



Public Health
Agency of Canada

Agence de la santé
publique du Canada

Canada

Update on COVID-19 in Canada: Epidemiology and Modelling

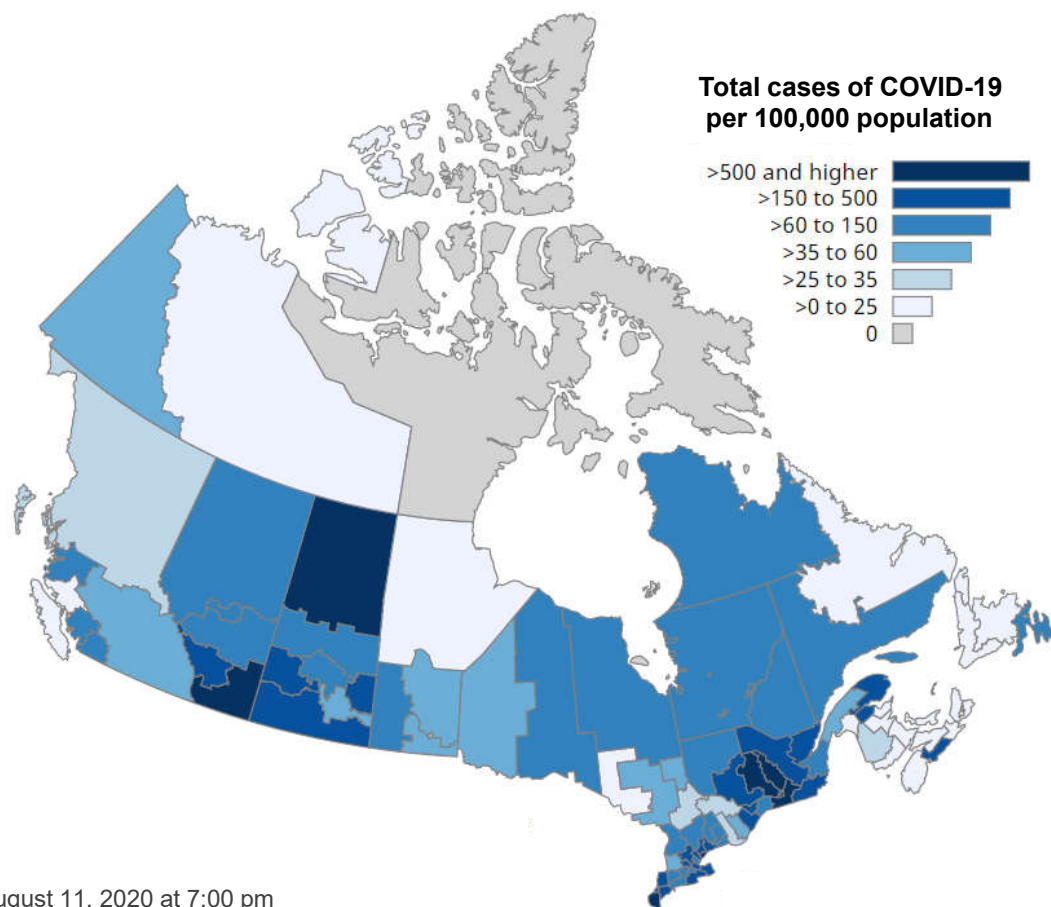
August 14, 2020

PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH



EPIDEMIOLOGY

COVID-19 has impacted some health regions more than others



Median age (range)	48 years (<1 to 112)
Females	64,806 (55%)
Males	52,608 (45%)
Other gender	15 (<1%)

Age and gender available for 117,689 and 117,430 cases, respectively, as of Aug 11.

Deaths	8,991 (8%) [‡]
Hospitalizations	11,214 (14%)*
ICU Admissions	2,289 (3%)*

[‡] Publicly reported as of Aug 11.

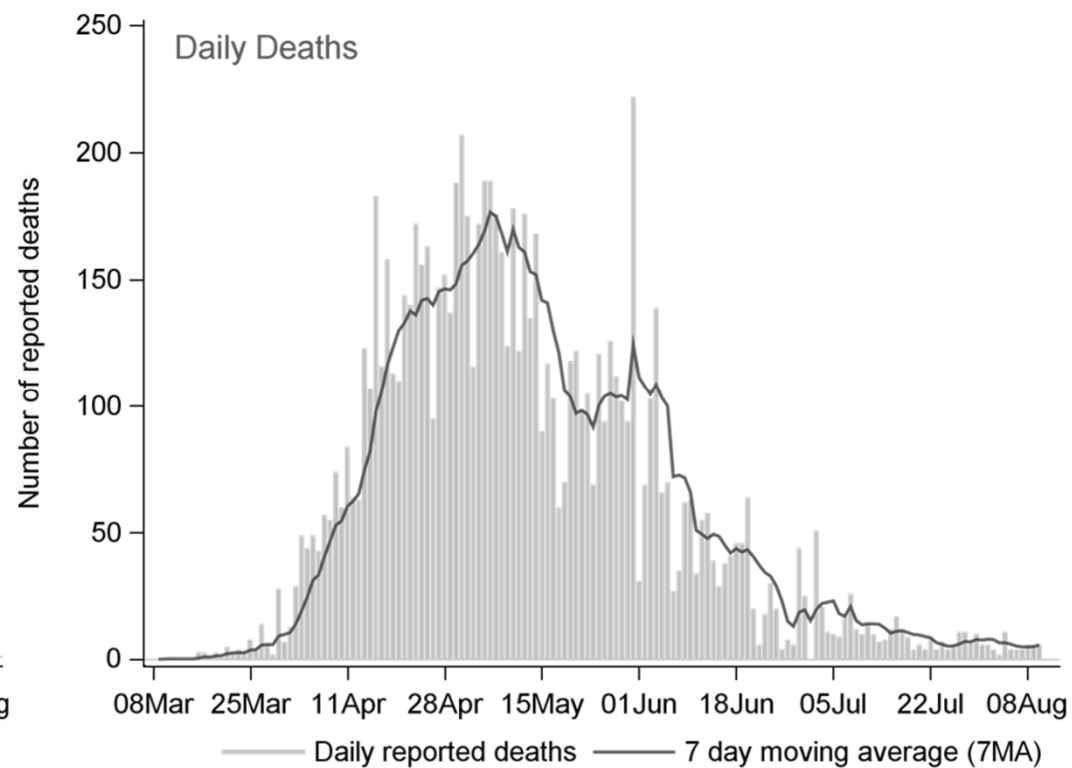
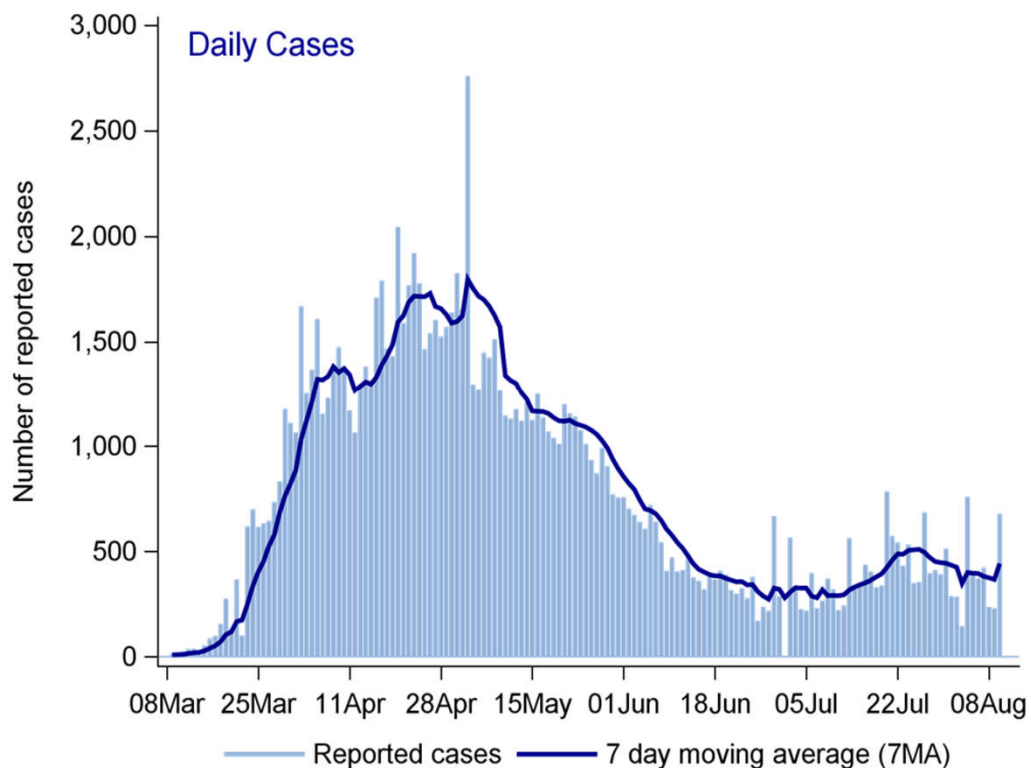
* Of 80,861 case reports for which the hospitalization fields were completed as of Aug 11.

Data as of August 11, 2020 at 7:00 pm

Credit: A collaboration between Public Health Agency of Canada, Statistics Canada & Natural Resources Canada. Powered by: PHAC InfoBase

Data source: Berry I, Soucy J-PR, Tuite A, Fisman D. Open access epidemiologic data and an interactive dashboard to monitor the COVID-19 outbreak in Canada.

Recent increase in national case counts reminds us to remain vigilant

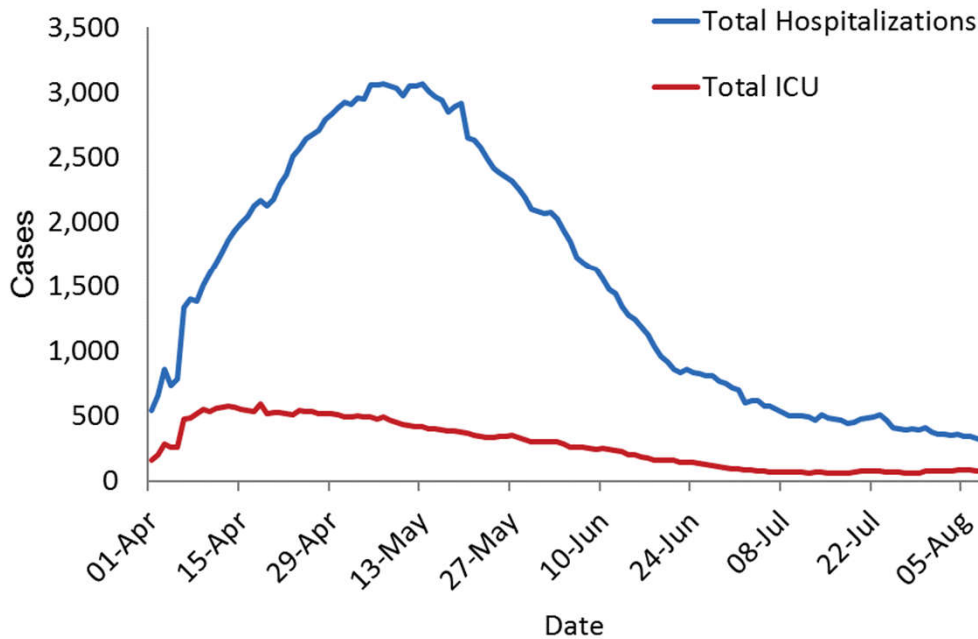


- Number of new **cases** reported daily has **increased** in recent weeks
- Number of **deaths** reported daily remains **low**

Data as of August 10, 2020

The number of cases with severe illness remains low

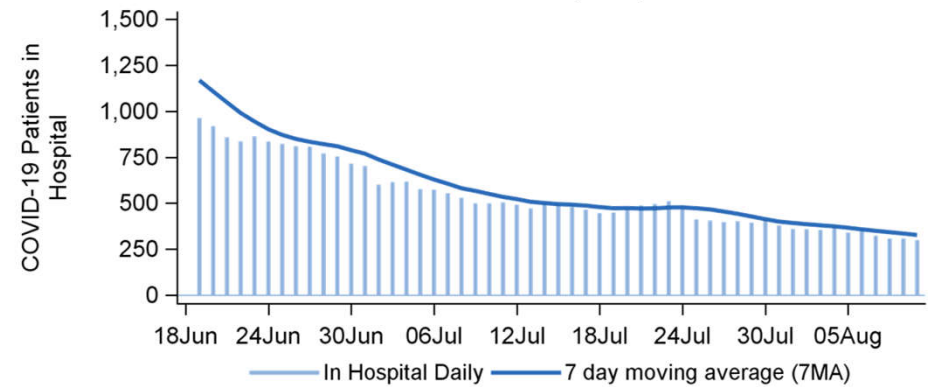
COVID-19 patients in hospital daily across Canada



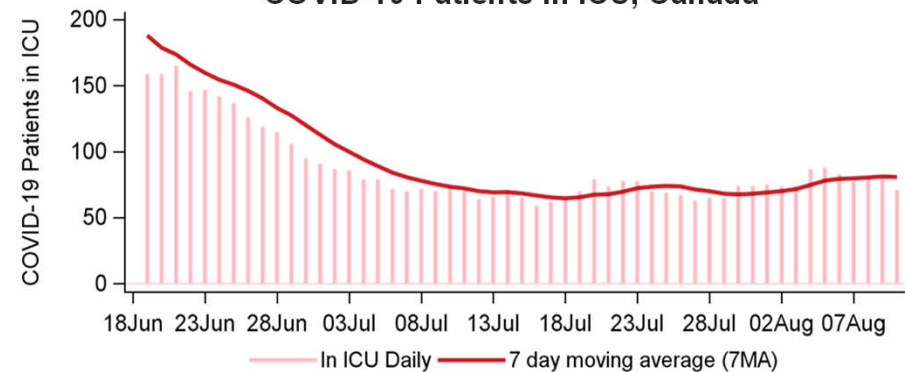
- Number of COVID-19 cases in hospitals across the country **remains low**

Data as of August 11, 2020

COVID-19 Patients in hospital, Canada

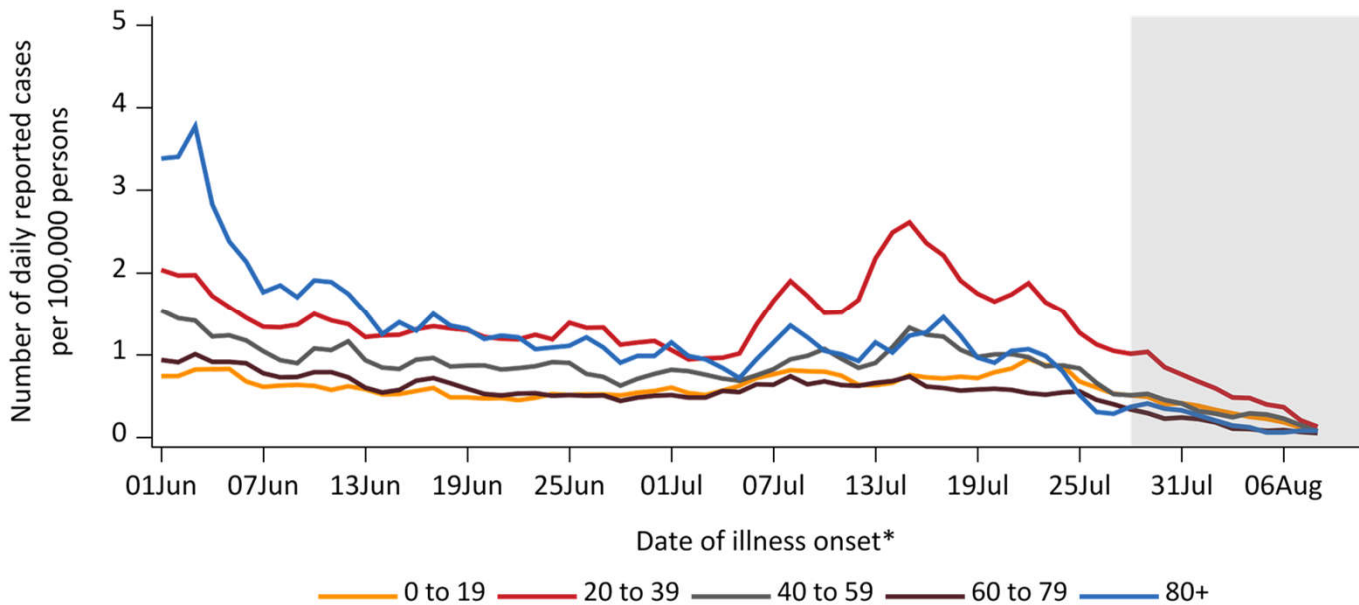


COVID-19 Patients in ICU, Canada



Highest incidence in recent weeks is among young adults, aged 20 to 39 years

Number of cases per 100,000 population by date of illness onset and age group
(3-day moving average)

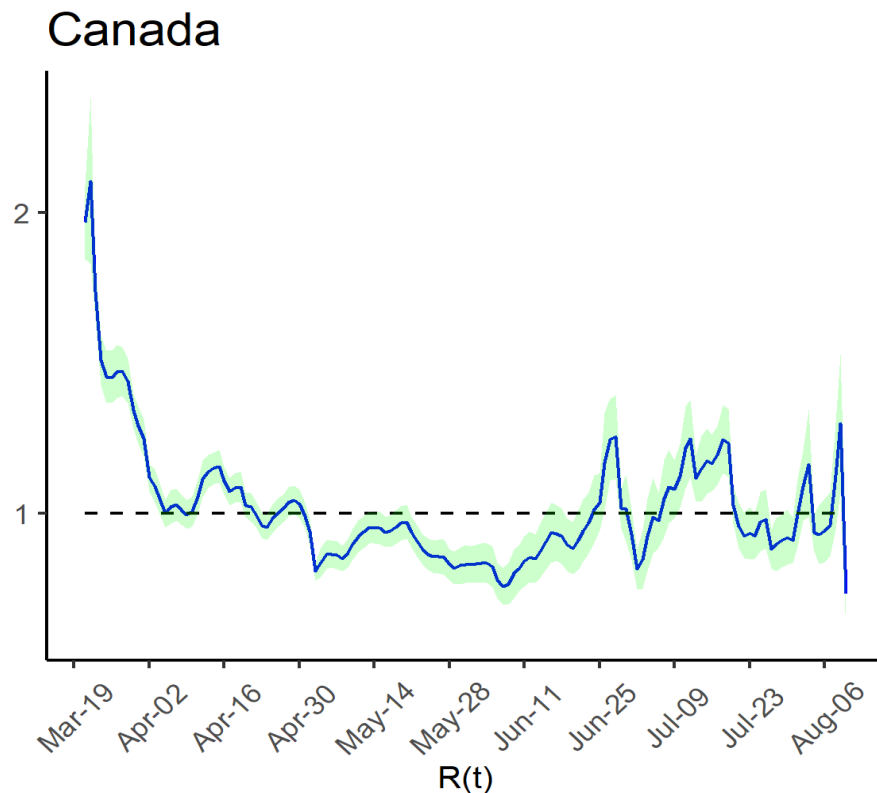


- Since early July, the highest incidence of COVID-19 has been reported among individuals aged 20 to 39 years
- The incidence of COVID-19 has begun to decline again across all age groups in recent weeks
- We expect to see additional surges in case reporting moving forward - our collective responsibility is to limit their size and impact

Data as of August 11, 2020

*First available of illness onset, specimen collection, laboratory test date; cases may not yet be reported in shaded area due to reporting lag

Recent fluctuations in Canada's R_t are driven by localised outbreaks



Data as of August 10, 2020
Calculations are based on date of case report

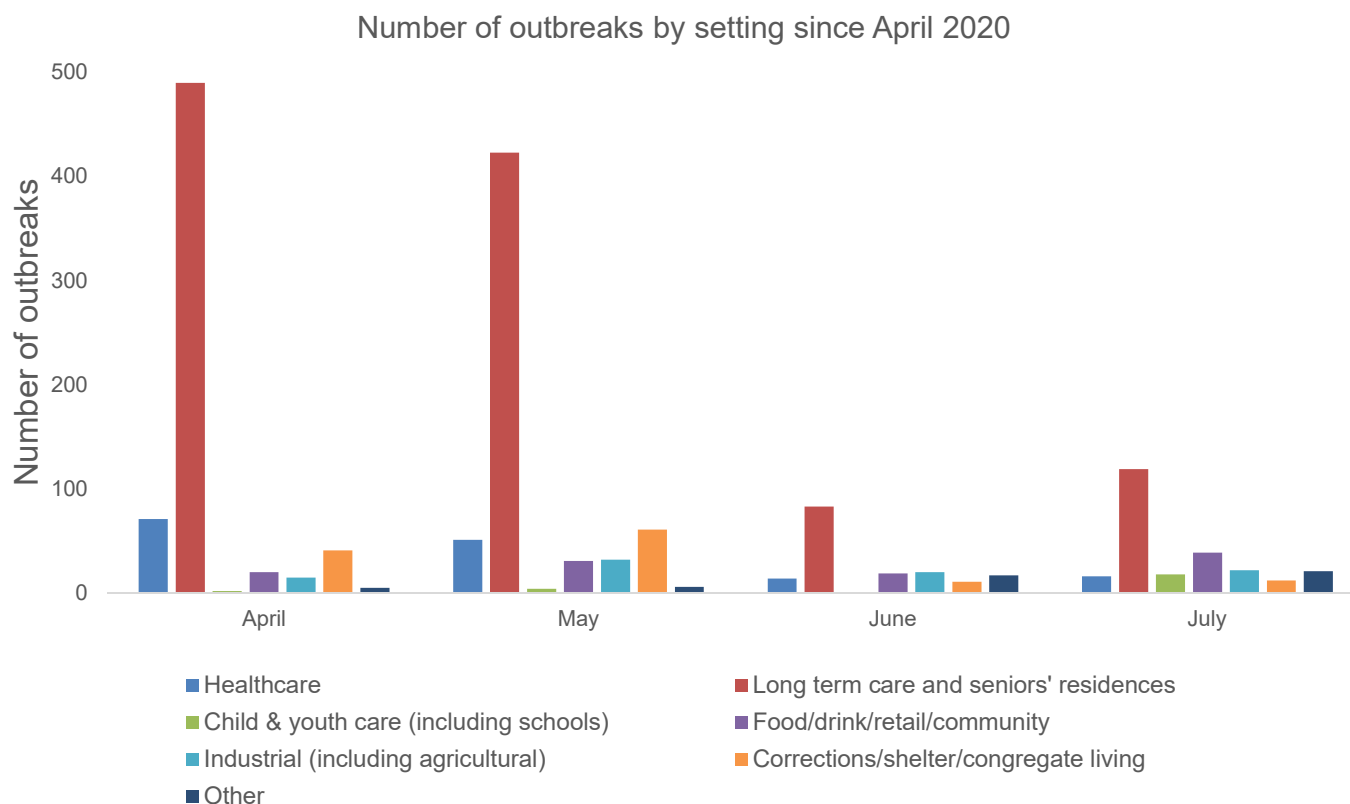
R_t , or the time varying effective reproduction number, represents the average number of people infected by each case

$R_t > 1$ is an indication the epidemic is growing

$R_t < 1$ is an indication the epidemic is being brought under control

Now that case numbers nationally are relatively low, R_t will continue to fluctuate up and down reflecting localised outbreaks as we have observed since late June

Outbreaks continue in high risk settings involving closed spaces, crowded places and close contact situations

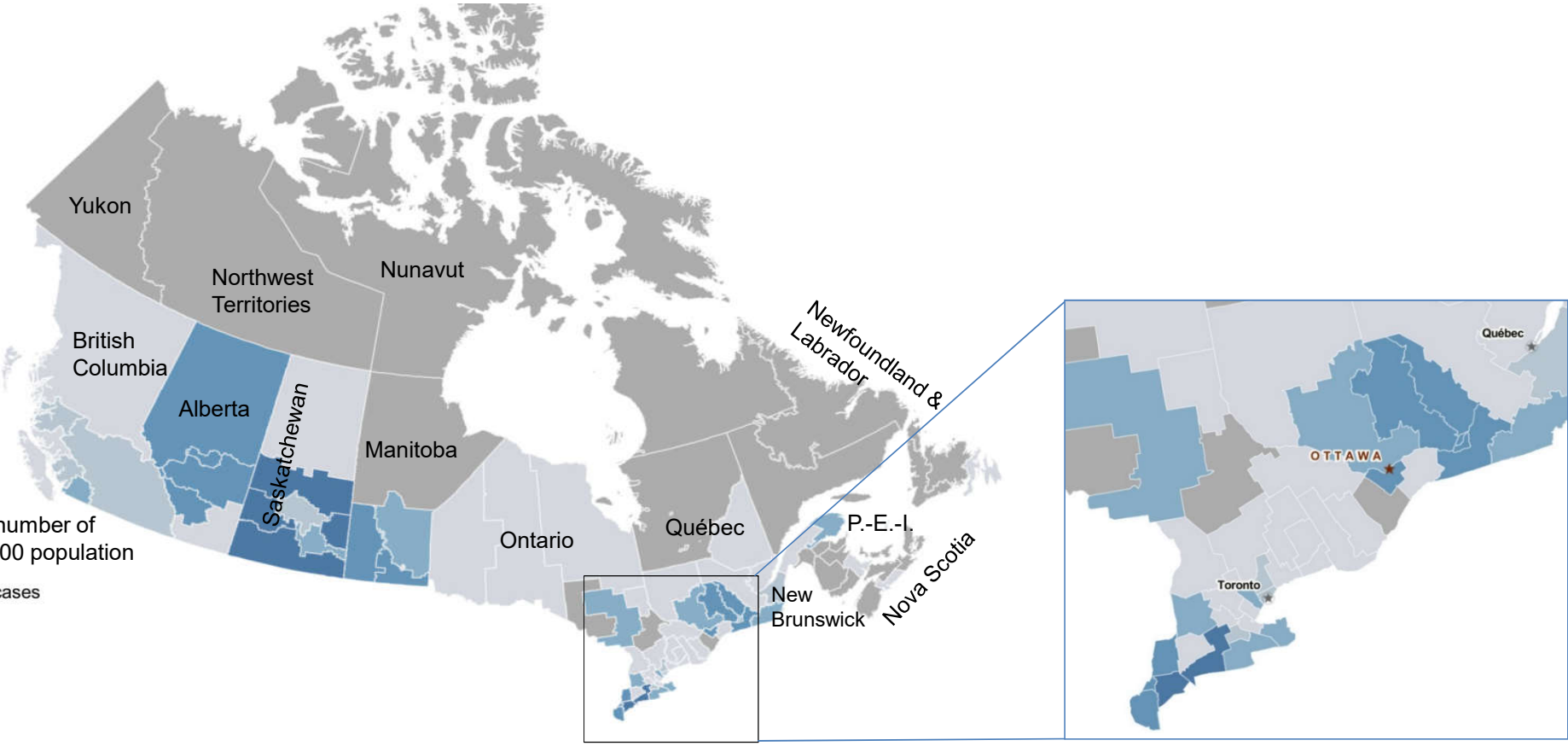


- Closed and crowded indoor settings where physical distancing is a challenge pose high risk for outbreaks
- Long term care and seniors' residences have been hit hardest, particularly early on in pandemic
- Following the reopening of social and economic spaces, a smaller number of outbreaks continue to be reported in a wider range of social settings

Data as of August 11, 2020

Reported numbers are based on public information sources and likely underestimate the true number of outbreaks in these settings.

Localised outbreaks and community transmission (past 14 days)



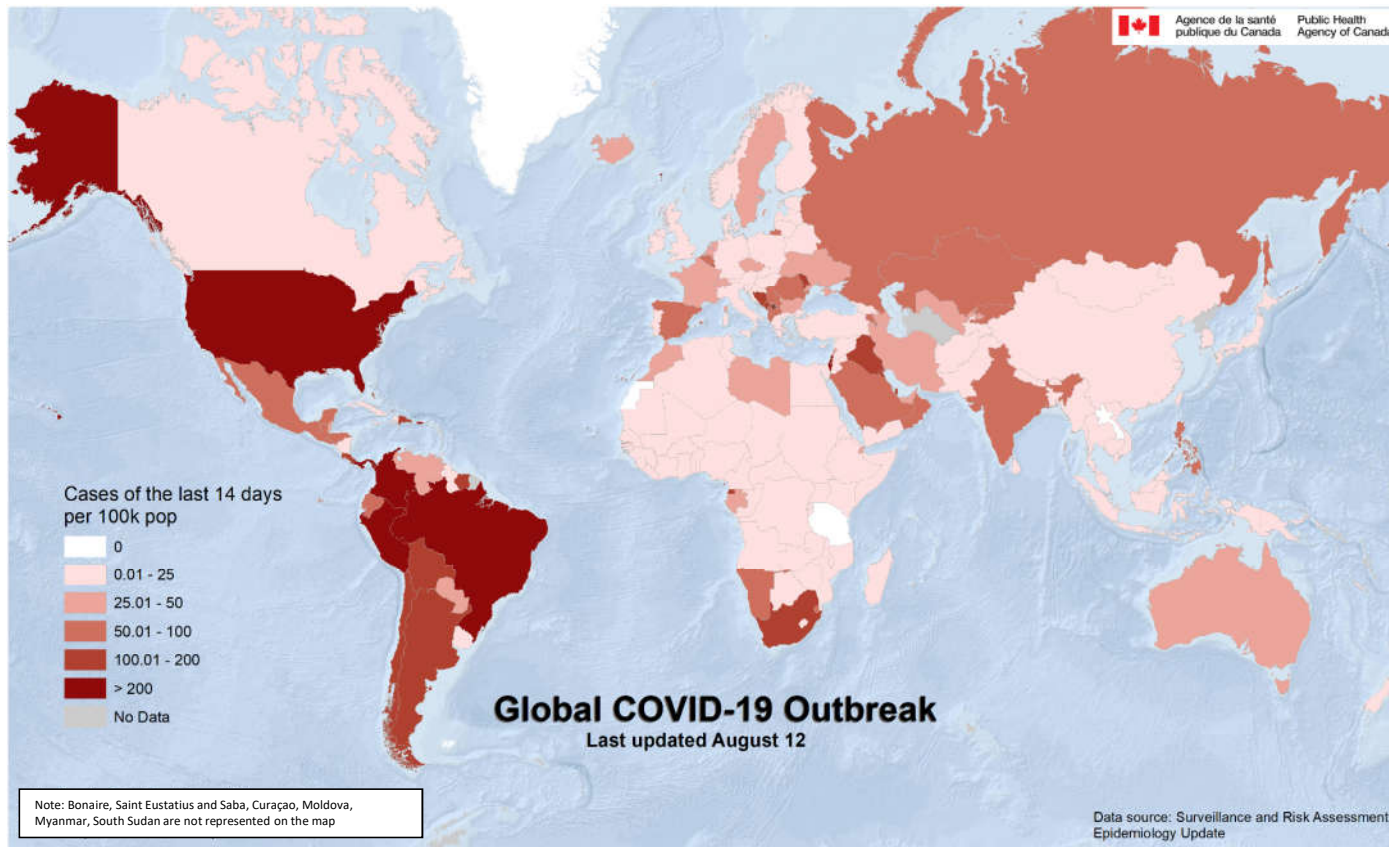
Past 14 days – number of cases per 100, 000 population

- No reported cases
- > 0 – 5
- > 5 – 10
- > 10 – 20
- > 20 – 50
- > 50

Data as of August 10, 2020
 Note: Map only shows COVID-19 cases where health region had been attributed in source data
 Data sources: COVID-19 Canada Open Data Working Group. Epidemiological Data from the COVID-19 Outbreak in Canada

COVID-19 continues to circulate worldwide

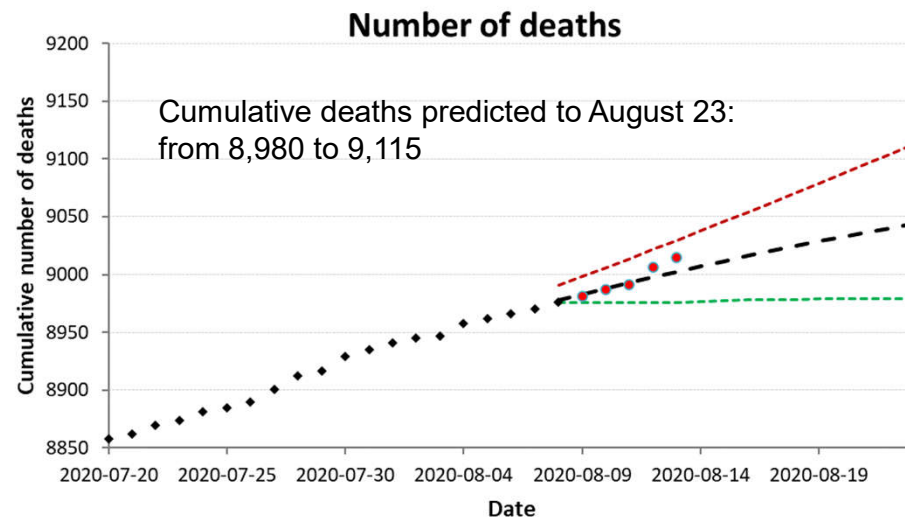
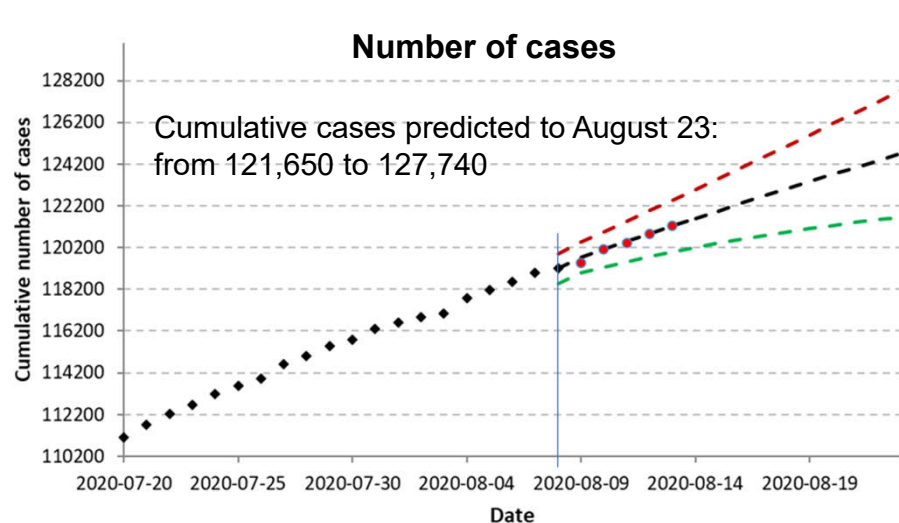
Global incidence of COVID-19 cases in the last 14 days



- The number of cases and deaths continue to increase in many countries worldwide
- Even countries that demonstrated early success to bring COVID-19 under control have experienced significant resurgences in transmission
- Continued vigilance and commitment is required in Canada and globally to minimise the impacts of COVID-19 and learn from our collective experience

MODELLING UPDATE

Data driven models forecast short-term epidemic trajectory



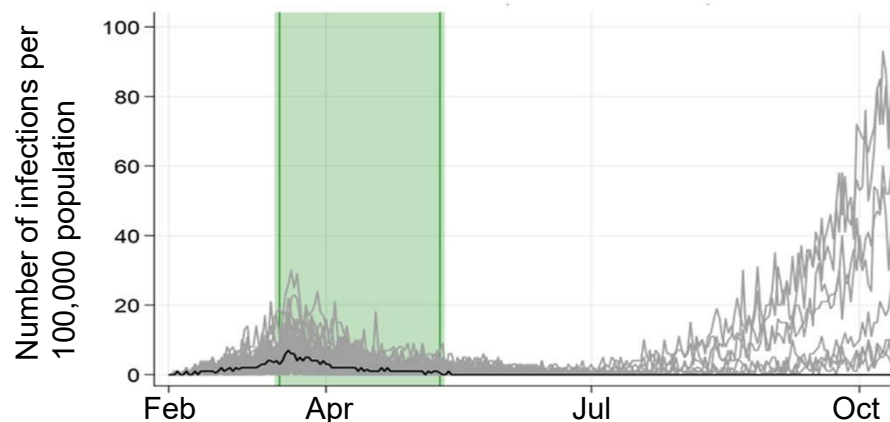
- ◆ Reported data by August 8
- Prediction or projected number to August 23
- Lower 95% confidence limit for the projected number for a given day
- Upper 95% confidence limit for the projected number for a given day
- Added data points since August 8 when the prediction was made

Extrapolation based on recent trends using a forecasting model (with ranges of uncertainty)

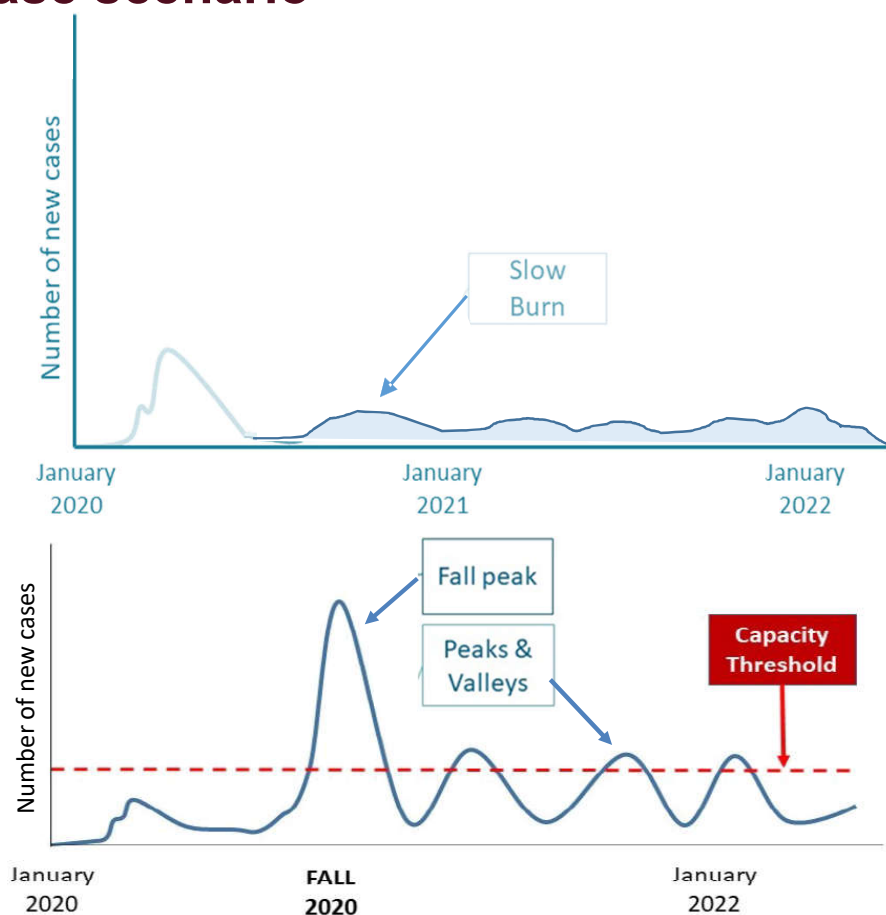
When the cases and deaths reported are between the red and green dotted lines, they are within the forecasted range of expected cases and deaths

Dynamic models show COVID-19 control depends on our collective efforts

- The number of Canadians infected over the course of the pandemic will depend on the degree to which we:
 - **Rapidly detect and isolate cases**
 - **Rapidly trace and quarantine contacts**
 - **Adhere to physical distancing and personal protective measures** (e.g., staying home if sick, good hygiene)
- Lifting population-based measures (e.g., business and school closures, stay-at-home requirements) without strengthening these other controls will likely cause the epidemic to rebound



Striving for the best case scenario while planning for a reasonable worst case scenario



- We are aiming for the **'Slow Burn'** scenario keeping case rates low and within the health and public health system's capacity to manage
- We are planning for a reasonable worst case scenario comprised of a large **'Fall Peak'** followed by ongoing **'Peak & Valleys'** in which resource demands intermittently exceed the health and/or public health system's capacity to manage
- **Increases in infection rates are expected** as we continue to support economic and social activities, even with appropriate controls in place - our collective responsibility is to limit the size and impact of these surges in transmission

Rapid case detection and contact tracing are essential to COVID-19 control

- Public health authorities are continuing to build capacity to:
 - > **Detect and isolate** as many **cases** as possible early in their infectious period
 - > **Identify (trace) and quarantine** as many **contacts** as possible and as soon as possible after exposure
 - > **Rapidly detect and respond to outbreaks** through enhanced surveillance and early alerting mechanisms
- The **COVID-Alert App** is an additional early alerting tool that can let people know of possible exposure to COVID-19 cases and direct them to local public health for follow up

Download COVID Alert today



COVID Alert is Canada's free exposure notification app.

Protect yourself and your fellow Canadians by increasing your KNOW-HOW to limit the spread of COVID-19

KNOW HOW to seek testing/care and when to stay home:

- If you develop symptoms, even if mild, **stay home and keep away from others**
- Contact your local public health authority to be guided safely to testing and care
- Protect those at high risk by finding virtual ways to connect and support them

KNOW HOW to avoid high-risk settings/situations:

- Avoid or strictly limit time spent in Closed spaces, Crowded places or Close contact situations

KNOW HOW to go out more safely by maintaining effective public health practices, including:

- Physical distancing 2 metres from others,
- Handwashing and cough etiquette
- Wearing a non-medical mask or face covering in closed spaces, crowded places or close contact situations

✓ Always



✗ Avoid



Use the “Going Out Safely during COVID-19” Guide to make informed choices to keep yourself and others safe:
<https://www.canada.ca/en/public-health/services/publications/diseases-conditions/covid-19-going-out-safely.html>

Read more KNOW-HOW in “Information and resources on COVID-19 epidemiology and reducing your risks for infection and spreading the virus”, available online at:
<https://www.canada.ca/en/public-health/news/2020/07/information-and-resources-on-covid-19-epidemiology-and-reducing-your-risks-for-infection-and-spreading-the-virus.html>