



CANADA COVID-19 WEEKLY EPIDEMIOLOGY REPORT (16 AUGUST TO 22 AUGUST 2020)

Published: 28 August 2020

<p>2 740 (↑ 92^a) New cases reported in the last 7 days^b</p>	<p>47 (↓ 1^a) New deaths reported in the last 7 days^b</p>
<p>391 (↑ 10^a) Average number of cases reported daily in the last 7 days^b</p>	<p>7 (0^a) Average number of deaths reported daily in the last 7 days^b</p>
<p>47 986 (↓ 5 696^a) Average people tested per day in the last 7 days^d</p>	<p>0.7% (↓ 0.1^c) Percent positive of people tested in the last 7 days^d</p>

^a The difference between the current reported value and that of the previous 7 day reporting period (9 to 15 August data) ^b Source: Provincial and Territorial MOH websites as of 22 August. ^c Difference in percentage points. ^d NML data for laboratory analyzes as of 22 August (Note: Laboratory testing numbers may be an underestimate due to reporting delays).

KEY MESSAGES

- Nationally, the number of new cases increased by 3% during the week of 16 to 22 August 2020 in comparison to the previous week, with an average of 391 cases and 7 deaths reported daily.
- Increases in cases have been observed in Western and Prairie regions of Canada, notably within British Columbia and Manitoba, over the last two weeks. These provinces are currently experiencing outbreaks in long-term care settings, meat-processing plants, and within small-localized communities.
- Long-term care outbreaks continue to account for the majority of outbreaks. During the month of August, an increase in food/drink/retail associated outbreaks have been noted. These settings likely draw-in a younger age demographic.
- The majority of cases reported this week were acquired domestically. Only five cases were associated with international exposure.
- Since late July, incidence rates have declined across all age groups however, those ages 20 to 39 remain consistently higher compared to all other age groups.
 - Since early July, cases under the age of 40 continue to account for the highest proportion of cases, contributing to 64% of cases this week.
 - Since 9 August, the majority of cases associated with international travel are those 20-39 years of age, which may be a reflection of the working demographic.
- Since early May, a steep decline in reported deaths has been observed, and the number of new deaths reported daily has remained low.
 - Since the beginning of the Canadian outbreak, the number of weekly reported deaths continues to be highest in those over 70 years of age.
 - The weekly reported cases in hospitals and ICUs across the country continue to steadily decline and remain highest in those 60 years and older since the beginning of the Canadian outbreak.
- The average number of people tested daily remained high over the last week, with over 47 986 people tested per day. The average percent positivity has decreased from 0.8% of people positive to 0.7% of people positive. This means we are now testing an average of over 140 people for every positive case, up from an average of 125 people tested for every positive case during the previous week.
- According to forecasting, 127 770 to 133 190 cumulative cases and 9 120 to 9 200 cumulative deaths are expected in Canada by 6 September. These forecasts also project the number of daily reported cases to



range from 380 cases to 400 cases per day during the period 22 August to 6 September. The reported number of daily deaths is predicted to remain stable at an average of five to six deaths per day for the same period.



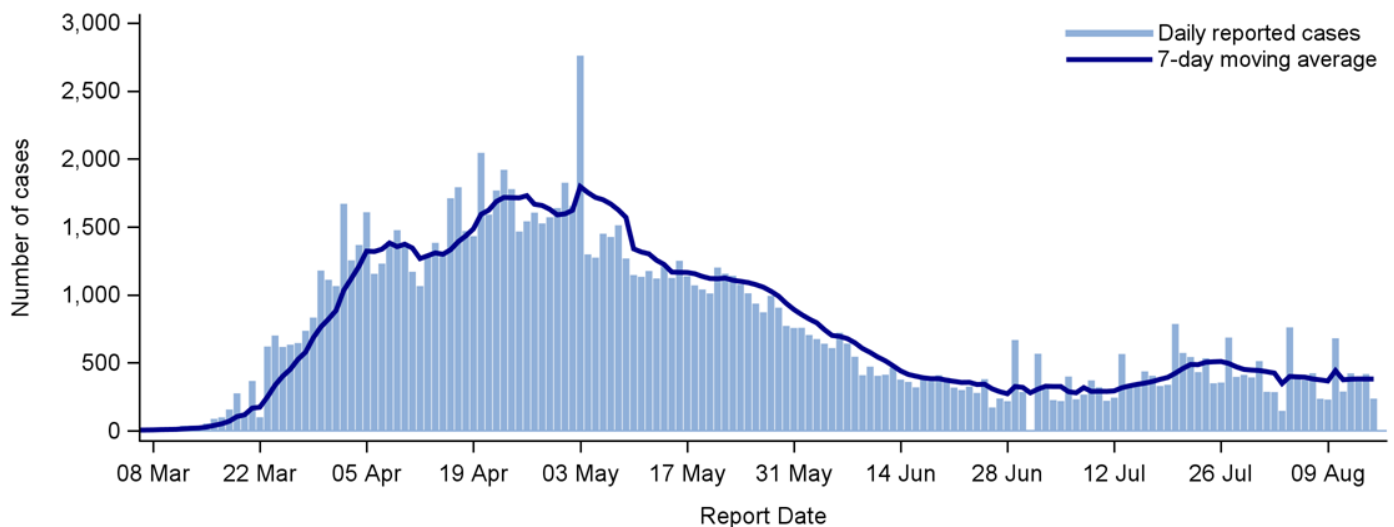
NATIONAL DEMOGRAPHICS AND TRENDS

NATIONAL TRENDS IN CASES

From 16 August to 22 August 2020, a total of 2 740 cases of COVID-19 were reported in Canada.

- The number of new cases represents a **3% increase** compared to the previous week but continues to be lower than observed in the months of April and May (Figure 1).

Figure 1. Daily number of reported COVID-19 cases in Canada (and 7-day moving average), as of 22 August 2020 (N=124 629)



Source: Provincial and Territorial MOH websites as of 22 August 2020.

Note: The 7-day moving average is a trend indicator that captures the arithmetic mean of the daily reported deaths over the previous seven days. The moving average helps smooth out day-to-day variability in reporting, filtering out the “noise” of short-term fluctuations. Fluctuations can be attributed to retrospective data or provinces or territories reporting cases at a reduced frequency. The spike on 4 May is due to the fact that Quebec reported 1 317 cases diagnosed between 2 to 30 of April.

As of 22 August 2020, an increase in the weekly number of new cases was observed nationally (Table 1).

- The greatest increase in cases continues to be reported in Western Canada this week with British Columbia and Manitoba reporting a 30% increase in weekly cases.
- A decrease in the weekly number of new cases per day was observed in Saskatchewan, Quebec, Newfoundland and Labrador, New Brunswick and Prince Edward Island.
- The Northwest Territories have not reported a new case since April 2020 and Nunavut has had no reported cases of COVID-19 since the beginning of the pandemic.



Table 1. Trends of new cases in Canada and by province or territory, as of 22 August 2020

Province/Territory	Total number of cases (as of 22 August) ^a	Average number of cases reported daily (16 to 22 August)	Weekly number of cases reported		Percent change (%) ^b	Population-adjusted rate per 100 000 (as of 22 August)
			9 to 15 August	16 to 22 August		
British Columbia ^c	4 915	80	424	557	+31%	96.9
Alberta ^c	12 748	99	623	695	+12%	291.6
Saskatchewan	1 597	4	133	31	-77%	136.0
Manitoba	872	30	156	209	+34%	63.7
Ontario	41 287	103	598	722	+21%	283.4
Quebec	61 599	74	717	515	-28%	726.0
Newfoundland and Labrador	268	0	1	0	-100%	51.4
New Brunswick	188	1	8	4	-50%	24.2
Nova Scotia	1 078	1	3	4	+33%	111.0
Prince Edward Island ^c	44	0	5	3	-40%	28.0
Yukon ^c	15	0	0	0	-	36.7
Northwest Territories ^c	5	0	0	0	-	11.2
Nunavut ^c	0	0	0	0	-	0.0
Canada^d	124 629	391	2 668	2 740	+3%	331.6

Source: Provincial and Territorial MOH websites as of 22 August 2020

^aThe number of cases includes the total confirmed and probable cases; this includes 11 probable cases from Manitoba. These counts are based on publicly available information from the provincial/territorial ministry of health websites.

^bThe percentage is calculated based on the difference in the total number of cases in the past 7 days over the past 7 days prior. Note that for provinces/territories with low case counts, an increase or decrease of only a few cases leads to a large percentage change. If the denominator is zero, the percent change cannot be calculated.

^cInformation as of 21 August 2020.

^dIncludes 13 cases identified in repatriated travelers (Grand Princess Cruise ship travelers) who were under quarantine in Trenton in March 2020.

Table 2 presents the age-standardized rate by province or territory for the week of 16 August to 22 August 2020.

- Cumulatively, Quebec has reported the highest age-standardized incidence rate at 687.5 cases per 100 000 population (see table A2 in the annex for cumulative counts).
- Of the provinces that provided detailed case information, Manitoba reported the highest cumulative age-standardized incidence rate in Canada, with 14.0 cases per 100 000 population.
 - Manitoba's age-standardized rate has increased over the past three weeks and may be attributed to outbreaks occurring within meat processing plants and local community settings.

Age-standardized rates take into account the differences in age structure within Canada to allow for a representative picture of the outbreak.



Table 2. Age-standardized incidence rates by province or territory for week 16 August to 22 August 2020

Province/Territory	Age-standardized incidence per 100 000 (16 to 22 August 2020)
British Columbia	10.6
Alberta	11.9
Saskatchewan	2.7
Manitoba	14.0
Ontario	4.6
Quebec	NA
New Brunswick	0.7
Newfoundland and Labrador	0.0
Nova Scotia	0.4
Prince Edward Island	2.2
Yukon	0.0
Northwest Territories	2.0
Nunavut	0.0

Source: Detailed case information received by PHAC from P/Ts, Standardized to the July 1 2019 postcensal population estimate
NA: data not available

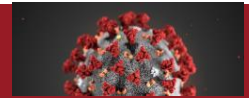
Table 3 summarizes the total new cases, recoveries and deaths for 16 August to 22 August 2020.

- Ontario, Alberta, British Columbia and Quebec account for the majority of cases (91%) and deaths (91%) this week.
- Saskatchewan, Quebec, New Brunswick, Newfoundland and Labrador, Prince Edward Island and Yukon reported more new recoveries than new cases.
- British Columbia, Alberta, Manitoba, Ontario, and Nova Scotia reported more new cases than new recoveries.

Table 3. Summary of COVID-19 cases, recoveries, and deaths reported by province or territory, for week 16 August to 22 August 2020

Province/Territory	New cases	New recoveries	New deaths
British Columbia	557	356	6
Alberta	695	578	9
Saskatchewan	31	102	1
Manitoba	209	127	3
Ontario	722	614	8
Quebec	515	867	20
New Brunswick	0	2	0
Newfoundland and Labrador	4	9	0
Nova Scotia	4	1	0
Prince Edward Island	3	4	0
Yukon	0	1	0
Northwest Territories	0	0	0
Nunavut	0	0	0
Canada	2 740	2 661	47

Source: Provincial and Territorial MOH websites as of 22 August 2020.



DEMOGRAPHIC DISTRIBUTION^a

^a Detailed case information received by PHAC from P/Ts

- Cases for which PHAC received detailed individual case-level information between 16 August to 22 August 2020 (n=1 936) ranged in age from less than one year to 99 years, with a median age of 33 years of age.
- The age distribution of these cases continues to be younger as the Canadian outbreak continues.
- Of the cases reported to PHAC this week, 64% were individuals under 40 years of age, including:
 - 16% under the age of 20 years, but who account for only 8% of total cases since the start of the Canadian outbreak (Table A3 in the Annex).
 - 27% between 20 to 29 years of age, but who account for only 16% of the total cases since the start of the Canadian outbreak. This age group is over-represented in recently reported cases, as they comprise just 14% of the Canadian population (Table A3 in the Annex).
 - 21% ages 30-39 years, who account for 15% of the total cases since the start of the Canadian outbreak (Table A3 in the Annex).
- Since June, the highest proportion of cases was observed in those 20-29 years of age followed by those ages 30-39 years of age. While overall case rates have decreased overall, those ages 20-39 continue to account for the highest proportion of cases and incidence rates this week:
 - The highest incidence rate in age is in both males and females 20-29 years of age (10.4 and 9.9 cases per 100 000 population respectively) followed by males and females 30-39 years of age (8.2 and 7.6 cases per 100 000 population respectively) (Table 4).
- Possible explanations for the increase in the proportion of cases in younger age groups include:
 - Younger individuals are increasing in-person physical connections, potentially due to return to workplaces, associated summer activities/holidays, and reduced adherence to and/or fatigue with physical distancing and other public health measures.
- Although severe illness is less common in younger individuals, the risk is not zero for this group or any other age group. Moreover, infected individuals who do not experience severe outcomes, including those that only experience mild or asymptomatic infection can spread the virus to people at higher risk.

Table 4. Age and sex distribution and incidence rate per 100 000 population of COVID-19 cases reported to PHAC, from 16 August to 22 August 2020.

Age groups	Female			Male			Total		
	n	%	Rate	n	%	Rate	n	%	Rate
≤ 19	159	17	4.0	145	14	3.5	304	16	3.7
20-29	244	26	9.9	275	27	10.4	519	27	10.2
30-39	196	21	7.6	214	21	8.2	410	21	7.9
40-49	107	11	4.4	137	14	5.7	244	12	5.1
50-59	113	12	4.3	106	11	4.1	219	11	4.2
60-69	68	7	2.9	70	7	3.1	138	7	3.0
70-79	36	4	2.4	42	4	3.1	78	4	2.7
80+	25	3	2.6	20	2	3.1	45	2	2.8
Total	948	100	5.0	1 009	100	5.4	1 957	100	5.2

Source: Detailed case information received by PHAC from P/Ts

Note: Excludes cases classified as Unknown or did not provide an age.

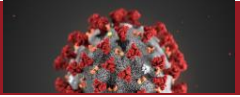
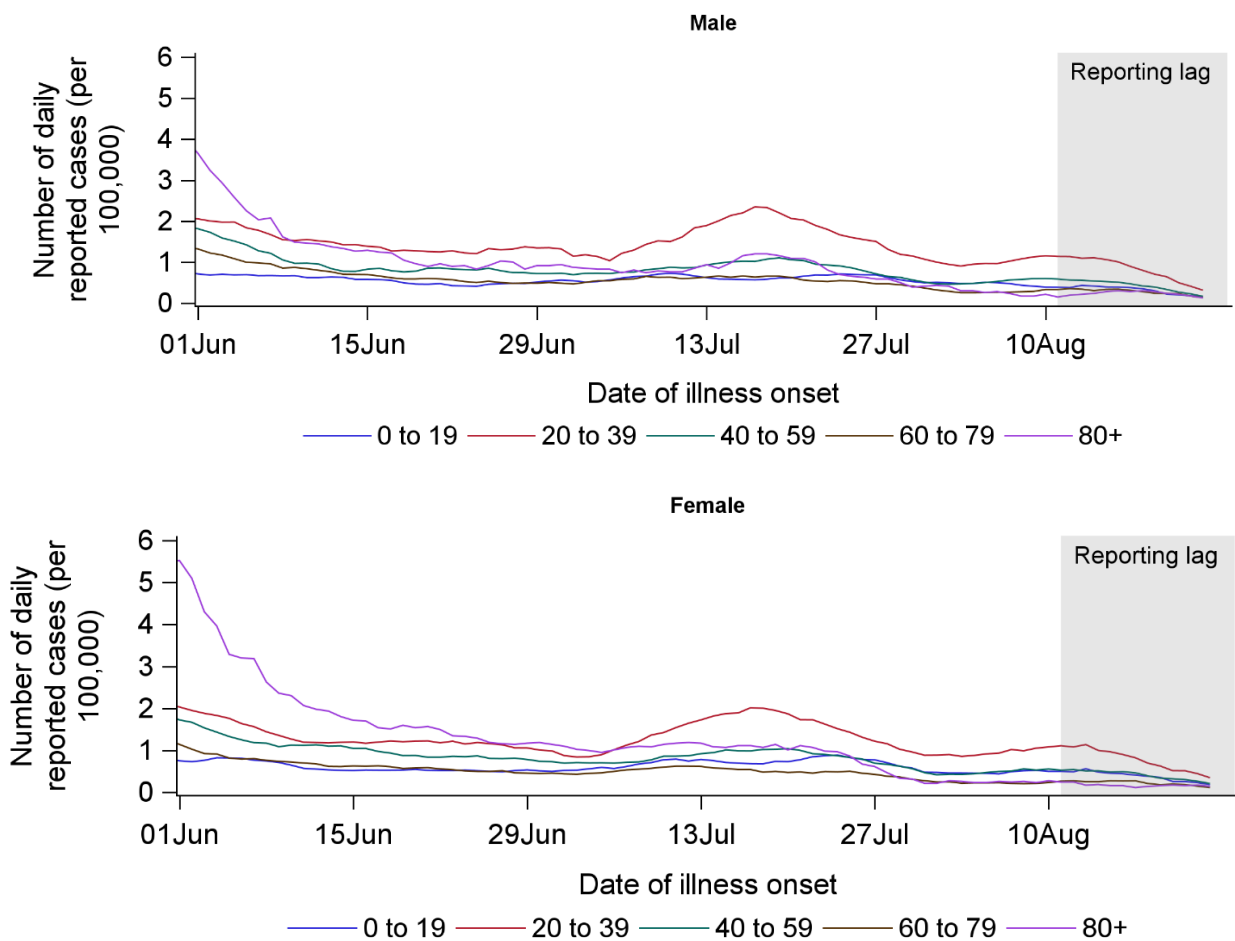


Figure 2 present cases by illness onset, stratified by sex and adjusted for population at the national level.

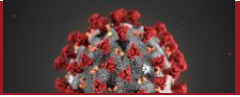
- In July, upon the gradual, phased re-opening of social and economic spaces, an increase of reported cases was observed, with the highest increase observed in those 20 to 39 years of age.
- Since late July, case rates declined, across all age groups; however, case rates for those 20 to 39 years of age remain consistently higher when compared to all other age groups.
- As more case report forms are submitted, the proportion of cases relative to other age categories is subject to change.

Figure 2. Daily cases by age and sex, population-adjusted from 1 June to 22 August 2020



Source: Detailed case information received by PHAC from P/Ts

Note: The shaded area represents a period of time (lag time) where it is expected that cases have occurred but have not yet been reported nationally. If the date of illness onset was not available, the earliest of the following dates were used as an estimate: Specimen Collection Date and Laboratory Testing Date.



SYNDROMIC SURVEILLANCE

FLUWATCHERS

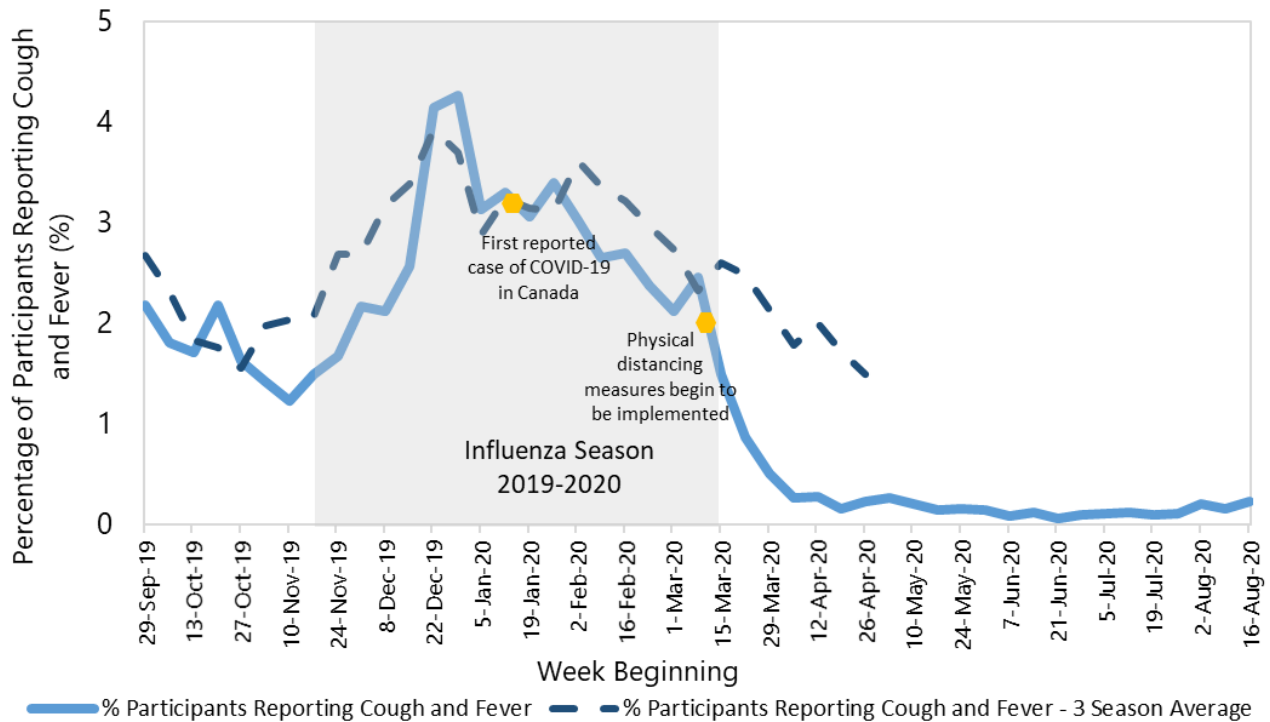
FluWatchers is an online health surveillance system that relies on volunteer reports to track spread of flu-like illness (ILI) across Canada. Mild COVID-19 illness presents with symptoms similar to ILI; therefore, FluWatchers is shifting focus to track COVID-19 symptoms over the spring and summer months.

In the week of 16 to 22 August 2020, 9 330 participants reported into the FluWatchers program. A total of 21 participants (0.2%) reported cough and fever (Figure 3). The participants reporting cough and fever were not restricted to a single jurisdiction. As FluWatchers does not normally collect data during the summer months, this cannot be compared to historical Canadian data. Similar participatory ILI surveillance programs in other countries are also reporting historically low levels. These low levels may be due to a combination of factors, including physical distancing.

Among the 21 participants reporting cough and fever:

- 8 (38%) sought medical attention;
- 7 (33%) were tested – no tests were positive for COVID-19.

Figure 3. Percentage of FluWatchers Participants Reporting Cough and Fever (N=9 330 the week of 16 to 22 August 2020)





TRANSMISSION

TEMPORAL DISTRIBUTION BY EXPOSURE CATEGORY^a

^a Detailed case information received by PHAC from P/Ts

Information on exposure is available for 384 cases with illness onset in the week of 16 August to 22 August 2020. Of these:

- 5 cases (1%) reported having travelled outside of Canada during the exposure period;
- 125 cases (33%) were due to exposure in Canada to a known COVID-19 case;
- 142 cases (37%) were due to exposure in Canada to an unknown source;
- 5 cases (1%) were due to exposure to a traveler; and
- 108 cases (28%) have information on exposure pending.

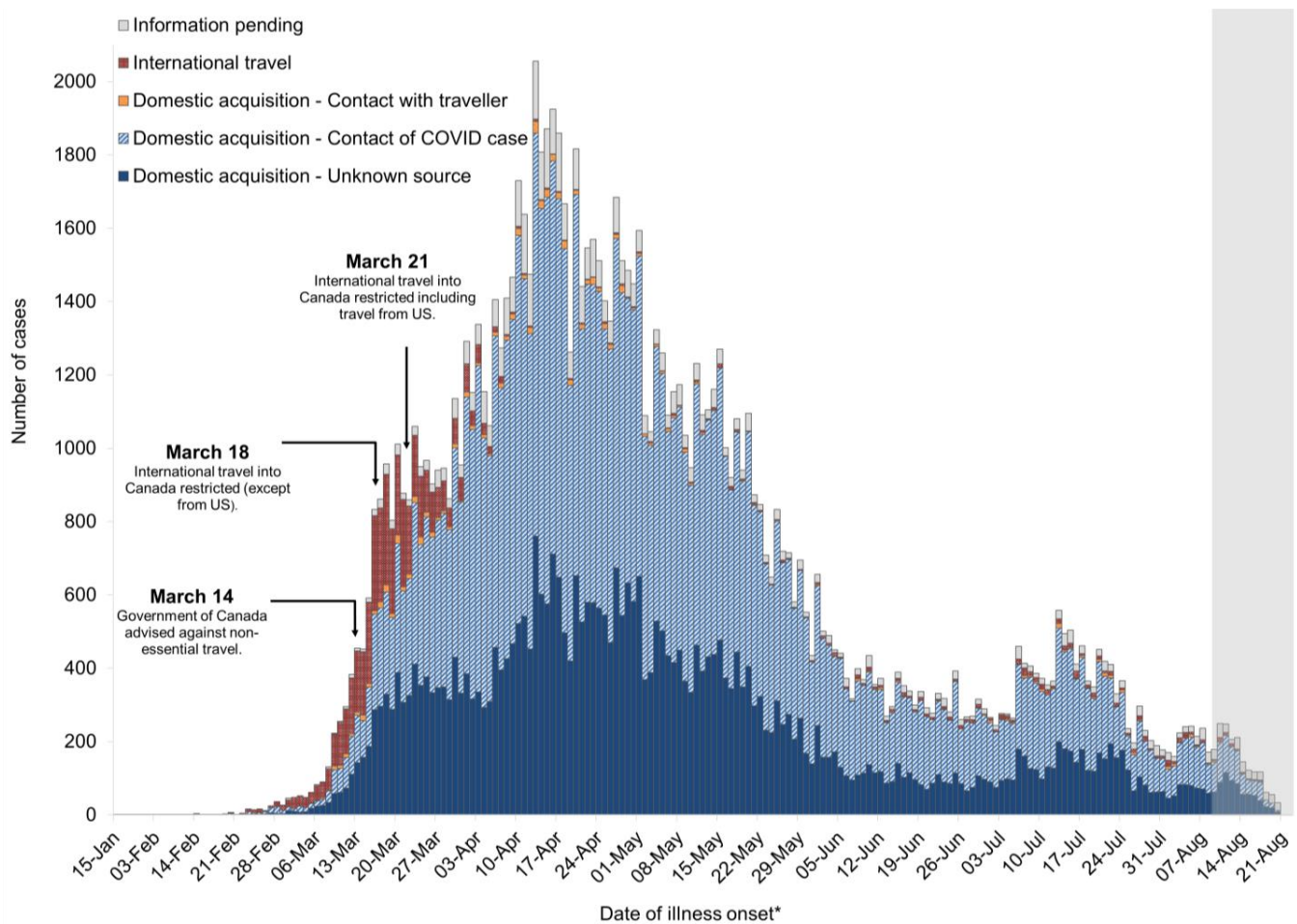
Jurisdictions update exposure status on an ongoing basis as case investigations are completed, which may result in information currently pending, changing the exposure category in the future. Conversely, some cases have information pending from early in the outbreak and may have been lost to follow-up, therefore, the exposure category may not be identified (Figure 4).

Of the 119 024 cases with information on exposure and illness onset provided:

- 5 051 cases (4%) reported having travelled outside of Canada during the exposure period;
- 65 377 cases (55%) reported exposure in Canada to a known COVID-19 case;
- 41 701 cases (35%) reported exposure in Canada to an unknown source;
- 1 056 cases (<1%) reported exposure to someone who had travelled; and
- 5 839 cases (5%) have information on exposure pending.



Figure 4. Number of reported COVID-19 cases in Canada, by date of illness onset and exposure category as of 22 August 2020 (n=119 024)



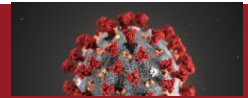
Source: Detailed case information received by PHAC from P/Ts

*If the date of illness onset was not available the earliest of the following dates was used as an estimate: Specimen Collection Date and Laboratory Testing Date.

Note: The shaded area represents a period of time (lag time) where it is expected that cases have occurred but have not yet been reported nationally.

Cumulatively, information on exposure with illness onset indicates that 55% of cases report exposure to a known COVID-19 case.

- From 16 August to 22 August 2020, more cases reported exposure to COVID-19 from an unknown source (37%) than a known source (33%); however, it is important to note that there are inherent delays in these indicators, and that data may become available at a later time.
- The indicator of exposure to COVID-19 from an unknown source can also be used as an indicator for community transmission.



INTERNATIONAL TRAVEL EXPOSURES^a

^a Detailed case information received by PHAC from P/Ts

In Canada, the first cases of COVID-19 were attributed to travel-related exposures. As of 22 August 2020, 5% of cases are travel-related exposures, of which 54% are related to travel in males. Of the cases reported to PHAC, 5 051 have been associated with international travel. On 14 March, the Government of Canada published a global Travel Health Notice advising Canadians against non-essential travel and advised Canadians abroad to return to Canada. By 21 March, the Government of Canada prohibited all non-essential travel into Canada by foreign nationals. Since that time, the proportion of COVID-19 cases associated with international travel decreased from 21.5% (n=3 906) of all cases in March to 0.4% in May (n=115), but has been steadily increasing recently to 3.2% in August (n=109) (Table 5).

- Since 1 June, the most commonly reported countries of travel included the United States, Mexico, and India.

Table 5. Number and percentage of COVID-19 cases associated with international travel by month, as of 22 August 2020

Month	Number of COVID-19 cases associated with international travel	Percentage of COVID-19 cases associated with international travel*
January	7	87.5%
February	78	42.2%
March	3 906	21.5%
April	339	0.7%
May	115	0.4%
June	194	1.8%
July	303	2.8%
August	109	3.2%
Total	5 051	4.2%

Source: Detailed case information received by PHAC from P/Ts

*Only includes cases that have an Onset Date, Specimen Collection Date, or Laboratory Test Date, as well as information on exposure.

From 16 August to 22 August 2020, five cases of COVID-19 in Canada associated with international travel were reported to PHAC.

- Of the five cases, travel was reported to and from Mexico (n=1), India and Germany (n=1), and the remaining have unknown travel exposure (n=3).
- The majority of international travel-related cases occurred prior to the implementation of travel restrictions, with the highest amount reported in March and the majority of domestic cases with exposure to an international traveler were reported in April (Figure 5).
 - Despite the small number of cases, the number of cases linked to international travel is rising and is at it highest since March mid-way into August.
- Since the beginning of the outbreak, the largest proportion of Canadian cases with international travel exposure continue to be those having visited the United States and Mexico.
- Restrictions of non-essential travel into Canada, continue to aid in the control of imported cases, however, the proportion of cases with exposure associated with international travel is the highest since March.

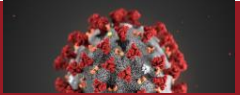
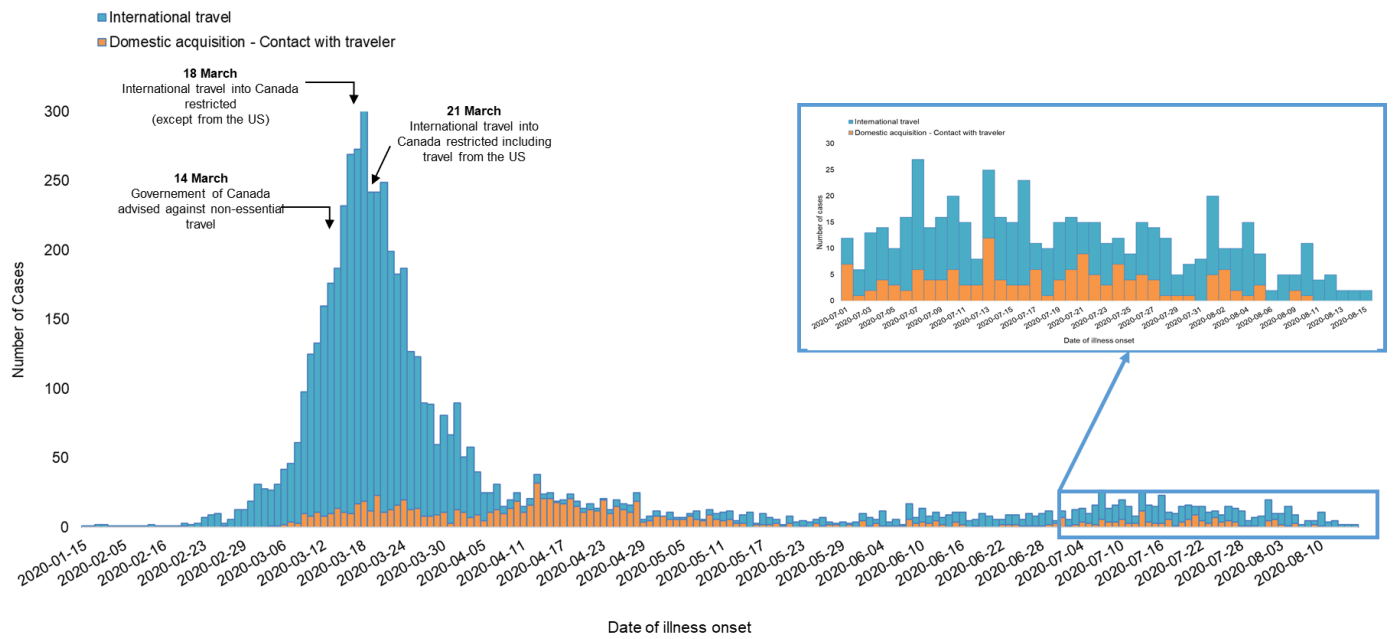


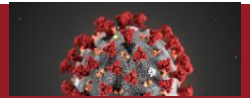
Figure 5. Number of travel-related COVID-19 cases in Canada, by illness onset date (n= 6 044)



Source: Detailed case information received by PHAC from P/Ts

^aIncludes all cases reported to PHAC with links to international travel (i.e. reported travel or contact with international traveler).

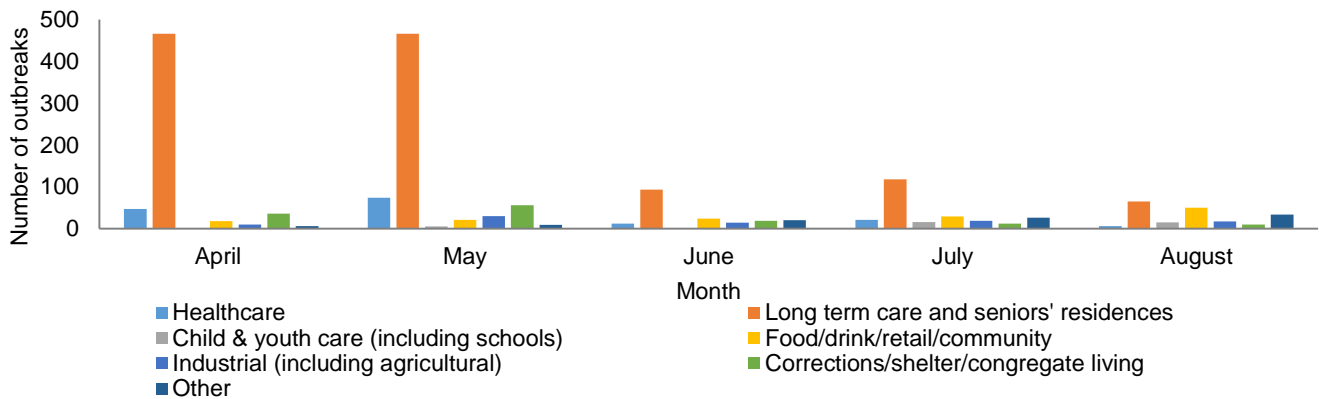
Note: If date of illness onset was not available the earliest of the following dates was used as an estimate: Specimen Collection Date and Laboratory Testing Date.



OUTBREAKS

- Outbreaks have been important contributors to the spread of COVID-19 in Canada and point to vulnerabilities in closed and crowded settings. Figure 6 and Table 6 identifies common locations of outbreaks identified, as well as the number of cases and deaths associated with each.

Figure 6. Number of outbreaks by setting since April 2020



Source: Publically reported outbreak data as of 22 August

- Within the month of August, outbreaks have been increasing in food/drink/retail settings who likely have a younger demographic and may be contributing to a younger distribution of cases.
- Outbreaks continue to be observed in high-risk settings involving closed spaces, crowded places and close contact situations.
- Outbreaks have been detected in congregate living, workplace, and agricultural work settings, namely in long-term care settings, meat processing plants, hospitals, small communities, and among farmworkers.
 - Long-term care facilities and retirement residences have accounted for the majority of outbreaks, particularly in the earlier months of the Canadian outbreak and continue to be reported.
- Following the reopening of social and economic spaces, a smaller number of outbreaks continue to be reported in a wider range of social settings, including food and drink establishments, and private gatherings and parties.



Table 6. Total number of COVID-19 outbreaks, cases, and deaths by outbreak setting in Canada as of 22 August 2020^a

Outbreak setting	Total number of outbreaks reported	Total number of cases reported	Total number of reported deaths
Long-term care and seniors homes	1 234	21 622	6732
Meat production/packing facilities	19	3 078	7
Hospitals	152	2 116	205
Community/Small city/Reserve/Indigenous communities/Rural and remote	42	1 939	21
Agricultural work settings (including those with congregate living for workers) ^b	20	1 732	4
Correctional facilities	30	840	4
Mass gatherings ^c	26	760	2
Other industrial settings ^d	49	748	2
Shelters	45	644	4
Other congregate living settings	51	506	37
Retail businesses	59	277	1
Food/drink establishments	36	242	0
Child and youth care ^e	31	156	0
Rehabilitation facilities	8	104	8

Source: Publically reported data as of 22 August

^aThis is not an all-inclusive list and is subject to change based on current and active outbreak locations reported.

^bThe number of outbreaks in Windsor-Essex have been grouped into one cluster

^c Mass gatherings are defined as an event which brings together a large number of people; examples of mass gatherings include conferences, funerals, family gatherings, sporting events, social events, and parties

^dOther industrial settings include: automotive manufacturing, distribution/processing facilities, worker camps, waste management/recycling, warehouse, etc.

^eChild and youth care include daycare centres and day camps.

Note: The following categories have been included for this week's report and include both current and retrospective data.



LABORATORY-CONFIRMED COVID-19 DETECTION^a

^a Source: NML Data for laboratory analyzes as of 22 August.

Overall, 5 088 437 people have been tested for COVID-19 in Canada as of 22 August 2020, and the cumulative percent positive to date is 2.3%.

From 16 to 22 August 2020, 335 904 Canadians were tested for COVID-19, a decrease in testing (-1.5%) compared to the previous seven days. The average percent positivity has decreased from 0.8% of people positive to 0.7% of people positive. This means we are now testing an average of over 140 people for every positive case, up from an average of 125 people tested for every positive case during the previous week. (Table 7). This is the lowest percent positivity recorded since late June.

Table 7. Summary of COVID-19 testing reported in Canada, by province or territory, between 16 to 22 August 2020 (N=5 088 437)

Province/Territory	Total number of people tested ^a	7 day difference	Average # people tested daily (16-22 August)	Average # people tested daily per 1 000 pop'n (16-22 August)	Weekly Percent positivity (16-22 August)
British Columbia	282 180	21 573	3 082	0.6	2.5%
Alberta	704 637	44 490	6 356	1.5	1.3%
Saskatchewan	111 598	6 800	971	0.8	0.3%
Manitoba	119 560	11 635	1 662	1.2	1.7%
Ontario	2 650 000	174 825	24 975	1.7	0.4%
Quebec	1 034 827	68 150	9 736	1.2	0.2%
Newfoundland and Labrador	29 899	1 632	233	0.5	0.0%
New Brunswick	51 287	1 761	252	0.3	0.2%
Nova Scotia	71 760	2 506	358	0.4	0.2%
Prince Edward Island	25 411	2 098	300	1.9	0.1%
Yukon	2 335	179	26	0.6	0.0%
Northwest Territories	3 301	175	25	0.6	0.0%
Nunavut	1 642	80	11	0.3	0.0%
Total^b	5 088 437	335 904	47 986	1.3	0.7%

Source: NML Data for laboratory analyzes as of 22 August.

^a For provinces and territories which report the number of tests completed, a formula is used to estimate the number of unique people tested.

^b Includes 76 repatriated travelers tested.

Note: Laboratory testing numbers may be an underestimate due to reporting delays and may not include additional sentinel surveillance or other testing conducted in the province or territory.

The mean time from symptom onset to lab specimen collection over the course of the pandemic has been trending down through the onset of the outbreak, plateauing close to 3 days through May and June but has increased to 3.27 days from 1 July to 1 August (Figure 7).

A shorter duration of COVID-19 patients being in an 'unknown disease status' is important to minimize transmission opportunities. This estimate is based on 66 909 case report forms across 11 PTs (excludes Nunavut & BC – insufficient data).

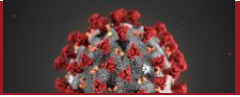
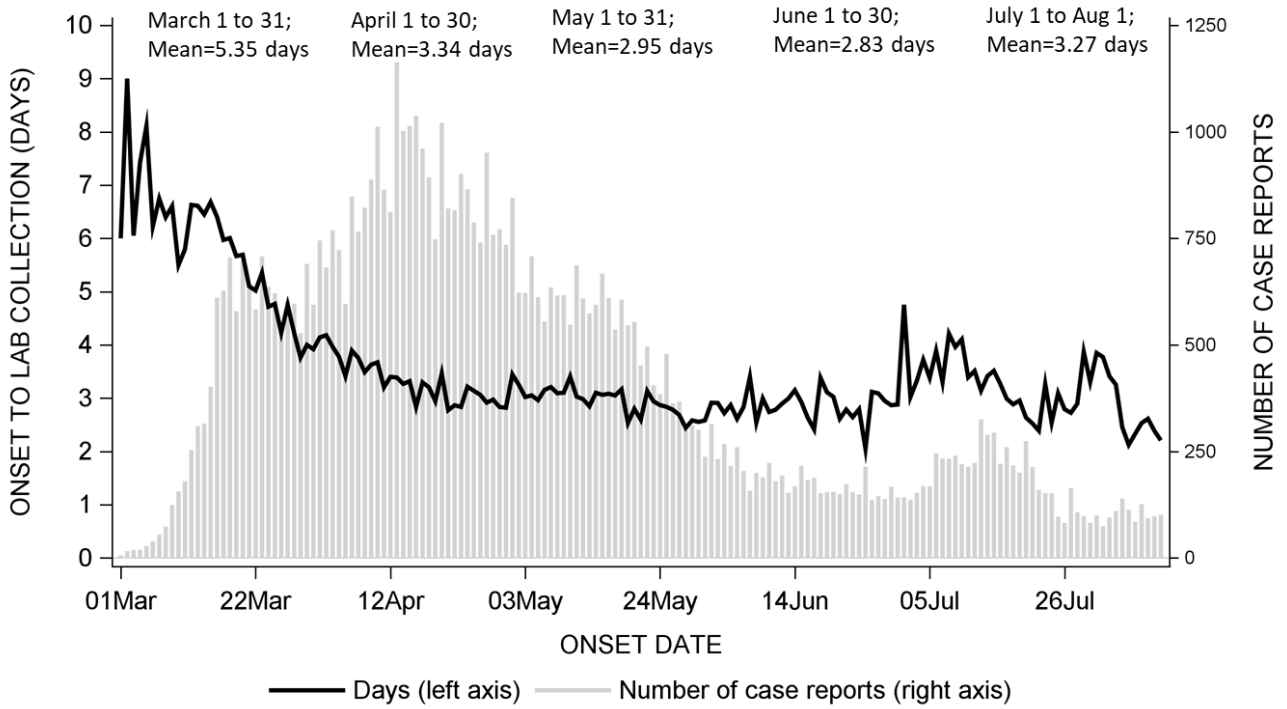
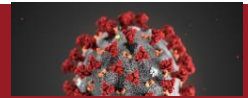


Figure 7. Onset date and lab collection date for cases reported to PHAC as of 1 August 2020



Note: Onset to specimen collection intervals of >15 days are deemed outliers, and not included in this figure.



SEVERITY INDICATORS

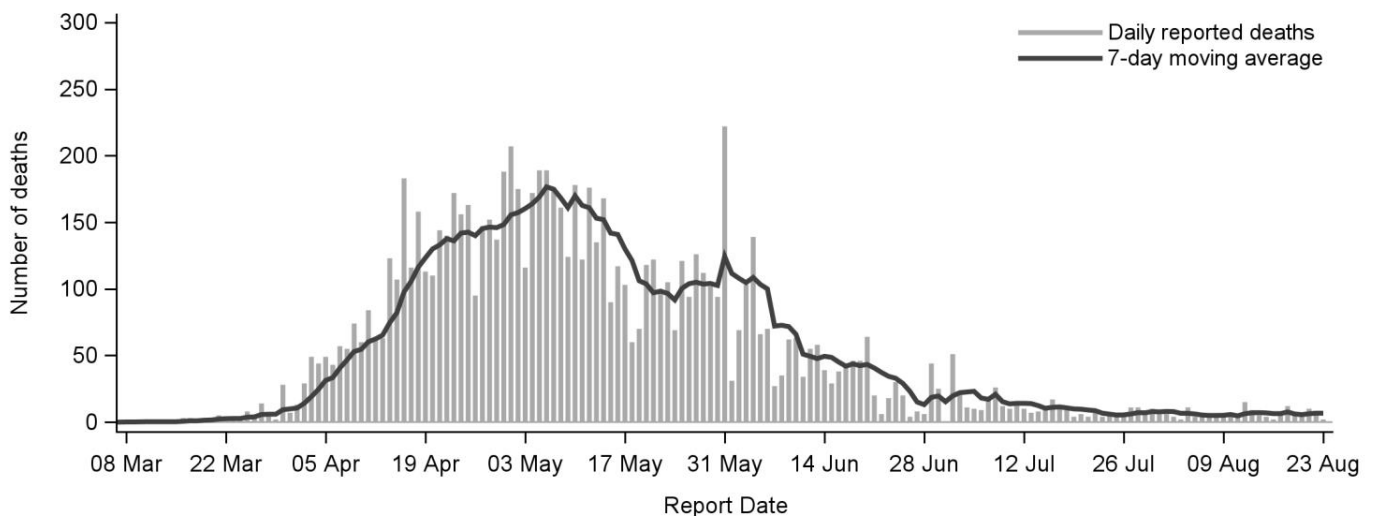
HOSPITALIZATIONS, INTENSIVE CARE, AND DEATHS

From 16 August to 22 August 2020, 47 deaths were reported in Canada.

- This represents a **2% decrease** compared to the previous week (9 August to 15 August).
- Following a steep decline of reported deaths in early May, the number of new deaths reported daily has remained low with an average of seven deaths reported per day this week.
 - Factors may include reported lag time, laboratory tests capturing milder and younger cases less at risk of adverse outcomes, improved treatment options, or greater knowledge and training for front-line workers.

During the same period, jurisdictions submitted individual-level information for eight deaths to PHAC. The majority of reported deaths were female (75%) and all reported deaths were over the age of 60. Deaths continue to be highest in those ages 70 and older since the beginning of the Canadian outbreak. (See table A4 in the annex for cumulative death counts).

Figure 8. Daily number of COVID-19 related deaths reported in Canada (and 7-day moving average), as of 22 August 2020 (N=9 071)



Source: Provincial and Territorial MOH websites as of 22 August 2020

Note: The 7-day moving average is a trend indicator that captures the arithmetic mean of the daily reported deaths over the previous seven days. The moving average helps smooth out day-to-day variability in reporting, filtering out the “noise” of short-term fluctuations. Fluctuations can be attributed to retrospective data or provinces or territories reporting cases at a reduced frequency.



From 16 August to 22 August 2020, detailed case information on hospitalization status based on PHAC report date was reported for 1 294 cases. Among these cases:

- **57 (4%)** were hospitalized (including ICU admission), of whom:
 - **8 (14%)** were admitted to ICU, and
 - **0 (0%)** required mechanical ventilation.

Detailed case information was reported for 121 417 cases in total; hospitalization status information was available for 83 599 (69%) of cases since the start of the outbreak, where:

- **11 370 (14%)** were hospitalized (including ICU admission), of whom:
 - **2 315 (20%)** were admitted to ICU, and
 - **464 (4%)** required mechanical ventilation.

Among the total number of cases that were hospitalized this week (including ICU admission), 40% (n=23/57) were ages 60 to 79 (Table 8) and this age group continues to account for the highest proportion of cases hospitalized (see table A5 and A6 in annex for cumulative counts).

Table 8. Number of COVID-19 cases hospitalized, and admitted to ICU, overall and by sex and age group, reported to PHAC for week 16 August to 22 August 2020^a

Age groups	Hospitalized-non ICU			Hospitalized – ICU		
	Female	Male	Total	Female	Male	Total
≤ 19	3	1	4	0	0	0
20-39	6	2	8	1	1	2
40-59	6	0	6	0	1	1
60-79	8	10	18	2	3	5
80+	7	6	13	0	0	0
Total	30	19	49	3	5	8

Source: Detailed case information received by PHAC from P/Ts

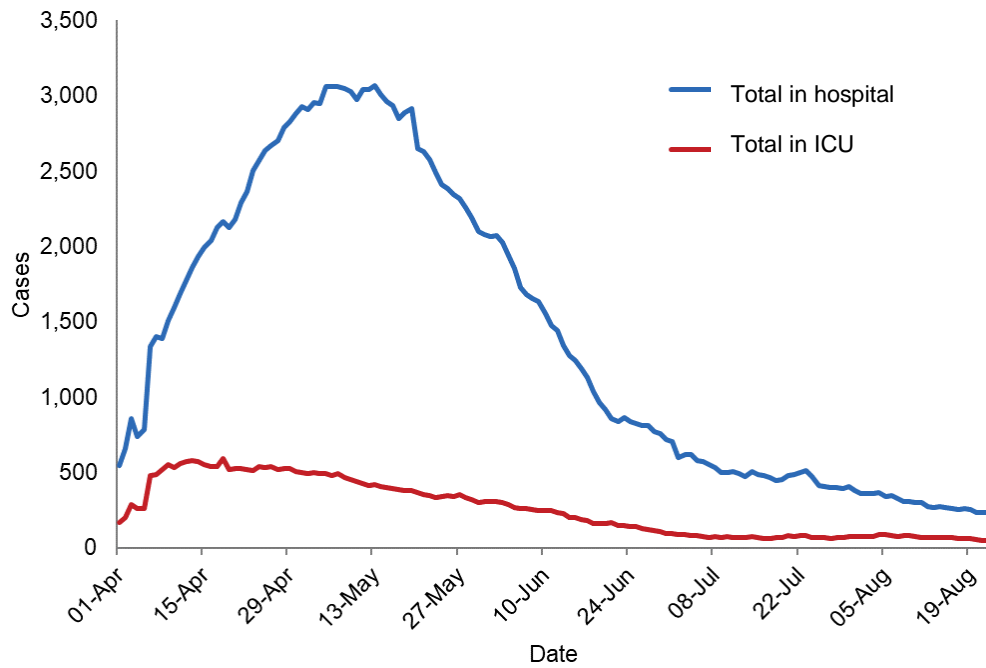
^a The information presented is based on cases reported to PHAC from 16 August to 22 August 2020. These values may change weekly due to updates in disease progression, and disposition.

Note: Hospitalizations and ICU counts are mutually exclusive.

There continues to be a downward trend in the number of cases hospitalized and in ICU, across the country (Figure 9). Based on detailed case information provided to PHAC, the overall cumulative hospitalization rate (including ICU admissions) is 30 cases per 100 000 population, with the highest rates observed in those 80 years of age and older (228 cases per 100 000 population).



Figure 9. Number of COVID-19 cases in hospital and intensive case units daily in Canada, as of 22 August 2020



Source: Provincial and Territorial MOH websites as of 22 August 2020



CANADIAN ACUTE-CARE HOSPITALS

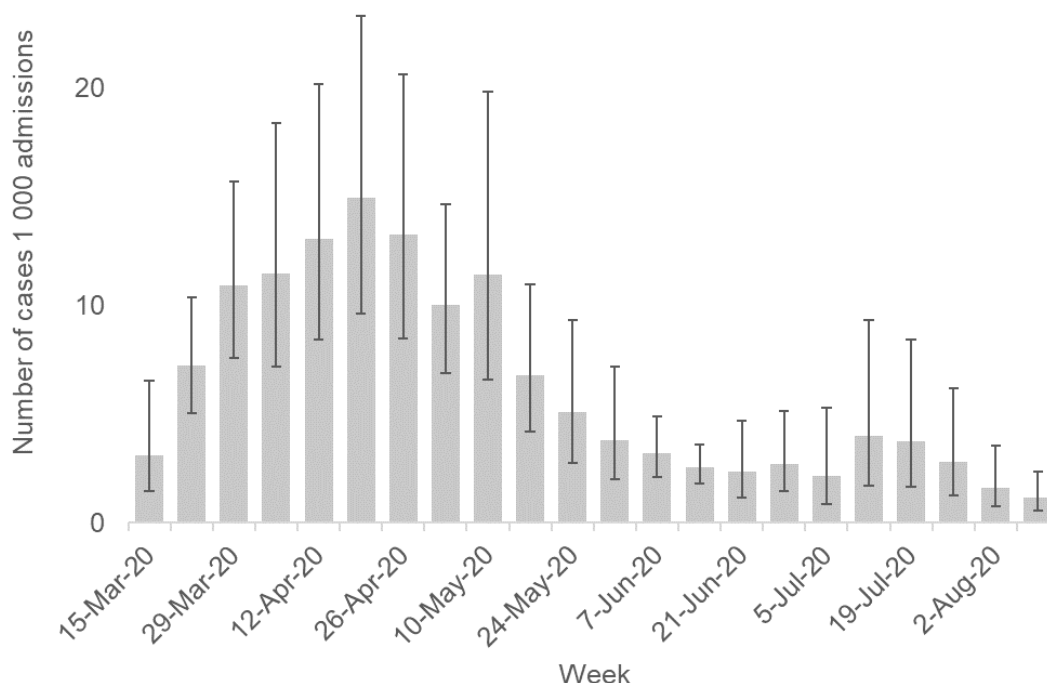
Laboratory-confirmed COVID-19-associated hospitalizations in Canada are monitored through two sentinel hospital-based systems:

1. Canadian Nosocomial Infection Surveillance Program (CNISP) *
2. Serious Outcomes Surveillance Network of the Canadian Immunization Research Network (CIRN-SOS) **

Key Findings:

- Weekly rates* of laboratory-confirmed COVID-19 patients per 1 000 hospital admissions peaked at 15.0, in the week of 19 April 2020. Weekly rates have since decreased and remained below 5.0 per 1 000 hospital admissions since the week of 31 May 2020^a (Figure 10).
- Among patients hospitalized with COVID-19:
 - Less than 3% acquired COVID-19 in-hospital*
 - Approximately 85% had at least one underlying medical condition
 - Approximately 20% have been admitted to the ICU
 - Less than 15% required mechanical ventilation
 - Less than 1% received extracorporeal membrane oxygenation (ECMO)
- Overall, all-cause mortality for hospitalized patients was approximately 20%.
 - Of those who died, 84% (272/325)* were attributed to COVID-19.

Figure 10. National rates of laboratory confirmed COVID-19 patients per 1 000 admissions with 95% confidence intervals*



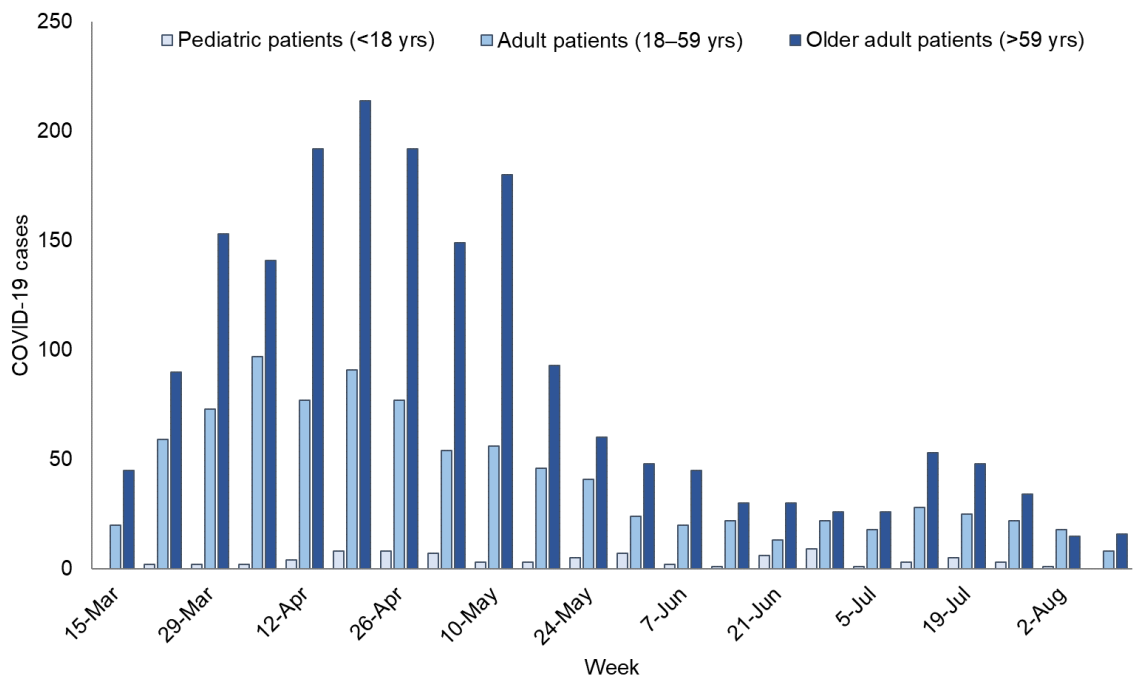
^a Includes data from the 147 hospitals that have participated in all weeks of aggregate data collection (n=2 873) and is estimated using 2019 annual or quarterly data.



Patient Demographics *

- The median age of patients hospitalized with COVID-19 was 71 years of age (range 0-102) and 52% were male (884/1 687).
- Only 3% of patients hospitalized with COVID-19 are pediatric (<18 years) (82/2 891).
- The number of patients hospitalized weekly with COVID-19 peaked in April amongst adult patients and older adult patients, while the number of pediatric patients has slightly fluctuated and overall has remained very low (below 10 cases per week) (Figure 11).

Figure 11. Weekly number of patients in hospital with laboratory-confirmed COVID-19 by age group (n=2 873)*



Clinical Progression **

- Median time from symptom onset to hospital admission was 5 days (n=575).
- Among hospitalized patients, median length of hospital stay was 11 days (n=510).
- Median length of hospital stay was longest among patients aged 60+ years of age at 14 days (n=361), compared to 7 days for patients 40-59 years of age (n=114) and 4 days for patients 16-39 years of age (n=35).

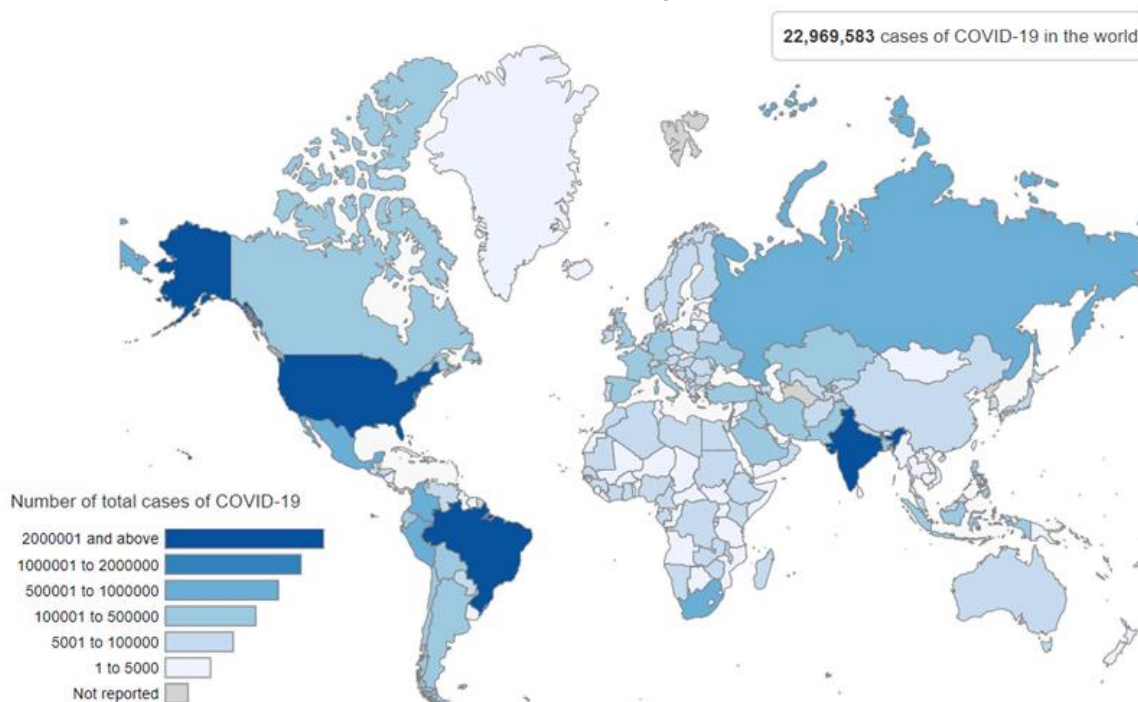
* denotes data from CNISP and ** data from CIRN-SOS



INTERNATIONAL

- As of 22 August 2020, globally, there are over 23 million cases of COVID-19 with over 800 000 reported deaths. Since 21 July, there have been over 200 000 cases reported globally each day, with the exception of cases reported on 18 August, falling slightly below 200 000 cases.
- The global single-day record occurred on 30 July with over 298 000 cases reported.
- The region of the Americas continue to account for the majority of cases reported (54%).
- The following five countries account for the largest proportion of cases globally (Figure 12):
 - United States (25%)
 - Brazil (15%)
 - India (13%)
 - Russia (4%)
 - South Africa (3%)
- Canada's daily cases account for less than 0.5% of all cases reported globally.

Figure 12. International map of COVID-19 cases as of 22 August 2020

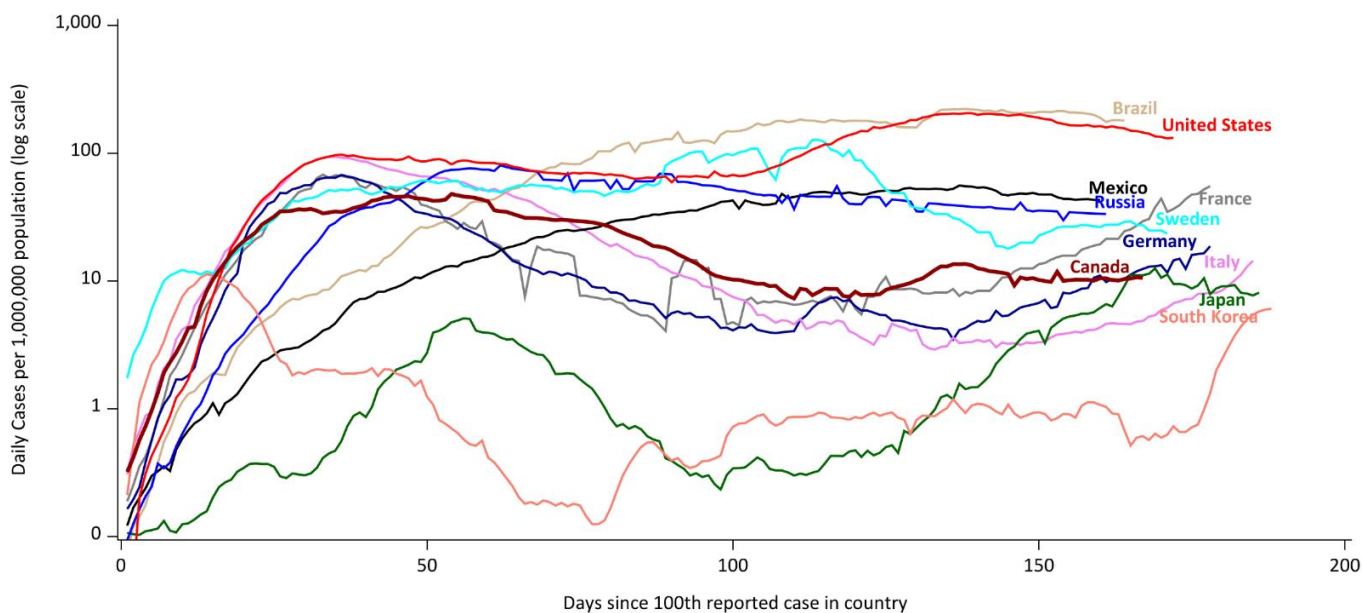


Source: Public Health infobase- Interactive data visualizations of COVID-19 <https://health-infobase.canada.ca/covid-19/international/>

The 7-day moving average of new daily COVID-19 cases in Canada compared to other countries is seen in Figure 13. France, Germany and Italy are seeing increases in case counts. Italy has surpassed Japan and Canada in population-adjusted daily reported cases. Canada's daily cases per 1 000 000 has remained steady in recent weeks.



Figure 13. Daily new cases of COVID-19 in Canada compared to other countries as of 22 August 2020 (7-day moving average, population-adjusted)



Source: Public Health Agency of Canada International numbers as of 22 August 2020

Up-to-date country-specific risk levels may be found on [travel health notices](#). For more information on COVID-19 internationally, please refer to the [World Health Organizations' COVID-19 Situation Report](#). Further information on geographical distribution of COVID-19 cases, can be found on the [global map](#).



MODELLING

Estimates of transmission rates in Canada: Effective reproductive rate (R_t)

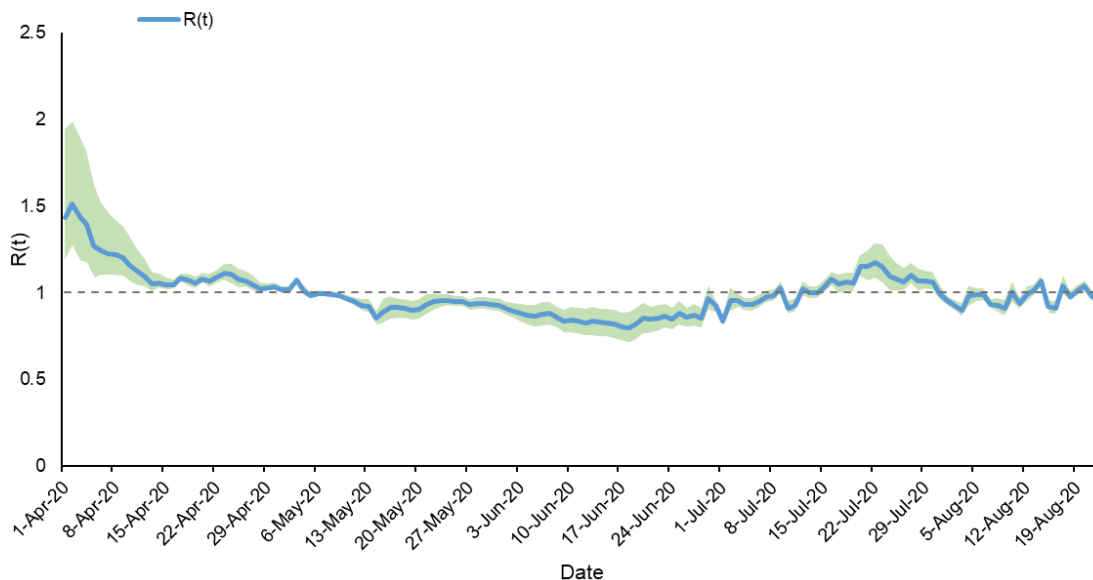
R_t is the time variable reproduction rate, representing the average number of newly infected people for each infected person. If R_t is less than 1 at a particular time (t), then the average number of people infected by one infected person is less than one, so the epidemic is being brought under control. If R_t is greater than 1, the average number of people infected by one infected person is greater than one, and the epidemic is growing. A value of R_t above 1 indicates that there is active community transmission, meaning that the disease will continue to spread in the population. The higher the R_t value, the faster the disease is spreading, which leads to an increase in the incidence of new cases.

However, there are some limitations to consider. As the epidemic continues, the R_t may not capture the current state of the epidemic with low case burden and the value must be interpreted based on the current landscape. The R_t can easily fluctuate when case numbers are low. It is also an average R_t for a population and does not point to local outbreaks driving case counts. Since the method used to calculate R_t is highly sensitive to the reported number of new cases, community outbreaks within specific provinces and territories will cause the estimated R_t value in that respective region to be higher, which may not always accurately depict overall transmission in the province/territory as a whole.

Figure 14 shows the R_t over time:

- The reproductive rate fell below one in the past week and community transmission continues to be low.

Figure 14. Reproductive rate in Canada based on date of case report, 22 August 2020



Note: Fluctuations are attributed to provincial and territorial reporting delays and non-reporting on the weekends



FORECASTING

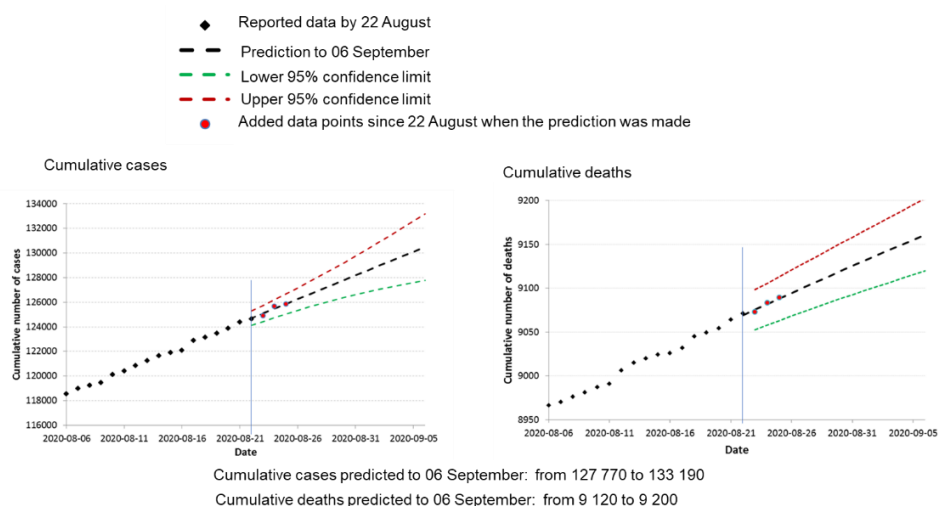
Canada's approach to modelling:

Models cannot predict the course of the COVID-19 pandemic, but can help us understand all possible scenarios, support decisions on public health measures and help the health care sector plan for these scenarios.

Forecasting models use data to estimate how many new cases can be expected in the coming weeks. Figure 15 below shows the projected number of cases and deaths in Canada, with a 95% prediction interval calculated to 6 September, using available data by 22 August 2020.

- According to forecasting, **127 770 to 133 190** cumulative reported cases and **9 120 to 9 200** cumulative numbers of deaths are expected by 6 September 2020.
- The increased number of daily reported cases is predicted to be 380 cases to 400 cases per day during the period from 22 August to 6 September. The predicted cumulative deaths suggest a stable number of daily deaths with an average of five to six deaths per day, during the same period. These numbers fluctuate and are typically lower on weekends and higher on Mondays.
- In figure 15, the black dots represent data (cumulative cases and for cumulative deaths) prior to 22 August and the dashed lines show the predicted trajectories beyond 22 August. It is important to communicate the underlying uncertainties around modelling. The red and green lines represent the upper and lower limits with 95% confidence. If the forecasts perform well, observed cases should fall between the red and green lines.

Figure 15. Projected numbers to 6 September 2020 and 95% prediction intervals based on data as reported by 22 August 2020



For more information, please visit: <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/covid-19-using-data-modelling-inform-public-health-action.html>



TECHNICAL NOTES

The data in the report are based on information from various sources described below. The information presented for case-based analyzes, trend analyzes and laboratory analyzes is available as of **22 August at 8 p.m. EDT**.

DATA SOURCES AND DATA CAVEATS

Provincial and territorial case counts

Provincial and territorial (P/T) information on case counts, recoveries, and deaths associated with COVID-19 are collected from publicly available P/T websites.

- National case definitions are provided by PHAC for the purpose of standardized case classification and reporting. PHAC's national case definitions can be found here: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html>
- Only cases and deaths meeting P/T's definition for case classification are reported. For details on case definitions, please consult each P/T ministry of health website.

Laboratory information

Laboratory data on the number of people tested per P/T are received from the National Microbiology Laboratory.

- Laboratory testing numbers may be an underestimate due to reporting delays and may not include additional sentinel surveillance or other testing performed. They are subject to changes as updates are received.
- Some provinces may report the number of tests conducted, and not the number of people tested. In this case, a formula is used to estimate the number of unique people tested.

Epidemiological data received by PHAC

Some of the epidemiological data for this report are based on detailed case information received by PHAC from P/Ts. This information is housed in the PHAC COVID-19 database. Case counts and level of detail in case information submitted to PHAC varies by P/T due to:

- Possible reporting delay between time of case notification to the P/T public health authority and when detailed information is sent/received by PHAC.
- Preliminary data may be limited and data are not complete for all variables.
- Data on cases are updated on an ongoing basis after received by PHAC and are subject to change.
- Variation in approaches to testing and testing criteria over time within and between P/Ts.
- The lag time from illness onset to PHAC report date is approximately two weeks and data within this period is subject to change.
- Missing data for sex, age, hospitalized, ICU admissions, and deceased were not included in calculations. Provinces and territories may define gender differently and some may be referring to biological sex.
- Case severity is likely underestimated due to underreporting of related variables, as well as events that may have occurred after the completion of public health reporting, therefore not captured in the case report forms.

Outbreak data



Reporting delays and gaps in information that is available at the federal level present difficulties in reporting on local outbreaks. To ensure timely information is available, PHAC utilizes web-scraping techniques to gather outbreak data from media and provincial/territorial public health agency websites. There are several important limitations to these data:

- A nationally standardized outbreak definition does not exist. Clusters are defined and vary according to P/T.
- The data do not represent all outbreaks that have occurred in Canada over the course of the pandemic, but they do provide a summary of clusters reported via non-traditional data sources. Data collection on outbreaks began 12 March 2020.
- Case-level data are generally not available for outbreaks detected via non-traditional data sources. Information presented is at the aggregate level only.
- The methods for defining an outbreak are currently in development and may change over time

Population data

- Canadian population data from Statistics Canada Population estimates on 1 July 2019 are used for age-standardized rate calculations.

International data

International data are retrieved from various reputable data sources, mainly the European Centre for Disease Prevention and Control (ECDC) Situation update, Johns Hopkins Resource Center and various country's ministry of health websites.

- Given that the pandemic is rapidly evolving and the reporting cycles from government sources are different, the case numbers may not necessarily match what is being reported publicly. Rather, this reflects what is publicly available from the sources listed above.
- International comparisons should be interpreted with caution. Number of tests conducted, indications for testing, and diagnostic capacity by country have a large influence on total number of reported cases. Therefore, the data displayed may not represent the true incidence of disease within each country.

Canadian Acute-Care Hospital Data

Canadian Nosocomial Infection Surveillance Program (**CNISP**) collects information on hospitalized patients across all age groups (pediatric and adult).

- As of 15 August 2020, CNISP has collected weekly aggregate data on 2 891 patients hospitalized with COVID-19 from 148 hospitals across all 10 provinces.
- As of 5 August 2020, case-level data is available on 1 709 adult and pediatric patients in 49 hospitals across 9 provinces.
- Denominators may be lower depending on variable completeness.

Serious Outcomes Surveillance Network of the Canadian Immunization Research Network (**CIRN-SOS**) collects information on hospitalized adult patients aged 16 years or older.

- As of 20 August 2020, CIRN-SOS has collected case-level data on 685 adult patients (≥ 16 years) hospitalized with COVID-19 across 8 hospital sites in Ontario, Quebec, and Nova Scotia.
- Denominators may be lower depending on variable completeness.

ANNEX



Table A1. Number of COVID-19 cases, recoveries, and deaths reported in Canada by province or territory, as of 22 August 2020

Province/Territory	Total cases	Total recovered	Total deaths
British Columbia	4 915	3 889	202
Alberta	12 748	11 374	230
Saskatchewan	1 597	1 458	22
Manitoba	872	570	12
Ontario	41 287	37 487	2 797
Quebec	61 599	54 576	5 739
Newfoundland and Labrador	268	265	3
New Brunswick	188	178	2
Nova Scotia	1 078	1 008	64
Prince Edward Island	44	40	0
Yukon	15	15	0
Northwest Territories	5	5	0
Nunavut	0	0	0
Canada^a	124 629	110 878	9 071

^a Includes 13 cases identified in repatriated travelers (Grand Princess Cruise ship travelers) who were under quarantine in Trenton in March 2020. Update on their status is not available.

Table A2. Age-standardized incidence rates of COVID-19 cases, by province or territory, as of 22 August 2020

Province/Territory	Cumulative (per 100 000)
British Columbia	95.3
Alberta	285.8
Saskatchewan	139.1
Manitoba	61.7
Ontario	284.8
Quebec	687.5
Newfoundland and Labrador	47.5
New Brunswick	24.3
Nova Scotia	110.7
Prince Edward Island	29.1
Yukon	21.4
Northwest Territories	11.9
Nunavut	0.0



Table A3. Cumulative age and sex distribution of COVID-19 cases reported to PHAC, as of 22 August 2020

Age groups	Female			Male			Total		
	n	%	Rate	n	%	Rate	n	%	Rate
≤ 19	5 186	8	130.5	4 979	9	119.8	10 165	8	125.0
20-29	9 879	15	402.4	8 915	16	336.8	18 794	16	368.4
30-39	9 196	14	356.9	8 397	15	322.0	17 593	15	339.4
40-49	9 885	15	407.0	8 165	15	341.8	18 050	15	374.7
50-59	9 726	15	368.5	8 092	15	309.7	17 818	15	339.2
60-69	5 679	9	241.1	5 848	11	259.6	11 527	10	250.1
70-79	4 213	6	278.9	4 149	8	305.0	8 362	7	291.3
80+	12 764	19	1 312.5	5 797	11	888.5	18 561	15	1 142.2
Total	66 528	100	351.8	54 342	100	290.9	120 885^a	100	321.6

^a Includes 15 cases classified as Other.

Table A4. Cumulative age and sex distribution of deceased COVID-19 cases reported to PHAC as of 22 August 2020

Age group	Female	Male	Total
≤ 19	1	0	1
20-39	7	17	24
40-59	102	158	260
60-79	921	1 357	2 278
80+	3 832	2 572	6 404
Total	4 863	4 104	8 967

Table A5. Cumulative age and sex distribution of hospitalized- non ICU COVID-19 cases reported to PHAC as of 22 August 2020

Age group	Female	Male	Total
≤ 19	63	52	115
20-39	362	312	674
40-59	751	957	1 708
60-79	1 426	1 702	3 128
80+	2 043	1 387	3 430
Total	4 645	4 410	9 055



Table A6. Cumulative age and sex distribution of COVID-19 cases admitted to ICU, reported to PHAC as of 22 August 2020

Age group	Female	Male	Total
≤ 19	13	14	27
20-39	93	109	202
40-59	256	448	704
60-79	377	735	1 112
80+	142	128	270
Total	881	1 434	2 315