

COVID-19 Update: *December 14, 2021*



Stay Informed Via These Resources:

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

Symptom Self-Assessment:

covid19.thrive.health

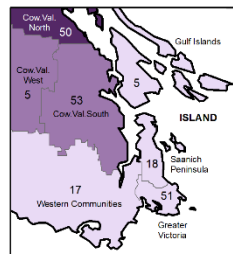


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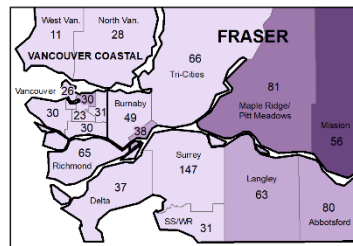
Geographic distribution of COVID-19 case rates by local health area of residence, Nov 28 to Dec 4, 2021

Epi-Week 48 Cases
Nov 28 to Dec 4, 2021

South Vancouver Island Inset



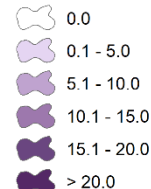
Greater Vancouver Inset



Additional cases with missing address information:
7 - Interior Health
1 - Fraser Health
1 - Vancouver Coastal Health
2 - Island Health
1 - Northern Health

Geographic Distribution of COVID-19 by Local Health Area of Case Residence

Average daily rate per 100,000 population by LHA



n = number of cases

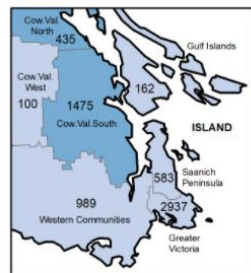
Notes: Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data source: Public Health Reporting Data Warehouse (PHRDW) integrated COVID dataset; we operate in a live database environment and case information from the health authorities are updated as it becomes available. How to interpret the maps: The map illustrates the geographic distribution of reported cases for the most recent epidemiological week (from Sunday to Saturday). Local Health Areas (LHA) with higher rates are illustrated in darker colour shading. The number of reported cases appears in each LHA. Note that the number of cases in the LHA may not represent the location of exposure (e.g. people who acquired disease while traveling or working elsewhere), and that not all COVID-19 infected individuals are tested and reported; the virus may be circulating undetected in the community, including in areas where no cases have been identified by public health. Map created December 8, 2021 by BCCDC for public release.

Geographic distribution of COVID-19 cumulative case rate by local health area of residence

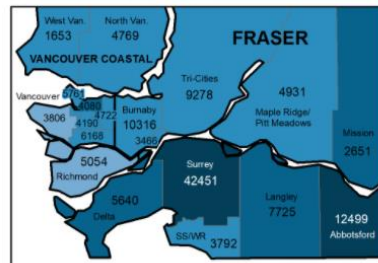
1 Jan 2020 – 30 Nov 2021

Cumulative Cases
January 2020 to November 2021

South Vancouver Island Inset



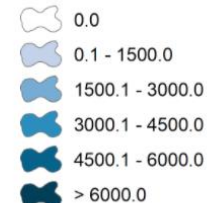
Greater Vancouver Inset



Additional cases with missing address information:
59 - Interior Health
85 - Fraser Health
407 - Vancouver Coastal Health
276 - Island Health
81 - Northern Health

Geographic Distribution of COVID-19 by Local Health Area of Case Residence

Rate per 100,000 population by LHA

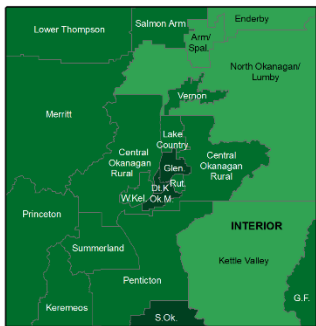


n = number of cases

Notes: Cases are mapped by location of residence; cases with unknown residence and from out of province are not mapped. Data source: Public Health Reporting Data Warehouse (PHRDW) integrated COVID dataset; we operate in a live database environment and case information from the health authorities are updated as it becomes available. How to interpret the maps: The map illustrates the geographic distribution of reported cases from January 1, 2020 to November 30, 2021. Local Health Areas (LHA) with higher rates are illustrated in darker colour shading. The number of reported cases appears in each LHA. Note that the number of cases in the LHA may not represent the location of exposure (e.g. people who acquired disease while traveling or working elsewhere), and that not all COVID-19 infected individuals are tested and reported; the virus may be circulating undetected in the community, including in areas where no cases have been identified by public health. Map created December 8, 2021 by BCCDC for public release.

Geographic distribution of COVID-19 1st dose of vaccination by local/community health area of residence Dec 6, 2021

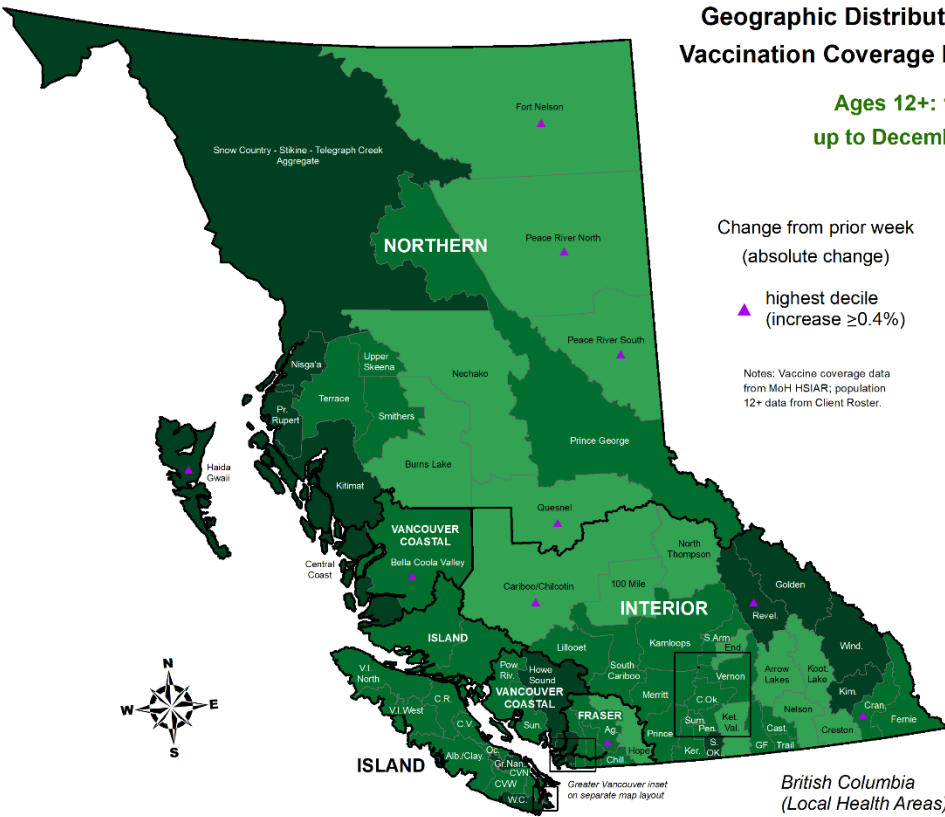
Okanagan Inset
(Community Health Service Areas)



Greater Victoria Inset
(Community Health Service Areas)



Geographic Distribution of COVID-19 Vaccination Coverage by LHA and CHSA Ages 12+: 1st Dose up to December 6, 2021



Geographic distribution of COVID-19 2nd dose of vaccination by local/community health area of residence
Dec 6, 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 12+: 2nd Dose
up to December 6, 2021**


Change from prior week
(absolute change)

highest decile
(increase $\geq 0.7\%$)

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

Vaccination coverage
rate (%) of persons 12+


 ≤ 50 %

 51 - 60 %

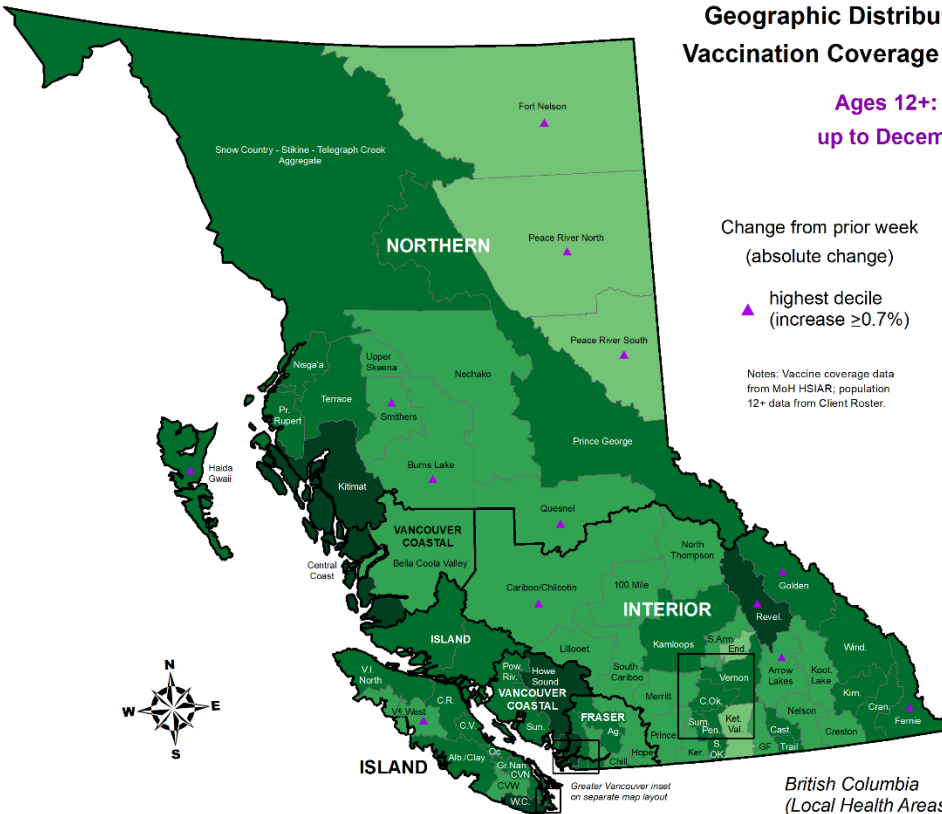
 61 - 70 %

71 - 80 %

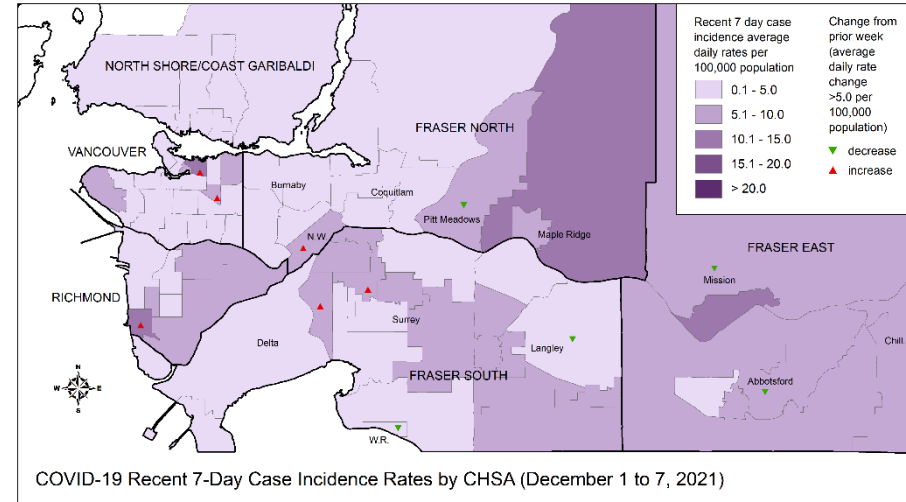
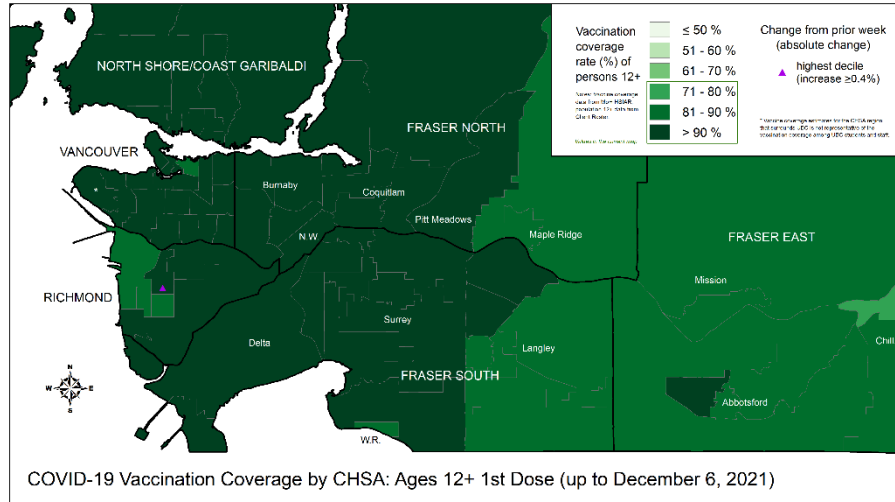
81 - 90 %

 > 90 %

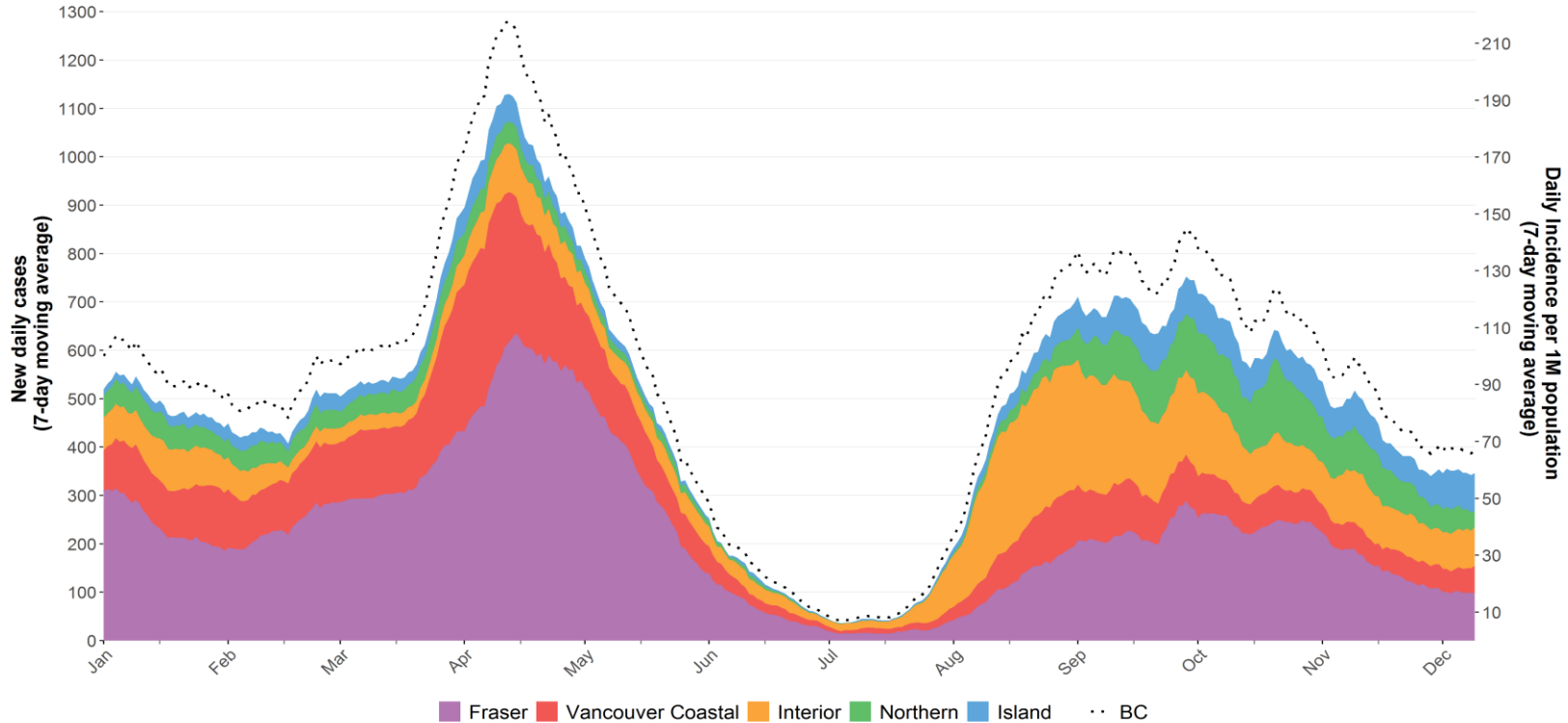
Values in the current map



Geographic distribution of COVID-19 **vaccinations** and **case** rates by local/community health area of residence, Dec 6, 2021

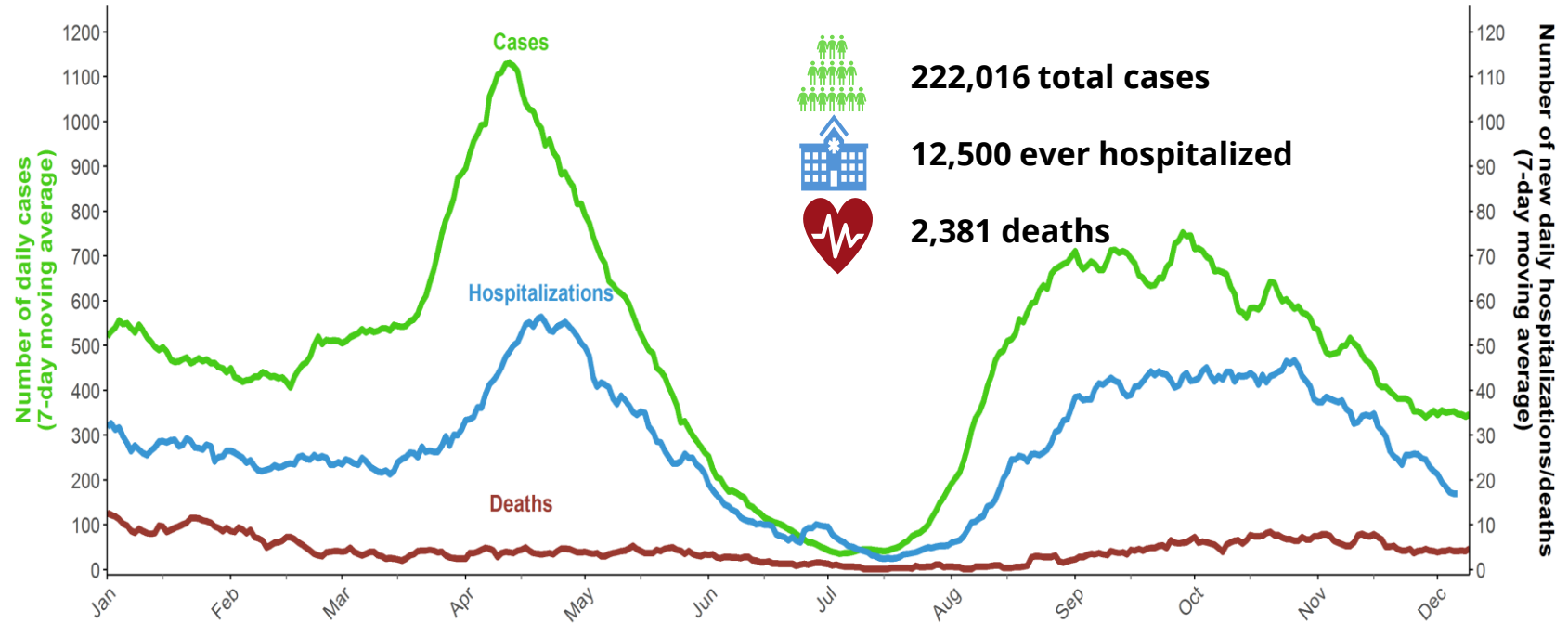


Epidemic curve, COVID-19 cases in BC by health authority, Jan 1- Dec 9, 2021



Daily cases, hospitalizations, and deaths Jan 1 to Dec 9, 2021

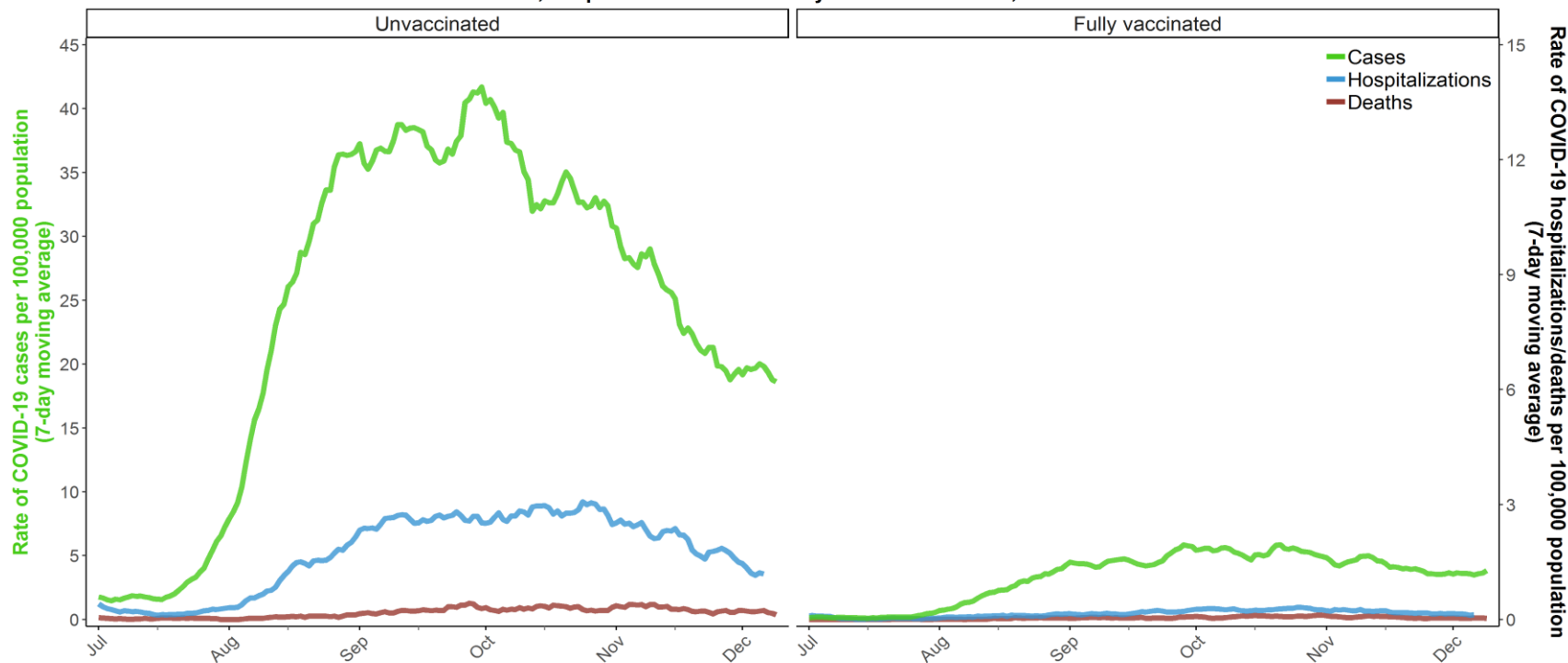
New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Dec 09 2021



* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Dec-10-2021

Rate of cases and hospitalizations by vaccination status, July 1 to Dec 09, 2021

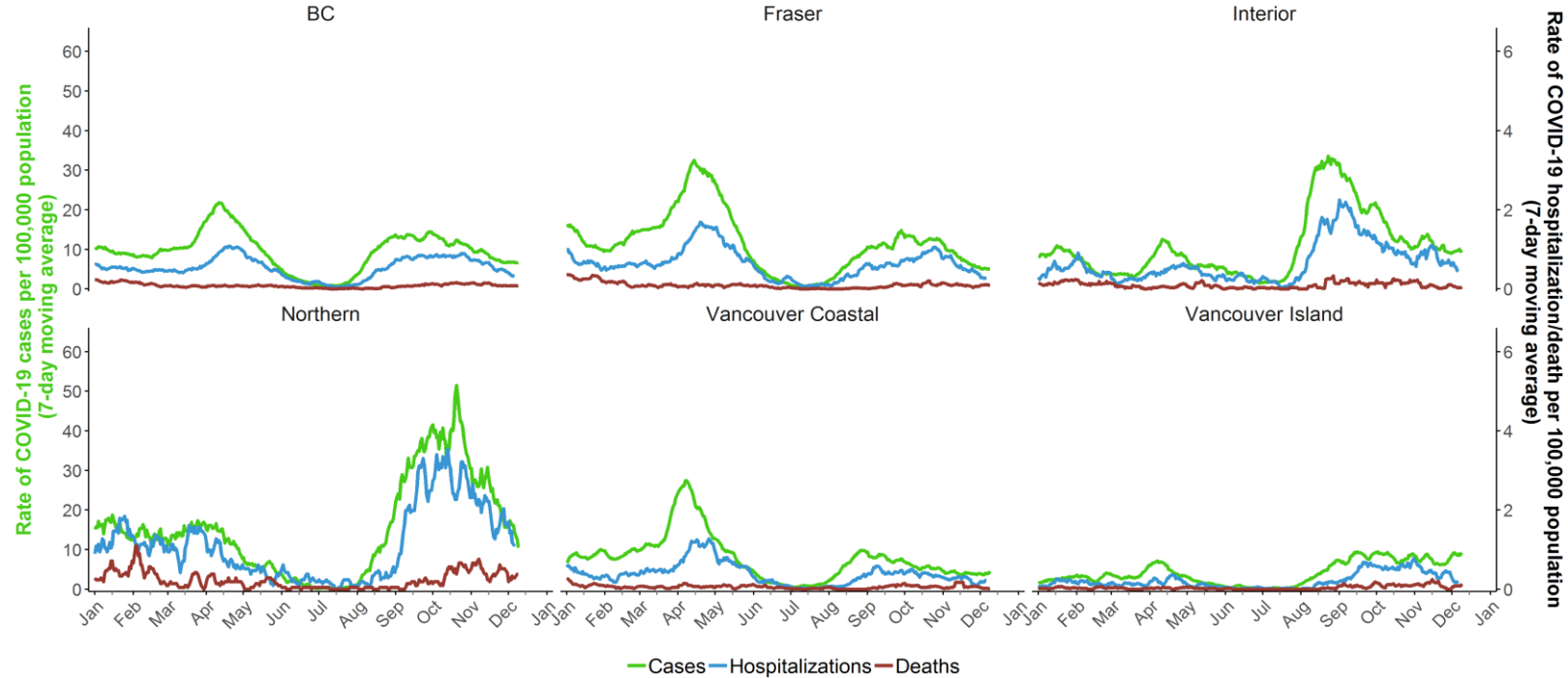
Rate of COVID-19 case, hospitalization and death by vaccination status, Jul 01 2021 - Dec 09 2021



* Data are by surveillance date for cases, death date for deaths, and admission date for hospitalizations
Data source: PHRDW Dec-10-2021

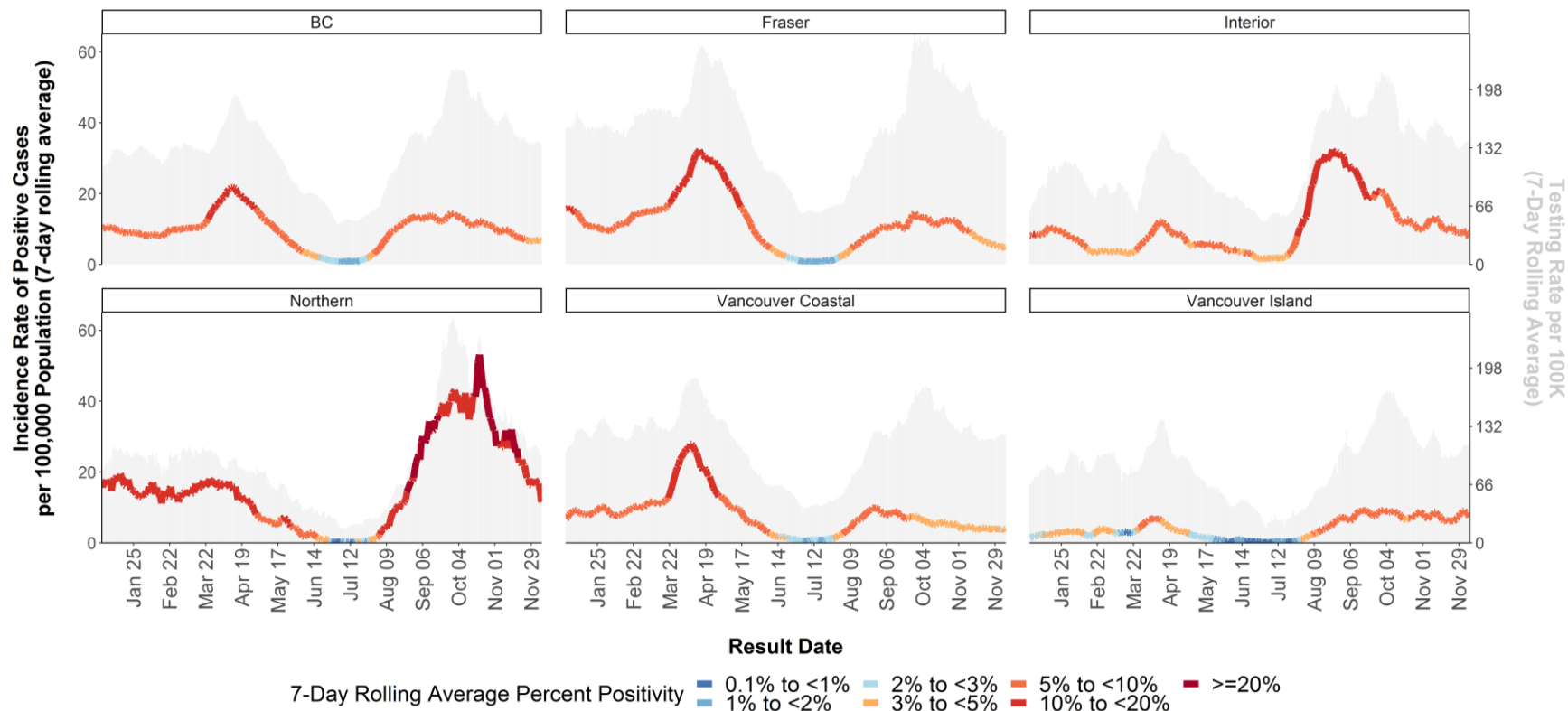
Daily cases, hospitalizations, and deaths by health authority, Jan 1 to Dec 9, 2021

Rate of COVID-19 case, hospitalization and death, Jan 01 2021 - Dec 09 2021



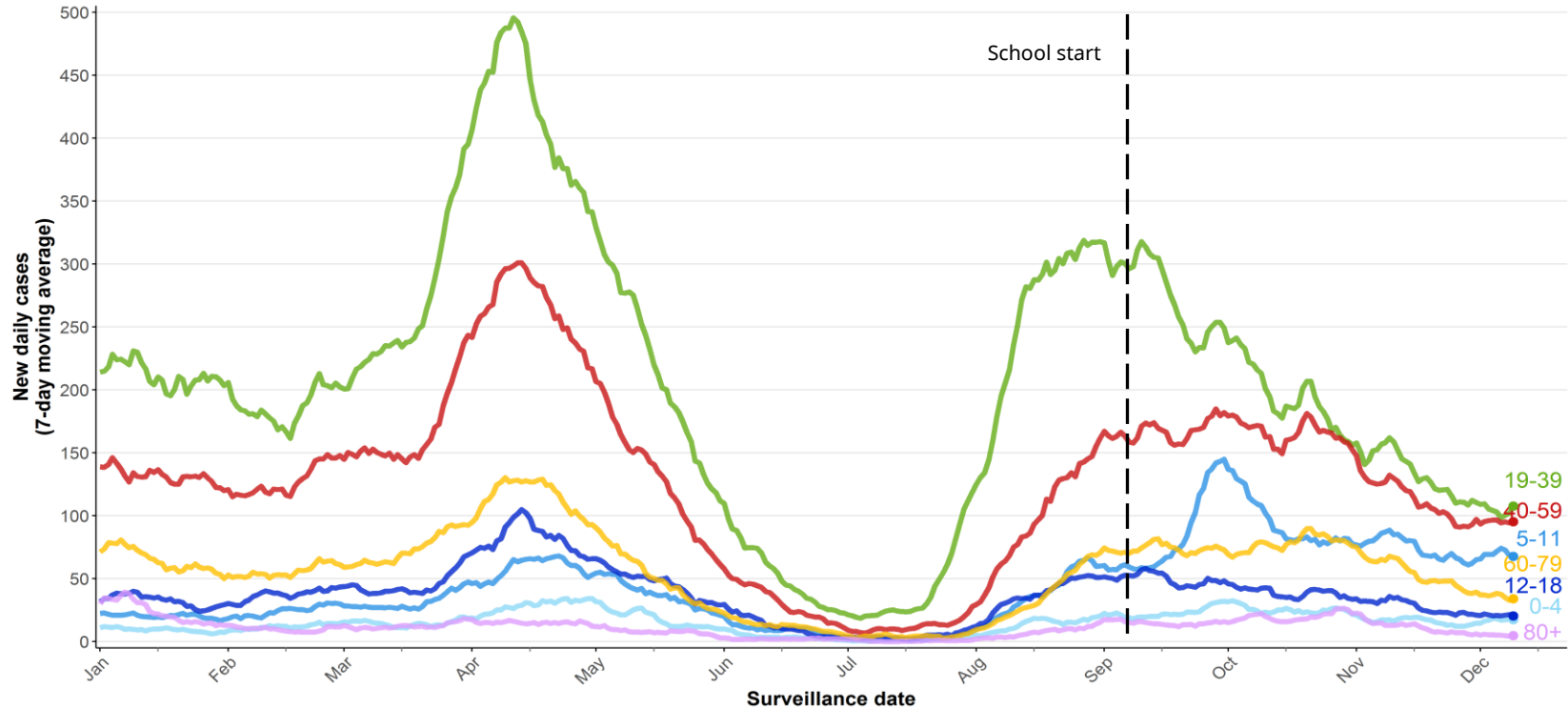
* Data are by surveillance date for cases and deaths, and admission date for hospitalizations
Data source: PHRDW Dec-10-2021

Case incidence, test positivity and testing rate by HA, Jan 1 2020 – Dec 7 2021



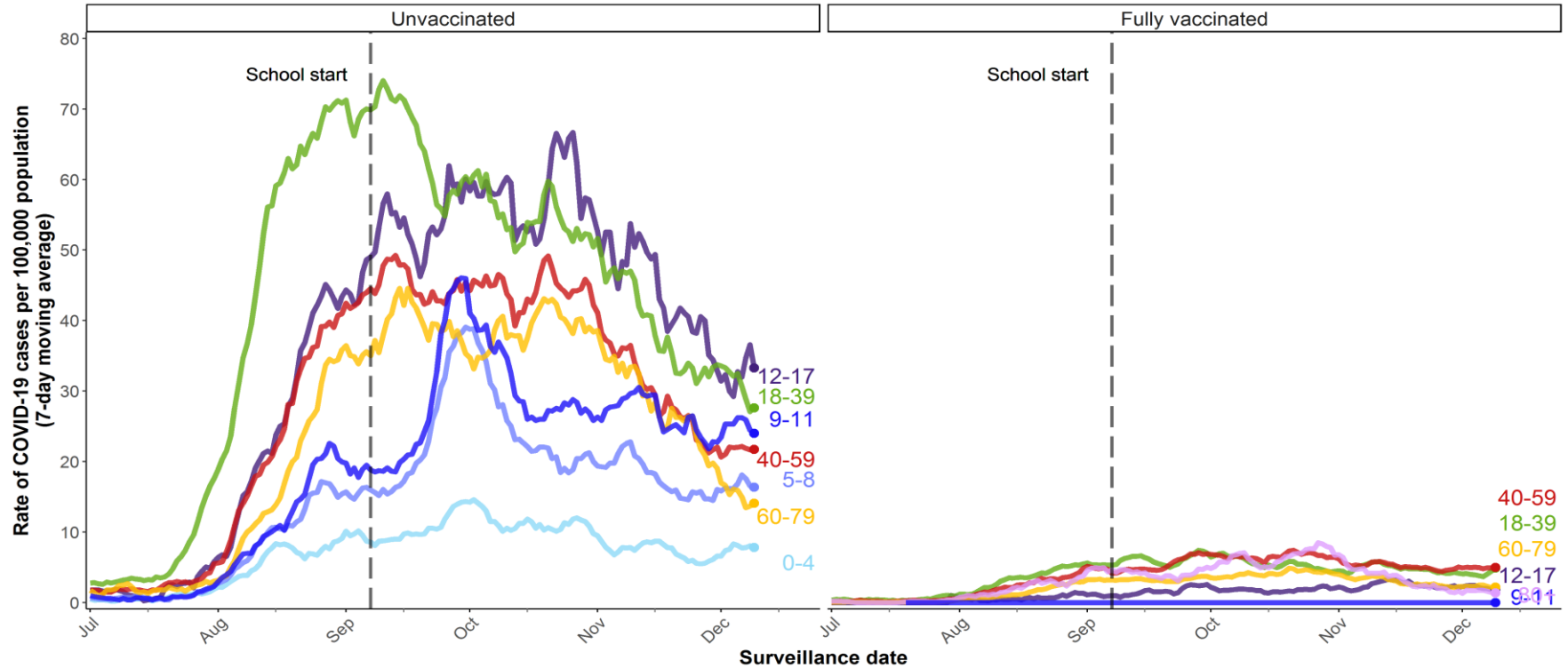
Data source: PLOVER 07-Dec-2021

Daily case rate **by age** Jan 1 to Dec 9, 2021



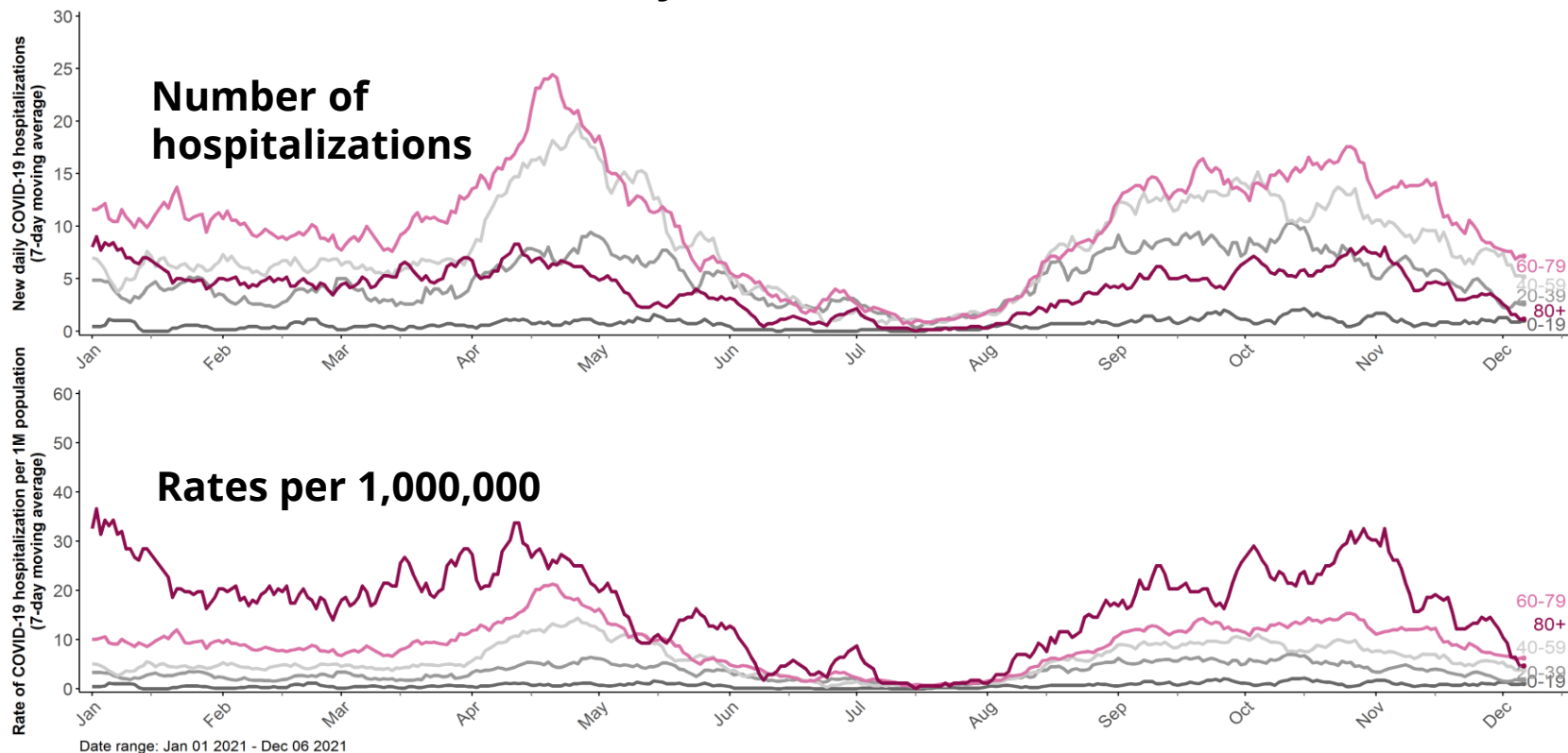
* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

Daily case rate by age and vaccination status, July 1 to Dec 9, 2021

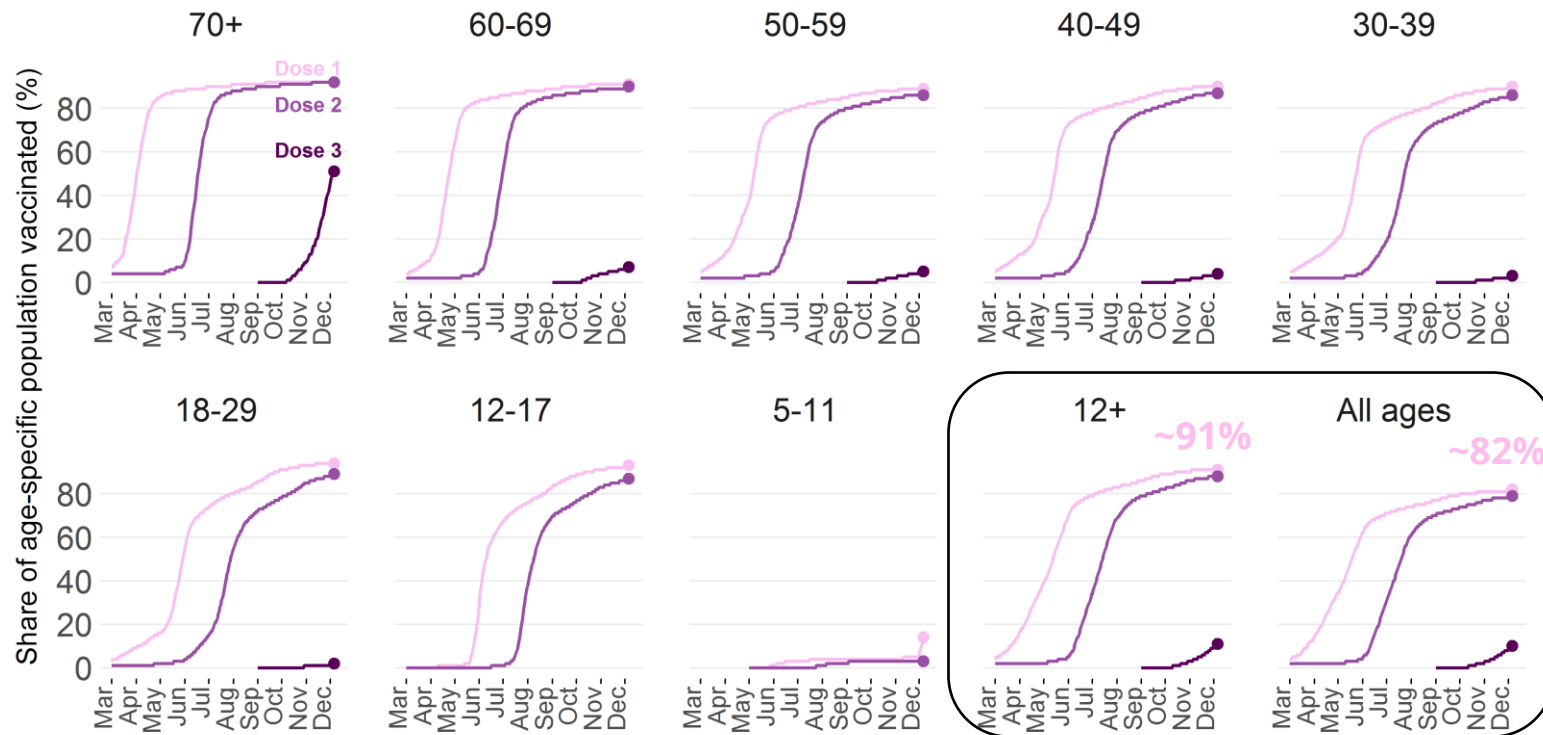


* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)
 Date range: Jul 01 2021 - Dec 09 2021
 Data source: PHRDW Dec-10-2021

New daily COVID-19 hospitalization counts and rates per 1,000,000 Jan 1 to Dec 6, 2021



Vaccination progress in BC over time by age group and dose number up to December 7, 2021



Data updated 2021-12-07
Data Source: Provincial Immunization Registry, PHSA

Over the **past month** (November 9 – December 9), unvaccinated individuals accounted for 68% of hospitalizations and 78% of critical care admissions

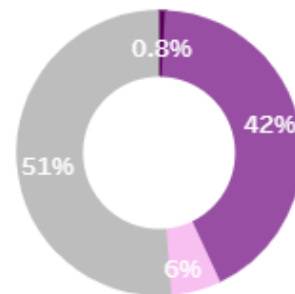
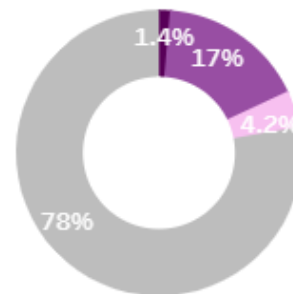
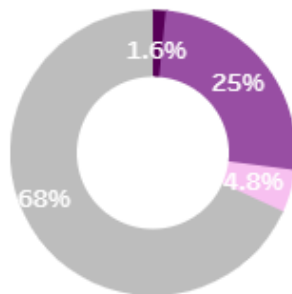
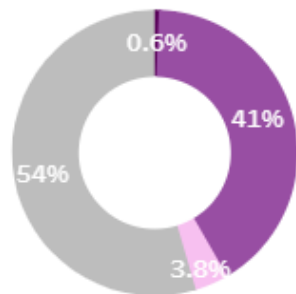
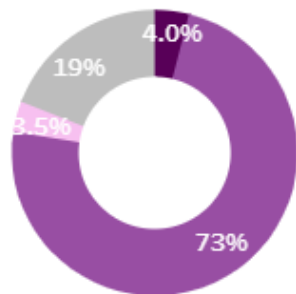
Vaccinations (all BC; n=5.2M)

Cases (n=10,251)

Hospitalizations (n=687)

Critical care (n=216)

Deaths (n=123)



■ Vaccinated, 3 doses ■ Vaccinated, 2 doses ■ Vaccinated, 1 dose ■ Unvaccinated

Note: relative size of donuts not to scale

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

COVID-19 health outcomes by vaccination status and age, BC, November 7 – December 07 2021

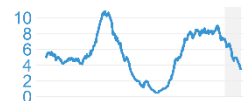
Trend in % total population vaccinated with at least 1 dose



Trend in daily cases per 1M



Trend in daily hospitalizations per 1M



Trend in daily critical care per 1M



Trend in daily deaths per 1M



Vaccinations (all BC; n=5.2M)



Cases (n=10,480)



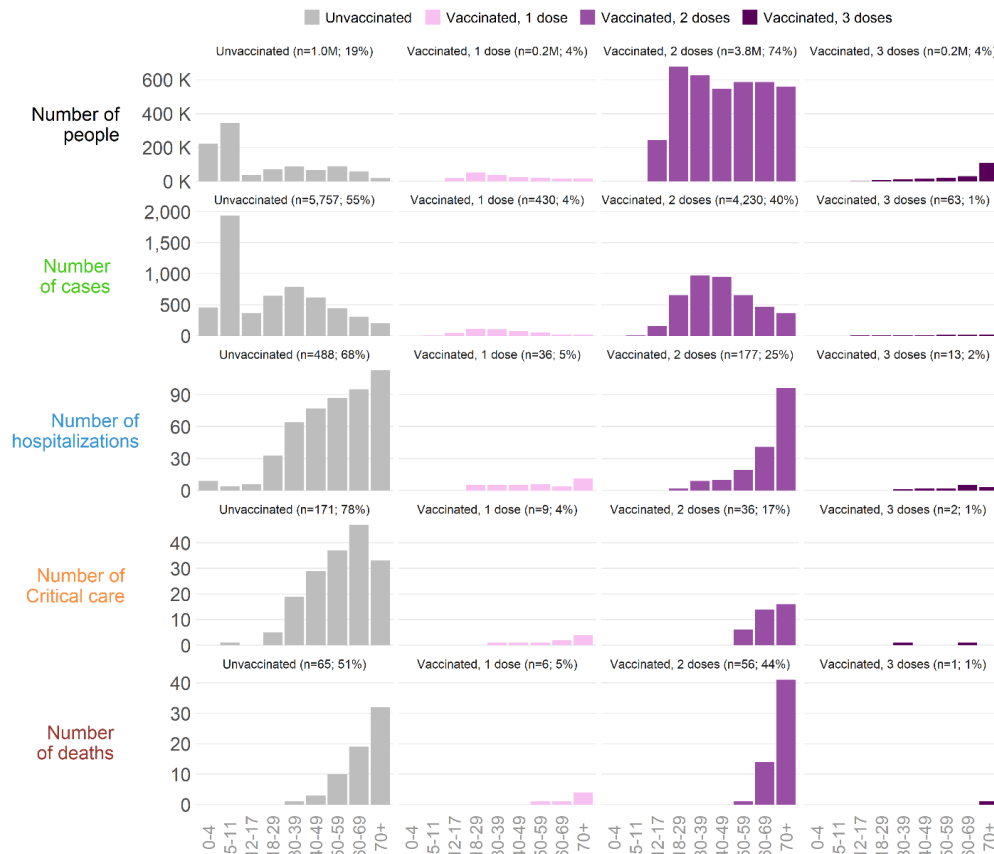
Hospitalizations (n=714)



Critical care (n=218)

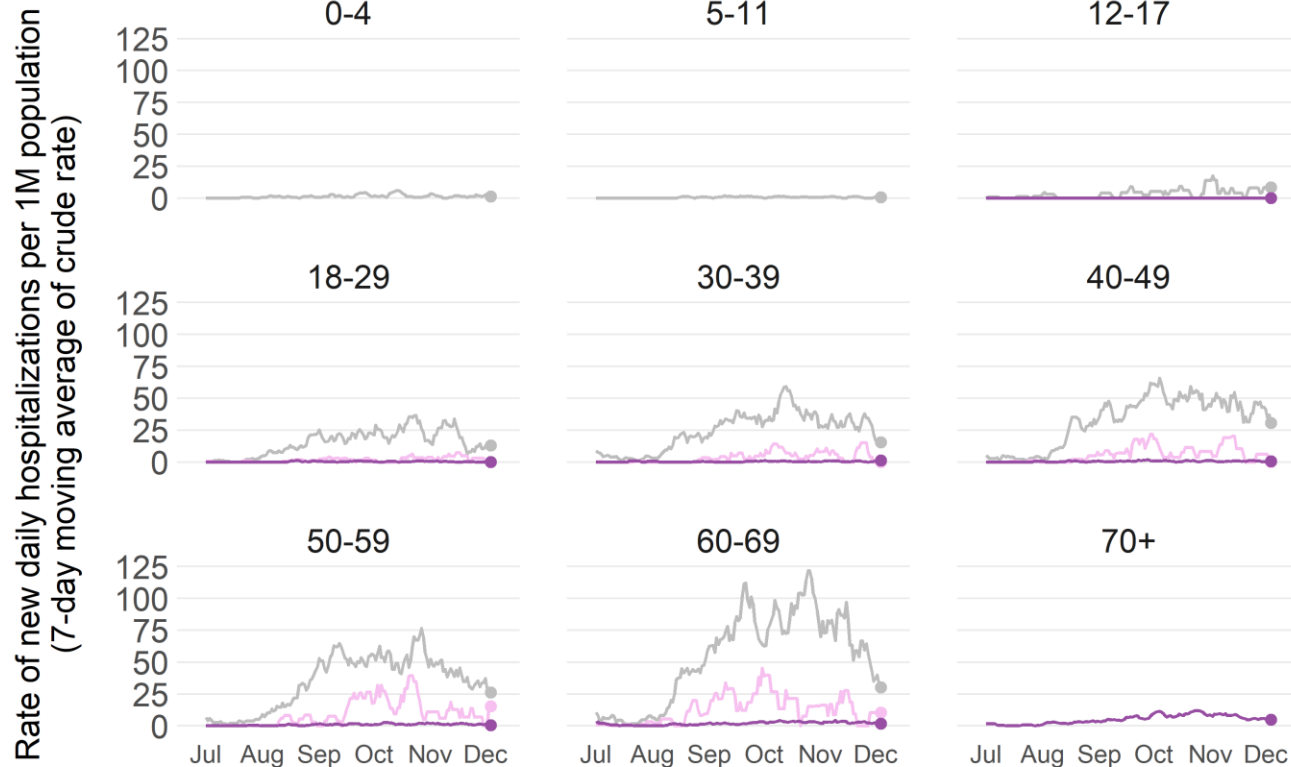


Deaths (n=128)



Data include cases from Nov 10-Dec 07, hospitalizations, critical care admissions and deaths from Nov 07-Dec 04, and vaccination statistics on Nov 23, 2021

COVID-19 hospitalization rate by vaccination status and age, July 1 – Dec 4, 2021

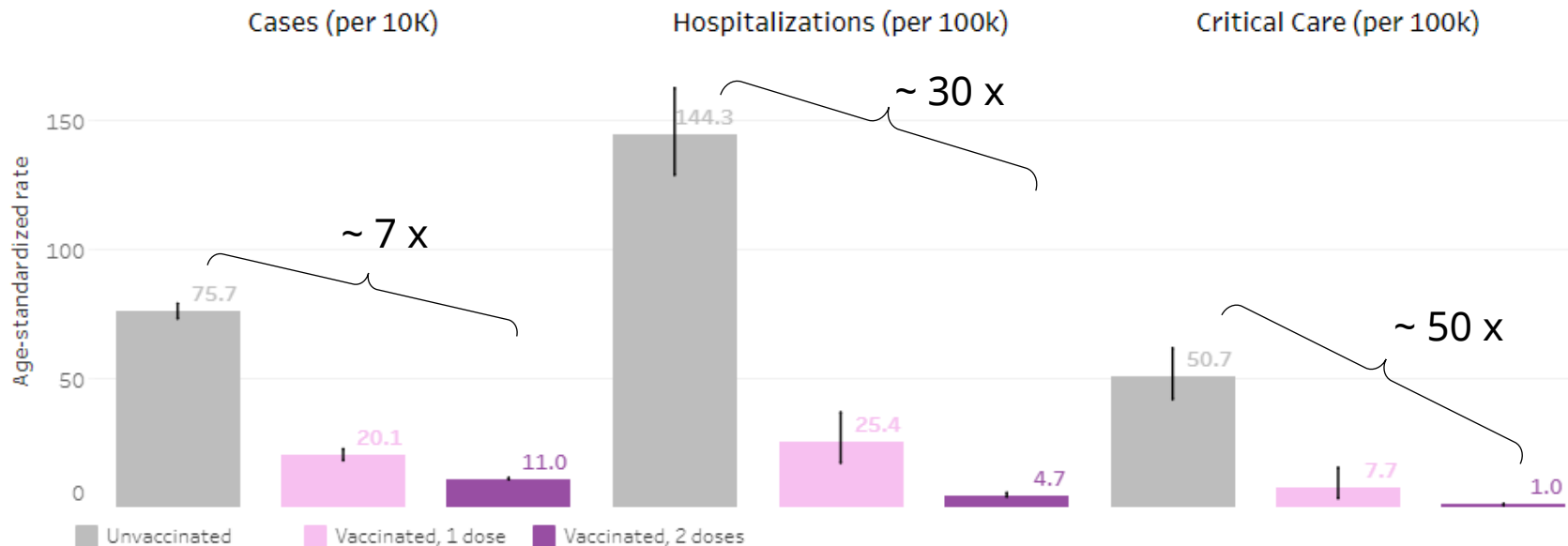


*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 5% of hospitalized unvaccinated cases since 1 July 2021.
Data extracted from health authority case line list and up to 04 Dec 2021

After adjusting for age differences, unvaccinated individuals are at much greater risk of infection and severe disease from COVID-19 than 2-dose recipients

Age-standardized Case, Hospitalization & Critical Care Rate, BC

Data include cases from Nov. 12 - Dec. 09, hospitalizations from Nov. 09 - Dec. 06 & critical care from Nov. 09-Dec. 06



Dec 02 to Dec 08: Pediatric COVID-19 Profile

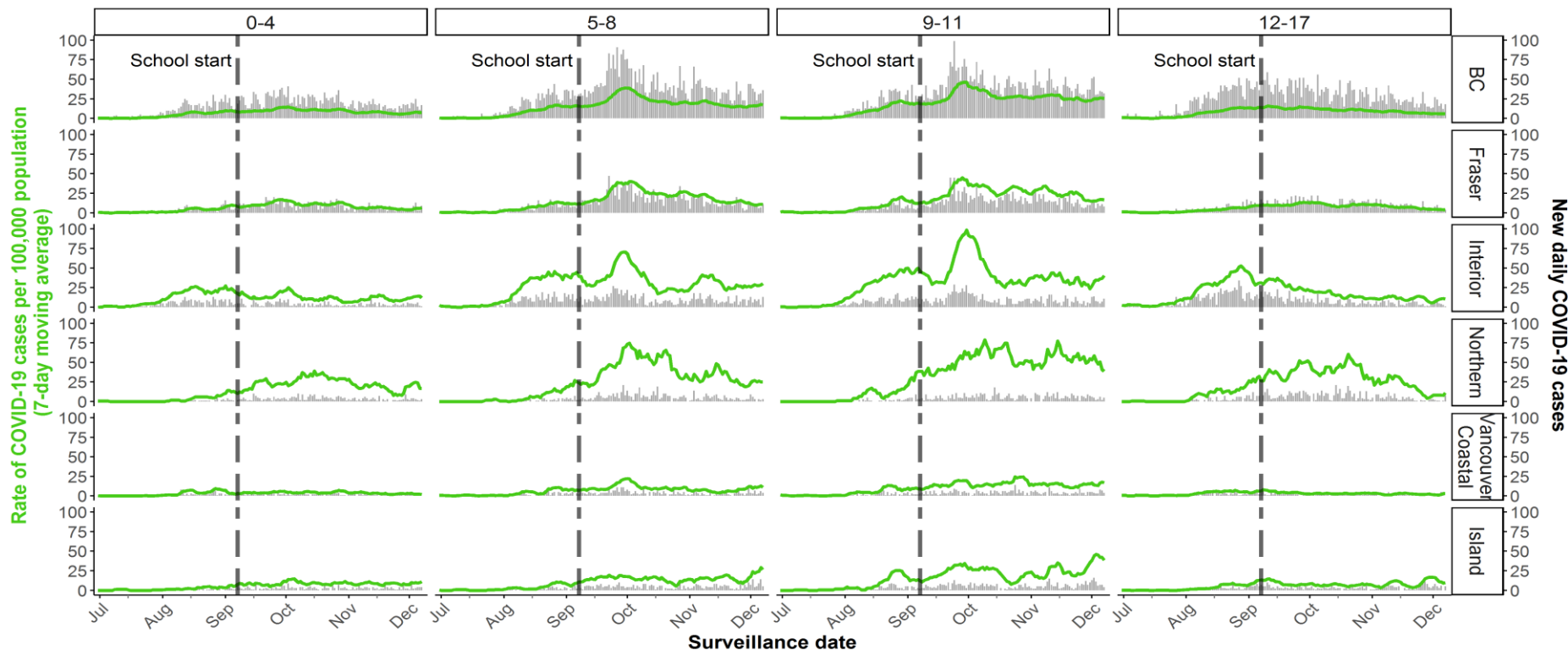


Age group: 0-4		Age group: 0-4		Age group: 0-4		Age group: 0-4	
6,138	total cases	128	ever hospitalized	12	ever in critical care	2	total deaths
124	new this week	0	new this week	0	new this week	0	new this week
Age group: 5-11		Age group: 5-11		Age group: 5-11		Age group: 5-11	
16,988	total cases	65	ever hospitalized	5	ever in critical care	0	total deaths
505	new this week	1	new this week	0	new this week	0	new this week
Age group: 12-17		Age group: 12-17		Age group: 12-17		Age group: 12-17	
13,222	total cases	58	ever hospitalized	10	ever in critical care	0	total deaths
128	new this week	0	new this week	0	new this week	0	new this week

* New hospitalizations and critical care census numbers are as of Dec 07 2021

* New cases and new deaths are net new between Line lists of Dec 01 2021 and Dec 08 2021

COVID-19 Incidence by age and Health Authority July 1 to Dec 7, 2021

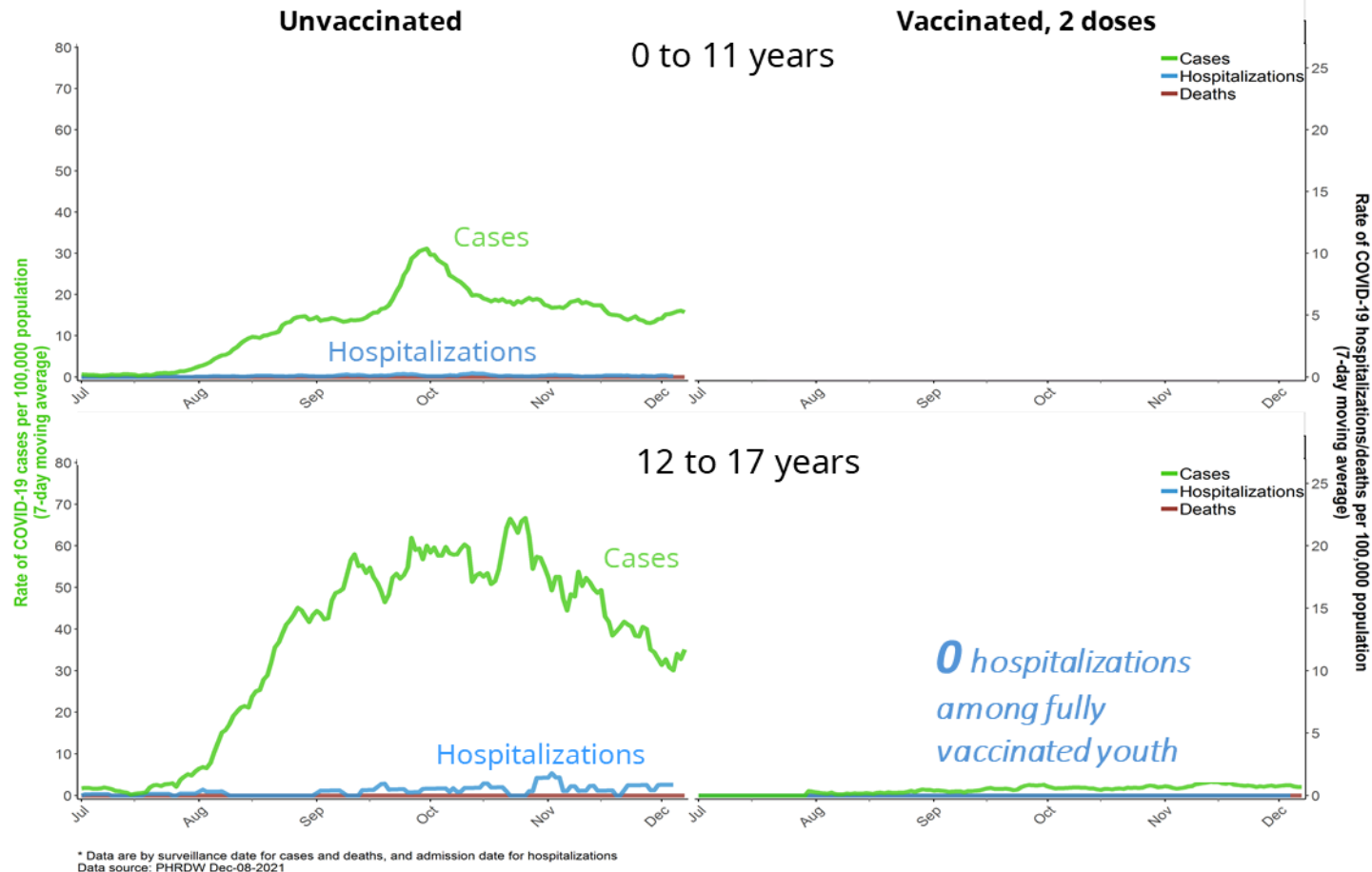


* Data based on surveillance date (i.e. lab result date, or when not available, date reported to public health)

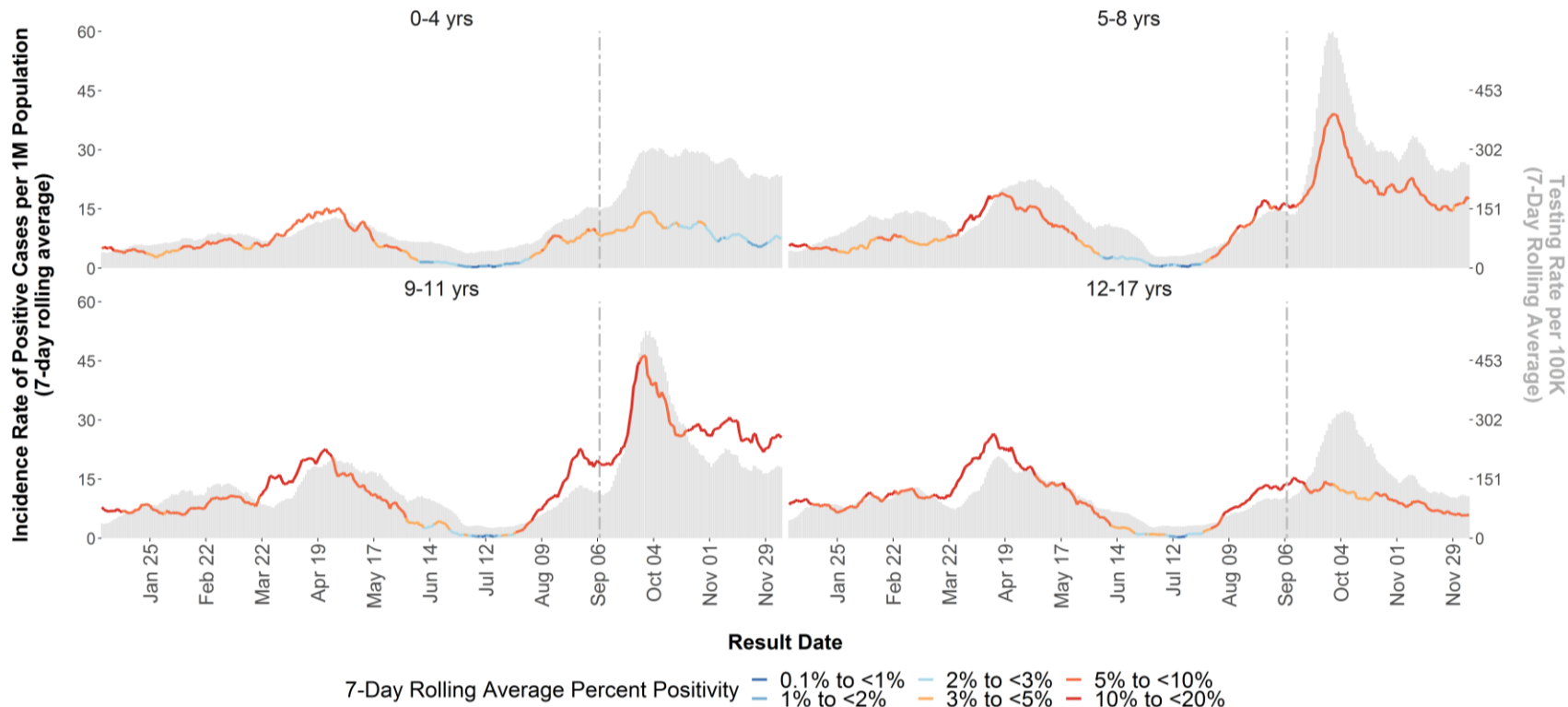
Date range: Jul 01 2021 - Dec 07 2021

Data source: PHRDW Dec-08-2021

Pediatric incidence, hospitalization and death rate by age (0-11 and 12-17 years) and vaccination status, July 1-Dec 7, 2021



Pediatric testing rates, incidence and percent positivity by age, Jan 1- Dec 7, 2021

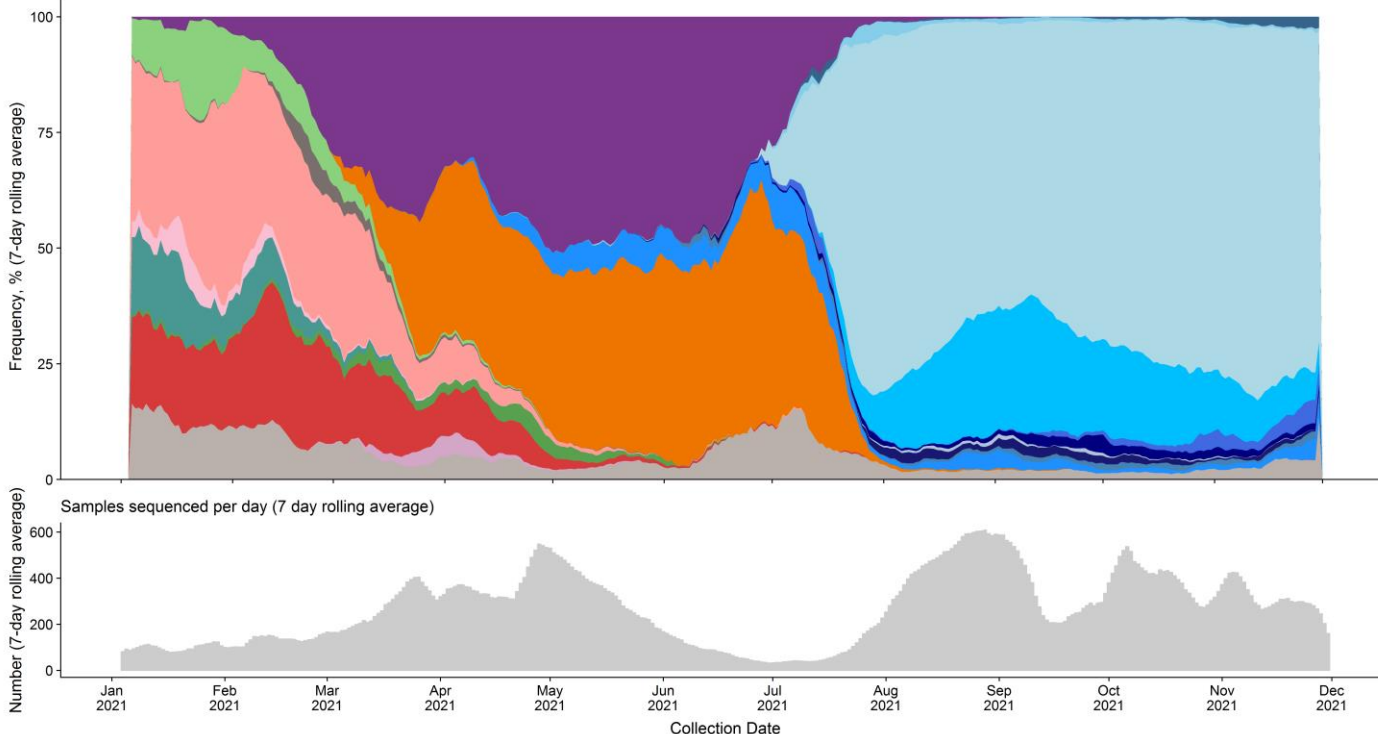


Data source: PLOVER 07-Dec-2021

Whole genome sequencing, Jan 2021 – 4 Dec 2021

SARS-CoV2 samples genome sequenced by BCCDC

7-day rolling frequency since 1st January 2021. Top 20 lineages only shown, remainder classified as 'other'

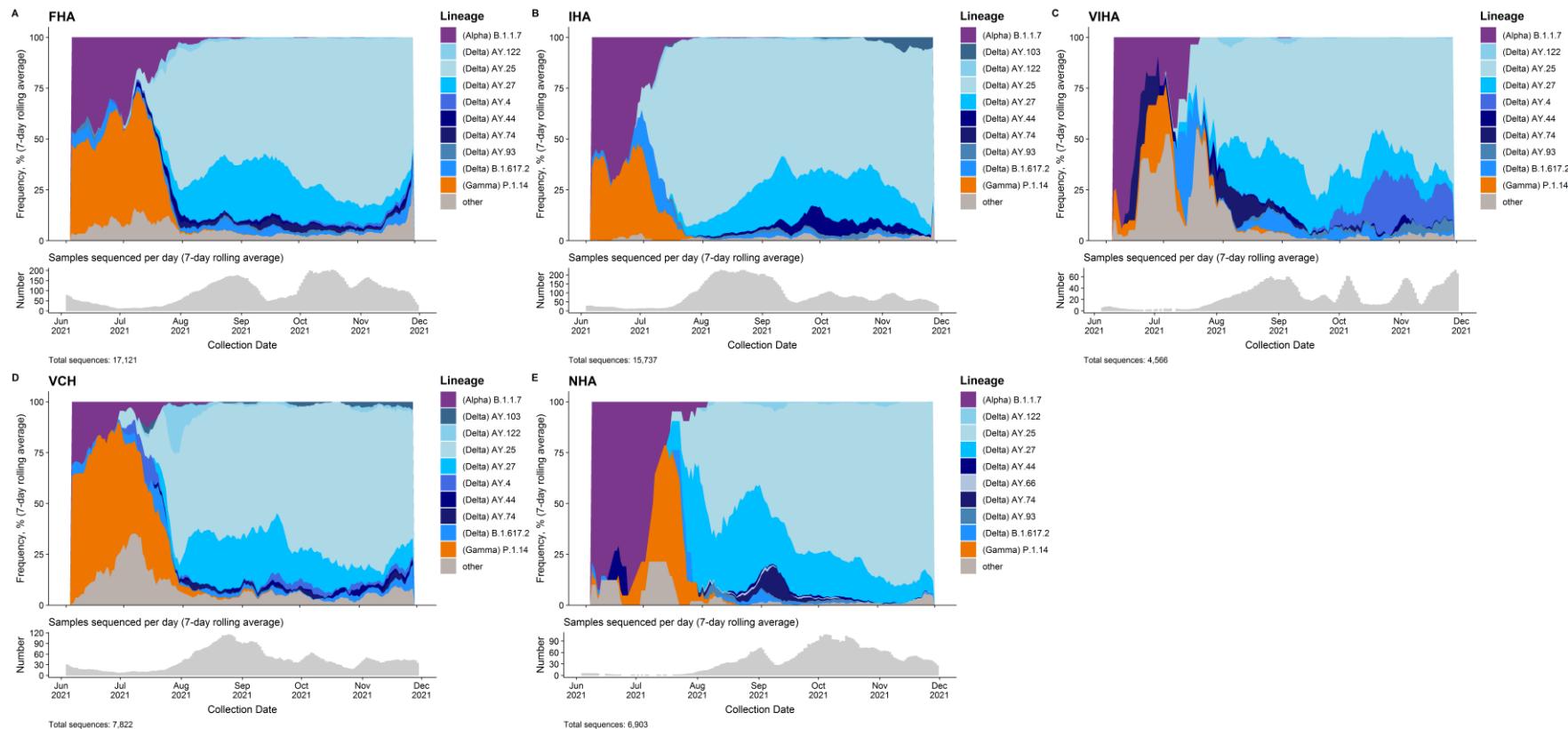


Lineage

- (Alpha) B.1.1.7
- (Delta) AY.103
- (Delta) AY.122
- (Delta) AY.25
- (Delta) AY.27
- (Delta) AY.4
- (Delta) AY.44
- (Delta) AY.66
- (Delta) AY.74
- (Delta) AY.93
- (Delta) B.1.617.2
- (Gamma) P.1.14
- AL.1
- B.1.1.519
- B.1.2
- B.1.36
- B.1.36.36
- B.1.429
- B.1.438.1
- B.1.617.1
- other

Pangolin version: 3.1.16, PangoleARN: 2021-11-18, Total sequences: 89,488

Whole genome sequencing by HA, Jun – 4 Dec 2021



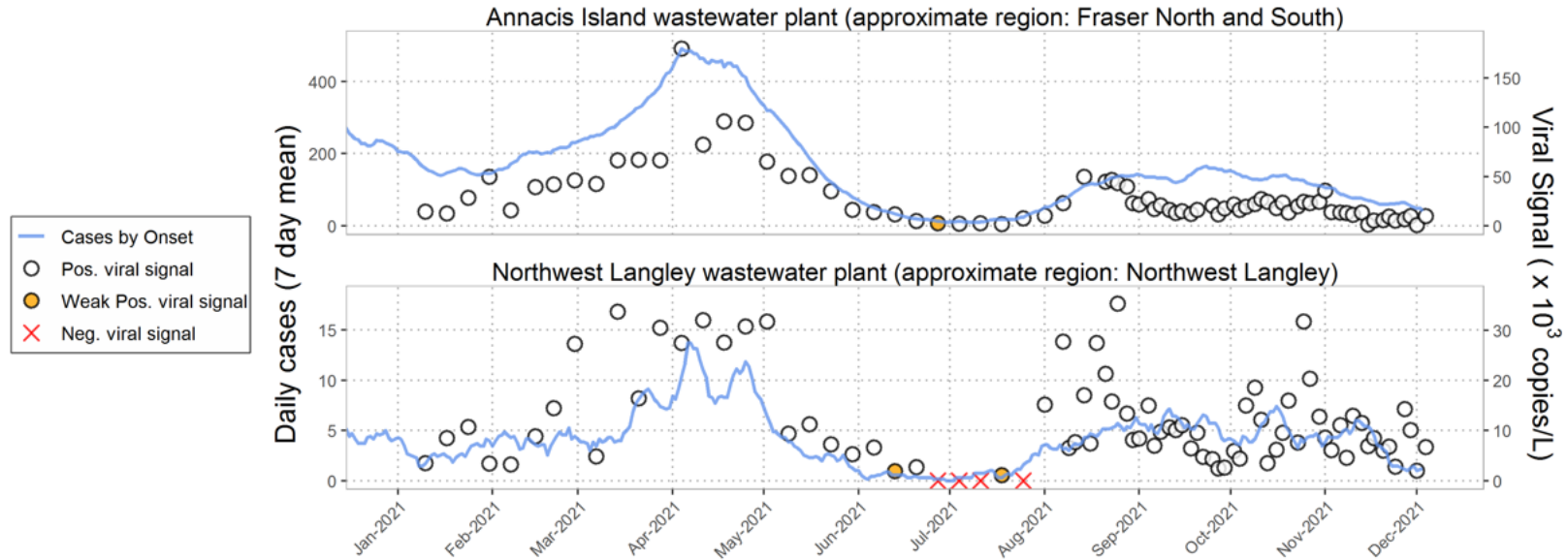
Variants of Concern – update on Omicron

- Omicron is detected via whole genome sequencing
- BC Sequencing close to 100% of cases
- 44 confirmed Omicron cases up to December 12th
 - 24 cases in FHA, 11 in VCHA, 5 in VIHA, 3 in IHA, 1 in NHA
 - Age range: between 5 and 72 years of age, median age 33 years old
 - None currently hospitalized
 - 7 non-vaccinated (including 2 children under 11 years of age)
- 20 cases have recent travel histories
 - Travel to Nigeria, South Africa/Zimbabwe, Egypt, Iran, Mexico, Germany, Portugal, and the USA
- Early identification of VIHA outbreak → sequencing indicates Omicron cases

Population-level surveillance: Viral signal from wastewater surveillance correlates with COVID-19 case counts and can detect VOCs

- The BCCDC and Metro Vancouver have been testing for SARS-CoV-2 in wastewater at five wastewater treatment plants (representing 50% of BC's population) since May 2020.
- Wastewater samples positive for SARS-CoV-2 are then sequenced, to detect circulating variants of concern (VoCs) in the population catchment. This work is being done in collaboration with UBC.
- Sequencing method successfully and timely detected the emergence of Alpha, Gamma and Delta variants in Metro Vancouver wastewater.

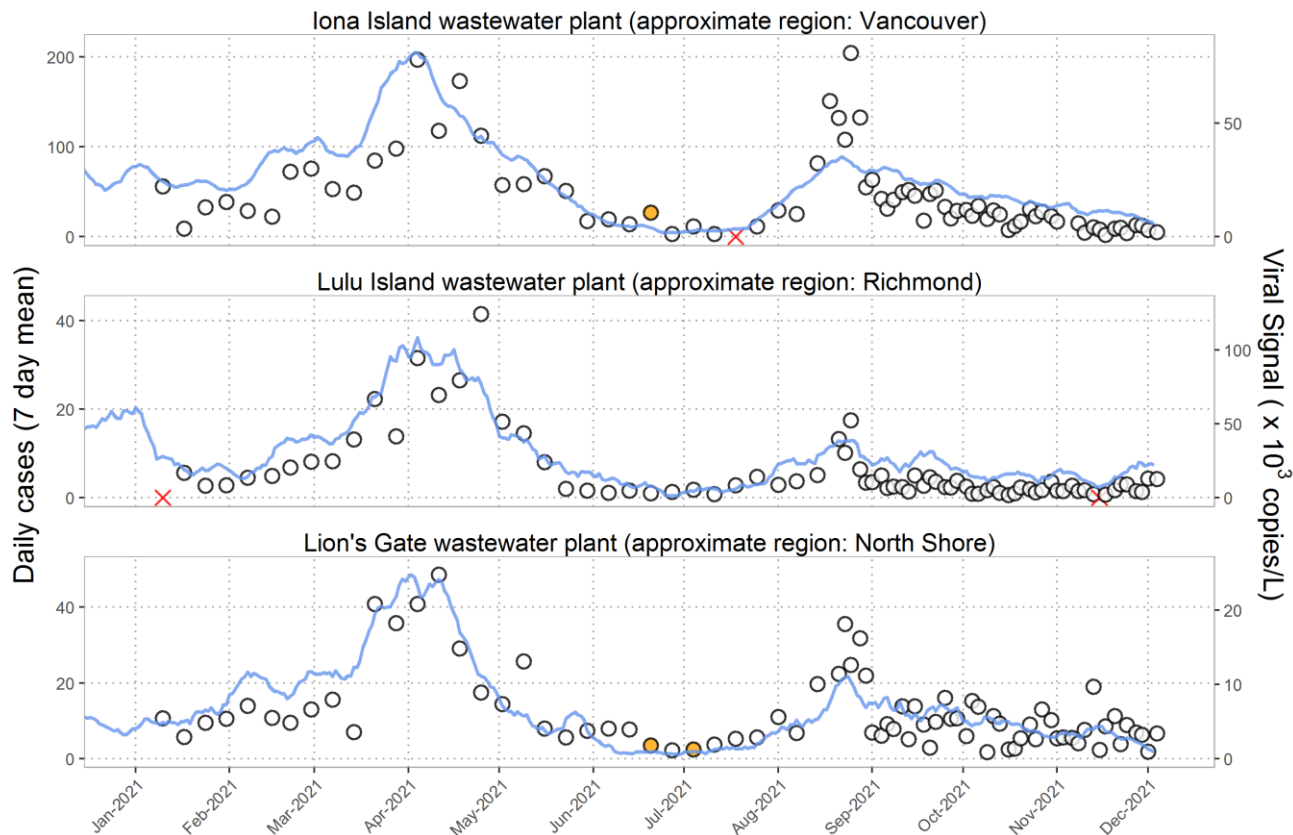
Viral signal from wastewater in FHA, Jan 2021 – 4 Dec 2021



Time-series plots show weekly or bi-weekly viral signals from each wastewater plant (right y-axis), overlaid with rolling 7-day mean of daily new cases within wastewater catchment area (left y-axis).

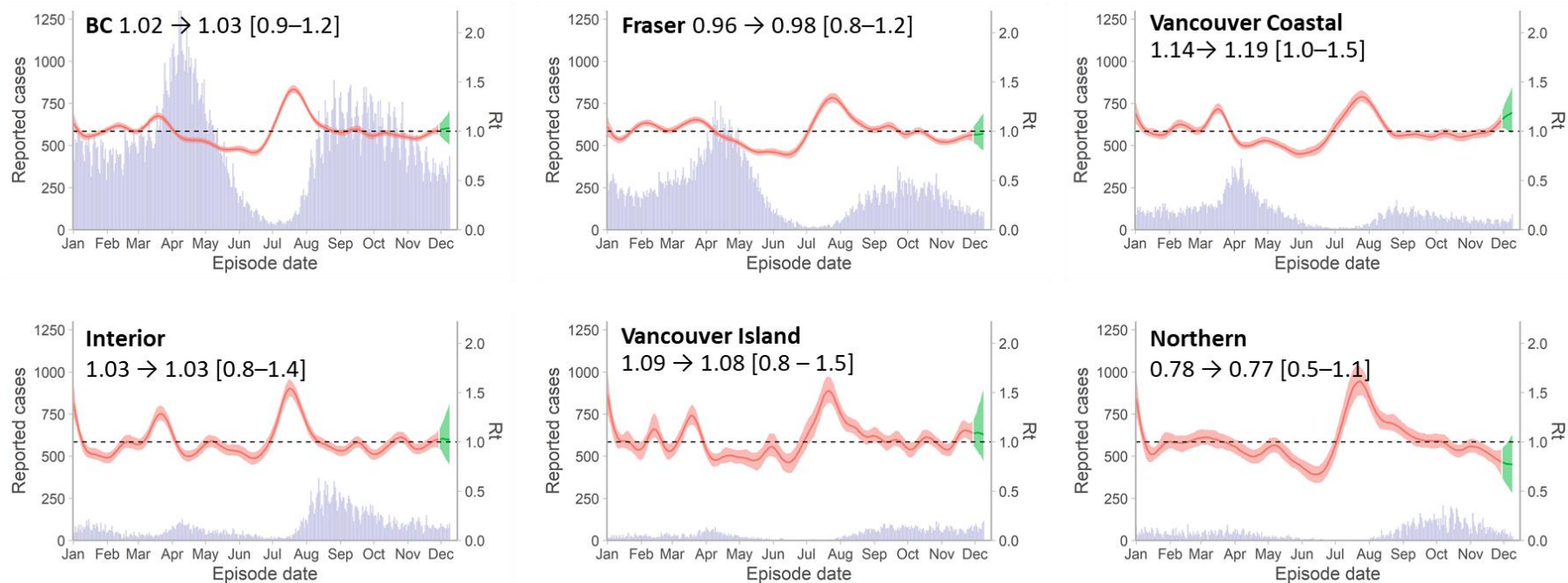
Plot title shows wastewater plant name, followed by approximate catchment area.

Viral signal from wastewater in VCH, Jan 2021- 4 Dec 2021



Dynamic modeling: recent trends

Modelling indicates that R_t is hovering near 1 in most regions.



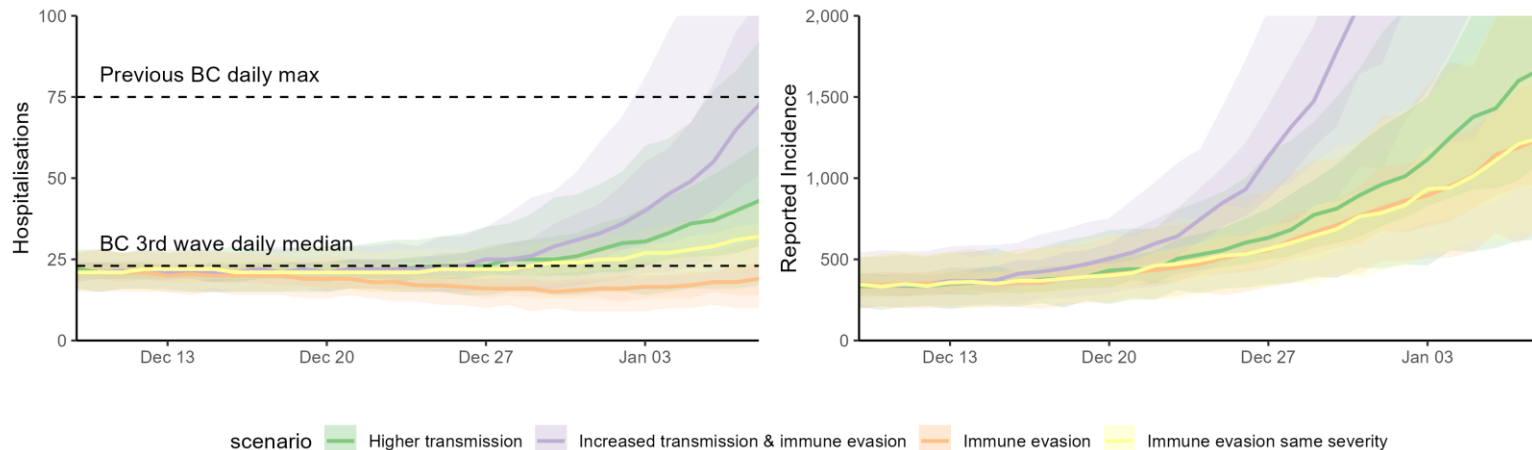
Estimates are shown for last week → this week, with 90% range of possible values. Solid line: median R_t , modeled using all reported cases up to Dec 9, 2021; Red band: 5%-95% credible interval; Green band: estimate based on partial data – each week, current estimates are updated with new data to provide a clearer understanding of the trend. Purple bars: all reported cases. Data source: BCCDC HA linelist.

Omicron scenarios

Scenarios: As we are still gathering data on Omicron, there are a large number of unknowns on its impact on cases and hospitalizations. We consider 3 scenarios with lower severity: 1) transmission is increased between 1.5 - 3 times that of Delta, 2) immune evasion to transmission is 30-60%, and 3) a combination of increased transmission and immune evasion.

We further consider the potential for Omicron to be less severe with a risk reduction of 0.2 - 0.8. We further consider a scenario of immune evasion with the same severity as Delta. Scenarios do not account for boosters which will impact severity and transmission. Further establishment of variant in the community is assumed to be on Dec 9th.

Note: These scenarios are for illustrative purposes and liable to change rapidly as more information are collected



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

COVID-19 update:

December 2021



Stay Informed Via These Resources:

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

Symptom Self-Assessment:

covid19.thrive.health



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