

Weekly Epidemiologic Summary

COVID-19 in Ontario: Focus on March 21, 2021 to March 27, 2021

This report includes the most current information available from CCM as of **March 30, 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

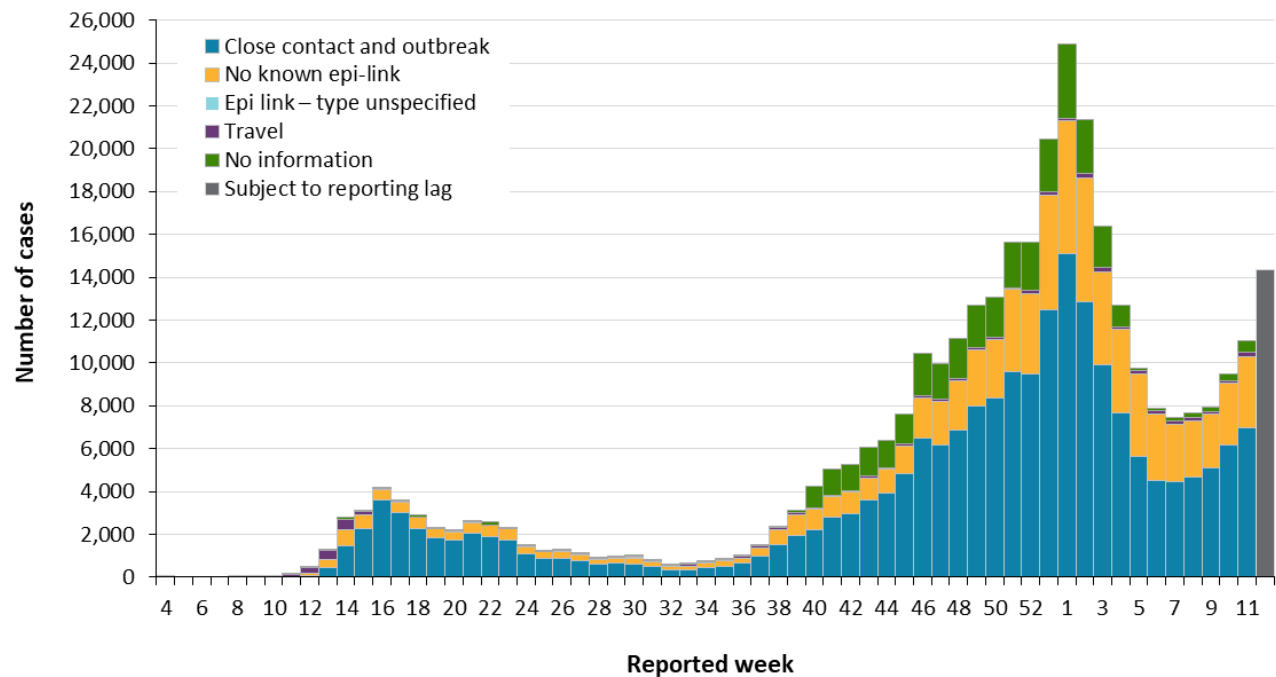
- There are a total of 344,436 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to March 27, 2021.
- For the period with a public health unit reported date between March 21 to 27, 2021 (week 12):
 - A total of 14,360 cases were reported to public health compared to 11,014 cases the previous week (March 14 to 20, 2021).
 - There is a 30.4% increase in reported cases in Ontario this week (n=14,360) compared to the previous week (n=11,014). The last time the week-to-week percentage increase was this large was the week of December 29th, 2020.
 - In week 12, the most ethnically diverse neighbourhoods in Ontario had COVID-19 rates that were 3.8 times higher than the least diverse neighbourhoods. This is the largest rate ratio reported since week 8 (February 21 to 27, 2021).

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

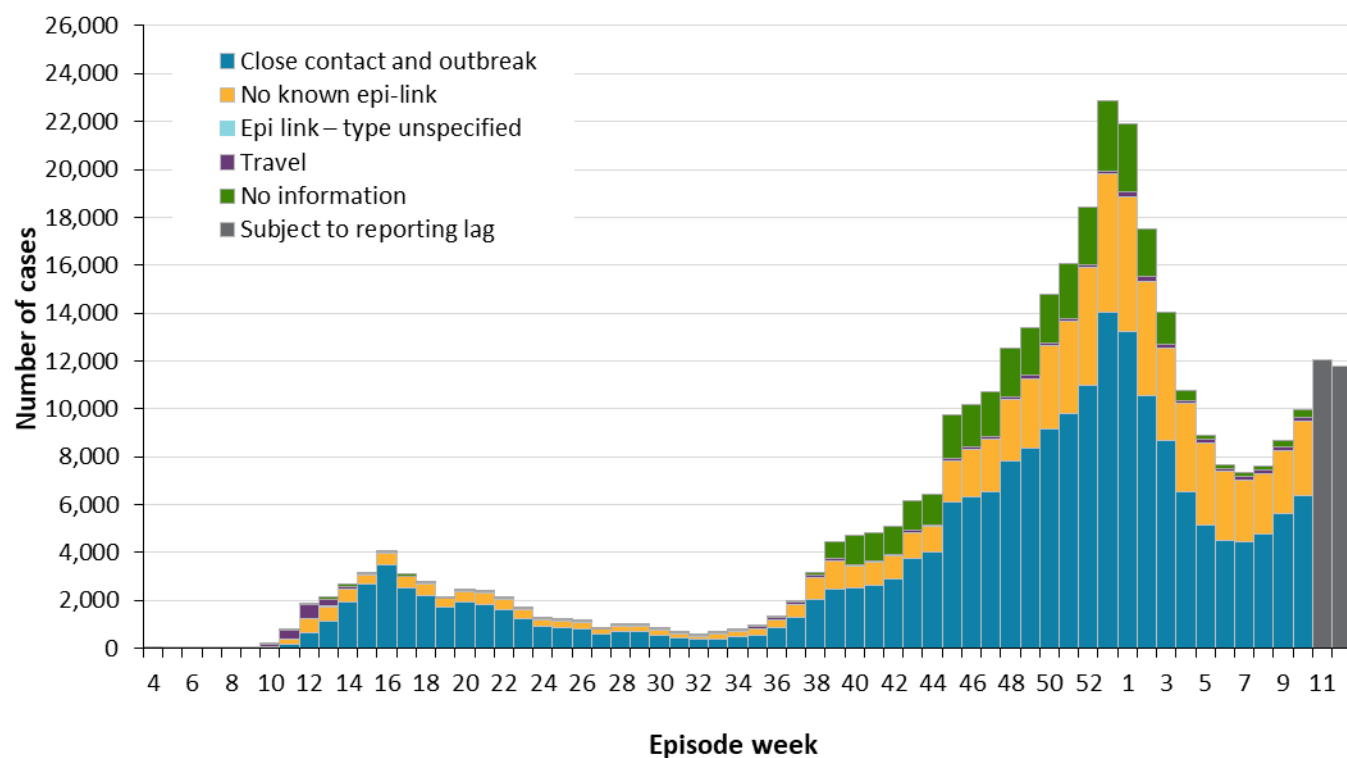
Figure 1. Confirmed cases of COVID-19 by likely source of acquisition and public health unit reported week: Ontario



Note: Include cases with reported dates ranging from week 4 (January 19 and 25, 2020) to week 12 (March 21 and 27, 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 12 (March 21 and 27, 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 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative case count up to March 27	Cumulative rate per 100,000 population
Total number of cases	11,014	14,360	344,436	2,317.2
Gender: Male	5,711	7,324	170,257	2,326.2
Gender: Female	5,215	6,925	172,259	2,283.0
Ages: 19 and under	2,228	2,952	48,983	1,561.7
Ages: 20-39	4,037	5,232	126,271	3,038.1
Ages: 40-59	3,082	4,020	99,016	2,514.7
Ages: 60-79	1,392	1,809	48,787	1,651.0
Ages: 80 and over	270	337	21,299	3,135.6
Number resolved	N/A	N/A	322,291	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

Percentage (%)

Male

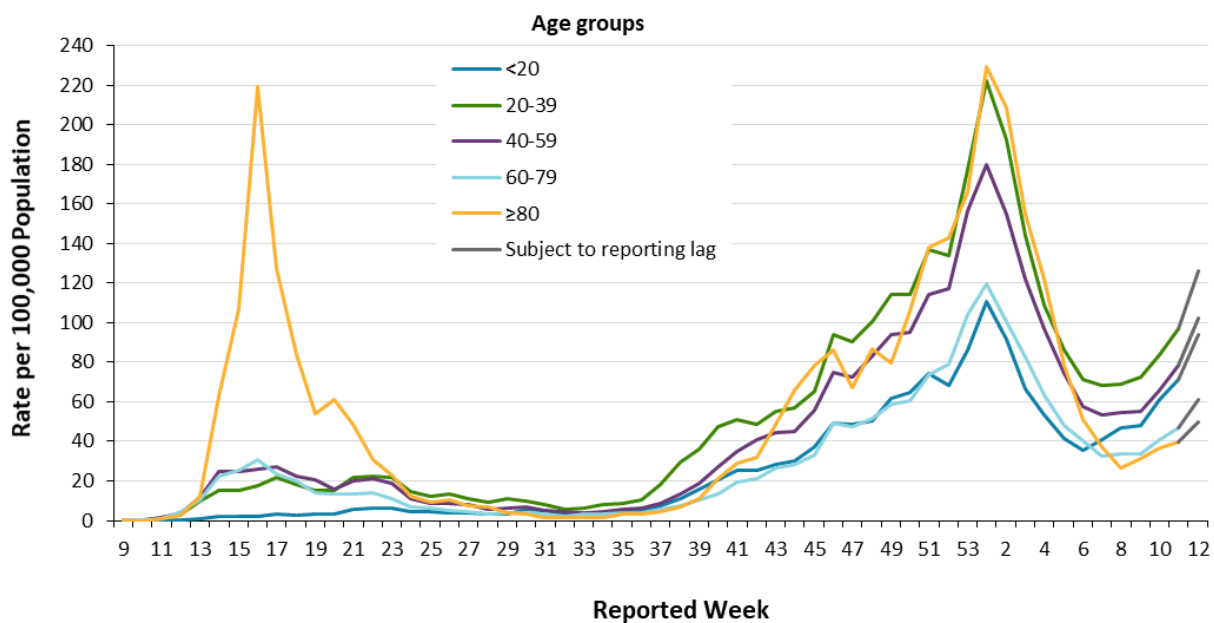
Female

Subject to reporting lag

Reported Week

Data Source: CCM

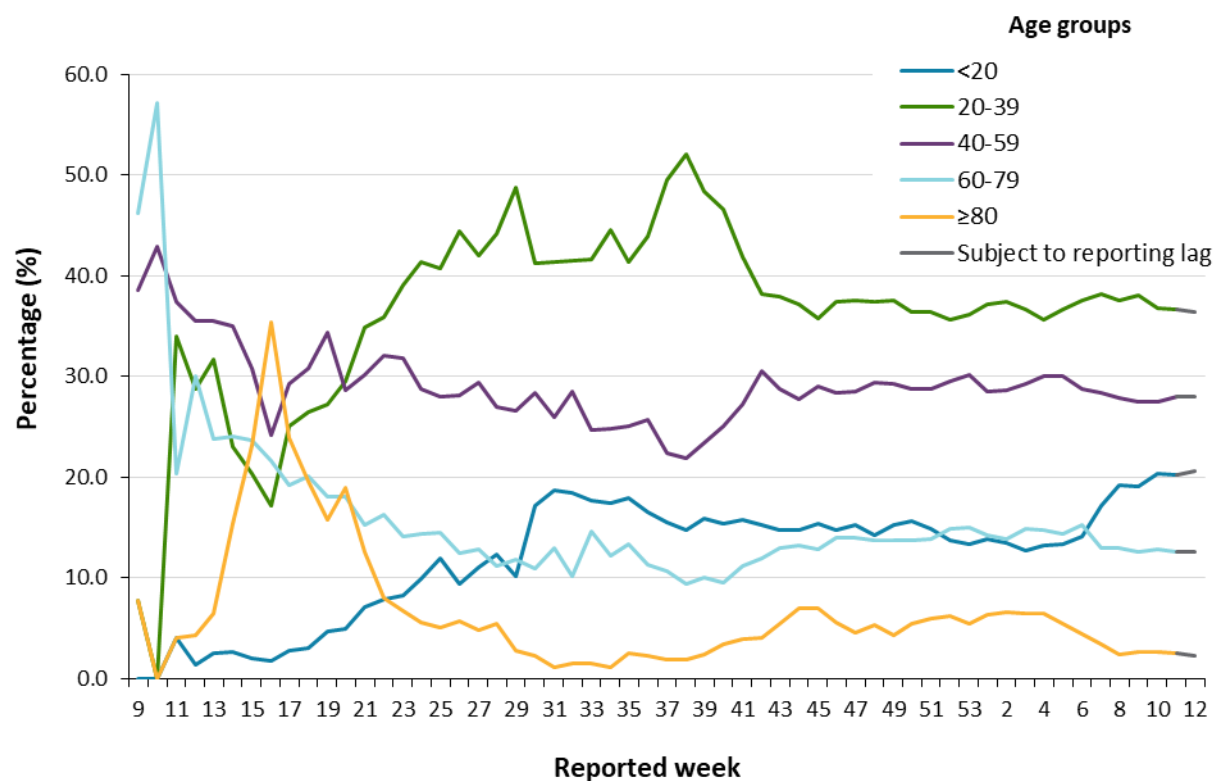
Figure 4a. Rate of confirmed cases of COVID-19 per 100,000 population by age group and public health unit reported week: Ontario



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 12 (March 21 and 27, 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 12 (March 21 and 27, 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

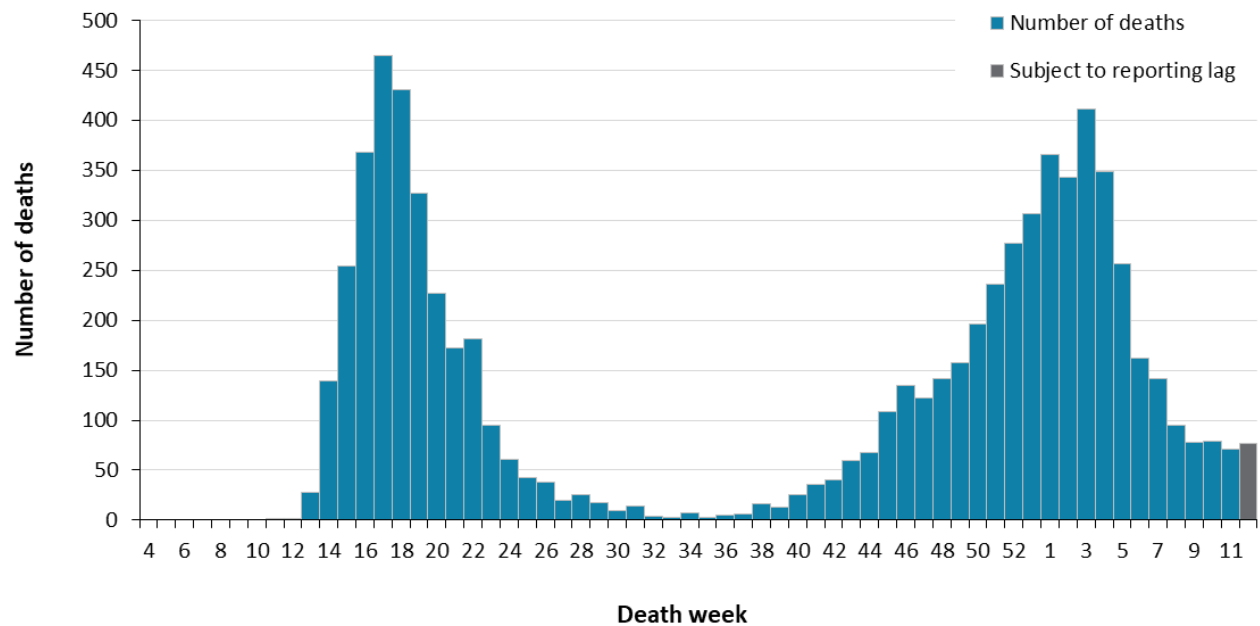


Table 2. Summary of deaths among confirmed cases of COVID-19 by public health unit reported week: Ontario

Deaths	Reported week 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative case count up to March 27	Cumulative rate per 100,000 population
Number of deaths	44	23	7,364	49.5
Gender: Male	20	11	3,571	48.8
Gender: Female	24	12	3,749	49.7
Ages: 19 and under	0	0	2	0.1
Ages: 20-39	2	0	33	0.8
Ages: 40-59	3	5	313	7.9
Ages: 60-79	16	10	2,079	70.4
Ages: 80 and over	23	8	4,936	726.7

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 11 (March 14 to 20)	Percentage	Reported week 12 (March 21 to 27)	Percentage	Cumulative case count up to March 27	Cumulative percentage
Travel	185	1.7%	195	1.4%	6,145	1.8%
Outbreak-associated or close contact of a confirmed case	6,963	63.2%	7,311	50.9%	213,548	62.0%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	166	0.0%
No known epidemiological link	3,337	30.3%	4,405	30.7%	87,014	25.3%
Information missing or unknown	529	4.8%	2,449	17.1%	37,563	10.9%
Total	11,014		14,360		344,436	

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 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative case count up to March 27
Number of cases	231	228	20,461
Ever hospitalized	4	4	387
Ever in ICU	1	0	83

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 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative case count up to March 27
Residents	12	24	15,041
Deaths among residents	2	1	3,901
Health care workers	19	18	6,819
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

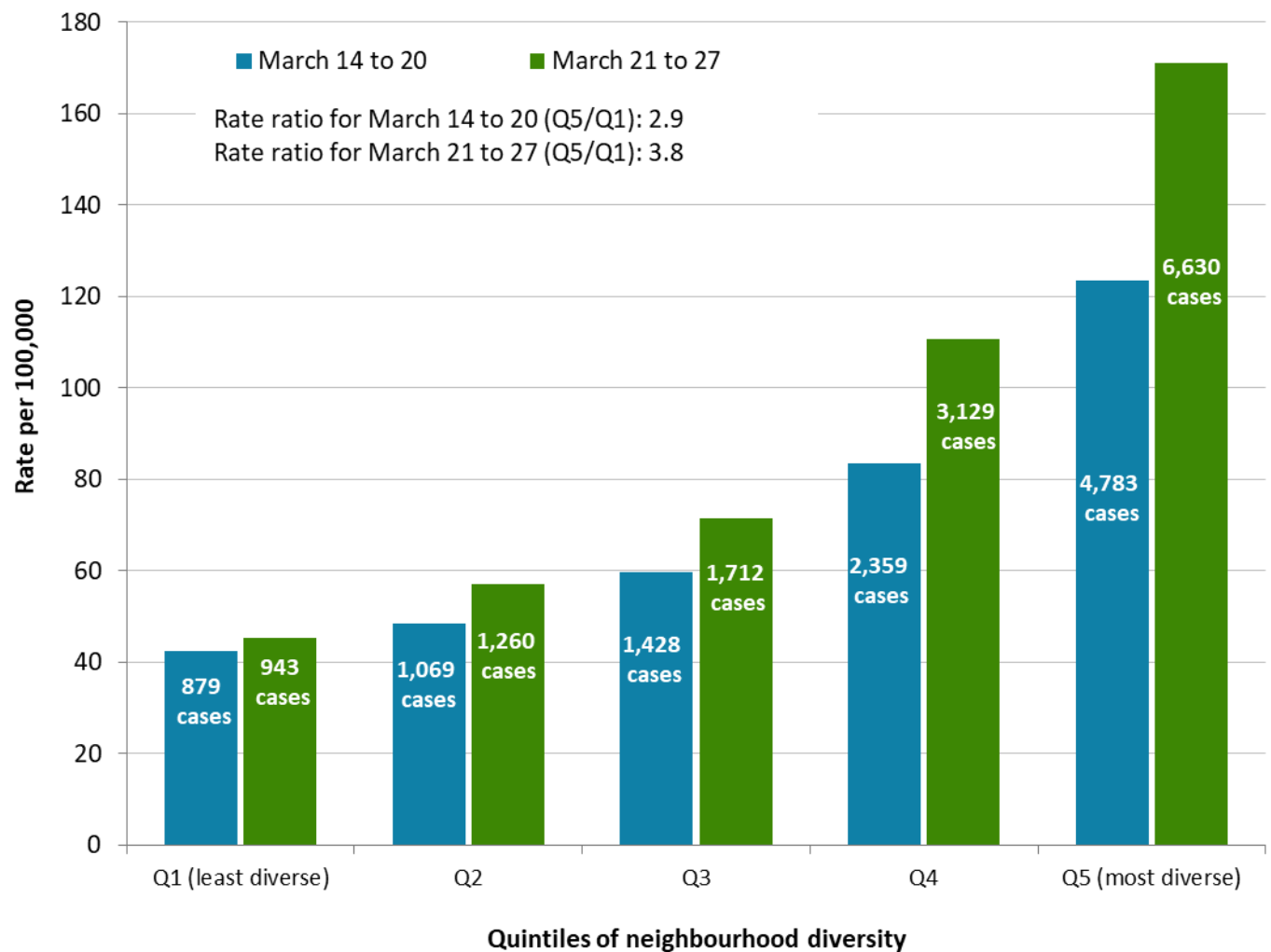
Table 6: Summary of cases of COVID-19 among school aged children by age group: Ontario

	Reported week 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative case count from August 30 up to March 27
Ages: 4-8	494	641	8,653
Ages: 9-13	570	762	11,363
Ages: 14-17	489	596	11,391

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

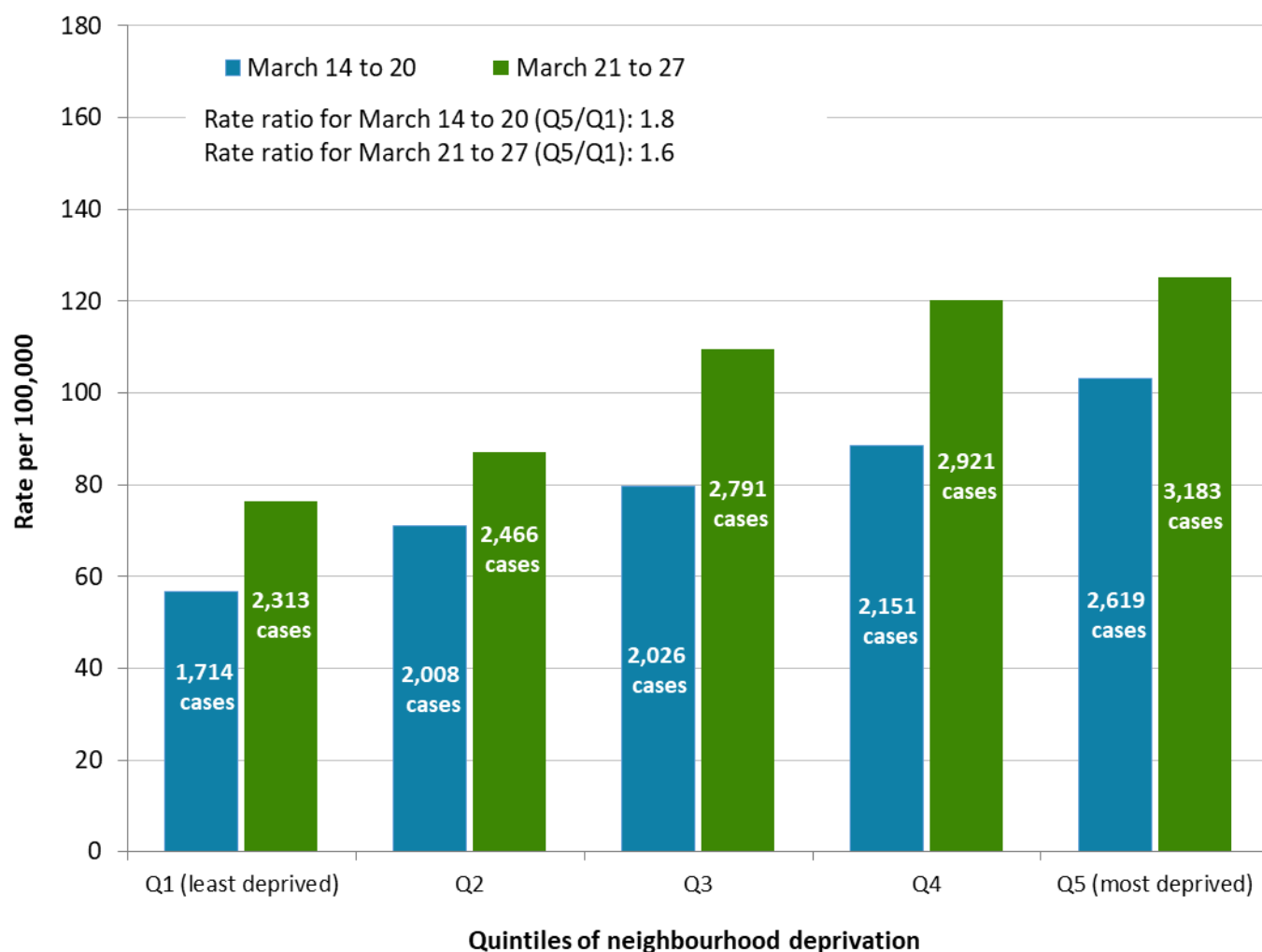
Figure 6. Rate and number of confirmed cases of COVID-19 for each quintile of neighbourhood diversity: Ontario, week 11 (March 14 to 20, 2021) and week 12 (March 21 to 27, 2021).



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.

Data Source: CCM, Ontario Marginalization Index

Figure 7. Rate and number of confirmed cases of COVID-19 for each quintile of neighbourhood deprivation: Ontario, week 11 (March 14 to 20, 2021) and week 12 (March 21 to 27, 2021).

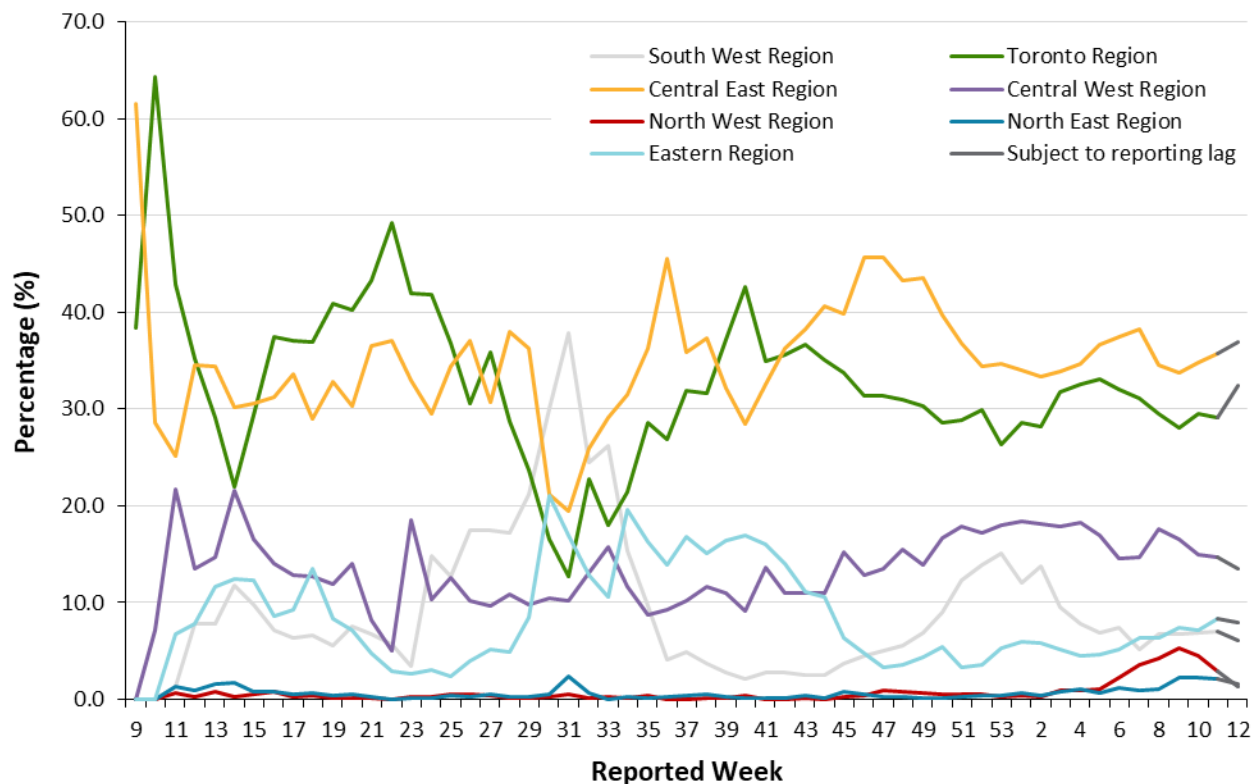


Note: Neighbourhood deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability of individuals and communities to access and attain basic material needs.

Data Source: CCM, Ontario Marginalization Index

Geography

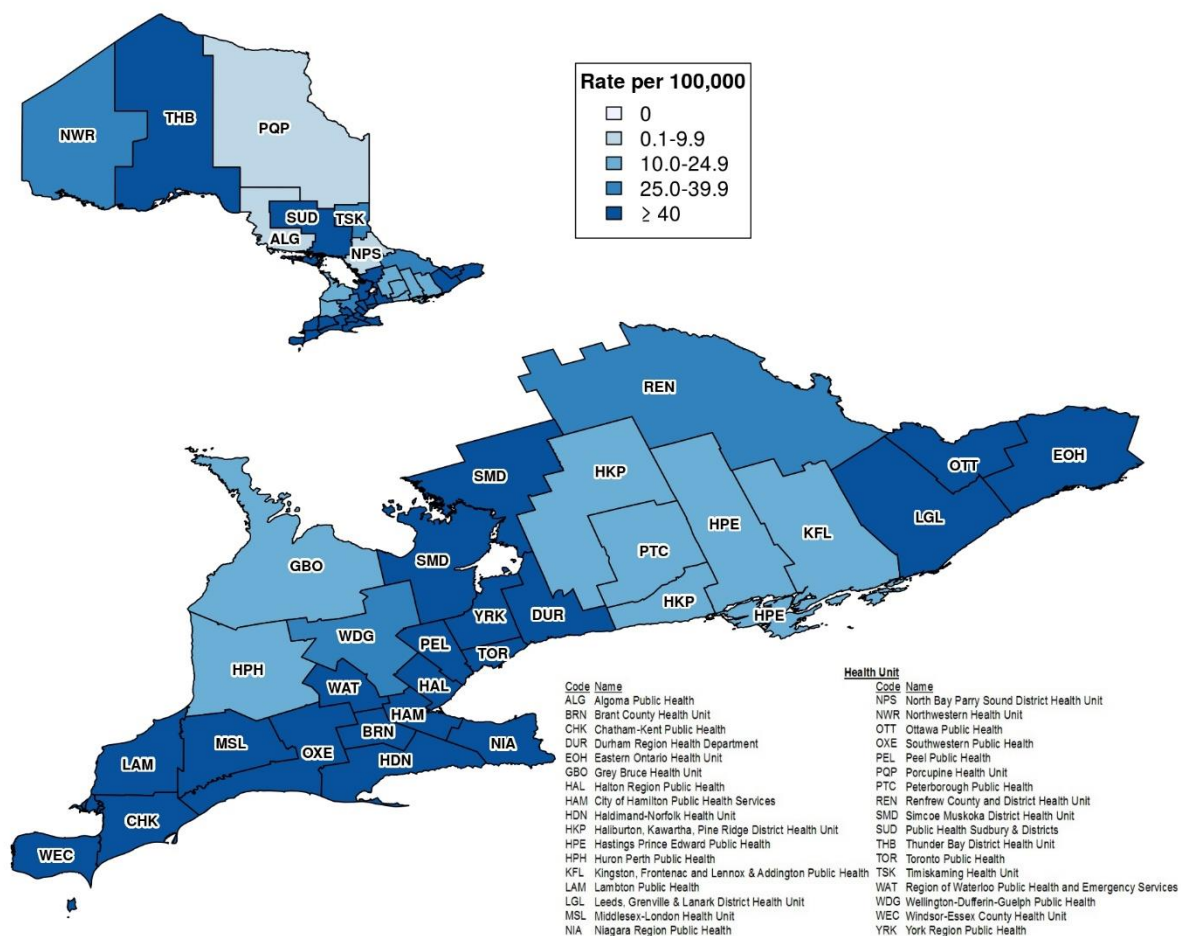
Figure 8. Percentage of COVID-19 cases by geographic region and public health unit reported week: Ontario



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 12 (March 21 and 27, 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 12 (March 21 to 27, 2021) by public health unit: Ontario



Note: The provincial rate of confirmed cases of COVID-19 reported in week 12 was 96.6 cases per 100,000 population.

Data Source: CCM

Outbreaks

Table 7. Number of public health unit declared COVID-19 outbreaks by setting type: Ontario

Setting Type	Reported week 12 (March 21 to 27)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to March 27
Congregate Care	44	133	2,643
Long-term care homes	17	56	1,369
Retirement homes	18	44	818
Hospitals	9	33	456
Congregate Living	21	78	923
Correctional facility	0	5	37
Shelter	8	30	192
Group Home/supportive housing	11	29	551
Short-term accommodations	1	3	23
Congregate other	1	11	120
Education	90	239	1,466
Child care	25	63	498
School – Elementary*	50	145	714
School – Elementary/secondary*	2	3	37
School – Secondary*	10	22	186
School – Post-secondary*	3	6	31
Other settings	105	228	2,568
Bar/restaurant/nightclub	8	13	192
Medical/health services	3	9	116

Setting Type	Reported week 12 (March 21 to 27)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to March 27
Personal service settings	3	3	21
Recreational fitness	4	7	72
Retail	9	21	268
Other recreation/community	7	20	143
Workplace – Farm	5	14	129
Workplace - Food processing	3	9	179
Other types of workplaces	58	126	1,429
Other	1	3	3
Unknown	4	3	16
Total number of outbreaks	260	678	7,600

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, construction, 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.

Data Source: CCM

Table 8. 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 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative number of cases
Congregate Care	218	238	37,475
Long-term care homes	53	70	25,153
Retirement homes	39	63	6,927
Hospitals	126	105	5,395
Congregate Living	281	223	7,089
Correctional facility	39	21	1,230
Shelter	126	114	2,041
Group Home/supportive housing	41	55	2,761
Short-term accommodations	14	3	104
Congregate other	61	30	953
Education	432	460	5,969
Child care	106	178	1,585
School – Elementary*	257	207	2,998
School – Elementary/secondary*	3	6	228
School – Secondary*	46	24	843
School – Post-secondary*	20	45	315
Other settings	775	541	19,590
Bar/restaurant/nightclub	37	27	796
Medical/health services	34	11	499
Personal service settings	7	6	75
Recreational fitness	63	14	591

Cases associated with the outbreak setting type	Reported week 11 (March 14 to 20)	Reported week 12 (March 21 to 27)	Cumulative number of cases
Retail	56	36	1,247
Other recreation/community	89	51	1,790
Workplace - Farm	16	17	2,552
Workplace - Food processing	32	15	2,228
Other types of workplaces	431	342	9,679
Other	8	8	17
Unknown	2	14	116
Total number of cases	1,706	1,462	70,123

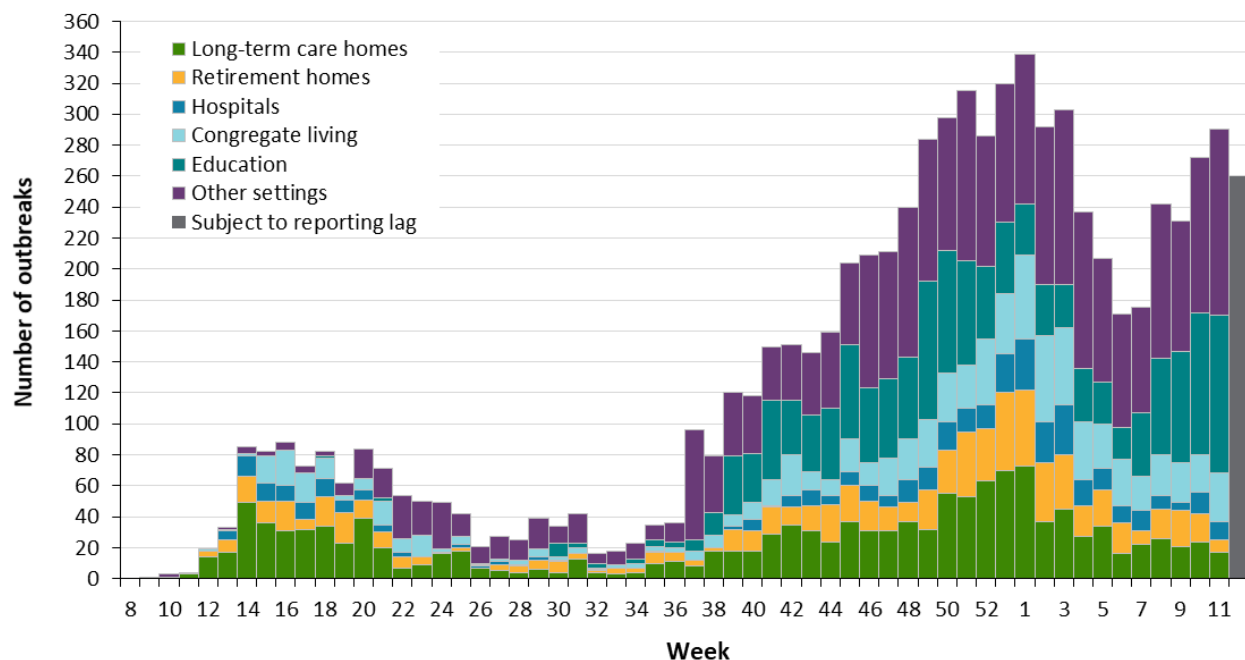
Note: Interpret case counts for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Retail includes settings such as grocery stores, pharmacies, malls, etc. Other types of workplaces include settings such as offices as well as warehousing, shipping and distribution, construction, 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.

Data Source: CCM

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



Variant COVID-19 Cases

Table 9. 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	Mutation or non-VOC lineage detected*	Cumulative case count as of March 27, 2021
Gender: Male	941	38	53	10,732	11,764
Gender: Female	947	32	39	9,890	10,908
Ages: 19 and under	263	6	15	4,013	4,297
Ages: 20-39	730	27	34	7,754	8,545
Ages: 40-59	557	20	33	6,057	6,667
Ages: 60-79	265	13	9	2,534	2,821
Ages: 80 and over	82	4	1	431	518

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 with a lineage or mutation reported in the Investigation Subtype field, excluding variants of concern B.1.1.7, B.1.351, and P.1 lineages. If a VOC is identified through genomic analysis, the cumulative case counts for mutations will fluctuate as the case is moved to one of the listed lineages.

Data Source: CCM

Table 10. 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	%	Mutation or non-VOC lineage detected*	%	Cumulative case count up to March 27, 2021	Cumulative percentage
Travel	94	5.0%	10	14.3%	1	1.1%	322	1.5%	427	1.9%
Outbreak- associated or close contact of a confirmed case	1,369	72.2%	51	72.9%	69	75.0%	13,234	63.6%	14,723	64.4%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No known epidemiological link	415	21.9%	8	11.4%	21	22.8%	6,059	29.1%	6,503	28.5%
Information missing or unknown	19	1.0%	1	1.4%	1	1.1%	1,177	5.7%	1,198	5.2%
Total	1,897		70		92		20,792		22,851	

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 with a lineage or mutation reported in the Investigation Subtype field, excluding variants of concern B.1.1.7, B.1.351, and P.1 lineages. If a VOC is identified through genomic analysis, the cumulative case counts for mutations will fluctuate as the case is moved to one of the listed lineages.

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 **March 30, 2021 at 1 p.m.**
- CCM is a dynamic disease reporting system, which allow ongoing updates to data previously entered. As a result, data extracted from CCM 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 May 2020.
- The health equity (neighbourhood-level diversity and 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.

Data Caveats and Methods: Case Data

- The data only represent cases reported to public health units and recorded in CCM. 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 is based on an estimate of the best date of disease onset. This date is calculated based on either the 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 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 ≤ 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 ≤ 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: 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 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	147	178
12	March 15, 2020	March 21, 2020	437	615
13	March 22, 2020	March 28, 2020	1,309	1,924
14	March 29, 2020	April 4, 2020	2,779	4,703
15	April 5, 2020	April 11, 2020	3,134	7,837
16	April 12, 2020	April 18, 2020	4,206	12,043
17	April 19, 2020	April 25, 2020	3,630	15,673
18	April 26, 2020	May 2, 2020	2,889	18,562
19	May 3, 2020	May 9, 2020	2,343	20,905
20	May 10, 2020	May 16, 2020	2,192	23,097
21	May 17, 2020	May 23, 2020	2,614	25,711

Reported Week	Start date	End date	Number of cases	Cumulative count
22	May 24, 2020	May 30, 2020	2,601	28,312
23	May 31, 2020	June 6, 2020	2,303	30,615
24	June 7, 2020	June 13, 2020	1,472	32,087
25	June 14, 2020	June 20, 2020	1,230	33,317
26	June 21, 2020	June 27, 2020	1,251	34,568
27	June 28, 2020	July 4, 2020	1,083	35,651
28	July 5, 2020	July 11, 2020	869	36,520
29	July 12, 2020	July 18, 2020	930	37,450
30	July 19, 2020	July 25, 2020	989	38,439
31	July 26, 2020	August 1, 2020	804	39,243
32	August 2, 2020	August 8, 2020	593	39,836
33	August 9, 2020	August 15, 2020	611	40,447
34	August 16, 2020	August 22, 2020	730	41,177
35	August 23, 2020	August 29, 2020	853	42,030
36	August 30, 2020	September 5, 2020	979	43,009
37	September 6, 2020	September 12, 2020	1,502	44,511
38	September 13, 2020	September 19, 2020	2,372	46,883
39	September 20, 2020	September 26, 2020	3,123	50,006
40	September 27, 2020	October 3, 2020	4,223	54,229
41	October 4, 2020	October 10, 2020	5,038	59,267
42	October 11, 2020	October 17, 2020	5,278	64,545
43	October 18, 2020	October 24, 2020	6,039	70,584
44	October 25, 2020	October 31, 2020	6,384	76,968

Reported Week	Start date	End date	Number of cases	Cumulative count
45	November 1, 2020	November 7, 2020	7,608	84,576
46	November 8, 2020	November 14, 2020	10,437	95,013
47	November 15, 2020	November 21, 2020	9,984	104,997
48	November 22, 2020	November 28, 2020	11,125	116,122
49	November 29, 2020	December 5, 2020	12,683	128,805
50	December 6, 2020	December 12, 2020	13,046	141,851
51	December 13, 2020	December 19, 2020	15,647	157,498
52	December 20, 2020	December 26, 2020	15,628	173,126
53	December 27, 2020	January 2, 2021	20,444	193,570
1	January 3, 2021	January 9, 2021	24,871	218,441
2	January 10, 2021	January 16, 2021	21,355	239,796
3	January 17, 2021	January 23, 2021	16,386	256,182
4	January 24, 2021	January 30, 2021	12,717	268,899
5	January 31, 2021	February 6, 2021	9,768	278,667
6	February 7, 2021	February 13, 2021	7,878	286,545
7	February 14, 2021	February 20, 2021	7,452	293,997
8	February 21, 2021	February 27, 2021	7,666	301,663
9	February 28, 2021	March 6, 2021	7,923	309,586
10	March 7, 2021	March 13, 2021	9,476	319,062
11	March 14, 2021	March 20, 2021	11,014	330,076
12	March 21, 2021	March 27, 2021	14,360	344,436

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

Public Health Unit Name	Cases reported week 11	Rate per 100,000 population Reported week 11	Cases reported week 12	Rate per 100,000 population Reported week 12
Northwestern Health Unit	57	65.0	33	37.6
Thunder Bay District Health Unit	267	178.0	166	110.7
TOTAL NORTH WEST	324	136.3	199	83.7
Algoma Public Health	17	14.9	5	4.4
North Bay Parry Sound District Health Unit	15	11.6	1	0.8
Porcupine Health Unit	2	2.4	4	4.8
Public Health Sudbury & Districts	188	94.5	201	101.0
Timiskaming Health Unit	6	18.4	13	39.8
TOTAL NORTH EAST	228	40.8	224	40.0
Ottawa Public Health	553	52.4	736	69.8
Eastern Ontario Health Unit	128	61.3	195	93.4
Hastings Prince Edward Public Health	4	2.4	31	18.4
Kingston, Frontenac and Lennox & Addington Public Health	83	39.0	53	24.9
Leeds, Grenville & Lanark District Health Unit	142	82.0	104	60.1
Renfrew County and District Health Unit	10	9.2	28	25.8
TOTAL EASTERN	920	47.8	1,147	59.5

Public Health Unit Name	Cases reported week 11	Rate per 100,000 population Reported week 11	Cases reported week 12	Rate per 100,000 population Reported week 12
Durham Region Health Department	486	68.2	875	122.8
Haliburton, Kawartha, Pine Ridge District Health Unit	25	13.2	22	11.6
Peel Public Health	2,054	127.9	2,561	159.5
Peterborough Public Health	51	34.5	35	23.7
Simcoe Muskoka District Health Unit	260	43.4	309	51.5
York Region Public Health	1,056	86.1	1,511	123.3
TOTAL CENTRAL EAST	3,932	87.8	5,313	118.6
Toronto Public Health	3,213	103.0	4,651	149.1
TOTAL TORONTO	3,213	103.0	4,651	149.1
Chatham-Kent Public Health	94	88.4	59	55.5
Grey Bruce Health Unit	28	16.5	42	24.7
Huron Perth Public Health	12	8.6	15	10.7
Lambton Public Health	211	161.1	186	142.0
Middlesex-London Health Unit	162	31.9	297	58.5
Southwestern Public Health	76	35.9	90	42.6
Windsor-Essex County Health Unit	193	45.4	193	45.4
TOTAL SOUTH WEST	776	45.9	882	52.2
Brant County Health Unit	86	55.4	68	43.8

Public Health Unit Name	Cases reported week 11	Rate per 100,000 population Reported week 11	Cases reported week 12	Rate per 100,000 population Reported week 12
City of Hamilton Public Health Services	612	103.3	713	120.4
Haldimand-Norfolk Health Unit	35	30.7	76	66.6
Halton Region Public Health	290	46.8	356	57.5
Niagara Region Public Health	256	54.2	320	67.7
Region of Waterloo Public Health and Emergency Services	233	39.9	289	49.5
Wellington-Dufferin-Guelph Public Health	109	34.9	122	39.1
TOTAL CENTRAL WEST	1,621	56.9	1,944	68.2
TOTAL ONTARIO	11,014	74.1	14,360	96.6

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 March 27 for Lineage B.1.1.7	Cumulative case count up to March 27 for Lineage B.1.351	Cumulative case count up to March 27 for Lineage P.1	Cumulative count up to March 27 for mutation or non-VOC lineage detected*
Northwestern Health Unit	1	0	0	6
Thunder Bay District Health Unit	0	0	0	4
TOTAL NORTH WEST	1	0	0	10
Algoma Public Health	0	0	0	0
North Bay Parry Sound District Health Unit	5	27	0	22
Porcupine Health Unit	0	2	0	3
Public Health Sudbury & Districts	5	0	0	398
Timiskaming Health Unit	0	1	0	17
TOTAL NORTH EAST	10	30	0	440
Ottawa Public Health	23	6	0	560
Eastern Ontario Health Unit	0	1	0	219
Hastings Prince Edward Public Health	0	0	0	19
Kingston, Frontenac and Lennox & Addington Public Health	1	0	0	76
Leeds, Grenville & Lanark District Health Unit	0	0	0	44
Renfrew County and District Health Unit	0	0	0	17
TOTAL EASTERN	24	7	0	935

Public Health Unit Name	Cumulative case count up to March 27 for Lineage B.1.1.7	Cumulative case count up to March 27 for Lineage B.1.351	Cumulative case count up to March 27 for Lineage P.1	Cumulative count up to March 27 for mutation or non-VOC lineage detected*
Durham Region Health Department	73	0	3	1,387
Haliburton, Kawartha, Pine Ridge District Health Unit	5	0	0	50
Peel Public Health	387	10	18	3,140
Peterborough Public Health	3	0	0	188
Simcoe Muskoka District Health Unit	368	1	16	768
York Region Public Health	420	2	14	2,500
TOTAL CENTRAL EAST	1,256	13	51	8,033
Toronto Public Health	473	17	40	8,472
TOTAL TORONTO	473	17	40	8,472
Chatham-Kent Public Health	4	0	0	42
Grey Bruce Health Unit	0	0	0	23
Huron Perth Public Health	0	0	0	10
Lambton Public Health	0	0	0	122
Middlesex-London Health Unit	6	0	0	154
Southwestern Public Health	5	0	0	63
Windsor-Essex County Health Unit	5	0	0	71
TOTAL SOUTH WEST	20	0	0	485
Brant County Health Unit	2	0	0	71

Public Health Unit Name	Cumulative case count up to March 27 for Lineage B.1.1.7	Cumulative case count up to March 27 for Lineage B.1.351	Cumulative case count up to March 27 for Lineage P.1	Cumulative count up to March 27 for mutation or non-VOC lineage detected*
City of Hamilton Public Health Services	13	0	0	832
Haldimand-Norfolk Health Unit	4	3	0	42
Halton Region Public Health	51	0	1	572
Niagara Region Public Health	9	0	0	290
Region of Waterloo Public Health and Emergency Services	27	0	0	407
Wellington-Dufferin-Guelph Public Health	7	0	0	203
TOTAL CENTRAL WEST	113	3	1	2,417
TOTAL ONTARIO	1,897	70	92	20,792

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 with a lineage or mutation reported in the Investigation Subtype field, excluding variants of concern B.1.1.7, B.1.351, and P.1 lineages. If a VOC is identified through genomic analysis, the cumulative case counts for mutations will fluctuate as the case is moved to one of the listed lineages.

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For Further Information

For more information, email cd@oahpp.ca.

Public Health Ontario

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