

BCCDC Data Summary

24 June 2021

Purpose

The surveillance deck is a summary of COVID-19 related indicators that can help inform the pandemic response in British Columbia. This surveillance monitoring constitutes the medical chart for population health assessment that guides the public health community of practice. As such this is a working document that reflects a snapshot in time and may differ from other published reports.

Data Sources

The collection, use and disclosure of case data is subject to the Public Health Act. COVID-19 cases are reported under the Public Health Act to the health authority of residence. Public health case notification, clinical management, contact tracing and follow-up contributes surveillance data for regional and provincial COVID-19 monitoring. Each regional health authority have their own workflows and information systems for capture of relevant data. This data foremost serves the public health and clinical management of the case and their contacts.

Disclaimer

- Data and key messages within these documents are not finalized and considered to be work in progress that is subject to retroactive changes as more data and information become available.
- Accurate interpretation of figures may be difficult with the limited inclusion of data notes and methodology descriptions in this document.

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Overall Summary

- **Case rates** continue to decline in all HAs, and provincial average is less than 100 cases per day; **test positivity** continues to decline, <3% provincially.
 - Percent positivity $\leq 5\%$ in all HAs and age groups
- **New hospitalizations** continue to decline; **hospital/critical care census** is declining across BC (below April 2020 level); **new deaths** are stable and low.
 - Majority of hospitalizations continue to be among individuals aged >40 years
- The share of **VOCs** among all positive tests in BC is ~88% from June 13 to 19; provincially P.1(Gamma) (~40%) and B.1.1.7 (Alpha) (~48%) remain two dominant VOCs, with B.1.617.2 (Delta) representing ~12% of VOCs.
- **Vaccine** coverage in BC by age, June 25th: >75% of 12+ have received first dose; ~40 % of adults 50+, and 25% of 12+ have received their 2nd dose.
- Data from BC: A **single dose of vaccine** (mRNA or viral vector) **prevented 7 out of every 10 infections** among individuals aged 50 to 69 years.

Jun 17 to Jun 23: BC COVID-19 Profile



147,271 total cases
597 new this week



1,744 total deaths
6 new this week

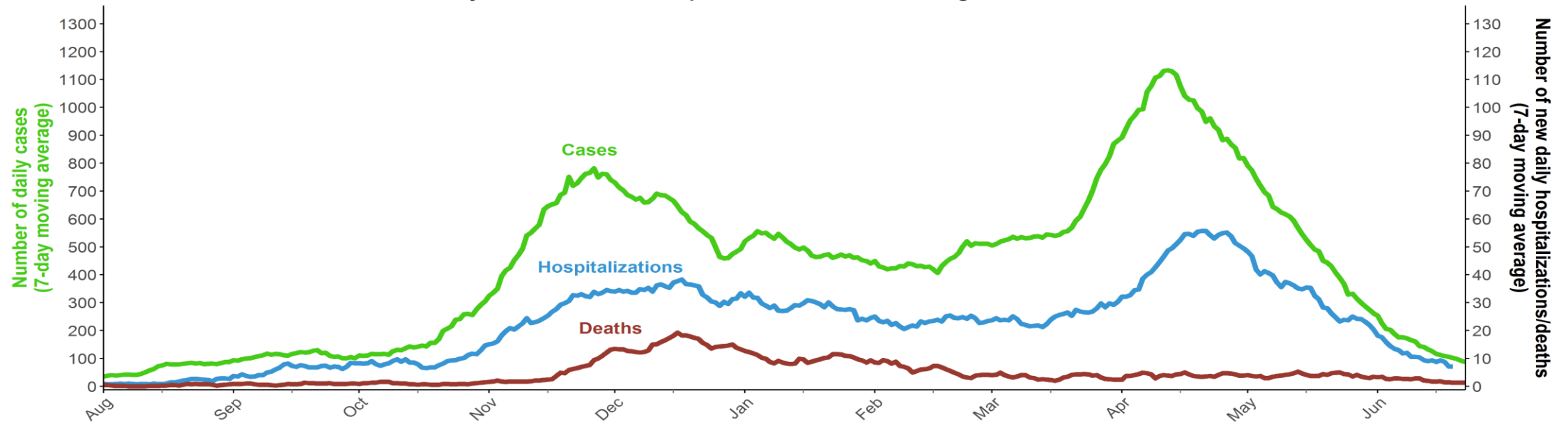


7,916 ever hospitalized
47 new this week



144,383 removed from isolation
934 new this week

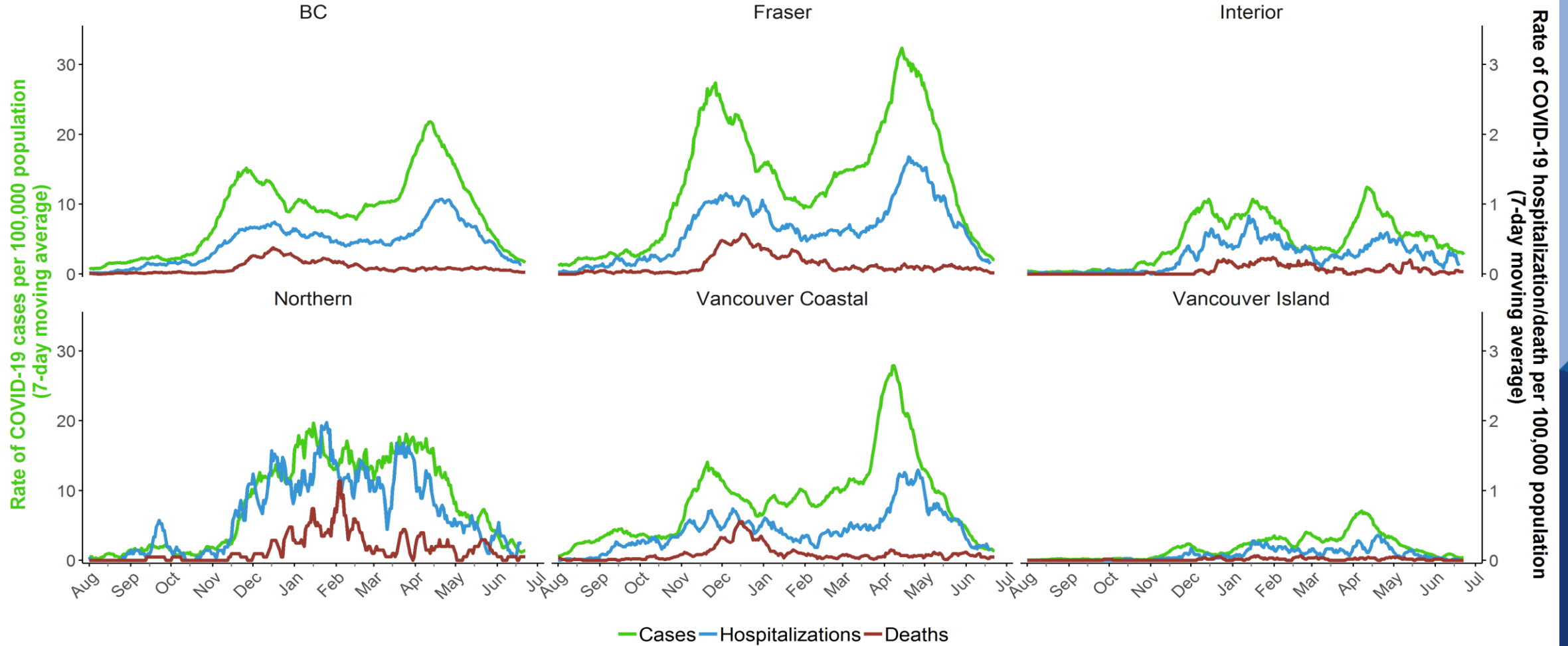
New daily COVID-19 cases, hospitalizations and deaths, Aug 01 2020 - Jun 22 2021



* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Jun-23-2021

Case rates are declining in all HAs; new hospitalizations are declining or stable in all HAs; new deaths are stable and low.

Rate of COVID-19 case, hospitalization and death, Aug 01 2020 - Jun 22 2021

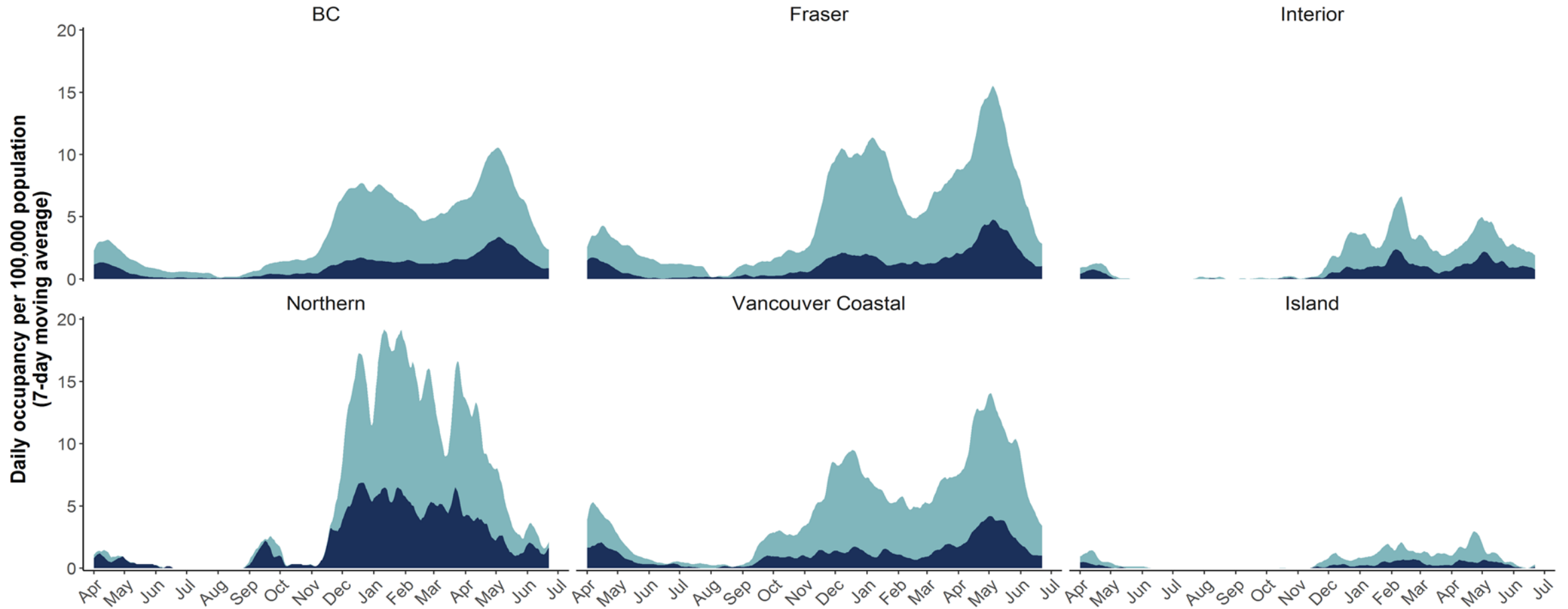


* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Jun-23-2021

Hospital and critical care census is declining or stable in all regions.

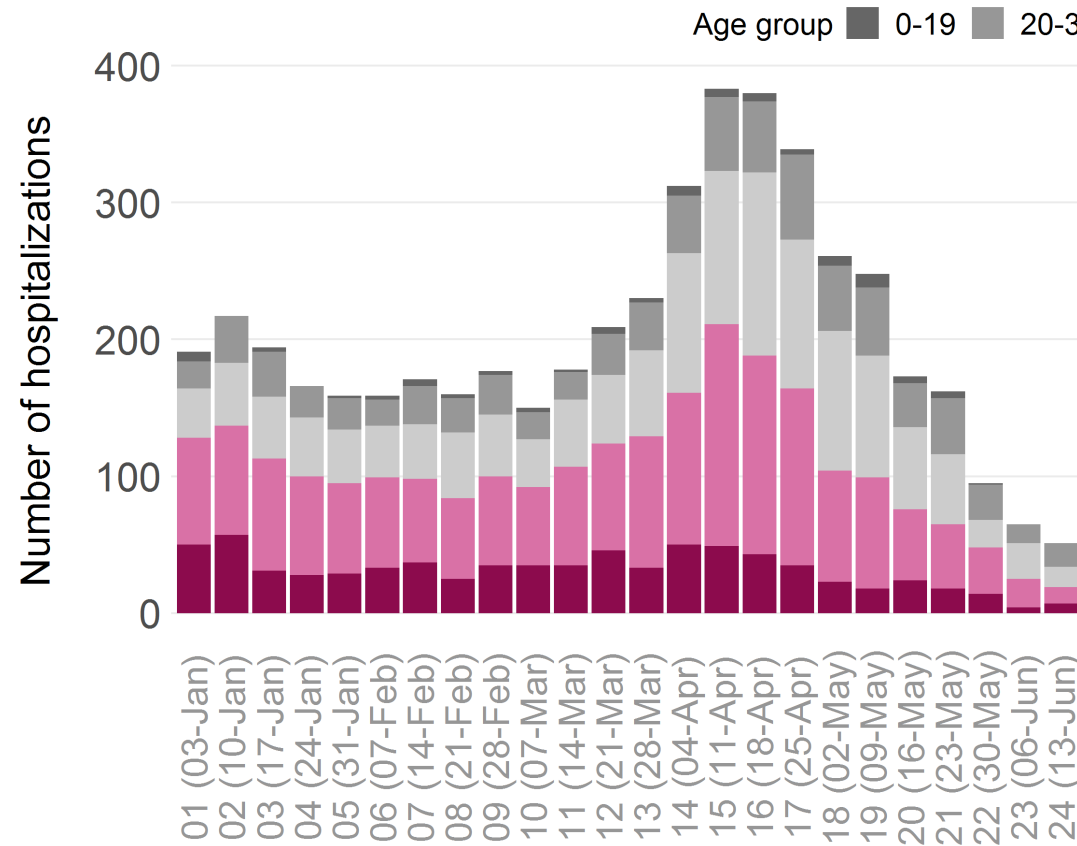
Current COVID-19 hospitalizations, Apr 01 2020 - Jun 22 2021

■ In the hospital but not in critical care ■ In critical care

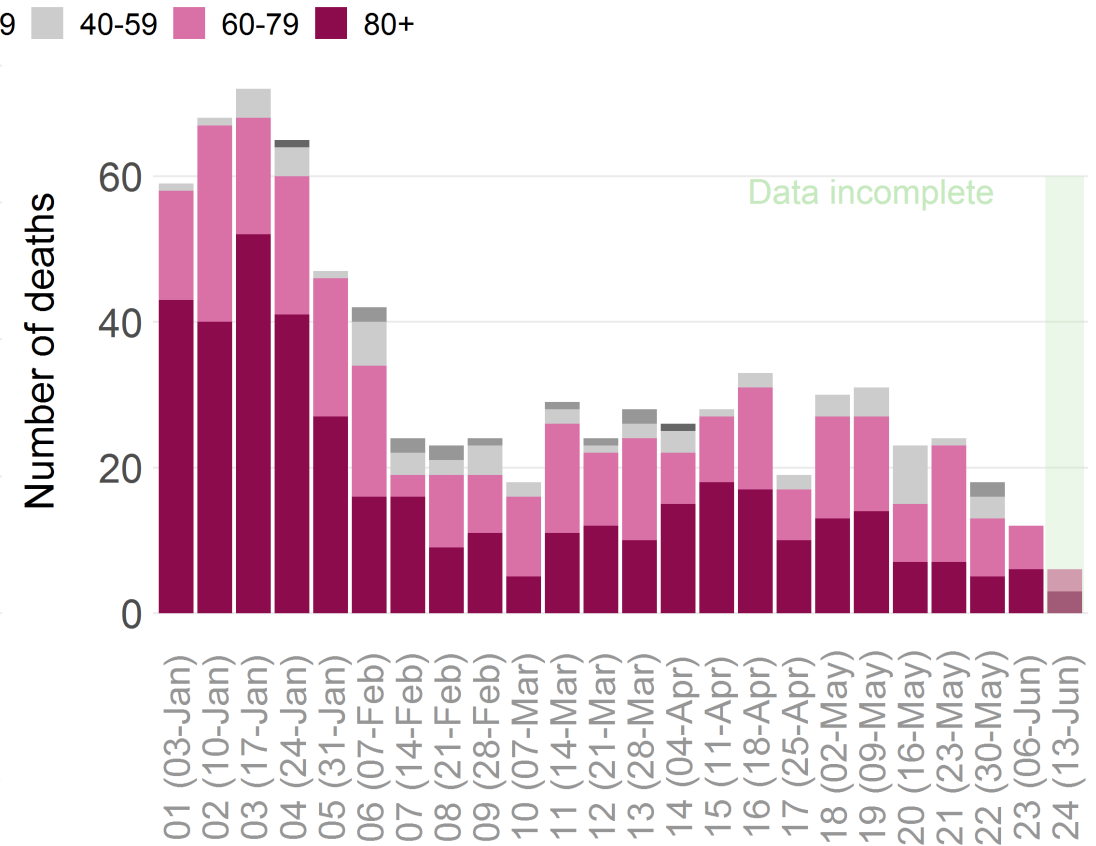


* Data are by census date for hospitalizations
Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Jun-23-2021

Number of new hospital admissions continues to decrease. The number of hospitalizations among individuals <40 years is low. Deaths are low and among individuals ≥ 60 years.



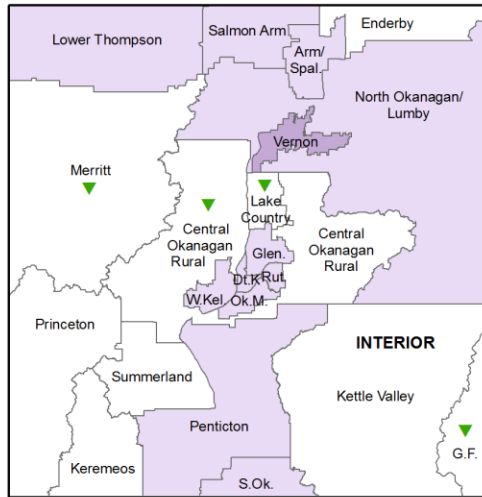
2021 Epi week of admission date
(epi week start date)



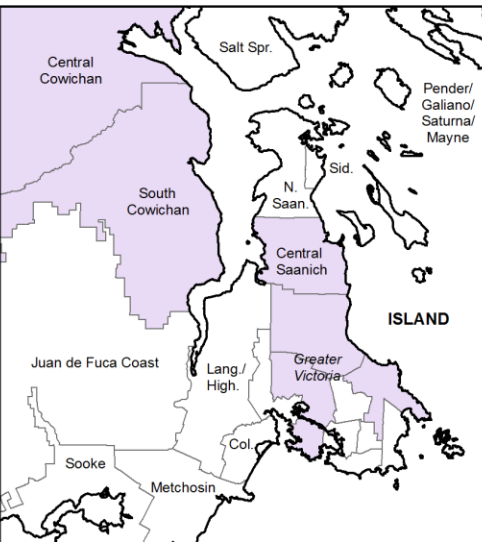
2021 Epi week of death date
(epi week start date)

Data extracted on 2021-06-24; hospitalization and death data from health authority case line list data

Okanagan Inset
(Community Health Service Areas)

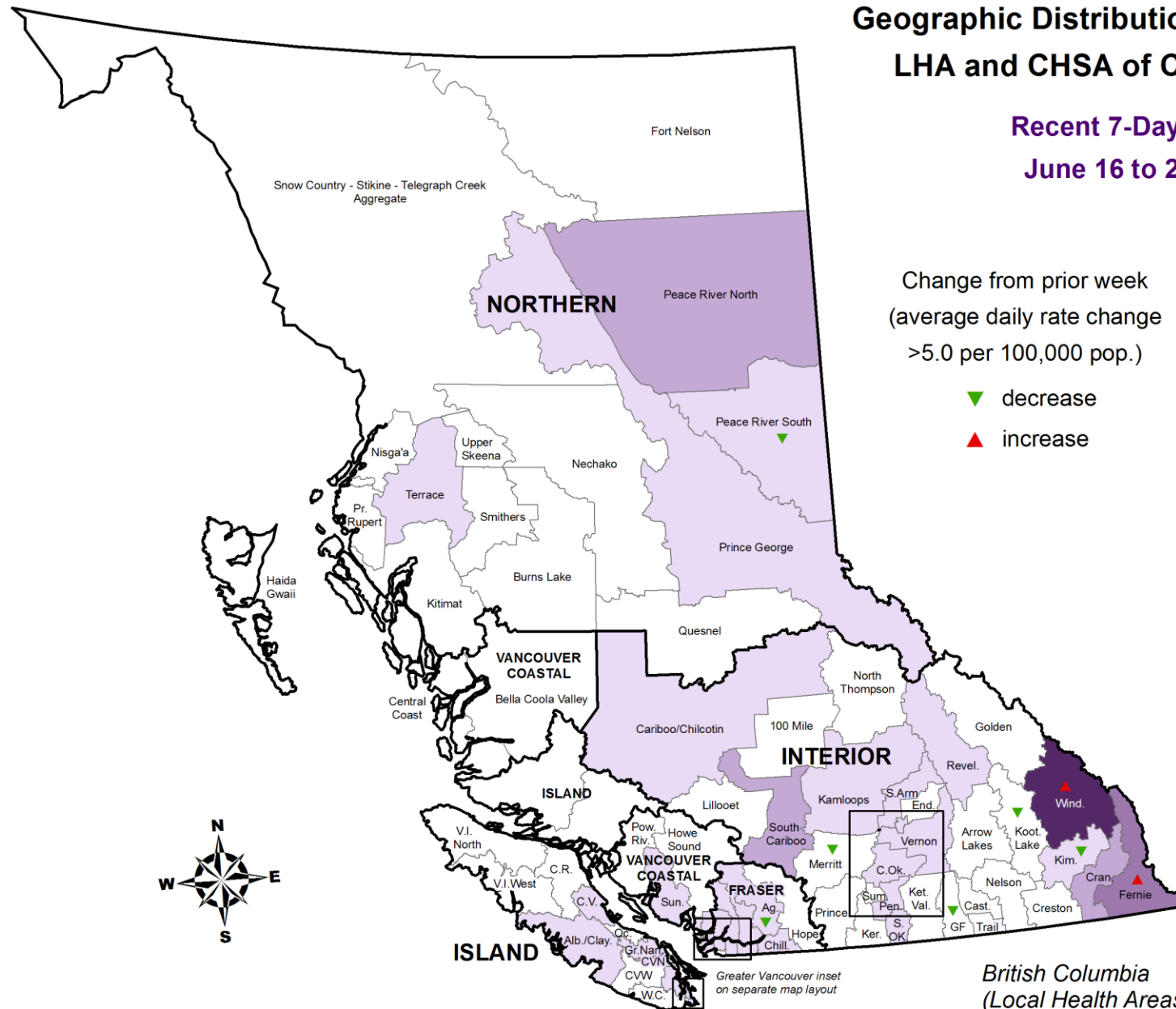


Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 by
LHA and CHSA of Case Residence

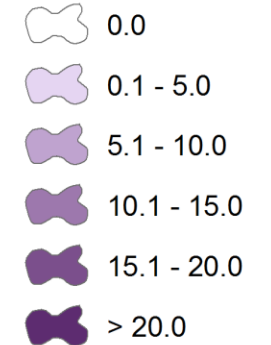
Recent 7-Days Cases
June 16 to 22, 2021



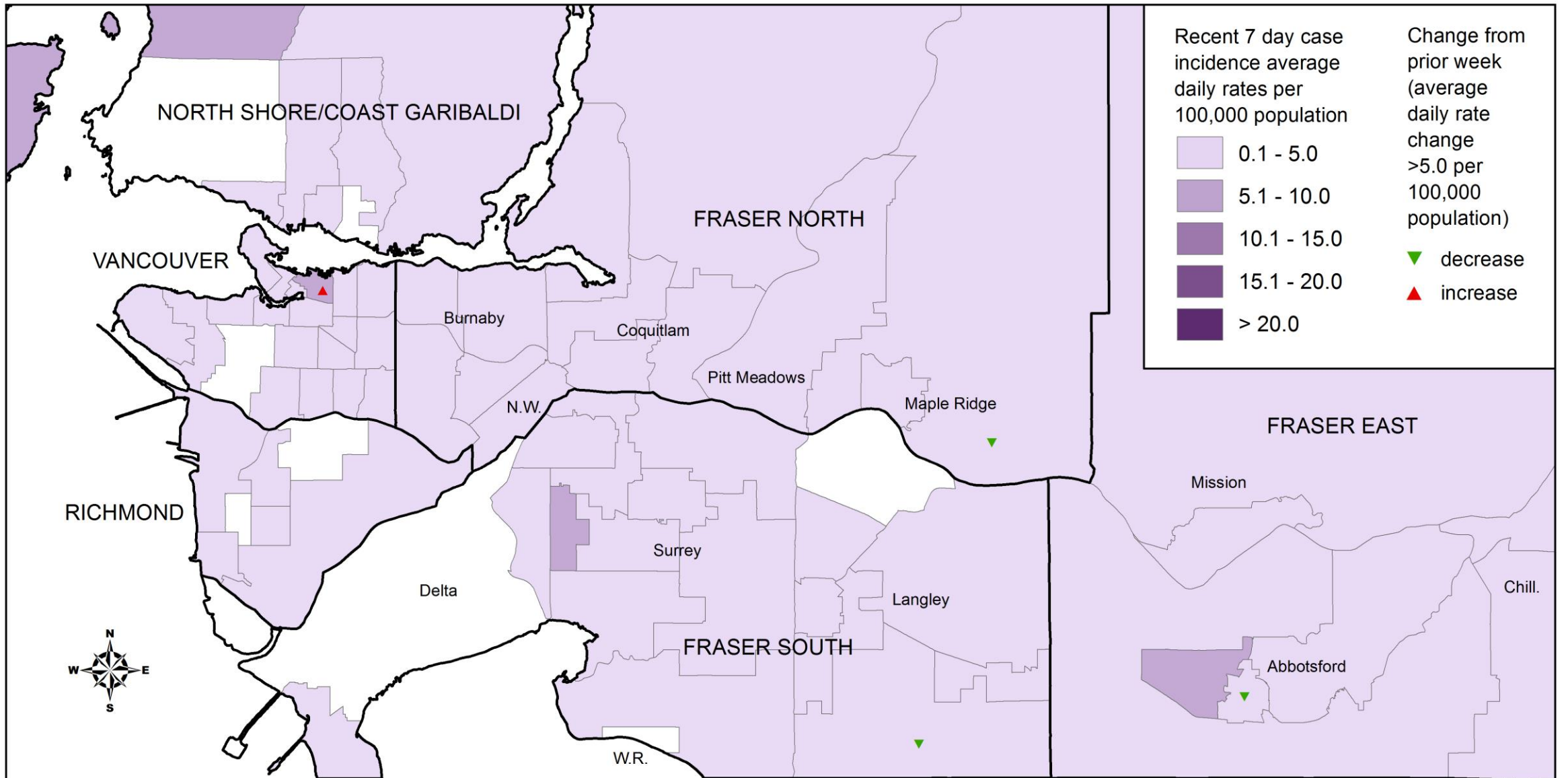
Change from prior week
(average daily rate change
>5.0 per 100,000 pop.)

- ▼ decrease
- ▲ increase

Average daily rate per
100,000 population

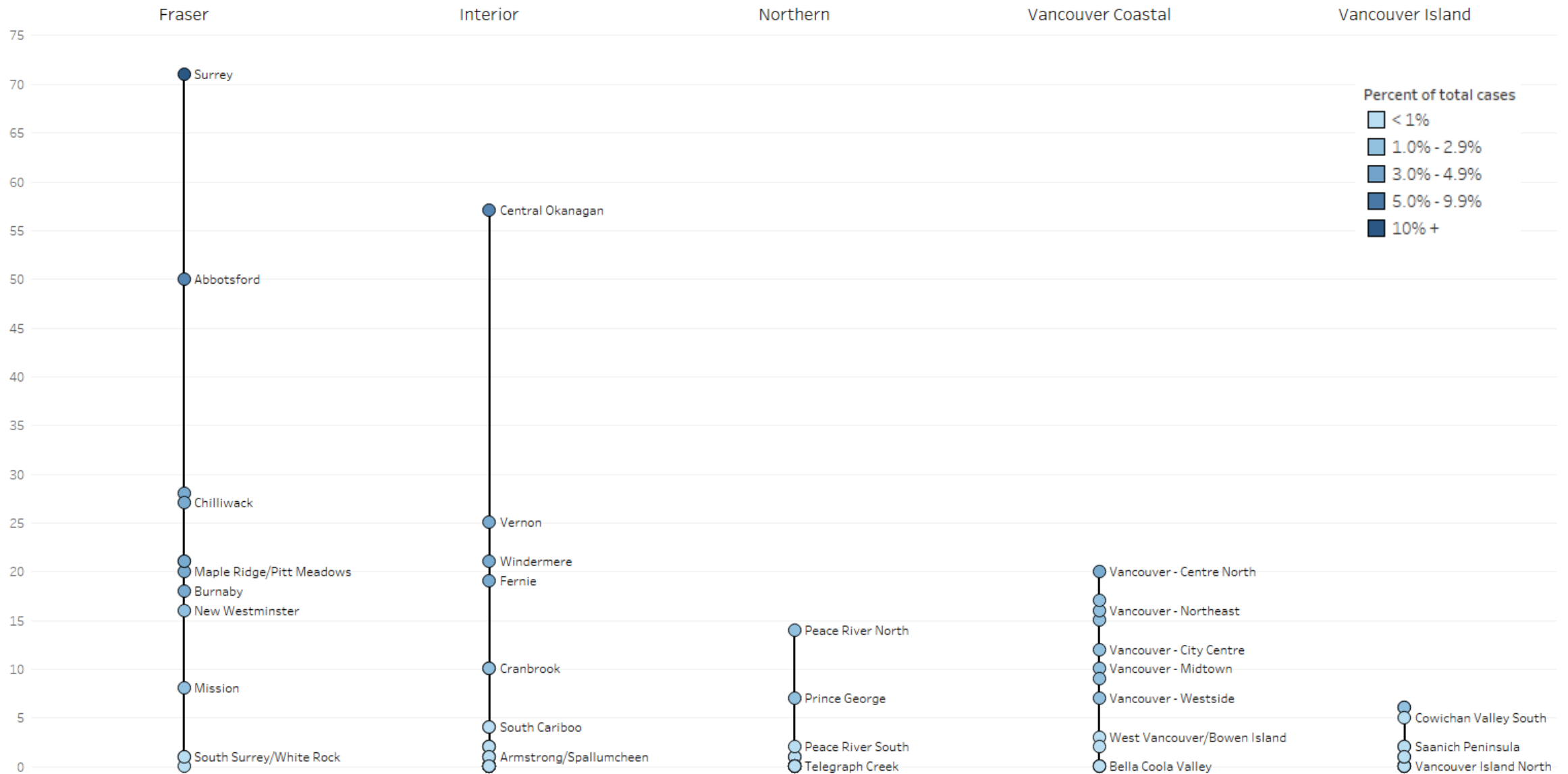


Data source: Public Health Reporting Data Warehouse (PHRDW) integrated COVID dataset; we operate in a live database environment and case information is updated as it becomes available. Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data are by date of first positive test, or date reported to public health for epi-linked cases. Population denominator from BC Stats PEOPLE estimates for 2021.

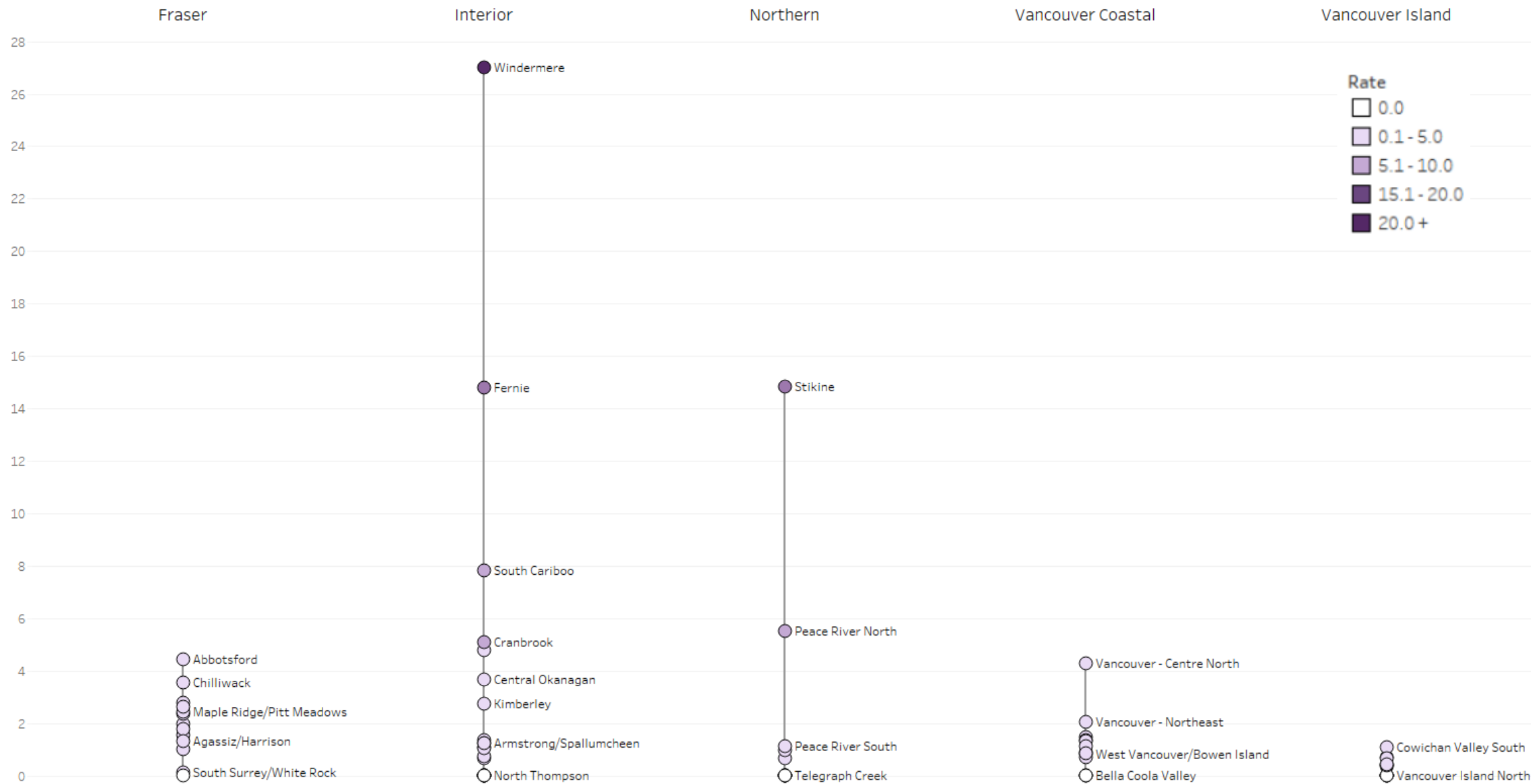


COVID-19 Recent 7-Day Case Incidence Rates by CHSA (June 16 to 22, 2021)

Total cases by local health area, Jun 16 - Jun 22, 2021

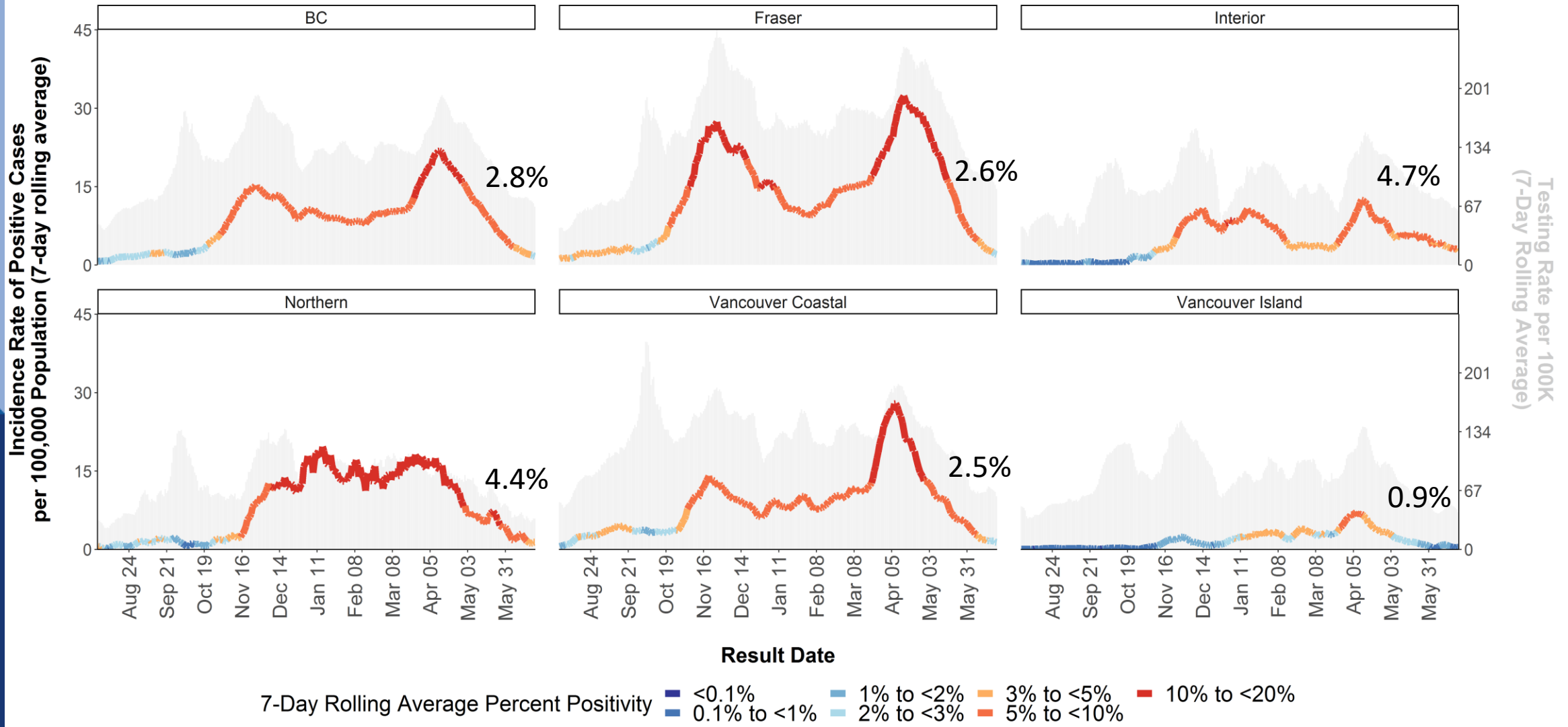


Average daily **rate** of new cases per 100,000 population, by local health area, Jun 16 - Jun 22, 2021



Case incidence decreasing in all HAs. Percent positivity <3% in BC, and ≤5% in all HAs.

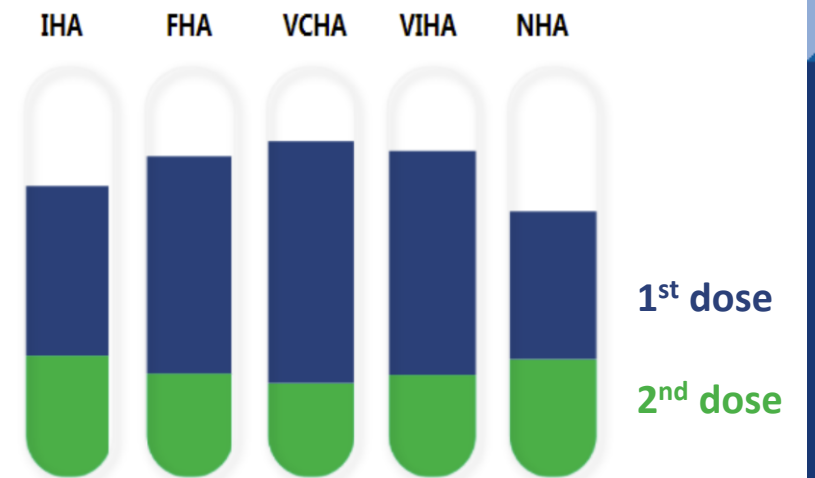
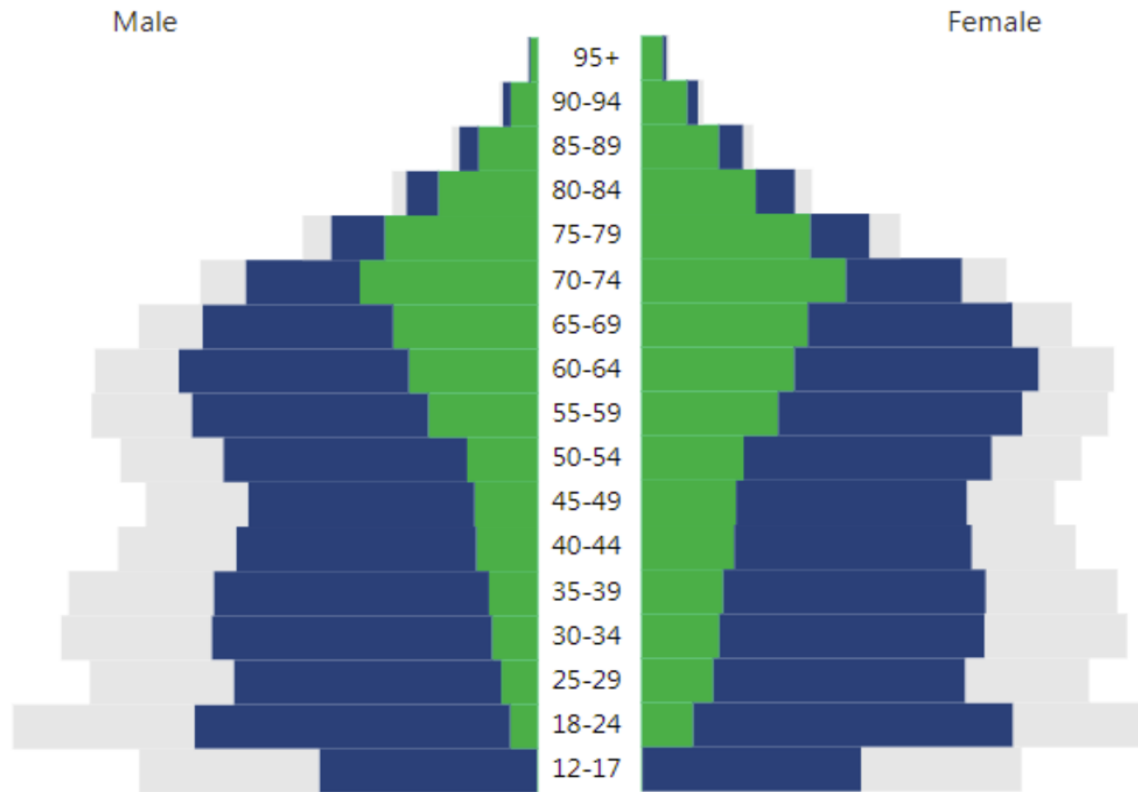
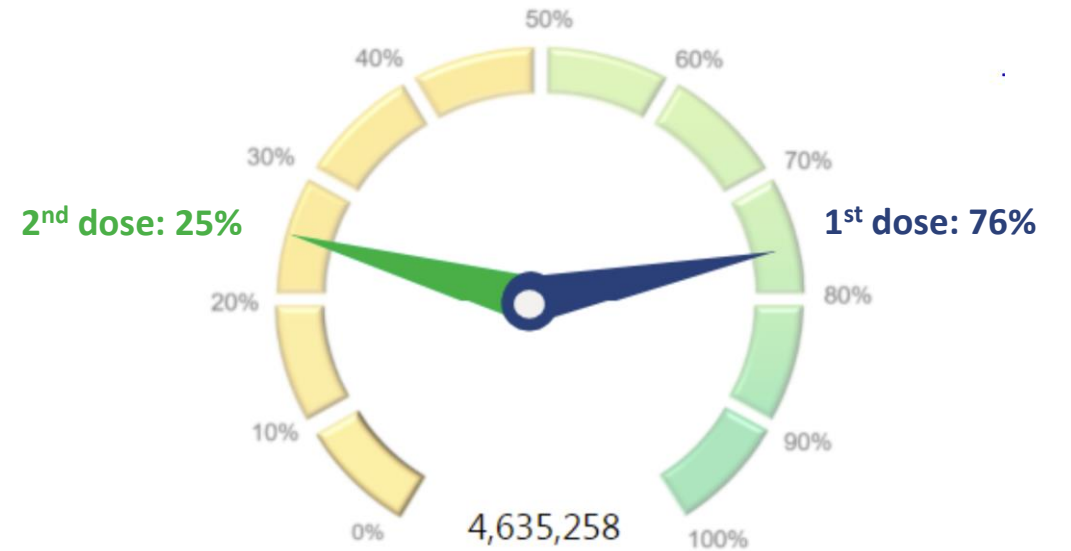
Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Aug 1 2020 - Jun 22, 2021.



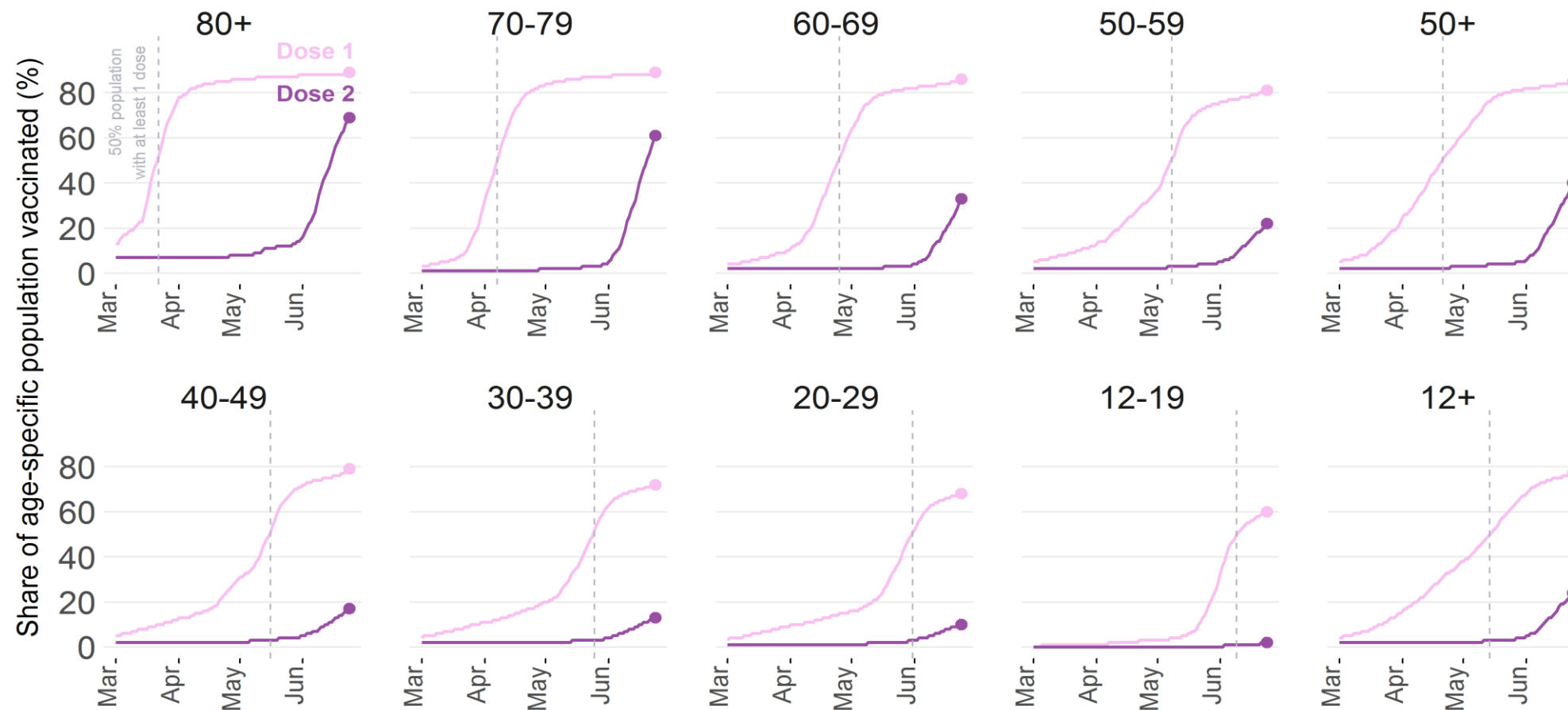
Data source: PLOVER 22-Jun-2021

Vaccination progress in BC as of June 24, 2021 for 1st and 2nd doses

B.C. Population (12+)

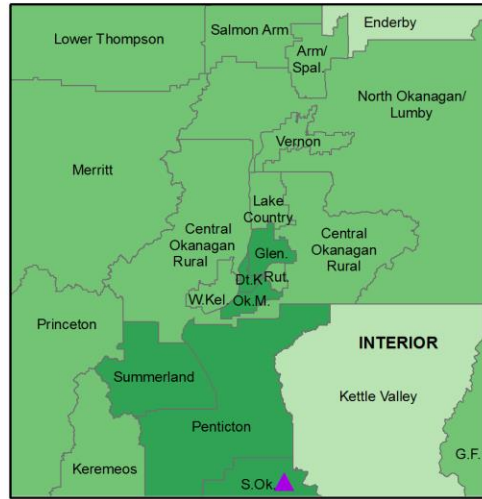


Vaccine coverage in BC by age, June 25th: >75% of 12+ have received first dose; ~40 % of adults 50+, and 25% of 12+ have received their 2nd dose.



Data updated 2021-06-25
Data Source: Provincial Immunization Registry, PHSA

Okanagan Inset
(Community Health Service Areas)

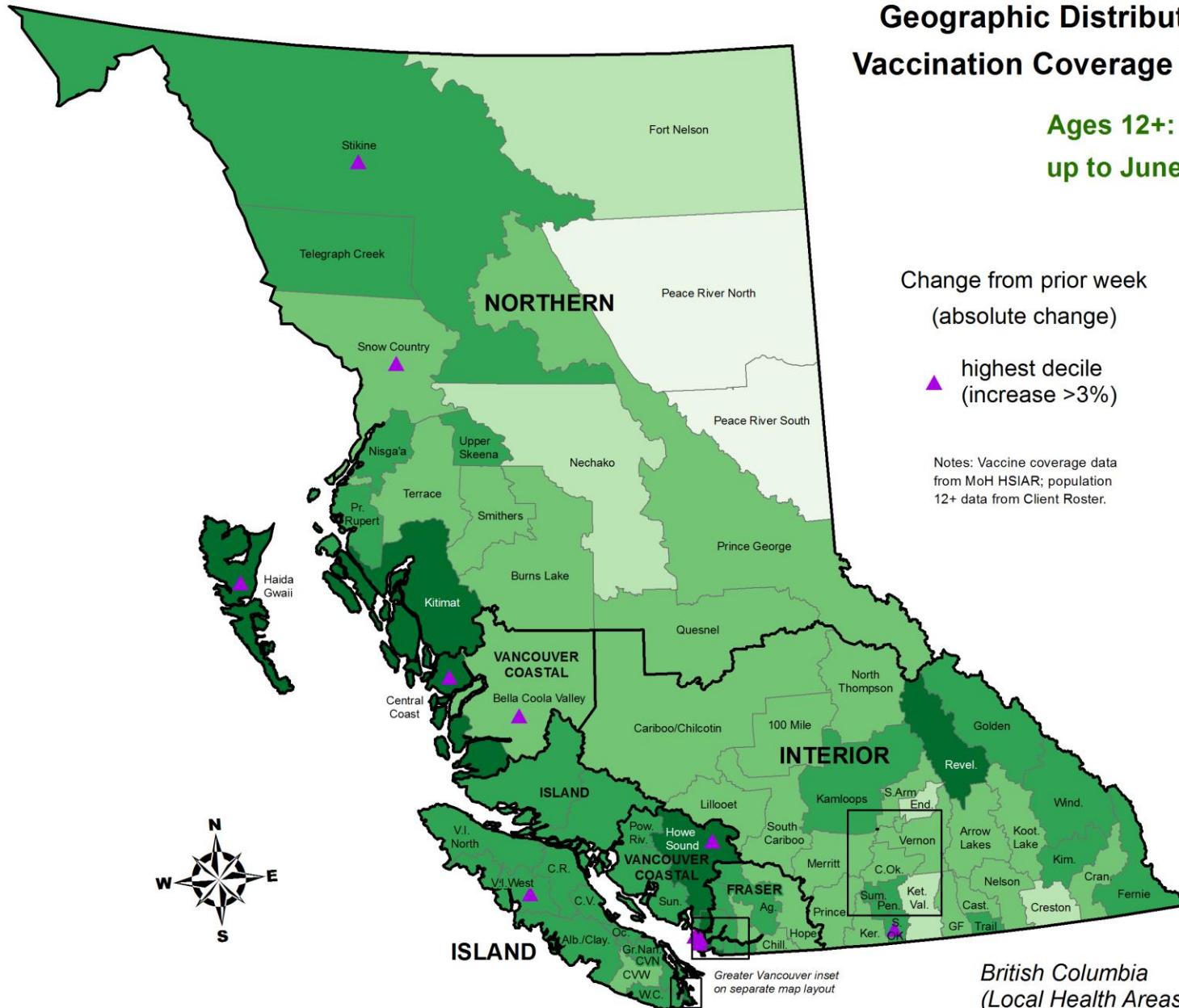


Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA

**Ages 12+: 1st Dose
up to June 21, 2021**



Change from prior week
(absolute change)

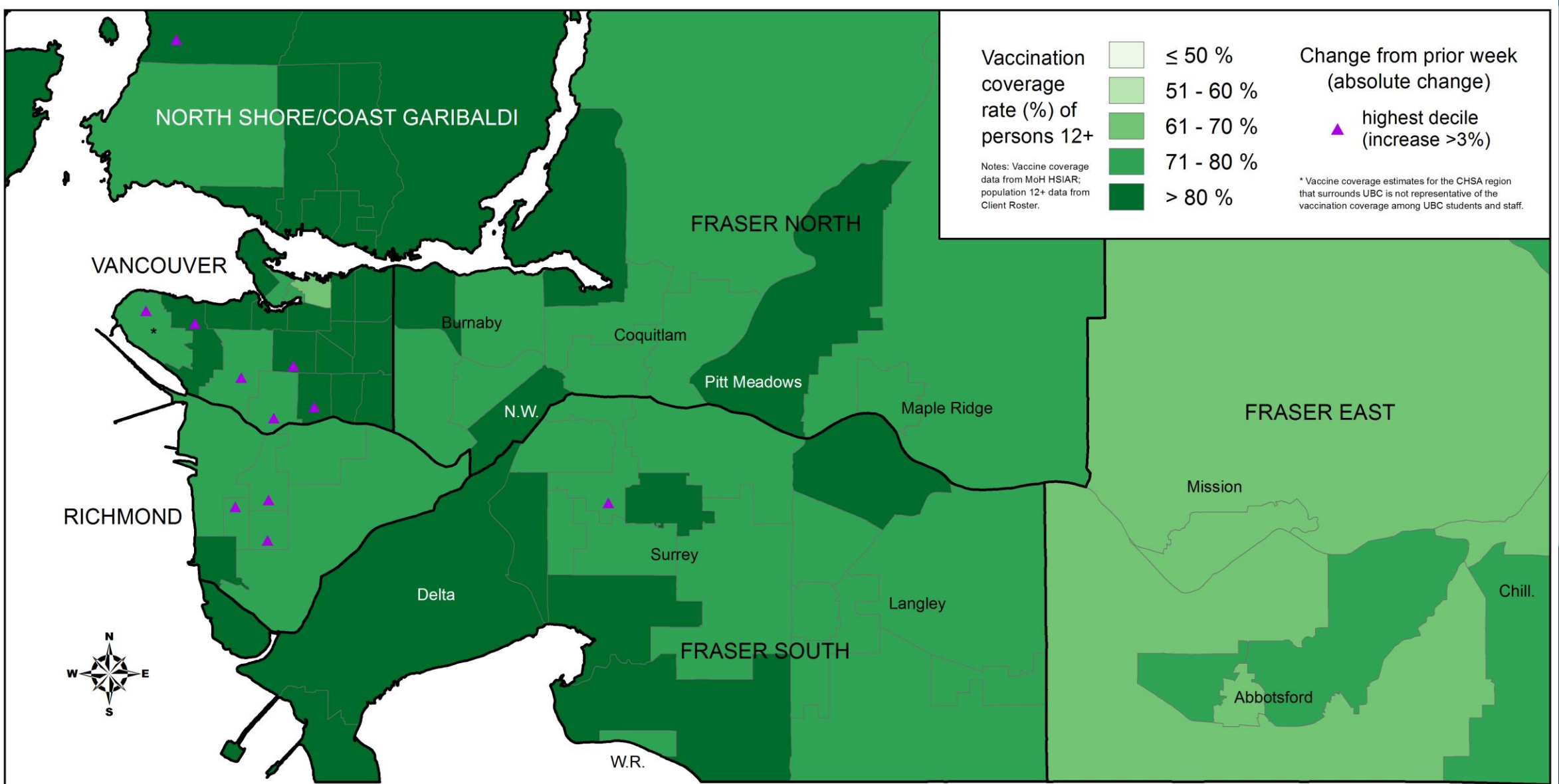
▲ highest decile
(increase >3%)

Notes: Vaccine coverage data
from MoH HSIAR; population
12+ data from Client Roster.

Vaccination coverage
rate (%) of persons 12+

- ≤ 50 %
- 51 - 60 %
- 61 - 70 %
- 71 - 80 %
- > 80 %

British Columbia
(Local Health Areas)



COVID-19 Vaccination Coverage by CHSA: Ages 12+ 1st Dose (up to June 21, 2021)

Okanagan Inset
(Community Health Service Areas)

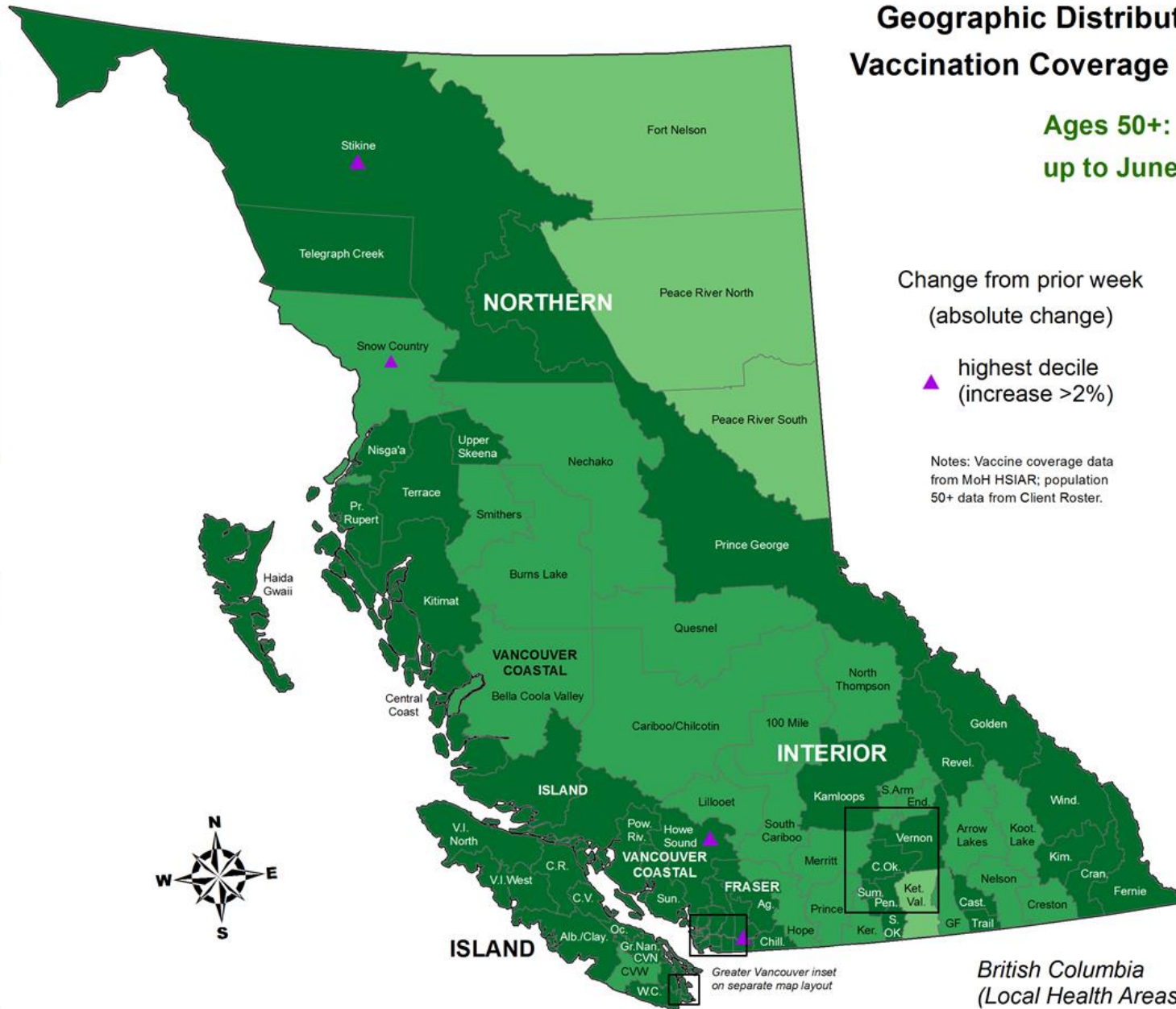


Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA

**Ages 50+: 1st Dose
up to June 21, 2021**

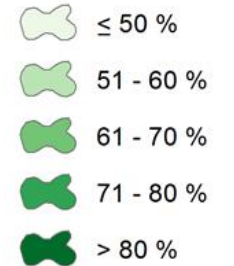


Change from prior week
(absolute change)

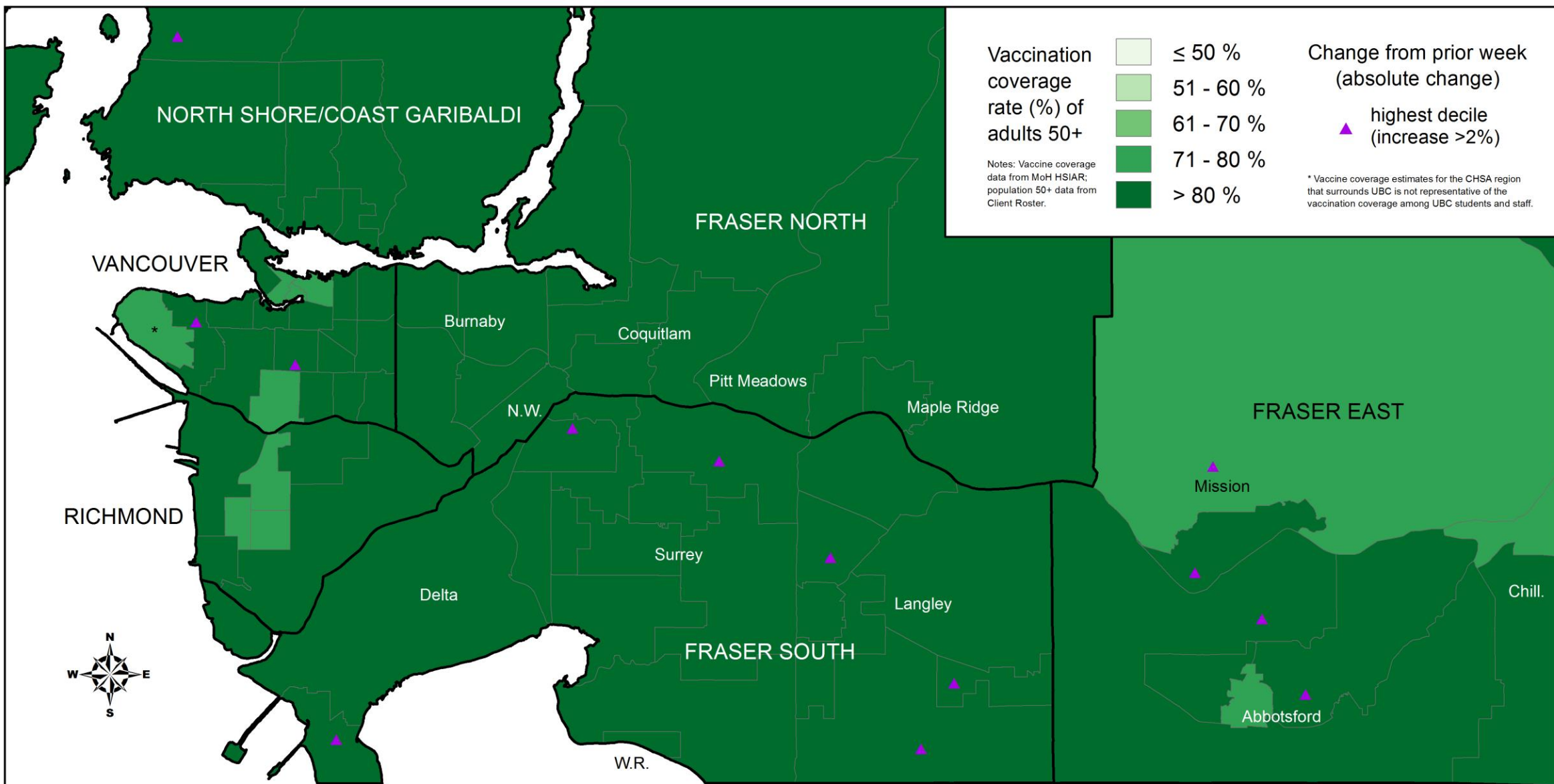
▲ highest decile
(increase >2%)

Notes: Vaccine coverage data
from MoH HSIAR; population
50+ data from Client Roster.

Vaccination coverage
rate (%) of adults 50+

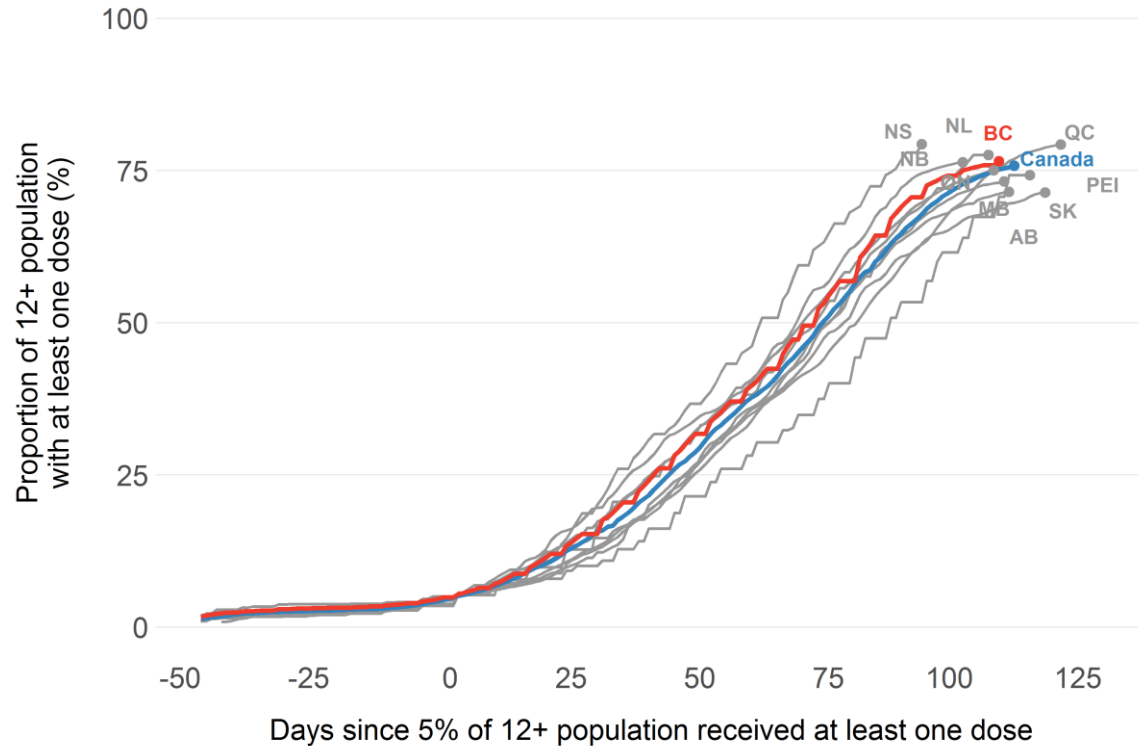


British Columbia
(Local Health Areas)

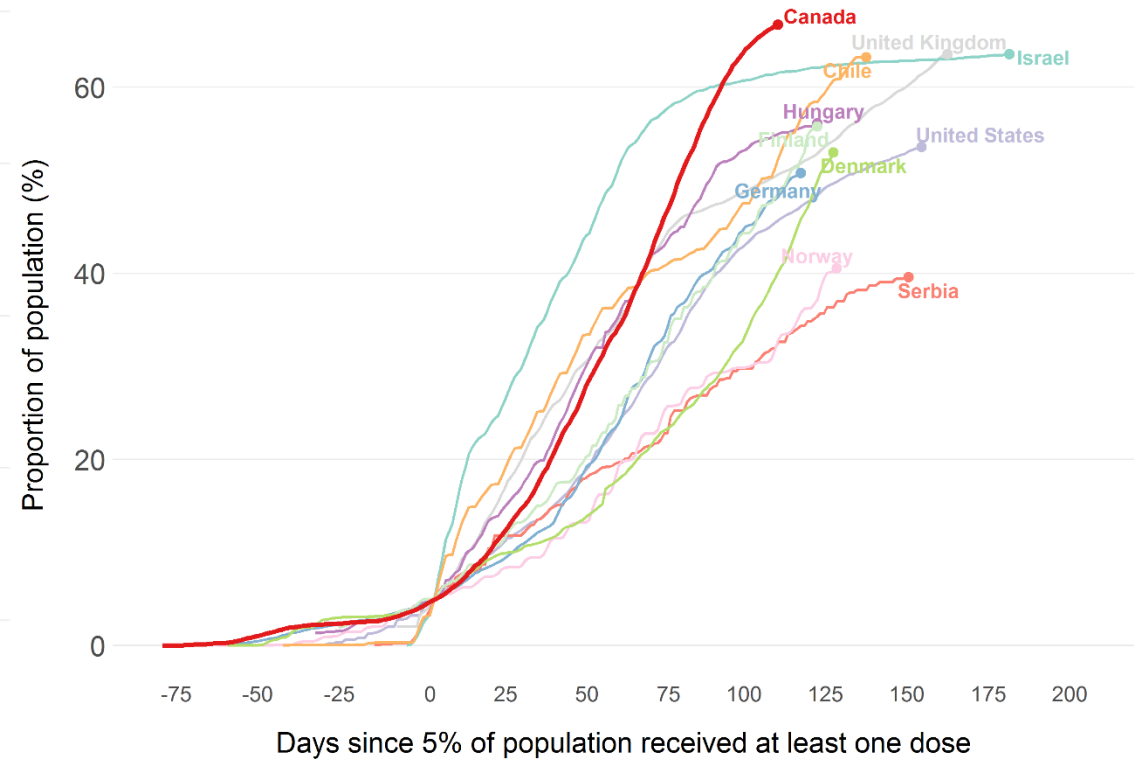


COVID-19 Vaccination Coverage by CHSA: Ages 50+ 1st Dose (up to June 21, 2021)

Nationally, BC's vaccination rate is very close to Canadian average; internationally, Canada is one of the countries with the highest proportion of the population with at least one dose.



Data from COVID-19 Canada Open Data Working Group and extracted 2021-06-22
Population denominator from Statistics Canada table 17-10-0005-01; 12-14 year old age group estimated



Data from Our World in Data and extracted on 2021-06-22

Data source: [Open Data](#)

Visualization: BCCDC

Data source: [Our World in Data](#)

Visualization: BCCDC

Lab - Key Messages

1. **Percent positivity** among publicly funded tests is less than 3% in BC.
2. Testing rates decreased 6% this week (~36,000 total tests June 13 to June 19)
3. There are regional differences in percent positivity, ranging from 0.9% in VIHA to 4.7% in IH.
4. Incidence continues to decline in all age groups; percent positivity is $\leq 5\%$ in all age groups.
5. The provincial weekly median **turnaround time** (time from specimen collection to lab result) is 13 hours, indicating good testing capacity; only 1 in 4 tests took ≥ 24 hours to result.
6. The share of **VOCs** among all positive tests in BC is ~88% from June 13 to 19.
7. Sequencing-based VOC prevalence for June 13 to 19 shows distribution of lineages: P.1 (Gamma)~40%, B.1.1.7 (Alpha)~48% and B.1.617.2 (Delta) ~12%.

Weekly Summary of ALL lab tests performed

2,854,550	total specimens tested
35,721	new this epi week
154,929	total positive specimens
769	new positive this epi week
15 hr	mean turnaround time (TAT)
13 [8-24]	Median [Q1 – Q3] TAT

↓ **6%** relative to last week

↓ **2.2%** positivity
↓ **0.5%** absolute change from last week

↑ **2%** TAT relative to last week

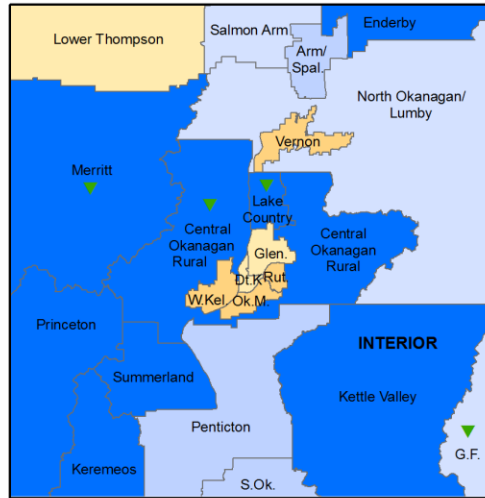
Weekly Summary of Lab tests paid Publicly

2,339,692	total specimens tested
26,223	new this epi week
153,522	total positive specimens
757	new positive this epi week

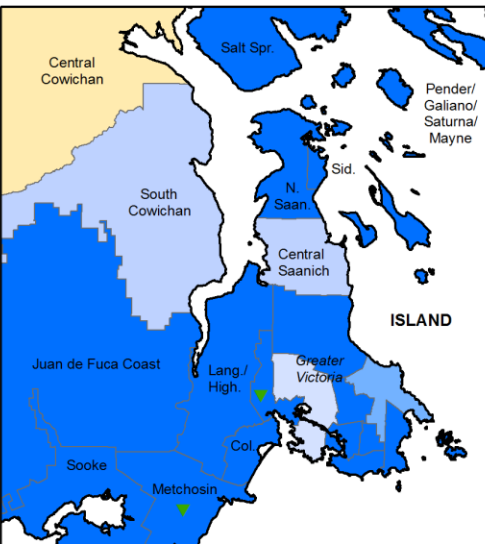
↓ **5%** relative to last week

↓ **2.9%** positivity
↓ **0.8%** absolute change from last week

Okanagan Inset
(Community Health Service Areas)

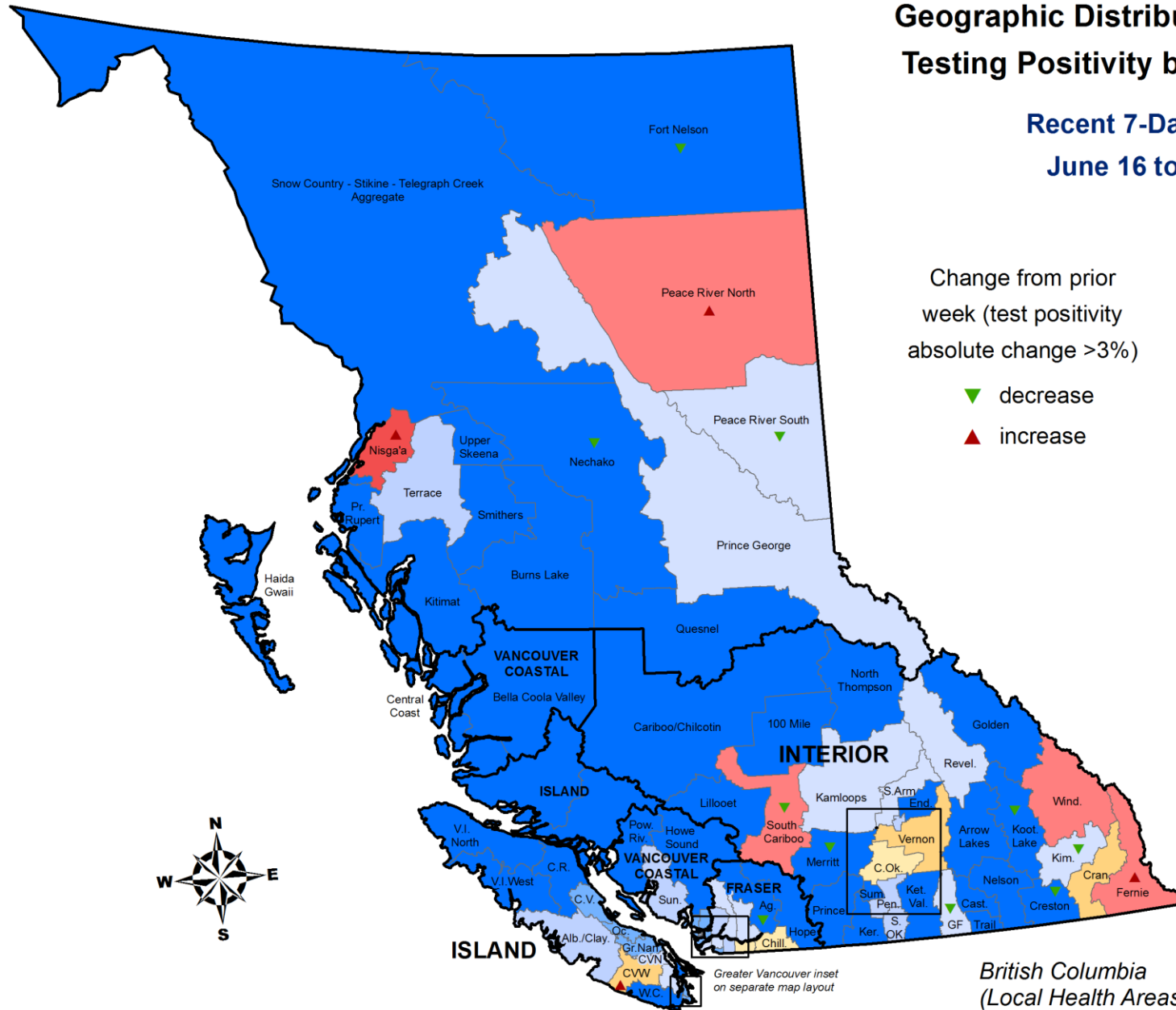


Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19
Testing Positivity by LHA and CHSA

Recent 7-Days Testing
June 16 to 22, 2021



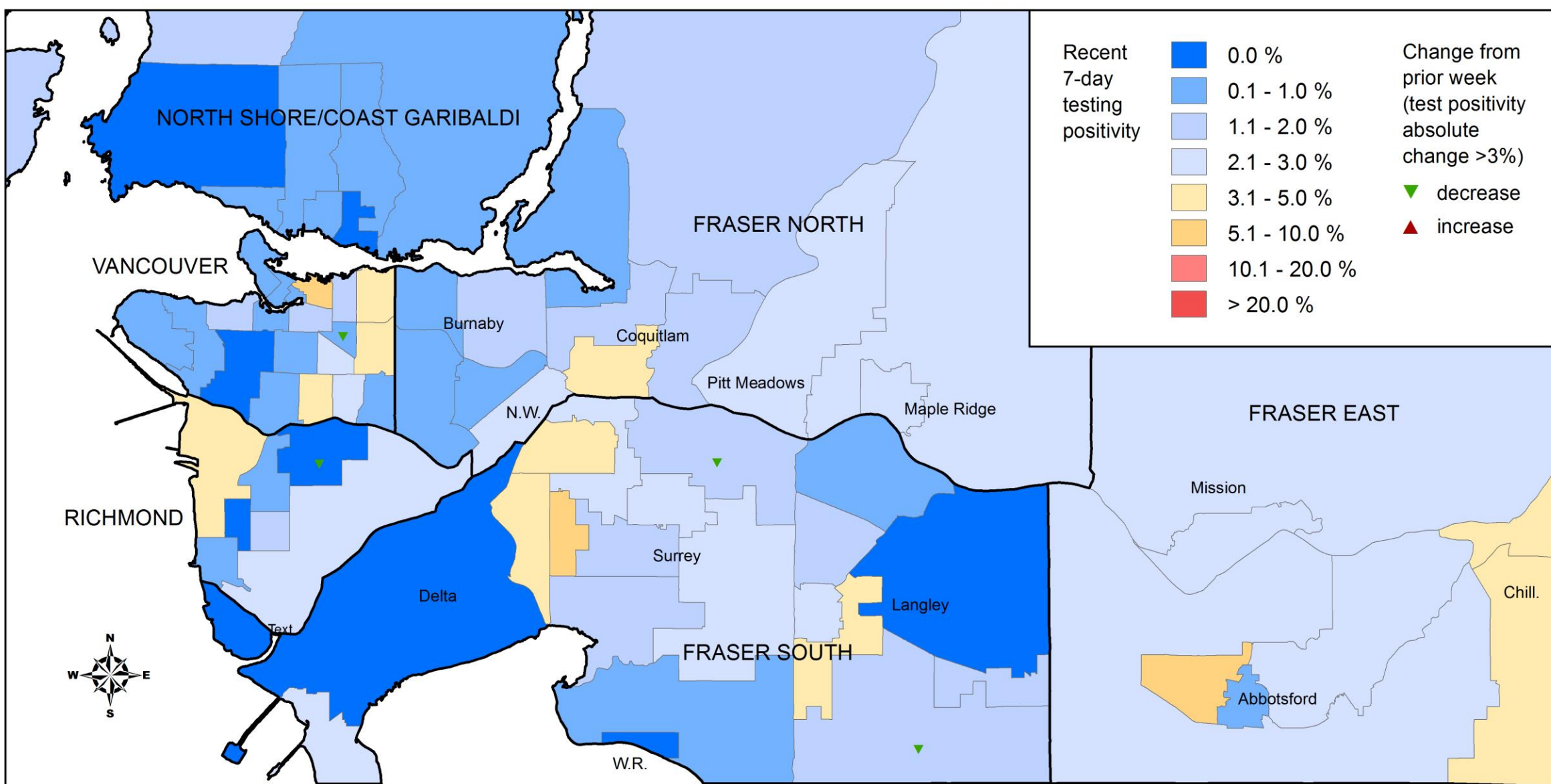
Change from prior week (test positivity absolute change >3%)

- ▼ decrease
- ▲ increase

Test positivity rate

- 0.0 %
- 0.1 - 1.0 %
- 1.1 - 2.0 %
- 2.1 - 3.0 %
- 3.1 - 5.0 %
- 5.1 - 10.0 %
- 10.1 - 20.0 %
- > 20.0 %

Data source: BCCDC Public Health Laboratory PLOVER system (all tests performed). Data are by testing result date, and location of client's residence or if missing, physician's address.

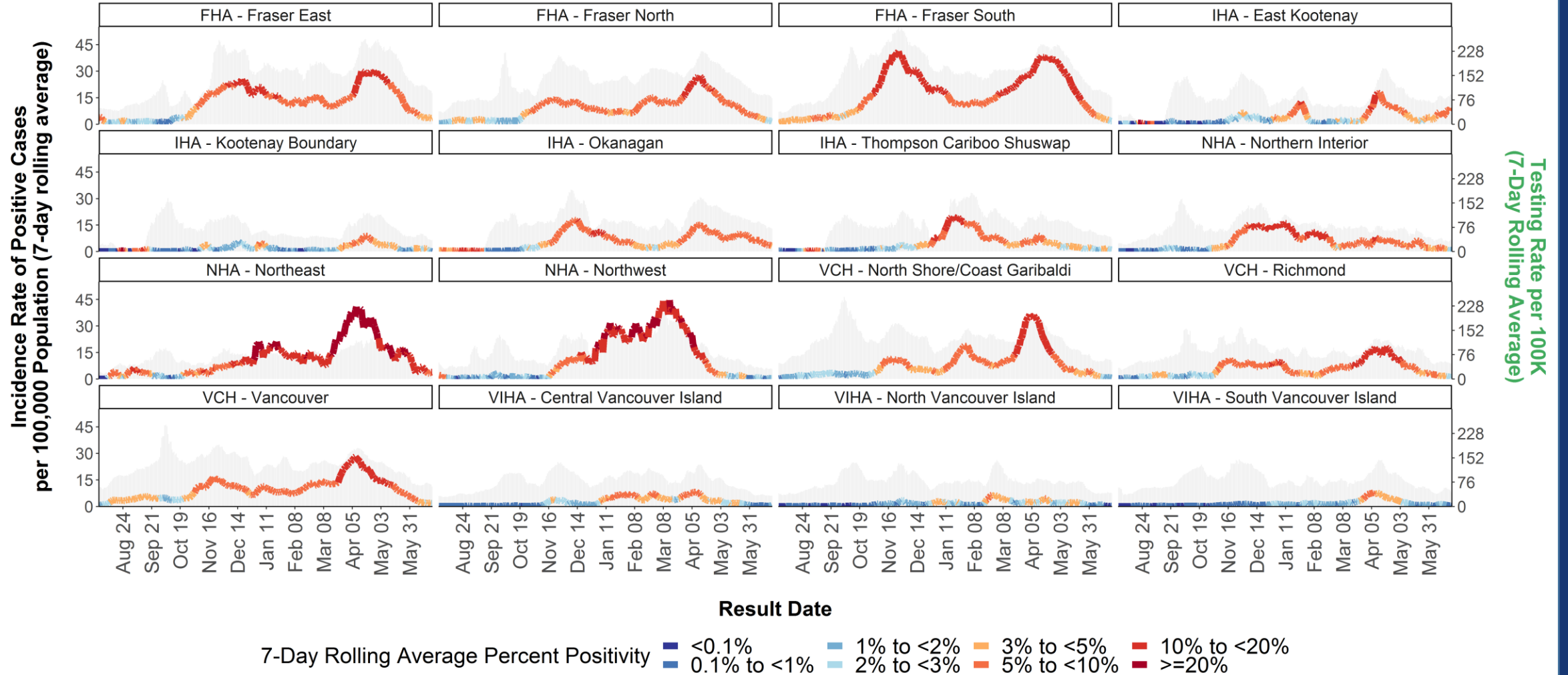


COVID-19 Recent 7-Day Test Positivity by CHSA (June 16 to 22, 2021)

Includes all tests

Incidence is stable or decreasing across all regions, with the exception of a slight increase in East Kootenay; positivity is >5% in Northeast and East Kootenay HSDAs.

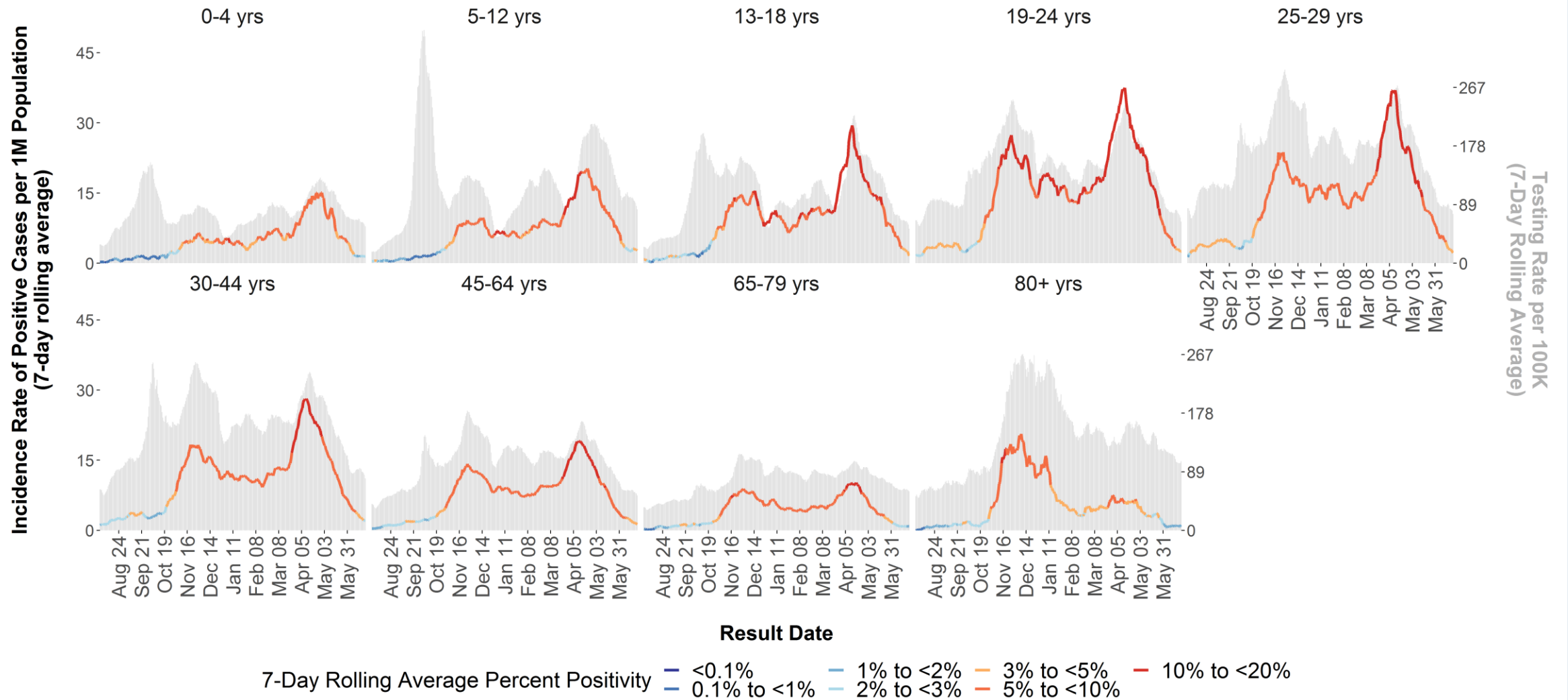
Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Aug 1 2020 - Jun 22, 2021.



Data source: PLOVER 22-Jun-2021

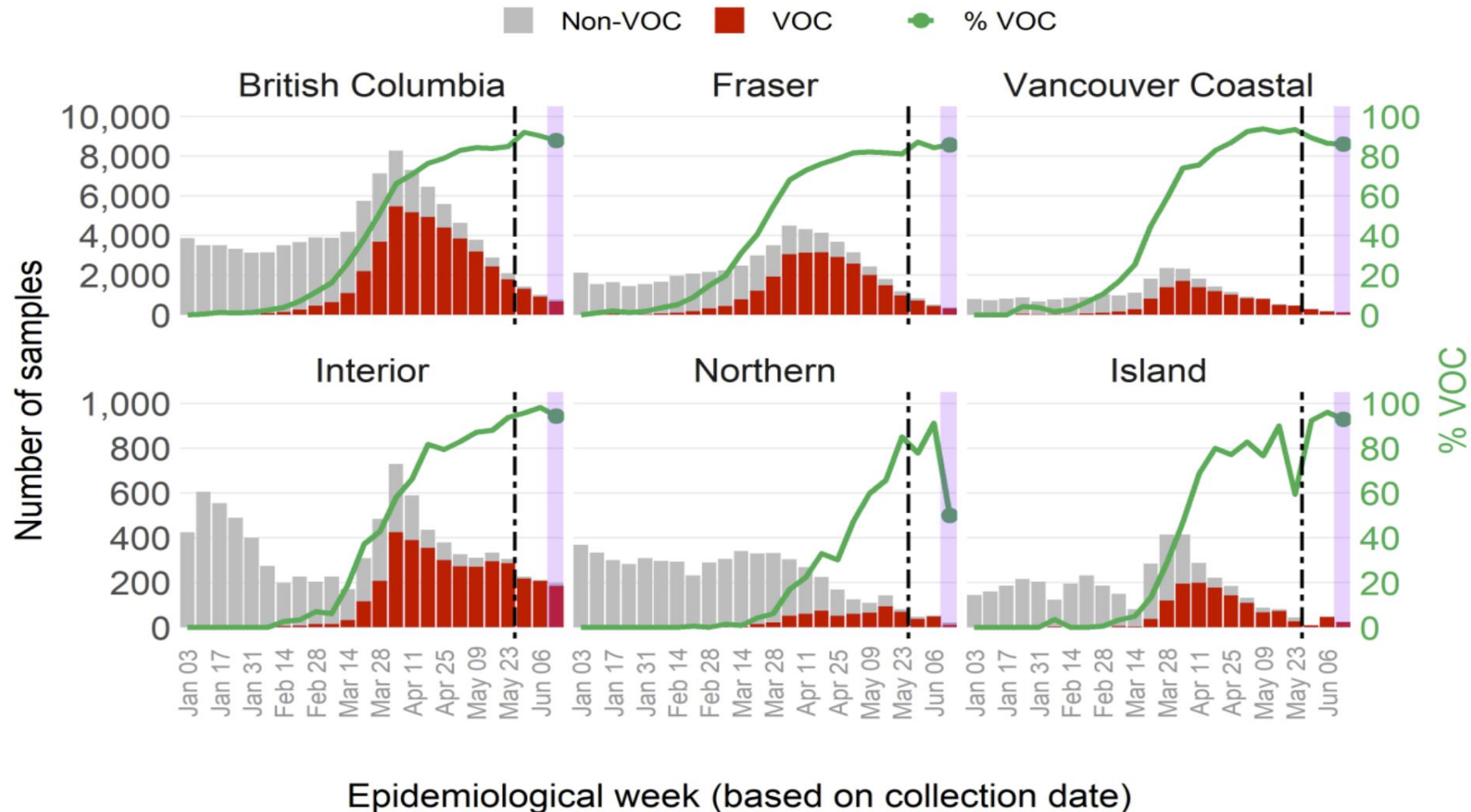
Incidence continues to decline in all age groups; percent positivity is $\leq 5\%$ in all age groups.

Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Aug 1 2020 - Jun 22, 2021.



Data source: PLOVER 22-Jun-2021

The majority of COVID-19 positive samples are VOCs (~88%); but the absolute number of VOC samples is small.

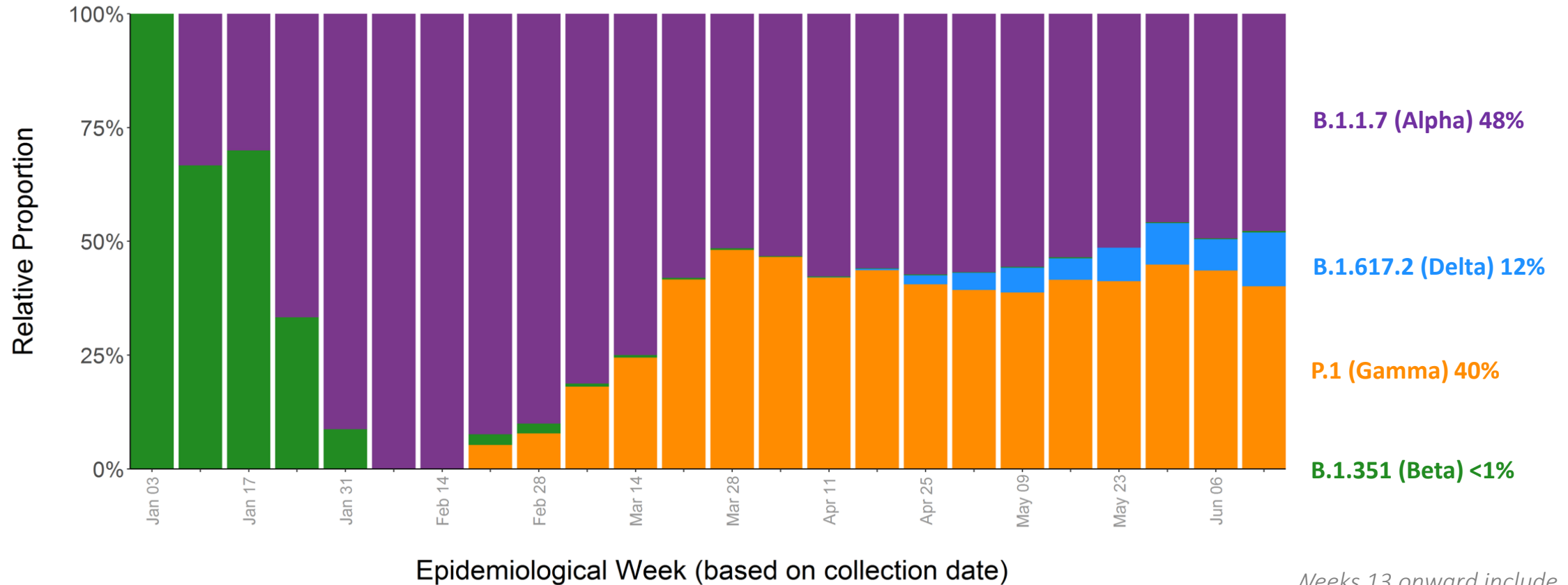


Shaded area reflects partial data and is subject to change

Data from the Plover system at the BCCDC Public Health Lab

This figure can also be found in the [weekly VOC report](#)

Among sequenced samples provincially based on information for June 13-19, P.1 (~40%) and B.1.1.7 (~48%) remain two dominant VOCs. B.1.617 increasing, currently represents ~12% of VOCs



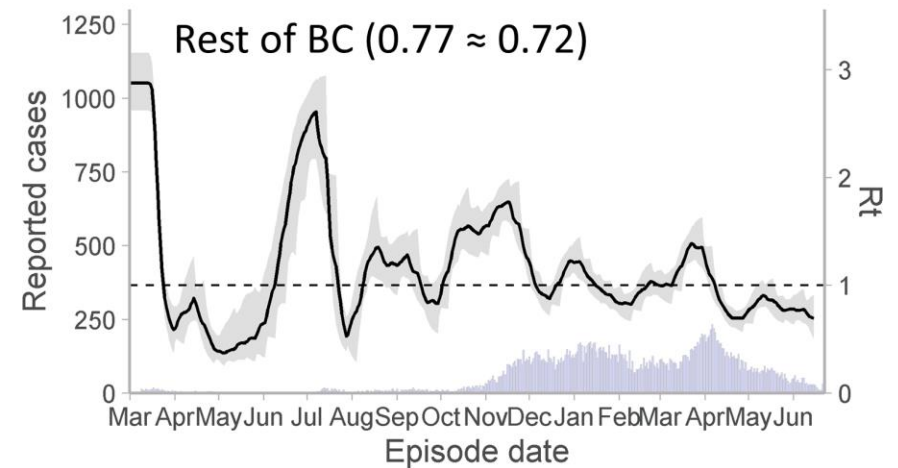
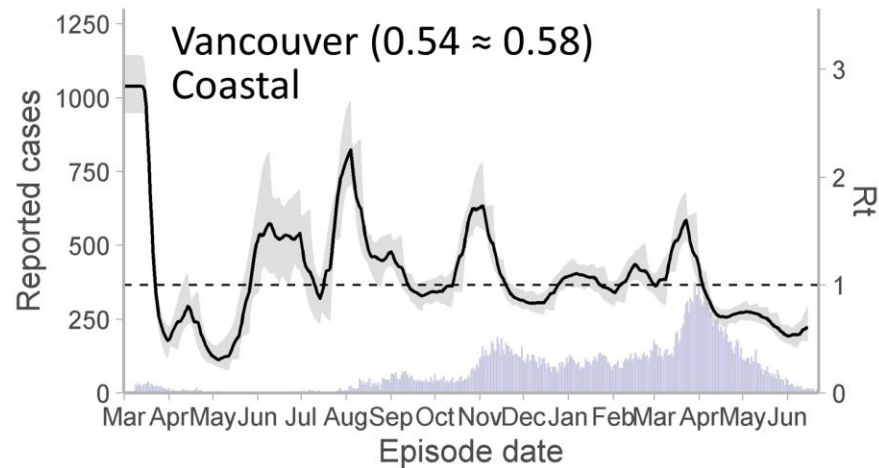
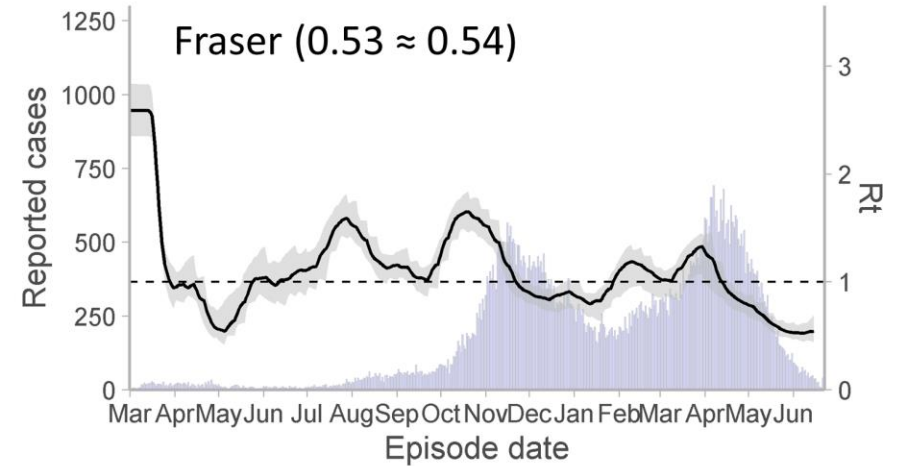
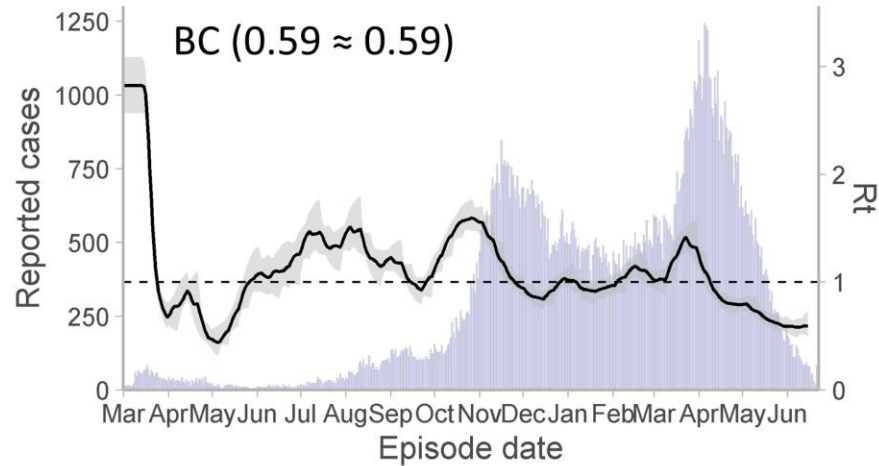
■ B.1.1.7
 ■ B.1.351
 ■ B.1.617.2
 ■ P.1

* the B.1.1.7 and P.1 VoC lineages are captured either by qPCR SNP screen or WGS for randomly selected samples up to epiweek 21; all other circulating VoCs are WGS confirmed and exclude samples sequenced for cluster and/outbreak investigation. In week 12, we used a qPCR SNP that is comprised of a dual N501Y and E484K assay

Weeks 13 onward include specimens from qPCR SNP screening that resulted as presumptive positive for B.1.1.7 and P.1.

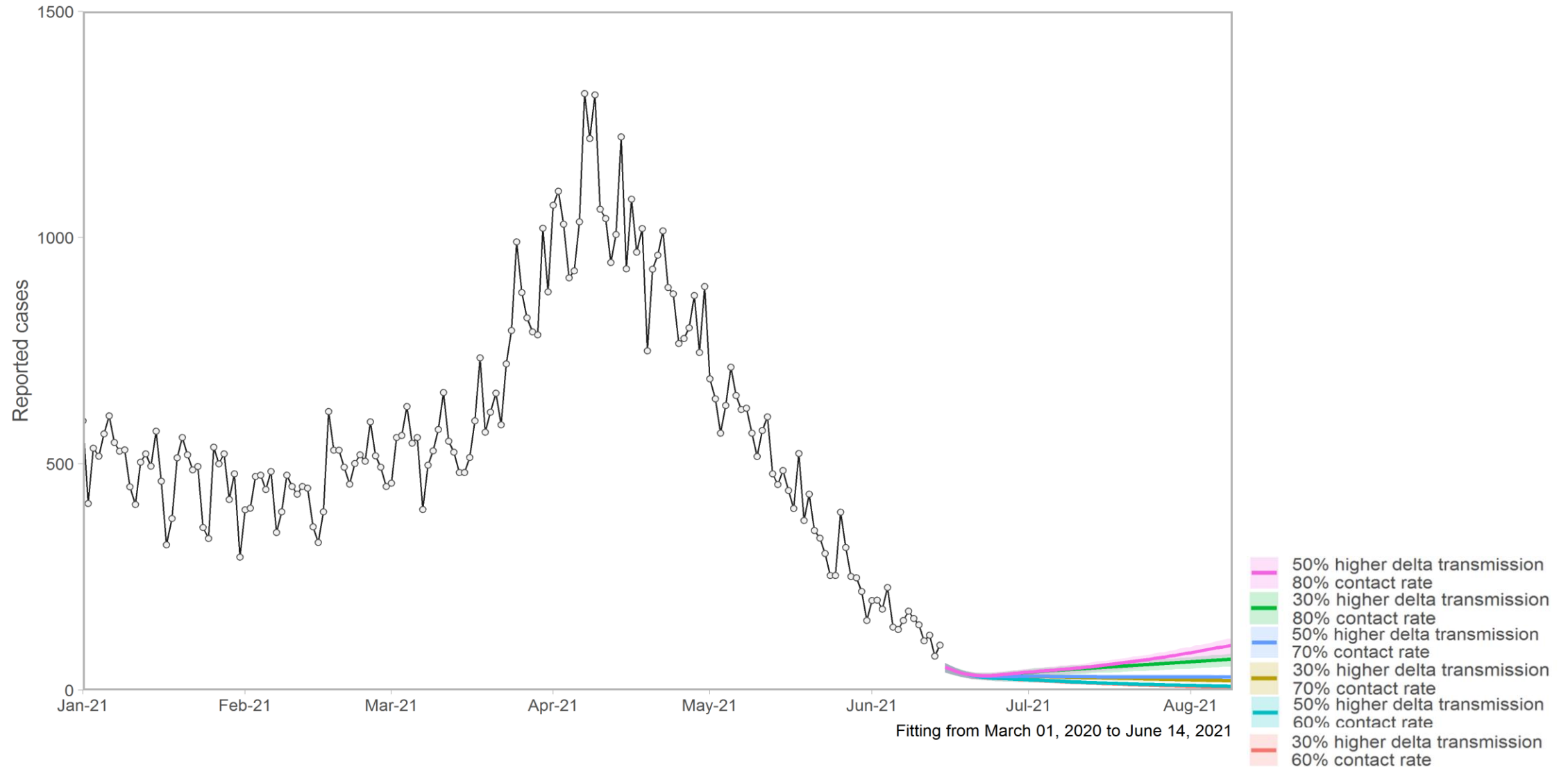
Dynamic compartmental modeling: recent trends

Our model shows that R_t remains below 1 and is stable across BC



Solid black line: median R_t , modeled using all reported cases up to June 22, 2021; Grey band: 5%-95% credible interval; Purple bars: all reported cases. Due to lag from symptom onset to reporting, most recent case counts and R_t are not shown. Recent trend shown comparing 7 day average R_t from (last week \rightarrow this week). Data source: BCCDC HA linelist.

Dynamic Compartmental Modelling: recent trends



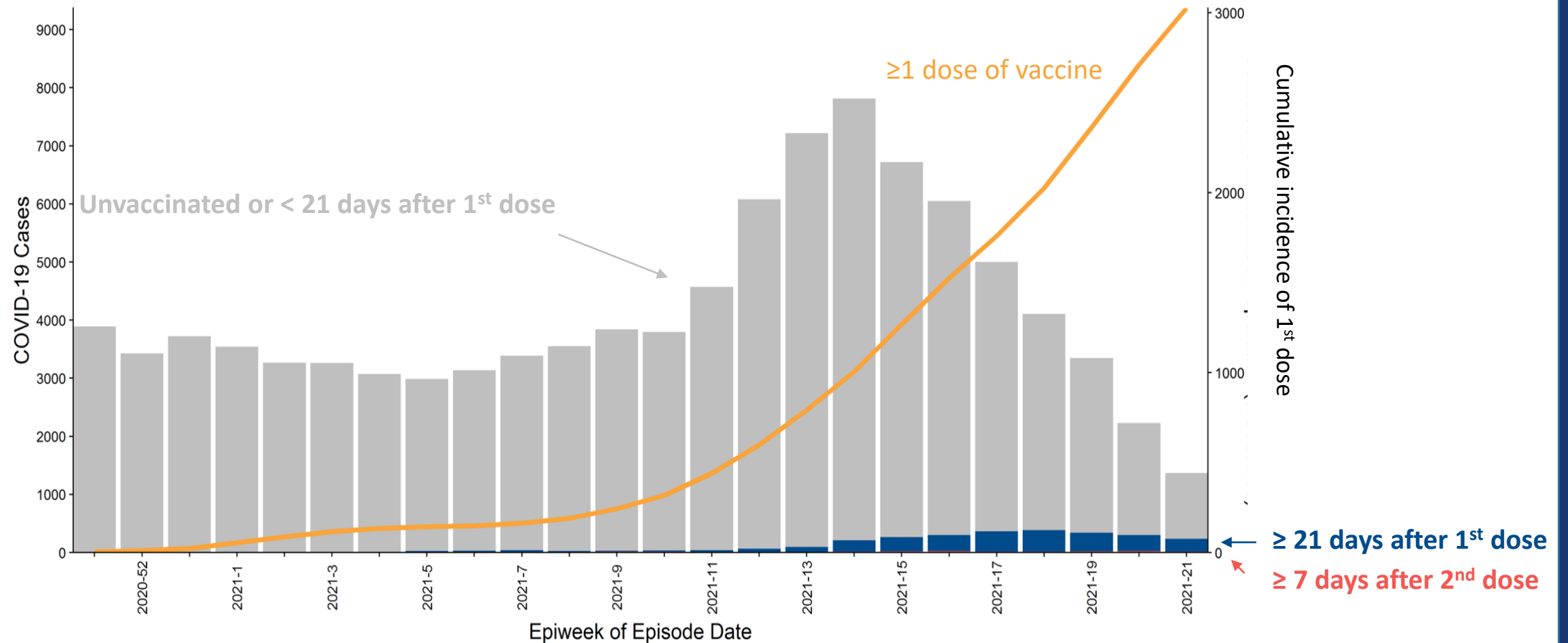
Model notes and assumptions

- **R_t modelling:** a dynamic compartmental model was fit to COVID-19 data for BC using a Bayesian framework (Anderson et al. 2020. PLoS Comp. Biol. 16(12): e1008274). Results are presented as provincial and regional time-varying estimates of average daily transmission rate (R_t).
 - the model does not consider importation of cases, hence all transmission is assumed to arise from local cases
 - the model does not distinguish cases arising from variants of concern (VoCs) versus 'wild-type' COVID-19, hence model estimates represent average rates of transmission

COVID-19 Vaccine Breakthrough Case Analysis

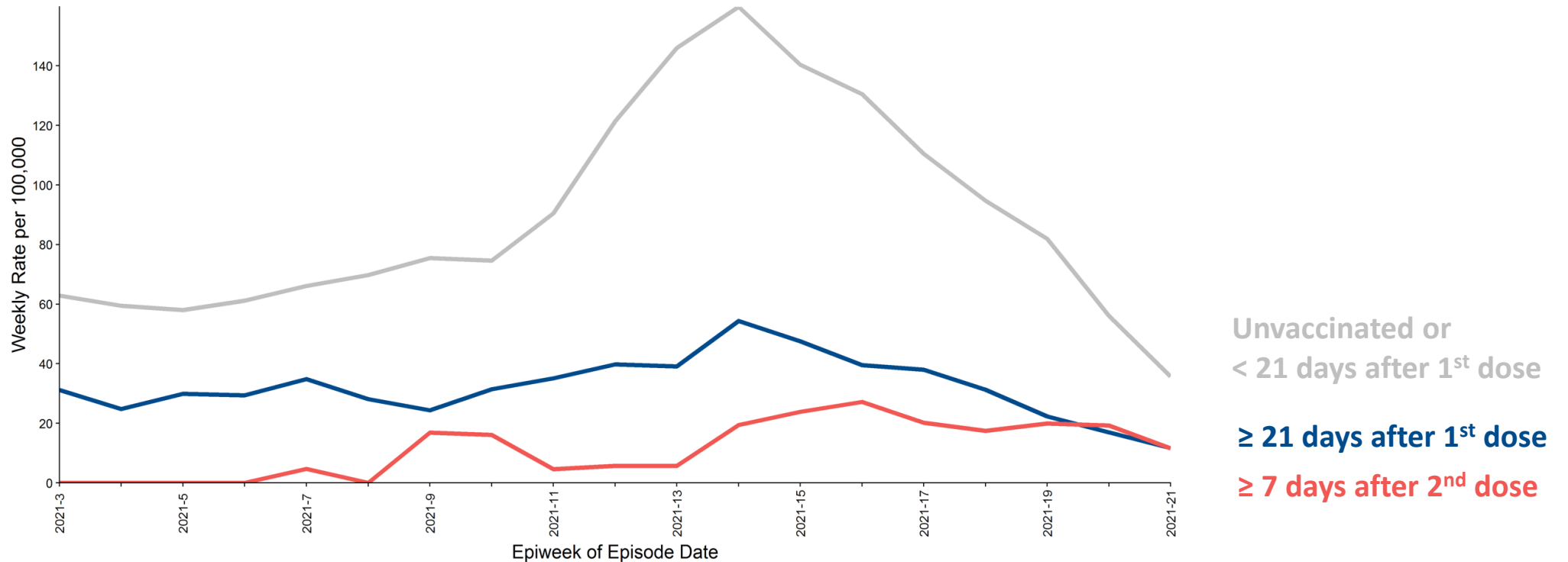
May 31, 2021

Weekly COVID-19 cases by vaccine status; and cumulative population with ≥ 1 dose of vaccine, BC, Dec 13 2020- May 29, 2021 (N=99,382)



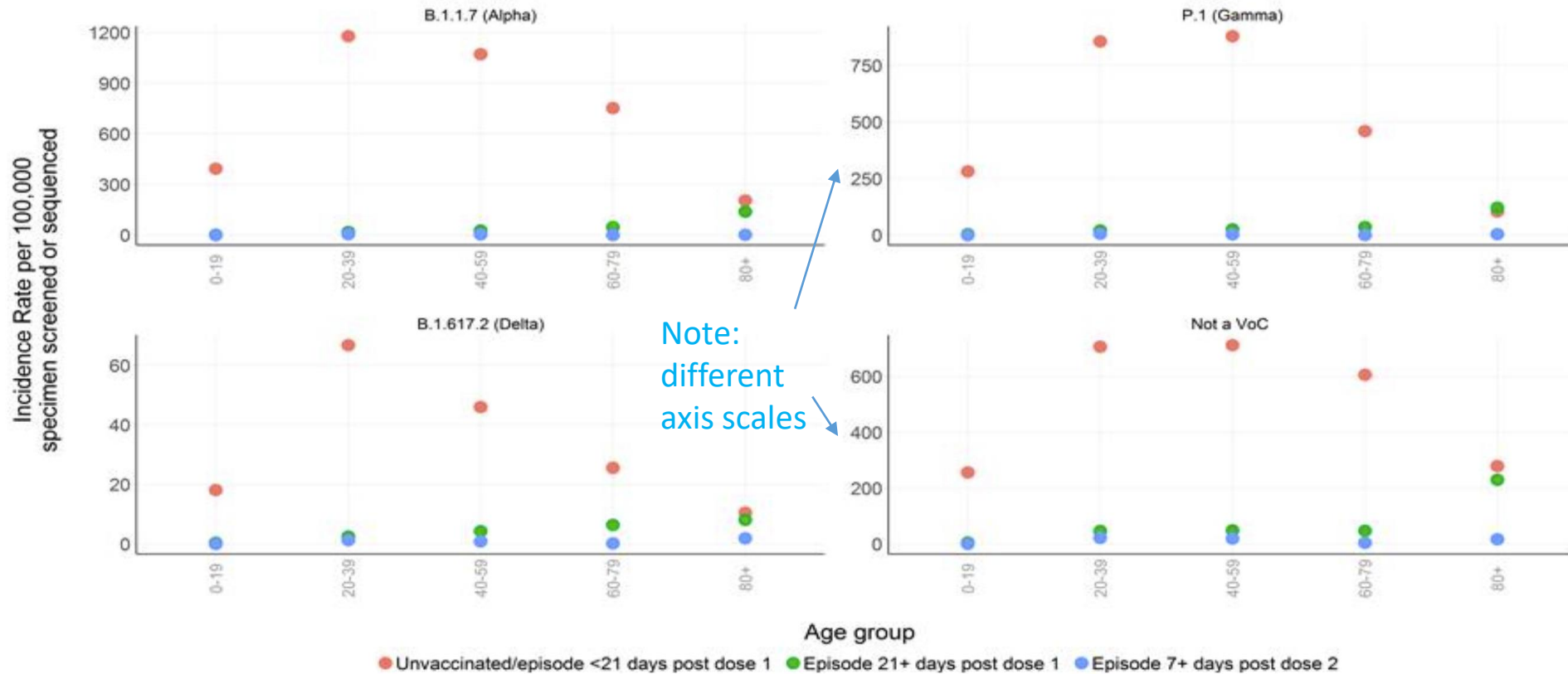
Rate of COVID-19 has been higher among unvaccinated individuals than among vaccinated individuals.

Weekly rate of COVID-19 by vaccine status, BC, Jan 17- May 29, 2021(N=81,531)



Cumulative Incidence of SARS-COV-2 Infection by VOC, age and vaccination status in BC (April 11-June 19, 2021)

Cumulative Incidence Rate of SARS-CoV-2 Infections by VoC, Vaccination Status, and Age in BC
April 11 - Jun 19, 2021



Vaccine effectiveness measures protection from vaccines better than counting breakthrough cases

- As vaccine coverage increases, more cases will be among vaccinated people. Even with a highly effective vaccine, in a population that is fully immunized, all cases would be among vaccinated.
- Counting “breakthrough” cases tells us how many cases are vaccinated. It does not measure protection from vaccines because it only looks at cases among vaccinated people.
- To assess how well the vaccine is protecting the population, we measure vaccine effectiveness (VE). VE measures how much the risk is reduced in vaccinated compared to unvaccinated people.
- BCCDC is shifting to report VE rather than breakthrough cases

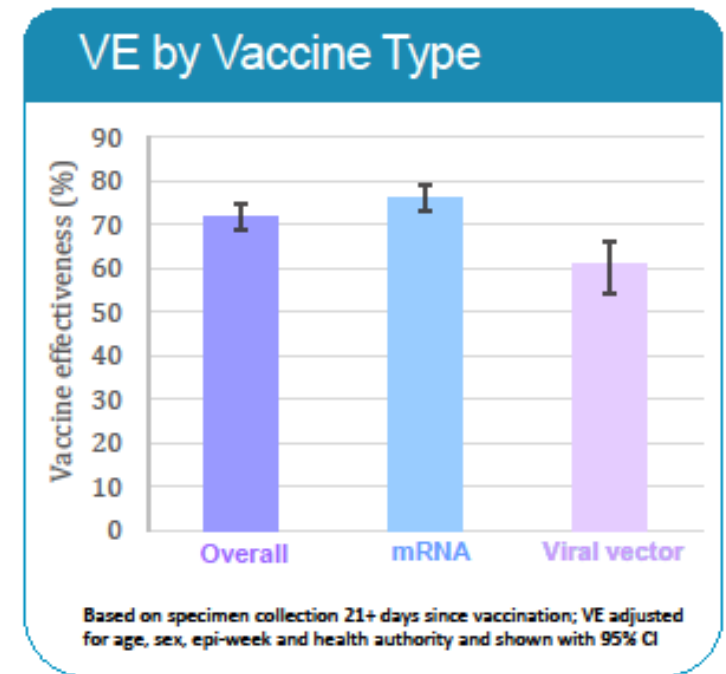
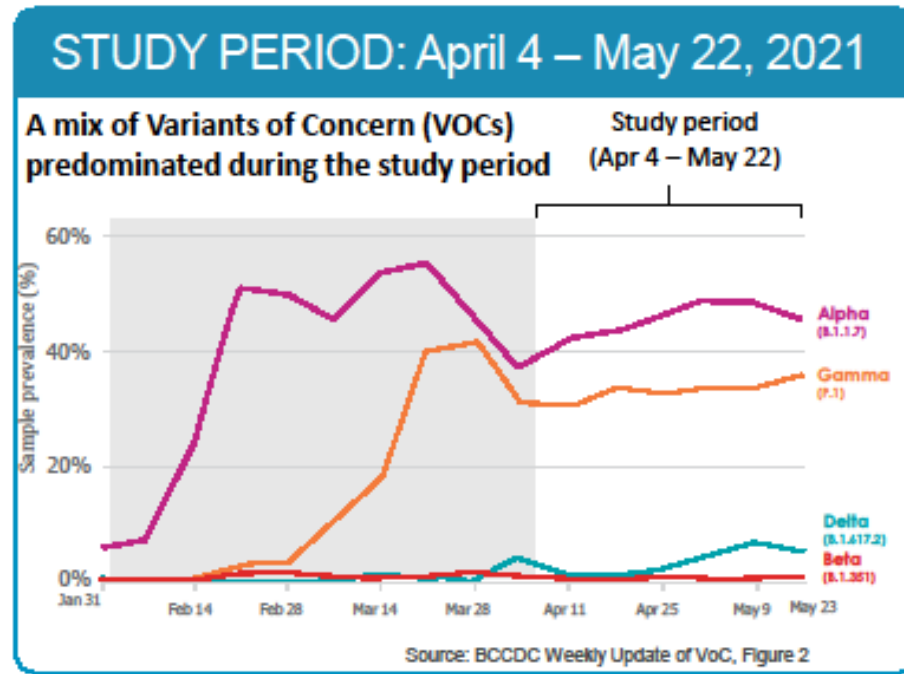
Preliminary 1st dose vaccine effectiveness (VE) against SARS-CoV-2 infection: mRNA (Pfizer/Moderna) and viral vector (Astrazeneca/COVISHIELD) vaccines, 50-69 year olds

Age Group: 50-69 year olds **VE study method:** Test-negative design*

STUDY SIZE

~60,000
participants

60%	40%
50-59 y	60-69 y
55%	45%
Women	Men



SUMMARY

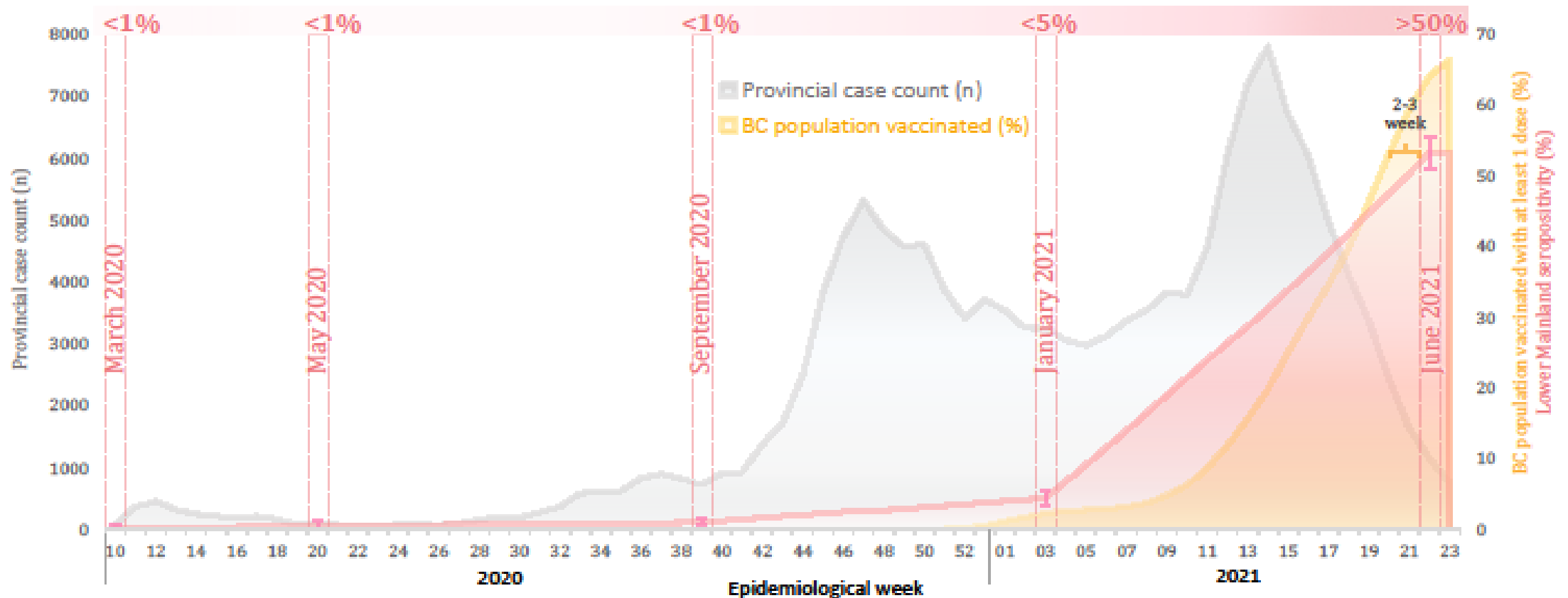
During the spring 2021 pandemic wave when VOCs were predominating in BC, a single dose of vaccine (mRNA or viral vector) prevented 7 out of every 10 infections overall among adults 50-69 years old. Viral vector vaccines were initially prioritized for those at higher exposure risk which may partly explain the lower VE. Estimates for separate VOCs are underway but so far preliminary VE findings do not vary meaningfully on that basis.

Research led by Dr. Danuta Skowronski and the BCCDC Influenza and Emerging Respiratory Pathogens Team *The "test-negative design" study method was co-developed by D. Skowronski (BCCDC) and G. De Serres (INSPO) for influenza VE monitoring and is now used around the world for this purpose and also now for COVID-19 VE monitoring

Cases dropped as vaccine coverage increased and the percentage of British Columbians with SARS-CoV-2 antibodies increased from <5% in January to >50% by June, 2021

>5000 Lower Mainland sera tested in 5 sero-surveys: March/May/Sept 2020 and in Jan/June 2021

% of residents with SARS-CoV-2 antibodies, by sero-survey



Antibody screening study led by Drs. Danuta Skowronski and Mel Krajden of the BC Centre for Disease Control (BCCDC) and BCCDC Public Health Laboratory (PHL), in partnership with LifeLabs. Funded by the Michael Smith Foundation for Health Research and the Public Health Agency of Canada (PHAC). Views expressed herein do not necessarily represent the views of PHAC. Results are preliminary.

Additional Resources

- BCCDC COVID-19 Surveillance Dashboard showing maps, vertical plots, and trends by LHA can be found [here](#)
- More BC COVID-19 data, including the latest Situation Report, maps, and BC COVID-19 public dashboard, can be found [here](#)
- For more information on variants of concern and whole genome sequencing, the latest report is posted [here](#)
- To put BC provincial, Health Authority, and HSDA trajectories into national and international context, see [BCCDC COVID-19 Epidemiology app](#)
- [COVID SPEAK 2020 Round 1 Survey results](#)
- Slides for previous public and modelling briefings by Dr. Bonnie Henry can be found [here](#)
- PHAC's COVID-19 Epidemiology update can be found [here](#)