BCCDC Data Summary

23 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 to Sept 21

- The majority of new cases (7 in 10) and hospitalizations (4 in 5) are among unvaccinated individuals.

- *NEW* Vaccine effectiveness estimates based on BC data show that:
  - 2 doses of any vaccine are highly protective, including against the Delta variant
  - Strong protection against infection is maintained at least 4 months after the 2nd mRNA dose
  - Protection is even stronger when the interval between 1st and 2nd doses is more than 6 weeks

- New hospitalizations are elevated but stable provincially; hospital/critical care census is increasing across BC; new deaths are low. Hospitalization rates among children continue to remain very low.

- Case rates are increasing in NH, elevated but decreasing in IH, and stable in VCH, FH and VIHA.

- Test positivity among public tests is stable (~8% provincially), and highest in IH (11%) and NH (21%).
  - Testing rates increased in children (<18 years)

- Vaccine coverage in BC, 21 Sep, 1 dose (2 doses): 78% (71%) of total population, 87% (79%) of 12+ eligible population. Lower vaccine coverage in Interior and Northern and among younger individuals.

- The Delta variant continues to account for ≈100% of all positive tests in BC.
Sep 16 to Sep 21: BC COVID-19 Profile

- Total cases: 180,937
  - New this week: 4,457

- Ever hospitalized: 9,590
  - New this week: 317

- Total deaths: 1,910
  - New this week: 37

- Removed from isolation: 173,215
  - New this week: 4,756

*Data are by surveillance date for cases and deaths, and admission date for hospitalizations.
Data source: PHRDW Sep-22-2021
Case rates and new hospitalizations are stable at provincial level, but trends differ by HA – note the increase in Northern and Island; new deaths are low.
The majority of new cases and hospitalizations continue to be among unvaccinated individuals
Number of new hospital admissions elevated and relatively stable among individuals >20 years. Deaths are low, but increasing: the majority are among individuals aged ≥60 years.
Trends in number and rate of new hospitalizations by age group, BC, 1 Jan – 18 Sept 2021

Hospitalization counts and rates among children (0-19 years) continue to remain very low

*Data based on admission date for hospitalizations
Hospital and critical care census is increasing in most regions and stable in IH

Current COVID-19 hospitalizations in BC, Jan 01 2021 - Sep 21 2021

* Data are by census date for hospitalizations
Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Sep-22-2021
Reported case rate among 5-11 year olds has recently increased and is currently higher than older age groups – but note the very high testing rates in this age group, see slides 46 and 47.
For all age groups, those who are vaccinated have very low case rates. Among those unvaccinated, case rate is the lowest in the 0-11 age group even with higher testing rates.
In regions with highly vaccinated adult populations, incidence is lower in children. Some of the recent increase in incidence among <17 years started before schools opened.
Rising case rates in children and youth have not translated into more hospitalizations.
Hospitalization rates remain very low and stable; deaths are extremely rare.
For latest version of this map (note: change symbols not included), see COVID-19 Regional Surveillance Dashboard
For latest version of this map, (note: change symbols not included), see COVID-19 Regional Surveillance Dashboard.
Average daily rate of new cases per 100,000 population, by local health area, Sep 15 - Sep 21, 2021
• 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
  • $\approx 12x$ more likely to become a case
  • $\approx 61x$ more likely to be hospitalized
  • $\approx 36x$ 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: $\geq 3$ 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 69% of BC’s total population, but accounted for only 24% of cases and 14% 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 21st 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 22% of cases and 13% of hospitalizations.

These % are expected to increase over time as more people get fully vaccinated and there are fewer unvaccinated people. If 100% of 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.
COVID-19 health outcomes by vaccination status and age, BC, Aug 23 – Sep 19, 2021

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

- Unvaccinated
- Vaccinated, 1 dose
- Vaccinated, 2 doses

**Number of people**

- Unvaccinated (n=1.3M; 25%)
- Vaccinated, 1 dose (n=0.3M; 6%)
- Vaccinated, 2 doses (n=3.6M; 69%)

**Number of cases**

- Unvaccinated (n=13,080; 69%)
- Vaccinated, 1 dose (n=1,650; 9%)
- Vaccinated, 2 doses (n=4,211; 22%)

**Number of hospitalizations**

- Unvaccinated (n=767; 82%)
- Vaccinated, 1 dose (n=53; 6%)
- Vaccinated, 2 doses (n=120; 13%)

**Number of deaths**

- Unvaccinated (n=49; 54%)
- Vaccinated, 1 dose (n=6; 7%)
- Vaccinated, 2 doses (n=35; 39%)

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*Figures include cases from Aug 23-Sep 19, and hospitalizations and deaths from Aug 20-Sep 16, 2021*
Denominators for each vaccine status group are dynamic and change daily as people flow from being unvaccinated to protected by 1 dose to protected by 2 doses. Therefore, the denominators are different across groups and over time.

Data extracted from health authority case line list on 22 Sep 2021

***NEW*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard
COVID-19 case rate by vaccination status and age, July 1 – Sept 22, 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.

***NEW*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard
COVID-19 hospitalization rate by vaccination status, July 1 – Sept 15, 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.

***NEW*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard
COVID-19 hospitalization rate by vaccination status and age, July 1 – Sept 15, 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.

***NEW*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard.
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 individuals.

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

Data include cases from Aug 23-Sep 19, and hospitalizations and deaths from Aug 20-Sep 16, 2021.
Illustrated differently...

- 164.3 cases hospitalized per 100,000 people unvaccinated
- 2.7 cases hospitalized per 100,000 people vaccinated, 2 doses

**Unvaccinated**
per 100,000 people

- 164.3 cases

**Vaccinated, 2 doses**
per 100,000 people

- 2.7 cases

61x higher risk of hospitalization among the unvaccinated population

Data from August 20 - September 16, 2021
Data source: health authority case line list
Vaccine Effectiveness (VE): 2 Doses | British Columbia (BC), Canada

Vaccines: mRNA (Pfizer Comirnaty & Moderna Spikevax), AstraZeneca Vaxzevria

Population: 18+ year olds, excluding long term care residents

Research method: Test-negative design

Study period: May 30 - Sept. 11, 2021, during rise of Delta variant in BC

Sample size: 246,656 Cases: 17,077 Controls: 229,579

Participant characteristics

- 55% Female
- 45% Male

Vaccines received: 2 doses

- Pfizer Comirnaty (mRNA): 67%
- Moderna Spikevax (mRNA): 16%
- AstraZeneca Vaxzevria: 5%
- AstraZeneca Vaxzevria + mRNA: 9%

2 doses of any vaccine are highly protective, including against the Delta variant

- Hospitalization risk in vaccinated people reduced by more than 90%
- Infection risk reduced by more than 90% for mRNA recipients and 70% for Vaxzevria
- Mixed doses (mRNA and Vaxzevria) offers protection similar to 2 mRNA doses

Strong protection > 80-90% against infection maintained at least 4 months after the 2nd mRNA dose (monitoring continues, including for AstraZeneca Vaxzevria)

Protection is even stronger when the interval between 1st and 2nd dose is more than 6 weeks

- VE estimates displayed are against infection.

Adjusted for: age group, gender, epidemiological week [22–36] and health regions

Skowronski DM, Setayeshgar S, Zou M et al. Two-dose vaccine effectiveness against SARS-CoV-2 infection and hospitalization, including Delta variant: a test-negative design in British Columbia, Canada.
Vaccination progress in BC over time by age group and dose number up to Sept 21

Data updated 2021-09-21
Data Source: Provincial Immunization Registry, PHSA
Vaccination progress in BC and by Health Authority as of Sept 21, 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.

Blue line is for visual reference only; note the change to 90%

***NEW*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard
BC communities with higher vaccination rates generally had lower total number of cases per capita between July 1 and Sep 19.
For latest version of this map, see COVID-19 Regional Surveillance Dashboard
For latest version of this map, see COVID-19 Regional Surveillance Dashboard
COVID-19 vaccination coverage with 1st dose among 12-17 year olds, by Local Health Area, up to Sept 20, 2021: there is more variation in this age group compared with older age groups.

For latest version of this map, see COVID-19 Regional Surveillance Dashboard.
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 2021-09-22
Population denominator from Statistics Canada table 17-10-0025-01, 12-14 year old age group estimated

Data from Our World in Data and extracted on 2021-09-22

For latest vaccination progress statistics in BC, Canada and internationally, see the Epi App
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 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 ~8%
  - Test positivity varies by HA, ranging from 5.8% in VCH to 21% in NH.
  - Test positivity is high in Fraser East and most HSDAs in NH and IH

- Publicly funded **testing rates** were stable this week
  - Testing rates increasing in children (<19 years)

- The provincial weekly median **turnaround time** (time from specimen collection to lab result) remains low, at 14 hours indicating good testing capacity; 1 in 4 tests took > 22 hours to result.

- **Delta** is the most prevalent COVID-19 variant in BC representing ~100% of all sequenced specimens in most recent week.

- Wastewater samples can act as a population-level sentinel surveillance tool
  - Viral signals in Metro Vancouver wastewater plants have plateaued or are declining slowing, consistent with case-counts in these regions
### Weekly Summary of ALL lab tests performed

<table>
<thead>
<tr>
<th><strong>Weekly Summary of ALL lab tests performed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3,694,756</strong></td>
</tr>
<tr>
<td><strong>85,934</strong></td>
</tr>
<tr>
<td><strong>189,036</strong></td>
</tr>
<tr>
<td><strong>4,777</strong></td>
</tr>
<tr>
<td><strong>16 hr</strong></td>
</tr>
<tr>
<td><strong>14 [9-22]</strong></td>
</tr>
</tbody>
</table>

- **8%** relative to last week
- **5.6%** positivity
- **1.0%** absolute change from last week

### Weekly Summary of Lab tests paid Publicly

<table>
<thead>
<tr>
<th><strong>Weekly Summary of Lab tests paid Publicly</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2,794,940</strong></td>
</tr>
<tr>
<td><strong>60,338</strong></td>
</tr>
<tr>
<td><strong>186,713</strong></td>
</tr>
<tr>
<td><strong>4,697</strong></td>
</tr>
</tbody>
</table>

- **14%** relative to last week
- **7.8%** positivity
- **1.9%** absolute change from last week

**Data source:** PLOVER extract at 10:30am on September 21, 2021.

Epi week 37 (Sep 12 – Sep 18)
For latest version of this map, see the new (note: change symbols not included) COVID-19 Surveillance Dashboard

Geographic Distribution of COVID-19 Testing Positivity by LHA and CHSA
Recent 7-Days Testing
September 15 to 21, 2021

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

Test positivity rate
- 0.0 %
- 0.1 - 1.0 %
- 1.1 - 2.0 %
- 2.1 - 3.0 %
- 3.1 - 5.0 %
- 5.1 - 10.0 %
- 10.1 - 20.0 %
- > 20.0 %

Data source: BC CDC 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 15 to 21, 2021) Includes all tests

For latest version of this map, see the new (note: change symbols not included) COVID-19 Surveillance Dashboard
Percent positivity decreased slightly in the most recent week (~8%), in parallel with an increase in the number of publicly funded specimens tested.

Note: Invalid (n = 1460) and indeterminate (n = 5570) results have been excluded.

Data source: PLOVER 22-Sep-2021
NH case incidence continues to increase considerably and has high test positivity (~21%). Incidence is stable or declining in other regions; test positivity still high in IH (~11%).

Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Sep 21, 2021.

- BC: Percent % = 7.9%
- Fraser: 6.7%
- Interior: 11%
- Northern: 21%
- Vancouver Coastal: 5.8%
- Vancouver Island: 7.6%

Data source: PCOVER 21-Sep-2021
Test positivity high and incidence increasing in Fraser East and Northern Interior

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Jan 1 2021 - Sep 21, 2021.

For latest version of a graph similar to this one (difference: all tests, not public tests), see the Epi App.
There was a steep rise in testing rates among children 5-11, the highest of any age group and the highest testing rate at any point in the pandemic so far.
Increase in testing is seen in all **pediatric** age groups.
Among sequenced VOC samples provincially based on information for September 12 to 18, the dominant VOC continues to be Delta ~100%
Wastewater samples can act as a population-level sentinel surveillance tool-
viral signals found in wastewater are highly correlated with disease incidence in population.

In FHA, the viral signal from wastewater reflects the trends in case counts in this region.
In VCH, the viral signal from wastewater reflects the declining trends in case counts in this region.
Dynamic modeling: recent trends

Modelling indicates that $R_t$ is near 1 and declining in most 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 21, 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 $R_t$ estimate from (last week → this week; 5% - 95% credible interval). Only January 2021 onward shown here. Data source: BCCDC HA linelist.

- **BC**: 0.93 → 0.92 [0.8–1.1]
- **Fraser**: 0.94 → 0.92 [0.8–1.1]
- **Vancouver Coastal**: 0.86 → 0.82 [0.6–1.1]
- **Interior**: 0.93 → 0.98 [0.7–1.4]
- **Vancouver Island**: 0.84 → 0.76 [0.4–1.2]
- **Northern**: 1.04 → 1.01 [0.7–1.5]
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](#)