COVID-19 in Ontario: Focus on October 2, 2022 to October 8, 2022 (Week 40)

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Figures and tables in this report present the most recent 52 weeks of data for Ontario, ranging from **October 10, 2021 to October 8, 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 was 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 similar (+/- 10%) compared to last week among those eligible for testing**: The number of reported cases in Ontario was 8,929 this week, similar when compared to 8,306 last week. However, a gradual increase in case numbers is observed when looking back over the past 4 weeks. Current projections suggest weekly case numbers may continue to gradually rise over the next 2 weeks.

    - Case rates were similar or increased this week in all 7 of Ontario's regions and 28 of 34 public health units, compared to last week.

    - Case rates were similar or increased this week in all age groups, compared to last week. Notably, the 80 years and older age group reported a 24% increased case rate this week compared to last week.

- **Percent positivity similar (+/- 10%) and testing volumes up 11% compared to last week:** Percent positivity was 13.5% this week, similar when compared to 13.3% last week. However, a gradual increase in percent positivity is observed when looking back over the past 4 weeks. Testing volume this week was 66,117, compared to 59,575 tests last week.

Severity

- **Hospital admissions down 21% and deaths down 29% compared to last week:** There were 344 hospital admissions reported this week, compared to 434 last week. There were 46 deaths reported this week, compared to 65 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 up 22% compared to last week:** The total number of outbreaks in high-risk settings was 211 this week, compared to 173 last week. Retirement homes and correctional facilities reported a similar (+/- 10%) number of outbreaks compared to last week; all other high-risk settings reported an increased number of outbreaks compared to last week.

- **Outbreak-associated cases in high-risk settings up 14% compared to last week**: There were 2,290 outbreak-associated cases reported this week in high-risk settings, compared to 2,017 last week. Hospitals and correctional facilities reported a similar (+/- 10%) number of outbreak-associated cases compared to last week; all other high-risk settings reported an increased number of outbreak-associated cases compared to last week.
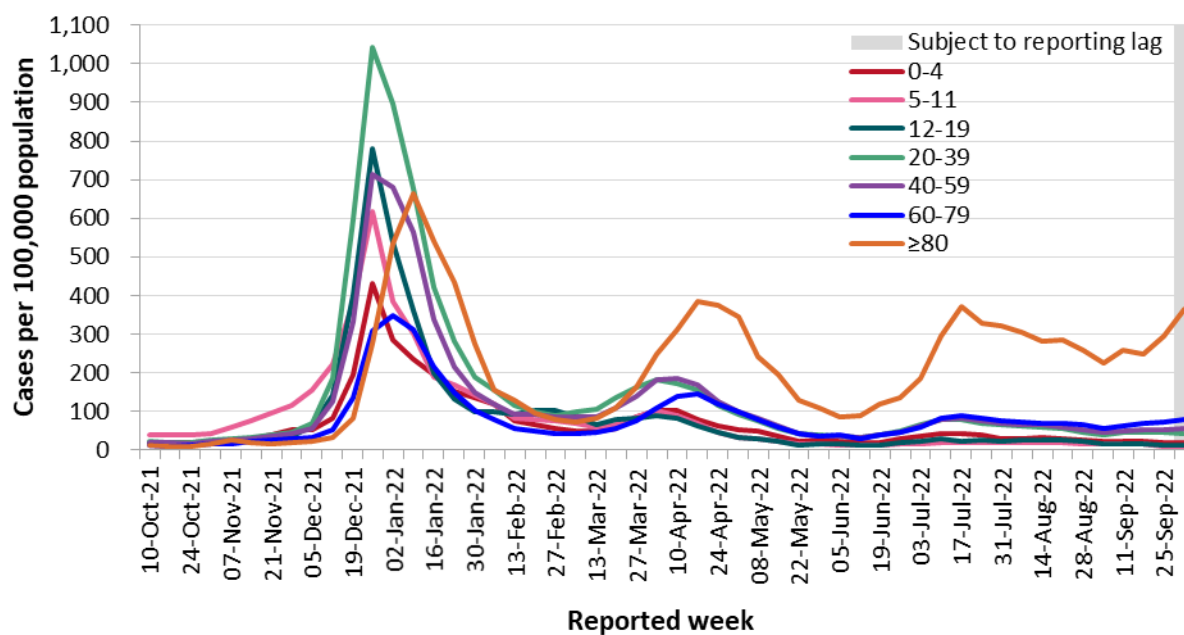
Cases

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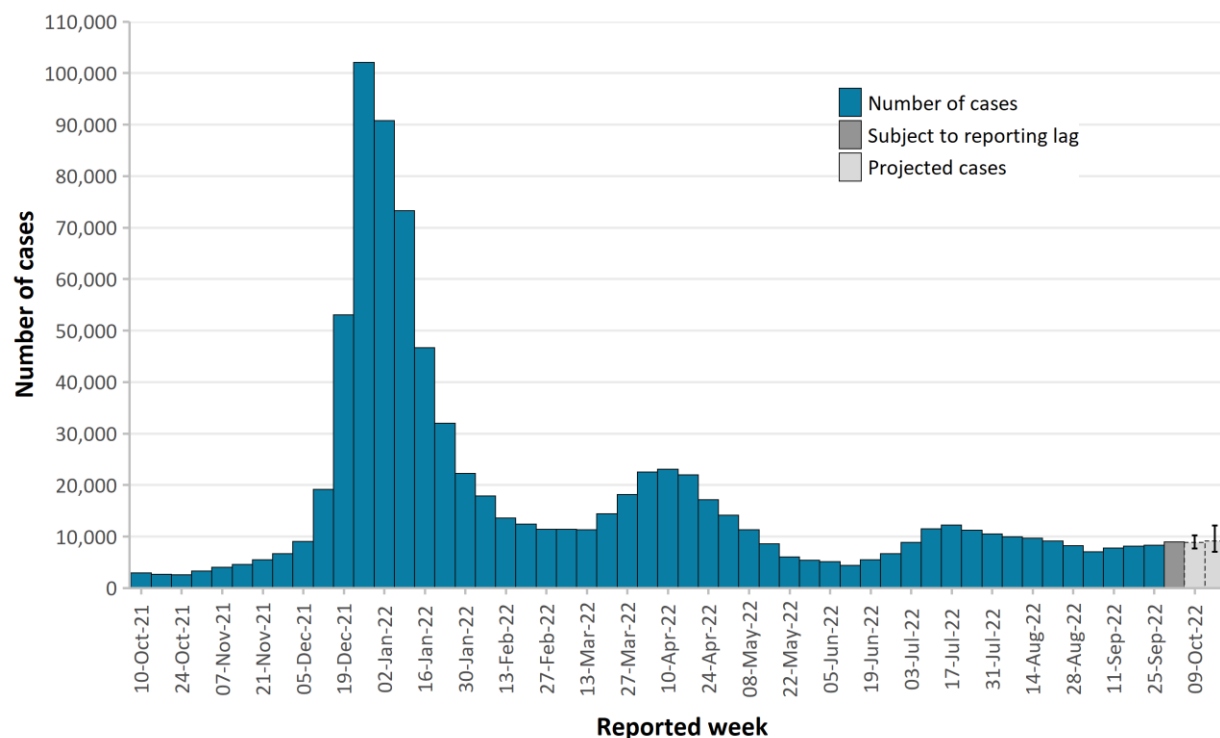
Note: Projections were estimated using the daily distribution of SARS-CoV-2 lineages and COVID-19 cases over time to forecast COVID-19 cases into the future by 14 days. The error bars on the projected cases represent the 75% credible interval. For more information refer to Appendix E. Projections are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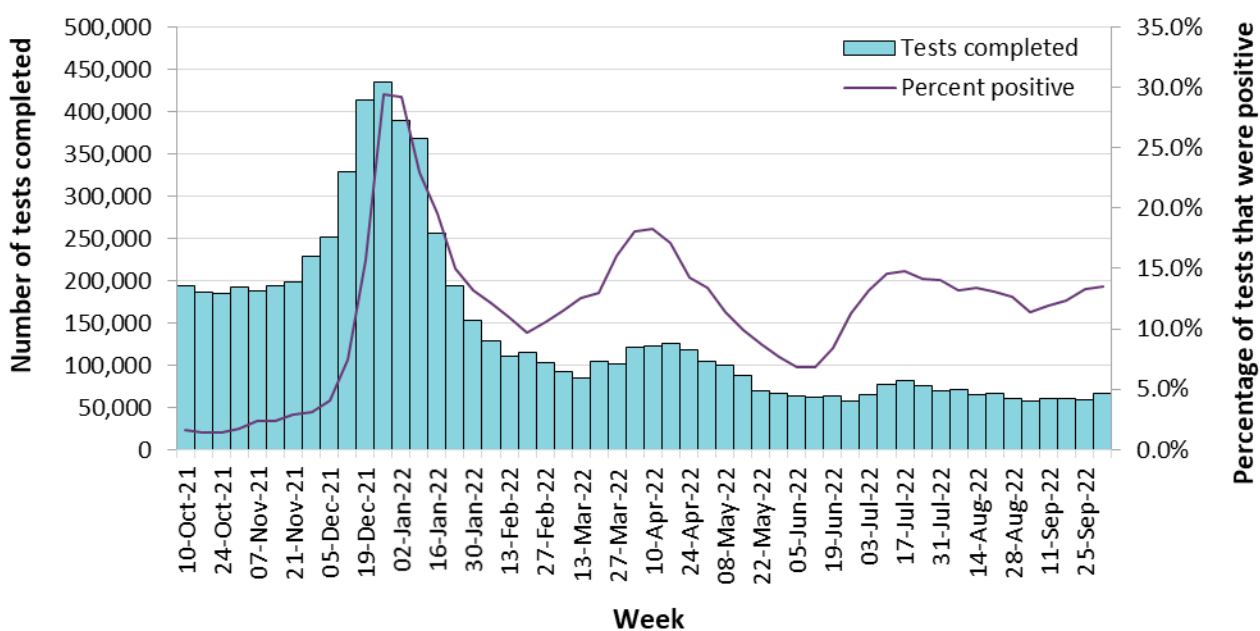
Figure 1b. Confirmed cases of COVID-19 (per 100,000 population), by age group and reported week

Note: Not all cases have an age reported.
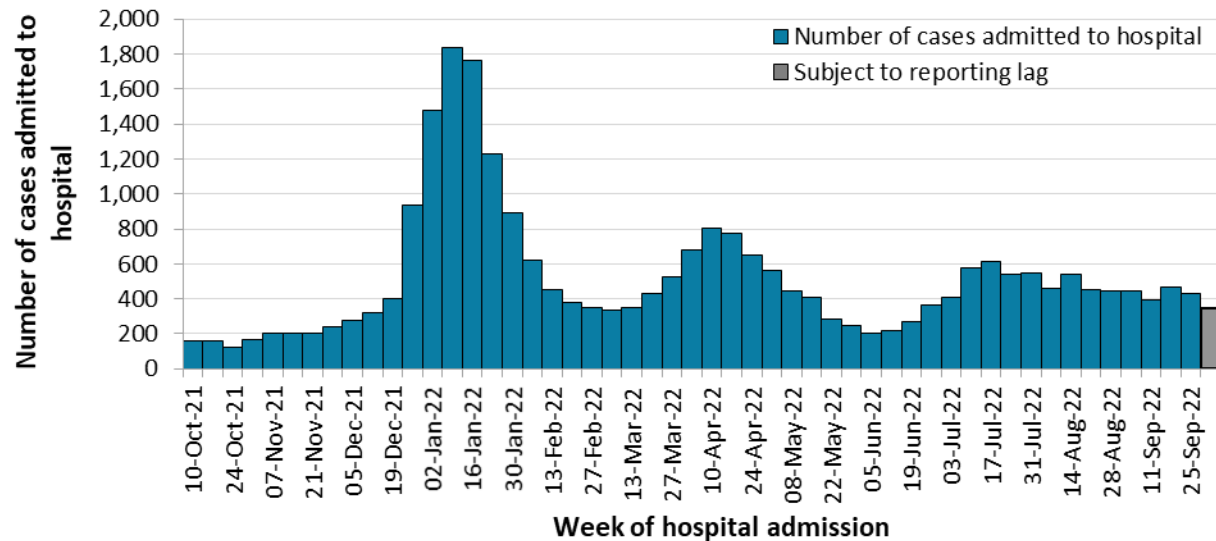
Testing

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

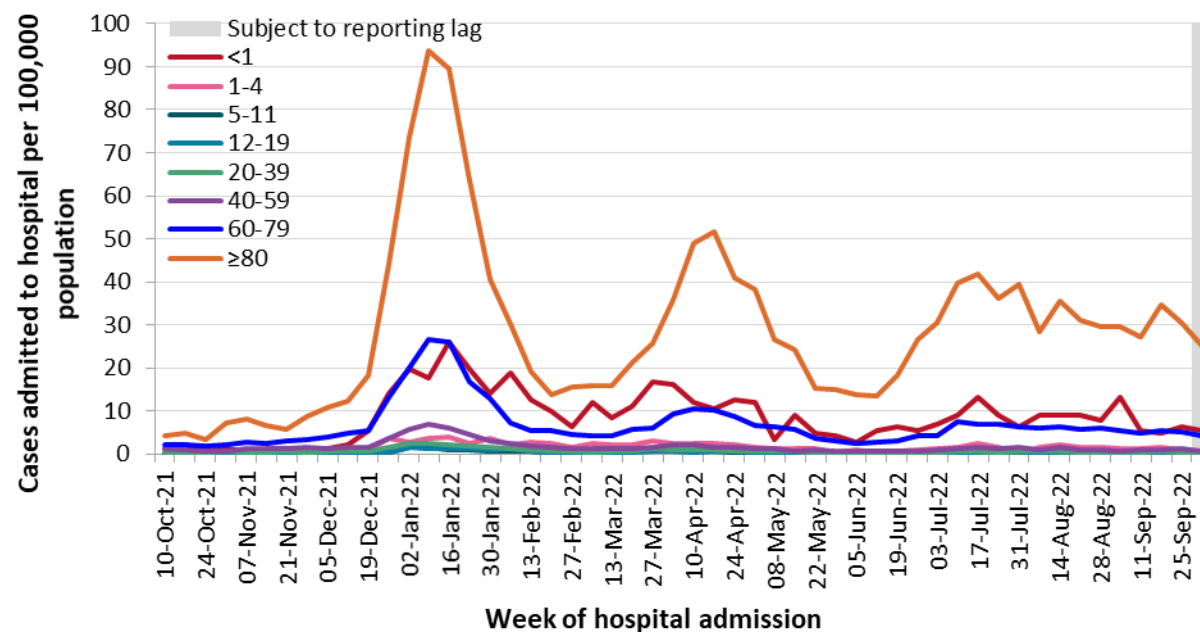**Data Source:** The Provincial COVID-19 Diagnostics Network, data reported by member microbiology laboratories.

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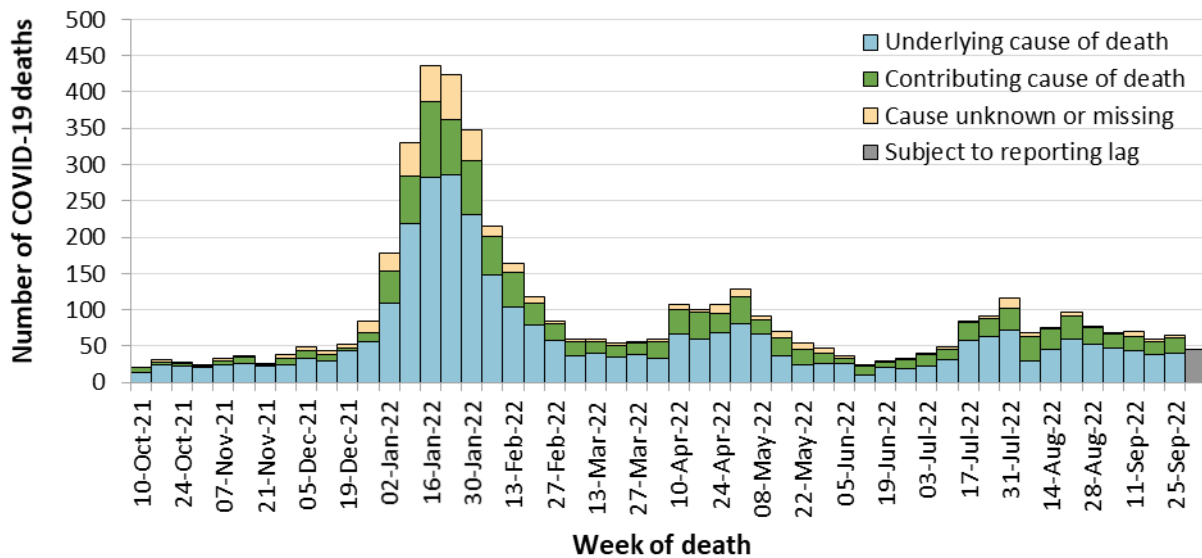
Figure 4b. Confirmed COVID-19 deaths (per 100,000 population), by age group and week of death
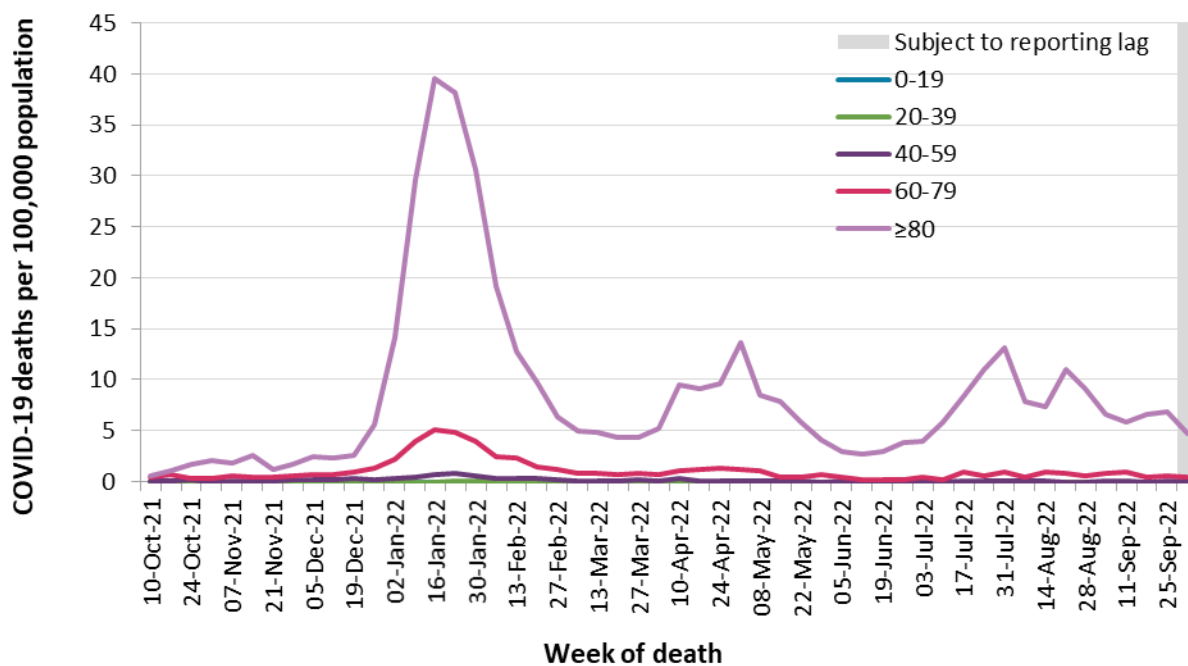
Severity by Neighbourhood Material Deprivation

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
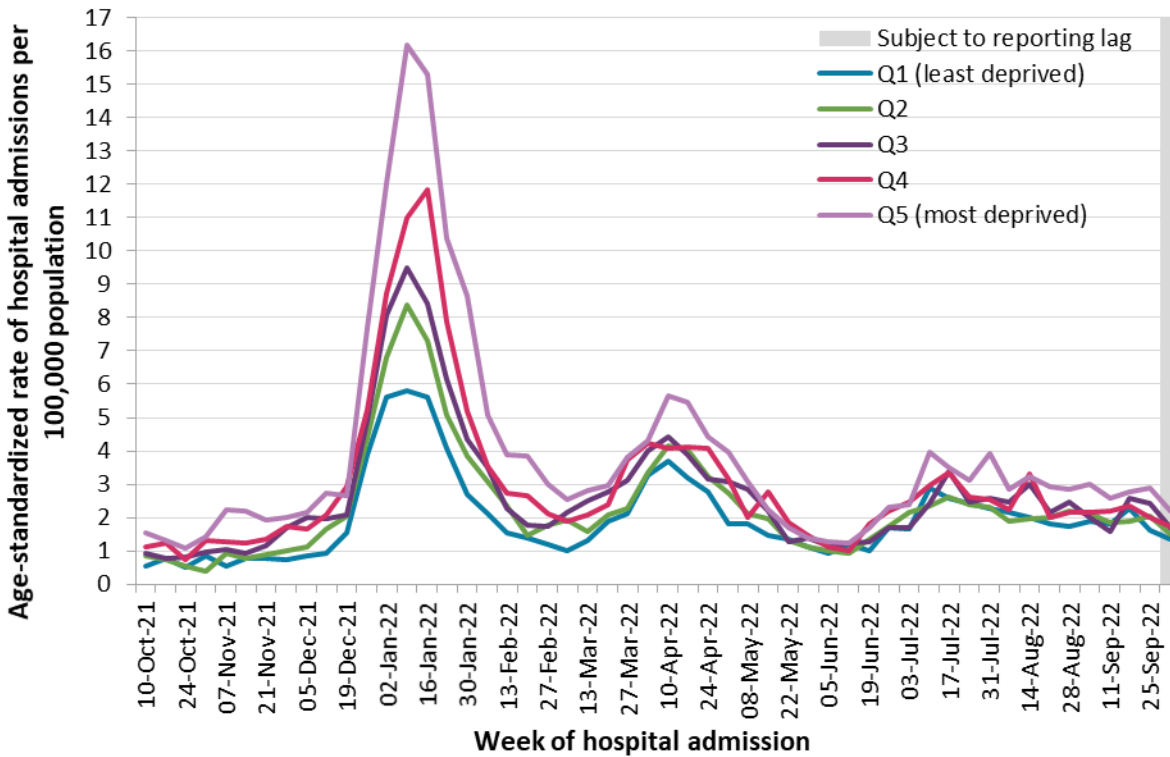
Data Source: CCM, ON-Marg 2016

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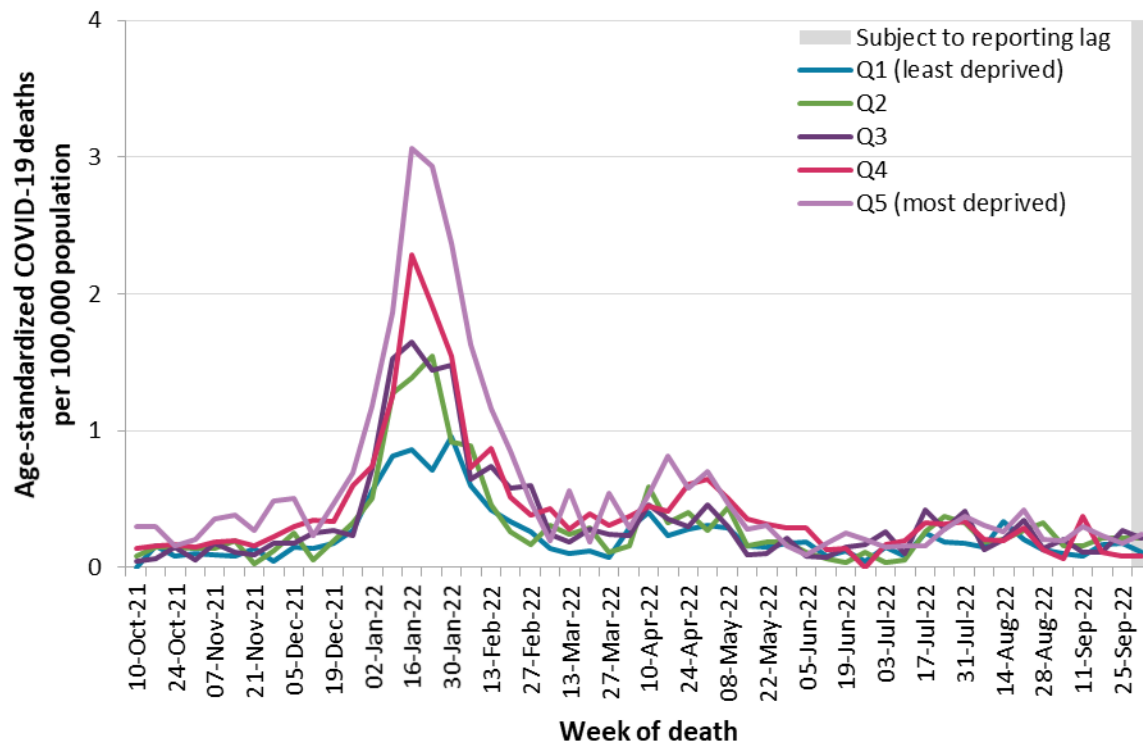
Data Source: CCM, ON-Marg 2016

Outbreaks

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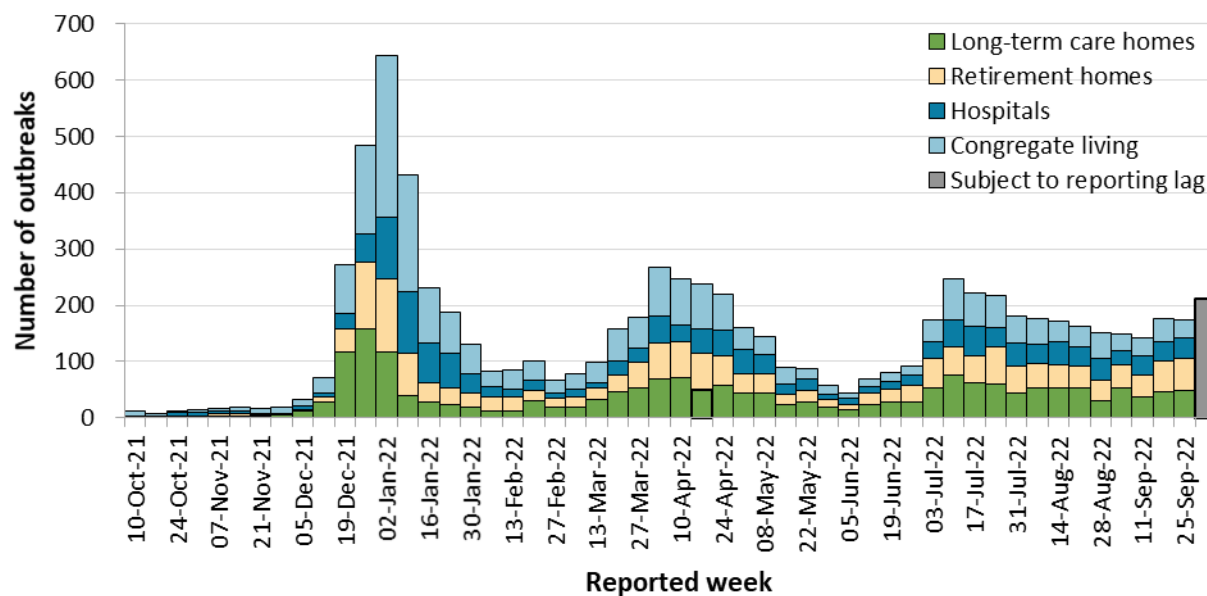
Note: Congregate living includes group homes, shelters, and correctional facilities.

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

Setting Type	Reported September 25 to October 1, 2022	Reported October 2 to October 8, 2022	Ongoing outbreaks	Reported Past 52 Weeks (October 10, 2021 to October 8, 2022)
Congregate Care	**143**	**167**	**398**	**5,330**
Long-term care homes	49	57	161	2,014
Retirement homes	56	59	148	1,806
Hospitals	38	51	89	1,510
Congregate Living	**30**	**44**	**69**	**2,466**
Correctional facility	4	4	13	136
Shelter	5	9	12	457
Group home/supportive housing	21	31	44	1,873
Total number of outbreaks*	**173**	**211**	**467**	**7,796**

*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 September 25 to October 1, 2022	Reported October 2 to October 8, 2022	Reported Past 52 Weeks (October 10, 2021 to October 8, 2022)
Congregate Care	**1,920**	**2,158**	**89,186**
Long-term care homes	1,001	1,151	53,379
Retirement homes	601	708	22,500
Hospitals	318	299	13,307
Congregate Living	**97**	**132**	**14,336**
Correctional facility	32	31	4,380
Shelter	6	13	2,676
Group home/supportive housing	59	88	7,280
Total number of cases*	**2,017**	**2,290**	**103,522**

*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:

  - **October 11, 2022 at 1 p.m.** for cases reported in waves 6 and 7 (March 1, 2022 onwards)

  - **October 11, 2022 at 9 a.m.** for cases reported in waves 4 and 5 (August 1, 2021 to February 28, 2022)

  - **October 3, 2022 at 9 a.**m. for cases reported in waves 1, 2, and 3 (up to July 31, 2021)

- Hospital and ICU bed occupancy data were obtained from the Ministry of Health on **October 12, 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 2001-2020: Table 1 annual population estimates by age and sex for July 1, 2001 to 2020, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2021 [received April 22, 2021].

- Statistics Canada Postal Code Conversion File Plus (PCCF+), version 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 **October 5, 2022** from PHO and **October 4, 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
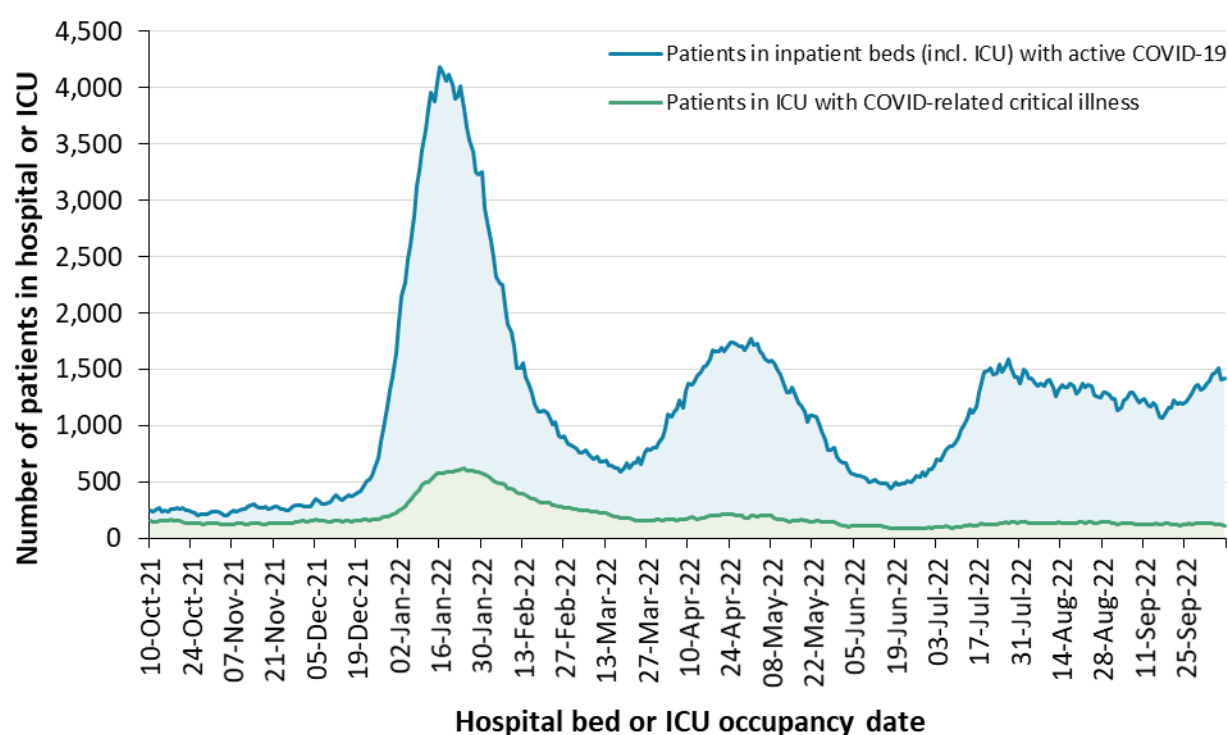
Data Source: Ontario Ministry of Health
Note: Hospital bed occupancy data comes from the Hospital Daily Bed Census and ICU bed occupancy data comes from the Critical Care Information System.

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

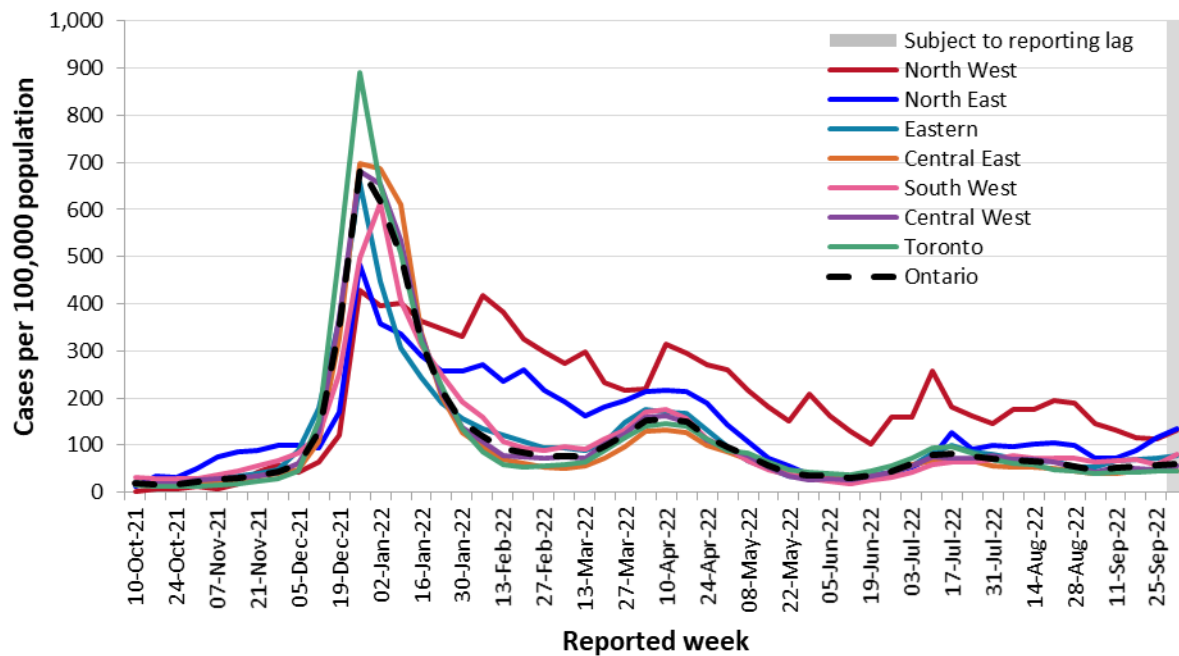| Public Health Unit Name	Cases September 25 to October 1, 2022	Cases per 100,000 population September 25 to October 1, 2022	Cases October 2 to October 8, 2022	Cases per 100,000 population October 2 to October 8, 2022	Cases per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Northwestern Health Unit	82	101.0	93	114.6	13,957.0
Thunder Bay District Health Unit	191	121.1	224	142.0	8,017.5
TOTAL NORTH WEST	**273**	**114.3**	**317**	**132.7**	**10,036.0**
Algoma Public Health	168	142.6	195	165.5	8,149.2
North Bay Parry Sound District Health Unit	162	125.3	161	124.5	5,497.0
Porcupine Health Unit	65	76.5	86	101.2	7,342.4
Public Health Sudbury & Districts	234	114.0	250	121.8	7,920.3
Timiskaming Health Unit	38	112.1	71	209.5	6,581.1
TOTAL NORTH EAST	**667**	**116.8**	**763**	**133.6**	**7,253.6**
Ottawa Public Health	512	49.1	589	56.5	5,090.6
Eastern Ontario Health Unit	113	52.3	104	48.2	5,979.4
Hastings Prince Edward Public Health	244	141.2	165	95.5	6,606.5
Kingston, Frontenac and Lennox &	268	128.1	307	146.7	9,244.9

Public Health Unit Name	Cases September 25 to October 1, 2022	Cases per 100,000 population September 25 to October 1, 2022	Cases October 2 to October 8, 2022	Cases per 100,000 population October 2 to October 8, 2022	Cases per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Addington Public Health					
Leeds, Grenville & Lanark District Health Unit	187	103.9	258	143.4	5,518.9
Renfrew County and District Health Unit	79	72.8	83	76.5	4,914.5
TOTAL EASTERN	**1,403**	**72.7**	**1,506**	**78.1**	**5,806.4**
Durham Region Health Department	336	47.2	343	48.2	5,792.6
Haliburton, Kawartha, Pine Ridge District Health Unit	119	62.4	161	84.4	4,553.1
Peel Public Health	558	35.7	473	30.2	5,302.2
Peterborough Public Health	228	153.9	225	151.9	5,073.7
Simcoe Muskoka District Health Unit	453	74.9	394	65.2	6,325.6
York Region Public Health	502	41.8	435	36.2	5,524.3
TOTAL CENTRAL EAST	**2,196**	**49.7**	**2,031**	**46.0**	**5,541.5**
Toronto Public Health	1,356	45.4	1,382	46.2	6,038.8
TOTAL TORONTO	**1,356**	**45.4**	**1,382**	**46.2**	**6,038.8**
Chatham-Kent Public Health	58	54.4	61	57.2	6,863.6

Public Health Unit Name	Cases September 25 to October 1, 2022	Cases per 100,000 population September 25 to October 1, 2022	Cases October 2 to October 8, 2022	Cases per 100,000 population October 2 to October 8, 2022	Cases per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Grey Bruce Health Unit	73	41.4	101	57.3	4,445.1
Huron Perth Public Health	72	49.2	144	98.5	4,329.8
Lambton Public Health	129	97.0	134	100.8	7,009.0
Middlesex-London Health Unit	337	66.0	428	83.8	5,782.3
Southwestern Public Health	132	60.3	197	90.0	5,385.8
Windsor-Essex County Health Unit	231	53.6	298	69.2	6,683.2
TOTAL SOUTH WEST	**1,032**	**59.9**	**1,363**	**79.1**	**5,858.9**
Brant County Health Unit	82	53.4	68	44.3	5,698.8
City of Hamilton Public Health Services	334	57.4	554	95.2	7,203.4
Haldimand-Norfolk Health Unit	92	76.7	84	70.0	5,762.1
Halton Region Public Health	218	35.7	230	37.7	5,738.0
Niagara Region Public Health	291	60.4	294	61.0	5,992.6
Region of Waterloo Public Health and Emergency Services	262	43.3	232	38.3	5,253.9

Public Health Unit Name	Cases September 25 to October 1, 2022	Cases per 100,000 population September 25 to October 1, 2022	Cases October 2 to October 8, 2022	Cases per 100,000 population October 2 to October 8, 2022	Cases per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Wellington-Dufferin-Guelph Public Health	100	32.1	105	33.7	5,008.4
TOTAL CENTRAL WEST	**1,379**	**48.1**	**1,567**	**54.7**	**5,895.6**
TOTAL ONTARIO	**8,306**	**56.4**	**8,929**	**60.6**	**5,922.2**

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 September 25 to October 1, 2022	Hospital admissions per 100,000 population September 25 to October 1, 2022	Hospital admissions October 2 to October 8, 2022	Hospital admissions per 100,000 population October 2 to October 8, 2022	Hospital admissions Past 52 weeks (October 10, 2021 to October 8, 2022)	Hospital admissions per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Total Cases	434	2.9	344	2.3	26,638	180.8
Sex: Female	224	3.0	168	2.3	12,206	163.7
Sex: Male	210	2.9	176	2.4	14,394	197.7
Sex: Did not specify female or male	0	N/A	0	N/A	38	N/A
Ages: <1	9	6.3	8	5.6	635	445.9
Ages: 1 – 4	6	1.0	3	0.5	465	80.1
Ages: 5 – 11	3	0.3	7	0.6	224	20.8
Ages: 12 – 19	0	0.0	1	0.1	265	19.9
Ages: 20 – 39	12	0.3	14	0.3	1,629	39.2
Ages: 40 – 59	51	1.3	24	0.6	3,458	88.8
Ages: 60 – 79	153	5.3	122	4.2	10,237	353.0
Ages: 80 and over	200	30.5	165	25.2	9,725	1,482.8
Ages: Unknown	0	N/A	0	N/A	0	N/A

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

Sex and age group	Deaths September 25 to October 1, 2022	Deaths per 100,000 population September 25 to October 1, 2022	Deaths October 2 to October 8, 2022	Deaths per 100,000 population October 2 to October 8, 2022	Deaths Past 52 weeks (October 10, 2021 to October 8, 2022)	Deaths per 100,000 population Past 52 weeks (October 10, 2021 to October 8, 2022)
Total Cases	65	0.4	46	0.3	4,898	33.2
Sex: Female	34	0.5	23	0.3	2,145	28.8
Sex: Male	31	0.4	23	0.3	2,742	37.7
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	13	0.4
Ages: 20 – 39	1	<0.1	0	0.0	60	1.4
Ages: 40 – 59	3	0.1	2	0.1	318	8.2
Ages: 60 – 79	16	0.6	13	0.4	1,633	56.3
Ages: 80 and over	45	6.9	31	4.7	2,874	438.2
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)	6,011	1,906	31.7%
Wave 2 (September 1, 2020 to February 28, 2021)	9,048	1,948	21.5%
Wave 3 (March 1, 2021 to July 31, 2021)	413	59	14.3%
Wave 4 (August 1, 2021 to December 14, 2021)	245	45	18.4%
Wave 5 (December 15, 2021 to February 28, 2022)	10,100	481	4.8%
Wave 6 (March 1, 2022 to June 18, 2022)	7,642	203	2.7%
Wave 7 (June 19, 2022 to October 8, 2022)[2]	14,100	373	2.6%
Total	**47,559**	**5,015**	**10.5%**

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. Wave 7 is ongoing and only includes cases up to October 8, 2022. Therefore, the case fatality rate for the time period of wave 7 presented here may increase.

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 two and a half months. The lineage categorization is made using the top five prevalent lineages over that time. These proportions 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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