

WEEKLY EPIDEMIOLOGICAL SUMMARY

COVID-19 in Ontario: Focus on November 28, 2021 to December 4, 2021

This report includes the most current information available from CCM as of **December 7, 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.

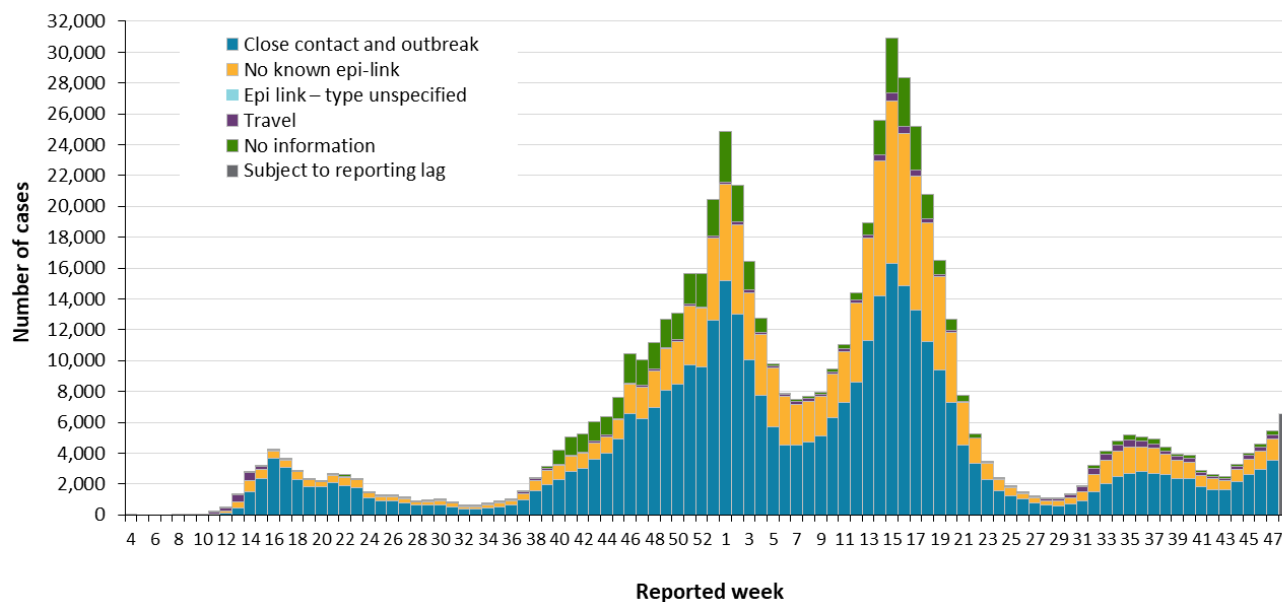
Highlights

- There are a total of 624,013 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to December 4, 2021.
- For the period with a public health unit (PHU) reported date between November 28 to December 4, 2021 (week 48):
 - A total of 6,539 cases were reported to public health compared to 5,425 cases the previous week (November 21 to 27, 2021).
 - There was a 20.5% increase in cases reported this week with the highest case count reported in a single week since May (week 21).
 - The number of outbreak reported in congregate living settings doubled from week 47 (n=6) to week 48 (n=12). This may be driven by an increase in the number of outbreaks reported in correctional facilities in the current week.

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

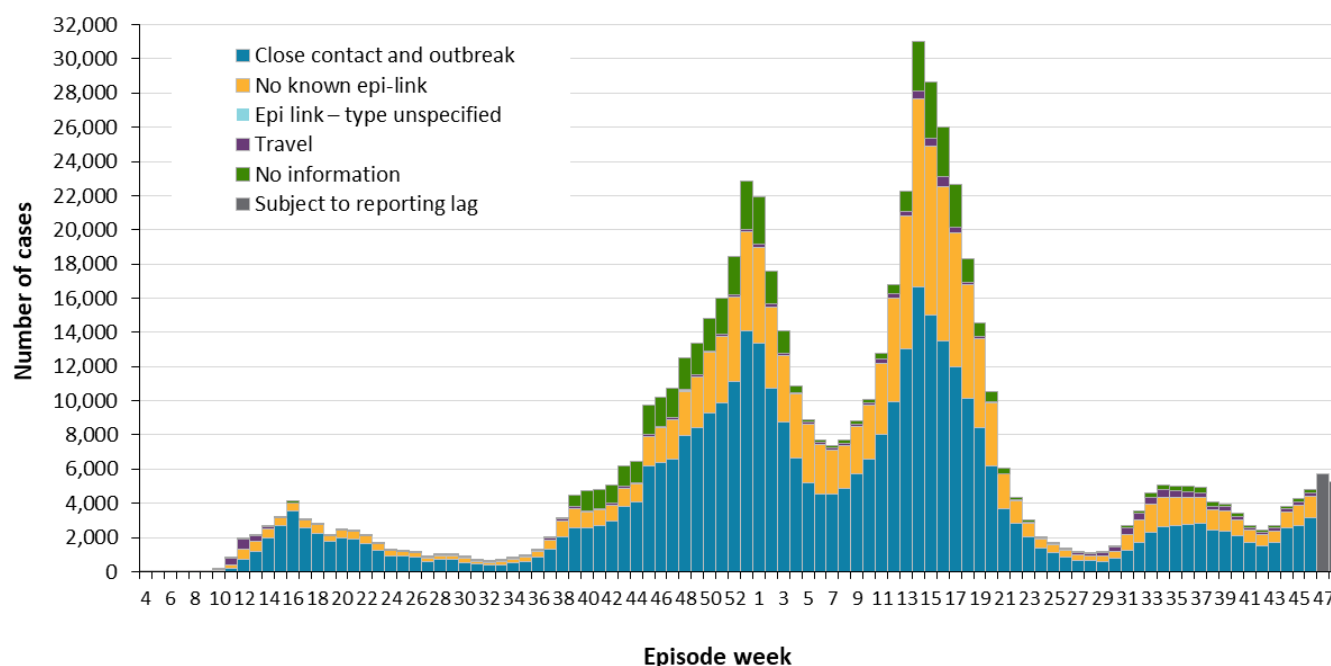
Figure 1. Confirmed cases of COVID-19 by likely source of acquisition and public health unit reported week: Ontario



Note: Include cases with reported dates ranging from week-4 (January 19 and 25, 2020) to week 48 (November 28 and December 4, 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 48 (November 28 and December 4, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM

Case Characteristics

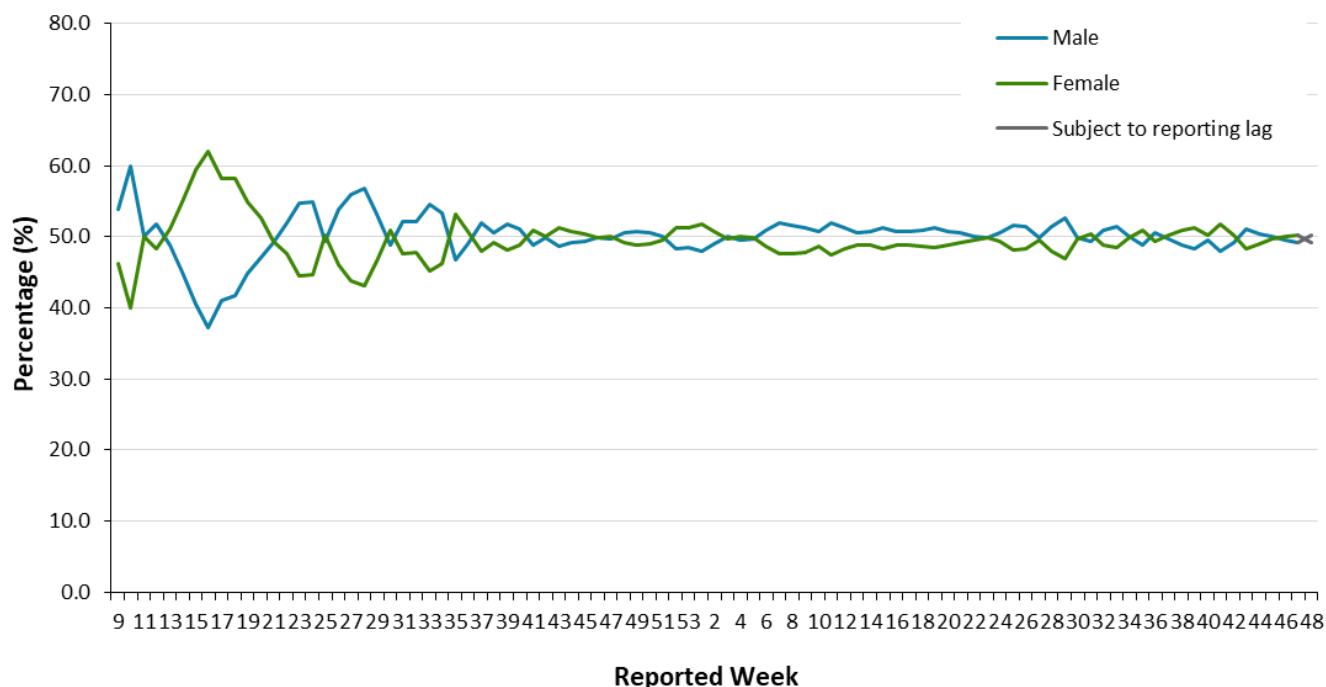
Table 1. Summary of confirmed cases of COVID-19 by public health unit reported date: Ontario

	Reported week 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative case count up to December 4	Cumulative rate per 100,000 population
Total number of cases	5,425	6,539	624,013	4,235.2
Sex: Male	2,668	3,288	311,952	4,285.4
Sex: Female	2,728	3,212	309,874	4,156.8
Ages: 0-4	274	376	18,373	2,541.2
Ages: 5-11	1,042	1,214	36,069	3,344.3
Ages: 12-19	386	488	55,363	4,164.3
Ages: 20-39	1,569	1,909	232,724	5,605.3
Ages: 40-59	1,359	1,610	173,965	4,465.8
Ages: 60-79	693	823	80,695	2,782.8
Ages: 80 and over	101	118	26,718	4,073.9
Number resolved	N/A	N/A	607,856	N/A

Note: Not all cases have an age or sex reported. Interpret information for the most recent week with caution due to reporting lags.

Data Source: CCM

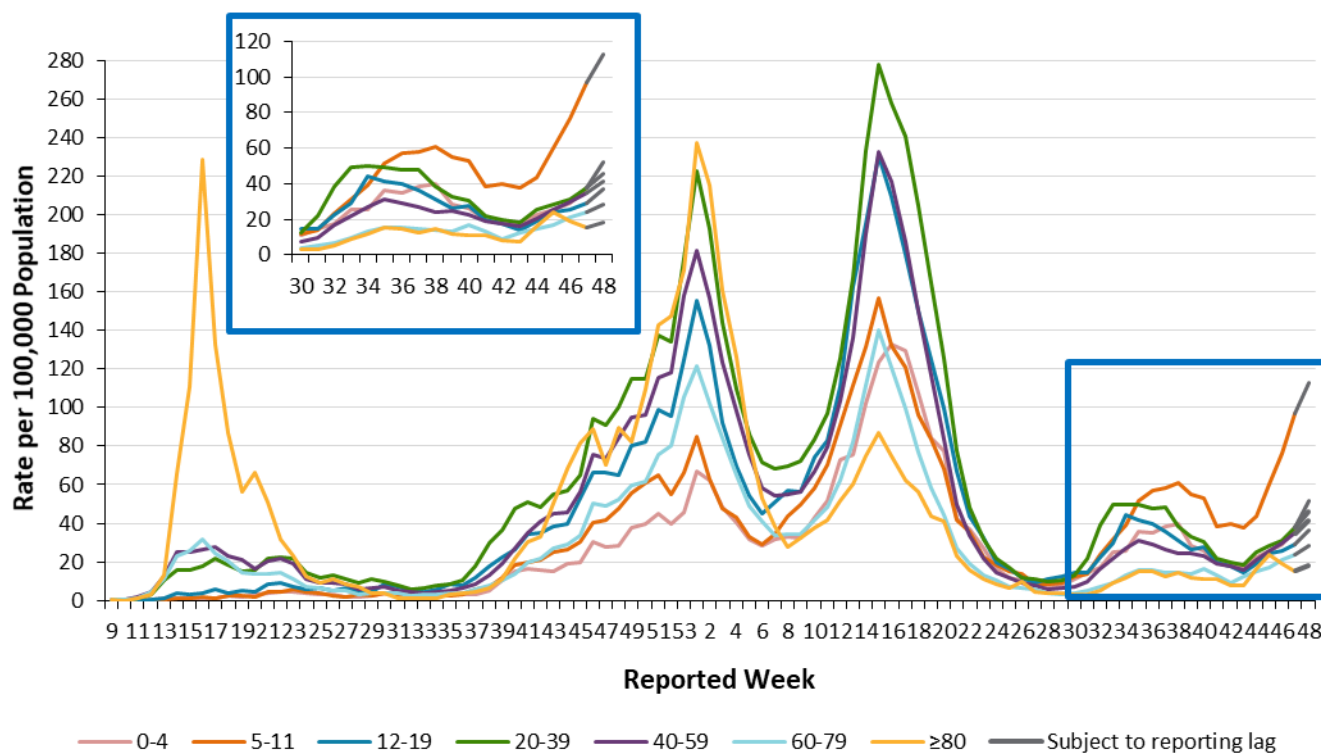
Figure 3. Percentage of confirmed cases of COVID-19 by sex and public health unit reported week: Ontario



Note: Not all cases have a sex 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 48 (November 28 and December 4, 2021). See [Table 1A](#) in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM

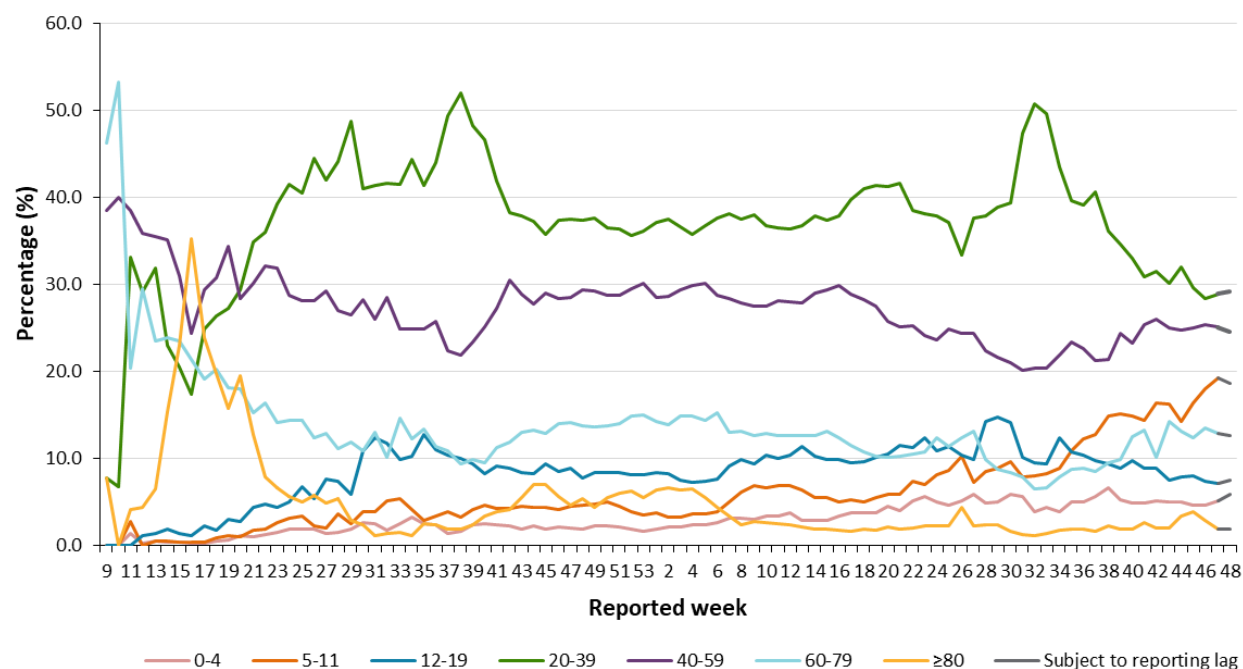
Figure 4a. Rate of confirmed cases of COVID-19 per 100,000 population by age group and public health unit reported week: Ontario



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 48 (November 28 and December 4, 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

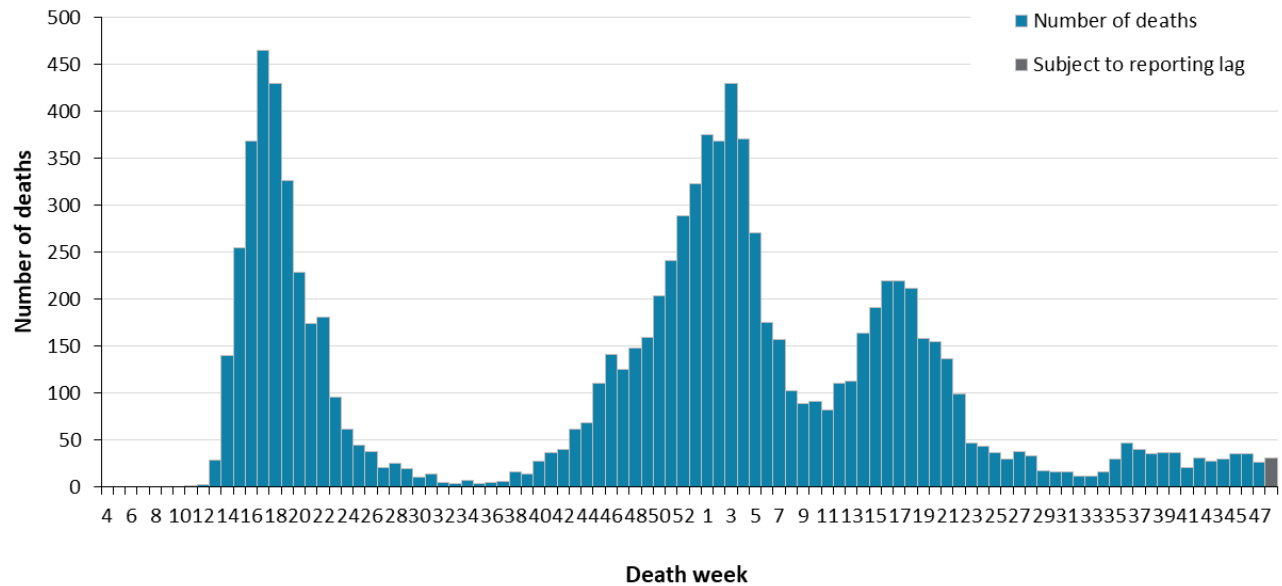


Note: Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 48 (November 28 and December 4, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding 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 48 (November 28 and December 4, 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 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative case count up to December 4	Cumulative rate per 100,000 population
Number of deaths	15	14	10,044	68.2
Sex: Male	12	9	5,173	71.1
Sex: Female	3	5	4,816	64.6
Ages: 19 and under	0	0	7	0.2
Ages: 20-39	1	0	107	2.6
Ages: 40-59	2	1	706	18.1
Ages: 60-79	7	6	3,309	114.1
Ages: 80 and over	5	7	5,914	901.8

Note: Age and sex 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 47 (November 21 to 27)	Percentage	Reported week 48 (November 28 to December 4)	Percentage	Cumulative case count up to December 4	Cumulative percentage
Travel	257	4.7%	316	4.8%	14,705	2.4%
Outbreak-associated or close contact of a confirmed case	3,527	65.0%	4,015	61.4%	374,351	60.0%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	45	<0.1%
No known epidemiological link	1,385	25.5%	1,597	24.4%	180,668	29.0%
Information missing or unknown	256	4.7%	611	9.3%	54,244	8.7%
Total	5,425		6,539		624,013	

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 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative case count up to December 4
Number of cases	122	124	25,337
Ever hospitalized	1	1	483
Ever in ICU	1	0	100

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 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative case count up to December 4
Residents	1	16	15,669
Deaths among residents	0	2	4,027
Health care workers	4	10	7,425
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

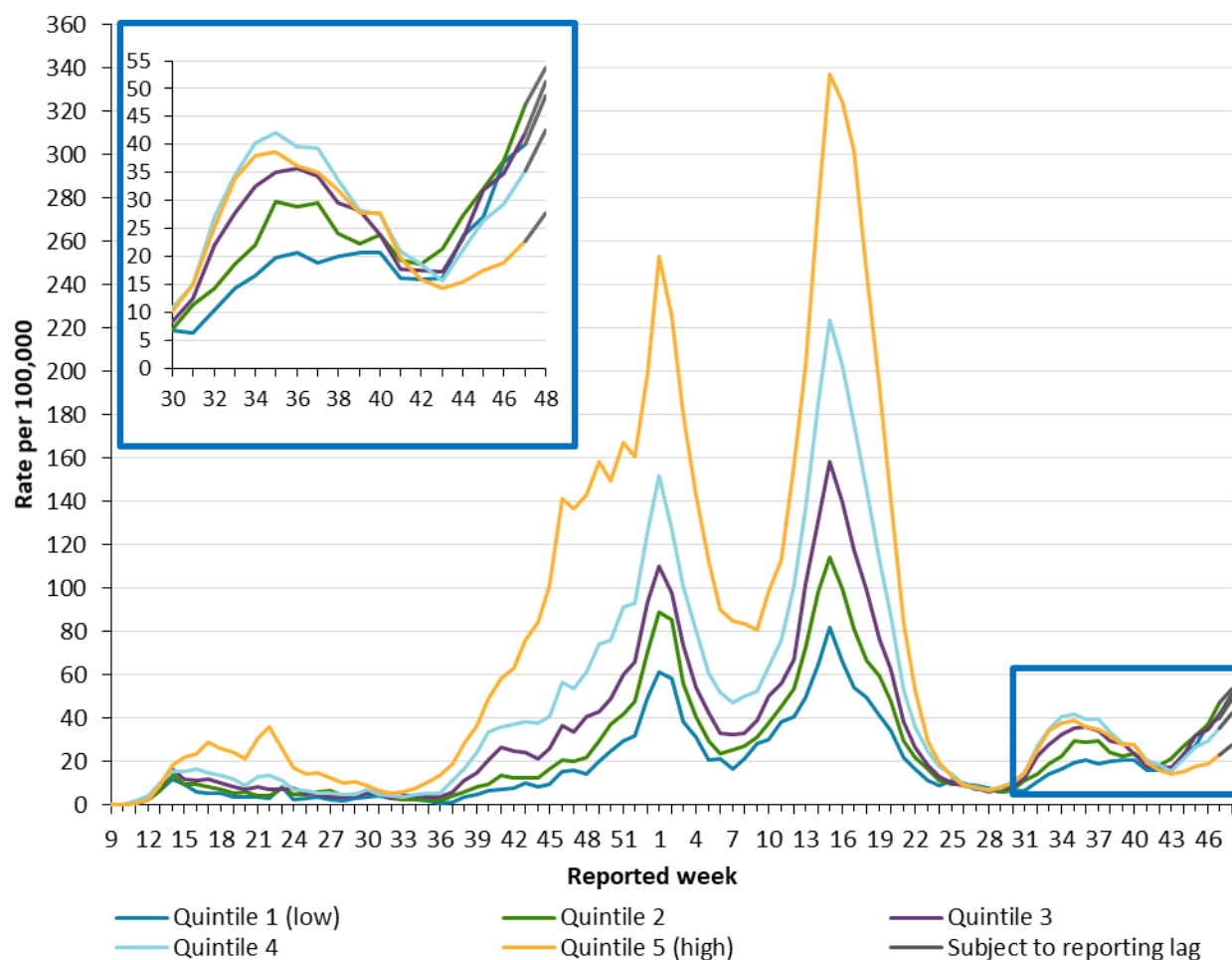
Table 6: Summary of reinfection cases of COVID-19 by age group and public health unit reported week: Ontario

Age Group	Reported week 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative count from November 1, 2020 up to December 4, 2021	Percent of reinfection cases
Ages: 0-4	0	0	20	4.8%
Ages: 5-11	1	2	13	3.1%
Ages: 12-19	0	0	37	8.8%
Ages: 20-39	7	7	197	46.9%
Ages: 40-59	4	1	108	25.7%
Ages: 60-79	0	1	35	8.3%
Ages: 80 and over	0	0	10	2.4%
Total reinfection cases	12	11	420	100.0%

Note: Cases identified as reinfections meeting the [provincial definition](#) as indicated by public health units selecting the reinfection checkbox. Cumulative counts include cases of COVID-19 reinfection reported starting week-45 (November 1 to 7, 2020). Not all cases have a reported age or sex. 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, sex) differing from past publicly reported case counts.

Data Source: CCM

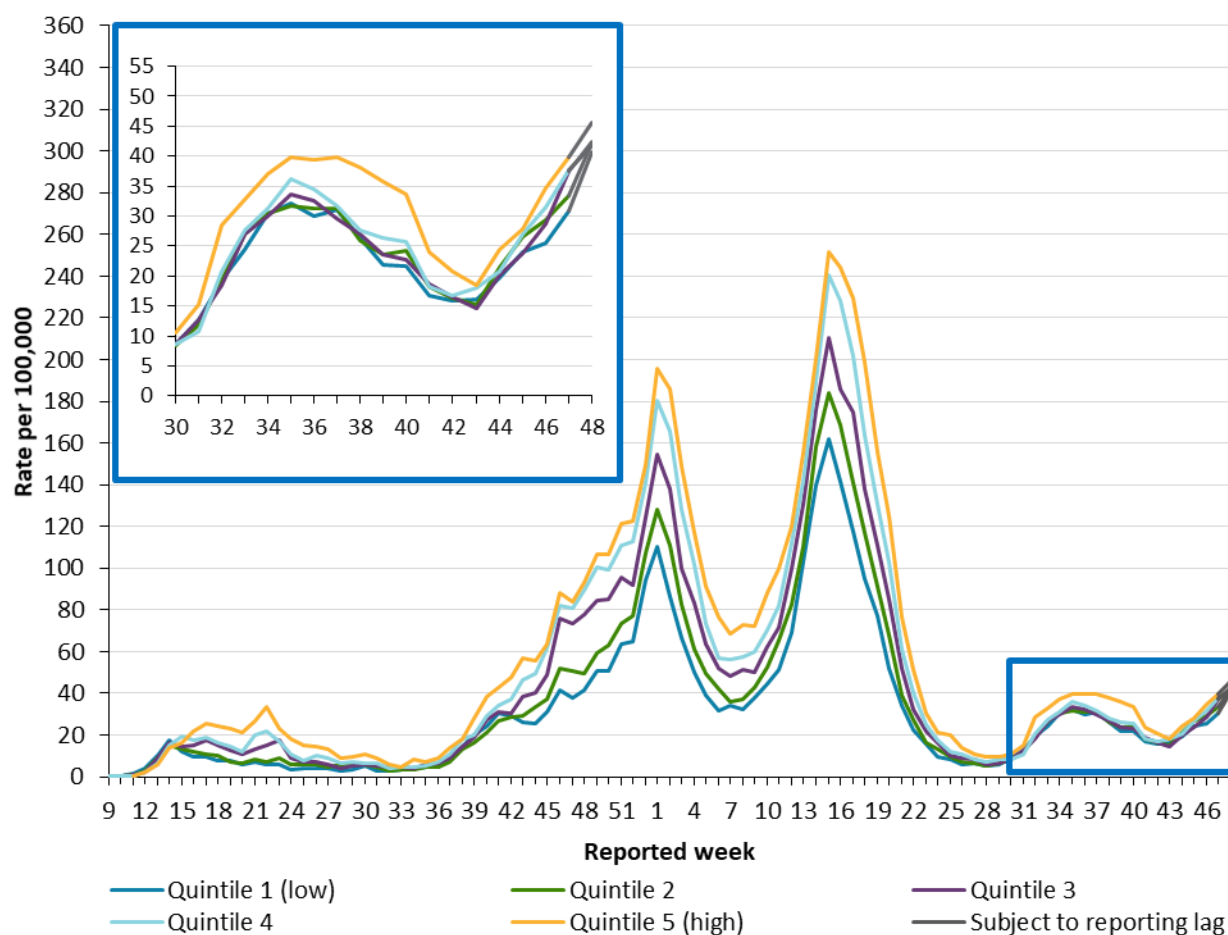
Figure 6. Rate of confirmed cases of COVID-19 per 100,000 population by quintile of neighbourhood diversity and public health unit reported week: Ontario



Note: Neighbourhood diversity is measured using the ethnic concentration dimension of the Ontario Marginalization Index. The ethnic concentration dimension is based on the proportion of non-white and non-Indigenous residents and/or the proportion of immigrants that arrived in Canada within the past five years. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to week 48 (November 28 to December 4, 2021). As of June 8, all rate denominators were changed to the 2021 OHIP RPDB population, and as a result, rates shown here may differ from previous reports. See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM, Ontario Marginalization Index

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



Note: Neighbourhood material deprivation is measured using the material deprivation dimension of the Ontario Marginalization Index. The material deprivation dimension uses Canadian census data on income, quality of housing, educational attainment and family structure characteristics to assess the ability of individuals and communities to access and attain basic material needs. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week 9). Include cases with reported dates ranging from weeks 9 (February 23 to 29, 2020) to week 48 (November 28 to December 4, 2021). As of June 8, all rate denominators were changed to the 2021 OHIP RPDB population, and as a result, rates shown here may differ from previous reports. See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM, Ontario Marginalization Index

Table 7: Summary of cases of COVID-19 by quintile of neighbourhood diversity and public health unit reported week: Ontario

	Cases Reported Week 47 (November 21 to 27)	Cases Reported Week 48 (November 28 to December 4)	Cumulative case count up to December 4	Cumulative rate per 100,000 population up to December 4
Quintile 1 (least diverse)	892	1,081	37,979	1,709.8
Quintile 2	1,119	1,272	54,848	2,316.1
Quintile 3	1,091	1,329	77,839	3,002.9
Quintile 4	1,103	1,334	127,672	4,082.1
Quintile 5 (most diverse)	986	1,198	281,981	6,523.9

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. Cumulative counts and rates include cases of COVID-19 reported starting week 9 (February 23 to 29, 2020).

Data Source: CCM, Ontario Marginalization Index

Table 8: Summary of cases of COVID-19 by quintile of neighbourhood material deprivation and public health unit reported week: Ontario

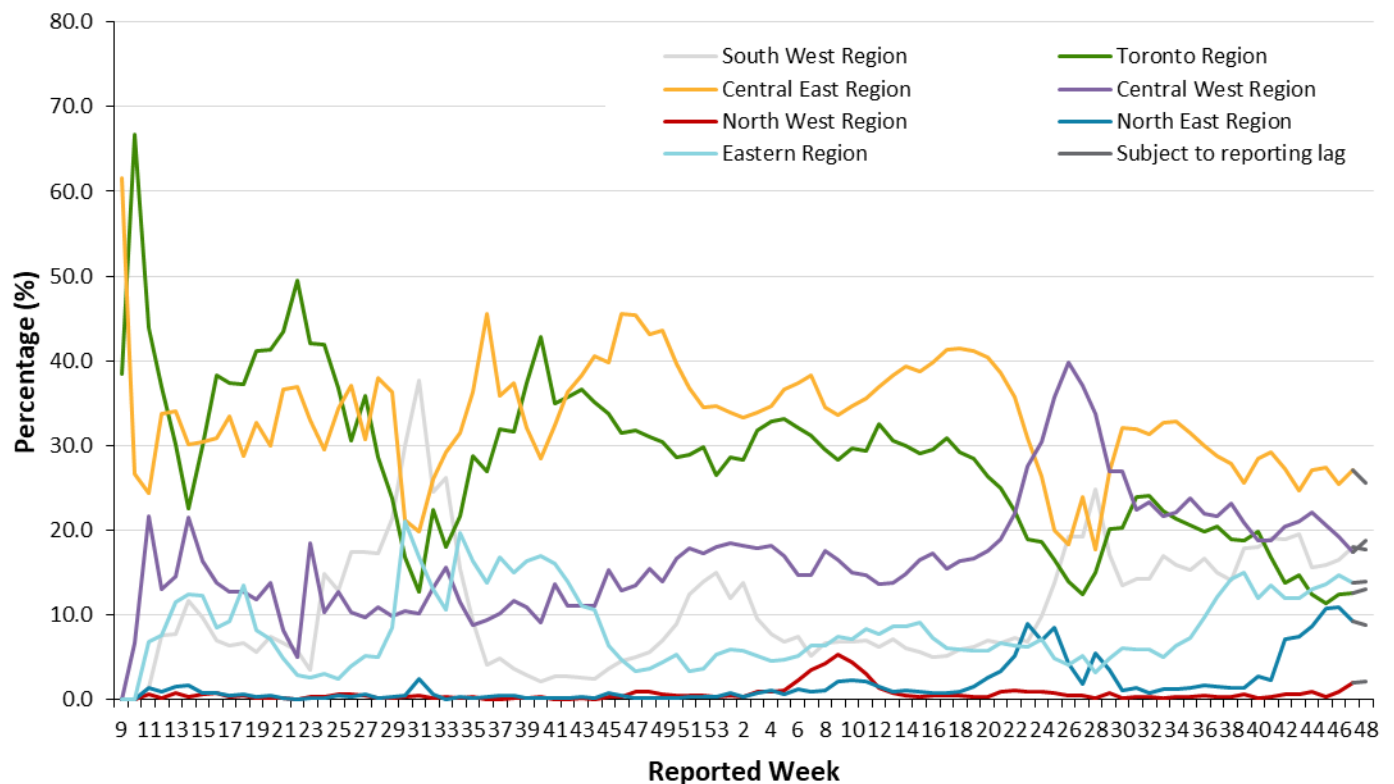
	Cases Reported Week 47 (November 21 to 27)	Cases Reported Week 48 (November 28 to December 4)	Cumulative case count up to December 4	Cumulative rate per 100,000 population up to December 4
Quintile 1 (least material deprivation)	1,060	1,406	100,372	2,912.6
Quintile 2	1,037	1,311	103,985	3,349.3
Quintile 3	1,038	1,177	111,507	4,021.3
Quintile 4	988	1,097	121,453	4,622.3
Quintile 5 (most material deprivation)	1,068	1,223	143,002	5,335.9

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. Cumulative counts and rates include cases of COVID-19 reported starting week 9 (February 23 to 29, 2020).

Data Source: CCM, Ontario Marginalization Index

Geography

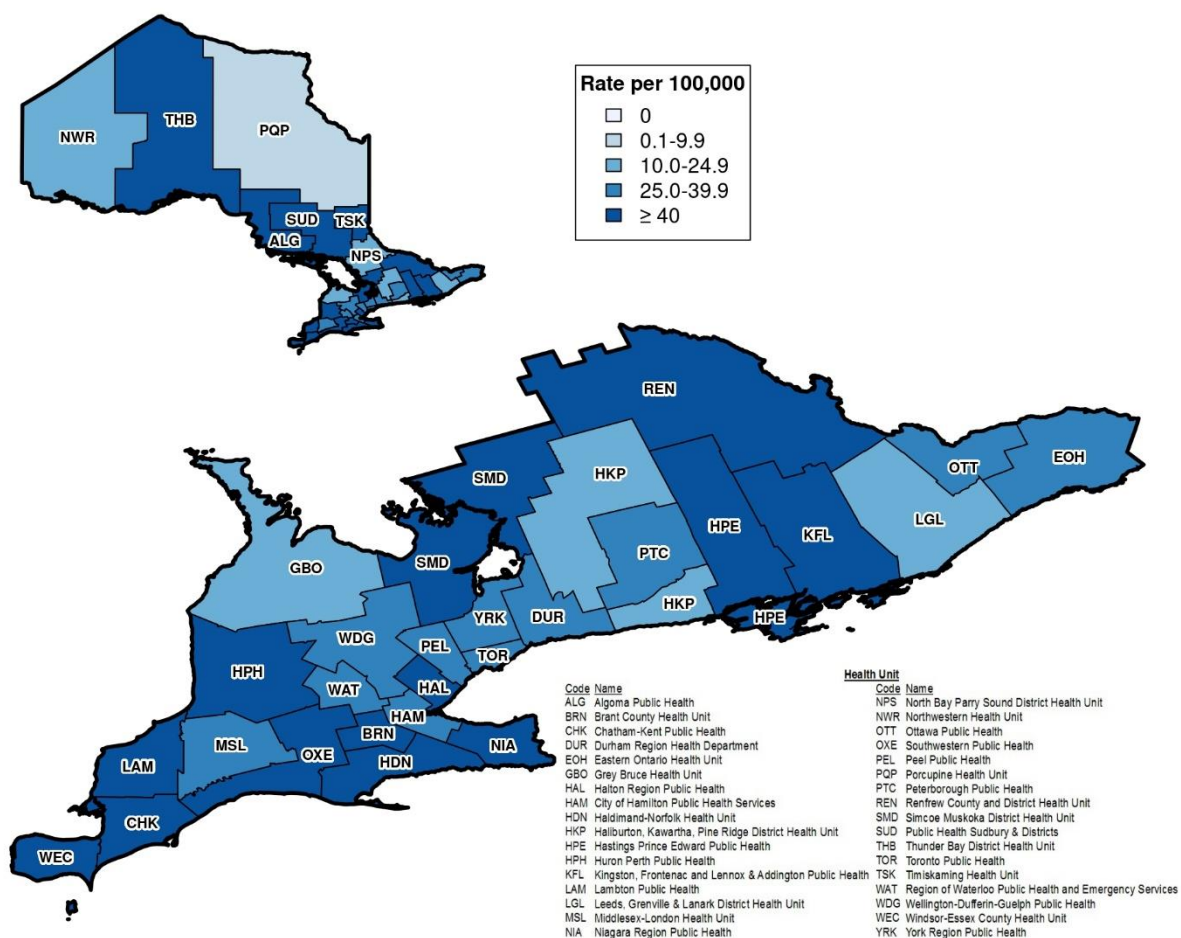
Figure 8. Percentage of COVID-19 cases by geographic region and public health unit reported week: Ontario



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 48 (November 28 and December 4, 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 48 (November 28 to December 4, 2021) by public health unit: Ontario



Note: The provincial rate of confirmed cases of COVID-19 reported in week 48 was 44.4 cases per 100,000 population.

Data Source: CCM

Outbreaks

Table 9. Number of public health unit declared COVID-19 outbreaks by setting type: Ontario

Setting Type	Reported week 48 (November 28 to December 4)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to December 4
Congregate Care	5	19	3,101
Long-term care homes	3	6	1,555
Retirement homes	0	4	924
Hospitals	2	9	622
Congregate Living	12	24	1,462
Correctional facility	5	6	77
Shelter	0	5	303
Group Home/supportive housing	4	6	843
Short-term accommodations	1	1	49
Congregate other	2	6	190
Education and Childcare	130	294	3,584
Child care	21	32	1,223
Camp – Day*	0	0	21
Camp – Overnight*	0	0	1
Camp – Unspecified*	0	0	1
School – Elementary**	101	239	1,837
School – Elementary/secondary**	2	5	86
School – Secondary**	6	16	359
School – Post-secondary**	0	2	56
Other settings	91	161	5,128

Setting Type	Reported week 48 (November 28 to December 4)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to December 4
Bar/restaurant/nightclub	6	10	437
Medical/health services	3	6	179
Personal service settings	0	1	39
Recreational fitness	10	11	167
Retail	9	11	540
Other recreation/community	8	14	325
Workplace – Farm	0	0	253
Workplace - Food processing	0	2	293
Other types of workplaces	38	63	2,763
Other	1	7	19
Unknown	16	36	113
Total number of outbreaks	238	498	13,275

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

*Cumulative counts include COVID-19 camp outbreaks reported starting week-27 of 2021 (July 4 to 10, 2021).

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

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

Data Source: CCM

Table 10. 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 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative number of cases
Congregate Care	31	53	41,270
Long-term care homes	4	30	26,943
Retirement homes	8	1	7,605
Hospitals	19	22	6,722
Congregate Living	57	66	10,787
Correctional facility	24	47	2,033
Shelter	9	1	2,933
Group Home/supportive housing	17	11	3,804
Short-term accommodations	4	4	269
Congregate other	3	3	1,748
Education and Childcare	621	627	15,428
Child care	41	49	4,900
Camp – Day*	0	0	109
Camp – Overnight*	0	0	11
Camp – Unspecified*	0	0	2
School – Elementary**	548	555	8,120
School – Elementary/secondary**	7	0	448
School – Secondary**	22	20	1,397
School – Post-secondary**	3	3	441
Other settings	447	398	40,039
Bar/restaurant/nightclub	62	34	2,168
Medical/health services	12	27	797

Cases associated with the outbreak setting type	Reported week 47 (November 21 to 27)	Reported week 48 (November 28 to December 4)	Cumulative number of cases
Personal service settings	1	0	138
Recreational fitness	37	57	1,078
Retail	12	13	2,899
Other recreation/community	19	56	3,957
Workplace - Farm	3	0	3,238
Workplace - Food processing	30	10	4,007
Other types of workplaces	124	114	21,018
Other	27	15	108
Unknown	120	72	631
Total number of cases	1,156	1,144	107,524

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

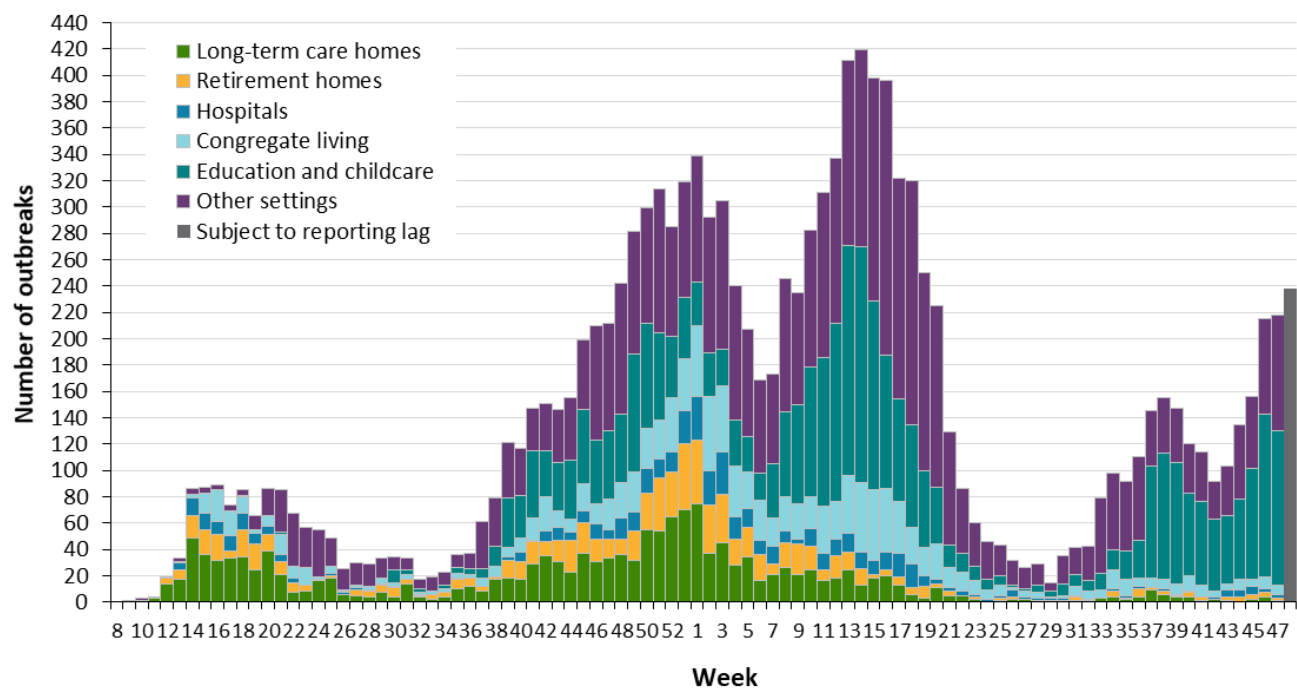
*Cumulative counts include cases of COVID-19 camp outbreaks reported starting week-27 of 2021 (July 4 to 10, 2021).

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

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

Data Source: CCM

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



Note: If public health unit outbreak reported date is unavailable, the date the public health unit created the outbreak is used. Week 8 refers to February 16 and 22, 2020 and week 48 refers to November 28 and December 4, 2021. Congregate living include group homes, shelters, correctional facilities, etc. Other settings include outbreaks within workplaces, restaurants, recreation etc.

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 **December 7, 2021 at 1 p.m.** for cases reported from February 1, 2021 onwards and as of **December 6, 2021 at 9 a.m.** for cases reported up January 31, 2021.
- Ontario population estimate data were sourced from Statistics Canada. Population estimates 2001-2020: Table 1 annual population estimates by age and sex for July 1, 2001 to 2020, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2021 [received April 22, 2021].
- Statistics Canada Postal Code Conversion File Plus (PCCF+), version 7B.
- The health equity (neighbourhood-level diversity and material deprivation) analyses use data from the 2016 Ontario Marginalization Index (ON-Marg), and population counts from the Ontario Health Insurance Plan (OHIP) Registered Person Database (RPDB) as of May 1, 2021 (provided by the Institute for Clinical Evaluative Sciences [ICES]):
 - 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.
 - Chung H, Fung K, Ishiguro L, Paterson M, et al. Characteristics of COVID-19 diagnostic test recipients, Applied Health Research Questions (AHRQ) # 2021 0950 080 000. Toronto: Institute for Clinical Evaluative Sciences; 2020.

Data Caveats and Methods: Case Data

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

- Hospitalization includes all cases for which a hospital admission date was reported or hospitalization/ICU was reported as 'Yes' at the time of data extraction. It includes cases that have been discharged from hospital as well as cases that are currently hospitalized. Emergency room visits are not included in the number of reported hospitalizations.
- ICU admission includes all cases for which an ICU admission date was reported at the time of data extraction. It is a subset of the count of hospitalized cases. It includes cases that have been treated or that are currently being treated in an ICU.
- Male/Female information presented in this report are sourced from the Sex field in CCM and are intended to represent sex assigned at birth. On October 14, 2021, changes were made in CCM to enable reporting on the Sex field where this data field is supplemented by archived Male/Female information previously entered in the Gender field.
- 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 permanent health unit. This is equivalent to the diagnosing health unit (DHU) in iPHIS. 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).

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). Cases were probabilistically matched to a DA based on their postal code using Statistics Canada’s PCCF+ version 7B file, and 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.
- Population counts used in rate denominators were provided by ICES. Individuals alive and eligible for the Ontario Health Insurance Plan (OHIP) as of January 1st, 2021 using the OHIP RPDB were included.
 - Individuals residing in long-term care (LTC) homes were excluded. Recent health care transaction records (e.g., OHIP physician billings, Ontario Drug Benefit [ODB] Plan claims) and Resident Assessment Instrument (RAI) assessments from the Continuing Care Reporting System (CCRS) were used to identify individuals residing in a LTC home near the period prior to the index date.
 - Postal codes were assigned to individuals according to the most recent residential address available in the OHIP RPDB.
- This work is supported by the Applied Health Research Questions (AHRQ) Portfolio at ICES, which is funded by the Ontario Ministry of Health, and Ontario Health Data Platform (OHDP), a Province of Ontario initiative to support Ontario’s ongoing response to COVID-19 and its related impacts. Parts of this material are based on data and information compiled and provided by the Ontario Ministry of Health. The analyses, conclusions, opinions and statements expressed herein are solely those of the authors and do not reflect those of ICES, the OHDP or the funding or data sources; no endorsement is intended or should be inferred. For more information on AHRQ and how to submit a request, please visit www.ices.on.ca/DAS/AHRQ.

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	15	32
11	March 8, 2020	March 14, 2020	148	180
12	March 15, 2020	March 21, 2020	447	627
13	March 22, 2020	March 28, 2020	1,325	1,952
14	March 29, 2020	April 4, 2020	2,796	4,748
15	April 5, 2020	April 11, 2020	3,166	7,914
16	April 12, 2020	April 18, 2020	4,262	12,176
17	April 19, 2020	April 25, 2020	3,650	15,826
18	April 26, 2020	May 2, 2020	2,901	18,727
19	May 3, 2020	May 9, 2020	2,353	21,080
20	May 10, 2020	May 16, 2020	2,223	23,303
21	May 17, 2020	May 23, 2020	2,617	25,920
22	May 24, 2020	May 30, 2020	2,611	28,531
23	May 31, 2020	June 6, 2020	2,302	30,833

Reported Week	Start date	End date	Number of cases	Cumulative count
24	June 7, 2020	June 13, 2020	1,472	32,305
25	June 14, 2020	June 20, 2020	1,226	33,531
26	June 21, 2020	June 27, 2020	1,251	34,782
27	June 28, 2020	July 4, 2020	1,085	35,867
28	July 5, 2020	July 11, 2020	866	36,733
29	July 12, 2020	July 18, 2020	931	37,664
30	July 19, 2020	July 25, 2020	992	38,656
31	July 26, 2020	August 1, 2020	808	39,464
32	August 2, 2020	August 8, 2020	592	40,056
33	August 9, 2020	August 15, 2020	610	40,666
34	August 16, 2020	August 22, 2020	728	41,394
35	August 23, 2020	August 29, 2020	850	42,244
36	August 30, 2020	September 5, 2020	976	43,220
37	September 6, 2020	September 12, 2020	1,505	44,725
38	September 13, 2020	September 19, 2020	2,371	47,096
39	September 20, 2020	September 26, 2020	3,123	50,219
40	September 27, 2020	October 3, 2020	4,223	54,442
41	October 4, 2020	October 10, 2020	5,036	59,478
42	October 11, 2020	October 17, 2020	5,276	64,754
43	October 18, 2020	October 24, 2020	6,041	70,795
44	October 25, 2020	October 31, 2020	6,389	77,184
45	November 1, 2020	November 7, 2020	7,601	84,785
46	November 8, 2020	November 14, 2020	10,441	95,226
47	November 15, 2020	November 21, 2020	10,037	105,263
48	November 22, 2020	November 28, 2020	11,137	116,400

Reported Week	Start date	End date	Number of cases	Cumulative count
49	November 29, 2020	December 5, 2020	12,683	129,083
50	December 6, 2020	December 12, 2020	13,064	142,147
51	December 13, 2020	December 19, 2020	15,660	157,807
52	December 20, 2020	December 26, 2020	15,627	173,434
53	December 27, 2020	January 2, 2021	20,452	193,886
1	January 3, 2021	January 9, 2021	24,874	218,760
2	January 10, 2021	January 16, 2021	21,383	240,143
3	January 17, 2021	January 23, 2021	16,403	256,546
4	January 24, 2021	January 30, 2021	12,770	269,316
5	January 31, 2021	February 6, 2021	9,780	279,096
6	February 7, 2021	February 13, 2021	7,900	286,996
7	February 14, 2021	February 20, 2021	7,456	294,452
8	February 21, 2021	February 27, 2021	7,686	302,138
9	February 28, 2021	March 6, 2021	7,935	310,073
10	March 7, 2021	March 13, 2021	9,483	319,556
11	March 14, 2021	March 20, 2021	11,023	330,579
12	March 21, 2021	March 27, 2021	14,390	344,969
13	March 28, 2021	April 3, 2021	18,947	363,916
14	April 4, 2021	April 10, 2021	25,579	389,495
15	April 11, 2021	April 17, 2021	30,893	420,388
16	April 18, 2021	April 24, 2021	28,343	448,731
17	April 25, 2021	May 1, 2021	25,208	473,939
18	May 2, 2021	May 8, 2021	20,755	494,694
19	May 9, 2021	May 15, 2021	16,525	511,219
20	May 16, 2021	May 22, 2021	12,651	523,870

Reported Week	Start date	End date	Number of cases	Cumulative count
21	May 23, 2021	May 29, 2021	7,759	531,629
22	May 30, 2021	June 5, 2021	5,215	536,844
23	June 6, 2021	June 12, 2021	3,484	540,328
24	June 13, 2021	June 19, 2021	2,418	542,746
25	June 20, 2021	June 26, 2021	1,881	544,627
26	June 27, 2021	July 3, 2021	1,473	546,100
27	July 4, 2021	July 10, 2021	1,226	547,326
28	July 11, 2021	July 17, 2021	1,044	548,370
29	July 18, 2021	July 24, 2021	1,109	549,479
30	July 25, 2021	July 31, 2021	1,350	550,829
31	August 1, 2021	August 7, 2021	1,906	552,735
32	August 8, 2021	August 14, 2021	3,172	555,907
33	August 15, 2021	August 21, 2021	4,144	560,051
34	August 22, 2021	August 28, 2021	4,775	564,826
35	August 29, 2021	September 4, 2021	5,184	570,010
36	September 5, 2021	September 11, 2021	5,054	575,064
37	September 12, 2021	September 18, 2021	4,917	579,981
38	September 19, 2021	September 25, 2021	4,399	584,380
39	September 26, 2021	October 2, 2021	3,952	588,332
40	October 3, 2021	October 9, 2021	3,844	592,176
41	October 10, 2021	October 16, 2021	2,901	595,077
42	October 17, 2021	October 23, 2021	2,626	597,703
43	October 24, 2021	October 30, 2021	2,503	600,206
44	October 31, 2021	November 6, 2021	3,288	603,494
45	November 7, 2021	November 13, 2021	3,983	607,477

Reported Week	Start date	End date	Number of cases	Cumulative count
46	November 14, 2021	November 20, 2021	4,572	612,049
47	November 21, 2021	November 27, 2021	5,425	617,474
48	November 28, 2021	December 4, 2021	6,539	624,013

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

Public Health Unit Name	Cases reported week 47	Rate per 100,000 population Reported week 47	Cases reported week 48	Rate per 100,000 population Reported week 48
Northwestern Health Unit	13	16.0	18	22.2
Thunder Bay District Health Unit	90	57.1	118	74.8
TOTAL NORTH WEST	103	43.1	136	56.9
Algoma Public Health	201	170.6	220	186.7
North Bay Parry Sound District Health Unit	18	13.9	25	19.3
Porcupine Health Unit	10	11.8	6	7.1
Public Health Sudbury & Districts	207	100.8	292	142.3
Timiskaming Health Unit	67	197.7	31	91.5
TOTAL NORTH EAST	503	88.0	574	100.5
Ottawa Public Health	283	27.1	360	34.5
Eastern Ontario Health Unit	85	39.4	78	36.1
Hastings Prince Edward Public Health	113	65.4	134	77.5
Kingston, Frontenac and Lennox & Addington Public Health	217	103.7	246	117.6
Leeds, Grenville & Lanark District Health Unit	25	13.9	44	24.5
Renfrew County and District Health Unit	23	21.2	48	44.3
TOTAL EASTERN	746	38.7	910	47.2
Durham Region Health Department	209	29.4	188	26.4

Public Health Unit Name	Cases reported week 47	Rate per 100,000 population Reported week 47	Cases reported week 48	Rate per 100,000 population Reported week 48
Haliburton, Kawartha, Pine Ridge District Health Unit	29	15.2	40	21.0
Peel Public Health	336	21.5	436	27.9
Peterborough Public Health	38	25.7	40	27.0
Simcoe Muskoka District Health Unit	513	84.9	591	97.8
York Region Public Health	344	28.7	380	31.7
TOTAL CENTRAL EAST	1,469	33.2	1,675	37.9
Toronto Public Health	684	22.9	853	28.5
TOTAL TORONTO	684	22.9	853	28.5
Chatham-Kent Public Health	60	56.3	119	111.6
Grey Bruce Health Unit	47	26.7	39	22.1
Huron Perth Public Health	49	33.5	66	45.1
Lambton Public Health	49	36.8	68	51.1
Middlesex-London Health Unit	117	22.9	201	39.4
Southwestern Public Health	186	85.0	175	79.9
Windsor-Essex County Health Unit	466	108.1	494	114.6
TOTAL SOUTH WEST	974	56.5	1,162	67.5
Brant County Health Unit	134	87.3	110	71.6
City of Hamilton Public Health Services	149	25.6	207	35.6
Haldimand-Norfolk Health Unit	103	85.8	102	85.0
Halton Region Public Health	167	27.4	259	42.4
Niagara Region Public Health	121	25.1	197	40.9

Public Health Unit Name	Cases reported week 47	Rate per 100,000 population Reported week 47	Cases reported week 48	Rate per 100,000 population Reported week 48
Region of Waterloo Public Health and Emergency Services	207	34.2	237	39.2
Wellington-Dufferin-Guelph Public Health	65	20.8	117	37.5
TOTAL CENTRAL WEST	946	33.0	1,229	42.9
TOTAL ONTARIO	5,425	36.8	6,539	44.4

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

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