

Weekly Epidemiologic Summary

COVID-19 in Ontario: Focus on April 11, 2021 to April 17, 2021

This report includes the most current information available from CCM as of **April 20, 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

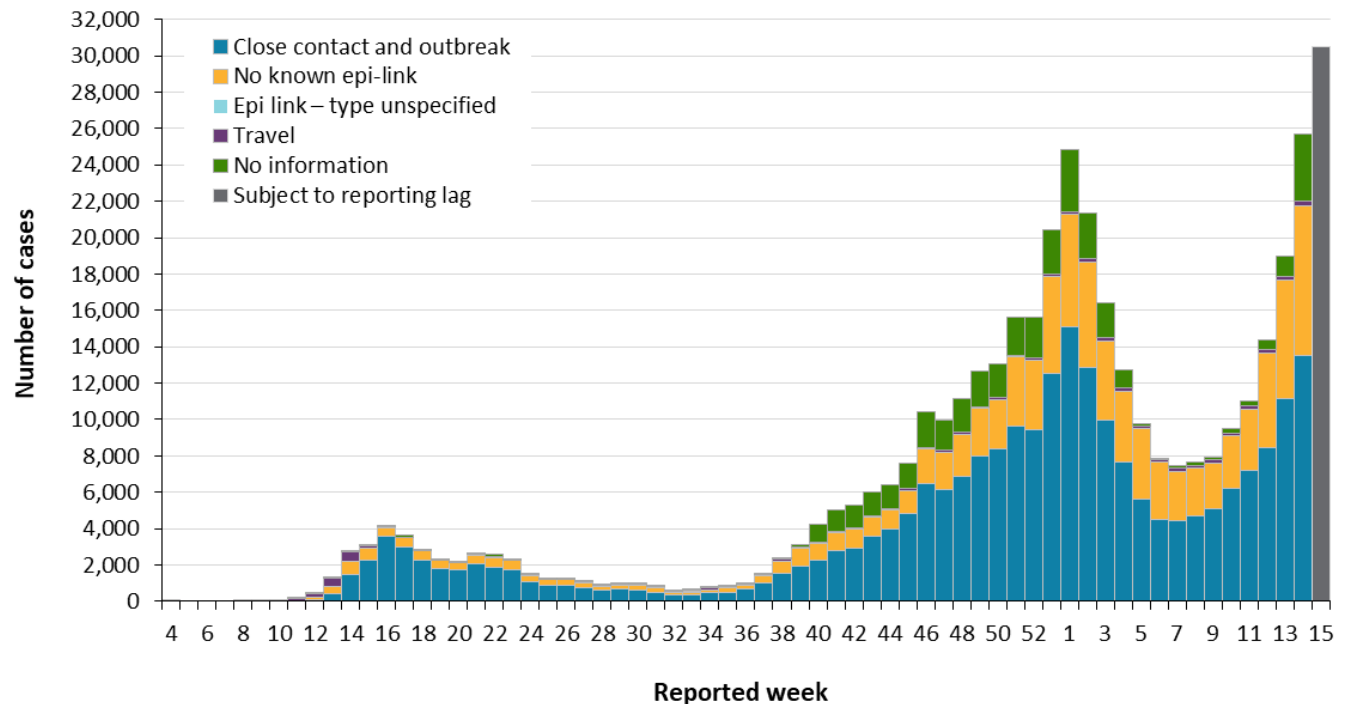
- There are a total of 419,719 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to April 17, 2021.
- For the period with a public health unit reported date between April 11 to 17, 2021 (week 15):
 - A total of 30,490 cases were reported to public health compared to 25,694 cases the previous week (April 4 to 10, 2021).
 - Over 30,000 cases were reported this week, breaking the record for the largest number of cases reported in a single week for the second time in a row (n=30,490). The highest rate of cases per 100,000 population were reported among public health units within the GTA; Peel (353.4), York Region (286.7) and Toronto (276.3).
 - Approximately 39% of COVID-19 cases reported to public health in the current week were those confirmed or presumed to be lineage B.1.1.7. Three public health units within the GTA (Peel, York Region and Durham Region) reported the highest rate of cases with lineage B.1.1.7 this week at a rate of over 40 cases per 100,000 population.

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

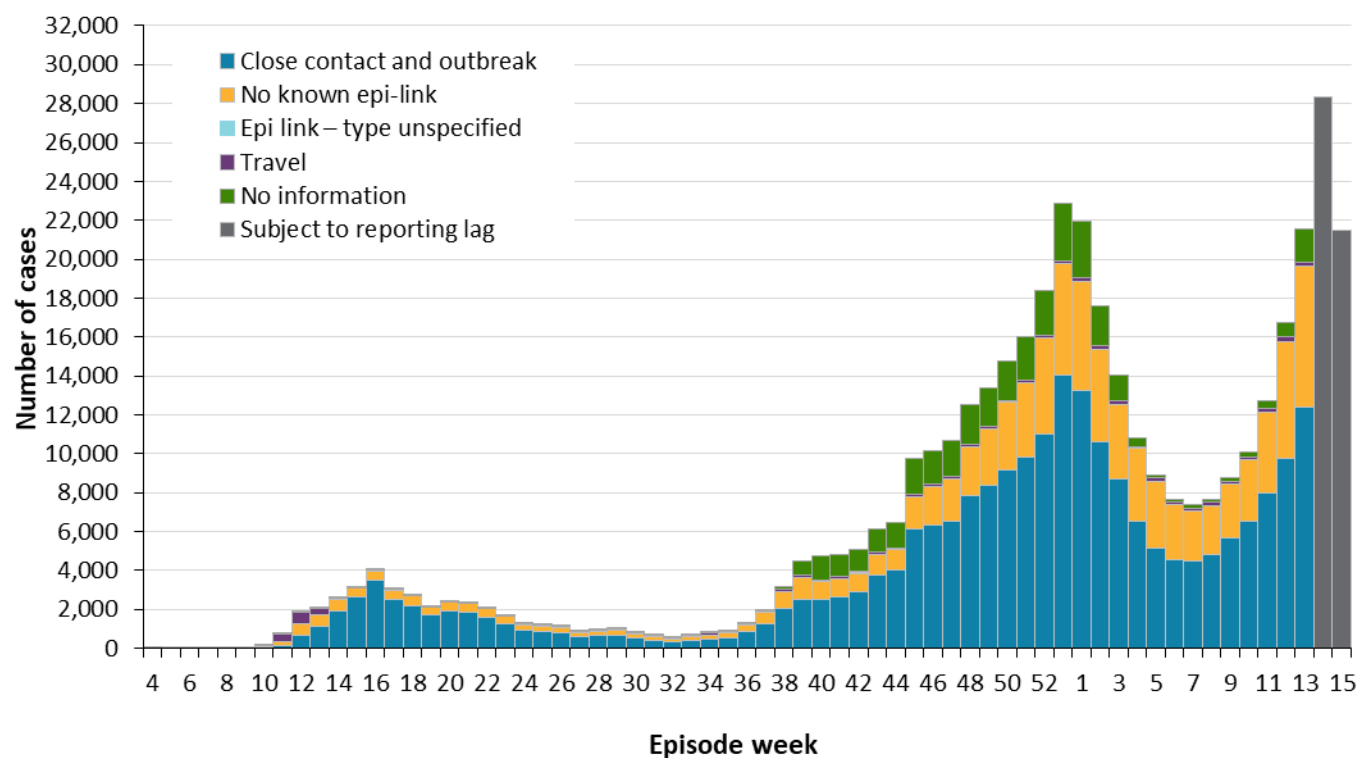
Figure 1. Confirmed cases of COVID-19 by likely source of acquisition and public health unit reported week: Ontario



Note: Include cases with reported dates ranging from week 4 (January 19 and 25, 2020) to week 15 (April 11 and 17, 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 15 (April 11 and 17, 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

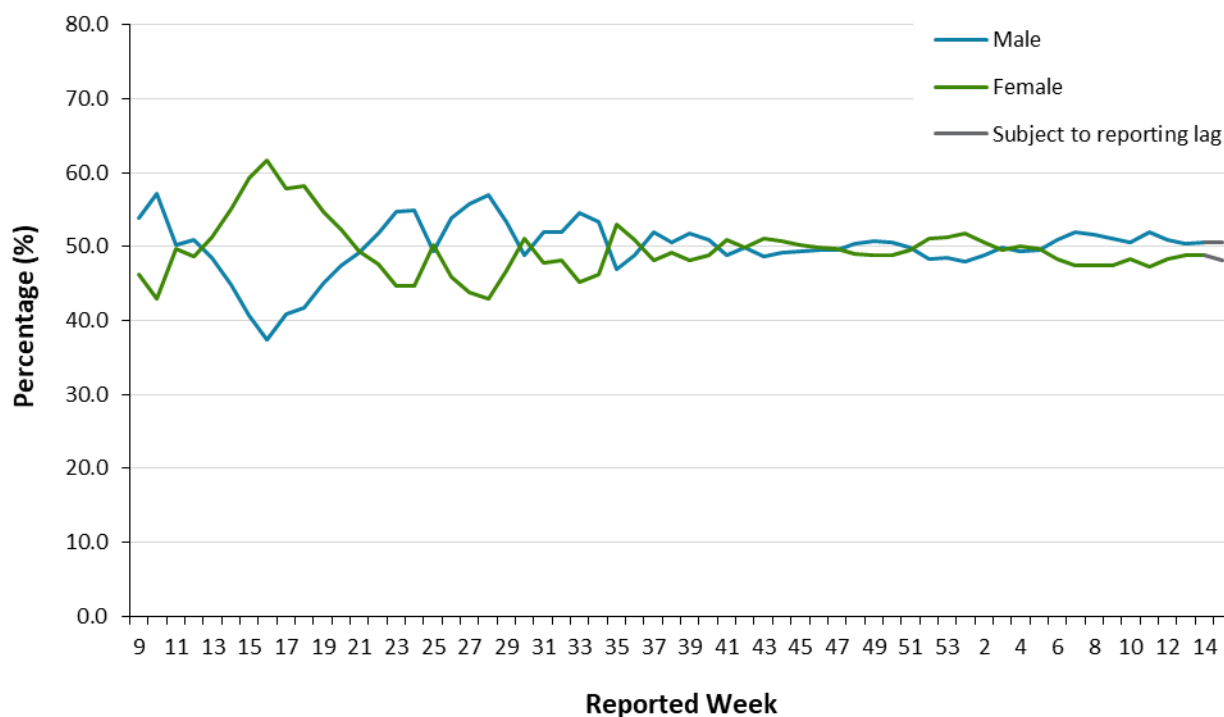
	Reported week 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative case count up to April 17	Cumulative rate per 100,000 population
Total number of cases	25,694	30,490	419,719	2,823.6
Gender: Male	13,000	15,407	208,299	2,845.9
Gender: Female	12,557	14,661	208,795	2,767.3
Ages: 19 and under	4,794	5,602	63,342	2,019.5
Ages: 20-39	9,738	11,240	154,253	3,711.4
Ages: 40-59	7,432	9,010	120,799	3,067.9
Ages: 60-79	3,237	4,034	58,452	1,978.1
Ages: 80 and over	490	572	22,760	3,350.7
Number resolved	N/A	N/A	378,264	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

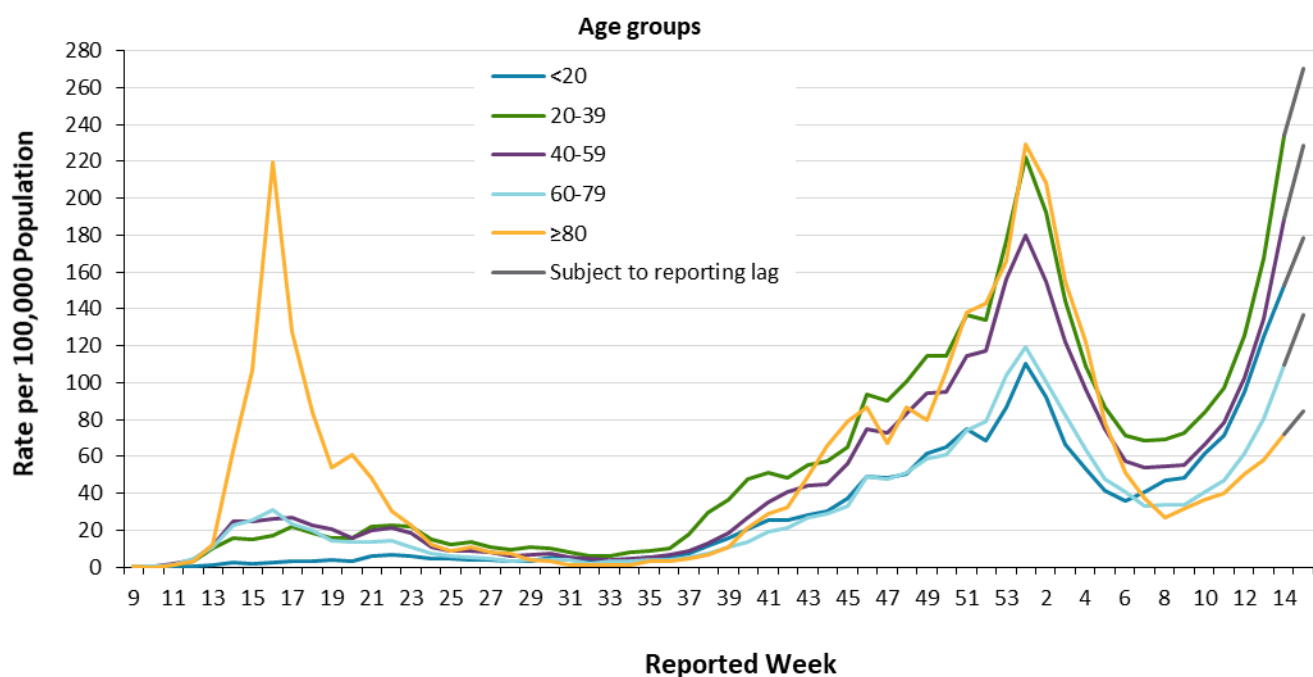
Figure 3. Percentage of confirmed cases of COVID-19 by gender and public health unit reported week: Ontario



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 15 (April 11 and 17, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM

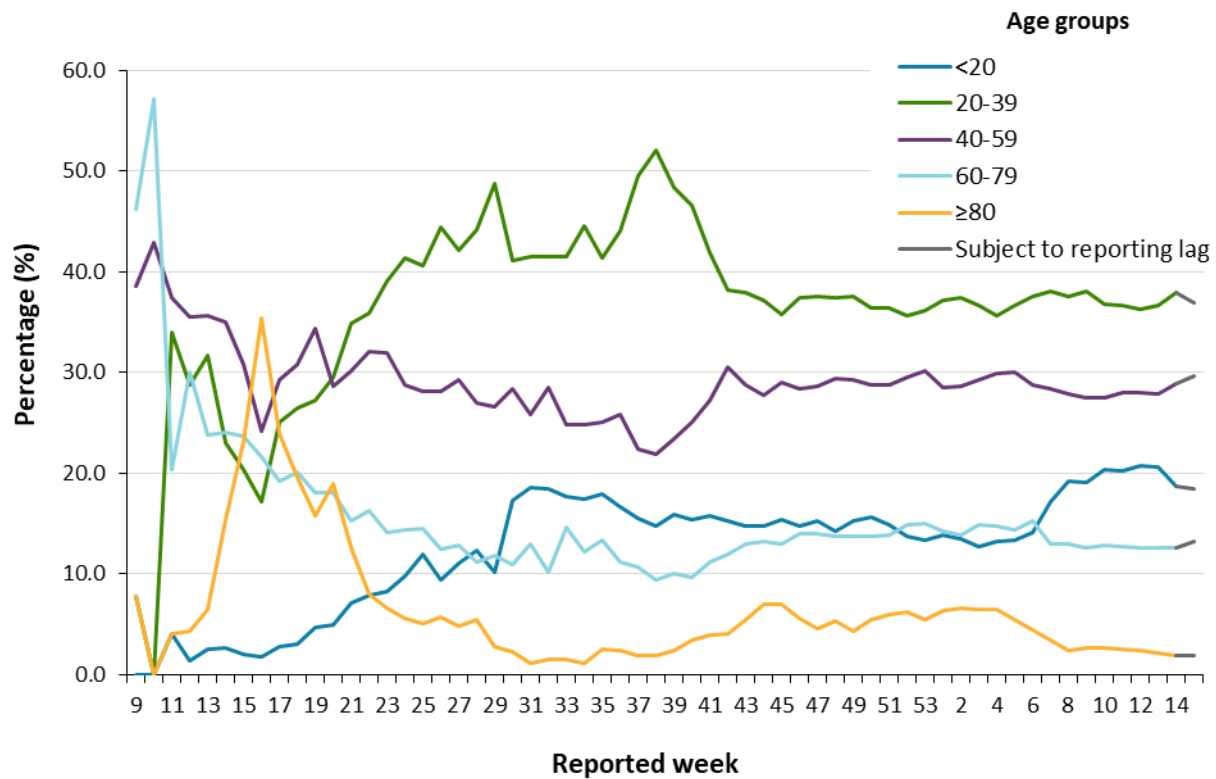
Figure 4a. Rate of confirmed cases of COVID-19 per 100,000 population by age group and public health unit reported week: Ontario



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 15 (April 11 and 17, 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

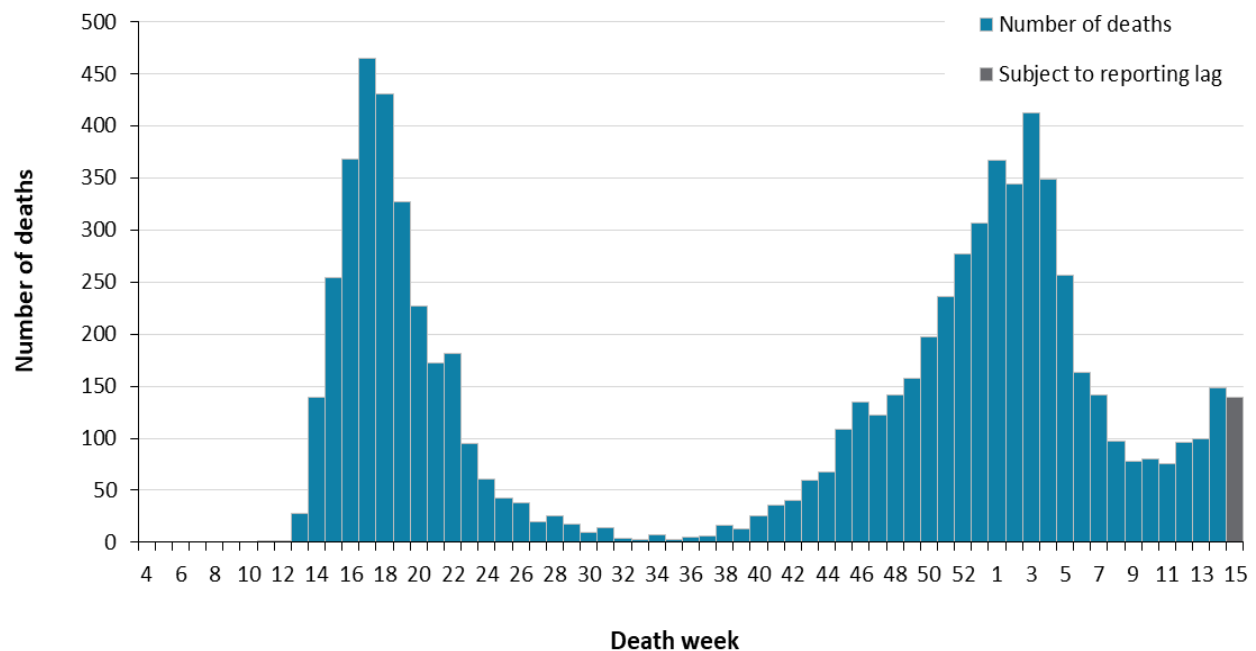


Note: Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from week 9 (February 23 and 29, 2020) to week 15 (April 11 and 17, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding 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 15 (April 11 and 17, 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 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative case count up to April 17	Cumulative rate per 100,000 population
Number of deaths	102	47	7,788	52.4
Gender: Male	61	28	3,810	52.1
Gender: Female	40	17	3,928	52.1
Ages: 19 and under	0	0	2	0.1
Ages: 20-39	1	2	44	1.1
Ages: 40-59	13	6	353	9.0
Ages: 60-79	40	19	2,263	76.6
Ages: 80 and over	48	20	5,125	754.5

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 14 (April 4 to 10)	Percentage	Reported week 15 (April 11 to 17)	Percentage	Cumulative case count up to April 17	Cumulative percentage
Travel	267	1.0%	251	0.8%	6,923	1.6%
Outbreak-associated or close contact of a confirmed case	13,492	52.5%	12,320	40.4%	252,114	60.1%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	163	<0.1%
No known epidemiological link	8,235	32.1%	6,994	22.9%	109,602	26.1%
Information missing or unknown	3,700	14.4%	10,925	35.8%	50,917	12.1%
Total	25,694		30,490		419,719	

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 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative case count up to April 17
Number of cases	331	299	21,442
Ever hospitalized	7	5	408
Ever in ICU	2	0	88

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 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative case count up to April 17
Residents	8	35	15,107
Deaths among residents	0	1	3,912
Health care workers	14	11	6,902
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

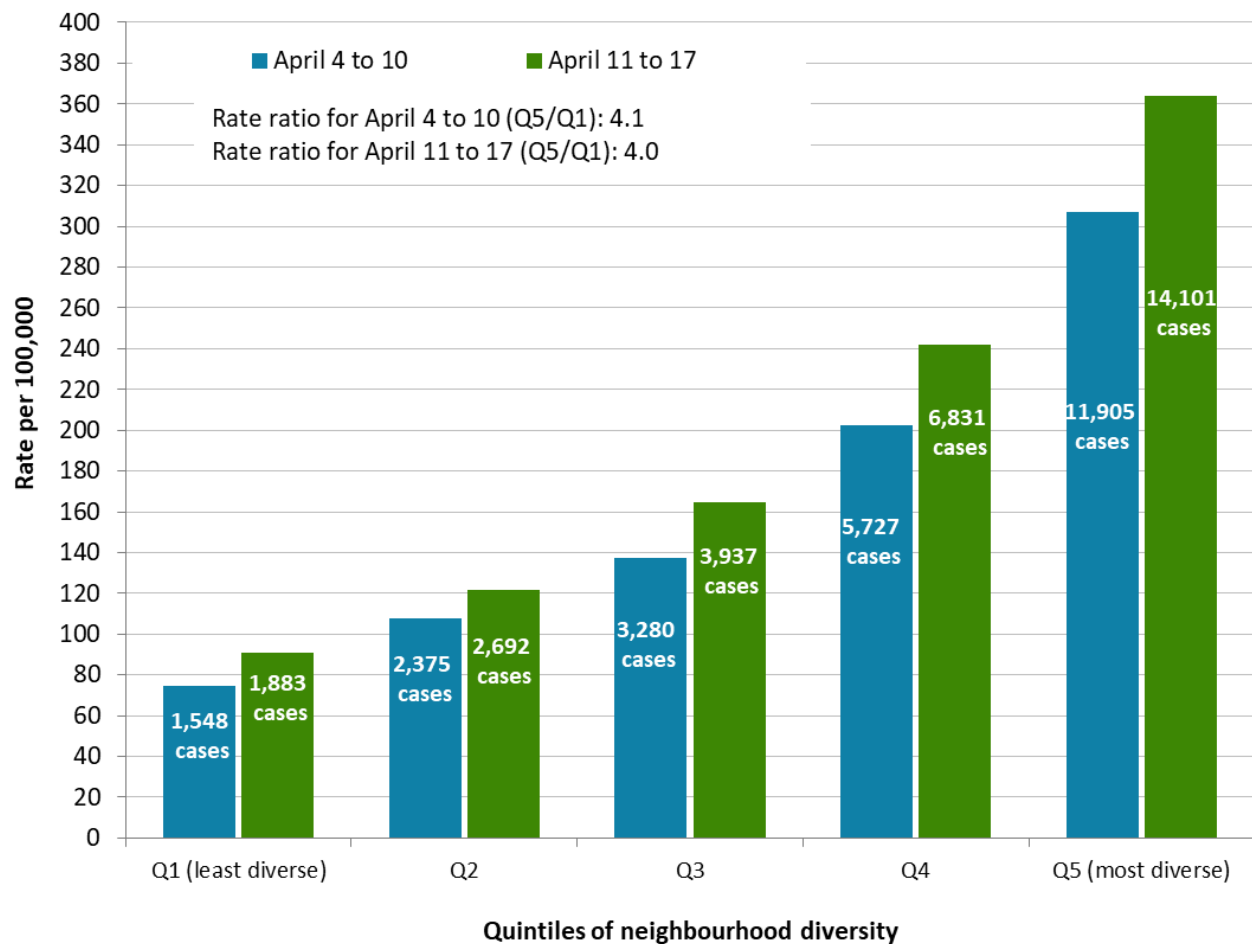
Table 6: Summary of cases of COVID-19 among school aged children by age group: Ontario

	Reported week 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative case count from August 30 up to April 17
Ages: 4-8	942	1,071	11,443
Ages: 9-13	1,187	1,405	14,943
Ages: 14-17	1,159	1,383	14,786

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

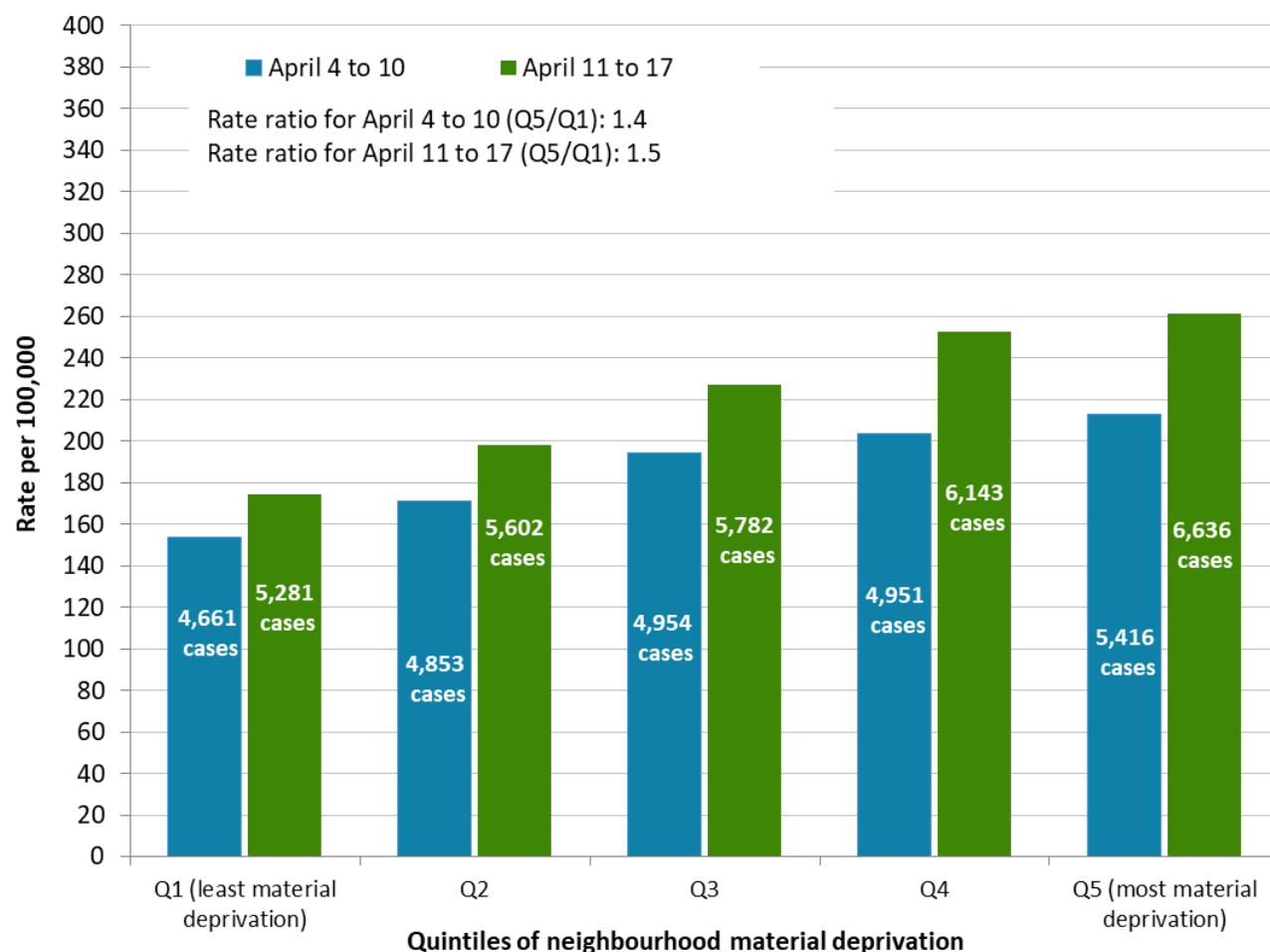
Figure 6. Rate and number of confirmed cases of COVID-19 for each quintile of neighbourhood diversity: Ontario, week 14 (April 4 to 10, 2021) and week 15 (April 11 to 17, 2021).



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 material deprivation: Ontario, week 14 (April 4 to 10, 2021) and week 15 (April 11 to 17, 2021).

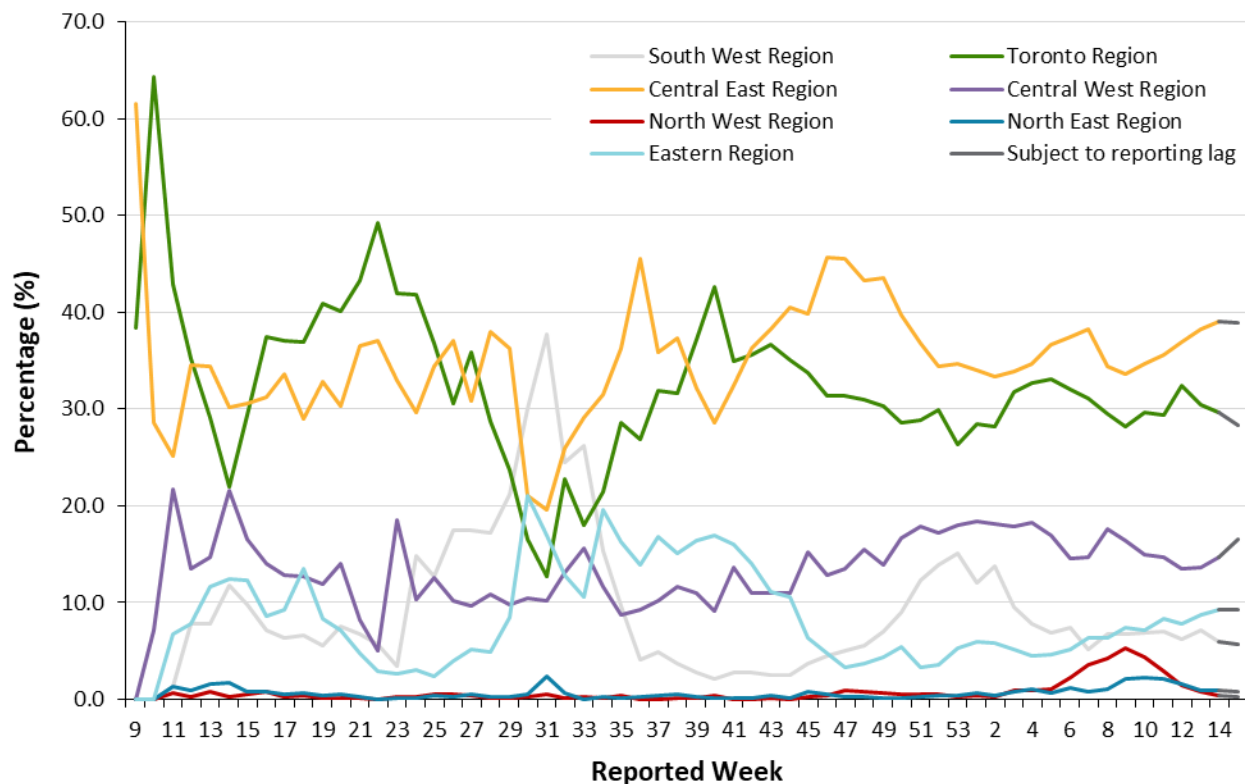


Note: Neighbourhood material deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability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

Data Source: CCM, Ontario Marginalization Index

Geography

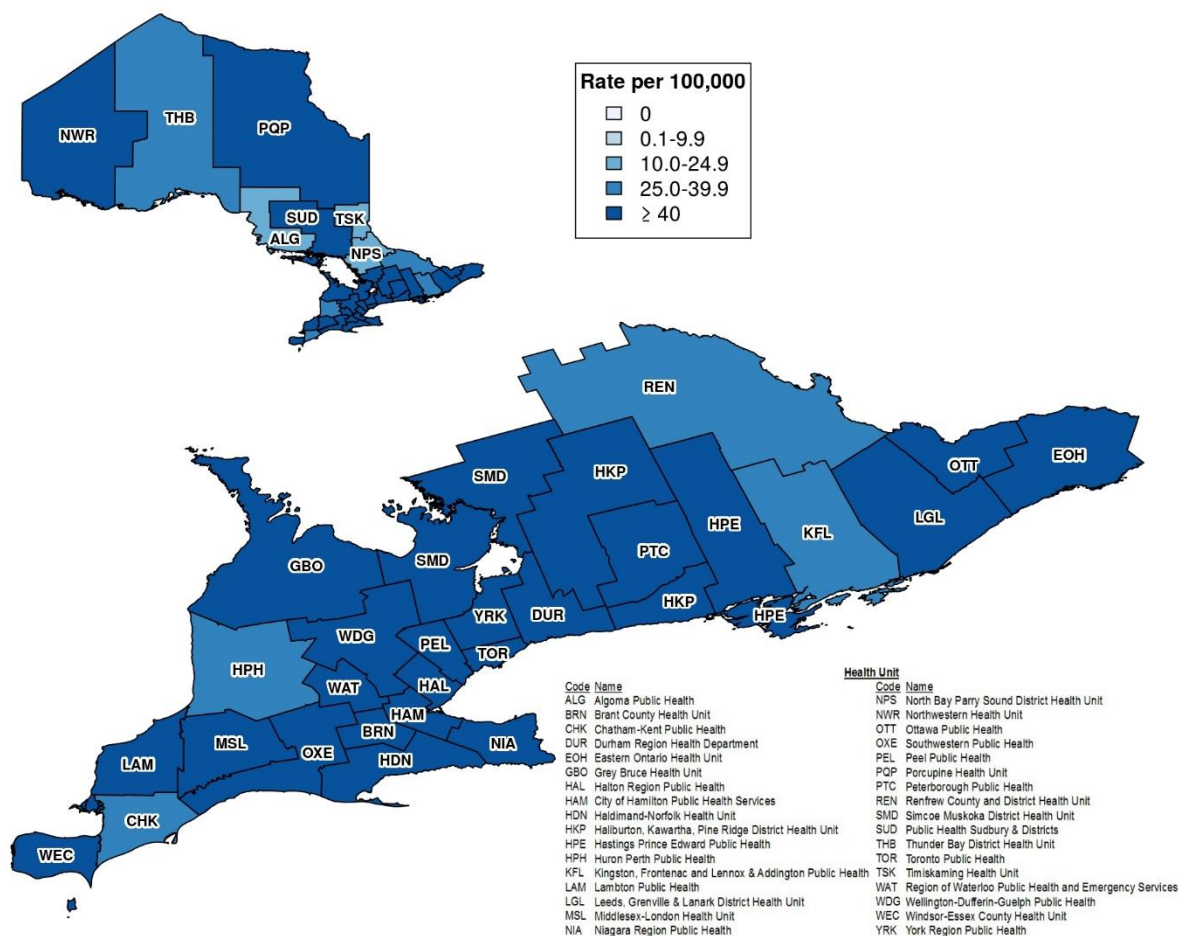
Figure 8. Percentage of COVID-19 cases by geographic region and public health unit reported week: Ontario



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 15 (April 11 and 17, 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 15 (April 11 to 17, 2021) by public health unit: Ontario



Note: The provincial rate of confirmed cases of COVID-19 reported in week 15 was 205.1 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 15 (April 11 to 17)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to April 17
Congregate Care	24	88	2,748
Long-term care homes	11	35	1,414
Retirement homes	2	20	836
Hospitals	11	33	498
Congregate Living	43	138	1,070
Correctional facility	1	6	46
Shelter	9	36	223
Group Home/supportive housing	28	76	634
Short-term accommodations	0	1	25
Congregate other	5	19	142
Education	125	268	1,993
Child care	40	107	642
School – Elementary*	68	123	1,020
School – Elementary/secondary*	2	9	57
School – Secondary*	13	24	238
School – Post-secondary*	2	5	36
Other settings	148	308	3,016
Bar/restaurant/nightclub	8	17	229
Medical/health services	3	6	126

Setting Type	Reported week 15 (April 11 to 17)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to April 17
Personal service settings	2	1	28
Recreational fitness	2	3	83
Retail	10	25	311
Other recreation/community	11	29	177
Workplace – Farm	10	22	163
Workplace - Food processing	5	20	202
Other types of workplaces	89	173	1,669
Other	4	5	6
Unknown	4	7	22
Total number of outbreaks	340	802	8,827

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 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative number of cases
Congregate Care	235	177	38,217
Long-term care homes	54	48	25,424
Retirement homes	37	60	7,063
Hospitals	144	69	5,730
Congregate Living	372	314	8,132
Correctional facility	24	32	1,313
Shelter	100	54	2,329
Group Home/supportive housing	122	136	3,098
Short-term accommodations	12	0	132
Congregate other	114	92	1,260
Education	764	432	8,164
Child care	232	186	2,261
School – Elementary*	400	194	4,194
School – Elementary/secondary*	26	9	293
School – Secondary*	82	42	1,040
School – Post-secondary*	24	1	376
Other settings	1,095	871	23,059
Bar/restaurant/nightclub	53	27	959
Medical/health services	27	12	567
Personal service settings	3	4	104
Recreational fitness	45	21	686

Cases associated with the outbreak setting type	Reported week 14 (April 4 to 10)	Reported week 15 (April 11 to 17)	Cumulative number of cases
Retail	85	38	1,476
Other recreation/community	88	117	2,162
Workplace - Farm	52	20	2,677
Workplace - Food processing	102	110	2,582
Other types of workplaces	628	494	11,691
Other	3	16	25
Unknown	9	12	130
Total number of cases	2,466	1,794	77,572

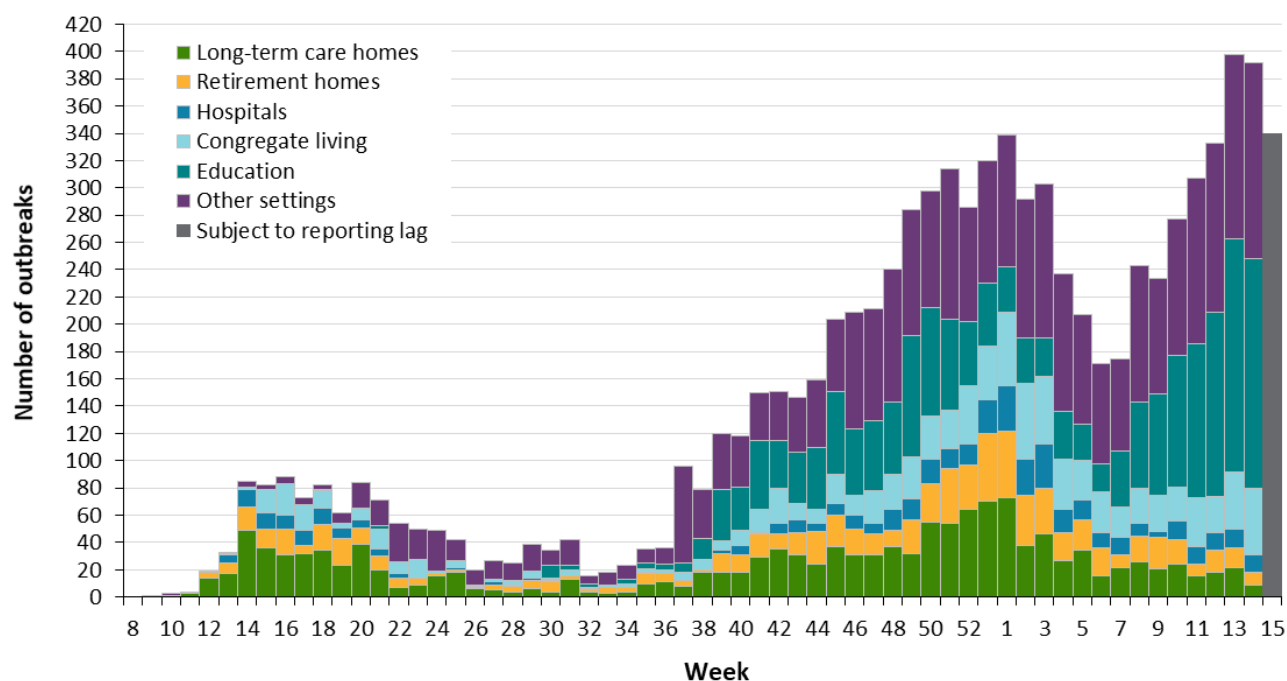
Note: Interpret case counts for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Retail includes settings such as grocery stores, pharmacies, malls, etc. Other types of workplaces include settings such as offices as well as warehousing, shipping and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



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 15 refers to April 11 and 17, 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 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	Mutations**	Cumulative case count as of April 17, 2021
Gender: Male	20,575	58	115	14,579	35,327
Gender: Female	19,714	49	95	13,659	33,517
Ages: 19 and under	7,404	12	31	5,560	13,007
Ages: 20-39	14,711	38	73	10,646	25,468
Ages: 40-59	12,283	33	77	8,205	20,598
Ages: 60-79	5,311	18	28	3,444	8,801
Ages: 80 and over	809	7	3	606	1,425

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 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	%	Mutations**	%	Cumulative case count up to April 17, 2021	Cumulative percentage
Travel	296	0.7%	11	10.2%	3	1.4%	334	1.2%	644	0.9%
Outbreak- associated or close contact of a confirmed case	22,908	56.5%	80	74.1%	155	73.1%	17,193	60.4%	40,336	58.2%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No known epidemiological link	13,035	32.2%	15	13.9%	51	24.1%	8,727	30.7%	21,828	31.5%
Information missing or unknown	4,282	10.6%	2	1.9%	3	1.4%	2,209	7.8%	6,496	9.4%
Total	40,521		108		212		28,463		69,304	

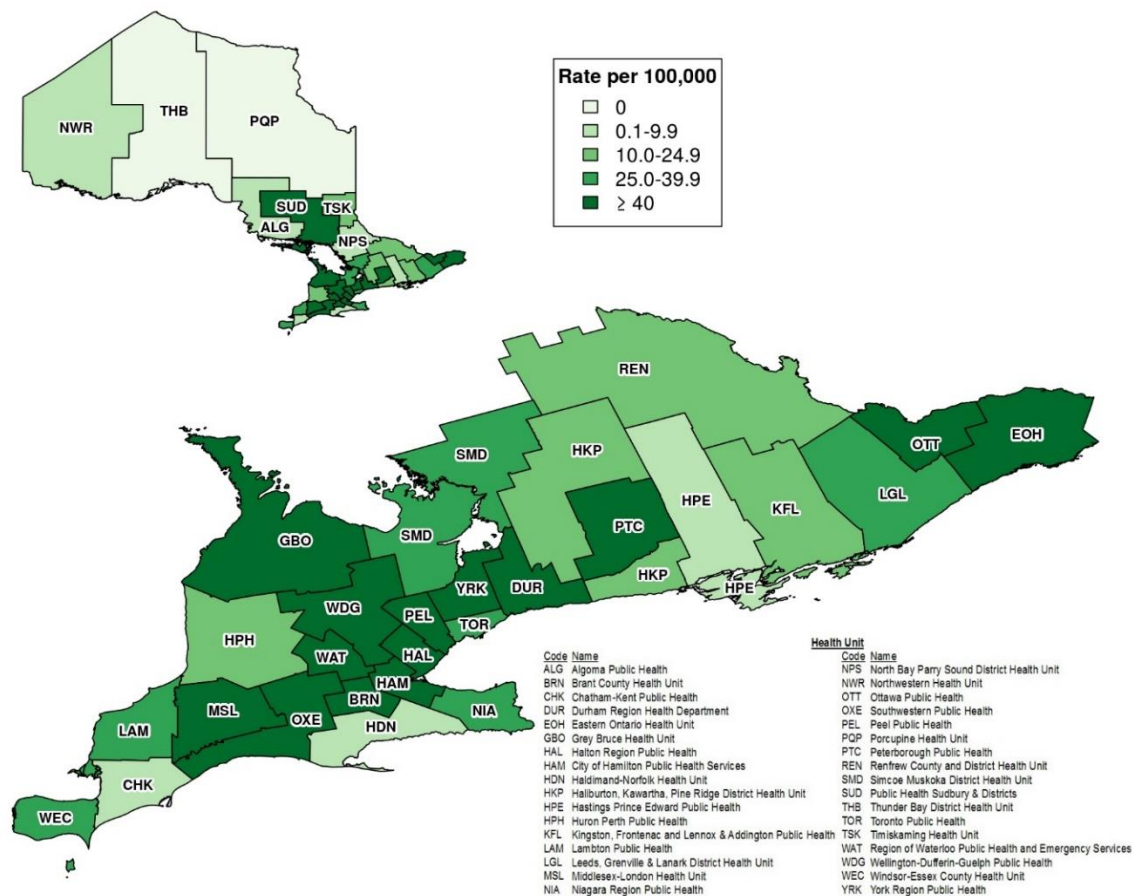
Note: Information for how cases are grouped within each category is available in the technical notes. Data for cases with a B.1.1.7, B.1.351, and P.1 lineage detected are determined using the Investigation Subtype field only.* Includes all confirmed COVID-19 cases where lineage B.1.1.7 was identified 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

COVID-19 in Ontario: Focus on April 11, 2021 to April 17, 2021

Figure 11. Rates of confirmed cases of COVID-19 with lineage B.1.1.7* detected in public health reported week 15 (April 11 to 17, 2021) by public health unit: Ontario

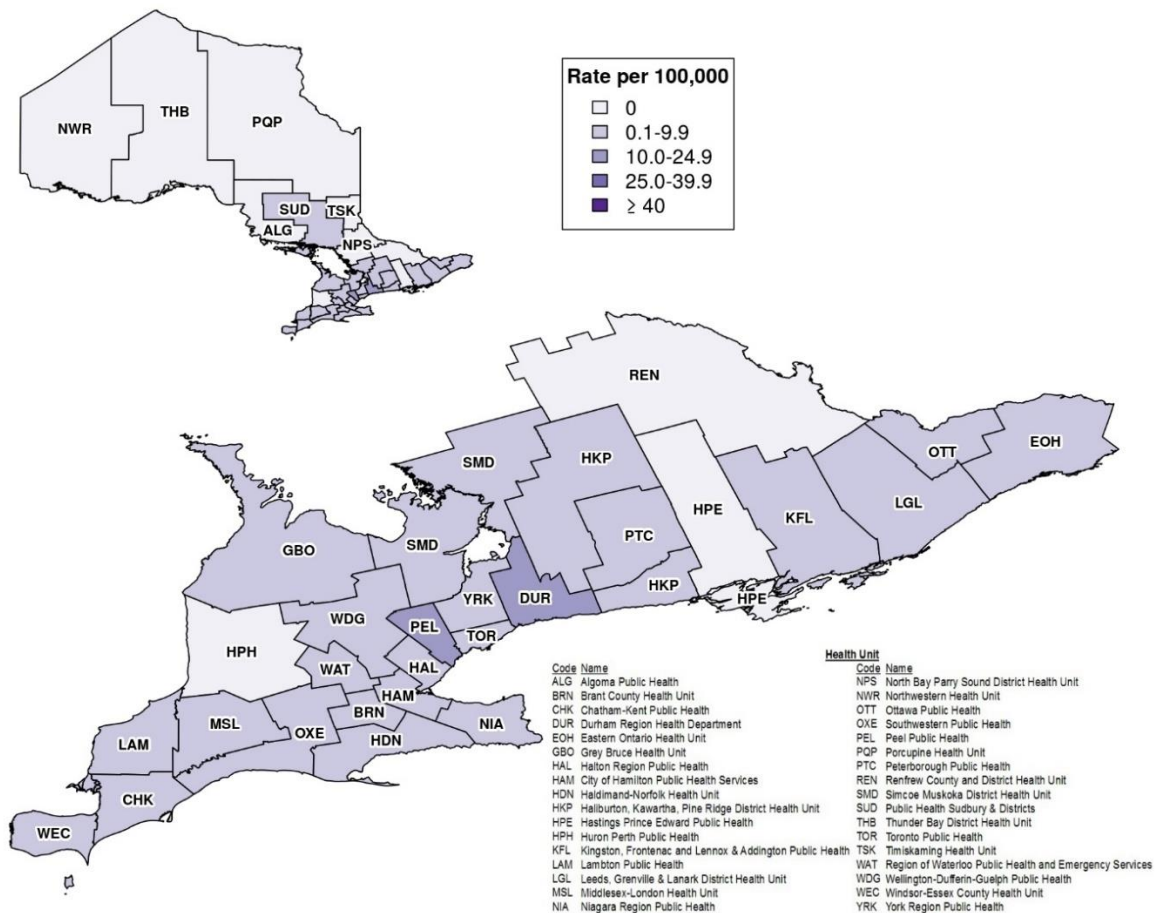


Note: The provincial rate of confirmed cases of COVID-19 with lineage B.1.1.7* reported in week 15 was 79.0 cases per 100,000 population. Changes to the VOC testing algorithm may impact counts and trends. Further details can be found in the data caveats section.

*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 15 (April 11 to 17, 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 15 was 6.8 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 **April 20, 2021 at 1 p.m.** for cases reported in 2021 and as of April 19, 2021 at 9 a.m. for cases reported in 2020
- 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 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.

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 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	147	178
12	March 15, 2020	March 21, 2020	437	615
13	March 22, 2020	March 28, 2020	1,308	1,923
14	March 29, 2020	April 4, 2020	2,778	4,701
15	April 5, 2020	April 11, 2020	3,135	7,836
16	April 12, 2020	April 18, 2020	4,206	12,042
17	April 19, 2020	April 25, 2020	3,630	15,672
18	April 26, 2020	May 2, 2020	2,889	18,561
19	May 3, 2020	May 9, 2020	2,343	20,904
20	May 10, 2020	May 16, 2020	2,193	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	2,600	28,311
23	May 31, 2020	June 6, 2020	2,303	30,614
24	June 7, 2020	June 13, 2020	1,473	32,087
25	June 14, 2020	June 20, 2020	1,229	33,316
26	June 21, 2020	June 27, 2020	1,251	34,567
27	June 28, 2020	July 4, 2020	1,084	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	990	38,440
31	July 26, 2020	August 1, 2020	805	39,245
32	August 2, 2020	August 8, 2020	593	39,838
33	August 9, 2020	August 15, 2020	610	40,448
34	August 16, 2020	August 22, 2020	730	41,178
35	August 23, 2020	August 29, 2020	853	42,031
36	August 30, 2020	September 5, 2020	978	43,009
37	September 6, 2020	September 12, 2020	1,502	44,511
38	September 13, 2020	September 19, 2020	2,373	46,884
39	September 20, 2020	September 26, 2020	3,122	50,006
40	September 27, 2020	October 3, 2020	4,225	54,231
41	October 4, 2020	October 10, 2020	5,042	59,273
42	October 11, 2020	October 17, 2020	5,278	64,551
43	October 18, 2020	October 24, 2020	6,039	70,590
44	October 25, 2020	October 31, 2020	6,387	76,977

Reported Week	Start date	End date	Number of cases	Cumulative count
45	November 1, 2020	November 7, 2020	7,609	84,586
46	November 8, 2020	November 14, 2020	10,435	95,021
47	November 15, 2020	November 21, 2020	9,989	105,010
48	November 22, 2020	November 28, 2020	11,123	116,133
49	November 29, 2020	December 5, 2020	12,684	128,817
50	December 6, 2020	December 12, 2020	13,047	141,864
51	December 13, 2020	December 19, 2020	15,652	157,516
52	December 20, 2020	December 26, 2020	15,627	173,143
53	December 27, 2020	January 2, 2021	20,448	193,591
1	January 3, 2021	January 9, 2021	24,866	218,457
2	January 10, 2021	January 16, 2021	21,363	239,820
3	January 17, 2021	January 23, 2021	16,395	256,215
4	January 24, 2021	January 30, 2021	12,725	268,940
5	January 31, 2021	February 6, 2021	9,775	278,715
6	February 7, 2021	February 13, 2021	7,891	286,606
7	February 14, 2021	February 20, 2021	7,455	294,061
8	February 21, 2021	February 27, 2021	7,676	301,737
9	February 28, 2021	March 6, 2021	7,933	309,670
10	March 7, 2021	March 13, 2021	9,481	319,151
11	March 14, 2021	March 20, 2021	11,024	330,175
12	March 21, 2021	March 27, 2021	14,406	344,581
13	March 28, 2021	April 3, 2021	18,954	363,535
14	April 4, 2021	April 10, 2021	25,694	389,229

Reported Week	Start date	End date	Number of cases	Cumulative count
15	April 11, 2021	April 17, 2021	30,490	419,719

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

Public Health Unit Name	Cases reported week 14	Rate per 100,000 population Reported week 14	Cases reported week 15	Rate per 100,000 population Reported week 15
Northwestern Health Unit	50	57.0	52	59.3
Thunder Bay District Health Unit	55	36.7	38	25.3
TOTAL NORTH WEST	105	44.2	90	37.9
Algoma Public Health	29	25.3	26	22.7
North Bay Parry Sound District Health Unit	16	12.3	14	10.8
Porcupine Health Unit	37	44.3	75	89.9
Public Health Sudbury & Districts	170	85.4	140	70.3
Timiskaming Health Unit	1	3.1	8	24.5
TOTAL NORTH EAST	253	45.2	263	47.0
Ottawa Public Health	1,698	161.0	2,197	208.3
Eastern Ontario Health Unit	266	127.4	313	150.0
Hastings Prince Edward Public Health	135	80.1	101	59.9
Kingston, Frontenac and Lennox & Addington Public Health	131	61.6	77	36.2
Leeds, Grenville & Lanark District Health Unit	121	69.9	100	57.7
Renfrew County and District Health Unit	37	34.1	38	35.0
TOTAL EASTERN	2,388	124.0	2,826	146.7

Public Health Unit Name	Cases reported week 14	Rate per 100,000 population Reported week 14	Cases reported week 15	Rate per 100,000 population Reported week 15
Durham Region Health Department	1,534	215.3	1,689	237.1
Haliburton, Kawartha, Pine Ridge District Health Unit	121	64.0	168	88.9
Peel Public Health	4,740	295.2	5,675	353.4
Peterborough Public Health	76	51.4	112	75.7
Simcoe Muskoka District Health Unit	658	109.7	729	121.6
York Region Public Health	2,894	236.1	3,514	286.7
TOTAL CENTRAL EAST	10,023	223.7	11,887	265.3
Toronto Public Health	7,615	244.0	8,623	276.3
TOTAL TORONTO	7,615	244.0	8,623	276.3
Chatham-Kent Public Health	38	35.7	29	27.3
Grey Bruce Health Unit	70	41.2	148	87.1
Huron Perth Public Health	47	33.6	47	33.6
Lambton Public Health	114	87.0	77	58.8
Middlesex-London Health Unit	832	163.9	840	165.5
Southwestern Public Health	124	58.6	175	82.7
Windsor-Essex County Health Unit	315	74.1	435	102.4
TOTAL SOUTH WEST	1,540	91.1	1,751	103.6
Brant County Health Unit	218	140.5	264	170.1

Public Health Unit Name	Cases reported week 14	Rate per 100,000 population Reported week 14	Cases reported week 15	Rate per 100,000 population Reported week 15
City of Hamilton Public Health Services	825	139.3	1,222	206.4
Haldimand-Norfolk Health Unit	137	120.1	201	176.2
Halton Region Public Health	921	148.8	1,114	179.9
Niagara Region Public Health	737	156.0	1,151	243.6
Region of Waterloo Public Health and Emergency Services	470	80.4	616	105.4
Wellington-Dufferin-Guelph Public Health	462	148.1	482	154.5
TOTAL CENTRAL WEST	3,770	132.3	5,050	177.2
TOTAL ONTARIO	25,694	172.9	30,490	205.1

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 April 17 for Lineage B.1.1.7*	Cumulative case count up to April 17 for Lineage B.1.351	Cumulative case count up to April 17 for Lineage P.1	Cumulative count up to April 17 for Mutations**
Northwestern Health Unit	19	0	0	19
Thunder Bay District Health Unit	0	0	0	10
TOTAL NORTH WEST	19	0	0	29
Algoma Public Health	5	0	0	25
North Bay Parry Sound District Health Unit	43	27	0	12
Porcupine Health Unit	5	2	0	4
Public Health Sudbury & Districts	168	0	0	485
Timiskaming Health Unit	27	1	0	0
TOTAL NORTH EAST	248	30	0	526
Ottawa Public Health	2,307	7	0	1,003
Eastern Ontario Health Unit	457	2	0	277
Hastings Prince Edward Public Health	7	0	1	228
Kingston, Frontenac and Lennox & Addington Public Health	144	0	4	120
Leeds, Grenville & Lanark District Health Unit	172	1	0	41
Renfrew County and District Health Unit	63	0	0	11
TOTAL EASTERN	3,150	10	5	1,680
Durham Region Health Department	3,088	2	14	1,718

Public Health Unit Name	Cumulative case count up to April 17 for Lineage B.1.1.7*	Cumulative case count up to April 17 for Lineage B.1.351	Cumulative case count up to April 17 for Lineage P.1	Cumulative count up to April 17 for Mutations**
Haliburton, Kawartha, Pine Ridge District Health Unit	60	0	0	186
Peel Public Health	10,823	18	52	4,269
Peterborough Public Health	215	0	0	150
Simcoe Muskoka District Health Unit	1,444	3	20	703
York Region Public Health	6,592	5	30	2,394
TOTAL CENTRAL EAST	22,222	28	116	9,420
Toronto Public Health	6,548	31	80	13,465
TOTAL TORONTO	6,548	31	80	13,465
Chatham-Kent Public Health	24	4	0	93
Grey Bruce Health Unit	143	0	0	37
Huron Perth Public Health	29	0	0	35
Lambton Public Health	236	0	0	53
Middlesex-London Health Unit	1,173	0	2	204
Southwestern Public Health	266	0	0	36
Windsor-Essex County Health Unit	488	2	0	77
TOTAL SOUTH WEST	2,359	6	2	535
Brant County Health Unit	191	0	4	214
City of Hamilton Public Health Services	1,131	1	2	886
Haldimand-Norfolk Health Unit	40	0	0	137

Public Health Unit Name	Cumulative case count up to April 17 for Lineage B.1.1.7*	Cumulative case count up to April 17 for Lineage B.1.351	Cumulative case count up to April 17 for Lineage P.1	Cumulative count up to April 17 for Mutations**
Halton Region Public Health	1,934	1	1	556
Niagara Region Public Health	820	0	0	585
Region of Waterloo Public Health and Emergency Services	1,002	1	1	296
Wellington-Dufferin-Guelph Public Health	857	0	1	134
TOTAL CENTRAL WEST	5,975	3	9	2,808
TOTAL ONTARIO	40,521	108	212	28,463

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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