COVID-19: Going Forward

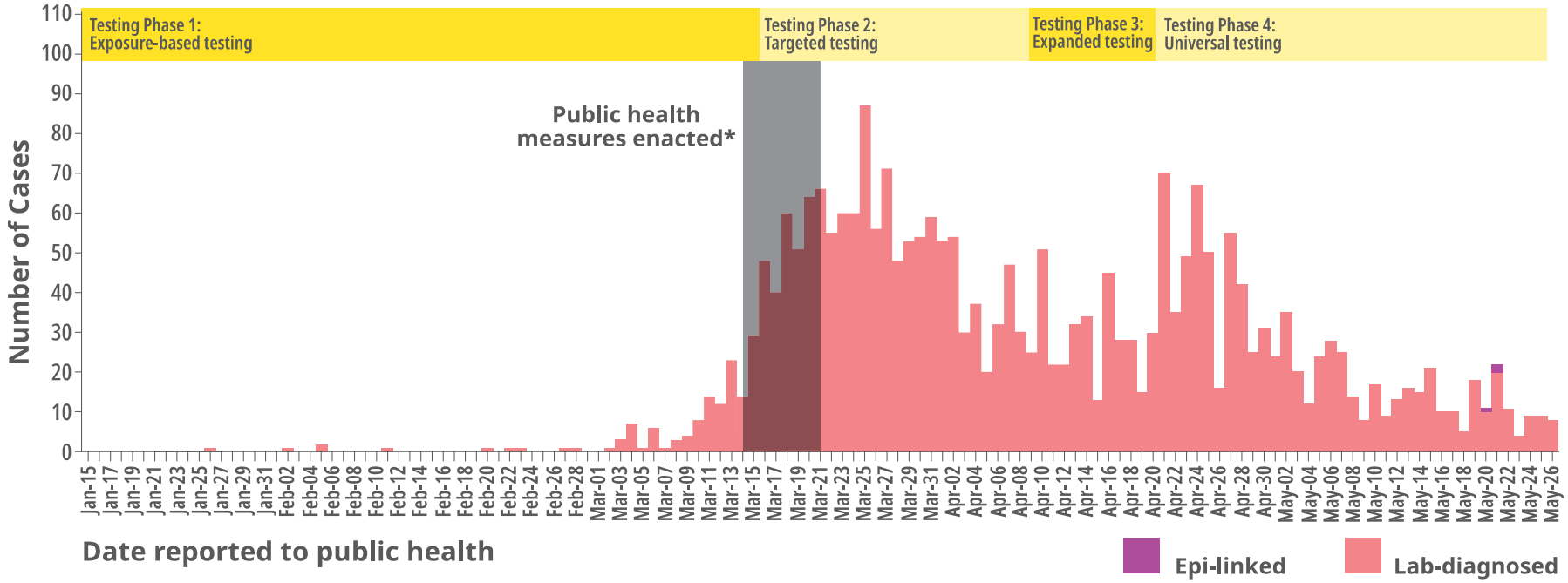
- Prepared for BC Ministry of Health
- June 4, 2020

BRITISH COLUMBIA

Epidemiology

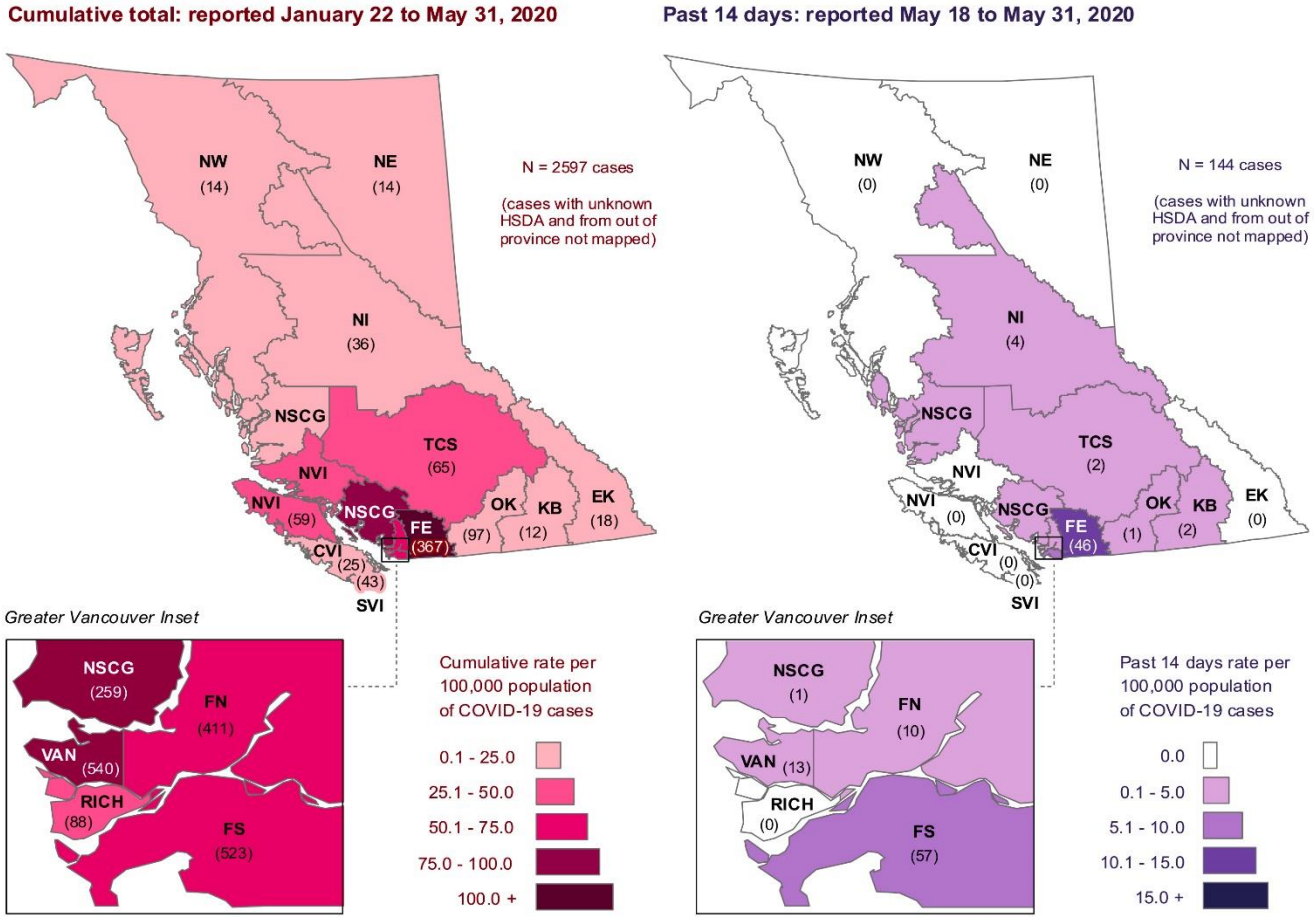
How and Where the Virus Has Affected People in BC

Epidemic Curve: Confirmed COVID-19 cases in BC by reported date January 1 and May 27, 2020 (N=2553).

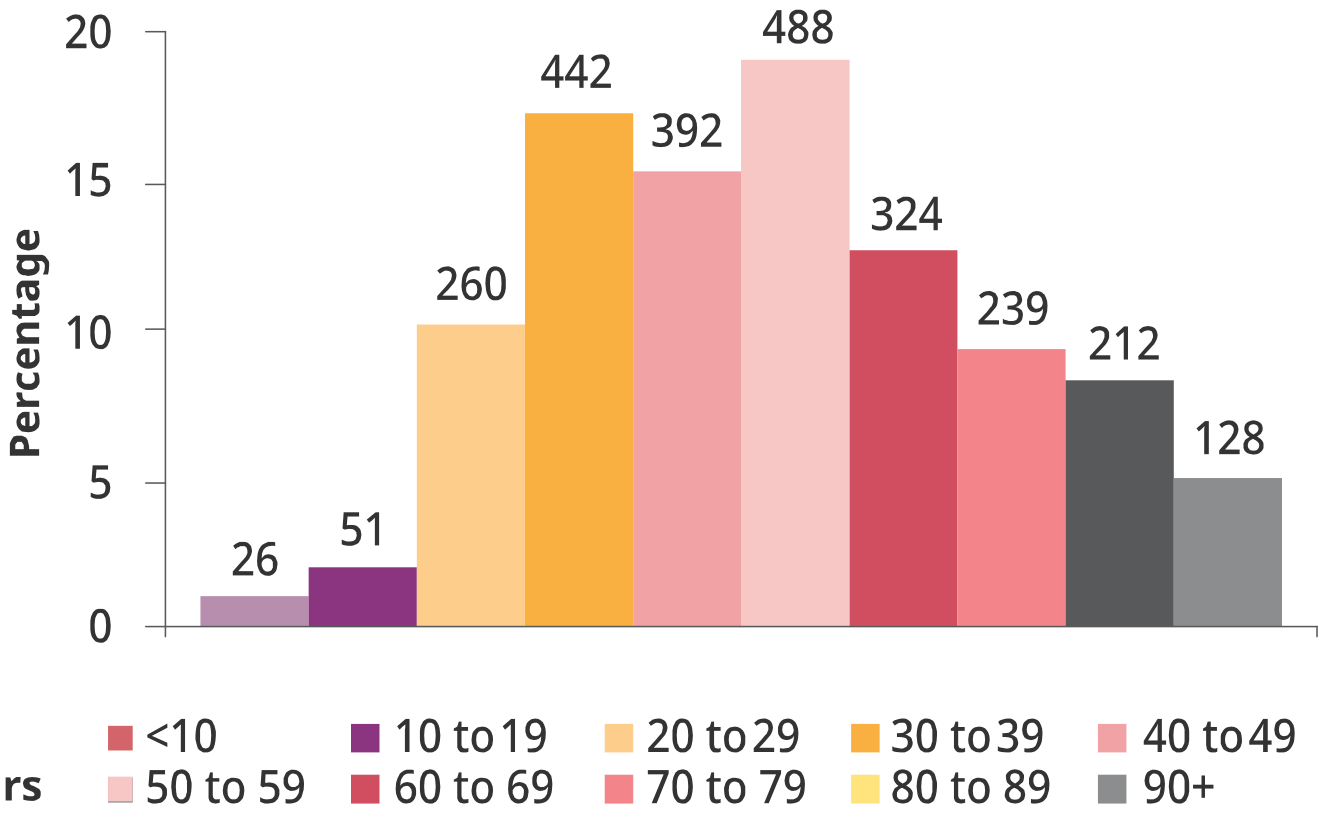


Cases reported on the same day as this report are excluded as only a portion are available at the time the data are extracted. The number of cases reported by day differs from that in Table 1 in previous reports as this figure reflects the date the case was lab-confirmed and reported to the Health Authority.

Confirmed COVID-19 Cases in BC by Health Service Delivery Area

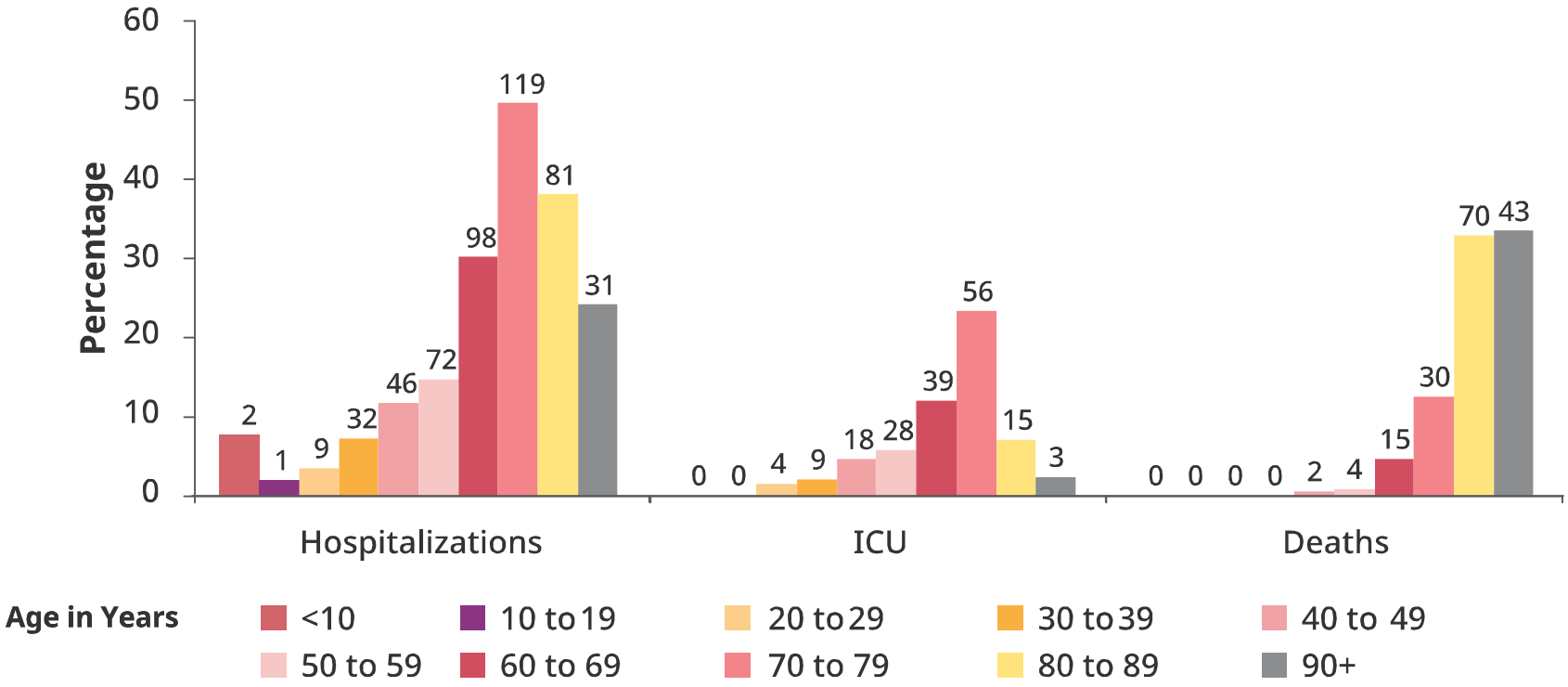


COVID-19 Cases by Age (Total N=2,562)

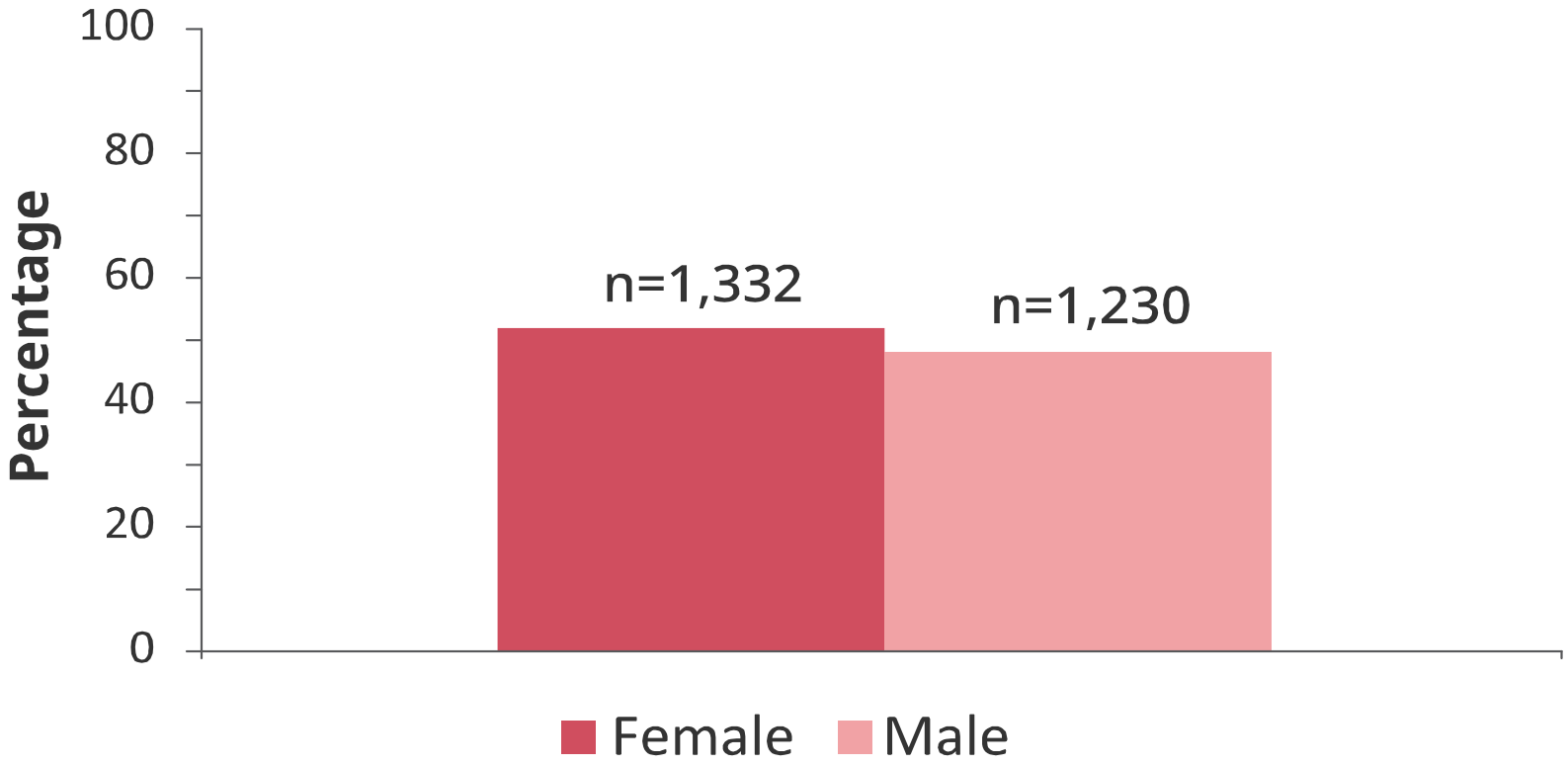


Numbers on bars represent number of cases by age group.

Percentage of COVID-19 hospitalizations, ICU admissions and deaths by age in BC January 1 – May 29, 2020 (N=2,562).



COVID-19 Cases by Sex



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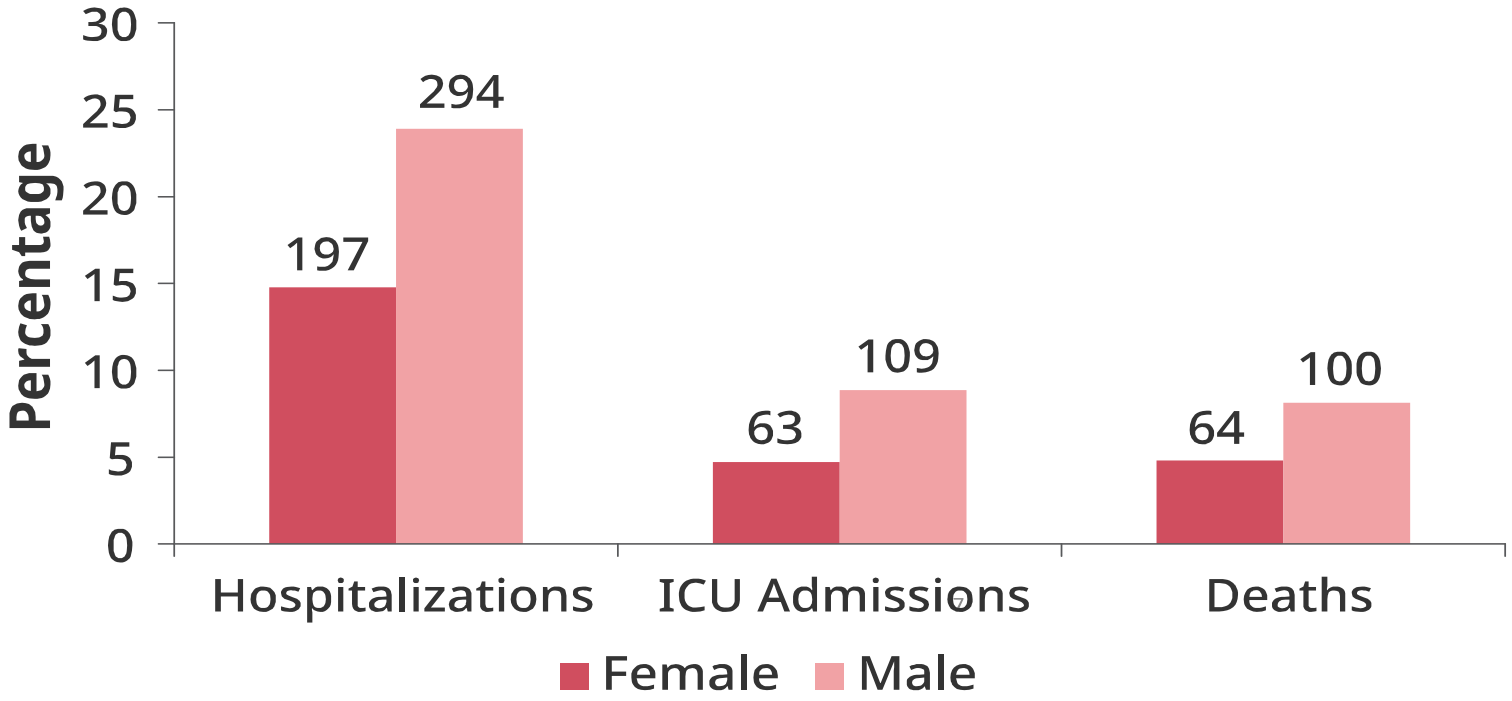
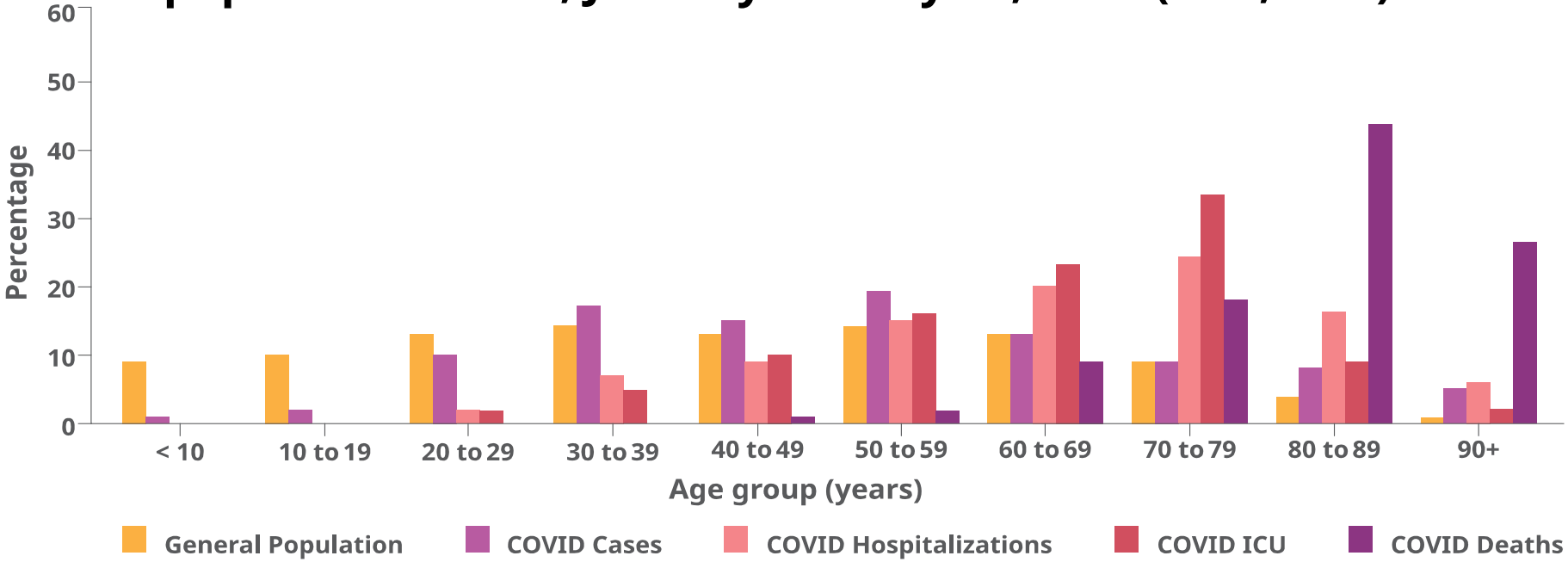


Percentage distribution of COVID-19 cases, hospitalization, ICU admissions and deaths by age, compared to the general population† of BC, January 1 – May 29, 2020 (N=2,562*).



**Includes 2,562 cases, 491 hospitalizations, 172 ICU admissions, and 164 deceased with age information available. † PEOPLE2019-2020 population estimates.*
Note: COVID hospitalizations have been reported in the <10y and 10-19y age groups but represent <1% of hospitalizations and are therefore not visible.

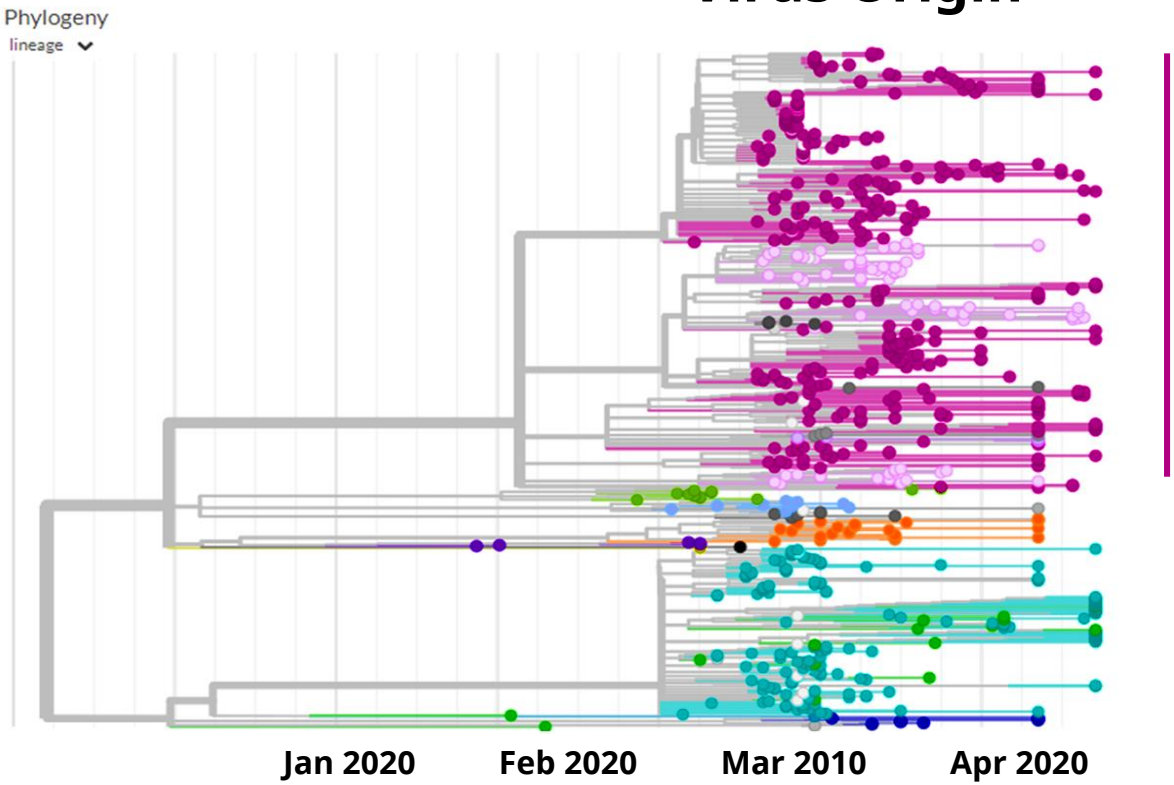
COVID-19 Public Health Investigations Over Time

Before March 15th	After March 15th	Total
1,257	11,085	12,342
1,150 contacts traced	8,665 contacts traced	9,815 contacts traced
10.7 contacts per case	3.6 contacts per case	1/3 contacts per case before March 15th
99.3% contacts reached	98.0% contacts reached	High % of contacts reached both before and after March 15th
2.0% became secondary cases	7.4% became secondary cases	3x higher proportion of secondary cases after March 15th

1 day from case notification to contact tracing

1 day from contact tracing to contact notification

Genomic Epidemiology: Virus Origin



B.1 European-like & Eastern Canada

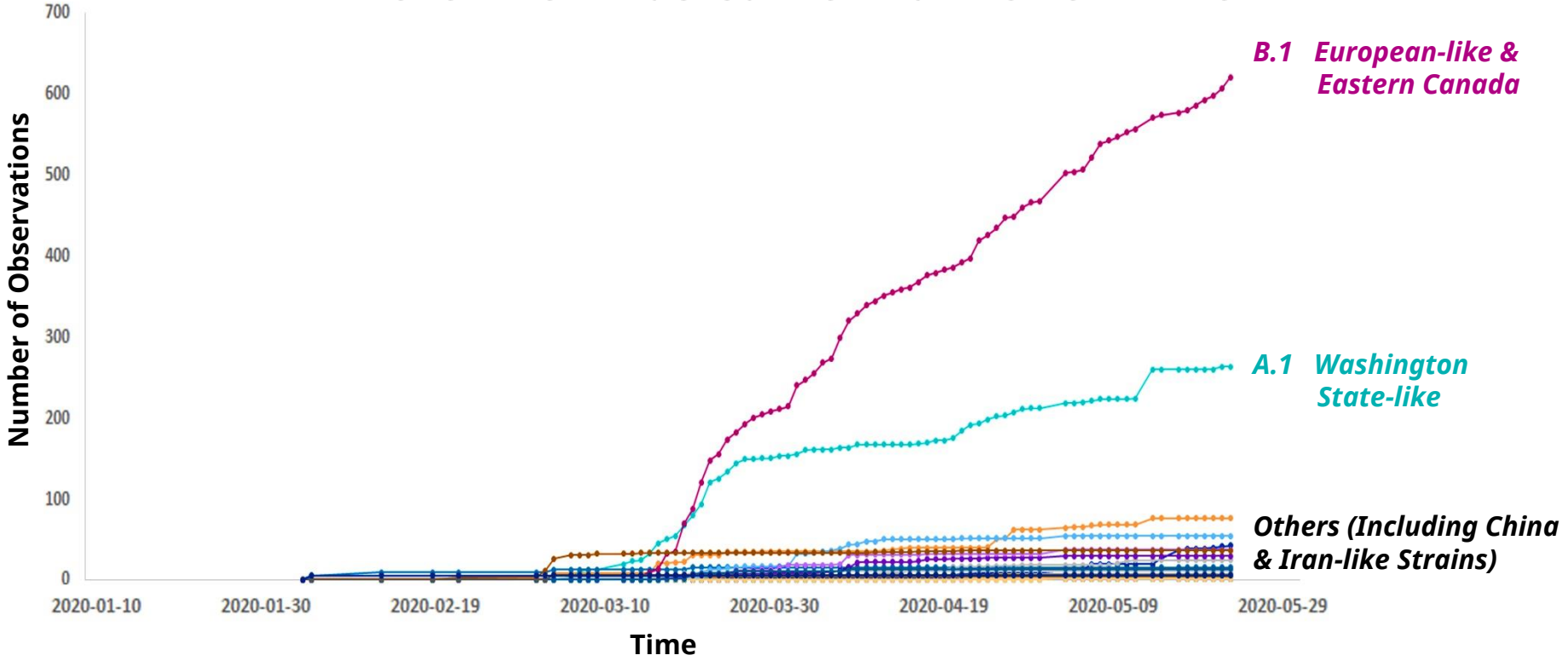
B.4 Via Iran

B.3 Mainly China

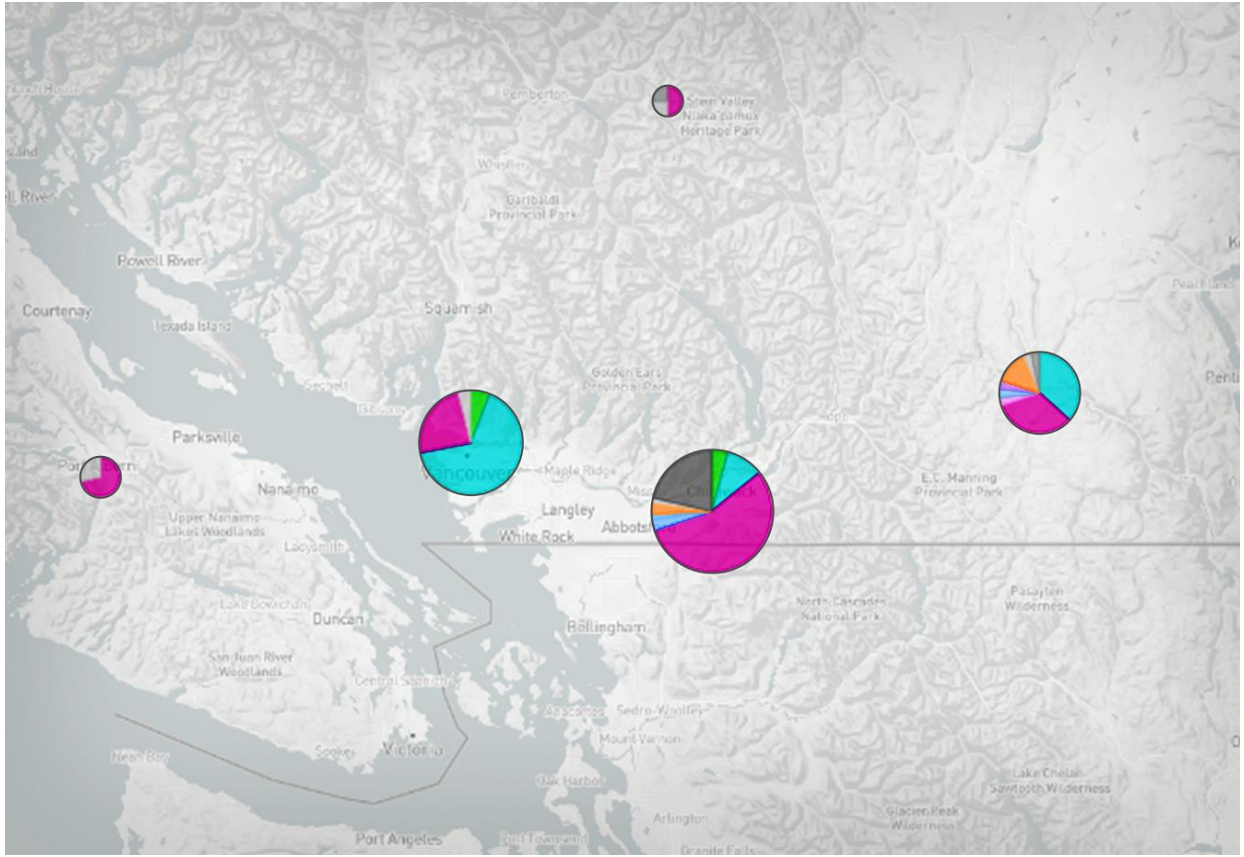
A.1 Washington State-like

B.3 Mainly China

Temporal Distribution of Virus Lineages: Where The Virus Came From Over Time



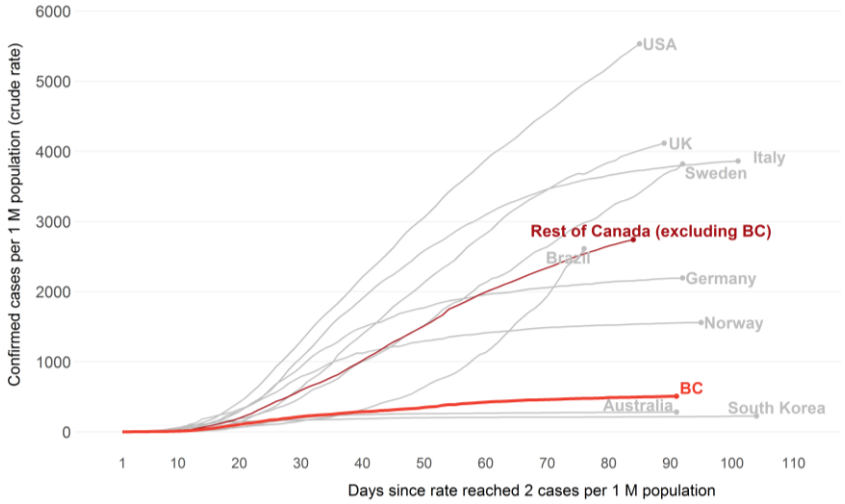
Geographic Distribution of Virus Lineages



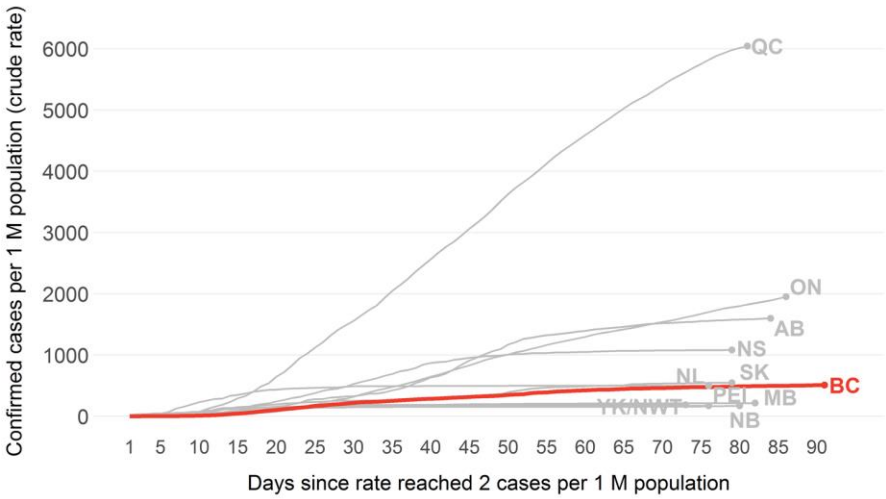
- *B.1 European-like/ Eastern Canada*
- *A.1 Washington State-like*
- *B.3 China-like*
- *B.4 Iran-like*
- *B.3 Others*

Case Rate Comparison

International Case Rates Comparison:
Cumulative diagnosed COVID-19 case rates by select countries vs BC and rest of Canada.



National Case Rates Comparison:
Cumulative diagnosed COVID-19 case rates by Canadian provinces.



Note: QC, and, to a lesser extent, ON, account for most of the deaths count for the Rest of Canada.

Death Rate Comparison

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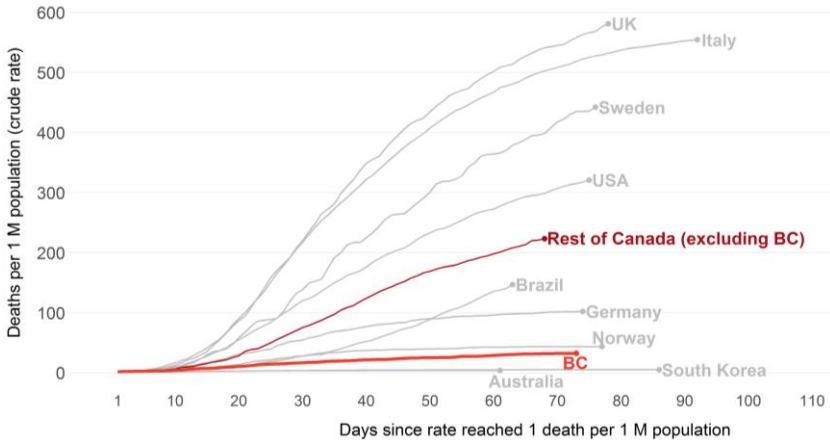

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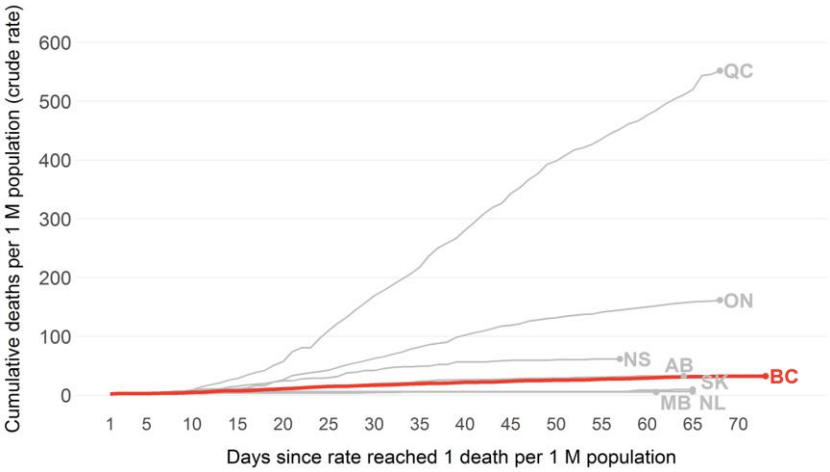

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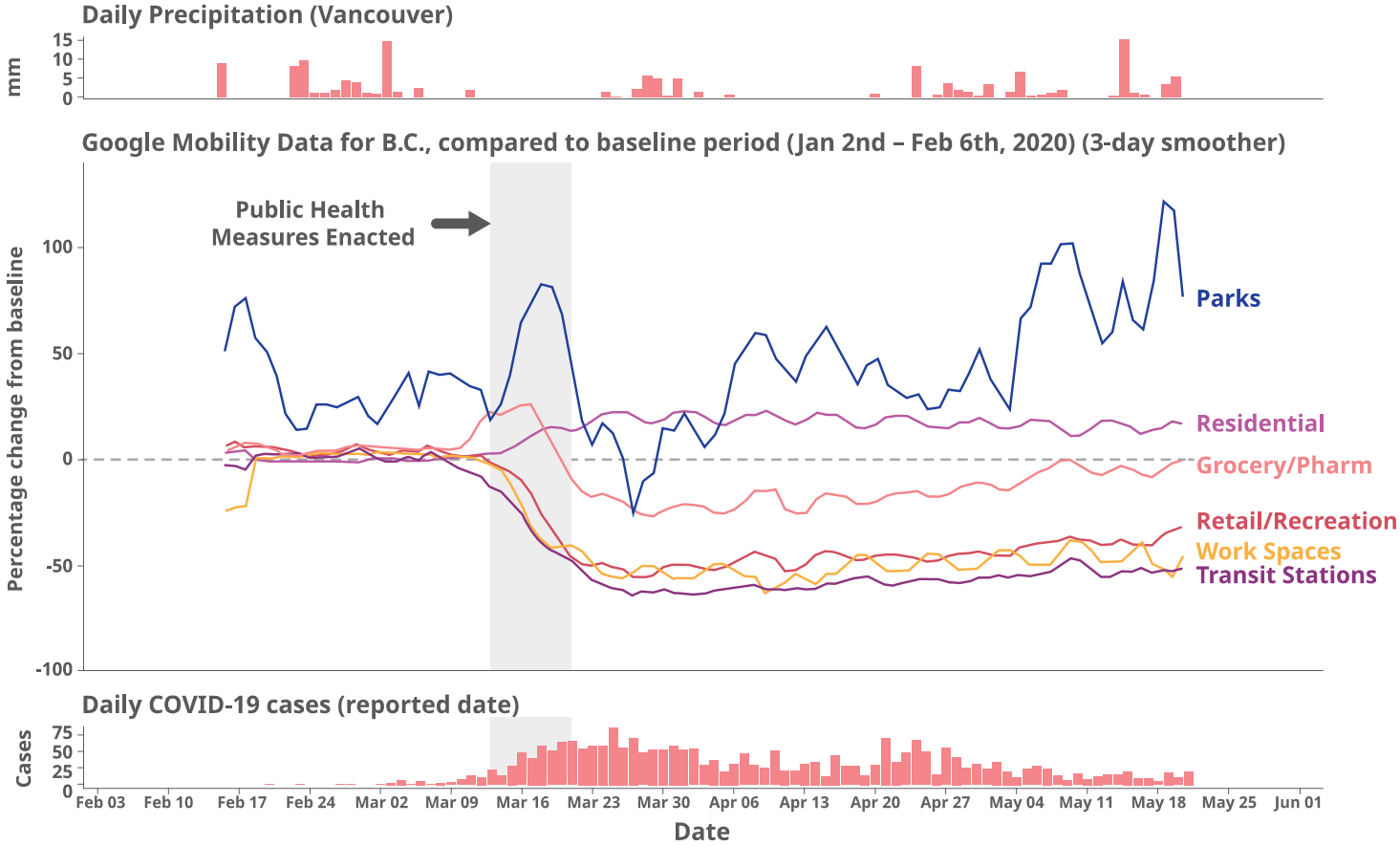
Modelling Analyses to Date

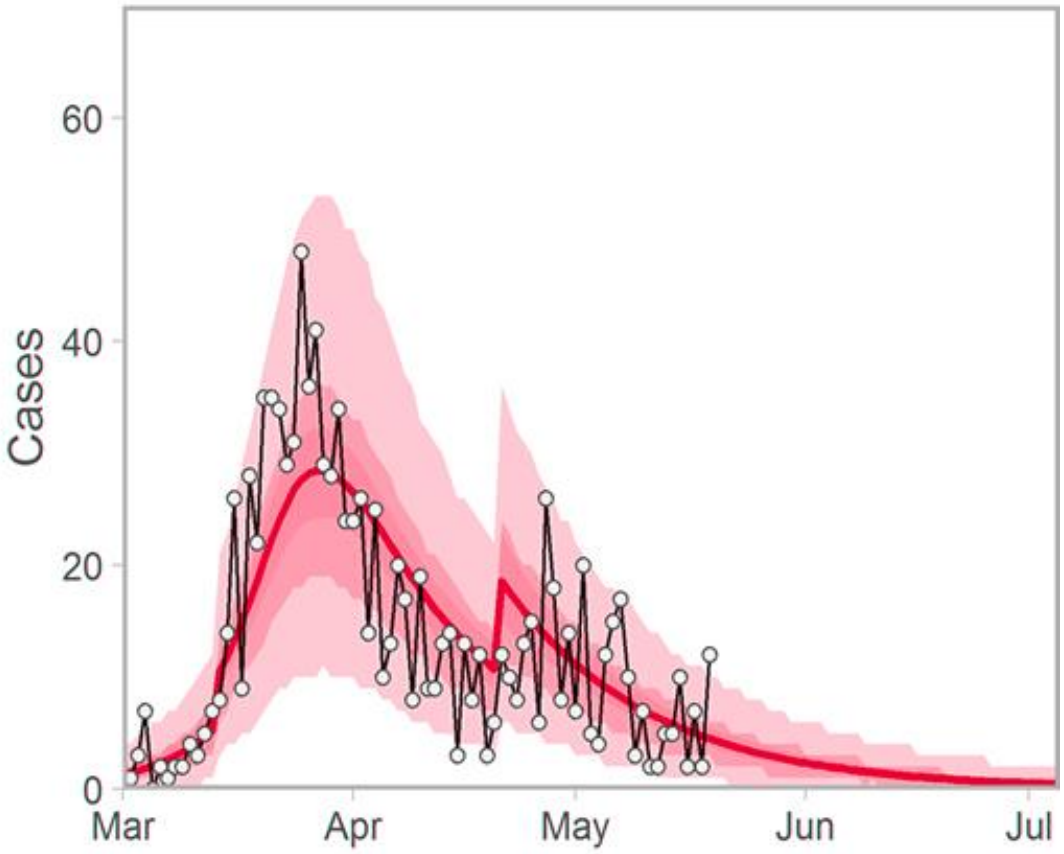
Keeping the Curve Flat

British Columbians' Mobility



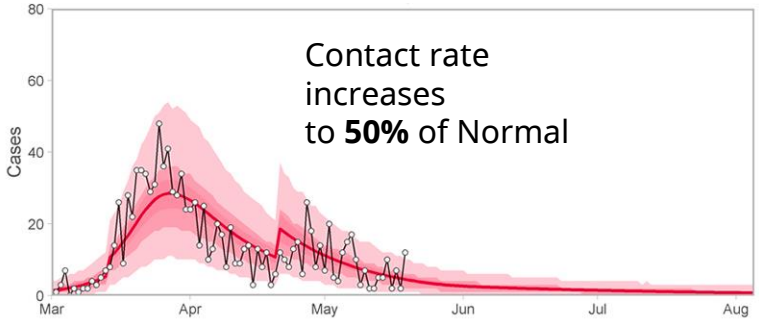
Dynamic Compartmental Modelling

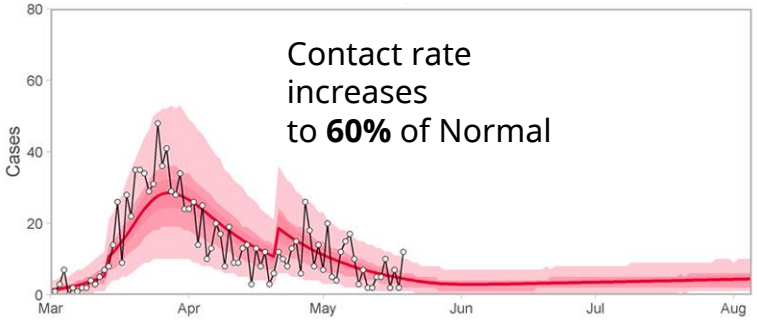
Our model suggests continued declines in transmission, resulting from ongoing physical distancing.

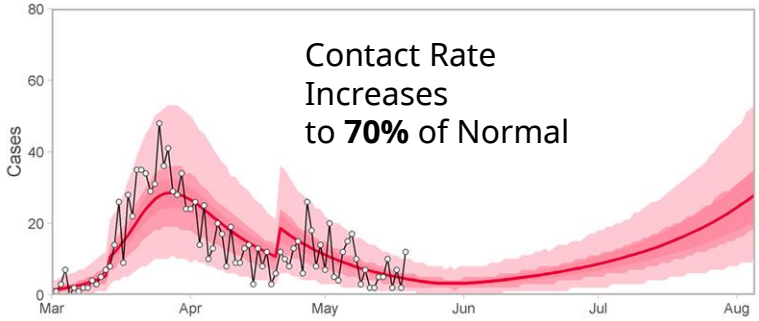


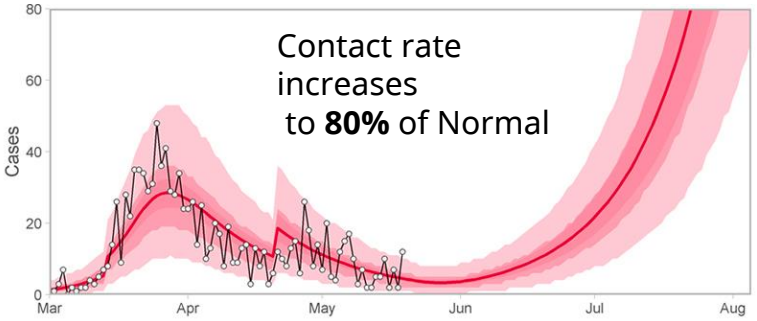
Solid line: mean; shaded bands: 50% and 90% credible intervals; Open circles: reported cases. Cases used for model fitting exclude those attributed to outbreak clusters.

Dynamic Compartmental Modelling: If too much relaxation of distancing occurs, it may result in a rapid rebound in transmission.

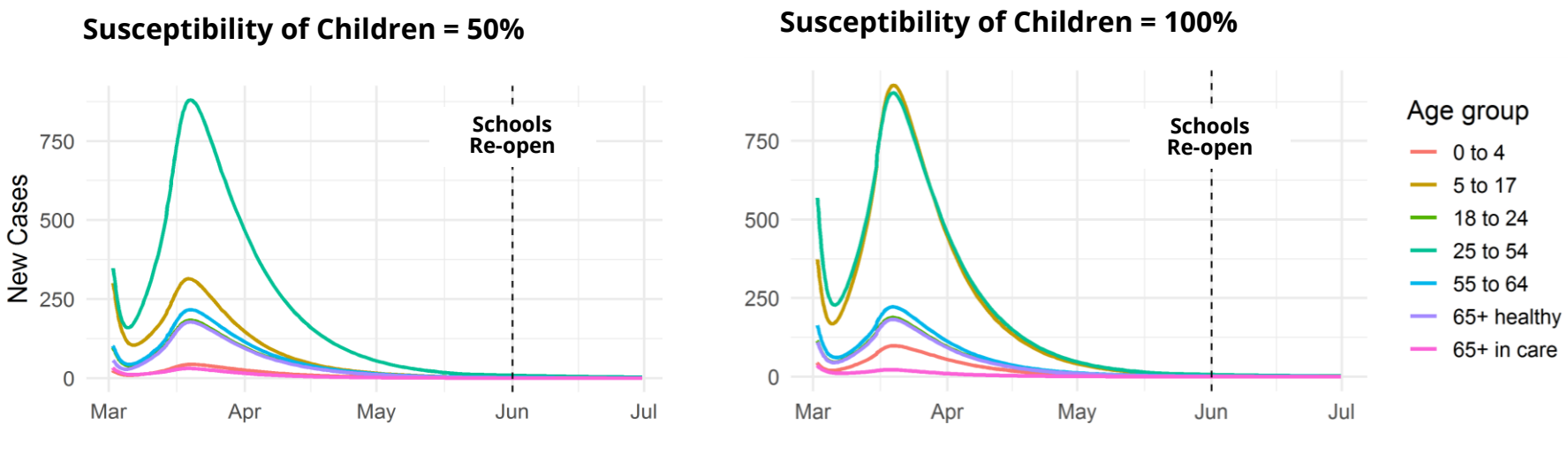






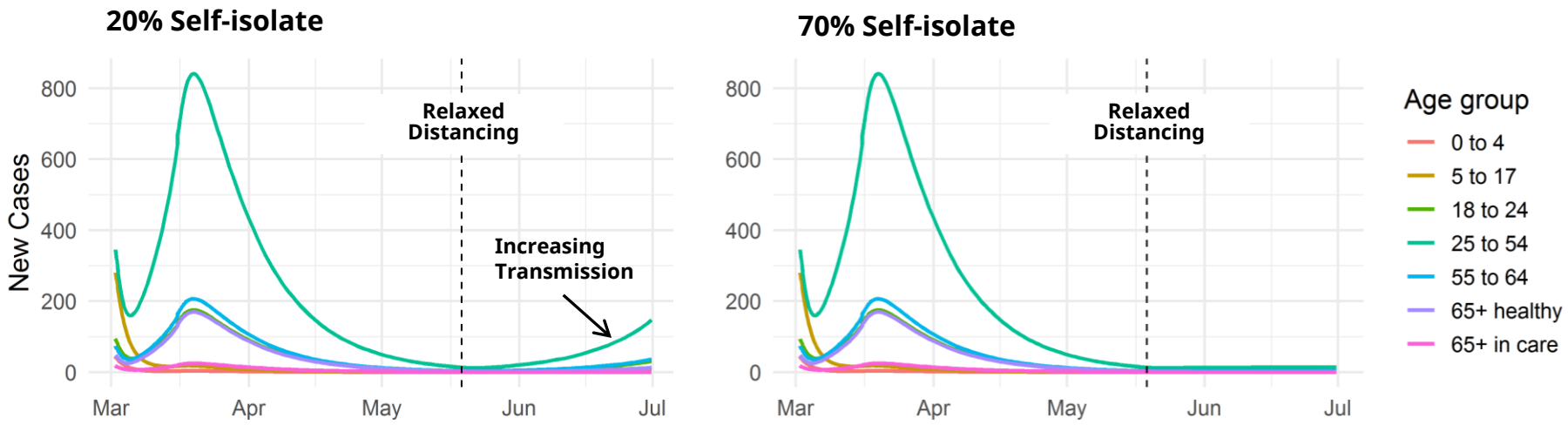


Age Structured Modelling: The susceptibility of children to infection (50% vs 100% compared to adults).



Partial re-opening of schools in June have minimal impact on transmission in the short-term, provided vulnerable adults maintain physical distancing.

Age Structured Modelling: Self-isolation (20% vs 70%).



As schools re-open and distancing measures relax, self-isolation by sick individuals can prevent renewed epidemic growth of cases.

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