

# BCCDC Data Summary

26 August 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 for surveillance data up to 24 Aug

- **Case rates** are increasing in all regions; **test positivity** for public tests has been stable at ~9% provincially, and is highest in IH (16%) and NH (20%).
- **New hospitalizations** and **hospital/critical care census** are increasing; **new deaths** are relatively stable and low. Hospitalization rates among children continue to remain very low.
- Based on last week's data, compared with fully vaccinated individuals and after adjusting for age differences, unvaccinated individuals are
  - ~**12x** more likely to become a case
  - ~**34x** more likely to be hospitalized
  - ~**8x** more likely to die
- **Vaccine** coverage in BC, 24 Aug, 1 dose (2 doses): 74% (67%) of total population, 83% (75%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern and among younger individuals.
- Variants of concern (**VOCs**) continue to account for ~100% of all positive tests in BC. Delta is the dominant VOC (98%) across all of BC.

# Aug 19 to Aug 24: BC COVID-19 Profile



**161,969** total cases  
**4,402** new this week



**1,802** total deaths  
**20** new this week

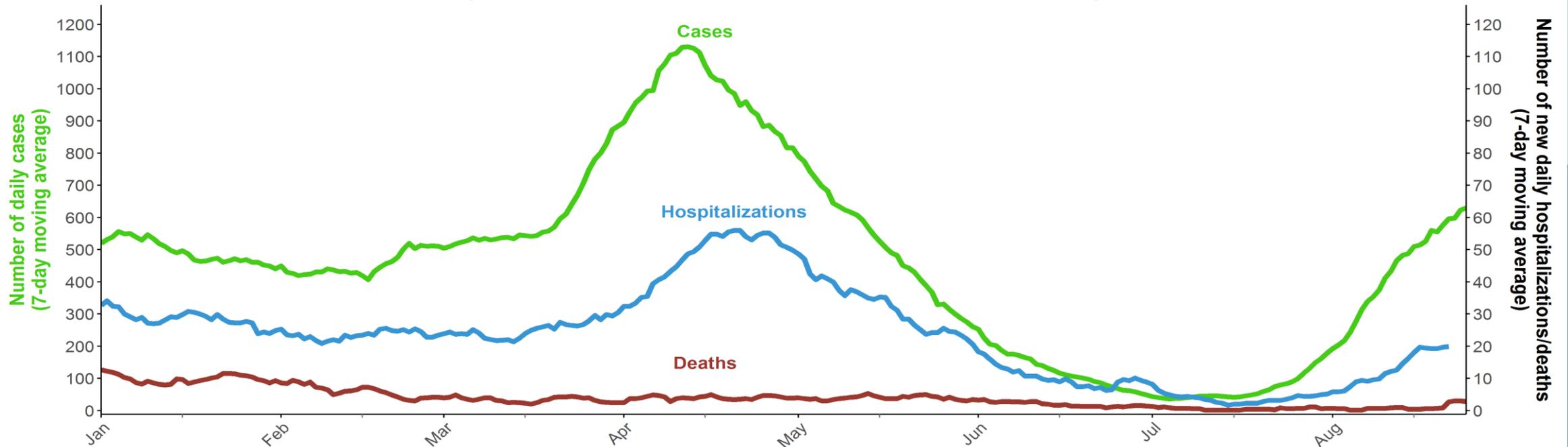


**8,500** ever hospitalized  
**149** new this week



**154,669** removed from isolation  
**4,567** new this week

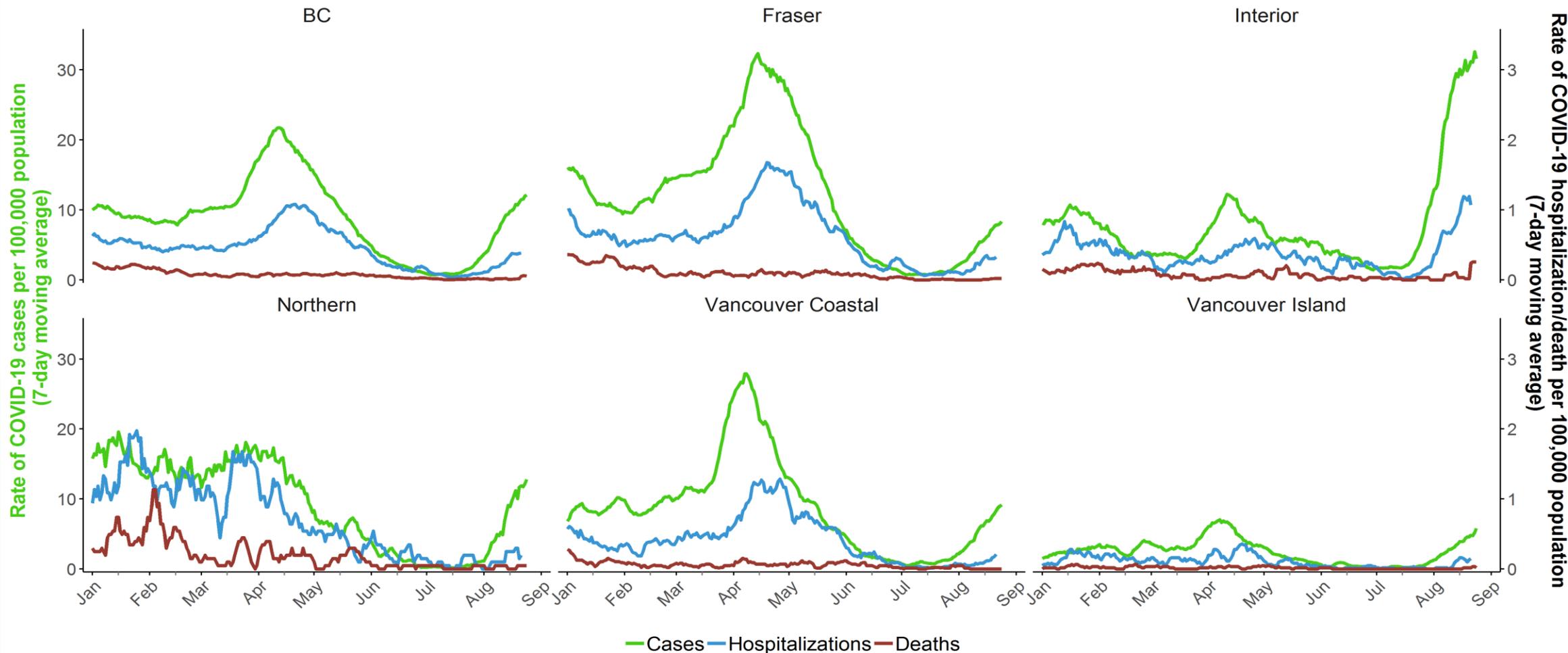
New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Aug 24 2021



\* Data are by surveillance date for cases and deaths, and admission date for hospitalizations  
Data source: PHRDW Aug-25-2021

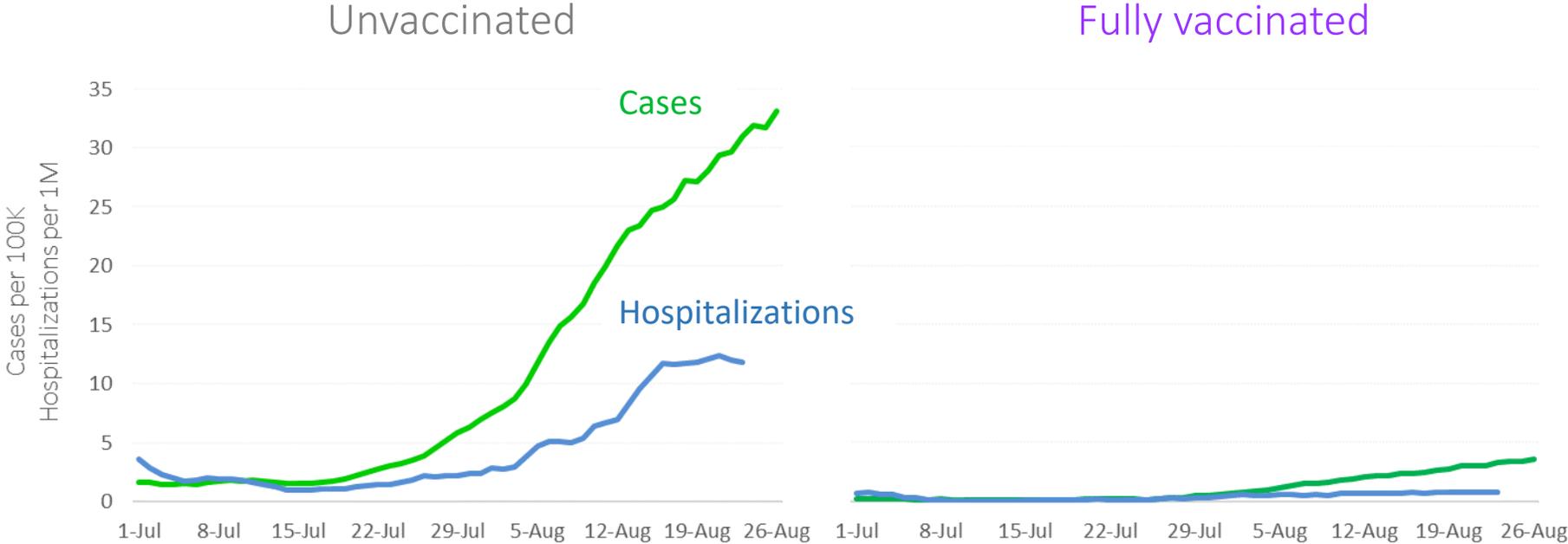
**Case** rates continue to increase in all HAs, with highest rates in Interior; **new hospitalizations** are also increasing; **new deaths** are stable and low.

Rate of COVID-19 case, hospitalization and death, Jan 01 2021 - Aug 24 2021

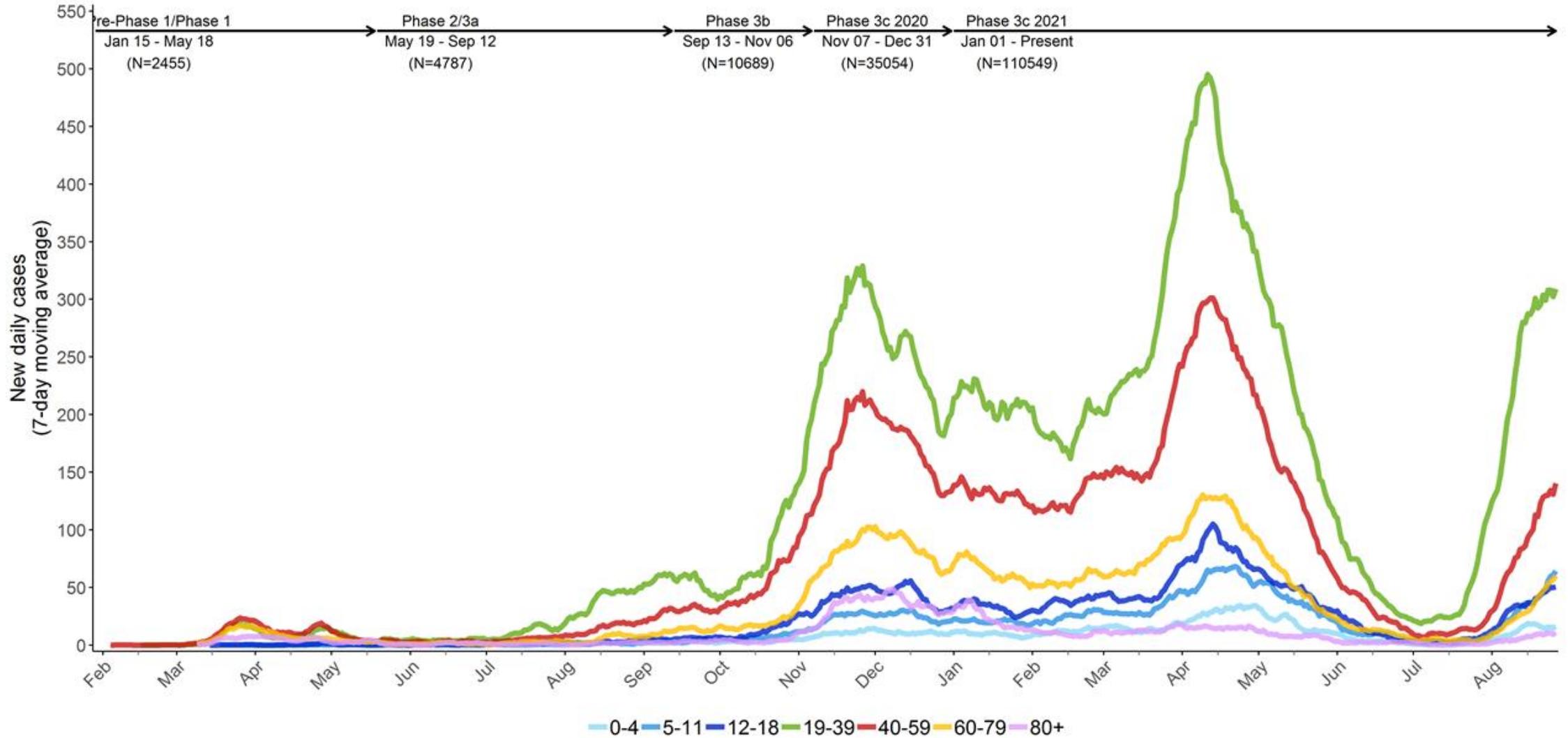


\* Data are by surveillance date for cases and deaths, and admission date for hospitalizations  
Data source: PHRDW Aug-25-2021

# The epidemic trajectory is very different for unvaccinated and fully vaccinated individuals (also see slides 16-24)



# Case counts are highest among 19-39 year olds, consistent with previous resurgences

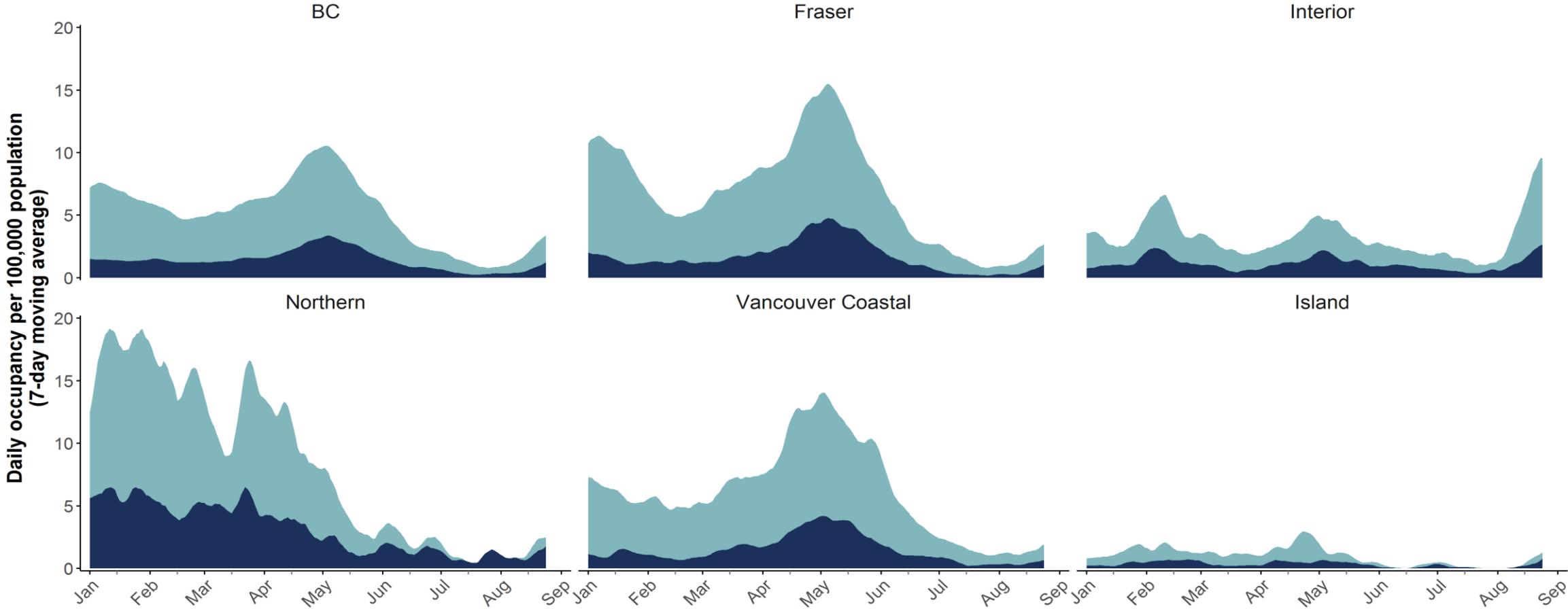


\* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

# Hospital and critical care census is high and increasing in IH, and trending upwards in other parts of BC

Current COVID-19 hospitalizations, Jan 01 2021 - Aug 24 2021

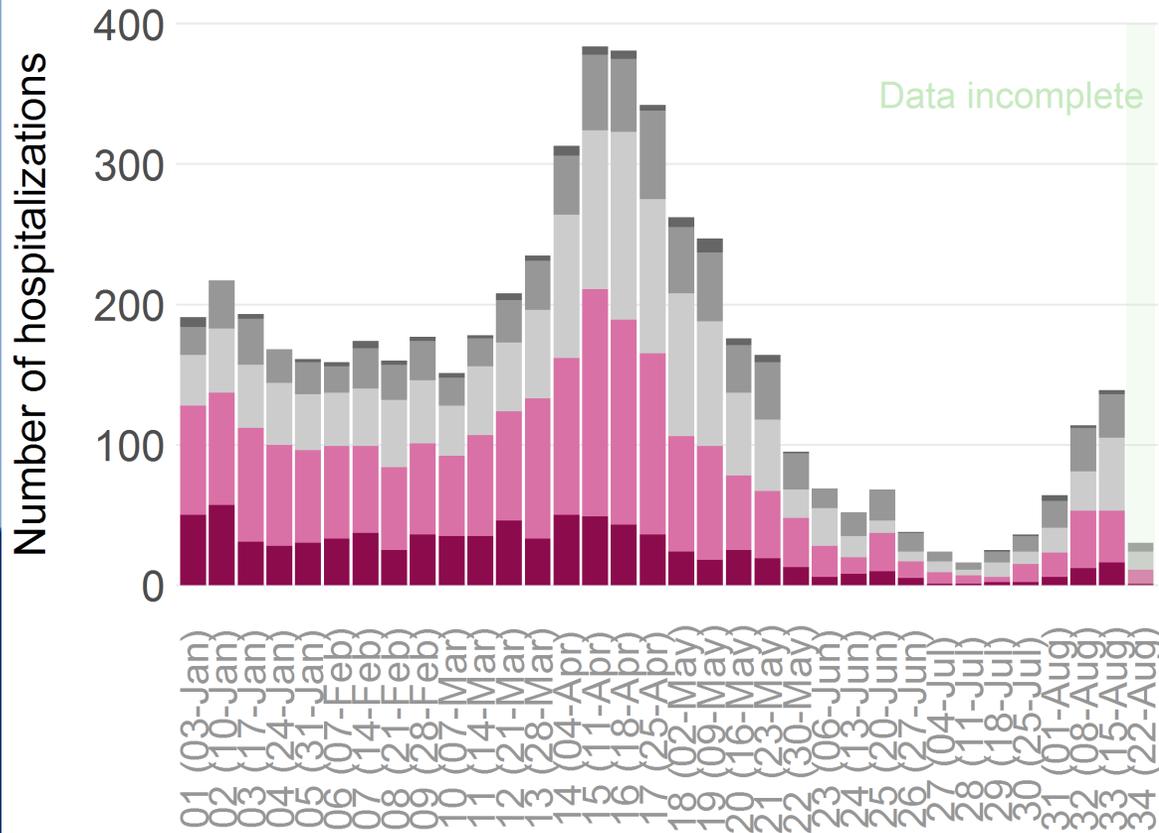
■ In the hospital but not in critical care ■ In critical care



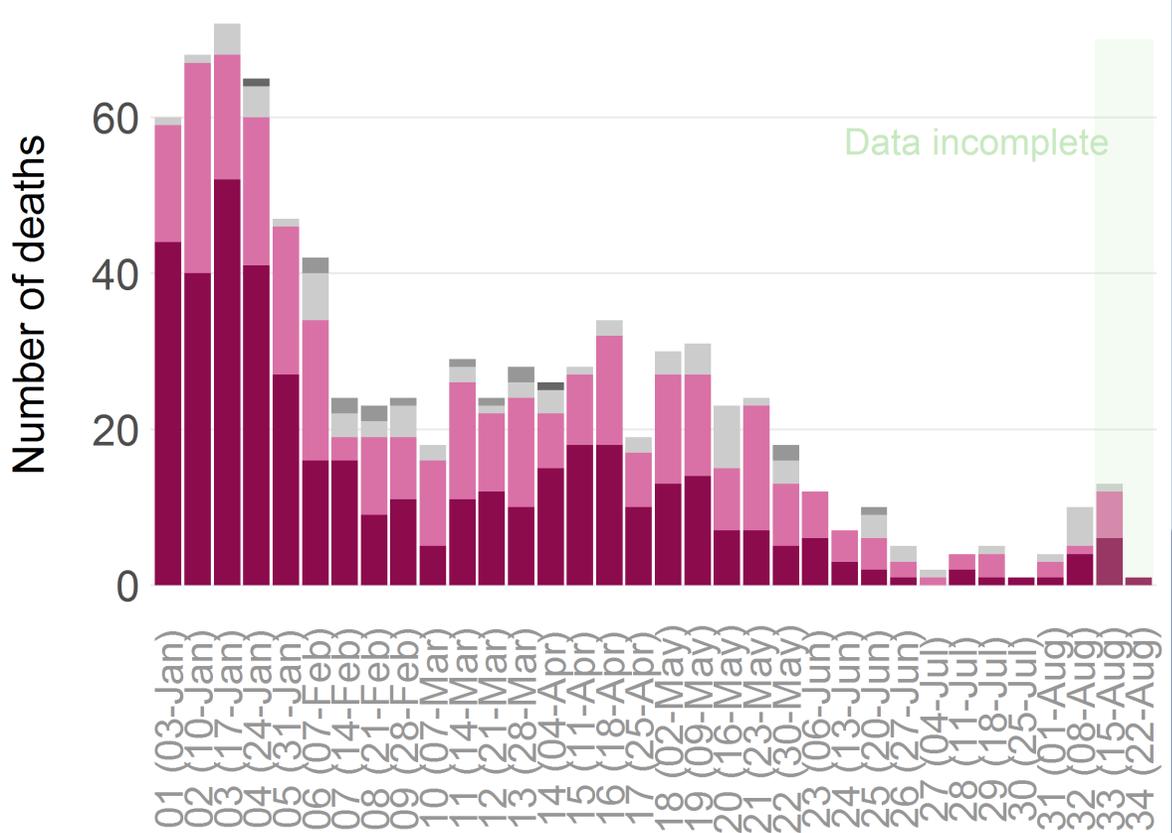
\* Data are by census date for hospitalizations  
 Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Aug-25-2021

Number of new hospital admissions has increased the most among 40-59 year olds, mostly among unvaccinated individuals (see slide 23). Deaths are stable and low.

Age group 0-19 20-39 40-59 60-79 80+



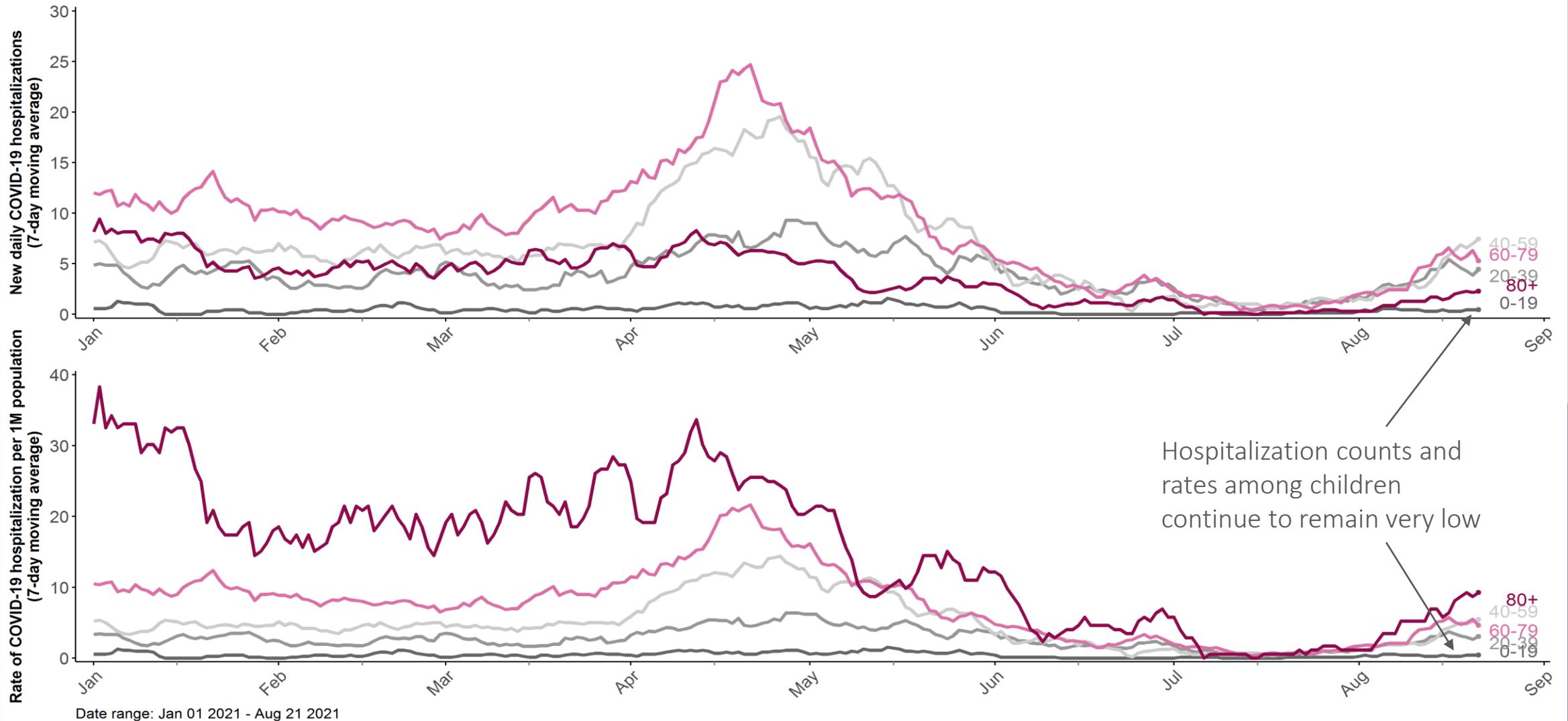
2021 Epi week of admission date  
(epi week start date)



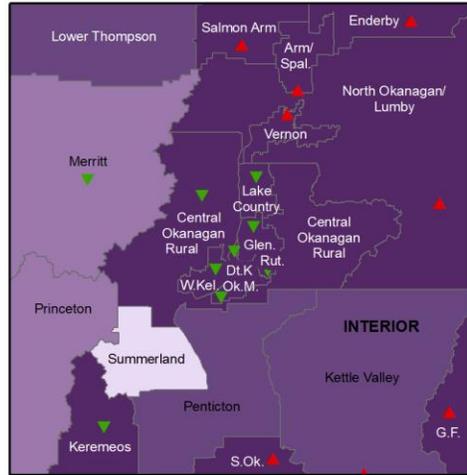
2021 Epi week of death date  
(epi week start date)

Data extracted on 2021-08-26; hospitalization and death data from health authority case line list data

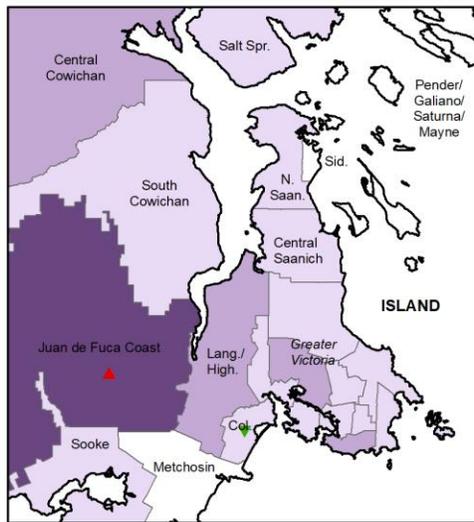
# Trends in number and rate of new hospitalizations by age group, BC, 1 Jan – 21 August 2021



Okanagan Inset  
(Community Health Service Areas)

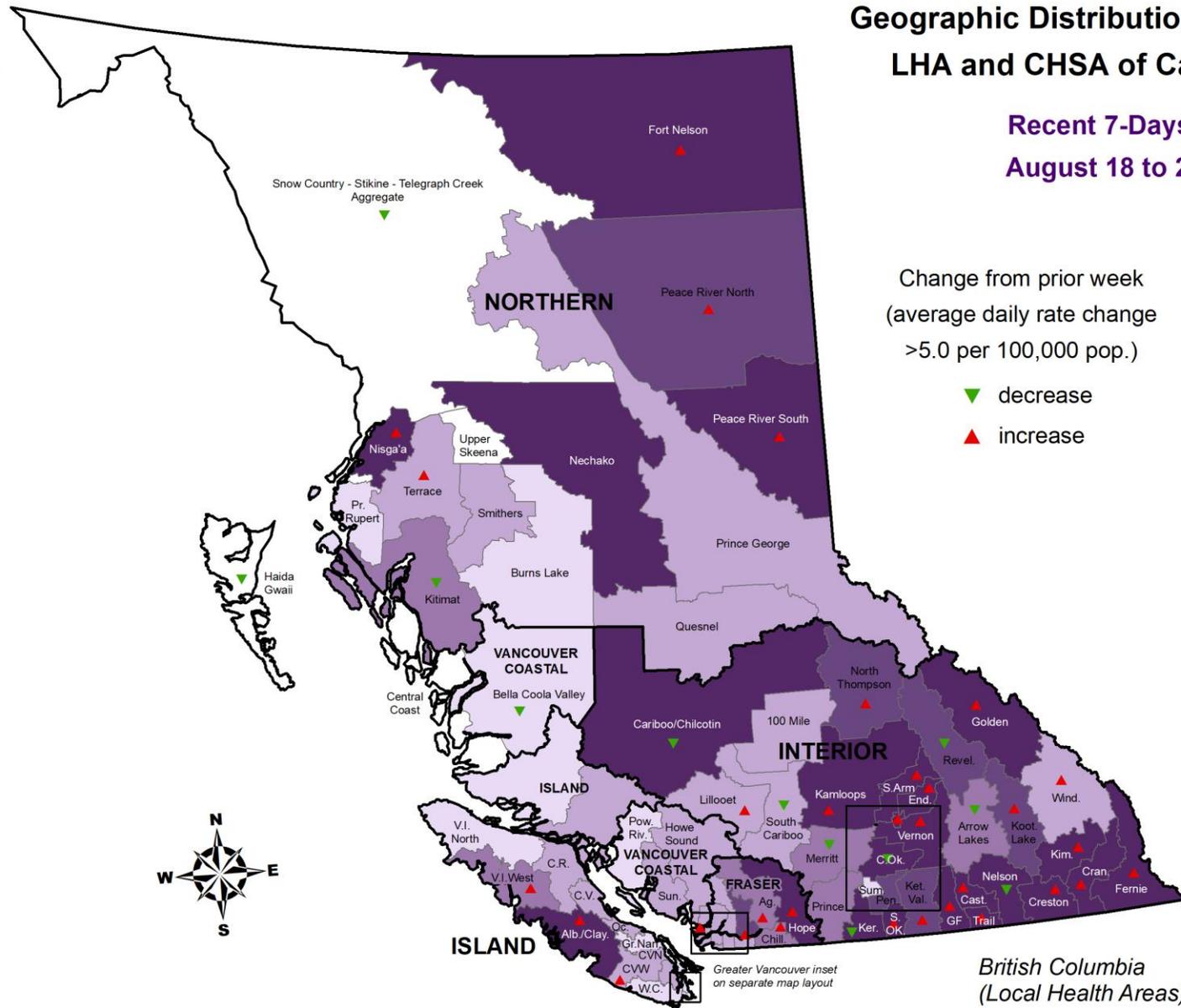


Greater Victoria Inset  
(Community Health Service Areas)



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

Recent 7-Days Cases  
August 18 to 24, 2021



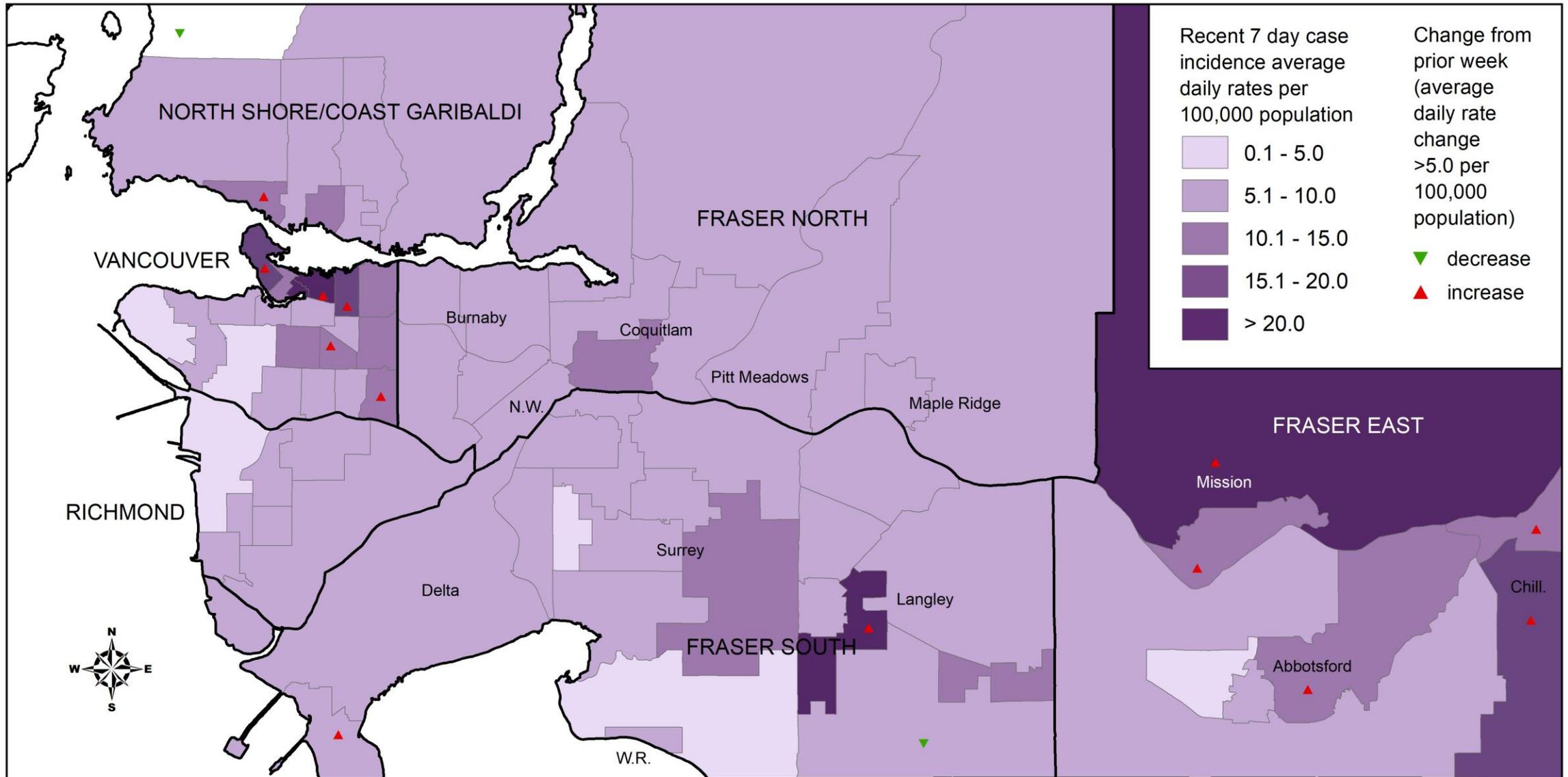
Change from prior week  
(average daily rate change  
>5.0 per 100,000 pop.)

- ▼ decrease
- ▲ increase

Average daily rate per  
100,000 population

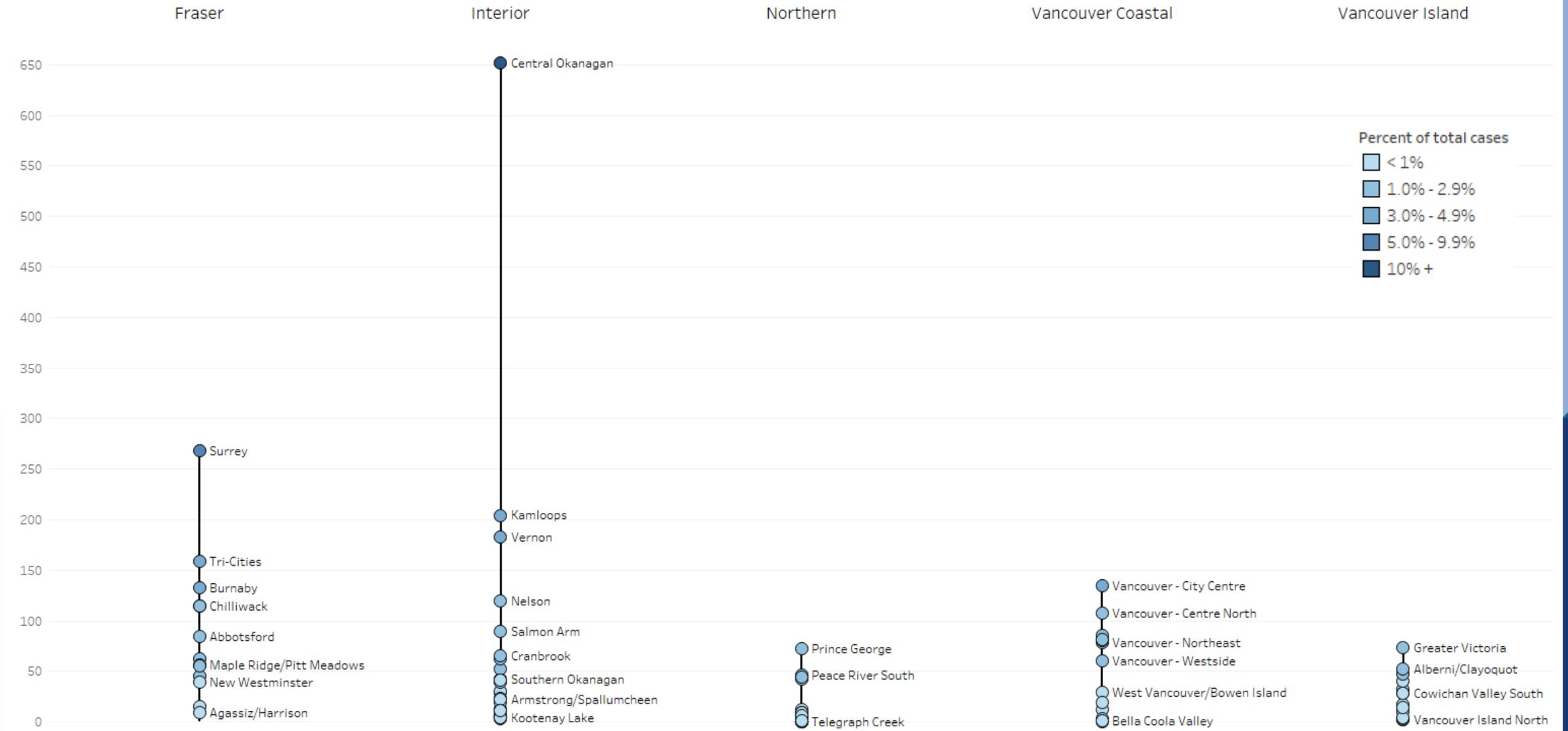
- 0.0
- 0.1 - 5.0
- 5.1 - 10.0
- 10.1 - 15.0
- 15.1 - 20.0
- > 20.0

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.

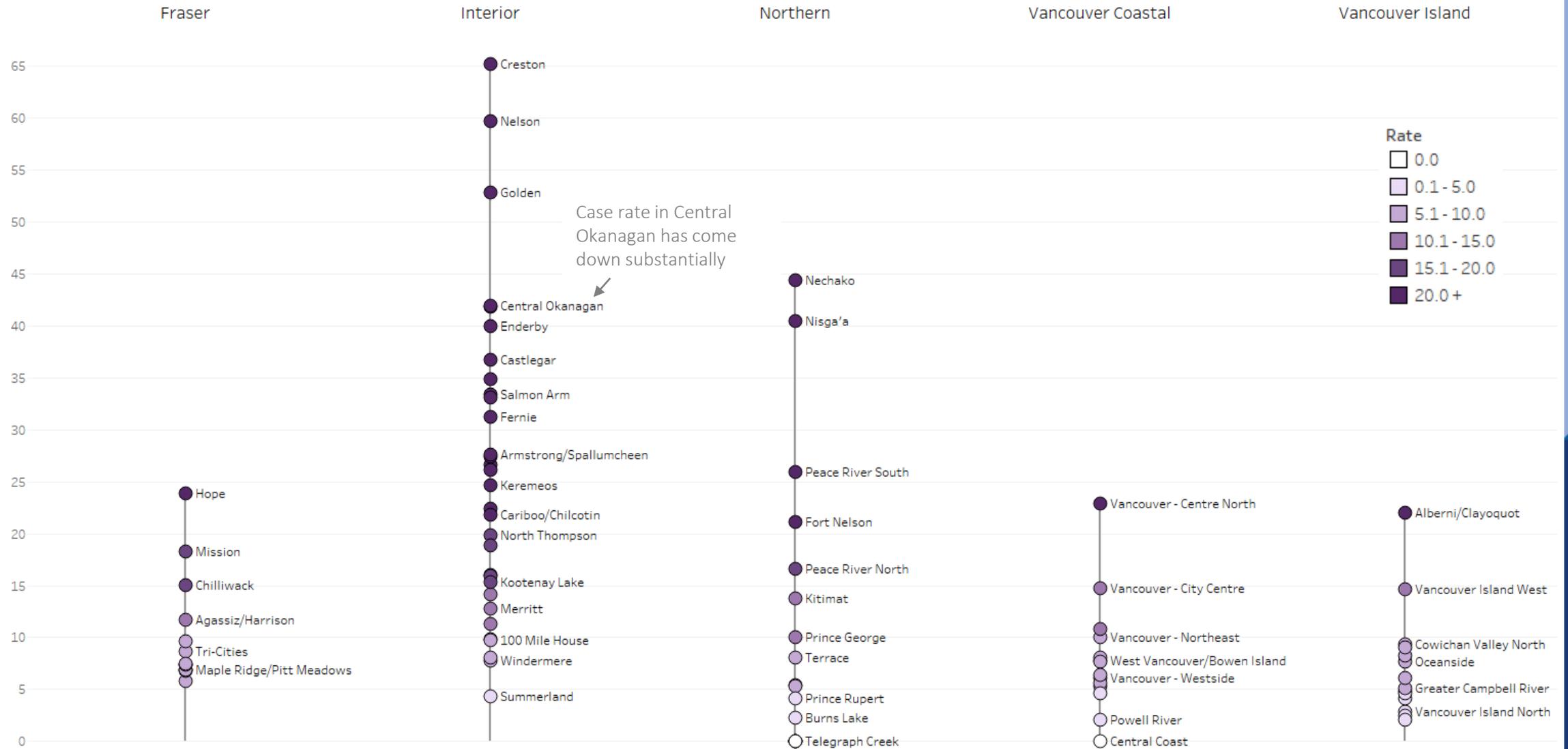


COVID-19 Recent 7-Day Case Incidence Rates by CHSA (August 18 to 24, 2021)

Total cases by local health area, Aug 18 - Aug 24, 2021



Average daily **rate** of new cases per 100,000 population, by local health area, Aug 18 - Aug 24, 2021

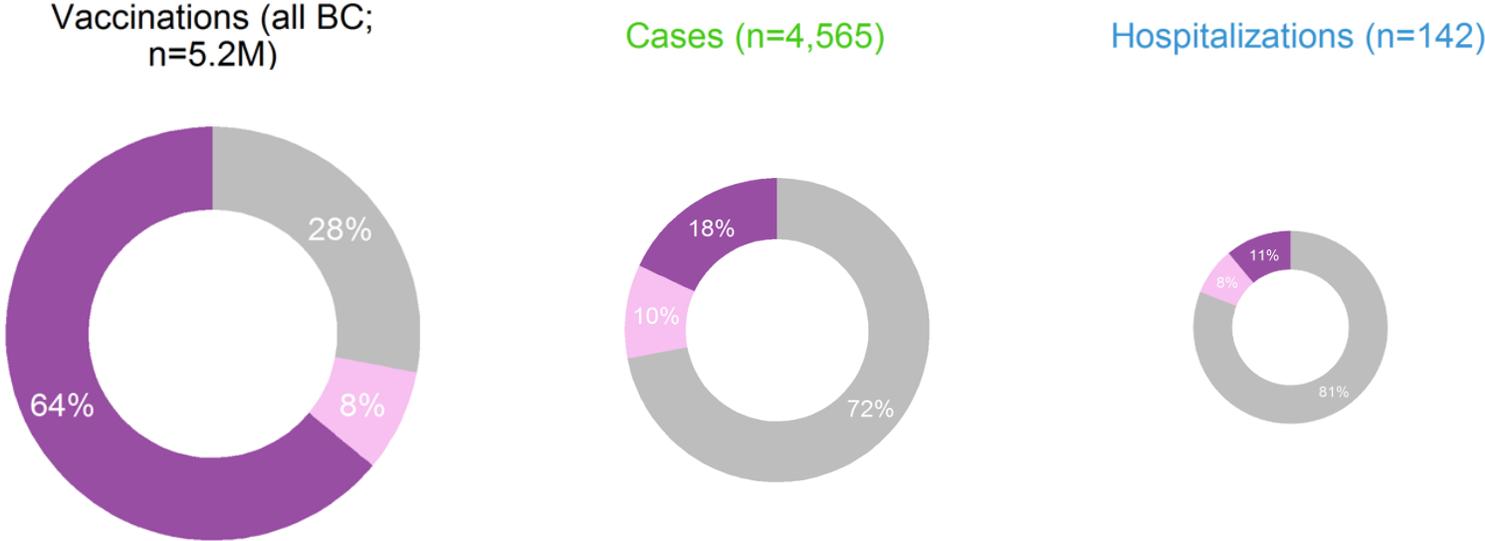


# Key messages - Cases by vaccine status

- Most of the recent cases and hospitalizations continue to be among unvaccinated individuals
- Based on last week's data, compared with fully vaccinated individuals, unvaccinated individuals are
  - ~9x more likely to become a case (~12x after adjusting for age differences)
  - ~17x more likely to be hospitalized (~34x after adjusting for age differences)
  - ~8x more likely to die, taking into account age differences
- Hospitalization rates among children continue to remain very low
- Unvaccinated: no dose or <3 weeks since receipt of 1<sup>st</sup> dose
- Partially vaccinated = 1 dose: ≥3 weeks since receipt of 1<sup>st</sup> dose and <2 weeks after 2<sup>nd</sup> dose
- Fully vaccinated = 2 doses: 2 weeks or more after receipt of 2<sup>nd</sup> dose

# Over the past week, fully vaccinated individuals represented 64% of BC's total population but accounted for only 18% of cases and 11% of hospitalizations

These % fluctuate over time. There are many more vaccinated individuals than unvaccinated individuals. Thus it is important to take the denominator into account. These figures do not represent vaccine effectiveness.



■ Unvaccinated ■ Vaccinated, 1 dose ■ Vaccinated, 2 doses

Data include cases from Aug 20-Aug 26, and hospitalizations and deaths from Aug 17-Aug 23, 2021

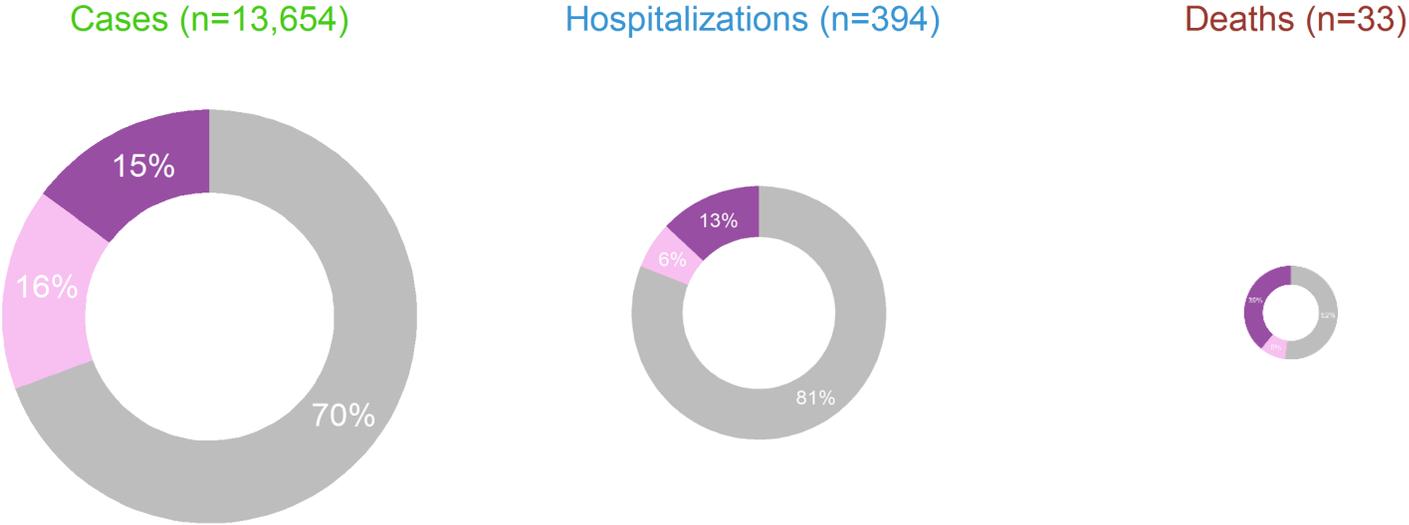
Unvaccinated individuals include those not yet eligible to be vaccinated (12 years old and younger)

Note: relative size of donuts not to scale

We operate in a live database environment and data get updated retrospectively. These figures may differ slightly from previously reported counts. Vaccinations represent vaccination coverage as of the last date. Cases are captured based on surveillance date. Hospitalizations are by admission date. Please note that there is often a multiple-days lag in recording hospitalizations, e.g. some hospital admissions that occurred on Aug 17<sup>th</sup> may not be captured by our surveillance system until Aug 22<sup>nd</sup>.

# Over the past month, fully vaccinated individuals accounted for 15% of cases and 13% of hospitalizations

These % are expected to increase over time 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 among vaccinated people. Percentages for deaths among partially or fully vaccinated need to be interpreted



Deaths continue to occur primarily among older individuals (see next slide), >90% of whom are vaccinated, which explains the higher relative % of deaths among the fully vaccinated.

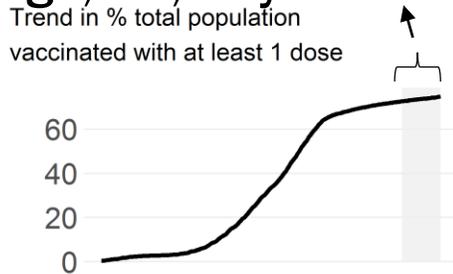
Note: relative size of donuts not to scale

■ Unvaccinated ■ Vaccinated, 1 dose ■ Vaccinated, 2 doses  
Data include cases from Jul 30-Aug 26, and hospitalizations and deaths from Jul 27-Aug 23, 2021

We operate in a live database environment and data get updated retrospectively. These figures may differ slightly from previously reported counts. Cases are captured based on surveillance date. Hospitalizations are by admission date. Deaths are by date of death. Please note that there is often a multiple-days lag in recording hospitalizations and deaths, e.g. some hospital admissions that occurred on Aug 17<sup>th</sup> may not be captured in our surveillance system until Aug 22<sup>nd</sup>.

# COVID-19 health outcomes by vaccination status and age, BC, July 30 – August 26, 2021

## Trend in % total population vaccinated with at least 1 dose



Vaccinations (all BC; n=5.2M)



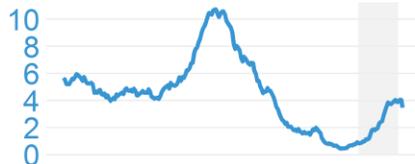
Trend in daily cases per 1M



Cases (n=13,654)



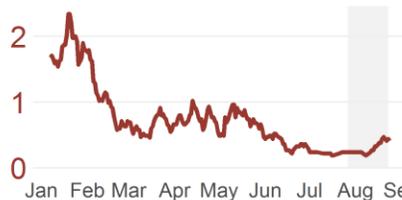
Trend in daily hospitalizations per 1M



Hospitalizations (n=394)



Trend in daily deaths per 1M

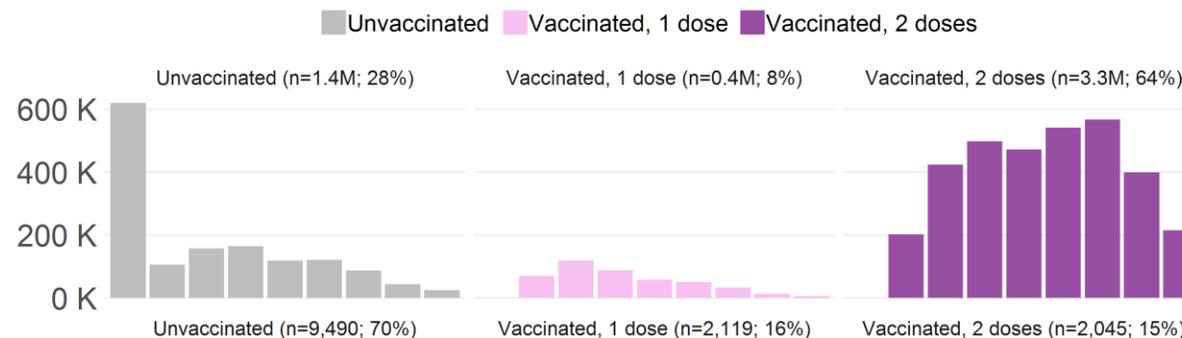


Deaths (n=33)

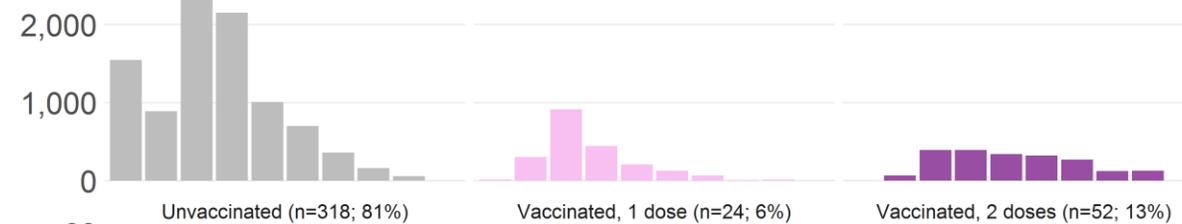


Note: relative size of donuts not to scale

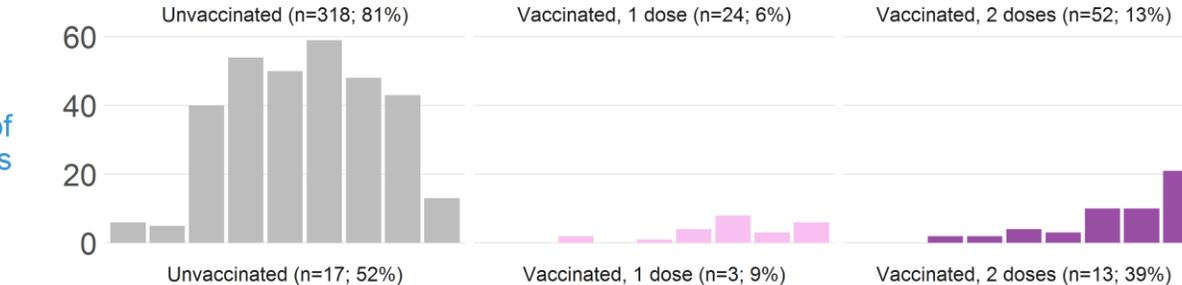
Number of people



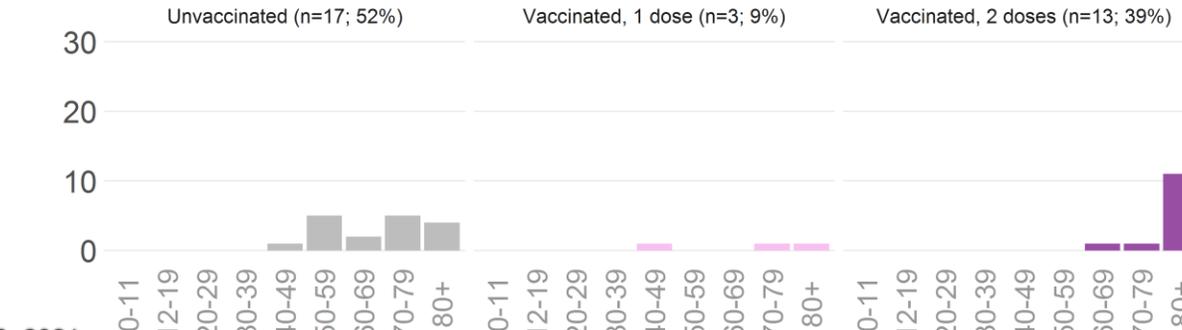
Number of cases



Number of hospitalizations



Number of deaths

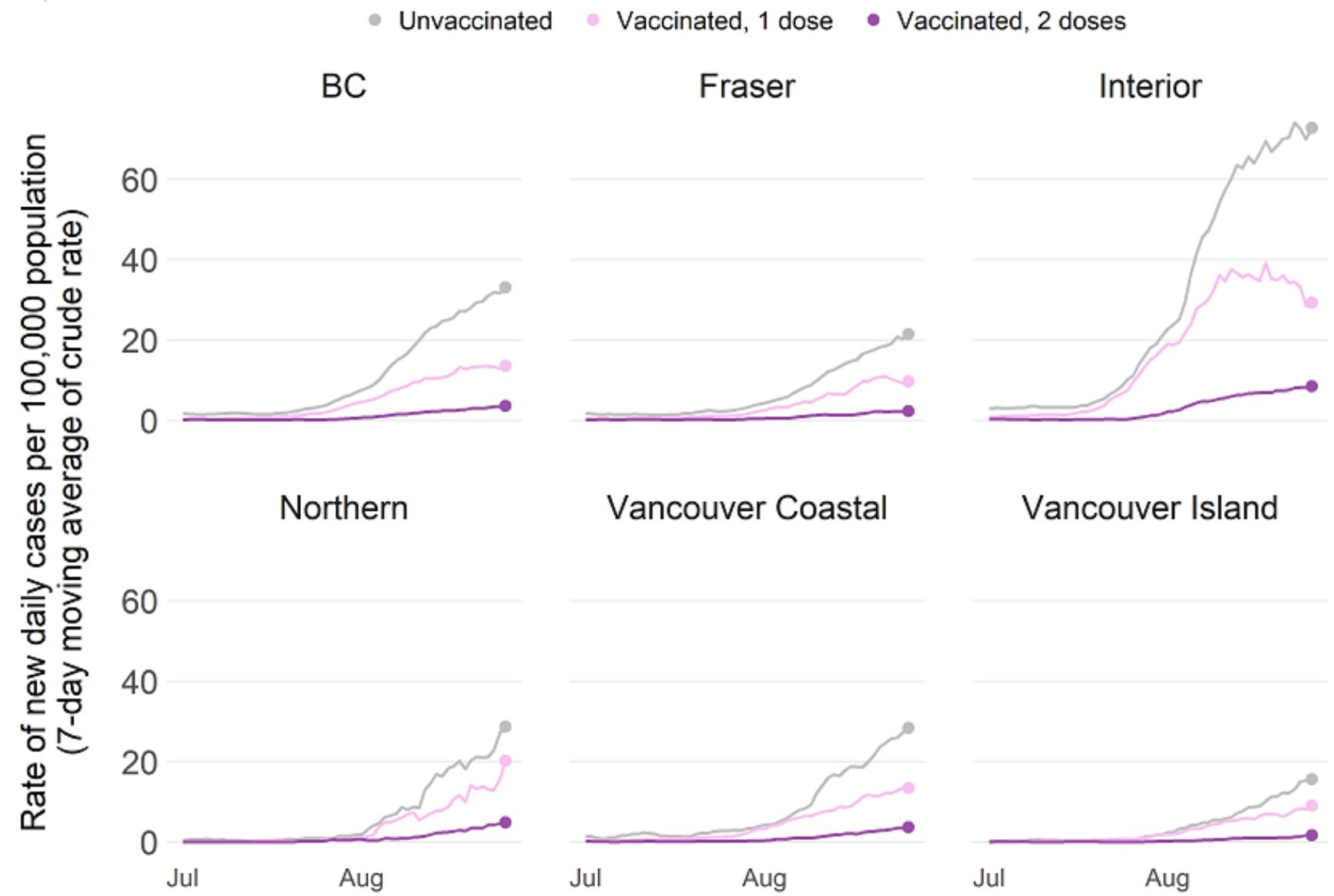


\*Figures include cases from Jul 30-Aug 26, and hospitalizations and deaths from Jul 27-Aug 23, 2021

# COVID-19 case rate by vaccination status and Health Authority, July 1 – Aug 27, 2021

Over the past 8 weeks, the case rate among the unvaccinated individuals has been 9-10x higher than the case rate among fully vaccinated individuals – but note that this is crude and not adjusted for age (see slide 23).

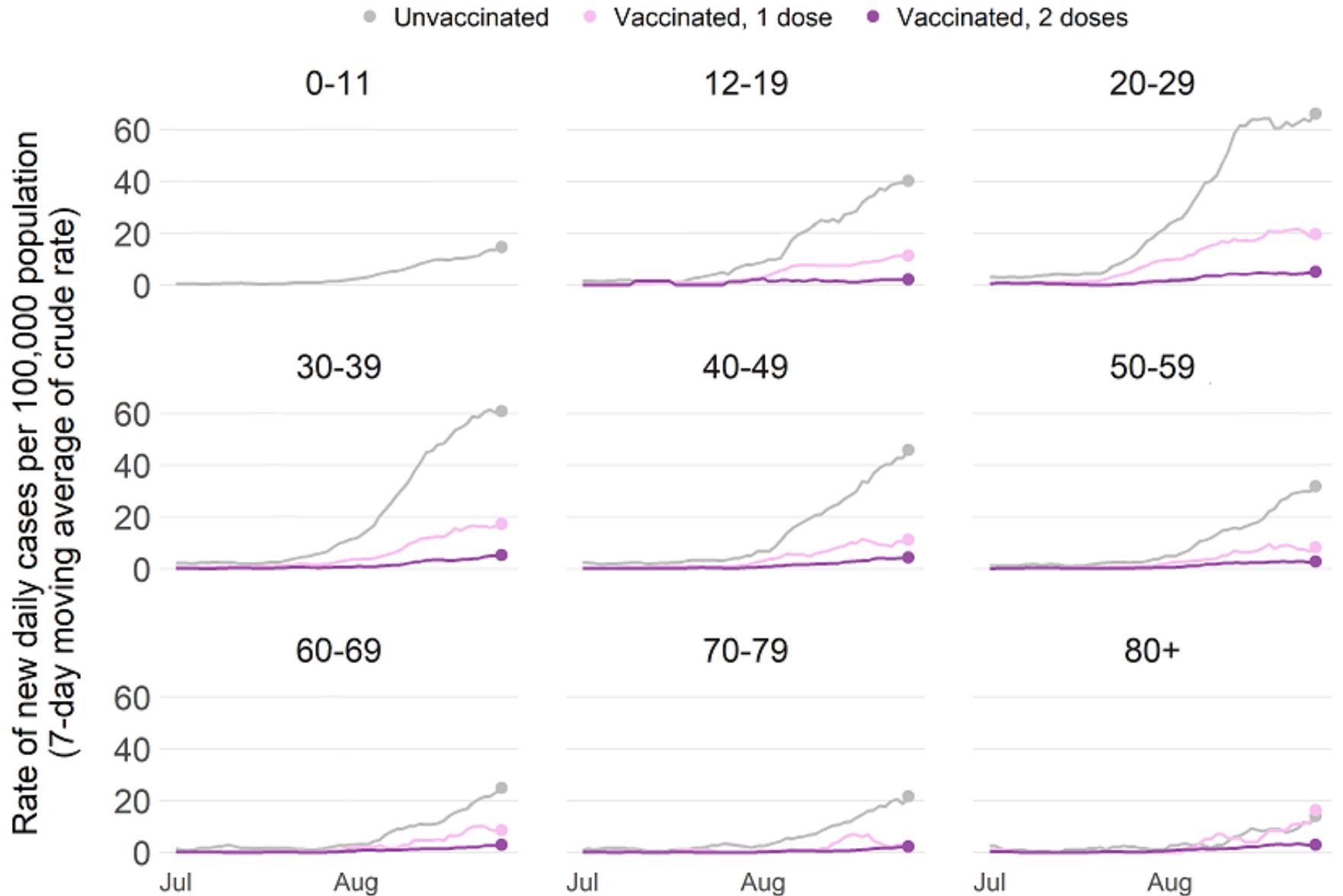
*Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.*



Data extracted from health authority case line list on 27 Aug 2021

# COVID-19 case rate by vaccination status and age, July 1 – August 27, 2021

*Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.*

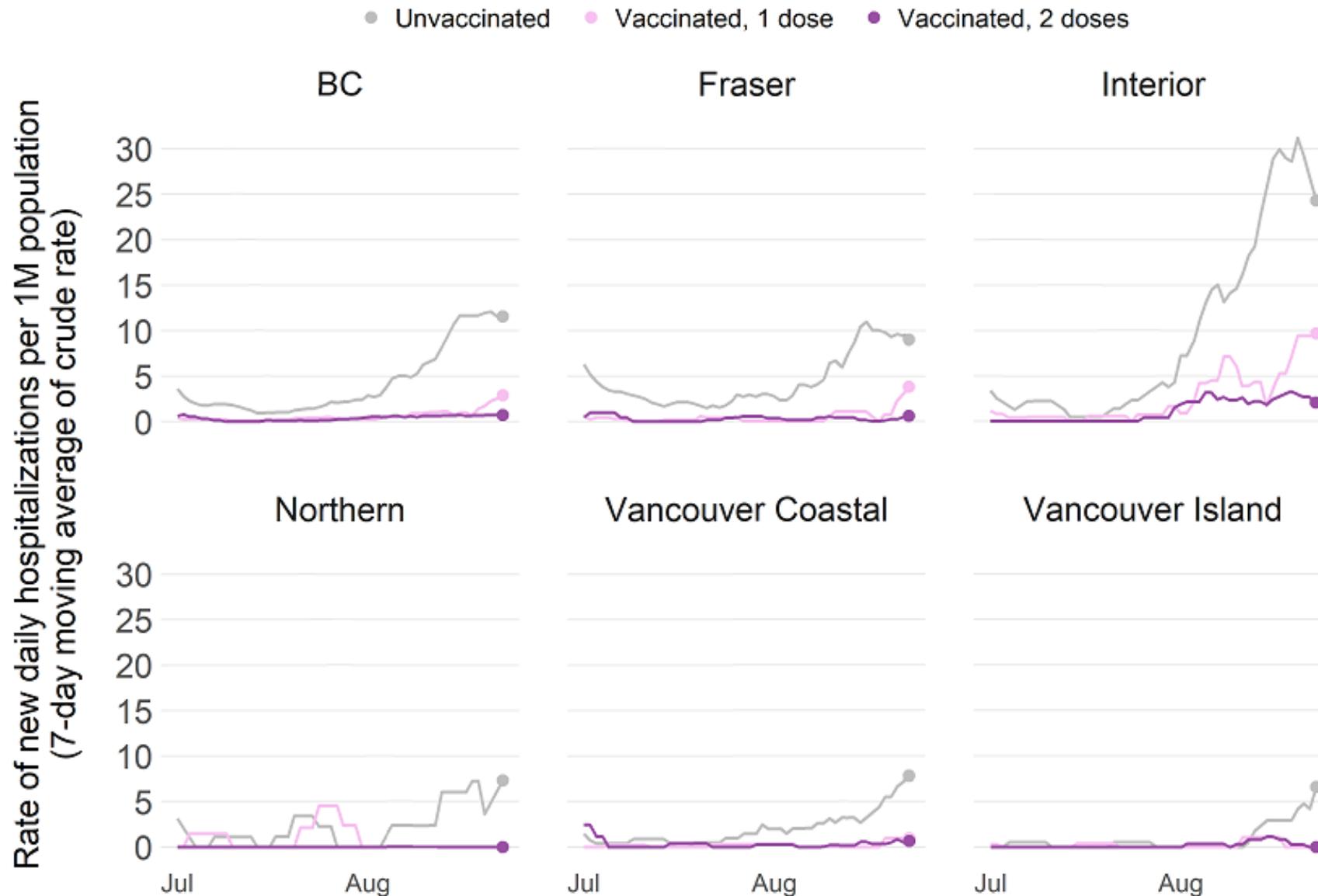


Data extracted from health authority case line list on 27 Aug 2021

# COVID-19 hospitalization rate by vaccination status, July 1 – Aug 23, 2021

Over the past 3 weeks, the hospitalization rate among the unvaccinated individuals has been ~17x higher than the hospitalization rate among fully vaccinated individuals – but note that this is crude and not adjusted for age (see slide 23).

*Data by hospital admission date. Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.*

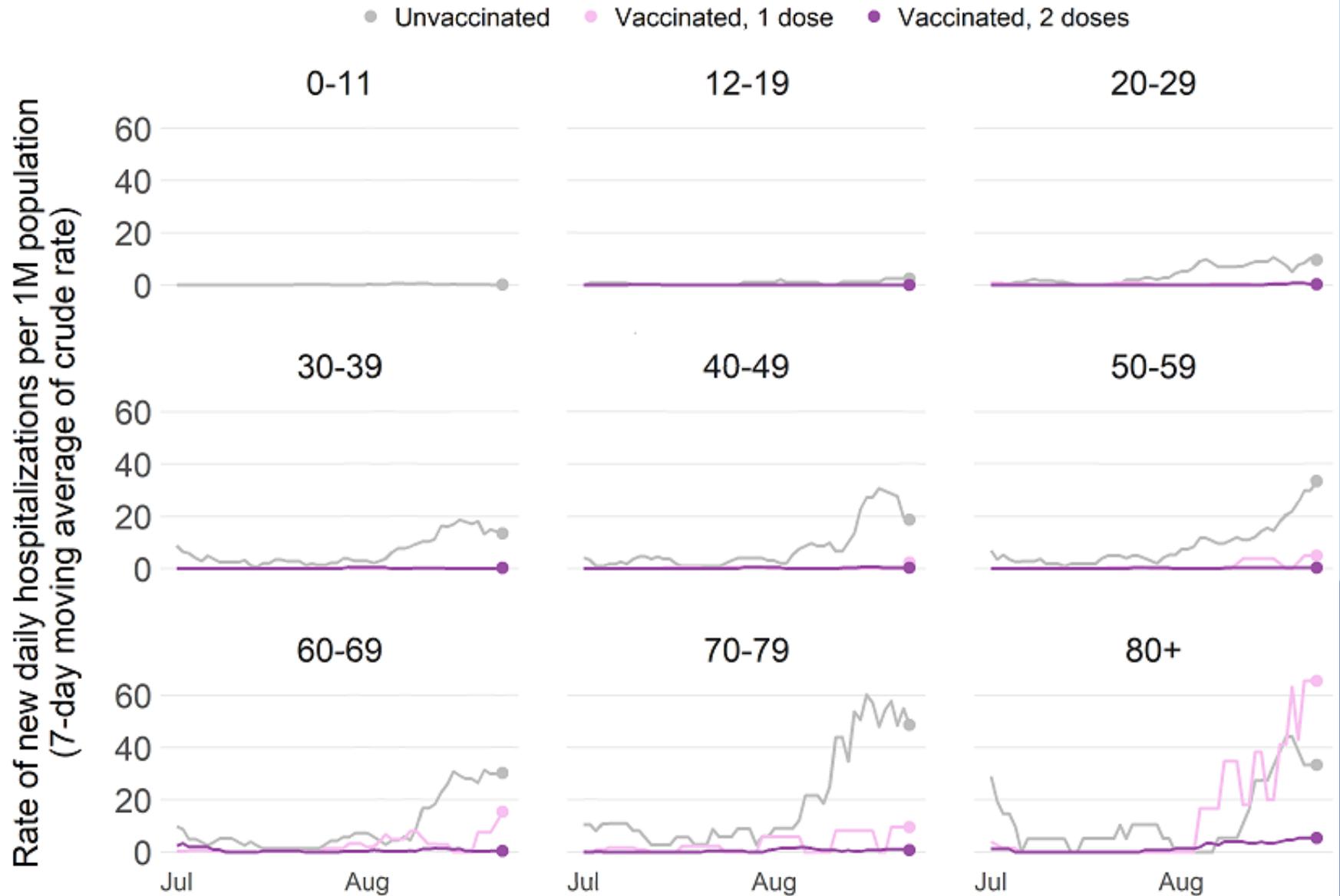


Data extracted from health authority case line and up to 23 Aug 2021

# COVID-19 hospitalization rate by vaccination status and age, July 1 - Aug 23, 2021

Given relatively low numbers, please interpret these results with caution. Trends tend to be unstable with low counts.

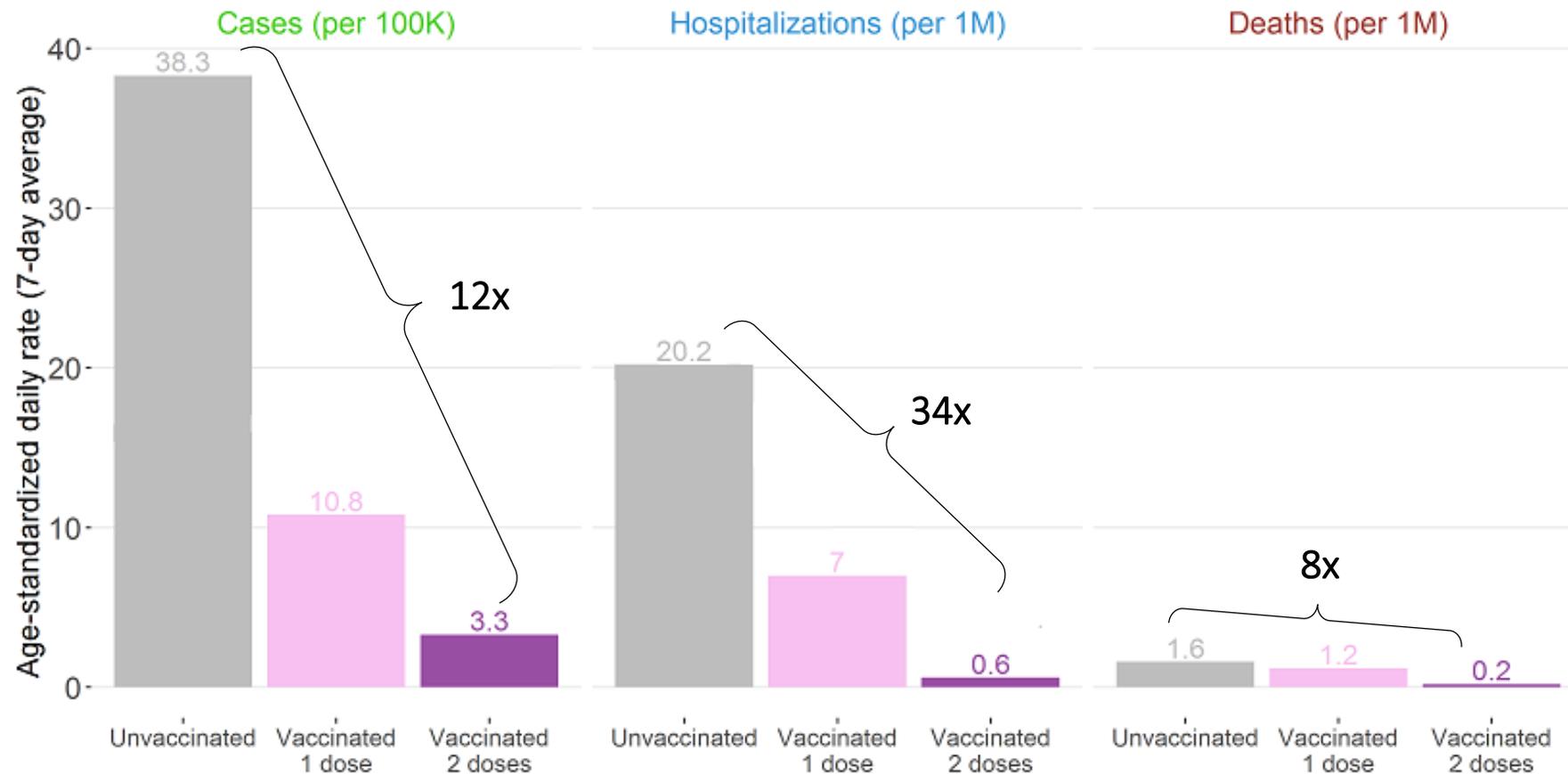
*Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.*



Data extracted from health authority case line and up to 23 Aug 2021

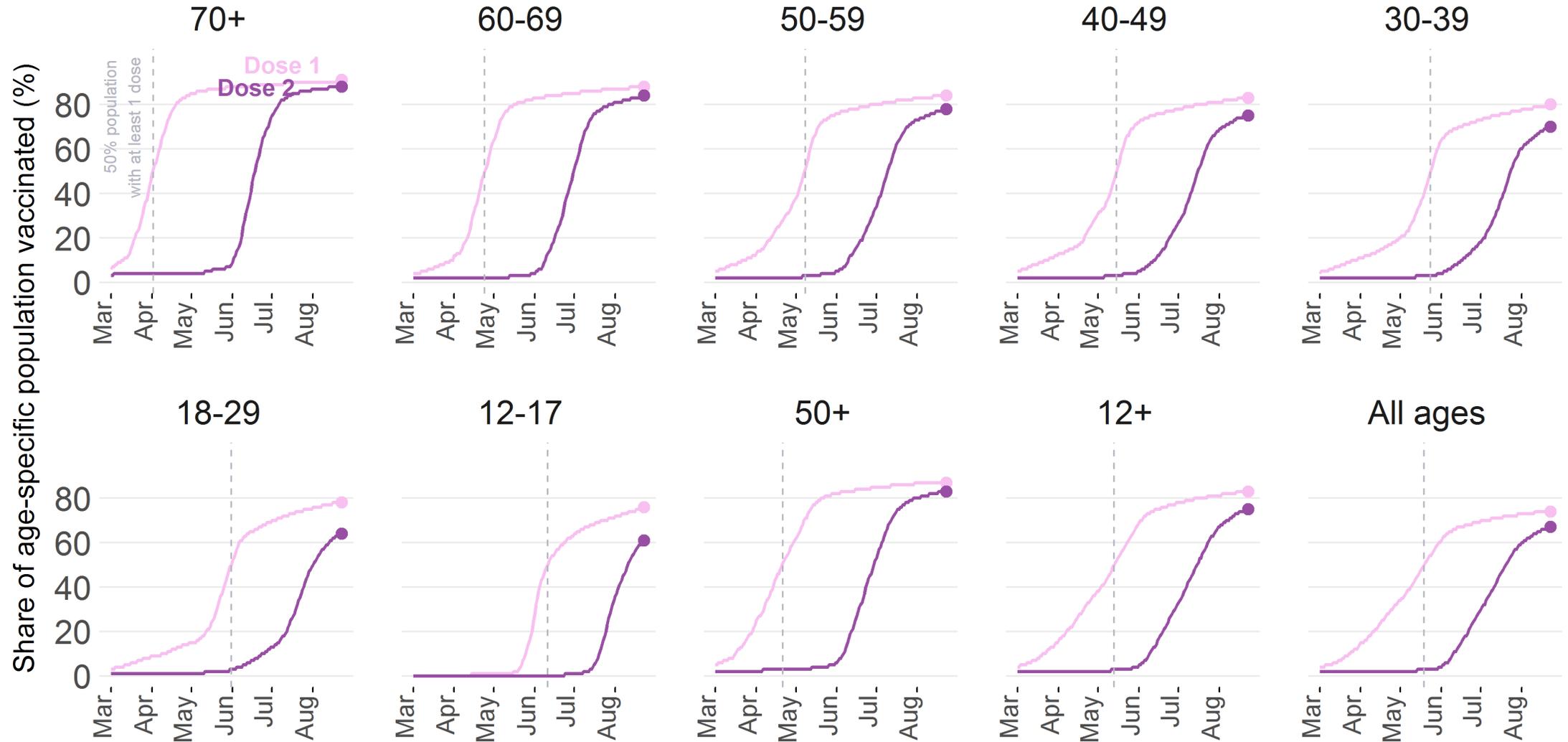
# After adjusting for age differences, unvaccinated individuals are at greatest risk of infection, hospitalization, or death from COVID-19 than fully vaccinated individuals

Relative rates fluctuate over time and will change from week to week. These figures do not represent vaccine effectiveness.



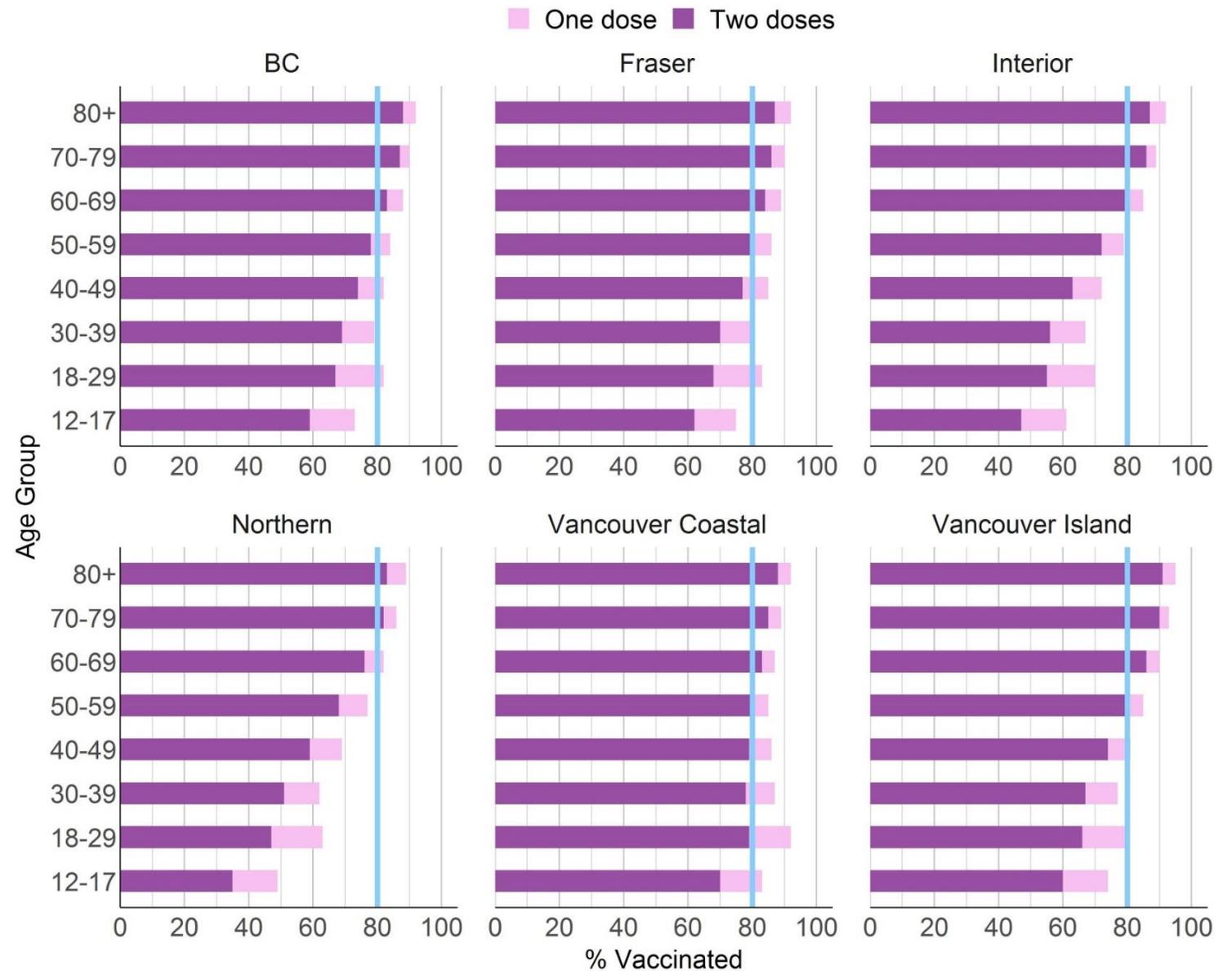
Data include cases from Aug 20-Aug 26, and hospitalizations and deaths from Aug 17-Aug 23, 2021

# Vaccination progress in BC over time by age group and dose number up to 24 August



Data updated 2021-08-24  
Data Source: Provincial Immunization Registry, PHSA

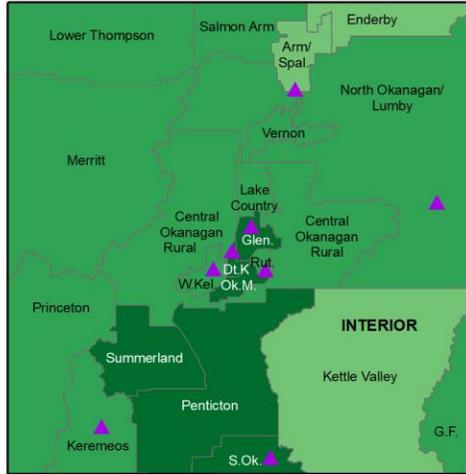
# Vaccination progress in BC and by Health Authority as of August 24<sup>th</sup>, by age group and dose number



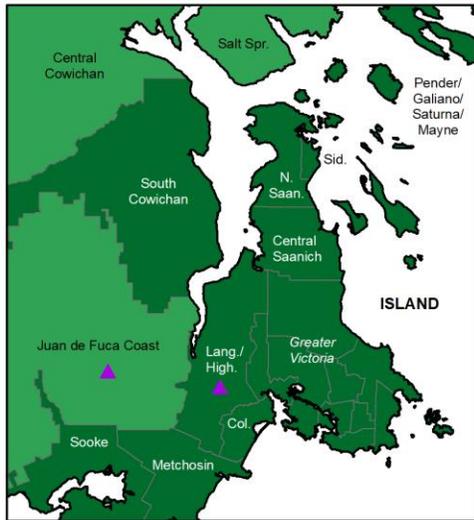
Blue lines at 80% are for visual reference only for easier navigation across panels

Data updated 2021-08-24  
Data Source: Ministry of Health

Okanagan Inset  
(Community Health Service Areas)



Greater Victoria Inset  
(Community Health Service Areas)



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

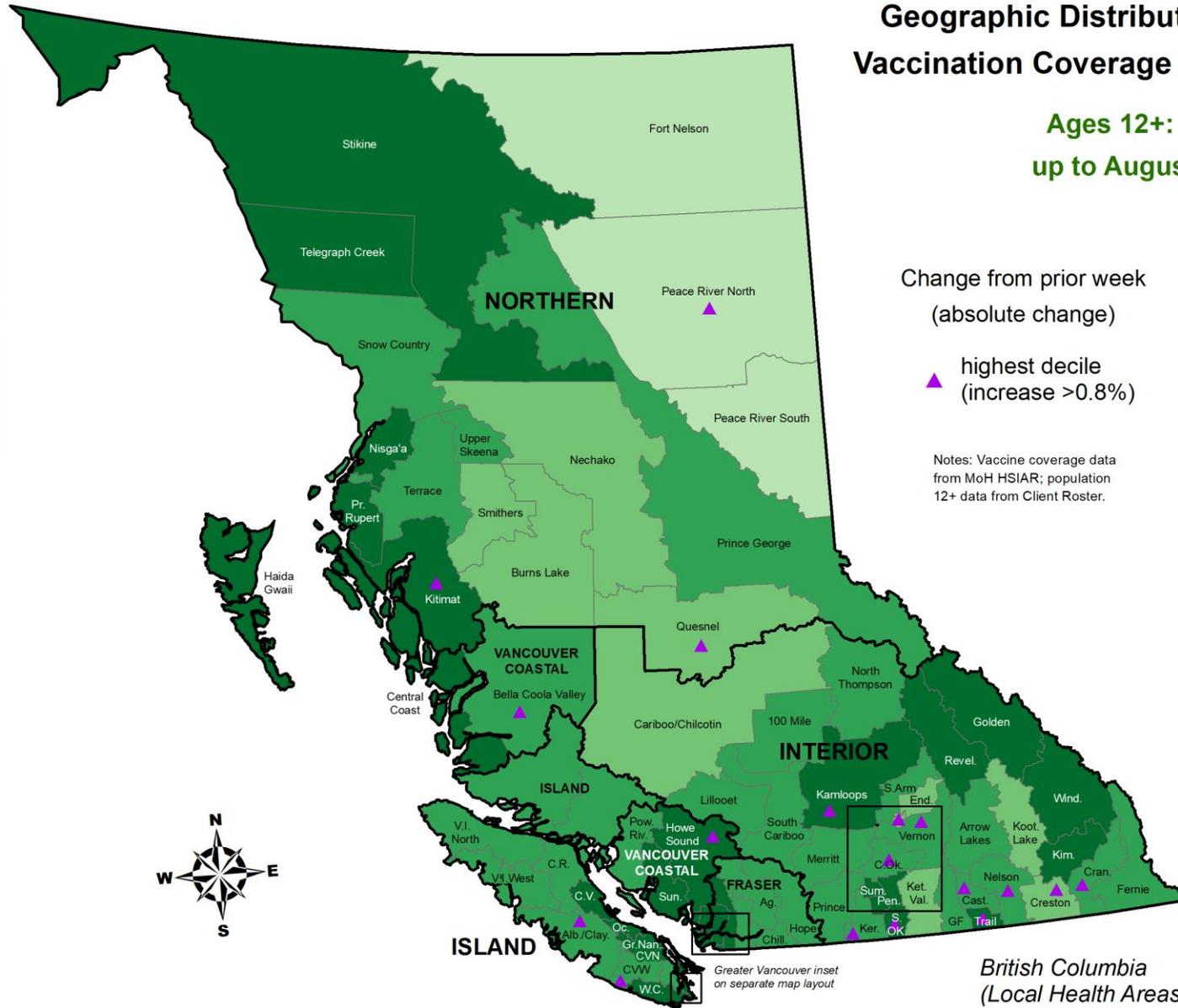
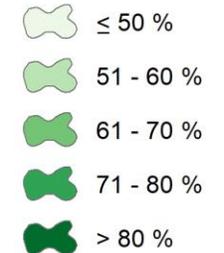
**Ages 12+: 1st Dose  
up to August 23, 2021**

Change from prior week  
(absolute change)

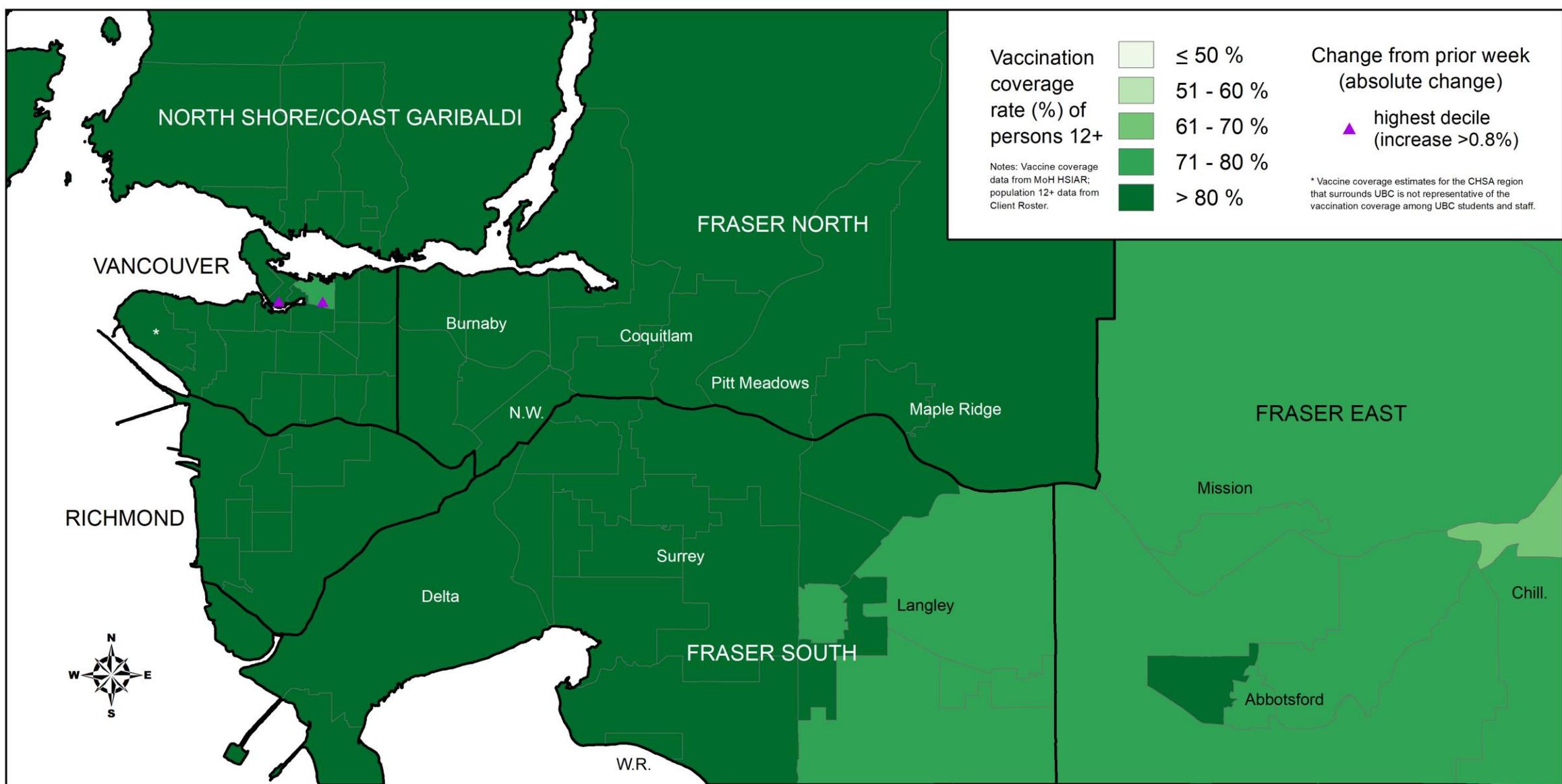
▲ highest decile  
(increase >0.8%)

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

Vaccination coverage  
rate (%) of persons 12+

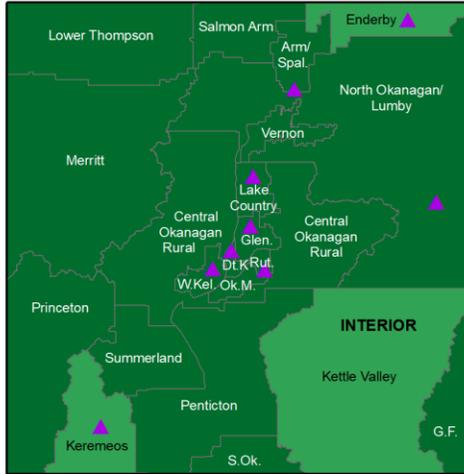


British Columbia  
(Local Health Areas)

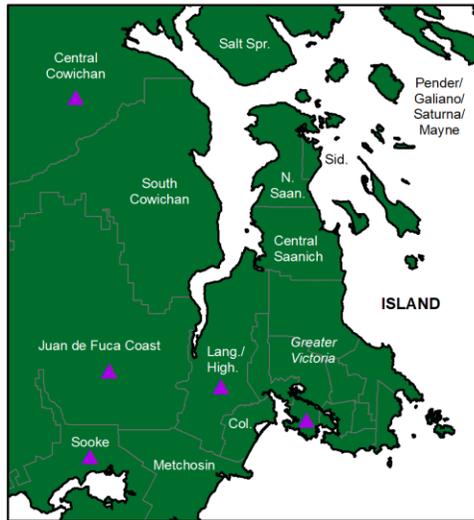


COVID-19 Vaccination Coverage by CHSA: Ages 12+ 1st Dose (up to August 23, 2021)

Okanagan Inset  
(Community Health Service Areas)



Greater Victoria Inset  
(Community Health Service Areas)



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

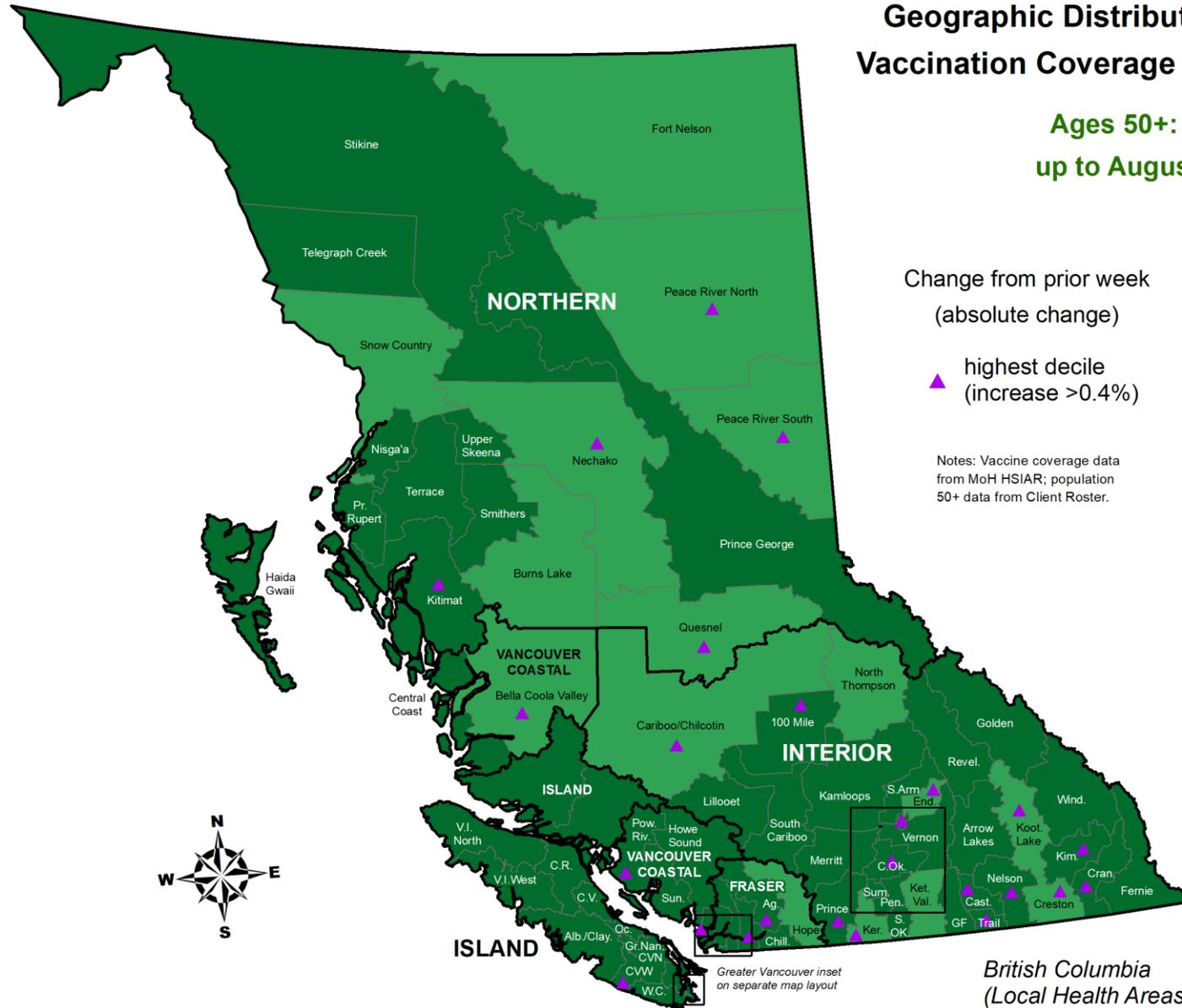
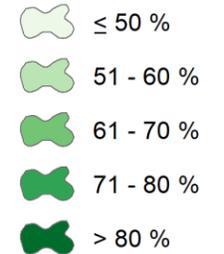
**Ages 50+: 1st Dose  
up to August 23, 2021**

Change from prior week  
(absolute change)

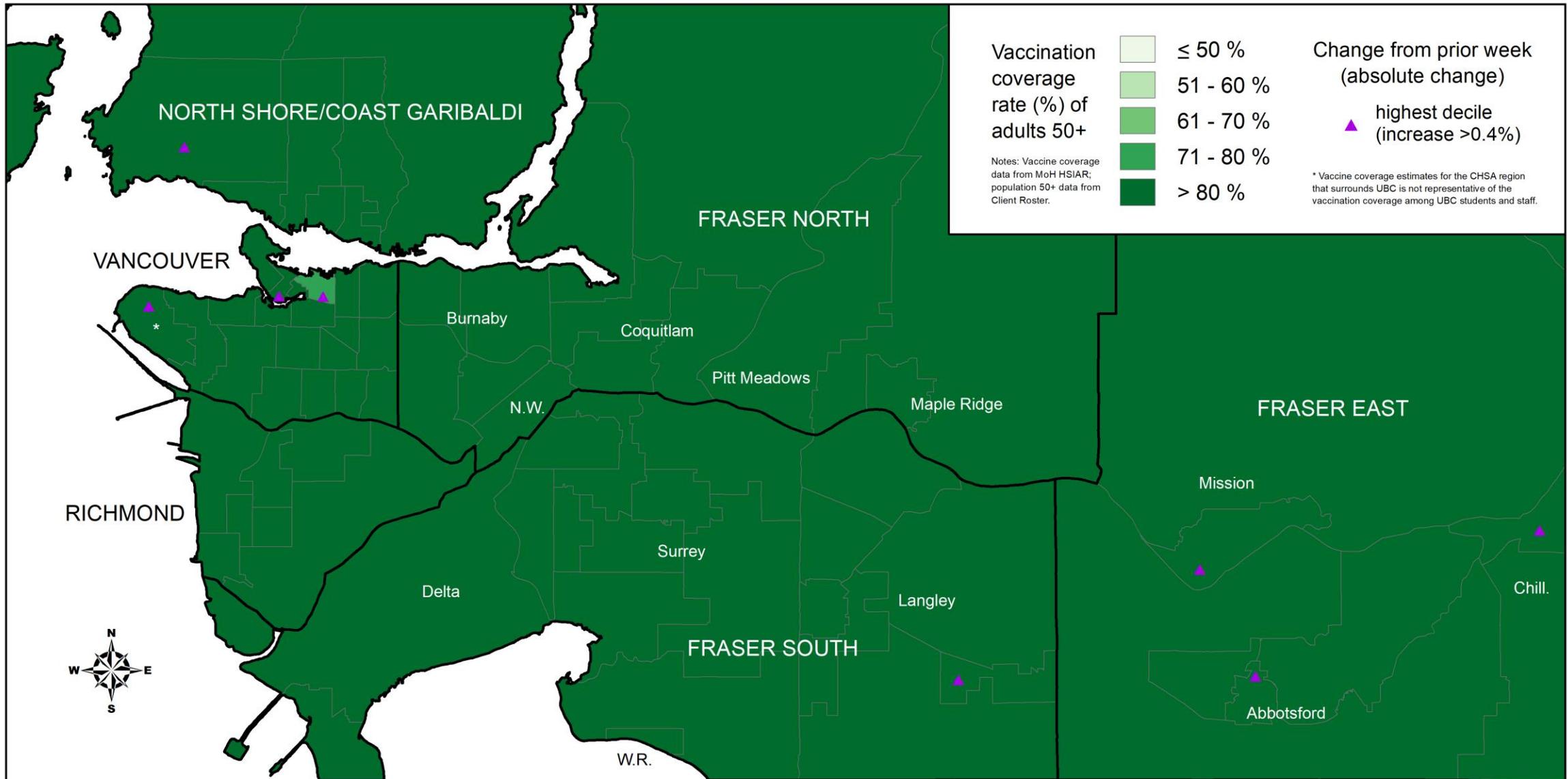
▲ highest decile  
(increase >0.4%)

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

Vaccination coverage  
rate (%) of adults 50+

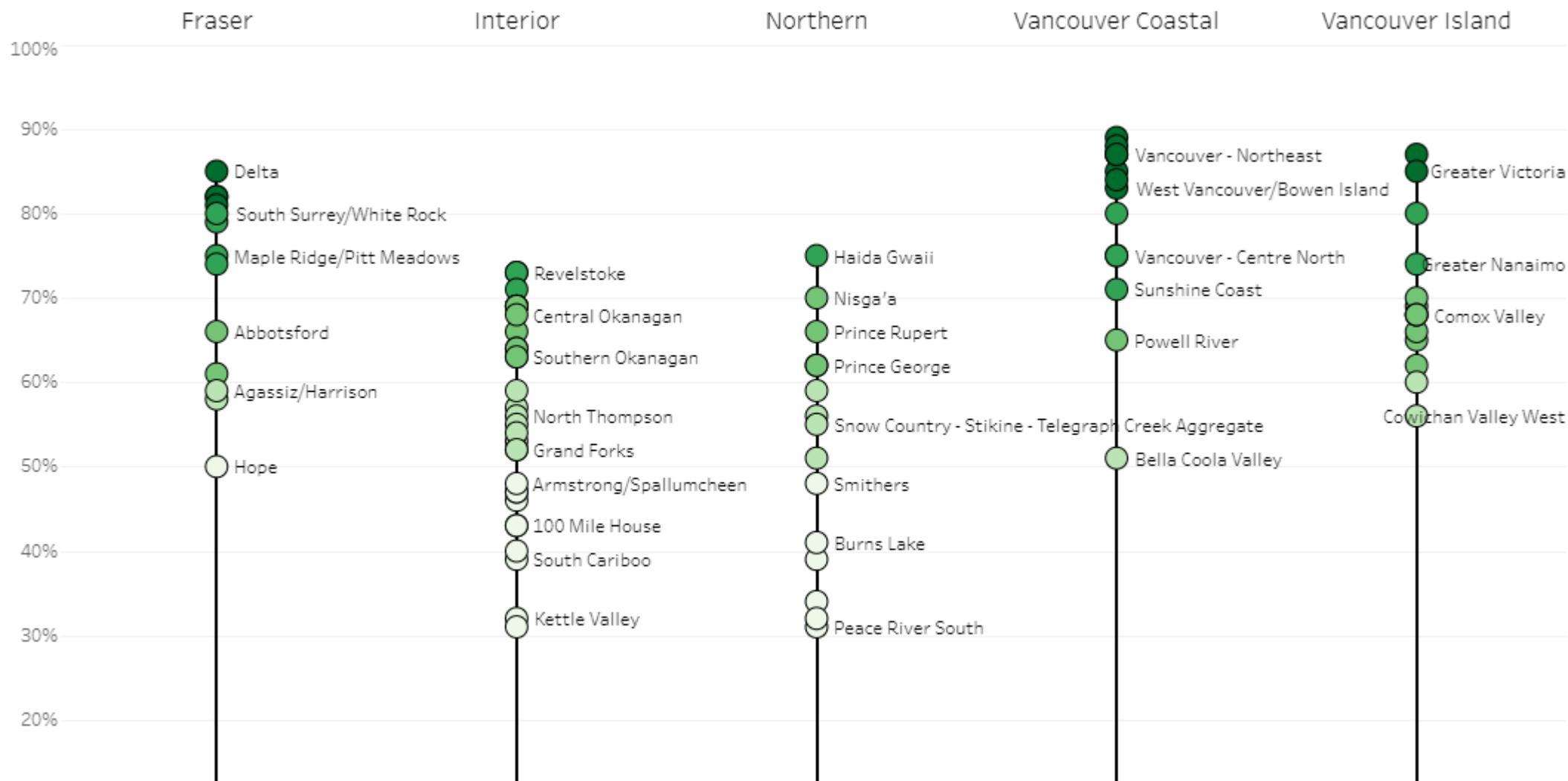


British Columbia  
(Local Health Areas)

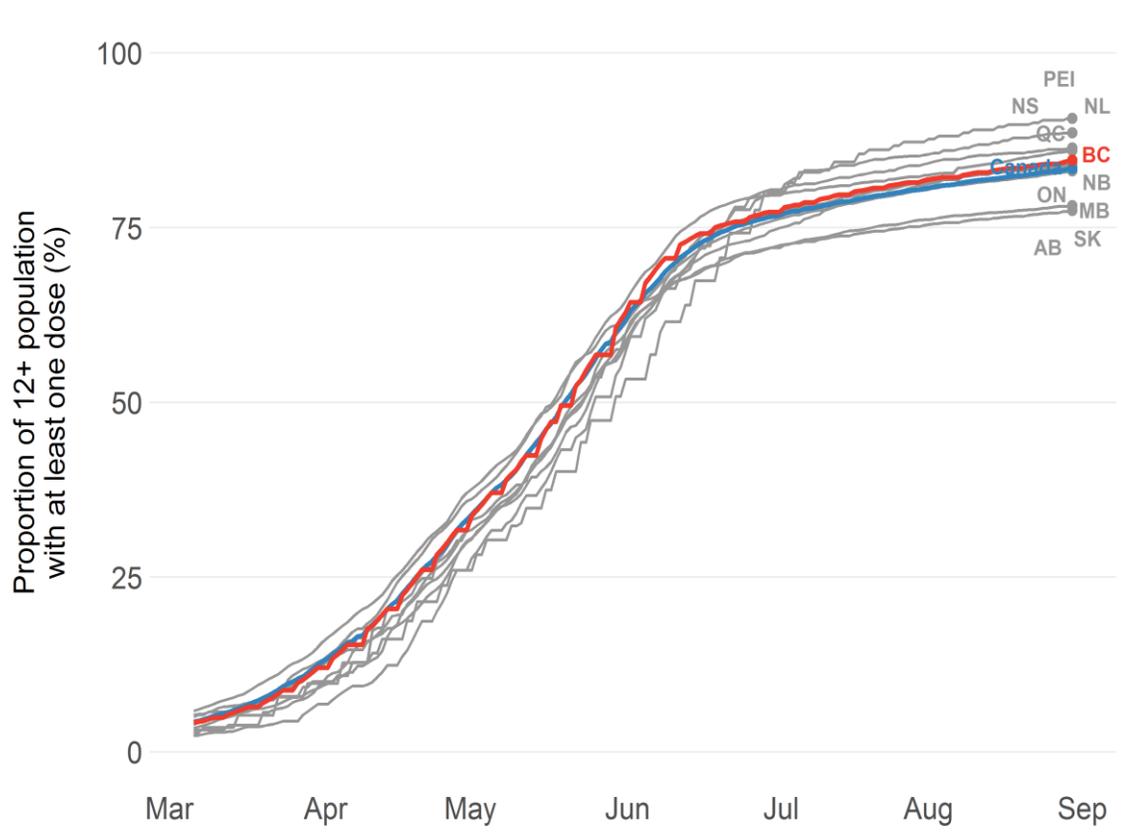


COVID-19 Vaccination Coverage by CHSA: Ages 50+ 1st Dose (up to August 23, 2021)

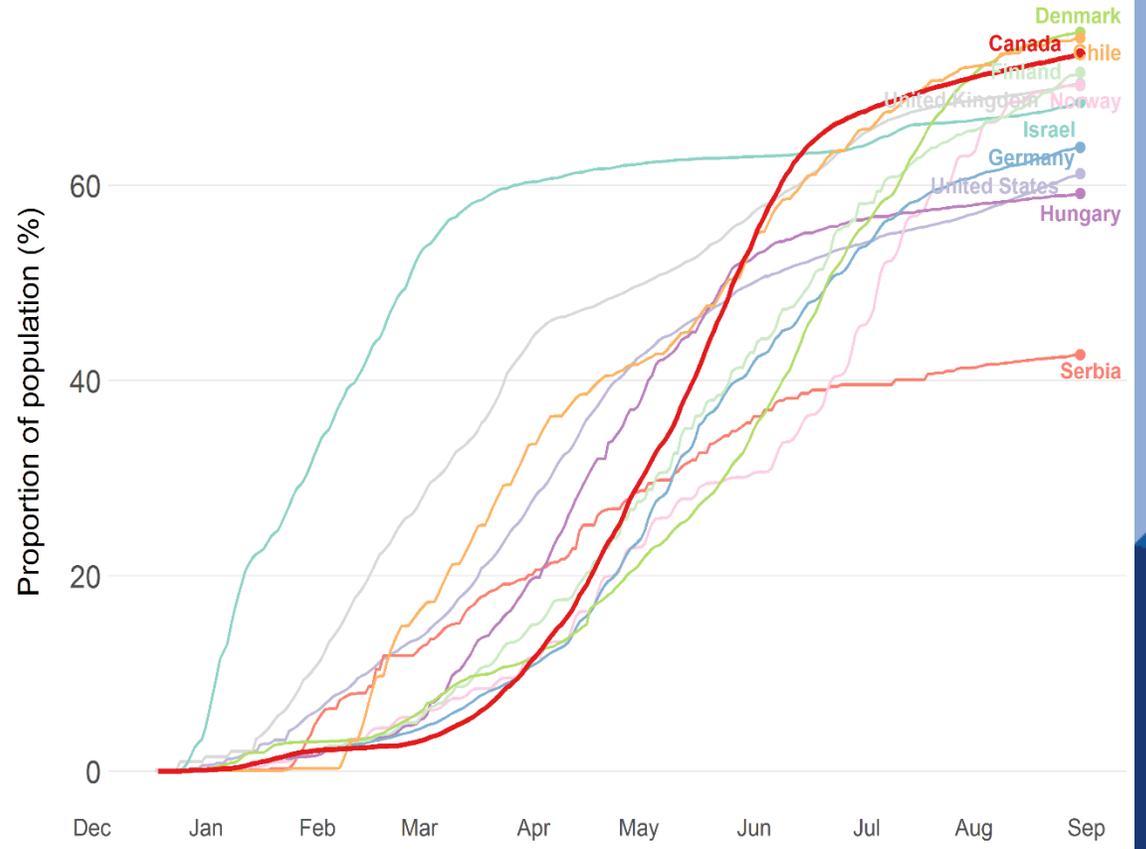
# COVID-19 vaccination coverage with 1st dose among 12-17 year olds by local health area, Aug 26



Nationally, BC's vaccination rate is very close to the 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 2021-08-25  
Population denominator from Statistics Canada table 17-10-0005-01; 12-14 year old age group estimated

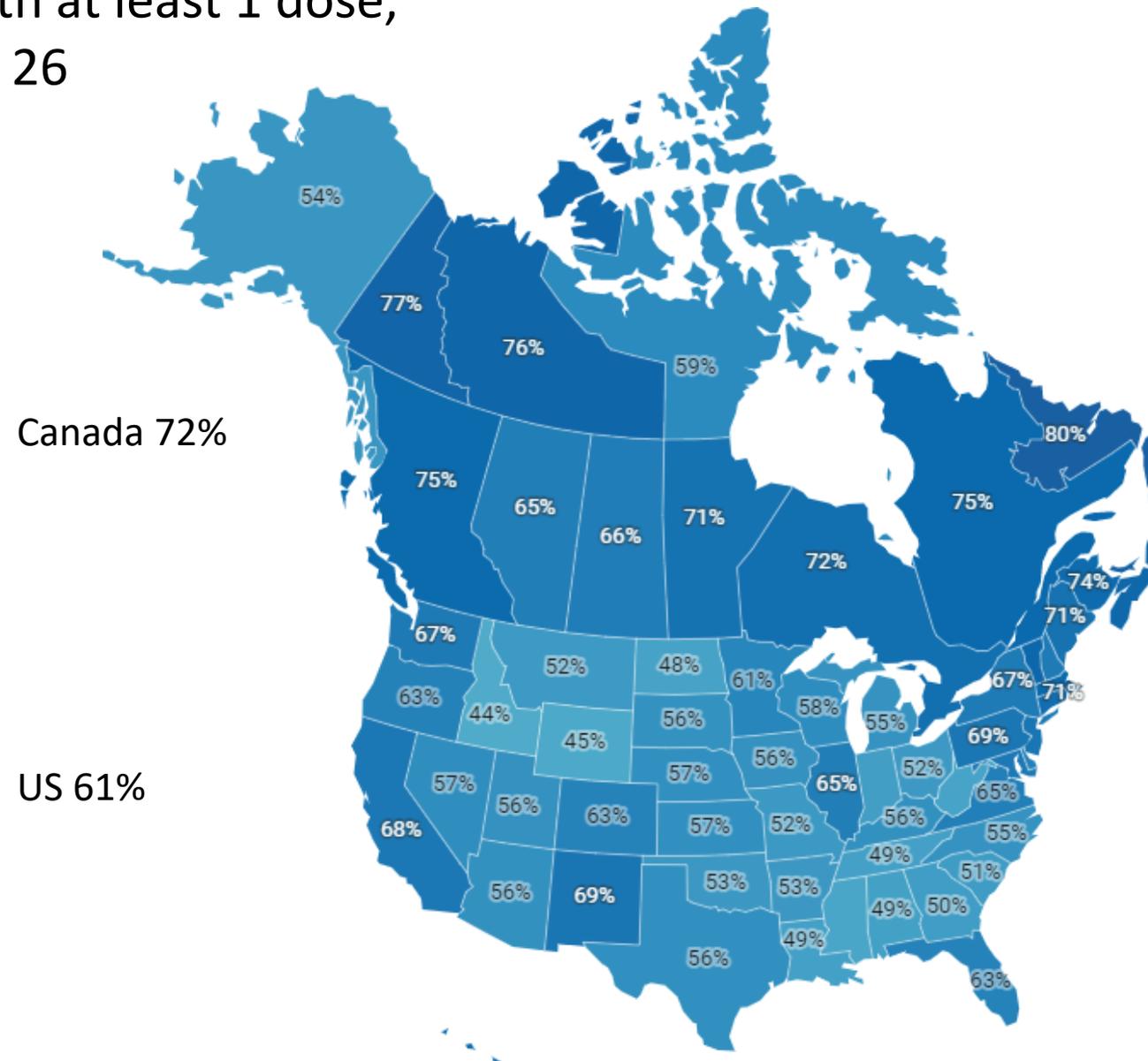


Data from Our World in Data and extracted on 2021-08-25

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

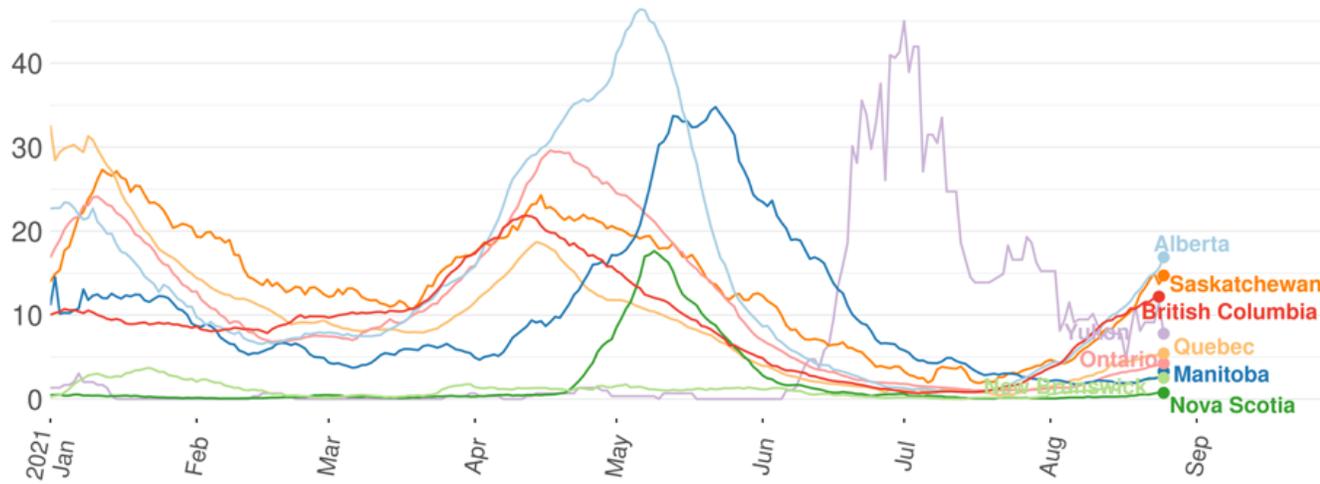
Data source: [Our World in Data](#)  
Visualization: BCCDC

# Vaccination rates with at least 1 dose, Canada and US, Aug 26

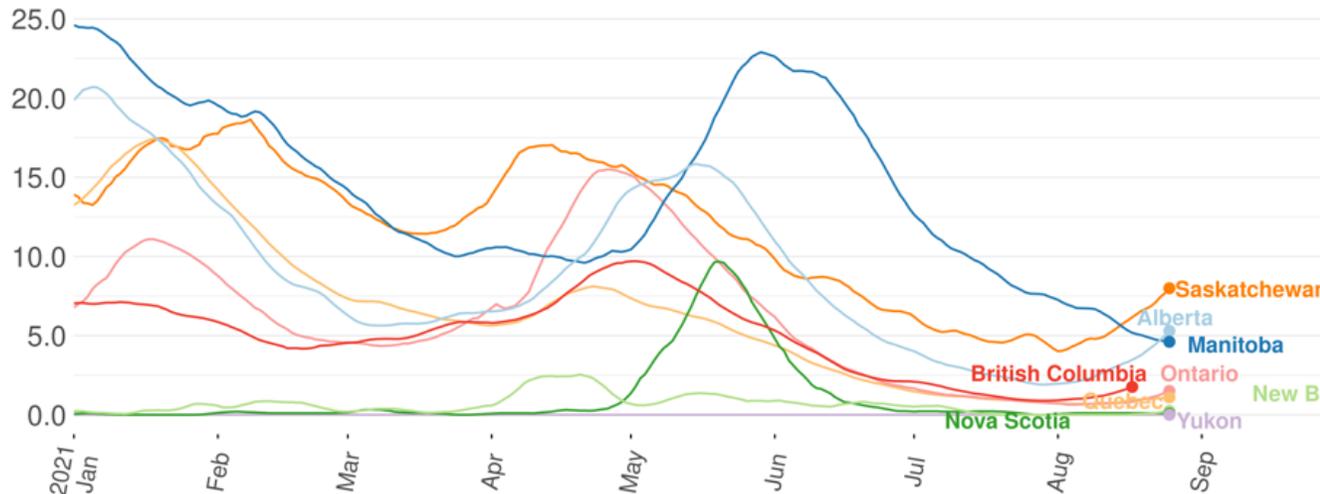


Source: Dr. Trevor Tombe

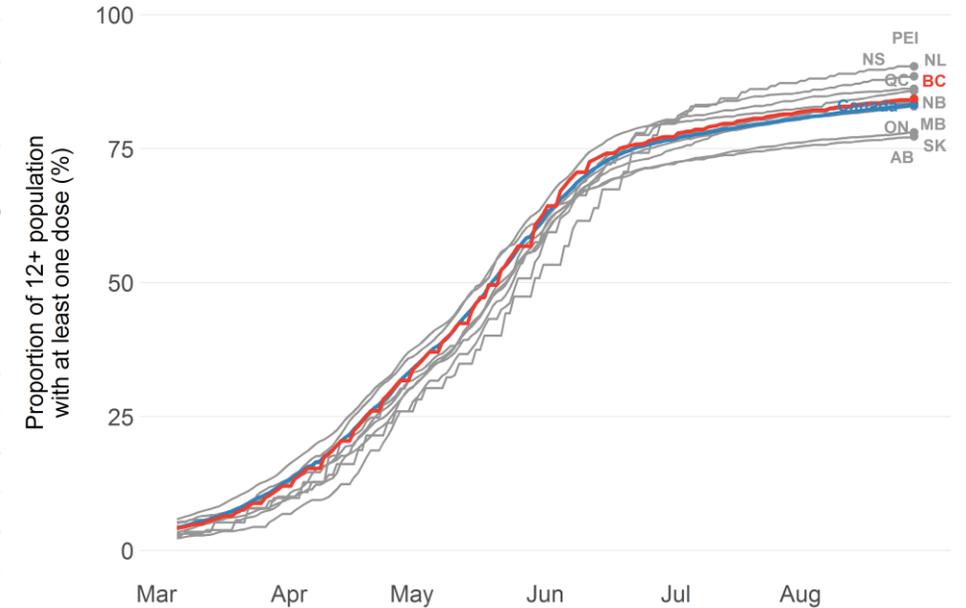
New daily **cases** per 100K population (7-day moving average)



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



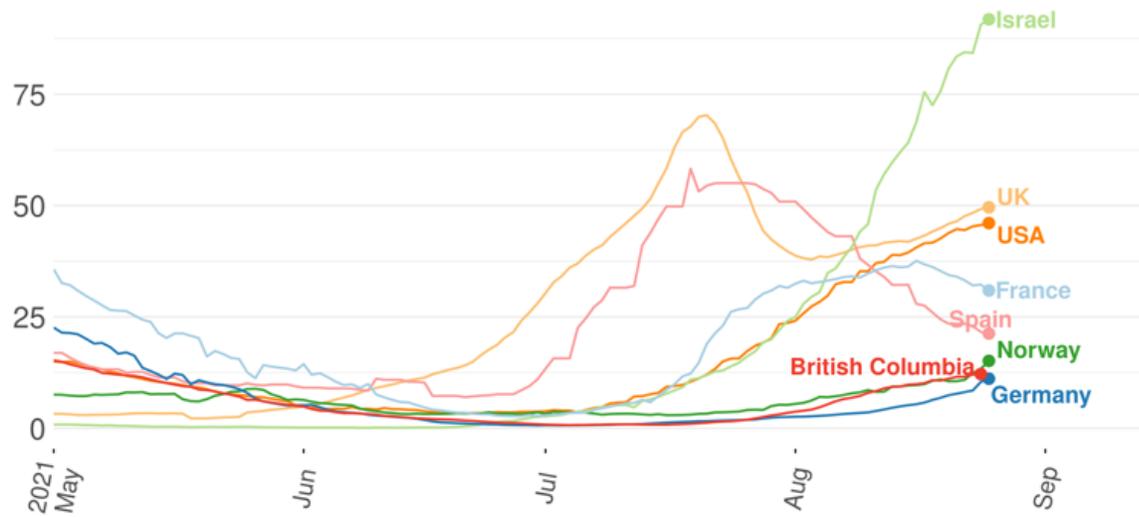
**BC's case rate has been similar to AB and SK rates, but hospital census has been lower**



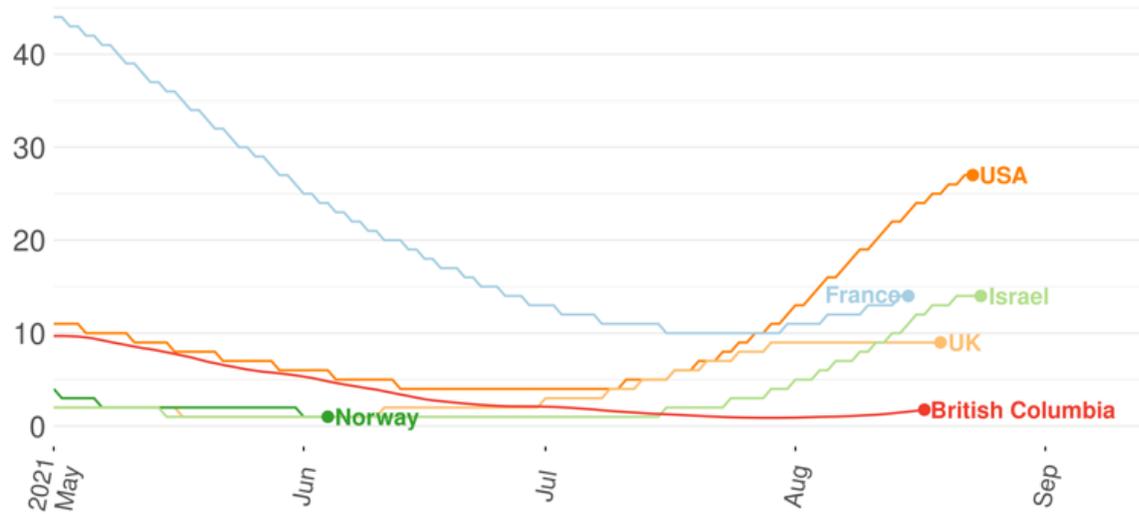
Data from COVID-19 Canada Open Data Working Group and extracted 2021-08-24  
Population denominator from Statistics Canada table 17-10-0005-01; 12-14 year old age group estimated

For most up to date figures, and to make your own comparisons, please go to the [Epi App](#)

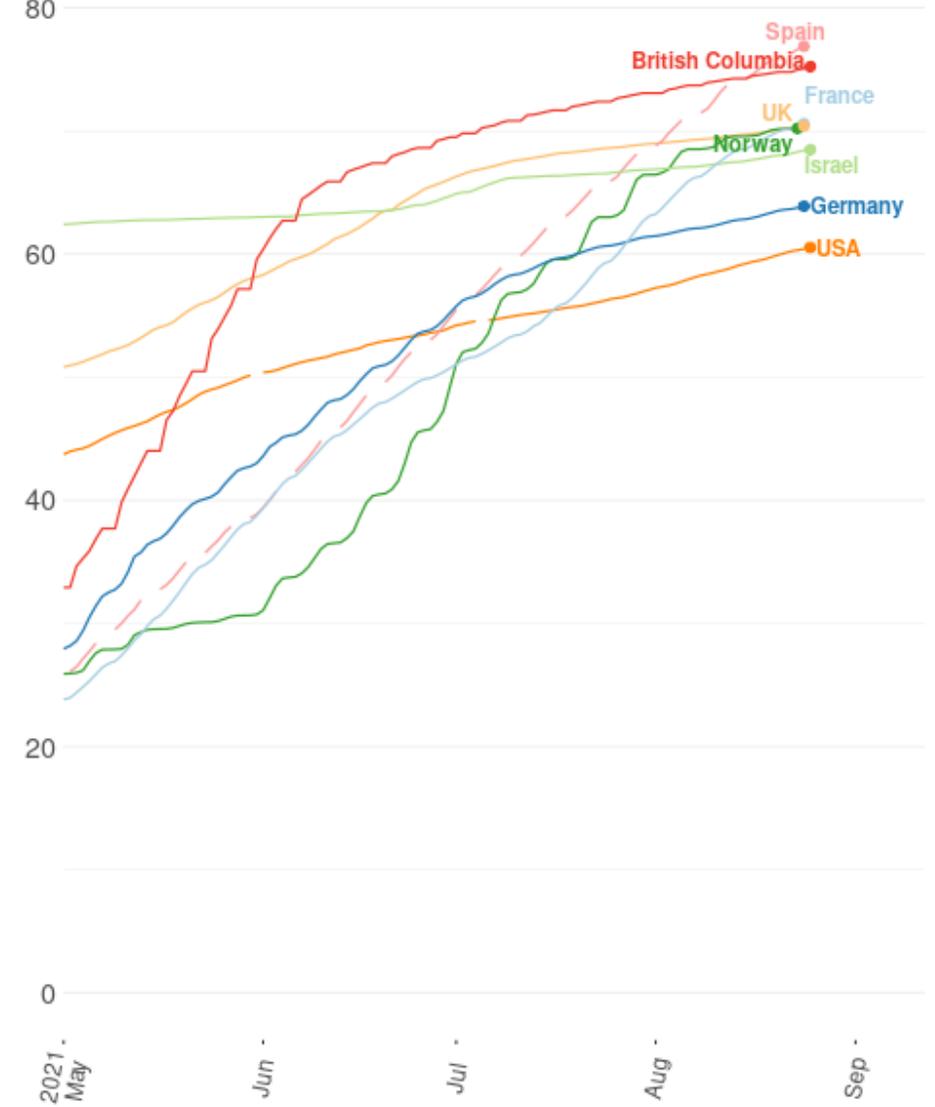
New daily **cases** per 100K population (7-day moving average)



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



Percent (%) population received at least 1 dose



For most up to date figures, and to make your own comparisons, please go to the [Epi App](#)

# Lab - Key Messages

- **Percent positivity** among publicly funded tests is stable at ~9%
  - Test positivity varies by HA, ranging from 6.4% in FH to 20% in NH.
  - Case incidence rate continued to increase among 5-18 and 30-79 year olds.
- **Testing rates** continue to increase this week
- The provincial weekly median **turnaround time** (time from specimen collection to lab result) remains low, at 23 hours indicating good testing capacity; 1 in 4 tests took  $\leq 24$  hours to result.
- **Delta** is the most prevalent COVID-19 variant in BC and, in the last epi week, consisted of 98% of all sequenced specimens.
- Overall, unvaccinated people have a higher cumulative case incidence rate for all variants of concern in comparison with people who are vaccinated.

## Weekly Summary of ALL lab tests performed

<b>3,328,602</b>	total specimens tested
<b>79,479</b>	new this epi week
<b>168,628</b>	total positive specimens
<b>4,186</b>	new positive this epi week
<b>25 hr</b>	mean turnaround time (TAT)
<b>23 [10-24]</b>	Median [Q <sub>1</sub> – Q <sub>3</sub> ] TAT

↑ **10%** relative to last week

↑ **5.3%** positivity  
↑ **0.3%** absolute change from last week

↓ **2%** TAT relative to last week

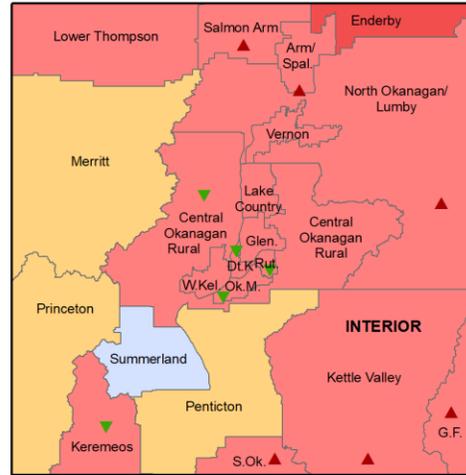
## Weekly Summary of Lab tests paid Publicly

<b>2,551,019</b>	total specimens tested
<b>45,288</b>	new this epi week
<b>166,712</b>	total positive specimens
<b>4,083</b>	new positive this epi week

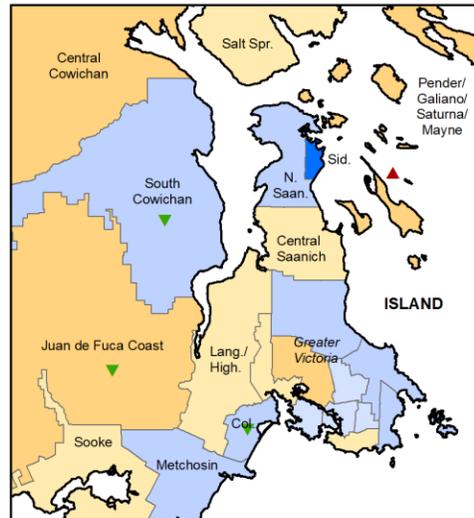
↑ **19%** relative to last week

↓ **9.0%** positivity  
↓ **0.3%** absolute change from last week

Okanagan Inset  
(Community Health Service Areas)

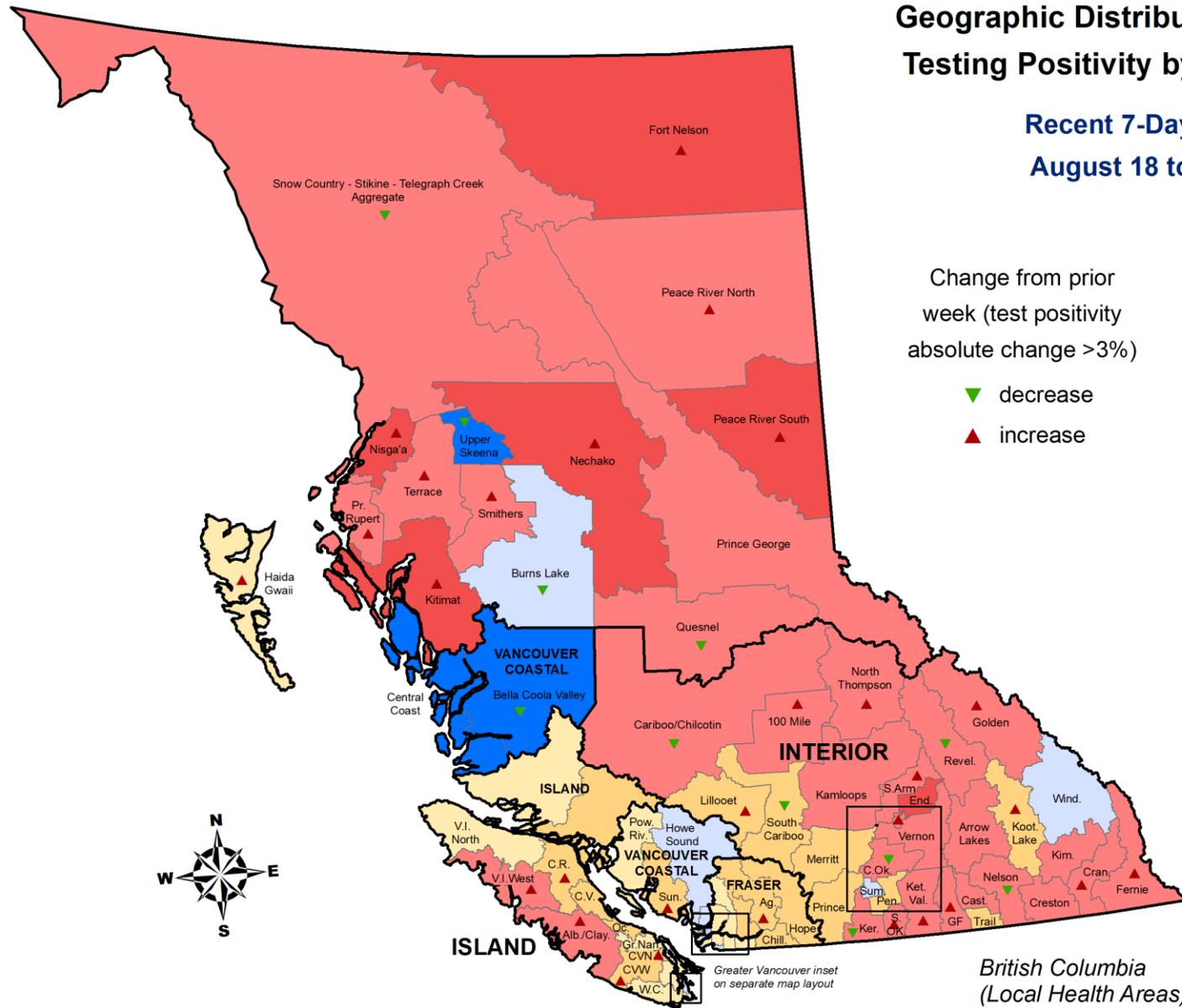


Greater Victoria Inset  
(Community Health Service Areas)



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

Recent 7-Days Testing  
August 18 to 24, 2021



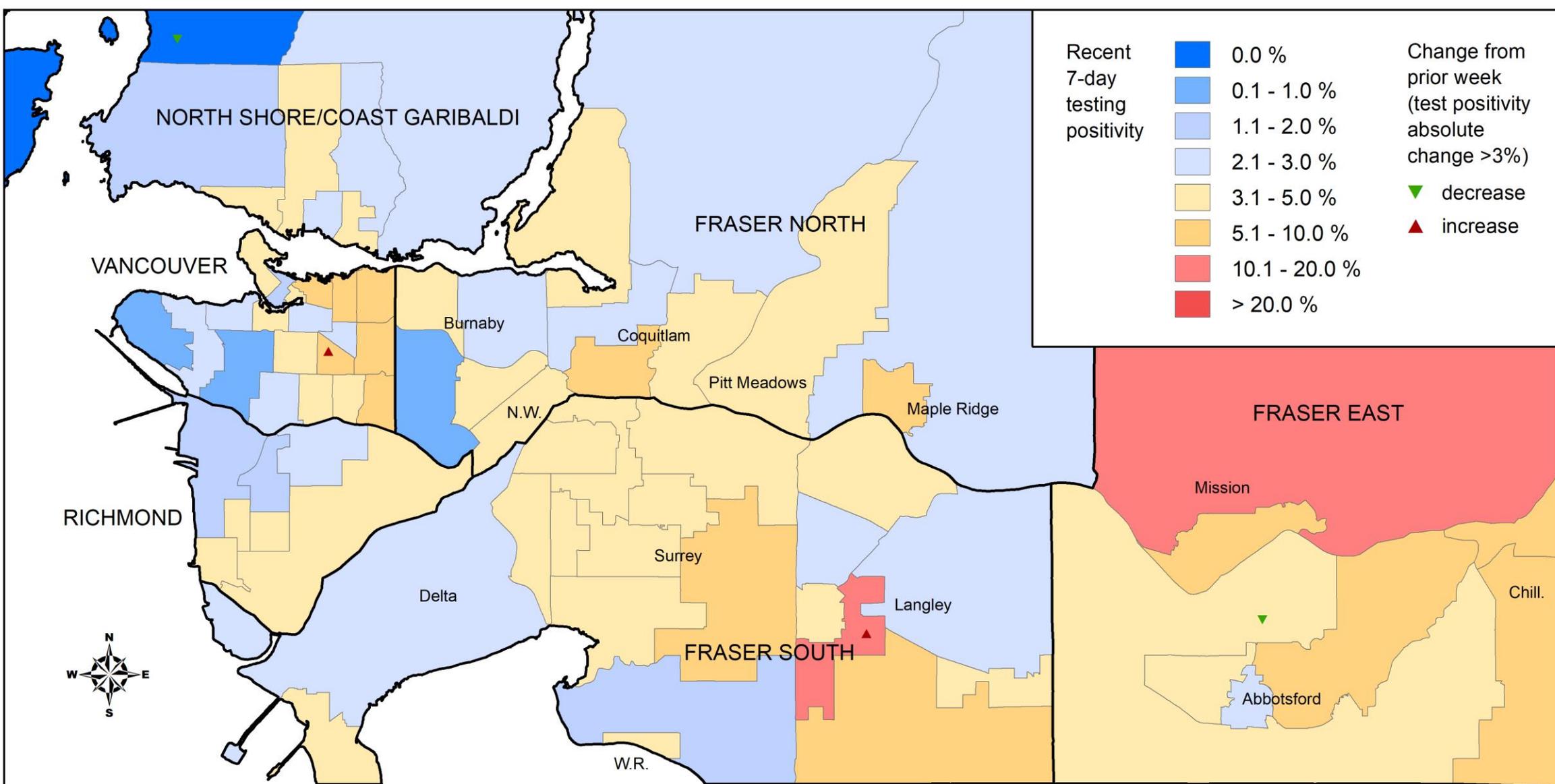
Change from prior week (test positivity absolute change >3%)

- ▼ 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 %

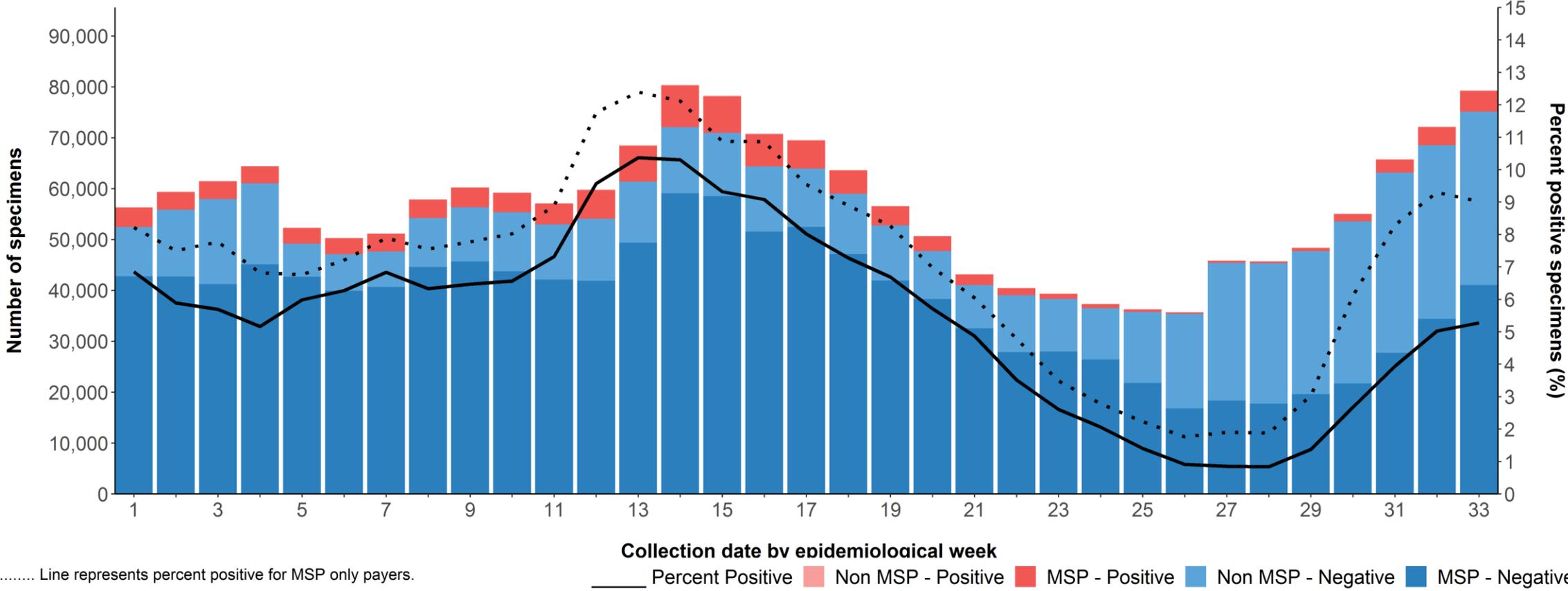
Data source: BCCDC Public Health Laboratory PLOVER system (all tests performed). Data are by testing result date, and location of client's residence or if missing, physician's address.



COVID-19 Recent 7-Day Test Positivity by CHSA (August 18 to 24, 2021)

Includes all tests

# In epi week 32, percent positivity among publicly funded tests increased to 9.3%

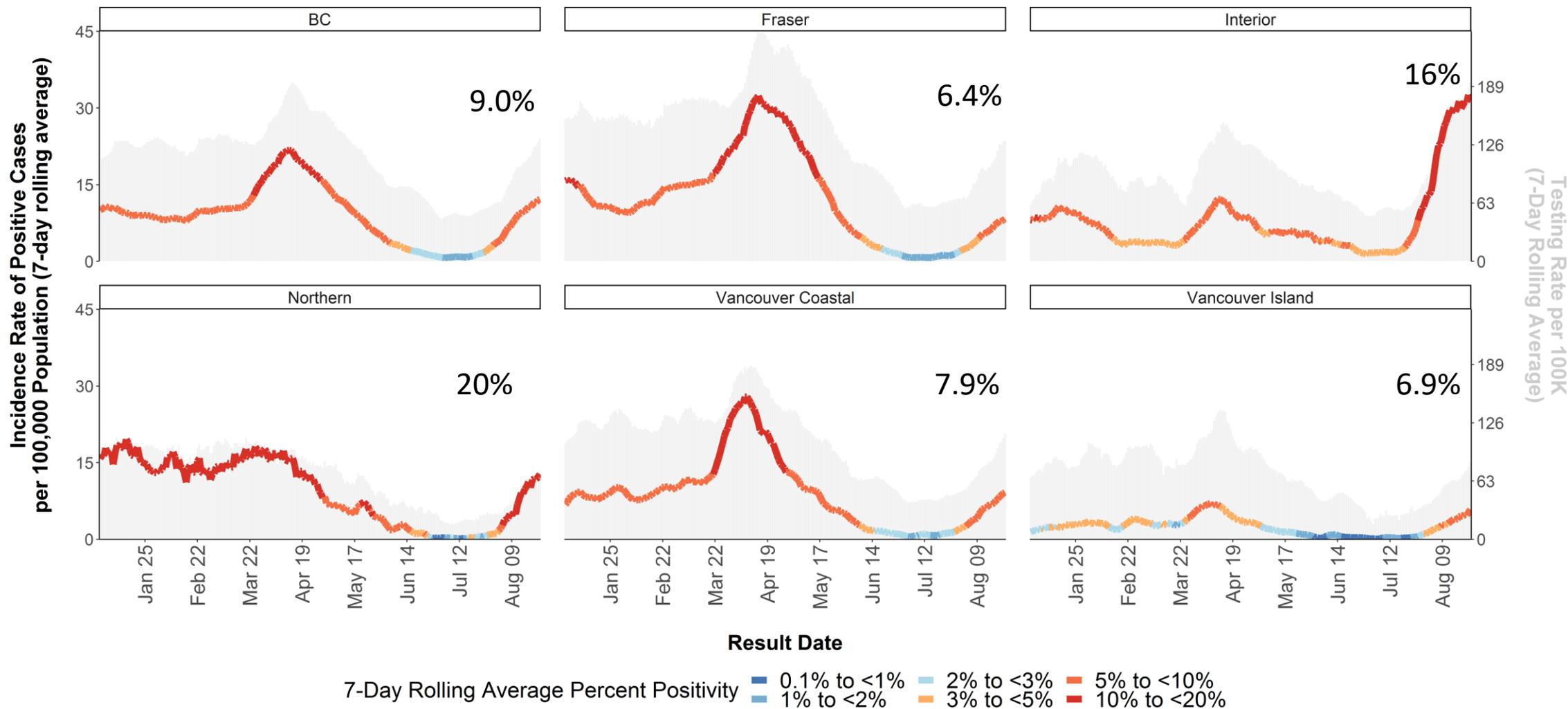


Note: Invalid (n = 1293) and indeterminate (n = 4855) results have been excluded

Data source: PLOVER 26-Aug-2021

# Incidence and % positivity have increased in all HAs, with positivity being highest in Interior and Northern health authorities

Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Aug 24, 2021.



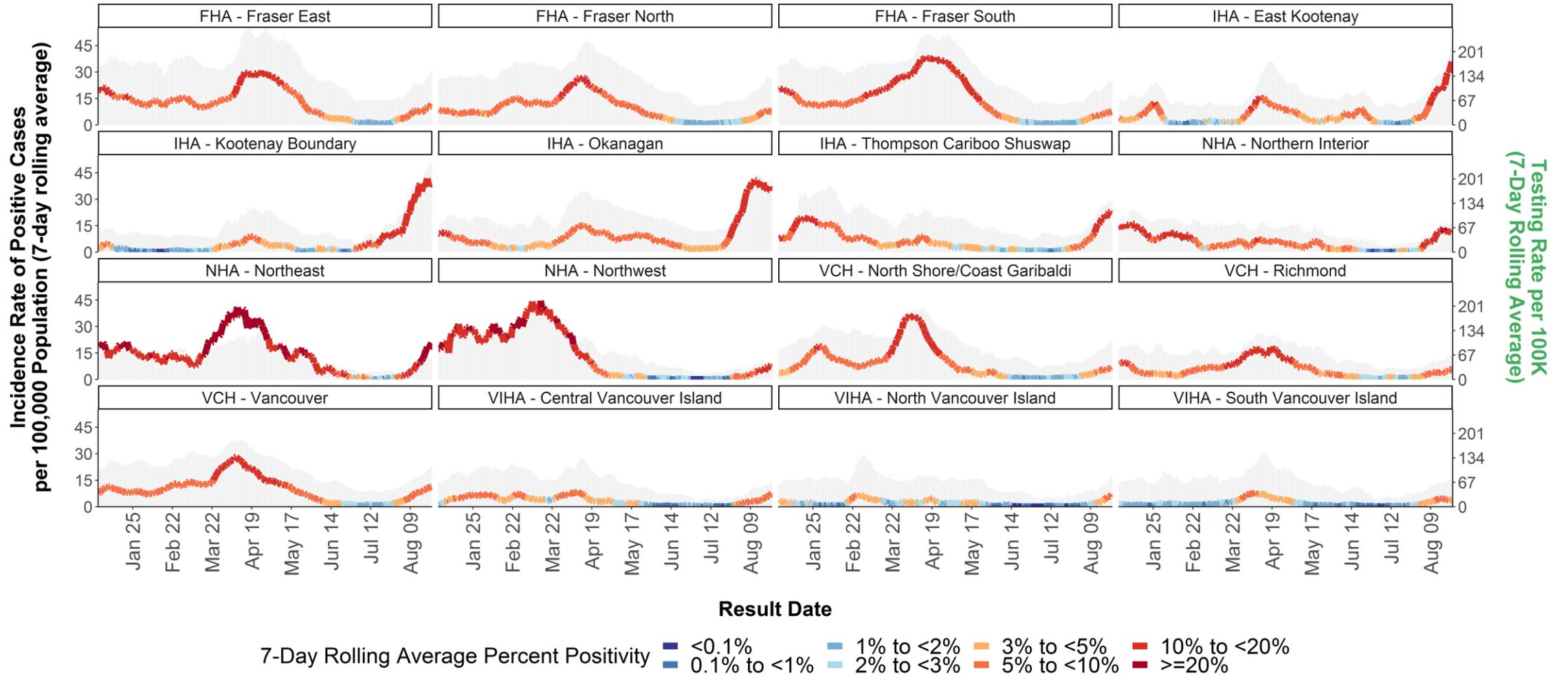
Data source: PLOVER 24-Aug-2021

For latest version of a graph similar to this one (difference: all tests, not public tests), see the [Epi App](#)



# Incidence and test positivity are high across Interior and Northern HSDAs, with many showing increasing trends.

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).  
Jan 1 2021 - Aug 24, 2021.

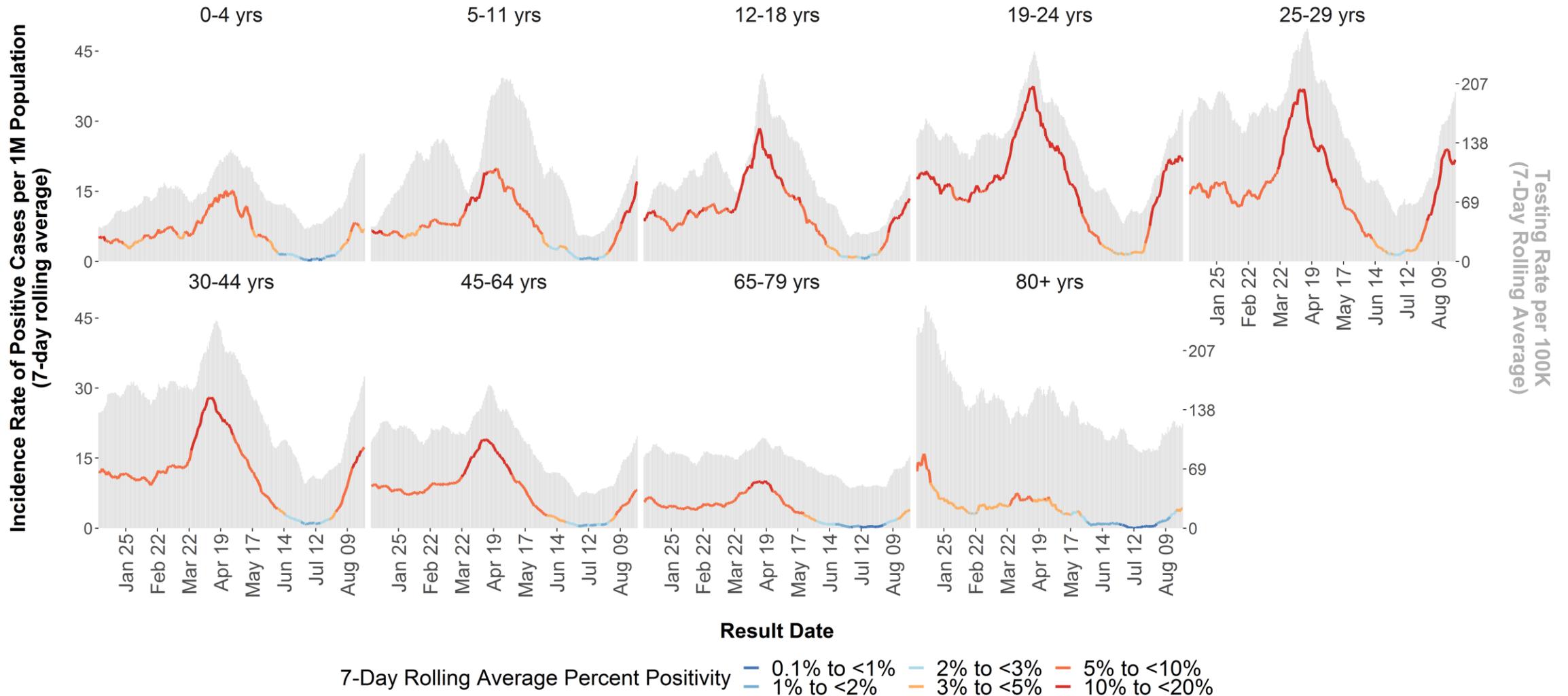


Data source: PLOVER 24-Aug-2021

For latest version of a graph similar to this one (difference: all tests, not public tests), see the [Epi App](#)

# Increase in incidence and positivity across all age groups; most marked increase in last month among individuals 19 to 29 years.

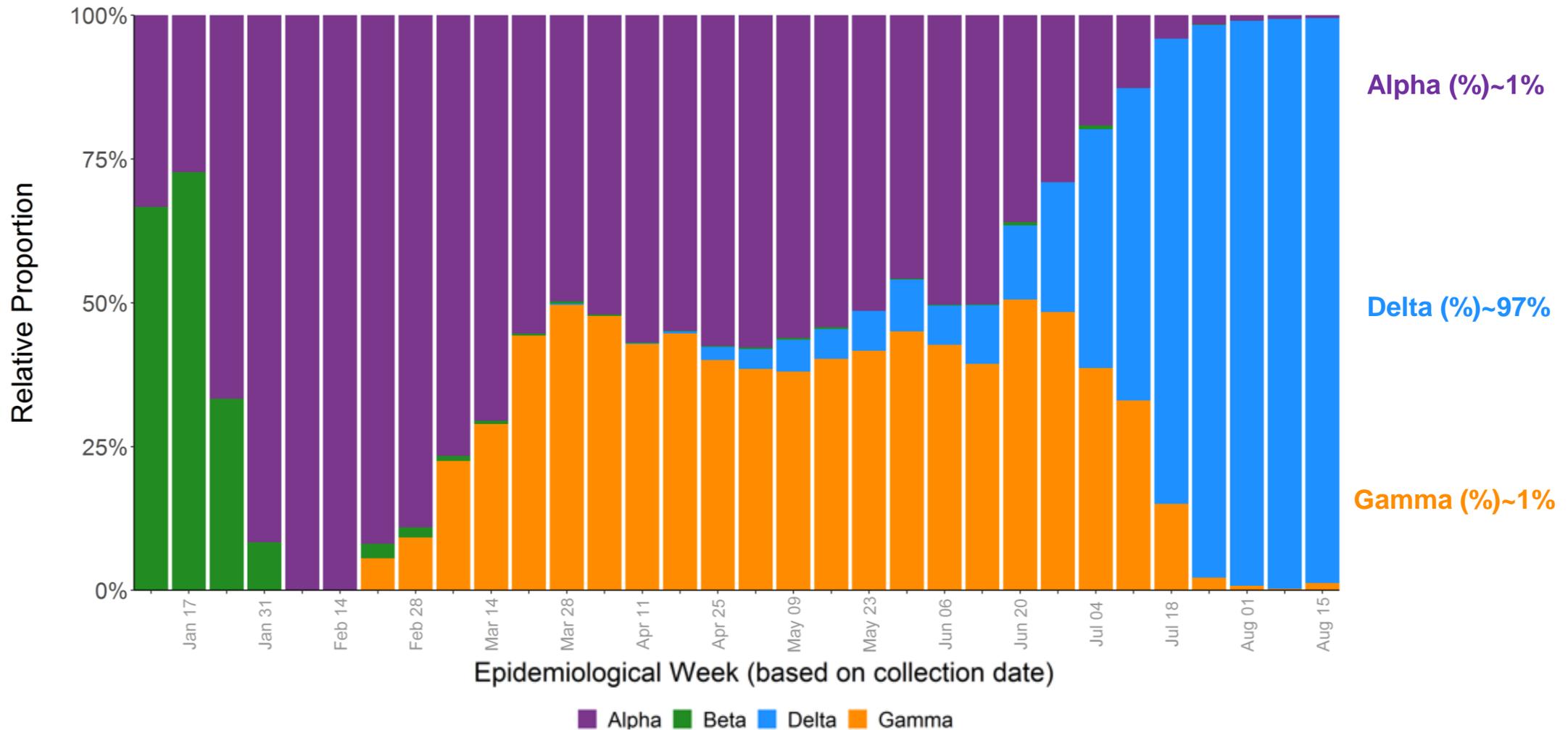
Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Aug 24, 2021.



Data source: PLOVER 24-Aug-2021

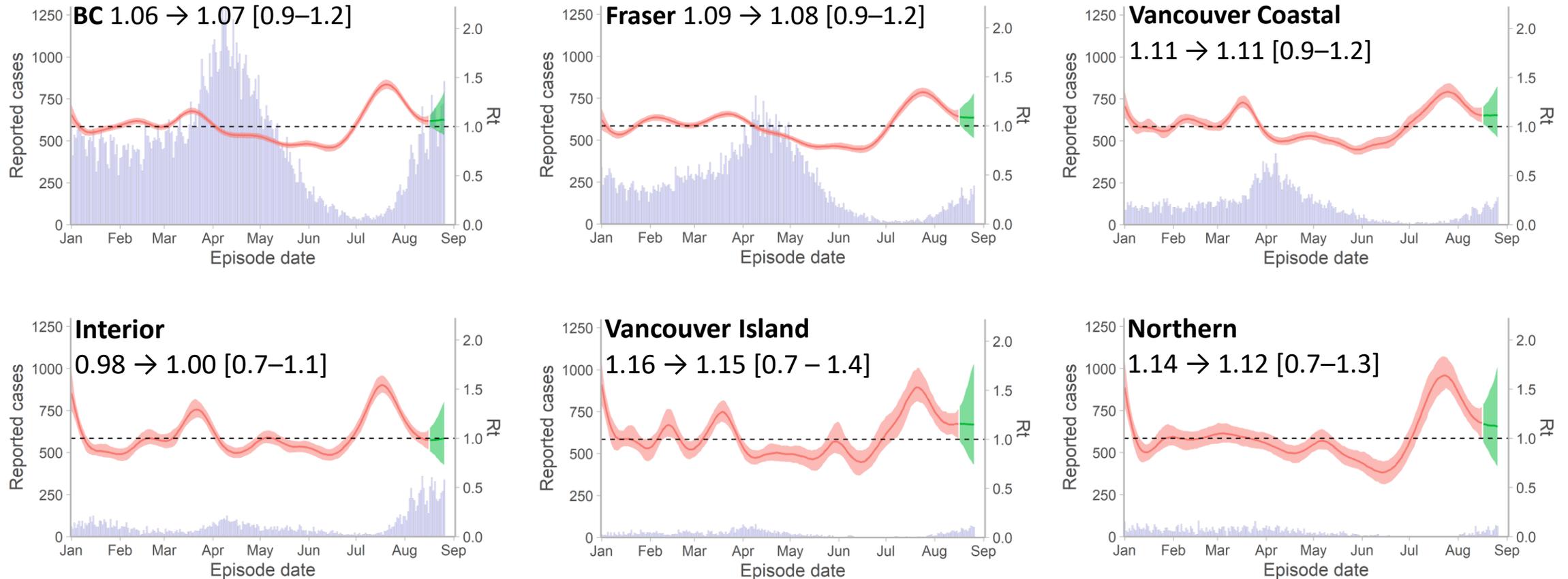
Among sequenced VOC samples provincially based on information for August 15 to 21, the dominant VOC is Delta, at ~98%

Relative Proportion of VoCs in BC by Epiweek of Collection Date



# Dynamic modeling: $R_t$ is near 1 in most regions of BC

Estimates are shown for last week → this week, with 90% range of possible values given next to most recent estimate.



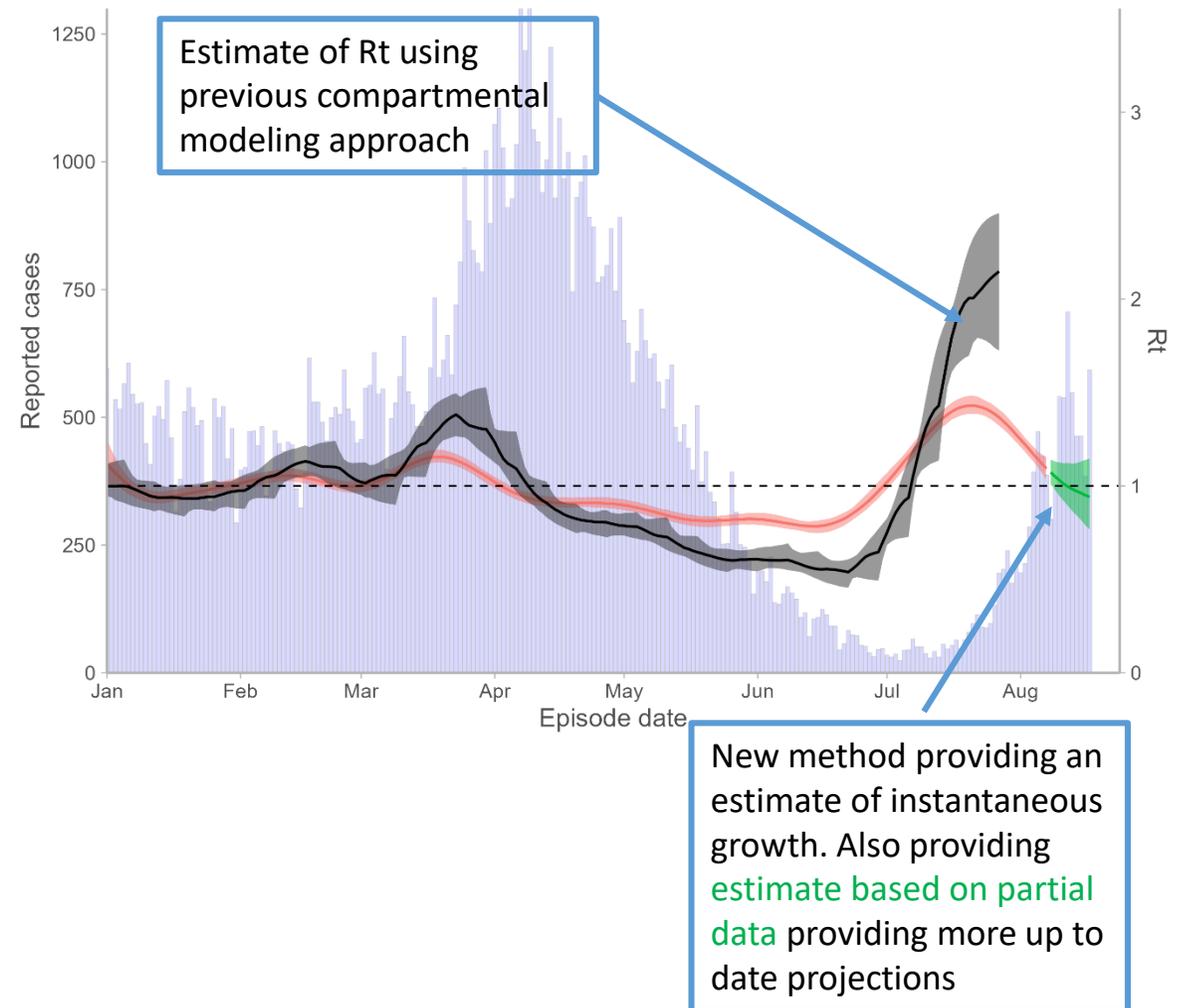
Solid line: median  $R_t$ , modeled using all reported cases up to August 26, 2021; Red band: 5%-95% credible interval; Green band: estimate based on partial data. Purple bars: all reported cases. Due to lag from symptom onset to reporting, most recent case counts and  $R_t$  are not shown. Only January 2021 onward shown here. Data source: BCCDC HA linelist.

# Model notes and assumptions

- **$R_t$  modelling:** Note due to ongoing changes requiring a more flexible methodological approach the  $R_t$  estimation procedure has been updated from previous estimates. A renewal equation model with a non-stationary Gaussian process based on Cori et al was fit to COVID-19 data for BC using a Bayesian framework ([Abbott et al, 2020](#)). 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 different variants of concern; model estimates represent average rates of transmission. Note that almost all cases in BC are now Delta variant.
  - This is a model-based estimate using daily case counts -- these estimates assume a fixed distribution in the delay of reporting and that under-ascertainment of cases remains consistent for each region

# Updates to Rt estimation methodology

- All Rt methods are model-based, meaning they have necessary underlying assumptions around the distribution of infectiousness, delays in reporting, under-reporting, and other factors. In addition many separate definitions of Rt exist. These methods typically show agreement on when Rt is above or below one, but can have differences in their absolute values estimated for a given time period.
- As more data are collected, Rt estimates at previous points in time are updated and refined. This is because future trends in cases help to confirm the case growth or decline and its extent.
- Original method for estimating Rt was based on a compartmental modelling framework. This framework was originally designed to capture changes in patterns of infectious contact pre-variants and vaccination. It was found this method was overly sensitive to periods of growth and decline in cases compared with other methods (see figure).
- A review of Rt estimation methodology was conducted including appraising external estimates for BC. The [Cori et al method](#) was selected given: 1) it provides a more flexible approach where weekly patterns of case reporting can be accounted for; 2) it provides more up to date estimates of Rt based on partial data and 3) it is more in line with other methods for the estimation of instantaneous Rt (See [Hellewell, 2020](#)). For more details on the comparison of Rt methods see [Gostic, 2020](#)



# Additional Resources

- BCCDC COVID-19 Regional 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](#)