

COVID-19: One Year of the Pandemic in BC

March 11, 2021



Stay Informed Via These Resources:

gov.bc.ca/Covid-19 | bccdc.ca | 1-888-COVID19

Symptom Self-Assessment:

covid19.thrive.health

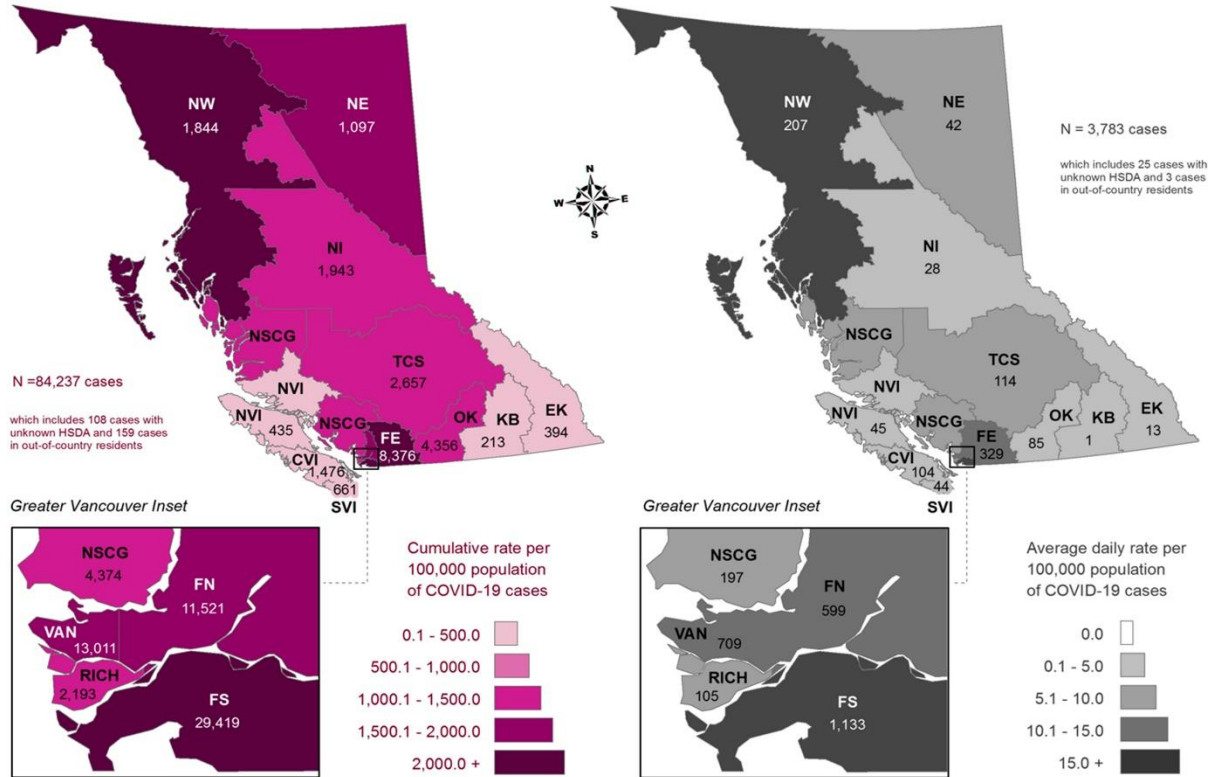


**BRITISH
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Geographic Distribution of COVID-19 by Health Service Delivery Area of Case Residence

Cumulative total: cases reported Jan 1, 2020 to Mar 6, 2021

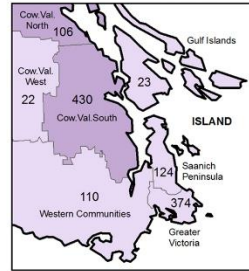
Past 7 days: cases reported February 28 to March 6, 2021



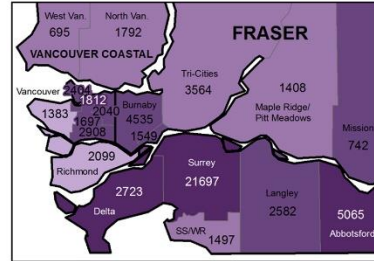
Notes: Cases are mapped by location of residence; cases with unknown residence and from out-of-country are not mapped. Data source: the 5 regional health authorities of British Columbia; we operate in a live database environment and case information from the health authorities are updated as it becomes available. Data may not be directly comparable to published counts from previous maps and reports. How to interpret the maps: The map on the left (blue) illustrates the geographic distribution of all reported cases from January 1, 2020 onwards. The map on the right (brown) illustrates the reported cases during the past 7 days. Health Service Delivery Areas (HSDA) with higher rates per 100,000 population are illustrated in darker colour shading. The number of reported cases appears under each HSDA label. Note that not all COVID-19 infected individuals are tested and reported; the virus may be circulating undetected in the community, including in areas where no cases have been identified by public health. Map created March 10, 2021 by BCCDC for public release.

Geographic Distribution of COVID-19 by Local Health Area of Case Residence Jan 2020 – Feb 2021

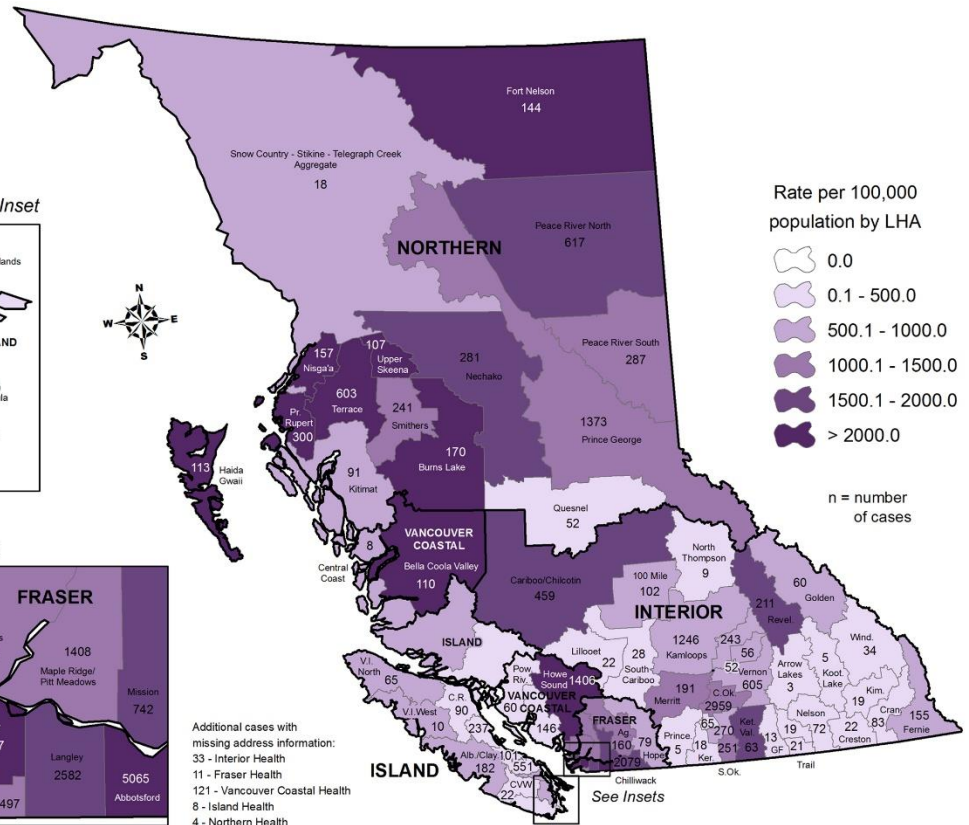
South Vancouver Island Inset



Greater Vancouver Inset



Additional cases with missing address information:
 33 - Interior Health
 11 - Fraser Health
 121 - Vancouver Coastal Health
 8 - Island Health
 4 - Northern Health



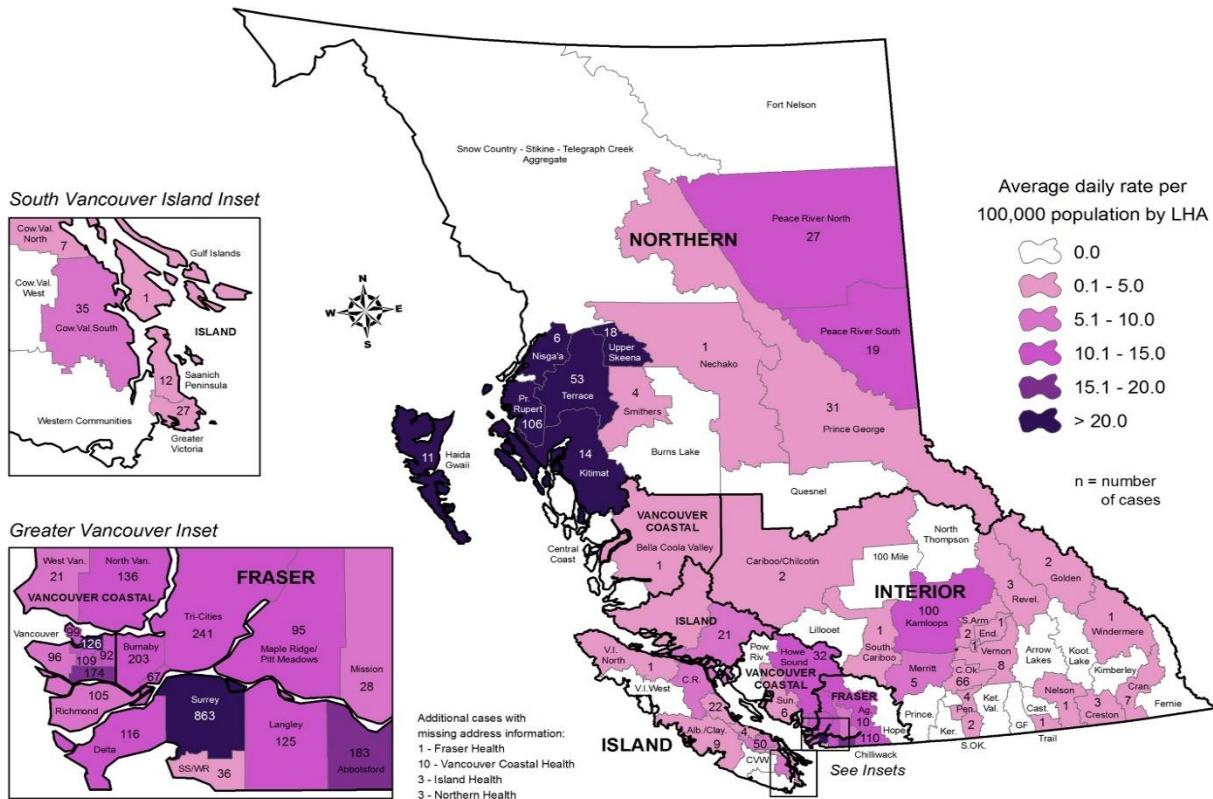
Rate per 100,000 population by LHA

- 0.0
- 0.1 - 500.0
- 500.1 - 1000.0
- 1000.1 - 1500.0
- 1500.1 - 2000.0
- > 2000.0

n = number of cases

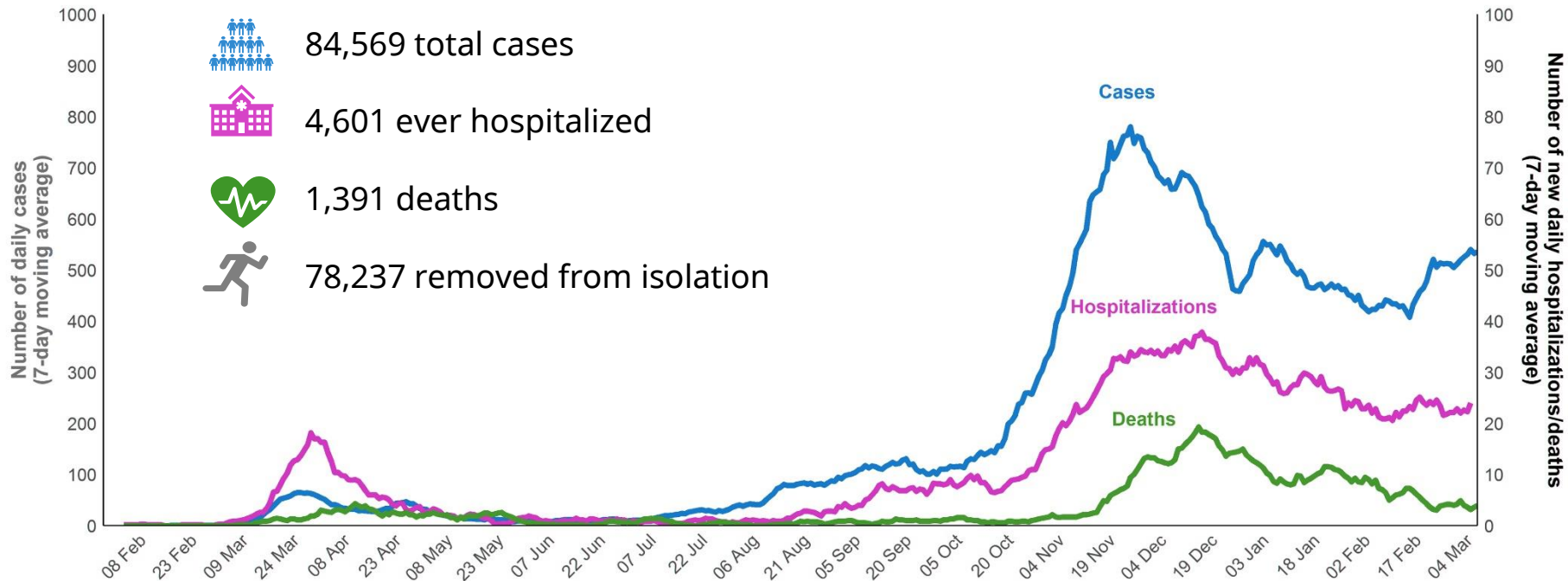
Notes: Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data source: the 5 regional health authorities of British Columbia; we operate in a live database environment and case information from the health authorities are updated as it becomes available. How to interpret the maps: The map illustrates the geographic distribution of reported cases from January 1, 2020 to February 28, 2021. Local Health Areas (LHA) with higher rates are illustrated in darker colour shading. The number of reported cases appears in each LHA. Note that the number of cases in the LHA may not represent the location of exposure (e.g. people who acquired disease while traveling or working elsewhere), and that not all COVID-19 infected individuals are tested and reported; the virus may be circulating undetected in the community, including in areas where no cases have been identified by public health. Map created March 3, 2021 by BCCDC for public release.

Geographic Distribution of COVID-19 by Local Health Area of Case Residence in Past 7 Days

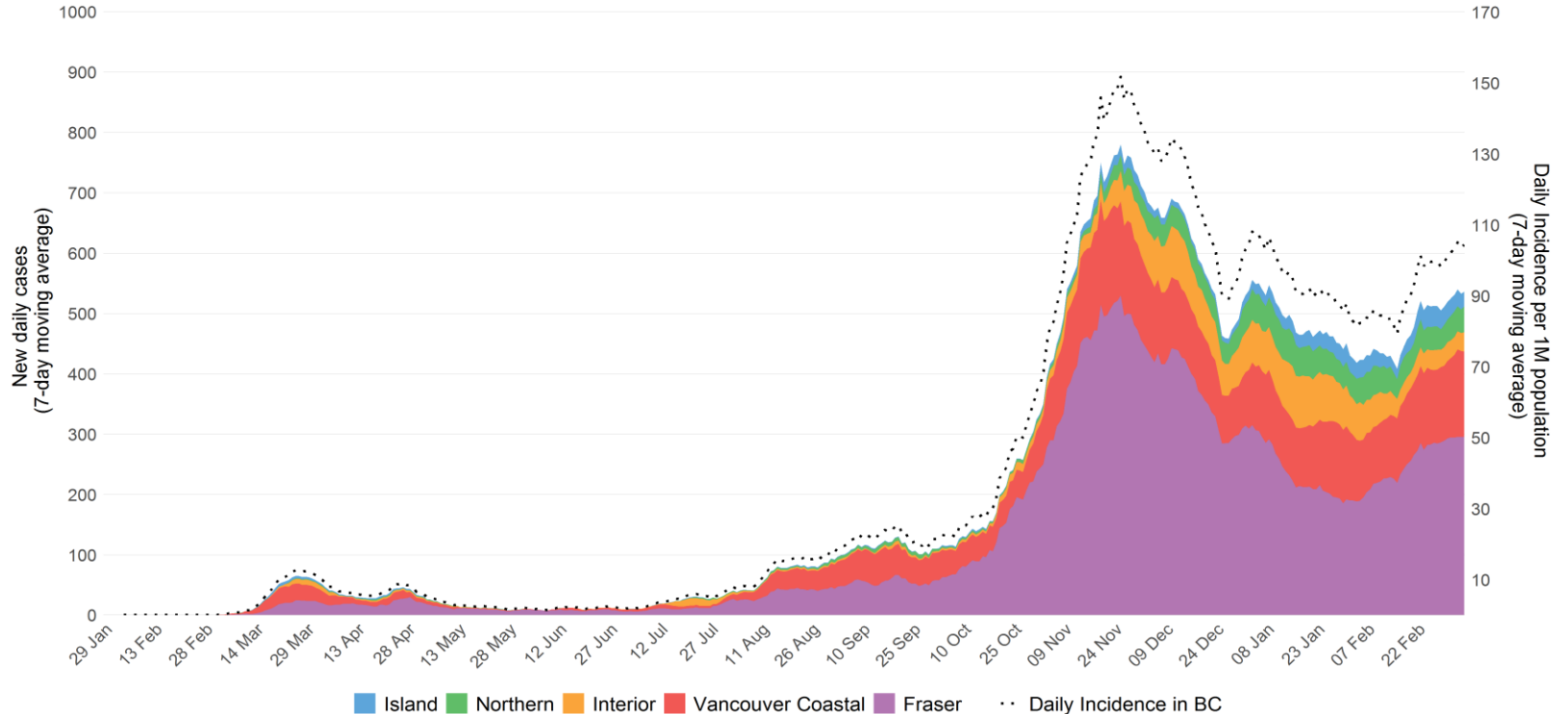


Notes: Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data source: the 5 regional health authorities of British Columbia; we operate in a live database environment and case information from the health authorities are updated as it becomes available. How to interpret the maps: The map illustrates the geographic distribution of reported cases for the most recent epidemiological week (from Sunday to Saturday). Local Health Areas (LHA) with higher rates are illustrated in darker colour shading. The number of reported cases appears in each LHA. Note that the number of cases in the LHA may not represent the location of exposure (e.g. people who acquired disease while traveling or working elsewhere), and that not all COVID-19 infected individuals are tested and reported; the virus may be circulating undetected in the community, including in areas where no cases have been identified by public health. Map created March 10, 2021 by BCCDC for public release.

Daily Cases, Hospitalizations, and Deaths by Surveillance Date January 2020 – March 8, 2021

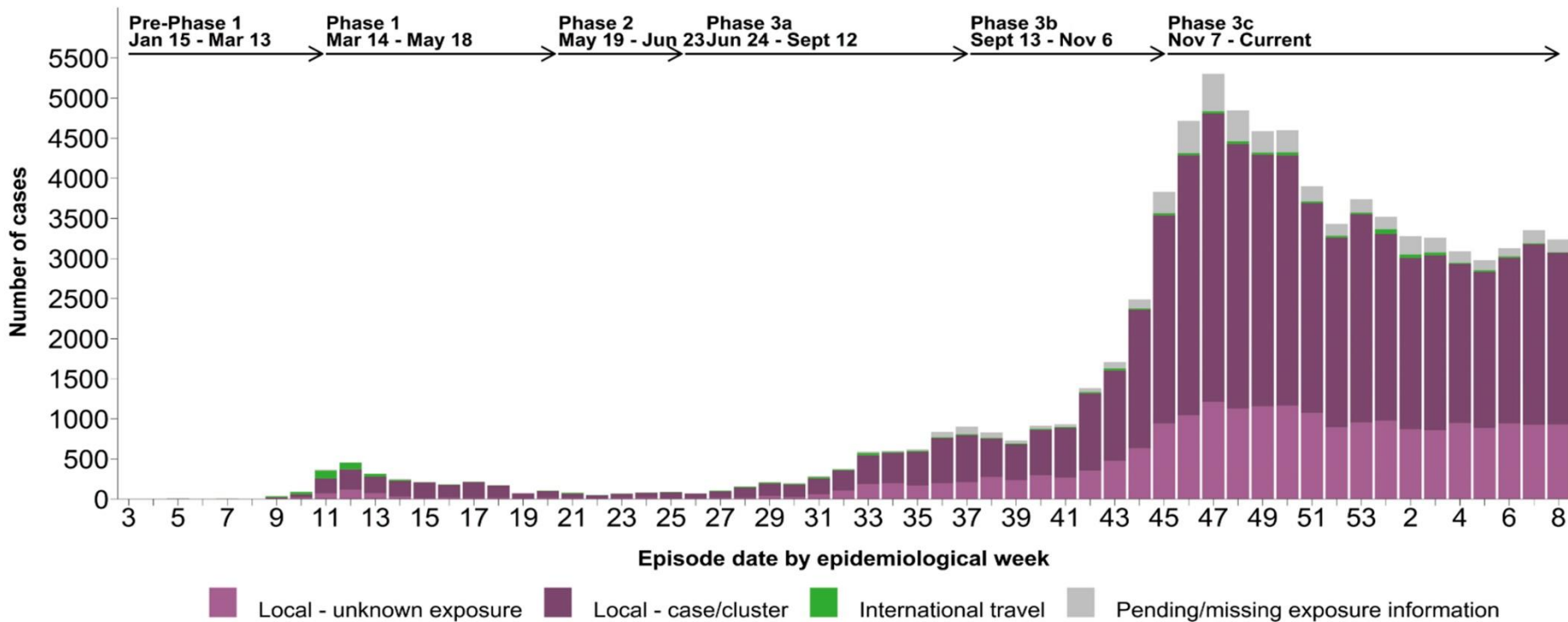


Epidemic Curve, COVID-19 Cases in B.C. by Surveillance Date January 2020 – March 8, 2021

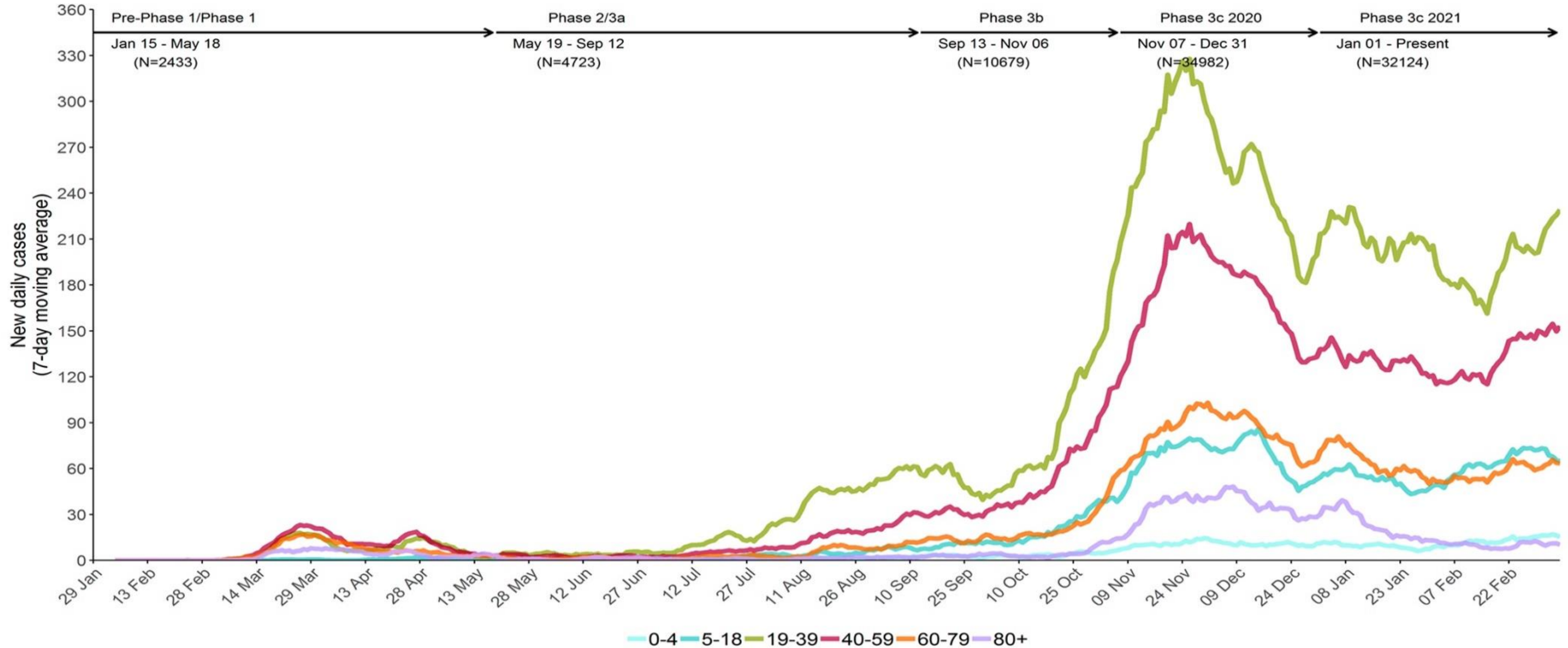


* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

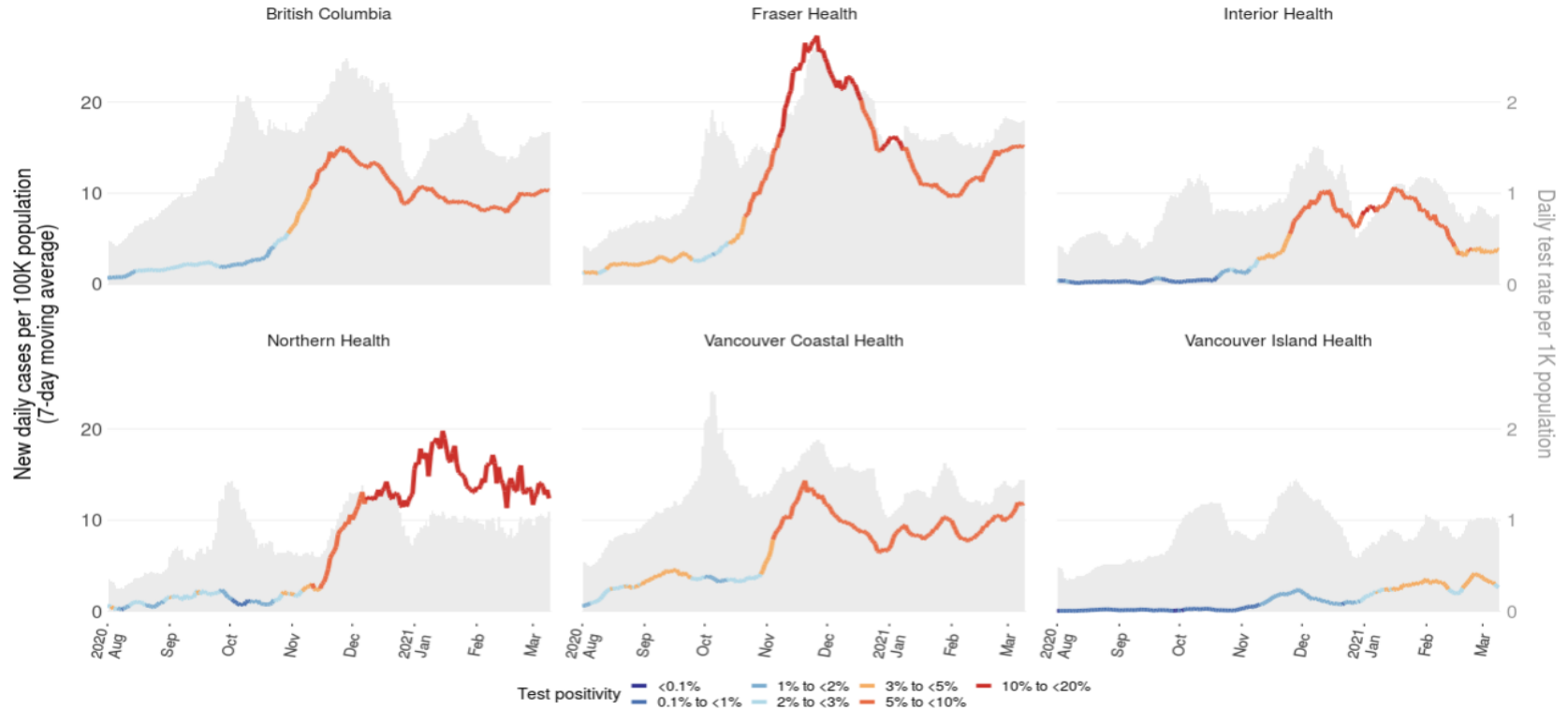
Likely Source of COVID-19 Infection by Episode Date, BC January 15, 2020 – February 27, 2021



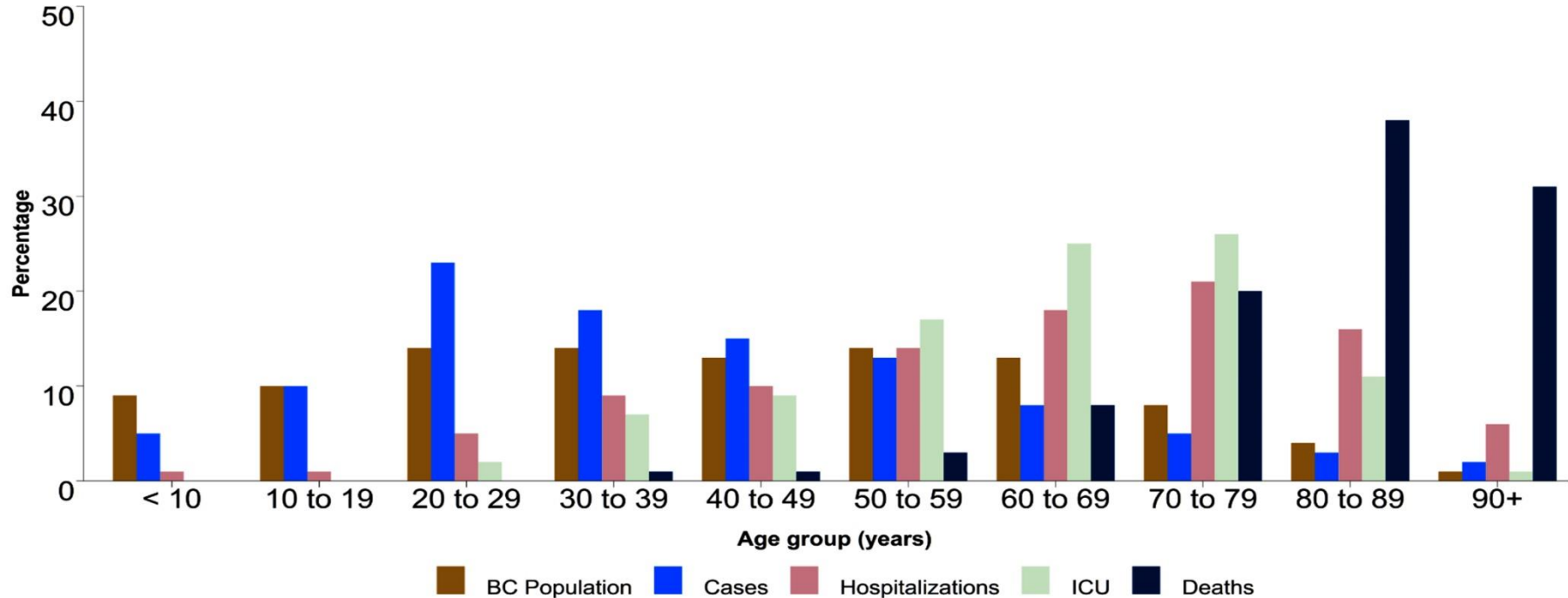
Daily Case Count by Age January 2020 – March 8, 2021 (7-day Moving Average)



Daily Case Rate, Testing Rate and Percent Positivity by Health Authority (March 1, 2020 – March 7, 2021)



Percentage Distribution of COVID-19 Cases, Hospitalizations, ICU Admissions and Deaths by Age, British Columbia, January 15, 2020 – February 27, 2021



Multi-Inflammatory Syndrome in Children (MIS-C) Aged 0 – 18 in British Columbia

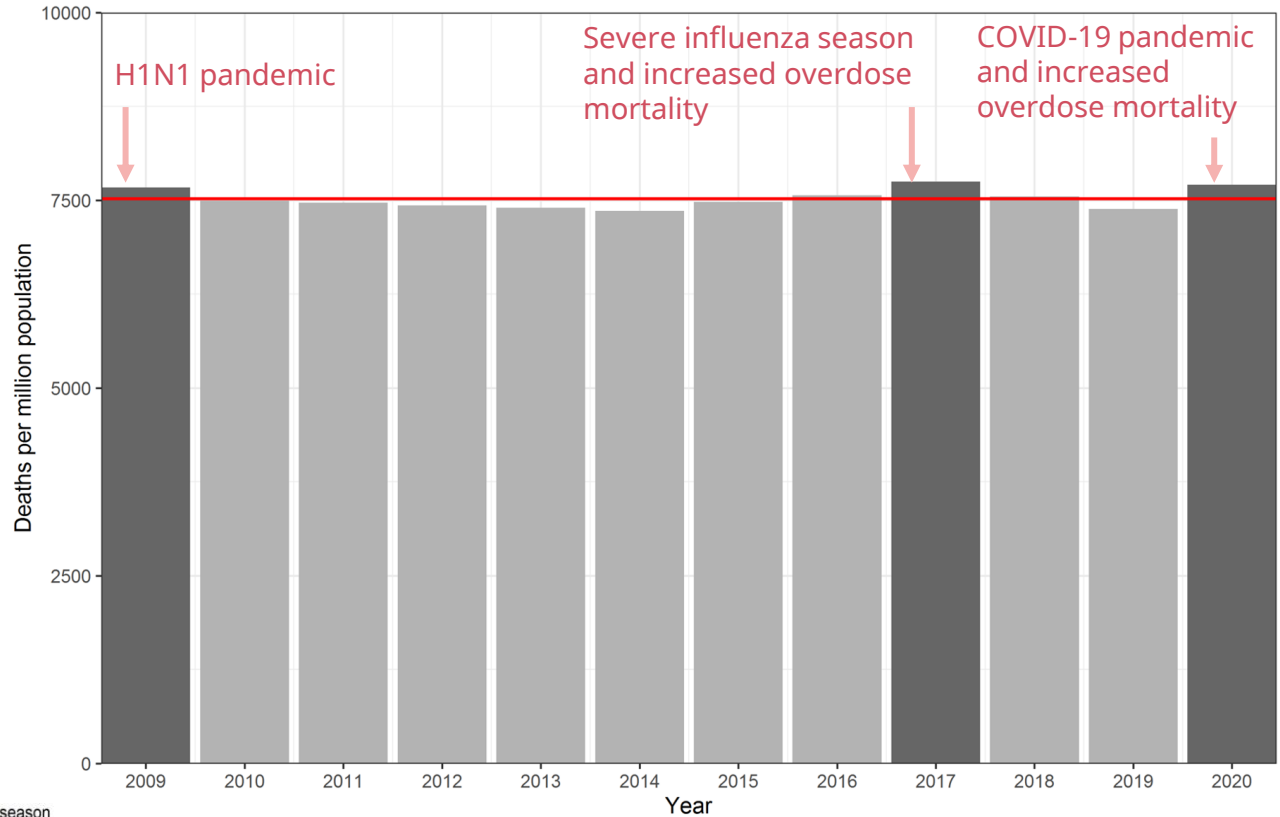


- 10 confirmed children with MIS-C among 10,887 total COVID-19 cases 0-18 years
 - 7 admitted to ICU
- **All recovered, recovering or in stable condition, no deaths**



- **Who:** Median age 8 years (range 1-15 years)
- **Where:** 6 in Fraser, 2 in Vancouver Coastal and 2 in Northern
- **When:** January 2020 to March 10, 2021

All-Cause Mortality Rates in BC 2009 – 2020, Standardized for Age and Sex*

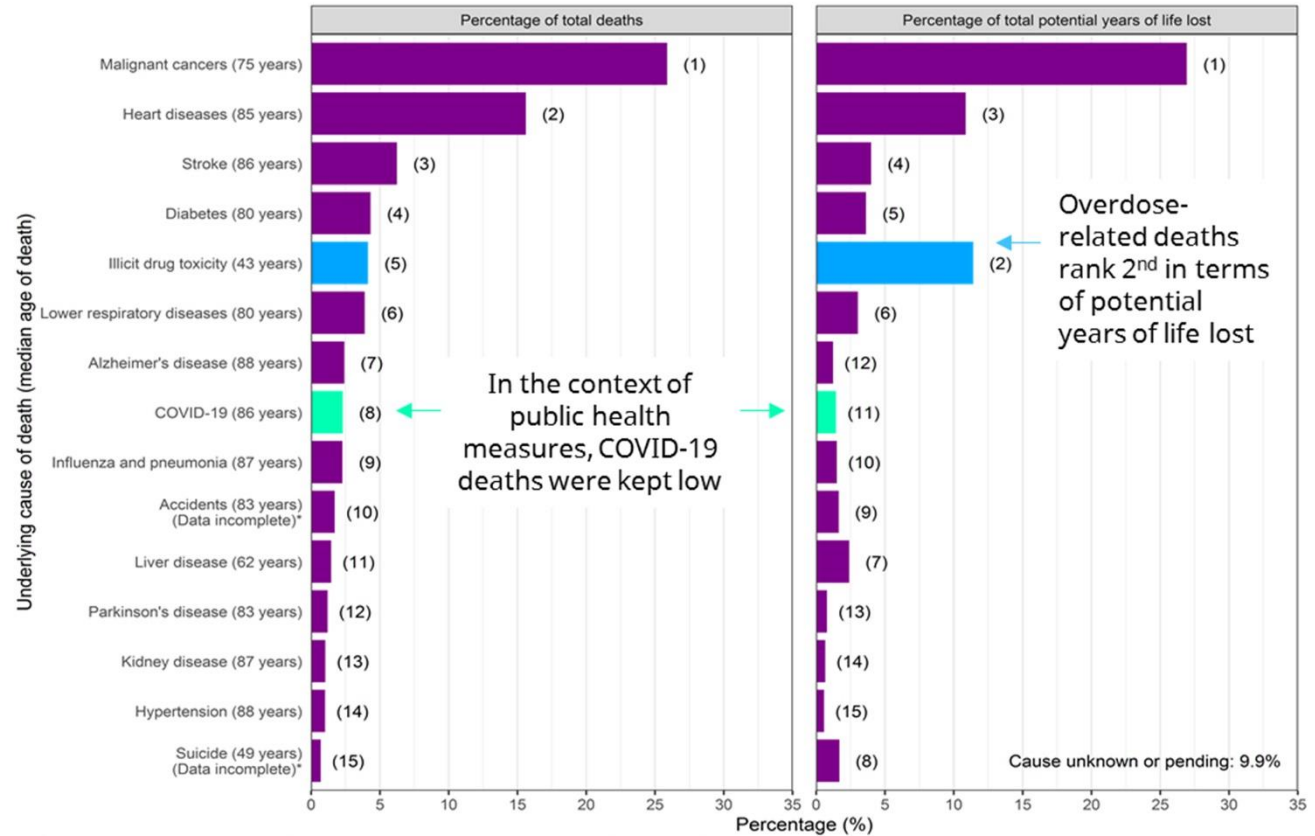


— Mean adjusted rate

■ Year with a pandemic or severe influenza season
■ Year with no pandemic or severe influenza season

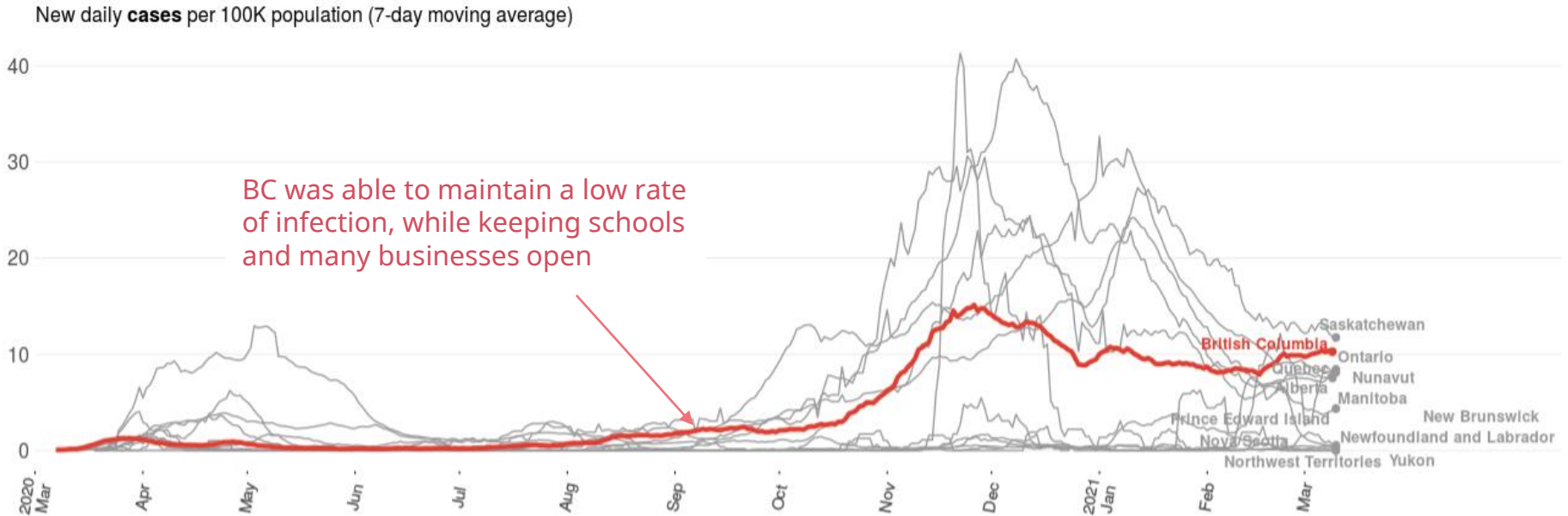
*Direct age- and sex-adjustment using the 2016 British Columbia population as the standard population.

Top 15 Causes of Death in BC in 2020 Based on Available Data (10% Still Unknown or Pending)



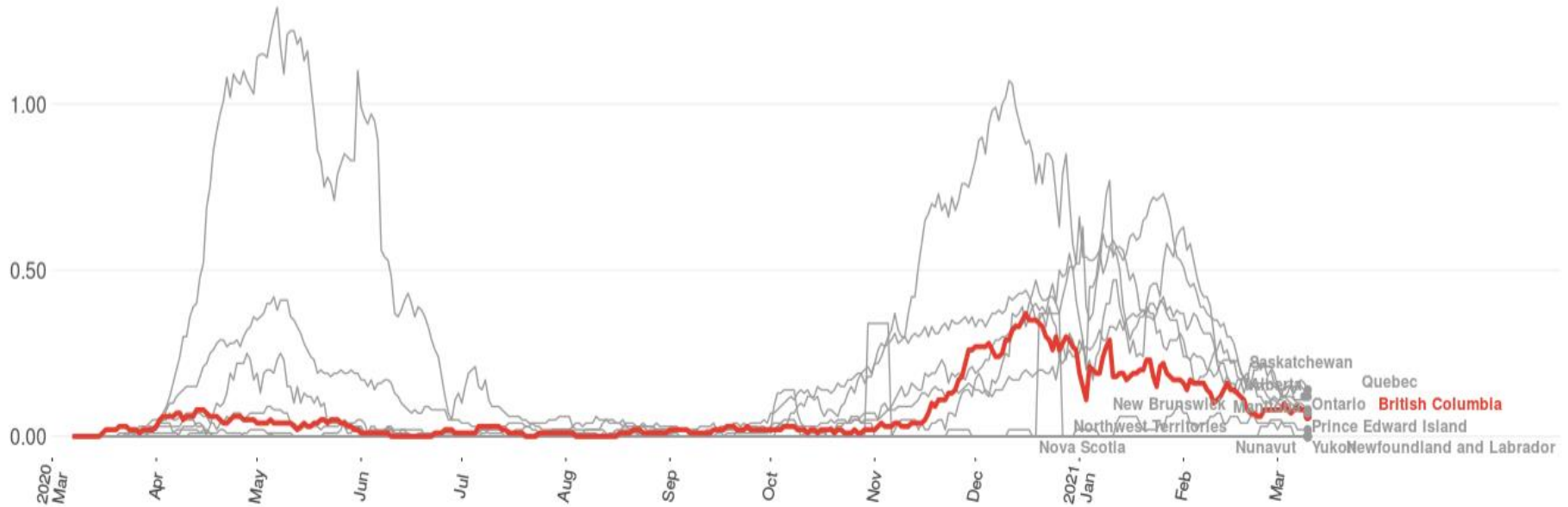
*External causes of death (other than illicit drug toxicity) incomplete due to reporting delay and will rise in ranking as data become complete.
 Data sources: 1) BC Vital Statistics; 2) COVID-19 deaths reported by public health; 3) Data on illicit drug toxicity deaths provided to BCCDC by BC Coroners Service and extracted on February 4 2021; 4) Statistics Canada Table 13-10-0114-01 Life expectancy and other elements of the life table, Canada, reference period 2017-2019.

Daily Case Rates Across Canada March 1, 2020 – March 7, 2021

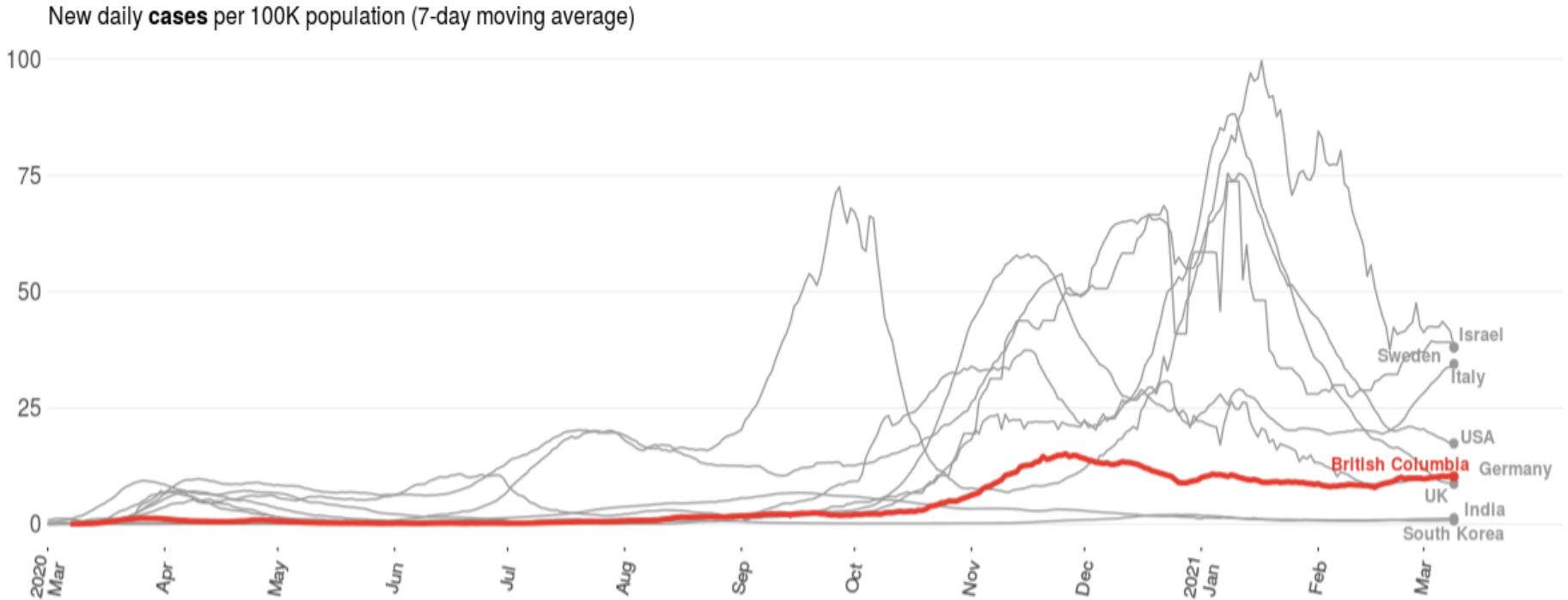


Daily Death Rates Across Canada March 1, 2020 – March 7, 2021

New daily **deaths** per 100K population (7-day moving average)

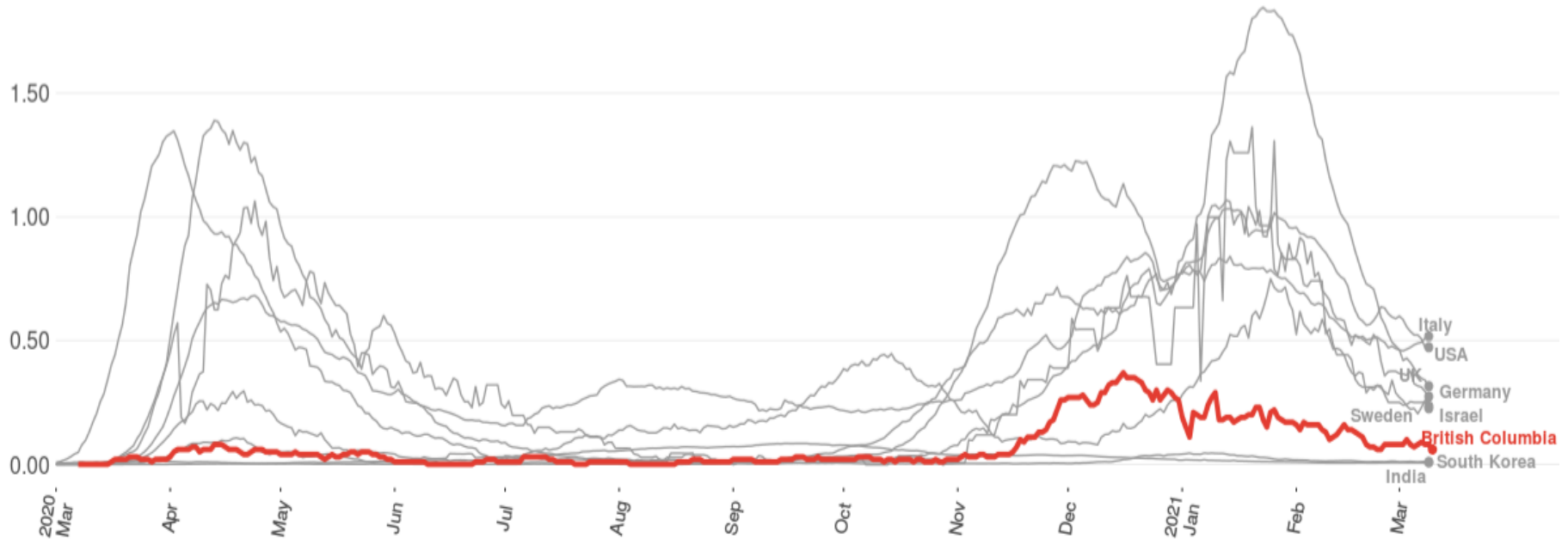


Daily Case Rates: International March 1, 2020 – March 7, 2021



Daily Death Rates: International March 1, 2020 – March 7, 2021

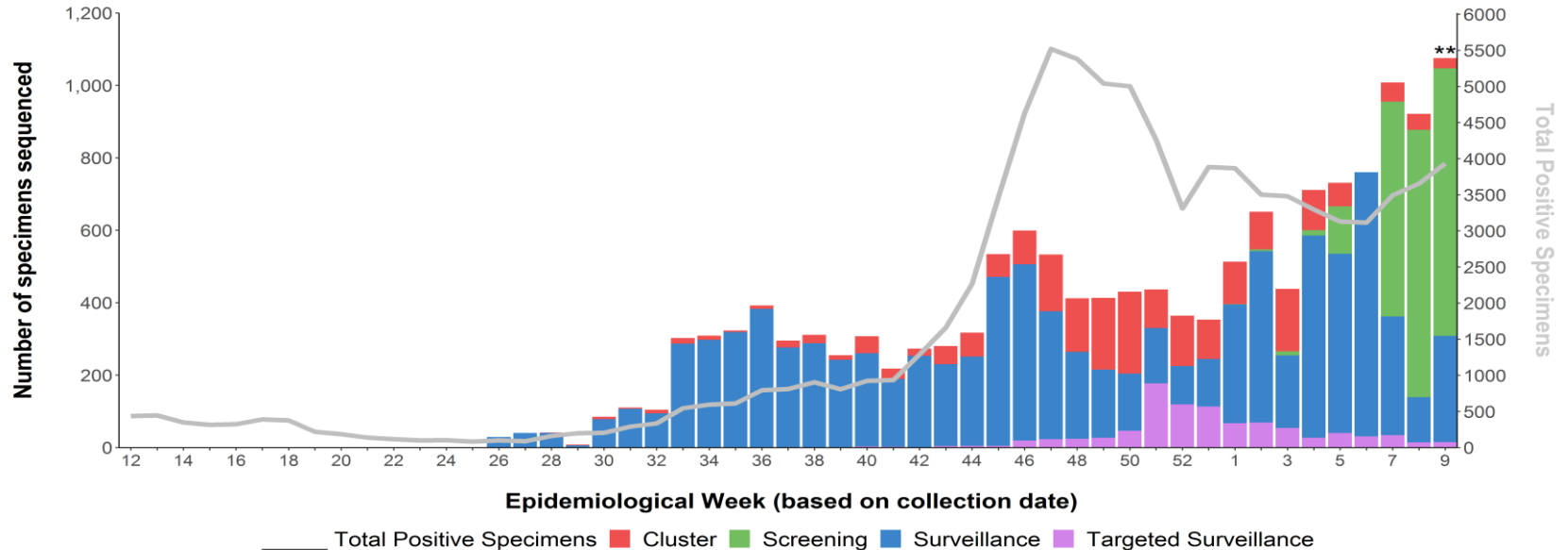
New daily **deaths** per 100K population (7-day moving average)



The Majority of Positive Samples Sequenced are Selected From the General Population With a Positive COVID-19 Test.

In the past two weeks, ~50% of the specimens are sequenced following screening for mutations.

Number of positive samples and specimens sequenced** (Illumina) by Surveillance type, Mar 16 2020 - March 6, 2021

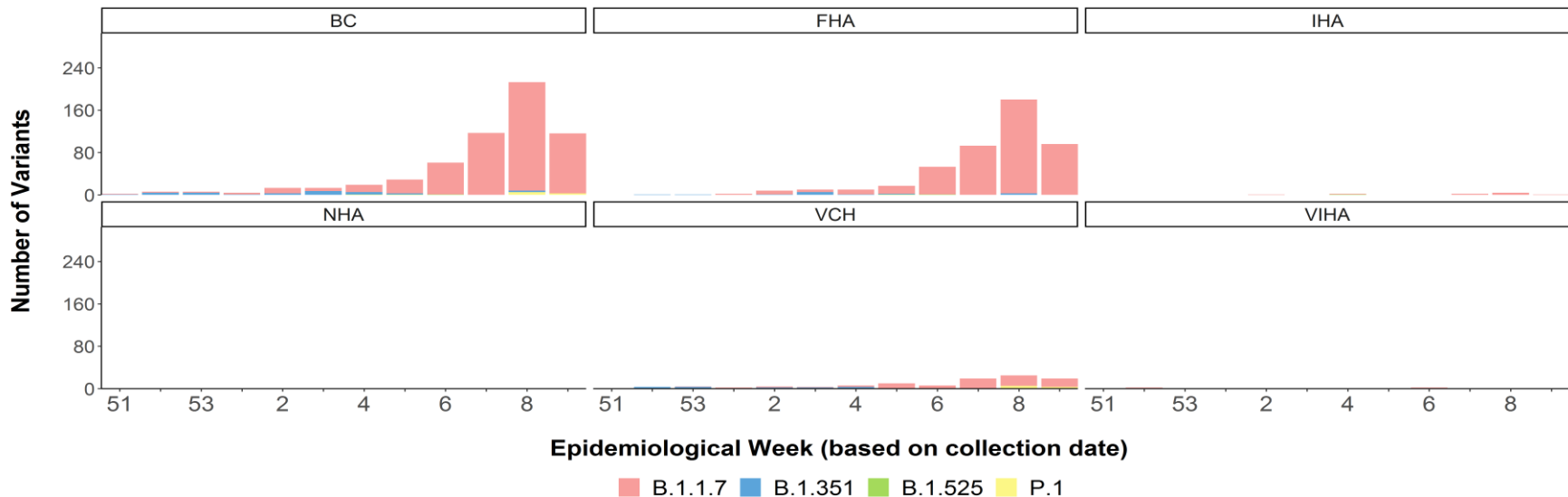


Data source: PLOVER 10-Mar-2021

** Latest epi week has incomplete data as sequences are being analyzed in the following week.

Confirmed VoC by Sequencing of Samples That are Representative of the General Population is Below 10%

SARS-CoV-2 variants confirmed by sequencing** by epi week, December 13, 2020 - March 6, 2021



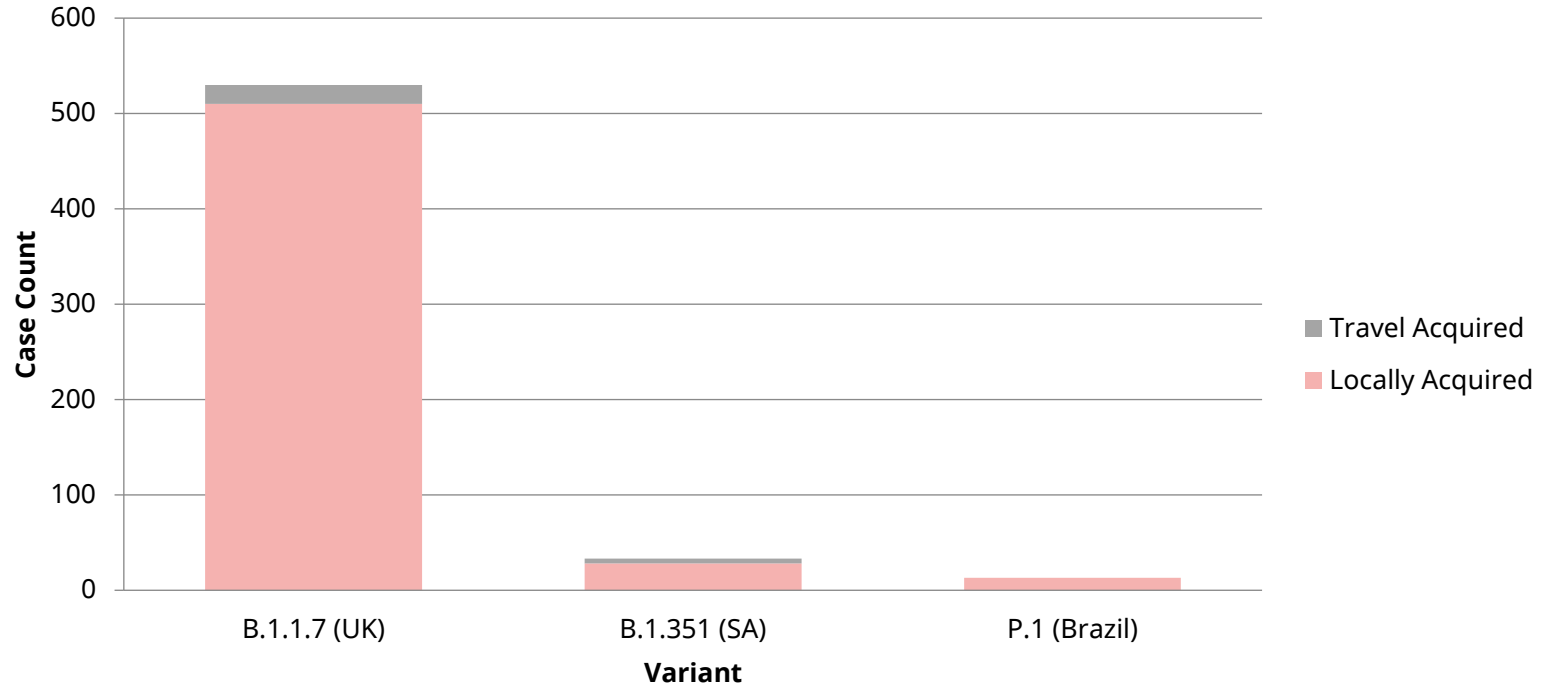
Data source: PLOVER 10-Mar-2021

Places of origin: United Kingdom (B.1.1.7); South Africa (B.1.351); Nigeria (B.1.525)*; Brazil (P.1)*

* This variant is not a VoC in Canada

** Latest epi week is incomplete data as genomic outputs are being analyzed in the following week.

Most VOCs Are Now Locally Acquired; P.1 (variant initially identified in Brazil) recently detected in BC

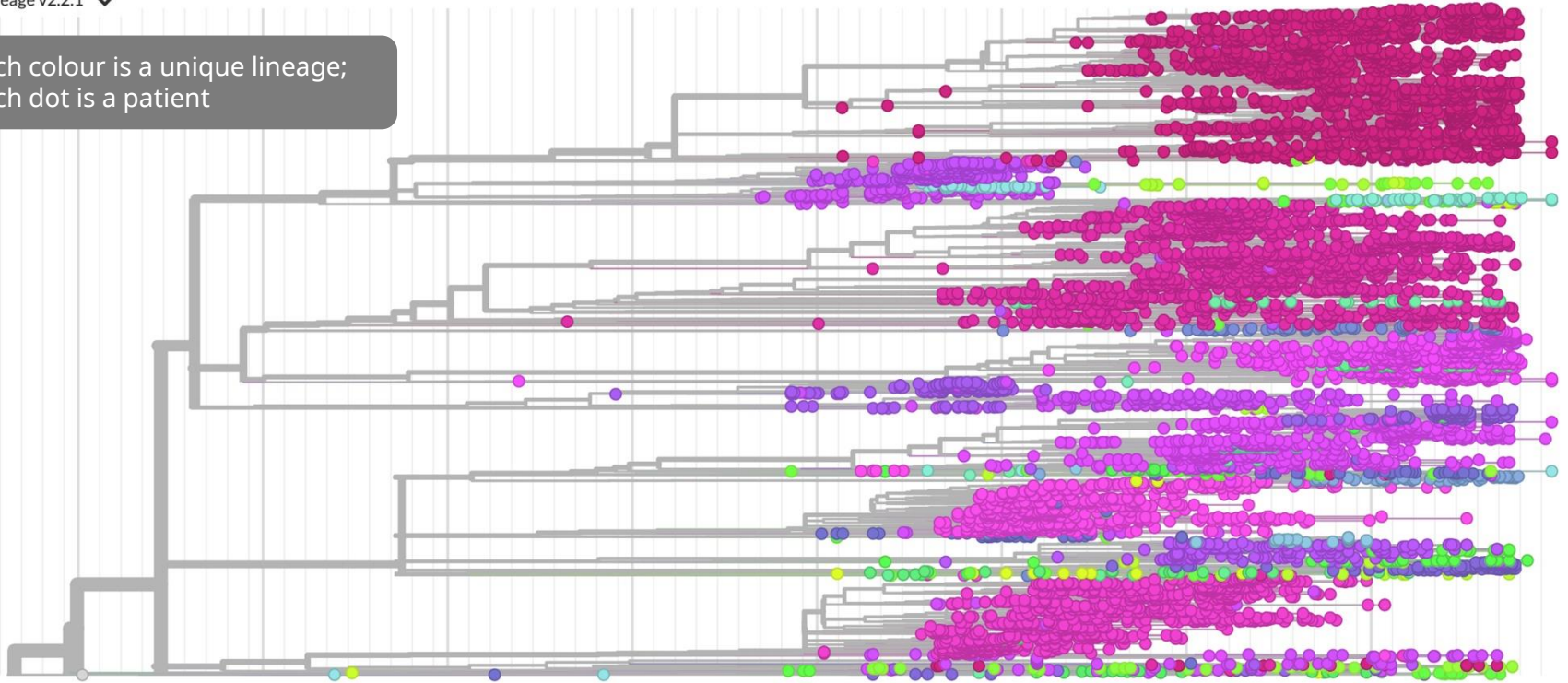


There are Many Lineages/Variants of SARS-CoV-2 in BC

Phylogeny

Lineage v2.2.1 ▾

Each colour is a unique lineage;
each dot is a patient

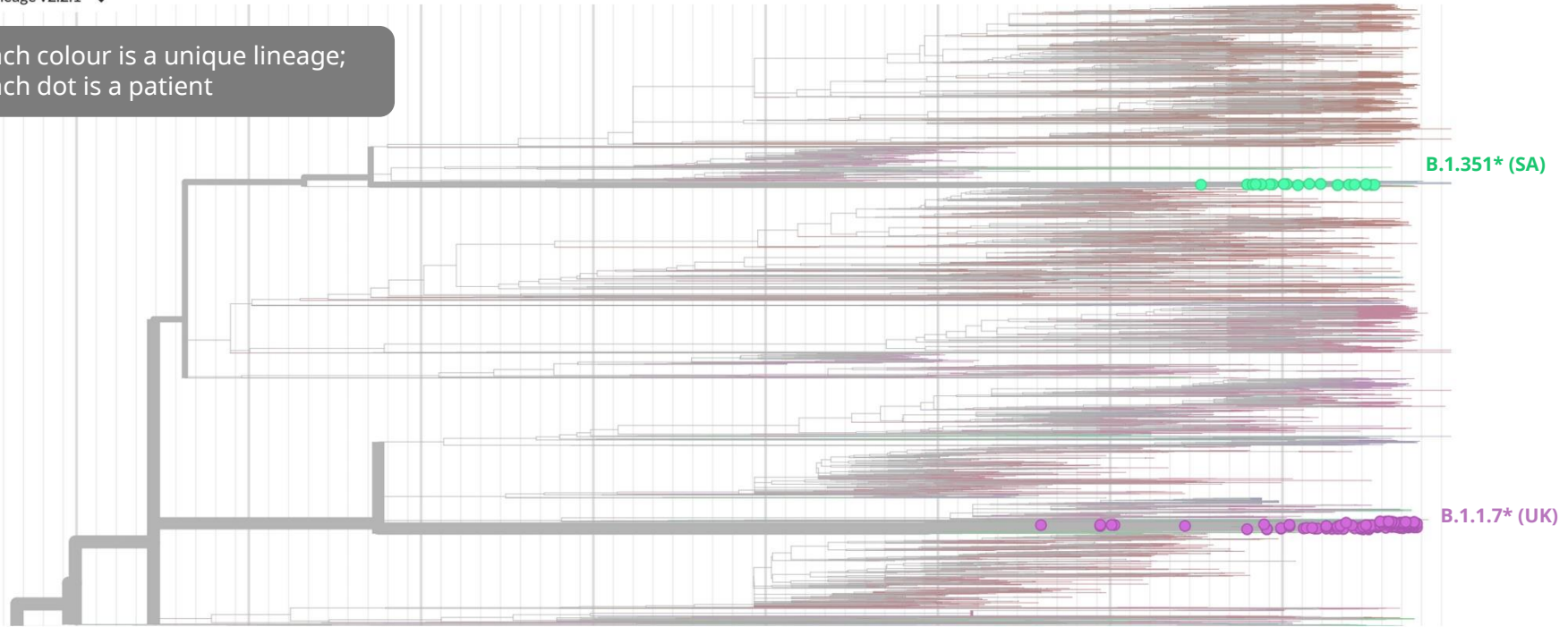


Variant Lineages (B.1.1.7* and B.1.351*) are Still Rare in BC Compared to Other Lineages

Phylogeny

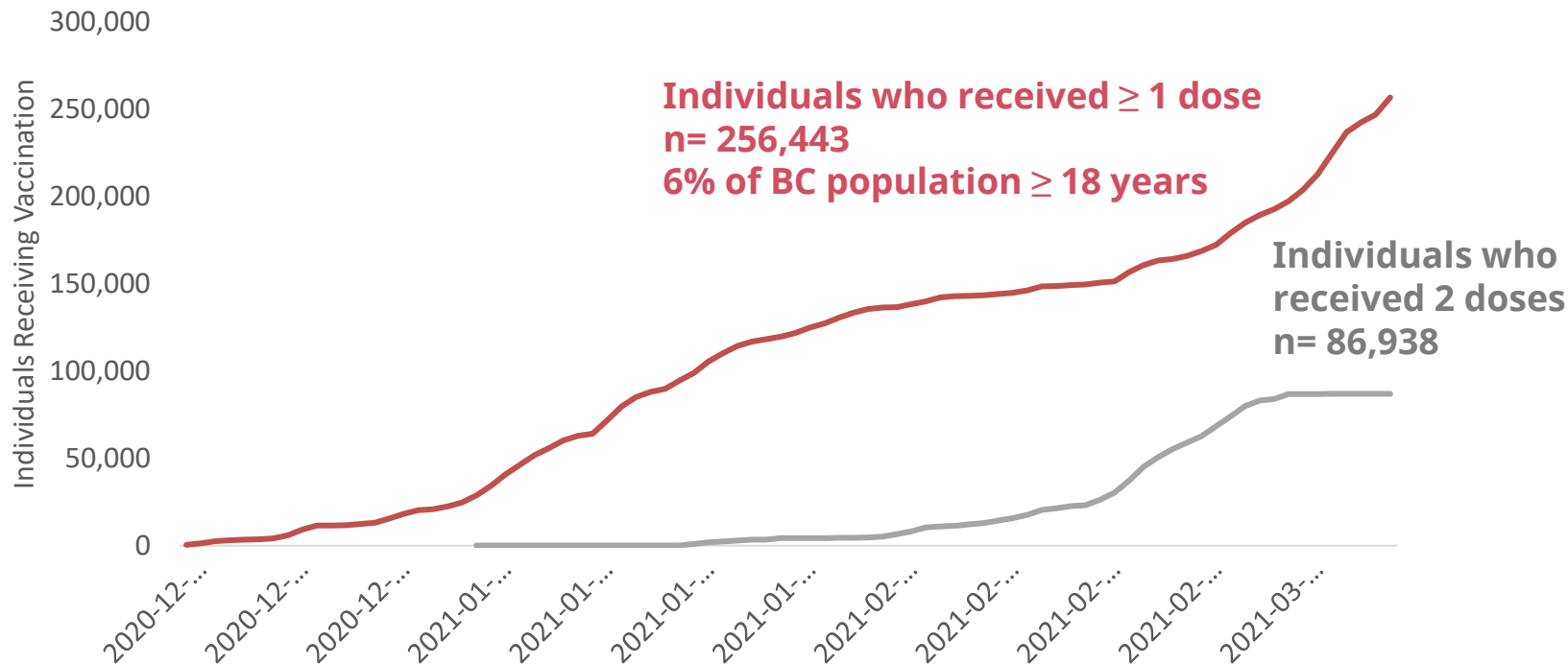
Lineage v2.2.1 ▾

Each colour is a unique lineage;
each dot is a patient



BC Vaccine Rollout

Number of Doses Administered to March 8, 2021 (N=343,381)



Early COVID-19 Vaccine Effectiveness in BC

Research led by Dr. Danuta Skowronski and the BCCDC Influenza and Respiratory Pathogens Team.



Examined cases among vaccinated **long term care residents and health care workers** from late **December 2020 to early February 2021**



Early surveillance data shows drop in **cases** in both groups at about 14 days after vaccination, with **hospitalizations** and **deaths** also lower



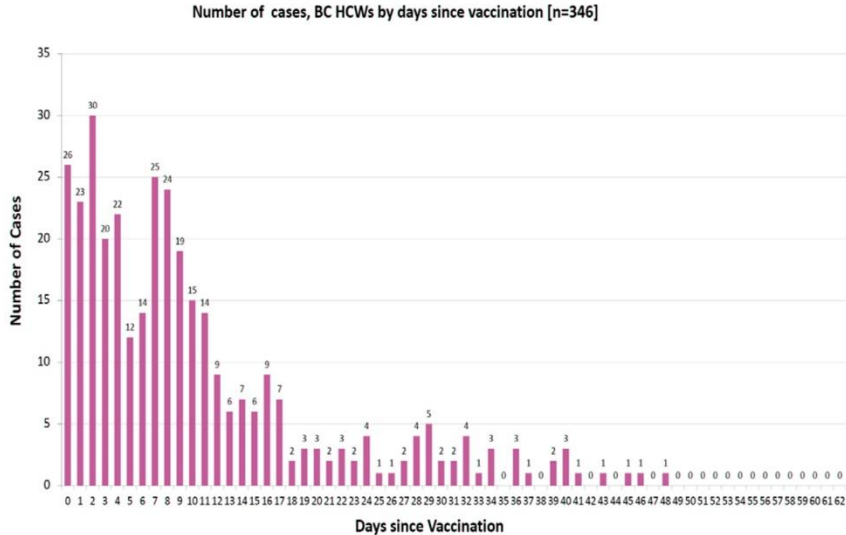
Estimates suggest **80% of COVID-19** cases prevented after 2 to 3 weeks

Funding for this research was provided by the Michael Smith Foundation for Health Research.

Substantial Decline Within a Few Weeks of First Vaccination (episode date)

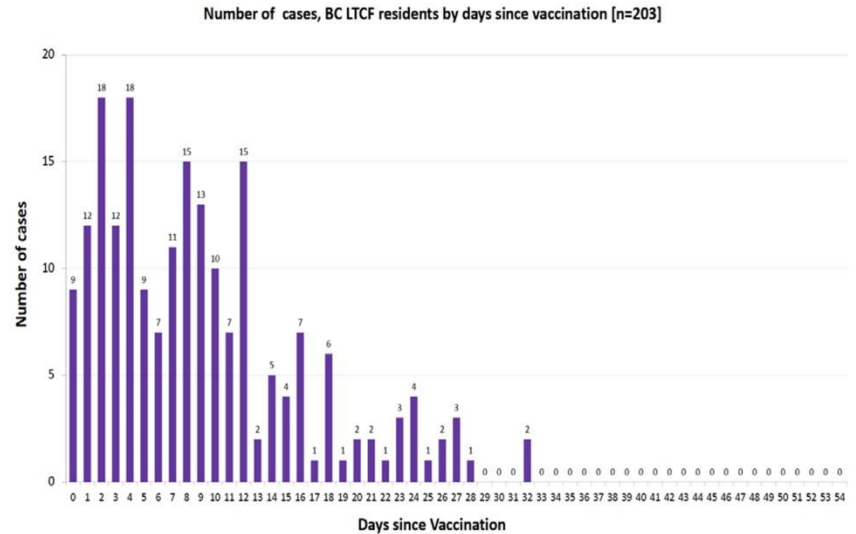
Substantial Decline in HCW Cases:

- To day 62 post-vaccination (Extract Feb 22, 2021: study period Dec 15, 2020 to Feb 15, 2021)
- 346 cases of which 86% before day 21 since vaccination



Substantial Decline in LTCF Resident Cases:

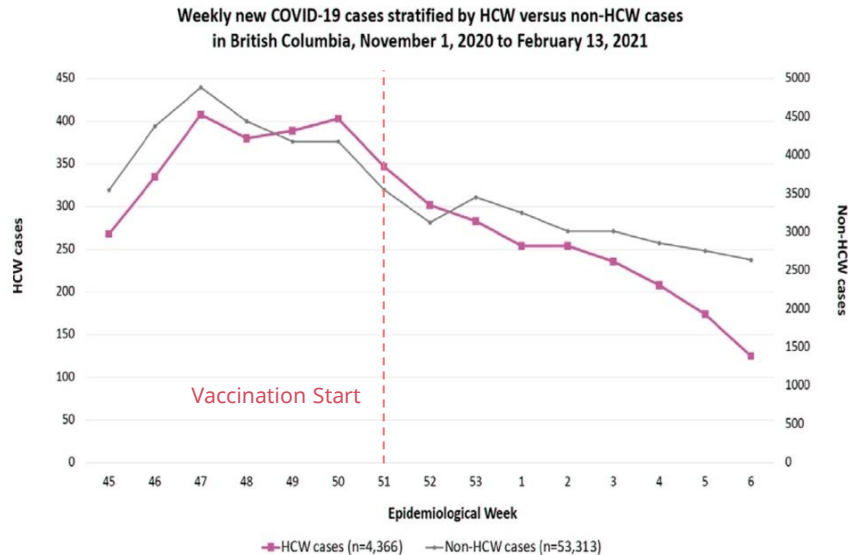
- To day 54 post-vaccination (Extract Feb 22, 2021: study period Dec 23, 2020 to Feb 15, 2021)
- 203 cases of which 89% before day 21 since vaccination



Population Surveillance Data Suggest Beneficial Vaccine Impact in Targeted Groups

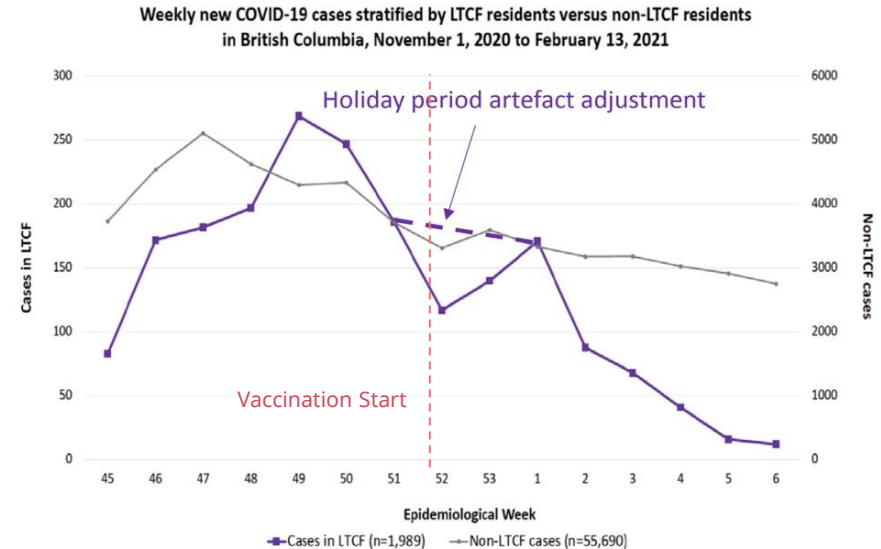
Decline in HCW Cases:

- Vaccination of HCWs began Dec 15, 2020 (week 51)
- Greater decline than in non-HCW cases in BC



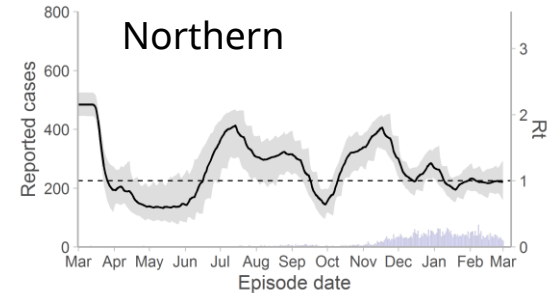
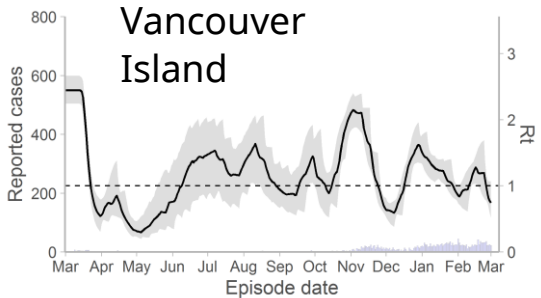
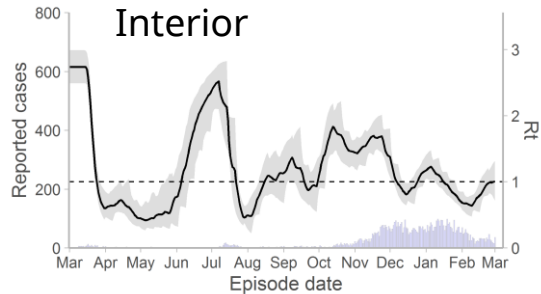
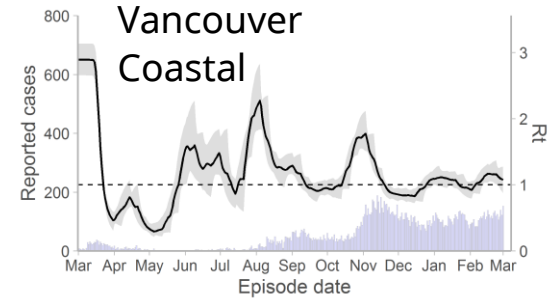
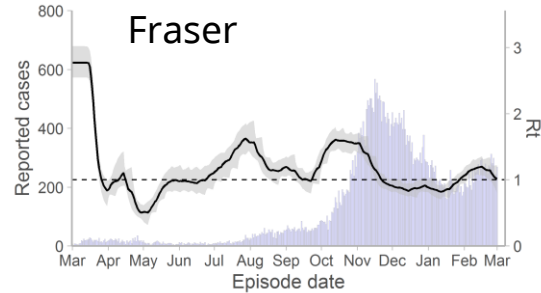
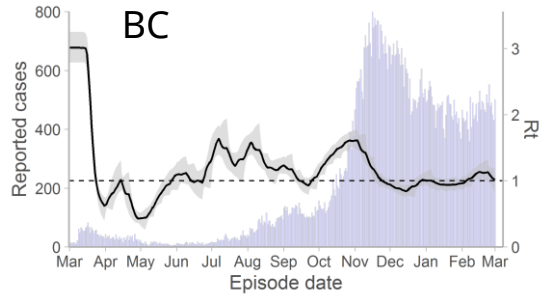
Decline in LTCF Resident Cases:

- Vaccination of LTCF residents began Dec 23, 2020 (week 52)
- Greater decline than in non-LTCF residents in BC



Dynamic Compartmental Modeling: Recent Trends

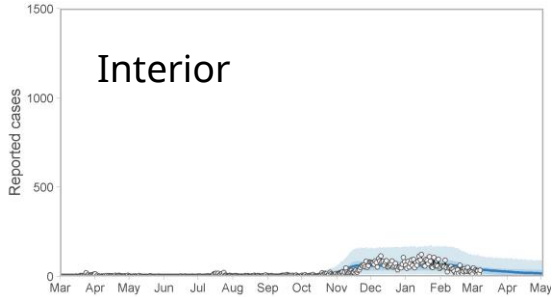
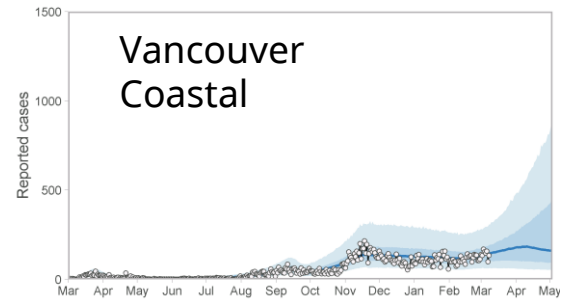
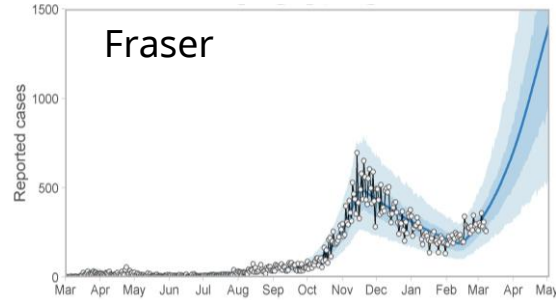
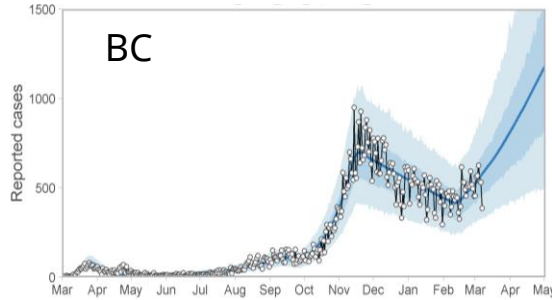
Our model shows that R_t is close to or above 1 in most regions of BC. Whenever $R_t > 1$, there is a risk that the number of new cases will grow.



Solid black line: median R_t , data up to Mar 8, 2021; Grey band: 5%-95% credible interval; Purple bars: all reported cases. Due to lag from symptom onset to reporting, most recent cases are not shown.

Dynamic Compartmental Modeling: Recent Trends

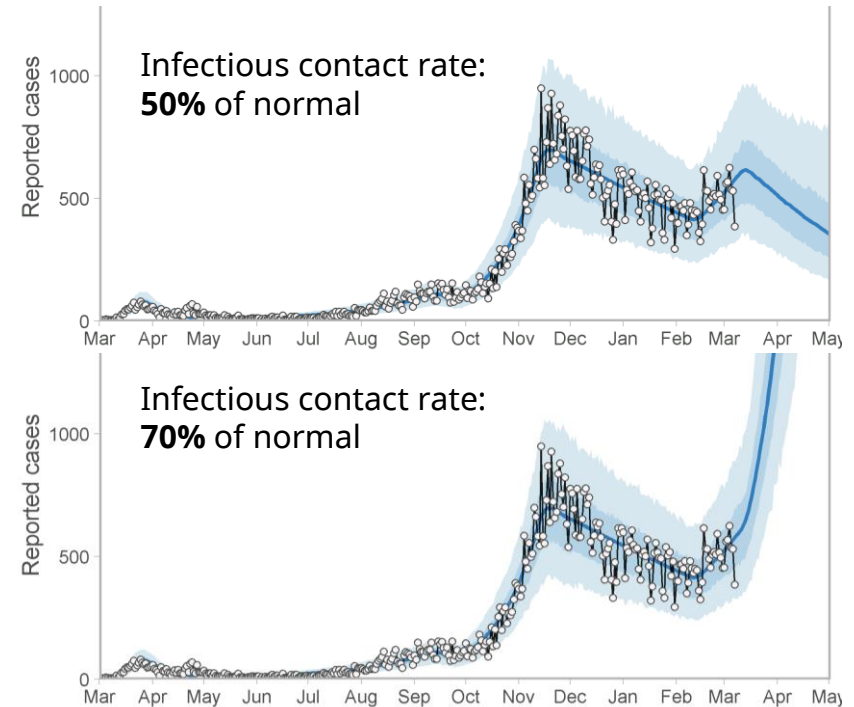
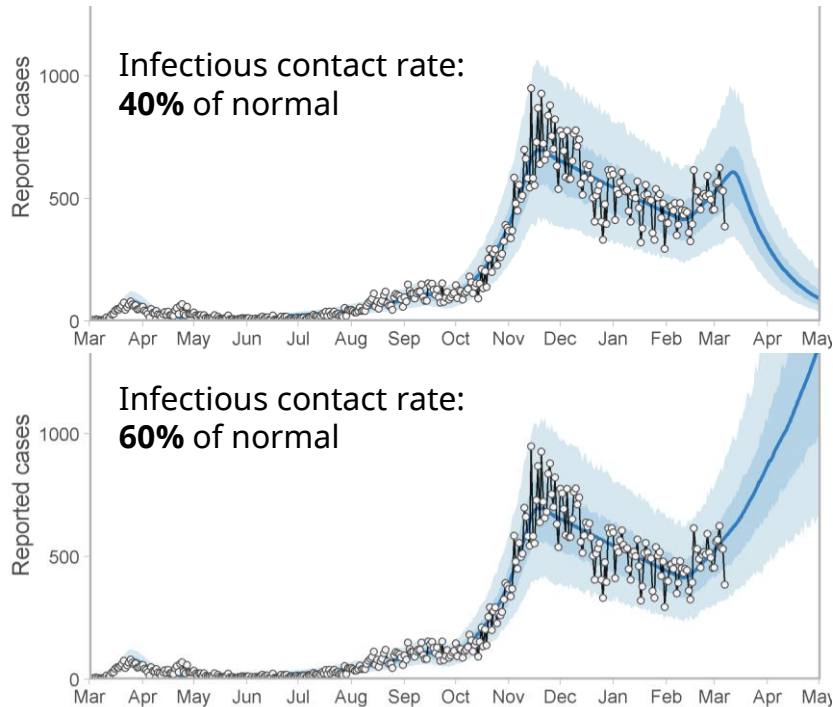
Our model outputs show differing trends across BC.
Large uncertainty reflects the recent fluctuations in case counts in many regions.



Solid blue line: median model fit; shaded bands: 50% and 90% credible intervals; Open circles: all reported cases, March 1, 2020 – March 8, 2021. X Axis = Case Surveillance Date

Dynamic Compartmental Modeling: Scenarios

Our modeling scenarios are consistent with an average infectious contact rate of 50-60% of normal.



Solid blue line: median model fit; shaded bands: 50% and 90% credible intervals; Open circles: all reported cases, March 1, 2020 – Mar 8, 2021. X Axis = Case Surveillance Date

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