

WEEKLY EPIDEMIOLOGICAL SUMMARY

COVID-19 in Ontario: Focus on November 7, 2021 to November 13, 2021

As of November 12, 2021, routine Variants of Concern (VOC) PCR testing of positive COVID-19 samples is no longer being conducted. All eligible positive COVID-19 samples will now be forwarded for whole genome sequencing. Starting on November 17, 2021, VOC and mutation data will be removed from the weekly epidemiological summary.

Comprehensive Ontario data on variants will be found in PHO's Whole Genome Sequencing enhanced epidemiological summary. Historical data on VOCs and mutations in daily and weekly epidemiological summaries can be found on the provincial COVID-19 data webpage.

This report includes the most current information available from CCM as of November 16, 2021.

Please visit the interactive <u>Ontario COVID-19 Data Tool</u> to explore recent COVID-19 data by public health unit, age group, sex, and trends over time.

A <u>daily summary</u> 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.

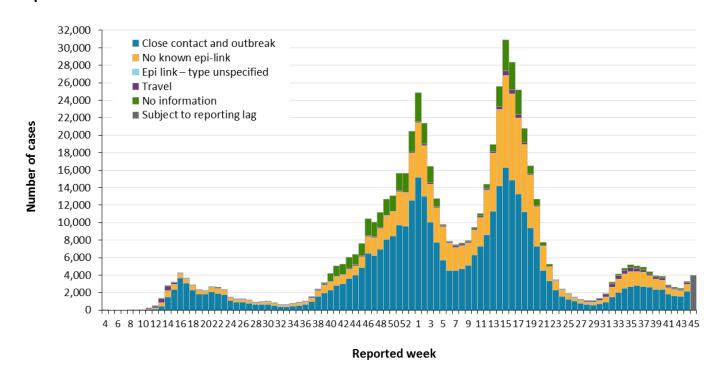
Highlights

- There are a total of 607,462 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to November 13, 2021.
- For the period with a public health unit (PHU) reported date between November 7 to 13, 2021 (week 45):
 - A total of 3,970 cases were reported to public health compared to 3,291 cases the previous week (October 31 to November 6, 2021).
 - There was a 49% increase in cases in the North East region this week. Public Health Sudbury & Districts reported an increase in case rate from 91.6 cases per 100,000 population in week 44 to 117.4 in week 45. Algoma Public Health also reported an increase in case rate from 32.2 to 111.2 over this same period.
 - The rate of cases increased across all quintiles of neighbourhood diversity and neighbourhood material deprivation this week. The highest rate increase was reported for quintile 3 of neighbourhood diversity which saw case rates increase from 23.3 cases per 100,000 population in week 44 to 31.5 in week 45.

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.

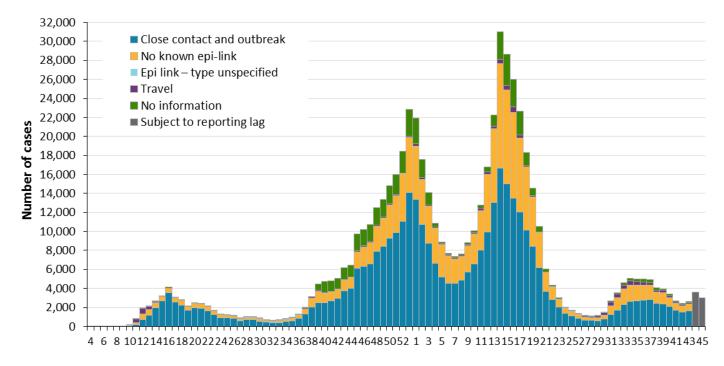
Cases Over Time

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 45 (November 7 and 13, 2021). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

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



Episode week

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 45 (November 7 and 13, 2021). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

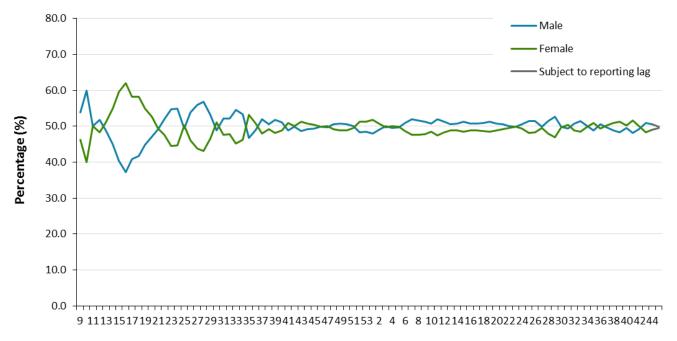
Case Characteristics

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

	Reported Week 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative case count up to November 13	Cumulative rate per 100,000 population
Total number of cases	3,291	3,970	607,462	4,122.9
Sex: Male	1,661	1,978	303,695	4,172.0
Sex: Female	1,611	1,965	301,608	4,045.9
Ages: 0-4	163	184	17,508	2,421.5
Ages: 5-11	469	645	32,980	3,057.9
Ages: 12-19	255	316	54,145	4,072.6
Ages: 20-39	1,053	1,177	227,946	5,490.2
Ages: 40-59	813	997	169,843	4,360.0
Ages: 60-79	431	494	78,560	2,709.2
Ages: 80 and over	107	157	26,374	4,021.4
Number resolved	N/A	N/A	593,989	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.

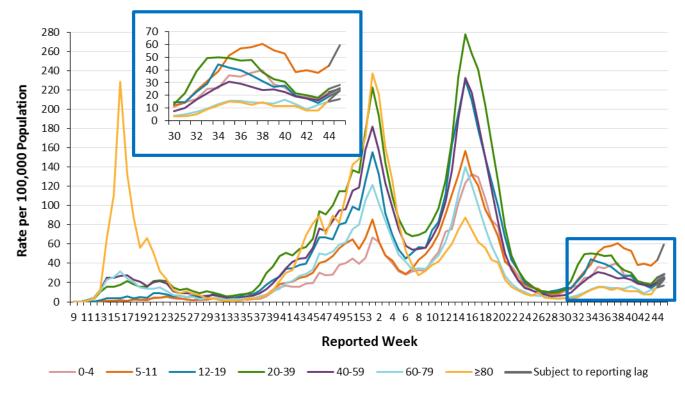
Figure 3. Percentage of confirmed cases of COVID-19 by sex and public health unit reported week: Ontario



Reported Week

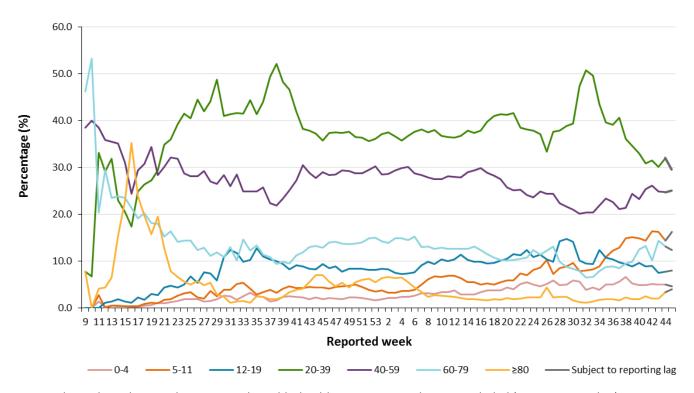
Note: Not all cases have a sex reported. The denominator for calculating weekly percentages includes all cases. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 45 (November 7 and 13, 2021). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

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 45 (November 7 and 13, 2021). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

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 45 (November 7 and 13, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.

Deaths

Number of deaths

450

400

350

250

150

100

50

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

Death week

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 45 (November 7 and 13, 2021). See <u>Table 1A</u> in Appendix A for a list of the weeks and corresponding start and end dates.

Data Source: CCM

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

Deaths	Reported Week 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative case count up to November 13	Cumulative rate per 100,000 population
Number of deaths	21	13	9,950	67.5
Sex: Male	18	10	5,106	70.1
Sex: Female	3	3	4,789	64.2
Ages: 19 and under	0	0	7	0.2
Ages: 20-39	0	1	107	2.6
Ages: 40-59	3	0	694	17.8
Ages: 60-79	10	5	3,264	112.6
Ages: 80 and over	8	7	5,877	896.1

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.

Exposure

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

	Reported Week 44 (October 31 to November 6)	Percentage	Reported week 45 (November 7 to 13)	Percentage	Cumulative case count up to November 13	Cumulative percentage
Travel	183	5.6%	195	4.9%	13,901	2.3%
Outbreak- associated or close contact of a confirmed case	2,136	64.9%	2,476	62.4%	363,417	59.8%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	45	<0.1%
No known epidemiological link	806	24.5%	1,013	25.5%	176,565	29.1%
Information missing or unknown	166	5.0%	286	7.2%	53,534	8.8%
Total	3,291		3,970		607,462	

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.

Sub-populations of interest

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

Health care workers	Reported Week 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative case count up to November 13
Number of cases	84	100	24,957
Ever hospitalized	0	0	483
Ever in ICU	0	0	99

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 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative case count up to November 13
Residents	0	3	15,644
Deaths among residents	0	0	4,023
Health care workers	0	0	7,409
Deaths among health care workers	0	0	10

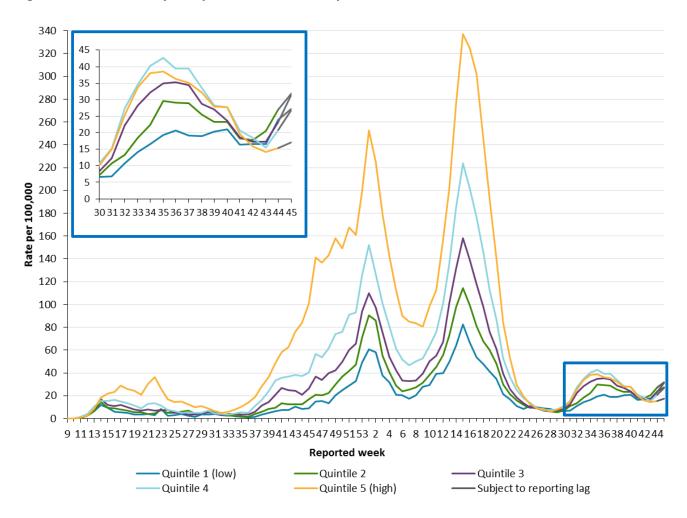
Note: Information on how long-term care home residents and health care workers are identified is available in the technical notes. Interpret information for the most recent week with caution due to reporting lags.

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

Age Group	Reported Week 44 (October 31 to November 6)	Reported Week 45 (November 7 to 13)	Cumulative count from November 1, 2020 up to November 13, 2021	Percent of reinfection cases
Ages: 0-4	0	0	19	5.0%
Ages: 5-11	1	1	8	2.1%
Ages: 12-19	0	1	37	9.8%
Ages: 20-39	0	2	173	45.6%
Ages: 40-59	1	2	100	26.4%
Ages: 60-79	1	2	32	8.4%
Ages: 80 and over	0	0	10	2.6%
Total reinfection cases	3	8	379	100.0%

Note: Cases identified as reinfections meeting the <u>provincial definition</u> 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.

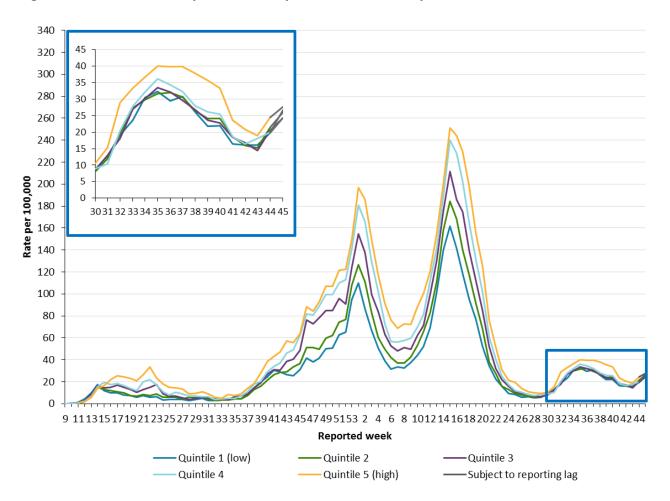
Figure 6. Rate of confirmed cases of COVID-19 per 100,000 population by quintile of neighbourhood diversity and public health unit reported week: Ontario



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 45 (November 7 to 13, 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 45 (November 7 to 13, 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 44 (October 31 to November 6)	Cases Reported Week 45 (November 7 to 13)	Cumulative case count up to November 13	Cumulative rate per 100,000 population up to November 13
Quintile 1 (least diverse)	534	604	35,192	1,584.4
Quintile 2	642	756	51,590	2,178.5
Quintile 3	605	816	74,502	2,874.2
Quintile 4	655	840	124,330	3,975.2
Quintile 5 (most diverse)	664	741	278,951	6,453.8

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

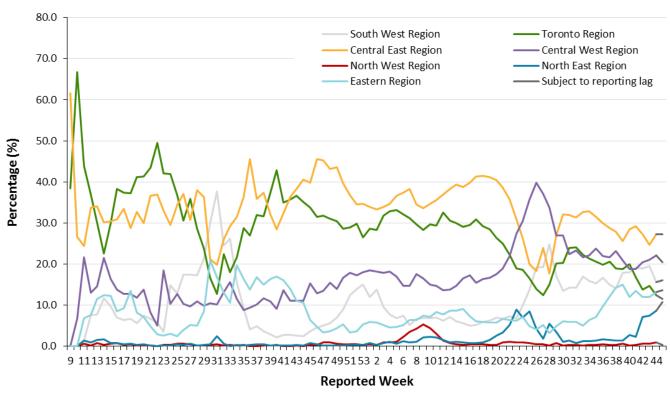
	Cases Reported Week 44 (October 31 to November 6)	Cases Reported Week 45 (November 7 to 13)	Cumulative case count up to November 13	Cumulative rate per 100,000 population up to November 13
Quintile 1 (least material deprivation)	679	836	97,008	2,814.9
Quintile 2	668	805	100,748	3,245.1
Quintile 3	573	672	108,468	3,911.7
Quintile 4	525	702	118,445	4,507.8
Quintile 5 (most material deprivation)	655	742	139,896	5,220.0

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

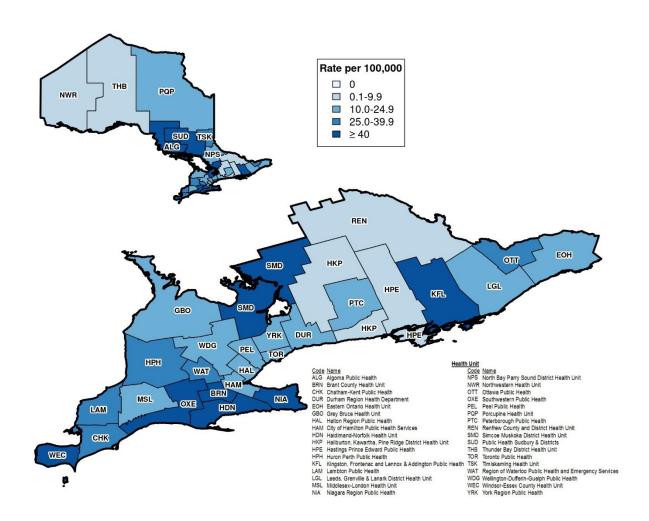
Geography

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 45 (November 7 and 13, 2021). Table 2A in Appendix A has a listing of public health units by region.

Figure 9. Rate of confirmed cases of COVID-19 in public health reported week 45 (November 7 to 13, 2021) by public health unit: Ontario



Note: The provincial rate of confirmed cases of COVID-19 reported in week 45 was 26.9 cases per 100,000 population.

Outbreaks

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

Setting Type	Reported week 45 (November 7 to 13)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to November 13
Congregate Care	11	30	3,080
Long-term care homes	2	5	1,548
Retirement homes	3	8	918
Hospitals	6	17	614
Congregate Living	4	15	1,432
Correctional facility	1	2	71
Shelter	1	5	296
Group Home/supportive housing	2	6	833
Short-term accommodations	0	0	47
Congregate other	0	2	185
Education and Childcare	65	132	3,185
Child care	6	9	1,176
Camp – Day*	0	0	21
Camp – Overnight*	0	0	1
Camp – Unspecified*	0	0	1
School – Elementary**	49	105	1,520
School – Elementary/secondary**	3	3	78
School – Secondary**	6	14	334
School – Post-secondary**	1	1	54
Other settings	50	93	4,872

Setting Type	Reported week 45 (November 7 to 13)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to November 13
Bar/restaurant/nightclub	4	6	424
Medical/health services	2	2	170
Personal service settings	0	0	38
Recreational fitness	4	6	141
Retail	5	10	519
Other recreation/community	1	4	305
Workplace – Farm	0	1	253
Workplace - Food processing	2	2	292
Other types of workplaces	25	40	2,664
Other	0	1	4
Unknown	7	21	62
Total number of outbreaks	130	270	12,569

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

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.

^{*}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).

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 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative number of cases
Congregate Care	101	138	41,107
Long-term care homes	1	3	26,900
Retirement homes	49	83	7,542
Hospitals	51	52	6,665
Congregate Living	86	52	10,611
Correctional facility	13	19	1,943
Shelter	53	16	2,914
Group Home/supportive housing	11	13	3,763
Short-term accommodations	0	0	257
Congregate other	9	4	1,734
Education and Childcare	303	311	13,550
Child care	17	25	4,771
Camp – Day*	0	0	109
Camp – Overnight*	0	0	11
Camp – Unspecified*	0	0	2
School – Elementary**	255	258	6,495
School – Elementary/secondary**	4	10	416
School – Secondary**	25	18	1,315
School – Post-secondary**	2	0	431
Other settings	235	224	38,275
Bar/restaurant/nightclub	10	13	2,057
Medical/health services	1	2	715

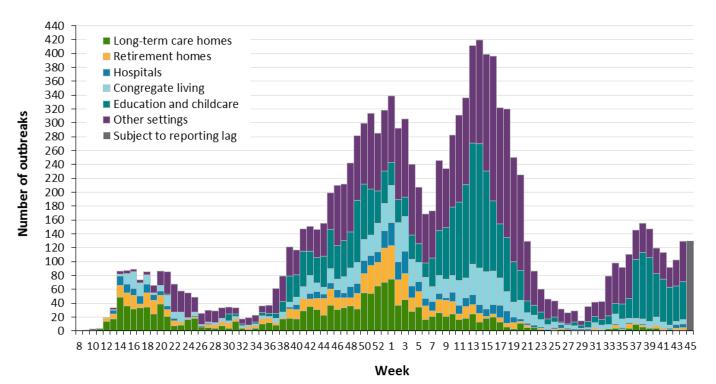
Cases associated with the outbreak setting type	Reported Week 44 (October 31 to November 6)	Reported week 45 (November 7 to 13)	Cumulative number of cases
Personal service settings	0	0	136
Recreational fitness	11	23	939
Retail	14	13	2,810
Other recreation/community	34	33	3,831
Workplace - Farm	6	1	3,239
Workplace - Food processing	0	14	3,857
Other types of workplaces	93	74	20,322
Other	2	0	13
Unknown	64	51	356
Total number of cases	725	725	103,543

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).

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.

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

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 45 refers to November 7 and 13, 2021. Congregate living include group homes, shelters, correctional facilities, etc. Other settings include outbreaks within workplaces, restaurants, recreation etc.

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 **November 16, 2021 at 1 p.m.** for cases reported from February 1, 2021 onwards and as of **November 15, 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 <u>MOH Case Definition</u> <u>Coronavirus Disease (COVID-19) document</u> 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	3,651	15,827
18	April 26, 2020	May 2, 2020	2,901	18,728
19	May 3, 2020	May 9, 2020	2,353	21,081
20	May 10, 2020	May 16, 2020	2,223	23,304
21	May 17, 2020	May 23, 2020	2,617	25,921
22	May 24, 2020	May 30, 2020	2,611	28,532
23	May 31, 2020	June 6, 2020	2,302	30,834

Reported Week	Start date	End date	Number of cases	Cumulative count
24	June 7, 2020	June 13, 2020	1,472	32,306
25	June 14, 2020	June 20, 2020	1,226	33,532
26	June 21, 2020	June 27, 2020	1,250	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	993	38,657
31	July 26, 2020	August 1, 2020	808	39,465
32	August 2, 2020	August 8, 2020	592	40,057
33	August 9, 2020	August 15, 2020	610	40,667
34	August 16, 2020	August 22, 2020	728	41,395
35	August 23, 2020	August 29, 2020	850	42,245
36	August 30, 2020	September 5, 2020	976	43,221
37	September 6, 2020	September 12, 2020	1,505	44,726
38	September 13, 2020	September 19, 2020	2,372	47,098
39	September 20, 2020	September 26, 2020	3,123	50,221
40	September 27, 2020	October 3, 2020	4,223	54,444
41	October 4, 2020	October 10, 2020	5,036	59,480
42	October 11, 2020	October 17, 2020	5,276	64,756
43	October 18, 2020	October 24, 2020	6,040	70,796
44	October 25, 2020	October 31, 2020	6,388	77,184
45	November 1, 2020	November 7, 2020	7,601	84,785
46	November 8, 2020	November 14, 2020	10,440	95,225
47	November 15, 2020	November 21, 2020	10,039	105,264
48	November 22, 2020	November 28, 2020	11,138	116,402

Reported Week	Start date	End date	Number of cases	Cumulative count
49	November 29, 2020	December 5, 2020	12,682	129,084
50	December 6, 2020	December 12, 2020	13,062	142,146
51	December 13, 2020	December 19, 2020	15,659	157,805
52	December 20, 2020	December 26, 2020	15,628	173,433
53	December 27, 2020	January 2, 2021	20,449	193,882
1	January 3, 2021	January 9, 2021	24,876	218,758
2	January 10, 2021	January 16, 2021	21,384	240,142
3	January 17, 2021	January 23, 2021	16,403	256,545
4	January 24, 2021	January 30, 2021	12,770	269,315
5	January 31, 2021	February 6, 2021	9,780	279,095
6	February 7, 2021	February 13, 2021	7,900	286,995
7	February 14, 2021	February 20, 2021	7,457	294,452
8	February 21, 2021	February 27, 2021	7,685	302,137
9	February 28, 2021	March 6, 2021	7,935	310,072
10	March 7, 2021	March 13, 2021	9,482	319,554
11	March 14, 2021	March 20, 2021	11,023	330,577
12	March 21, 2021	March 27, 2021	14,390	344,967
13	March 28, 2021	April 3, 2021	18,947	363,914
14	April 4, 2021	April 10, 2021	25,577	389,491
15	April 11, 2021	April 17, 2021	30,894	420,385
16	April 18, 2021	April 24, 2021	28,342	448,727
17	April 25, 2021	May 1, 2021	25,207	473,934
18	May 2, 2021	May 8, 2021	20,754	494,688
19	May 9, 2021	May 15, 2021	16,524	511,212
20	May 16, 2021	May 22, 2021	12,652	523,864

Reported Week	Start date	End date	Number of cases	Cumulative count
21	May 23, 2021	May 29, 2021	7,759	531,623
22	May 30, 2021	June 5, 2021	5,215	536,838
23	June 6, 2021	June 12, 2021	3,482	540,320
24	June 13, 2021	June 19, 2021	2,418	542,738
25	June 20, 2021	June 26, 2021	1,881	544,619
26	June 27, 2021	July 3, 2021	1,473	546,092
27	July 4, 2021	July 10, 2021	1,226	547,318
28	July 11, 2021	July 17, 2021	1,044	548,362
29	July 18, 2021	July 24, 2021	1,109	549,471
30	July 25, 2021	July 31, 2021	1,350	550,821
31	August 1, 2021	August 7, 2021	1,906	552,727
32	August 8, 2021	August 14, 2021	3,172	555,899
33	August 15, 2021	August 21, 2021	4,144	560,043
34	August 22, 2021	August 28, 2021	4,774	564,817
35	August 29, 2021	September 4, 2021	5,185	570,002
36	September 5, 2021	September 11, 2021	5,054	575,056
37	September 12, 2021	September 18, 2021	4,915	579,971
38	September 19, 2021	September 25, 2021	4,399	584,370
39	September 26, 2021	October 2, 2021	3,952	588,322
40	October 3, 2021	October 9, 2021	3,845	592,167
41	October 10, 2021	October 16, 2021	2,903	595,070
42	October 17, 20210	October 23, 2021	2,624	597,694
43	October 24, 2021	October 30, 2021	2,507	600,201
44	October 31, 2021	November 6, 2021	3,291	603,492
45	November 7, 2021	November 13, 2021	3,970	607,462

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

Public Health Unit Name	Cases reported Week 44	Rate per 100,000 population Reported Week 44	Cases reported week 45	Rate per 100,000 population Reported week 45
Northwestern Health Unit	7	8.6	3	3.7
Thunder Bay District Health Unit	24	15.2	10	6.3
TOTAL NORTH WEST	31	13.0	13	5.4
Algoma Public Health	38	32.2	131	111.2
North Bay Parry Sound District Health Unit	41	31.7	23	17.8
Porcupine Health Unit	11	12.9	21	24.7
Public Health Sudbury & Districts	188	91.6	241	117.4
Timiskaming Health Unit	7	20.7	9	26.6
TOTAL NORTH EAST	285	49.9	425	74.4
Ottawa Public Health	239	22.9	288	27.6
Eastern Ontario Health Unit	40	18.5	45	20.8
Hastings Prince Edward Public Health	21	12.2	17	9.8
Kingston, Frontenac and Lennox & Addington Public Health	104	49.7	143	68.3
Leeds, Grenville & Lanark District Health Unit	19	10.6	41	22.8
Renfrew County and District Health Unit	9	8.3	9	8.3
TOTAL EASTERN	432	22.4	543	28.1
Durham Region Health Department	64	9.0	172	24.2

Public Health Unit Name	Cases reported Week 44	Rate per 100,000 population Reported Week 44	Cases reported week 45	Rate per 100,000 population Reported week 45
Haliburton, Kawartha, Pine Ridge District Health Unit	14	7.3	8	4.2
Peel Public Health	248	15.9	258	16.5
Peterborough Public Health	19	12.8	24	16.2
Simcoe Muskoka District Health Unit	255	42.2	331	54.8
York Region Public Health	295	24.6	290	24.2
TOTAL CENTRAL EAST	895	20.3	1083	24.5
Toronto Public Health	408	13.7	458	15.3
TOTAL TORONTO	408	13.7	458	15.3
Chatham-Kent Public Health	34	31.9	41	38.5
Grey Bruce Health Unit	36	20.4	19	10.8
Huron Perth Public Health	45	30.8	53	36.2
Lambton Public Health	55	41.4	39	29.3
Middlesex-London Health Unit	57	11.2	89	17.4
Southwestern Public Health	133	60.8	152	69.4
Windsor-Essex County Health Unit	155	36.0	242	56.2
TOTAL SOUTH WEST	515	29.9	635	36.9
Brant County Health Unit	39	25.4	67	43.6
City of Hamilton Public Health Services	119	20.5	93	16.0
Haldimand-Norfolk Health Unit	72	60.0	83	69.2
Halton Region Public Health	93	15.2	100	16.4
Niagara Region Public Health	198	41.1	205	42.6

Public Health Unit Name	Cases reported Week 44	Rate per 100,000 population Reported Week 44	Cases reported week 45	Rate per 100,000 population Reported week 45
Region of Waterloo Public Health and Emergency Services	142	23.5	191	31.6
Wellington-Dufferin-Guelph Public Health	62	19.9	74	23.7
TOTAL CENTRAL WEST	725	25.3	813	28.4
TOTAL ONTARIO	3,291	22.3	3,970	26.9

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

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