Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

Update: COVID-19 in Canada

June 4, 2020

PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH

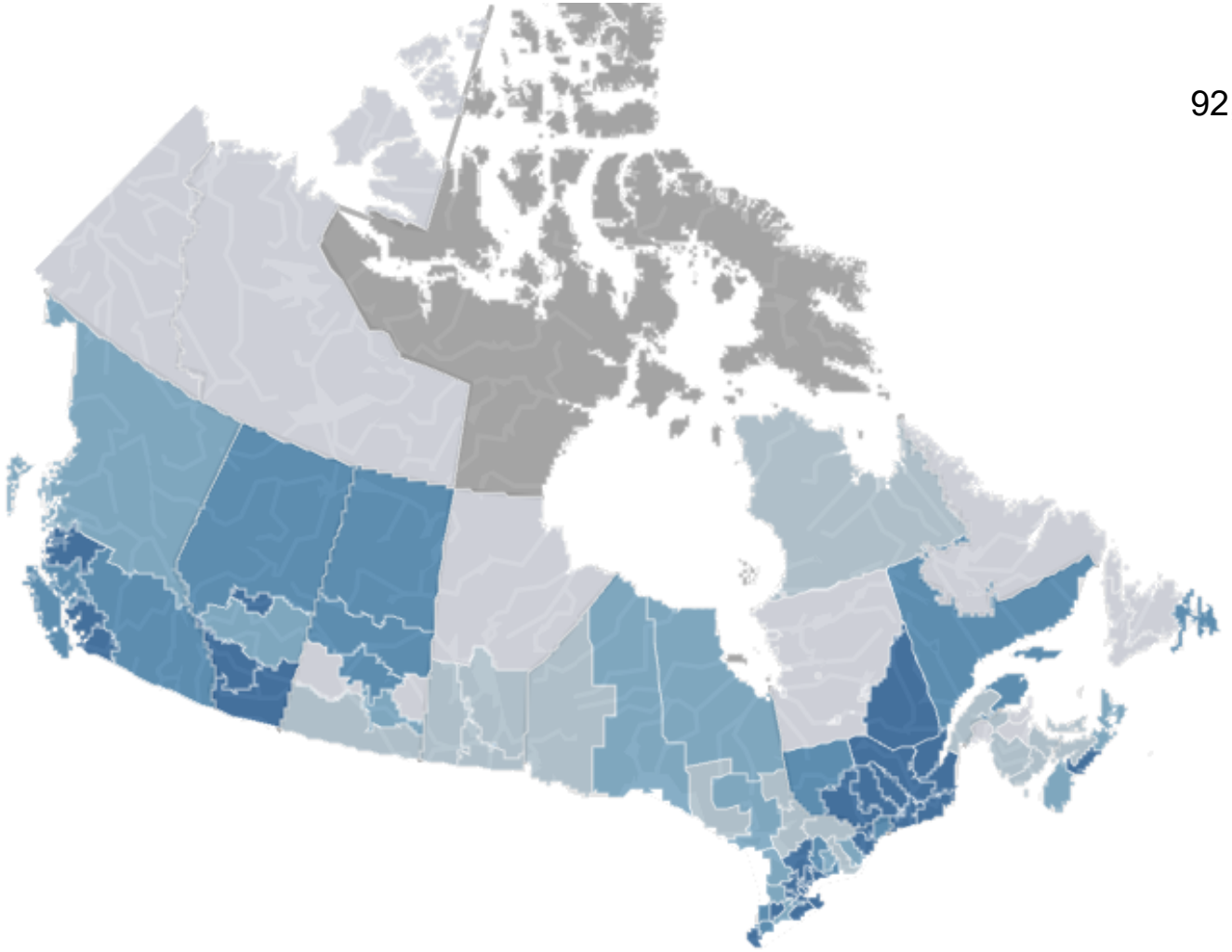
Data and modelling are guiding Canada's response to COVID-19

This presentation provides an update on the status of COVID-19 in Canada.

As we re-open Canadian society, data and modelling indicate that **core public health measures** remain essential to control the epidemic in Canada:

- physical distancing amongst individuals,
- detect and isolate cases,
- trace and quarantine contacts, and
- manage risk of importation.

COVID-19 cases have occurred in most health regions in Canada



92,748

Median age (range)	51 years (<1 to 112)
Females	52,142 (57%)
Males	39,541 (43%)
Other gender	11 (<1%)

Age and gender available for 91,878 and 91694 cases, respectively.

Deaths	7,495 (8%)
Hospitalizations	8,742 (16%)*
ICU Admissions	1,721 (3%)*

*Of 54,922 case reports for which the hospitalization fields were completed.

Data as of June 3 2020 at 21:00

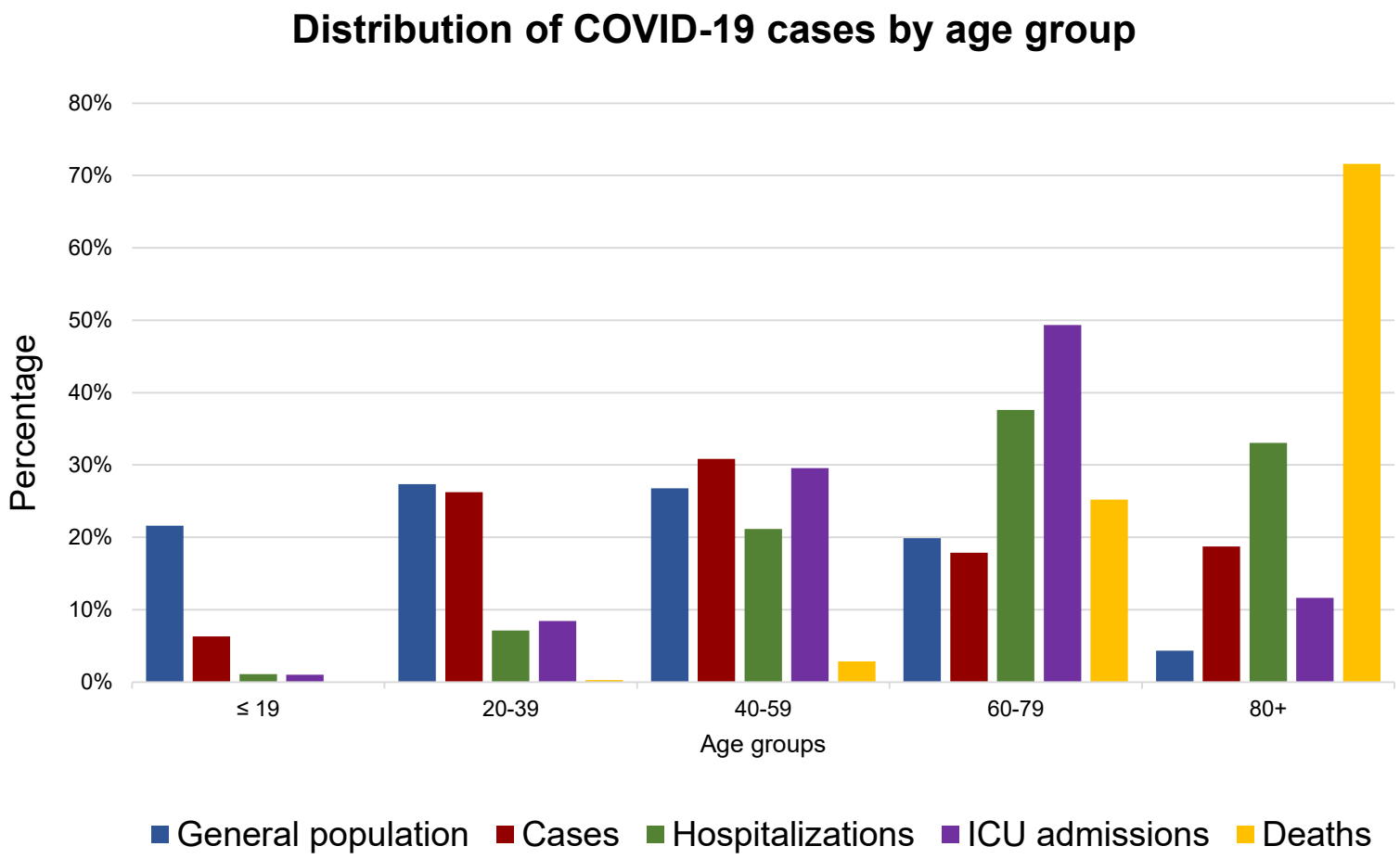
Credit: A collaboration between Public Health Agency of Canada, Statistics Canada and Natural Resources Canada. Powered by: ESRI Canada and Amazon Web Services (AWS).
Data source: Berry I, Soucy J-PR, Tuite A, Fisman D. Open access epidemiologic data and an interactive dashboard to monitor the COVID-19 outbreak in Canada.

Older Canadians are at greater risk of severe outcomes

Based on available data, people aged ≥ 60 years comprise:

- 94% of 7,495 deaths
- 71% of 8,742 hospital admissions
- 61% of 1,721 ICU admissions

82% of 7,495 deaths are linked to long-term care and seniors' homes.



Data as of June 3, 2020, 21:00

Epidemic growth has slowed across all age groups

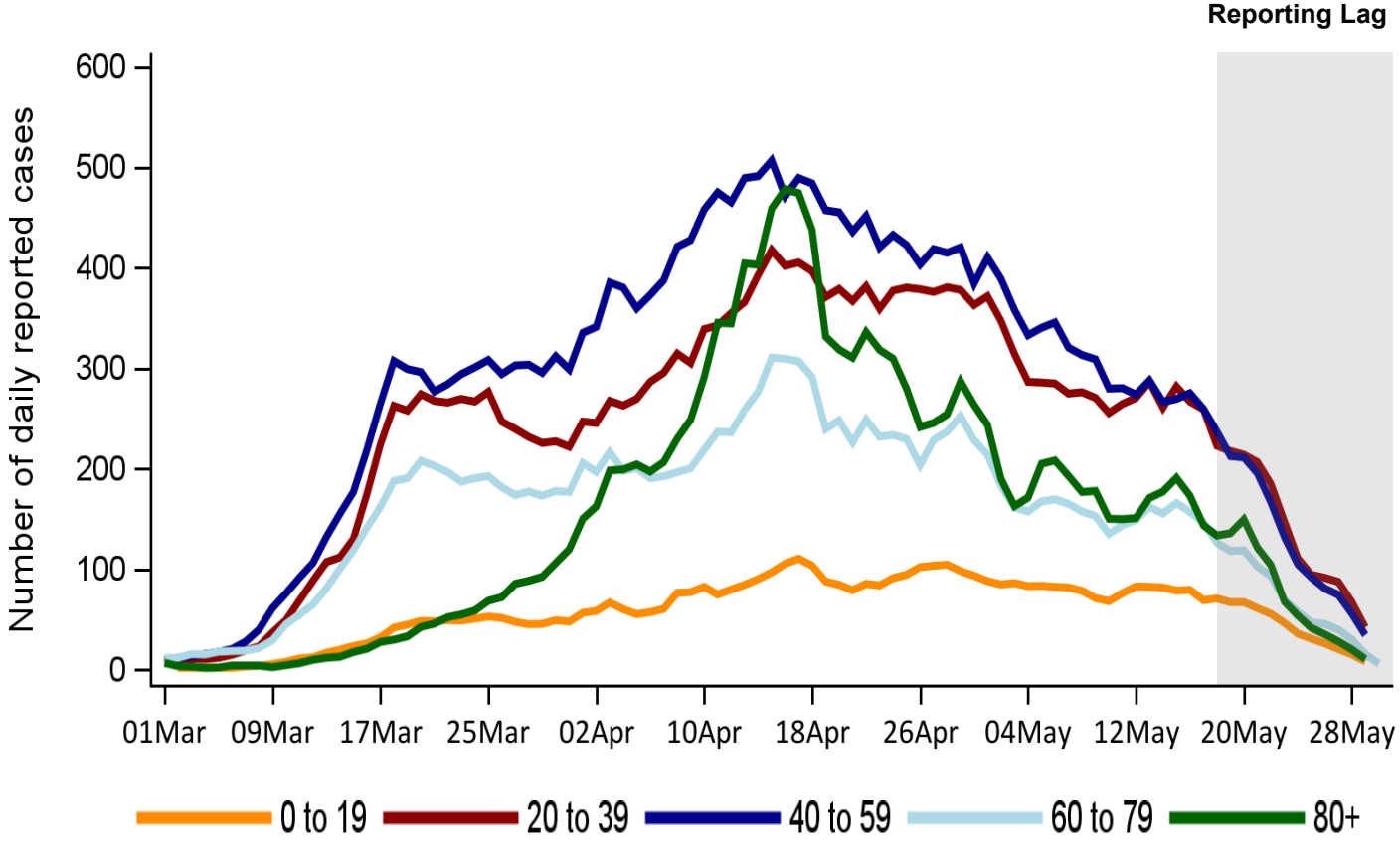
All age groups have been affected although the number of cases among children and youth has remained low.

Young and middle age adults account for the majority of cases early on and through to the present.

The sharp peak of cases aged 80 years and older is in large part due to outbreaks in long-term care homes in Quebec and Ontario.

Data as of June 3, 2020, 21:00

Number of cases by date of illness onset* and age group (N=85,328)



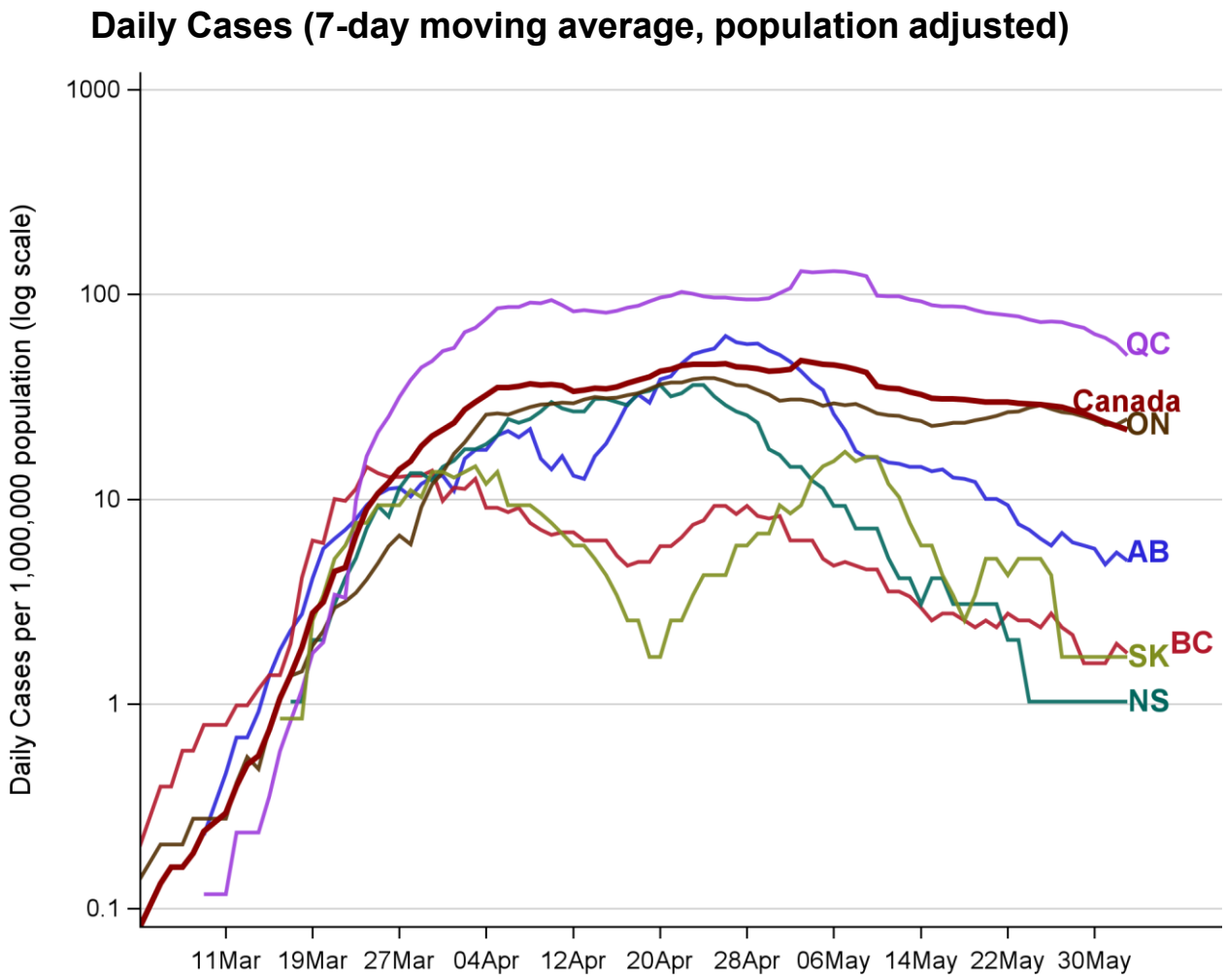
*If illness onset not available, the first available of specimen collection or laboratory test date was used.

National trends reflect a series of regional epidemics

Quebec and Ontario account for over 90% of the national case count over the past 14 days.

No community transmission in Prince Edward Island, the Northwest Territories or the Yukon.

There have been no cases reported to date in Nunavut.



Data as of June 3, 2020, 21:00

Source: Provincial and Territorial websites

Outbreaks point to vulnerabilities in congregate settings

Cases among residents of long-term care and seniors' homes represent 18% of cases and 82% of deaths country-wide.

Outbreaks in other congregate living and work settings are also 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.

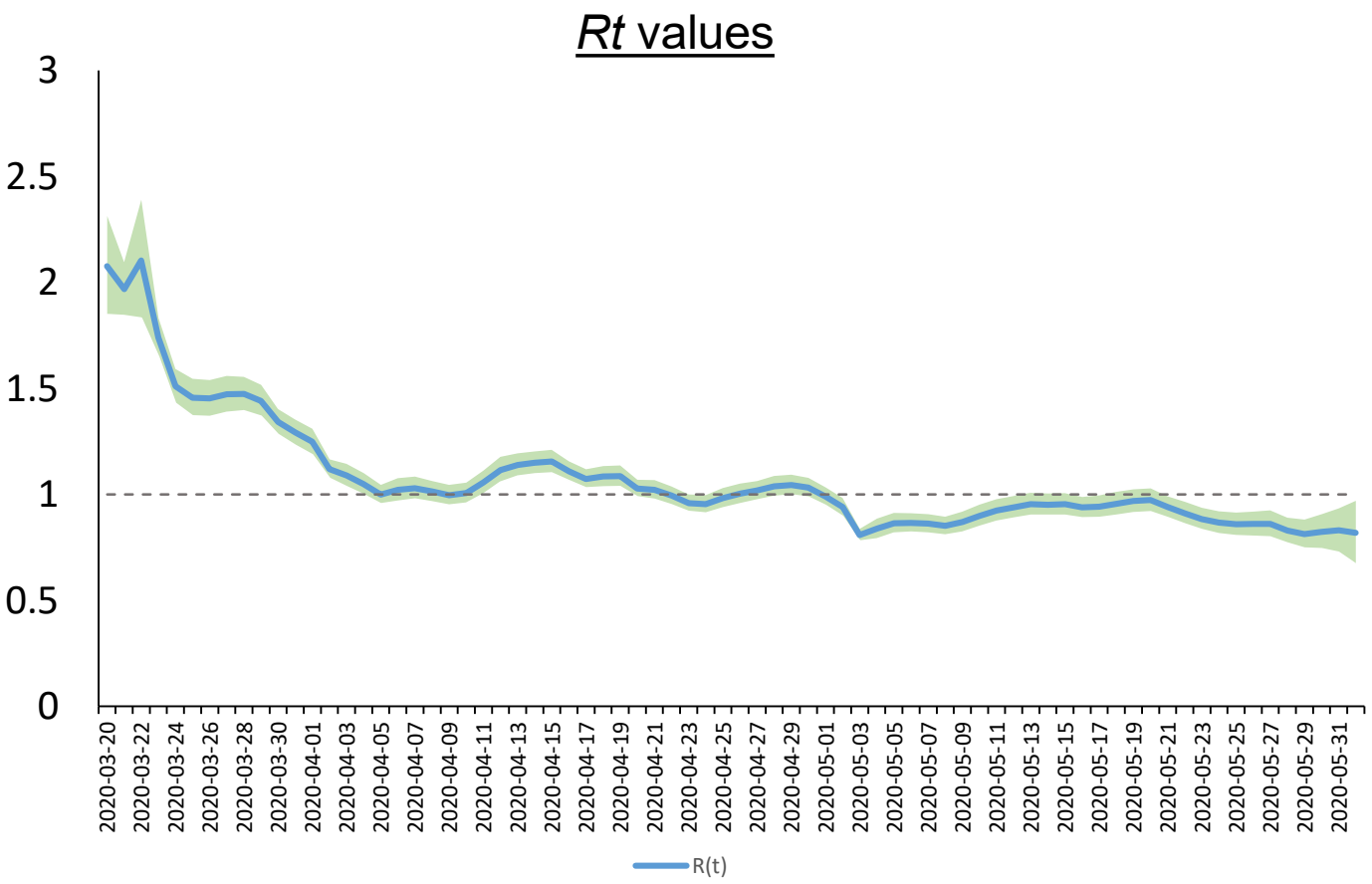
Movement of workers, whether between workplaces or across jurisdictions, has initiated new chains of transmission, for example:

- Health care workers working at more than one facility
- Outbreak in northern Saskatchewan linked to worker camp in Alberta

Outbreak Setting	Clusters (n)	Linked Cases (n)
Long-term care and seniors' homes	981	19,130
Hospital	120	>1,500
Correctional facilities	23	833
Meat and poultry plants	13	>3,000
Worker camp/congregate living for workers	13	>480
Shelters	>23	>400

*Estimates are based on public information sources and likely underestimate the true number of outbreaks and cases in these settings.

Canada's effective reproductive value (Rt) is trending close to 1



Based on data as of June 1, 2020

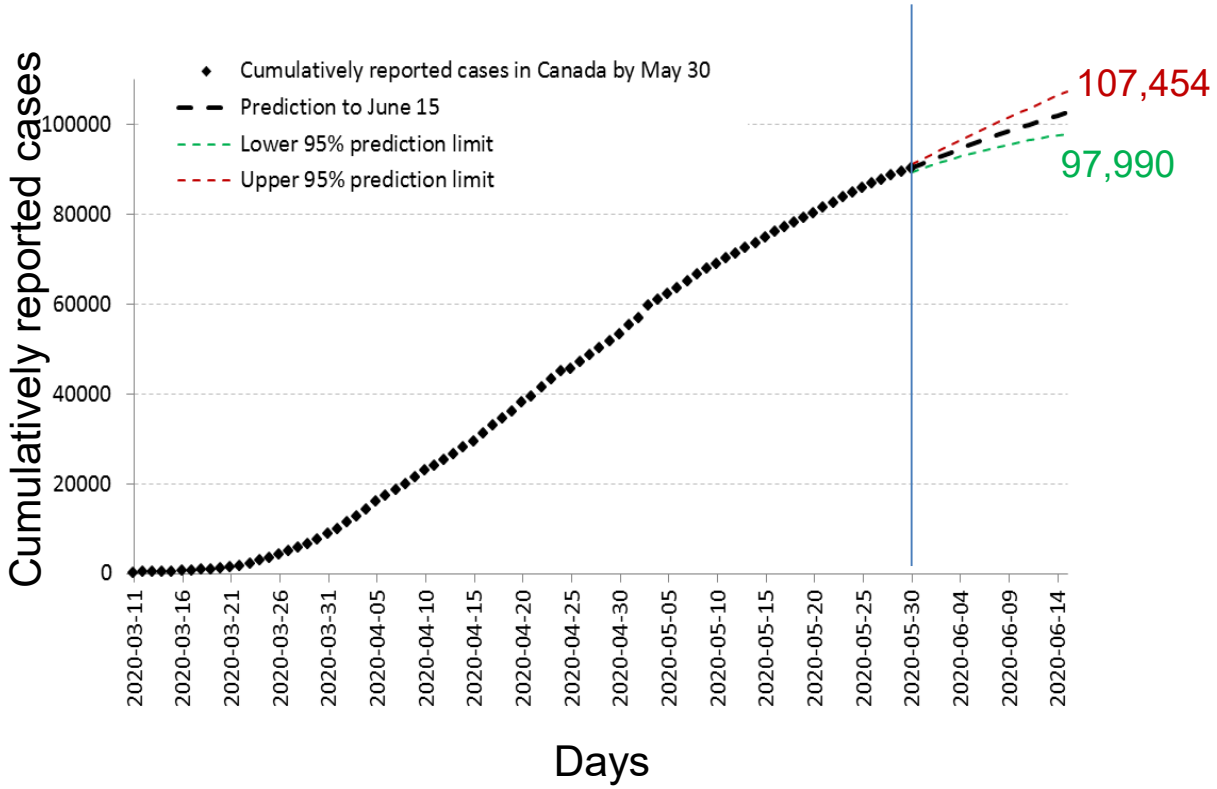
Rt is the time variable reproduction rate, representing the average number of new infected people for each infected person.

The graph shows how the *Rt* has remained below 1 for nearly 2 weeks suggesting public health measures are being effective in controlling the epidemic.

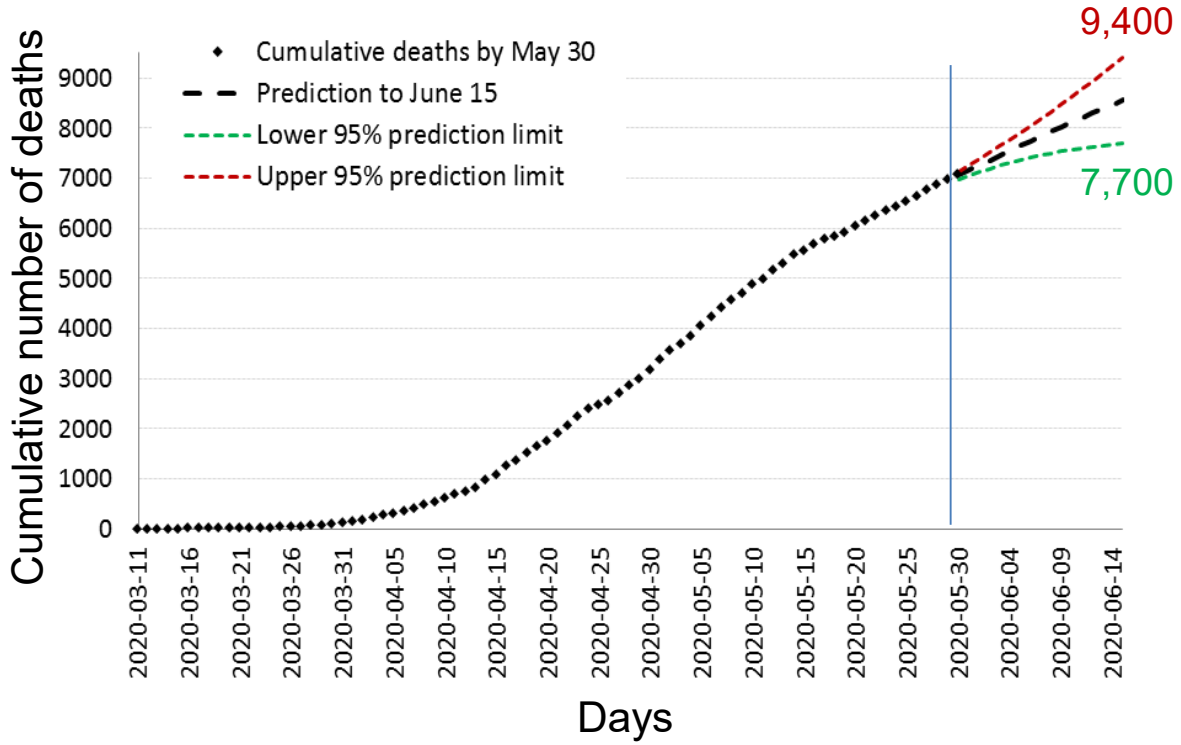
Fluctuations above and below 1 in the last month reflect ongoing transmission in some communities and settings across the country, especially in and around Canada's most populous cities, Toronto and Montreal.

Data driven models forecast short-term epidemic trajectory

97,990 to 107,454 cases by June 15



7,700 to 9,400 deaths by June 15



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

Modelling is a tool to explore different scenarios

A series of models were used to generate a number of scenarios including three key scenarios: ‘no control’, ‘weaker controls (delay and reduce the peak)’, and ‘stronger epidemic control’. This lets us estimate the range of the population infected and the potential duration of the epidemic.

Stronger epidemic control models include:

- A high degree of physical distancing
- A high proportion of cases identified and isolated
- A high proportion of contacts traced and quarantined

Weaker control models include:

- A low degree of physical distancing
- A low proportion of cases identified and isolated
- A low proportion of contacts traced and quarantined

Modelled scenarios show the impact of public health measures

Models help us identify which combinations of public health measures, applied with what intensity, are most likely to reinforce epidemic control.

Stronger epidemic control

- high degree of physical distancing
- high % of cases and their contacts traced and isolated or quarantined

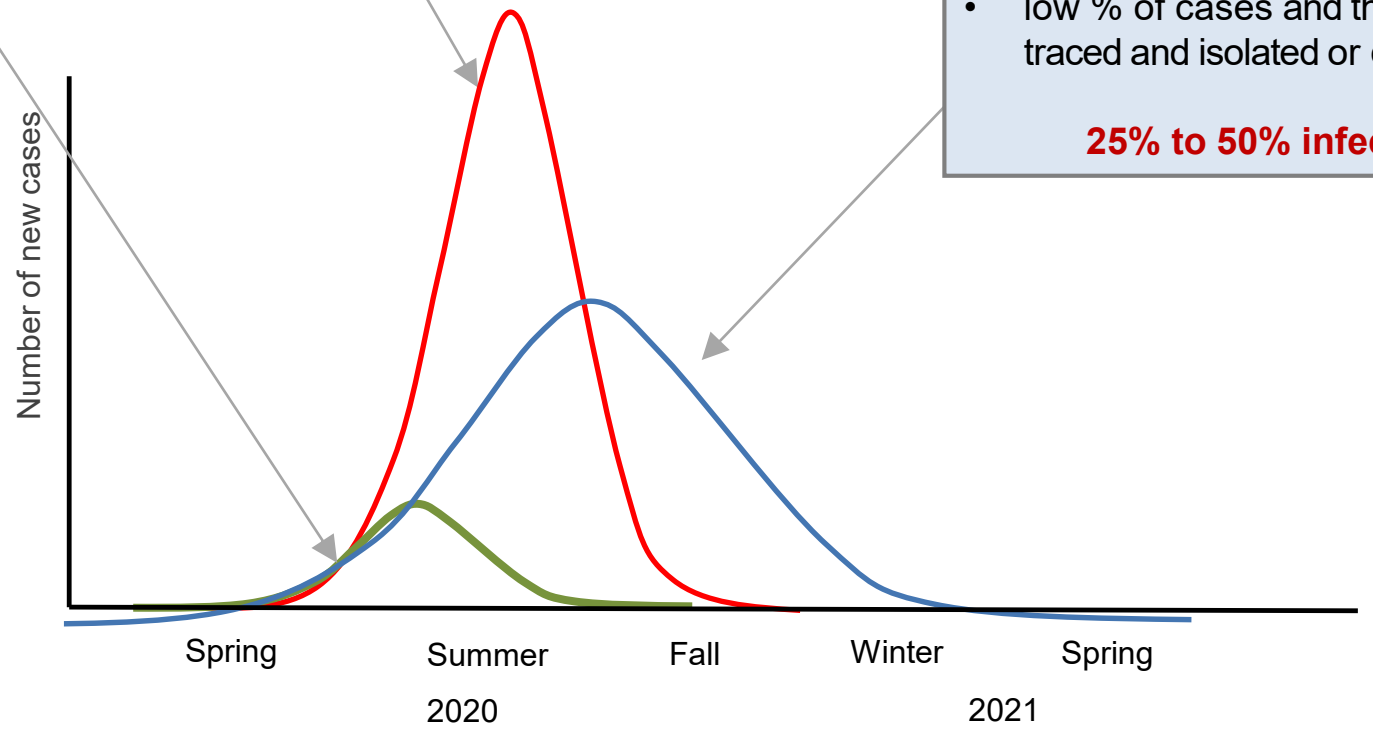
1% to 10% infected

No control effort
70% to 80% infected

Weaker controls (delay and reduce the peak)

- low degree of physical distancing
- low % of cases and their contacts traced and isolated or quarantined

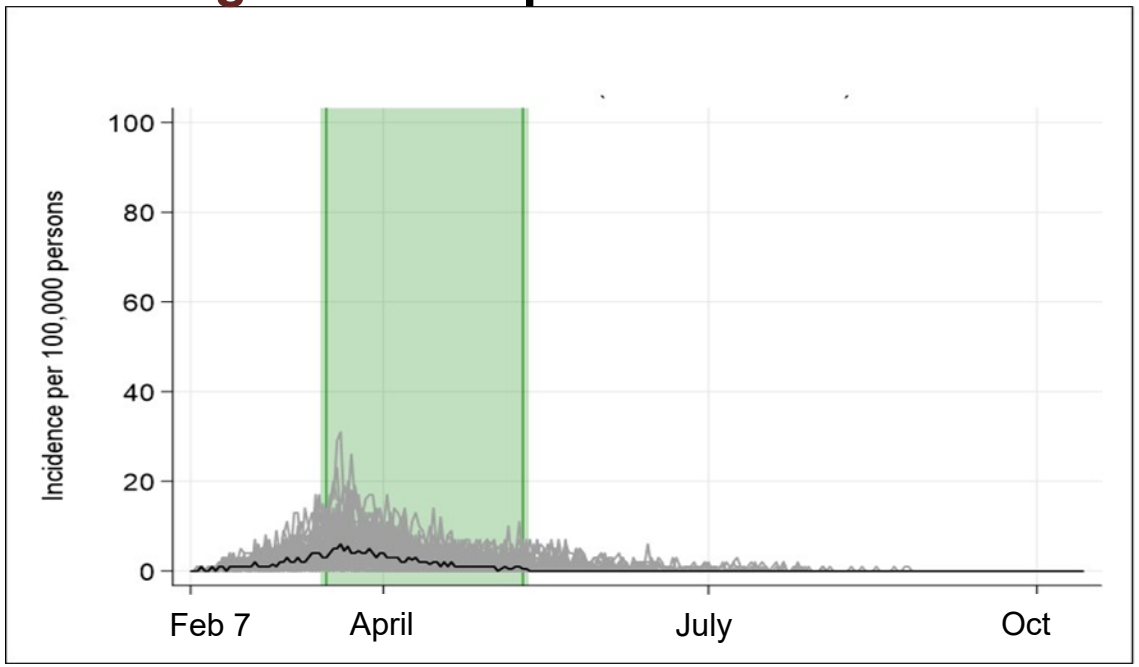
25% to 50% infected



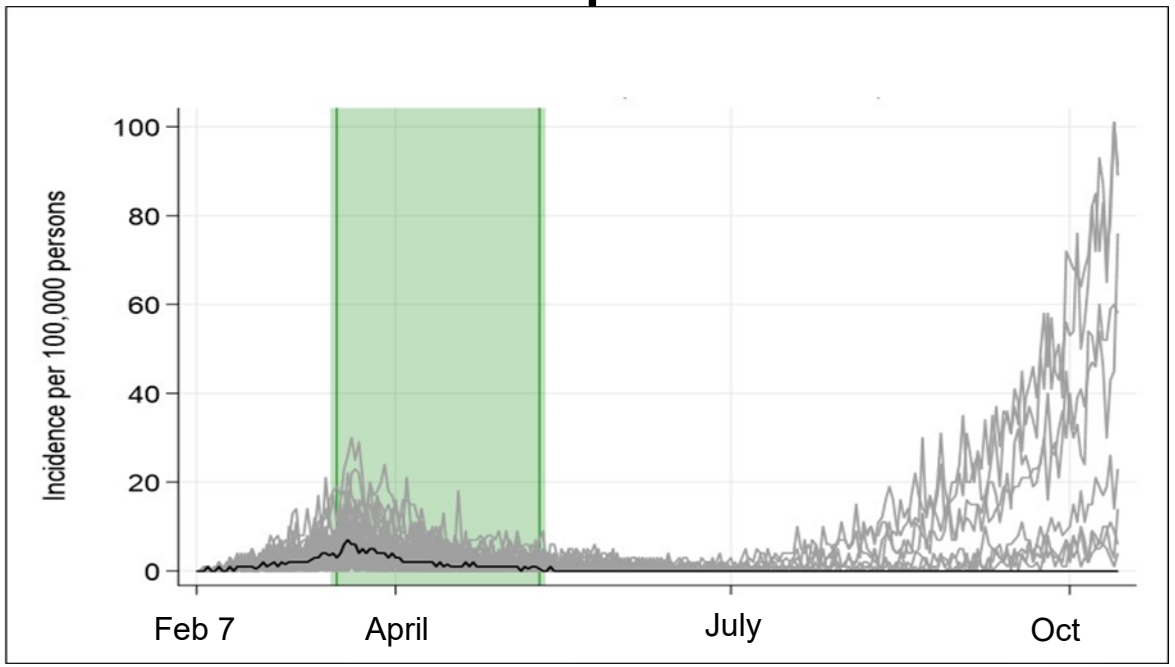
Core public health measures remain essential to control the epidemic

- Dynamic models show that when we lift restrictive population-based public health measures (e.g. business and school closures, stay at home requirements), we must strengthen other core public health measures to maintain epidemic control (e.g. personal physical distancing, detect and isolate cases, trace and quarantine contacts).
- Lifting population-based measures without strengthening other public health measures will likely cause the epidemic to rebound.

Ease population-based measures
Strengthen other public health measures



Ease population-based measures
Insufficient other public health measures

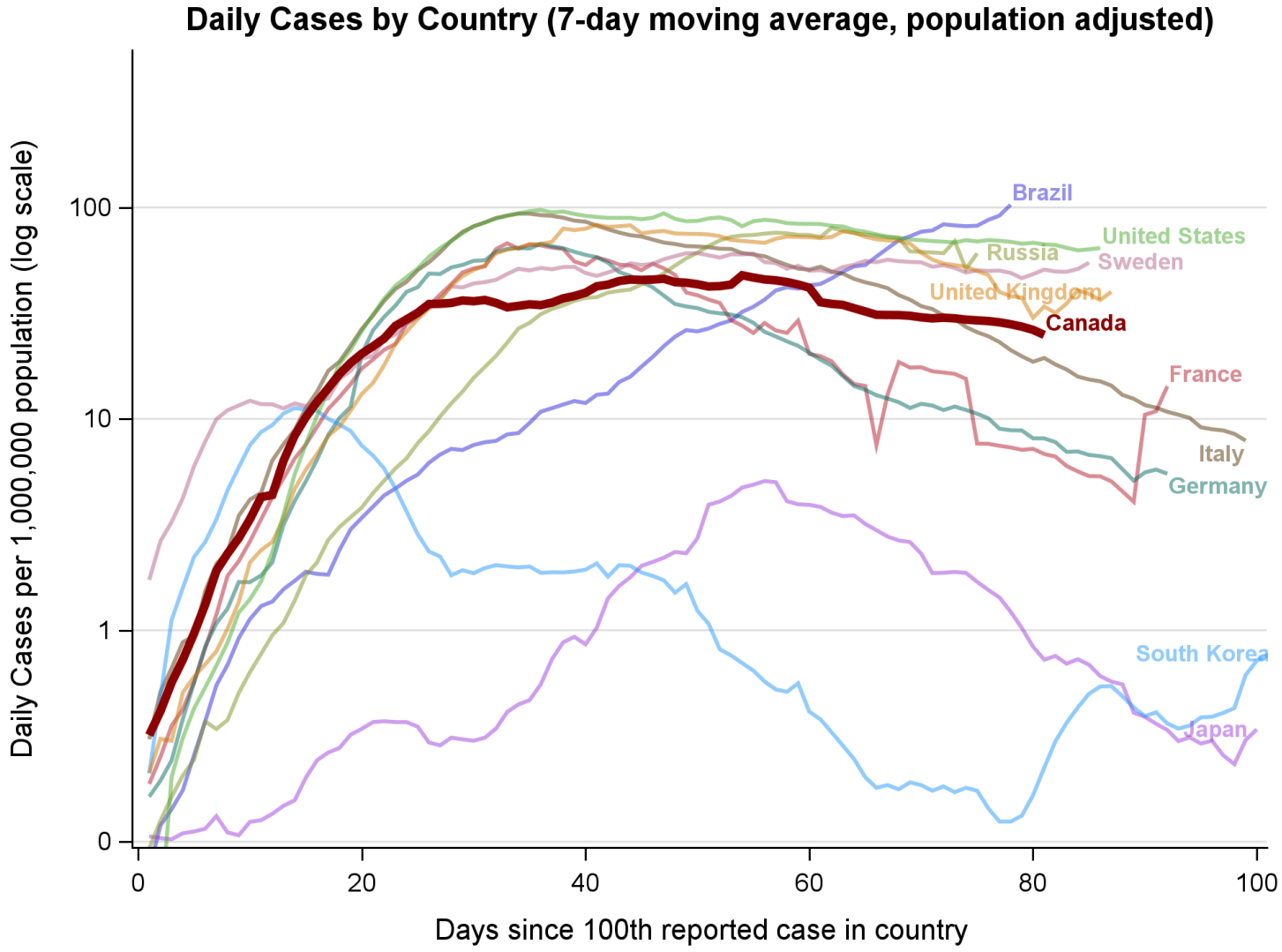


We are learning from the experience of the global community

Canada flattened the curve sooner than a number of countries such as the UK, Italy and US.

Other countries such as South Korea and Japan demonstrated strong epidemic control to keep their curves smaller overall.

All countries realise this is an ongoing effort, requiring sustained public health measures to avoid resurgent transmission.



Data as of May 31, 2020 21:00

Living with COVID-19 will require ongoing effort

Canada has made significant progress to bring the epidemic under control, thanks to the commitment of Canadians who are following public health advice to protect themselves and others.

Until there is a vaccine or effective treatment, we must carefully balance the risks associated with spread of COVID-19 with the unintended social and health consequences of restrictive public health measures.

Jurisdictions across the country are taking a gradual, phased approach to increasing social and economic activity with appropriate conditions and controls in place to minimise serious illness, death and burden on the health care system. Priority areas include:

- Rapidly identify and isolate cases, trace and quarantine contacts
- Continue to increase health care and public health capacity
- Provide high degree of protection for vulnerable populations and settings including supporting workplaces
- Engage communities to practice core personal public health measures

Additional information

APPENDIX

Monitoring COVID-19: Reproduction number (*Rt*)

- *Rt* is the time variable reproduction rate, representing the average number of new infected people for each infected person
  - If *Rt* is > 1 the epidemic is not coming under control
  - If *Rt* is < 1 the epidemic might be controlled, but it might be just starting to come under control
  - *Rt* does not say where you are on the curve

- Care should be taken when interpreting *Rt* values.
  - *Rt* can dip below 1 transiently when the epidemic is not controlled due to variation in surveillance data
  - *Rt* can also transiently go over 1 when the epidemic is controlled if there is a new outbreak that is rapidly brought under control

- Reported cases are up to 2 weeks behind what is actually happening in transmission
  - Given this, *Rt* < 1 is required for more than 3 weeks to be sure public health measures are controlling the epidemic