



CORONAVIRUS DISEASE 2019 (COVID-19)

WEEKLY EPIDEMIOLOGY UPDATE (4-10 JUNE, 2020)

Published: 12 June 2020

536

AVERAGE NEW CASES PER DAY
(4 to 10 June)

66

AVERAGE NEW DEATHS PER DAY
(4 to 10 June)

32 771

AVERAGE PEOPLE TESTED PER DAY
(1 to 7 June)

2%

PERCENT POSITIVE
(weekly to 10 June)

KEY UPDATES

- There have been decreases in the number of cases and deaths in Canada this week compared to the preceding week
- Quebec and Ontario continue to drive the epidemic in Canada, accounting for 87% of total cases and 95% of total deaths
- Over 230,000 people were tested in the past week
- Some provinces are reporting clusters and outbreaks in congregate living and working environments
- A large proportion of total deaths continues to be attributed to outbreaks in long-term care facilities

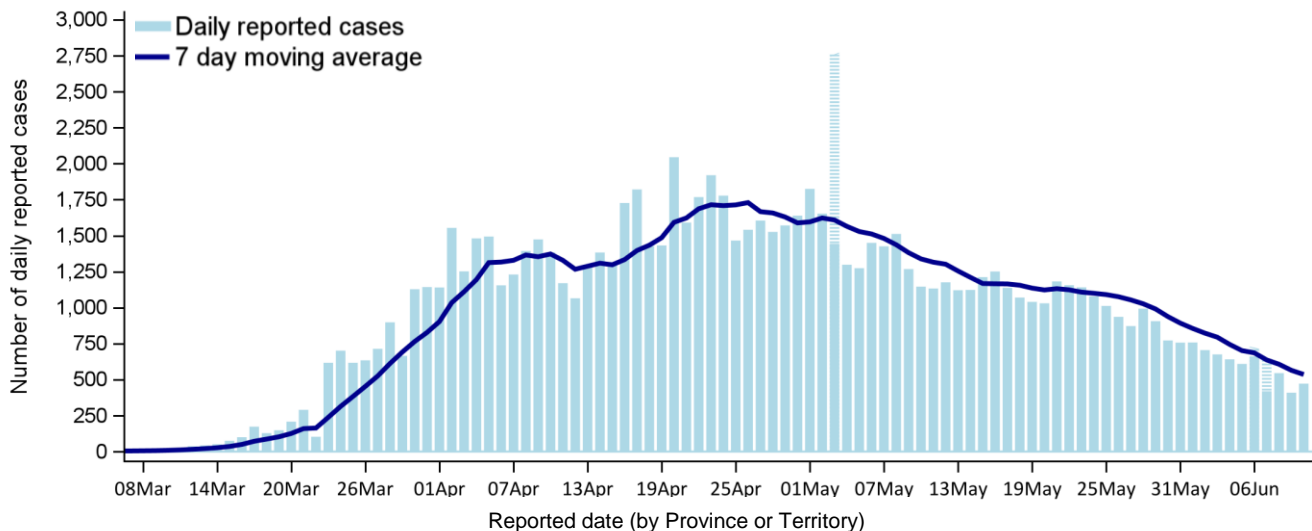
COVID-19 IN CANADA

NATIONAL TRENDS

From 4 to 10 June 2020, the average number of new cases per day was 536 (range 472 – 722).

- This represents a **32.6% decrease** compared to the previous 7-day period (28 May to 3 June)

Figure 1. Daily number of reported COVID-19 cases in Canada (and 7-day moving average*), by date of report as of 10 June 2020 (n=97 125)

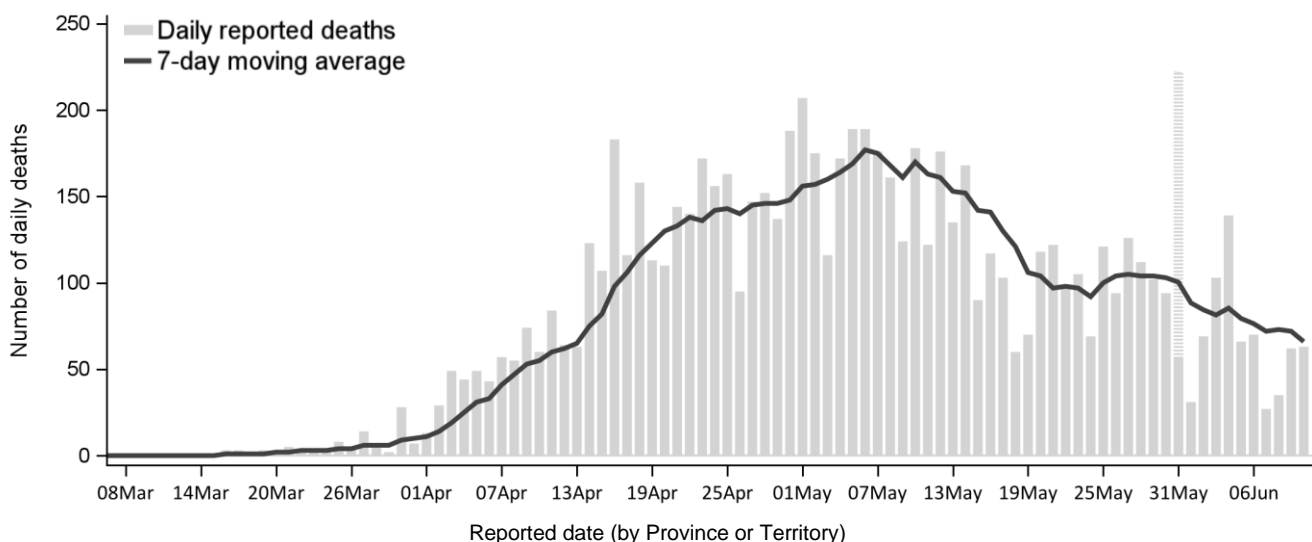


Note: The 7-day moving average is a trend indicator that captures the arithmetic mean of the daily reported cases over the previous seven days. The moving average helps smooth out day-to-day variability in reporting, filtering out the “noise” of short term fluctuations. The hatched blue bars corresponds to the 1 317 cases reported by Quebec on 3 May, that were originally detected over the period 2 to 30 April (excluded from moving average calculation), and the 68 and 223 cases reported by Ontario on 6 and 7 of June, respectively

From 4 to 10 June 2020, the average number of deaths per day was 66 (range 27 – 139).

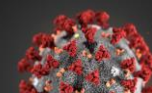
- This represents a **37.0% decrease** compared to the previous 7-day period (28 May to 3 June)

Figure 2. Daily deaths in Canada (and 7-day moving average) as of 10 June 2020 (n=7 960)



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. The hatched grey bar corresponds to 165 additional deaths reported by Quebec on 31 May that occurred before 23 May.

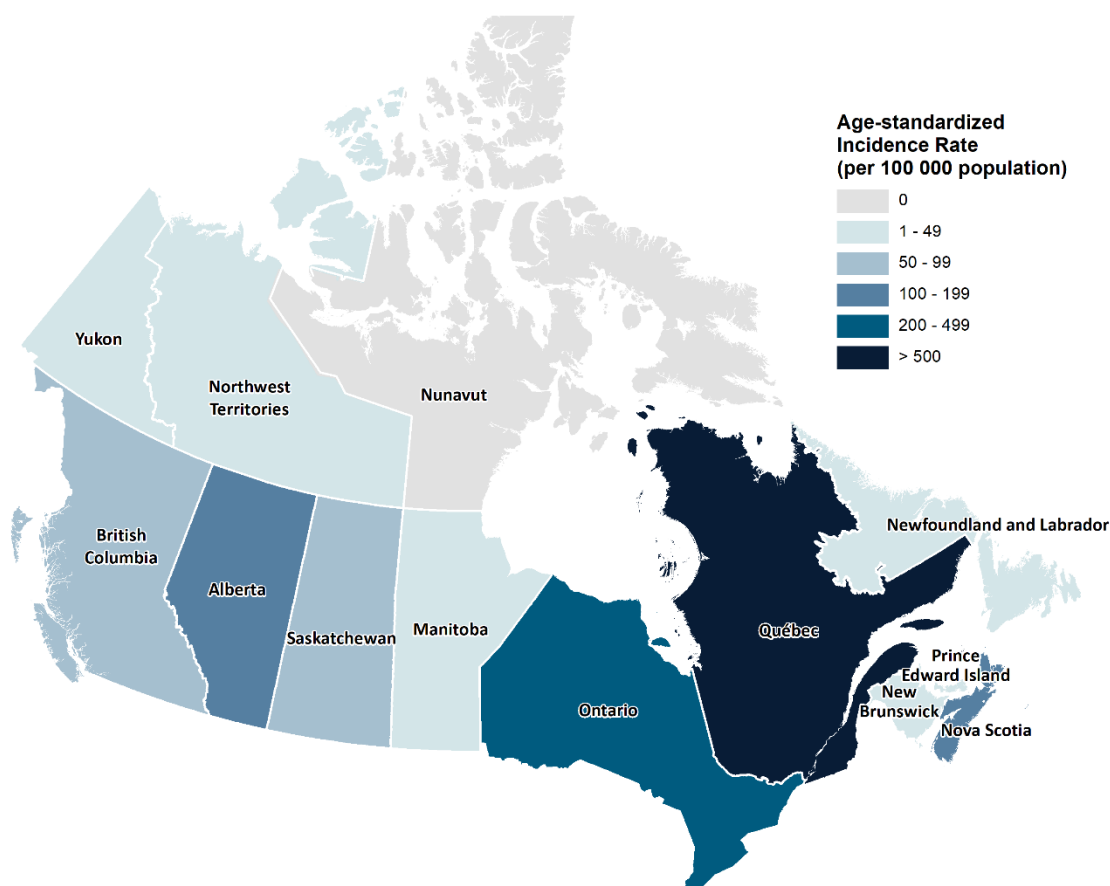
COVID-19 IN CANADA



As of 8 June, Quebec had the highest age-standardized incidence rate of cases reported (619.7 per 100,000), followed by Ontario (214.6 per 100,000) and Alberta (160.4 per 100,000).

- Prince Edward Island, Yukon, and Northwest Territories have not reported any new cases this week.
- Nunavut has not reported any cases to date.

Figure 3. COVID-19 age-standardized incidence rate per 100 000 population by province or territory (PT) as of 8 June 2020



Data source: Provincial or Territorial websites. Map from NML Geomatics

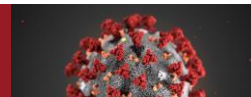
*The total n excludes 13 repatriated travelers.

Standardized to the July 1 2019 postcensal population estimate

Table 1. Age-standardized incidence rates by province or territory

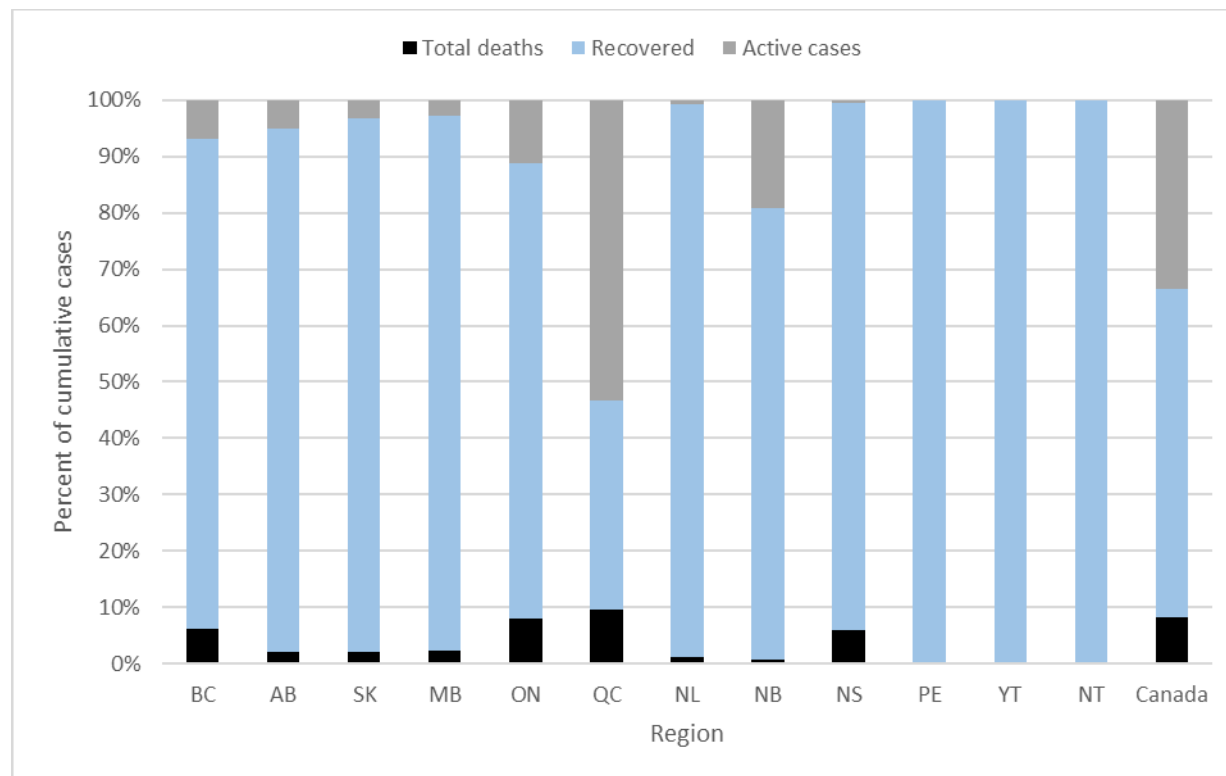
Province/Territory	Age-standardized incidence per 100 000	Province/Territory	Age-standardized incidence per 100 000
British Columbia	51.7	New Brunswick	17.5
Alberta	160.4	Prince Edward Island	17.3
Saskatchewan	56.3	Nova Scotia	108.5
Manitoba	22.7	Newfoundland	46.4
Ontario	214.6	Yukon	21.4
Quebec	619.7	Northwest Territories	10.0

COVID-19 IN CANADA



Quebec continues to have the highest number (n=29 069) and proportion (55%) of active cases in Canada. In all other provinces and territories, over 75% of their cases have recovered.

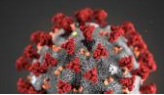
Figure 4. Proportion of COVID-19 cases in Canada, by current status, as of 10 June 2020 (n=97 125)



**The total n excludes 13 repatriated travelers.*

Note that the definition and reporting of 'recovered' cases varies by PT. Reporting of recovered cases may be delayed.

COVID-19 IN CANADA



Canada saw a 32.6% decrease in the 7-day average of newly reported cases for the week of 4-10 June compared to the previous week.

As of 10 June 2020, most provinces and territories observed a decrease in their 7-day average number of new cases.

- Substantial decreases in the average number of new cases per day were seen in Ontario and Quebec
- Increases in the average number of new cases per day were seen in Alberta, Saskatchewan, and New Brunswick

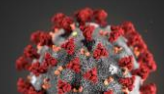
Table 2. Trends of new cases in Canada and by province/territory, as of 10 June 2020

	# Cases (as of 10 June)	Crude rate per 100 000 (as of 10 June)	7-day average (28 May - 3 June)	7-day average (4- 10 June)	% Change**
BC	2680	52.8	10.4	8.1	-22%
AB	7276	166.4	21.4	28.6	+33%
SK	658	56.0	1.4	1.6	+10%
MB	300	21.9	0.9	0.3	-67%
ON	31 341	215.2	366.3	286.1	-22%
QC	53 341	628.7	392.1	208.1	-47%
NL	261	50.0	0.1	0	-100%
NB	151	19.4	1.7	2.3	+33%
NS	1061	109.2	0.7	0.4	-40%
PE	27	17.2	0	0	n/a
YK	11	26.9	0	0	n/a
NT	5	11.2	0	0	n/a
NU	0	0	0	0	n/a
Canada*	97 125	258.4	795	577.1	-32.6%

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

**The percentage is calculated on the difference in the total number of cases in the past 7 days over the past 7 days prior. Note that for PTs with low case counts, an increase or decrease of only a few cases leads to a large percentage change

COVID-19 IN CANADA



DEMOGRAPHIC DISTRIBUTION

- Cases ranged in age from less than one year to 112 years old, with a median age of 50 years.
- The age distribution of cases reported is older than the general population:
 - Those less than 20 years of age make up 7% of cases, but make up 22% of Canada's population,
 - Those aged 60 and over make up 36% of cases, but make up 24% of Canada's population.
- The most affected age group is those over the age of 80 years (1 082 cases per 100,000 population), followed by those aged 40-49 years (308 cases per 100,000 population).
 - The high number of cases in the over 80 age group likely reflects the high number of cases observed in long-term care and other retirement settings.
 - Overall, there is a higher proportion of female cases (57%). There are two possible explanations for this. Firstly, women are more highly represented in the 80+ age group, and account for 69% of cases in that age group. Additionally, women aged 80+ years account for a higher proportion long-term care/retirement setting residents. Secondly, women are over represented within health and care occupations, which puts them at an increased likelihood of exposure to COVID-19 in health and care settings.

Table 3. Demographic characteristics of COVID-19 cases reported in Canada as of 8 June 2020

Age groups	n	(%)	Rate per 100 000
≤ 19	6445	(7%)	80
20-29	12 590	(13%)	249
30-39	13 221	(14%)	259
40-49	14 770	(15%)	308
50-59	14 834	(15%)	281
60-69	9617	(10%)	211
70-79	7304	(8%)	261
80+	17 405	(18%)	1082
Total	96 186	(100%)	
Gender	n	(%)	Rate per 100 000
Female	54 288	(57%)	289
Male	41 680	(43%)	225
Other	13	(<1 %)	
Total	95 981	(100%)	

COVID-19 IN CANADA

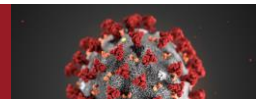
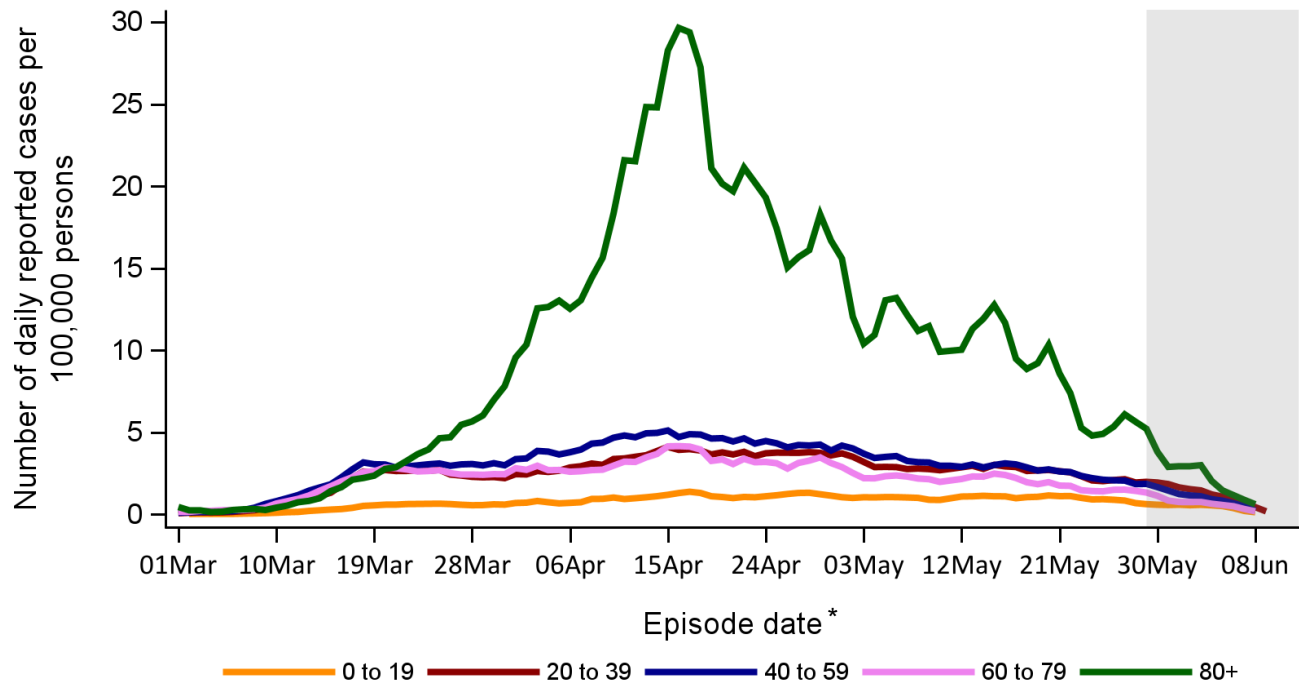


Figure 5. Reported COVID-19 cases by age group (3-day moving average) as of 8 June 2020



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

COVID-19 IN CANADA

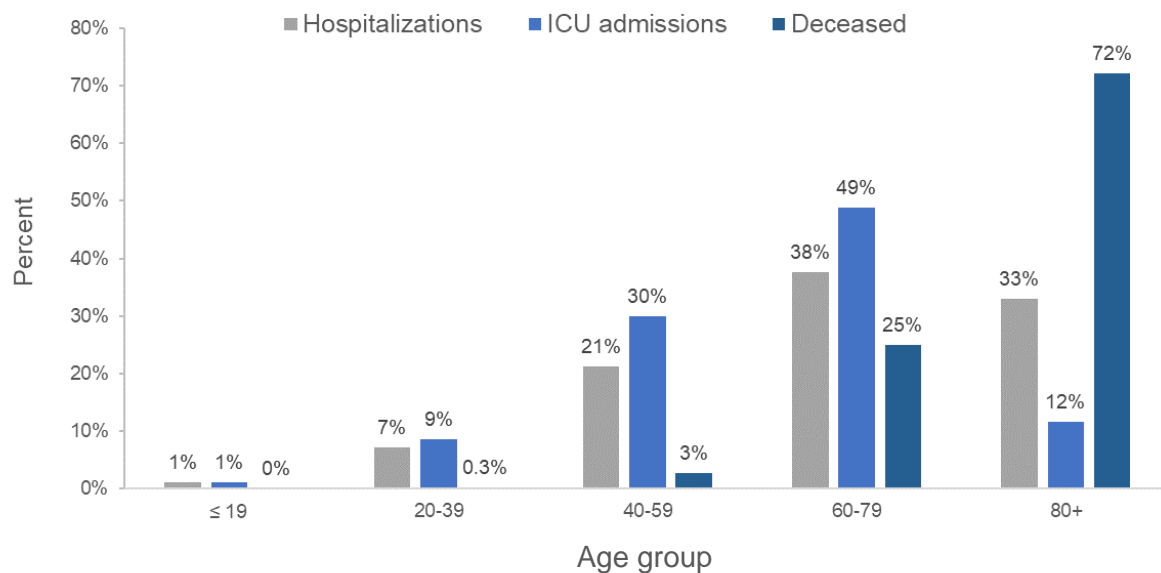


CLINICAL PRESENTATIONS AND OUTCOMES

Among the 57 280 cases with data on hospitalization status reported:

- **9 056 cases (16%)** were hospitalized, of whom:
 - **1 828 (20%)** were admitted to ICU, and
 - **356 (4%)** required mechanical ventilation**

Figure 6. Distribution of COVID-19 cases hospitalized, admitted to ICU and deceased in Canada, by age group, as of 8 June 2020



*Refer to Table 2 in Appendix for more information

**The number of cases requiring mechanical ventilation is lower than reported 4 June. This is due to changes in the national dataset that are related to different data sources used by P/Ts to submit data to PHAC. PHAC intends to resolve the issue and maintain complete data on as many cases as possible.

COVID-19 IN CANADA

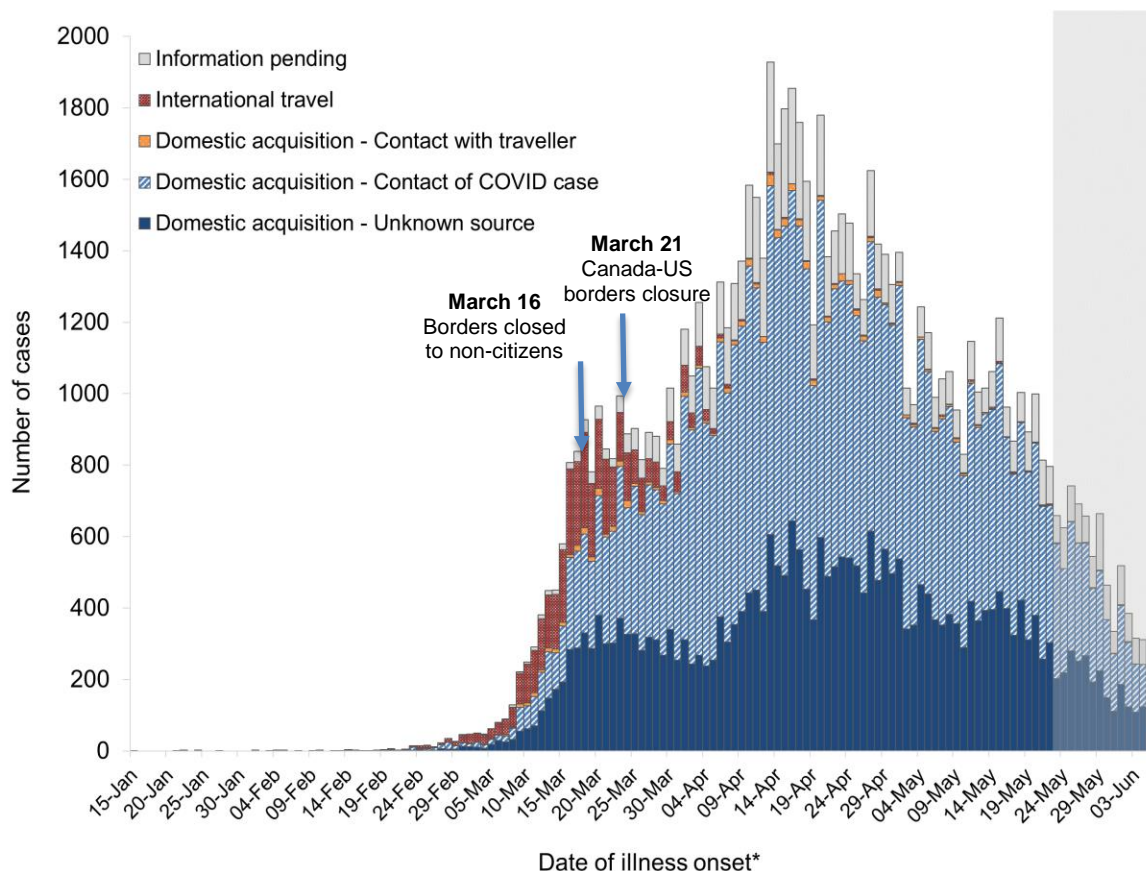


TEMPORAL DISTRIBUTION BY EXPOSURE CATEGORY

Of the 94 143 cases with information on exposure provided, 3 954 cases (4%) reported having travelled outside of Canada, 47 747 (51%) cases were due to exposure in Canada to either a known COVID-19 case or to someone who had travelled; 9801 (10%) have information on exposure pending.

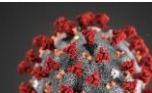
Information on exposure is available for 1 381 cases with an onset date* in the week of 2-8 June. Of these, 5 cases (<1%) reported having travelled outside of Canada, 526 cases (38%) were due to exposure in Canada to either a known COVID-19 case or to someone who had travelled; 376 (27%) have information on exposure pending. PTs update exposure status on an ongoing basis as case investigations are completed, so cases that are currently pending information will likely change exposure category in the future.

Figure 7. Number of newly reported COVID-19 cases in Canada, by date of illness onset and exposure category as of 8 June (n=94 143)



*If date of illness onset was not available the earliest of the following dates was used as an estimate in the following order: 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.



OUTBREAKS

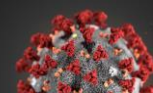
- Within a few weeks of Canada's first imported case of COVID-19, outbreaks were identified in long-term care and seniors' homes. To-date, outbreaks related to these settings are responsible for 18% of cases and 82% of deaths in Canada.
 - High mortality associated with outbreaks in long-term care settings reflects the vulnerability of this population.
- Additionally, outbreaks in other congregate living and workplace settings have also been driving case counts.
 - Canada's largest outbreak occurred at the Cargill meat processing plant in Alberta with 1,560 cases among workers, household and community members. A significant risk associated with workplace outbreaks is the spread of the virus into communities, leading to a high burden of illness.
- Movement of workers, whether between workplaces or across jurisdictions, has initiated additional chains of transmission.
 - Health care workers working at more than one facility can spread COVID-19 between facilities
 - An outbreak in northern Saskatchewan was linked to work camp in Alberta
 - There have been several outbreaks associated with temporary foreign workers, particularly in agricultural and congregate living settings.
 - COVID-19 outbreaks have also been detected in other congregate living settings such as correctional facilities and shelters.
- Successful control of outbreaks requires early identification of cases and the implementation of measures to mitigate spread.

Table 4. Total number of COVID-19 clusters and cases by outbreak setting in Canada

Outbreak location	Number of outbreaks	Total number of cases
Long term care and senior's homes	946	19662
Meat processing plant	13	3022
Hospital	115	1566
Workplace (includes work camps and agricultural settings)	71	1474
Group Homes, Residential Care and Supported Housing	47	568
Shelter	29	548
Rural and remote communities	6	484
Mass gathering	5	179

COVID-19 IN CANADA

FLUWATCHERS



FluWatchers is an online health surveillance system that relies on volunteer reports to track spread of flu-like illness across Canada.

In the context of the COVID-19 pandemic, FluWatchers is shifting focus to track COVID-19 symptoms over the spring and summer months.

In the week starting 31 May 2020, 11 126 participants reported into the FluWatchers program. A total of 17 participants (0.15%) reported cough and fever.

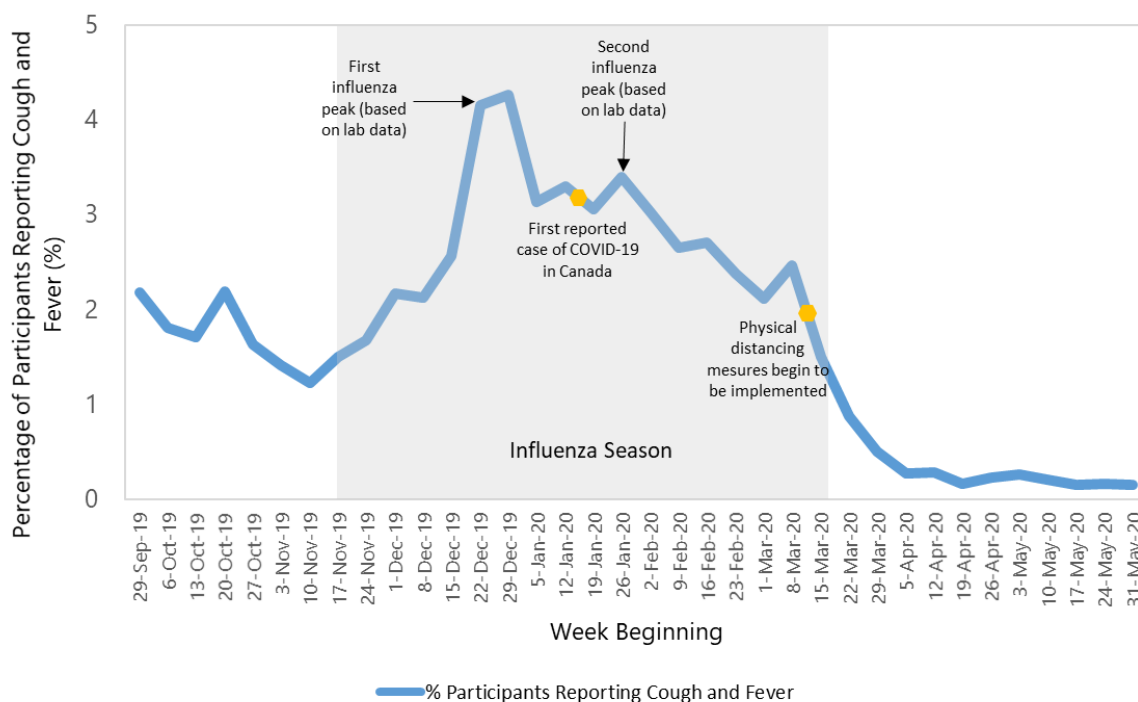
Among the 17 participants reporting cough and fever:

- 9 (53%) sought medical attention
- 8 (47%) were tested
 - 1 test was positive for COVID-19, 7 were negative

Additionally, 109 participants (1%) reported having a cough and at least one other symptom* in the week of 31 May 2020. 14 of these participants reported being tested (10 tests were negative and 4 results were unavailable at the time of reporting).

**sore throat, fatigue/exhaustion, diarrhea/vomiting/stomach ache, joint pain, muscle pain, shortness of breath and headache*

Figure 8: Percentage of FluWatchers Participants Reporting Cough and Fever (N=11 126 the week of 31 May 2020)



COVID-19 IN CANADA



LABORATORY TESTING

1 930 141 people have been tested for COVID-19 in Canada as of 8 June 2020. The percent positive to date is **4.6%**, which represents the number of people testing positive divided by the total number of people tested.

Table 6. Summary of COVID-19 testing reported between 2 and 8 June 2020 in Canada by PT

Location	Total number of people tested	Difference since last report	Average # people tested daily in past 7 days	People tested per 1 000 000 pop'n
BC	133 367	9579	1118	26 298
AB	268 663	30 916	3374	61 460
SK	47 010	3353	479	40 027
MB	48 706	4899	726	35 566
ON	838 542	129 782	18 405	57 566
QC	489 877	45 095	6882	57 735
NL	13 423	1170	164	25 737
NB	31 781	4952	968	40 911
NS	47 017	3341	486	48 402
PE	7494	963	144	47 749
YK	1214	38	4	29 716
NT	2130	78	14	47 517
NU	841	57	8	21 686
Total*	1 930 141	234 223	32 771	51 348

*For provinces and territories which report the number of tests completed, mathematical formula is used to estimate the number of unique people tested. *Includes 76 repatriated travellers tested.*

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

For the period 2 – 8 June 2020, **234 223** persons were tested and the weekly average percent positive over that same period was **2%**. This is substantially lower than the high of 8.5% observed during the week starting 6 April. The observed decrease in the percent positivity may be due to increased testing, lower incidence of disease, or a combination of the two.

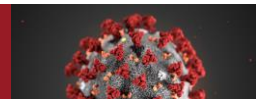
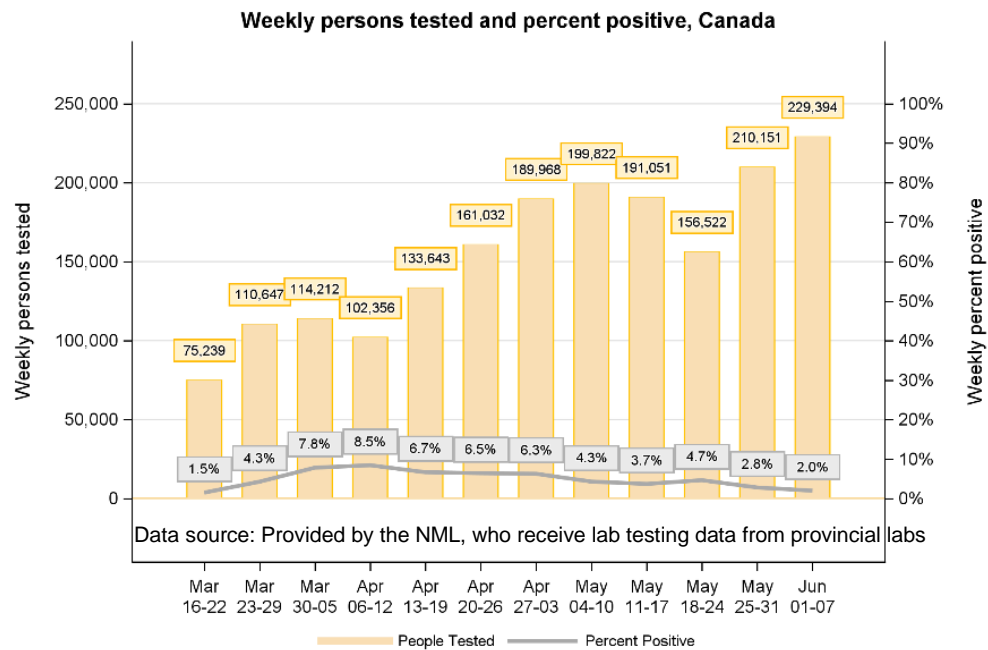
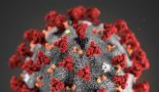


Figure 9: Number of persons tested for COVID-19 and percent positivity by week (data to 7 June)



COVID-19 IN CANADA

MODELLING



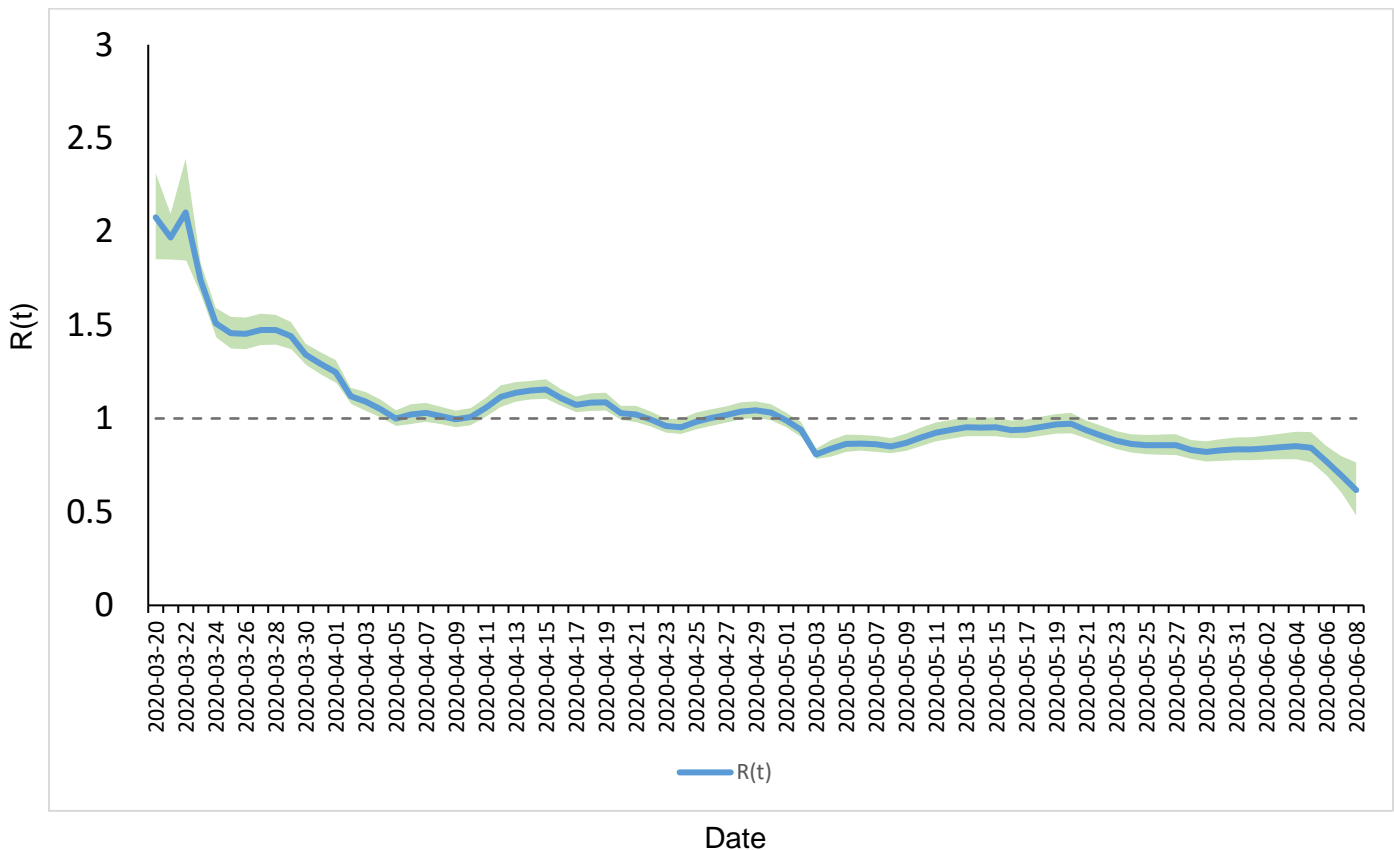
Estimates of transmission rates in Canada: Effective reproductive rate (R_t)

R_t is the time variable reproduction rate, representing the average number of new 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.

Figure 10 shows the R_t over time

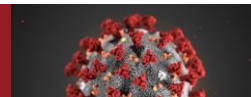
- The graph shows how the reproductive rate in Canada has remained below 1 for nearly 3 weeks, suggesting public health measures are being effective in controlling the epidemic.
- These fluctuations reflect ongoing transmission in some communities and settings across the country, especially in and around Canada's most populous cities, Toronto and Montreal.
- Until we can keep R_t consistently below 1, the epidemic will continue to smolder.
- Canada does not depend only on the value of R_t to assess the state of epidemic control.

Figure 10. Reproductive rate in Canada, 1 March to 8 June 2020



COVID-19 IN CANADA

FORECASTING



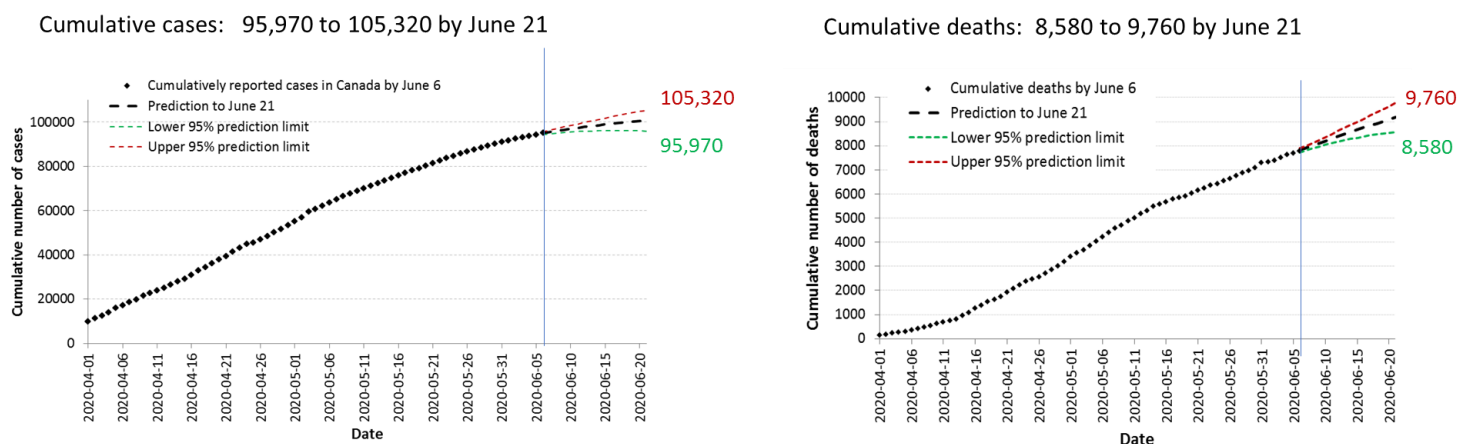
Canada's approach to modelling:

Models cannot predict what will happen, but rather can help us understand what might happen to ensure we can plan for worst cases and drive public health action to achieve the best possible outcome. Models can support decisions on public health measures and help the health care sector plan for the number of expected COVID-19 patients.

Forecasting models use data to estimate how many new cases we might expect to see in the coming week. Figure 11 below shows the projected number of cases and deaths in Canada, with a 95% prediction interval.

- Forecasting shows **95,970** to **105,320** cumulative reported cases and **8,580** to **9,760** cumulative number of deaths are predicted by 21 June.

Figure 11. Cumulative number of reported cases and deaths in Canada, projected to 21 June 2020

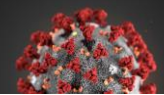


For more information, please visit:

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

COVID-19 IN CANADA

INTERNATIONAL



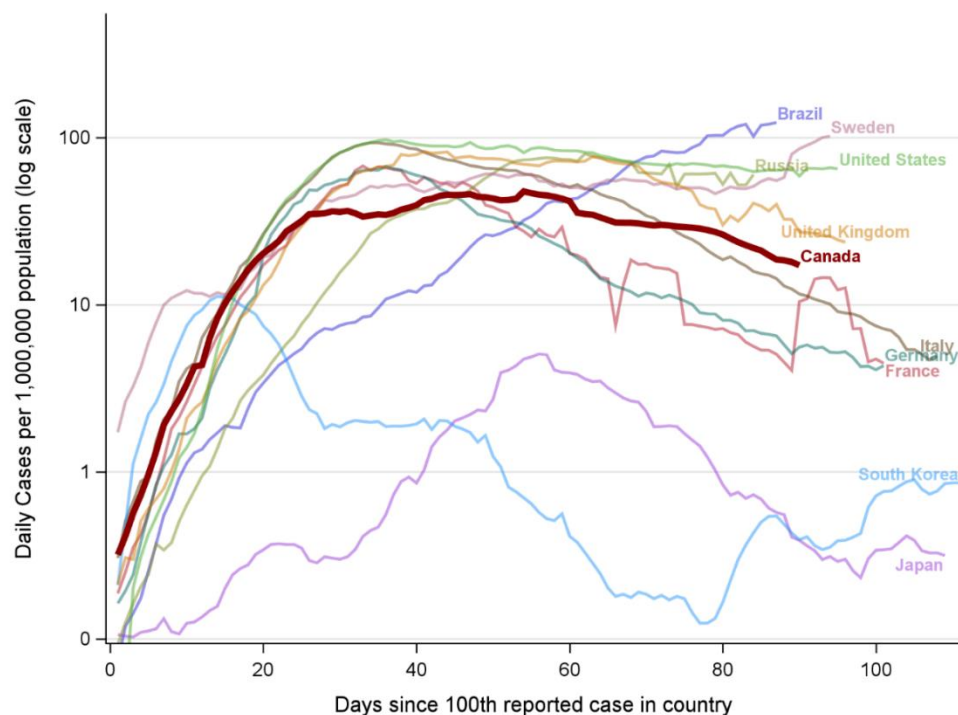
- As of 10 June, globally, there have been over 7.2 million confirmed cases of COVID-19 with over 410,000 reported deaths.
- Latin America continues to report large increases in COVID-19 cases and is now considered to be the epicenter of the pandemic. As of 10 June, Brazil has the second-highest number of COVID-19 cases globally (n=739 503) and the third-highest number of deaths (n=38 406). Elsewhere in the region, Peru has reported just over 200 000 cases, Chile 142 579, and Mexico 124 301.
- In South Asia, India has reported more than 9 000 new cases daily since 4 June. This is a marked increase from earlier figures; the average number of new daily cases reported from 15 – 31 May was 6126.
- As countries lift public health restrictions, increases in daily cases have been observed in countries such as South Korea, Japan, France and Germany.

The 7-day moving average of new daily COVID-19 cases in Canada compared to other countries can be seen in **Figure 12**.

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](#).

Figure 12. Daily new cases of COVID-19 in Canada compared to other countries (7-day moving average, population adjusted)



COVID-19 IN CANADA

ANNEX



Table A1. Summary of COVID-19 cases reported in Canada by location as of 10 June

Location	Total cases	New cases reported in past 7 days	Recovered	New recoveries in past 7 days	Total deaths	New deaths reported in past 7 days
BC	2680	57	2328	85	167	1
AB	7276	200	6754	167	151	6
SK	658	11	624	22	13	2
MB	300	2	285	3	7	0
ON	31 341	2003	25 380	2569	2475	163
QC	53 341	1457	19 841	2743	5081	287
NL	261	0	256	0	3	0
NB	151	16	121	1	1	1
NS	1061	3	994	1	62	2
PE	27	0	27	0	0	0
YK	11	0	11	0	0	0
NT	5	0	5	0	0	0
NU	0	0	0	0	0	0
Total*	97 125	4040	56 639	5591	7960	462

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

Table A2. Clinical severity summary of COVID-19 cases reported in Canada as of 8 June

COVID-19 Case Severity						
Overall Summary Hospitalizations						
Hospitalizations			9056/57 280		(16%)	
Hospitalizations in ICU			1828/9056		(20%)	
Hospitalizations requiring mechanical ventilation			356/9056		(4%)	
All Hospitalizations			Admitted to ICU		Deceased	
Age groups						
≤ 19	94	(1%)	19	(1%)	0	(0%)
20-39	649	(7%)	157	(9%)	22	(<1%)
40-59	1 918	(21%)	547	(30%)	208	(3%)
60-79	3 407	(38%)	894	(49%)	1 959	(25%)
80+	2 984	(33%)	211	(12%)	5 655	(72%)
Total	9 052	(100%)	1 828	(100%)	7 844	(100%)
Gender						
Female	4 393	(49%)	706	(39%)	4 227	(54%)
Male	4 655	(51%)	1 122	(61%)	3 582	(46%)
Other	1	(<1%)				
Total	9 049	(100%)	1 828	(100%)	7 809	(100%)

COVID-19 IN CANADA

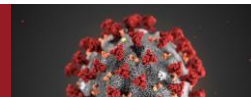


Figure A1: Number of daily cases reported, by PT to 10 June

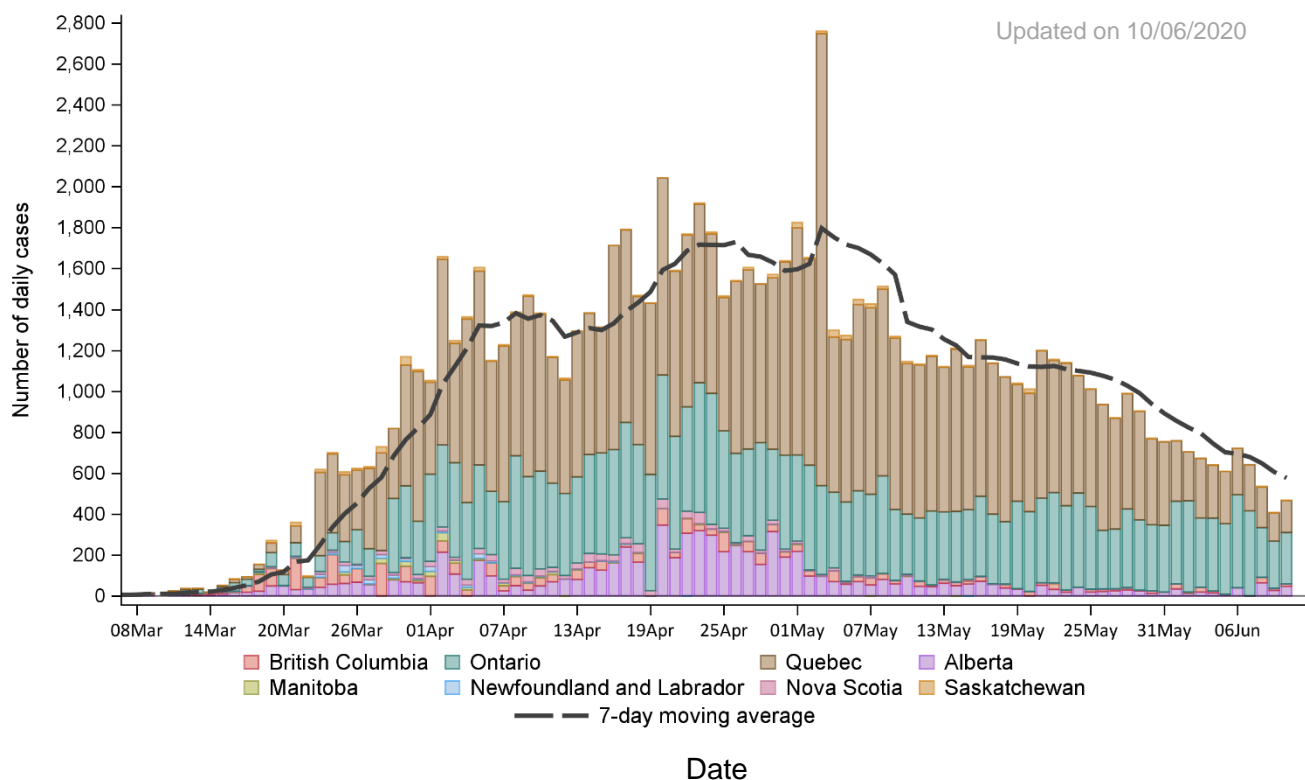
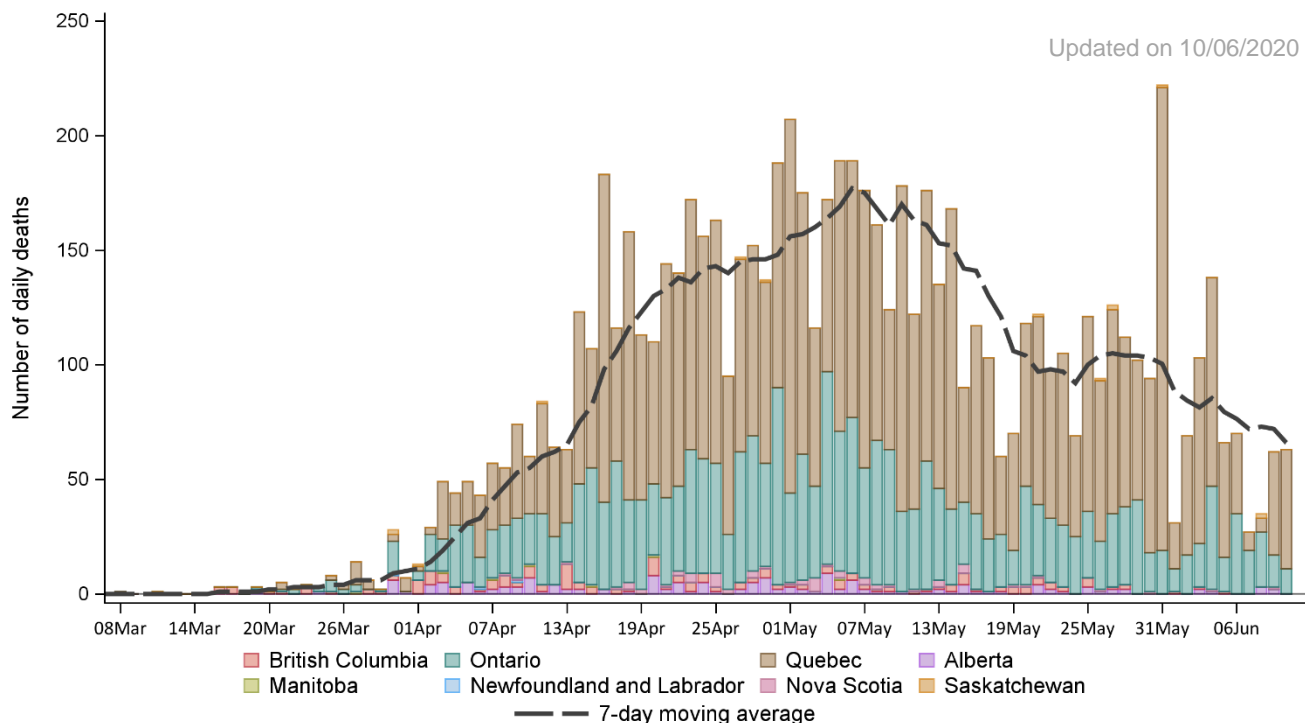
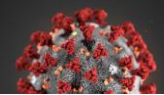


Figure A2. Number of daily deaths reported, by PT to 10 June





The data in the report are based on information from various sources described below. The information presented for case-based analyses is that available as of **8 June at 8 p.m. EDT**. The information presented for trend analyses is that available as of **10 June 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.

- 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 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 mathematical formula is used to estimate the number of unique people tested.

Epidemiological data

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 are sent/received by PHAC.
- Preliminary data may be limited and data are not complete for all variables.
- Data on patient health status not frequently updated and received by PHAC.
- Variation in approaches to testing and testing criteria over time within and between P/Ts.

Data on case severity are likely under-estimated due to underreporting of these 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 this data:

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- A national 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 March 12.
- Case-level data is generally not available for outbreaks detected via non-traditional data sources. Information presented is at the aggregate level only.

Population data

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

International data

International data are retrieved from various reputable data source, mainly the European Centre for Disease Prevention and Control (ECDC) Situation update, Johns Hopkins Resource Center and various country's MOH website.

- 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.