COVID-19 in Ontario: Focus on January 1, 2023 to January 7, 2023 (Week 1)

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Figures and tables in this report present the most recent 52 weeks of data for Ontario, ranging from **January 9, 2022 to January 7, 2023**. 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 12% compared to last week among those eligible for testing**: The number of reported cases in Ontario was 7,441 this week, compared to 6,624 last week. A gradual increase has been observed since late November. Current projections suggest weekly case numbers may decrease over the next two weeks.

  - Among Ontario's seven regions, case rates were higher in five, similar in one, and lower in one this week. Among the 34 public health units, case rates were higher in 18, similar in 12, and lower in four compared to last week.

  - Case rates were higher in four age groups, similar in one, and lower in two compared to last week.

- **Percent positivity similar (+/- 10%) and testing volumes up 12% compared to last week:** Percent positivity was 16.2% this week compared to 16.5% observed last week. Testing volume this week was 48,037 compared to 42,849 tests last week.

Severity

- **Hospital admissions trending downward and deaths trending upward compared to last week:** There were 398 hospital admissions reported this week, compared to 463 last week. There were 67 deaths reported this week, compared to 47 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 similar (+/- 10%) compared to last week:** The total number of outbreaks in high-risk settings was 143 this week, compared to 144 last week. Compared to last week, this week there were a similar number of outbreaks in shelters, more outbreaks reported in retirement homes, hospitals, and correctional facilities, and fewer outbreaks reported in long-term care homes and group homes/supportive housing.

- **Outbreak-associated cases in high-risk settings similar (+/- 10%) compared to last week**: There were 1,866 outbreak-associated cases reported this week in high-risk settings, compared to 1,794 last week. Compared to last week, this week there were a similar number of outbreak-associated cases in most settings; the exception was group homes/supportive housing, where there were fewer outbreak-associated cases.
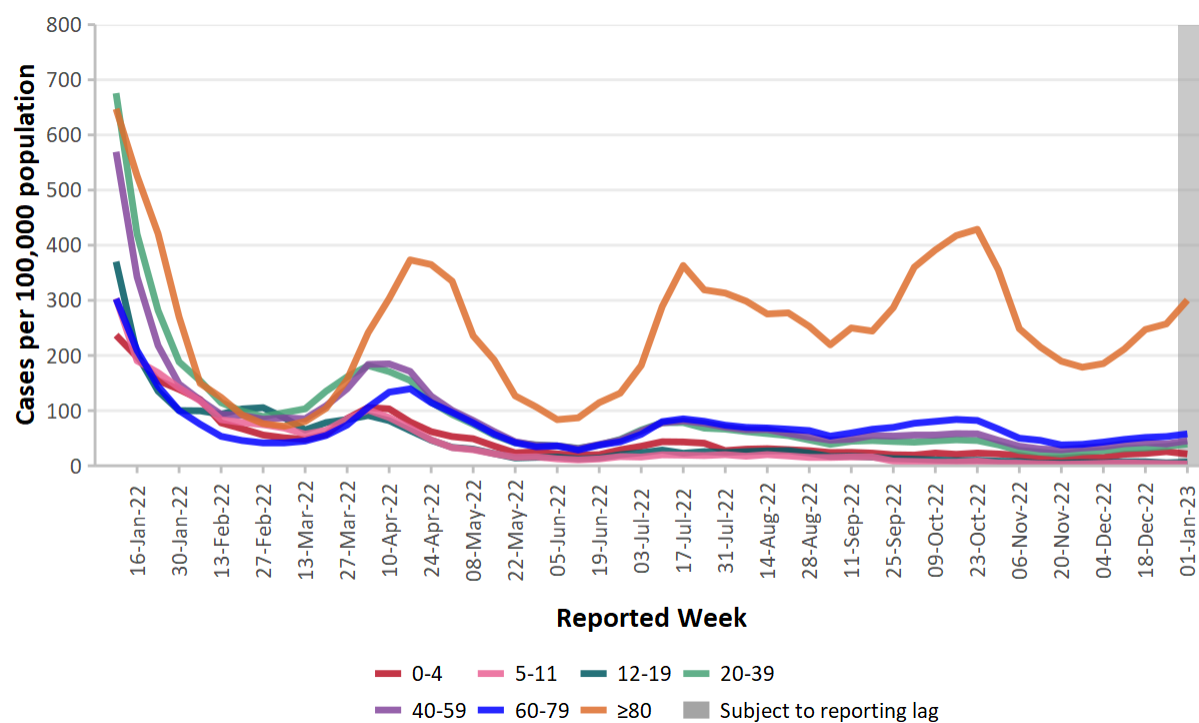
Cases

Figure 1a. Confirmed and projected cases of COVID-19 by reported week
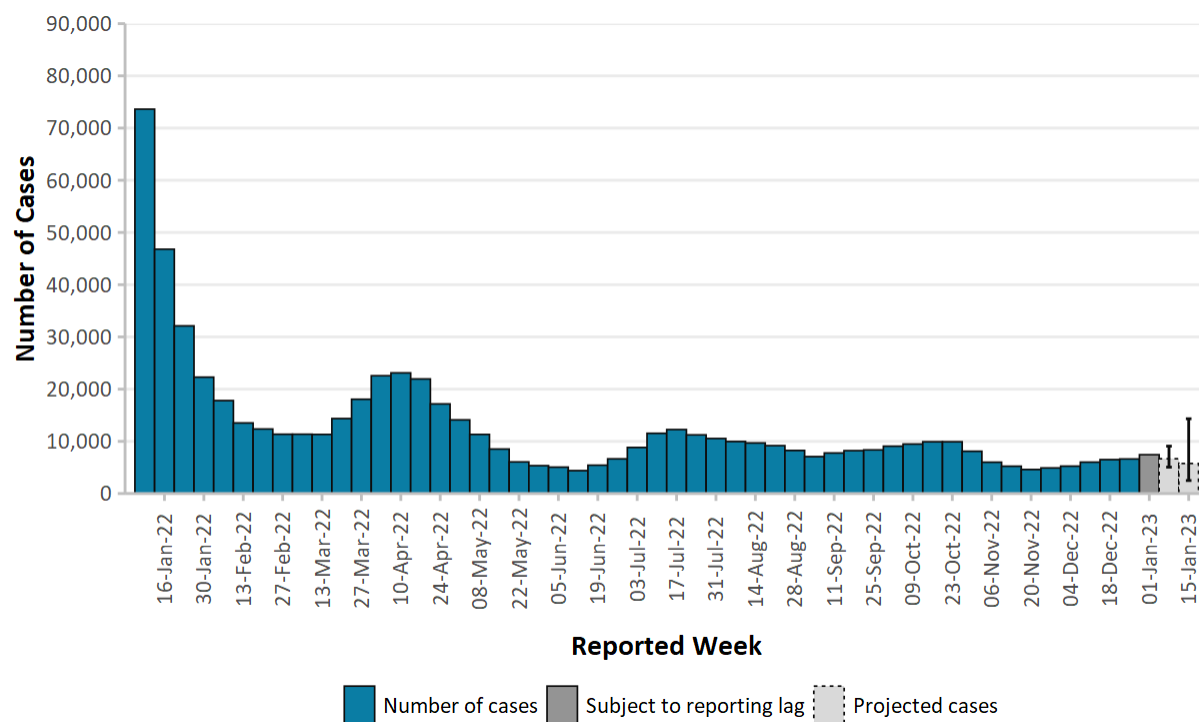
Note: Projections were estimated using the daily distribution of SARS-CoV-2 lineages and COVID-19 cases over time to forecast COVID-19 cases into the future by 14 days. The error bars on the projected cases represent the 75% credible interval. For more information refer to Appendix E. Projections are made based on our current knowledge of COVID-19, and thus cannot predict introductions of new lineages, which may impact model accuracy.
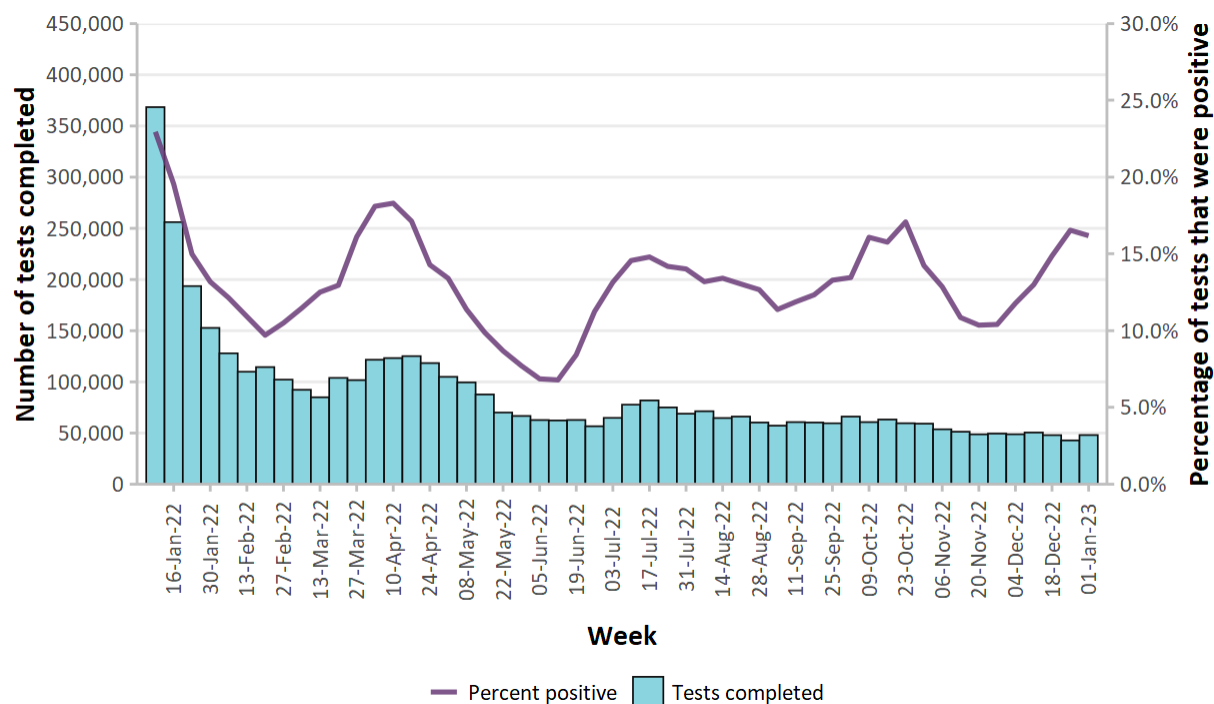
Figure 1b. Confirmed cases of COVID-19 (per 100,000 population), by age group and report week

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
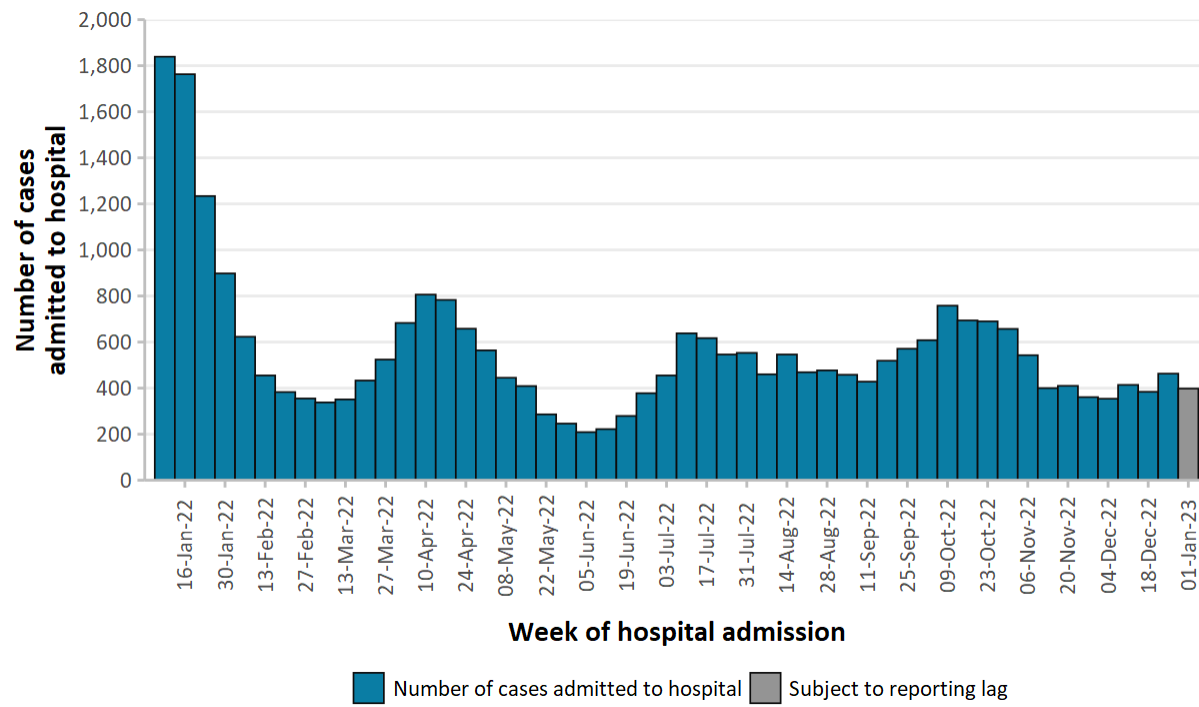
Figure 3b. Confirmed COVID-19 cases that were admitted to hospital (per 100,000 population), by age group and hospital admission date
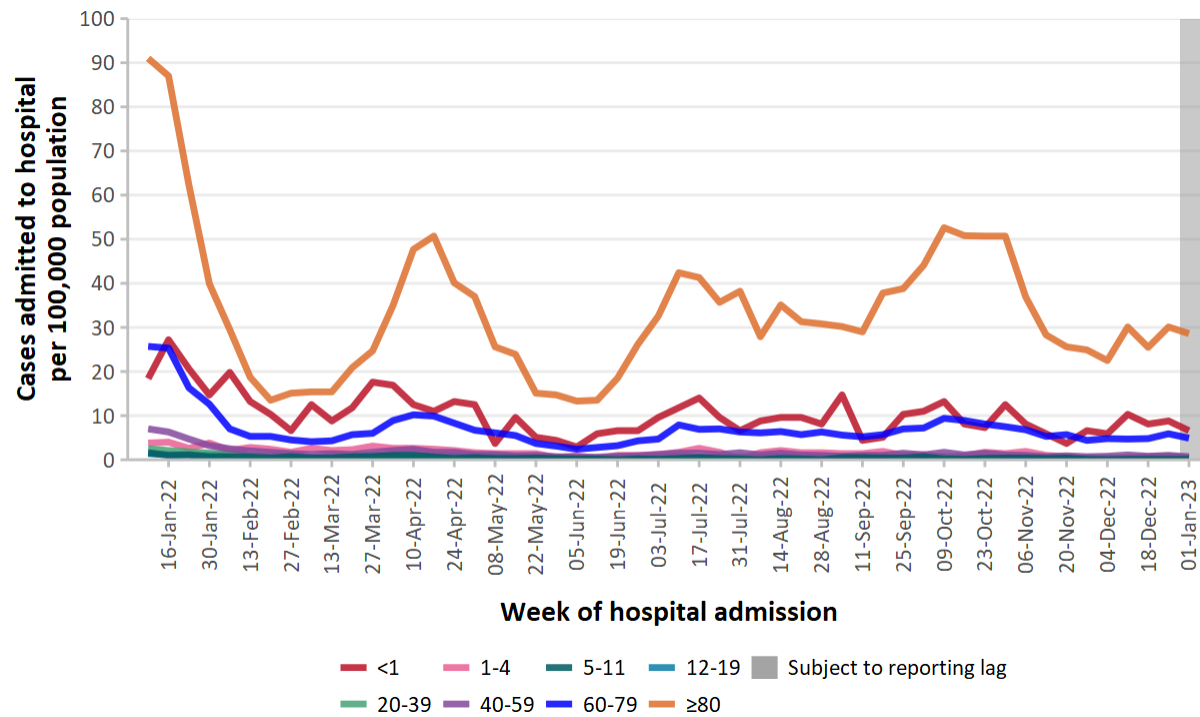
Note: Not all cases have an age reported.

Deaths

Figure 4a. Confirmed COVID-19 deaths, by cause and week of death
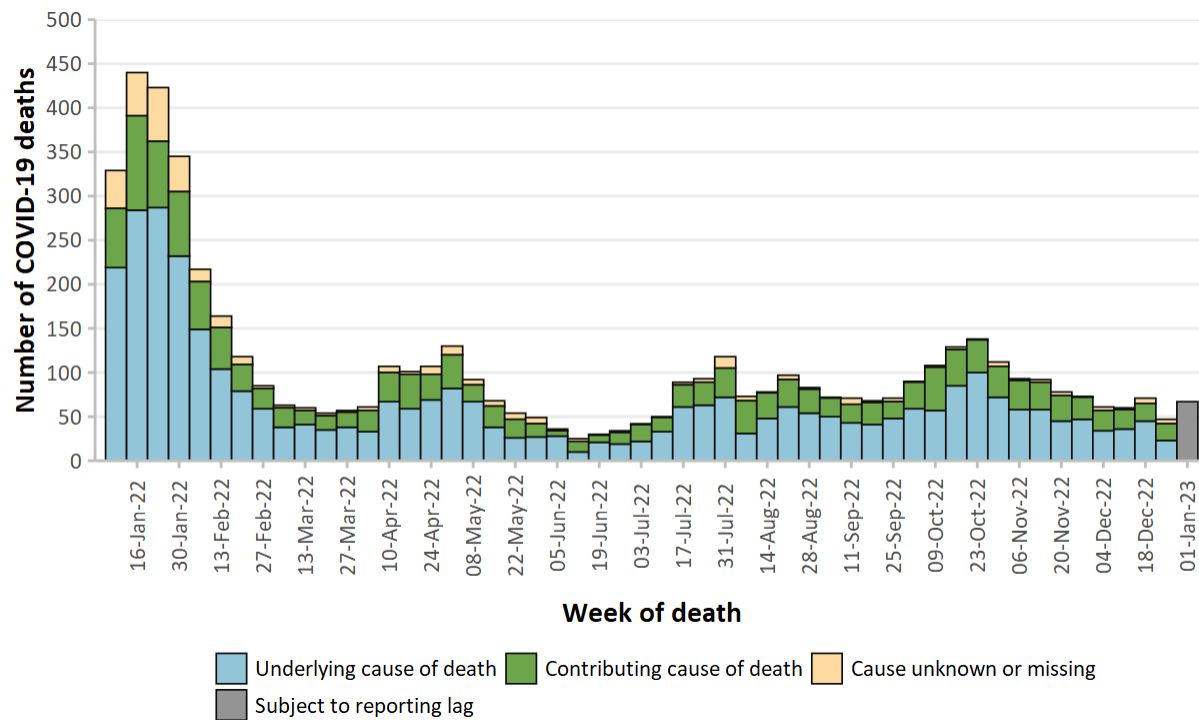
Figure 4b. Confirmed COVID-19 deaths (per 100,000 population), by age group and week of death
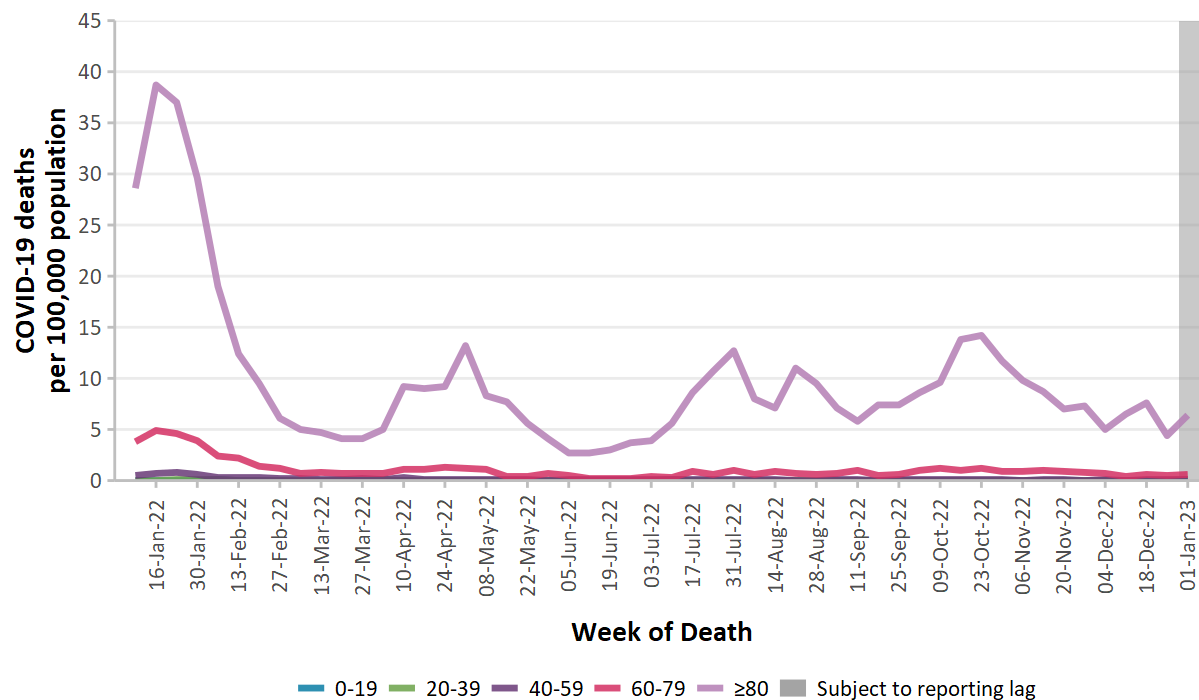
Severity by Neighbourhood Material Deprivation

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
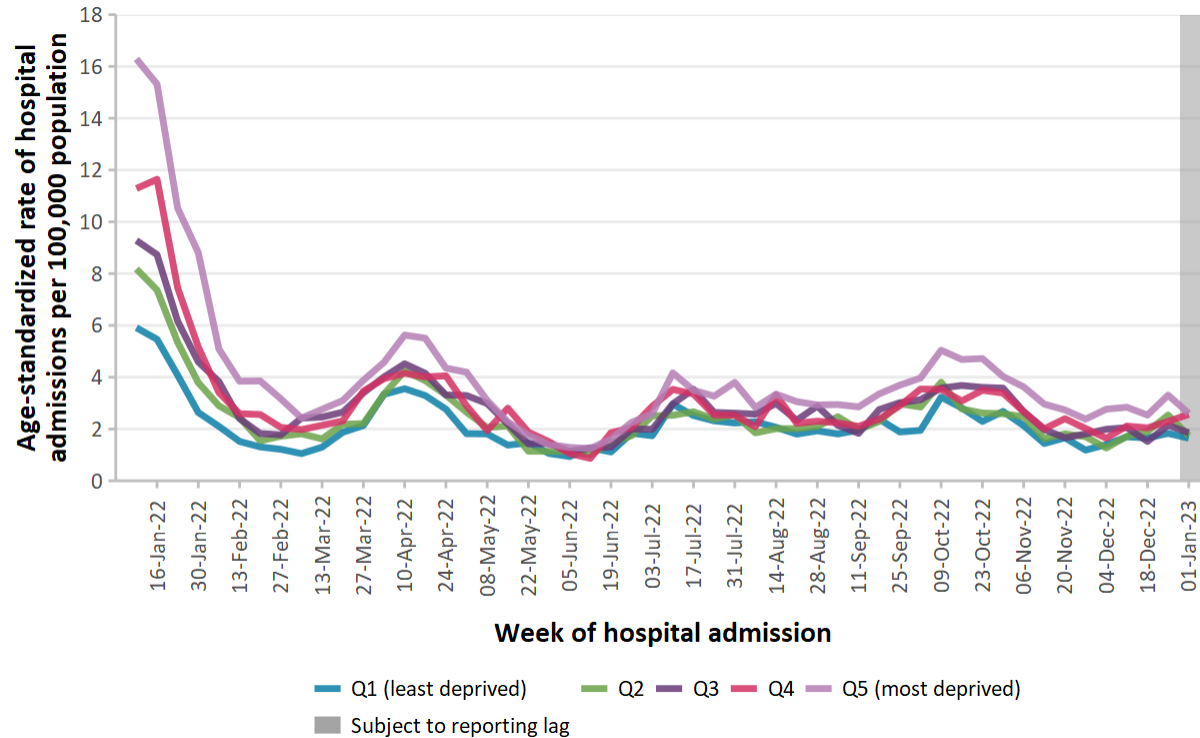
Data Source: CCM, ON-Marg 2016

Figure 5b. Confirmed COVID-19 deaths (per 100,000 population), by quintile of neighbourhood material deprivation and week of death
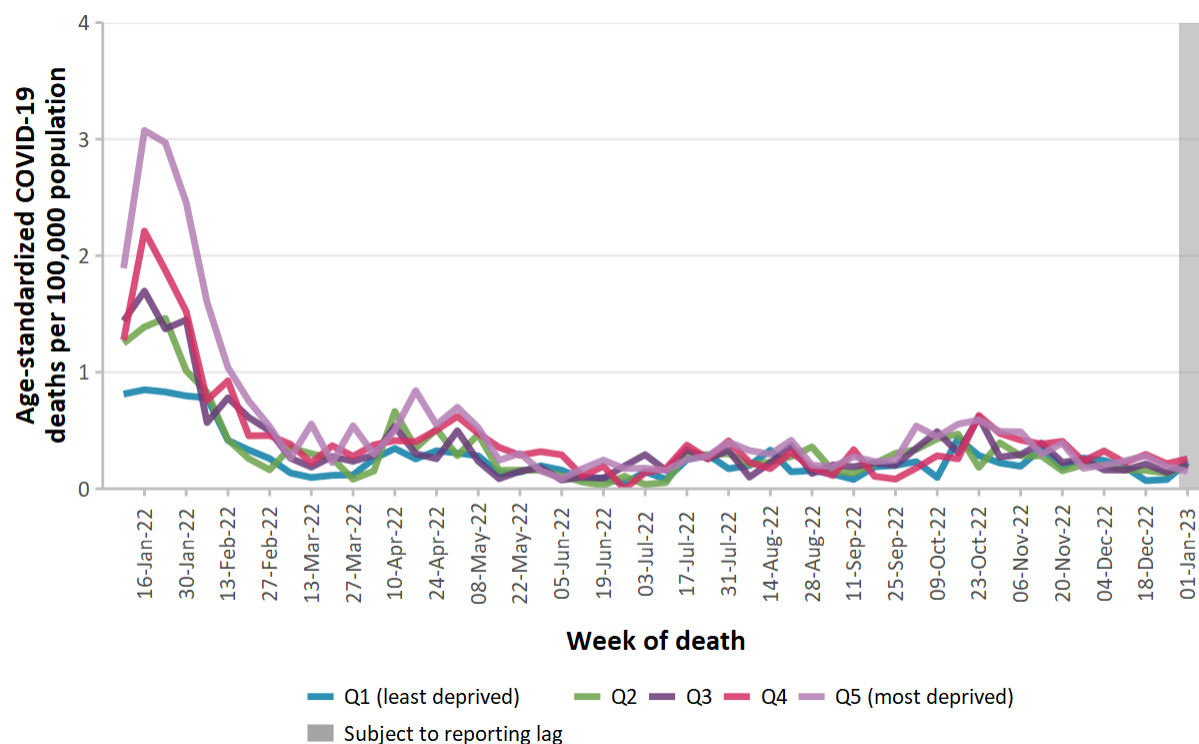
Data Source: CCM, ON-Marg 2016

Outbreaks

Figure 6. Confirmed COVID-19 outbreaks, by setting type and reported week
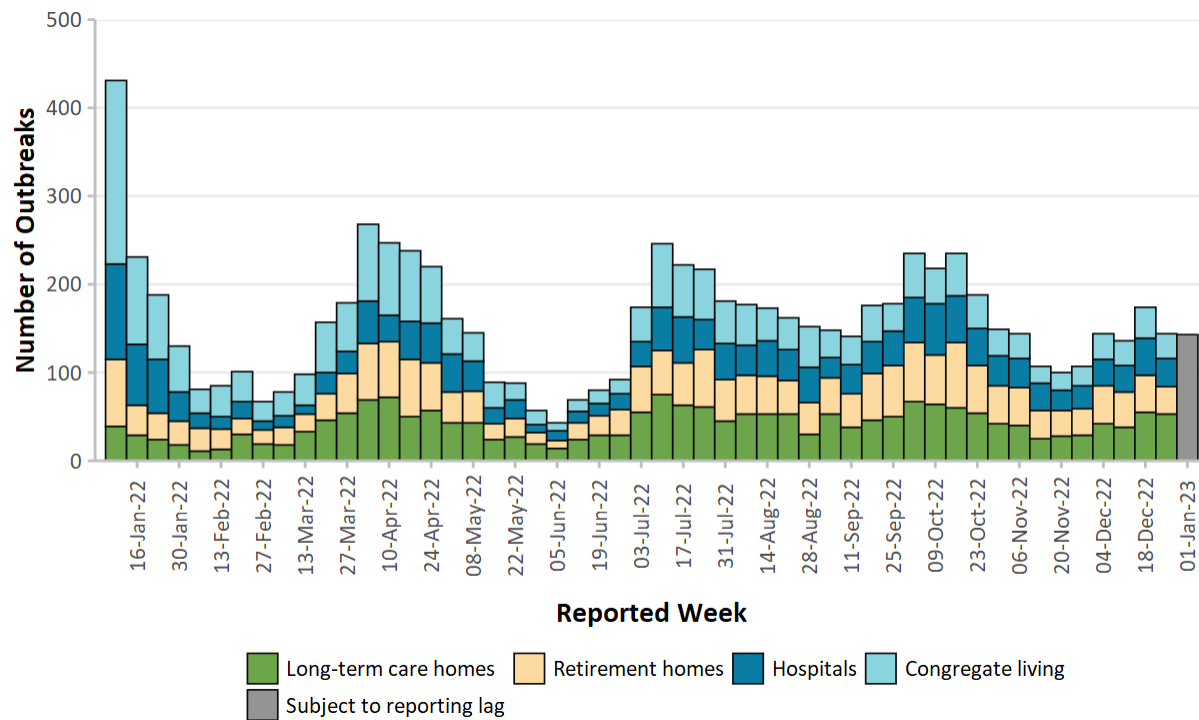
Note: Congregate living includes group homes, shelters, and correctional facilities.

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

Setting Type	Reported December 25 to December 31, 2022	Reported January 1 to January 7, 2023	Ongoing Outbreaks	Reported Past 52 Weeks (January 9, 2022 to January 7, 2023)
Congregate Care Total	**116**	**123**	**322**	**5,958**
Long-term care homes	53	37	149	2,143
Retirement homes	31	45	110	2,055
Hospitals	32	41	63	1,760
Congregate Living Total	**28**	**20**	**37**	**2,236**
Correctional facility	0	2	4	137
Shelter	5	7	12	380
Group homes/supportive housing	23	11	21	1,719
Total number of outbreaks*	**144**	**143**	**359**	**8,194**

*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 25 to December 31, 2022	Reported January 1 to January 7, 2023	Reported Past 52 Weeks (January 9, 2022 to January 7, 2023)
Congregate Care Total	**1,744**	**1,823**	**104,697**
Long-term care homes	1,013	1,095	61,386
Retirement homes	494	483	28,072
Hospitals	237	245	15,239
Congregate Living Total	**50**	**43**	**12,025**
Correctional facility	2	4	3,567
Shelter	10	13	1,877
Group homes/supportive housing	38	26	6,581
Total number of cases*	**1,794**	**1,866**	**116,722**

*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:

  - **January 10, 2023 at 1 p.m**. for cases reported March 1, 2022 onwards

  - **January 9, 2023 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 **January 10, 2023**. 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 28, 2022** from PHO and **December 27, 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

Legend:
- Patients in inpatient beds (incl. ICU) with active COVID-19
- Patients in ICU with COVID-related critical illness
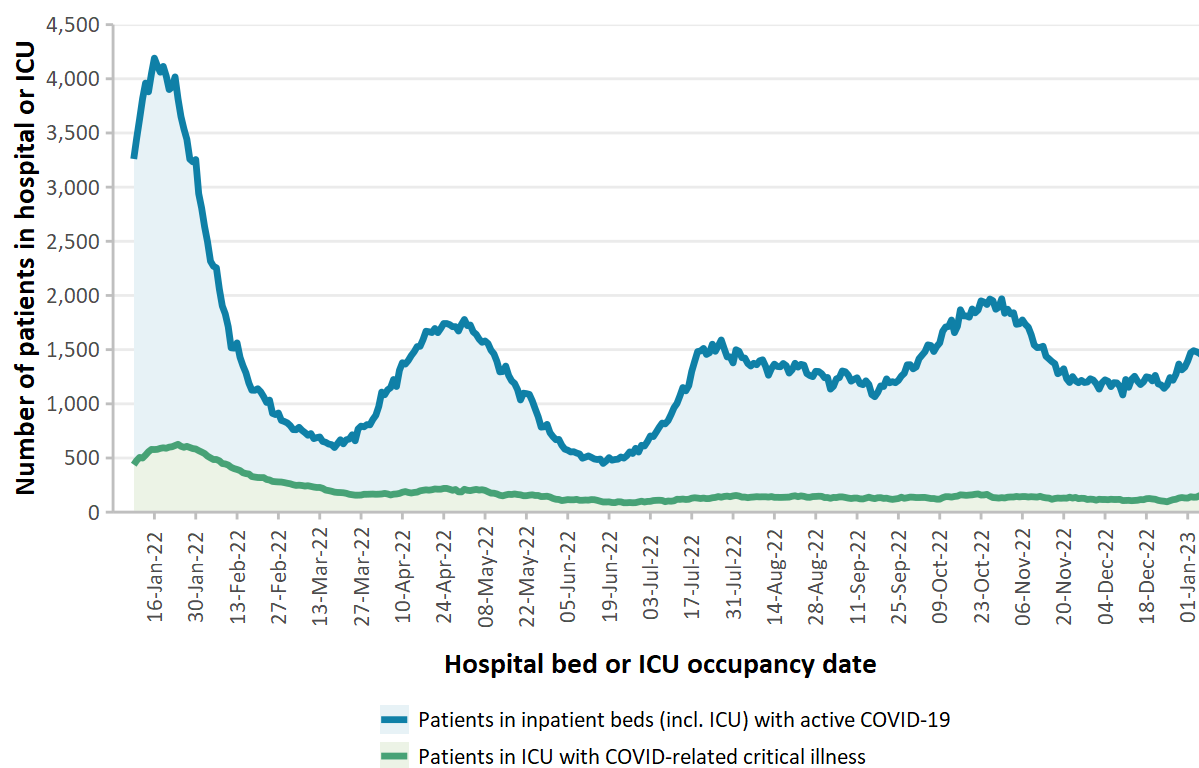
Data Source: Ontario Ministry of Health
Note: Hospital bed occupancy data comes from the Hospital Daily Bed Census and ICU bed occupancy data comes from the Critical Care Information System.

Appendix B: Cases by Public Health Unit

Figure 8. Confirmed cases of COVID-19 (per 100,000 population), by region and reported week
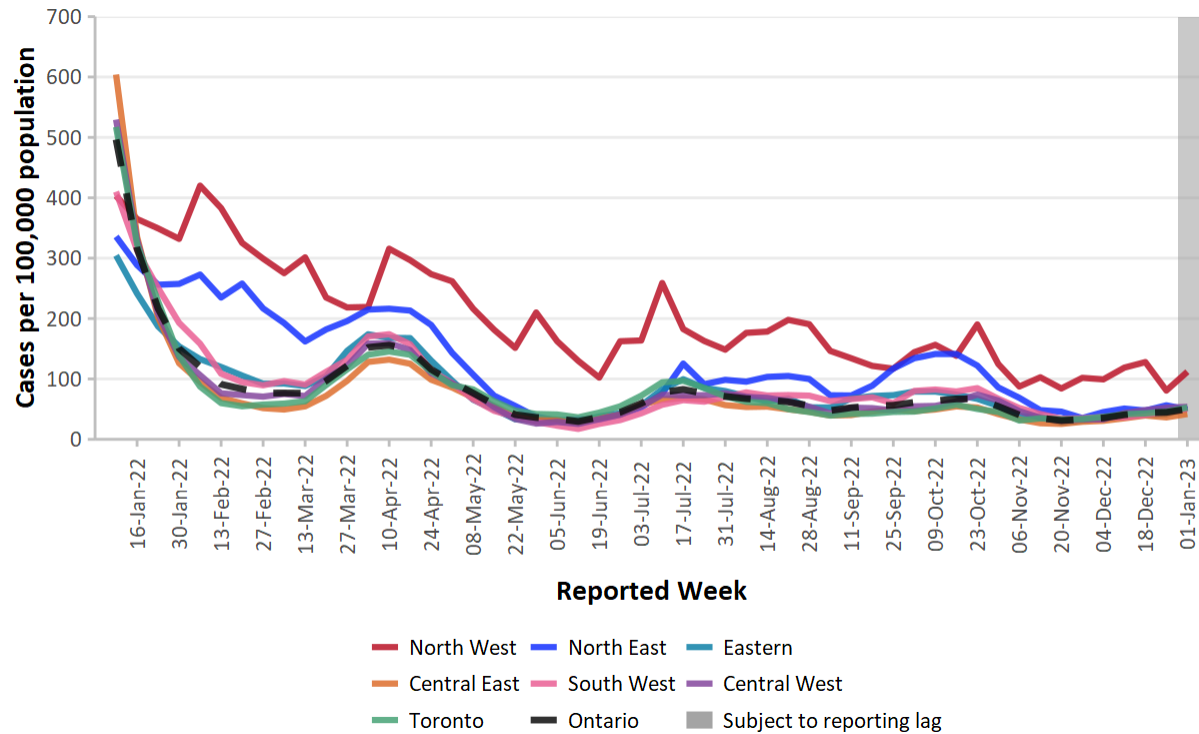
Table 3. Confirmed cases of COVID-19, by public health unit and region

Public Health Unit Name	Cases December 25 to December 31, 2022	Cases per 100,000 population December 25 to December 31, 2022	Cases January 1 to January 7, 2023	Cases per 100,000 population January 1 to January 7, 2023	Cases per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Northwestern Health Unit	60	73.5	67	82.1	14,414.7
Thunder Bay District Health Unit	132	84.6	199	127.5	8,357.2
TOTAL NORTH WEST	**192**	**80.8**	**266**	**111.9**	**10,437.5**
Algoma Public Health	50	42.7	50	42.7	7,512.5
North Bay Parry Sound District Health Unit	84	64.2	69	52.8	5,285.7
Porcupine Health Unit	52	61.8	56	66.5	6,457.2
Public Health Sudbury & Districts	108	52.6	101	49.2	6,868.8
Timiskaming Health Unit	28	81.9	6	17.6	5,749.0
TOTAL NORTH EAST	**322**	**56.3**	**282**	**49.3**	**6,511.0**
Ottawa Public Health	314	29.8	404	38.3	3,594.1
Eastern Ontario Health Unit	92	42.2	95	43.6	4,309.1
Hastings Prince Edward Public Health	96	55.2	109	62.7	5,332.7

Public Health Unit Name	Cases December 25 to December 31, 2022	Cases per 100,000 population December 25 to December 31, 2022	Cases January 1 to January 7, 2023	Cases per 100,000 population January 1 to January 7, 2023	Cases per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Kingston, Frontenac and Lennox & Addington Public Health	152	72.5	203	96.8	7,416.5
Leeds, Grenville & Lanark District Health Unit	114	62.8	137	75.5	5,014.1
Renfrew County and District Health Unit	38	34.8	71	64.9	4,912.0
TOTAL EASTERN	806	41.4	1,019	52.3	4,447.5
Durham Region Health Department	270	37.1	304	41.8	4,173.8
Haliburton, Kawartha, Pine Ridge District Health Unit	47	24.3	106	54.9	3,974.0
Peel Public Health	535	34.0	602	38.3	3,620.2
Peterborough Public Health	33	22.3	42	28.4	4,494.8
Simcoe Muskoka District Health Unit	274	44.4	273	44.3	4,738.7
York Region Public Health	468	38.7	546	45.1	3,777.8
TOTAL CENTRAL EAST	1,627	36.4	1,873	41.9	3,951.7
Toronto Public Health	1,365	45.9	1,563	52.6	4,242.9
TOTAL TORONTO	1,365	45.9	1,563	52.6	4,242.9

Public Health Unit Name	Cases December 25 to December 31, 2022	Cases per 100,000 population December 25 to December 31, 2022	Cases January 1 to January 7, 2023	Cases per 100,000 population January 1 to January 7, 2023	Cases per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Chatham-Kent Public Health	51	47.3	53	49.1	5,667.9
Grey Bruce Health Unit	77	43.1	51	28.6	3,796.9
Huron Perth Public Health	64	43.3	59	39.9	3,600.0
Lambton Public Health	61	46.0	93	70.1	5,610.4
Middlesex-London Health Unit	228	44.3	298	57.9	4,467.6
Southwestern Public Health	72	32.3	106	47.6	4,156.5
Windsor-Essex County Health Unit	243	57.0	219	51.4	5,308.0
TOTAL SOUTH WEST	**796**	**46.0**	**879**	**50.8**	**4,653.4**
Brant County Health Unit	103	65.8	93	59.4	4,274.0
City of Hamilton Public Health Services	472	80.4	512	87.2	5,618.8
Haldimand-Norfolk Health Unit	70	57.3	87	71.3	4,591.4
Halton Region Public Health	201	32.5	225	36.3	3,700.4
Niagara Region Public Health	243	50.1	261	53.8	4,916.1

Public Health Unit Name	Cases December 25 to December 31, 2022	Cases per 100,000 population December 25 to December 31, 2022	Cases January 1 to January 7, 2023	Cases per 100,000 population January 1 to January 7, 2023	Cases per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Region of Waterloo Public Health and Emergency Services	259	42.4	240	39.2	3,806.3
Wellington-Dufferin-Guelph Public Health	168	53.1	141	44.5	3,633.7
TOTAL CENTRAL WEST	**1,516**	**52.3**	**1,559**	**53.8**	**4,376.1**
TOTAL ONTARIO	**6,624**	**44.7**	**7,441**	**50.2**	**4,442.8**

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 25 to December 31, 2022	Hospital admissions per 100,000 population December 25 to December 31, 2022	Hospital admissions January 1 to January 7, 2023	Hospital admissions per 100,000 population January 1 to January 7, 2023	Hospital admissions Past 52 weeks (January 9, 2022 to January 7, 2023)	Hospital admissions per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Total Cases	463	3.1	398	2.7	29,035	195.8
Sex: Female	236	3.1	204	2.7	13,423	179.0
Sex: Male	226	3.1	193	2.6	15,555	212.3
Sex: Did not specify female or male	1	N/A	1	N/A	57	N/A
Ages: <1	12	8.8	9	6.6	722	530.5
Ages: 1 – 4	5	0.9	2	0.3	489	84.8
Ages: 5 – 11	1	0.1	1	0.1	221	20.6
Ages: 12 – 19	4	0.3	2	0.2	253	19.4
Ages: 20 – 39	24	0.6	18	0.4	1,466	35.0
Ages: 40 – 59	37	1.0	27	0.7	3,109	80.2
Ages: 60 – 79	176	5.9	146	4.9	10,980	366.7
Ages: 80 and over	203	30.1	193	28.6	11,792	1747.0
Ages: Unknown	1	N/A	0	N/A	3	N/A

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

Sex and age group	Deaths December 25 to December 31, 2022	Deaths per 100,000 population December 25 to December 31, 2022	Deaths January 1 to January 7, 2023	Deaths per 100,000 population January 1 to January 7, 2023	Deaths Past 52 weeks (January 9, 2022 to January 7, 2023)	Deaths per 100,000 population Past 52 weeks (January 9, 2022 to January 7, 2023)
Total Cases	47	0.3	67	0.5	5,473	36.9
Sex: Female	16	0.2	38	0.5	2,480	33.1
Sex: Male	31	0.4	29	0.4	2,982	40.7
Sex: Did not specify female or male	0	N/A	0	N/A	11	N/A
Ages: 0 – 19	0	0.0	0	0.0	11	0.4
Ages: 20 – 39	0	0.0	3	0.1	46	1.1
Ages: 40 – 59	3	0.1	3	0.1	281	7.3
Ages: 60 – 79	14	0.5	18	0.6	1,708	57.0
Ages: 80 and over	30	4.4	43	6.4	3,427	507.7
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)	9,086	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)	10,177	483	4.7%
Wave 6 (March 1, 2022 to June 18, 2022)	7,708	203	2.6%
Wave 7 (June 19, 2022 to January 7, 2023)[2]	25,773	729	2.8%
Total	**59,417**	**5,375**	**9.0%**

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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