

# BCCDC Data Summary

22 July 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.

# Table of Contents

Overall Summary .....	4
Surveillance .....	5
BC Epidemiology.....	5
Vaccinations.....	15
Labs/Genomics.....	25
Modelling.....	36
Additional Resources.....	38

# Overall Summary for surveillance data up to 21 July

- **Case rates** are relatively stable; **test positivity** for public tests is ~2% provincially.
  - Percent positivity  $\leq 3\%$  in all age groups
  - Percent positivity  $< 2\%$  in VIHA, VCH, FH and between 3-5% in IH and NH
- **New hospitalizations** are low and declining or stable in each region; **hospital/critical care census** is declining or stable across BC; **new deaths** are stable and very low.
- Most of the cases, hospitalizations and deaths over the past month were among unvaccinated individuals. Severe outcomes are less common among fully vaccinated people (5%).
- **Vaccine** coverage in BC, July 20<sup>th</sup>: ~90% of 70+ and ~80% of 12+ have received their 1<sup>st</sup> dose; almost 50% of the total population has received their 2<sup>nd</sup> dose.
- The share of **VOCs** among all positive tests in BC is ~97% from July 11 to 17; P.1 (Gamma) ~42% and B.1.617 (Delta) ~41% are now two dominant VOCs, followed by B.1.1.7 (Alpha) at ~18%.
- Studies consistently show that **both mRNA and AstraZeneca vaccines** remain **highly effective against the Delta variant**, especially against severe outcomes. Vaccinated individuals tend to have milder illness if they get infected and are also less likely to pass virus on than unvaccinated individuals.

# Jul 15 to Jul 21: BC COVID-19 Profile



**148,641** total cases  
**413** new this week



**1,763** total deaths  
**3** new this week

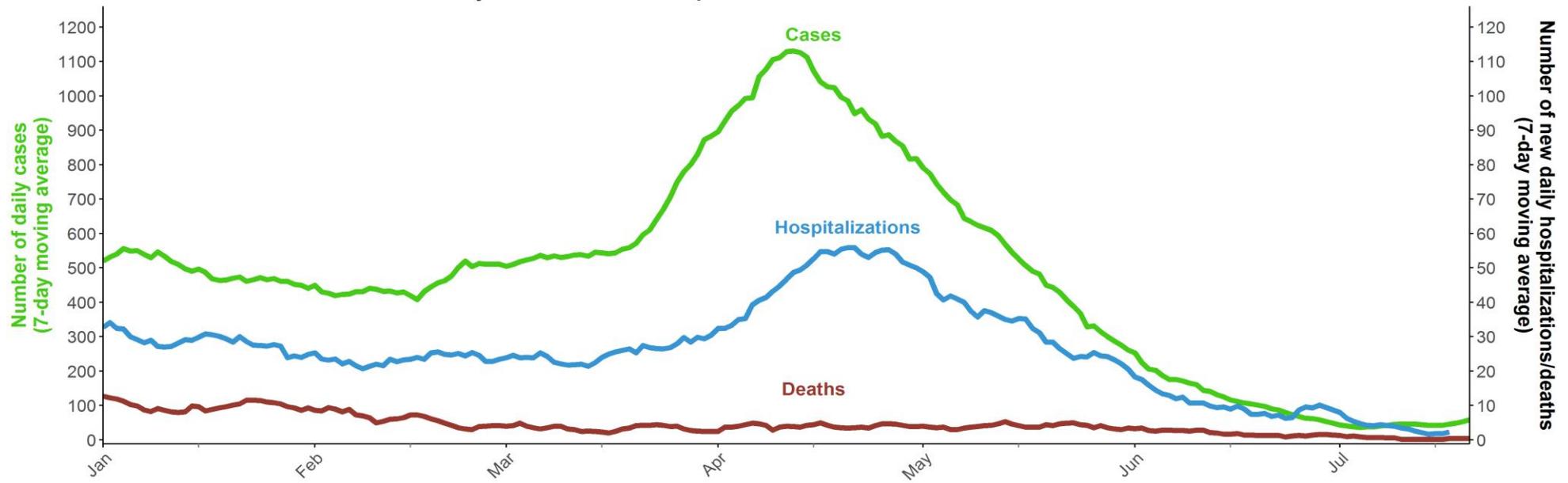


**8,098** ever hospitalized  
**17** new this week



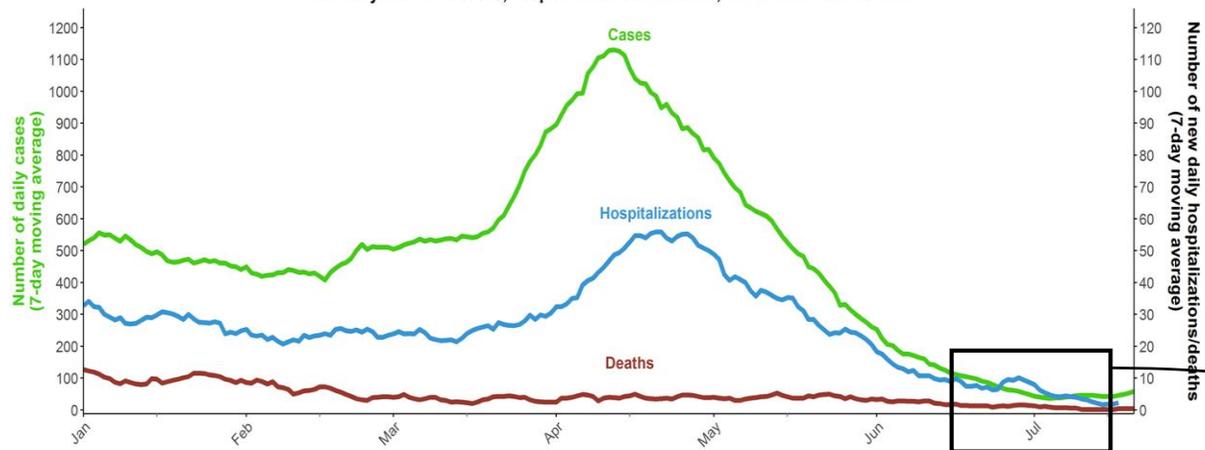
**146,142** removed from isolation  
**325** new this week

New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Jul 20 2021



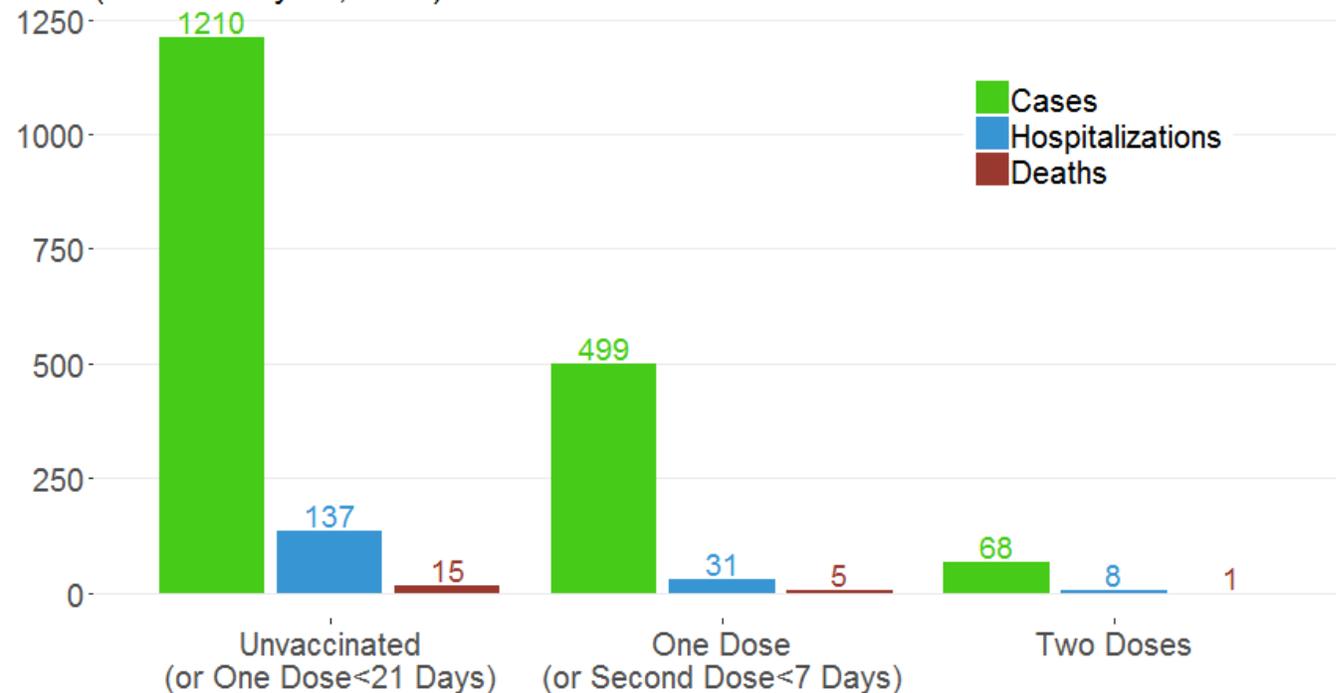
\* Data are by surveillance date for cases and deaths, and admission date for hospitalizations  
Data source: PHRDW Jul-21-2021

New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Jul 20 2021



\* Data are by surveillance date for cases and deaths, and admission date for hospitalizations  
Data source: PHRDW Jul-21-2021

Number of Cases, Hospitalizations and Deaths by Vaccination Status (June 15-July 15, 2021)

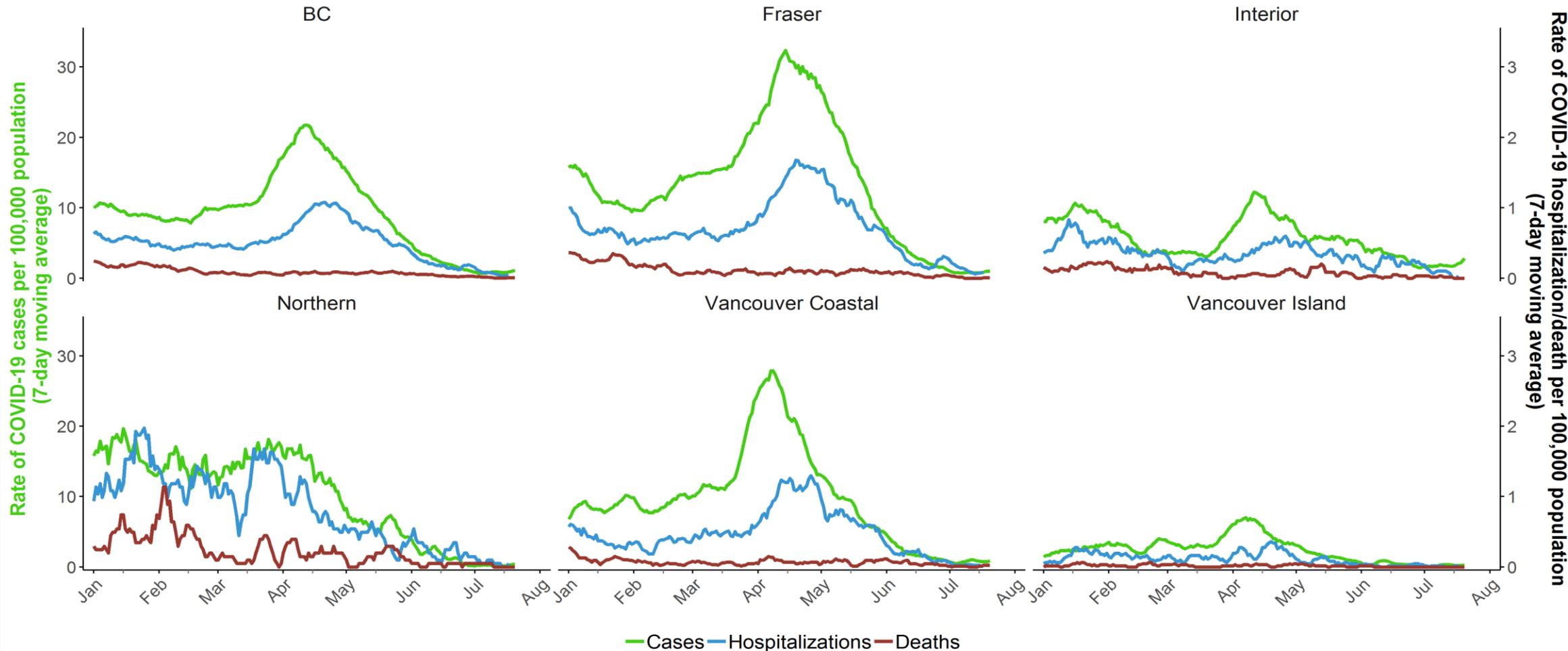


**Most of the cases, hospitalizations and deaths over the past month were among unvaccinated individuals**

\*Also see slides 17 and 18

**Case** rates are relatively stable provincially, with small increase in Interior; **new hospitalizations** are declining or stable in all HAs; **new deaths** are stable and very low.

Rate of COVID-19 case, hospitalization and death, Jan 01 2021 - Jul 20 2021

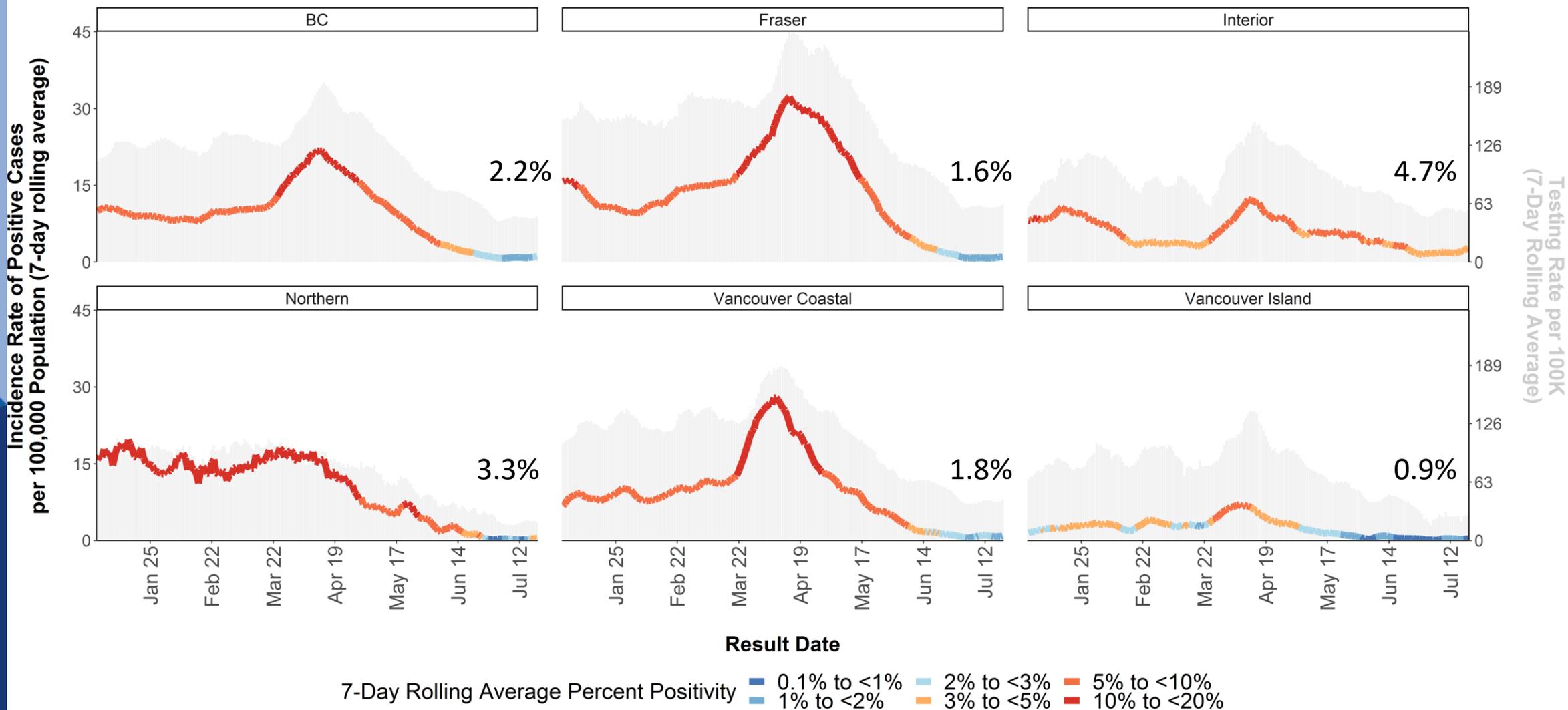


\* Data are by surveillance date for cases and deaths, and admission date for hospitalizations  
Data source: PHRDW Jul-21-2021

For latest version of a graph similar to this one (difference: hospital census, not new hospitalizations), see the [Epi App](#)

Overall, % positivity is low and stable at the provincial level, with some regional variation; it is higher in NH and IH (3-5%) and lower in other parts of the province (<2%).

Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Jul 20, 2021.

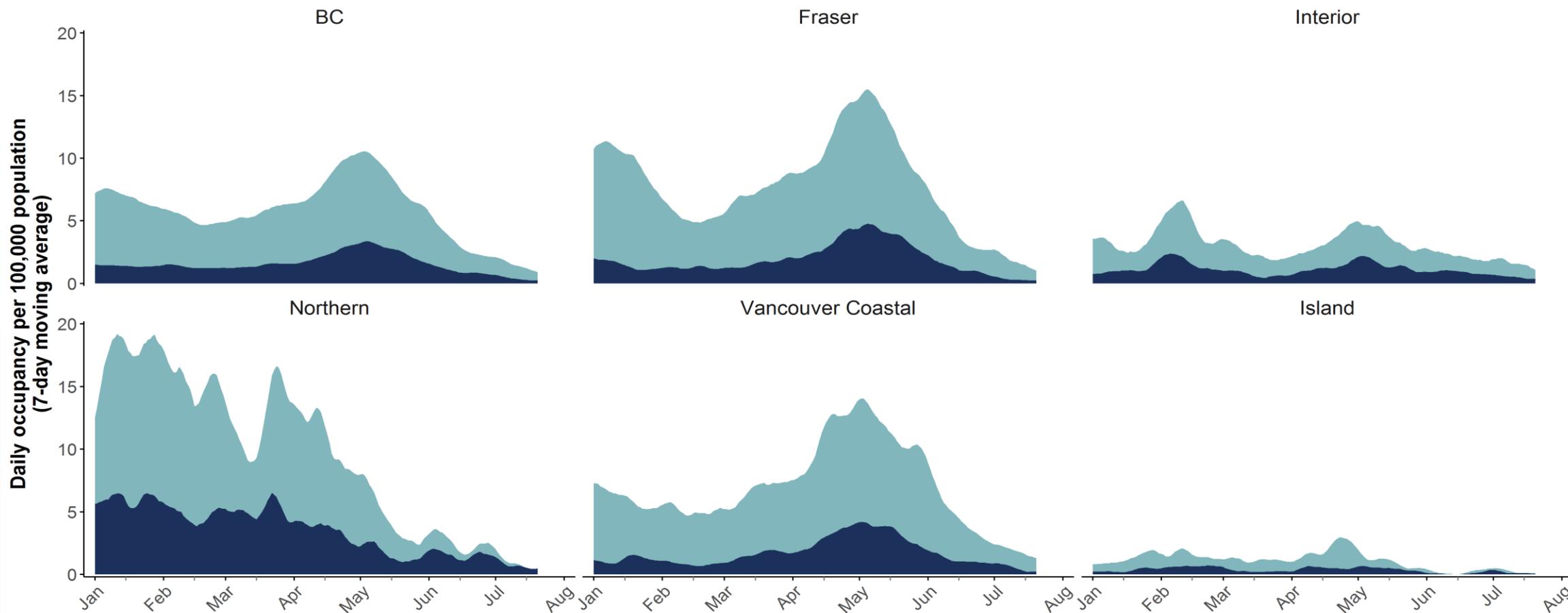


Data source: PLOVER 20-Jul-2021

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

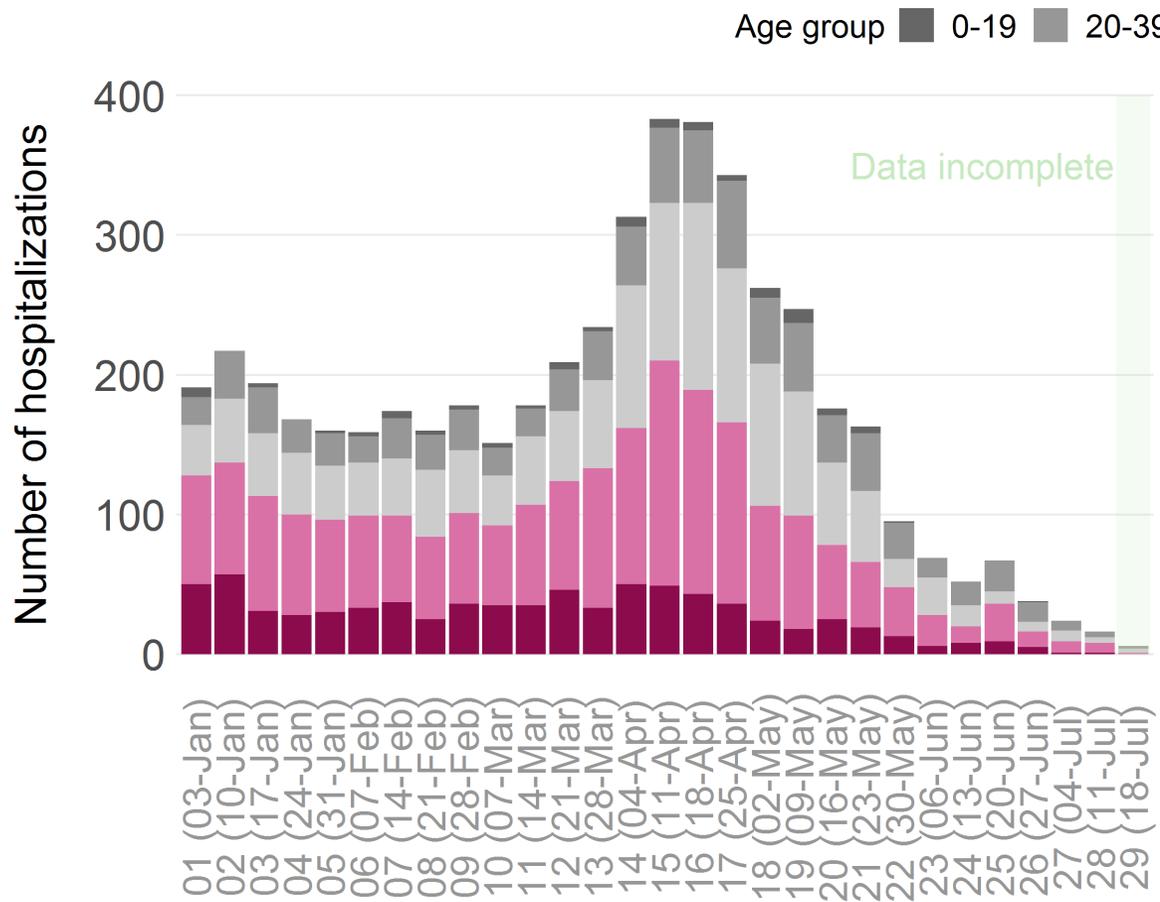
Current COVID-19 hospitalizations, Jan 01 2021 - Jul 20 2021

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

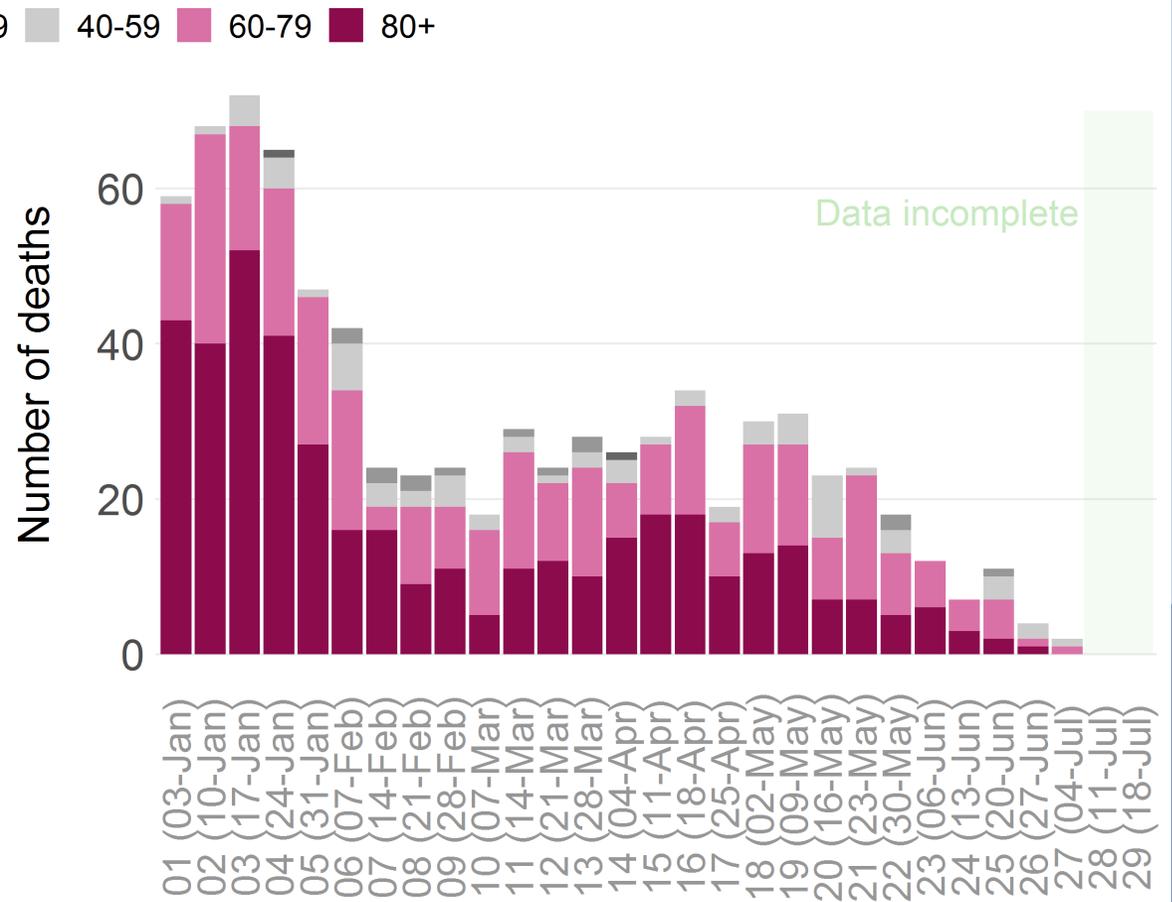


\* Data are by census date for hospitalizations  
Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Jul-21-2021

# Number of new hospital admissions is low and decreasing. Deaths are low and stable.



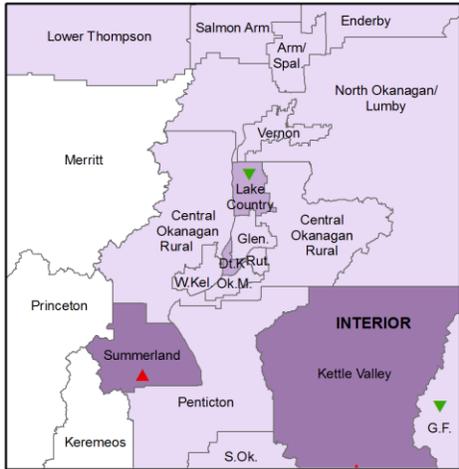
2021 Epi week of admission date (epi week start date)



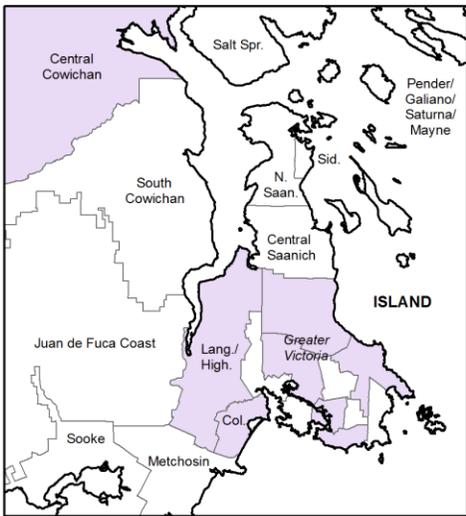
2021 Epi week of death date (epi week start date)

Data extracted on 2021-07-21; hospitalization and death data from health authority case line list data

Okanagan Inset  
(Community Health Service Areas)

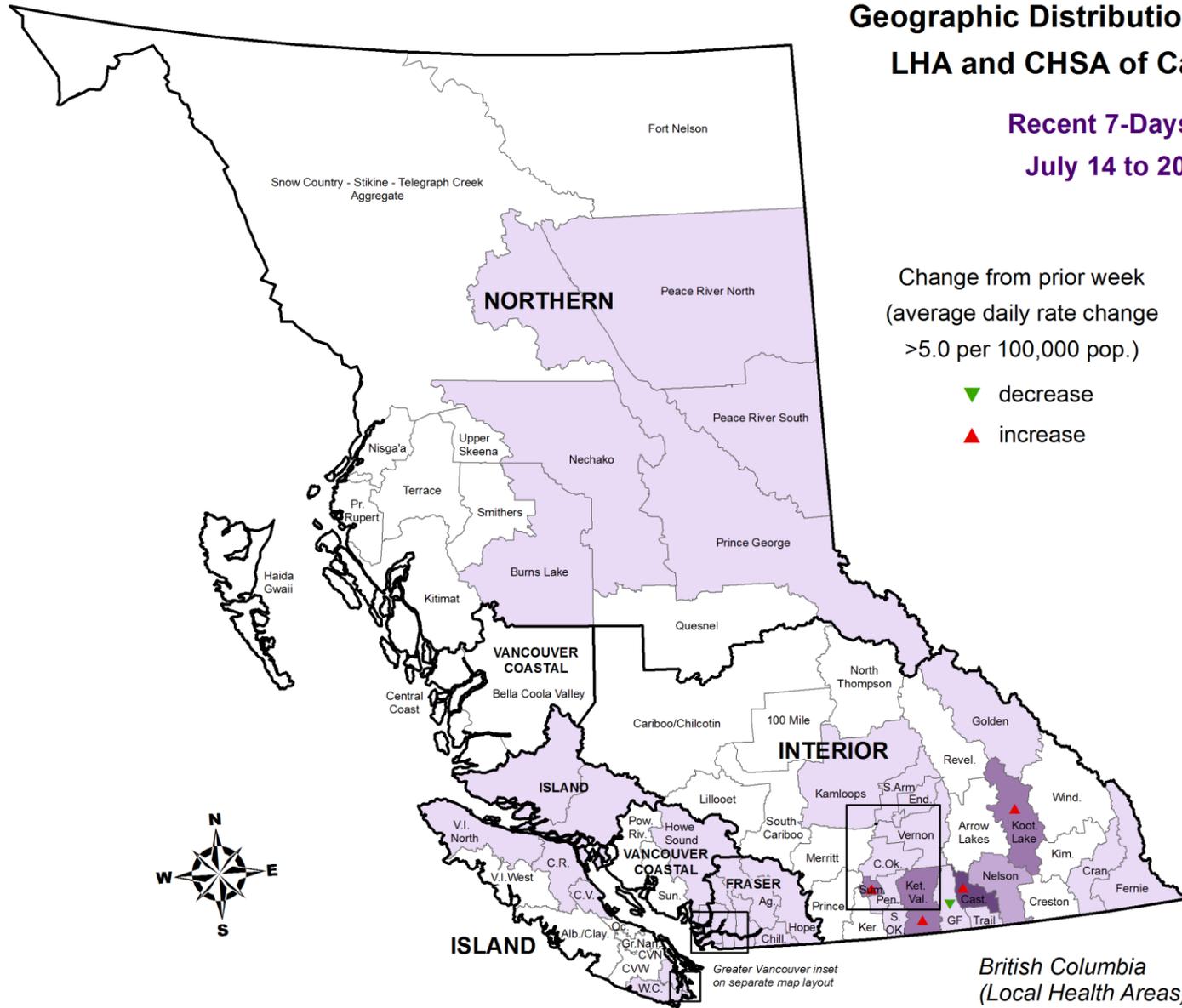


Greater Victoria Inset  
(Community Health Service Areas)



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

Recent 7-Days Cases  
July 14 to 20, 2021



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

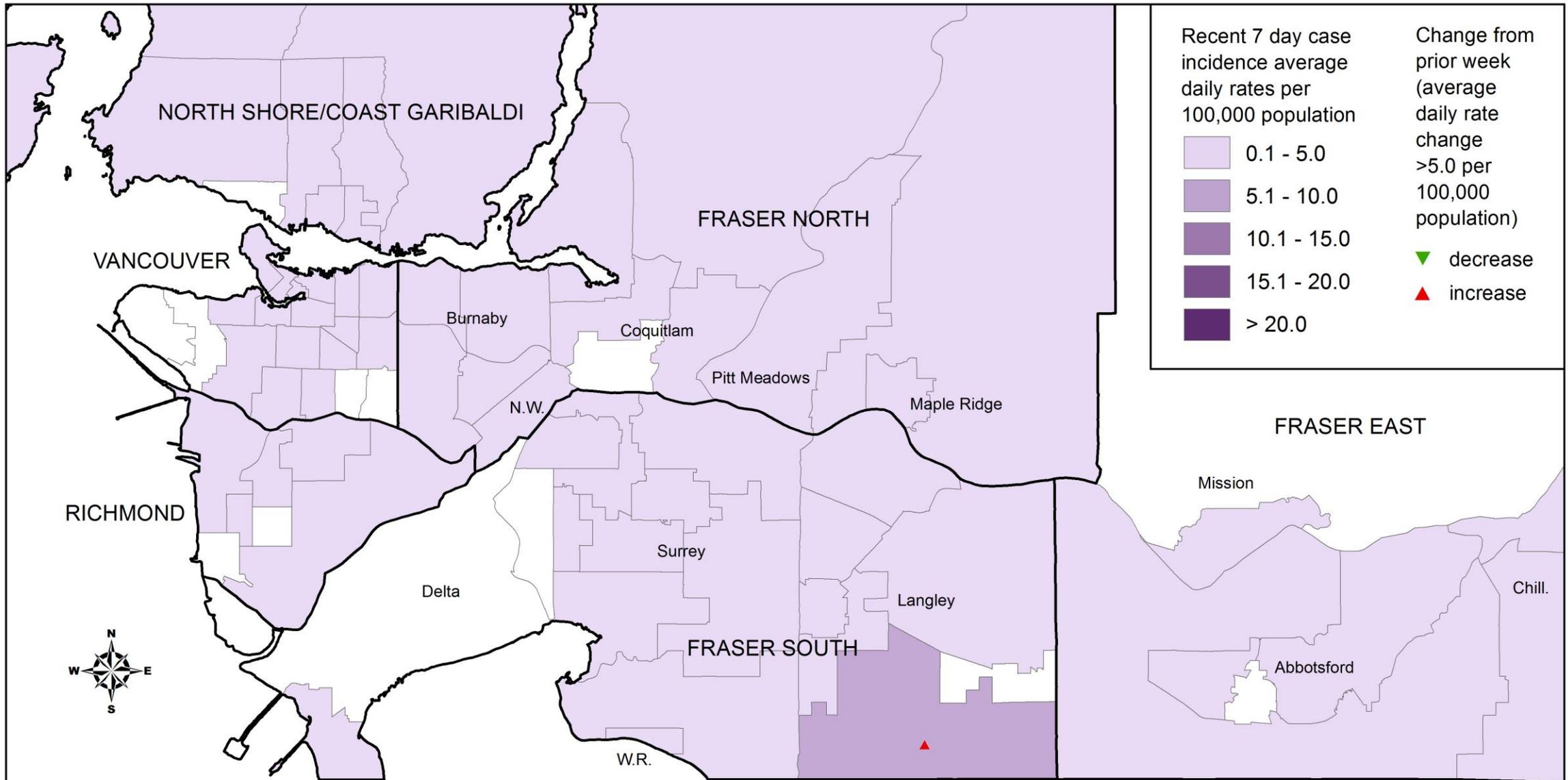
- ▼ decrease
- ▲ increase

Average daily rate per  
100,000 population

- 0.0
- 0.1 - 5.0
- 5.1 - 10.0
- 10.1 - 15.0
- 15.1 - 20.0
- > 20.0

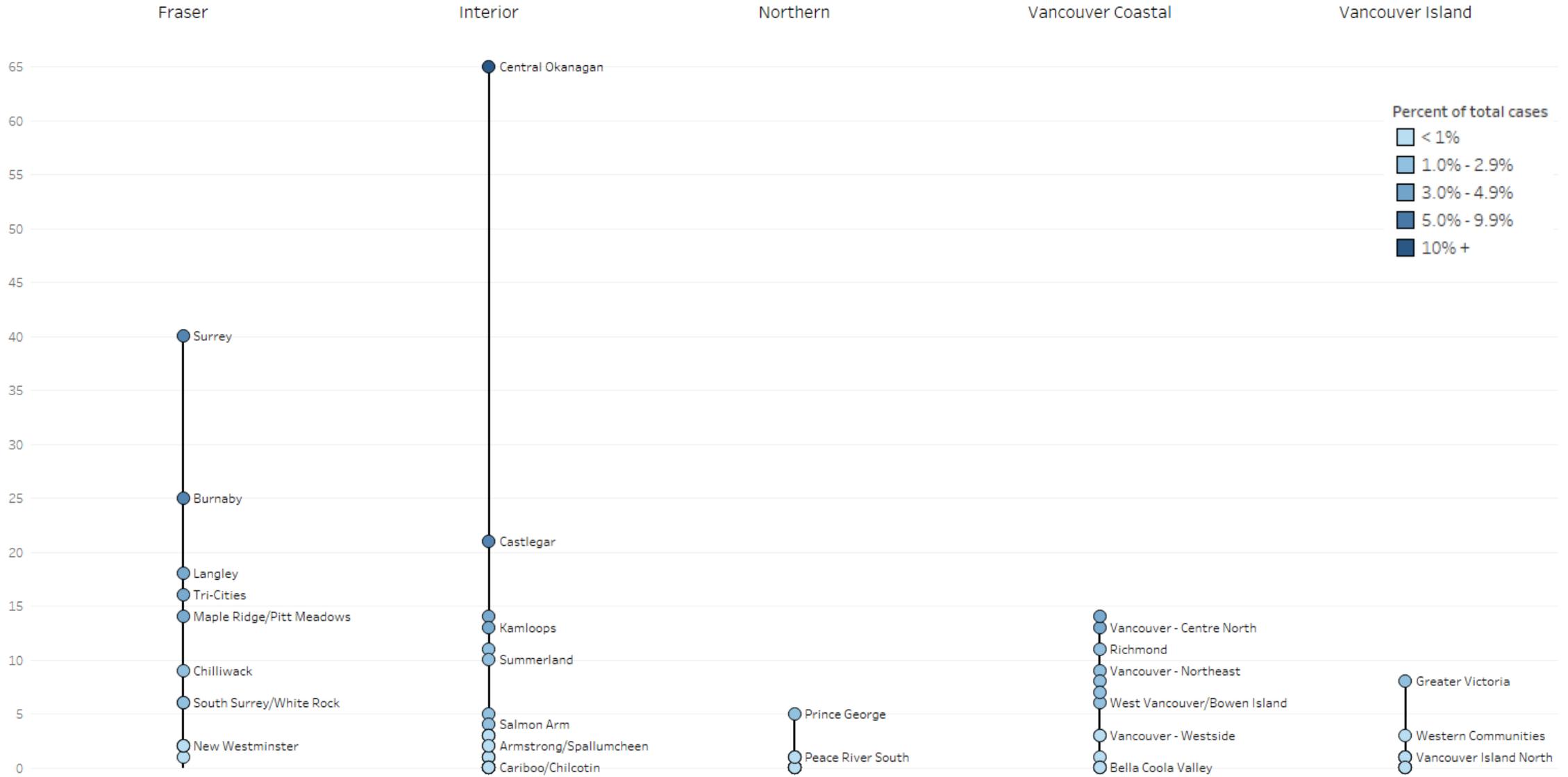
Data source: Public Health Reporting Data Warehouse (PHRDW) integrated COVID dataset; we operate in a live database environment and case information is updated as it becomes available. Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data 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.

British Columbia  
(Local Health Areas)

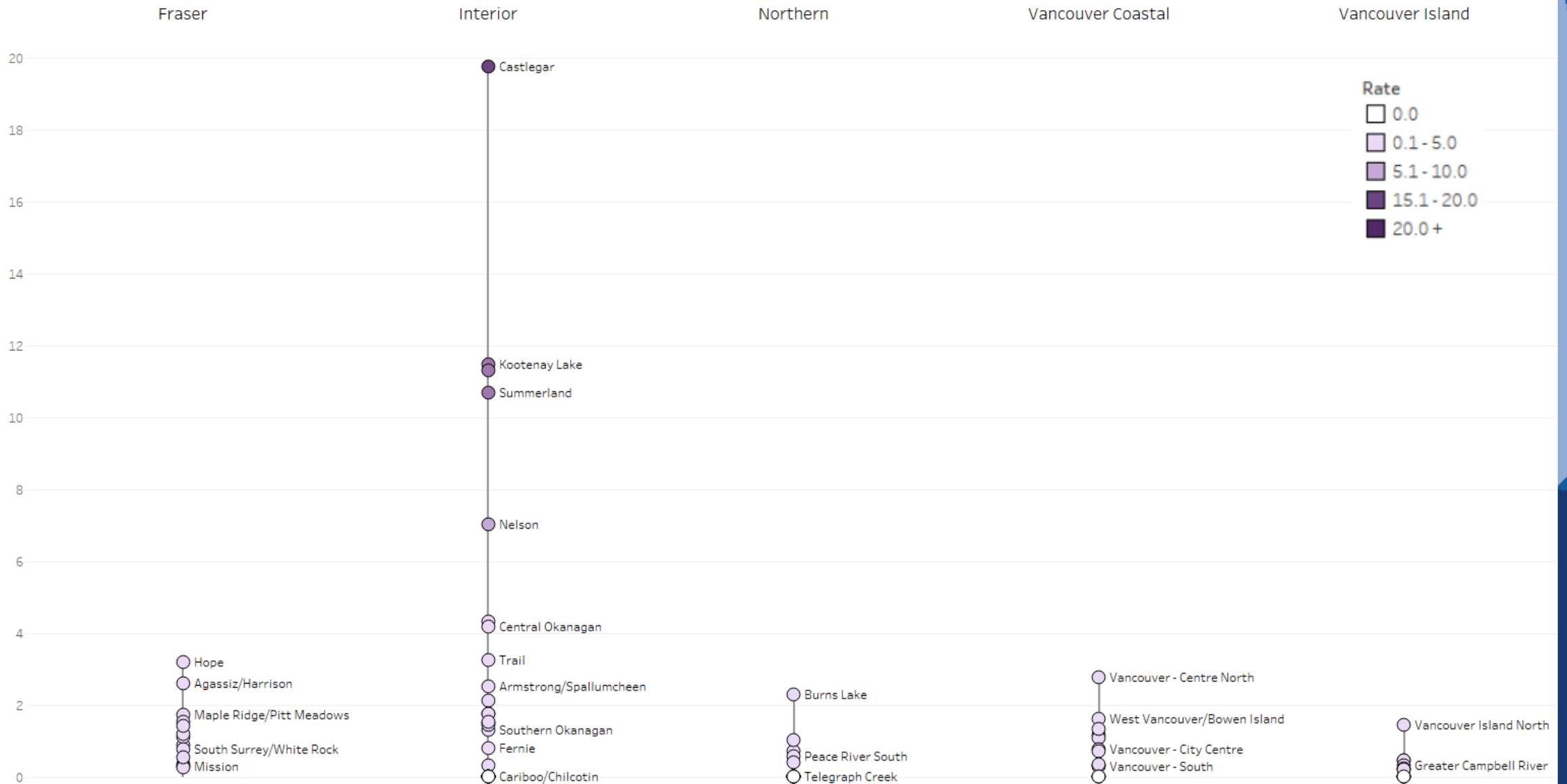


COVID-19 Recent 7-Day Case Incidence Rates by CHSA (July 14 to 20, 2021)

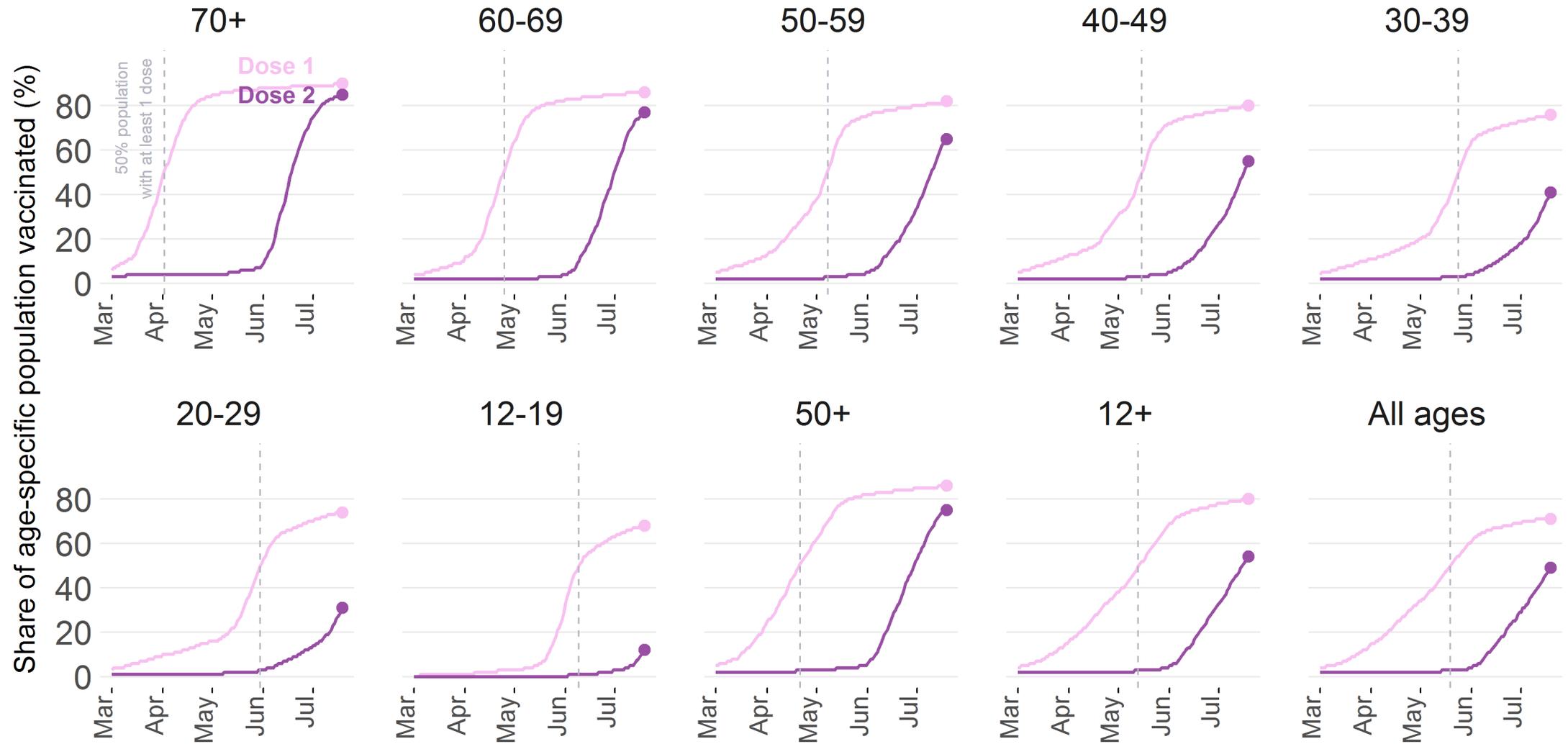
Total cases by local health area, Jul 14 - Jul 20, 2021



Average daily **rate** of new cases per 100,000 population, by local health area, Jul 14 - Jul 20, 2021

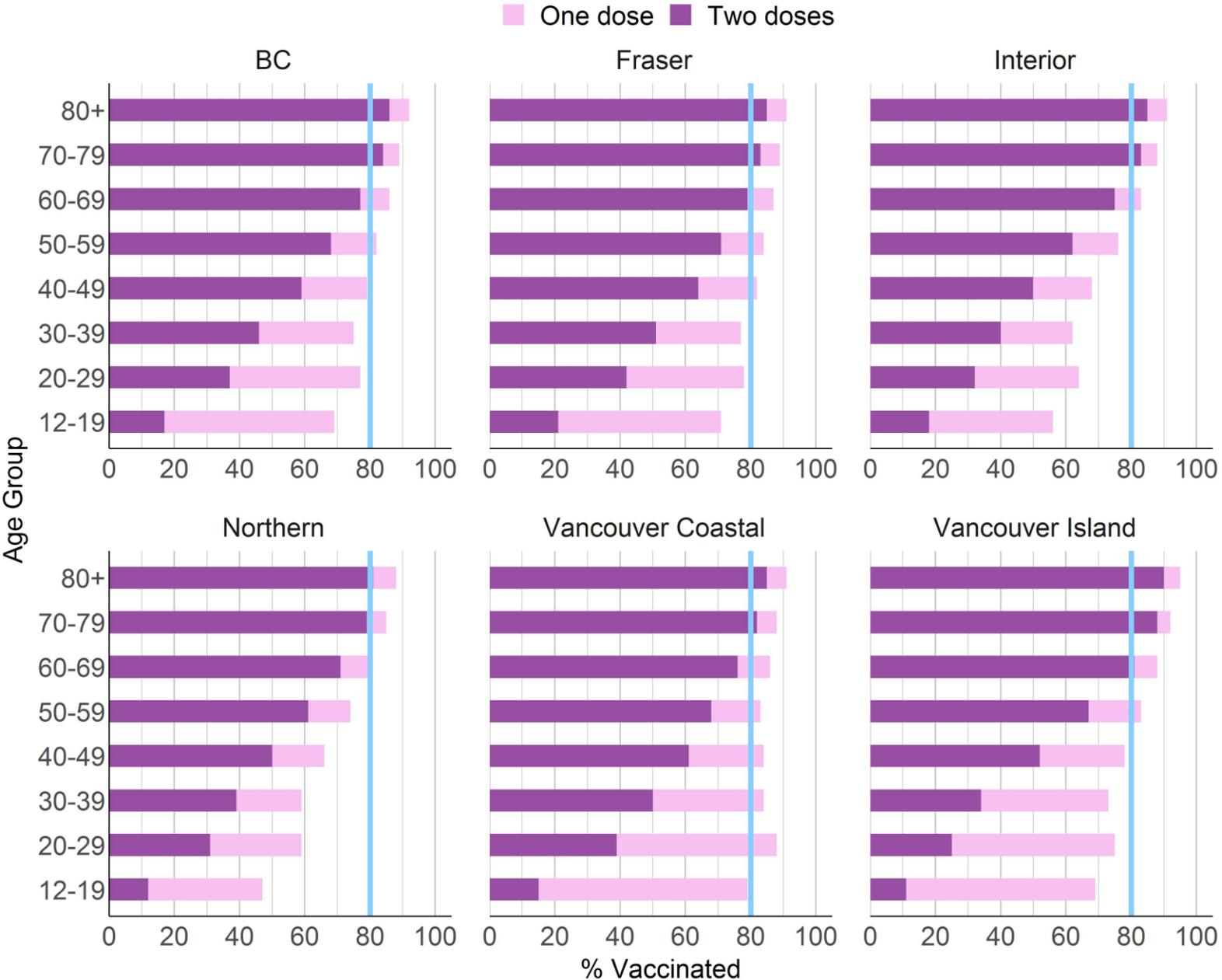


# Vaccination progress in BC over time by age group and dose number up to July 20



Data updated 2021-07-20  
Data Source: Provincial Immunization Registry, PHSA

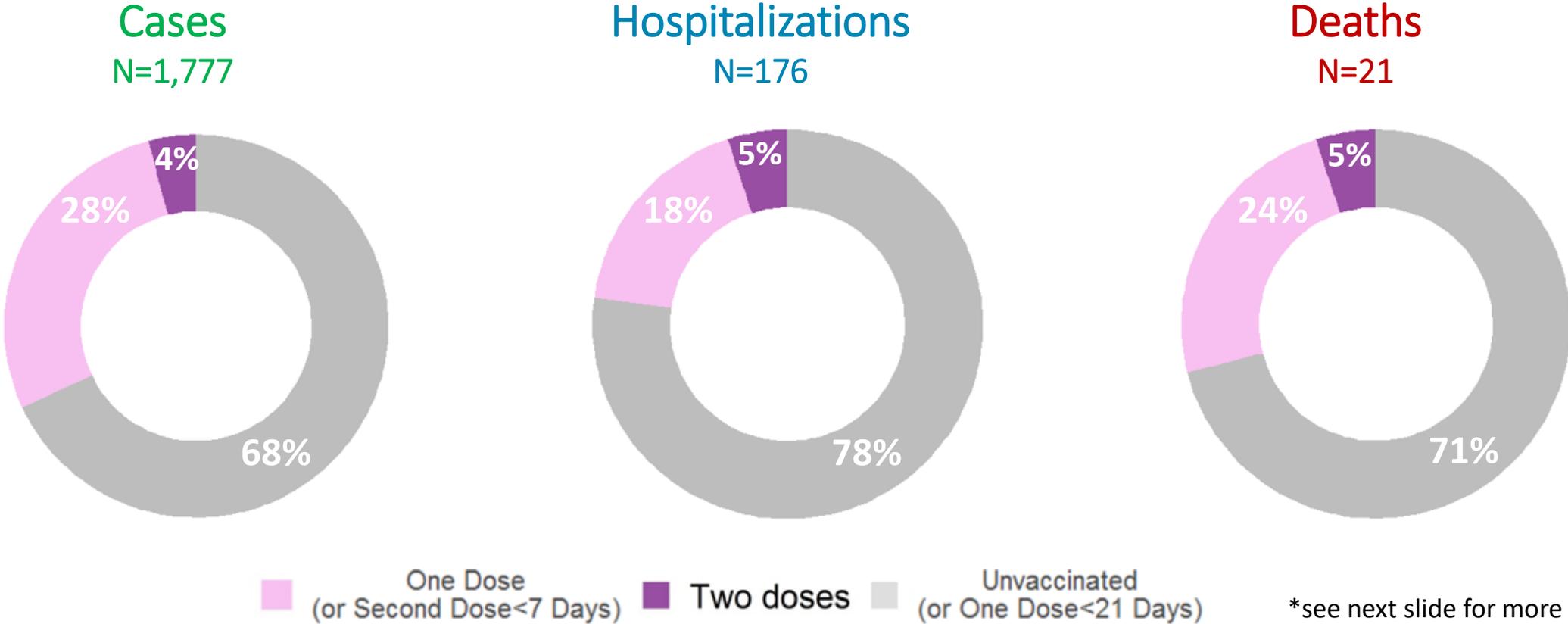
# Vaccination progress in BC by Health Authority, age group and dose number as of July 22<sup>nd</sup>



Blue lines at 80% are for visual reference only for easier navigation across panels

# Over the past month (15 Jun-15 Jul), fully vaccinated individuals accounted for only ~5% of hospitalizations and deaths.\*

This % is expected to increase as more people get fully vaccinated and there are fewer unvaccinated people. If 100% of the population gets fully vaccinated, then any new cases, hospitalizations, or deaths will be 100% among vaccinated people.



\*see next slide for more details

Trend\* in % total population vaccinated with at least 1 dose



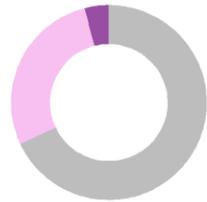
Vaccinations (all BC; n=5,197,224)



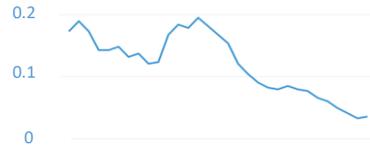
Trend in daily cases per 100K



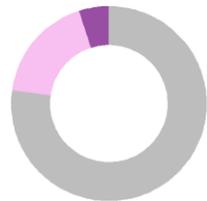
Cases (n=1,777)



Trend in daily hospitalizations per 100K



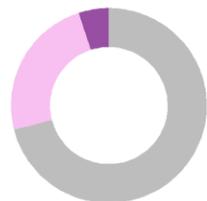
Hospitalizations (n=176)



Trend in daily deaths per 100K



Deaths (n=21)



\*Figures include data for 15 Jun – 15 July 2021

■ One Dose (or Second Dose < 7 Days) 
 ■ Two doses 
 ■ Unvaccinated (or One Dose < 21 Days)



Note: % may not add to 100 due to rounding

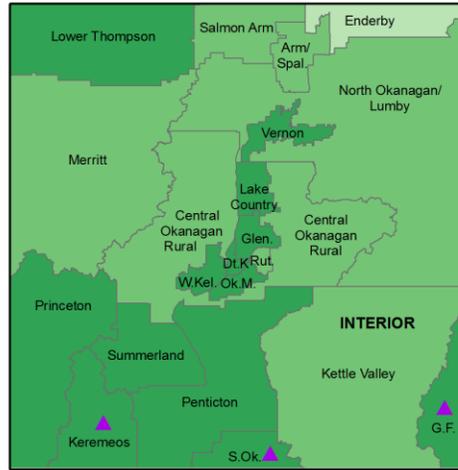
# Severe outcomes tend to occur among older individuals. Median age for severe outcomes is lower for unvaccinated individuals.

Vaccine status*	Median age (years)		
	Cases <i>N=1,777</i>	Hospitalizations <i>N=176</i>	Deaths <i>N=21</i>
Unvaccinated	29	52	63
Vaccinated, 1 dose	40	62	66
Vaccinated, 2 doses	55	81	96
<b>Total</b>	<b>32</b>	<b>55</b>	<b>65</b>

This table is based on data for 15 Jun – 15 July 2021

\*Unvaccinated is defined as no doses or within 3 weeks of 1<sup>st</sup> dose; Vaccinated, 1 dose is defined as >3 weeks after 1<sup>st</sup> dose and <1 week after 2<sup>nd</sup> dose, if applicable; Vaccinated, 2 doses is defined as >1 week after 2<sup>nd</sup> dose

Okanagan Inset  
(Community Health Service Areas)

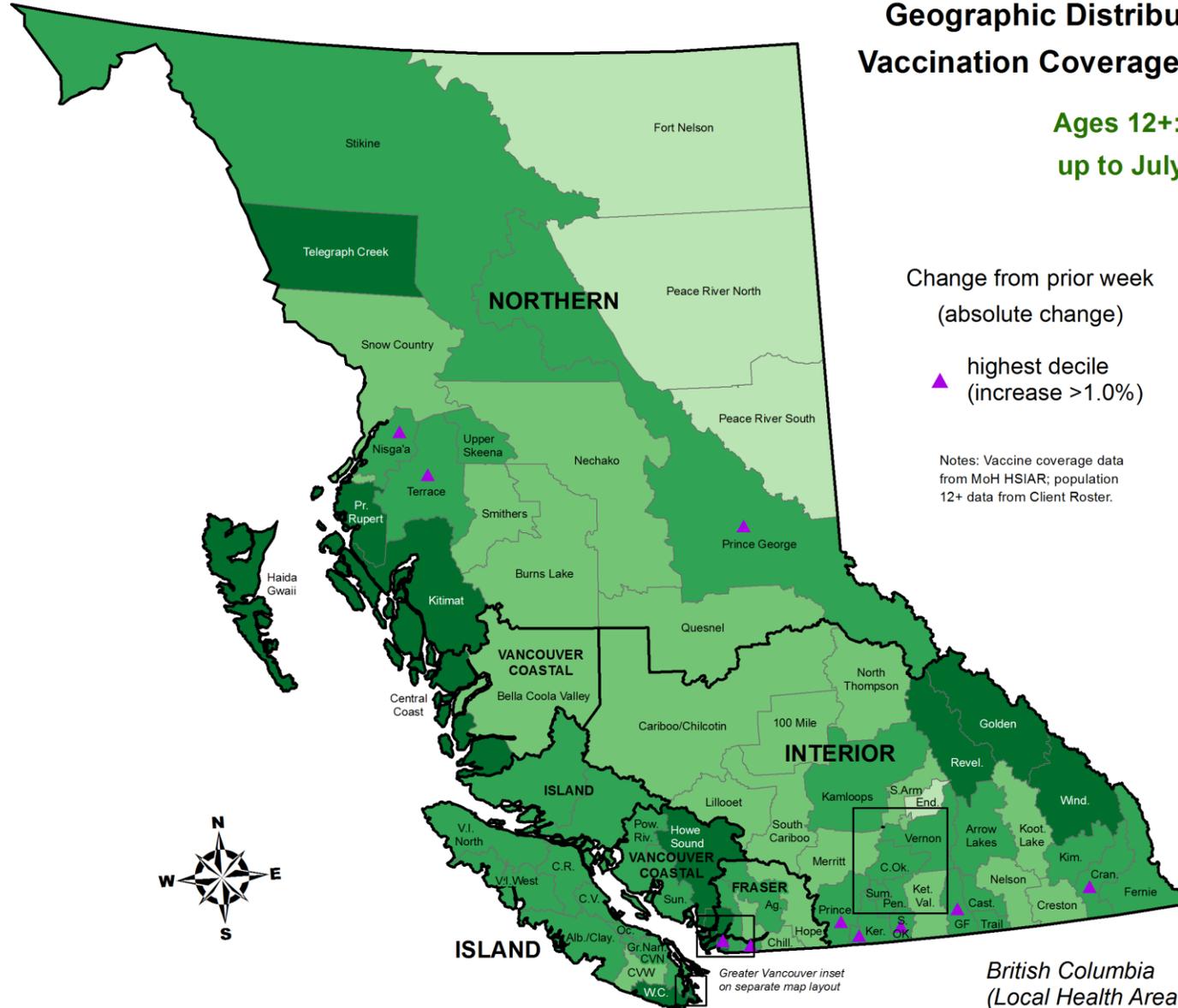


Greater Victoria Inset  
(Community Health Service Areas)



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

**Ages 12+: 1st Dose  
up to July 19, 2021**



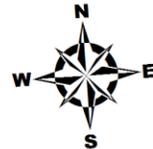
Change from prior week  
(absolute change)

▲ highest decile  
(increase >1.0%)

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

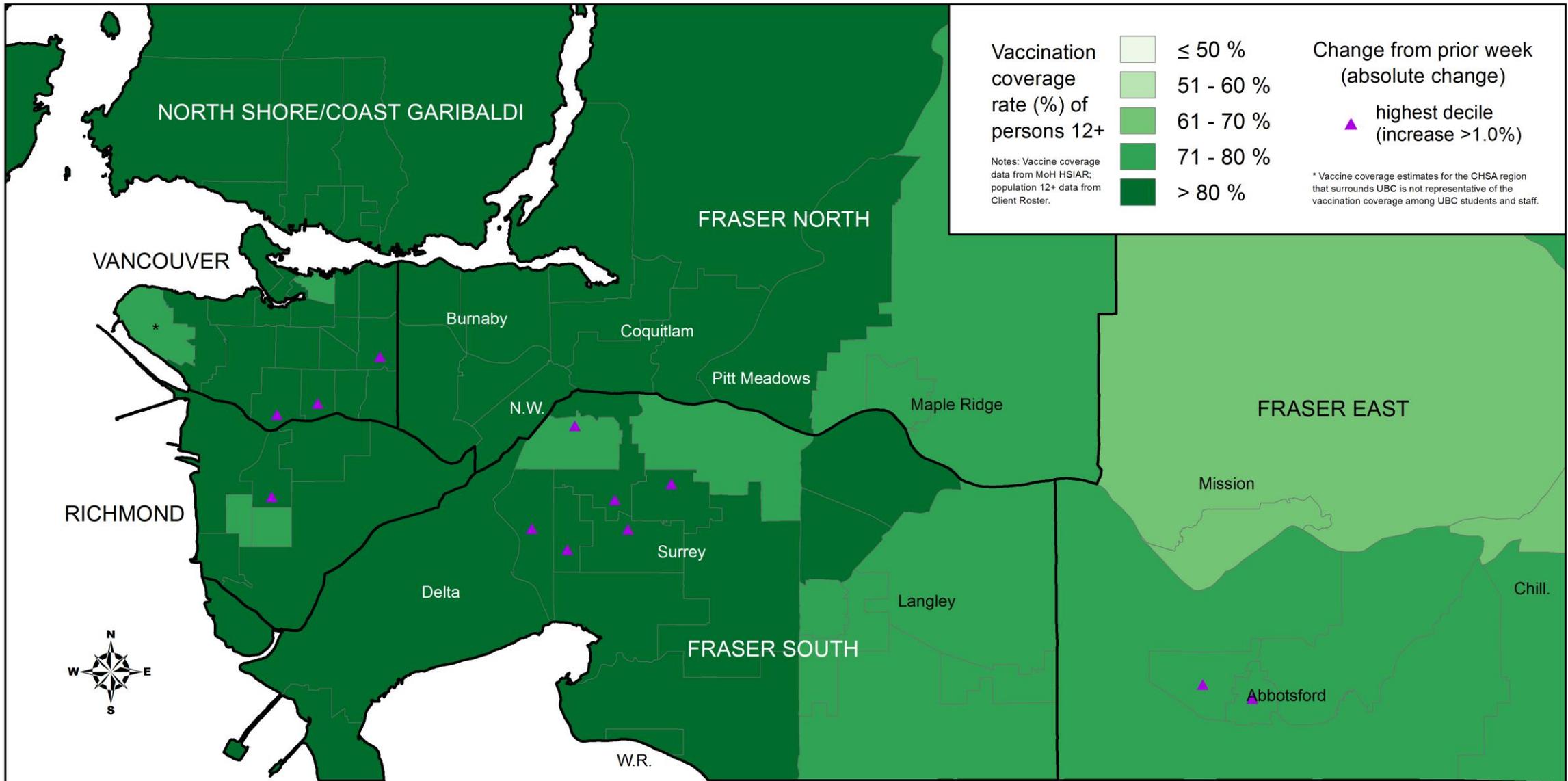
Vaccination coverage  
rate (%) of persons 12+

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



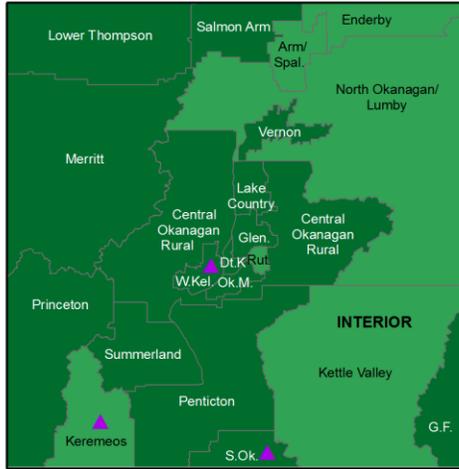
Greater Vancouver inset  
on separate map layout

British Columbia  
(Local Health Areas)



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

Okanagan Inset  
(Community Health Service Areas)

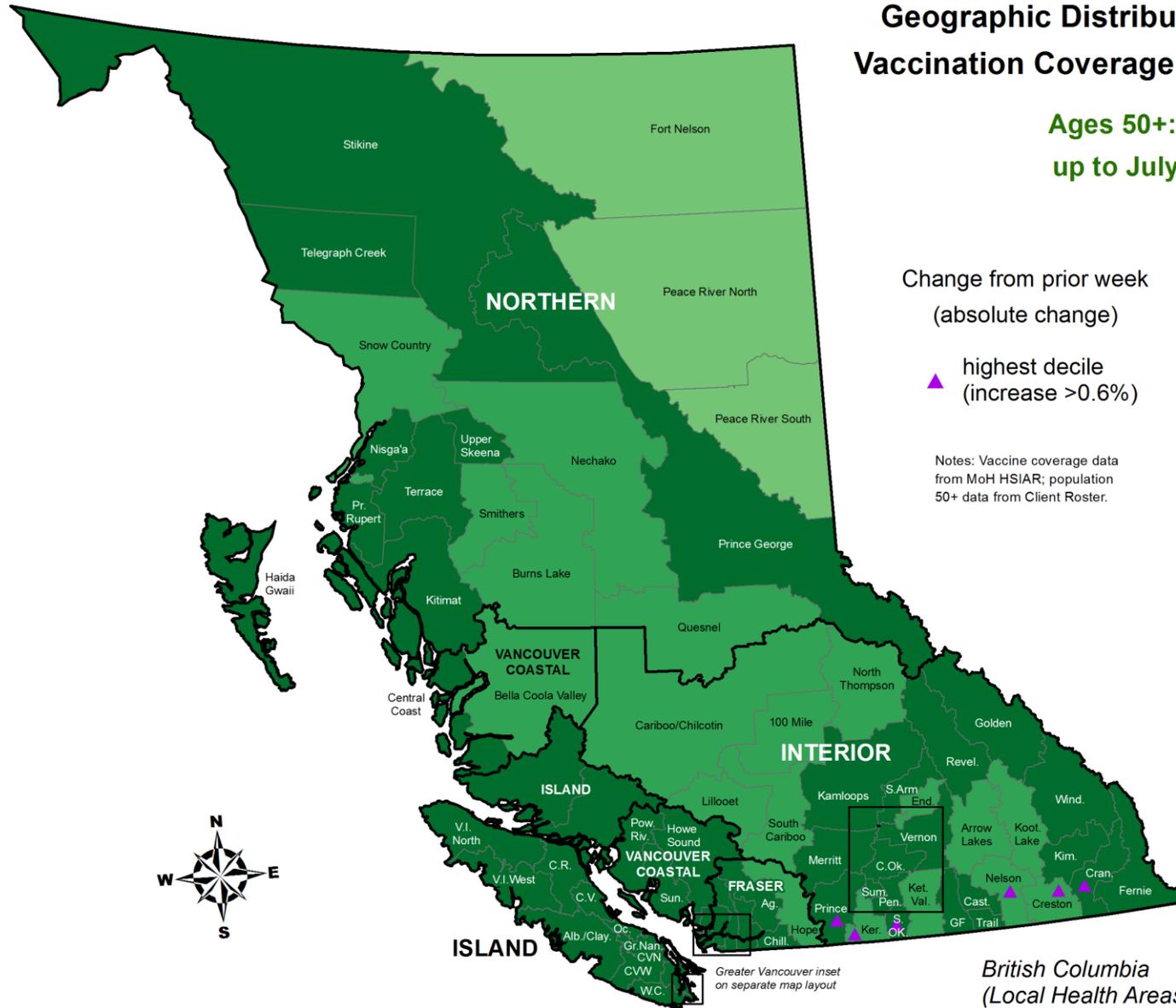


Greater Victoria Inset  
(Community Health Service Areas)



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

**Ages 50+: 1st Dose  
up to July 19, 2021**



Change from prior week  
(absolute change)

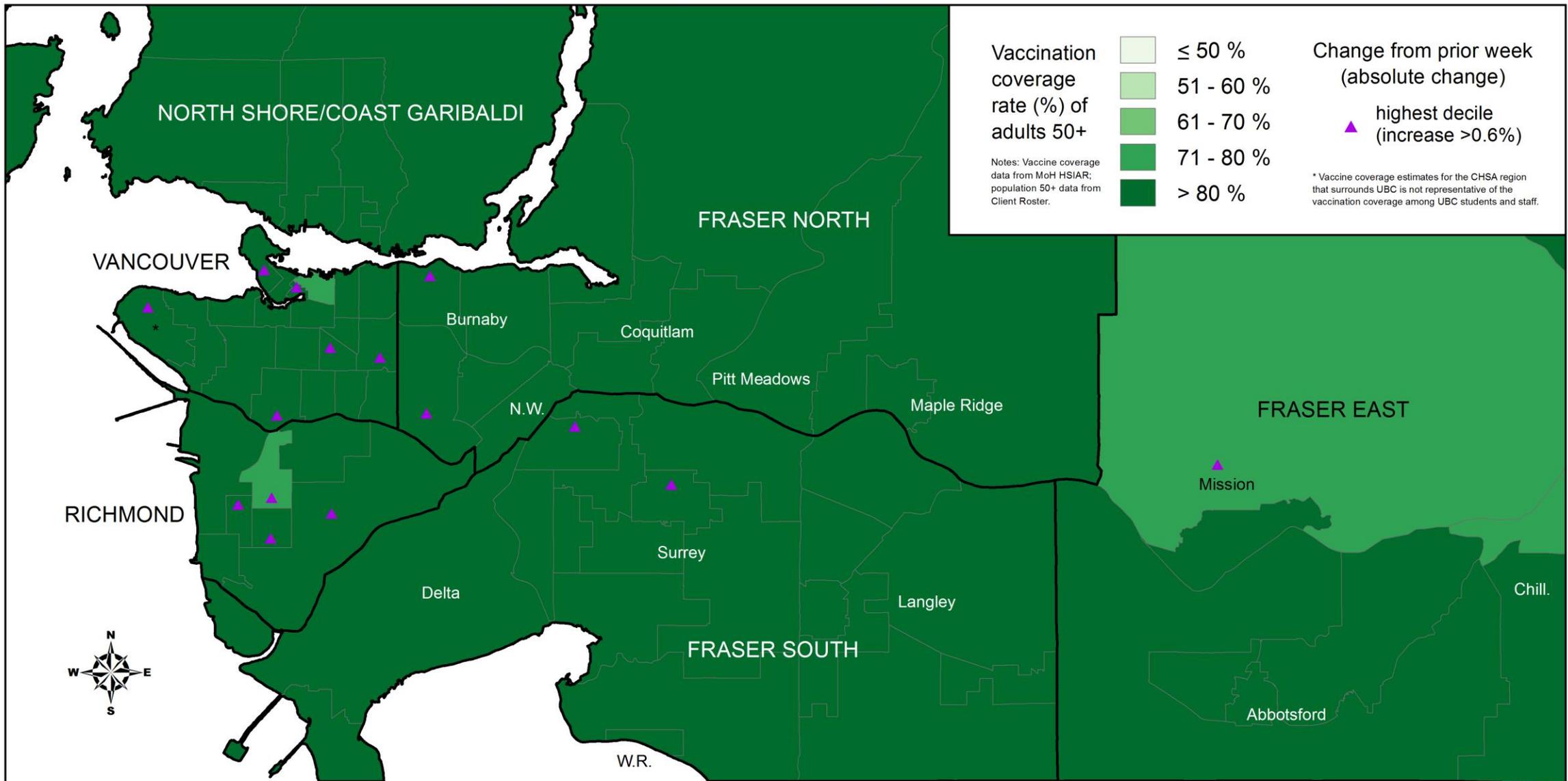
▲ highest decile  
(increase > 0.6%)

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

Vaccination coverage  
rate (%) of adults 50+

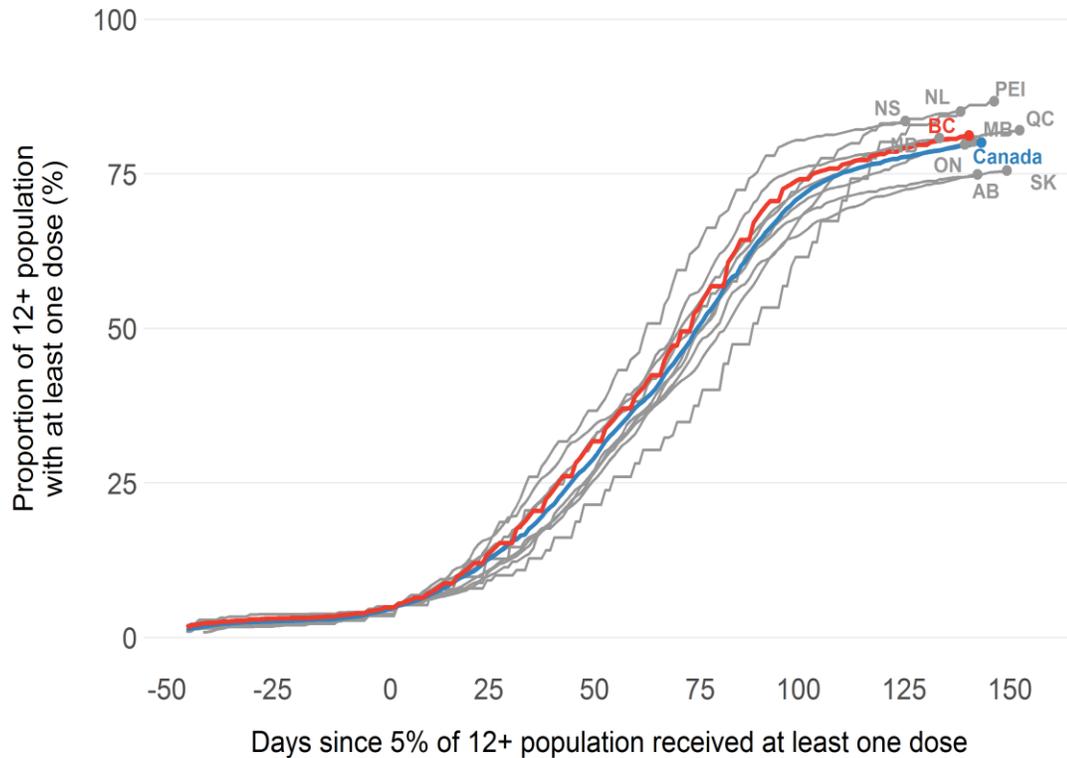
-  ≤ 50 %
-  51 - 60 %
-  61 - 70 %
-  71 - 80 %
-  > 80 %

British Columbia  
(Local Health Areas)

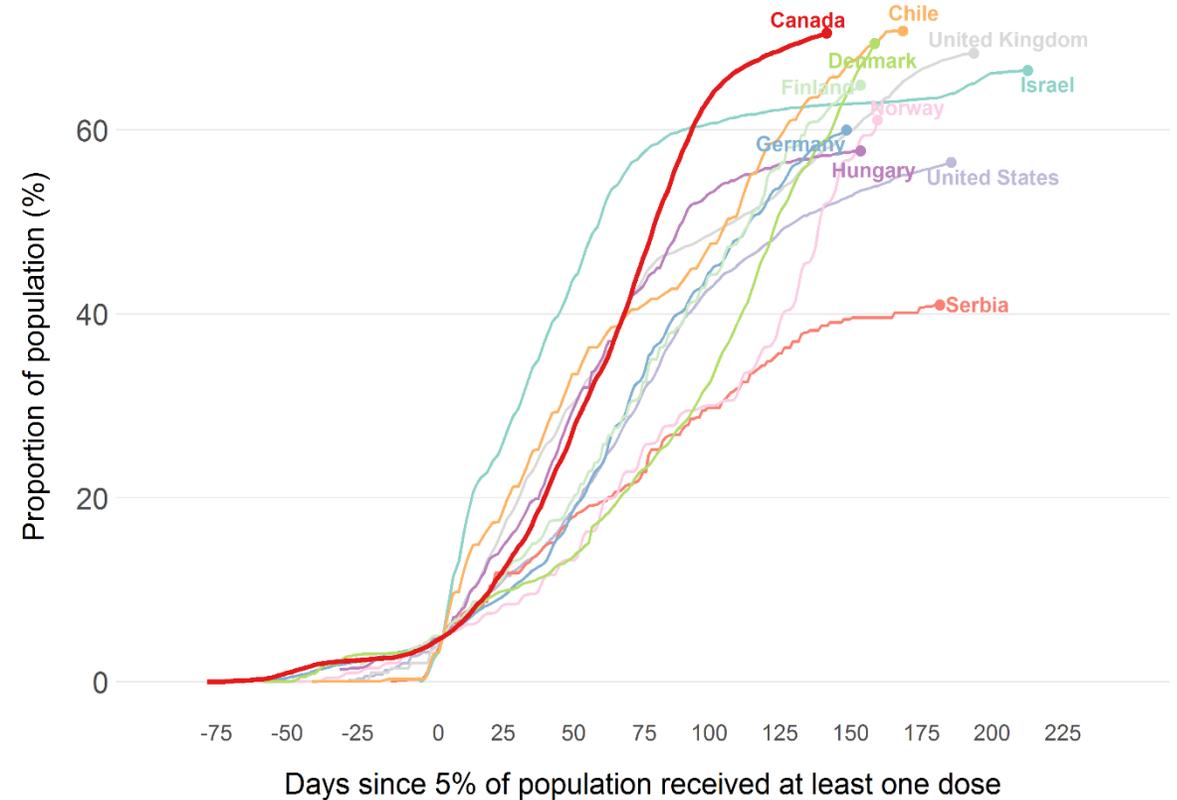


COVID-19 Vaccination Coverage by CHSA: Ages 50+ 1st Dose (up to July 19, 2021)

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 2021-07-21  
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 2021-07-21

Data source: [Open Data](#)  
Visualization: BCCDC

For latest vaccination progress statistics in Canada and internationally, see the [Epi App](#)

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

# Lab - Key Messages

1. Percent positivity among publicly funded tests remained stable (2.3%).
2. The provincial weekly median turnaround time (time from specimen collection to lab result) remains low, at 24 hours indicating good testing capacity. 1 in 4 tests took  $\geq 24$  hours to result.
3. Case incidence rates for all age groups remain low and relatively stable.
4. There are regional differences in case incidence rates, with Interior Health seeing a slight increase in case incidence rate.
5. Period prevalence of Delta (B.1.617.2) has increased substantially in the past few epi weeks, whereas it decreased for Alpha (B.1.1.7).
6. Overall, unvaccinated people experience a higher infection rate compared with vaccinated people. Second dose is necessary for full protection, especially for older individuals. Vaccines are effective against all 3 circulating variants in BC.

## Weekly Summary of ALL lab tests performed

<b>3,004,640</b>	total specimens tested
<b>44,270</b>	new this epi week
<b>156,360</b>	total positive specimens
<b>381</b>	new positive this epi week
<b>30 hr</b>	mean turnaround time (TAT)
<b>24 [10-48]</b>	Median [Q1 – Q3] TAT

↓ **1.3%** relative to last week

**0.9%** positivity  
**0%** absolute change from last week

**0%** TAT relative to last week

## Weekly Summary of Lab tests paid Publicly

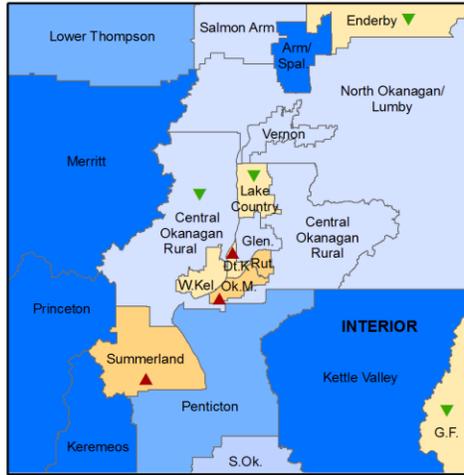
<b>2,391,454</b>	total specimens tested
<b>17,206</b>	new this epi week
<b>154,826</b>	total positive specimens
<b>339</b>	new positive this epi week

↓ **2.3%** relative to last week

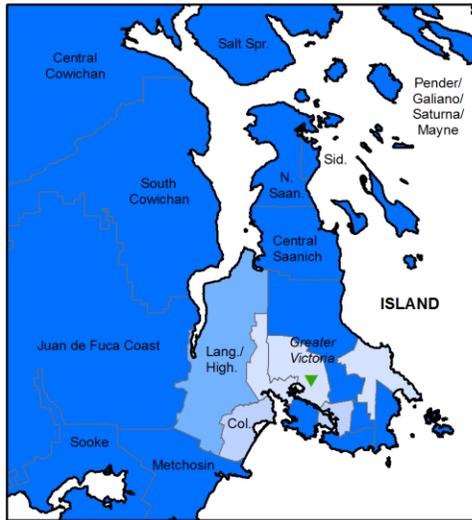
**2%** positivity  
**0%** absolute change from last week

26

Okanagan Inset  
(Community Health Service Areas)

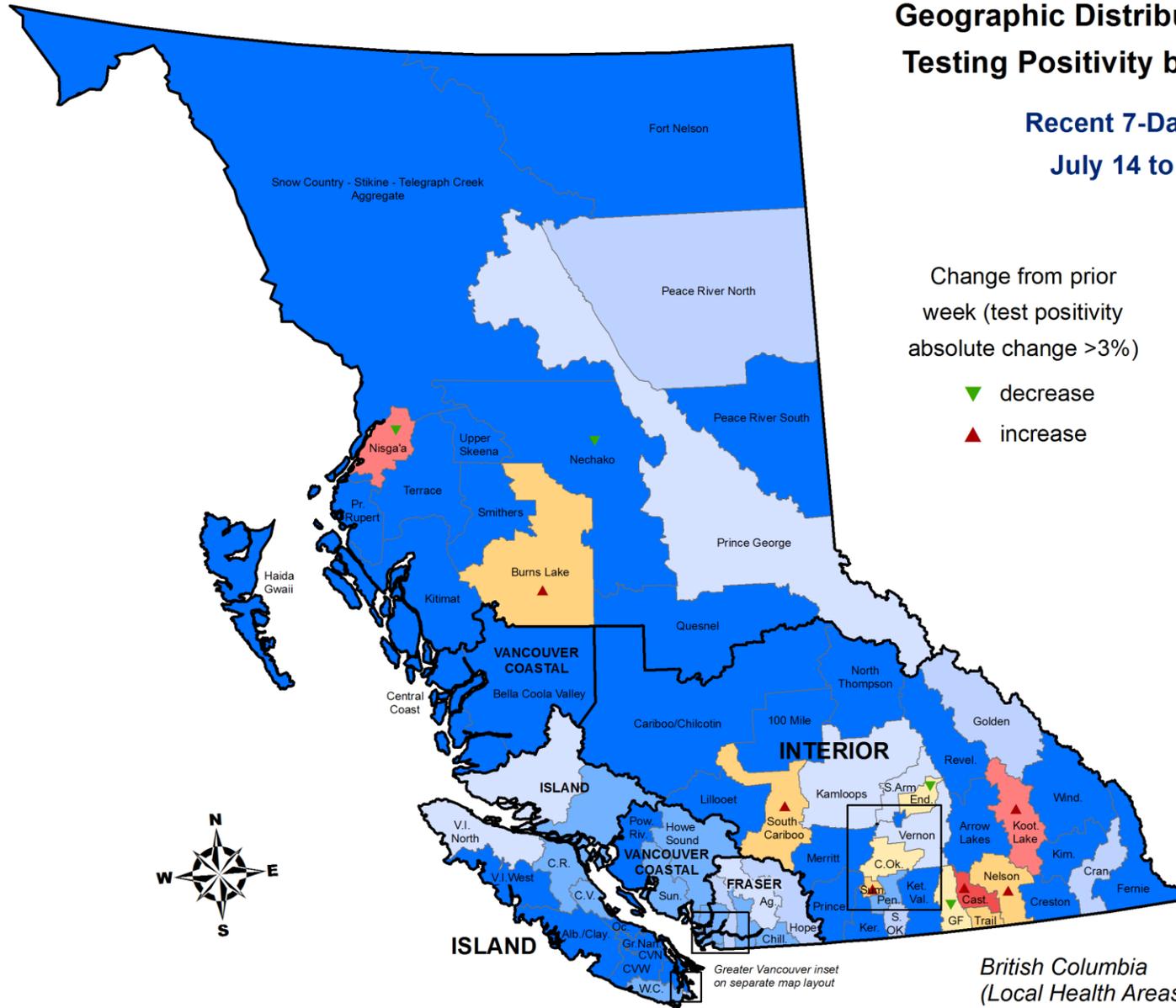


Greater Victoria Inset  
(Community Health Service Areas)



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

Recent 7-Days Testing  
July 14 to 20, 2021

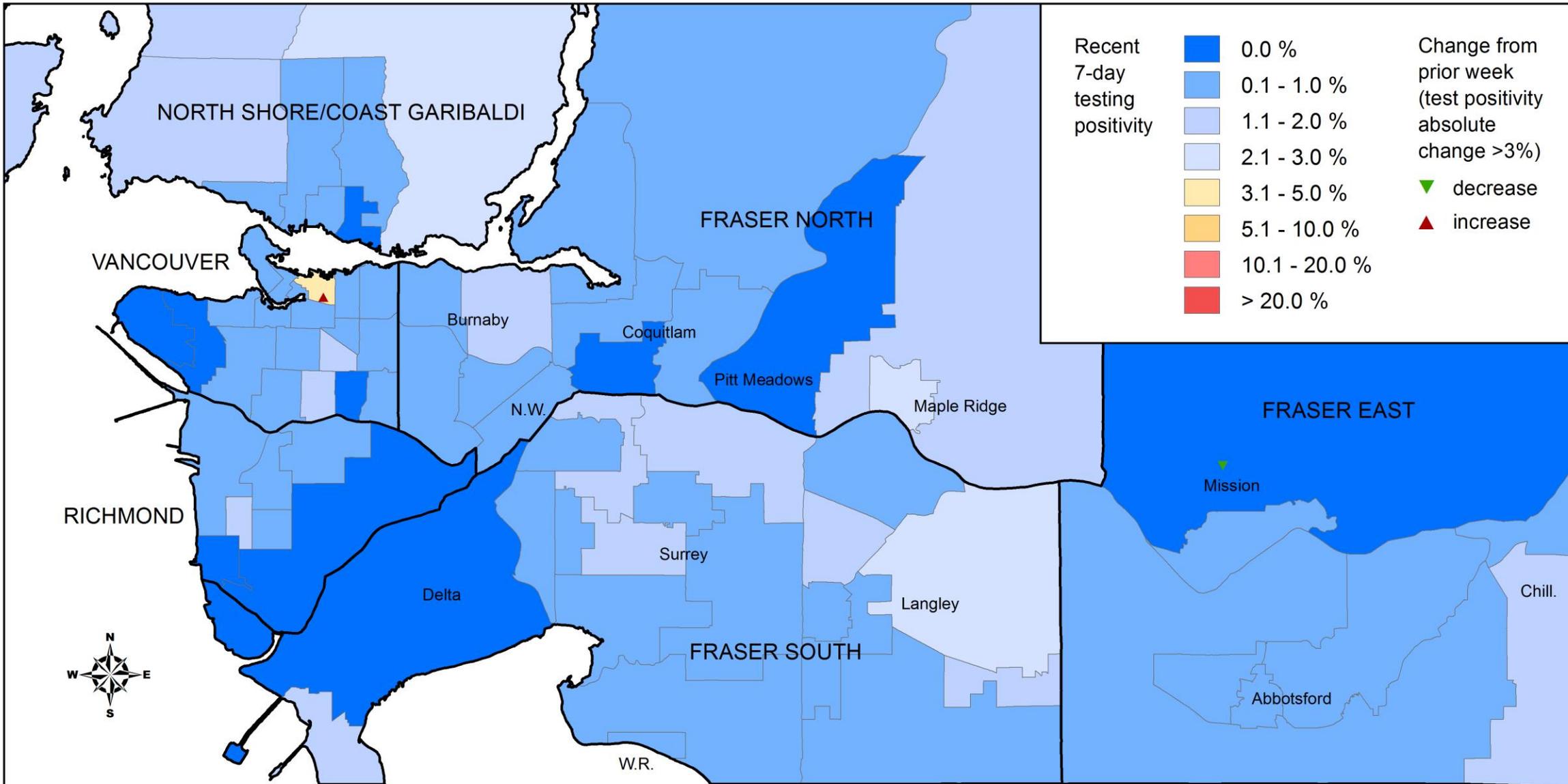


Change from prior week (test positivity absolute change >3%)  
 ▼ decrease  
 ▲ increase

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 %

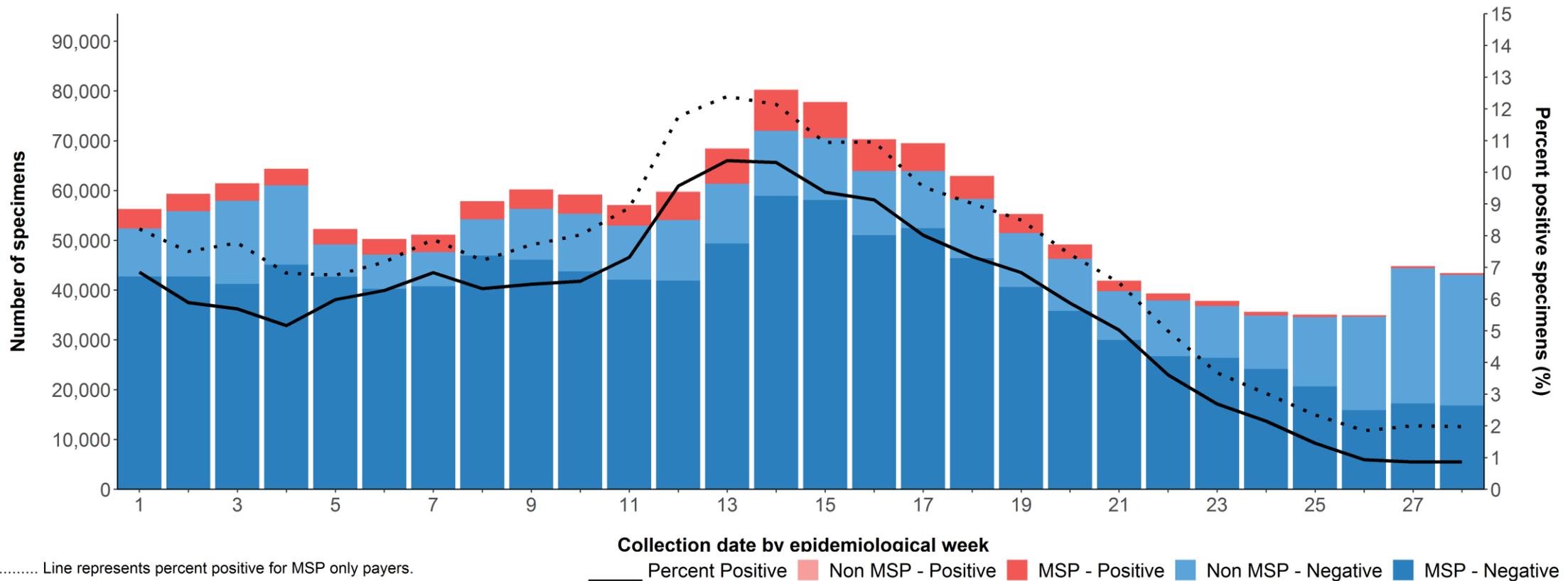
Data source: BCCDC Public Health Laboratory PLOVER system (all tests performed). Data are by testing result date, and location of client's residence or if missing, physician's address.



COVID-19 Recent 7-Day Test Positivity by CHSA (July 14 to 20, 2021)

Includes all tests

# Percent positivity among publicly funded tests remained relatively stable (2.3%) in the past three epi weeks.

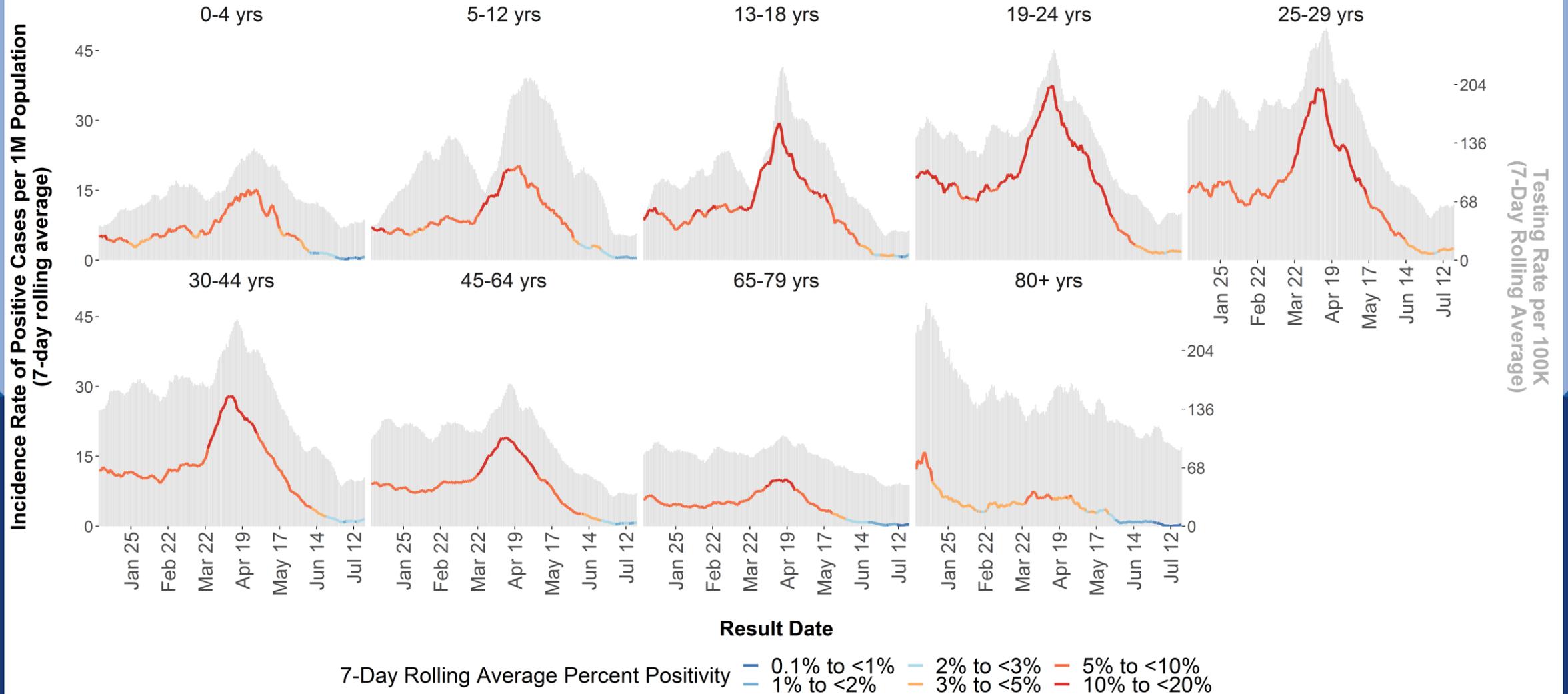


Note: Invalid (n = 1099) and indeterminate (n = 4392) results have been excluded

Data source: PLOVER 17-Jul-2021

# Case incidence rates for all age groups remain low and relatively stable

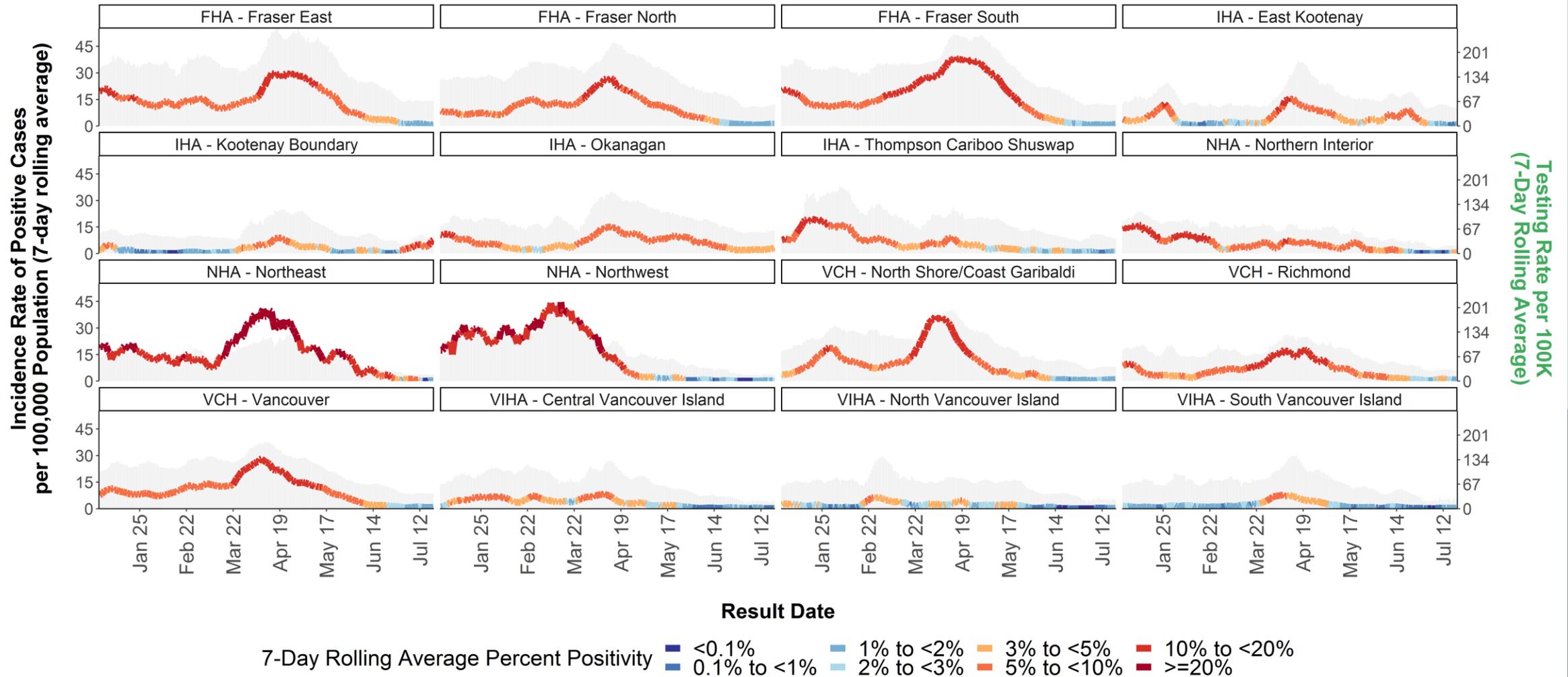
Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Jul 20, 2021.



Data source: PLOVER 20-Jul-2021

# HSDAs to watch: Kootenay Boundary

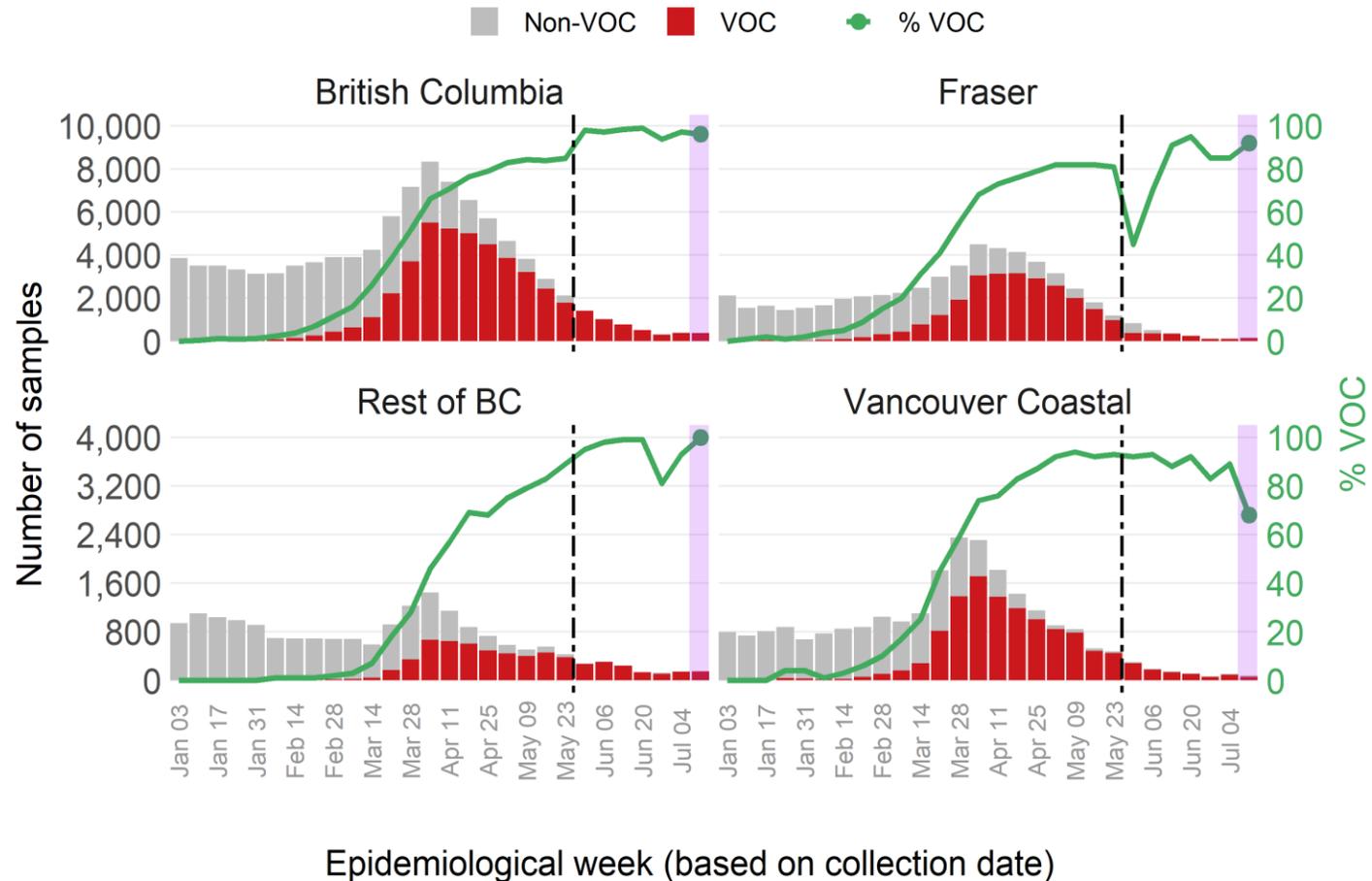
Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).  
Jan 1 2021 - Jul 20, 2021.



Data source: PLOVER 20-Jul-2021

# Over the past epi week, the majority of COVID-19 positive samples were VOCs (~97%); but note that the absolute number of VOC samples is small.

Prevalence of VOC, by epi week in BC and Health Authorities, Jul 11 - Jul 17



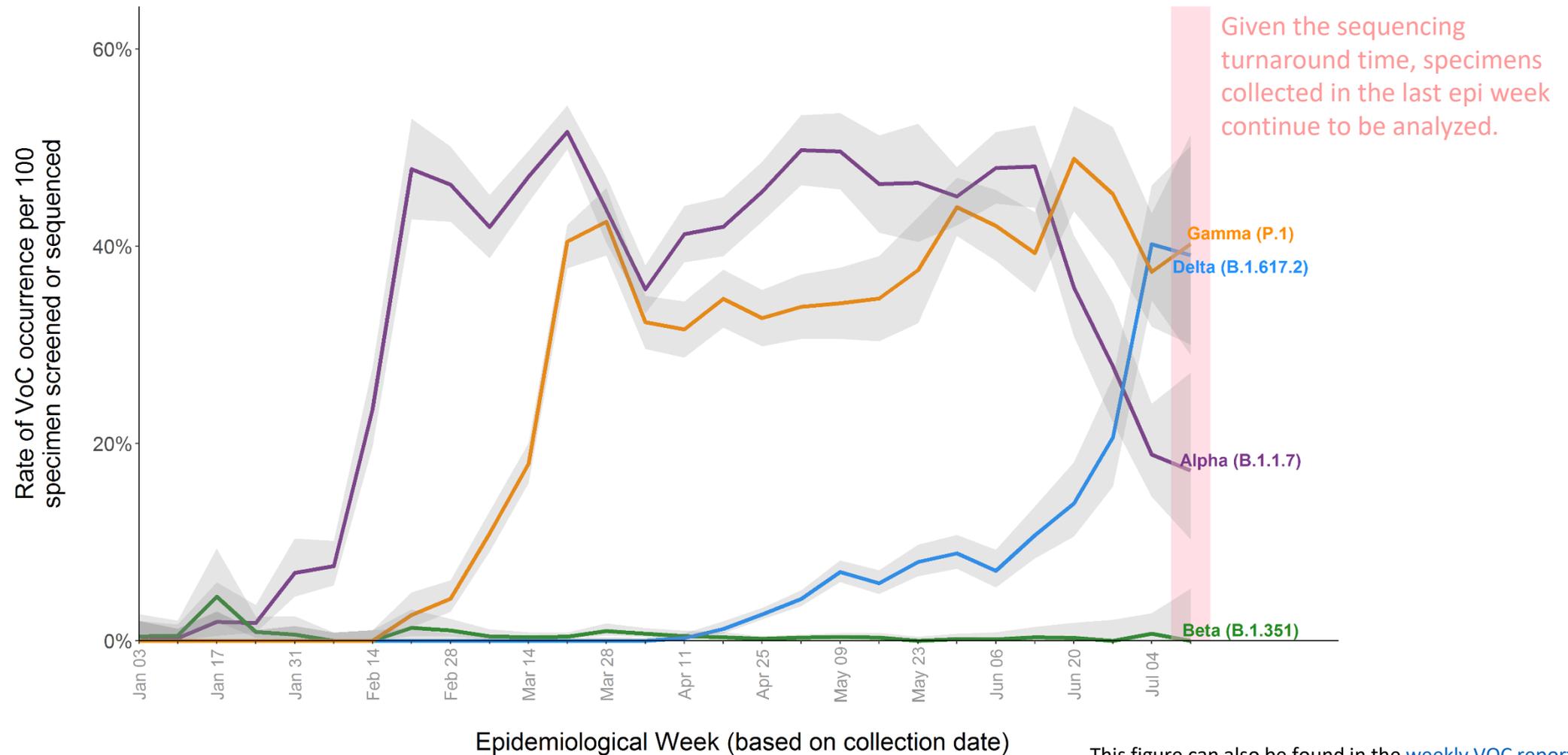
Shaded area reflects partial data and is subject to change

Note: given smaller number of weekly cases, percentages are more likely to fluctuate

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

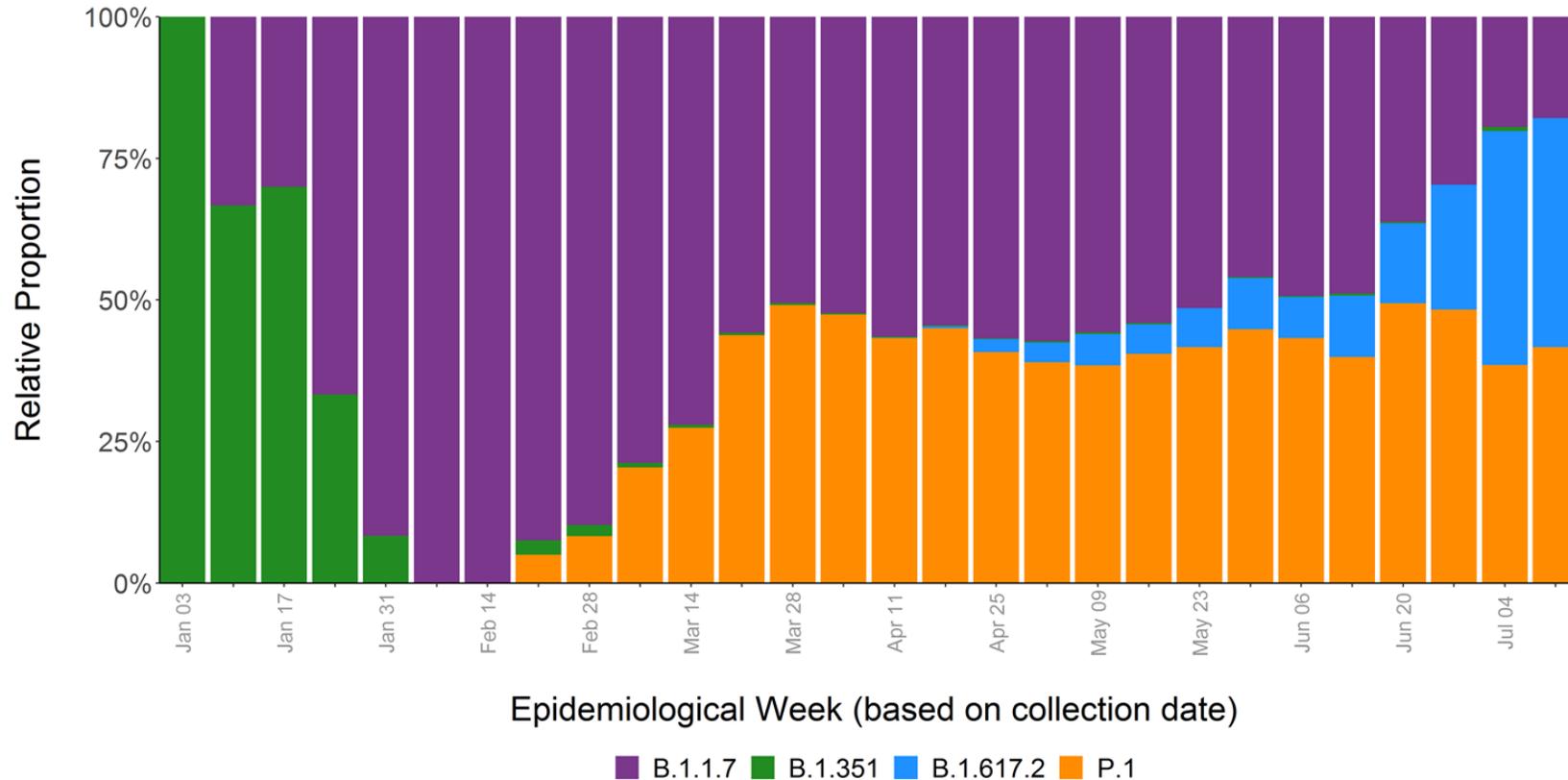
# Prevalence of the Delta variant among all sequenced samples\* has increased substantially over the past few weeks

Estimated sample prevalence of VOCs by lineage by epi week of collection date, Jan 3 – Jul 17, 2021



Among sequenced VoC samples provincially based on information for July 11-17th, P.1 (Gamma) ~42% and B.1.617 (Delta) ~41% are now two dominant VoCs, followed by B.1.1.7 (Alpha) at ~18%.

Relative Proportion of VoCs in BC Detected through Quasi-Random Sample Selection by Epiweek of Collection Date



B.1.1.7 (Alpha) 18%\*

B.1.617.2 (Delta) 41%

P.1 (Gamma) 42%

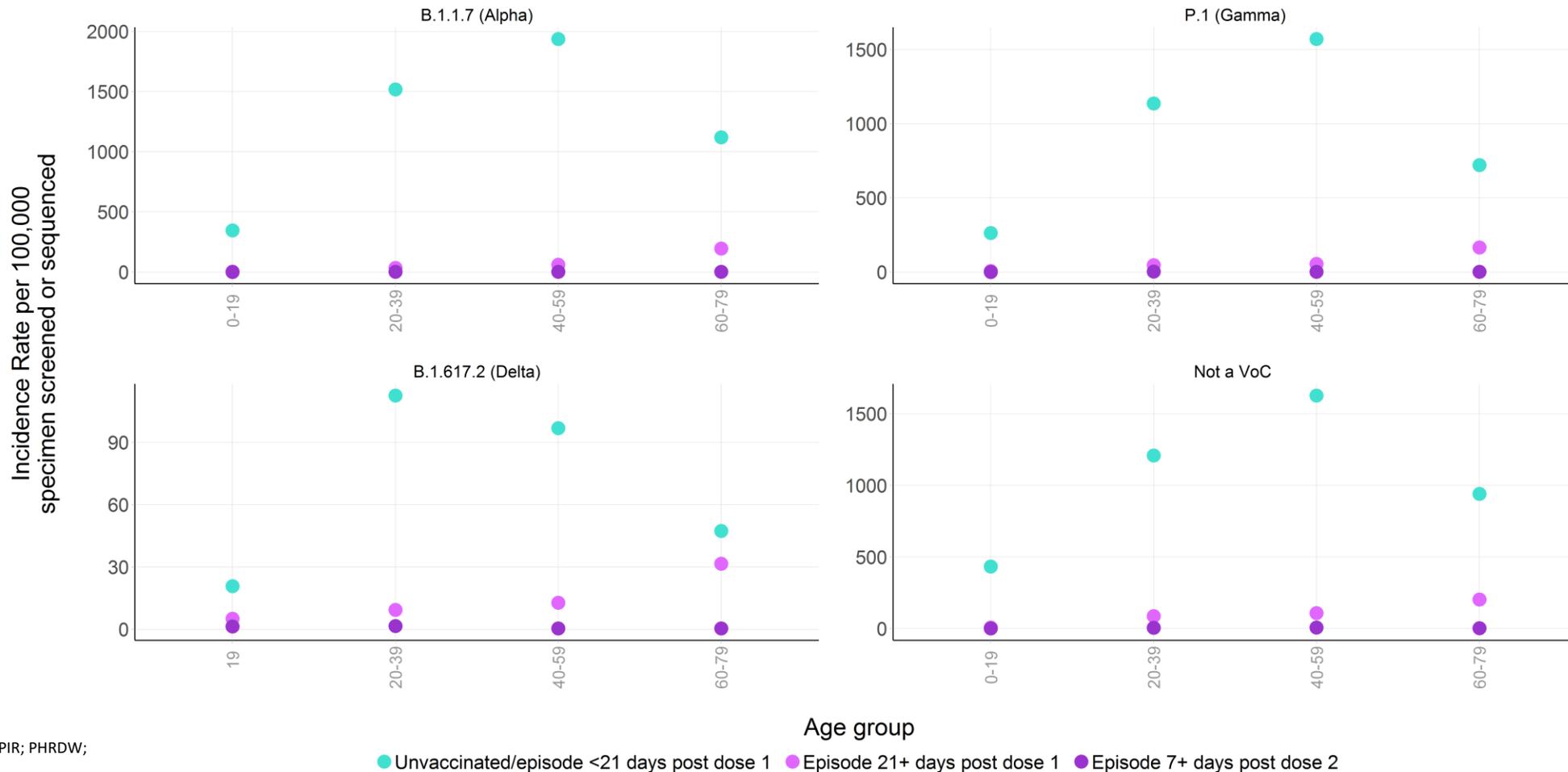
\*Note: % may not add to 100 due to rounding

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

**Overall, unvaccinated people experience a higher infection rate compared with vaccinated people for every variant and across all ages. Second dose helps to achieve better protection, especially for older individuals. Vaccines provide protection against all 3 circulating variants in BC.**

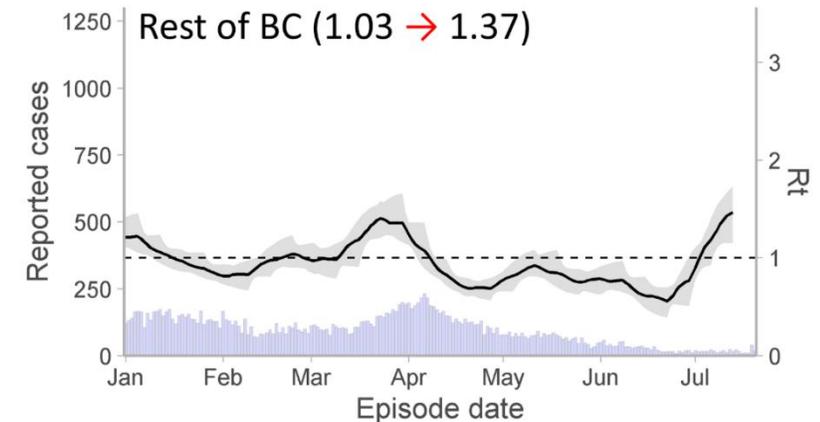
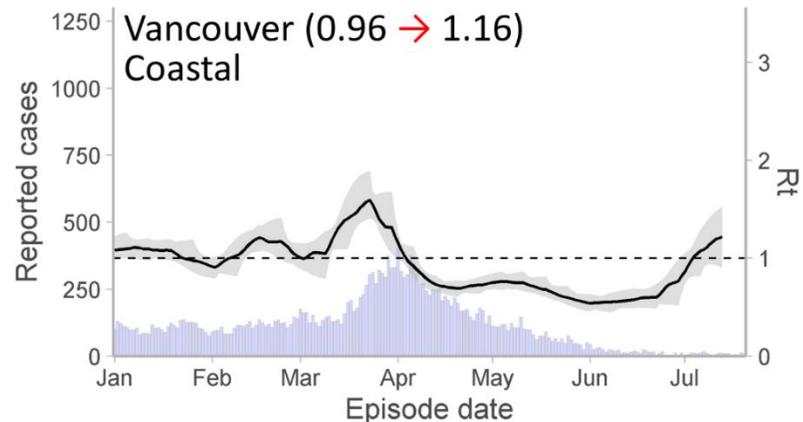
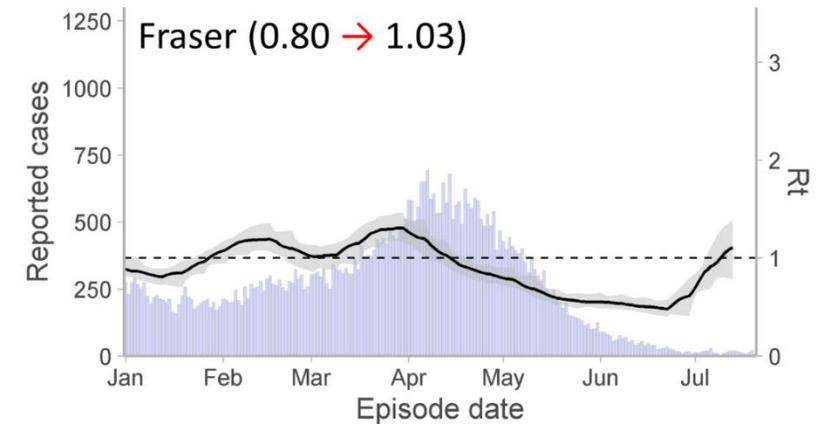
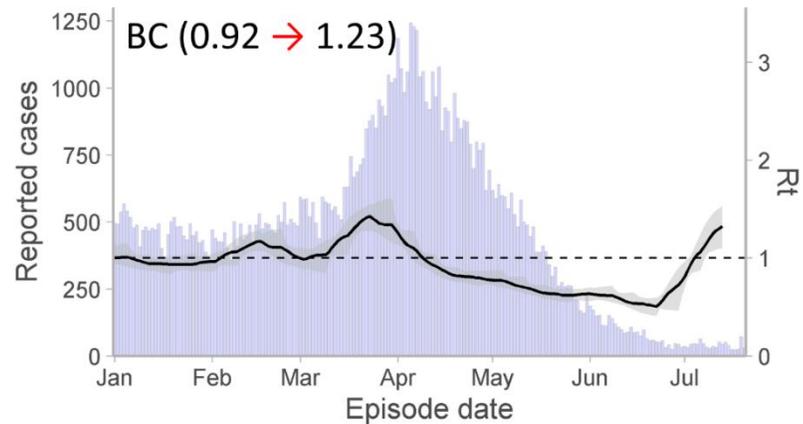
Cumulative Incidence Rate of SARS-CoV-2 Infections by VoC, Vaccination Status, and Age in BC  
Jun 15 - Jul 17, 2021



Data sources: PIR; PHRDW; PLOVER

# Dynamic compartmental modeling: recent trends

Our model shows that  $R_t$  is trending upward and is now at or near 1, but note the overall low case numbers, which make estimates more unstable



Solid black line: median  $R_t$ , modeled using all reported cases up to July 21, 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 → this week). Only January 2021 onward shown here. Data source: BCCDC HA linelist.

# 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

# 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](#)