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

- Total cases: 176,480
  - New this week: 4,916

- Ever hospitalized: 9,273
  - New this week: 266

- Total deaths: 1,873
  - New this week: 31

- Removed from isolation: 168,459
  - New this week: 4,666

New daily COVID-19 cases, hospitalizations and deaths, Jan 01 2021 - Sep 14 2021

* Data are by surveillance date for cases and deaths, and admission date for hospitalizations

Data source: PHRDW Sep-15-2021
Case rates and new hospitalizations are stable in BC, trends differ by HA; new deaths are stable and low.

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*** For latest version of this figure, see COVID-19 Regional Surveillance Dashboard.
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.
Hospital and critical care census is increasing in all regions. Note addition of % in critical care line.

Current COVID-19 hospitalizations in BC, Jan 01 2021 - Sep 14 2021

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

Data source: PHSA Provincial COVID19 Monitoring Solution (PCMS) Sep-15-2021
Number of new hospital admissions is increasing across all ages >20 years, almost all are among unvaccinated individuals (see slide 23). Deaths are low.
Trends in number and rate of new hospitalizations by age group, BC, 1 Jan – 11 Sept 2021

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

*Data based on admission date for hospitalizations
### Sep 09 to Sep 15: Pediatric Profile

<table>
<thead>
<tr>
<th>Age group: 0-4</th>
<th>Total cases</th>
<th>New this week</th>
<th>Ever hospitalized</th>
<th>Total deaths</th>
<th>New this week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4338</td>
<td>141</td>
<td>85</td>
<td>2</td>
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</tbody>
</table>

<table>
<thead>
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<th>Age group: 5-11</th>
<th>Total cases</th>
<th>New this week</th>
<th>Ever hospitalized</th>
<th>Total deaths</th>
<th>New this week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9673</td>
<td>428</td>
<td>39</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age group: 12-17</th>
<th>Total cases</th>
<th>New this week</th>
<th>Ever hospitalized</th>
<th>Total deaths</th>
<th>New this week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10745</td>
<td>309</td>
<td>38</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Hospitalization are extracted from Line list + BCCW
Hospitalizations continue to be low among children and youth.
Geographic Distribution of COVID-19 by LHA and CHSA of Case Residence

Recent 7-Days Cases
September 8 to 14, 2021

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

- decrease
- increase

Average daily rate per 100,000 population

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

Data source: Public Health Reporting Data Warehouse (PHRDA) 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 those out of province are not mapped. Data are by date of first positive test, or date reported to public health for epidemiological cases. Population denominator from BC Stats PEOPLE estimates for 2021.

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 08 - Sep 14, 2021

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

*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

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 these figures, see COVID-19 Regional Surveillance Dashboard.
COVID-19 case rate by vaccination status and age, July 1 – Sept 14, 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 14 Sep 2021

***NEW*** For latest version of these figures, see COVID-19 Regional Surveillance Dashboard
COVID-19 hospitalization rate by vaccination status, July 1 – Sept 9, 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.

***NEW*** For latest version of these figures, see COVID-19 Regional Surveillance Dashboard

Rates for unvaccinated/1 dose 80+ year olds not shown as they are unstable, making it difficult to interpret data for other age groups.

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.

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

Lower vaccination rate, lower case rate

Higher vaccination rate, higher case rate

Lower vaccination rate, higher case rate

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

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 13, 2021: there is more variation in this age group compared with older age groups.

For latest version of this graph, 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.

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 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.
• **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

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,574,221</td>
<td>total specimens tested</td>
<td>↓6% relative to last week</td>
</tr>
<tr>
<td>78,384</td>
<td>new this epi week</td>
<td></td>
</tr>
<tr>
<td>183,472</td>
<td>total positive specimens</td>
<td>6.6% positivity</td>
</tr>
<tr>
<td>5,201</td>
<td>new positive this epi week</td>
<td>↑0.7% absolute change from last week</td>
</tr>
<tr>
<td>15 hr</td>
<td>mean turnaround time (TAT)</td>
<td>↓3% TAT relative to last week</td>
</tr>
</tbody>
</table>

### Weekly Summary of Lab tests paid Publicly

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,700,534</td>
<td>total specimens tested</td>
<td>↓1% relative to last week</td>
</tr>
<tr>
<td>52,840</td>
<td>new this epi week</td>
<td></td>
</tr>
<tr>
<td>181,233</td>
<td>total positive specimens</td>
<td>9.7% positivity</td>
</tr>
<tr>
<td>5,121</td>
<td>new positive this epi week</td>
<td>↑0.6% absolute change from last week</td>
</tr>
</tbody>
</table>

**Data source:** PLOVER extract at 10:30am on September 14, 2021.
Epi week 36 (Sep 5 – Sep 11)
COVID-19 Recent 7-Day Test Positivity by CHSA (September 8 to 14, 2021)

Includes all tests

For latest version of this map, see the new (note: change symbols not included) COVID-19 Surveillance Dashboard

BC Centre for Disease Control
Among publicly funded tests: percent positivity is stable at ~10%, and number of tests is stable.
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%).

![Case incidence rate, test percent positivity, and testing rate (Public Payers Only). Jan 1 2020 - Sep 13, 2021.](image)

- Northern: 24.4%
- Interior: 14.7%
- Fraser: 8.0%
- BC: 9.5%
- Vancouver Coastal: 6.9%
- Vancouver Island: 9.4%
Test positivity continues to be high in Interior and Northern HSDAs

Case incidence rate, test percent positivity, and testing rate by HSDA (Public Payers Only).
Jan 1 2021 - Sep 13, 2021.

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

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
Test positivity differs by age group and is >10% among 5-44 years.
Among sequenced VOC samples provincially based on information for September 5 to 11, the dominant VOC continues to be Delta > 99%.
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.

**BC** 0.96 → 0.95 [0.8–1.1]

**Fraser** 1.03 → 1.03 [0.9–1.2]

**Vancouver Coastal** 0.97 → 0.95 [0.8–1.2]

**Interior** 0.85 → 0.81 [0.6–1.2]

**Vancouver Island** 1.08 → 1.07 [0.7–1.5]

**Northern** 1.03 → 0.99 [0.6–1.5]

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 $R_t$ estimate from (last week → this week; 5% - 95% credible interval). Only January 2021 onward shown here. Data source: BC CDC HA line list.
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.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>12 - 17</th>
<th>18 - 24</th>
<th>25 - 34</th>
<th>35 - 44</th>
<th>45 - 54</th>
<th>55 - 64</th>
<th>65 - 74</th>
<th>&gt; 75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected</td>
<td>80%</td>
<td>79%</td>
<td>83%</td>
<td>83%</td>
<td>85%</td>
<td>86%</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td>vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher</td>
<td>87%</td>
<td>87%</td>
<td>85%</td>
<td>86%</td>
<td>89%</td>
<td>95%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>vaccination</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
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](#)