WEEKLY EPIDEMIOLOGICAL SUMMARY

COVID-19 in Ontario: Focus on May 30, 2021 to June 5, 2021

This report includes the most current information available from CCM as of **June 8, 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 536,356 confirmed cases of COVID-19 in Ontario with a public health unit reported date up to June 5, 2021.

- For the period with a public health unit (PHU) reported date between May 30 to June 5, 2021 (week 22):

  - A total of 5,207 cases were reported to public health compared to 7,774 cases the previous week (May 23 to 29, 2021).

  - Rates continue to decrease weekly across quintiles of neighbourhood diversity, with decreases of more than 20.0% observed from week 21 to week 22. Although still having the highest rates, the largest decrease (37.1%) was observed in the most ethnically diverse neighbourhoods with a rate per 100,000 population of 52.6 in week 22 compared to 83.8 in week 21. The smallest decrease (20.8%) was observed in the least ethnically diverse neighbourhoods, with a rate of 16.8 in week 22 compared to 21.2 in week 21.

  - With a rate of 35.0 cases per 100,000 population, week 22 is the first week since week 43 (October 11-17, 2020) where the provincial rate has been less than 40.0. Of note, in week 22, Toronto reported a rate of 37.2 after having reported one of the highest rates in week 21 (62.2).

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
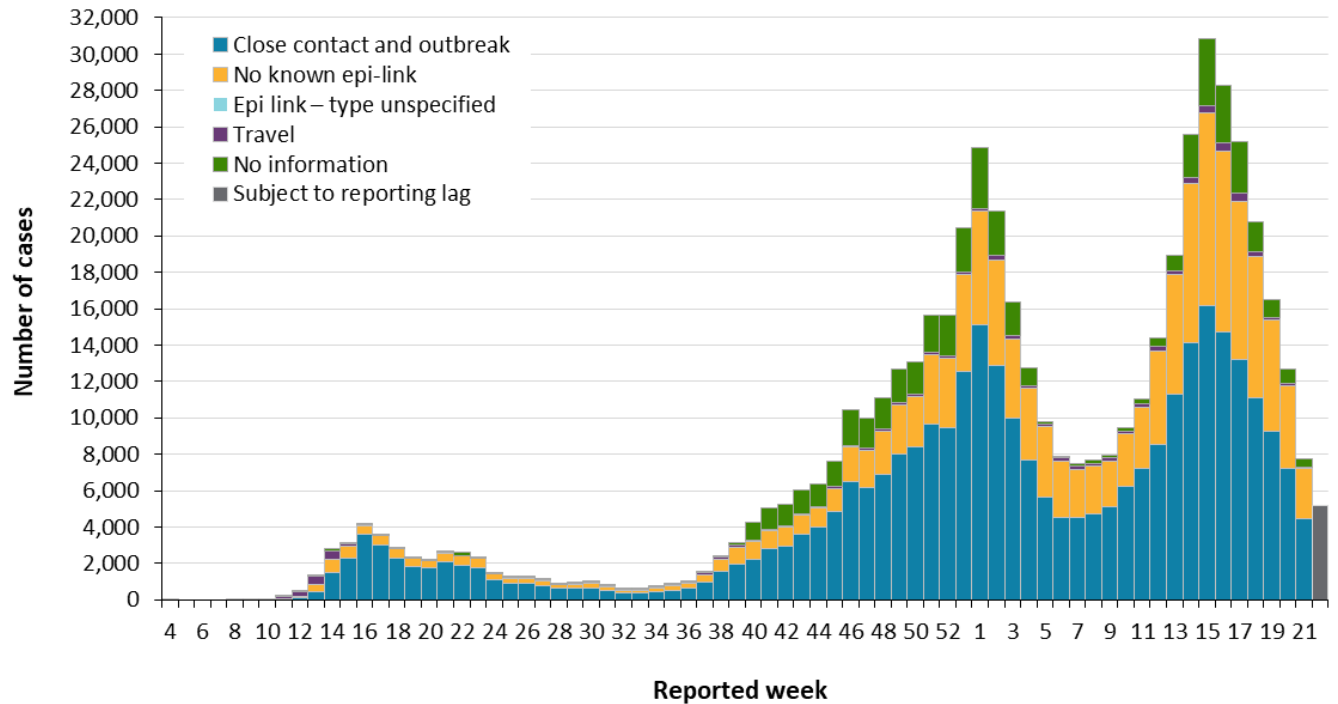
Note: Include cases with reported dates ranging from week-4 (January 19 and 25, 2020) to week 22 (May 30 and June 5, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.
Data Source: CCM

Figure 2. Confirmed cases of COVID-19 by likely source of acquisition and approximation of symptom onset week: Ontario
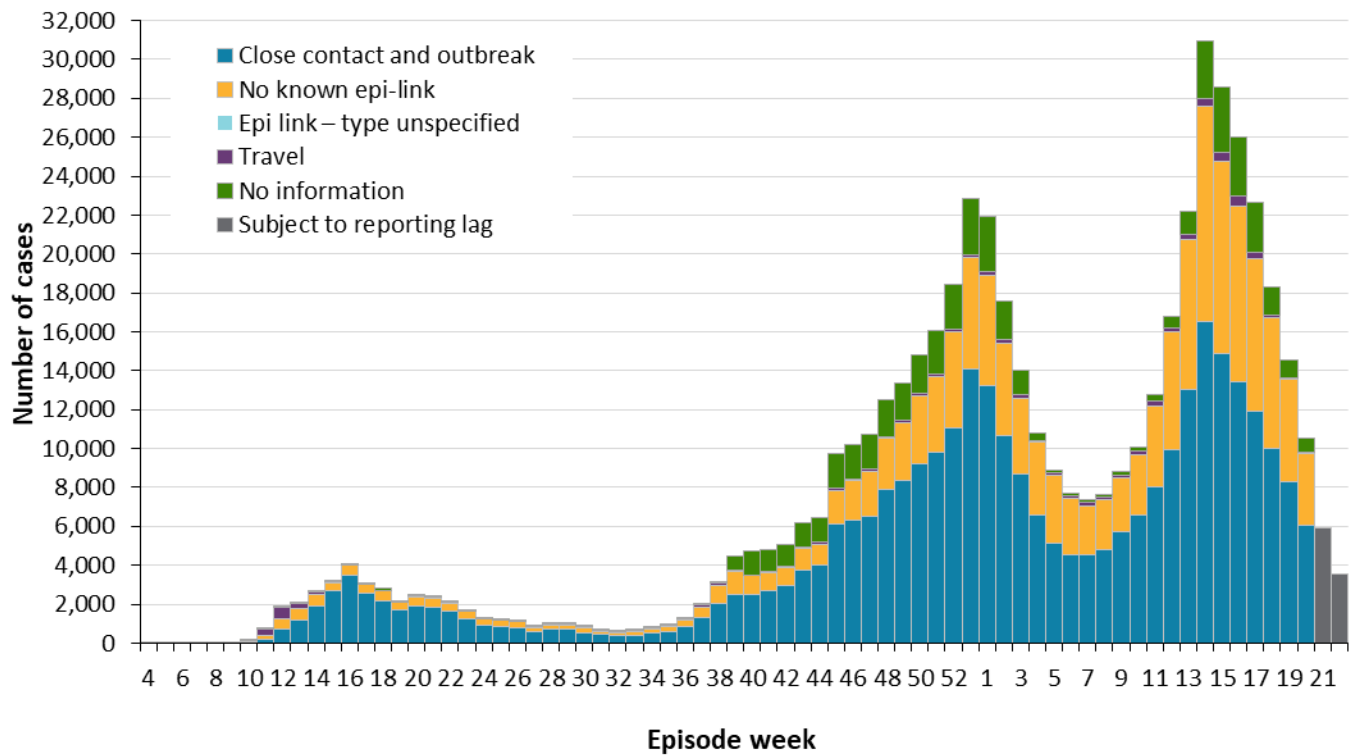
Note: Not all cases have an episode date. Cases without an episode date are not included in the figure. The definition for how episode date is defined is available in the technical notes. Include cases with episode dates ranging from week-4 (January 19 and 25, 2020) to week 22 (May 30 and June 5, 2021). 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 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative case count up to June 5	Cumulative rate per 100,000 population
Total number of cases	7,774	5,207	536,356	3,608.3
Gender: Male	3,862	2,553	267,256	3,651.4
Gender: Female	3,767	2,532	265,420	3,517.7
Ages: 19 and under	1,643	1,237	85,638	2,730.4
Ages: 20-39	3,234	2,001	200,898	4,833.7
Ages: 40-59	1,951	1,312	153,449	3,897.1
Ages: 60-79	792	550	71,427	2,417.2
Ages: 80 and over	152	105	24,844	3,657.5
Number resolved	N/A	N/A	521,706	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
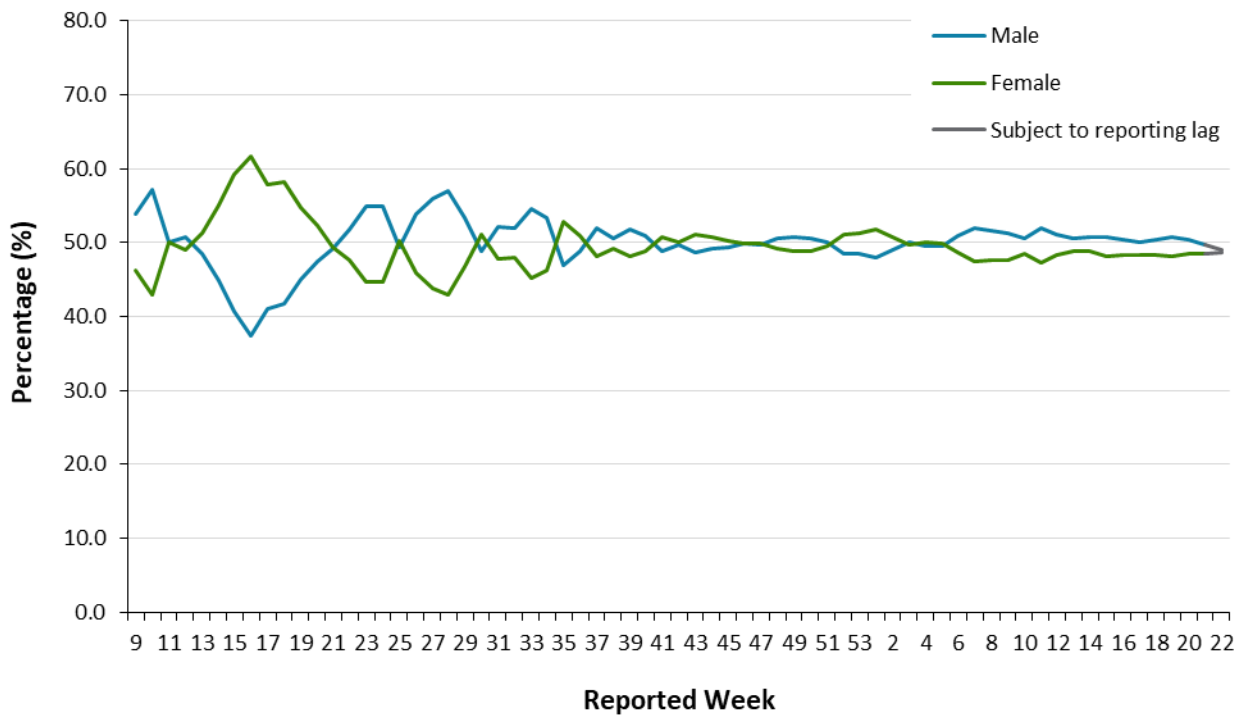
Note: Not all cases have a gender reported. The denominator for calculating weekly percentages includes all cases. Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 22 (May 30 and June 5, 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 22 (May 30 and June 5, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.
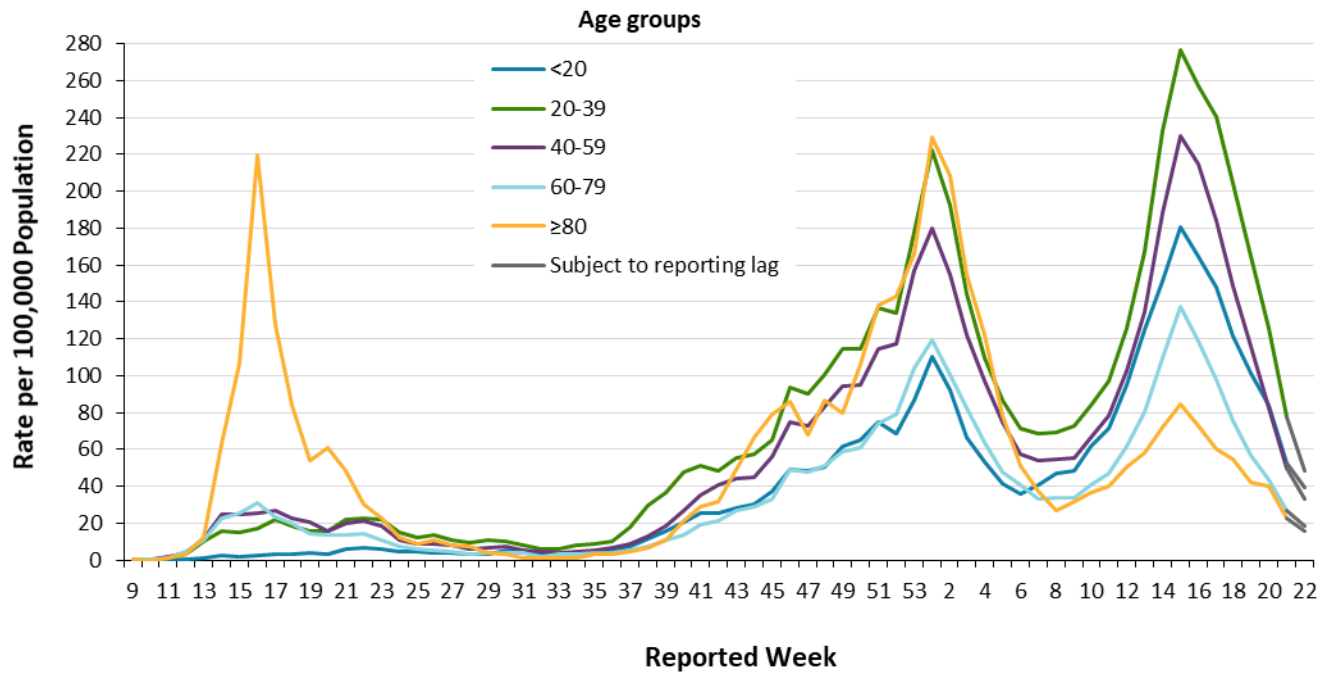**Data Source**: CCM

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 22 (May 30 and June 5, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.
Data Source: CCM

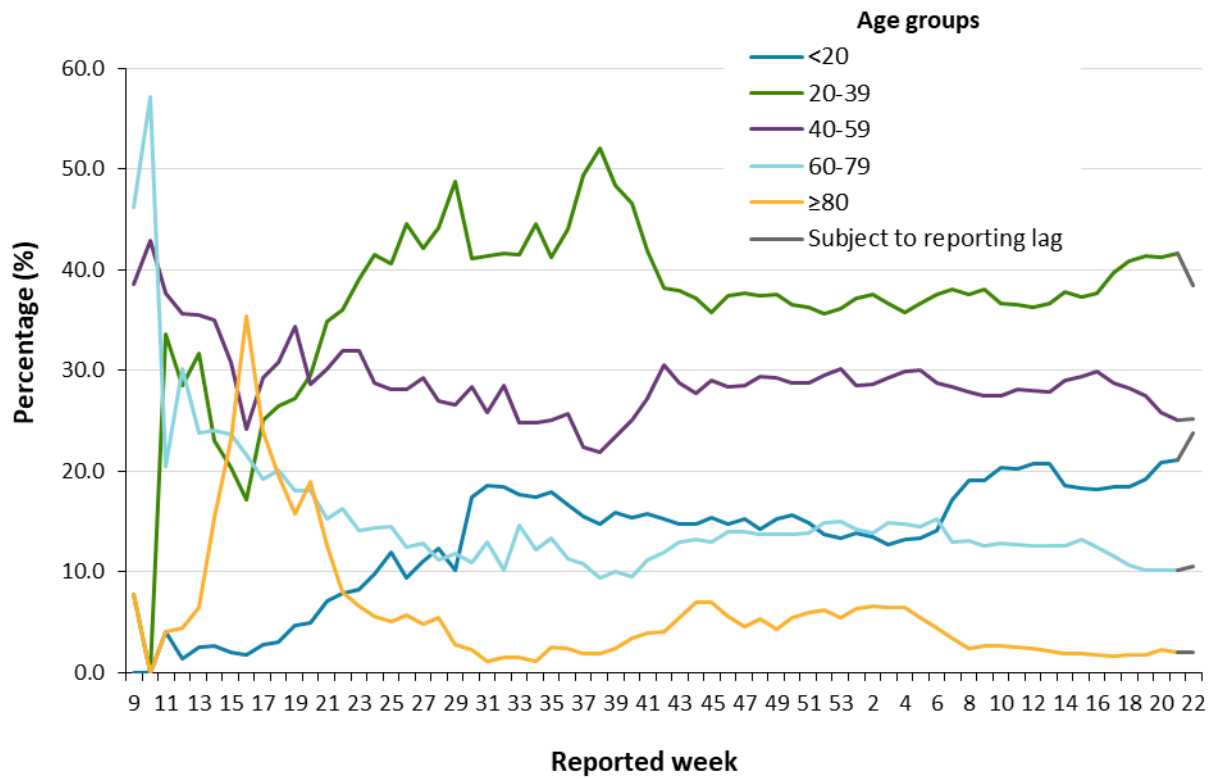# Deaths

Figure 5. Deaths among confirmed cases of COVID-19 by week of death: Ontario
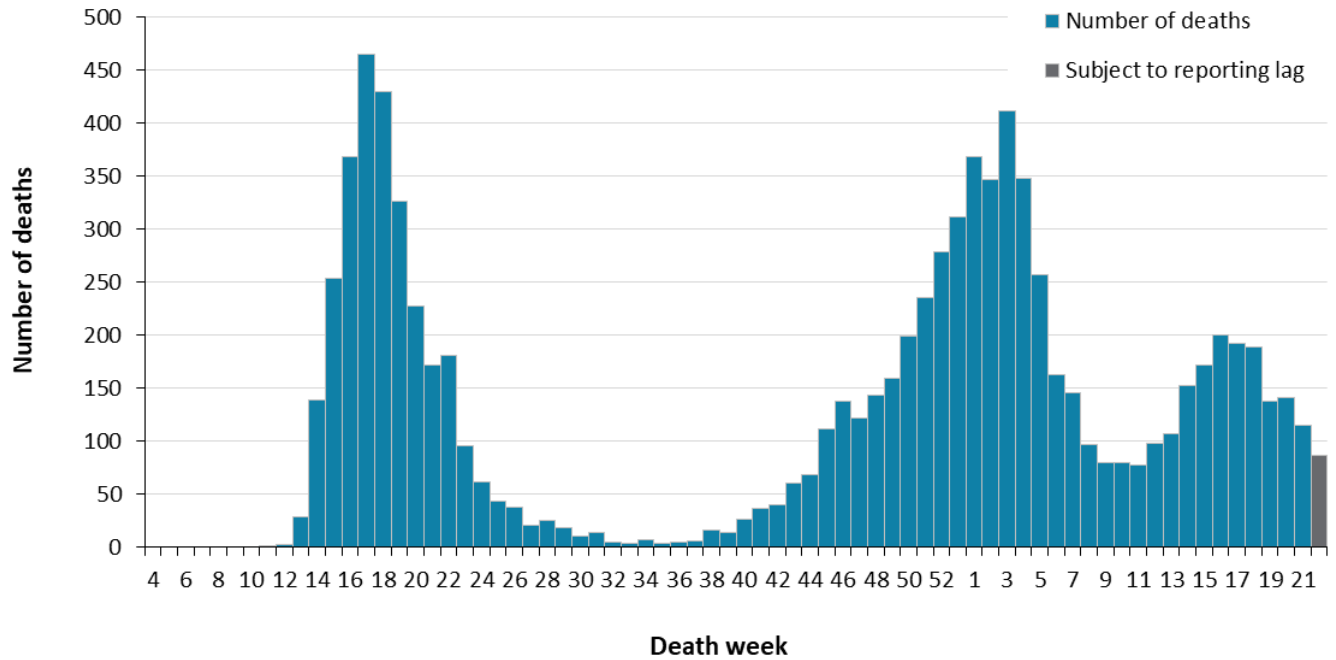
Note: Cases without a death date are not included in the figure. Include cases with date of death ranging from week-4 (January 19 and 25, 2020) to week 22 (May 30 and June 5, 2021). See Table 1A in Appendix A for a list of the weeks and corresponding start and end dates.
Data Source: CCM

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

Deaths	Reported week 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative case count up to June 5	Cumulative rate per 100,000 population
Number of deaths	32	12	8,917	60.0
Gender: Male	18	9	4,481	61.2
Gender: Female	11	3	4,377	58.0
Ages: 19 and under	0	0	4	0.1
Ages: 20-39	0	0	72	1.7
Ages: 40-59	6	4	535	13.6
Ages: 60-79	11	6	2,790	94.4
Ages: 80 and over	15	2	5,515	811.9

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 21 (May 23 to 29)	Percentage	Reported week 22 (May 30 to June 5)	Percentage	Cumulative case count up to June 5	Cumulative percentage
Travel	64	0.8%	62	1.2%	8,689	1.6%
Outbreak-associated or close contact of a confirmed case	4,439	57.1%	3,124	60.0%	320,404	59.7%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	135	<0.1%
No known epidemiological link	2,784	35.8%	1,594	30.6%	155,619	29.0%
Information missing or unknown	487	6.3%	427	8.2%	51,509	9.6%
Total	**7,774**		**5,207**		**536,356**	

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 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative case count up to June 5
Number of cases	163	78	23,364
Ever hospitalized	7	0	449
Ever in ICU	2	0	97

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

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

Long-term care home associated cases	Reported week 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative case count up to June 5
Residents	15	14	15,319
Deaths among residents	3	1	3,962
Health care workers	20	5	7,113
Deaths among health care workers	0	0	10

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

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

Vaccine category	Number of resident cases	Percent of resident cases	Number of health care worker cases	Percent of health care worker cases	Total LTCH cases	Percent of LTCH cases
Breakthrough	87	13.7%	26	7.5%	113	11.5%
Partially vaccinated	142	22.4%	78	22.6%	220	22.5%
Not yet protected	405	63.9%	241	69.9%	646	66.0%
Total post-vaccination cases	**634**		**345**		**979**	

Note: Include cases reported from December 14, 2020 to June 7, 2021. The number of LTCH residents and health-care workers that have received at least one dose of vaccine can be found in the latest version of the COVID-19 Vaccine Uptake in Ontario report.
Data Source: CCM/COVaxON

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

	Reported week 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative case count from August 30 up to June 5
Ages: 4-8	317	256	15,734
Ages: 9-13	365	291	19,847
Ages: 14-17	428	299	20,209

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

Table 8: Summary of reinfection cases of COVID-19 by age group and public health unit reported week: Ontario

Age Group	Reported Week 21 (May 23 to 29)	Reported Week 22 (May 30 to June 5)	Cumulative count from November 1 up to June 5	Percent of reinfection cases
Ages: 19 and under	0	0	24	12.9%
Ages: 20-39	6	2	82	44.1%
Ages: 40-59	3	1	59	31.7%
Ages: 60-79	1	1	15	8.1%
Ages: 80 and over	2	0	6	3.2%
Total reinfection cases	**12**	**4**	**186**	

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 gender. 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 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
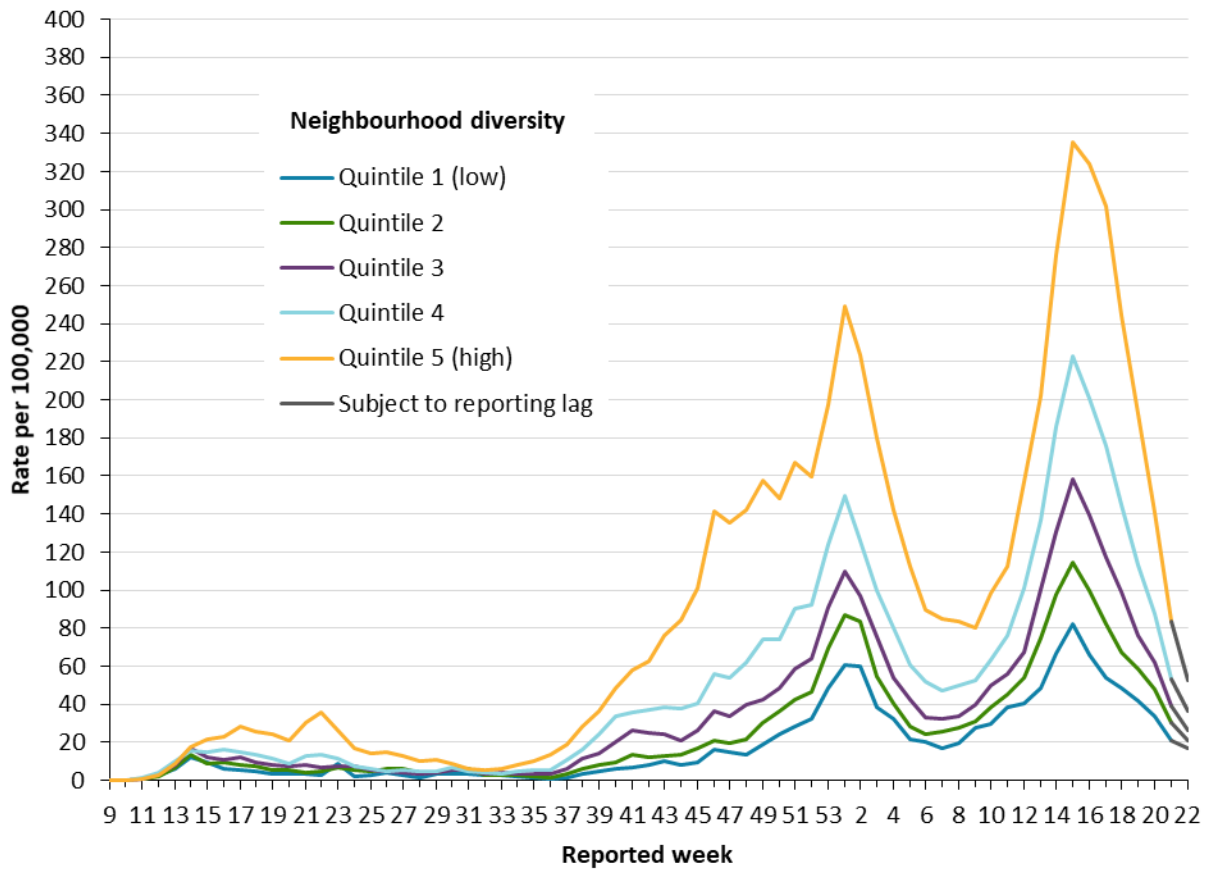
Note: Neighbourhood diversity is measured using the ethnic concentration dimension of the Ontario Marginalization Index. The ethnic concentration dimension is based on the proportion of non-white and non-Indigenous residents and/or the proportion of immigrants that arrived in Canada within the past five 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 22 (May 30 to June 5, 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.
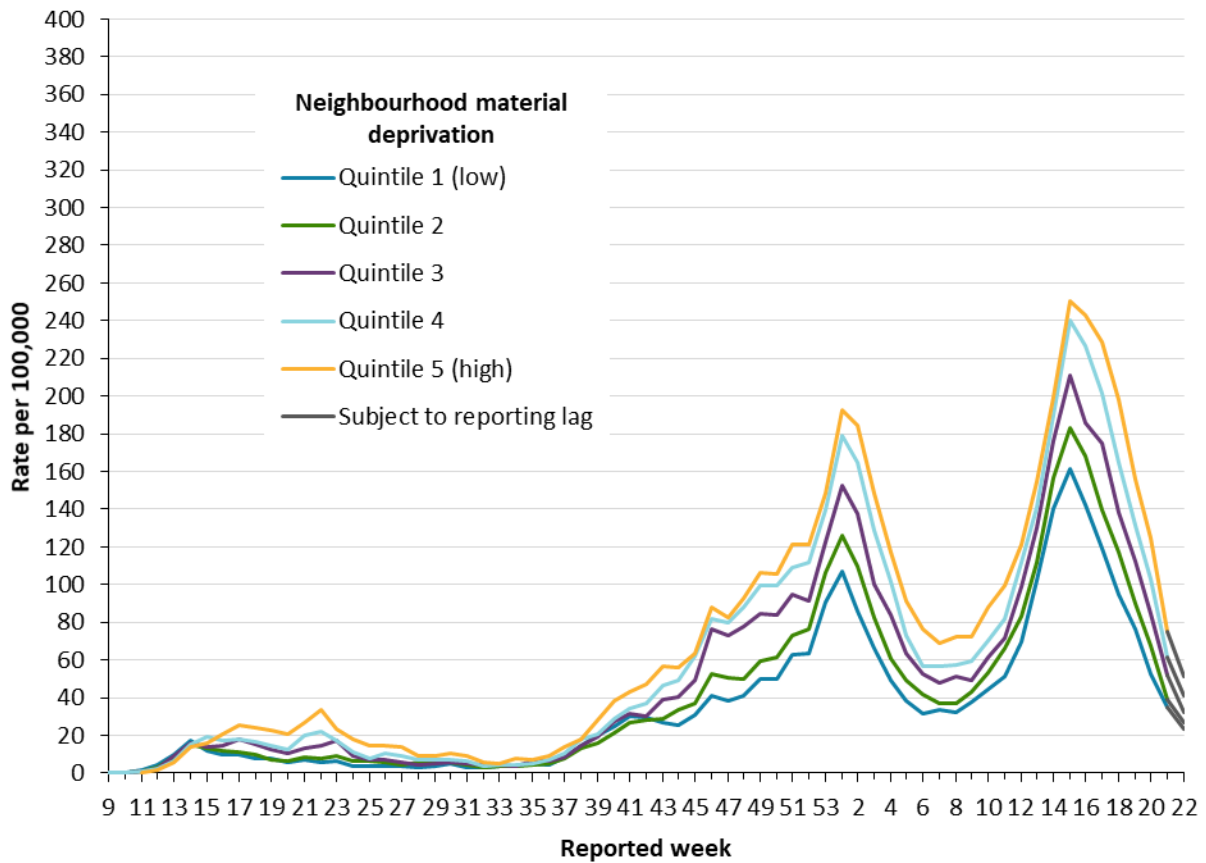**Data Source:** CCM, Ontario Marginalization Index

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 22 (May 30 to June 5, 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 9: Summary of cases of COVID-19 by quintile of neighbourhood diversity and public health unit reported week: Ontario

	Cases Reported Week 21 (May 23 to 29)	Cases Reported Week 22 (May 30 to June 5)	Cumulative case count up to June 5	Cumulative rate per 100,000 population up to June 5
Quintile 1 (least diverse)	471	373	27,584	1,241.8
Quintile 2	713	493	41,549	1,754.5
Quintile 3	1,012	675	62,175	2,398.6
Quintile 4	1,662	1,145	107,352	3,432.4
Quintile 5 (most diverse)	3,621	2,275	256,547	5,935.5

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

	Cases Reported Week 21 (May 23 to 29)	Cases Reported Week 22 (May 30 to June 5)	Cumulative case count up to June 5	Cumulative rate per 100,000 population up to June 5
Quintile 1 (least material deprivation)	1,210	795	82,541	2,395.1
Quintile 2	1,203	828	87,082	2,804.9
Quintile 3	1,442	893	96,082	3,465.0
Quintile 4	1,608	1,074	105,838	4,028.0
Quintile 5 (most material deprivation)	2,016	1,371	123,664	4,614.3

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
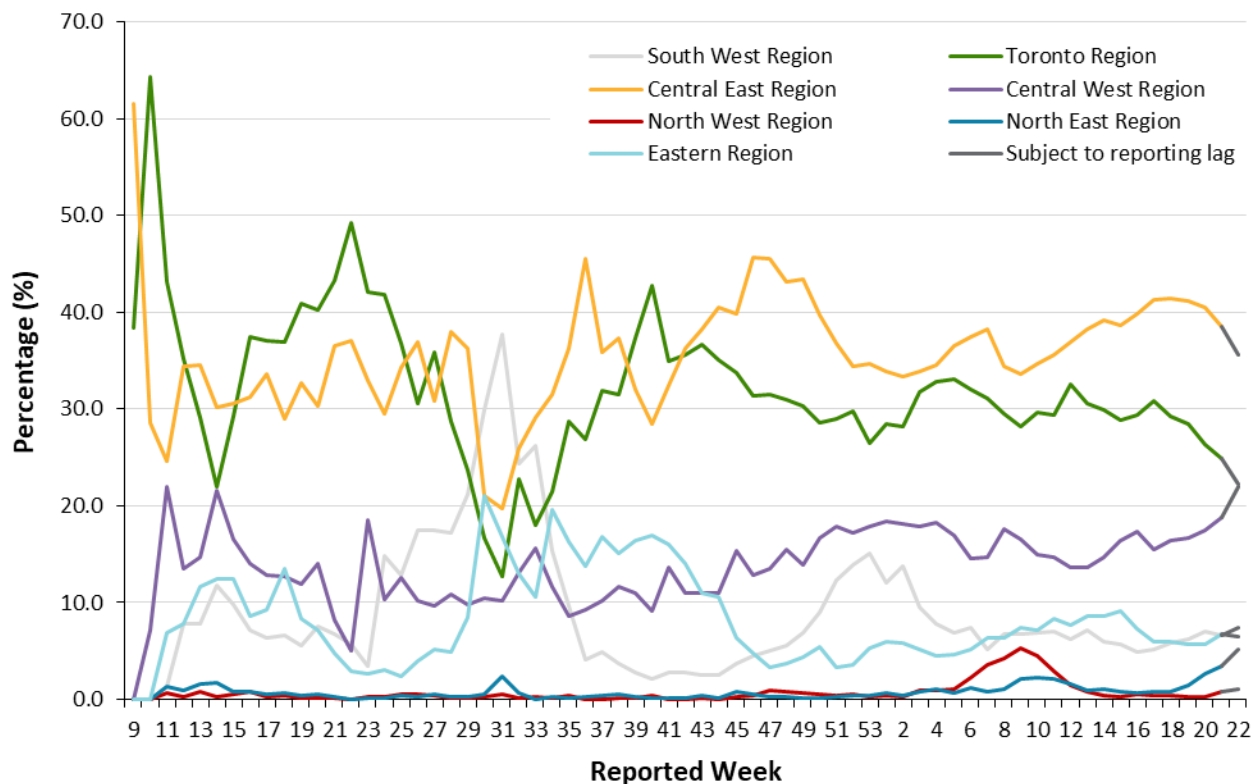
Note: Only weeks with more than 10 cases by public health unit reporting date are included (starting in week-9). Include cases with reported dates ranging from week-9 (February 23 and 29, 2020) to week 22 (May 30 and June 5, 2021). Table 2A in Appendix A has a listing of public health units by region.
Data Source: CCM

Figure 9. Rate of confirmed cases of COVID-19 in public health reported week 22 (May 30 to June 5, 2021) by public health unit: Ontario
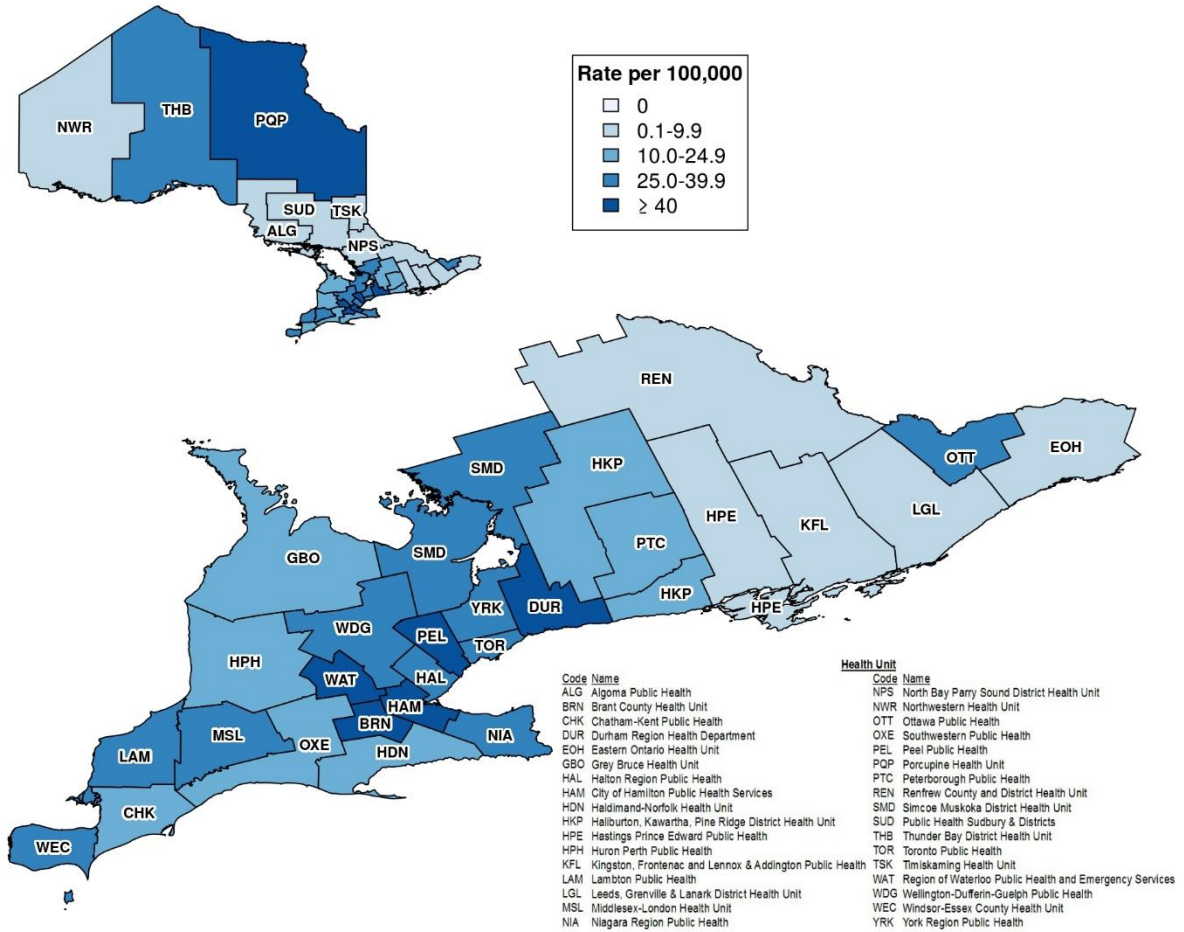
Note: The provincial rate of confirmed cases of COVID-19 reported in week 22 was 35.0 cases per 100,000 population.
Data Source: CCM

Outbreaks

Table 11. Number of public health unit declared COVID-19 outbreaks by setting type: Ontario

Setting Type	Reported week 22 (May 30 to June 5)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to June 5
Congregate Care	**7**	**28**	**2,916**
Long-term care homes	4	15	1,480
Retirement homes	0	6	871
Hospitals	3	7	565
Congregate Living	**13**	**36**	**1,263**
Correctional facility	0	5	53
Shelter	2	7	259
Group Home/supportive housing	7	19	754
Short-term accommodations	0	0	33
Congregate other	4	5	164
Education	**12**	**35**	**2,400**
Child care	11	31	966
School – Elementary*	1	1	1,071
School – Elementary/secondary*	0	0	64
School – Secondary*	0	1	254
School – Post-secondary*	0	2	45
Other settings	**47**	**138**	**4,043**
Bar/restaurant/nightclub	8	13	323
Medical/health services	1	1	146
Personal service settings	0	0	28
Recreational fitness	0	1	91

Setting Type	Reported week 22 (May 30 to June 5)	Number of ongoing outbreaks	Cumulative number of outbreaks reported to June 5
Retail	4	20	447
Other recreation/community	1	7	211
Workplace – Farm	0	3	208
Workplace - Food processing	2	5	259
Other types of workplaces	30	85	2,302
Other	1	2	7
Unknown	0	1	21
Total number of outbreaks	**79**	**237**	**10,622**

Note: Reported week is based on the outbreak reported date, and if unavailable, the date the public health unit created the outbreak. Ongoing outbreaks includes all outbreaks that are 'Open' in CCM without a 'Declared Over Date' recorded or where the outbreak start date (determined by the onset date of first case, or if missing the reported date, or if missing the created date) is more than 5 months from the current date, even for outbreaks where the outbreak status value selected in CCM is 'OPEN'. Interpret information for the most recent week with caution due to reporting lags. Outbreak categories are mutually exclusive. Retail includes settings such as grocery stores, pharmacies, malls, etc. Other types of workplaces include settings such as offices as well as warehousing, shipping and distribution, manufacturing facilities, mines and construction sites, etc. Other recreation/community includes settings such as entertainment and event venues, gatherings (e.g., weddings), religious facilities, etc. Medical/health services refer to settings such as doctor's office or clinic, wellness clinics, etc., and excludes categories listed in the congregate care setting group.
*Cumulative counts include COVID-19 school outbreaks reported starting week-36 (August 30 to September 5, 2020).
Ongoing re-classification of settings for reported outbreaks can result in outbreak counts that may differ from previously reported counts. Outbreaks in settings outside of Ontario are excluded from all outbreak counts.
Data Source: CCM

Table 12. 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 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative number of cases
Congregate Care	**90**	**36**	**39,588**
Long-term care homes	66	22	26,029
Retirement homes	10	3	7,293
Hospitals	14	11	6,266
Congregate Living	**158**	**90**	**9,429**
Correctional facility	108	23	1,649
Shelter	23	21	2,643
Group Home/supportive housing	21	22	3,502
Short-term accommodations	0	0	196
Congregate other	6	24	1,439
Education	**73**	**80**	**10,222**
Child care	66	74	3,942
School – Elementary*	5	3	4,446
School – Elementary/secondary*	0	0	334
School – Secondary*	0	3	1,089
School – Post-secondary*	2	0	411
Other settings	**424**	**223**	**31,683**
Bar/restaurant/nightclub	25	22	1,401
Medical/health services	7	2	647
Personal service settings	0	0	106
Recreational fitness	0	0	708
Retail	58	20	2,345

Cases associated with the outbreak setting type	Reported week 21 (May 23 to 29)	Reported week 22 (May 30 to June 5)	Cumulative number of cases
Other recreation/community	51	39	2,726
Workplace - Farm	15	10	3,005
Workplace - Food processing	33	8	3,395
Other types of workplaces	217	121	17,193
Other	16	1	39
Unknown	2	0	118
Total number of cases	**745**	**429**	**90,922**

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

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

Data Source: CCM

Figure 10. Public health unit declared COVID-19 outbreaks by outbreak setting type and public health unit reported week: Ontario
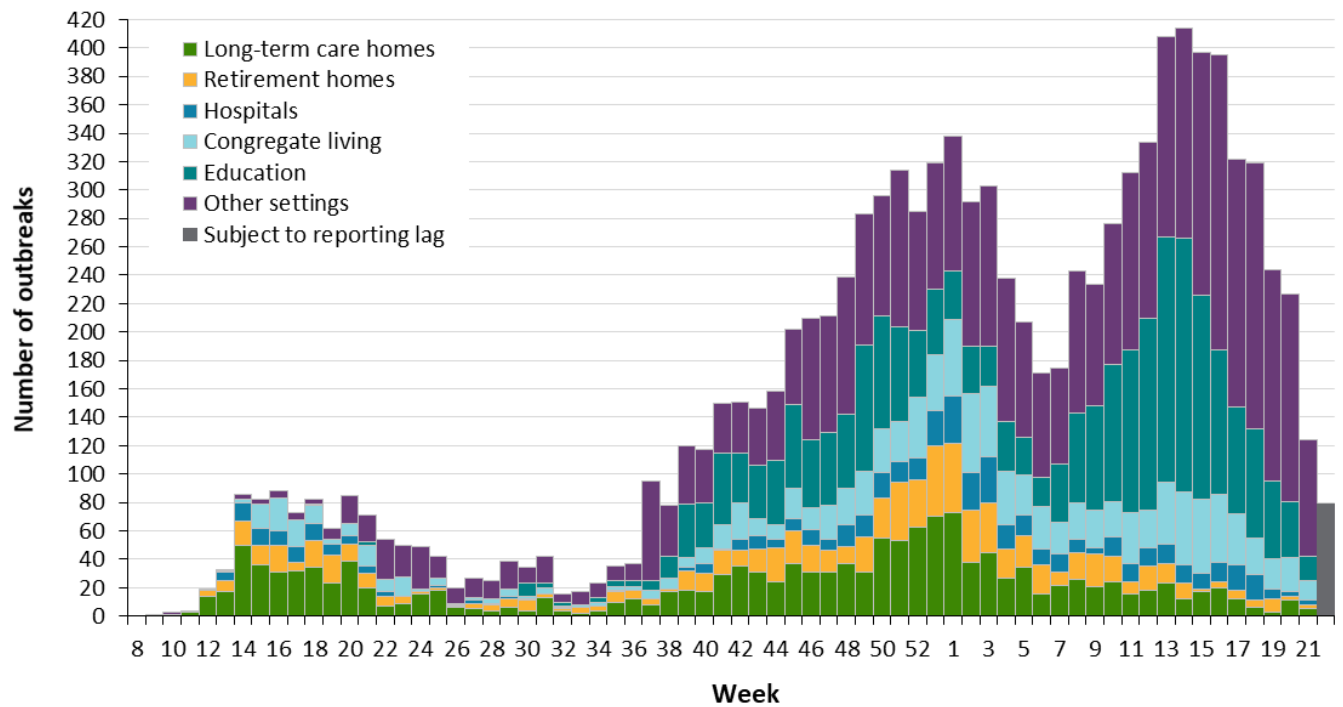
Note: If public health unit outbreak reported date is unavailable, the date the public health unit created the outbreak is used. Week 8 refers to February 16 and 22, 2020 and week 22 refers to May 30 and June 5, 2021. Congregate living include group homes, shelters, correctional facilities, etc. Other settings include outbreaks within workplaces, childcare, schools, restaurants, recreation etc.
Data Source: CCM

Variant COVID-19 Cases

Table 13. 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 June 5, 2021
Gender: Male	67,828	565	2,102	14,962	85,457
Gender: Female	65,673	555	1,944	13,919	82,091
Ages: 19 and under	25,308	177	705	5,746	31,936
Ages: 20-39	50,818	355	1,482	11,205	63,860
Ages: 40-59	39,702	385	1,249	8,119	49,455
Ages: 60-79	16,056	175	525	3,515	20,271
Ages: 80 and over	2,539	33	112	592	3,276

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 14. 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 June 5, 2021	Cumulative percentage
Travel	717	0.5%	30	2.7%	46	1.1%	316	1.1%	1,109	0.7%
Outbreak-associated or close contact of a confirmed case	73,955	55.0%	713	63.4%	2,580	63.3%	18,328	62.8%	95,576	56.6%
Epidemiological link – type unspecified	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
No known epidemiological link	48,222	35.9%	313	27.8%	1,257	30.9%	9,113	31.2%	58,905	34.9%
Information missing or unknown	11,539	8.6%	69	6.1%	190	4.7%	1,421	4.9%	13,219	7.8%
Total	**134,433**		**1,125**		**4,073**		**29,178**		**168,809**	

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

Figure 11. Rates of confirmed cases of COVID-19 with lineage B.1.1.7* detected in public health reported week 22 (May 30 to June 5, 2021) by public health unit: Ontario
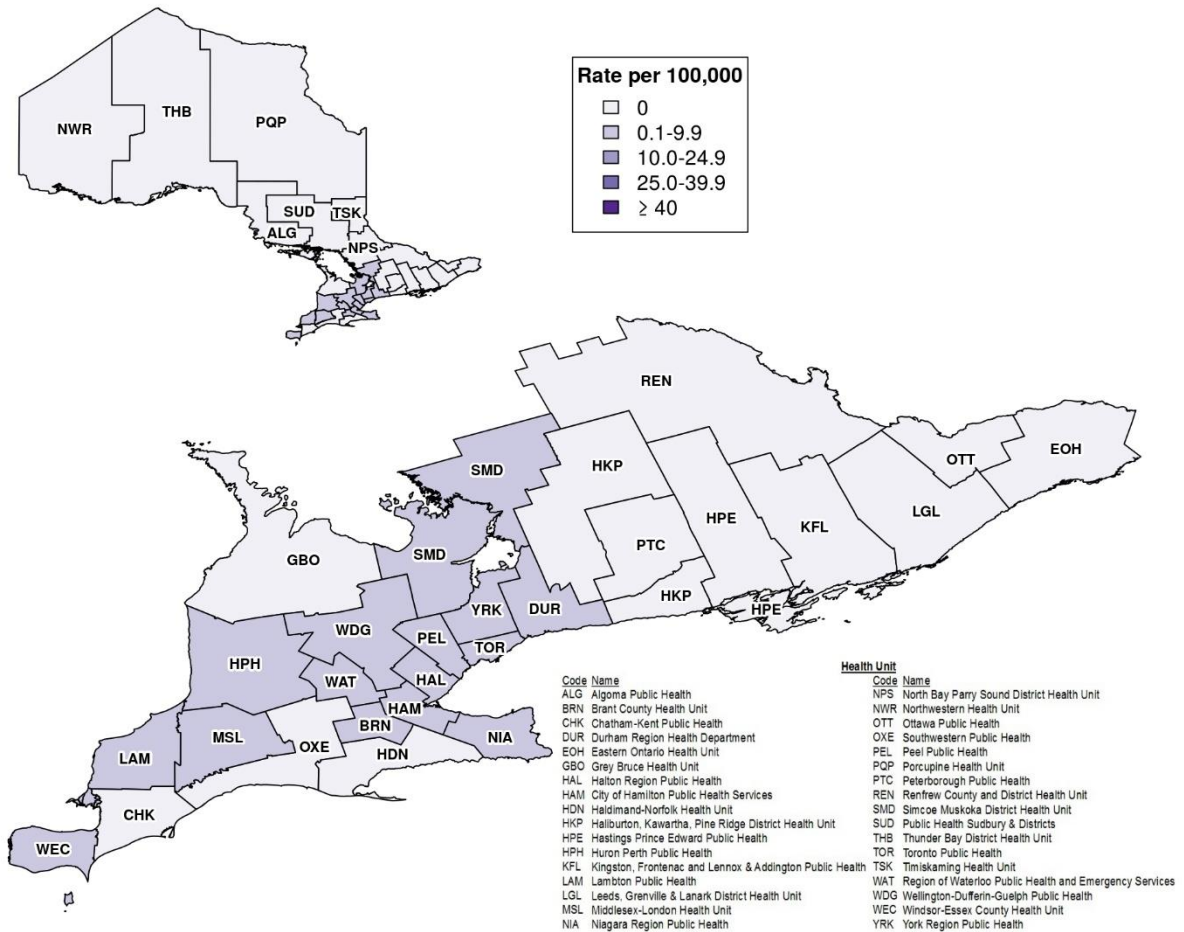

Rate per 100,000
- ☐ 0
- 0.1-9.9
- 10.0-24.9
- 25.0-39.9
- ≥ 40

Code	Name		Code	Name
ALG	Algoma Public Health		NPS	North Bay Parry Sound District Health Unit
BRN	Brant County Health Unit		NWR	Northwestern Health Unit
CHK	Chatham-Kent Public Health		OTT	Ottawa Public Health
DUR	Durham Region Health Department		OXE	Southwestern Public Health
EOH	Eastern Ontario Health Unit		PEL	Peel Public Health
GBO	Grey Bruce Health Unit		PQP	Porcupine Health Unit
HAL	Halton Region Public Health		PTC	Peterborough Public Health
HAM	City of Hamilton Public Health Services		REN	Renfrew County and District Health Unit
HDN	Haldimand-Norfolk Health Unit		SMD	Simcoe Muskoka District Health Unit
HKP	Haliburton, Kawartha, Pine Ridge District Health Unit		SUD	Public Health Sudbury & Districts
HPE	Hastings Prince Edward Public Health		THB	Thunder Bay District Health Unit
HPH	Huron Perth Public Health		TOR	Toronto Public Health
KFL	Kingston, Frontenac and Lennox & Addington Public Health		TSK	Timiskaming Health Unit
LAM	Lambton Public Health		WAT	Region of Waterloo Public Health and Emergency Services
LGL	Leeds, Grenville & Lanark District Health Unit		WDG	Wellington-Dufferin-Guelph Public Health
MSL	Middlesex-London Health Unit		WEC	Windsor-Essex County Health Unit
NIA	Niagara Region Public Health		YRK	York Region Public Health

Note: The provincial rate of confirmed cases of COVID-19 with lineage B.1.1.7* reported in week 22 was 15.0 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 22 (May 30 to June 5, 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 22 was 1.1 cases per 100,000 population. Data for cases with a B.1.351, P.1 lineage or an 'N501Y and E484K' mutation detected are determined using the Investigation Subtype field only. Changes to the VOC testing algorithm may impact counts and trends. Further details can be found in the data caveats section.
Data Source: CCM

Technical Notes

Data Sources

- The data for this report were based on:

  - Information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUS by PHO as of **June 8, 2021 at 1 p.m.** for cases reported from February 1, 2021 onwards and as of **June 7, 2021 at 9 a.m.** for cases reported up January 31, 2021.

  - VOC data was successfully extracted from CCM for all PHUs by PHO as of June 8, 2021 at 1 p.m. for cases reported from April 1, 2021 onwards and as of **June 7, 2021 at 9 a.m**. for cases reported up to March 31, 2021.

  - COVID-19 vaccination data were based on information successfully extracted from the Ontario Ministry of Health's COVaxON application as of **June 7, 2021 at approximately 7 a.m.** COVaxON data was subsequently linked to COVID-19 case data based on information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUs by PHO as of **June 7, 2021 at 1 p.m.**

- CCM and COVaxON are dynamic disease reporting systems, which allow ongoing updates to data previously entered. As a result, data extracted from CCM and COVaxON represent a snapshot at the time of extraction and may differ from previous or subsequent reports.

- Ontario population projection data for 2020 were sourced from Ministry, IntelliHEALTH Ontario. Data were extracted on November 26, 2019.

- Statistics Canada Postal Code Conversion File 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 and vaccination information reported to public health units and recorded in CCM or COVaxON. As a result, all counts are subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours, which may depend on severity of illness, clinical practice, changes in laboratory testing, and reporting behaviours.

- Observed trends over time should be interpreted with caution for the most recent period due to reporting and/or data entry lags.

- Only cases meeting the confirmed case classification as listed in the [MOH Case Definition – Coronavirus Disease (COVID-19) document](#) are included in the report counts from CCM. This includes persons with:

    - laboratory confirmation by a validated NAAT assay

    - a validated point-of-care (POC) assay deemed acceptable to provide a final result

    - a validated laboratory-based serological assay SARS-CoV-2

- Cases of confirmed reinfection, as defined in the provincial case definitions, are counted as unique investigations. 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.

- 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-Co-V-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: COVaxON

- Linking COVaxON and CCM data is dependent on availability of personal identifiers reported in both databases. For example, if a client was reported in both COVaxON and CCM, but personal identifiers (e.g. such as health card number, date of birth) were not available, then sufficient information would not have been available to identify the client and the client would not have been included in the linkage.

- The following COVID-19 cases were excluded from the primary analysis as the timing of infection (i.e. date of symptom onset) relative to vaccination (i.e. date of dose administration) could not be determined.

    - Cases reported as asymptomatic and where no symptom information was reported.

    - Cases were no symptoms onset date was reported.

    - Cases reported as re-positive or remote positive.

        - Re-positive cases are defined as cases that test positive again after a negative test result based on an approved method or after being cleared/resolved (based on either time from symptom onset or having two negative tests). This may include cases that were asymptomatic at the time of the initial positive result and later developed symptoms which lead to subsequent testing. As a result, the timing of infection may be unclear.

        - Remote positive cases are defined as asymptomatic positive cases with a low pre-test probability (e.g., no epidemiologic link to a confirmed case or an outbreak) and a repeat test that is negative. For these cases, the timing of infection may be unclear.

- The definitions for partially vaccinated and breakthrough cases used in this report were modelled after proposed national definitions, and do not necessarily align with those used in other jurisdictions. Further, the definitions may be revised over time.

- **Cases not yet protected by vaccination:** Individuals with a symptom onset date that was 0 to <14 days following the first dose of a COVID-19 vaccine. This time period from vaccination is not sufficient to develop immunity, therefore these individuals are not considered protected from vaccination.

- **Partially vaccinated case:** Individuals with a symptom onset date that was 14 or more days following the first dose of a COVID-19 vaccine or 0 to <7 days after receiving the second dose. This time period from vaccination may be sufficient to develop some degree of immunity, but these individuals are not considered fully protected as they have not yet received the second dose or have only recently received the second dose.

- **Breakthrough (i.e., fully vaccinated) case**: Individuals with a symptom onset date that was 7 or more days following receipt of the second dose of a COVID-19 vaccine. These individuals are considered fully protected from vaccination, however, as VE is not 100%, it is expected that a small number of individuals become infected following complete vaccination.

- For breakthrough cases, the time interval between doses was not assessed to determine if the second dose was administered as per the product-specific recommended minimum interval.

Data Caveats and Methods: ON-Marg

- ON-Marg is a data tool that combines a wide range of demographic indicators into multiple distinct dimensions of marginalization. It is an area-based index which assigns a measure of marginalization based on neighbourhood versus individual characteristics. As such, the broader demographic trends of an area may not reflect all residents of a neighbourhood owing to the inherent heterogeneity of demographic characteristics which can vary substantially especially across large rural geographies. For more information, please visit PHO's ON-Marg website.

- Neighbourhood diversity is defined using the ethnic concentration dimension of ON-Marg, which measures populations who may experience marginalization related to racism and discrimination. It is based on the proportion of non-white and non-Indigenous residents (visible minority) and/or the proportion of immigrants that arrived in Canada within the past five years. 'Visible minority' is a term used by Statistics Canada that, although is considered to be outdated, is used here to be consistent with the Canadian census.

- Neighbourhood material deprivation is defined using the material deprivation dimension of ON-Marg, which is closely connected to poverty. It refers to the inability of individuals and communities to access and attain basic material needs. The indicators included in this dimension measure income, quality of housing, educational attainment and family structure characteristics.

- "Neighbourhoods" are considered to be Statistic Canada dissemination areas (DA). 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.

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Appendix A

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

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

Reported Week	Start date	End date	Number of cases	Cumulative count
24	June 7, 2020	June 13, 2020	1,473	32,075
25	June 14, 2020	June 20, 2020	1,228	33,303
26	June 21, 2020	June 27, 2020	1,250	34,553
27	June 28, 2020	July 4, 2020	1,084	35,637
28	July 5, 2020	July 11, 2020	869	36,506
29	July 12, 2020	July 18, 2020	930	37,436
30	July 19, 2020	July 25, 2020	991	38,427
31	July 26, 2020	August 1, 2020	806	39,233
32	August 2, 2020	August 8, 2020	594	39,827
33	August 9, 2020	August 15, 2020	610	40,437
34	August 16, 2020	August 22, 2020	730	41,167
35	August 23, 2020	August 29, 2020	851	42,018
36	August 30, 2020	September 5, 2020	977	42,995
37	September 6, 2020	September 12, 2020	1,502	44,497
38	September 13, 2020	September 19, 2020	2,372	46,869
39	September 20, 2020	September 26, 2020	3,121	49,990
40	September 27, 2020	October 3, 2020	4,224	54,214
41	October 4, 2020	October 10, 2020	5,037	59,251
42	October 11, 2020	October 17, 2020	5,275	64,526
43	October 18, 2020	October 24, 2020	6,036	70,562
44	October 25, 2020	October 31, 2020	6,387	76,949
45	November 1, 2020	November 7, 2020	7,609	84,558
46	November 8, 2020	November 14, 2020	10,429	94,987
47	November 15, 2020	November 21, 2020	9,991	104,978
48	November 22, 2020	November 28, 2020	11,127	116,105

Reported Week	Start date	End date	Number of cases	Cumulative count
49	November 29, 2020	December 5, 2020	12,684	128,789
50	December 6, 2020	December 12, 2020	13,057	141,846
51	December 13, 2020	December 19, 2020	15,659	157,505
52	December 20, 2020	December 26, 2020	15,630	173,135
53	December 27, 2020	January 2, 2021	20,453	193,588
1	January 3, 2021	January 9, 2021	24,869	218,457
2	January 10, 2021	January 16, 2021	21,374	239,831
3	January 17, 2021	January 23, 2021	16,399	256,230
4	January 24, 2021	January 30, 2021	12,759	268,989
5	January 31, 2021	February 6, 2021	9,775	278,764
6	February 7, 2021	February 13, 2021	7,894	286,658
7	February 14, 2021	February 20, 2021	7,455	294,113
8	February 21, 2021	February 27, 2021	7,678	301,791
9	February 28, 2021	March 6, 2021	7,933	309,724
10	March 7, 2021	March 13, 2021	9,475	319,199
11	March 14, 2021	March 20, 2021	11,024	330,223
12	March 21, 2021	March 27, 2021	14,391	344,614
13	March 28, 2021	April 3, 2021	18,941	363,555
14	April 4, 2021	April 10, 2021	25,561	389,116
15	April 11, 2021	April 17, 2021	30,848	419,964
16	April 18, 2021	April 24, 2021	28,290	448,254
17	April 25, 2021	May 1, 2021	25,197	473,451
18	May 2, 2021	May 8, 2021	20,751	494,202
19	May 9, 2021	May 15, 2021	16,522	510,724
20	May 16, 2021	May 22, 2021	12,651	523,375

Reported Week	Start date	End date	Number of cases	Cumulative count
21	May 23, 2021	May 29, 2021	7,774	531,149
22	May 30, 2021	June 5, 2021	5,207	536,356

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

Public Health Unit Name	Cases reported week 21	Rate per 100,000 population Reported week 21	Cases reported week 22	Rate per 100,000 population Reported week 22
Northwestern Health Unit	11	12.5	1	1.1
Thunder Bay District Health Unit	54	36.0	57	38.0
TOTAL NORTH WEST	**65**	**27.4**	**58**	**24.4**
Algoma Public Health	8	7.0	2	1.7
North Bay Parry Sound District Health Unit	10	7.7	9	6.9
Porcupine Health Unit	227	272.0	244	292.4
Public Health Sudbury & Districts	18	9.0	14	7.0
Timiskaming Health Unit	1	3.1	1	3.1
TOTAL NORTH EAST	**264**	**47.2**	**270**	**48.3**
Ottawa Public Health	416	39.4	304	28.8
Eastern Ontario Health Unit	36	17.2	10	4.8
Hastings Prince Edward Public Health	26	15.4	2	1.2
Kingston, Frontenac and Lennox & Addington Public Health	7	3.3	10	4.7
Leeds, Grenville & Lanark District Health Unit	21	12.1	1	0.6

Public Health Unit Name	Cases reported week 21	Rate per 100,000 population Reported week 21	Cases reported week 22	Rate per 100,000 population Reported week 22
Renfrew County and District Health Unit	23	21.2	9	8.3
TOTAL EASTERN	**529**	**27.5**	**336**	**17.4**
Durham Region Health Department	456	64.0	298	41.8
Haliburton, Kawartha, Pine Ridge District Health Unit	100	52.9	43	22.8
Peel Public Health	1,580	98.4	967	60.2
Peterborough Public Health	45	30.4	26	17.6
Simcoe Muskoka District Health Unit	204	34.0	152	25.4
York Region Public Health	610	49.8	367	29.9
TOTAL CENTRAL EAST	**2,995**	**66.8**	**1,853**	**41.4**
Toronto Public Health	1,940	62.2	1,161	37.2
TOTAL TORONTO	**1,940**	**62.2**	**1,161**	**37.2**
Chatham-Kent Public Health	5	4.7	14	13.2
Grey Bruce Health Unit	7	4.1	23	13.5
Huron Perth Public Health	43	30.8	23	16.5
Lambton Public Health	32	24.4	36	27.5
Middlesex-London Health Unit	225	44.3	137	27.0
Southwestern Public Health	52	24.6	22	10.4
Windsor-Essex County Health Unit	154	36.2	129	30.4
TOTAL SOUTH WEST	**518**	**30.6**	**384**	**22.7**
Brant County Health Unit	88	56.7	72	46.4

Public Health Unit Name	Cases reported week 21	Rate per 100,000 population Reported week 21	Cases reported week 22	Rate per 100,000 population Reported week 22
City of Hamilton Public Health Services	424	71.6	357	60.3
Haldimand-Norfolk Health Unit	47	41.2	17	14.9
Halton Region Public Health	267	43.1	158	25.5
Niagara Region Public Health	228	48.3	174	36.8
Region of Waterloo Public Health and Emergency Services	285	48.8	277	47.4
Wellington-Dufferin-Guelph Public Health	124	39.8	90	28.9
TOTAL CENTRAL WEST	**1,463**	**51.3**	**1,145**	**40.2**
TOTAL ONTARIO	**7,774**	**52.3**	**5,207**	**35.0**

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 June 5 for Lineage B.1.1.7*	Cumulative case count up to June 5 for Lineage B.1.351	Cumulative case count up to June 5 for Lineage P.1	Cumulative count up to June 5 for Mutations**
Northwestern Health Unit	50	0	1	16
Thunder Bay District Health Unit	96	0	1	66
TOTAL NORTH WEST	**146**	**0**	**2**	**82**
Algoma Public Health	65	0	12	28
North Bay Parry Sound District Health Unit	113	28	1	15
Porcupine Health Unit	818	2	0	7
Public Health Sudbury & Districts	571	9	5	350
Timiskaming Health Unit	82	1	0	0
TOTAL NORTH EAST	**1,649**	**40**	**18**	**400**
Ottawa Public Health	5,727	322	29	627
Eastern Ontario Health Unit	637	41	17	277
Hastings Prince Edward Public Health	67	0	5	415
Kingston, Frontenac and Lennox & Addington Public Health	432	2	35	126
Leeds, Grenville & Lanark District Health Unit	281	18	0	41
Renfrew County and District Health Unit	204	6	3	19
TOTAL EASTERN	**7,348**	**389**	**89**	**1,505**
Durham Region Health Department	9,301	49	185	1,276
Haliburton, Kawartha, Pine Ridge District Health Unit	425	0	18	312

Public Health Unit Name	Cumulative case count up to June 5 for Lineage B.1.1.7*	Cumulative case count up to June 5 for Lineage B.1.351	Cumulative case count up to June 5 for Lineage P.1	Cumulative count up to June 5 for Mutations**
Peel Public Health	28,526	131	1,358	3,876
Peterborough Public Health	526	4	6	164
Simcoe Muskoka District Health Unit	3,531	26	148	857
York Region Public Health	15,689	76	429	2,724
TOTAL CENTRAL EAST	**57,998**	**286**	**2,144**	**9,209**
Toronto Public Health	40,889	307	1,229	11,842
TOTAL TORONTO	**40,889**	**307**	**1,229**	**11,842**
Chatham-Kent Public Health	105	5	13	116
Grey Bruce Health Unit	300	0	5	55
Huron Perth Public Health	153	0	4	139
Lambton Public Health	404	0	17	125
Middlesex-London Health Unit	3,069	2	81	343
Southwestern Public Health	627	1	10	166
Windsor-Essex County Health Unit	1,740	5	13	129
TOTAL SOUTH WEST	**6,398**	**13**	**143**	**1,073**
Brant County Health Unit	640	2	81	486
City of Hamilton Public Health Services	4,895	52	81	2,015
Haldimand-Norfolk Health Unit	354	3	17	391
Halton Region Public Health	5,007	23	140	614
Niagara Region Public Health	4,071	3	12	1,064
Region of Waterloo Public Health and Emergency Services	2,983	6	60	306

Public Health Unit Name	Cumulative case count up to June 5 for Lineage B.1.1.7*	Cumulative case count up to June 5 for Lineage B.1.351	Cumulative case count up to June 5 for Lineage P.1	Cumulative count up to June 5 for Mutations**
Wellington-Dufferin-Guelph Public Health	2,055	1	57	191
TOTAL CENTRAL WEST	**20,005**	**90**	**448**	**5,067**
TOTAL ONTARIO	**134,433**	**1,125**	**4,073**	**29,178**

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

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

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

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For Further Information

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Public Health Ontario

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