


# COVID-19 epidemiology update: Key updates

Last updated: 2023-03-27  PDF

Summary of COVID-19 cases, hospitalizations and deaths, cases following vaccination, testing and variants of concern across Canada and over time. Older versions of this report are available on the [archived reports page](#).

**Update schedule:** We update this page every Monday. This page was last updated on March 27, 2023, 10 am ET.

## Weekly highlights

### General trends

- Nationally, the number of weekly reported COVID-19 cases and percent positivity have both remained relatively stable for the past several weeks following periods of decline.
- Similarly, outbreak incidence has been stable following a decreasing trend in early January 2023.
- There continues to be variation in COVID-19 trends across provinces and territories, with some jurisdictions experiencing recent, gradual increases in cases and percent positivity.

### Hospitalizations and deaths

- Nationally, there has been a general downward trend [in hospital use by COVID-19 patients](#) since mid-January, with slowing declines observed across the past month.
- [COVID-19 deaths](#) have been stable since early February, with decreases observed in the latest reporting week.
- The [weekly rates of COVID-19 cases hospitalized and admitted to ICU](#) remained highest among individuals aged 80 years and older.

### Variants

- Nationally, clinical sequencing shows that [that XBB.1.5 has displaced the previously dominant variants BQ.1 and BQ.1.1.](#)
- While the data we publish under Latest COVID-19 numbers in the Current Situation tab may include provincial or territorial data corrections or backfill (sometimes described as bulk reporting) in the week they are reported, the weekly highlights account for these data corrections and focus on recent trends.

**Latest COVID-19 numbers** (Last data update March 27, 2023, 10 am ET)

Weekly change in cases

**7,646**

Total cases

**4,625,743**

Weekly change in deaths

**117**

Total deaths

**51,930**

Weekly tests reported

**49,955**

Weekly percent positivity

**11.6%**

- Case and death information are up to March 18, 2023.
- Weekly change in cases includes data from 8 of the 13 Canadian provinces and territories reporting updates for the week of March 12 to March 18, 2023. Weekly change in deaths includes data from 8 of the 13 Canadian provinces and territories reporting updates for the week of March 12 to March 18, 2023.
- These reflect the changes in the case and death counts at the end of the week compared to the end of the previous week.
- Laboratory testing information is based on data from the Respiratory Virus Detection Surveillance System (RVDSS) (see [Data notes](#)).
- Weekly percent positivity is calculated as the number of positive tests divided by the total number of tests performed during the epidemiological week.
- Laboratory data represents specimens received by labs up to March 18, 2023.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.
- As of October 19, 2022, the Statistics Canada population estimates as of July 1, 2022 are being used for denominators in rate calculations.

## COVID-19 data products

### COVID-19 surveillance

- [COVID-19 wastewater surveillance dashboard](#)
- [Interactive data map of COVID-19 cases around the world](#)

### COVID-19 vaccination

- [Reported side effects following vaccination](#)
- [Number of people vaccinated in Canada](#)
- [Number of COVID-19 vaccine doses administered in Canada](#)
- [Vaccines distributed in Canada](#)

## COVID-19 and mental health

- [Mental Illness during the Pandemic: Survey on COVID-19 and Mental Health \(Cycles 1 and 2\)](#)
- [Map of Canadian mental health during the COVID-19 pandemic](#)
- [Inequalities in the mental health of adults before and during the COVID-19 pandemic](#)

## Impacts of COVID-19

- [Frequency and impact of longer-term symptoms following COVID-19 in Canadian adults](#)
- [Impacts of the COVID-19 Pandemic on Canadian Children with Cognitive, Behavioural or Emotional Disabilities](#)

## COVID-19 inequalities

- [Social inequalities in COVID-19 deaths in Canada](#)

# Provincial, territorial and international reporting

For more information, please refer to provincial or territorial COVID-19 webpages:

- [British Columbia](#)
- [Alberta](#)
- [Saskatchewan](#)
- [Manitoba](#)
- [Ontario](#)
- [Quebec](#)
- [Newfoundland and Labrador](#)
- [New Brunswick](#)
- [Nova Scotia](#)
- [Prince Edward Island](#)
- [Yukon](#)
- [Northwest Territories](#)
- [Nunavut](#)

For more information, please refer to international COVID-19 webpages:

- [World Health Organization](#)
- [US Centers for Disease Control and Prevention](#)
- [European Centre for Disease Control and Prevention](#)

## You might also be interested in

### [COVID-19 wastewater surveillance dashboard](#)

Trend data about the levels of COVID-19 in the wastewater.

### [COVID-19 vaccination](#)

Number of COVID-19 vaccine doses that have been administered in Canada.

[All Health Infobase data products](#)

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### What was wrong?

Answers to frequently asked questions can be found in the [Understanding the data section!](#)

- The answer I need is missing
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- I'm not in the right place
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- Other reason

**Please provide more details**

# COVID-19 epidemiology update: Current situation

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**Update schedule:** We update all sections of this page every Monday, except for 'Hospital use', which we update every Thursday. This page was last updated on March 27, 2023, 10 am ET.

# Latest COVID-19 numbers (Last data update March 27, 2023, 10 am ET)

Weekly change in cases

**7,646**

Total cases

**4,625,743**

Weekly change in deaths

**117**

Total deaths

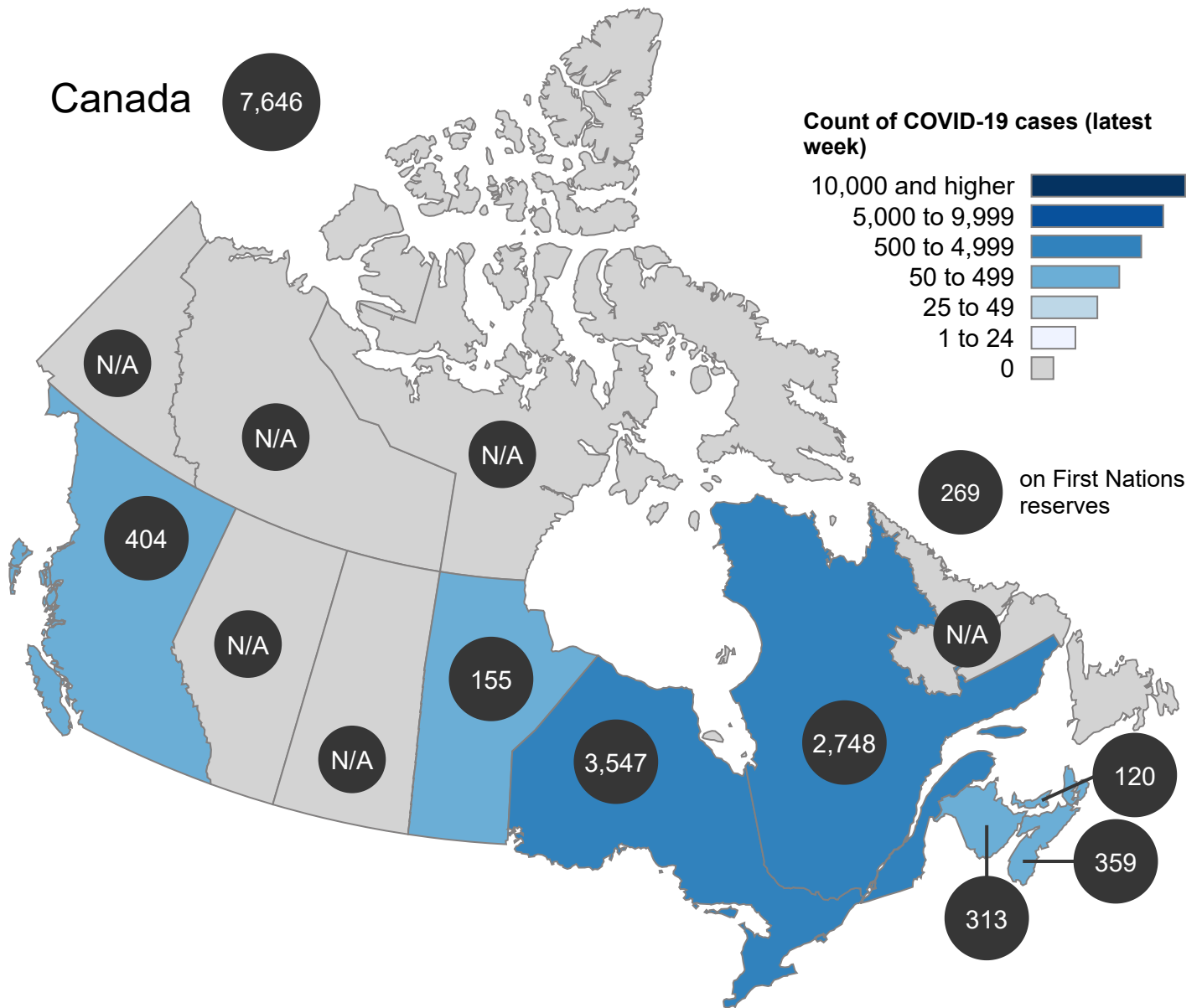
**51,930**

- Case and death information are up to March 18, 2023.
- Weekly change in cases includes data from 8 of the 13 Canadian provinces and territories reporting updates for the week of March 12 to March 18, 2023. Weekly change in deaths includes data from 8 of the 13 Canadian provinces and territories reporting updates for the week of March 12 to March 18, 2023.
- These reflect the changes in the case and death counts at the end of the week compared to the end of the previous week.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.
- As of October 19, 2022, the Statistics Canada population estimates as of July 1, 2022 are being used for denominators in rate calculations.

## National and regional trends

Figure 1.  of  of COVID-19,  for the week of March 12 to March 18, 2023

(Last data update March 27, 2023, 10 am ET)



The count of cases of COVID-19 for the week of March 12 to March 18, 2023 in **Canada** was **7,646**.

- This information is based on data our provincial and territorial partners published on cases and deaths. The numbers provided reflect cases, deaths up to up to March 18, 2023. For the most up to date data for any province, territory or city, please visit their [website](#). The number of cases or deaths reported may differ slightly from those on the provincial and territorial websites as these websites may update historic case and death counts as new information becomes available.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.
- As of April 11, 2022, Nunavut no longer publishes regular COVID-19 updates.
- As of June 13, 2022, Northwest Territories no longer publishes regular COVID-19 updates.
- As of November 16, 2022, Yukon no longer publishes regular COVID-19 updates.

Areas in Canada with cases of COVID-19

Location	Total cases		Cases (latest week)		Cases (latest 2 weeks)		Total deaths		Deaths (latest week)		Deaths (latest 2 weeks)	
	Count	Rate <sup>a</sup>	Count	Rate <sup>a</sup>	Count	Rate <sup>a</sup>	Count	Rate <sup>a</sup>	Count	Rate <sup>a</sup>	Count	Rate <sup>a</sup>
British Columbia	397,593	7,475	404	8	776	15	5,308	100	30	0.6	59	1.1
Alberta	629,549	13,857	N/A	N/A	N/A	N/A	5,619	124	N/A	N/A	N/A	N/A
Saskatchewan	154,105	12,898	N/A	N/A	N/A	N/A	1,913	160	N/A	N/A	N/A	N/A
Manitoba	155,147	11,009	155	11	285	20	2,470	175	0	0.0	4	0.3
Ontario	1,601,906	10,602	3,547	23	7,226	48	16,309	108	49	0.3	92	0.6
Quebec	1,324,190	15,228	2,748	32	5,666	65	18,153	209	19	0.2	59	0.7
Newfoundland and Labrador	54,897	10,437	N/A	N/A	N/A	N/A	330	63	N/A	N/A	N/A	N/A
New Brunswick	89,927	11,074	313	39	701	86	856	105	8	1.0	14	1.7
Nova Scotia	141,659	13,892	359	35	621	61	816	80	11	1.1	17	1.7
Prince Edward Island	56,726	33,234	120	70	203	119	95	56	0	0.0	2	1.2
Yukon	4,989	11,393	N/A	N/A	N/A	N/A	32	73	N/A	N/A	N/A	N/A
Northwest Territories	11,511	25,241	N/A	N/A	N/A	N/A	22	48	N/A	N/A	N/A	N/A
Nunavut	3,531	8,713	N/A	N/A	N/A	N/A	7	17	N/A	N/A	N/A	N/A
<b>Canada</b>	<b>4,625,743</b>	<b>11,882</b>	<b>7,646</b>	<b>20</b>	<b>16,172</b>	<b>42</b>	<b>51,930</b>	<b>133</b>	<b>117</b>	<b>0.3</b>	<b>259</b>	<b>0.7</b>

a. \* Rate per 100,000 population



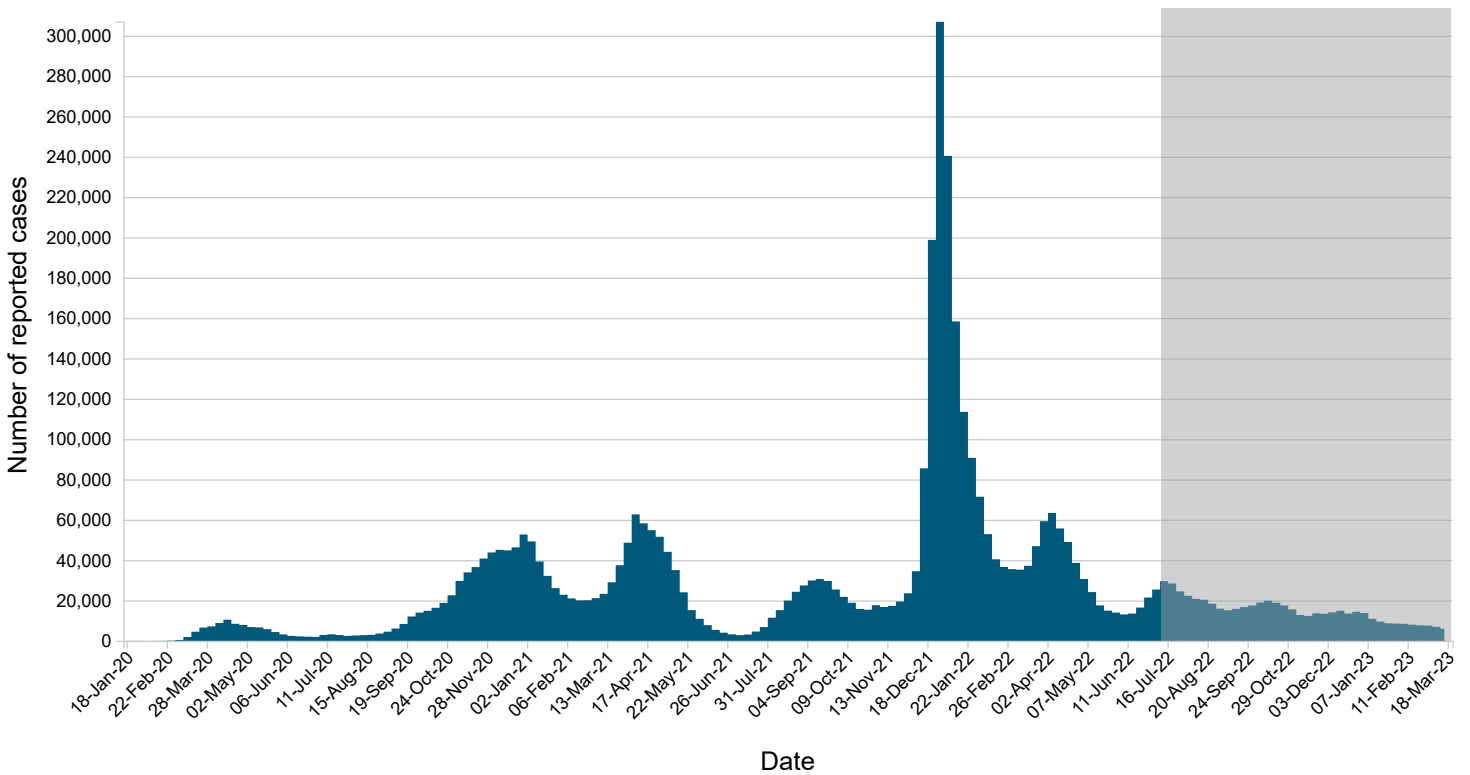
## Epidemic curve

As of March 20, 2023, 8 am ET, PHAC has received detailed case report data on 4,354,032 cases.

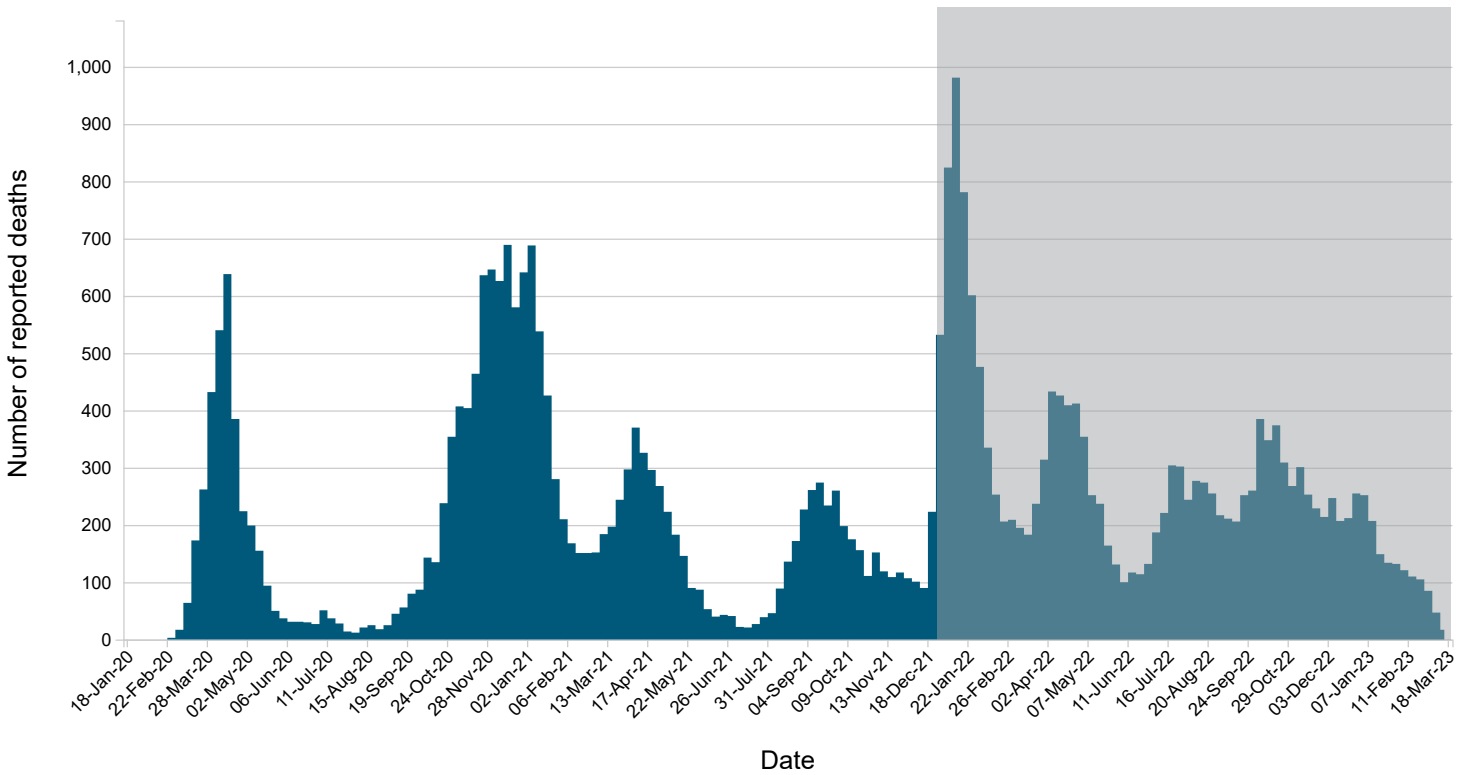
The shaded area for Figures 2 and 3 represents a period of accumulating data where it is known or expected that cases, and severe outcomes have occurred but have not yet been reported nationally. We update this information as it becomes available.

Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.

**Figure 2a. COVID-19 cases (n=4,353,656) in Canada by date as of March 20, 2023, 8 am ET (total cases)**



**Figure 2b. COVID-19 deaths (n=36,751) in Canada by date as of March 20, 2023, 8 am ET (total deaths)**



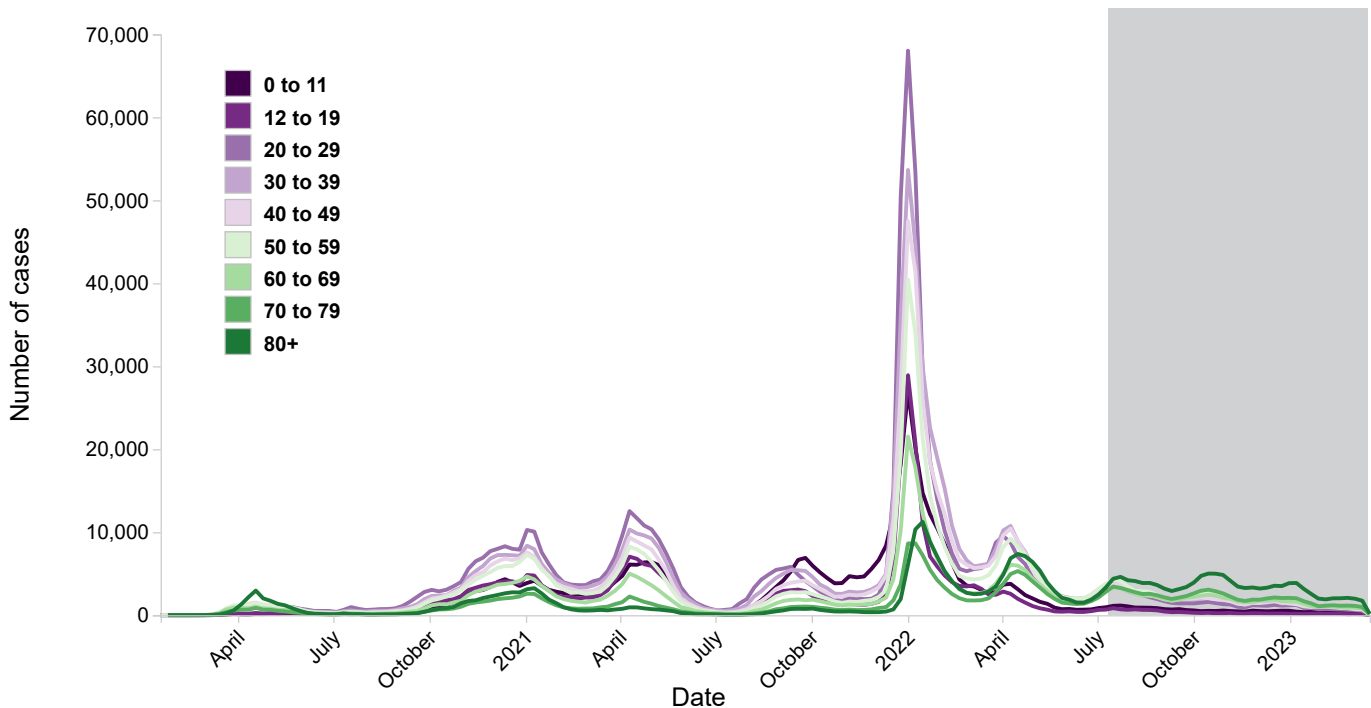
- a. This figure reflects detailed case information provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. This data is updated every week. It may change as we get more information about cases.
- b. The earliest of the following dates were used to determine the week in which a case or death is presented: Onset date, Specimen Collection Date, Laboratory Testing Date, Date Reported to Province or Territory, or Date Reported to PHAC.

# Cases by age and gender

We have detailed case report data from 4,354,032 cases. We know the age of patients in 99.9% of cases, and both age and gender in 99.6% of cases.

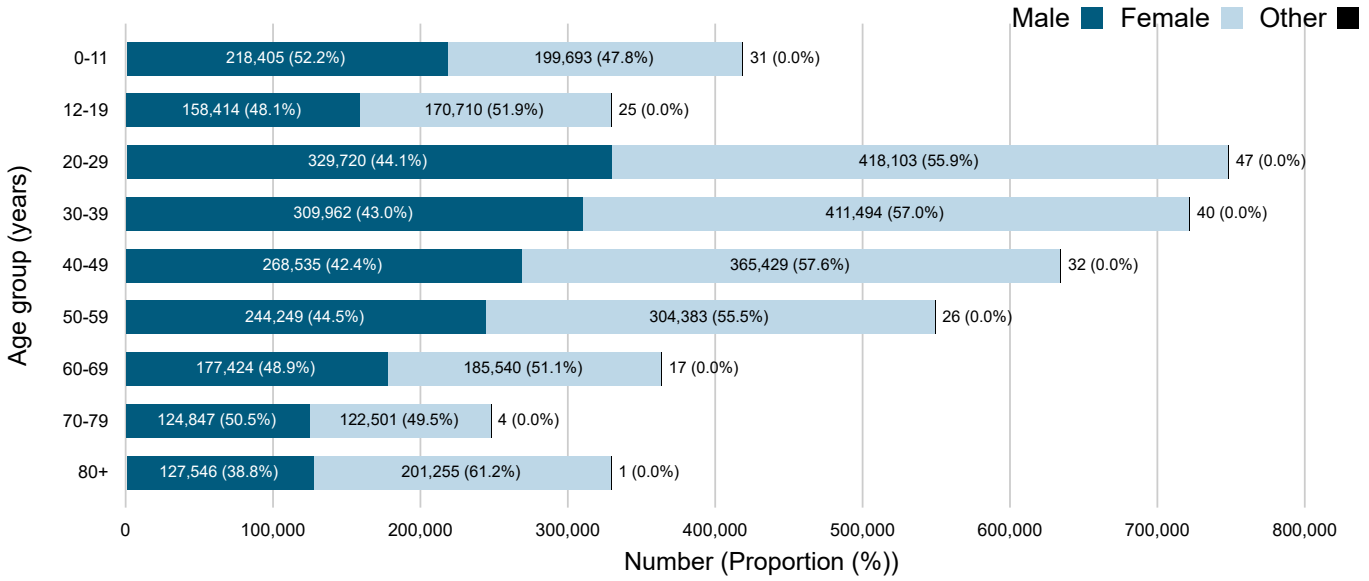
Of the cases reported in Canada so far, 54.8% were female and 33.9% were between 20 and 39 years old (Figure 3).

**Figure 3. Weekly number of COVID-19 cases by age group in Canada as of March 18, 2023**

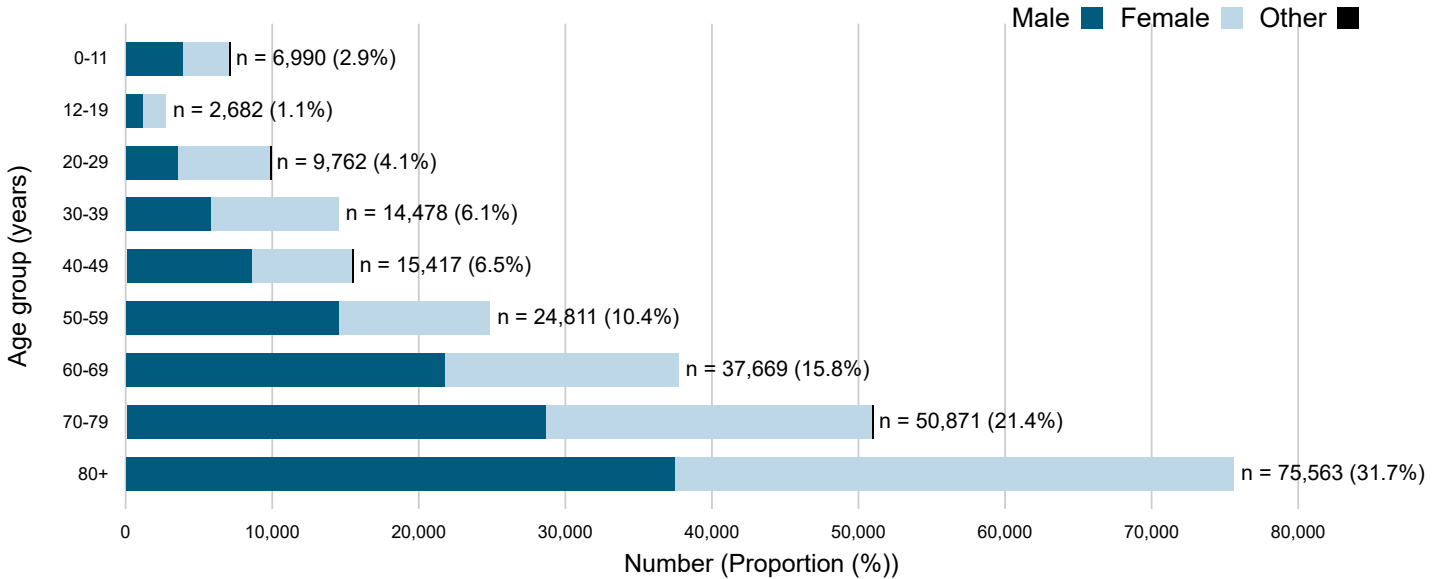


- This figure reflects detailed case information provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. This data is updated every week. It may change as we get more information about cases.
- The earliest of the following dates were used to determine the week in which a case or death is presented: Onset date, Specimen Collection Date, Laboratory Testing Date, Date Reported to Province or Territory, or Date Reported to PHAC.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated
- As of October 19, 2022, the Statistics Canada population estimates as of July 1, 2022 are being used for denominators in rate calculations.

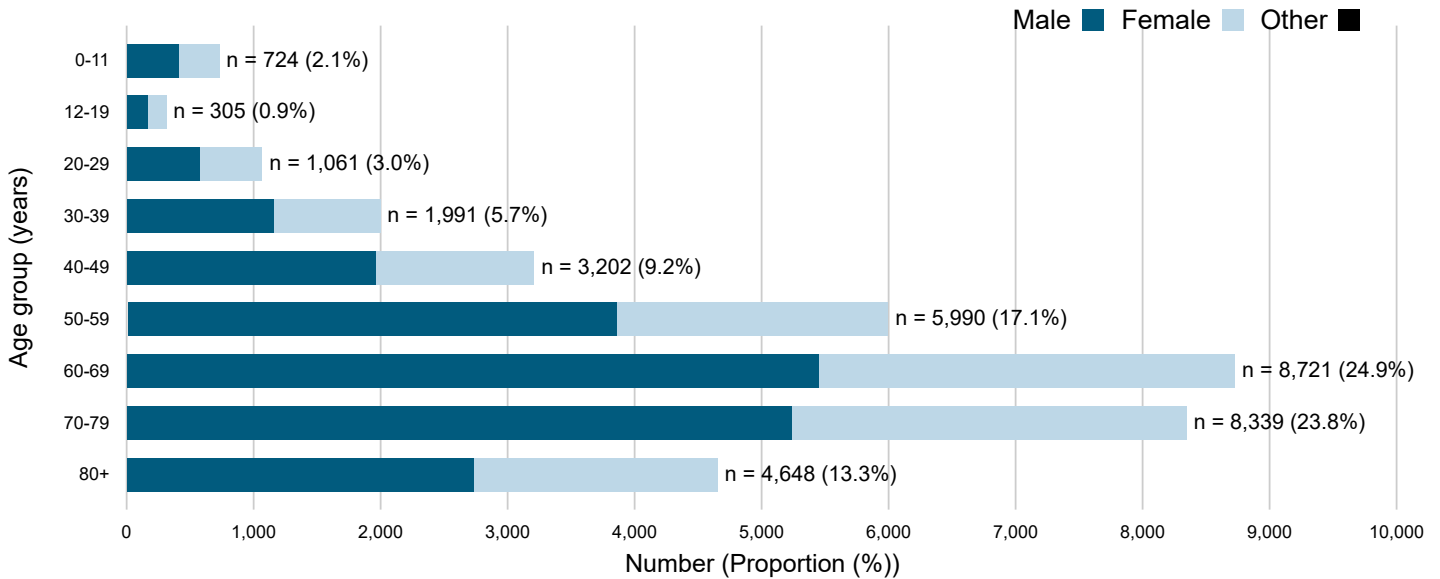
**Figure 4a. Age and gender distribution of COVID-19 cases in Canada as of March 20, 2023, 8 am ET (n=4,338,433)**



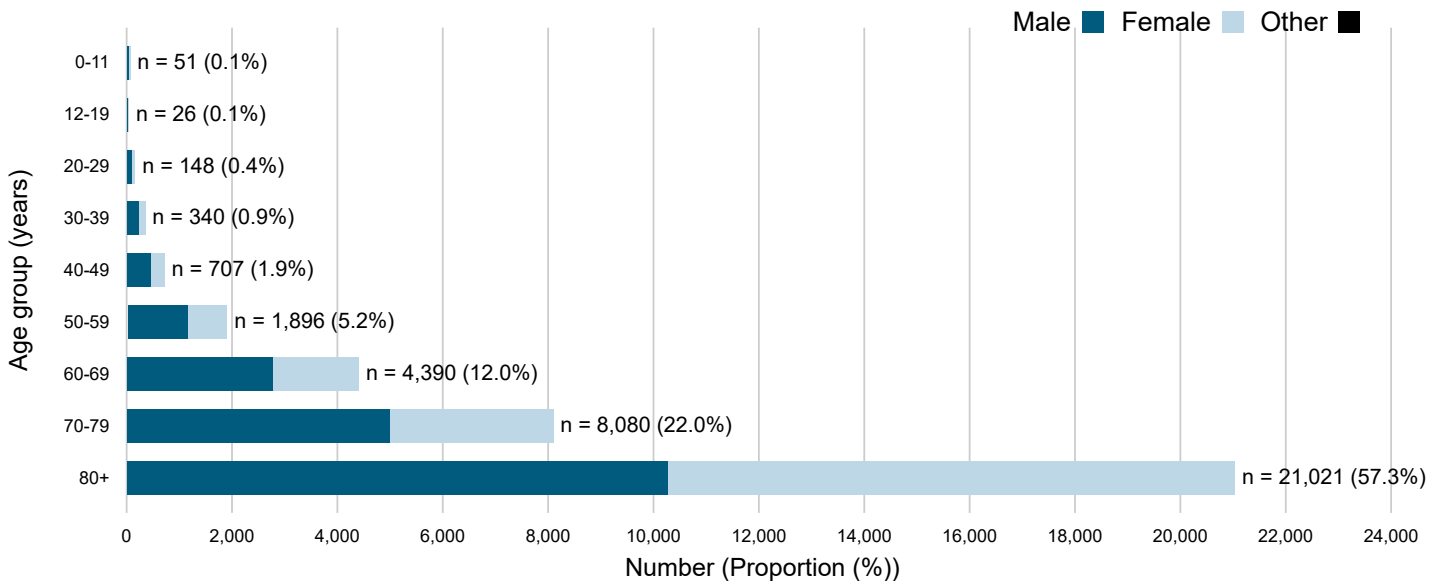
**Figure 4b. Age and gender distribution of COVID-19 cases hospitalized in Canada as of March 20, 2023, 8 am ET (n=238,243)**



**Figure 4c. Age and gender distribution of COVID-19 cases admitted to ICU in Canada as of March 20, 2023, 8 am ET (n=34,981)**



**Figure 4d. Age and gender distribution of COVID-19 cases deceased in Canada as of March 20, 2023, 8 am ET (n=36,659)**



- This figure reflects detailed case information provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. This data is updated every week. It may change as we get more information about cases.
- This figure includes COVID-19 cases hospitalized, admitted to ICU, and deceased for which age and gender information were available. Therefore, some COVID-19 hospitalizations, ICU admissions, and deaths may not be included.

**Age and gender distribution of COVID-19 cases in Canada as of March 20, 2023, 8 am ET (n=4,338,433)**

<b>Age group (years)</b>	<b>Number of cases with case reports (percentage)</b>	<b>Number of male cases (percentage)</b>	<b>Number of female cases (percentage)</b>	<b>Number of other cases (percentage)</b>
0-11	420,192 (9.7%)	218,405 (11.1%)	199,693 (8.4%)	31 (13.9%)
12-19	330,764 (7.6%)	158,414 (8.1%)	170,710 (7.2%)	25 (11.2%)
20-29	751,415 (17.3%)	329,720 (16.8%)	418,103 (17.6%)	47 (21.1%)
30-39	723,874 (16.6%)	309,962 (15.8%)	411,494 (17.3%)	40 (17.9%)
40-49	635,754 (14.6%)	268,535 (13.7%)	365,429 (15.4%)	32 (14.3%)
50-59	550,087 (12.6%)	244,249 (12.5%)	304,383 (12.8%)	26 (11.7%)
60-69	363,850 (8.4%)	177,424 (9.1%)	185,540 (7.8%)	17 (7.6%)
70-79	247,809 (5.7%)	124,847 (6.4%)	122,501 (5.1%)	4 (1.8%)
80+	329,329 (7.6%)	127,546 (6.5%)	201,255 (8.5%)	1 (0.4%)

**Age and gender distribution of COVID-19 cases hospitalized in Canada as of March 20, 2023, 8 am ET (n=238,243)**

<b>Age group (years)</b>	<b>Number of cases with case reports (percentage)</b>	<b>Number of male cases (percentage)</b>	<b>Number of female cases (percentage)</b>	<b>Number of other cases (percentage)</b>
0-11	6,990 (2.9%)	3,917 (1.6%)	3,072 (1.3%)	1 (0.0%)
12-19	2,682 (1.1%)	1,136 (0.5%)	1,546 (0.6%)	0 (0.0%)
20-29	9,762 (4.1%)	3,512 (1.5%)	6,249 (2.6%)	1 (0.0%)
30-39	14,478 (6.1%)	5,747 (2.4%)	8,731 (3.7%)	0 (0.0%)
40-49	15,417 (6.5%)	8,527 (3.6%)	6,889 (2.9%)	1 (0.0%)
50-59	24,811 (10.4%)	14,539 (6.1%)	10,272 (4.3%)	0 (0.0%)
60-69	37,669 (15.8%)	21,734 (9.1%)	15,935 (6.7%)	0 (0.0%)
70-79	50,871 (21.4%)	28,655 (12.0%)	22,215 (9.3%)	1 (0.0%)
80+	75,563 (31.7%)	37,436 (15.7%)	38,127 (16.0%)	0 (0.0%)

**Age and gender distribution of COVID-19 cases admitted to ICU in Canada as of March 20, 2023, 8 am ET (n=34,981)**

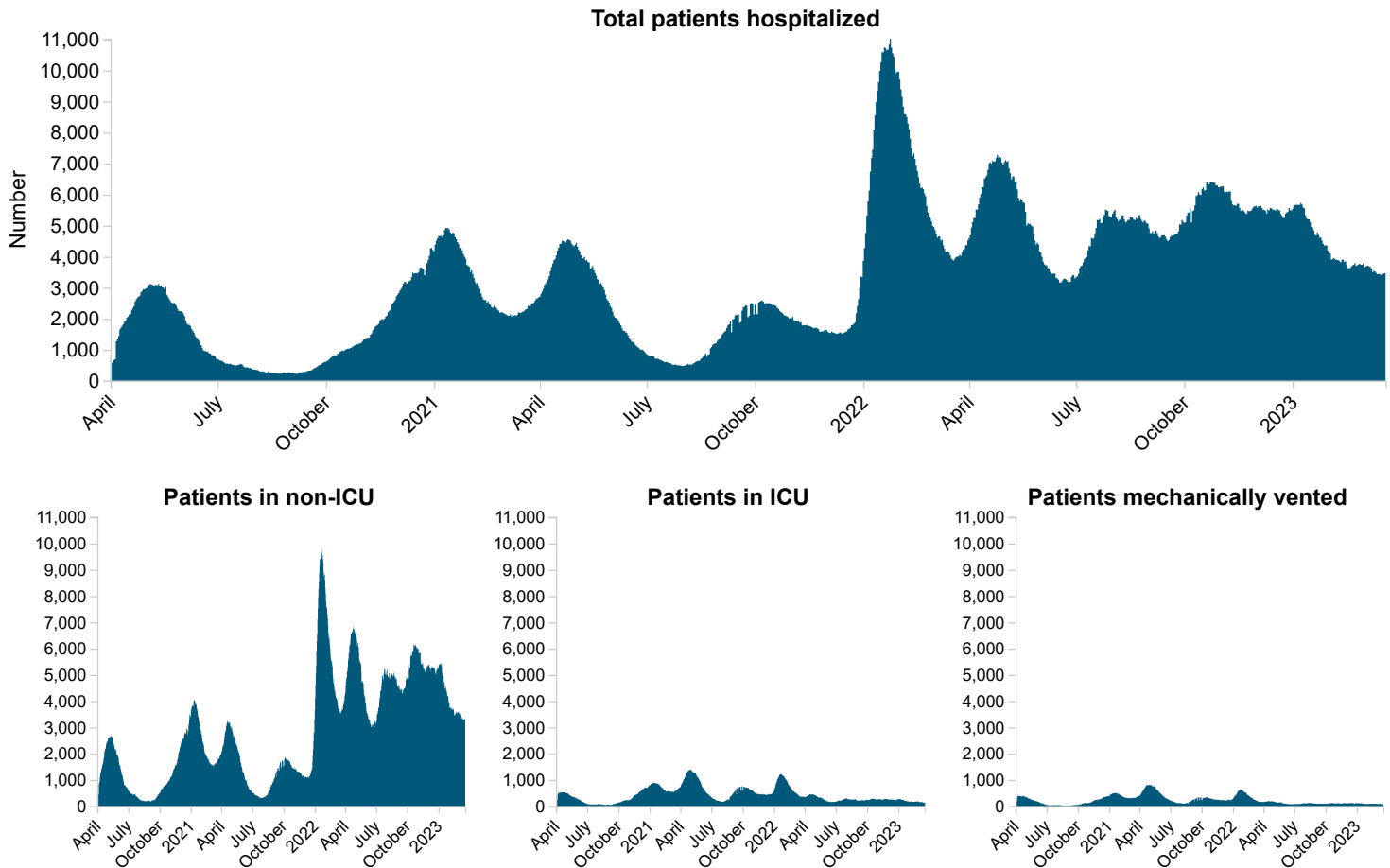
<b>Age group (years)</b>	<b>Number of cases with case reports (percentage)</b>	<b>Number of male cases (percentage)</b>	<b>Number of female cases (percentage)</b>	<b>Number of other cases (percentage)</b>
0-11	724 (2.1%)	406 (1.2%)	318 (0.9%)	0 (0.0%)
12-19	305 (0.9%)	161 (0.5%)	144 (0.4%)	0 (0.0%)
20-29	1,061 (3.0%)	576 (1.6%)	485 (1.4%)	0 (0.0%)
30-39	1,991 (5.7%)	1,152 (3.3%)	839 (2.4%)	0 (0.0%)
40-49	3,202 (9.2%)	1,959 (5.6%)	1,243 (3.6%)	0 (0.0%)
50-59	5,990 (17.1%)	3,858 (11.0%)	2,132 (6.1%)	0 (0.0%)
60-69	8,721 (24.9%)	5,446 (15.6%)	3,275 (9.4%)	0 (0.0%)
70-79	8,339 (23.8%)	5,233 (15.0%)	3,106 (8.9%)	0 (0.0%)
80+	4,648 (13.3%)	2,734 (7.8%)	1,914 (5.5%)	0 (0.0%)

**Age and gender distribution of COVID-19 cases deceased in Canada as of March 20, 2023, 8 am ET (n=36,659)**

<b>Age group (years)</b>	<b>Number of cases with case reports (percentage)</b>	<b>Number of male cases (percentage)</b>	<b>Number of female cases (percentage)</b>	<b>Number of other cases (percentage)</b>
0-11	51 (0.1%)	26 (0.1%)	25 (0.1%)	0 (0.0%)
12-19	26 (0.1%)	14 (0.0%)	12 (0.0%)	0 (0.0%)
20-29	148 (0.4%)	92 (0.3%)	56 (0.2%)	0 (0.0%)
30-39	340 (0.9%)	212 (0.6%)	128 (0.3%)	0 (0.0%)
40-49	707 (1.9%)	445 (1.2%)	262 (0.7%)	0 (0.0%)
50-59	1,896 (5.2%)	1,157 (3.2%)	739 (2.0%)	0 (0.0%)
60-69	4,390 (12.0%)	2,762 (7.5%)	1,628 (4.4%)	0 (0.0%)
70-79	8,080 (22.0%)	4,983 (13.6%)	3,097 (8.4%)	0 (0.0%)
80+	21,021 (57.3%)	10,260 (28.0%)	10,761 (29.4%)	0 (0.00%)

# Hospital use

Figure 5. Daily number of hospital beds and ICU beds occupied by COVID-19 patients as of March 21, 2023



Between March 14, 2023 and March 21, 2023:

- the total number of **hospital beds** occupied by COVID-19 patients **increased** from **3,437** to **3,474** beds.
- the number of **non-ICU beds** occupied by COVID-19 patients **increased** from **3,294** to **3,332** beds.
- the number of **ICU beds** occupied by COVID-19 patients **decreased** from **143** to **142** beds.
- the number of **COVID-19 patients who were mechanically vented** **decreased** from **77** to **73**.



## You might also be interested in

### [COVID-19 wastewater surveillance dashboard](#)

Trend data about the levels of COVID-19 in the wastewater.

### [COVID-19 vaccination](#)

Number of COVID-19 vaccine doses that have been administered in Canada.

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#### **Please provide more details**

**(Don't include any personal information. Note that you will not receive a reply.)**

Maximum 300 characters

# COVID-19 epidemiology update: Cases following vaccination

Last updated: 2023-03-27  PDF

Summary of COVID-19 cases, hospitalizations and deaths, cases following vaccination, testing and variants of concern across Canada and over time. Older versions of this report are available on the [archived reports page](#).

## Note

We are in the process of improving this page. Regular data updates will resume in the coming weeks. Data extracted on October 14, 2022 for cases between December 14, 2020 and September 25, 2022.

While COVID-19 vaccines are highly effective at preventing severe outcomes such as hospitalization and death, vaccinated people can still get infected if exposed. This means that even with high vaccine effectiveness, some vaccinated people will get sick, be hospitalized or die.

Most people in Canada have been vaccinated. Because they're a larger group, there will naturally be more cases among vaccinated people than among unvaccinated people. However, despite their higher case counts, **vaccinated people are less likely to get very sick or die.**

Case counts underestimate the total number of COVID-19 cases because a rapid increase in cases starting in December 2021 led to changes in COVID-19 testing policies and delays in data entry.

Case counts are likely to over-represent people at risk of severe disease, because they have been prioritized for testing. Data should be interpreted with caution.

## Cases reported since the start of the vaccination campaign, as of September 25, 2022

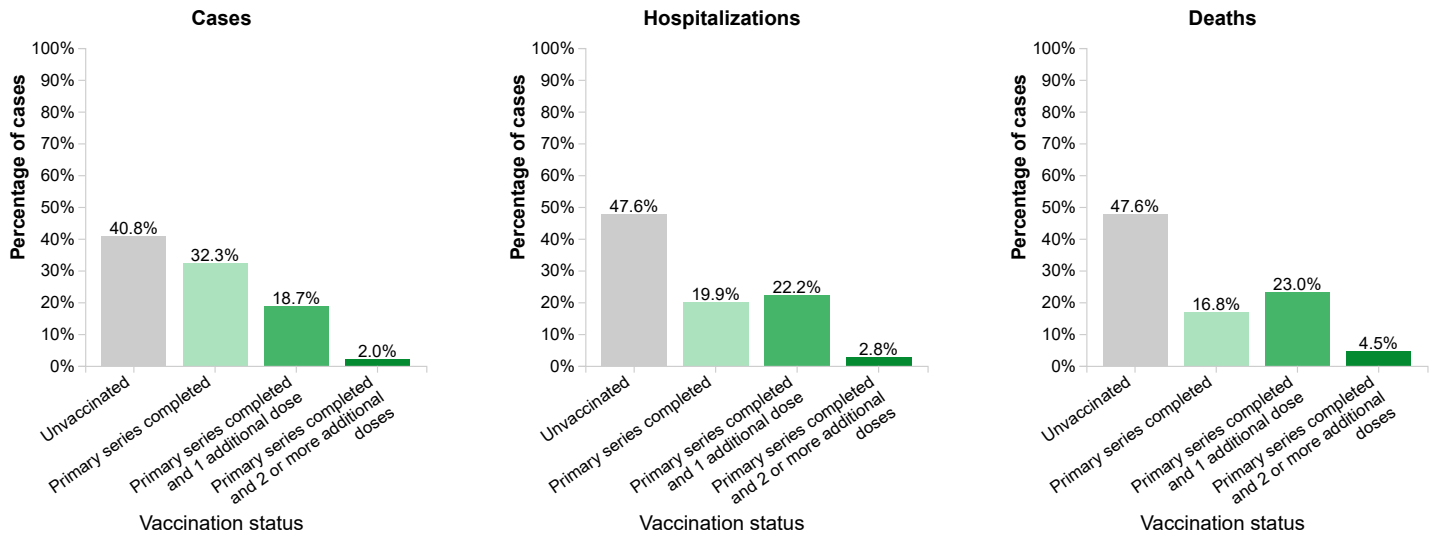
Since the start of the vaccination campaign on December 14, 2020, PHAC received case-level vaccine history data for 73% (n=2,457,576) of COVID-19 cases aged 5 years or older.

Of these cases:

- 1,002,452 (40.8%) were unvaccinated
- 794,145 (32.3%) had completed their primary vaccine series
- 460,280 (18.7%) had completed their primary vaccine series and 1 additional dose
- 49,056 (2.0%) had completed their primary vaccine series and 2 or more additional doses

For definitions of the different vaccination statuses, please refer to the [Technical notes and definitions section](#).

**Figure 1. Distribution** of outcomes of confirmed COVID-19 cases reported to PHAC by vaccination status as of September 25, 2022



**Outcomes of confirmed COVID-19 cases reported to PHAC by vaccination status, as of September 25, 2022**

Status	Cases	Hospitalizations	Deaths
Unvaccinated	40.8%	47.6%	47.6%
Primary series completed	32.3%	19.9%	16.8%
Primary series completed and 1 additional dose	18.7%	22.2%	23.0%
Primary series completed and 2 or more additional doses	2.0%	2.8%	4.5%

Among the twelve jurisdictions that have reported case-level vaccine history data to PHAC, a total of 25.2 million people have received at least one dose of the COVID-19 vaccine as of September 25, 2022.

Cases following vaccination were more common among older adults and females (Table 1). This may be due to:

- higher risk of disease among older adults and pregnant people
- longer life expectancy among females, which means more women move into older age groups with a higher risk of disease

Older adults have been prioritized for second booster doses. As a result, older people make up a large proportion of people who had completed their primary vaccine series and 2 or more additional doses. For the same reason, they also make up a large proportion of cases in that group.

**Table 1. Characteristics of confirmed cases by vaccination status, as of September 25, 2022**

		<b>Unvaccinated</b> (n=1,002,452)	<b>Primary series completed</b> (n=794,145)	<b>Primary series completed and 1 additional dose</b> (n=460,280)	<b>Primary series completed and 2 or more additional doses</b> (n=49,056)	<b>Total cases†</b> (n=2,457,576)
<b>Gender*</b>	Male	505,488 (45.3%)	349,204 (31.3%)	168,004 (15.0%)	19,728 (1.8%)	1,116,527 (100.0%)
	Female	492,450 (36.9%)	442,709 (33.2%)	291,150 (21.8%)	29,222 (2.2%)	1,332,782 (100.0%)
<b>Age group</b>	5-11	124,188 (75.3%)	8,334 (5.1%)	26 (0.0%)	0 (0.0%)	164,844 (100.0%)
	12-17	72,638 (52.9%)	56,193 (40.9%)	2,534 (1.9%)	14 (0.0%)	137,288 (100.0%)
	18-39	422,270 (43.2%)	375,031 (38.4%)	132,168 (13.5%)	1,587 (0.2%)	978,009 (100.0%)
	40-59	251,264 (36.3%)	246,720 (35.6%)	153,871 (22.2%)	4,104 (0.6%)	692,037 (100.0%)
	60-79	103,393 (31.2%)	85,657 (25.8%)	101,450 (30.6%)	18,218 (5.5%)	331,631 (100.0%)
	80+	28,699 (18.7%)	22,210 (14.4%)	70,231 (45.7%)	25,133 (16.3%)	153,767 (100.0%)

**Source:** Detailed case information received by PHAC from provinces and territories, since December 14, 2020 (see data notes in the [Technical notes and definitions section](#))

**People who were diagnosed with COVID-19 after completing their primary vaccine series were significantly less likely to be hospitalized or to die, particularly if they received an additional dose(s).**

Between August 29, 2022 and September 25, 2022, unvaccinated cases were 3 times more likely to be hospitalized and 5 times more likely to die from their illness, compared to cases with a completed primary vaccine series. During the same 4-week period, unvaccinated cases were 3 times more likely to be hospitalized and 5 times more likely to die from their illness, compared to cases with a completed primary vaccine series and 1 or more additional doses ([see data notes in Technical notes and definitions section](#)).

### Technical notes and definitions

Data for this analysis comes from the COVID-19 national data set, which contains detailed case-level information received by PHAC from all provinces and territories.

- 12 of 13 provinces and territories have reported case-level vaccine history data to PHAC as part of the national COVID-19 dataset.
  - 12 of these provinces and territories reported data on cases with a completed primary vaccine series and 1 additional dose. 8 of the 12 provinces and territories reported data on cases with a completed primary vaccine series and 2 or more additional doses. In provinces and territories that have not yet reported additional dose data, cases are classified as having completed their primary vaccine series if they have a completed primary series or with or without any more additional doses.
  - We used a data cut-off of September 25, 2022 to account for routine reporting delays associated with vaccine history information.
  - †Counts of cases by vaccination status may not add up to total counts, as data on cases not yet protected and partially vaccinated cases are not presented here.
  - Data presented here on cases with a completed primary vaccine series and 1 or more additional dose(s) are limited to individuals aged 5 years or older.
  - \*When available, we used gender data. If unavailable, we used sex data. We excluded cases with missing gender and sex data from the gender analysis. Reliable data on gender diverse respondents are unavailable due to small counts.
- 
- As of October 18, 2022, rate ratios are age-standardized using July 2022 Canadian population estimates for all 2022 report weeks. As a result, there is a decrease in rate ratios compared to previously published reports. For more information on denominators for cases following vaccination, see [Vaccination coverage data sources](#).
  - For analyses of rate ratios, cases are classified as having completed their primary series with one or more additional dose(s) if they have received at least 1 additional dose after completing their primary series
  - Rate ratio calculations were based on data from 12 provinces and territories that have reported complete case-level vaccine history data to PHAC during the 4-week period of analysis.

**Episode date:** Refers to symptom onset date. When symptom onset date is unavailable or the case is asymptomatic, episode date refers to either:

- laboratory specimen collection date, or
- laboratory testing date

PHAC monitors cases following vaccination using the following categories:

**Unvaccinated cases:** those who were unvaccinated at the time of their episode date.

**Cases not yet protected from vaccination:** those whose episode date occurred less than 14 days after their first dose of the vaccine.

**Partially vaccinated cases:** those whose episode date occurred:

- 14 days or more after their first vaccine dose in a 2-dose series, or
- less than 14 days after their second dose of the vaccine.

**Cases with a completed primary series:** those whose episode date occurred:

- 14 days or more after receipt of a second dose in a 2-dose series, or
- 14 days or more after receipt of one dose of a 1-dose vaccine series, and
- if an additional (for example, third dose or booster) dose was received, 0 to <14 days after receipt of the first additional dose.

**Cases with a completed primary series and 1 or more additional dose(s):** those whose episode date occurred 14 days or more following the receipt of at least 1 additional dose (for example, third dose or booster) of a COVID-19 vaccine product, after completing a primary vaccine series.

- Data on counts and distributions are further categorized into 2 groups:
  - **Cases with a completed primary vaccine series and 1 additional dose:** those whose episode date occurred 14 days or more following receipt of 1 additional dose (for example, third dose or first booster) of a COVID-19 vaccine product and, if a second additional dose was received, 0 to <14 days after receipt of that dose
  - **Cases with a completed primary series and 2 or more additional doses:** those whose episode date occurred 14 days or more following receipt of at least 2 additional doses (for example, fourth dose or second booster)

**COVID-19 vaccine product:** vaccines that have been:

- authorized by Health Canada or
- accepted by the Government of Canada for the purpose of travel to and within Canada

## You might also be interested in

### [COVID-19 wastewater surveillance dashboard](#)

Trend data about the levels of COVID-19 in the wastewater.

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Number of COVID-19 vaccine doses that have been administered in Canada.

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# COVID-19 epidemiology update: Testing and variants

Last updated: 2023-03-27  PDF

Summary of COVID-19 cases, hospitalizations and deaths, cases following vaccination, testing and variants of concern across Canada and over time. Older versions of this report are available on the [archived reports page](#).

**Update schedule:** We update 'Key COVID-19 testing updates' and 'Testing in Canada' every Monday. We update 'COVID-19 variants in Canada' every Friday. This page was last updated on March 27, 2023, 10 am ET.

## Changes to COVID-19 testing data source

The data source for COVID-19 testing in Canada changed on December 5, 2022 (see [Data notes](#)).

## Key COVID-19 testing updates (Last data update March 27, 2023, 10 am ET)

Weekly tests reported

**49,955**

Weekly percent positivity

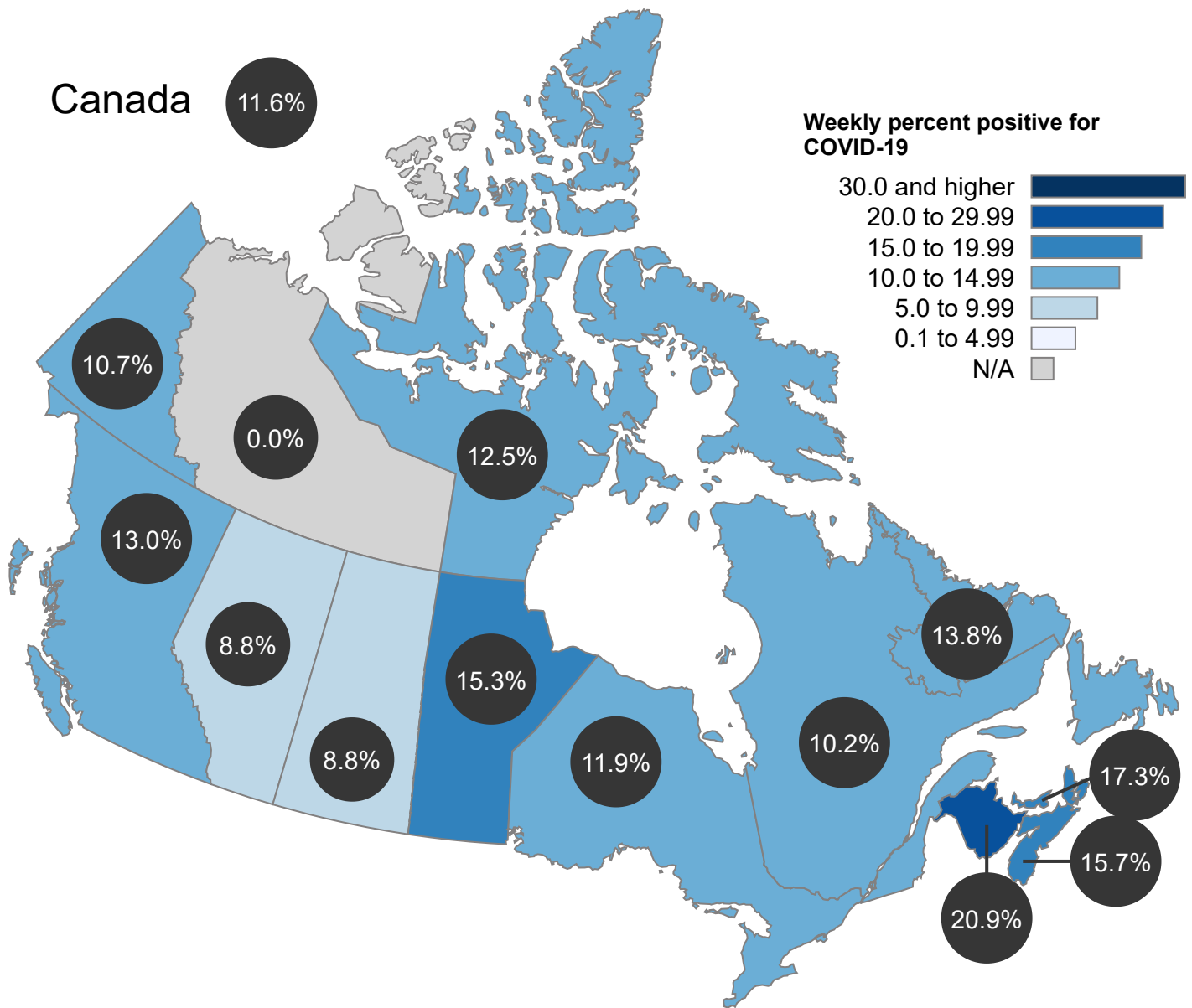
**11.6%**

- Laboratory testing information is based on data from the Respiratory Virus Detection Surveillance System (RVDSS) (see [Data notes](#)).
- Weekly percent positivity is calculated as the number of positive tests divided by the total number of tests performed during the epidemiological week.
- Laboratory data represents specimens received by labs up to March 18, 2023.
- Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.



# Testing in Canada

Figure 1. **weekly percent positive** for COVID-19 by select laboratories, by province or territory up to March 18, 2023 (Last data update March 27, 2023, 10 am ET)



The percentage of weekly positive tests up to March 18, 2023 in **Canada** was **11.6%**.

- This information is based on testing data provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. The numbers provided reflect tests up to March 18, 2023. For the most up to date data for any province, territory or city, please visit their [website](#).
- Weekly percent positivity is calculated as the number of positive tests divided by the total number of tests performed during the epidemiological week.

- c. Case counts are under-estimated due to changes in COVID-19 testing policies in many jurisdictions since December 2021.
- d. The data represent surveillance data available through RVDSS up to March 18, 2023. N.A represents missing data. We update data retroactively when we receive delayed data reports.

#### Testing in Canada for COVID-19

Location	Weekly tests reported	Weekly percent positive
British Columbia	3,828	13.0%
Alberta	4,421	8.8%
Saskatchewan	2,226	8.8%
Manitoba	1,715	15.3%
Ontario	15,074	11.9%
Quebec	17,731	10.2%
Newfoundland and Labrador	491	13.8%
New Brunswick	1,523	20.9%
Nova Scotia	2,145	15.7%
Prince Edward Island	595	17.3%
Yukon	75	10.7%
Northwest Territories	27	0.0%
Nunavut	104	12.5%
<b>Canada</b>	<b>49,955</b>	<b>11.6%</b>

On December 5, 2022, we changed surveillance systems for monitoring laboratory testing of SARS-CoV-2, the virus that causes COVID-19. We now use the Respiratory Virus Detection Surveillance System (RVDSS). Before December 5, we used the System for Analyzing Laboratory Test counts (SALT).

SALT was set up early in the COVID-19 pandemic to monitor daily SARS-CoV-2 testing volumes, and the percent of tests that were positive.

RVDSS is a longstanding surveillance system that collects data from laboratories across Canada on:

- the number of tests performed in participating laboratories and
- the number of positive tests for respiratory viruses

RVDSS mostly collects data from the tests of people who had COVID-19 symptoms or exposures, in order to assess trends in transmission via test positivity. RVDSS allows us to monitor COVID-19 in the context of other respiratory viruses.

The SALT and RVDSS data are not directly comparable.

- RVDSS data on COVID-19 is available starting the week of August 28, 2022 (Week 1 of the 2022/23 influenza season). SALT data are available starting February 1, 2020.
- Test positivity is higher in RVDSS than SALT. This is because tests reported to RVDSS are usually collected for clinical investigations, meaning people with symptoms or exposure to COVID-19, resulting in a higher proportion of positive tests.
- RVDSS presents all data by epidemiological week, while SALT presented daily data. [Historical SALT testing data is available.](#)

The number of laboratories participating in RVDSS can vary week to week and across provinces and territories. As a result, the numbers of tests performed cannot be directly compared between provinces and territories. The number of tests reported may be used to add context to interpret weekly percent positivity.

For information on other respiratory viruses circulating in Canada, and comparisons with COVID-19, please visit the [weekly RVDSS report.](#)

# COVID-19 variants in Canada

All viruses, including COVID-19, change over time. These changes are called mutations, and result in variants of the virus. Not all mutations are of concern. Most do not cause more severe illness. However, some mutations result in variants of concern or variants of interest.

A variant of concern has mutations that are significant to public health. Before a variant of interest is considered one of concern, scientists and public health professionals must determine if the mutations result in an actual change in the behaviour of the virus. For example, it might:

- spread more easily
- cause more severe illness
- require different treatments, or
- reduce vaccine effectiveness

The Public Health Agency of Canada (PHAC) works with provincial and territorial partners and the Canadian COVID-19 Genomics Network ([CanCOGeN](#)) to sequence a percentage of all positive COVID-19 test results. Sequencing reveals the genetic code of the virus, which tells us which variant is involved in a specific case of COVID-19. We report the proportion of COVID-19 variants in Canada every week.

We collect evidence to determine if new variants meet the definition for a variant of concern or a variant of interest. Many variants are being tracked across Canada and around the world.

Currently, Omicron and its sub-lineages are the primary variants of COVID-19 circulating in Canada. Evidence demonstrates that Omicron is more transmissible than previous variants of concern.

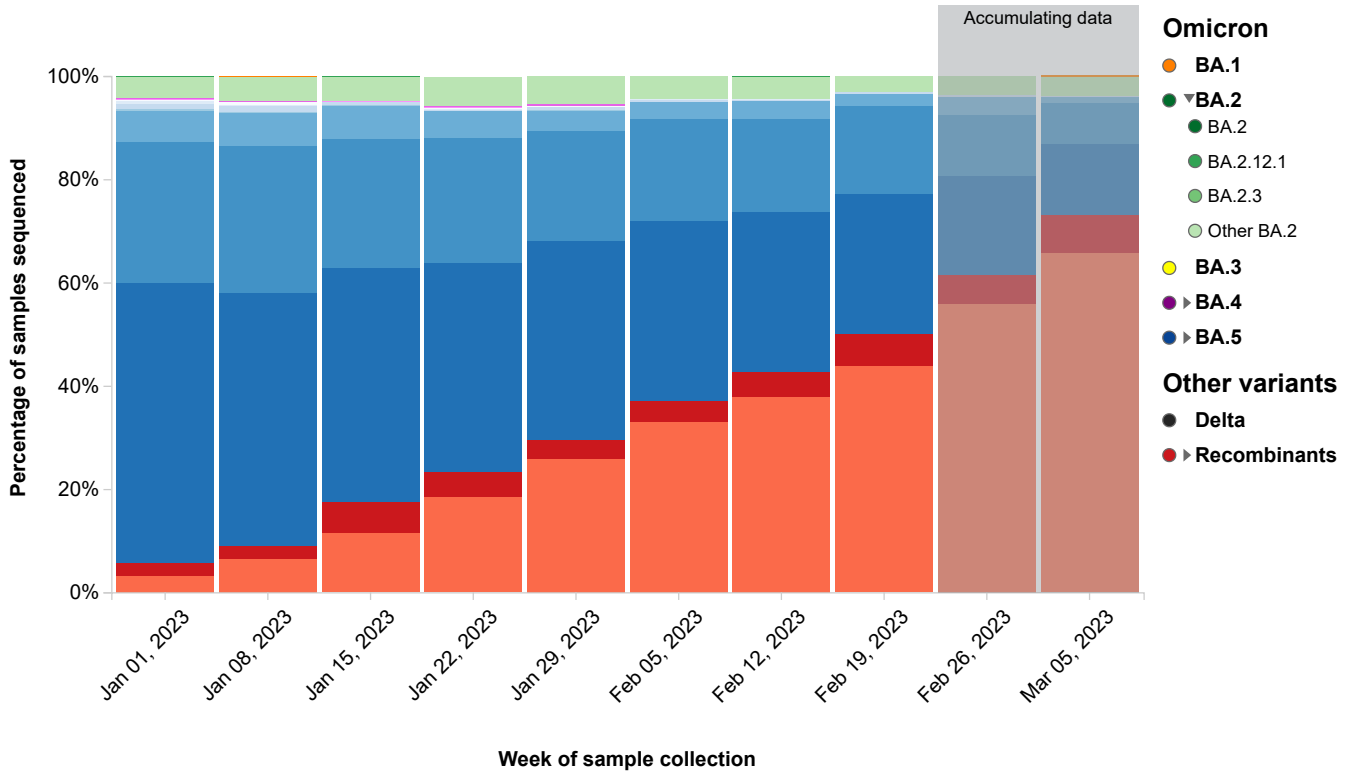
Previous variants of concern in Canada are as follows:

- Alpha
- Beta
- Gamma
- Delta

Staying up to date with COVID-19 vaccination continues to be one of the most effective ways to protect against serious illness, hospitalization, and death from COVID-19. Canada now has access to two updated bivalent vaccines that are expected to provide better protection against the Omicron variant of concern.

**Figure 2. Weekly variant breakdown** Updated: March 24, 2023, 4 pm EDT

**i** The graphic shows the percentage mix of COVID-19 variants detected in Canada through whole genome sequencing, by week of sample collection. You can see the numbers for each date by hovering over, tabbing to, or long-pressing any of the bars. To see a specific variant or variant grouping, click or press return. Repeat to restore the complete graph. Sublineages or offshoots for some variants can be revealed or hidden by clicking on the name of the variant in the legend.



This information is based on whole genome sequencing from surveillance testing in all provinces and territories. In addition to sequencing done by the National Microbiology Laboratory in Winnipeg, data is included from provincial and territorial laboratories.

Sequencing takes from 1 to 3 weeks to complete, so the proportions for recent weeks may change as more data are added. Surveillance in each province or territory is organized and prioritized according to local needs and may change from time to time. Because of differences in local sampling and reporting, the percentages illustrate trends rather than precise measurements.



<b>Variant Grouping</b>	<b>Jan 01, 2023</b> (n=4,009)	<b>Jan 08, 2023</b> (n=3,652)	<b>Jan 15, 2023</b> (n=3,083)	<b>Jan 22, 2023</b> (n=2,626)	<b>Jan 29, 2023</b> (n=2,845)	<b>Feb 05, 2023</b> (n=2,791)	<b>Feb 12, 2023</b> (n=2,707)	<b>Feb 19, 2023</b> (n=2,732)	<b>Feb 26, 2023</b> (n=2,313)
<b>Recombinants</b>	<b>5.7%</b>	<b>9.1%</b>	<b>17.4%</b>	<b>23.4%</b>	<b>29.5%</b>	<b>37.1%</b>	<b>42.6%</b>	<b>50.0%</b>	<b>61.5%</b>
Other Recombinants	2.6%	2.7%	6.0%	4.9%	3.7%	4.1%	4.8%	6.1%	5.7%
XBB.1.5	3.1%	6.4%	11.4%	18.5%	25.8%	33.0%	37.8%	43.9%	55.8%

[Downloadable data \(in .csv format\).](#)

**Note:** The shaded columns on the right represent a period of accumulating data.

### Contributing laboratories:

- Saskatchewan - Roy Romanow Provincial Laboratory (RRPL)
- Public Health Ontario (PHO)
- Nova Scotia Health Authority
- Newfoundland and Labrador - Eastern Health
- New Brunswick - Vitalité Health Network
- Manitoba Cadham Provincial Laboratory
- Laboratoire de santé publique du Québec (LSPQ)
- BCCDC Public Health Laboratory
- Alberta Precision Labs (APL)
- National Microbiology Laboratory (NML) - supplemental sequencing for all provinces and territories

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# COVID-19 epidemiology update: Outbreaks

Last updated: 2023-03-27  PDF

Summary of COVID-19 cases, hospitalizations and deaths, cases following vaccination, testing and variants of concern across Canada and over time. Older versions of this report are available on the [archived reports page](#).

**Update schedule:** We update this page every Monday. This page was last updated on March 27, 2023, 10 am ET.

The Public Health Agency of Canada (PHAC) regularly receives COVID-19 outbreak data from health authorities in the provinces and territories. This page summarizes outbreaks in Canada by setting and by size, and is updated weekly. Data may change retroactively if there are changes to:

- provincial or territorial COVID-19 testing strategies
- provincial or territorial reporting of outbreaks
- data collection methods, or
- outbreak management methods

Outbreak definitions vary across the country, but we use a national outbreak definition for all outbreaks. An outbreak is 2 or more confirmed cases of COVID-19 which are epidemiologically linked to a specific setting or location. It does **not** include:

- households (since household cases may not be declared or managed as an outbreak if the risk of transmission is contained)
- cases that are geographically clustered (such as in a region, city, or town) but not epidemiologically linked
- cases attributed to community transmission

In December 2021, the highly contagious Omicron variant caused a rapid increase in cases. This surge affected public health and testing capacity, which led to a change in testing strategies and limited contact tracing. This made it harder for provinces and territories to link cases. As a result, outbreaks were undercounted. The provinces and territories still consistently report cases of COVID-19 in high-priority settings. However, most no longer report cases in community settings, such as schools, recreational facilities and stores.

- **Acute care:** Hospital or similar setting where patients receive short-term treatment for an injury or severe episode of illness, an urgent medical condition, or during recovery from surgery. Acute care

settings include:

- hospitals
- emergency departments
- urgent care
- transitional care
- convalescent care
- short-term inpatient rehabilitation centres

- **Congregate living** includes:

- retirement residences
- assisted/supportive living
- group homes
- residential treatment centres
- transition centres
- shelters
- student dormitories

- **Correctional facilities** include:

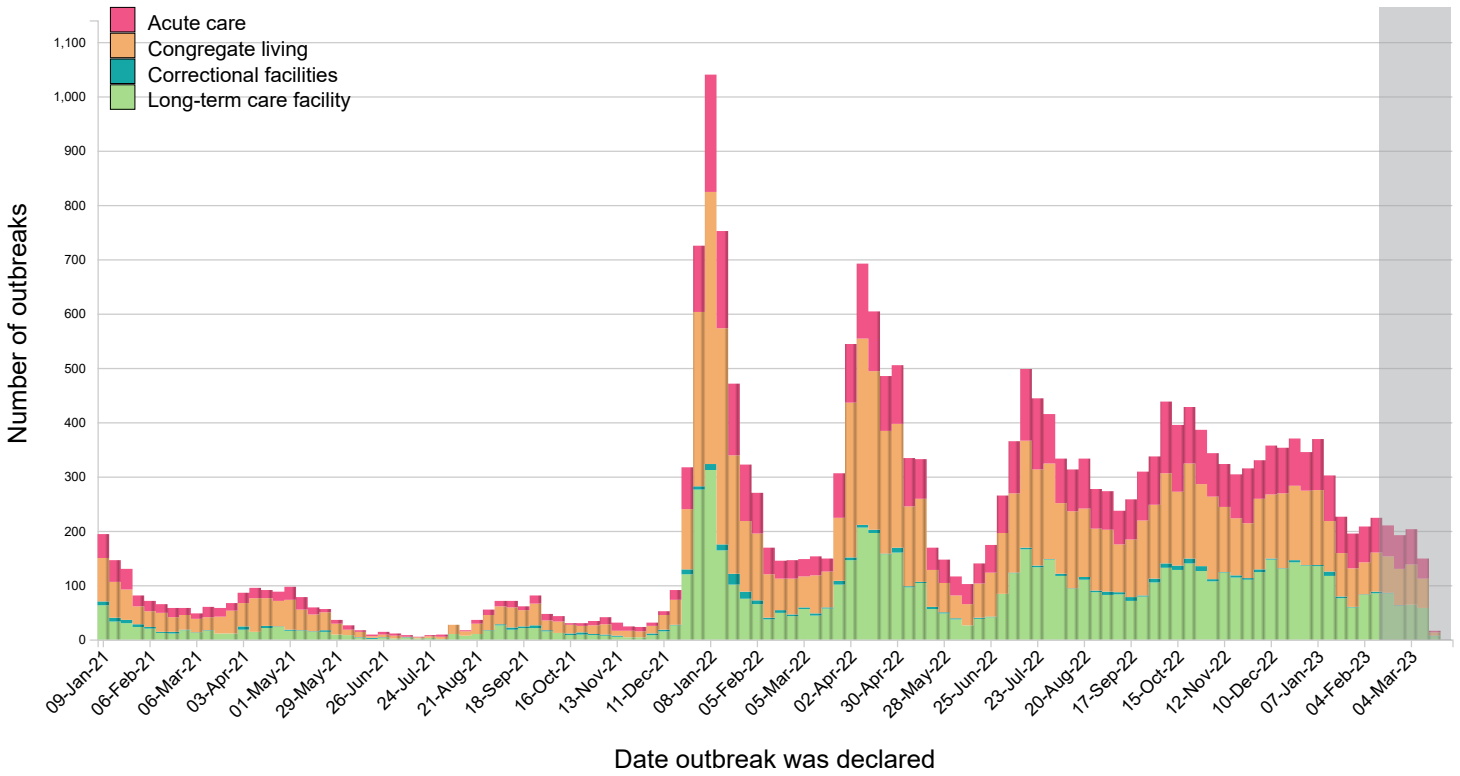
- provincial jails and prisons
- federal jails and prisons
- youth correction centres

- **Long-term care facilities** include both public and private facilities that provide living accommodations for people who require full-time supervised care, including professional health services, personal care, and other services (meals, laundry, cleaning)

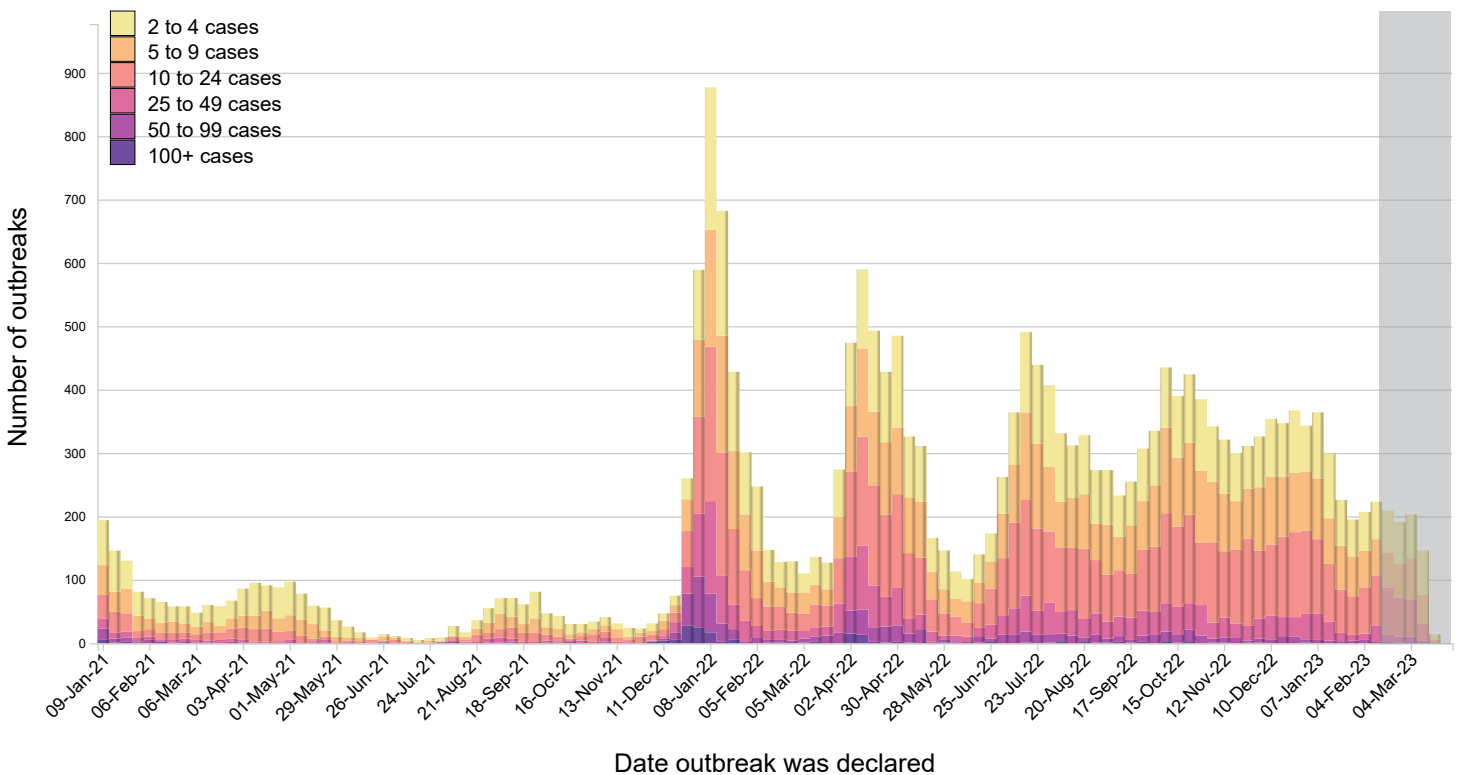
## howing outbreaks data from 2021-01-09 to 2023-03-18.

The shaded area on the far right of Figure 1 and Figure 2 represents a period of accumulating data. This is the period of time (1 to 2 weeks) before the latest outbreaks are reported to PHAC. This delay is a result of the time required to identify cases and declare outbreaks. We update this figure as more data becomes available.

**Figure 1. Weekly number of outbreaks by setting**



**Figure 2. Weekly number of outbreaks by outbreak size for all settings**



Between January 2, 2022 and March 18, 2023:

- Acute care accounted for 24% of outbreaks. The median outbreak size was 7 cases per outbreak.

- Congregate living accounted for 44% of outbreaks. The median outbreak size was 7 cases per outbreak.
- Correctional facilities accounted for 2% of outbreaks. Median outbreak size was 9 cases per outbreak.
- Long-term care facilities accounted for 31% of outbreaks. Median outbreak size was 12 cases per outbreak.

**Table 1. Summary statistics of COVID-19 outbreak size by setting, all time v**

Setting	Median case count	Average case count	Number of outbreaks
Acute care	7	9	5,308
Congregate living	7	13	9,601
Correctional facilities	9	28	361
Long-term care facility	12	21	6,793

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