.1	288	49.3
Wellington-Dufferin-Guelph Public Health	188	60.3	120	38.5
<b>TOTAL CENTRAL WEST</b>	<b>2,213</b>	<b>77.7</b>	<b>1,466</b>	<b>51.5</b>
<b>TOTAL ONTARIO</b>	<b>12,645</b>	<b>85.1</b>	<b>7,766</b>	<b>52.2</b>

**Note:** Interpret information for the most recent week with caution due to reporting lags.

**Table 3A. Confirmed COVID-19 variants of concern by public health unit and region: Ontario**

Public Health Unit Name	Cumulative case count up to May 29 for Lineage B.1.1.7*	Cumulative case count up to May 29 for Lineage B.1.351	Cumulative case count up to May 29 for Lineage P.1	Cumulative count up to May 29 for Mutations**
Northwestern Health Unit	48	0	1	18
Thunder Bay District Health Unit	59	0	0	50
<b>TOTAL NORTH WEST</b>	<b>107</b>	<b>0</b>	<b>1</b>	<b>68</b>
Algoma Public Health	62	0	3	35
North Bay Parry Sound District Health Unit	110	28	0	16
Porcupine Health Unit	658	2	0	7
Public Health Sudbury & Districts	560	3	0	361
Timiskaming Health Unit	81	1	0	0
<b>TOTAL NORTH EAST</b>	<b>1,471</b>	<b>34</b>	<b>3</b>	<b>419</b>
Ottawa Public Health	5,430	284	26	634
Eastern Ontario Health Unit	630	40	9	287
Hastings Prince Edward Public Health	67	0	3	417
Kingston, Frontenac and Lennox & Addington Public Health	424	1	28	134
Leeds, Grenville & Lanark District Health Unit	280	16	0	45
Renfrew County and District Health Unit	199	5	2	21
<b>TOTAL EASTERN</b>	<b>7,030</b>	<b>346</b>	<b>68</b>	<b>1,538</b>
Durham Region Health Department	9,104	38	128	1,301
Haliburton, Kawartha, Pine Ridge District Health Unit	407	0	12	308

Public Health Unit Name	Cumulative case count up to May 29 for Lineage B.1.1.7*	Cumulative case count up to May 29 for Lineage B.1.351	Cumulative case count up to May 29 for Lineage P.1	Cumulative count up to May 29 for Mutations**
Peel Public Health	27,676	103	811	4,655
Peterborough Public Health	508	3	3	167
Simcoe Muskoka District Health Unit	3,412	21	117	882
York Region Public Health	14,513	53	289	2,814
<b>TOTAL CENTRAL EAST</b>	<b>55,620</b>	<b>218</b>	<b>1,360</b>	<b>10,127</b>
Toronto Public Health	37,382	285	1,070	14,597
<b>TOTAL TORONTO</b>	<b>37,382</b>	<b>285</b>	<b>1,070</b>	<b>14,597</b>
Chatham-Kent Public Health	103	5	7	112
Grey Bruce Health Unit	295	0	4	55
Huron Perth Public Health	153	0	2	128
Lambton Public Health	399	0	14	113
Middlesex-London Health Unit	2,973	1	50	373
Southwestern Public Health	623	1	4	159
Windsor-Essex County Health Unit	1,670	5	6	126
<b>TOTAL SOUTH WEST</b>	<b>6,216</b>	<b>12</b>	<b>87</b>	<b>1,066</b>
Brant County Health Unit	598	2	68	481
City of Hamilton Public Health Services	4,878	26	49	1,867
Haldimand-Norfolk Health Unit	342	1	10	391
Halton Region Public Health	4,940	22	123	619
Niagara Region Public Health	3,820	0	9	1,049
Region of Waterloo Public Health and Emergency Services	2,862	6	27	334



Public Health Unit Name	Cumulative case count up to May 29 for Lineage B.1.1.7*	Cumulative case count up to May 29 for Lineage B.1.351	Cumulative case count up to May 29 for Lineage P.1	Cumulative count up to May 29 for Mutations**
Wellington-Dufferin-Guelph Public Health	1,992	0	36	208
<b>TOTAL CENTRAL WEST</b>	<b>19,432</b>	<b>57</b>	<b>322</b>	<b>4,949</b>
<b>TOTAL ONTARIO</b>	<b>127,258</b>	<b>952</b>	<b>2,911</b>	<b>32,764</b>

**Note:** Interpret the VOC and mutation trends with caution due to the varying time required to complete VOC testing and/or genomic analysis following the initial positive test for SARS-CoV-2. Data for calculating the cumulative case count uses data from the Investigation Subtype field only. Data for cases with a B.1.1.7, B.1.351, and P.1 lineage detected are determined using the Investigation Subtype field only.

\*Includes all confirmed COVID-19 cases where lineage B.1.1.7 was identified by genomic analysis and those presumed to be B.1.1.7 based on a positive N501Y and negative E484K mutation.

\*\* Mutations includes all confirmed COVID-19 cases with the following mutations detected, reported from the Investigation Subtype field: N501Y and E484K, N501Y (E484K unknown), E484K (N501Y negative), E484K (N501Y unknown)

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## For Further Information

For more information, email [cd@oahpp.ca](mailto:cd@oahpp.ca).

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