



# COVID-19 epidemiology update

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](#).

## Current situation

This page was last updated on October 21, 2022, 9 am ET.

**Update schedule:** We update all sections of this page every Friday, except for 'Hospital use', which we update every Thursday.

## Key COVID-19 case and death updates (Last data update October 21, 2022, 9 am ET)

Weekly change in cases

**21,188**

Total cases

**4,314,718**

Weekly change in deaths

**278**

Total deaths

**46,025**

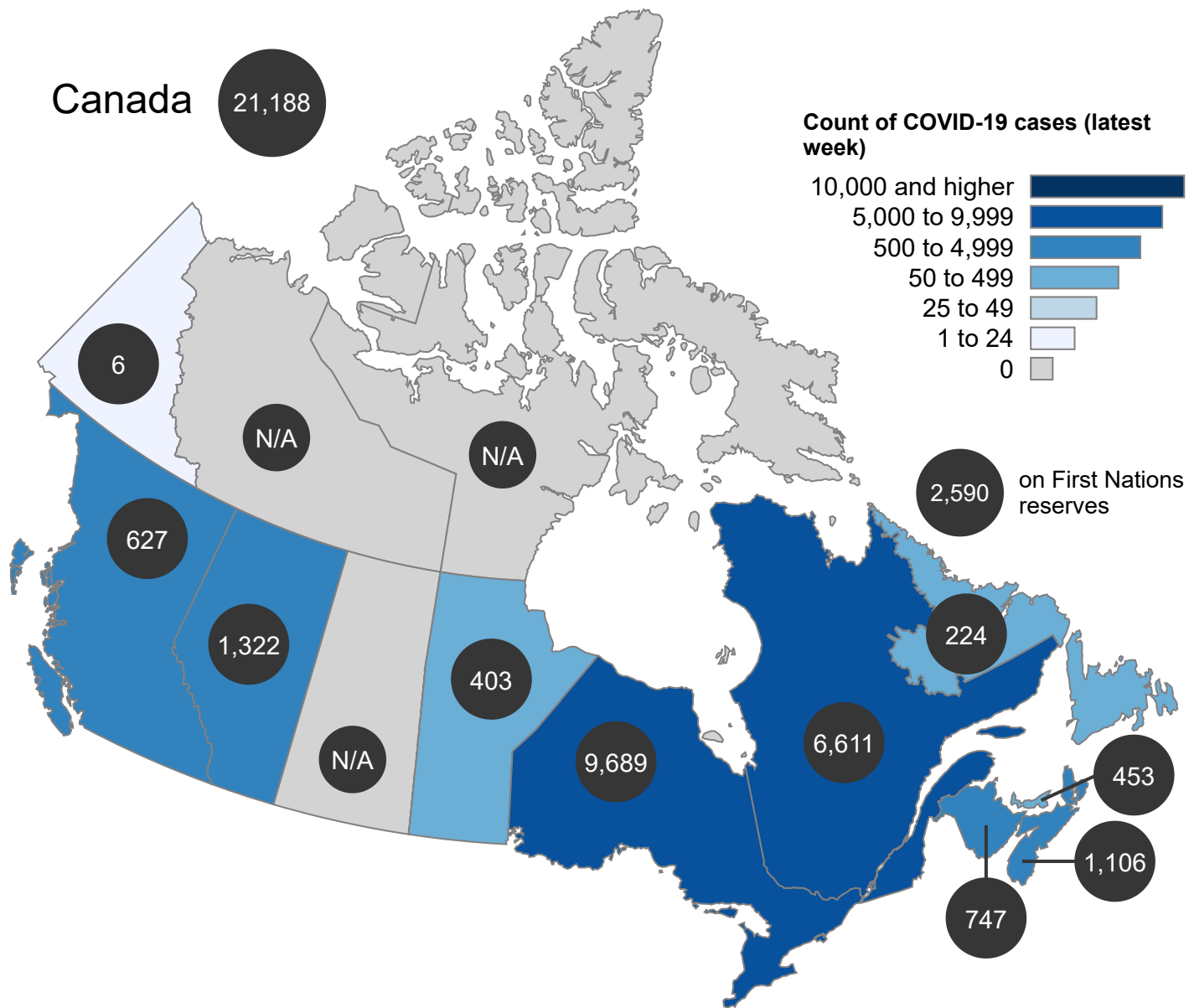
- Case and death information are up to October 15, 2022.
- Weekly change in cases and deaths includes data from 10 of the 13 Canadian provinces and territories reporting updates for the week of October 9 to October 15, 2022.
- These reflect the changes in the case and death counts at the end of the week 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.
- Due to technical issues, Ontario was not able to provide daily case or death updates for October 15-17. To estimate cases and deaths for October 9-15, we subtracted the cumulative total from October 14 from the cumulative total from October 18, 2022 and calculated the average increase per day for the missing days (e.g. October 15-17, 2022). This

average increase was added to the cumulative total on October 14, 2022 to calculate the estimated number of cases and deaths for October 15, 2022.

# Case and death trends

Figure 1. **Count** of **cases (latest week)** of COVID-19, **province/territory** for the week of October 09 to October 15, 2022

(Last data update October 21, 2022, 9 am ET)



The count of cases of COVID-19 for the week of October 09 to October 15, 2022 in **Canada** was **21,188**.

- a. 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 October 15, 2022. 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.

- b. Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.
- c. As of April 11, 2022, Nunavut no longer publishes regular COVID-19 updates.
- d. As of June 13, 2022, Northwest Territories no longer publishes regular COVID-19 updates.
- e. Due to technical issues, Ontario was not able to provide daily case or death updates for October 15-17. To estimate cases and deaths for October 9-15, we subtracted the cumulative total from October 14 from the cumulative total from October 18, 2022 and calculated the average increase per day for the missing days missing days (e.g. October 15-17, 2022). This average increase was added to the cumulative total on October 14, 2022 to calculate the estimated number of cases and deaths for October 15, 2022.

#### 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*	Count	Rate*	Count	Rate*	Count	Rate*	Count	Rate*	Count	Rate*
British Columbia	386,920	7,274	627	12	1,321	25	4,423	83	53	1.0	102	1.9
Alberta	611,045	13,450	1,322	29	2,698	59	4,981	110	13	0.3	37	0.8
Saskatchewan	145,734	12,197	N/A	N/A	N/A	N/A	1,566	131	N/A	N/A	N/A	N/A
Manitoba	150,957	10,712	403	29	744	53	2,199	156	9	0.6	22	1.6
Ontario	1,471,704	9,740	9,689	64	18,334	121	14,522	96	65	0.4	153	1.0
Quebec	1,215,208	13,975	6,611	76	12,976	149	16,817	193	35	0.4	76	0.9
Newfoundland and Labrador	52,335	9,950	224	43	380	72	250	48	4	0.7	7	1.4
New Brunswick	79,434	9,782	747	92	1,378	170	576	71	83	10.2	86	10.6
Nova Scotia	128,714	12,622	1,106	108	2,116	207	567	56	15	1.5	23	2.3
Prince Edward Island	52,683	30,865	453	266	763	447	64	37	1	0.6	2	1.4
Yukon	4,929	11,257	6	14	21	48	31	71	0	0.0	0	0.0
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>4,314,718</b>	<b>11,083</b>	<b>21,188</b>	<b>54</b>	<b>41,205</b>	<b>106</b>	<b>46,025</b>	<b>118</b>	<b>278</b>	<b>0.7</b>	<b>514</b>	<b>1.3</b>

a. \* Rate per 100,000 population

## Epidemic curve

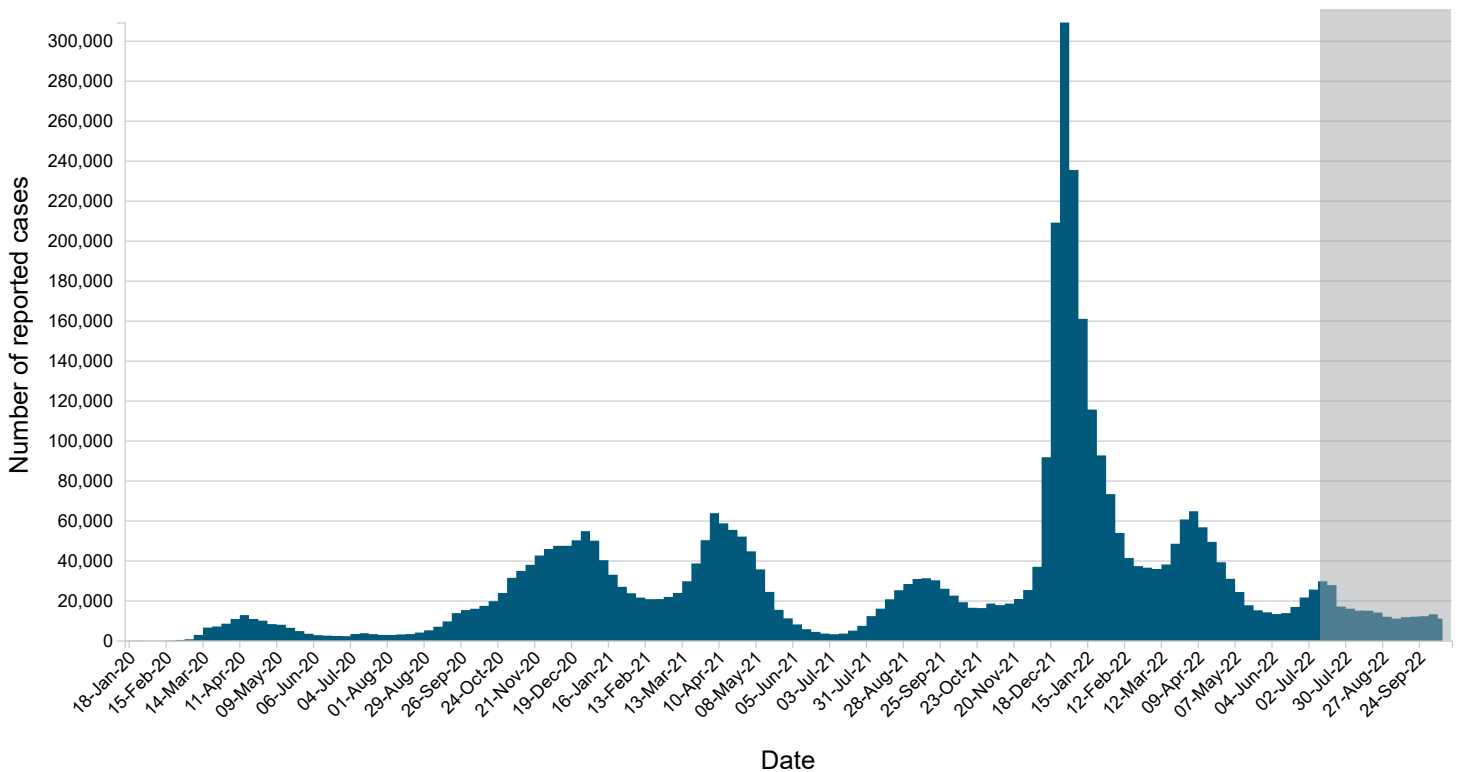
As of October 21, 2022, 9 am ET, PHAC has received detailed case report data on 4,135,488 cases.

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.

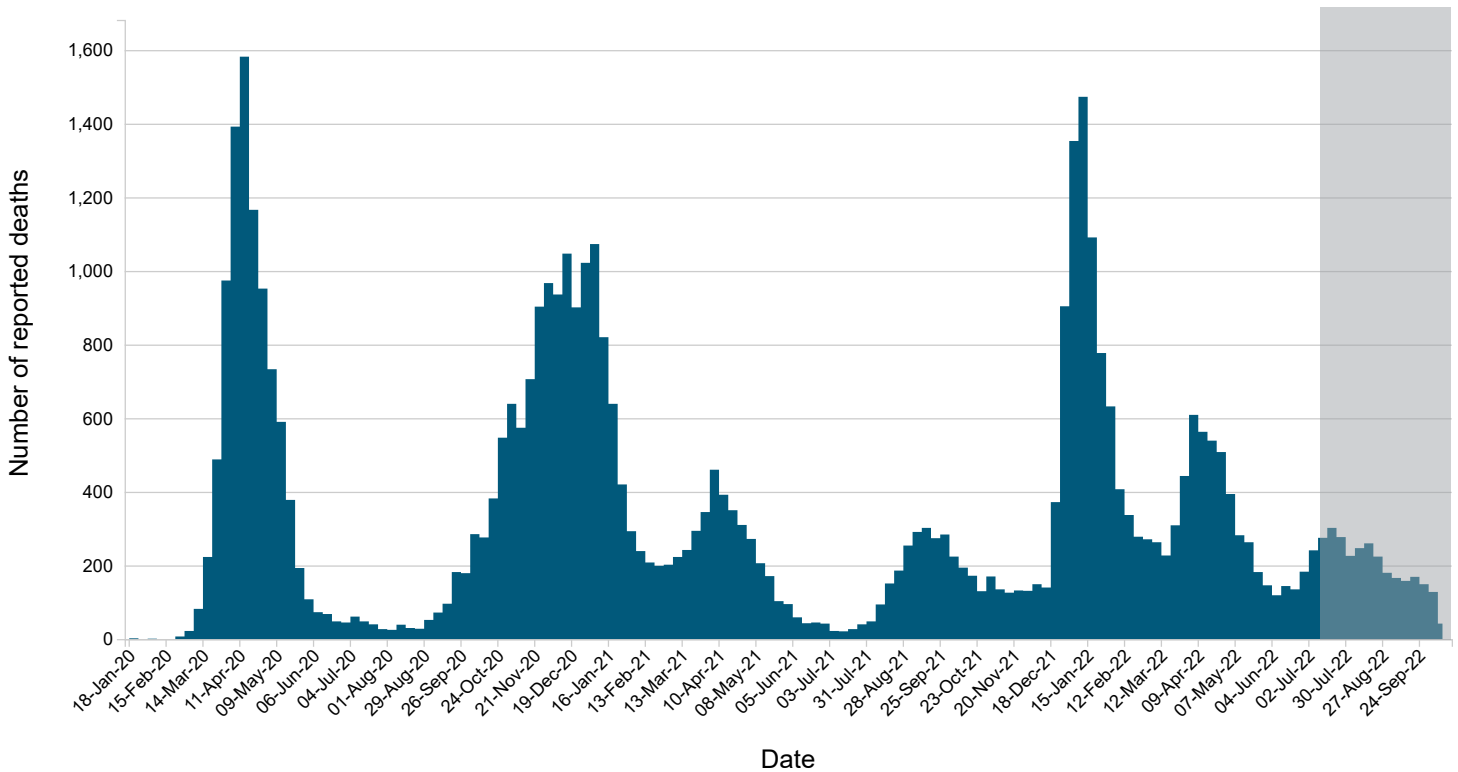
We update this information as it becomes available.

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=4,135,034) in Canada by date as of October 21, 2022, 9 am ET (total cases)**



**Figure 2b. COVID-19 cases (n=) in Canada by date as of October 21, 2022, 9 am ET (total deaths)**



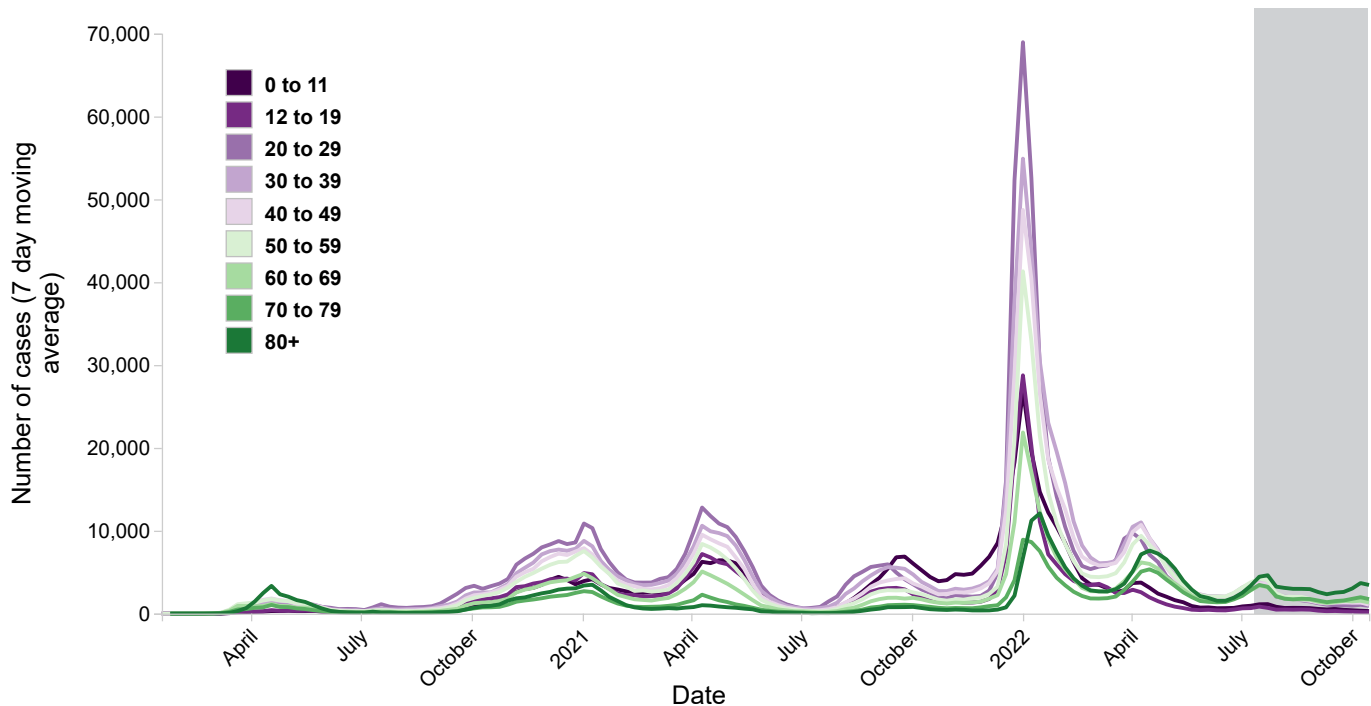
- a. This figure reflects detailed case information provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. This data is updated every week. It may change as we get more information about cases.
- b. The earliest of the following dates were used to 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 4,135,488 cases. We know the age of patients in 99.9% of cases, and both age and gender in 99.7% of cases.

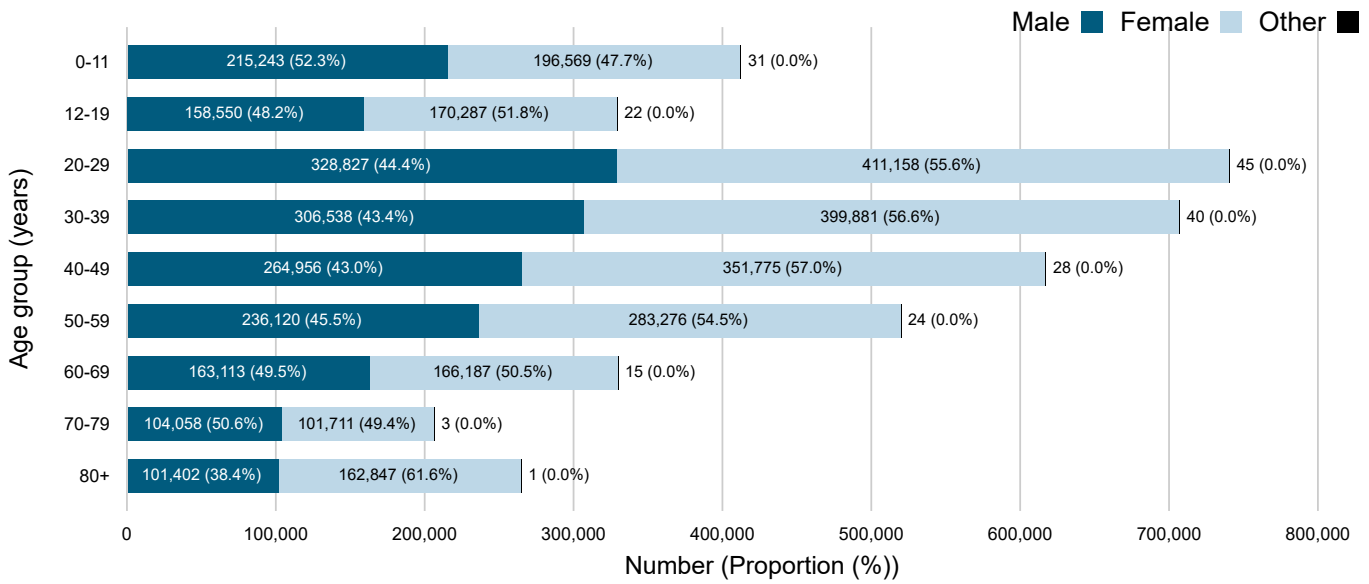
Of the cases reported in Canada so far, 54.4% were female and 35.1% were between 20 and 39 years old (Figure 2).

**Figure 3. Weekly  of COVID-19  by age group in Canada as of October 15, 2022**

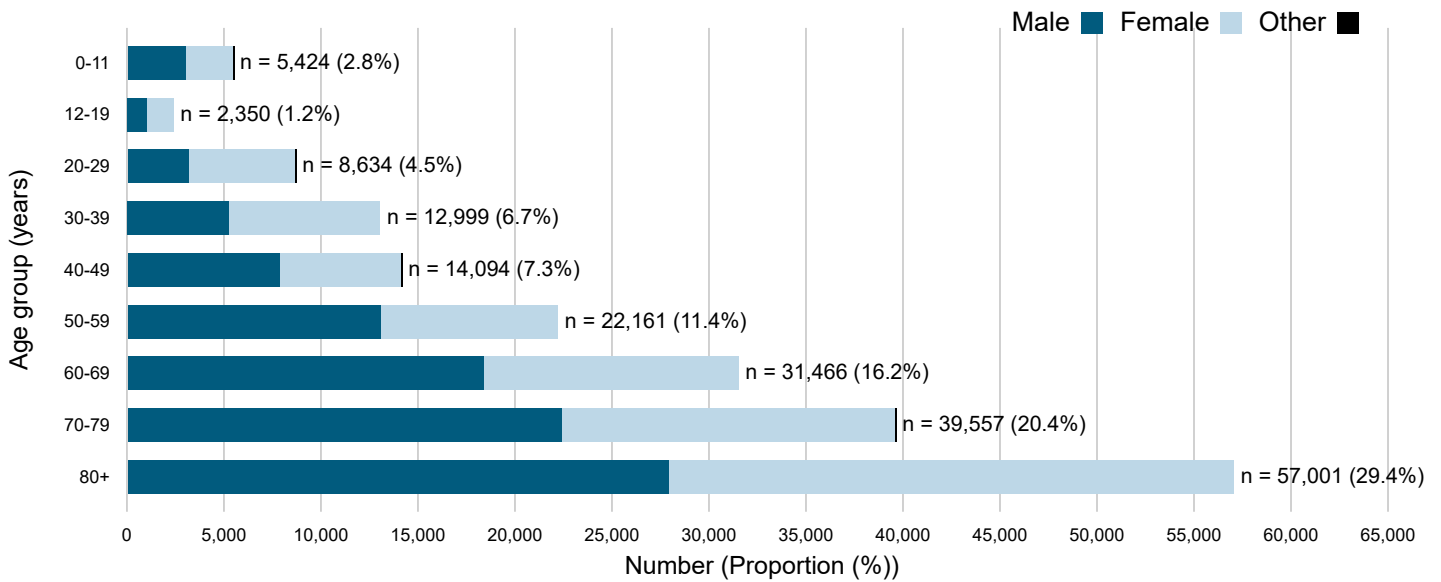


- This figure reflects detailed case information provided to the Public Health Agency of Canada (PHAC) by health authorities in the provinces and territories. This data is updated every week. It may change as we get more information about cases.
- The earliest of the following dates were used to determine 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 October 21, 2022, 9 am ET (n=4,093,695)**

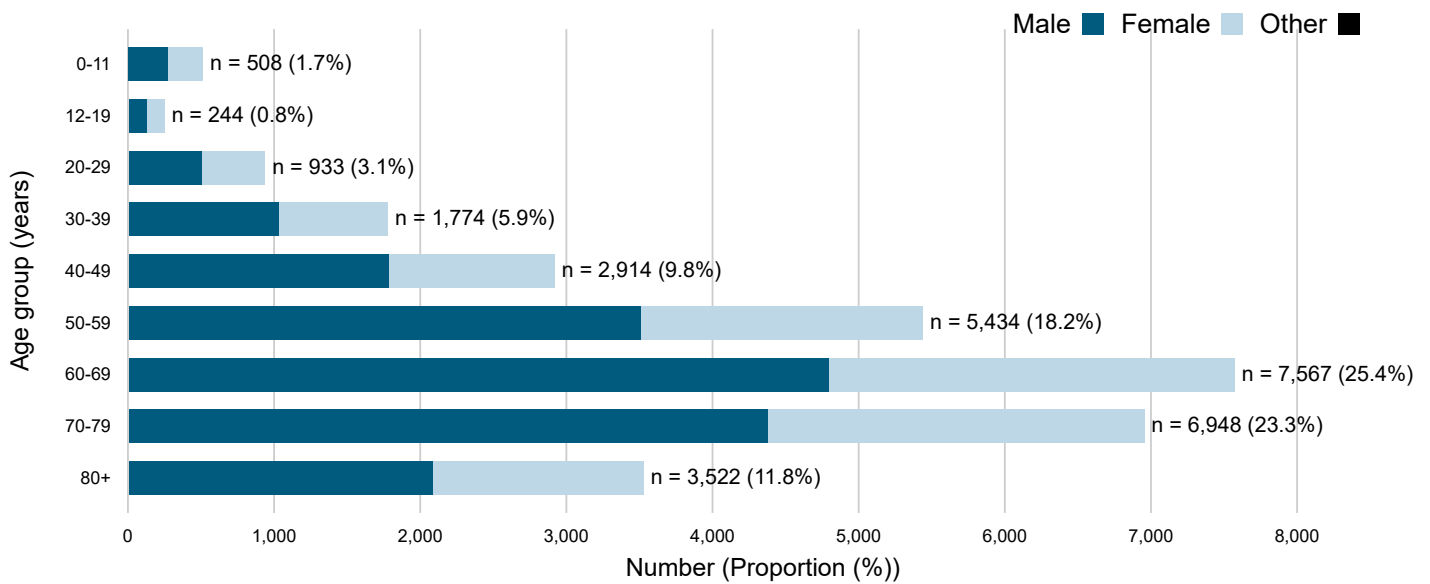


**Figure 4b. Age and gender distribution of COVID-19 cases hospitalized in Canada as of October 21, 2022, 9 am ET (n=193,686)**

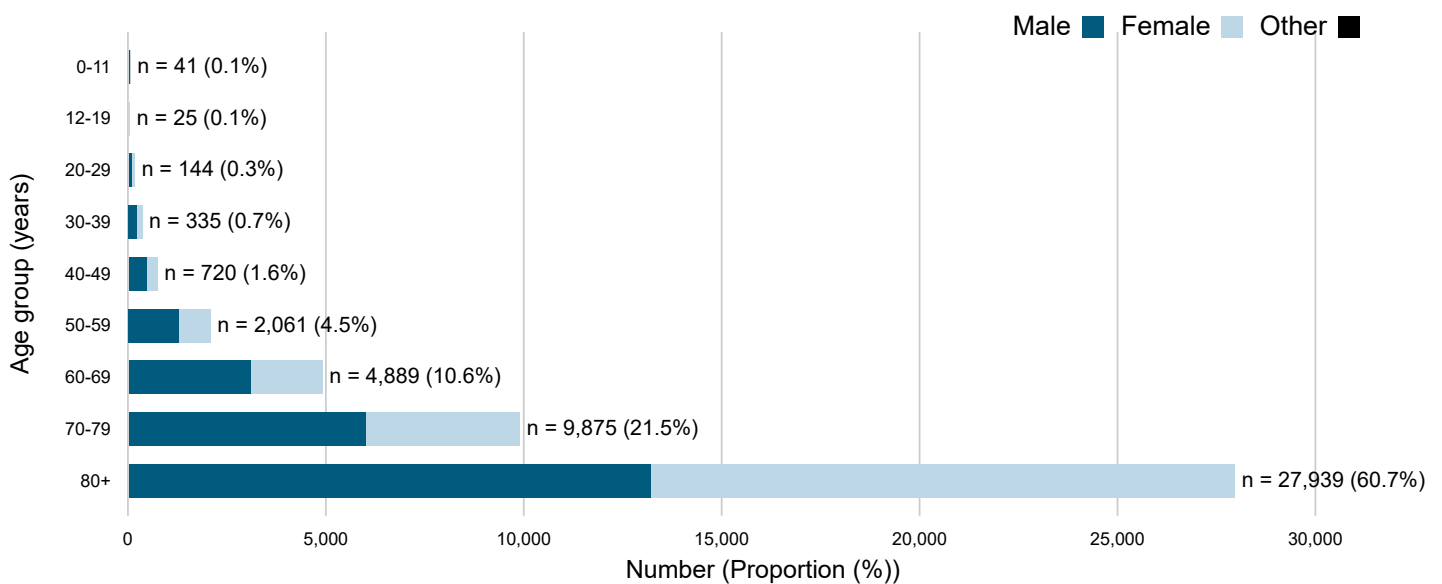




**Figure 4c. Age and gender distribution of COVID-19 cases admitted to ICU in Canada as of October 21, 2022, 9 am ET (n=29,844)**



**Figure 4d. Age and gender distribution of COVID-19 cases deceased in Canada as of October 21, 2022, 9 am ET (n=46,029)**



- 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 October 21, 2022, 9 am ET (n=4,093,695)**

<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	413,431 (10.0%)	215,243 (11.5%)	196,569 (8.8%)	31 (14.8%)
12-19	330,218 (8.0%)	158,550 (8.4%)	170,287 (7.6%)	22 (10.5%)
20-29	742,844 (18.0%)	328,827 (17.5%)	411,158 (18.3%)	45 (21.5%)
30-39	708,360 (17.1%)	306,538 (16.3%)	399,881 (17.8%)	40 (19.1%)
40-49	618,235 (15.0%)	264,956 (14.1%)	351,775 (15.7%)	28 (13.4%)
50-59	520,605 (12.6%)	236,120 (12.6%)	283,276 (12.6%)	24 (11.5%)
60-69	330,032 (8.0%)	163,113 (8.7%)	166,187 (7.4%)	15 (7.2%)
70-79	206,155 (5.0%)	104,058 (5.5%)	101,711 (4.5%)	3 (1.4%)
80+	264,687 (6.4%)	101,402 (5.4%)	162,847 (7.3%)	1 (0.5%)

**Age and gender distribution of COVID-19 cases hospitalized in Canada as of October 21, 2022, 9 am ET (n=193,686)**

<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	5,424 (2.8%)	3,038 (1.6%)	2,385 (1.2%)	1 (0.0%)
12-19	2,350 (1.2%)	988 (0.5%)	1,362 (0.7%)	0 (0.0%)
20-29	8,634 (4.5%)	3,143 (1.6%)	5,490 (2.8%)	1 (0.0%)
30-39	12,999 (6.7%)	5,220 (2.7%)	7,779 (4.0%)	0 (0.0%)
40-49	14,094 (7.3%)	7,832 (4.0%)	6,261 (3.2%)	1 (0.0%)
50-59	22,161 (11.4%)	13,073 (6.7%)	9,088 (4.7%)	0 (0.0%)
60-69	31,466 (16.2%)	18,346 (9.5%)	13,120 (6.8%)	0 (0.0%)
70-79	39,557 (20.4%)	22,398 (11.6%)	17,158 (8.9%)	1 (0.0%)

<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>
80+	57,001 (29.4%)	27,929 (14.4%)	29,072 (15.0%)	0 (0.0%)

**Age and gender distribution of COVID-19 cases admitted to ICU in Canada as of October 21, 2022, 9 am ET (n=29,844)**

<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	508 (1.7%)	274 (0.9%)	234 (0.8%)	0 (0.0%)
12-19	244 (0.8%)	126 (0.4%)	118 (0.4%)	0 (0.0%)
20-29	933 (3.1%)	502 (1.7%)	431 (1.4%)	0 (0.0%)
30-39	1,774 (5.9%)	1,030 (3.5%)	744 (2.5%)	0 (0.0%)
40-49	2,914 (9.8%)	1,784 (6.0%)	1,130 (3.8%)	0 (0.0%)
50-59	5,434 (18.2%)	3,507 (11.8%)	1,927 (6.5%)	0 (0.0%)
60-69	7,567 (25.4%)	4,794 (16.1%)	2,773 (9.3%)	0 (0.0%)
70-79	6,948 (23.3%)	4,375 (14.7%)	2,573 (8.6%)	0 (0.0%)
80+	3,522 (11.8%)	2,083 (7.0%)	1,439 (4.8%)	0 (0.0%)

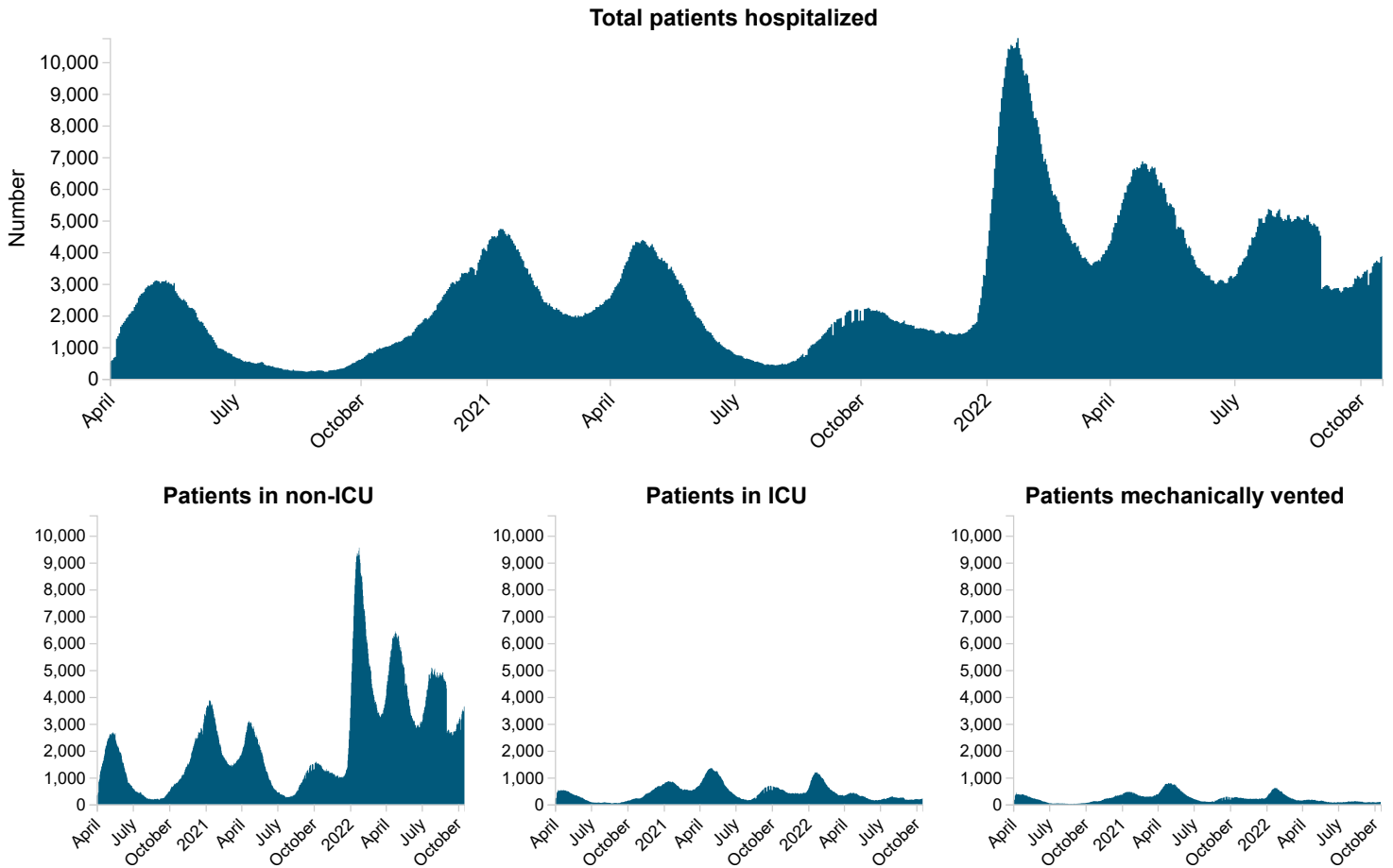
**Age and gender distribution of COVID-19 cases deceased in Canada as of October 21, 2022, 9 am ET (n=46,029)**

<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	41 (0.1%)	20 (0.0%)	21 (0.0%)	0 (0.0%)
12-19	25 (0.1%)	13 (0.0%)	12 (0.0%)	0 (0.0%)
20-29	144 (0.3%)	89 (0.2%)	55 (0.1%)	0 (0.0%)
30-39	335 (0.7%)	208 (0.5%)	127 (0.3%)	0 (0.0%)
40-49	720 (1.6%)	453 (1.0%)	267 (0.6%)	0 (0.0%)
50-59	2,061 (4.5%)	1,266 (2.8%)	795 (1.7%)	0 (0.0%)
60-69	4,889 (10.6%)	3,095 (6.7%)	1,794 (3.9%)	0 (0.0%)
70-79	9,875 (21.5%)	5,997 (13.0%)	3,878 (8.4%)	0 (0.0%)
80+	27,939 (60.7%)	13,197 (28.7%)	14,742 (32.0%)	0 (0.00%)



# Hospital use

Figure 5. Daily number of hospital beds and ICU beds occupied by COVID-19 patients as of October 17, 2022



Between October 10, 2022 and October 17, 2022:

- the total number of **hospital beds** occupied by COVID-19 patients **increased** from **3,550** to **3,875** beds.
- the number of **non-ICU beds** occupied by COVID-19 patients **increased** from **3,354** to **3,656** beds.
- the number of **ICU beds** occupied by COVID-19 patients **increased** from **196** to **219** beds.
- the number of **COVID-19 patients who were mechanically vented** **increased** from **85** to **93**.

# 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](#)



# Cases following vaccination

Data extracted on 14 Oct 2022 for cases between December 14, 2020 and 25 Sep 2022.

**Update Schedule:** We update all sections of this page every 4 weeks on Tuesdays.

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 25 Sep 2022

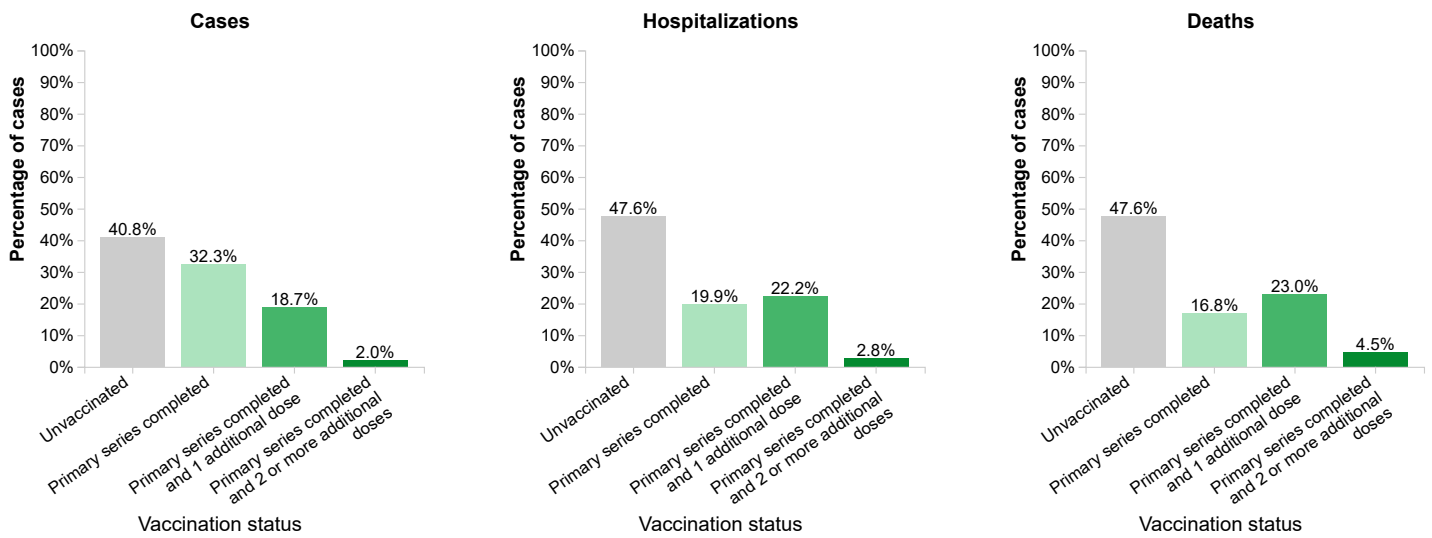
Since the start of the vaccination campaign on December 14, 2020, PHAC received case-level vaccine history data for 73% (n=2,457,576) of COVID-19 cases aged 5 years or older.

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



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

		Unvaccinated (n=1,002,452)	Primary series completed (n=794,145)	Primary series completed and 1 additional dose (n=460,280)	Primary series completed and 2 or more additional doses (n=49,056)	Total cases <sup>†</sup> (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 29 Aug 2022 and 25 Sep 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 25 Sep 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

# Testing and variants

This page was last updated on October 21, 2022, 9 am ET.

**Update schedule:** We update all sections of this page every Friday.

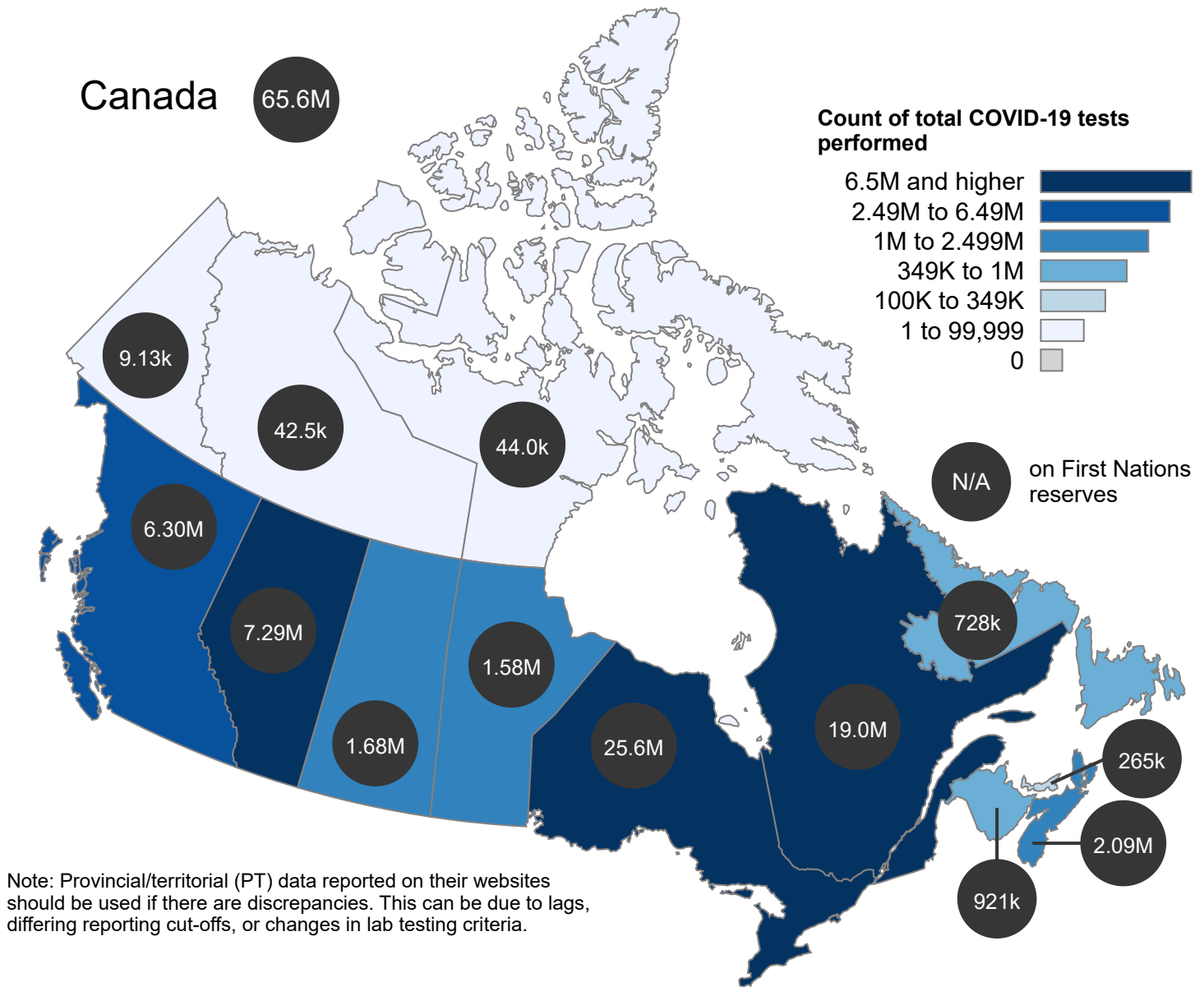
## Key COVID-19 testing updates (Last data update October 21, 2022, 9 am ET)

Total tests performed	Daily percent positive (last 7 days)	Daily tests per 100,000 population (last 7 days)
<b>65,558,668</b>	<b>13.2%</b>	<b>66</b>

- Laboratory data represents specimens received by labs up to October 18, 2022 to allow time to process results.
- The daily percent positive (last 7 days) and Daily tests per 100,000 population (last 7 days) are calculated as the sum of the daily numbers for the previous 7 days from the provinces and territories, (up to and including the day of the last update), divided by the number of days for which data is available.
- As of October 19, 2022, the Statistics Canada population estimates as of July 1, 2022 are being used for denominators in rate calculations.

# Testing in Canada

Figure 1.  of  for COVID-19, by province/territory up to October 18, 2022 (Last data update October 21, 2022, 9 am ET)



The count of total tests performed of COVID-19 in **Canada** was **65,558,668** up to October 18, 2022.

- 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 October 18, 2022. For the most up to date data for any province, territory or city, please visit their [website](#).

- b. The 7-day moving average is the sum of the daily numbers for the previous 7 days (up to and including the day of the last update), divided by the number of days for which data is available. We go back and update the moving averages as provinces and territories submit more data. To calculate the national 7-day moving average, we sum the number of tests performed during the 7-day period from the provinces and territories, and then divide by 7 the national population to calculate the rate.
- c. Due to changes in COVID-19 testing policies in many jurisdictions since December 2021, case counts are under-estimated.
- d. Out of all people tested, 76 were repatriated travellers, of whom 13 tested positive.

**Areas in Canada with cases of COVID-19**

Location	Total tests performed	Moving average daily tests performed (latest week)		Moving average daily percent positivity (latest week)
	Count	Count	Rate <sup>*</sup>	Percent
British Columbia	6,296,154	982	19	12.1%
Alberta	7,286,823	1,122	25	18.9%
Saskatchewan	1,680,514	905	76	10.8%
Manitoba	1,581,827	319	23	26.2%
Ontario	25,574,556	10,669	71	16.0%
Quebec	19,022,292	9,636	111	10.1%
Newfoundland and Labrador	728,192	520	99	6.6%
New Brunswick	920,802	625	77	20.0%
Nova Scotia	2,087,007	799	78	26.9%
Prince Edward Island	265,250	38	23	21.2%
Yukon	9,129	N/A	N/A	N/A
Northwest Territories	42,477	5	11	11.1%
Nunavut	44,014	22	53	6.5%
<b>Canada</b>	<b>65,558,668</b>	<b>25,642</b>	<b>66</b>	<b>13.2%</b>

a. <sup>\*</sup> Rate per 100,000 population

b. Out of the total number of people tested, 76 were repatriated travellers, of which 13 were cases.



# 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.

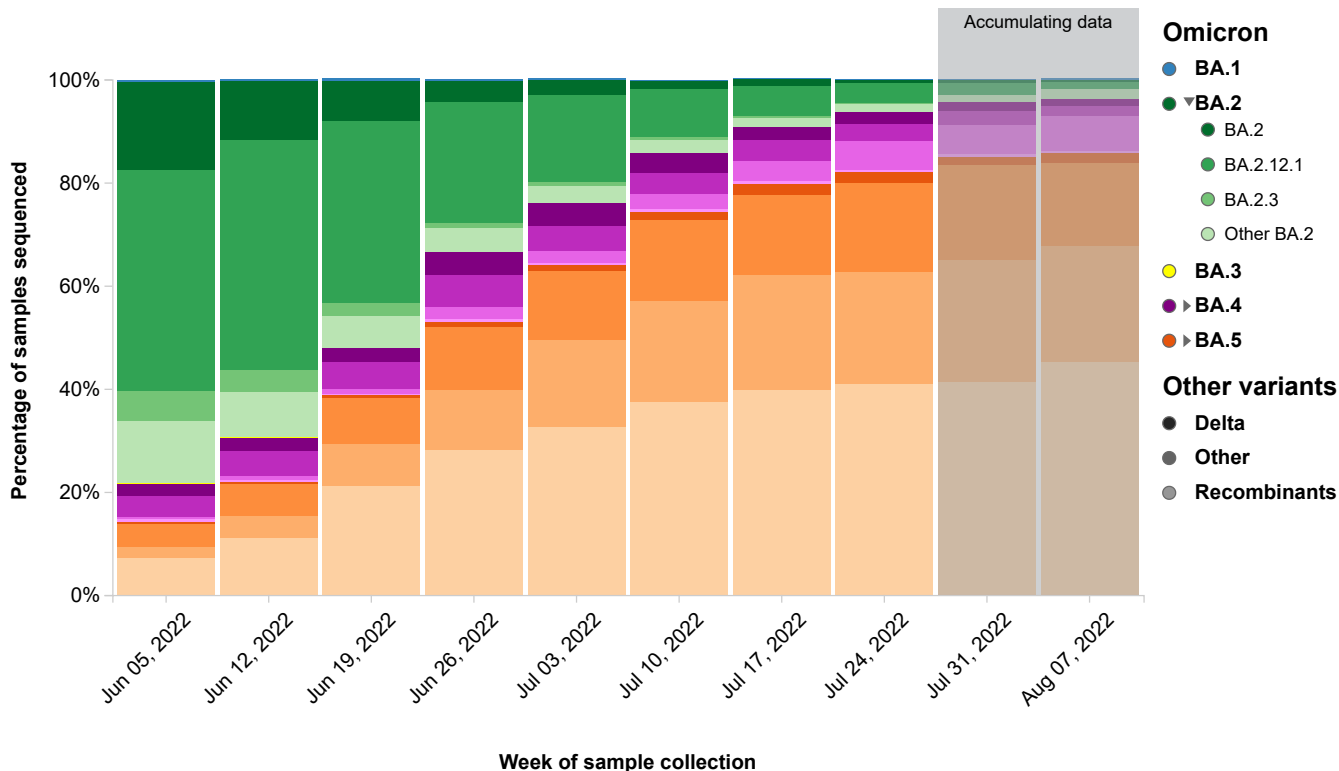
Previous variants of concern in Canada are as follows:

- 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: May 20, 2022, 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.

## Weekly variant breakdown

Percentage of COVID-19 cases identified through whole genome sequencing, presented by variant and by week of sample collection.

### Percentage of COVID-19 cases identified through whole genome sequencing, present variant and by week of sample collection.

Variant Grouping	Jun 05, 2022 (n=3,274)	Jun 12, 2022 (n=3,169)	Jun 19, 2022 (n=3,275)	Jun 26, 2022 (n=3,595)	Jul 03, 2022 (n=4,425)	Jul 10, 2022 (n=4,824)	Jul 17, 2022 (n=4,328)	Jul 24, 2022 (n=3,669)	Jul 31, 2022 (n=3,275)
<b>Omicron</b>	<b>99.8%</b>	<b>100.0%</b>	<b>100.1%</b>	<b>100.0%</b>	<b>100.2%</b>	<b>99.9%</b>	<b>100.2%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>BA.1</b>	<b>0.3%</b>	<b>0.2%</b>	<b>0.4%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.1%</b>
<b>BA.2</b>	<b>77.8%</b>	<b>69.2%</b>	<b>51.7%</b>	<b>33.1%</b>	<b>23.9%</b>	<b>14.0%</b>	<b>9.3%</b>	<b>6.2%</b>	<b>4.3%</b>
BA.2	17.0%	11.6%	7.7%	4.0%	2.9%	1.6%	1.3%	0.5%	0.5%
BA.2.12.1	43.0%	44.6%	35.4%	23.5%	16.9%	9.4%	5.9%	3.9%	2.4%
BA.2.3	5.7%	4.1%	2.5%	1.0%	0.7%	0.4%	0.4%	0.2%	0.0%
Other BA.2	12.1%	8.9%	6.1%	4.6%	3.4%	2.6%	1.7%	1.6%	1.4%
<b>BA.3</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	-	-
<b>BA.4</b>	<b>7.3%</b>	<b>8.5%</b>	<b>9.1%</b>	<b>13.6%</b>	<b>11.9%</b>	<b>11.4%</b>	<b>11.1%</b>	<b>11.7%</b>	<b>10.5%</b>
BA.4	2.4%	2.6%	2.6%	4.6%	4.3%	3.9%	2.6%	2.3%	1.7%
BA.4.1	4.0%	4.7%	5.3%	6.1%	4.9%	4.1%	3.9%	3.4%	2.7%
BA.4.6	0.5%	0.8%	0.9%	2.3%	2.4%	2.9%	4.0%	5.5%	5.7%
Other BA.4	0.4%	0.4%	0.3%	0.6%	0.3%	0.5%	0.6%	0.5%	0.4%
<b>BA.5</b>	<b>14.3%</b>	<b>22.0%</b>	<b>38.8%</b>	<b>53.0%</b>	<b>64.1%</b>	<b>74.4%</b>	<b>79.7%</b>	<b>82.0%</b>	<b>85.1%</b>
BA.5	0.4%	0.5%	0.6%	1.1%	1.2%	1.7%	2.0%	2.0%	1.6%
BA.5.1	4.5%	6.1%	8.9%	12.1%	13.5%	15.6%	15.6%	17.3%	18.5%
BA.5.2.1	2.2%	4.3%	8.1%	11.6%	16.7%	19.7%	22.3%	21.8%	23.6%
Other BA.5	7.2%	11.1%	21.2%	28.2%	32.7%	37.4%	39.8%	40.9%	41.4%
<b>Other variants</b>	<b>0.1%</b>	-	-	<b>0.0%</b>	-	<b>0.0%</b>	-	-	<b>0.0%</b>
<b>Delta</b>	-	-	-	-	-	-	-	-	-
<b>Other</b>	-	-	-	-	-	-	-	-	<b>0.0%</b>
<b>Recombinants</b>	<b>0.1%</b>	-	-	<b>0.0%</b>	-	<b>0.0%</b>	-	-	-

<b>Variant Grouping</b>	<b>Jun 05, 2022</b> (n=3,274)	<b>Jun 12, 2022</b> (n=3,169)	<b>Jun 19, 2022</b> (n=3,275)	<b>Jun 26, 2022</b> (n=3,595)	<b>Jul 03, 2022</b> (n=4,425)	<b>Jul 10, 2022</b> (n=4,824)	<b>Jul 17, 2022</b> (n=4,328)	<b>Jul 24, 2022</b> (n=3,669)	<b>Jul 31, 2022</b> (n=3,233)
XAC	0.0%	-	-	-	-	0.0%	-	-	-
XAM	0.1%	-	-	-	-	-	-	-	-
XAN	0.0%	-	-	-	-	-	-	-	-
XAP	-	-	-	0.0%	-	-	-	-	-

[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)
- 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 - Edmonton (APL)
- National Microbiology Laboratory (NML) - supplemental sequencing for all provinces and territories

National Microbiology Laboratory (NML) - supplemental sequencing for all provinces and territories

# Outbreaks

This page was last updated on October 21, 2022, 9 am ET.

**Update schedule:** We update all sections of this page every Friday.

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.

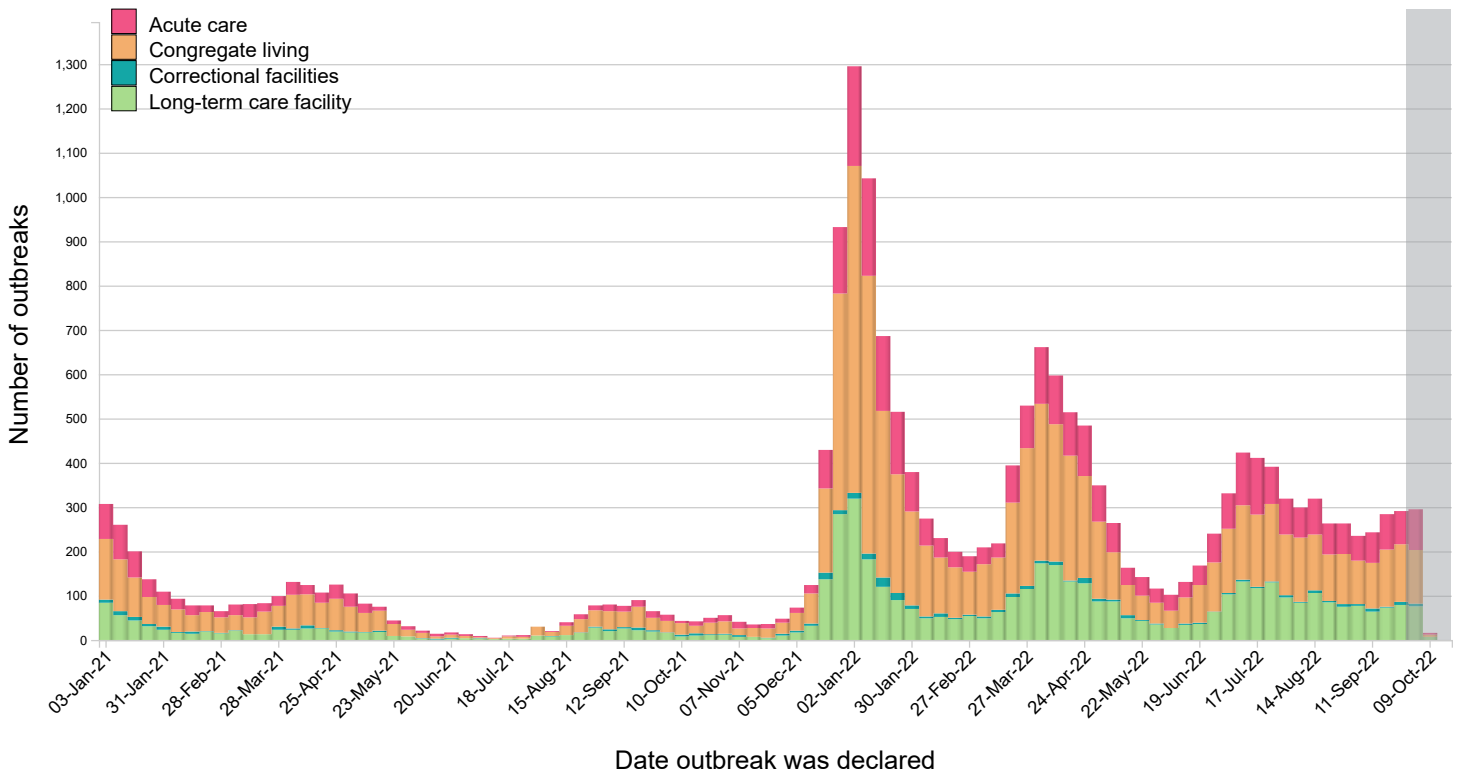
- **Acute care:** Hospital or similar setting where patients receive short-term treatment for an injury or severe episode of illness, an urgent medical condition, or during recovery from surgery. Acute care settings include:
  - hospitals
  - emergency departments
  - urgent care

- 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)

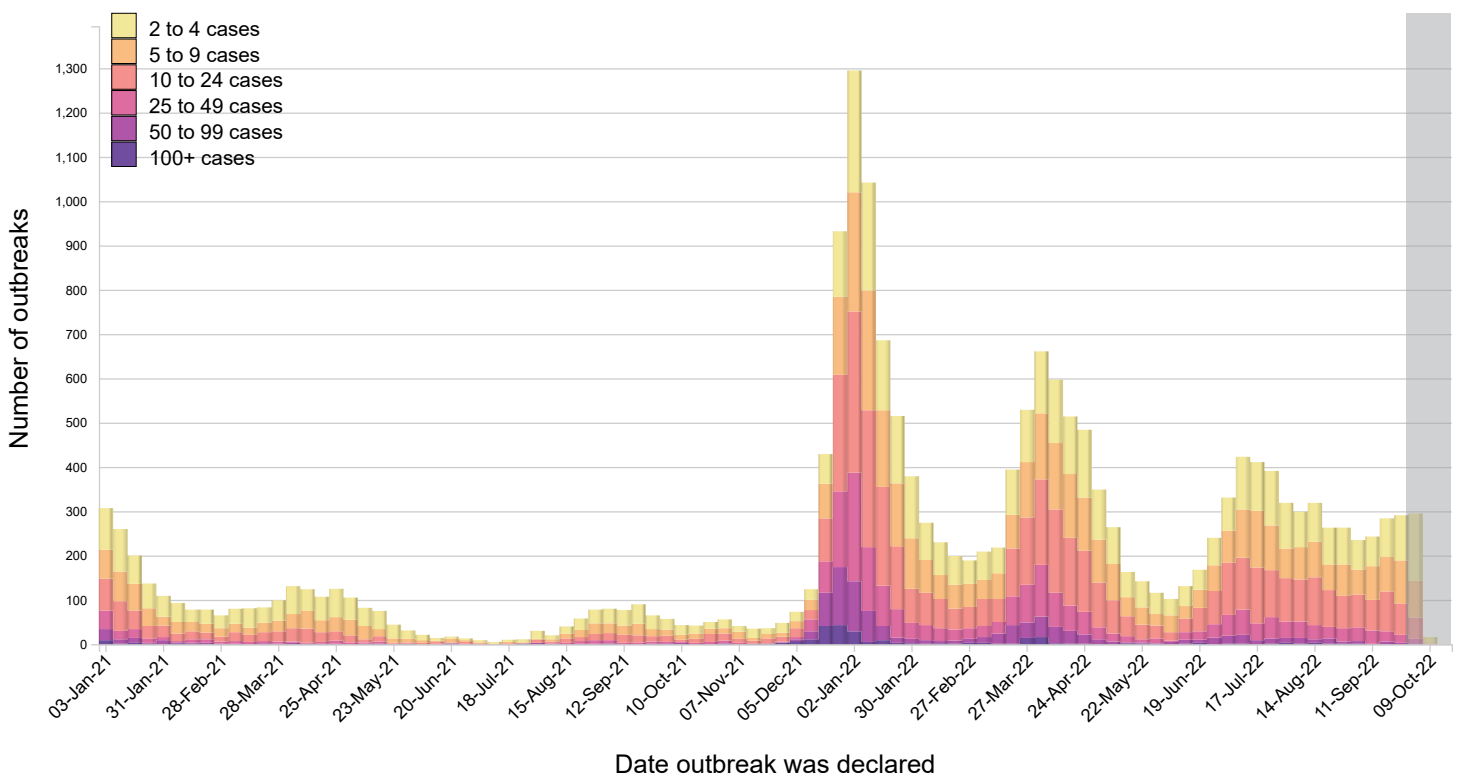
### **Showing outbreaks data from 2021-01-03 to 2022-10-09.**

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** all settings ▼



Between January 2, 2022 and October 9, 2022:

- Acute care accounted for 23% of outbreaks. The median outbreak size was 7 cases/outbreak.

- Congregate living accounted for 50% of outbreaks. The median outbreak size was 7 cases/outbreak.
- Correctional facilities accounted for 2% of outbreaks. Median outbreak size was 13 cases/outbreak.
- Long-term care facilities accounted for 25% of outbreaks. Median outbreak size was 14 cases/outbreak.



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

<b>Setting</b>	<b>Median case count</b>	<b>Average case count</b>	<b>Number of outbreaks</b>
Acute care	7	10	4,437
Congregate living	7	14	9,804
Correctional facilities	13	38	384
Long-term care facility	14	25	4,946