BCCDC Data Summary

16 September 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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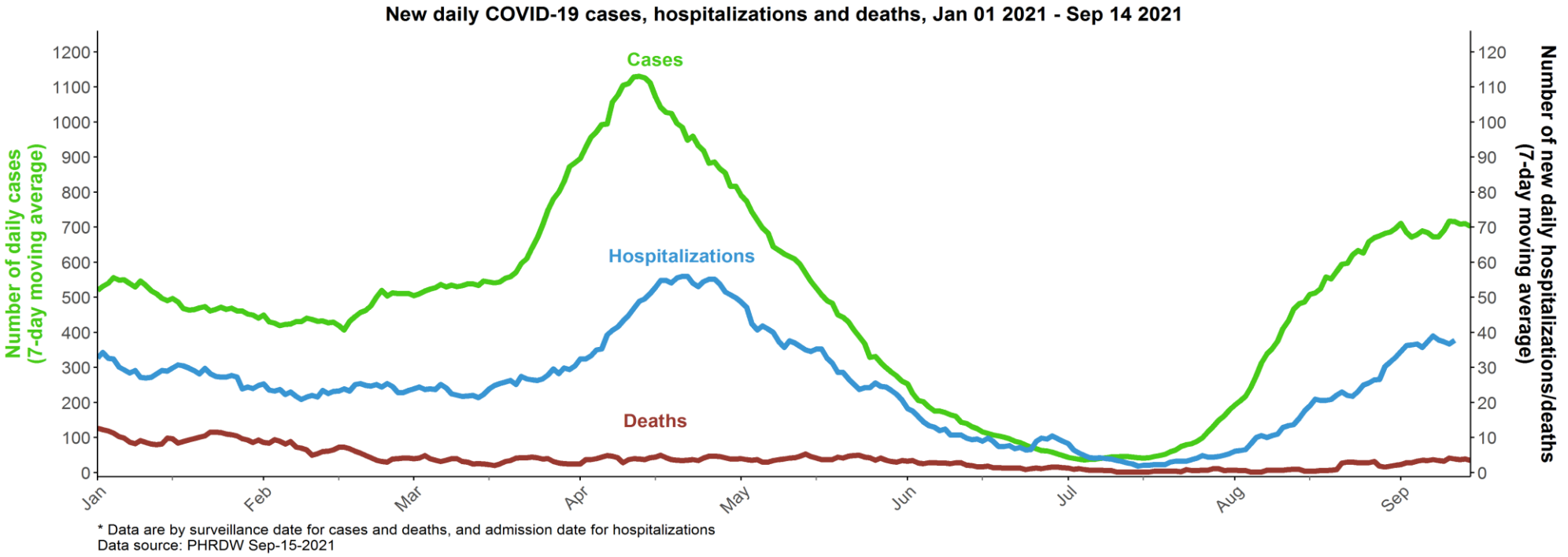
Overall Summary for surveillance data up to 14 Sep

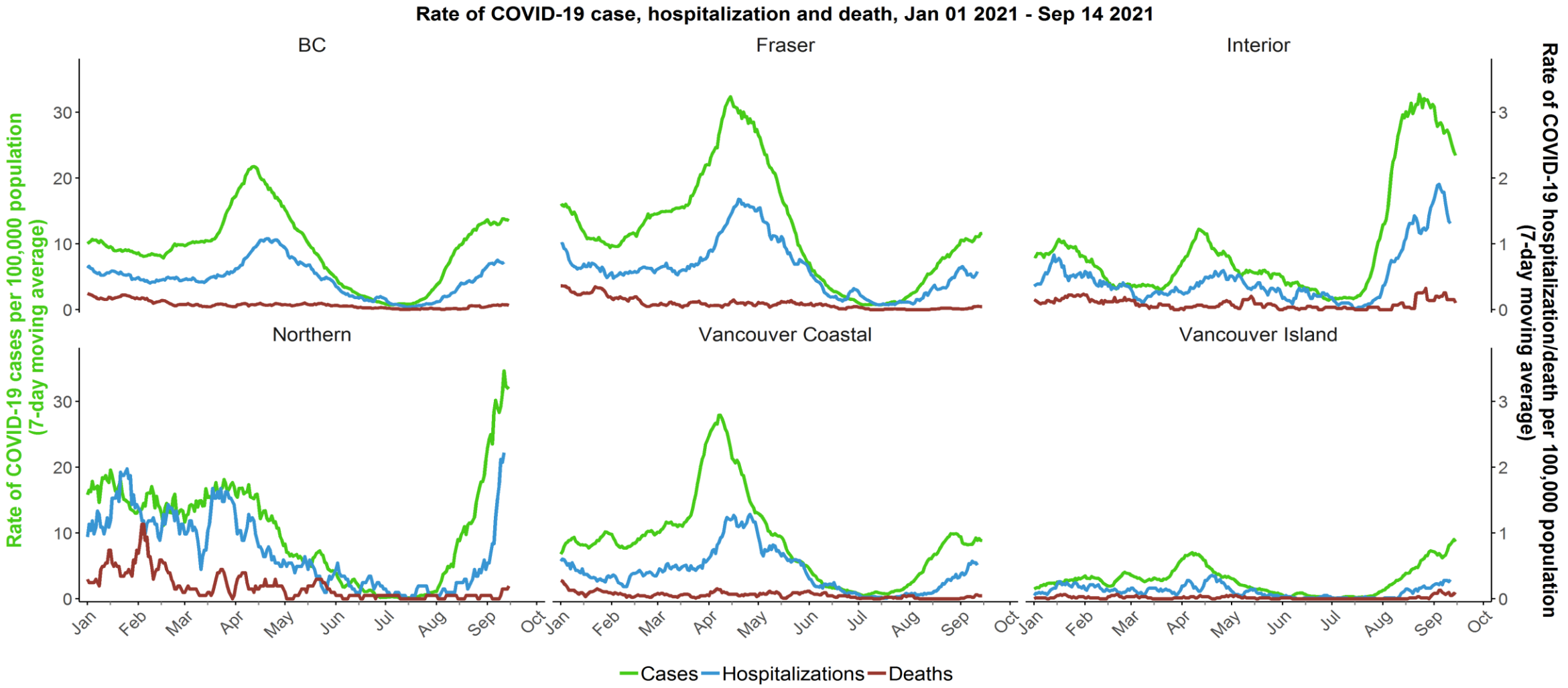
- Case rates are increasing in NH, FH and VIHA, elevated but decreasing in Interior, and stable in VCH.
- Test positivity among public tests is stable (~10% provincially), and is highest in IH (15%) and NH (24%).
- New hospitalizations are elevated but stabilizing provincially; hospital/critical care census is increasing across BC; new deaths are low. Hospitalization rates among children continue to remain very low.
- The majority of new cases and hospitalizations continue to be among the unvaccinated individuals. Compared with fully vaccinated individuals, unvaccinated individuals are at much higher risk of infection and severe outcomes.
- Vaccine coverage in BC, 14 Sep, 1 dose (2 doses): 77% (70%) of total population, 86% (78%) 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 (99.5%) across all of BC.

Sep 09 to Sep 15: BC COVID-19 Profile

176,480	total cases	1,873	total deaths
4,916	new this week	31	new this week
9,273	ever hospitalized	168,459	removed from isolation
266	new this week	4,666	new this week



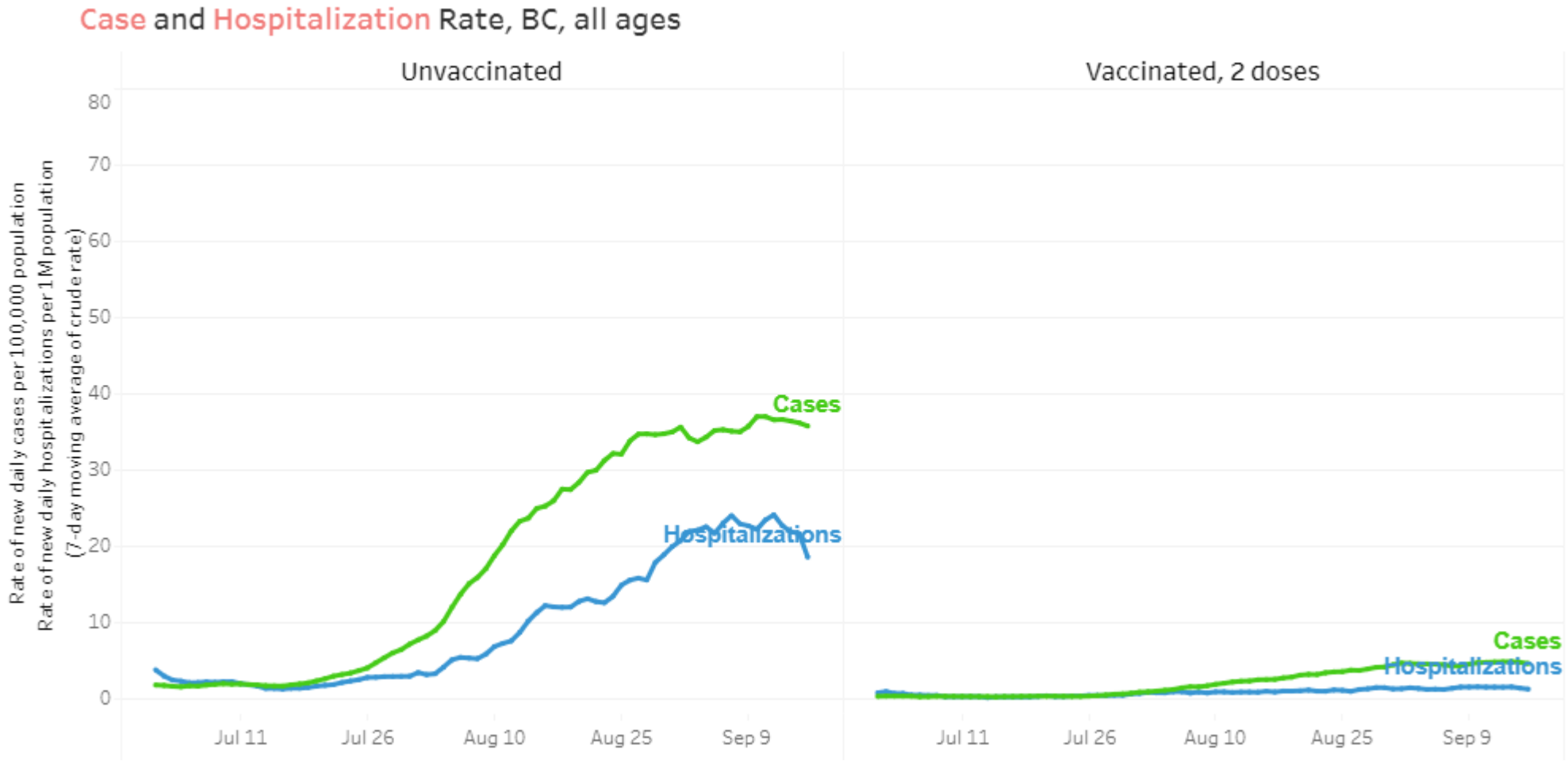
Case rates and new hospitalizations are stable in BC, trends differ by HA; new deaths are stable and low.



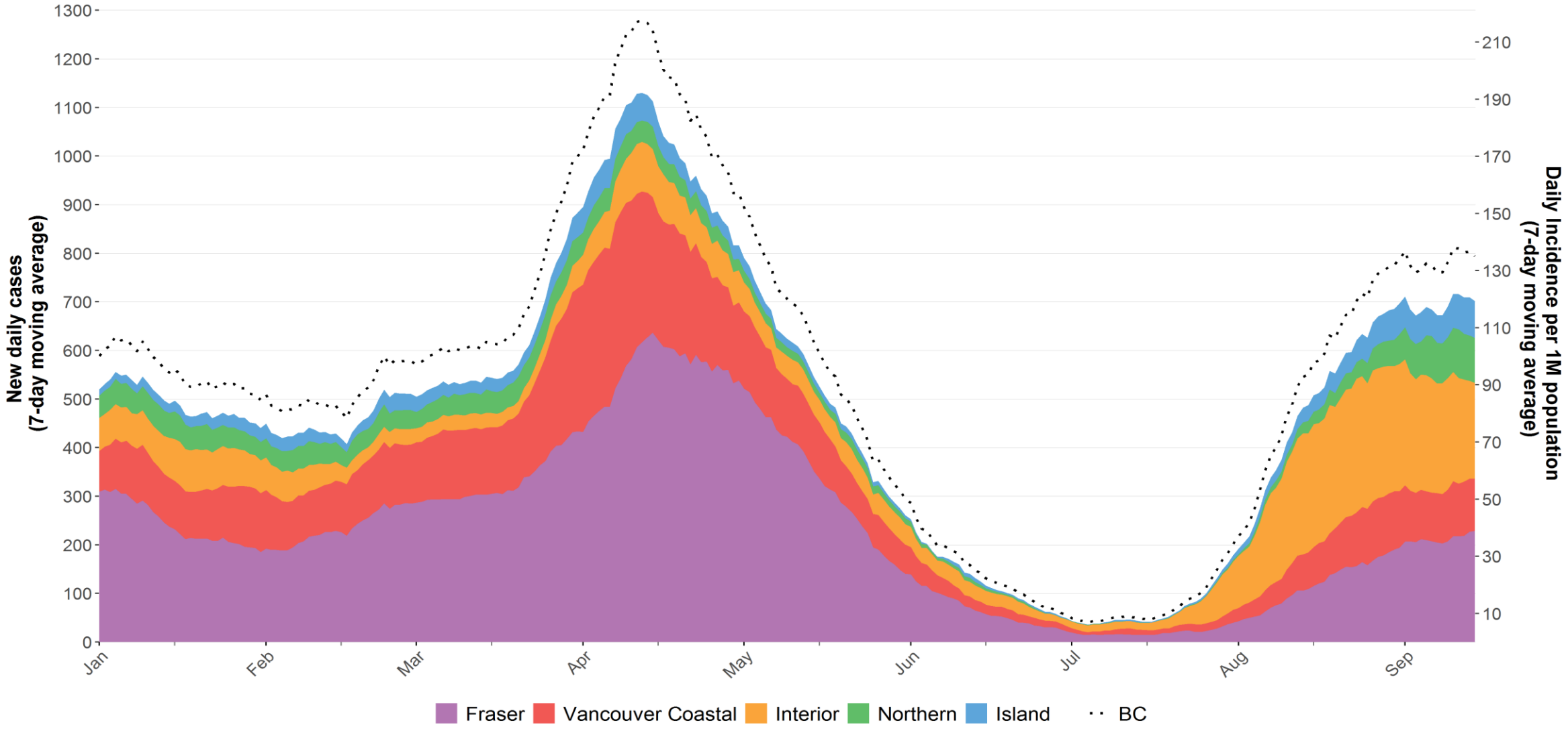
* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Sep-15-2021

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

The majority of new cases and hospitalizations continue to be among the unvaccinated individuals



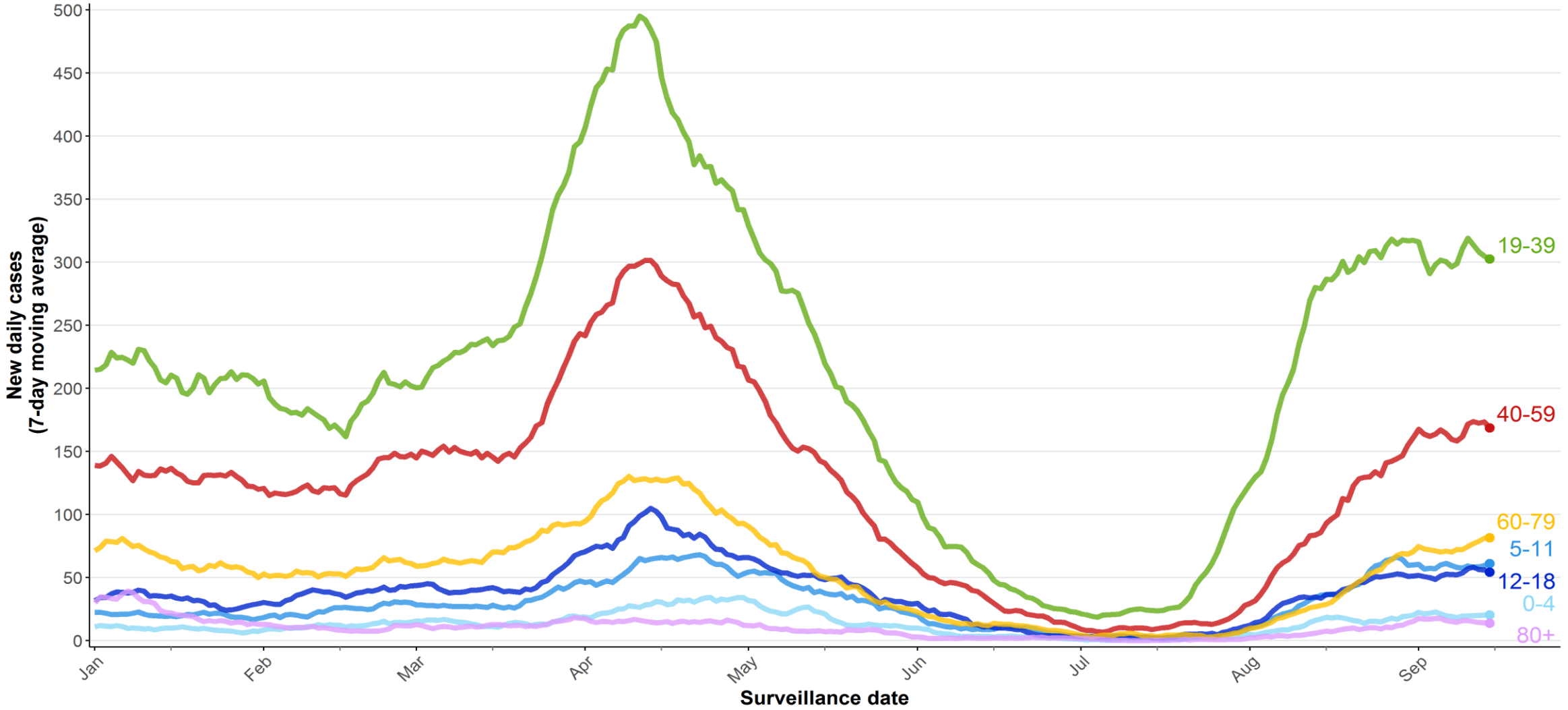
New daily COVID-19 cases by HA, Jan 1 2021 – Sept 14 2021



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

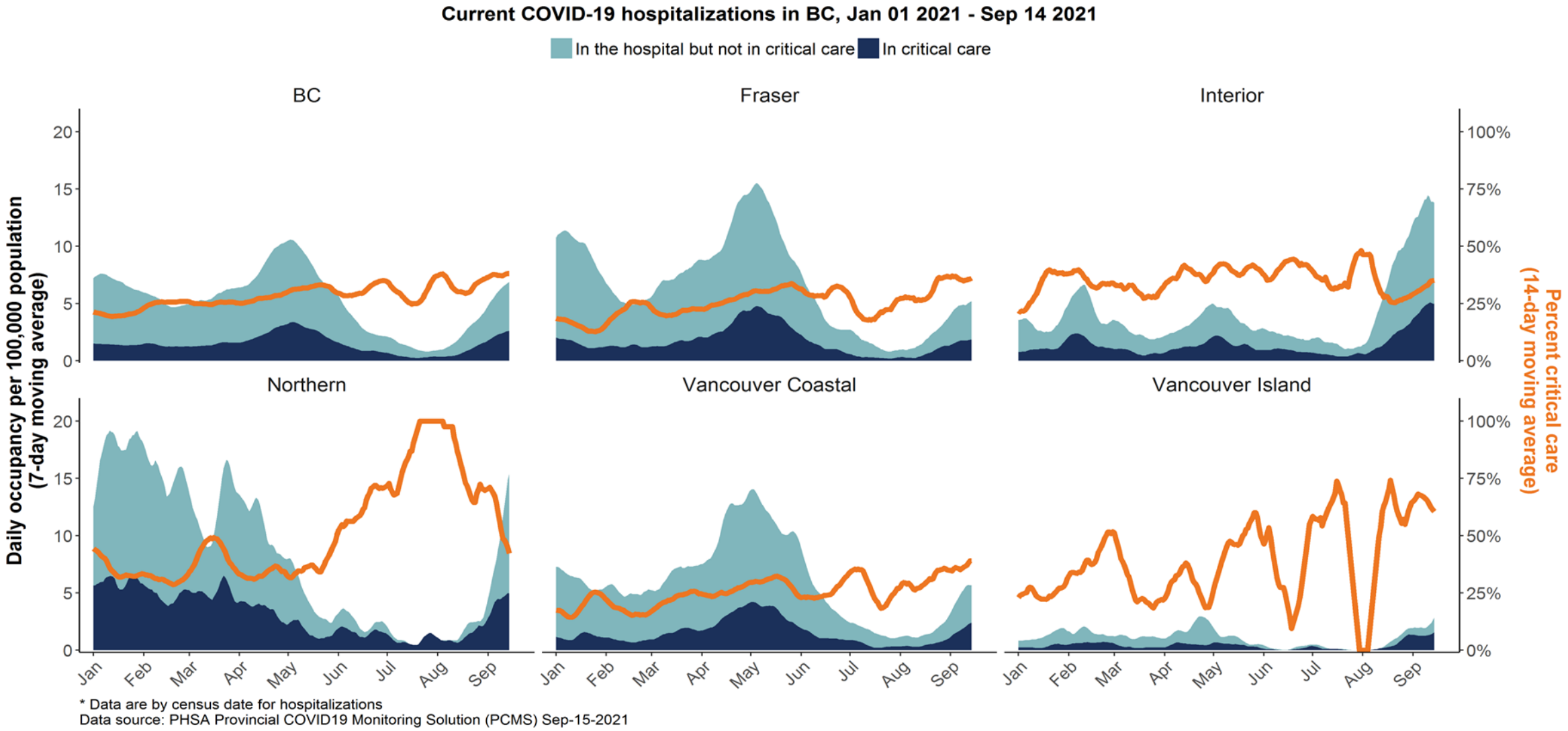
Case counts are highest among 19-39 year olds, followed by 40-59 year olds, consistent with previous resurgences

New daily COVID-19 cases by Age, Jan 1 2021 – Sept 14 2021

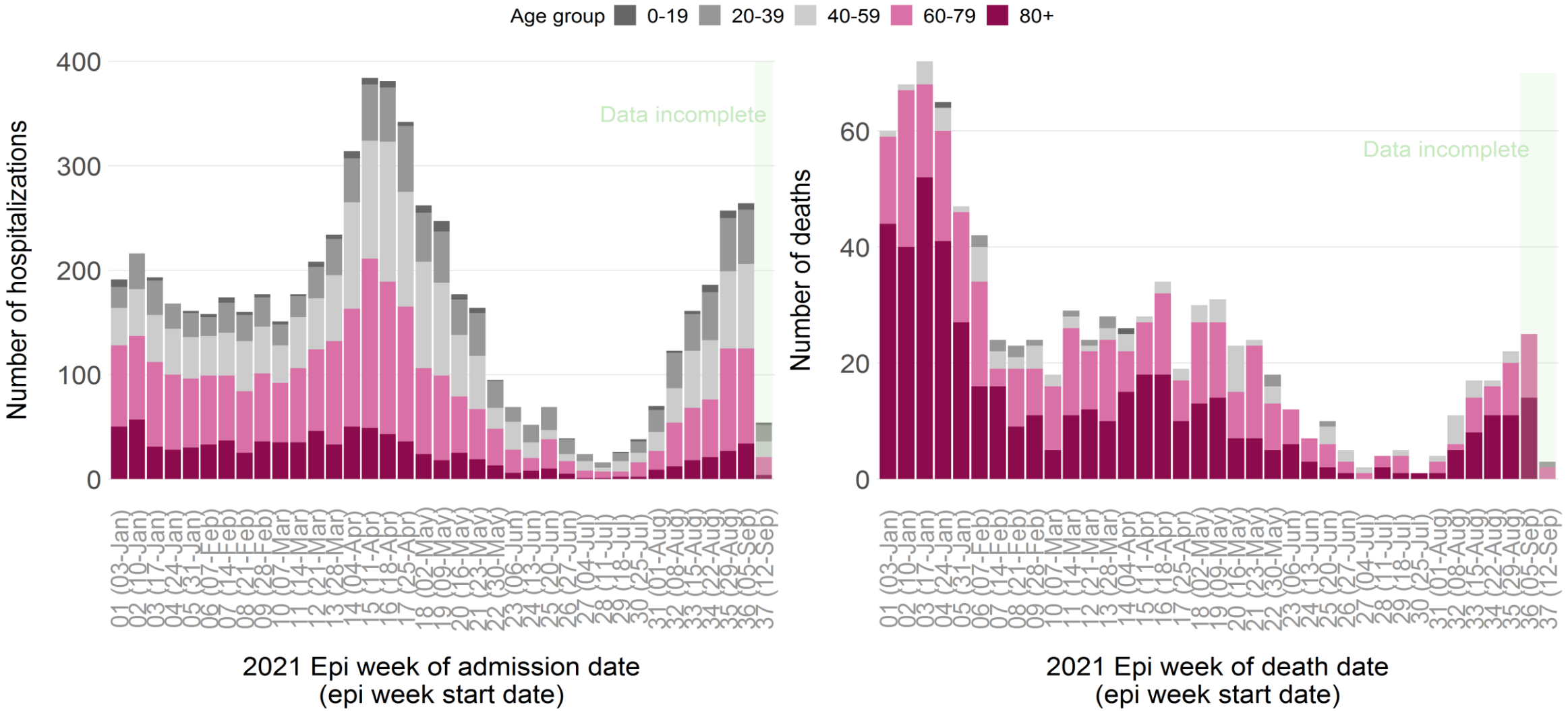


* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

Hospital and critical care census is increasing in all regions. Note addition of % in critical care line.

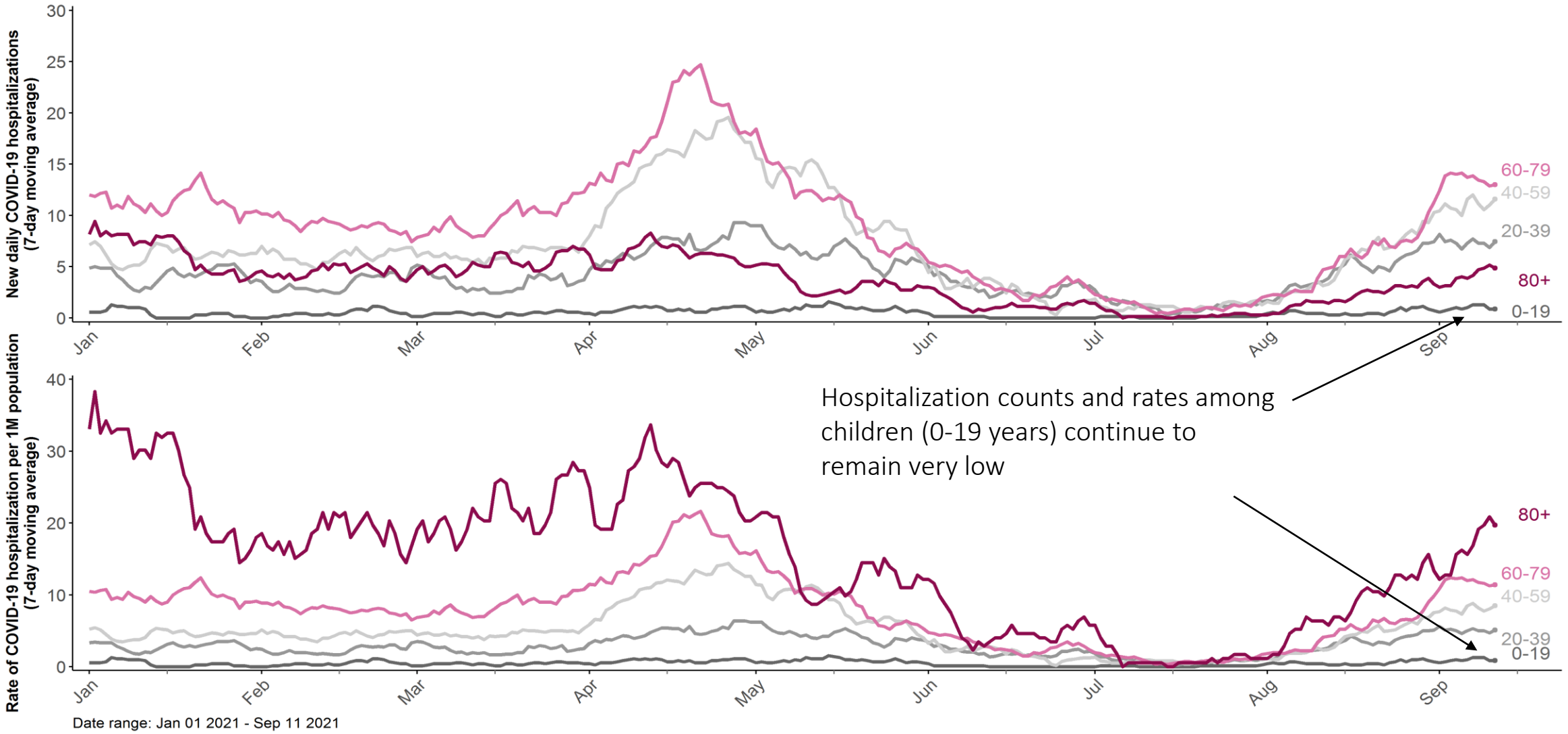


Number of new hospital admissions is increasing across all ages >20 years, almost all are among unvaccinated individuals (see slide 23). Deaths are low.



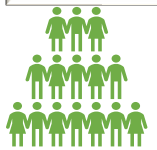
Data extracted on 2021-09-15; hospitalization and death data from health authority case line list data

Trends in number and rate of new hospitalizations by age group, BC, 1 Jan – 11 Sept 2021



Sep 09 to Sep 15: Pediatric Profile

Age group: 0-4



4338	total cases
141	new this week

85	ever hospitalized
1	new this week

2	total deaths
0	new this week

Age group: 5-11

9673	total cases
428	new this week

39	ever hospitalized
1	new this week

0	total deaths
0	new this week

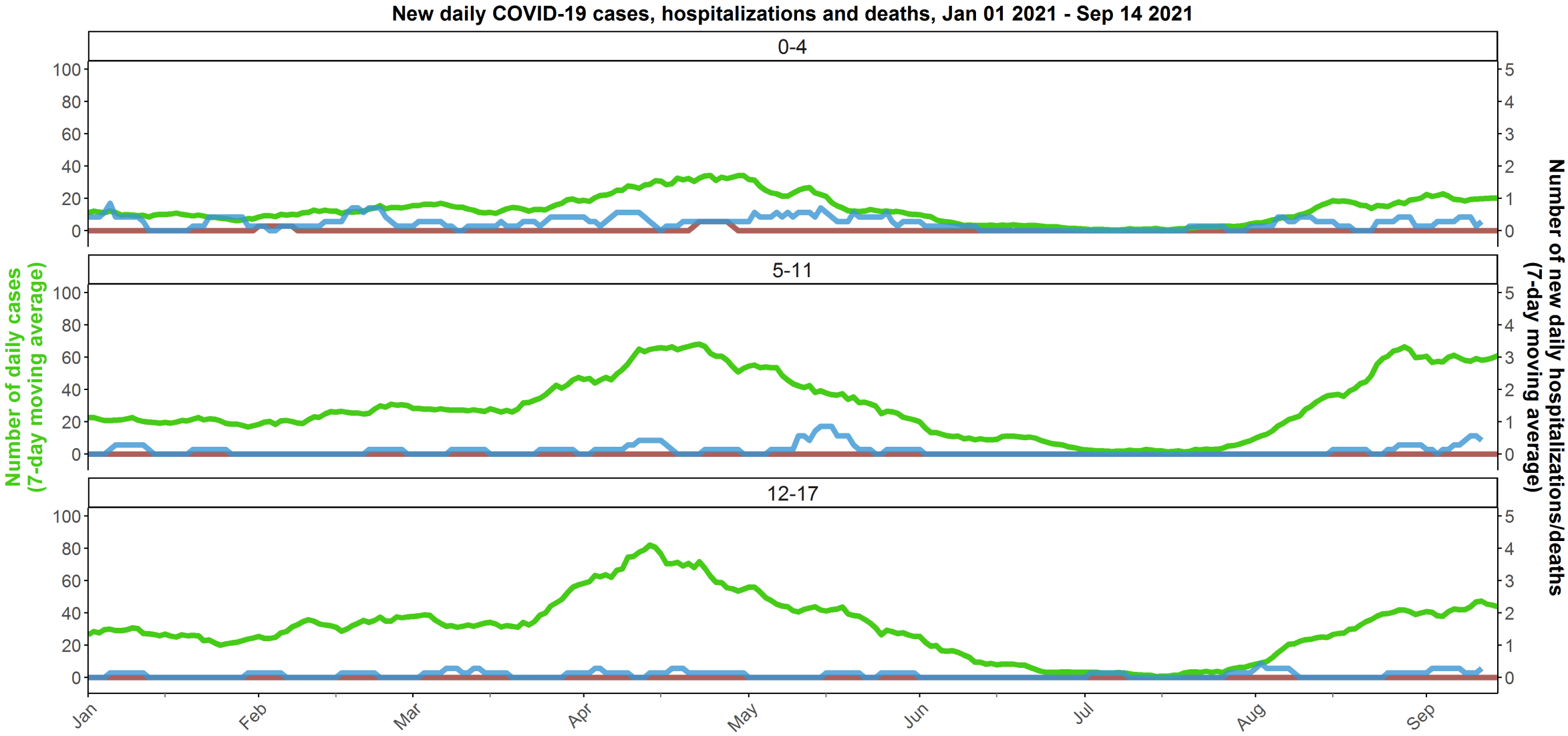
Age group: 12-17

10745	total cases
309	new this week

38	ever hospitalized
2	new this week

0	total deaths
0	new this week

Hospitalizations continue to be low among children and youth

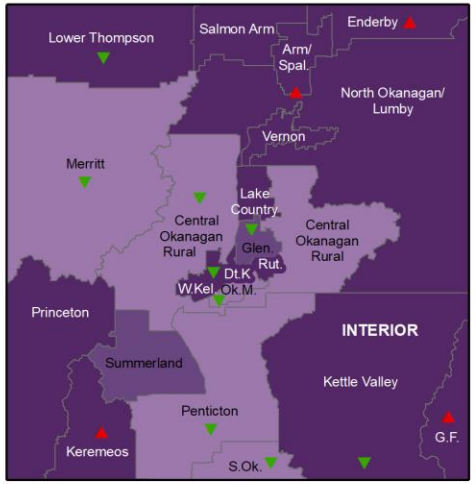


* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW + BCCW Sep-15-2021

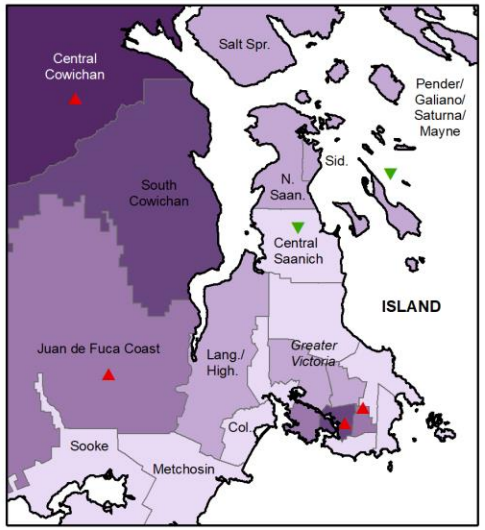
Geographic Distribution of COVID-19 by LHA and CHSA of Case Residence

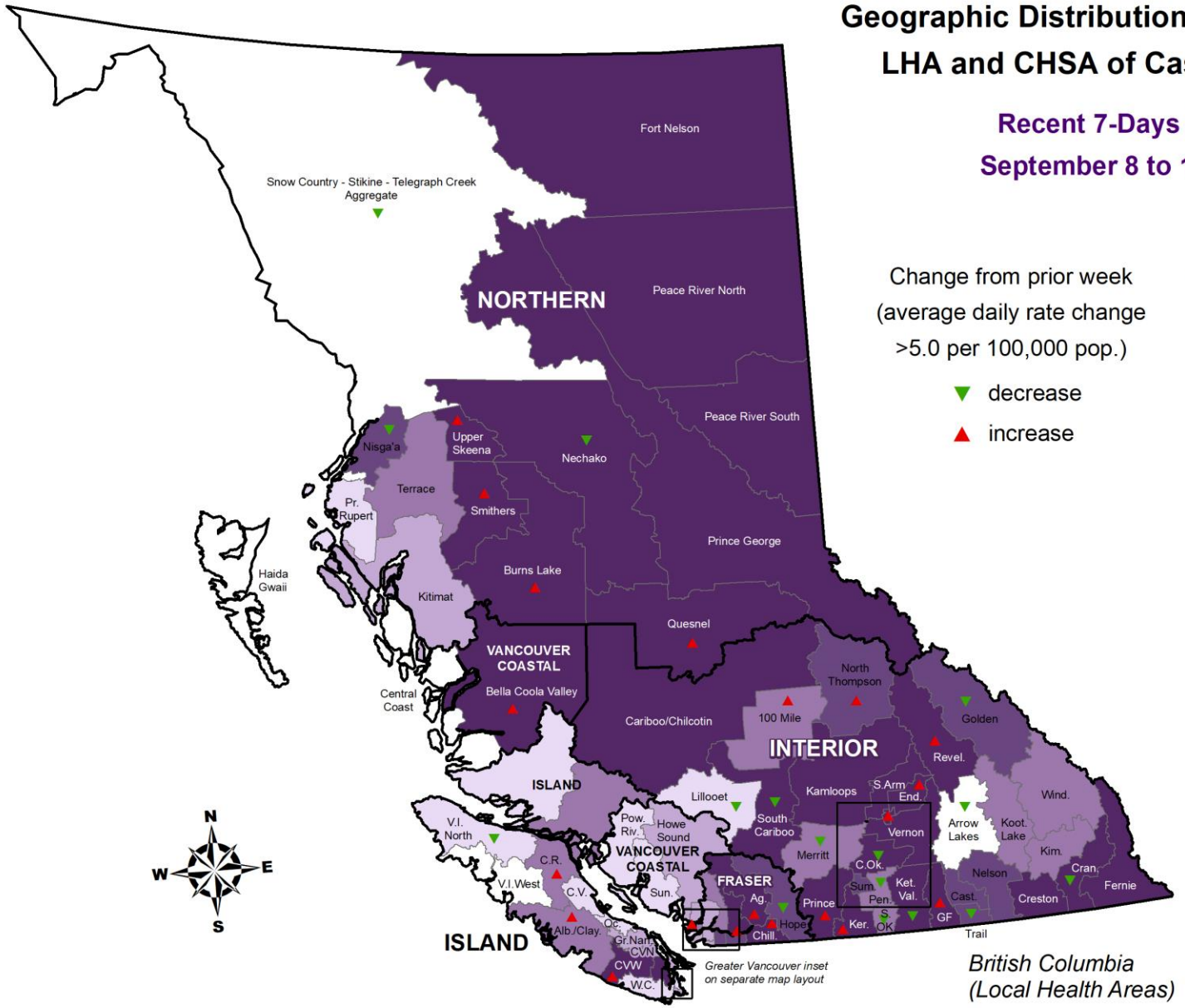
Recent 7-Days Cases
September 8 to 14, 2021

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)





British Columbia
(Local Health Areas)

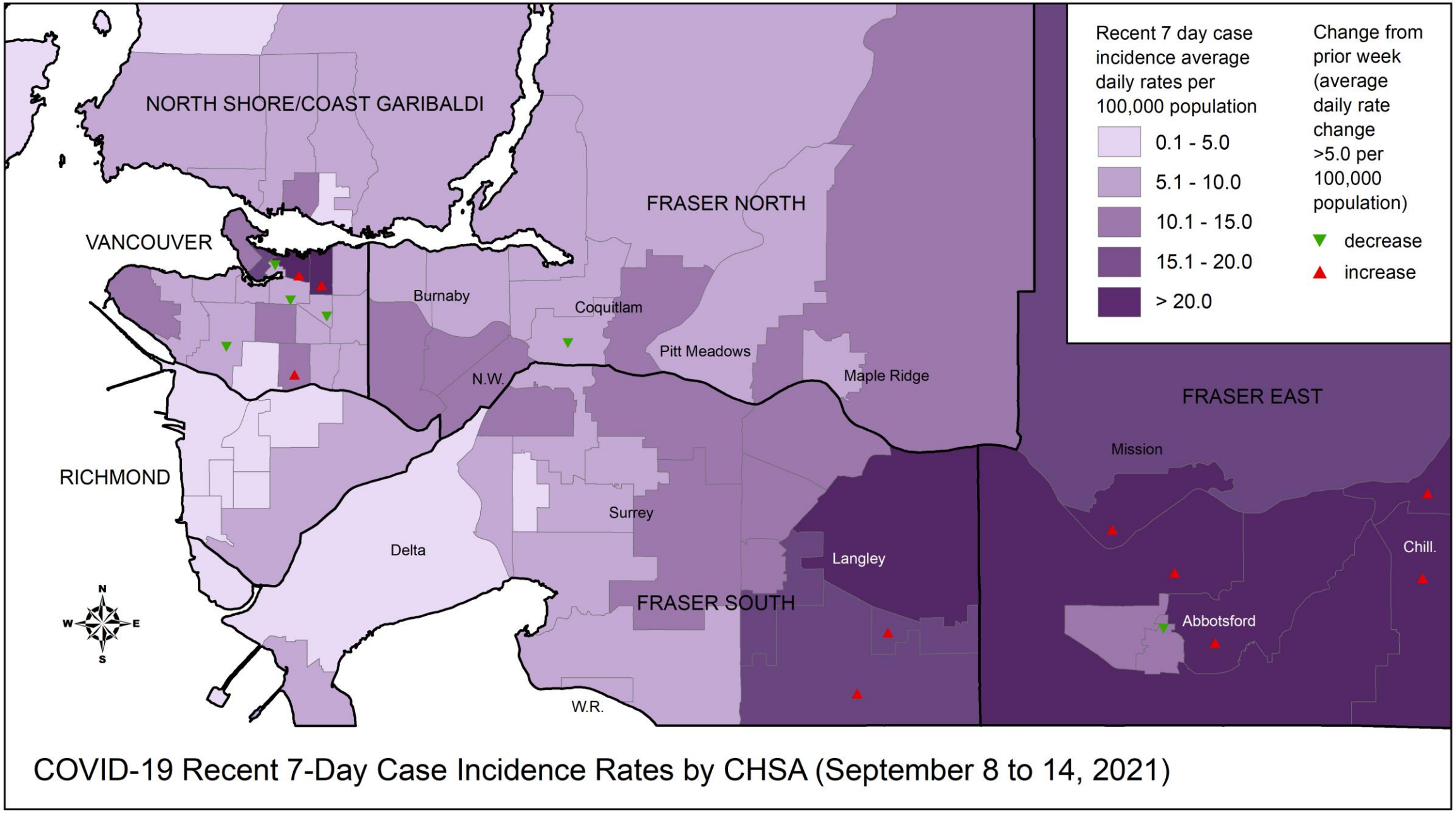
Change from prior week
(average daily rate change >5.0 per 100,000 pop.)

- ▼ decrease
- ▲ increase

Average daily rate per 100,000 population

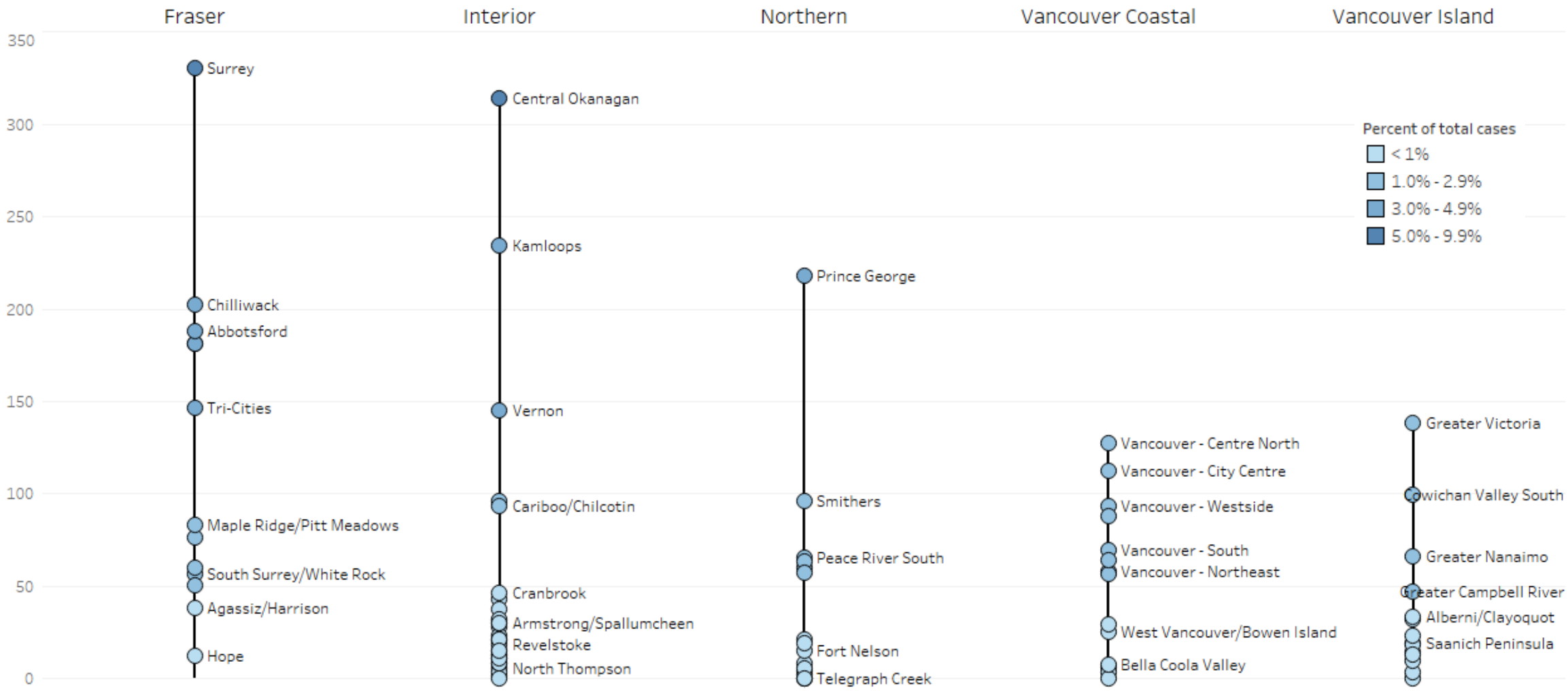
- 0.0
- 0.1 - 5.0
- 5.1 - 10.0
- 10.1 - 15.0
- 15.1 - 20.0
- > 20.0

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.

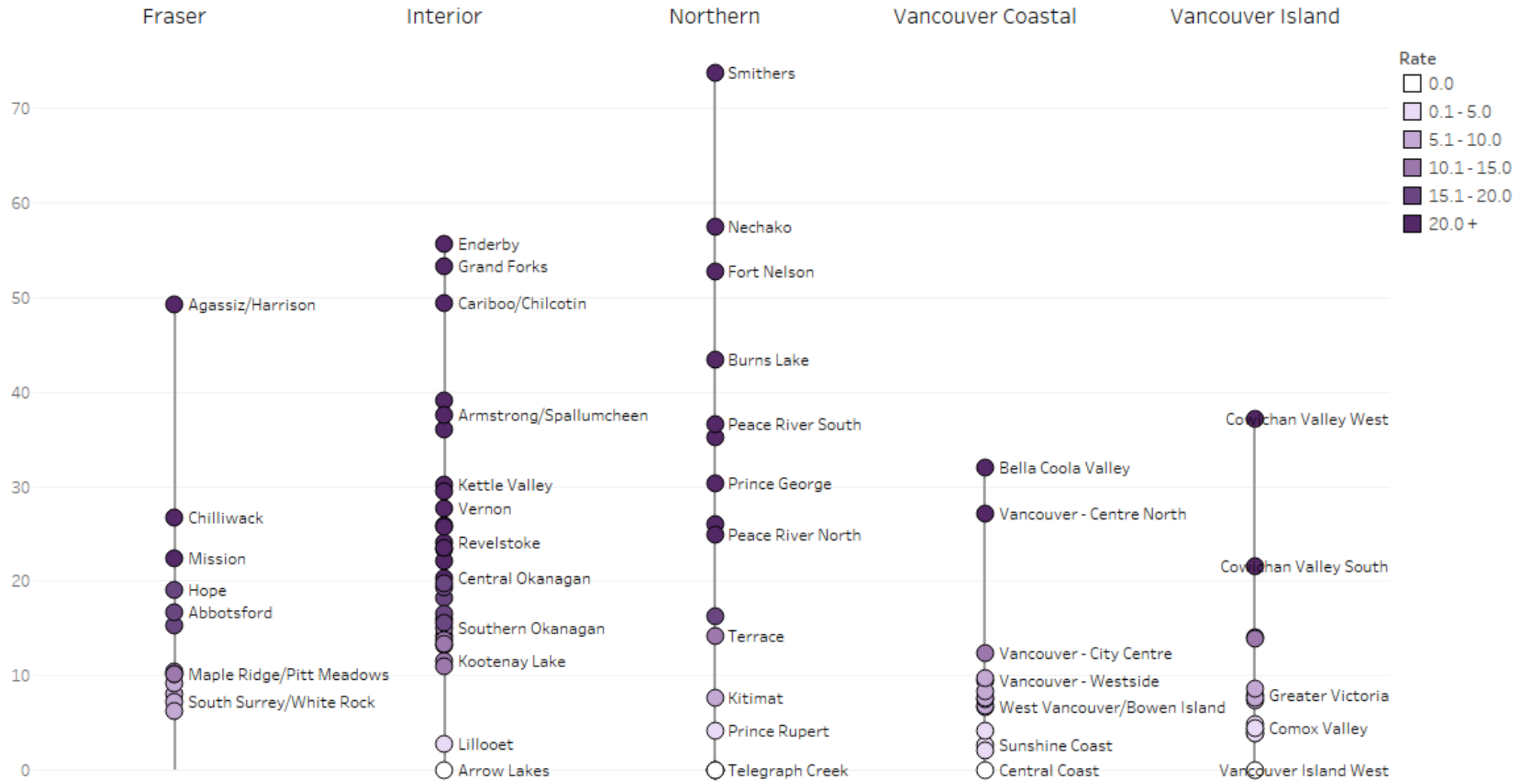


COVID-19 Recent 7-Day Case Incidence Rates by CHSA (September 8 to 14, 2021)

Total cases by local health area, Sep 08 - Sep 14, 2021



Average daily rate of new cases per 100,000 population, by local health area, Sep 08 - Sep 14, 2021



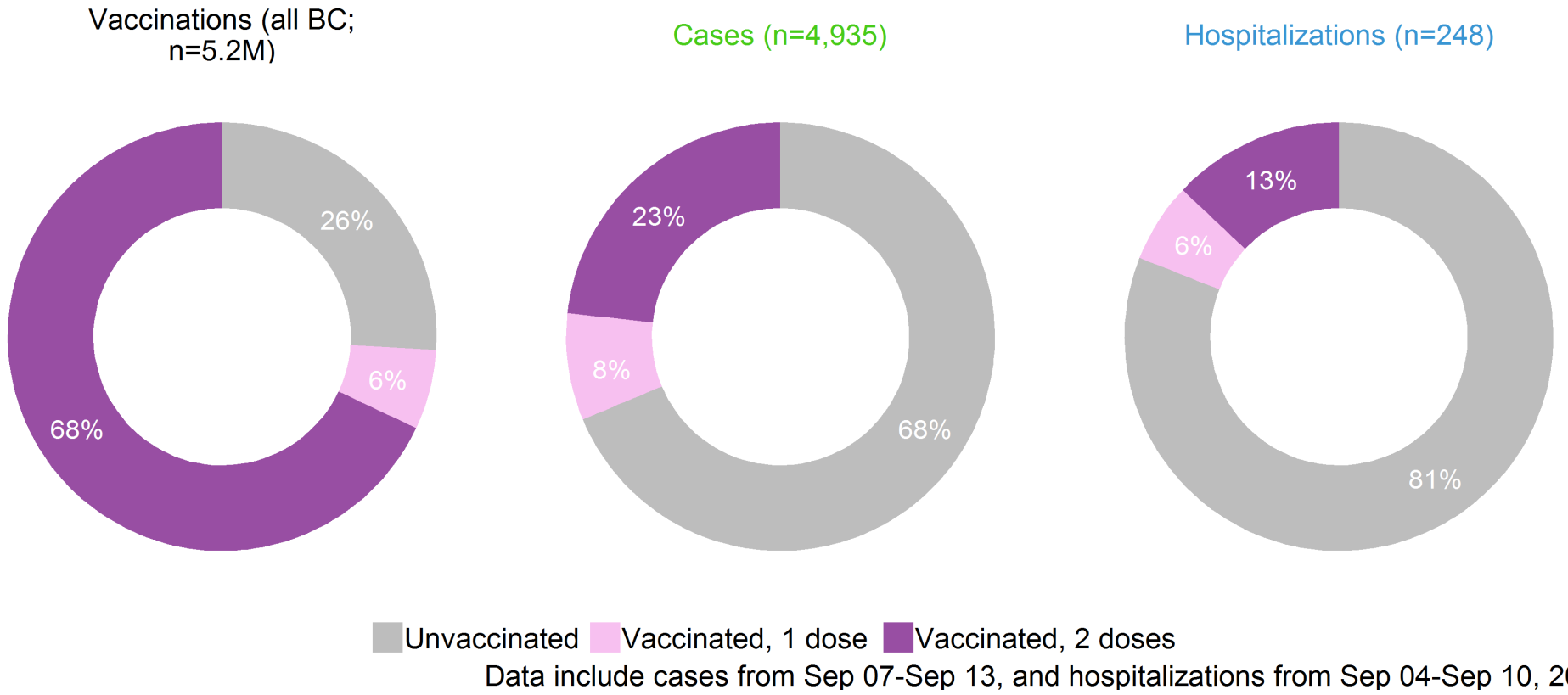
Key messages – Outcomes by vaccine status

- Most of the recent cases and hospitalizations continue to be among unvaccinated individuals
- Based on last month's data, compared with fully vaccinated individuals and after adjusting for age differences, unvaccinated individuals are
  - ≈ 11x more likely to become a case
  - ≈ 59x more likely to be hospitalized
  - ≈ 19x more likely to die
  - NB: relative rates fluctuate over time and do not represent vaccine effectiveness
- Hospitalization rates among children continue to remain very low

- Unvaccinated: no dose or <3 weeks since receipt of 1st dose
- Partially vaccinated = 1 dose: ≥3 weeks since receipt of 1st dose and <2 weeks after 2nd dose
- Fully vaccinated = 2 doses: 2 weeks or more after receipt of 2nd dose

Over the past week, fully vaccinated individuals represented 68% of BC's total population, but accounted for only 23% of cases and 13% of hospitalizations.

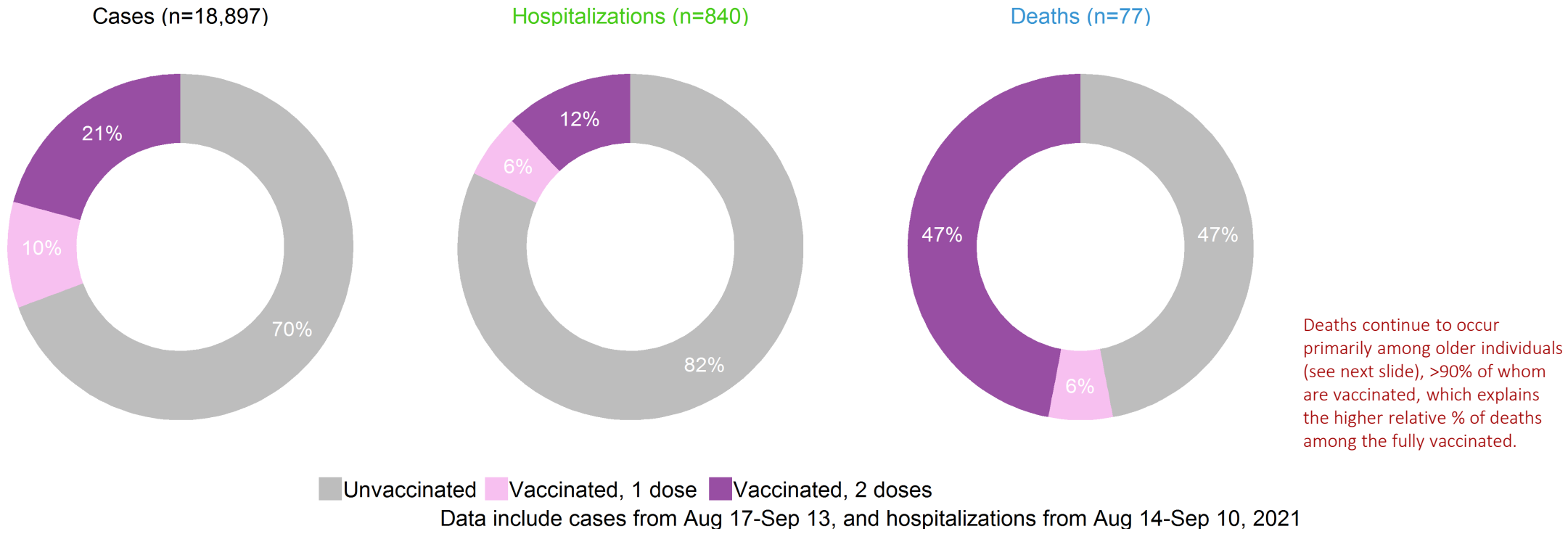
These % fluctuate over time. There are many more vaccinated individuals than unvaccinated individuals, and thus it is important to take the denominator into account. These figures do not represent vaccine effectiveness.



We operate in a live database environment and data get updated retrospectively. These figures were run on Tuesday Sep 14th and may differ slightly from previously reported counts. 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 24th may not be captured by our surveillance system until Aug 29th.

Over the past month, fully vaccinated individuals accounted for 21% of cases and 12% of hospitalizations.

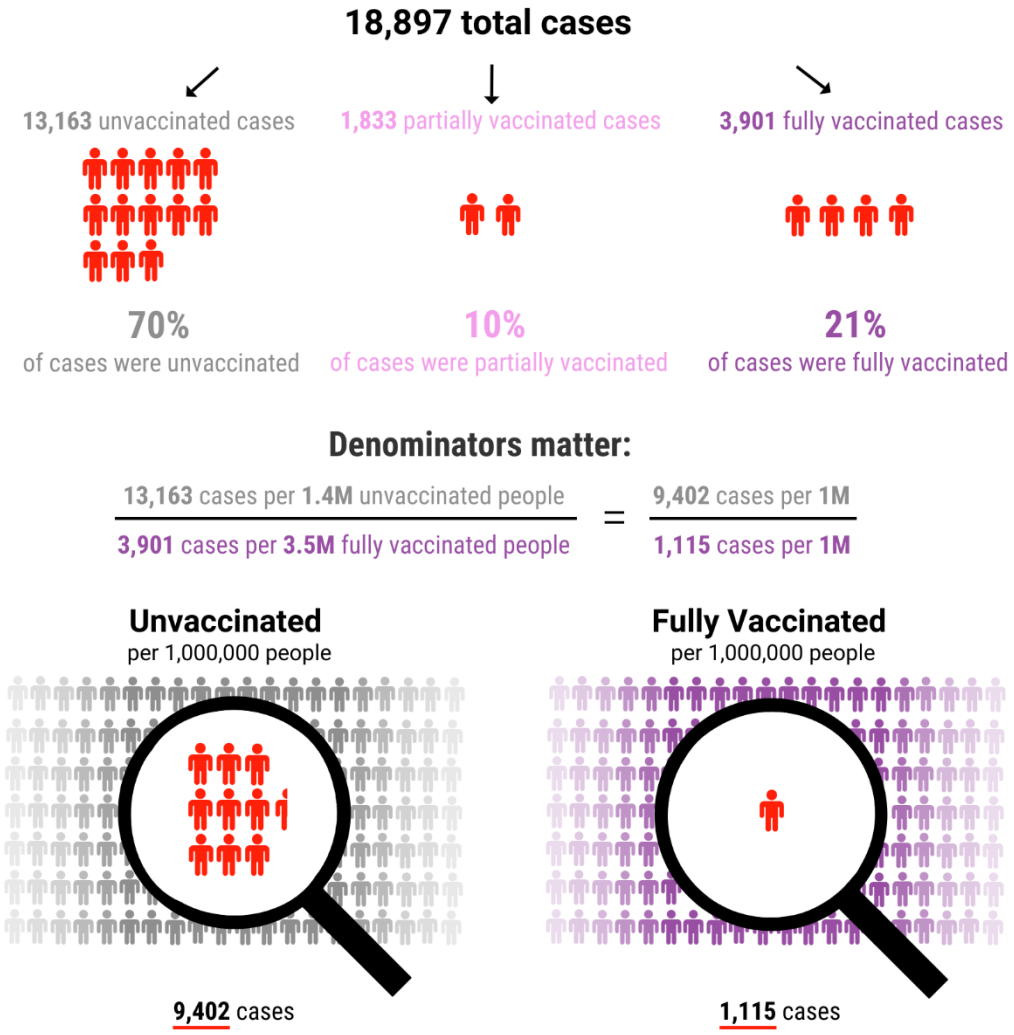
These % are expected to increase over time as more people get fully vaccinated and there are fewer unvaccinated people. If 100% of population gets fully vaccinated (which is almost the case for many long term care residents for example), then any new cases, hospitalizations, or deaths will be among vaccinated people.



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.

We operate in a live database environment and data get updated retrospectively. These figures were run on Sept 14th and thus will 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 24th may not be captured in our surveillance system until Aug 29th.

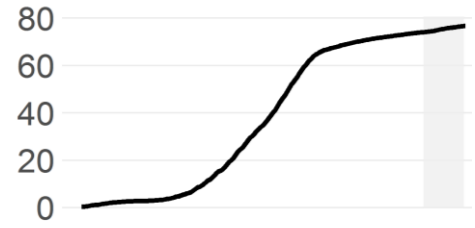
Pie charts on the previous slide do not tell the full story. Denominators matter.



Please note that this is crude and not adjusted for age differences between the vaccinated and unvaccinated individuals. See slide 28 for age adjusted calculation.

COVID-19 health outcomes by vaccination status and age, BC, Aug 17 – Sep 13, 2021

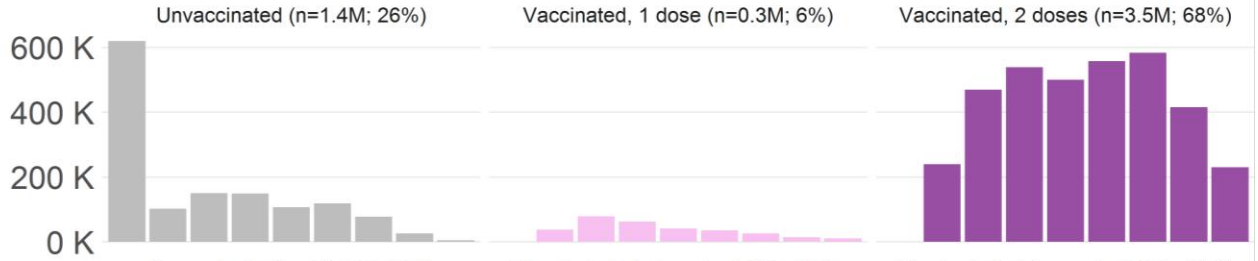
Trend in % total population vaccinated with at least 1 dose



Vaccinations (all BC; n=5.2M)

Number of people

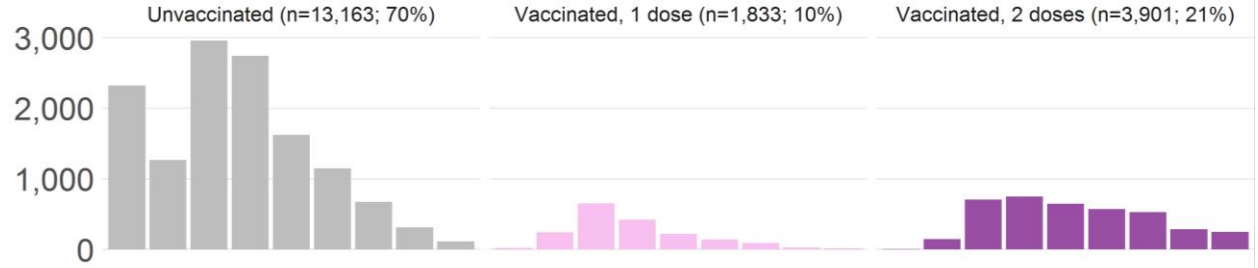
Unvaccinated | Vaccinated, 1 dose | Vaccinated, 2 doses



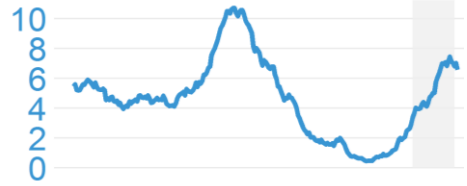
Trend in daily **cases** per 1M

Cases (n=18,897)

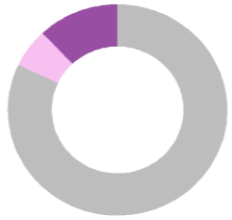
Number of cases



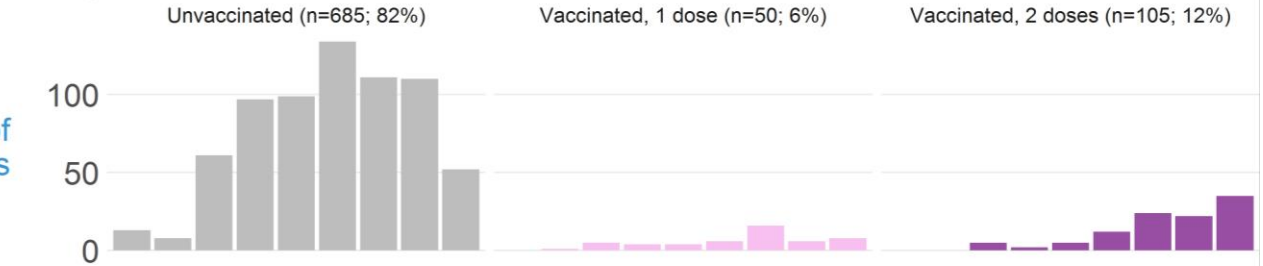
Trend in daily **hospitalizations** per 1M



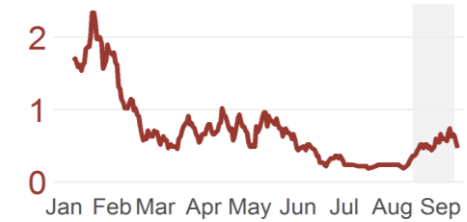
Hospitalizations (n=840)



Number of hospitalizations

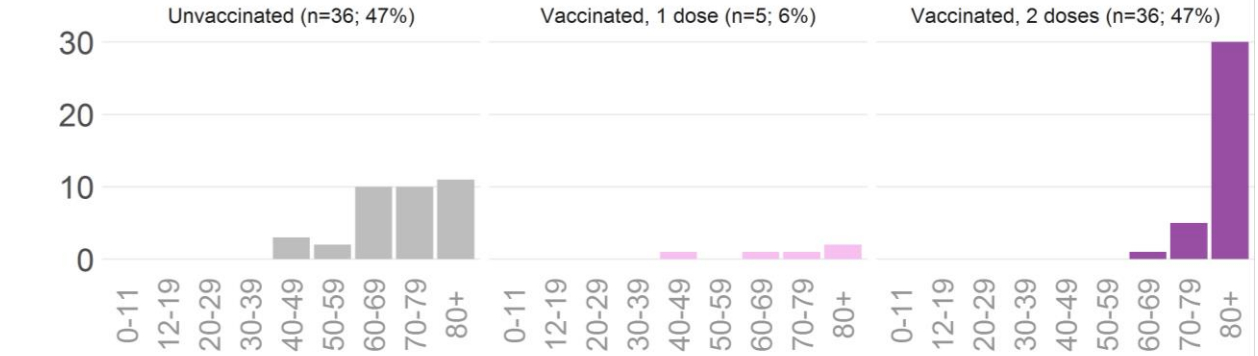


Trend in daily **deaths** per 1M



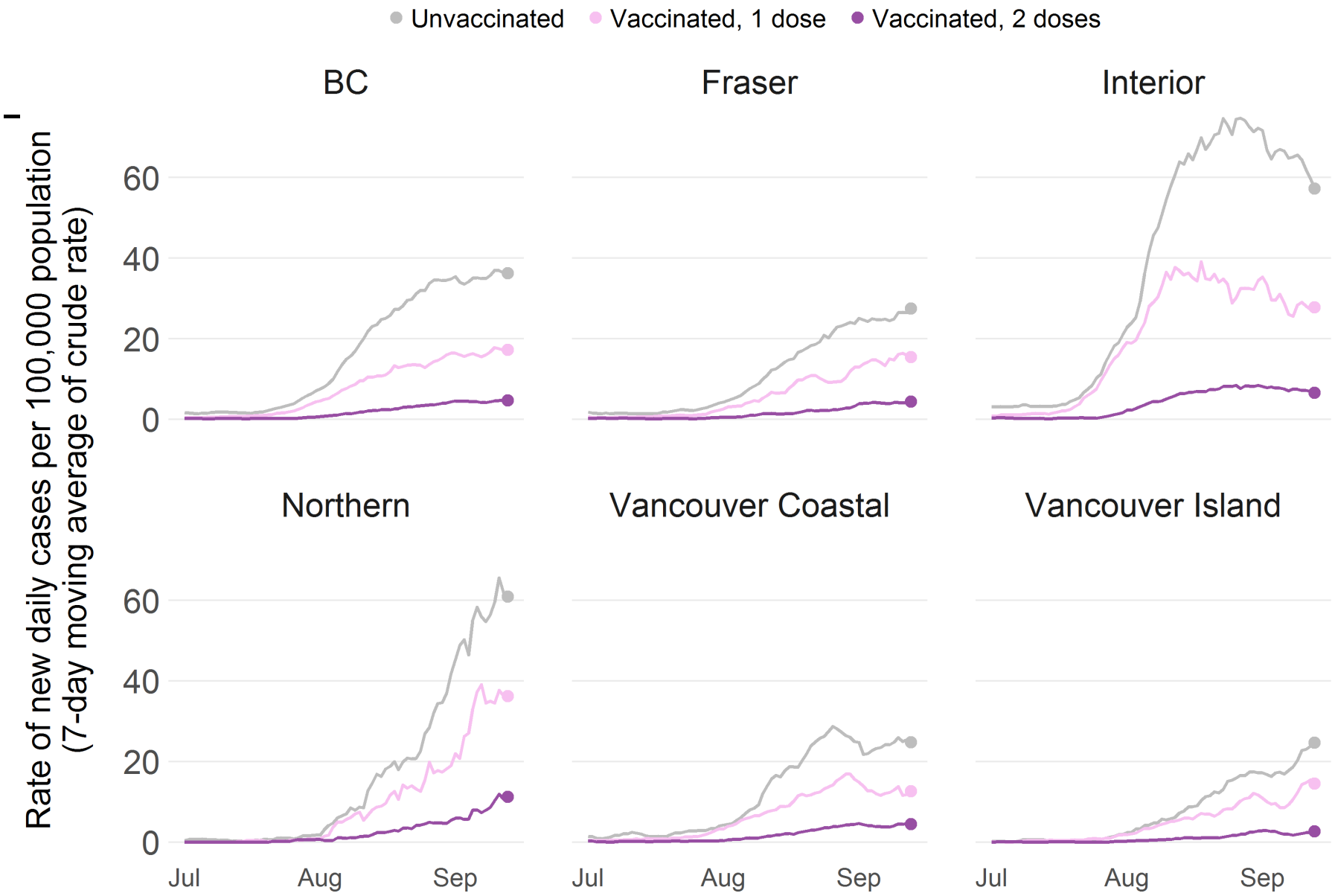
Deaths (n=77)

Number of deaths



*Figures include cases from Aug 17-Sep 13, and hospitalizations and deaths from Aug 14-Sep 10, 2021

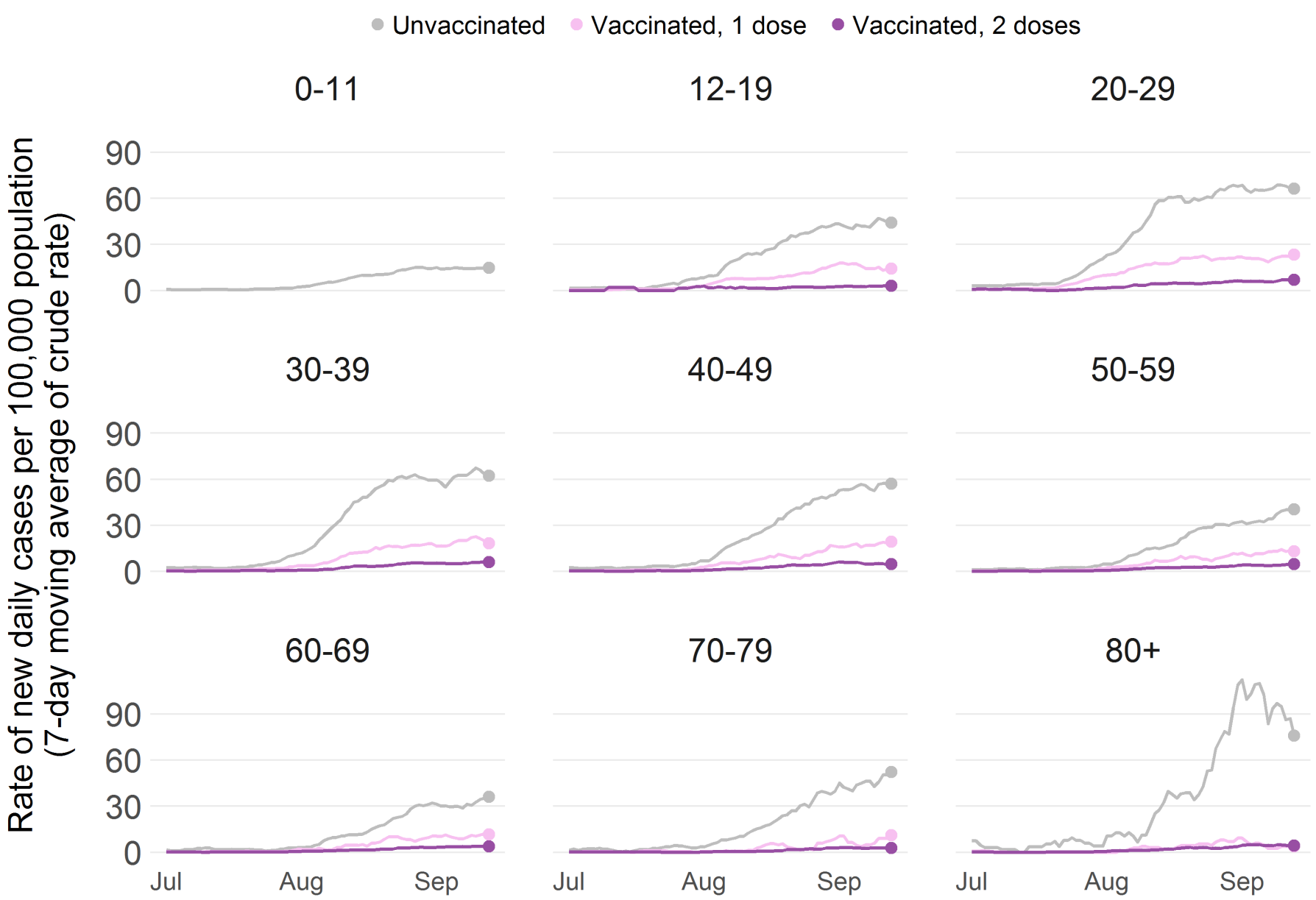
COVID-19 case rate by vaccination status and Health Authority, July 1 – Sept 14, 2021



Data extracted from health authority case line list on 14 Sep 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.

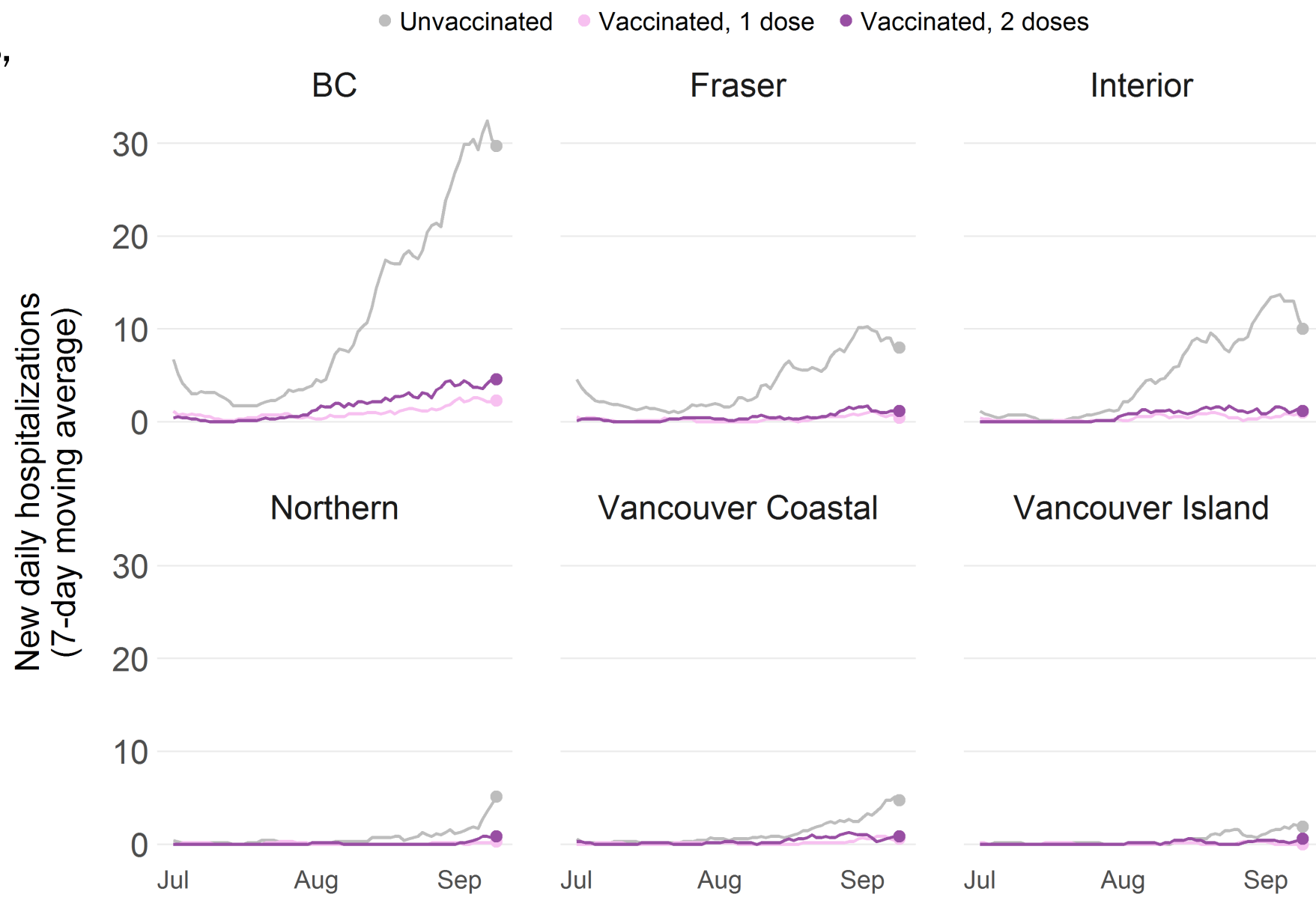
COVID-19 case rate by vaccination status and age, July 1 – Sept 14, 2021



Data extracted from health authority case line list on 14 Sep 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.

COVID-19 hospitalization rate by vaccination status, July 1 – Sept 9, 2021



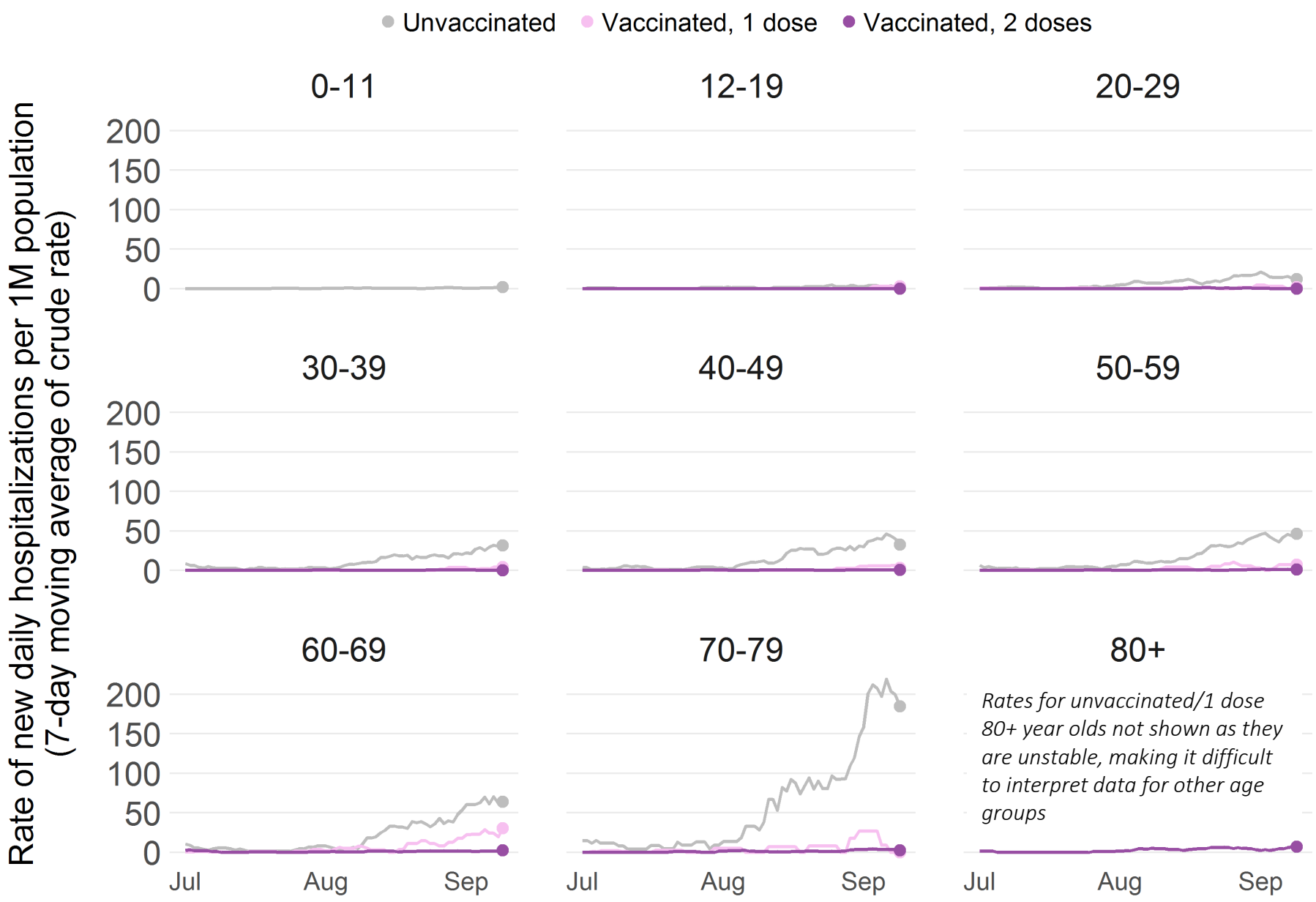
Data extracted from health authority case line list and up to 09 Sep 2021

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.

COVID-19 hospitalization rate by vaccination status and age, July 1 – Sept 9, 2021

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

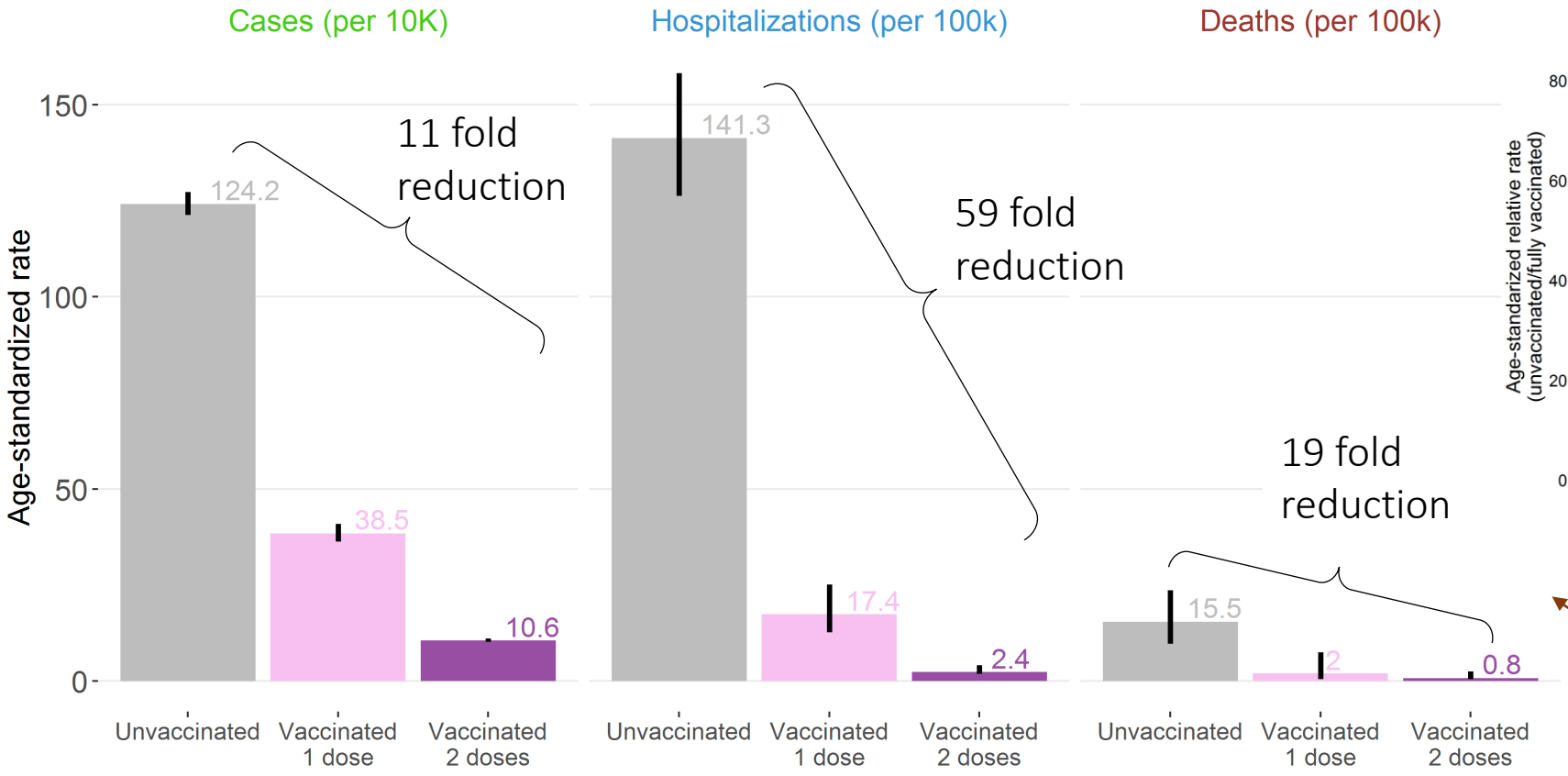
Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.

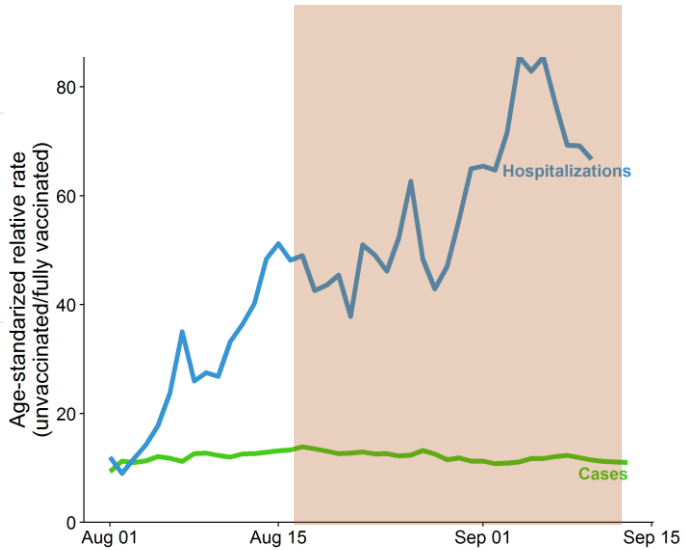


Data extracted from health authority case line and up to 09 Sep 2021

After adjusting for age, unvaccinated individuals continue to be at a significantly higher risk of infection, hospitalization, and death from COVID-19 compared with fully vaccinated

Relative rate fluctuates over time (see graph to the right). These figures do not represent vaccine effectiveness.

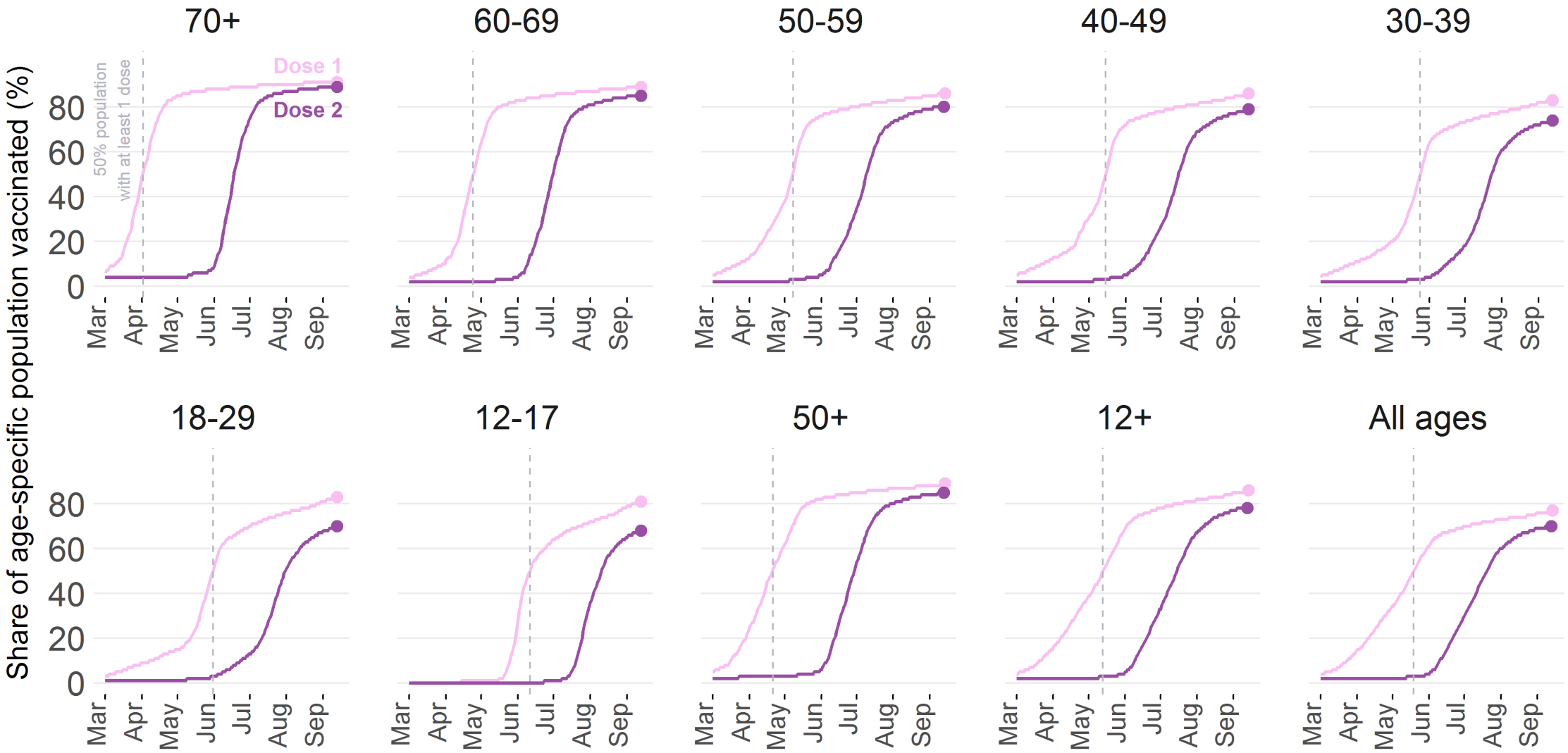




Note the bar graph was switched to monthly time frame and now includes confidence intervals

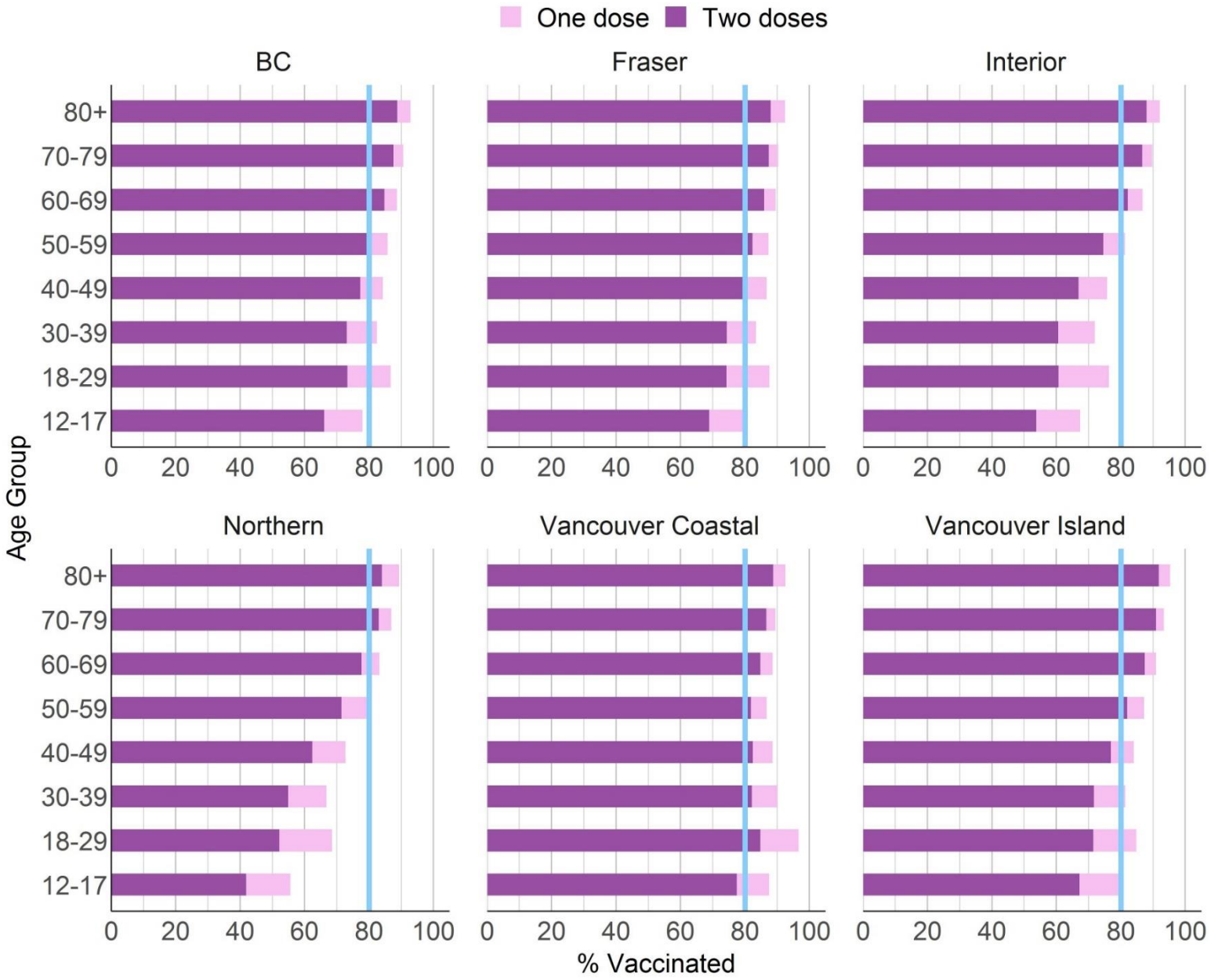
Data include cases from Aug 17-Sep 13, and hospitalizations and deaths from Aug 14-Sep 10, 2021

Vaccination progress in BC over time by age group and dose number up to Sept 14



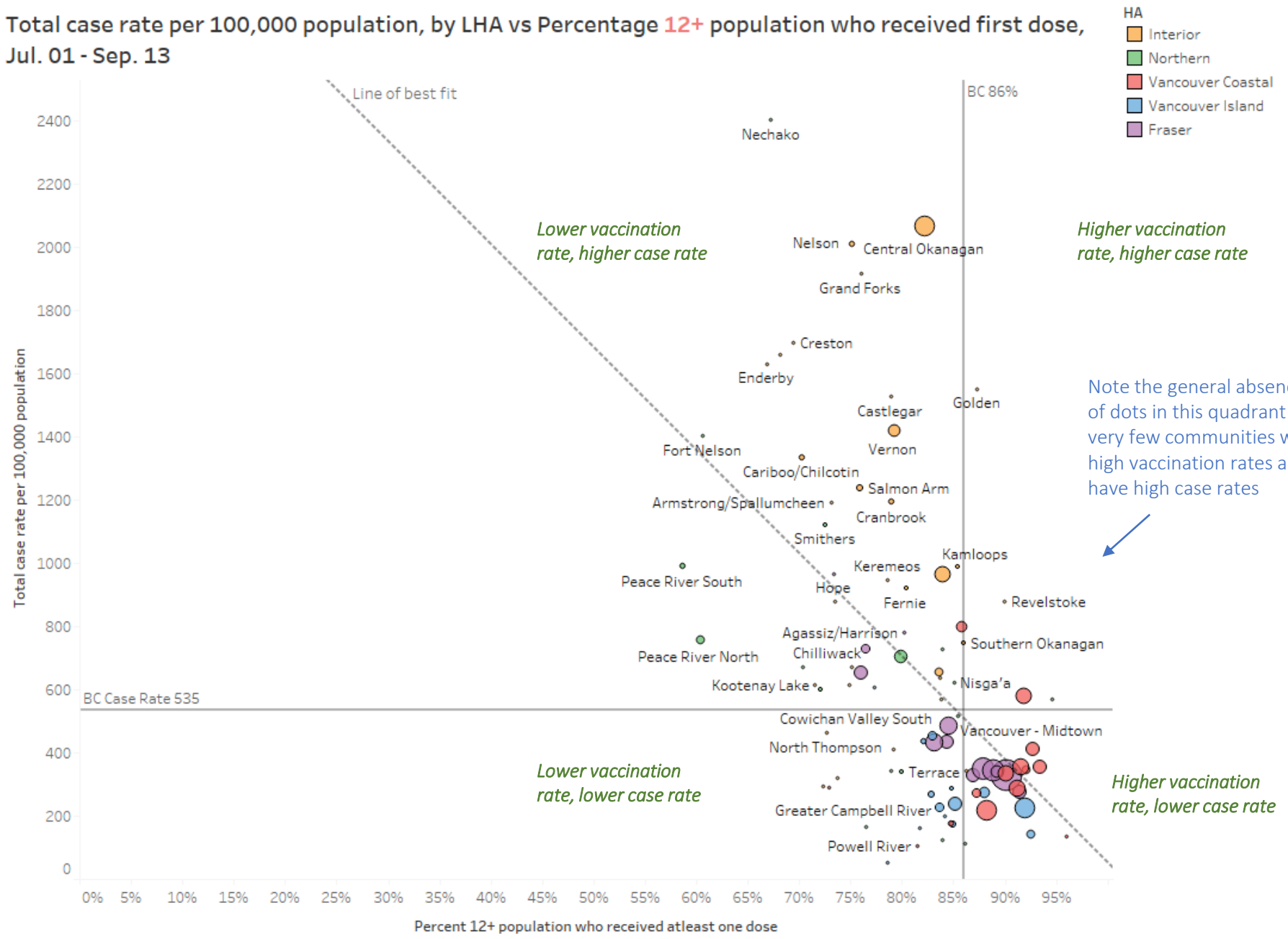
Data updated 2021-09-14
Data Source: Provincial Immunization Registry, PHSA

Vaccination progress in BC and by Health Authority as of Sept 13, by age group and dose number (%)



Data updated 2021-09-14
Data Source: Ministry of Health

BC communities with higher vaccination rates generally had lower total number of cases per capita between July 1 and Sep 13

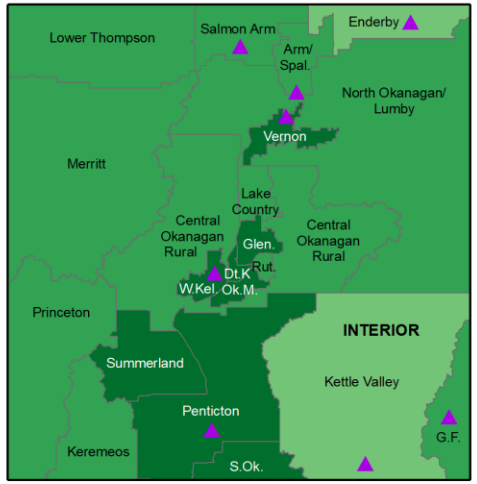


Note the general absence of dots in this quadrant – very few communities with high vaccination rates also have high case rates

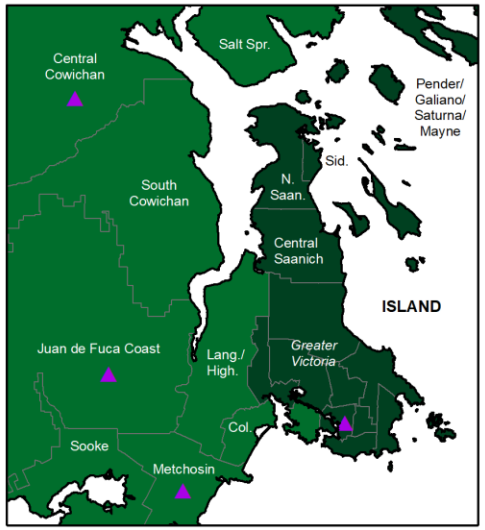
Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA

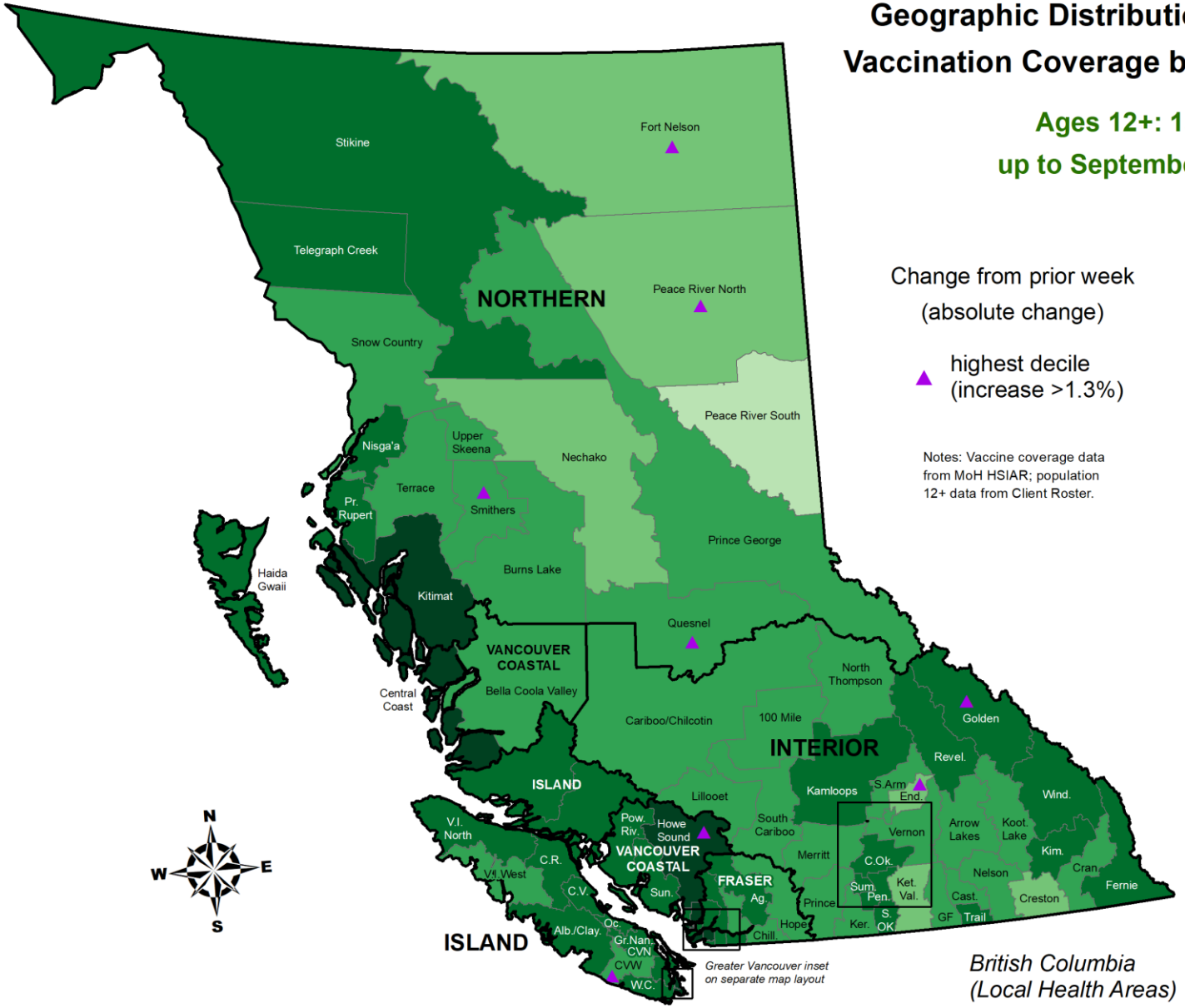
Ages 12+: 1st Dose
up to September 13, 2021

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)





N
W E
S

British Columbia
(Local Health Areas)

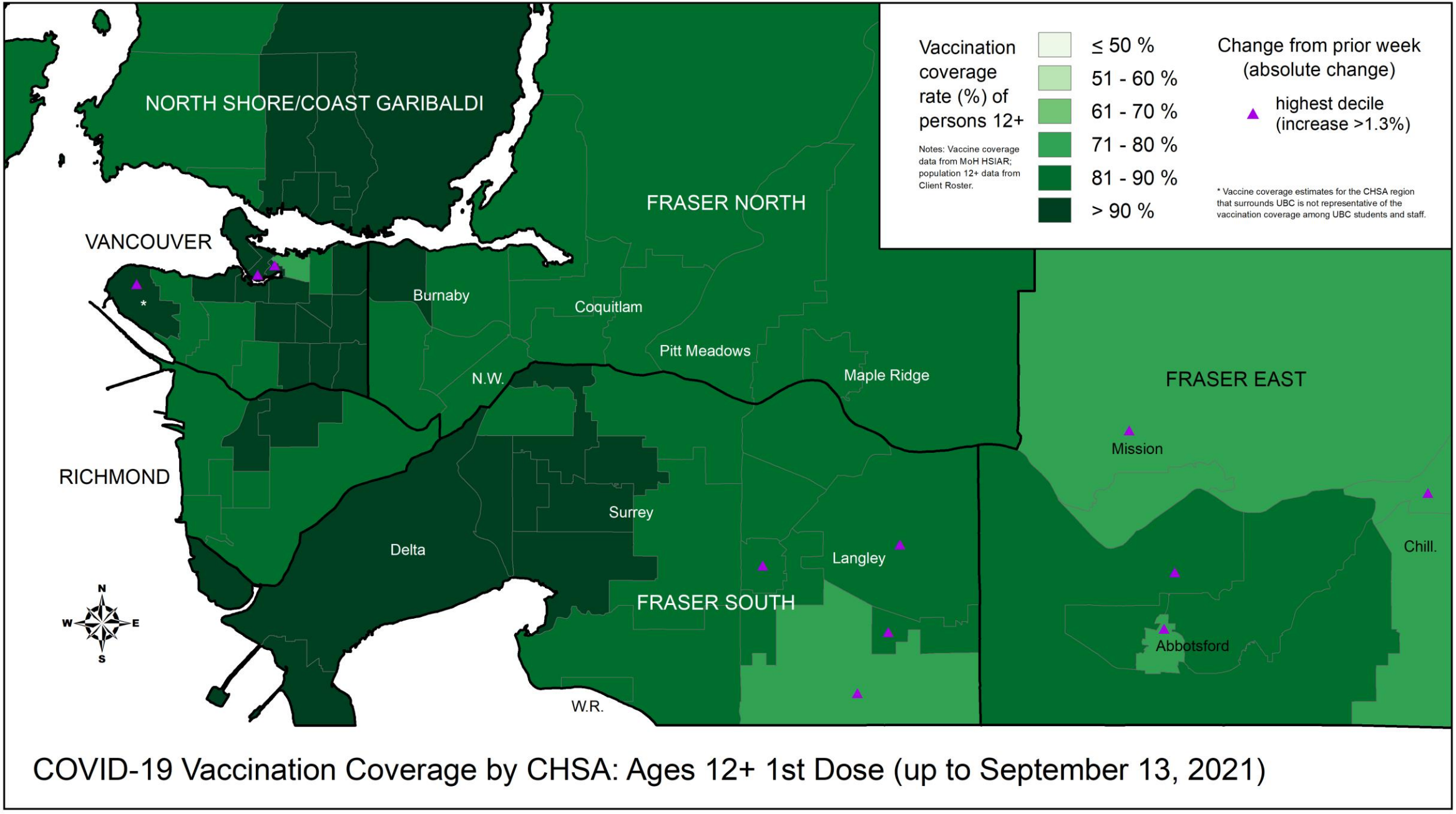
Change from prior week (absolute change)

▲ highest decile (increase >1.3%)

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

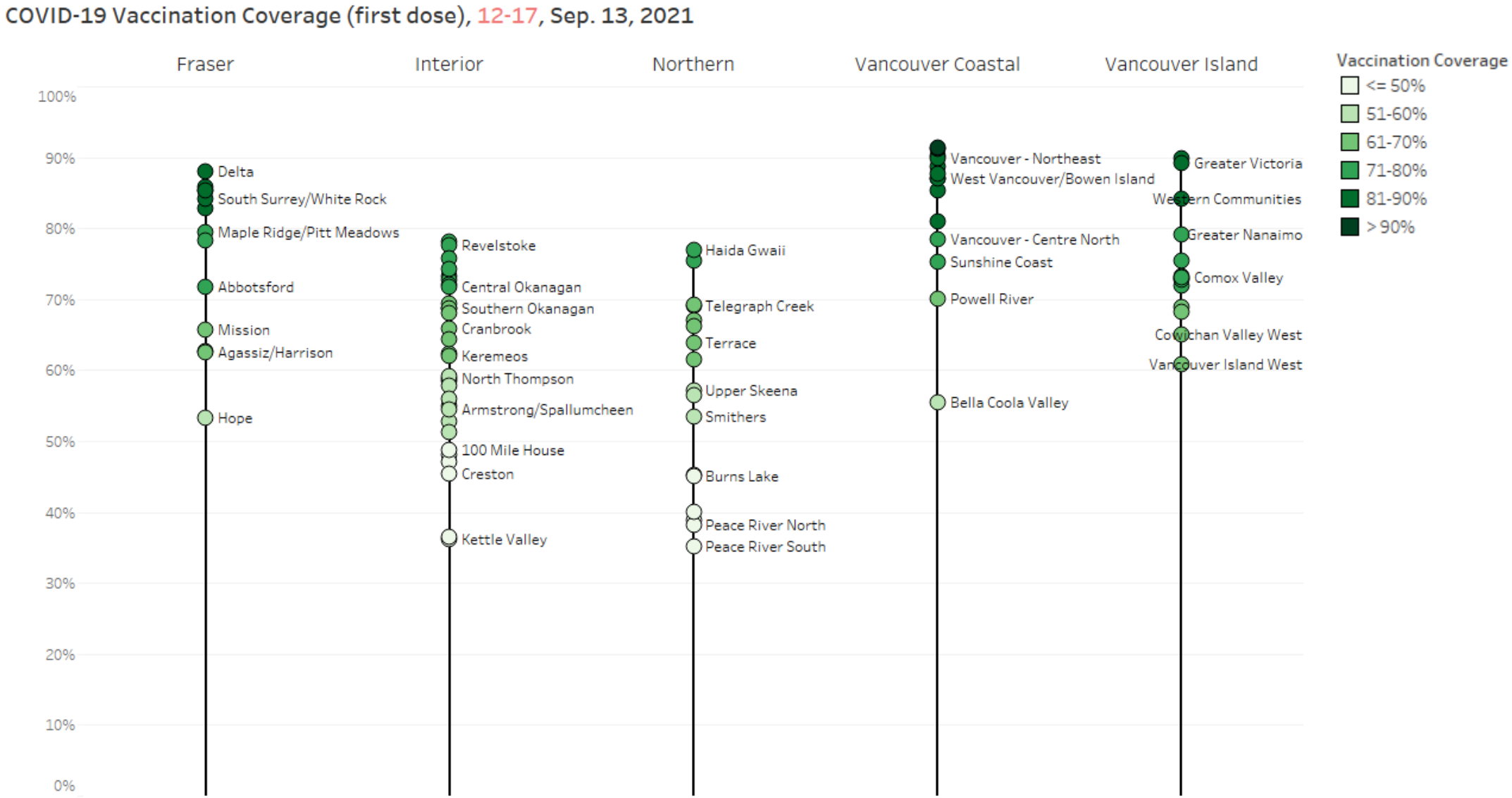
Vaccination coverage rate (%) of persons 12+

- ≤ 50 %
- 51 - 60 %
- 61 - 70 %
- 71 - 80 %
- 81 - 90 %
- > 90 %

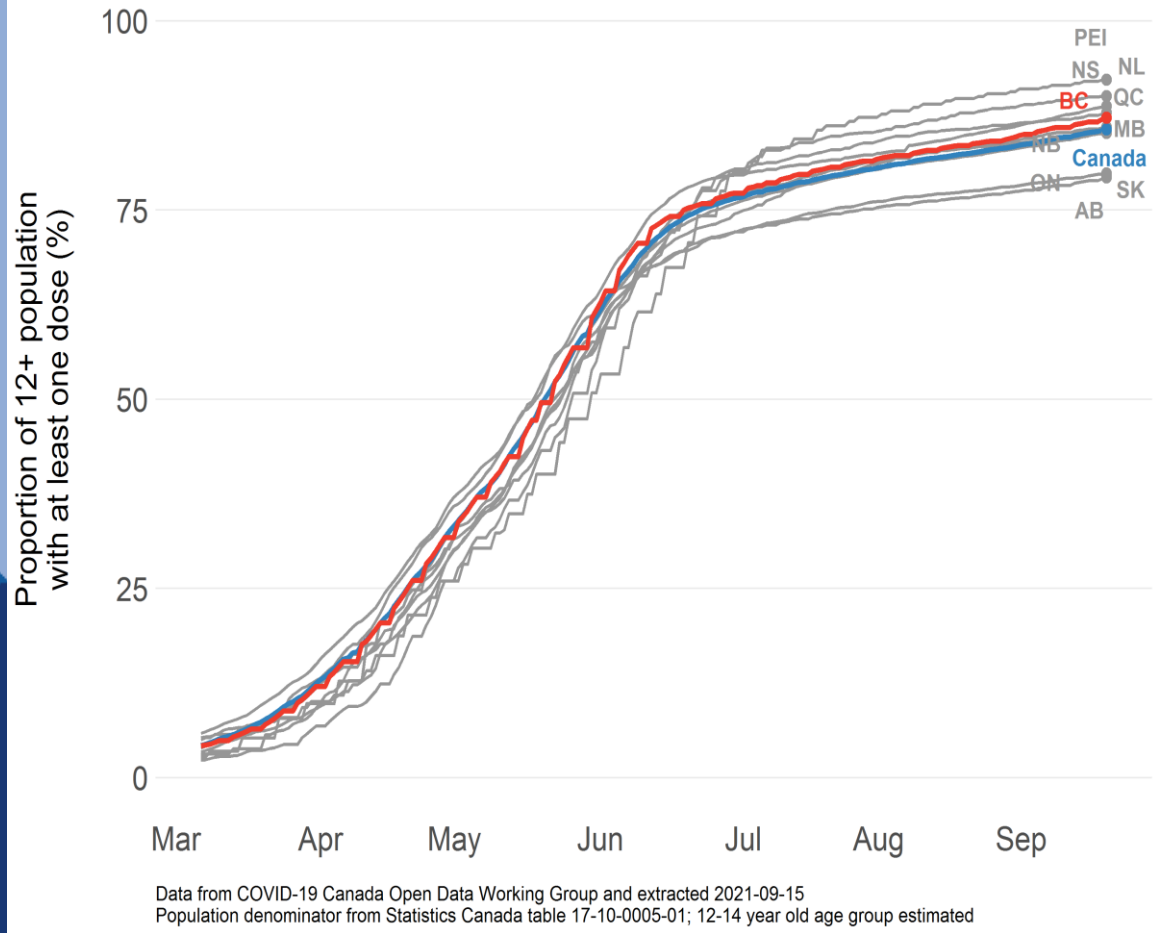


COVID-19 Vaccination Coverage by CHSA: Ages 12+ 1st Dose (up to September 13, 2021)

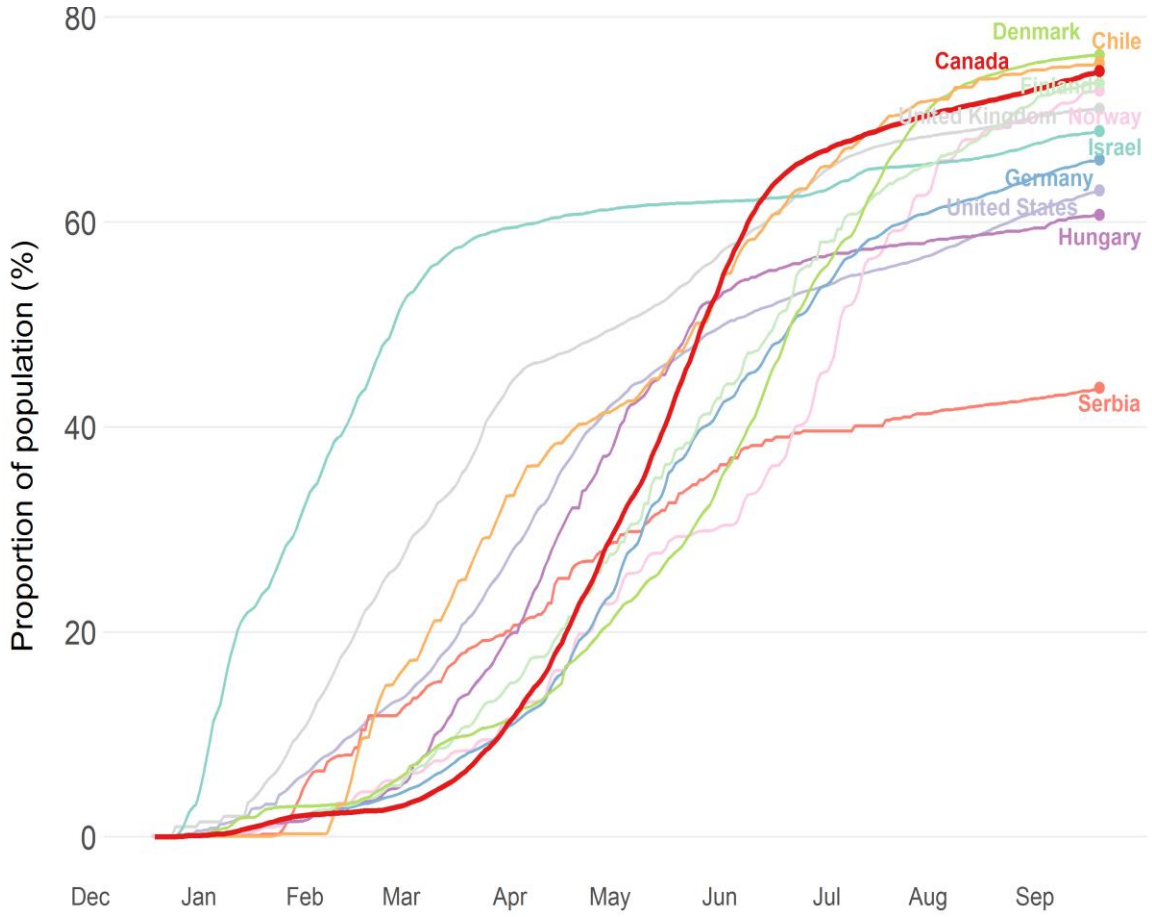
COVID-19 vaccination coverage with 1st dose among 12-17 year olds, by Local Health Area, up to Sept 13, 2021: there is more variation in this age group compared with older age groups



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.



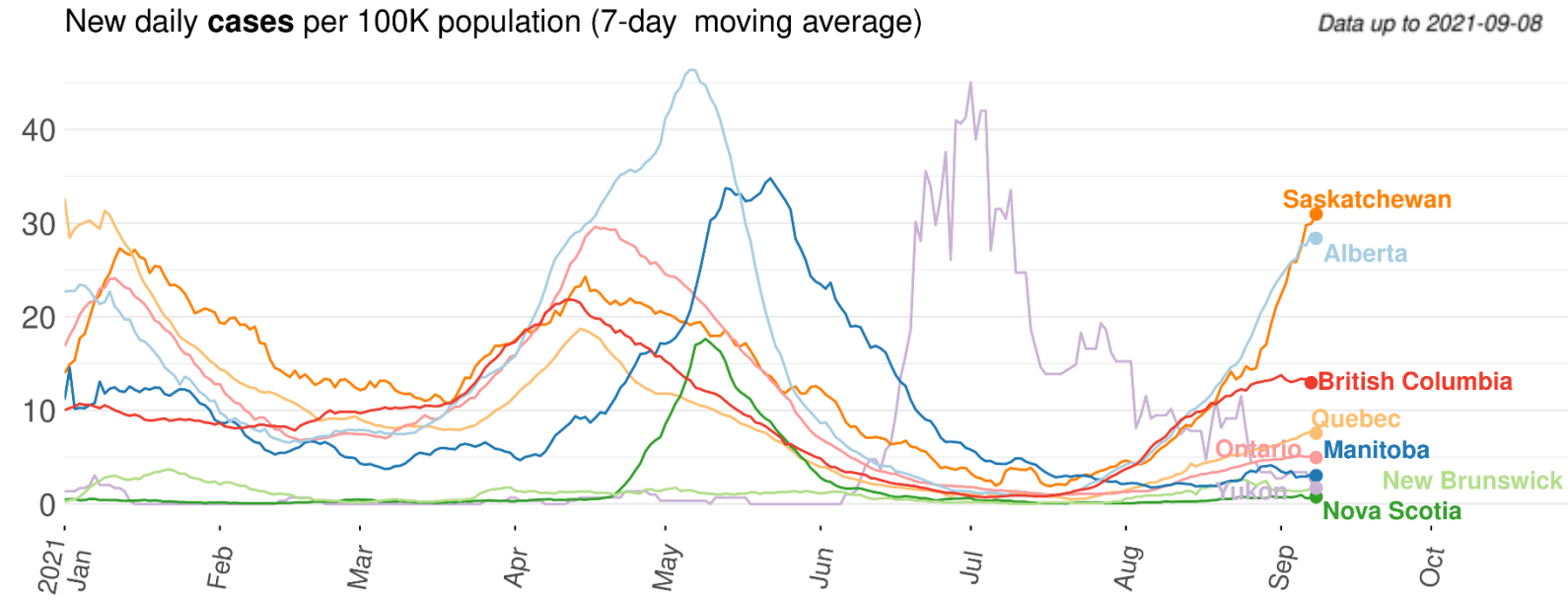
Data from COVID-19 Canada Open Data Working Group and extracted 2021-09-15
Population denominator from Statistics Canada table 17-10-0005-01; 12-14 year old age group estimated

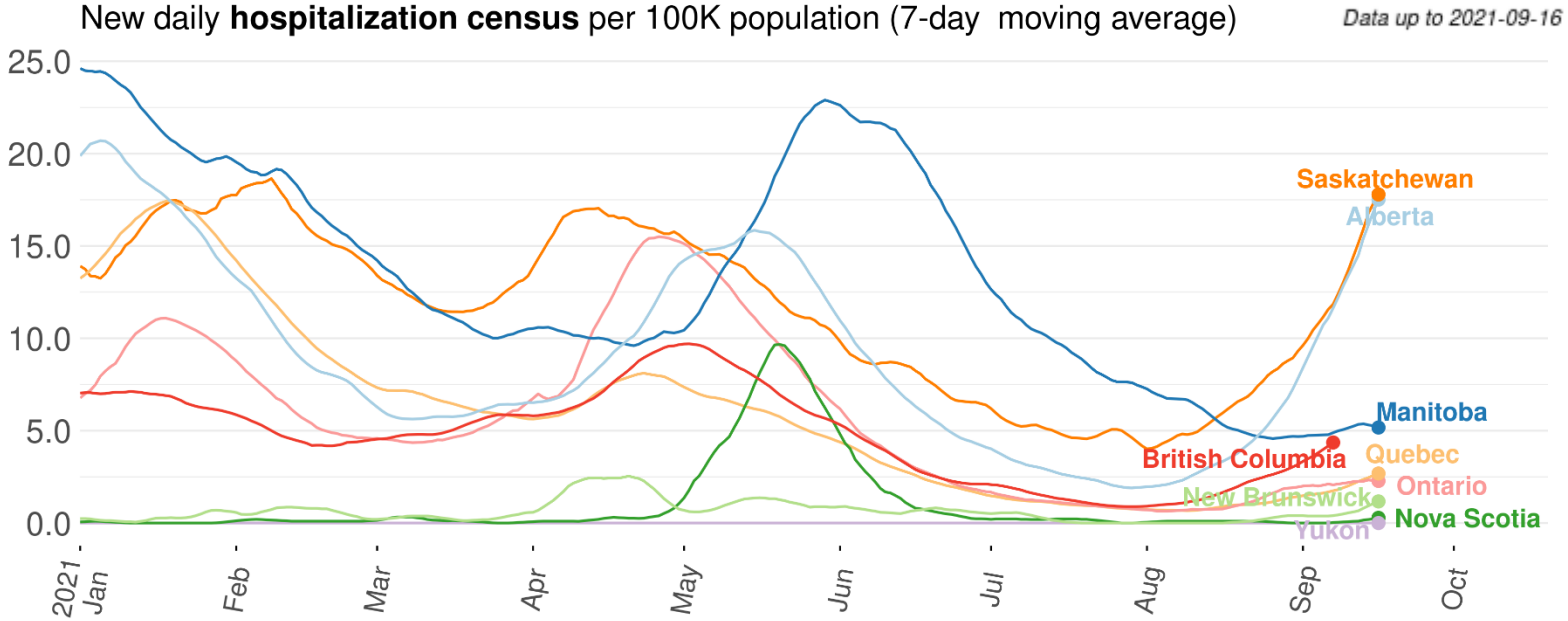


Data from Our World in Data and extracted on 2021-09-15

BC's case rate has flattened and has diverged from the continuing increasing trends in AB and SK, but it is higher than in other provinces.

BC's hospital census is increasing more slowly than AB and SK.

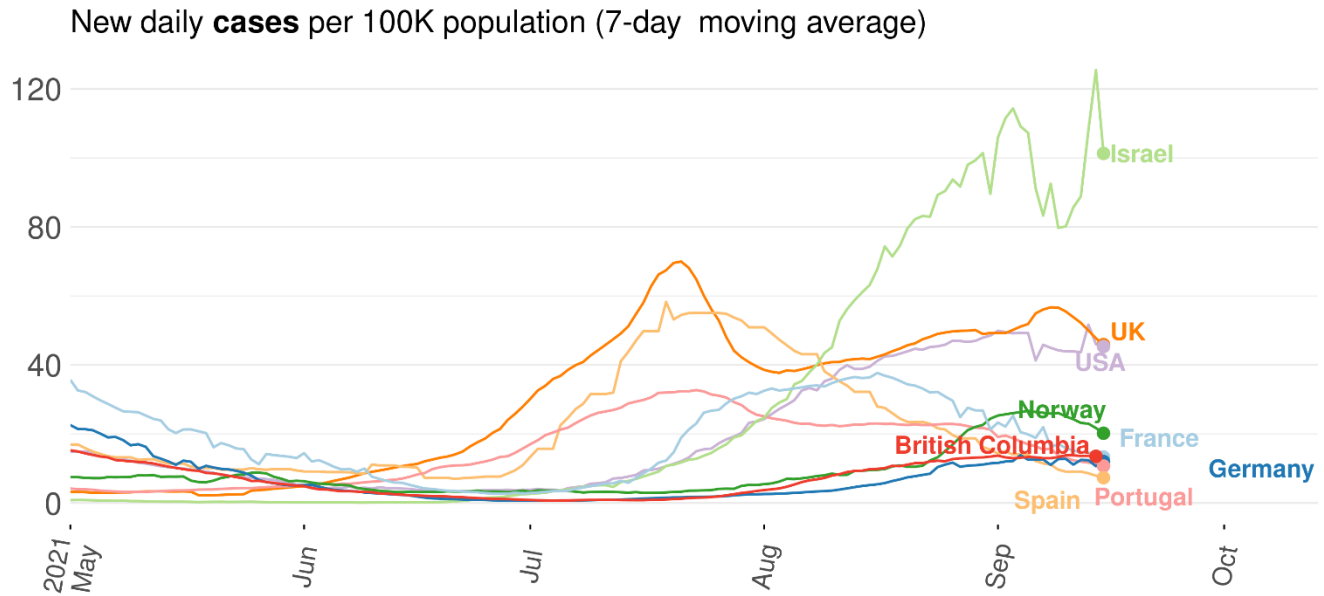


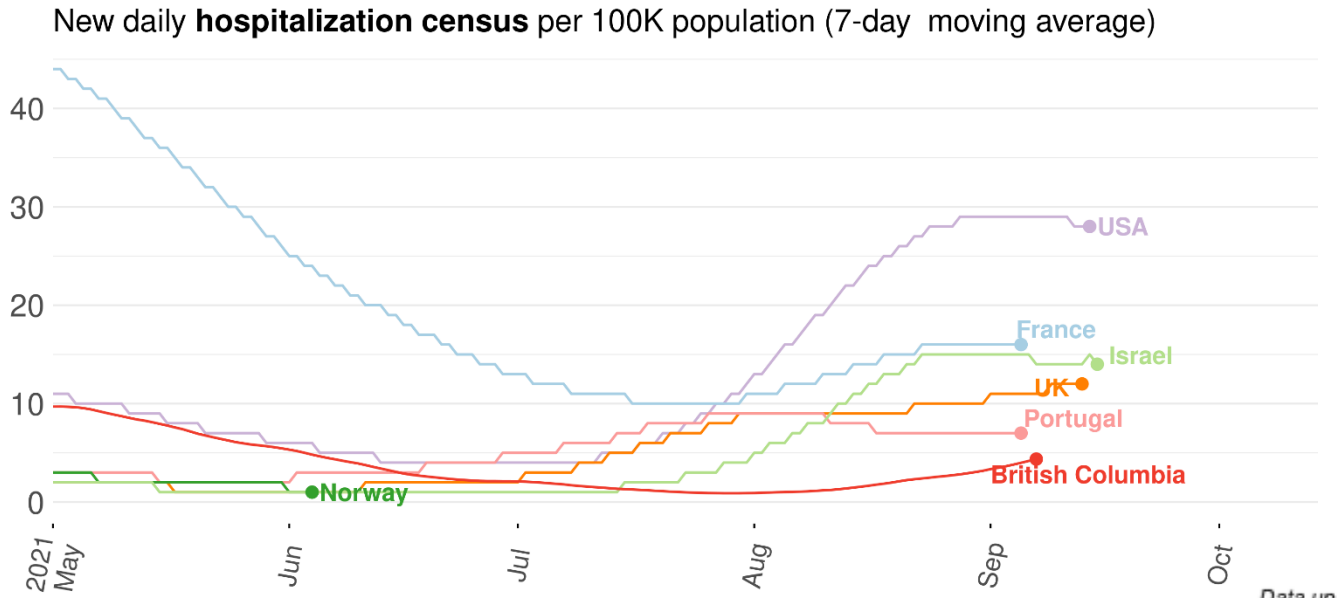


For most up to date figures, and to make your own comparisons, please go to the Epi App

Case rate is stable in the US and UK, and elevated in Israel. Case rates for European countries shown here are stable or declining.

Over the past two months, BC's case rate has been similar to Germany's and lower than US, UK and Israel.





For most up to date figures, and to make your own comparisons, please go to the Epi App

Lab - Key Messages

- Test positivity among publicly funded tests is stable at ≈ 10%
  - Test positivity varies by HA, ranging from 6.9% in VCH to 24% in NH.
  - Test positivity in high in NH (>20%) and IH (>10%)
  - Test positivity is >10% among 5-44 years.
- Publicly funded testing rates were stable this week
- The provincial weekly median turnaround time (time from specimen collection to lab result) remains low, at 15 hours indicating good testing capacity; 1 in 4 tests took > 21 hours to result.
- Delta is the most prevalent COVID-19 variant in BC representing 99.5% of all sequenced specimens in most recent week.

Weekly Summary of ALL lab tests performed

3,574,221	total specimens tested
78,384	new this epi week
183,472	total positive specimens
5,201	new positive this epi week
15 hr	mean turnaround time (TAT)
13 [9-21]	Median [Q1 – Q3] TAT

⬇6% relative to last week

6.6% positivity
⬆0.7% absolute change from last week

⬇ 3% TAT relative to last week

Weekly Summary of Lab tests paid Publicly

2,700,534	total specimens tested
52,840	new this epi week
181,233	total positive specimens
5,121	new positive this epi week

⬇ 1% relative to last week

9.7% positivity
⬆ 0.6% absolute change from last week

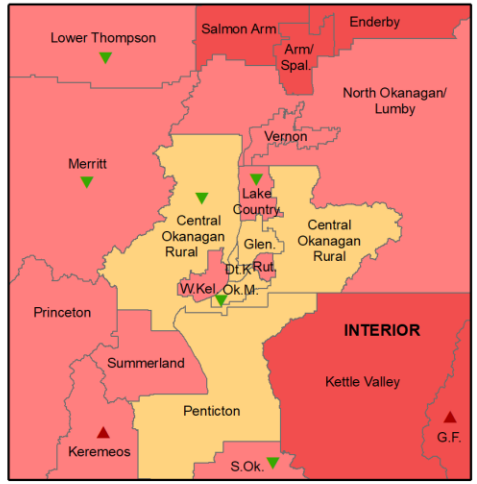
Data source: PLOVER extract at 10:30am on September 14, 2021.
Epi week 36 (Sep 5 – Sep 11)

BC Centre for Disease Control

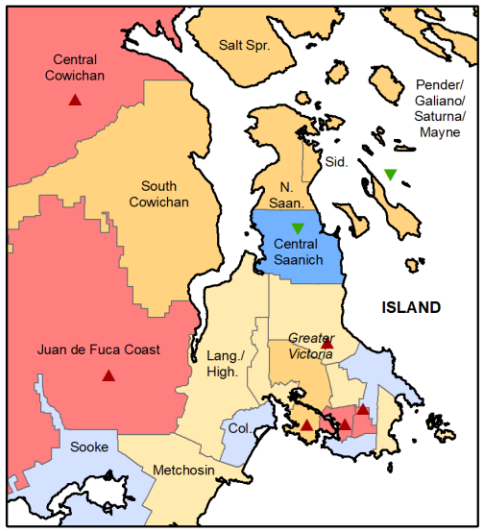
Geographic Distribution of COVID-19 Testing Positivity by LHA and CHSA

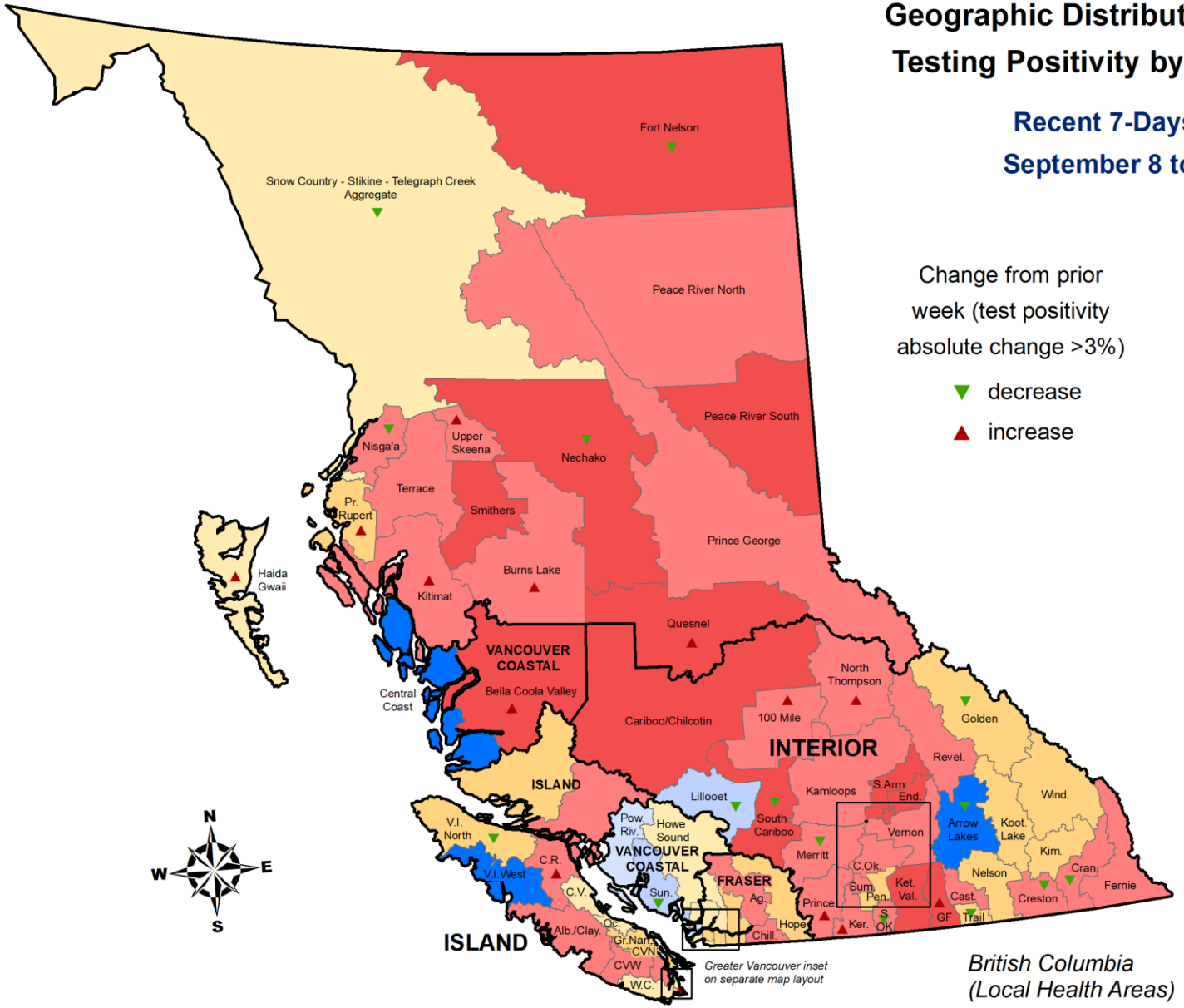
Recent 7-Days Testing
September 8 to 14, 2021

Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)





British Columbia
(Local Health Areas)

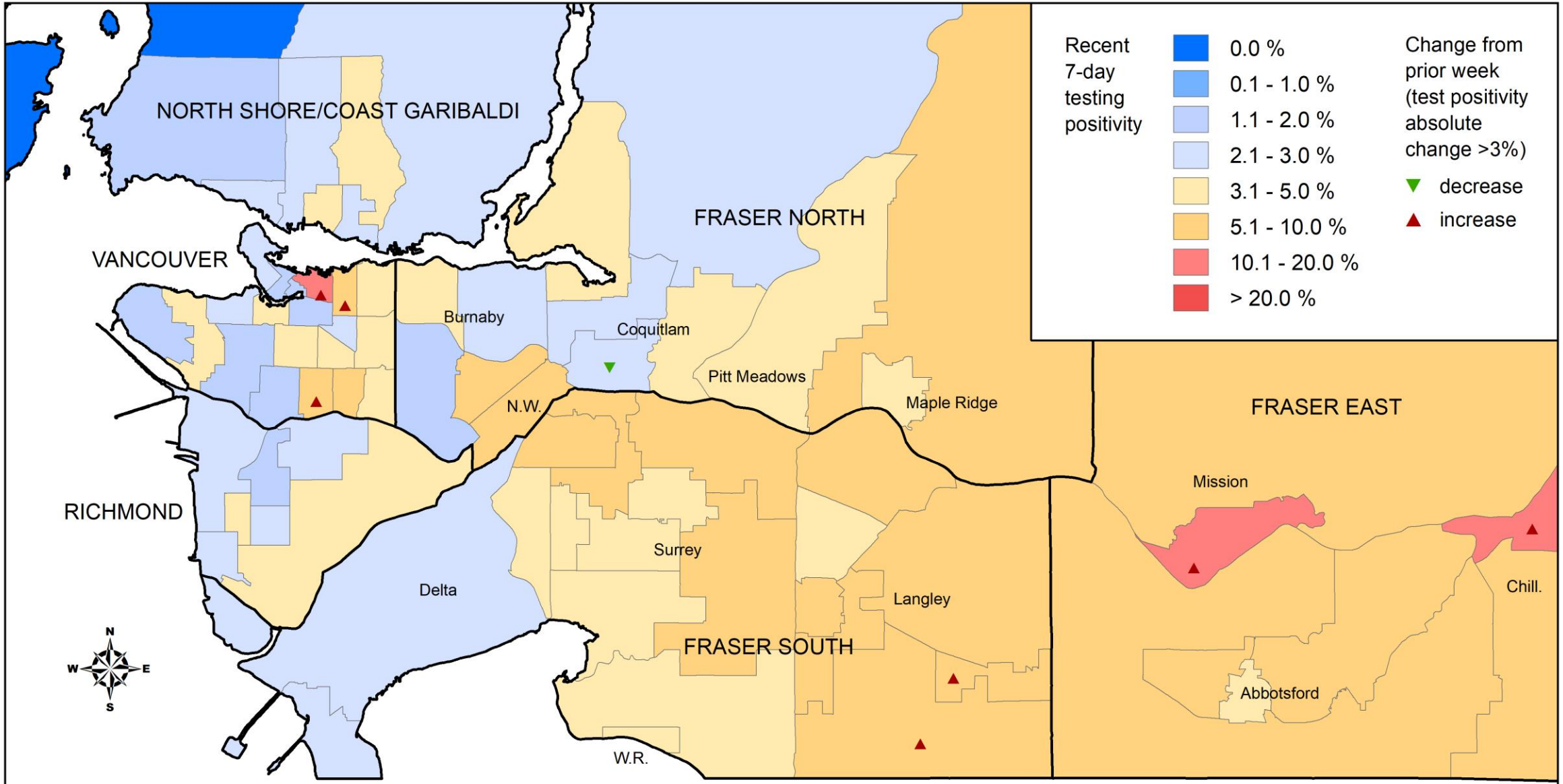
Change from prior week (test positivity absolute change >3%)

- ▼ 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 %

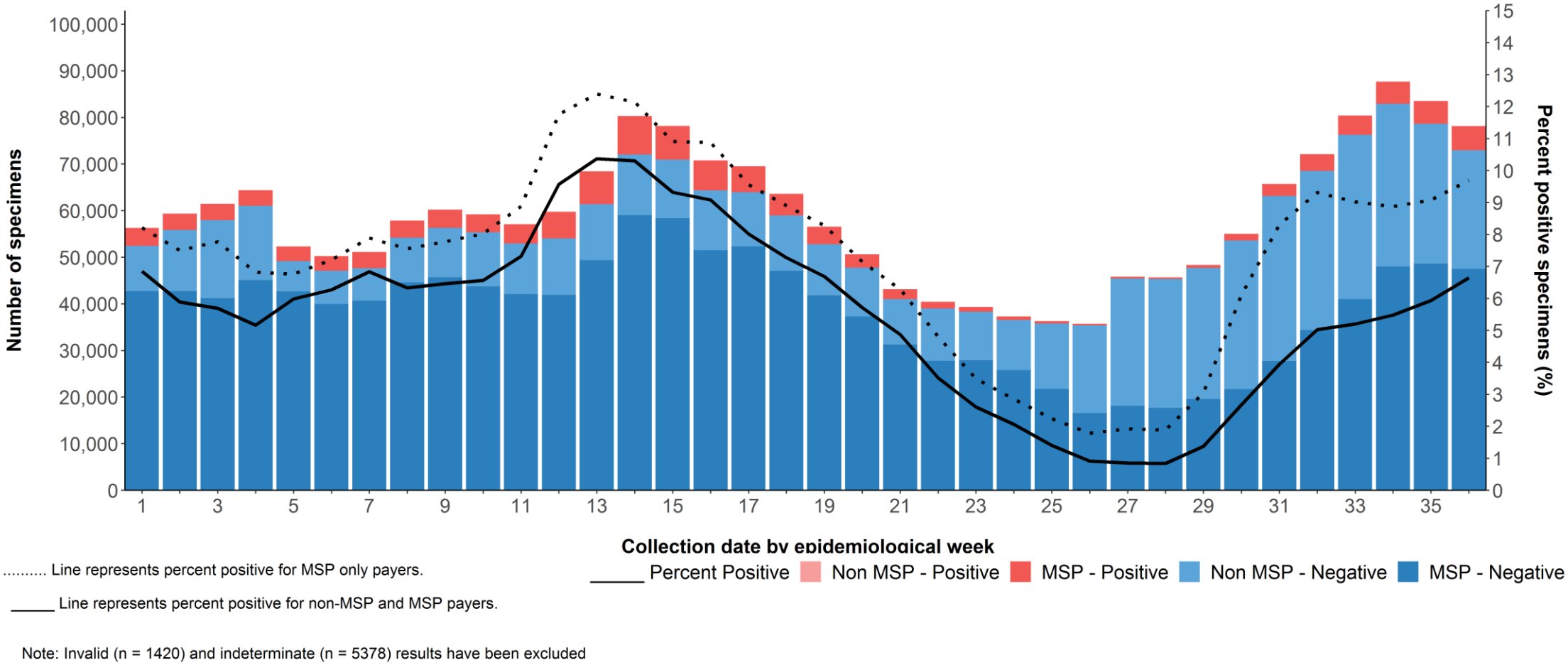
Data source: BCCDC Public Health Laboratory PLOVER system (all tests performed). Data are by testing result date, and location of client's residence or if missing, physician's address.



COVID-19 Recent 7-Day Test Positivity by CHSA (September 8 to 14, 2021)

Includes all tests

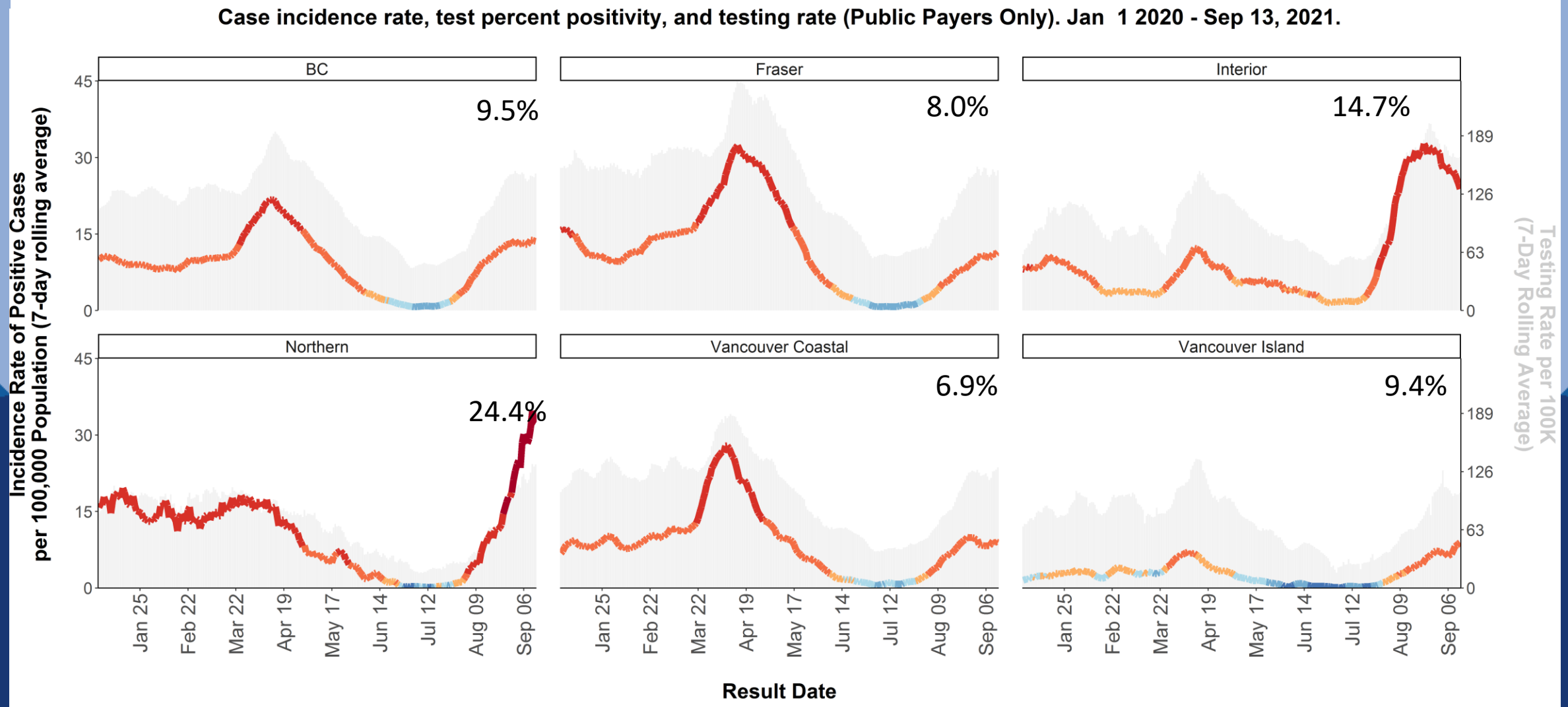
Among publicly funded tests: percent positivity is stable at ~10%, and number of tests is stable.



Note: Invalid (n = 1420) and indeterminate (n = 5378) results have been excluded

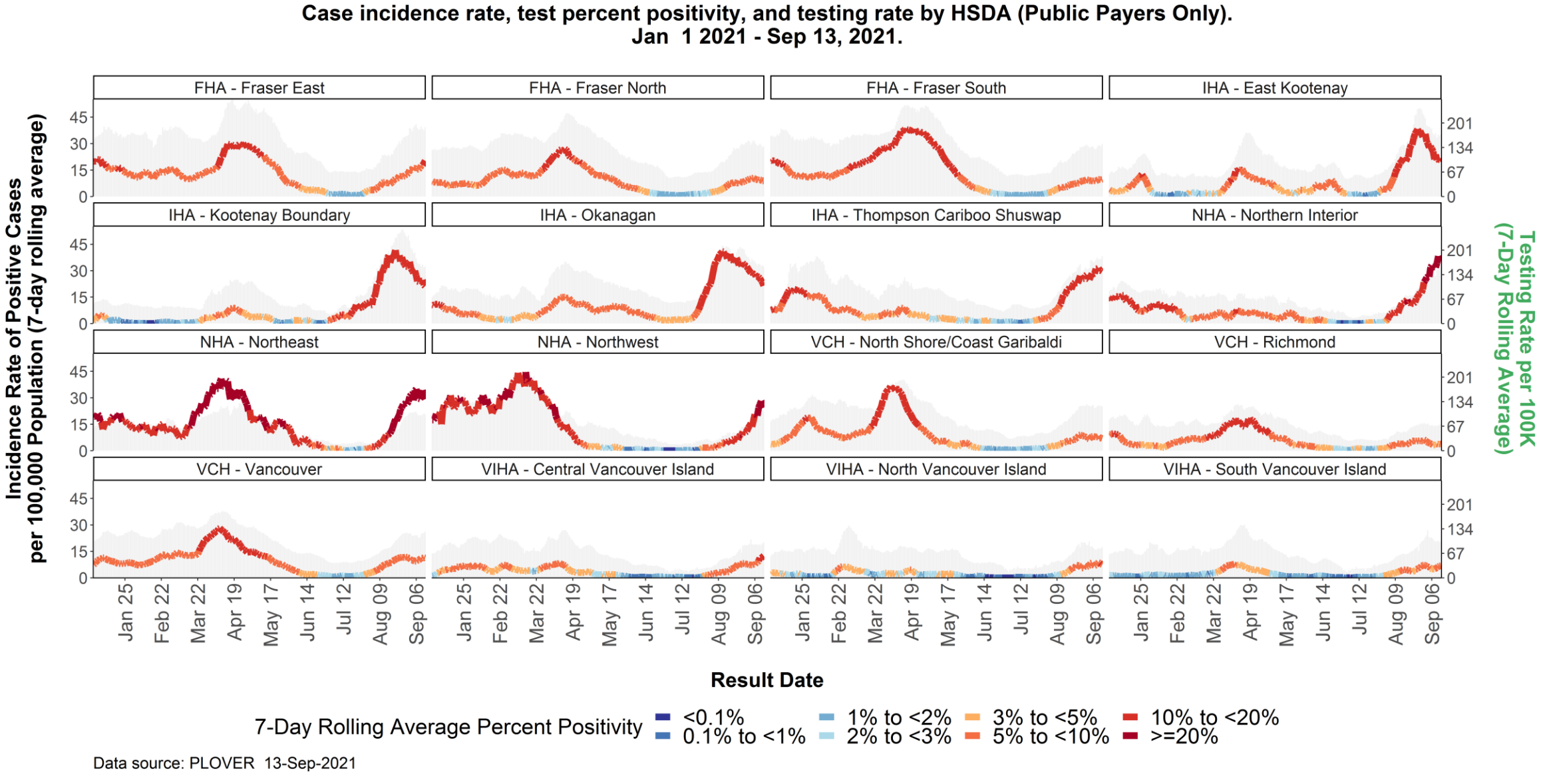
Data source: PLOVER 15-Sep-2021

NH case incidence continues to increase considerably and has the highest test positivity since the start of the pandemic. Test positivity is highest in Northern (25%) and Interior (16%).



R 13-Sep-2021

Test positivity continues to be high in Interior and Northern HSDAs

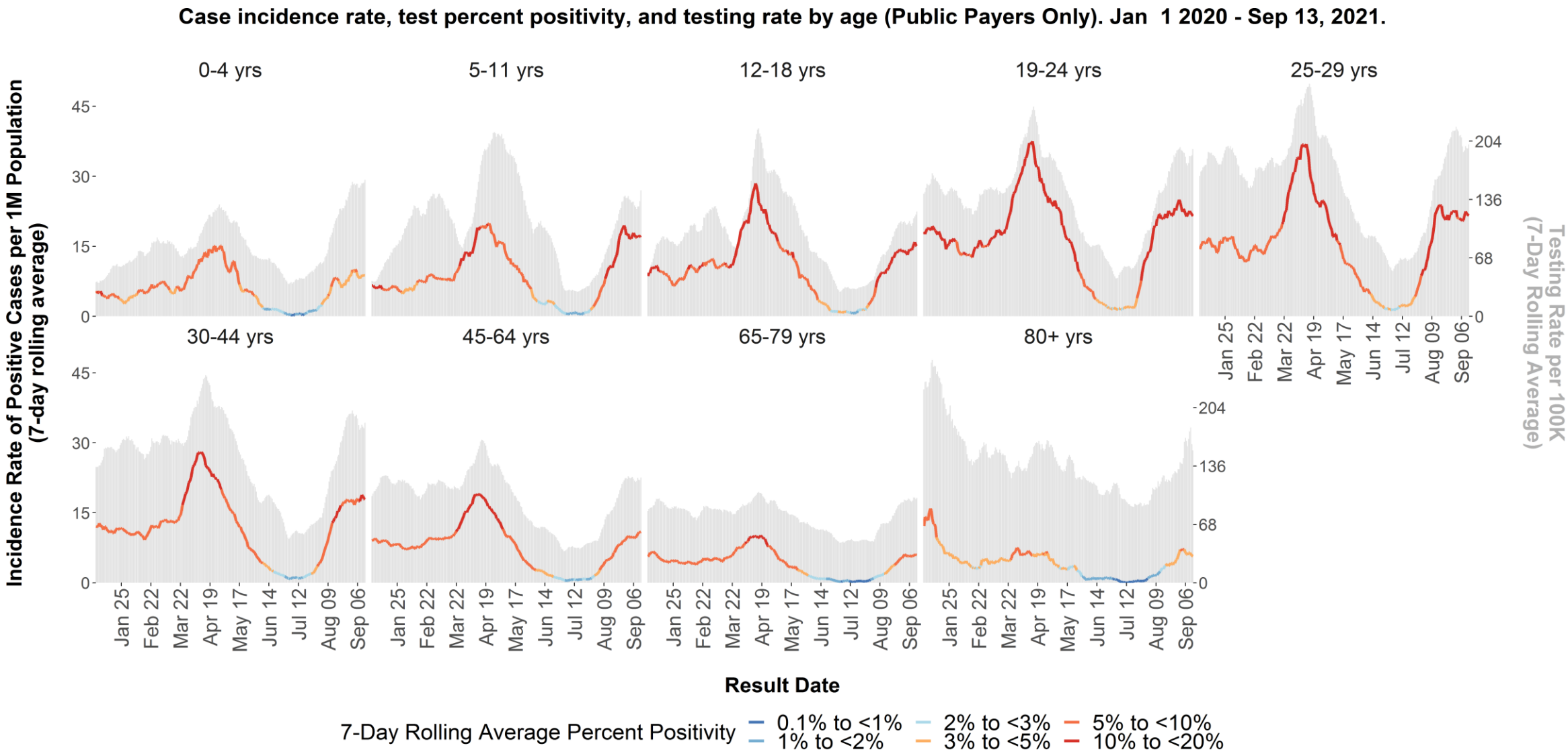


Data source: PLOVER 13-Sep-2021

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

BC Centre for Disease Control

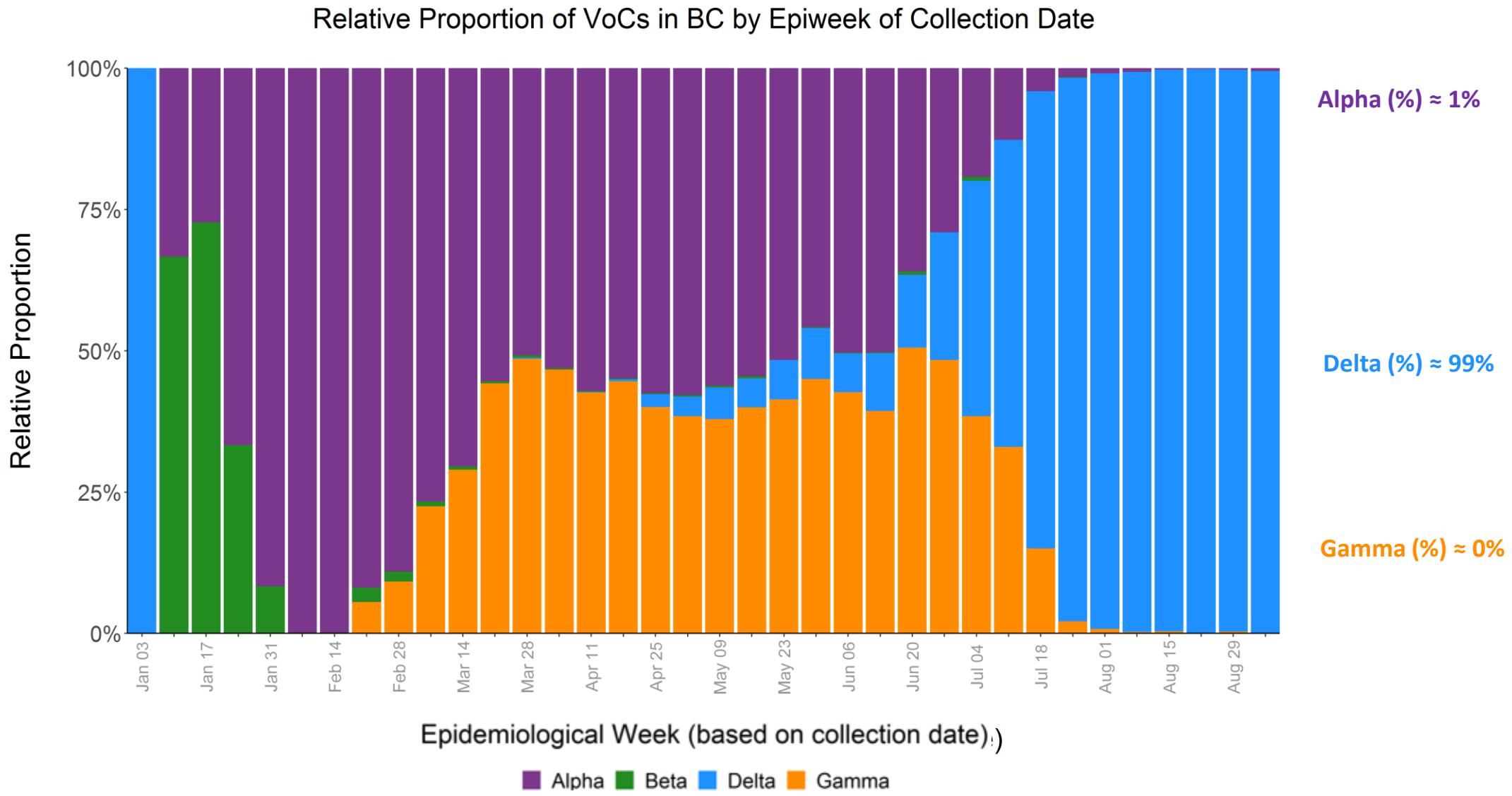
Test positivity differs by age group and is >10% among 5-44 years



Data source: PLOVER 13-Sep-2021

BC Centre for Disease Control

Among sequenced VOC samples provincially based on information for September 5 to 11, the dominant VOC continues to be Delta > 99%



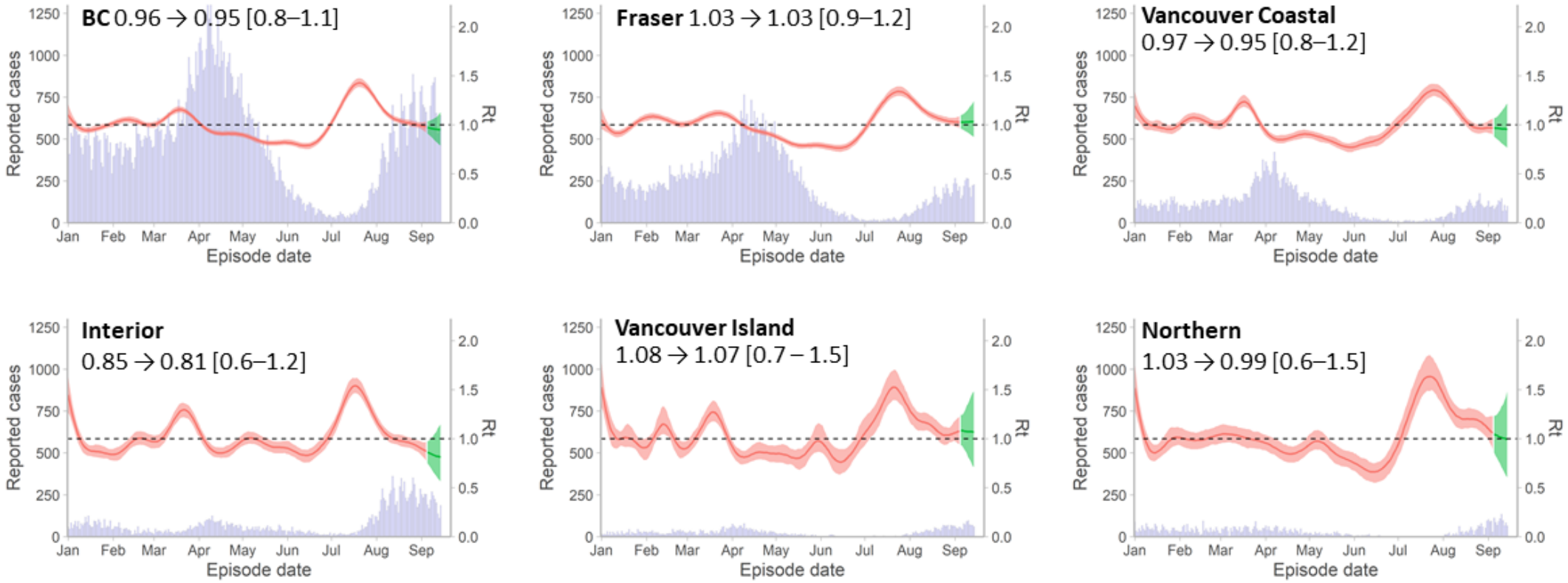
Alpha (%) ≈ 1%

Delta (%) ≈ 99%

Gamma (%) ≈ 0%

Dynamic modeling: recent trends

Modelling indicates that R_t is near 1 in all regions. 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 Sept 14, 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. Recent trend shown comparing median Rt estimate from (last week → this week; 5% - 95% credible interval). Only January 2021 onward shown here. Data source: BCCDC HA linelist.

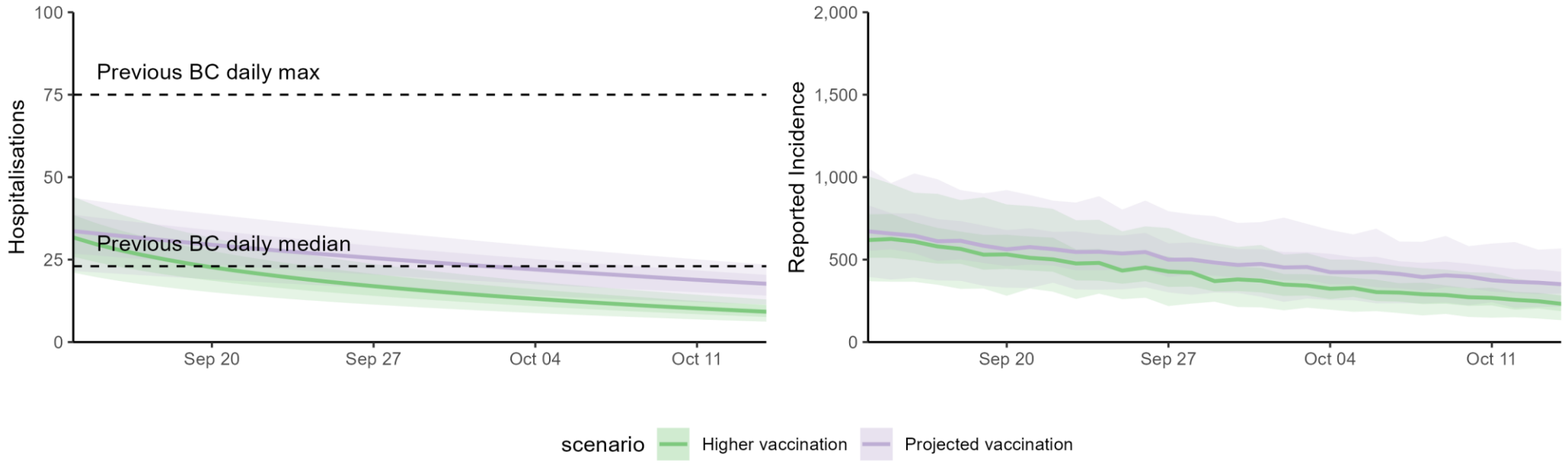
Modeling scenarios - overview

- All scenarios begin September 16th, 2021 with a one-month time horizon. Output is limited to short-term projections only because uncertainty increases greatly over time and it is unrealistic to assume no changes to policies or behaviour.
- Three transmission scenarios are shown based on most recent estimates and range of R_t for BC. A projection of the current vaccination rate is compared to a potential higher vaccination rate for each scenario. Importantly, *recent public health measures may further reduce transmission and decrease the likelihood of the upper range scenario*
- Model scenarios are based on a plausible range of vaccine effectiveness including reduction in risk of infection, reduction in risk of onward transmission if infected, and reduction in risk of hospitalization.
- It is assumed that all eligible and willing individuals will have completed their two-dose vaccination schedule and sufficient time has passed such that they are fully immunized.
- Reduction in infection due to vaccination is 80%, reduction in onward transmission ranges from 40-45%, and reduction in hospitalization ranges from 95-99%. Additionally, the increased severity of the delta variant ranges from 0-125%. Initial number of infections also varies over a plausible range. Reduction in reporting infection due to vaccination ranges from 80-95%. Vaccination parameters are comparable with other established models [1], [2], [3]
- Projected vaccination coverage scenarios were compared to where coverage in each age group is additionally increased by a level consistent with individual hesitancy derived from the COVID SPEAK survey, and an additional counterfactual scenario which considers if none of the population were vaccinated.

Scenario	12 - 17	18 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	> 75
Projected vaccination	80%	79%	83%	83%	85%	86%	90%	89%
Higher vaccination	87%	87%	85%	86%	89%	95%	98%	99%

Lower range scenario

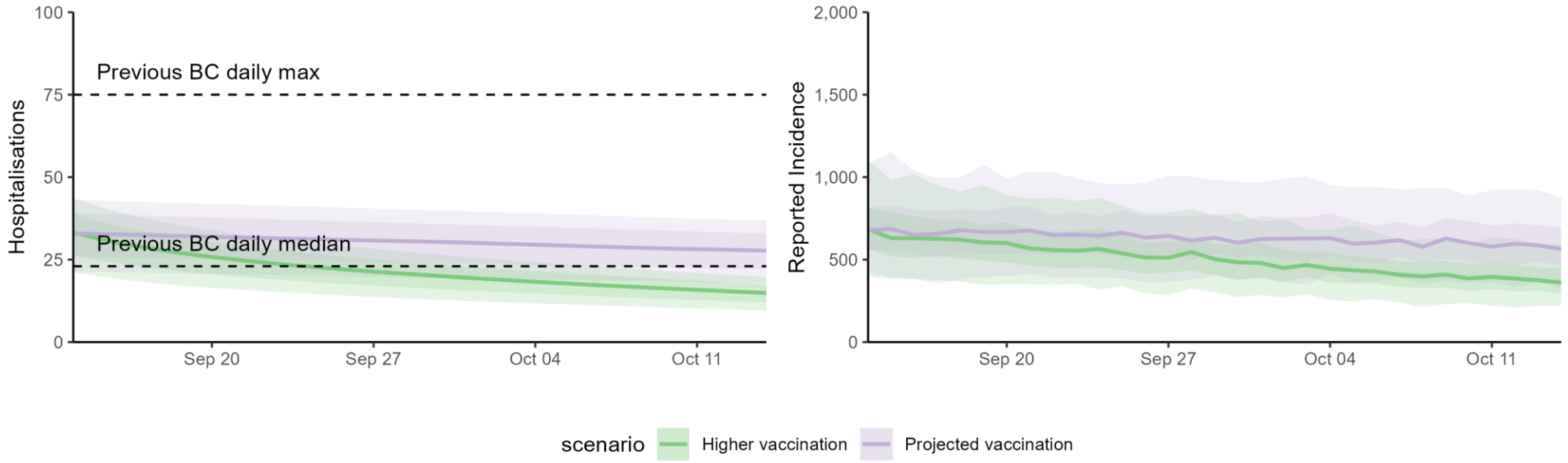
Scenario: lower transmission levels, equivalent to an initial R_t = 0.79 in the projected vaccination scenario and R_t = 0.7 in the potential (higher) vaccination scenario. Currently, R_t for BC is 0.95 (0.79 - 1.13).



Shading indicates uncertainty due to effectiveness of vaccination, showing 90% and 50% confidence intervals.

Mid-range scenario

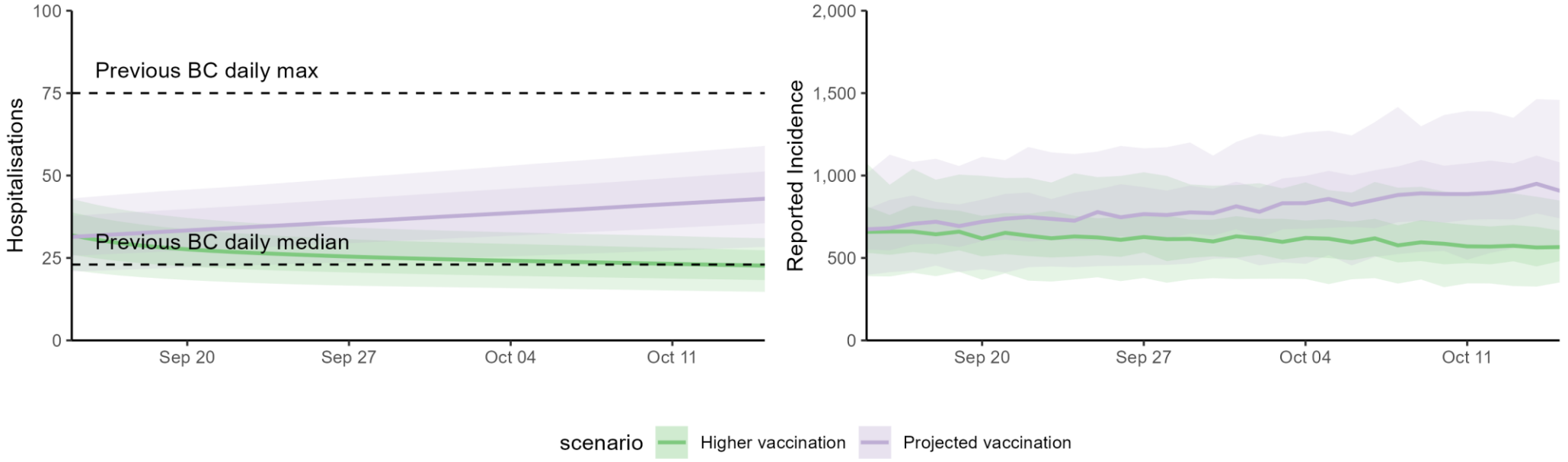
Scenario: moderate transmission levels, equivalent to an initial R_t = 0.95 in the projected vaccination scenario and R_t = 0.84 in the potential (higher) vaccination scenario. Currently, R_t for BC is 0.95 (0.79 - 1.13).



Shading indicates uncertainty due to effectiveness of vaccination, showing 90% and 50% confidence intervals.

Upper range scenario

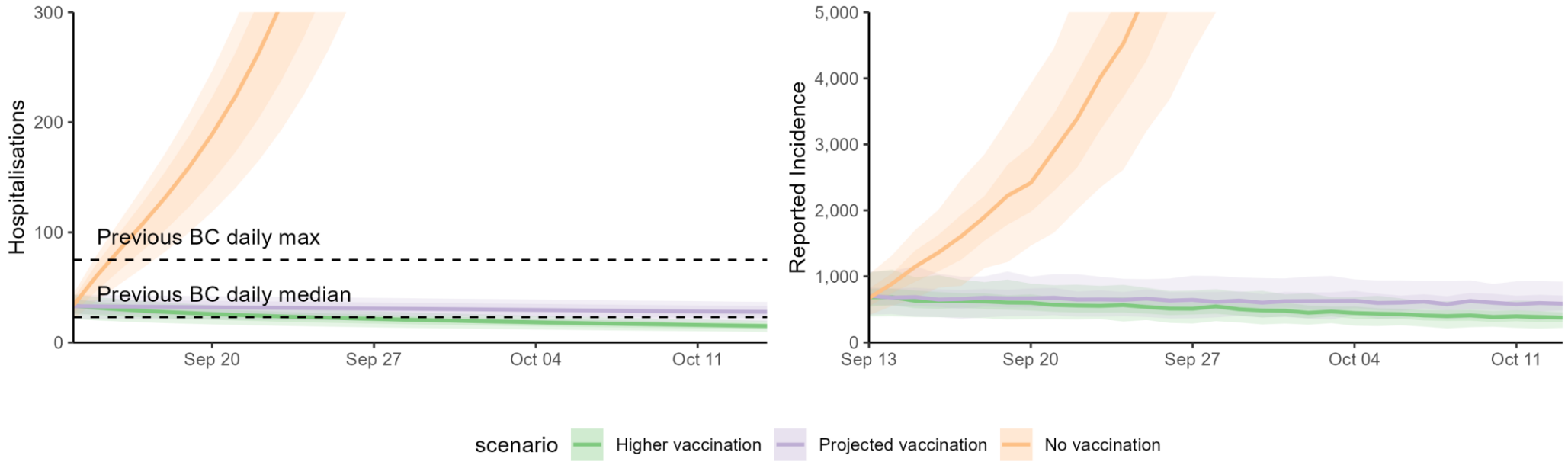
Scenario: moderate transmission levels, equivalent to an initial R_t = 1.13 in the projected vaccination scenario and R_t = 1 in the potential (higher) vaccination scenario. Currently, R_t for BC is 0.95 (0.79 - 1.13). **Note: scenarios do not include further public health measures that may be implemented to reduce transmission.**



Shading indicates uncertainty due to effectiveness of vaccination, showing 90% and 50% confidence intervals.

Mid-range scenario - comparison to no vaccine

Scenario: Comparing mid-range transmission scenario to a no-vaccination scenario (equivalent to an R_t = 2.79). **Note: scenarios do not include further public health measures that may be implemented to reduce transmission.**



Shading indicates uncertainty due to effectiveness of vaccination, showing 90% and 50% confidence intervals.

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