Public Health Ontario | Santé publique Ontario

WEEKLY EPIDEMIOLOGICAL SUMMARY

COVID-19 in Ontario: Focus on December 11, 2022 to December 17, 2022 (Week 50)

Published: December 23, 2022

Figures and tables in this report present the most recent 52 weeks of data for Ontario, ranging from **December 19, 2021 to December 17, 2022**. This report includes the most current information available from the Public Health Case and Contact Management Solution (CCM), unless otherwise specified.

Interpretation notes:

- Testing and case, contact, and outbreak management in Ontario is currently restricted to high-risk populations and settings in January 2022. Counts in this report are an underestimate of the extent of COVID-19 activity in Ontario.
- Observed trends over time should be interpreted with caution for the most recent period due to reporting and/or data entry lags.
- Severe outcomes are a lagging indicator, meaning that severe outcomes often occur after (e.g. days or weeks) cases are initially reported to public health. As such, counts for severe outcomes in more recent reporting periods may increase as more outcomes are reported.

Please visit the interactive Ontario COVID-19 Data Tool to explore data from the entire COVID-19 pandemic (i.e. February 2020 onward) by public health unit, age group, sex, and trends over time

Highlights

Case Trends and Percent Positivity

- **Weekly case numbers up 14% compared to last week among those eligible for testing**: The number of reported cases in Ontario was 6,022 this week, compared to 5,264 last week. A gradual increase has been observed over the past 3 weeks. Current projections suggest weekly case numbers may continue to rise over the next 2 weeks.
    - Among Ontario's 7 regions, case rates were higher in 6 regions and similar in 1 this week. Among the 34 public health units, case rates were higher in 20, similar in 6, and lower in 8 compared to last week.
    - Case rates were higher in all 7 age groups, compared to last week.
- **Percent positivity up 10.3% and testing volumes similar (+/- 10%) compared to last week:** Percent positivity was 13.0% this week, up from 11.8% observed last week. Testing volume this week was 50,527 compared to 48,811 tests last week.

Severity

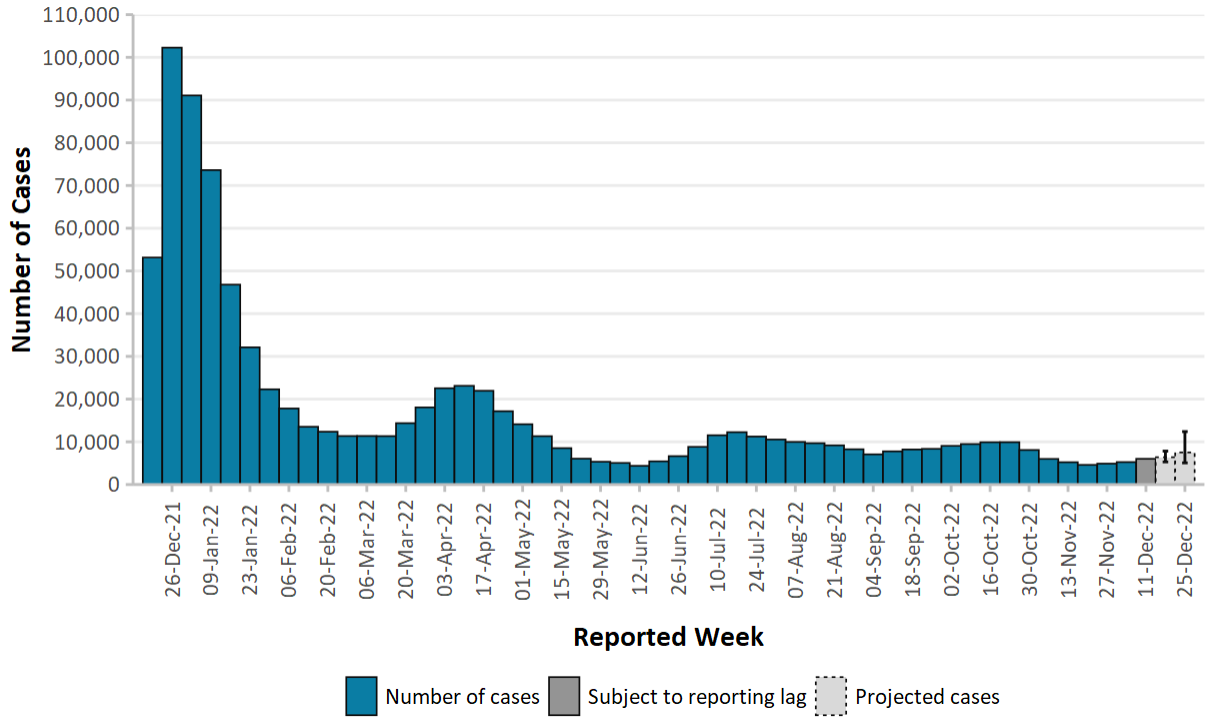
- **Hospital admissions similar (+/- 10%) compared to last week and deaths trending down:** Hospital admissions remained similar compared to last week, following a decline since peaking in mid-October. There were 308 hospital admissions reported this week, compared to 304 last week. Deaths have been declining since peaking in mid- to late-October. There were 40 deaths reported this week, compared to 52 last week. Hospital admission and death counts, particularly for more recent weeks, may increase as these outcomes are lagging indicators.

Outbreaks

- **Outbreaks in high-risk settings down 13% compared to last week:** The total number of outbreaks in high-risk settings was 125 this week, compared to 144 last week. Compared to last week, this week there were fewer outbreaks reported in long-term care homes, retirement homes, and shelters.
- **Outbreak-associated cases in high-risk settings similar (+/- 10%) compared to last week**: There were 1,396 outbreak-associated cases reported this week in high-risk settings, compared to 1,290 last week. Compared to last week, this week there were more outbreak-associated cases reported in retirement homes and correctional facilities, but fewer outbreak-associated cases reported in group homes/supportive housing.

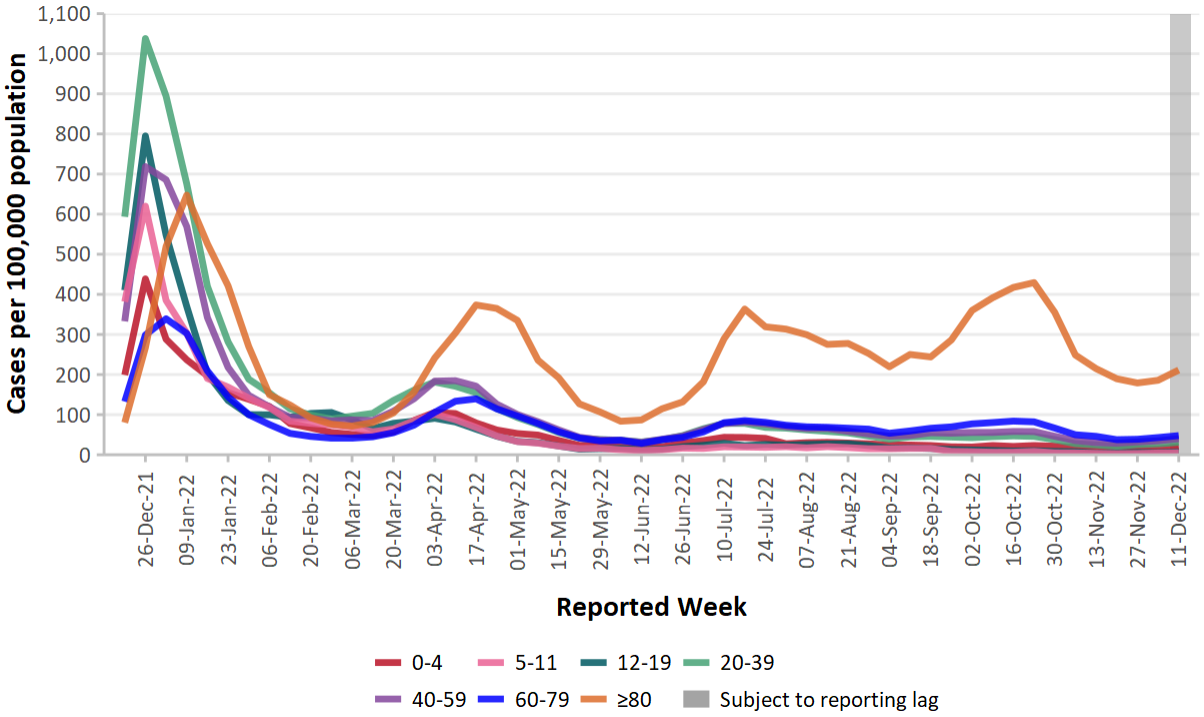
Cases

Figure 1a. Confirmed and projected cases of COVID-19 by reported week



Note: Projections were estimated using the daily distribution of SARS-CoV-2 lineages and COVID-19 cases over time to forecast COVID-19 cases into the future by 14 days. The error bars on the projected cases represent the 75% credible interval. For more information refer to Appendix E. Projections are made based on our current knowledge of COVID-19, and thus cannot predict introductions of new lineages, which may impact model accuracy.

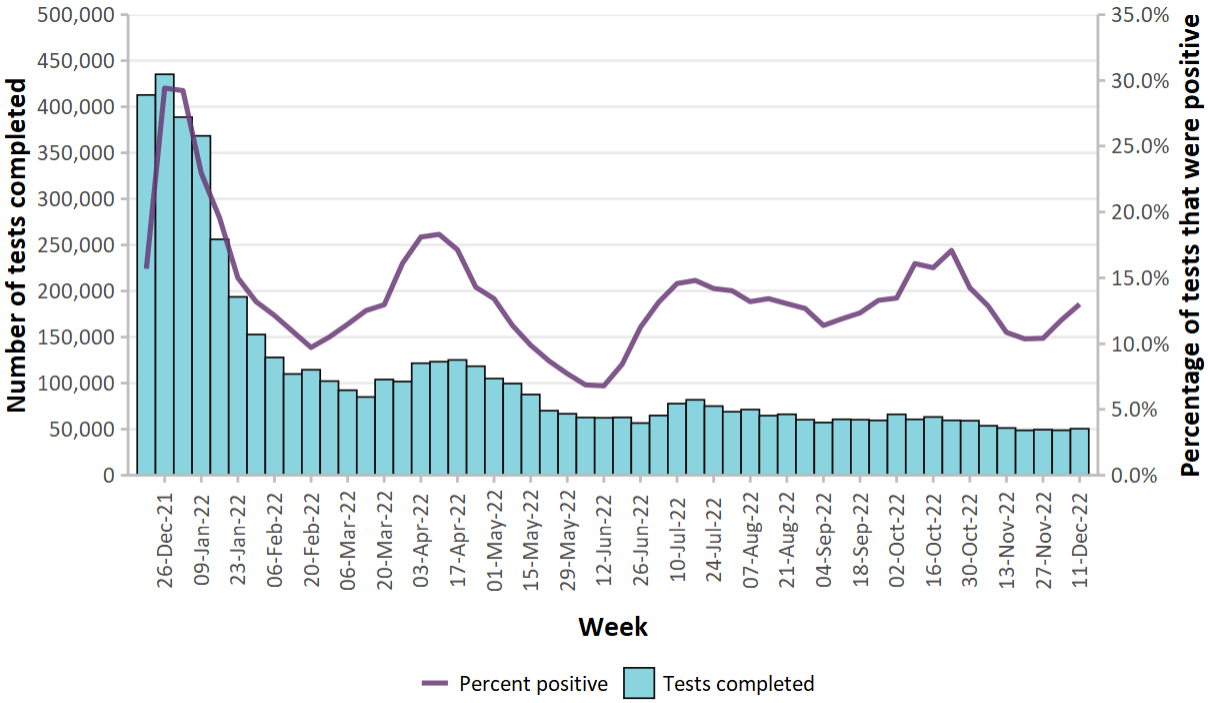
Figure 1b. Confirmed cases of COVID-19 (per 100,000 population), by age group and report week



Note: Not all cases have an age reported.

Testing

Figure 2. Weekly COVID-19 tests completed and percent positivity



Data Source: The Provincial COVID-19 Diagnostics Network, data reported by member microbiology laboratories.

Hospital Admissions

Figure 3a. Confirmed COVID-19 cases that were admitted to hospital, by hospital admission week

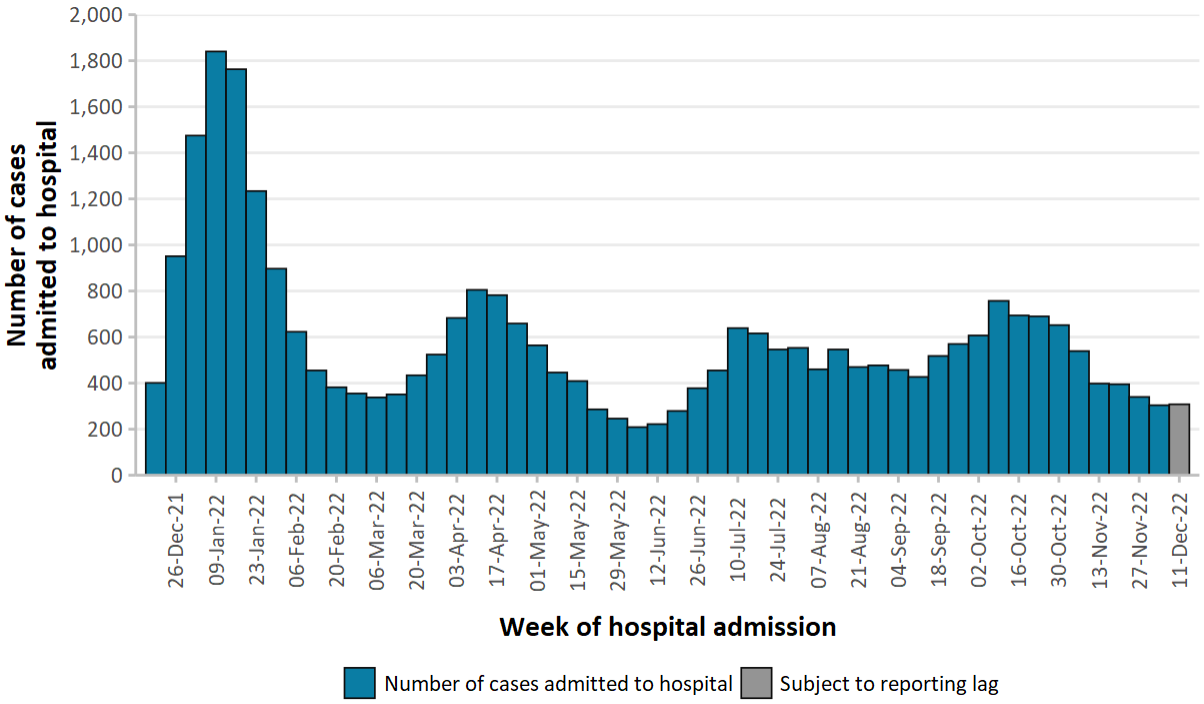
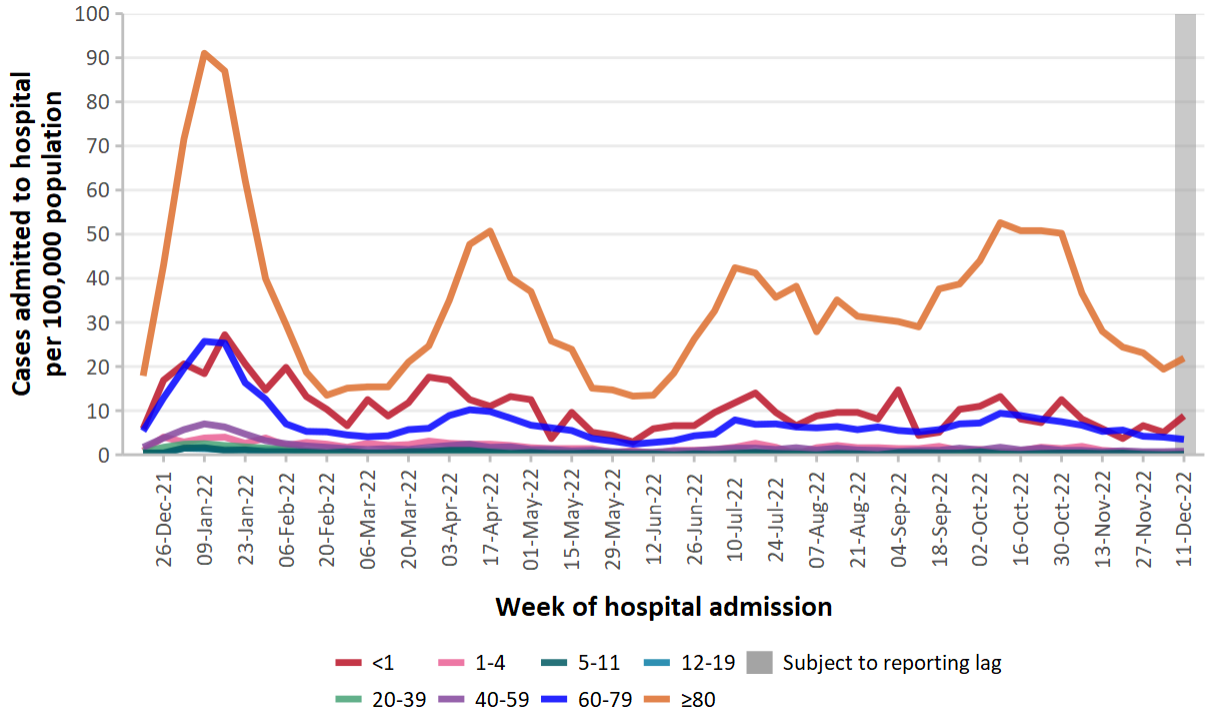


Figure 3b. Confirmed COVID-19 cases that were admitted to hospital (per 100,000 population), by age group and hospital admission date



Note: Not all cases have an age reported.

Deaths

Figure 4a. Confirmed COVID-19 deaths, by cause and week of death

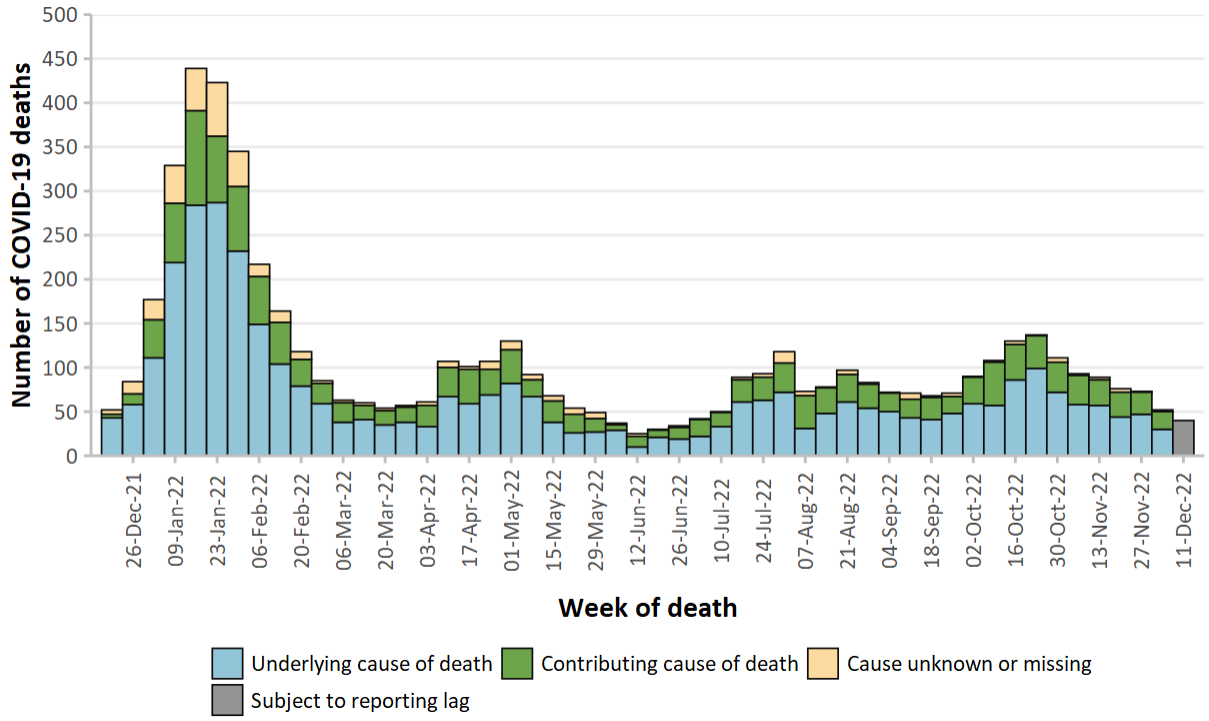
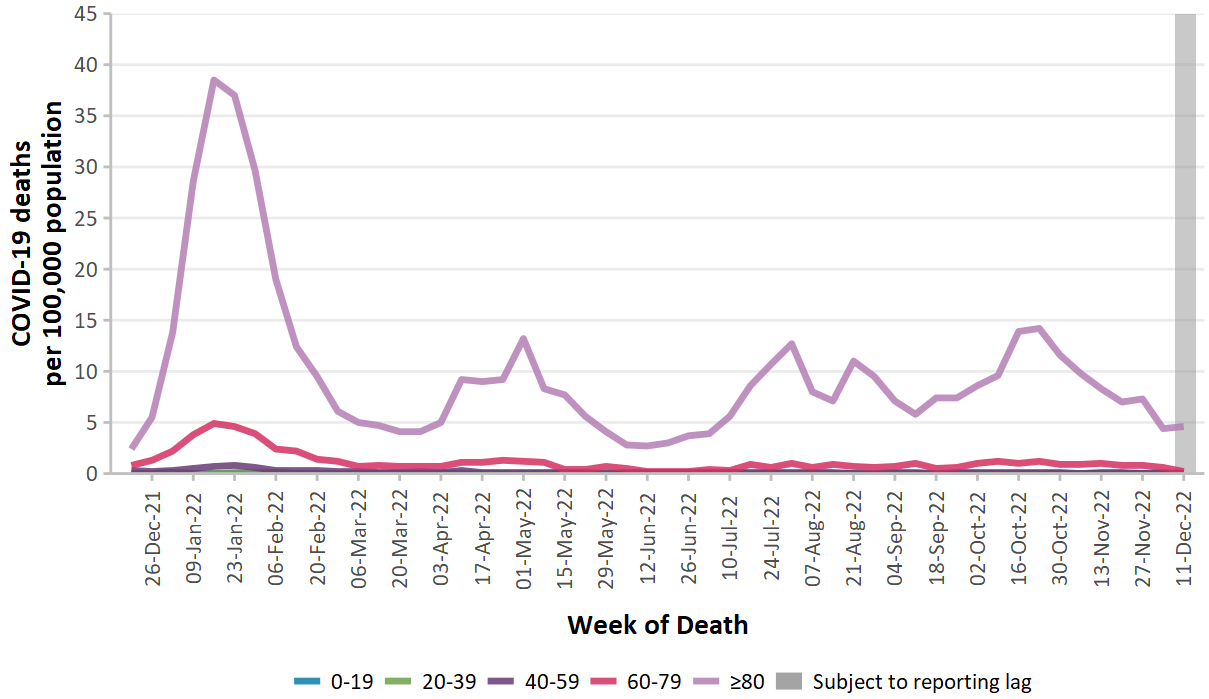
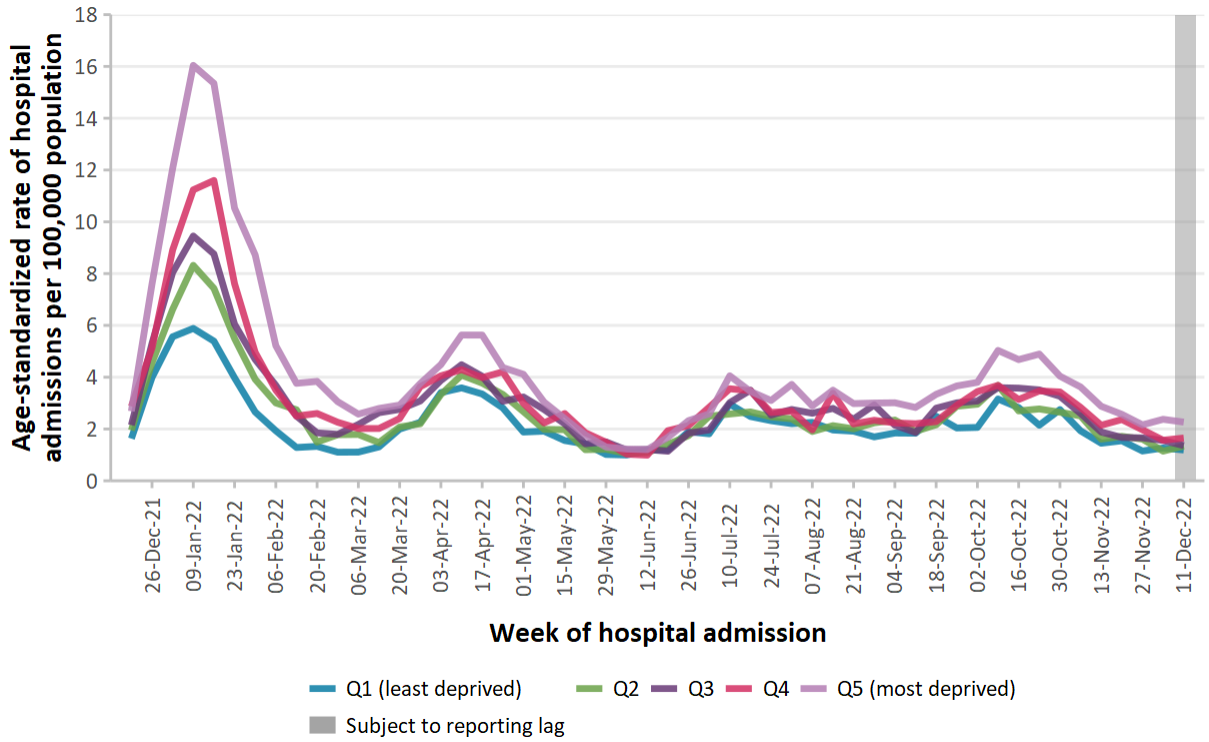


Figure 4b. Confirmed COVID-19 deaths (per 100,000 population), by age group and week of death



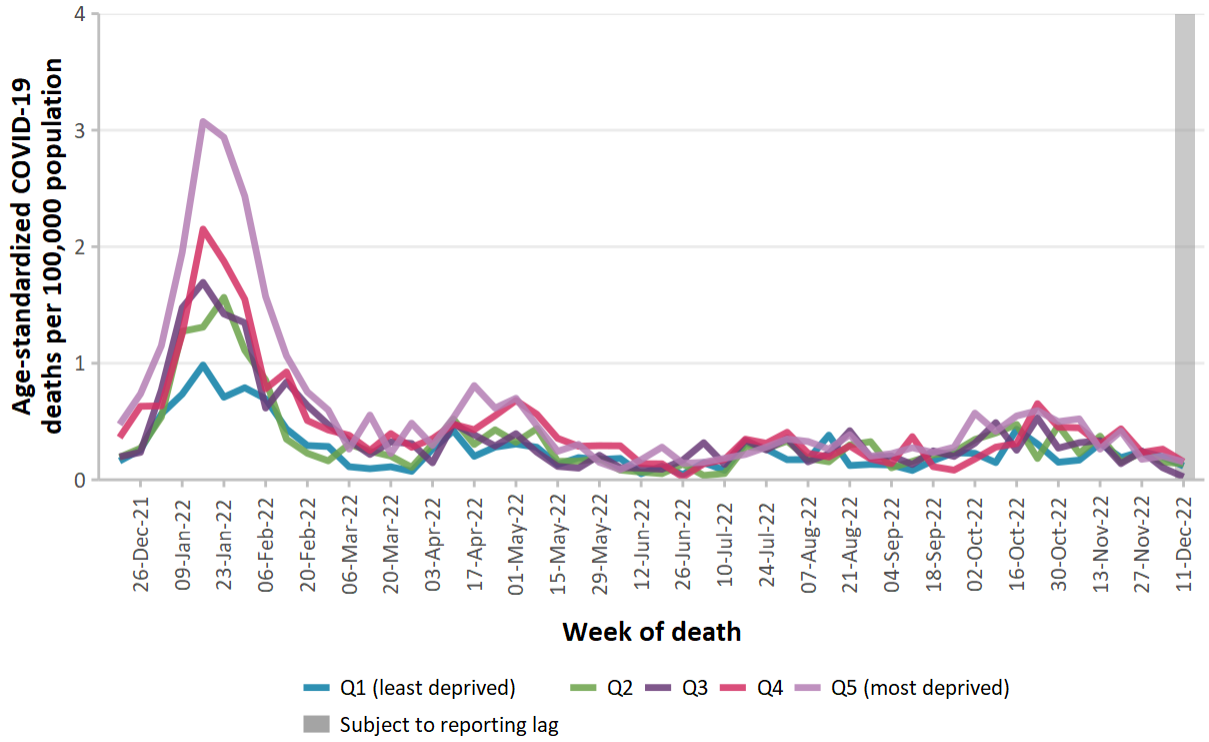
Severity by Neighbourhood Material Deprivation

Figure 5a. Confirmed COVID-19 cases that were admitted to hospital (per 100,000 population), by quintile of neighbourhood material deprivation and hospital admission week



Data Source: CCM, ON-Marg 2016

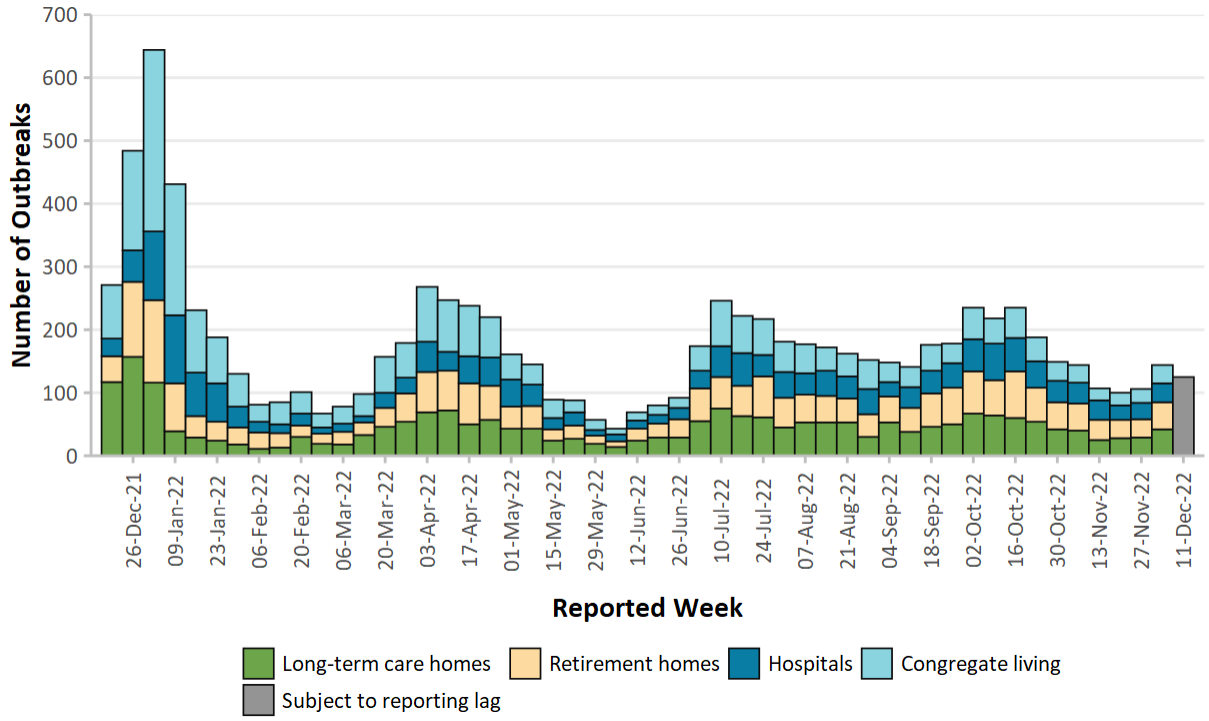
Figure 5b. Confirmed COVID-19 deaths (per 100,000 population), by quintile of neighbourhood material deprivation and week of death



Data Source: CCM, ON-Marg 2016

Outbreaks

Figure 6. Confirmed COVID-19 outbreaks, by setting type and reported week



Note: Congregate living includes group homes, shelters, and correctional facilities.

Table 1. Confirmed COVID-19 outbreaks, by setting type

Setting Type	Reported December 4 to December 10, 2022	Reported December 11 to December 17, 2022	Ongoing Outbreaks	Reported Past 52 Weeks (December 19, 2021 to December 17, 2022)
Congregate Care Total	**115**	**100**	**246**	**6,438**
Long-term care homes	42	35	105	2,385
Retirement homes	43	34	91	2,220
Hospitals	30	31	50	1,833
Congregate Living Total	**29**	**25**	**42**	**2,681**
Correctional facility	2	1	1	149
Shelter	8	3	9	473
Group homes/supportive housing	19	21	32	2,059
Total number of outbreaks*	**144**	**125**	**288**	**9,119**

*Only includes outbreaks in the setting types above

Table 2. Confirmed outbreak-associated COVID-19 cases, by setting type and reported week

Cases associated with the outbreak setting type	Reported December 4 to December 10, 2022	Reported December 11 to December 17, 2022	Reported Past 52 Weeks (December 19, 2021 to December 17, 2022)
Congregate Care Total	**1,214**	**1,320**	**109,546**
Long-term care homes	711	735	64,935
Retirement homes	321	409	28,515
Hospitals	182	176	16,096
Congregate Living Total	**76**	**76**	**14,499**
Correctional facility	17	24	4,206
Shelter	6	5	2,540
Group homes/supportive housing	53	47	7,753
Total number of cases*	**1,290**	**1,396**	**124,045**

*Only includes cases associated to outbreaks in the setting types above

Technical Notes

Details on data caveats and methods are documented in Technical Notes of the Ontario COVID-19 Data Tool. For information on data caveats and methods related to Ontario Marginalization Index (ON-Marg), please visit PHO's ON-Marg webpage.

Data Sources

- The data for this report were based on information successfully extracted from the CCM for all PHUS by PHO as of:
    - **December 20, 2022 at 1 p.m**. for cases reported March 1, 2022 onwards
    - **December 19, 2022 at 9 a.m**. for cases reported August 1, 2021 to February 28, 2022
    - **December 12, 2022 at 9 a.m**. for cases reported up to July 31, 2021
- Hospital and ICU bed occupancy data were obtained from the Ministry of Health on **December 21, 2022**. The same data is available weekly from Ontario's Data Catalogue (dataset: COVID-19 cases in hospital and ICU, by Ontario Health (OH) region). The 'date' field was adjusted to account for reporting lags. Specifically, hospital occupancy counts ('hospitalizations') correspond to the 'date' field minus two days, and ICU occupancy counts ('icu_crci_total') correspond to the 'date' field minus one day.
- Ontario population estimate data were sourced from Statistics Canada. Population estimates 2001-2021: Table 1 annual population estimates by age and sex for July 1, 2001 to 2021, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2022 [received April 12, 2022].
- Statistics Canada Postal Code Conversion File Plus (PCCF+), version 7E.
- The health equity (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]). For more information, please visit PHO's ON-Marg webpage.
- Whole genome sequencing data used in the short-term projection model were based on information extracted on **December 14, 2022** from PHO and **December 13, 2022** from partner laboratories in the Ontario COVID-19 Genomics Network. For more information on SARS-CoV-2 whole genome sequencing surveillance please see the report SARS-CoV-2 Genomic Surveillance in Ontario report.

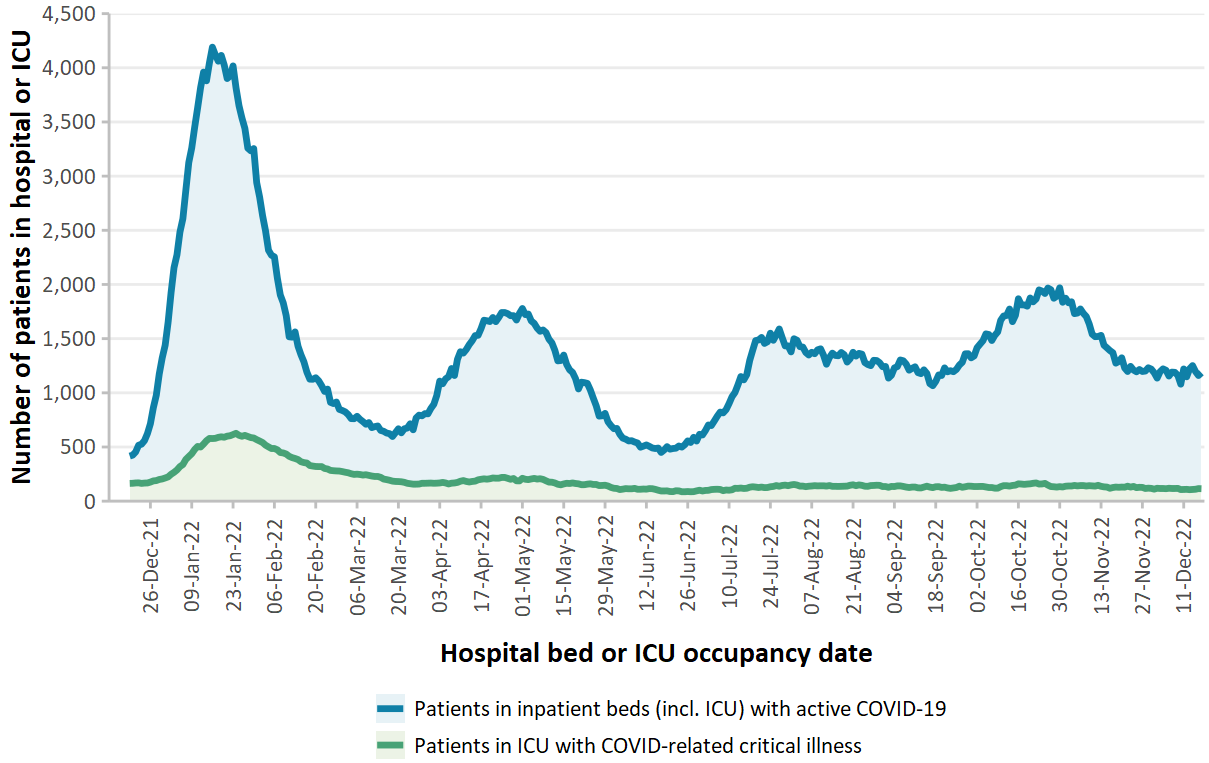
Appendix A: Hospital Bed Occupancy

This graph shows a daily count of:

1. the number of people in hospital (including intensive care unit (ICU)) with active COVID-19 (i.e. testing positive); and
2. the number of people in ICU because of COVID-19.

These counts differ from hospital admissions data in this report (Figures 3a, 3b, and Table 4), which count the number of people admitted to hospital each week due to COVID-19.

Figure 7. Hospital and ICU bed occupancy, by day



Data Source: Ontario Ministry of Health
Note: Hospital bed occupancy data comes from the Hospital Daily Bed Census and ICU bed occupancy data comes from the Critical Care Information System.

Appendix B: Cases by Public Health Unit

Figure 8. Confirmed cases of COVID-19 (per 100,000 population), by region and reported week

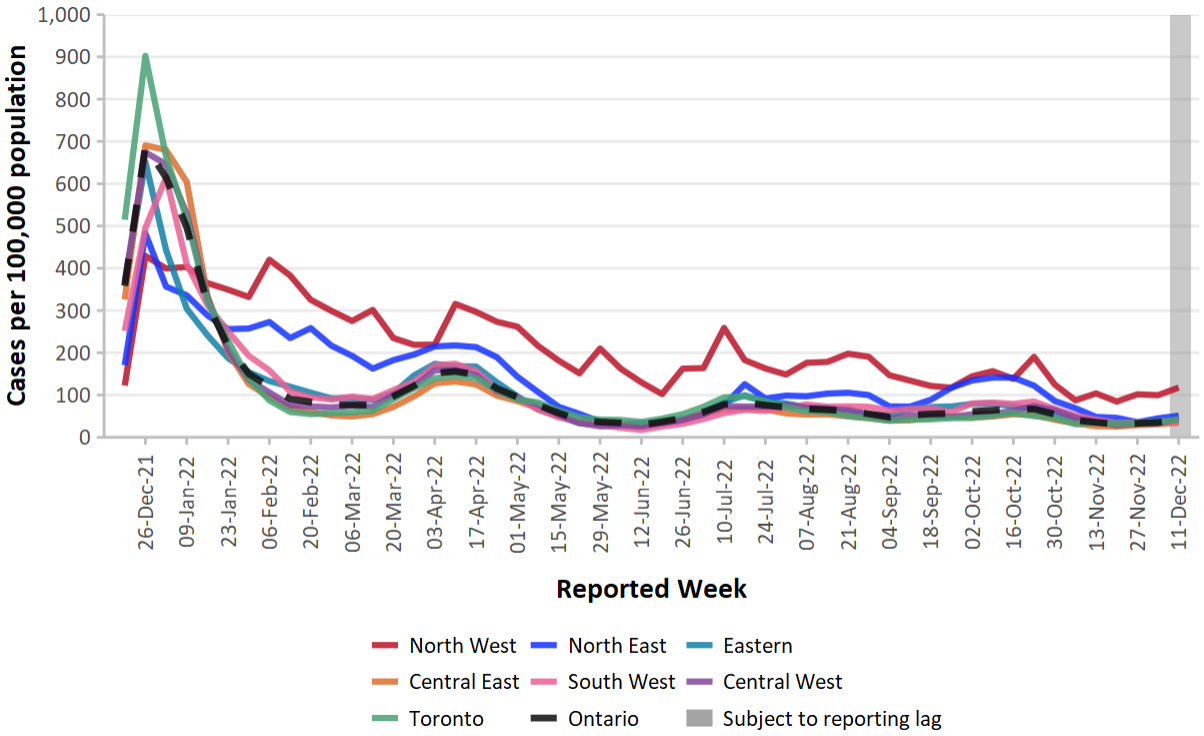


Table 3. Confirmed cases of COVID-19, by public health unit and region

Public Health Unit Name	Cases December 4 to December 10, 2022	Cases per 100,000 population December 4 to December 10, 2022	Cases December 11 to December 17, 2022	Cases per 100,000 population December 11 to December 17, 2022	Cases per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Northwestern Health Unit	96	117.6	130	159.3	15,326.4
Thunder Bay District Health Unit	141	90.4	150	96.1	8,844.9
TOTAL NORTH WEST	**237**	**99.7**	**280**	**117.8**	**11,070.9**
Algoma Public Health	57	48.6	50	42.7	8,242.2
North Bay Parry Sound District Health Unit	30	22.9	37	28.3	5,911.1
Porcupine Health Unit	18	21.4	31	36.8	7,669.7
Public Health Sudbury & Districts	136	66.2	161	78.4	7,843.1
Timiskaming Health Unit	16	46.8	13	38.0	6,512.6
TOTAL NORTH EAST	**257**	**44.9**	**292**	**51.1**	**7,377.9**
Ottawa Public Health	306	29.0	342	32.4	5,001.9
Eastern Ontario Health Unit	78	35.8	86	39.5	5,996.8
Hastings Prince Edward Public Health	51	29.3	43	24.7	6,535.3

Public Health Unit Name	Cases December 4 to December 10, 2022	Cases per 100,000 population December 4 to December 10, 2022	Cases December 11 to December 17, 2022	Cases per 100,000 population December 11 to December 17, 2022	Cases per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Kingston, Frontenac and Lennox & Addington Public Health	99	47.2	120	57.2	8,640.9
Leeds, Grenville & Lanark District Health Unit	103	56.7	121	66.6	5,945.0
Renfrew County and District Health Unit	46	42.1	49	44.8	5,725.2
TOTAL EASTERN	**683**	**35.1**	**761**	**39.1**	**5,770.7**
Durham Region Health Department	245	33.7	214	29.4	5,703.2
Haliburton, Kawartha, Pine Ridge District Health Unit	51	26.4	83	43.0	4,855.3
Peel Public Health	416	26.5	490	31.2	5,320.3
Peterborough Public Health	50	33.8	77	52.1	5,586.5
Simcoe Muskoka District Health Unit	218	35.4	236	38.3	6,063.2
York Region Public Health	396	32.7	451	37.3	5,520.9
TOTAL CENTRAL EAST	**1,376**	**30.8**	**1,551**	**34.7**	**5,528.3**
Toronto Public Health	1,109	37.3	1,249	42.0	6,183.5
TOTAL TORONTO	**1,109**	**37.3**	**1,249**	**42.0**	**6,183.5**

Public Health Unit Name	Cases December 4 to December 10, 2022	Cases per 100,000 population December 4 to December 10, 2022	Cases December 11 to December 17, 2022	Cases per 100,000 population December 11 to December 17, 2022	Cases per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Chatham-Kent Public Health	60	55.6	30	27.8	6,790.0
Grey Bruce Health Unit	29	16.2	33	18.5	4,679.3
Huron Perth Public Health	48	32.4	43	29.1	4,447.4
Lambton Public Health	58	43.7	54	40.7	7,272.4
Middlesex-London Health Unit	184	35.7	180	34.9	5,908.4
Southwestern Public Health	55	24.7	113	50.7	5,169.5
Windsor-Essex County Health Unit	208	48.8	175	41.1	6,545.3
TOTAL SOUTH WEST	**642**	**37.1**	**628**	**36.3**	**5,877.8**
Brant County Health Unit	48	30.7	39	24.9	5,542.9
City of Hamilton Public Health Services	257	43.8	301	51.3	7,429.4
Haldimand-Norfolk Health Unit	46	37.7	48	39.3	5,630.7
Halton Region Public Health	178	28.8	234	37.8	5,602.9
Niagara Region Public Health	159	32.8	293	60.4	6,106.1

Public Health Unit Name	Cases December 4 to December 10, 2022	Cases per 100,000 population December 4 to December 10, 2022	Cases December 11 to December 17, 2022	Cases per 100,000 population December 11 to December 17, 2022	Cases per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Region of Waterloo Public Health and Emergency Services	188	30.7	246	40.2	5,249.8
Wellington-Dufferin-Guelph Public Health	84	26.5	100	31.6	4,943.5
TOTAL CENTRAL WEST	**960**	**33.1**	**1,261**	**43.5**	**5,908.6**
TOTAL ONTARIO	**5,264**	**35.5**	**6,022**	**40.6**	**5,966.9**

Note: Access to testing can vary across the province and as a result may impact the reported confirmed case rates by public health unit.

Appendix C: Severity Measures by Age and Sex

Table 4. Confirmed COVID-19 cases that were admitted to hospital, by sex and age group

Sex and age group	Hospital admissions December 4 to December 10, 2022	Hospital admissions per 100,000 population December 4 to December 10, 2022	Hospital admissions December 11 to December 17, 2022	Hospital admissions per 100,000 population December 11 to December 17, 2022	Hospital admissions Past 52 weeks (December 19, 2021 to December 17, 2022)	Hospital admissions per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Total Cases	304	2.1	308	2.1	30,409	205.1
Sex: Female	150	2.0	120	1.6	14,015	186.9
Sex: Male	152	2.1	188	2.6	16,336	223.0
Sex: Did not specify female or male	2	N/A	0	N/A	58	N/A
Ages: <1	7	5.1	12	8.8	746	548.2
Ages: 1 – 4	1	0.2	2	0.3	521	90.3
Ages: 5 – 11	0	0.0	1	0.1	242	22.5
Ages: 12 – 19	2	0.2	2	0.2	276	21.1
Ages: 20 – 39	14	0.3	6	0.1	1,602	38.3
Ages: 40 – 59	29	0.7	32	0.8	3,431	88.6
Ages: 60 – 79	120	4.0	105	3.5	11,574	386.5
Ages: 80 and over	131	19.4	148	21.9	12,015	1780.1
Ages: Unknown	0	N/A	0	N/A	2	N/A

Table 5. Confirmed COVID-19 deaths, by sex and age group

Sex and age group	Deaths December 4 to December 10, 2022	Deaths per 100,000 population December 4 to December 10, 2022	Deaths December 11 to December 17, 2022	Deaths per 100,000 population December 11 to December 17, 2022	Deaths Past 52 weeks (December 19, 2021 to December 17, 2022)	Deaths per 100,000 population Past 52 weeks (December 19, 2021 to December 17, 2022)
Total Cases	52	0.4	40	0.3	5,566	37.5
Sex: Female	19	0.3	20	0.3	2,502	33.4
Sex: Male	33	0.5	20	0.3	3,050	41.6
Sex: Did not specify female or male	0	N/A	0	N/A	14	N/A
Ages: 0 – 19	0	0.0	1	<0.1	13	0.4
Ages: 20 – 39	0	0.0	1	<0.1	49	1.2
Ages: 40 – 59	5	0.1	0	0.0	302	7.8
Ages: 60 – 79	17	0.6	7	0.2	1,773	59.2
Ages: 80 and over	30	4.4	31	4.6	3,429	508.0
Ages: Unknown	0	N/A	0	N/A	0	N/A

Appendix D: All Time Severe Outcomes

Table 6. Confirmed COVID-19 cases and deaths among LTCH residents, by wave[1]

Wave	Number of LTCH Resident Cases	Number of LTCH Resident COVID-19 deaths	Case Fatality Rate (CFR)
Wave 1 (February 26, 2020 to August 31, 2020)	6,012	1,906	31.7%
Wave 2 (September 1, 2020 to February 28, 2021)	9,085	1,949	21.5%
Wave 3 (March 1, 2021 to July 31, 2021)	414	60	14.5%
Wave 4 (August 1, 2021 to December 14, 2021)	247	45	18.2%
Wave 5 (December 15, 2021 to February 28, 2022)	10,172	483	4.7%
Wave 6 (March 1, 2022 to June 18, 2022)	7,708	203	2.6%
Wave 7 (June 19, 2022 to December 17, 2022)[2]	23,190	662	2.9%
Total	**56,828**	**5,308**	**9.3%**

Notes:
1. As of August 31, 2022, only LTCH resident cases linked to an outbreak are required to be identified as LTCH residents in CCM. As a result, fewer LTCH resident cases will be identified. The number of LTCH resident cases, deaths, and CFR should be interpreted with this reporting change in mind. 2. The case fatality rate for this time period may change as new cases are reported.

Appendix E: Short-term Projections of COVID-19 in Ontario

- A multinomial logistic regression model (from the R package, *nnet*[1]) of whole genome sequencing (WGS) data, was used to estimate the proportion of each SARS-CoV-2 lineage over the last three months. Lineages with at least fourteen days of non-zero case counts were included in the model. Proportions of the top five lineages with at least one day of an estimated prevalence of 5% or greater during the 18 week period (12 observed and 6 projected) were then applied to the reported daily COVID-19 cases to determine the daily estimated number of cases for each lineage.

- The R package, *EpiNow2*[2], was used to project the daily number of cases forward 14 days. The model was run by lineage to ensure potential differences in lineage-specific transmission were accounted for. *EpiNow2*[2] calculates these projections using Bayesian latent variable modelling[3]. Model inputs included an incubation period of 4 days[4,5] and a generation time of 2.5 days[6]. The reporting delay was estimated to be about 3 days using the symptom onset date. The results by lineage were then summed to generate the projected total number of cases and 75% credible interval. Modelling results of past weeks were compared with reported cases to confirm model accuracy.

References

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Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Weekly epidemiologic summary: COVID-19 in Ontario – December 11 to December 17, 2022. Toronto, ON: King's Printer for Ontario; 2022.

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