# **BCCDC COVID Data Summary**

9 December 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.



Note: Information provided in this slide deck is or will be available in the data products listed below, at the same or greater frequency. This is the last publication of this product. Going forward, please consult the following sources:

BCCDC COVID-19 Regional Surveillance Dashboard: updated 2x week (Tues & Fri)\*

BCCDC COVID-19 Epidemiology app: updated 3x week (Mon, Wed, Fri)\*

<u>Situation Report</u>: updated weekly\*

<u>Laboratory report on variants and lineages</u>: updated weekly

<u>School report</u>: updated monthly

\*Note holiday schedule:

Regional Dashboard and Epi App: Dec 20, 23, 30, Jan 4

Situation Report: Dec 21 & Jan 4





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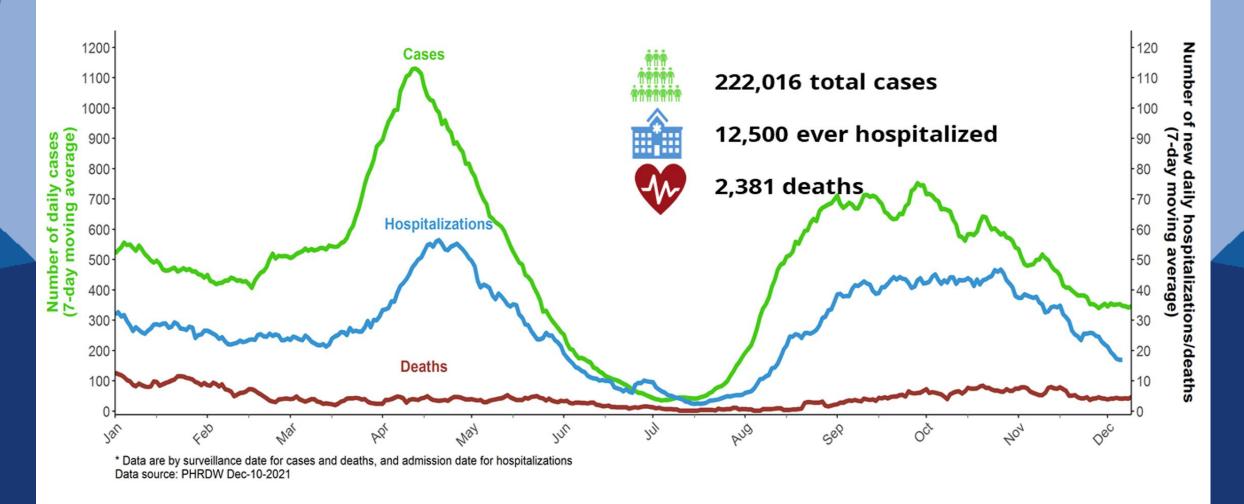
## Overall Summary for surveillance data to Dec 9

- Case rates are stabilizing in most regions but continue to decline in NH.
- Test positivity among public tests is stable (~4.9% provincially), and remains high in NH (13%).
- New hospitalizations and hospital census are continuing to decline provincially, critical care census is stable, but there is regional variation across BC; new deaths are low and stable.
- Hospitalization rates among children continue to remain very low, and are low and decreasing in older adults. Hospitalization counts and rates among individuals ≥ 80 years continue to decrease rapidly following booster dose rollout.
- The majority of new cases and hospitalizations continue to be among unvaccinated individuals.
- Vaccine coverage in BC, 07 Dec 2021, 1 dose (2 doses): ~82% (78%) of total population, ~91% (88%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern.
- The Delta variant continues to account for ≈100% of all positive tests in BC. There are 2 main sublineages circulating in BC: AY.25 and AY.27.
- 44 cases of Omicron variant reported; close to half related to international travel



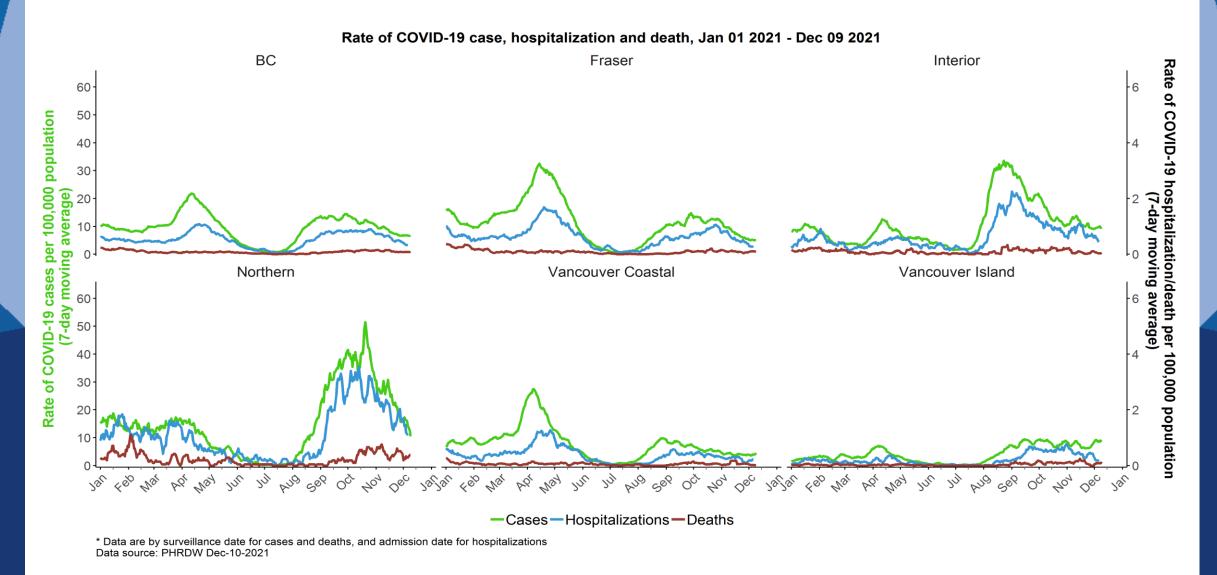


# BC COVID-19 Profile: New daily cases, hospitalizations and deaths, Jan 01 2021- Dec 09, 2021





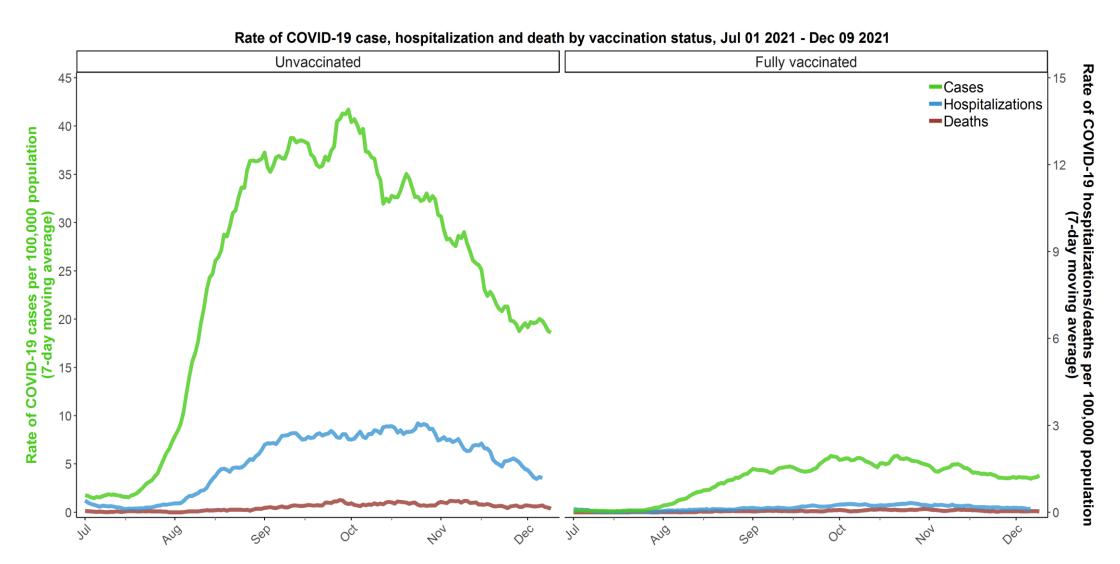
Case rates are stabilizing in most regions, but continue to decline in NH; new hospitalizations are continue to decline provincially; new deaths are low and stable. Note the regional variation.







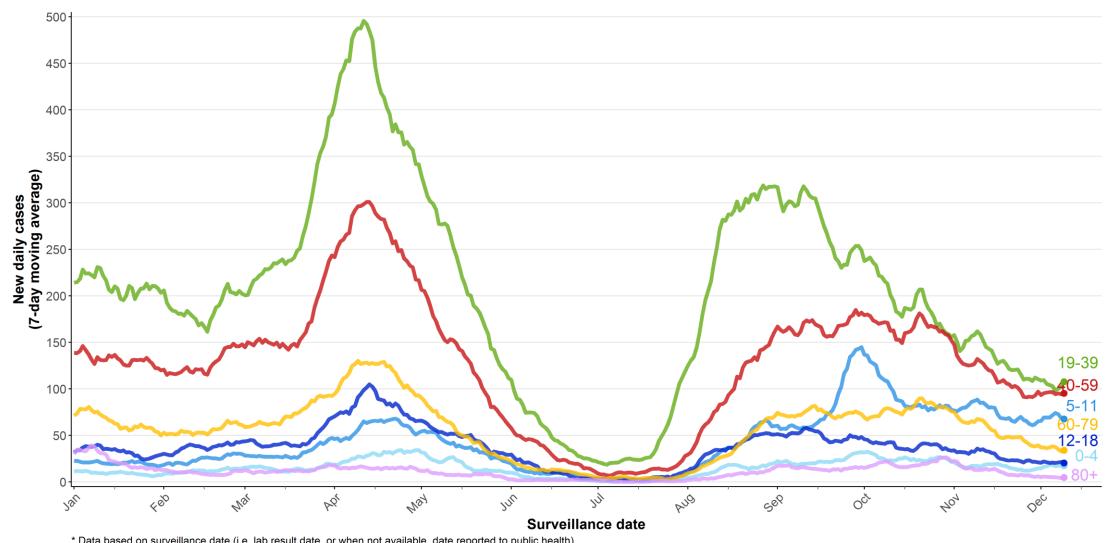
#### The majority of new cases and hospitalizations continue to be among unvaccinated individuals



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



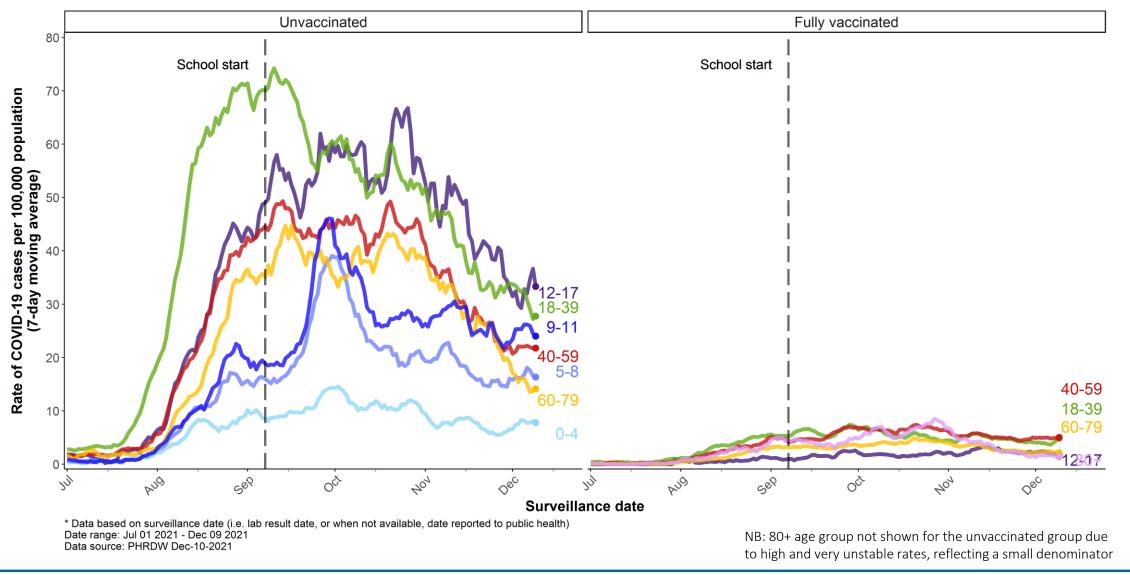
Incidence is stable among across all age groups. Note: this graph looks different once separated out by vaccine status (next slide)



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

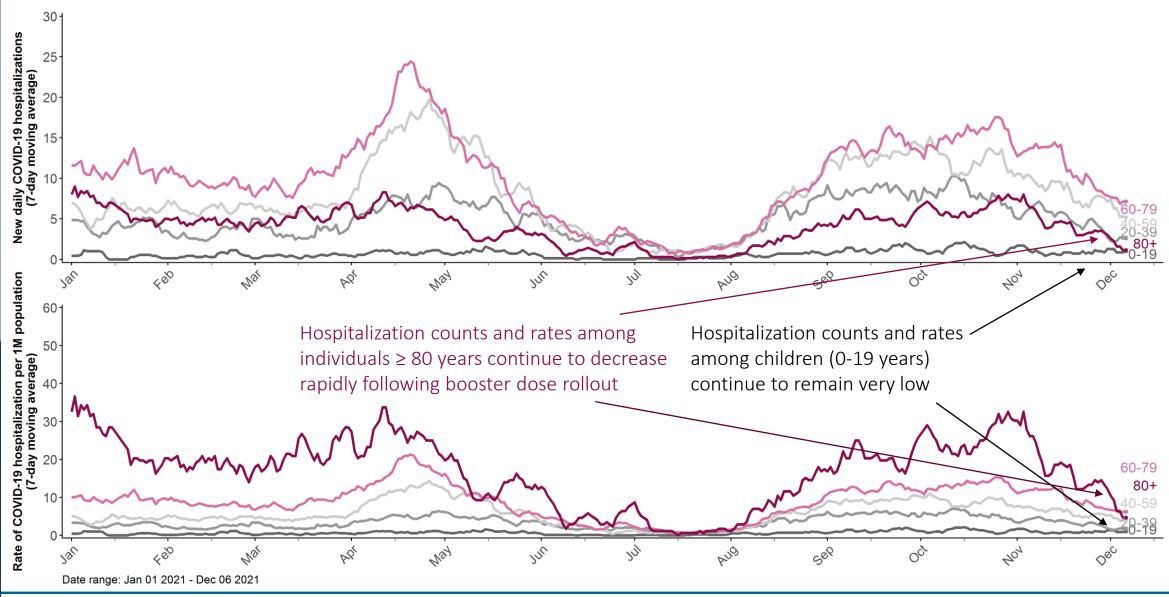


For all age groups 12+, those who are vaccinated have very low case rates. Among unvaccinated individuals, case rates are decreasing among 18-39 and 60-79 years, and stable in other age groups.





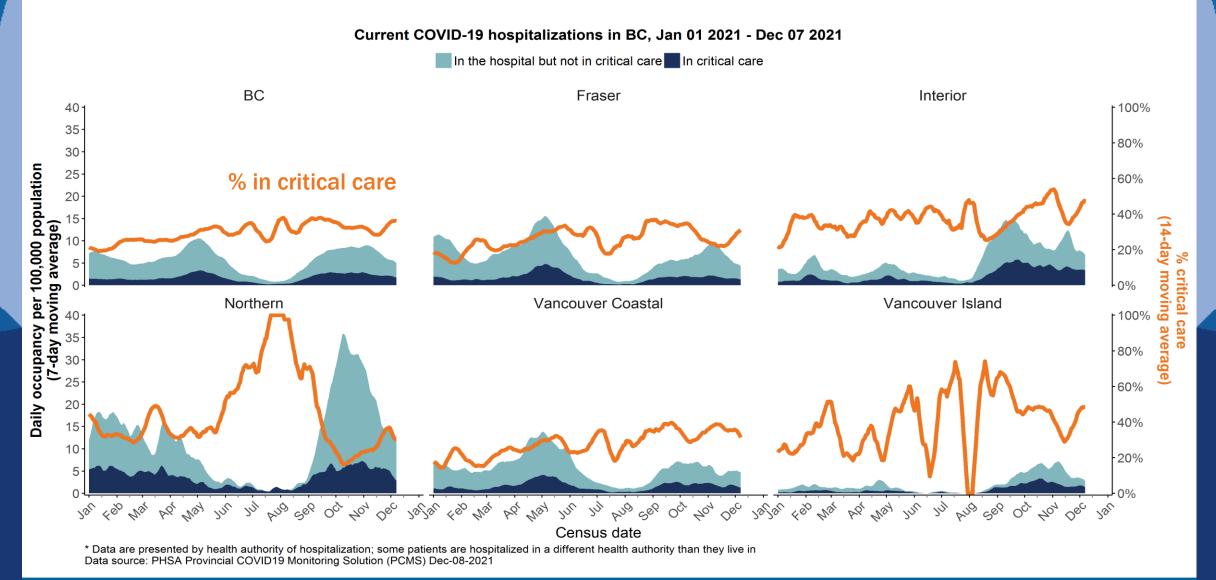
#### Trends in number and rate of new hospitalizations by age group, BC, 1 Jan - 6 Dec 2021





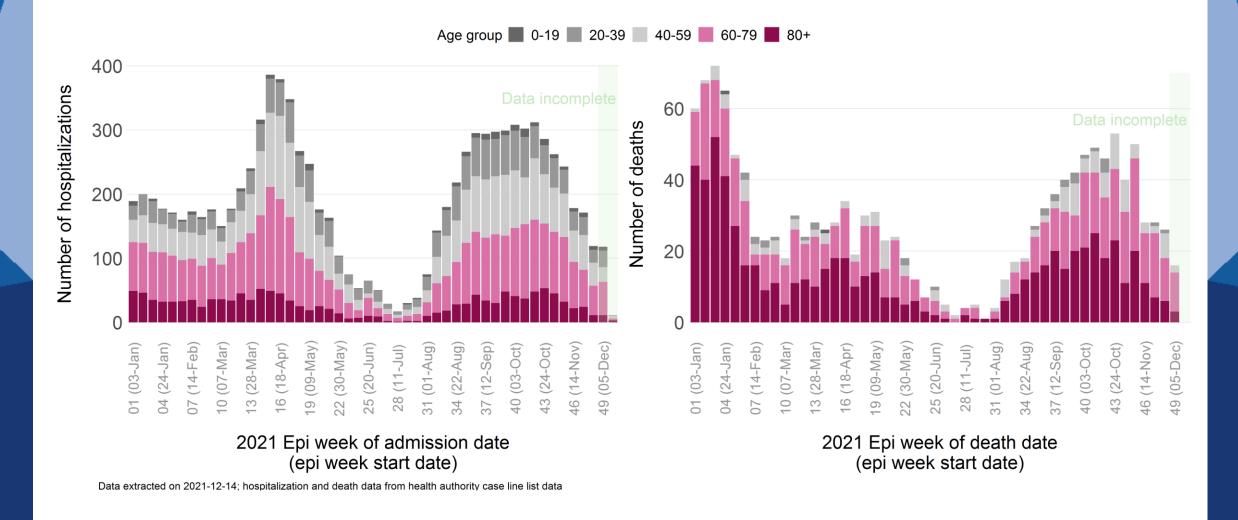
**BC Centre for Disease Control** 

# Hospital census is declining provincially; critical care census is stable. Note the variation by health authority.





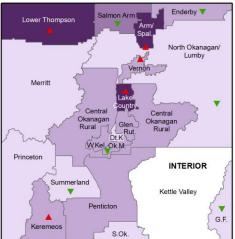
#### Number of new hospital admissions and deaths is continuing to decline across all age groups, especially among individuals age ≥80 years.



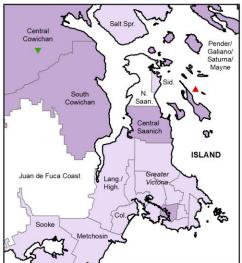


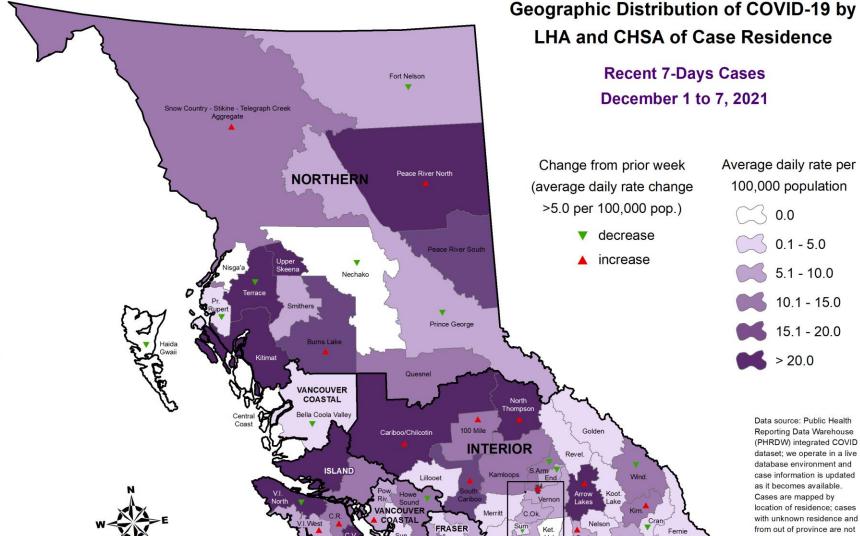
13

#### Okanagan Inset (Community Health Service Areas)



#### Greater Victoria Inset (Community Health Service Areas)







on separate map layout

British Columbia

(Local Health Areas)

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.

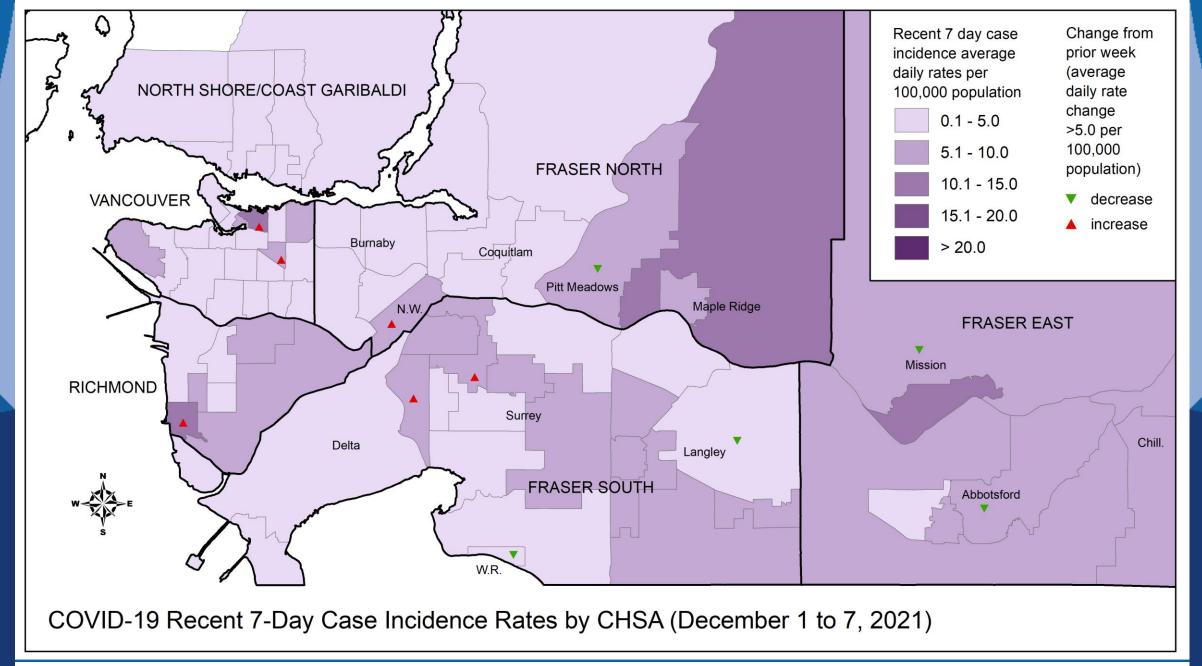
with unknown residence and

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

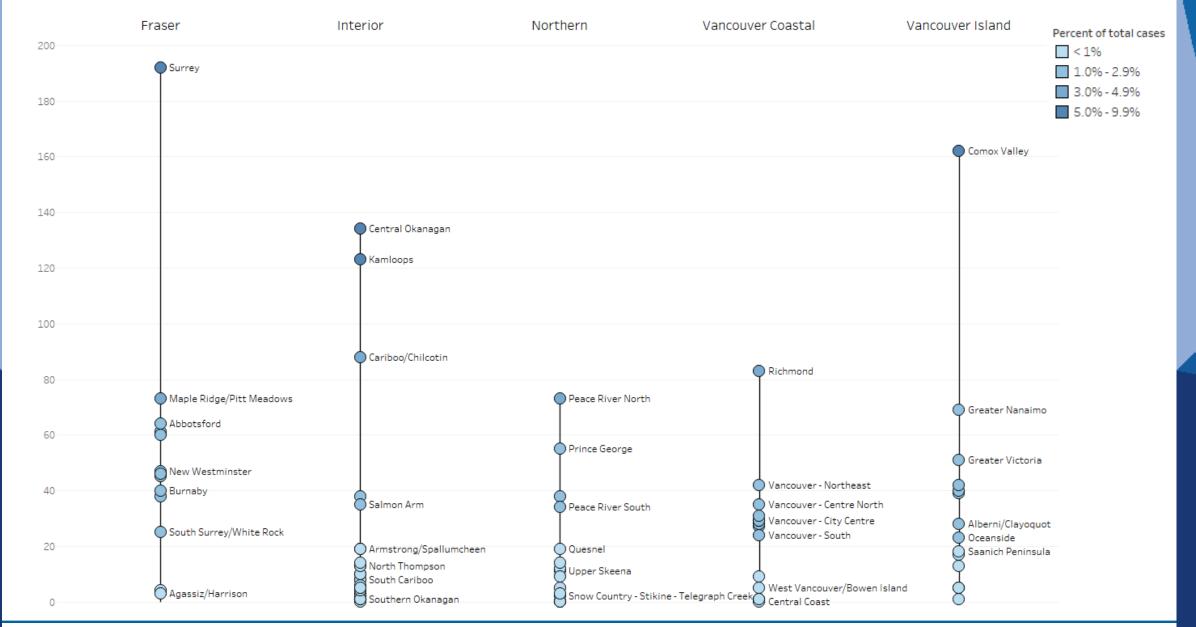
denominator from BC Stats

PEOPLE estimates for 2021.

Cases are mapped by location of residence; cases

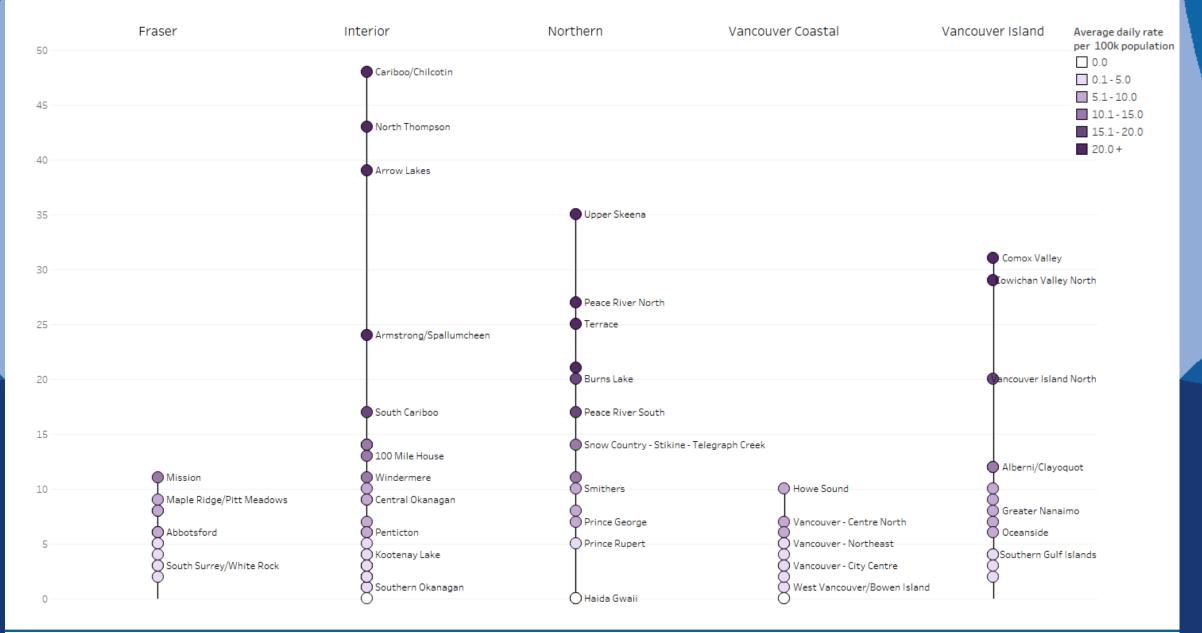


#### Total cases by local health area, Dec 01 - Dec 07, 2021





#### Average daily case rate of new cases per 100,000 population, by local health area, Dec 01 - Dec 07, 2021





# Key messages – vaccination coverage and outcomes by vaccine status

- Vaccine coverage in BC, 07 Dec 2021, 1 dose (2 doses): ~82% (78%) of total population, ~91% (88%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern.
- Most of the recent cases and hospitalizations continue to be among unvaccinated individuals
- Based on data over the last 4 weeks, compared with fully vaccinated individuals and after adjusting for age differences, unvaccinated individuals are
  - ≈ 7x more likely to become a case
  - ≈ 32x more likely to be hospitalized
  - ≈ 56x more likely to be admitted to critical care
  - NB: relative rates fluctuate over time and do not represent vaccine effectiveness

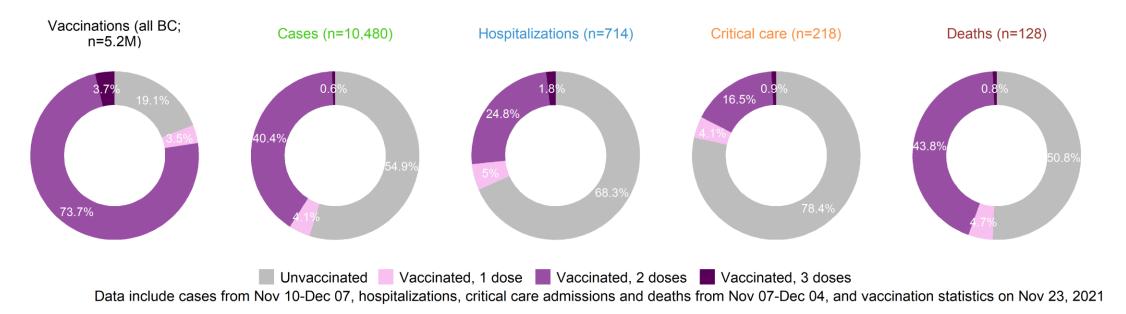
- Unvaccinated: no dose or not yet protected (<3 weeks since receipt of 1st dose; <10% of unvaccinated cases)</li>
- Vaccinated, 1 dose: ≥3 weeks since receipt of 1<sup>st</sup> dose and <2 weeks after 2<sup>nd</sup> dose
- Vaccinated, 2 doses: 2 weeks or more after receipt of 2<sup>nd</sup> dose and <2 weeks after 3<sup>rd</sup> dose (if applicable)
- Vaccinated, 3 doses: 2 weeks or more after receipt of 3<sup>nd</sup> dose





# Over the past month, unvaccinated individuals accounted for ~19% of the population but ~55% of cases, ~68% of hospitalizations, and ~78% of critical care admissions.

These % are expected to increase over time as more people get fully vaccinated and there are fewer unvaccinated people. 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.



A large proportion of deaths is among older (80+) individuals, >90% of whom are fully 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 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 Sept  $24^{th}$  may not be captured in our surveillance system until Sept  $29^{th}$ .

For latest version of this figure, see COVID-19 Regional Surveillance Dashboard



As more individuals in BC get vaccinated, we expect the % of cases that are among the vaccinated to grow.

In populations/ settings with very high vaccination coverage, (e.g. health care workers, post secondary students, long term care home residents - where coverage can be as high as 97% or more), by definition, the vast majority of cases will be among the vaccinated.

#### 10,480 cases: November 10 - December 07, 2021

**5,757** cases unvaccinated

**430** cases vaccinated, 1 dose

**4,230** cases vaccinated, 2 doses







55%

4%

40%

of cases were unvaccinated

of cases were vaccinated, 1 dose

of cases were vaccinated, 2 doses

#### **Denominators matter**

5,757 cases per 1.0M people unvaccinated

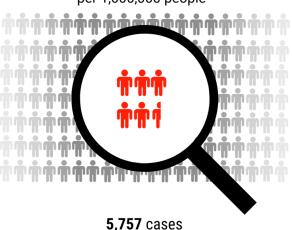
= 5,757 cases per 1M

**4,230** cases per **3.8M** people vaccinated, 2 doses

**1,113** cases per **1M** 

#### Unvaccinated

per 1,000,000 people



#### Vaccinated, 2 doses

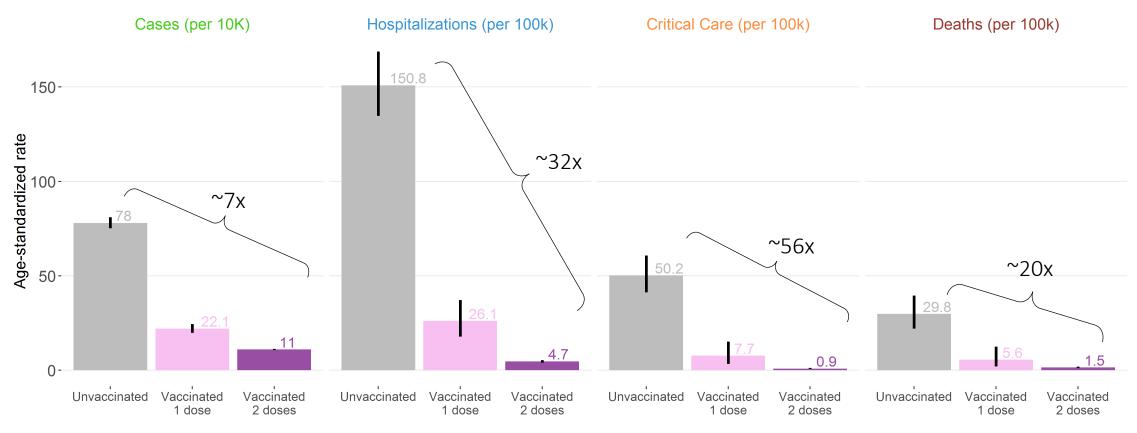
per 1,000,000 people





#### After adjusting for age and the size of the population, unvaccinated individuals continue to be at a significantly higher risk of diagnosed infection, hospitalization, critical care admission and death from COVID-19 compared with 2-dose vaccinated

Relative rates fluctuate over time. These figures do not represent vaccine effectiveness.

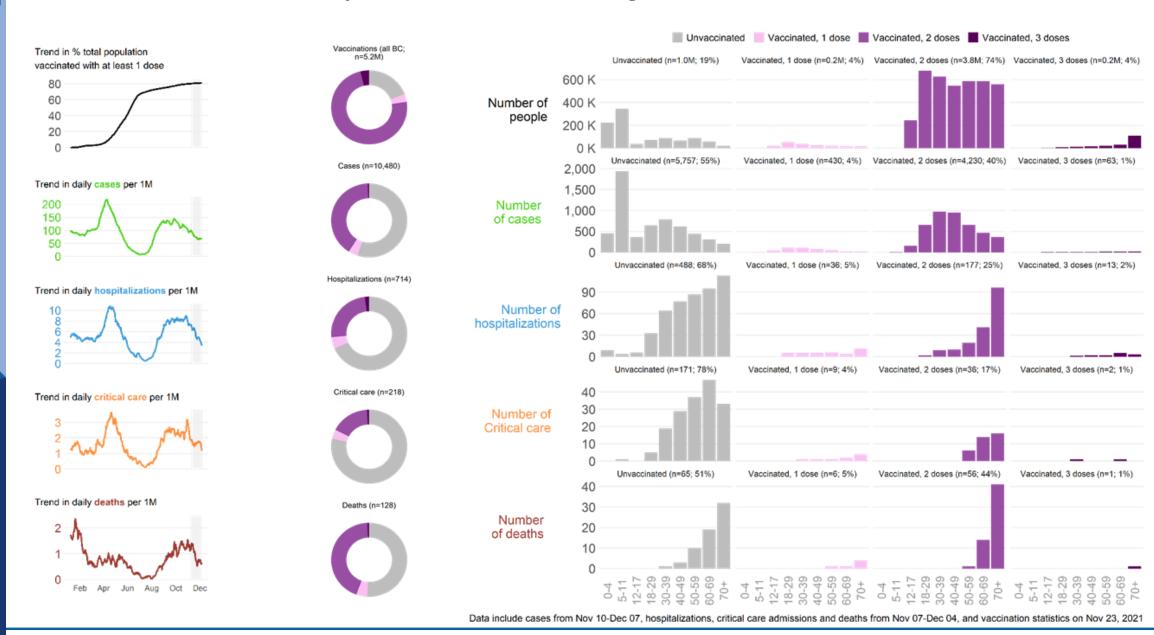


Data include cases from Nov 10-Dec 07, and hospitalizations, critical care admissions and deaths from Nov 07-Dec 04, 2021



21

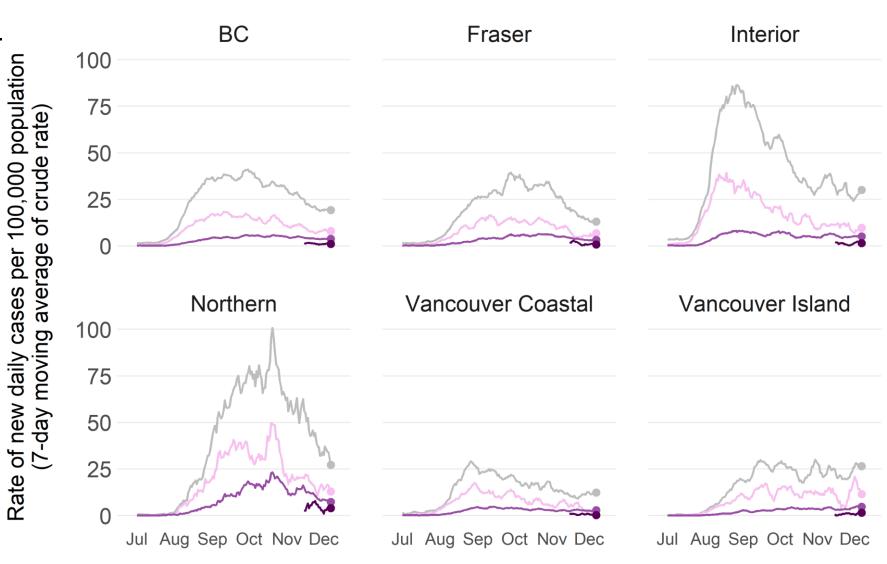
#### **COVID-19** health outcomes by vaccination status and age, BC, November 7 – December 07 2021







COVID-19 case rate by vaccination status and Health Authority, July 1 – Dec 9, 2021



Vaccinated, 1 dose

Vaccinated, 2 doses

Unvaccinated\*

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.

\*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 6% of the total unvaccinated cases since 1 July 2021.

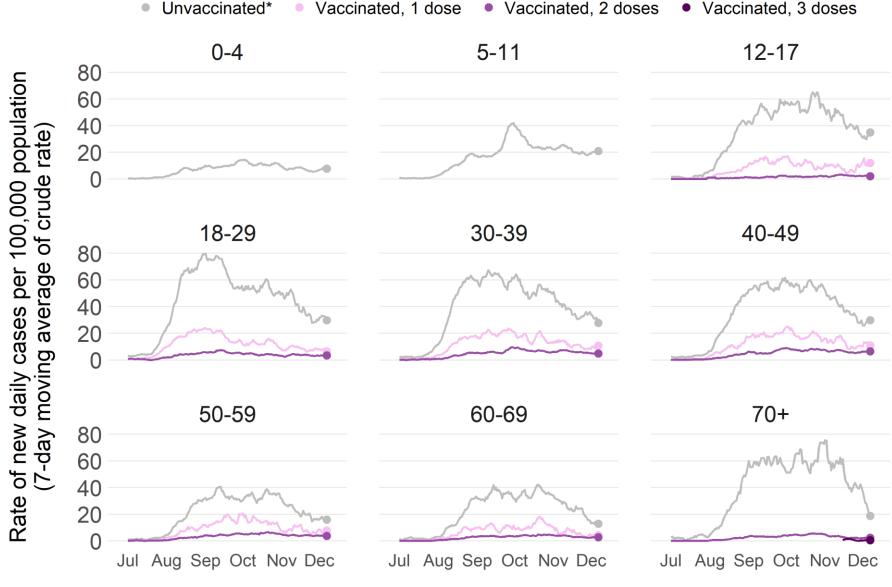
Data extracted from health authority case line list on 09 Dec 2021

For latest version of this figure, see COVID-19 Regional Surveillance Dashboard



Vaccinated, 3 doses

COVID-19 case rate by vaccination status and age, July 1 – Dec 9, 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.

\*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 6% of the total unvaccinated cases since 1 July 2021.

Data extracted from health authority case line list on 09 Dec 2021



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

Unvaccinated\* Vaccinated, 1 dose Vaccinated, 2 doses BC Fraser Interior per 1M population 80 60 crude rate) 40 20 Rate of new daily hospitalizations (7-day moving average of Northern Vancouver Coastal Vancouver Island 80 60 40 20 Aug Sep Oct Nov Dec Jul Aug Sep Oct Nov Dec Jul Aug Sep Oct Nov Dec

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.

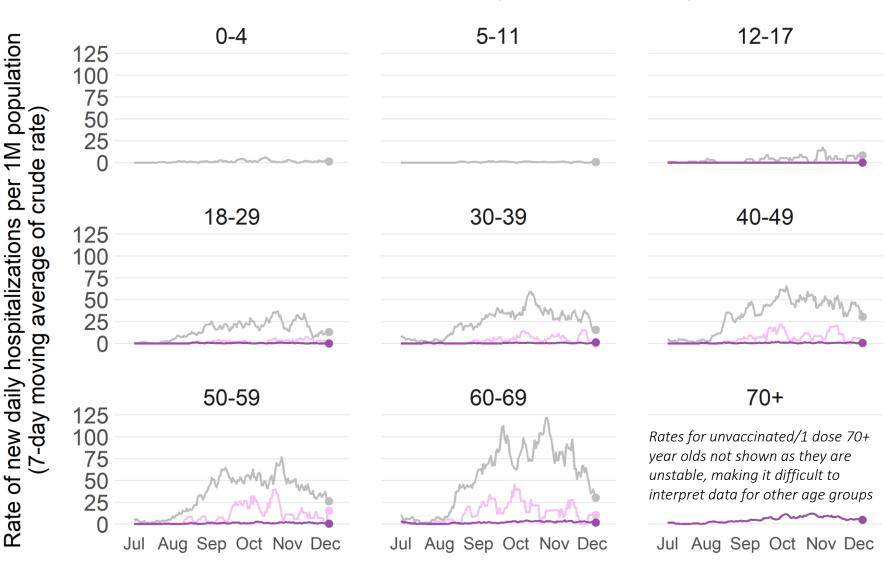
\*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 5% of hospitalized unvaccinated cases since 1 July 2021.

Data extracted from health authority case line list and up to 04 Dec 2021



#### COVID-19

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



Vaccinated, 1 dose

Vaccinated, 2 doses

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.

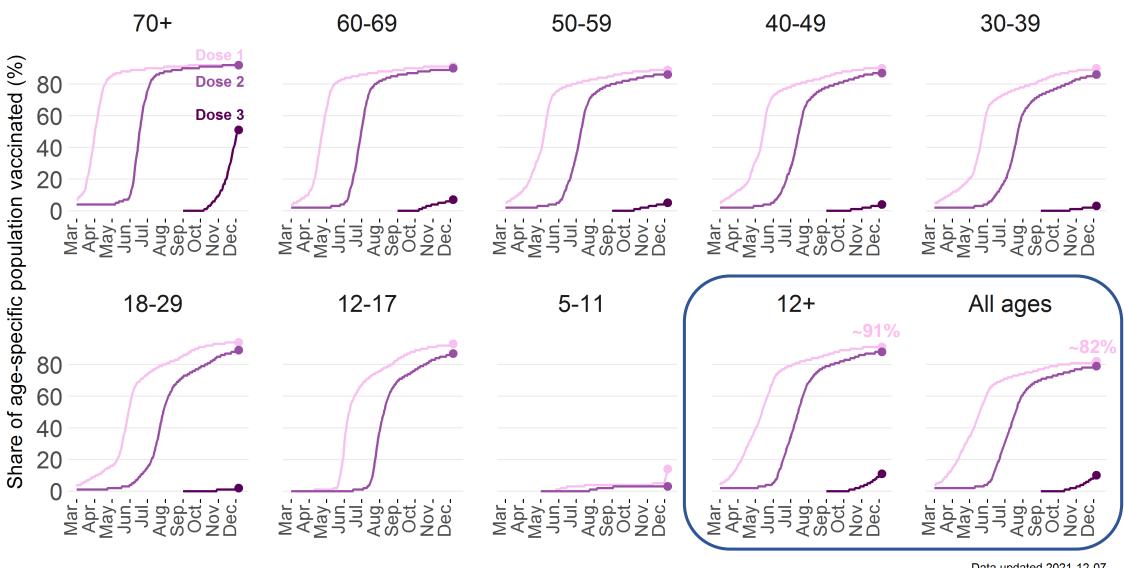
\*Unvaccinated includes cases who have received 1 dose but not yet protected (episode date <21 days after 1st dose administration date); These represent 5% of hospitalized unvaccinated cases since 1 July 2021.

Data extracted from health authority case line list and up to 04 Dec 2021



Unvaccinated\*

#### Vaccination progress in BC over time by age group and dose number up to Dec. 07, 2021

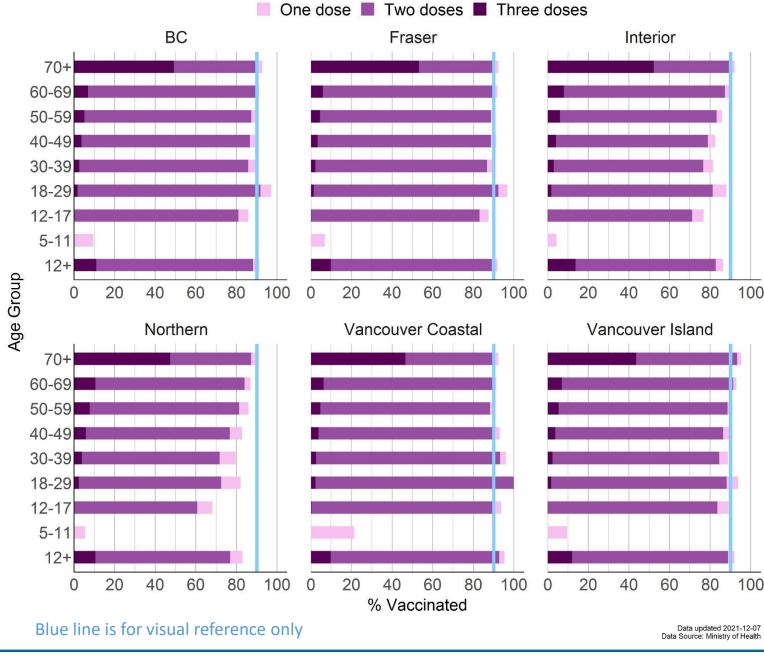


Data updated 2021-12-07
Data Source: Provincial Immunization Registry, PHSA



# Vaccination progress in BC and by Health Authority as of Dec. 07, by age group and dose number (%)

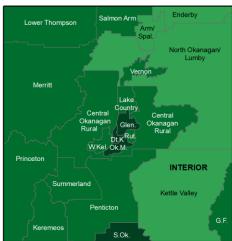
Denominator for this graph is Client Roster maintained by the BC Ministry of Health. Client Roster population data are sourced from a list of all residents registered with Medical Services Plan as of March 12, 2021. Since this date, people may have moved, permanently or temporarily, and have been vaccinated or reported their vaccination status. As a result, there are areas in BC where there will be more people vaccinated than there were living in that area in March 2021. The Client Roster likely underrepresents new arrivals into a region such as young adults relocating to attend post-secondary institutes and workers at major construction project areas. An alternative denominator would be based on projections derived from Census 2016, which is also not representative of the current BC population. There is no perfect denominator.





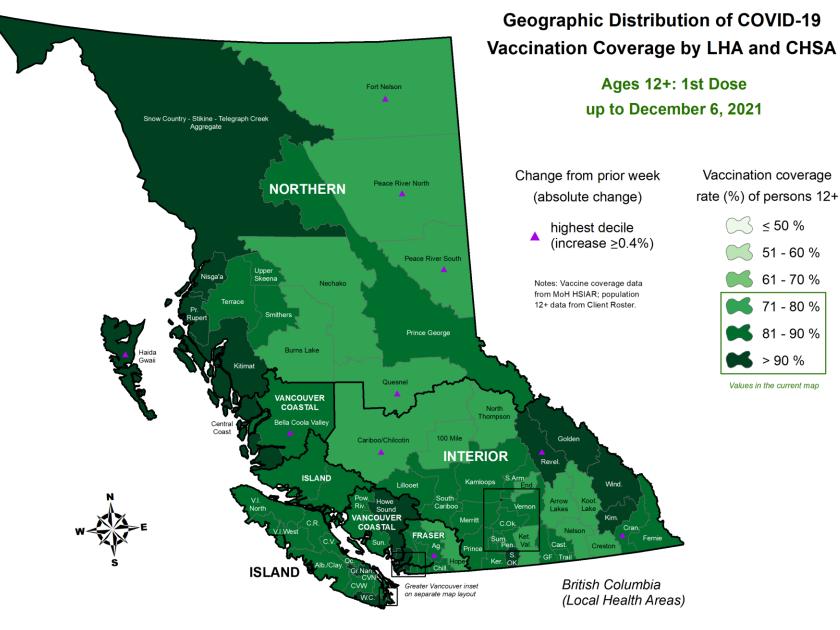


#### Okanagan Inset (Community Health Service Areas)



#### Greater Victoria Inset (Community Health Service Areas)







≤ 50 %

51 - 60 %

61 - 70 %

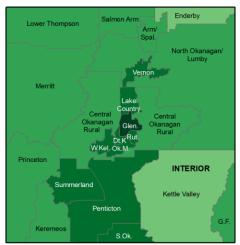
71 - 80 %

81 - 90 %

> 90 %

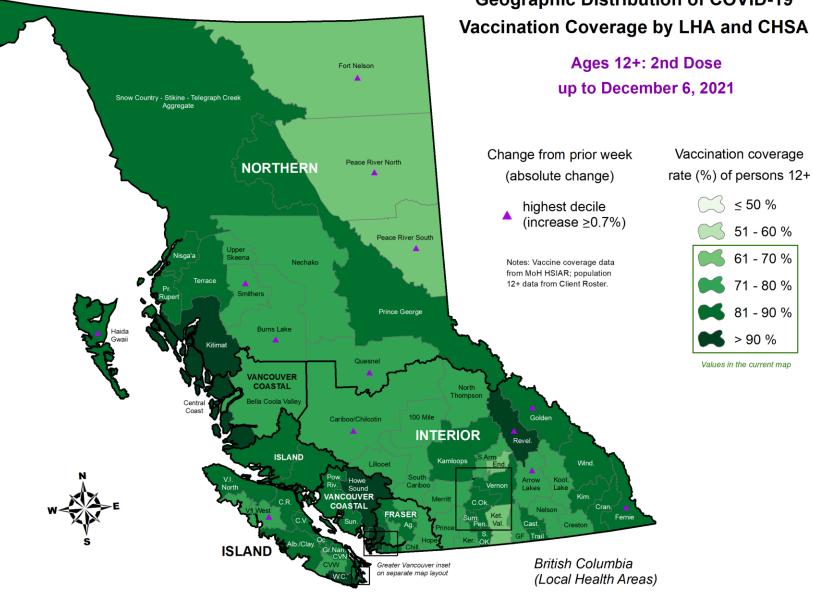
Values in the current map

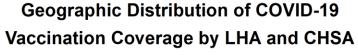
#### Okanagan Inset (Community Health Service Areas)



#### Greater Victoria Inset (Community Health Service Areas)







Ages 12+: 2nd Dose up to December 6, 2021

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

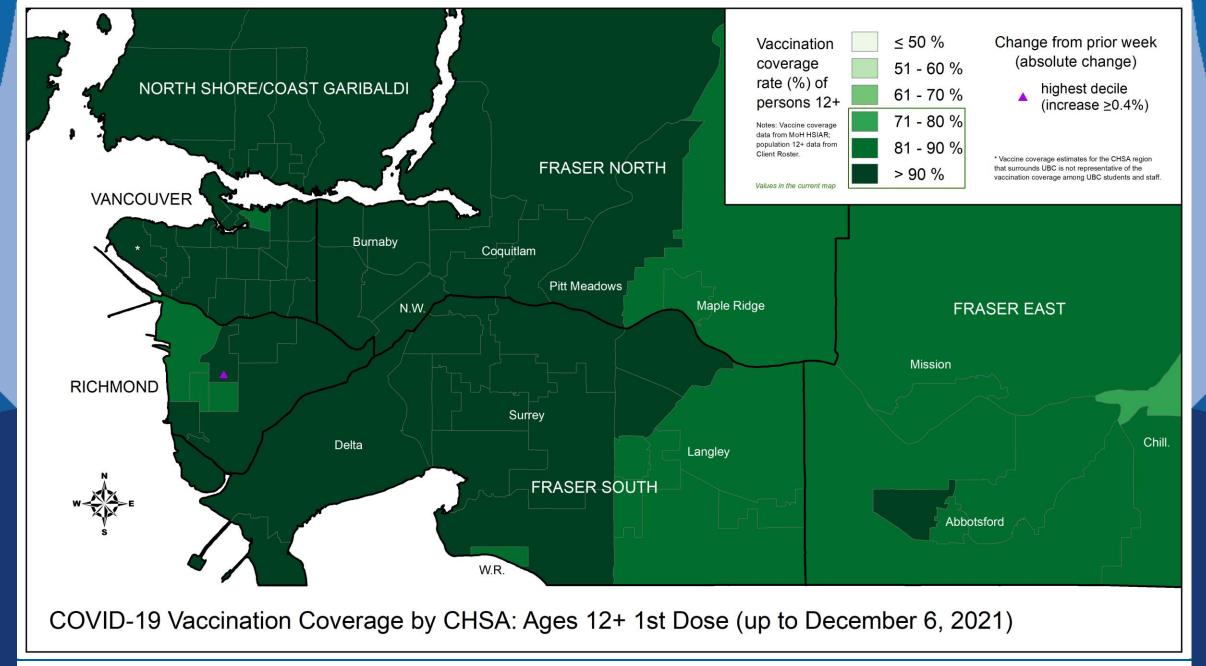
Vaccination coverage

≤ 50 %

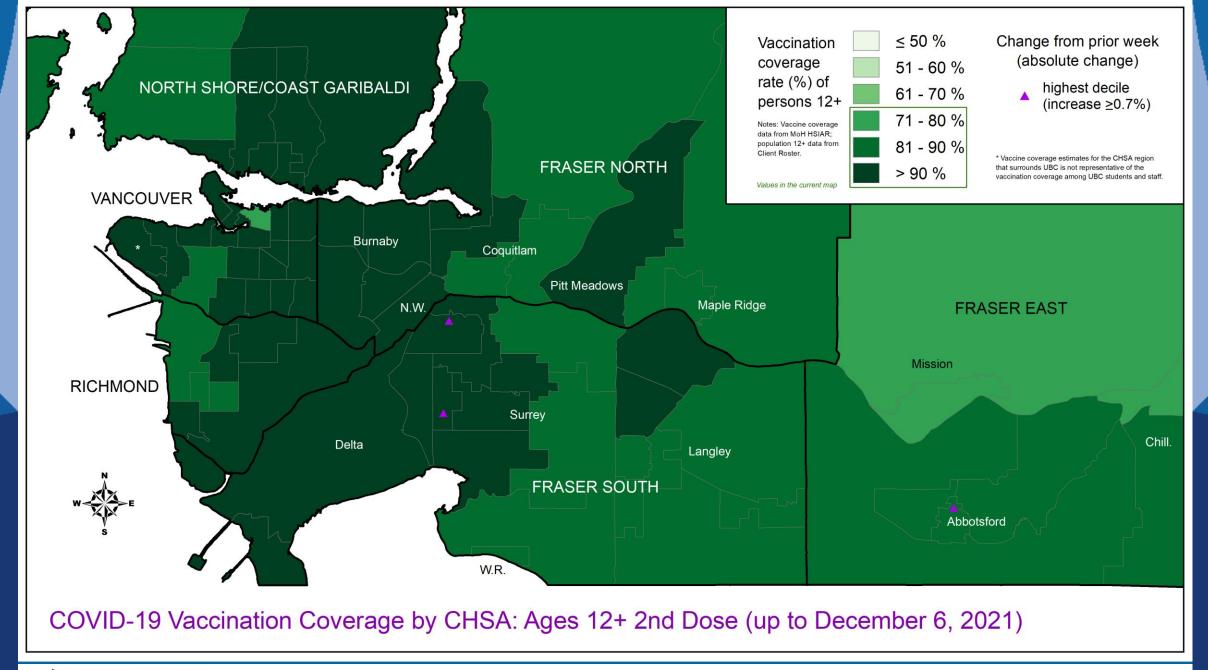
81 - 90 %

> 90 %

Values in the current map









## Lab - Key Messages

- Test positivity among publicly funded tests is stable (~4.9%)
  - Test positivity varies by HA, ranging from 3% in VCH to 13% in NH
  - Test positivity and incidence are increasing in North Vancouver Island
- Publicly funded testing is stable (~51K total public tests this week)
- The provincial weekly median turnaround time (time from specimen collection to lab result) is low at 13 hours, indicating good testing capacity; 3 in 4 tests took ≤ 18 hours to result.
- Delta sublineages AY.25 and AY.27 remain the most prevalent COVID-19 variants in BC across all age groups and all health authorities. In the last epi week, Delta consisted of ~100% of all sequenced specimens.
- 44 cases of Omicron variant reported to date, close to half related to international travel
- Viral signals from wastewater collection sites in Metro Vancouver reflect case trends in these regions
- More lab & genomic information can be found in the weekly <u>VOC Report</u>





### Weekly Summary of ALL lab tests performed



4,705,650

total specimens tested

new this epi week



**↑ 2%** relative to last week



231,619

82,907

total positive specimens

new positive this epi week



3.1% positivity
0% absolute change from
last week



2,542

mean turnaround time (TAT)

13 [9-18] Median

Median [Q1-Q3]TAT



**1** 4% TAT relative to last week

## **Weekly Summary of Lab tests paid Publicly**



3,488,834

total specimens tested

50,551 ne

new this epi week



total positive specimens

2,481

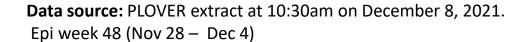
new positive this epi week



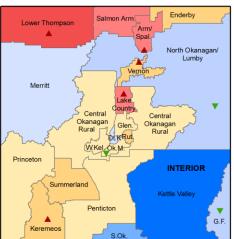
1 1% relative to last week



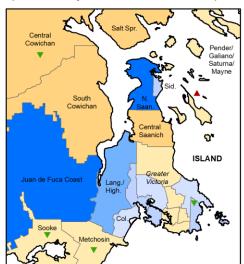
4.9% positivity
o% absolute change from last week

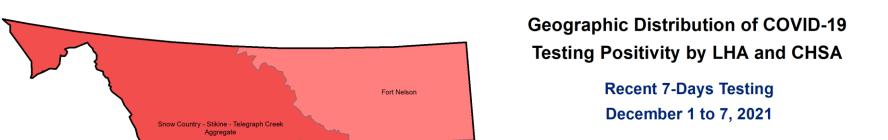


#### Okanagan Inset (Community Health Service Areas)



#### Greater Victoria Inset (Community Health Service Areas)





#### 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 %

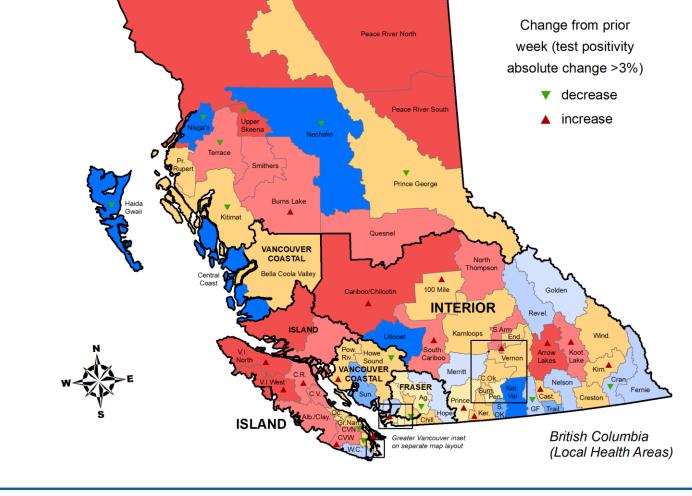


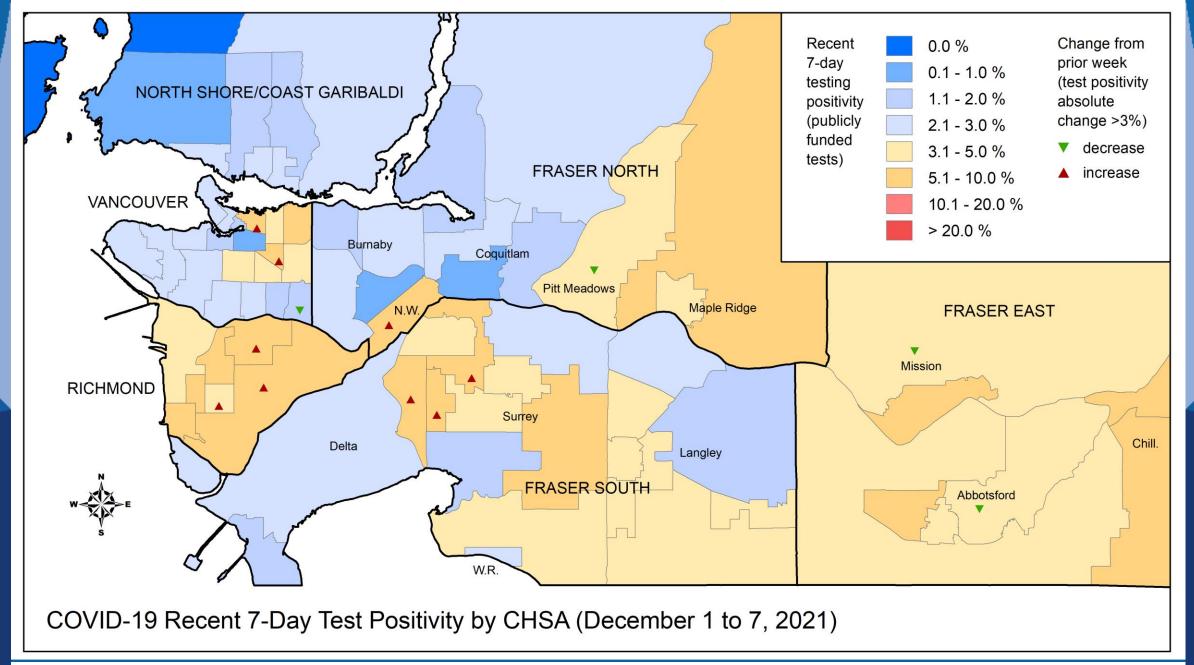
10.1 - 20.0 %



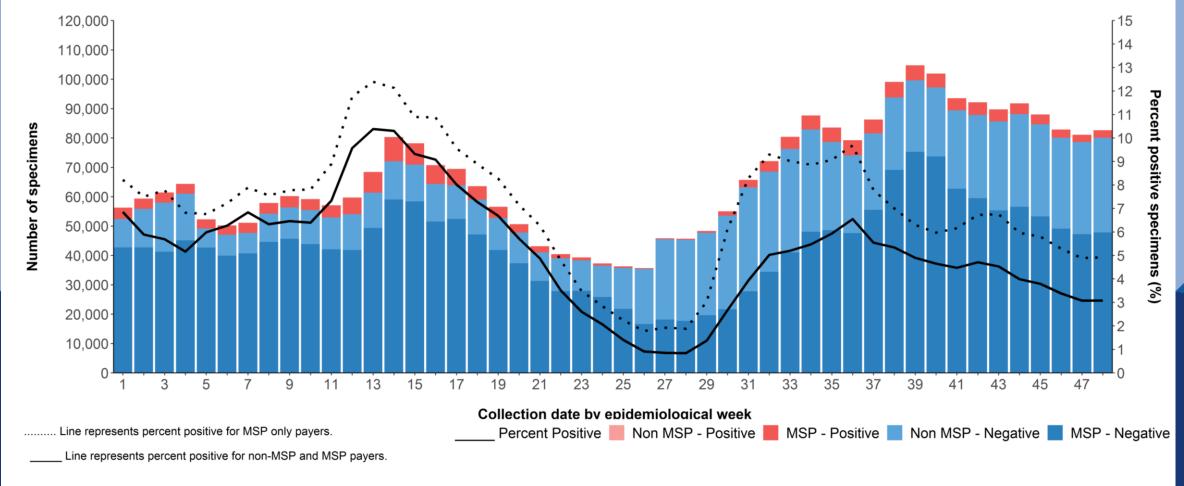


Data source: BCCDC Public Health Laboratory PLOVER system (publicly funded tests performed). Data are by testing result date, and location of client's residence or if missing physician's address.





#### Among publicly funded specimens, percent positivity (4.9% this week) and number of specimens tested continue to slowly decline.

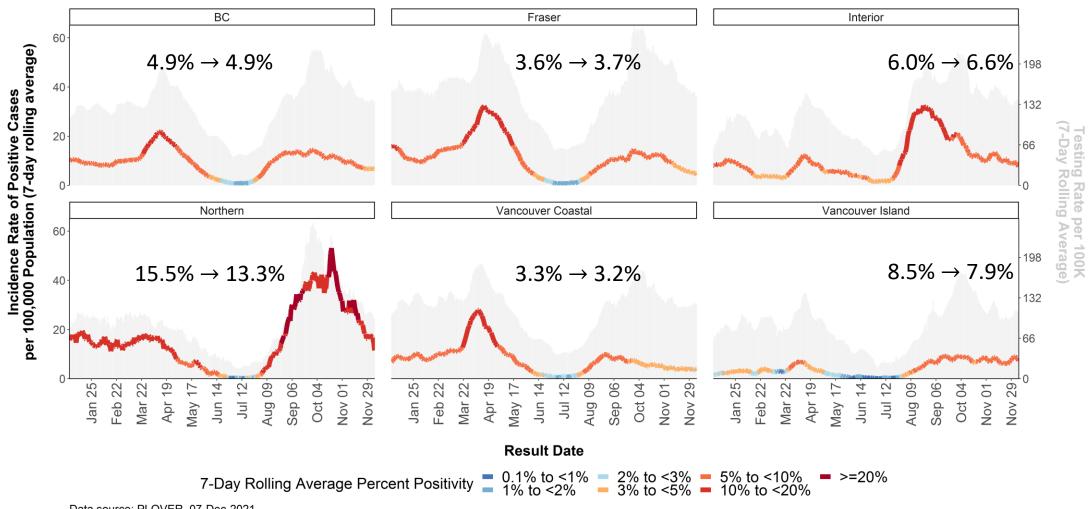


Note: Invalid (n = 1959) and indeterminate (n = 7793) results have been excluded

Data source: PLOVER 09-Dec-2021

#### Test positivity among public tests is stable (~4.9% provincially), and remains high in NH (13%).

Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Dec 7, 2021.



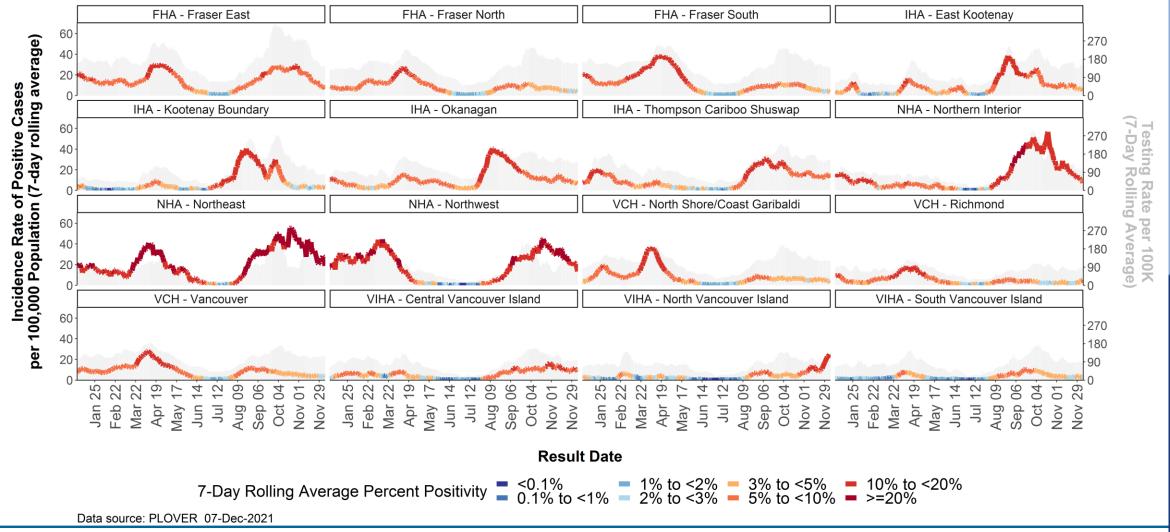
Data source: PLOVER 07-Dec-2021



# Test positivity is high in NHA ( >10% in Northwest and Northern Interior, and >20% in Northeast). In North Vancouver Island, test positivity is >10% and incidence is increasing.

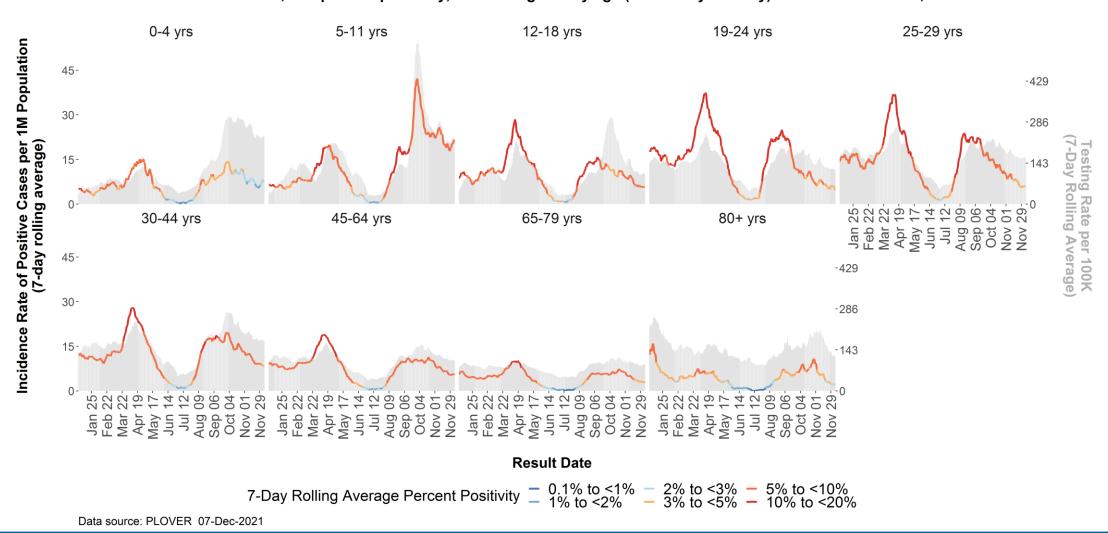
Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).

Jan 1 2021 - Dec 7, 2021.



## Percent positivity highest among 5 to 18 years (between 5 and 10%), and lowest among 0 to 4 and 80+ years (<3%).

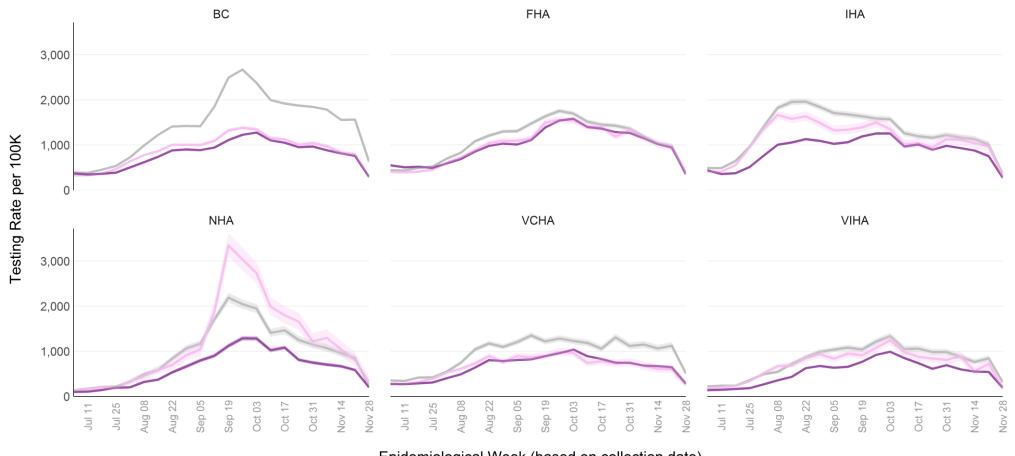
Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Dec 7, 2021.

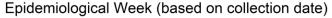




#### In every region, trends in testing rates are broadly similar by vaccination status

MSP Only Testing Rate by Vaccination Status and Epiweek of Collection Date (12+ year olds) Jul 4 - Dec 4, 2021



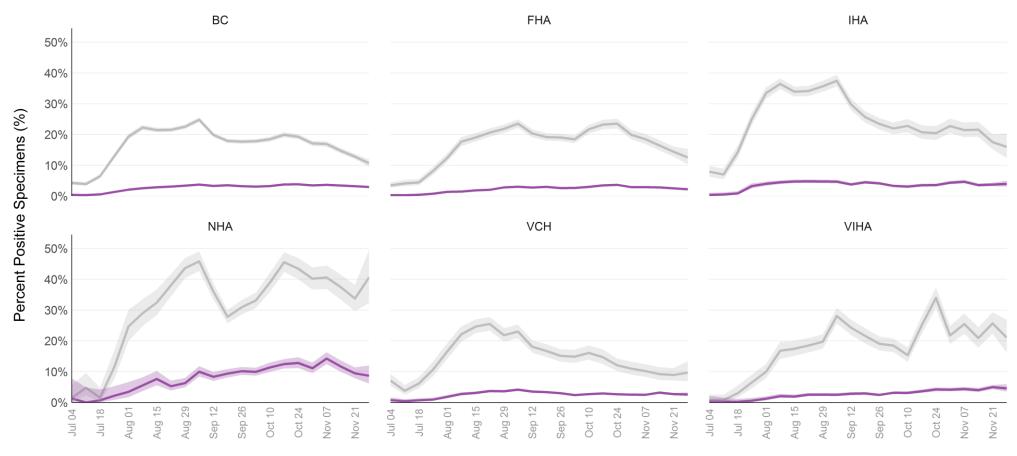


—Unvaccinated or underprotected Vaccinated 1 dose >= 21 days—Vaccinated 2 doses >= 14 days



#### Test positivity among individuals ≥ 12 years is higher for unvaccinated individuals in all HAs.

MSP Only Percent Positive Specimens by Vaccination Status and Epiweek of Collection Date (12+ year olds)Jul 4 - Dec 4, 2021

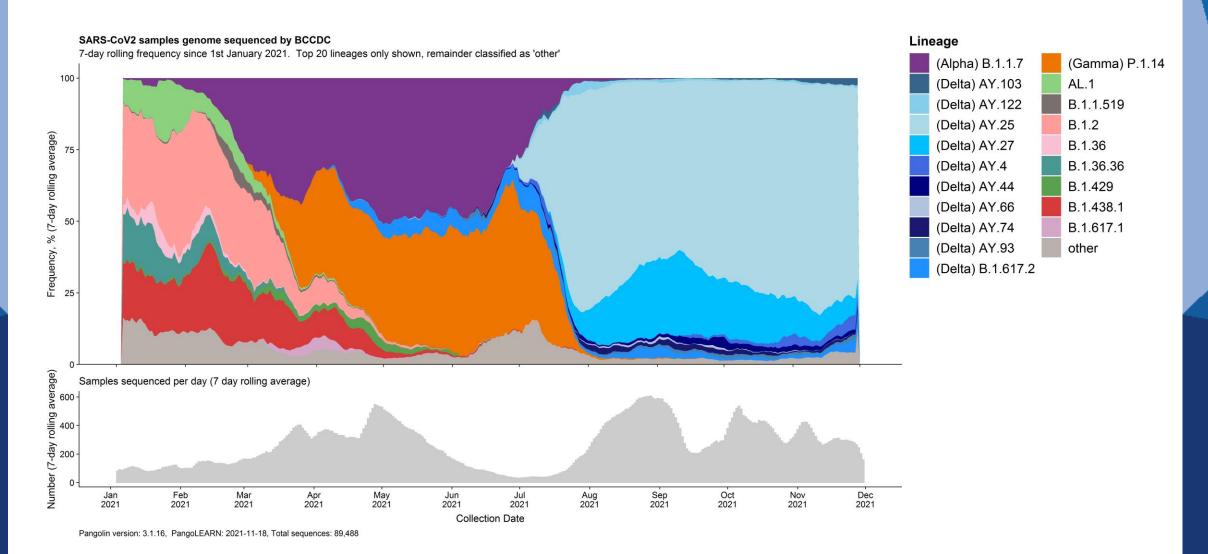


Epidemiological Week (based on collection date)

Unvaccinated or underprotected Vaccinated 2 doses >= 14 days

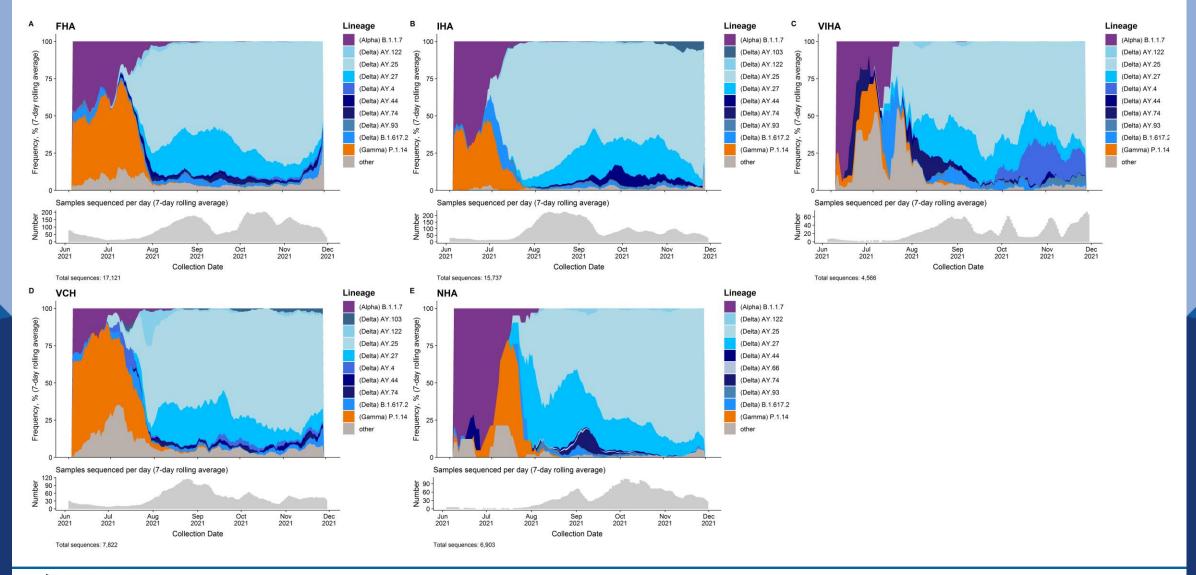


#### Whole genome sequencing, Jan 2021 – 4 Dec 2021





#### Whole genome sequencing by HA, Jun - 4 Dec 2021





## Variants of Concern – update on Omicron

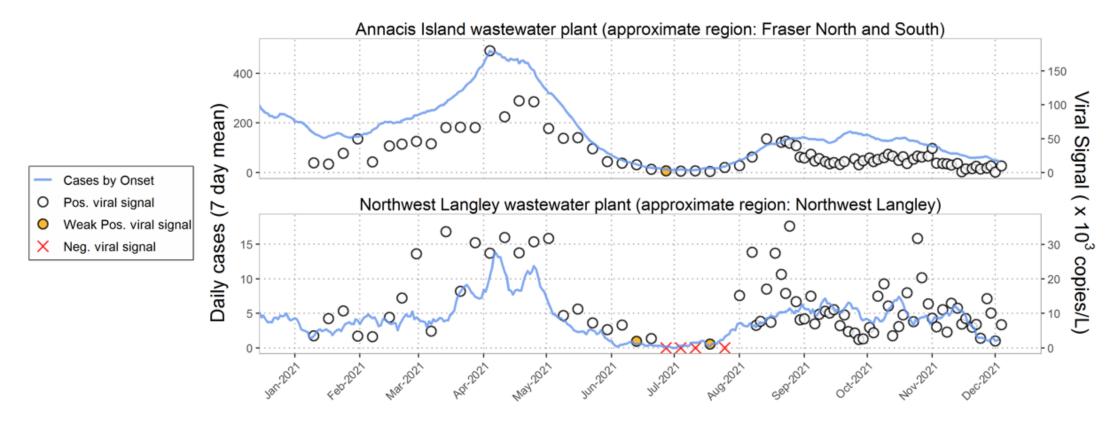
- Omicron is detected via whole genome sequencing
- BC Sequencing close to 100% of cases
- 44 confirmed Omicron cases up to December 12<sup>th</sup>
  - 24 cases in FHA, 11 in VCHA, 5 in VIHA, 3 in IHA, 1 in NHA
  - Age range: between 5 and 72 years of age, median age 33 years old
  - None currently 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  $\rightarrow$  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

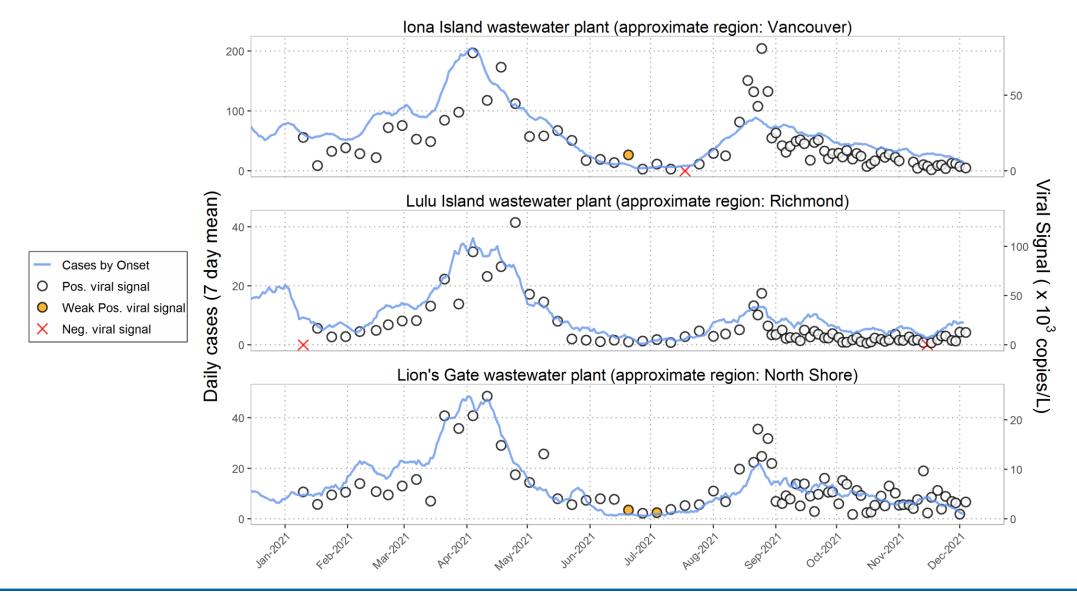


Time-series plots show weekly or bi-weekly viral signals from each wastewater plant (right y-axis), overlaid with rolling 7-day mean of daily new cases within wastewater catchment area (left y-axis).

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



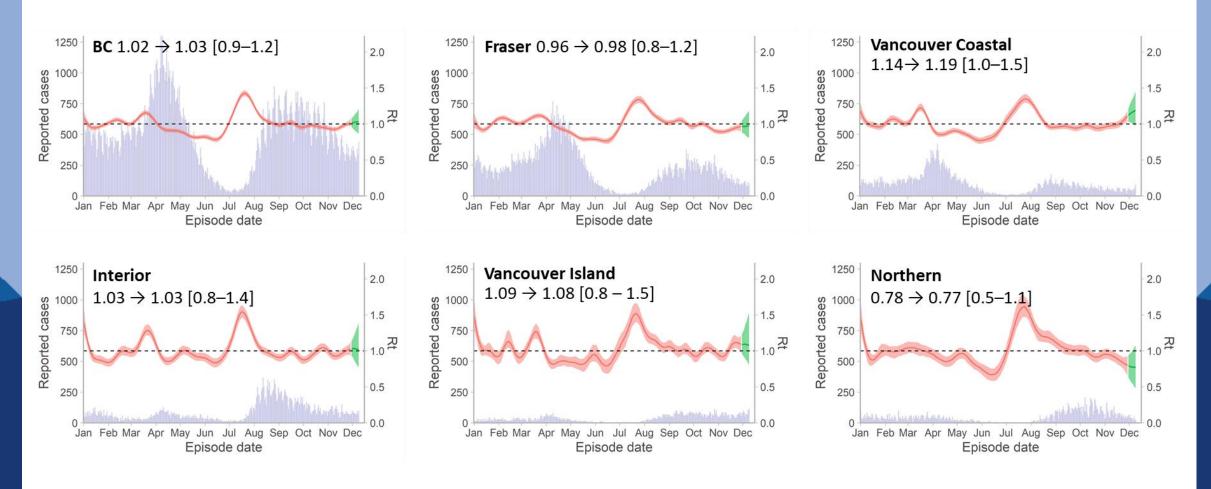
#### Viral signal from wastewater in VCH, Jan 2021- 4 Dec 2021





#### Dynamic modeling: recent trends

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



Estimates are shown for last week  $\rightarrow$  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.

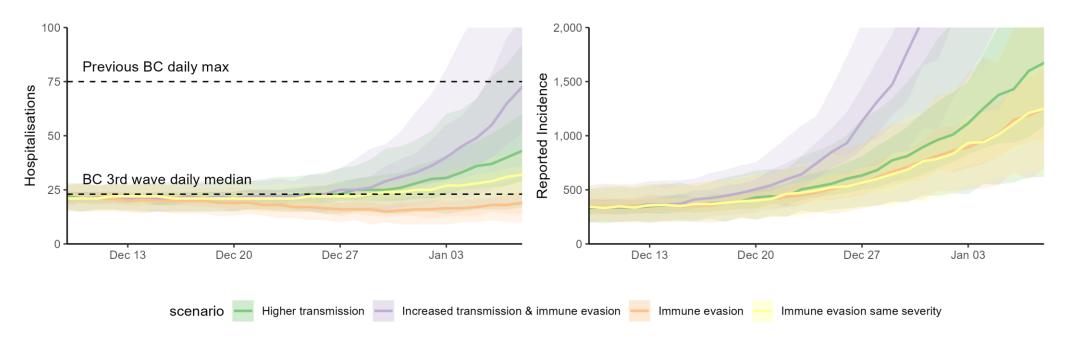


#### **Omicron scenarios**

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 9<sup>th</sup>.

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.





## **Pediatric Report - Key Messages**

- Case numbers in <18 years remain relatively stable</li>
  - Incidence varies regionally and by pediatric age group
  - Incidence recently increased in 5 to 11 years in VIHA
- Case rates are highest in regions with lower 12+ vaccine coverage
- Severe outcomes are rare in children

Also see the Data for K-12 Schools November report posted on the BCCDC website:

http://www.bccdc.ca/Health-Info-Site/Documents/COVID\_sitrep/K12\_Situation\_Report/SitRep\_K-12\_November\_2021.pdf

Next School Report will be released next week, approximately Dec 21 on this page





### 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

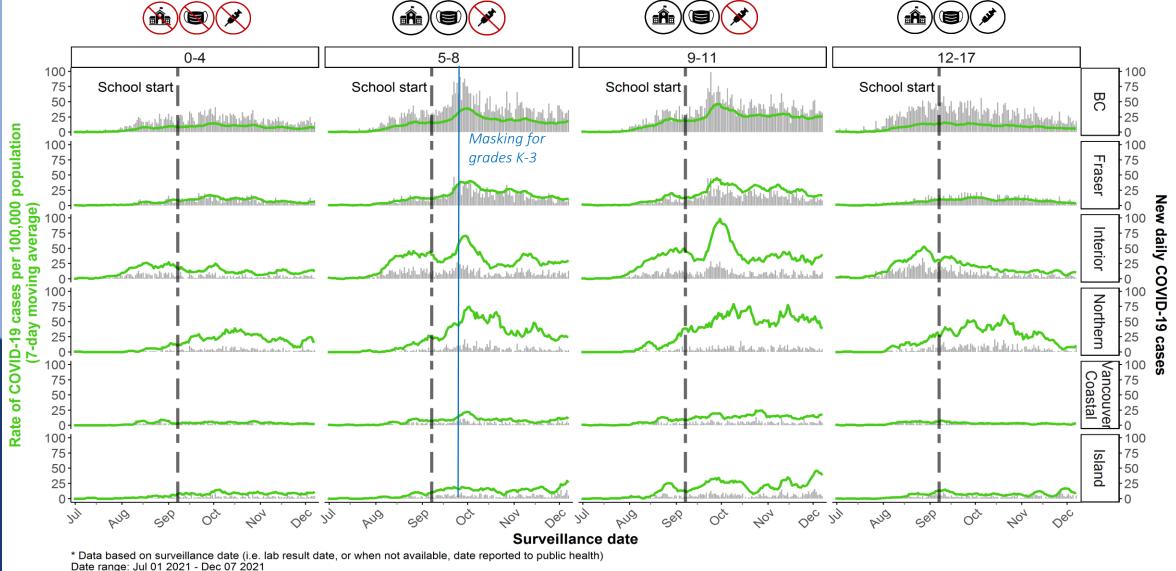
<sup>\*</sup> New hospitalizations and critical care census numbers are as of Dec 07 2021

<sup>\*</sup> New cases and new deaths are net new between Line lists of Dec 01 2021 and Dec 08 2021





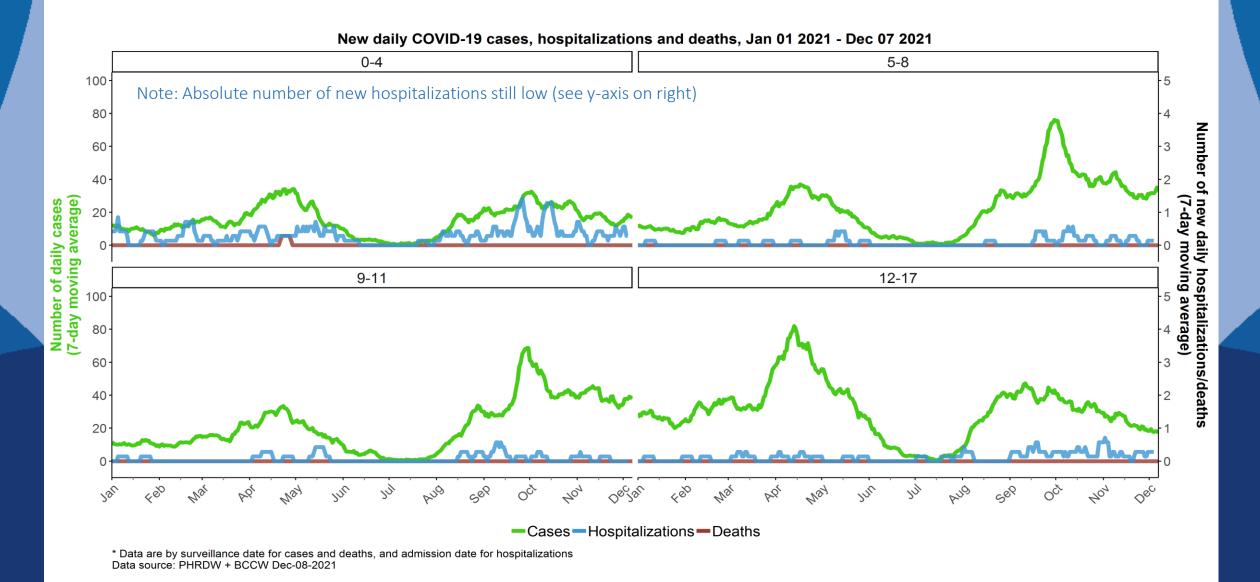
#### Incidence varies regionally and by pediatric age group; incidence among 5-11 years recently increased in VIHA.



Date range: Jul 01 2021 - Dec 07 2021 Data source: PHRDW Dec-08-2021



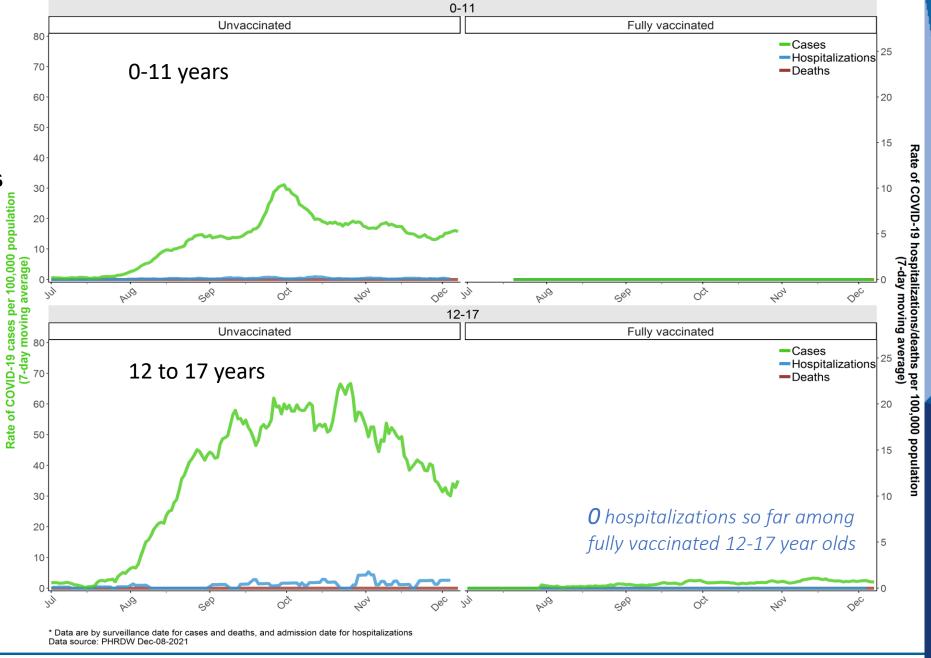
#### Number of new daily hospitalizations remains very low and stable; deaths are extremely rare

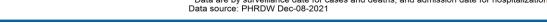




Case rates are relatively stable among children and youth.

**Hospitalization rates** remain low.

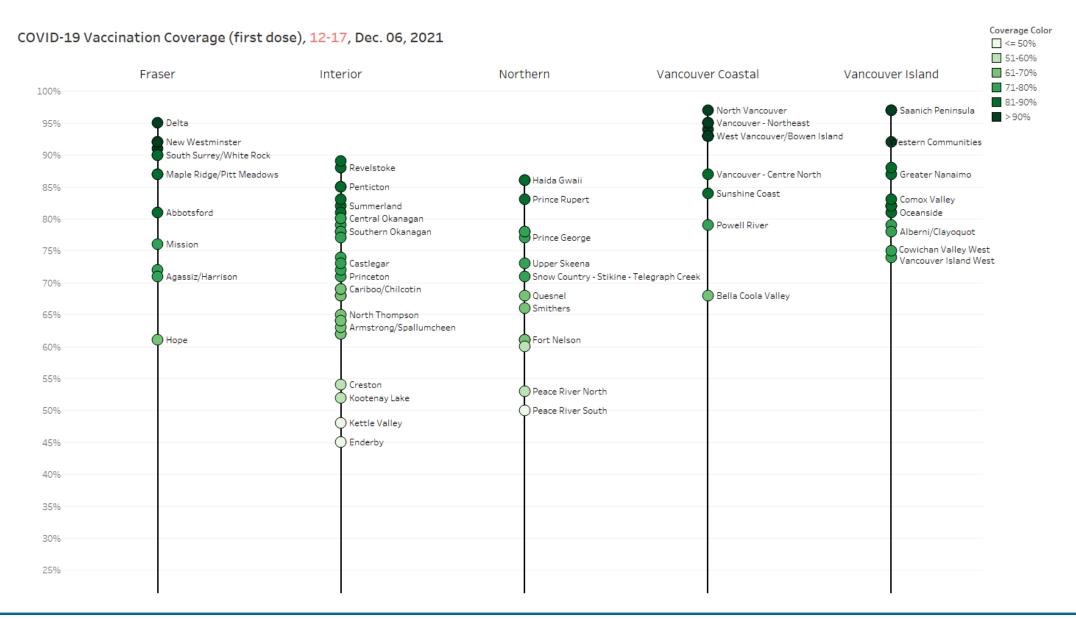






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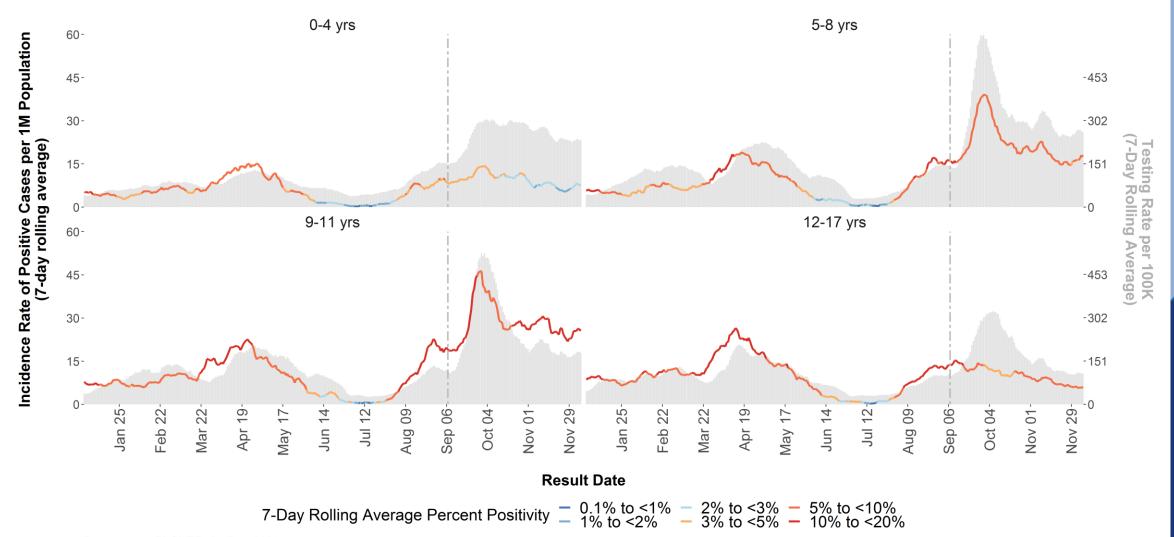
#### COVID-19 vaccination coverage with 1st dose among 12-17 year olds, by Local Health Area, Dec. 6, 2021





Testing rates among 0-17 year olds are stable and elevated. Test positivity is highest among 9-11 year olds (>10%) and lowest in the 0-4 year olds (<3%).

Case incidence rate, test percent positivity, and testing rate by age (Public Payers Only). Jan 1 2020 - Dec 7, 2021.



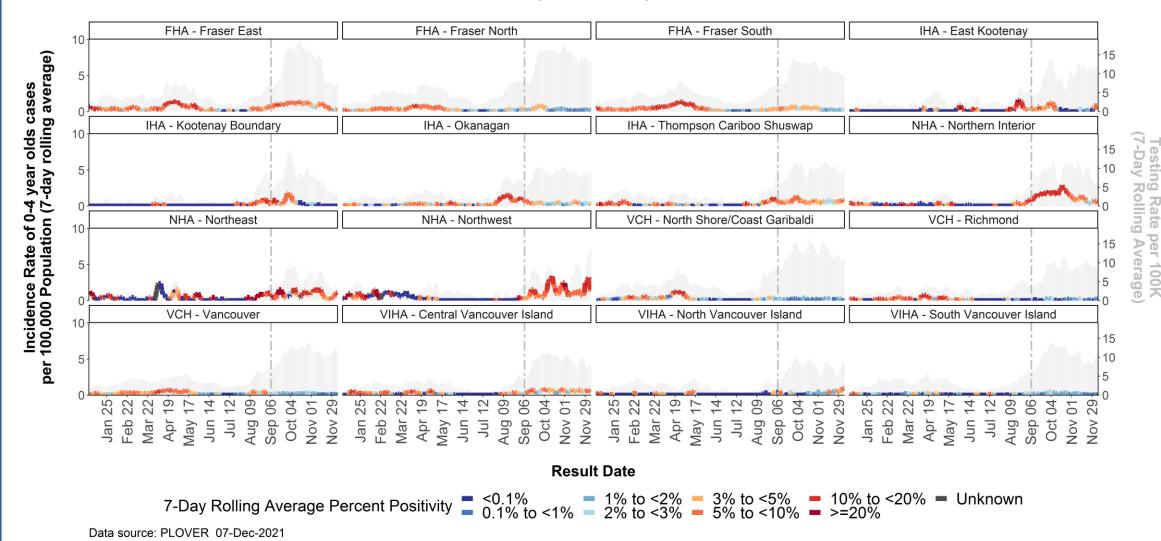
Data source: PLOVER 07-Dec-2021



Testing rates among 0-4 year olds remain high in all HSDAs. Percent positivity is variable; very low in most regions. Incidence is increasing in North Vancouver Island.

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).

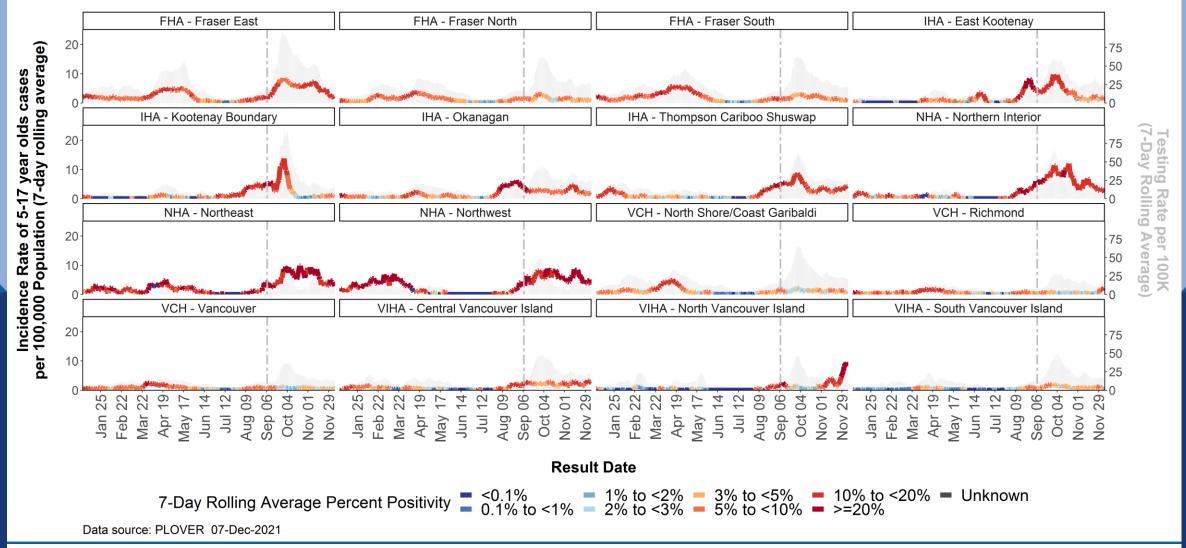
Jan 1, 2021 - Dec 7, 2021.



## Among 5 to 17 years: Percent positivity is high throughout NH, incidence is stable. In North Vancouver Island, percent positivity is >20% and incidence is rapidly increasing.

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).

Jan 1, 2021 - Dec 7, 2021.



#### **Additional Resources**

- BCCDC COVID-19 Regional Surveillance Dashboard showing maps, vertical plots, and trends by LHA can be found <a href="https://example.com/here">here</a>
- More BC COVID-19 data, including the latest Situation Report, maps, and BC COVID-19 public dashboard, can be found <u>here</u>
- For more information on variants of concern and whole genome sequencing, the latest report is posted <u>here</u>
- To put BC provincial, Health Authority, and HSDA trajectories into national and international context, see <u>BCCDC COVID-19 Epidemiology app</u>
- 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 <u>here</u>



