

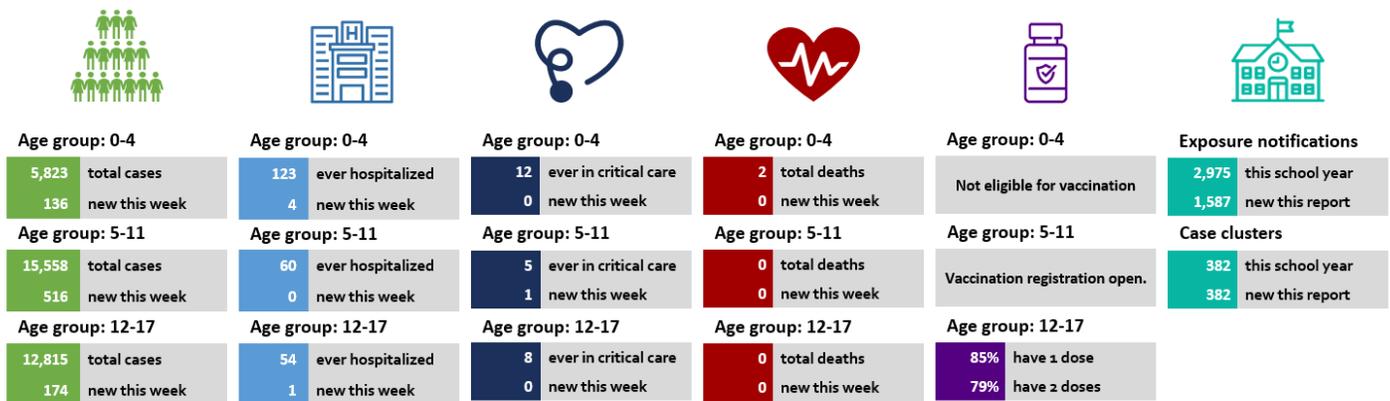
British Columbia COVID-19 Situation Report for K-12 Schools

November 2021 Update



Key Findings

- **Cases:** The case incidence among 5-11 year-olds in BC is in general decline with some smaller peaks and valleys in November. Regions with higher vaccination rates among individuals 12 years and older have generally experienced lower case rates overall and among children.
- **Testing:** Testing rates declined in October and have been relatively stable since the beginning of November in the 5-17 age groups; the rate among the 0-4 age group remains stable.
- **Outcomes:** Serious outcomes from COVID-19 infections continue to be rare among all school-age children in BC. Hospitalization among 12-17 year-olds is less common for those who have at least 1 dose of vaccine compared to those who are unvaccinated. There have been no deaths among school-age children in BC.
- **Vaccination coverage:** By November 15, 2021, one-dose coverage among 12-17 year-olds was 85% and two-dose coverage was 79% provincially. On November 19, 2021, Health Canada authorized the use of the Pfizer Comirnaty vaccine for 5-11 year-olds.
- **Adverse events following immunization:** There have been 133 adverse event reports following a COVID-19 vaccine among 12-17 year-olds, for a reporting rate of 26.1 reports per 100,000 doses administered as of November 13, 2021. Of these, 14 were considered serious involving admission to hospital, and all have been discharged.
- **Exposure notifications:** There have been 2,975 postings among 830 (45%) schools provincially between September 7 and November 13, 2021.
- **Clusters and outbreaks:** A total of 382 COVID-19 case clusters were reported in 217 (12%) K-12 schools in BC since the beginning of the 2021-2022 school year. The median cluster size is 3 as of November 6, 2021. During this period, four COVID-19 school outbreaks have been declared in distinct schools. In addition to the outbreaks included in the current analysis, one additional outbreak has recently been reported.



- o New cases and new deaths are net new between November 10 and November 17, 2021.
- o New hospitalizations and critical care census numbers are as of November 16, 2021.
- o Vaccination coverage are as of November 15, 2021.
- o School notifications are from September 7 to November 13, 2021, new this report is from October 9 to November 13, 2021.
- o School case clusters (this is the first reporting period) are from September 7 to November 6, 2021.

Figure 1: Current summary of pediatric COVID-19 cases and outcomes, vaccine coverage, school notifications, and school case clusters in BC, as of November 2021

Please note that the content of this report may change as more information becomes available. Links to the most recent available reports, dashboards and other resources are included in section H. Additional Resources.

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A. Introduction

When COVID-19 spreads in a community, there is a risk that it will be introduced in the schools in that community. COVID-19 cases in schools typically reflect the number of cases in their communities.

The risk of COVID-19 in BC K-12 schools looks different this year: there are new variants of the virus that spread more easily, but there are also highly effective vaccines that have been widely available to those aged 12 years and older since May 2021, and will start to become available to 5-11 year-olds following Health Canada authorization of the Pfizer Comirnaty vaccine on November 19, 2021.

Increasing COVID-19 vaccine coverage among all eligible individuals is the most effective strategy to reduce the risk in K-12 schools during the 2021-2022 school year. While the majority of the BC population 12 years and older have been vaccinated (91% first dose; and 87% two doses as of November 15, 2021), there are communities where immunization is much lower than the BC average. [Evidence](#) continues to demonstrate the strong protection provided by two doses of the COVID-19 vaccines available in BC, both against infection and severe disease. Not only does vaccination help protect the individual, it can also help protect others in the community who are not able to be vaccinated.

Schools provide essential support for student academic, social, and emotional development. A previous [report](#) from the BCCDC outlined the importance of schools remaining open to support child and family wellbeing during the pandemic. According to the 2020 [BC COVID-19 SPEAK survey](#), 60% of households with children reported increased child stress, while 79% of households with children reported decreased connection with friends amidst school closures and other pandemic response measures.

While there have been some changes to the public health guidance for K-12 schools for the 2021-2022 school year, many public health measures from last school year remain in effect. As of [August 25, 2021](#), the Provincial Health Officer mandated people 12 years and older to wear masks in indoor public settings, regardless of vaccination status. In response to increasing rates of COVID-19 among children under 12 years-old, the province updated its [public health and communicable disease guidance for K-12 schools](#) to require masks for Kindergarten to Grade 3 students, effective [October 4, 2021](#). As of October 12, 2021, the provincial indoor masking requirement was extended to anyone aged 5 years and older. [Enhanced measures](#) have also been recommended in some regions with higher rates of COVID-19, such as Fraser Health, Interior Health, and Northern Health.

[During the 2020-2021 school year in BC](#), most cases of COVID-19 among students and staff were acquired outside of school, in their community or household. COVID-19 exposures at schools did not typically result in transmission. When they did, it was usually one or two other cases. While the experience from the last school year provided insight into how COVID-19 spread within the K-12 school environment, the emergence of the more transmissible Delta variant over the summer meant that it was important to continue to monitor and respond as necessary to reduce the spread of COVID-19 in schools.

The purpose of this report is to provide a situational update on COVID-19 in BC K-12 schools since the start of the 2021-2022 school year.

B. Vaccination

Vaccine Coverage

Vaccines are the most effective way to reduce the risk of COVID-19. As part of the BC [vaccination strategy](#), starting May 2021, everyone 12 years and older became eligible to receive the vaccine. For youth 12-17 years-old, as of November 15, 2021, the second dose coverage for BC was 79%, while first dose coverage was 85%. There was regional variation for first doses, ranging from 66% in Northern Health to 93% in Vancouver Coastal Health. There was greater variation among coverage rates at the Local Health Area (LHA) level within Northern Health and Interior Health compared to other health authorities (Figure 2).

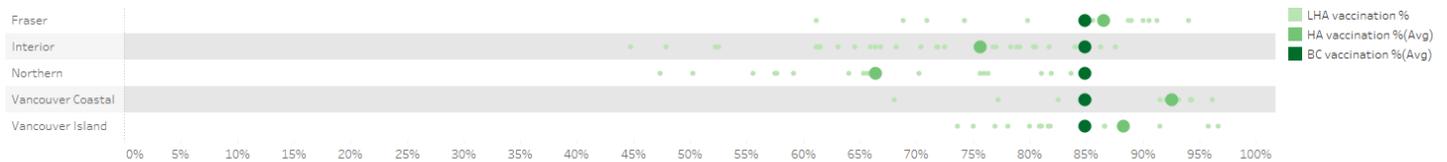


Figure 2: COVID-19 first dose vaccination coverage by BC Health Authority (HA) and Local Health Area (LHA), 12-17 year-olds, as of November 15, 2021

On November 19, 2021, [Health Canada](#) authorized the use of the Pfizer Comirnaty vaccine in 5-11 year-olds. The clinical trial showed that the immune response in 5-11 year-olds was comparable to the immune response in 16-25 year-olds. For 5-11 year-olds, the vaccine was 90.7% effective at preventing COVID-19 and no serious side effects were identified.

There are over 340,000 children aged 5-11 who are now eligible to receive the vaccine in BC. [Registration](#) is currently open for parents to register their children. This latest approval means that all children and youth in K-12 schools are eligible to receive the COVID-19 vaccine.

Vaccine Safety

The COVID-19 mRNA vaccines available to youth aged 12-17 in BC (Moderna Spikevax and Pfizer Comirnaty) are very safe and side effects are generally mild. Health Canada, the Public Health Agency of Canada, the provinces and territories, and manufacturers continue to closely monitor the safety of all COVID-19 vaccines through provincial and national reporting of adverse events.

In BC, vaccine administration among 12-17 year-olds started in May 2021. A total of 264,043 first doses and 245,763 second doses have been administered as of November 13, 2021 (Figure 3).

There have been 133 adverse events following immunization¹ (AEFI) reports following a COVID-19 vaccine among 12-17 year-olds in BC, for a reporting rate of 26.1 reports per 100,000 doses administered (Figure 3). The risk of an AEFI is lower among the pediatric population when compared to the entire population. There were 14 adverse events reported among 12-17 year-olds that were considered serious,² all of whom were admitted to hospital and have since been discharged.

Reports of adverse events are often delayed after vaccination as the time to onset varies by event, as well as the time it takes to receive, investigate, and process a report for submission. Weekly report counts, especially for recent weeks,

¹ **AEFI general definition:** any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the use of a vaccine.

² **Serious AEFI:** an AEFI that meets one or more of the following criteria: life-threatening, results in hospitalization, prolongation of an existing hospitalization, persistent or significant disability/incapacity, is a congenital anomaly/birth defect, fatal outcome. Any medical event which requires intervention to prevent one of the outcomes listed above may also be considered as serious.

are expected to increase over time as these are submitted, but Figure 3 shows that reports have declined as the immunization campaign has progressed.

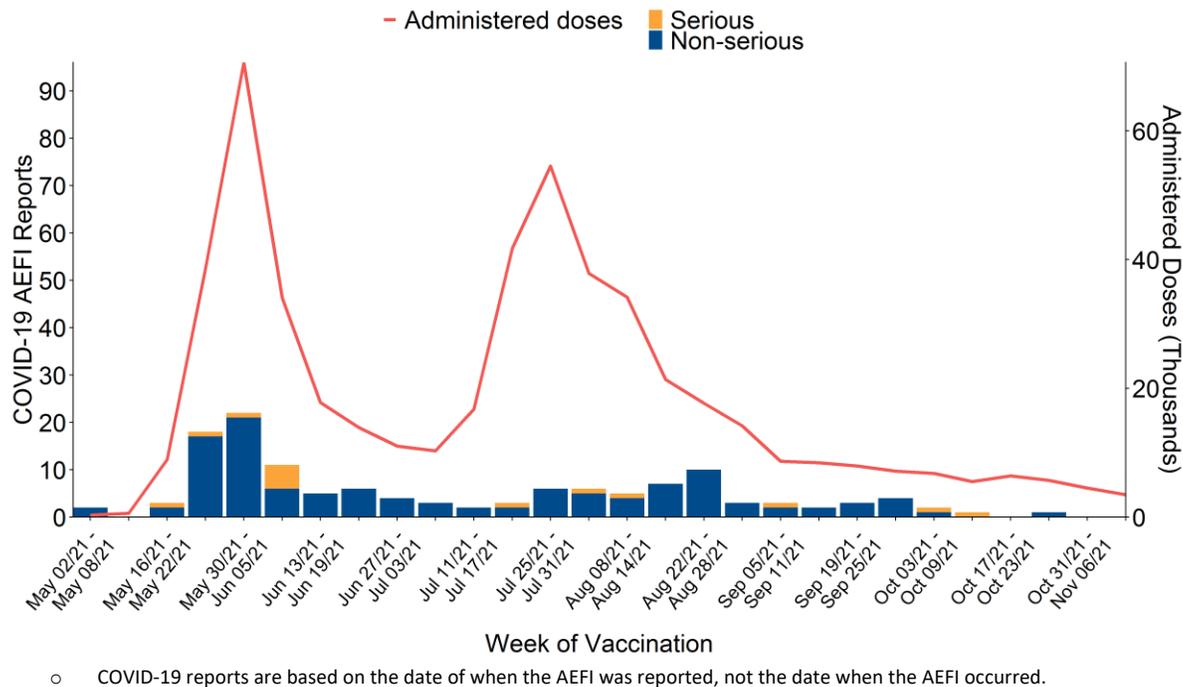


Figure 3: COVID-19 vaccine administration and adverse event reports following receipt of a COVID-19 vaccine by week of vaccination, 12-17 year-olds, BC, May 1 to November 13, 2021

A single AEFI report may contain one or more adverse events. While reported events are associated with the timing of vaccine administration (i.e., occur after vaccination within a biologically plausible timeframe), the investigation may find that they were not caused by the vaccine. The 133 AEFI reports received up to November 13, 2021 contained a total of 161 adverse events. The most frequently reported events were ‘other allergic events’ (e.g., allergic rash, hives, pruritus, and gastrointestinal symptoms) (n=50; 31%), ‘events managed as anaphylaxis’ (n=12; 7%), and ‘anaesthesia/paraesthesia’ (n=7; 4%).

While adverse events following immunization do occur, these events are very uncommon and are vastly outweighed by the risks associated with COVID-19 (Figure 4). Data from BC suggest that the risks of acquiring COVID-19 are 13 times higher among unvaccinated 12-17 year-olds compared to their vaccinated counterparts. The risk of a serious AEFI, which includes hospitalizations, is 2.7 per 100,000 doses administered. In contrast, the rate of being hospitalized for COVID-19 among unvaccinated youth is 37.3 per 100,000 population and there have been no hospitalizations for their vaccinated counterparts. There have been no deaths in the 12-17 year-old age group regardless of vaccination status to date.

The risk of experiencing a serious AEFI is extremely uncommon when compared to other general risks, such as being hospitalized for a mental disorder (321 per 100,000 youth aged 10-14 years, and 922 per 100,000 youth aged 15-17 years³) or dying from a motor vehicle crash (7.3 per 100,000 population aged 15-24 years⁴).

³ [Canadian Institute for Health Information](#), British Columbia, 2018/19

⁴ [Ministry of Public Safety and Solicitor General](#), British Columbia, 2019

Risk of...	Among unvaccinated	Among partially or fully vaccinated
 Getting COVID-19¹ (per 100,000 population)	4,476.5	351.7
 Being hospitalized due to COVID-19¹ (per 100,000 population)	37.3	No hospitalizations to date
 Experiencing a serious adverse event after immunization² (per 100,000 doses administered)	Not applicable	2.7

¹ Data are from July 18 to November 16, 2021.

² Data are from May 1 to November 13, 2021. **Serious AEFI**: an AEFI that meets one or more of the following criteria: life-threatening, results in hospitalization, prolongation of an existing hospitalization, persistent or significant disability/incapacity, is a congenital anomaly/birth defect, fatal outcome. Any medical event which requires intervention to prevent one of the outcomes listed above may also be considered as serious.

Figure 4: COVID-19 illness-related risks compared with COVID-19 vaccine-related risks, 12-17 year-olds, BC

C. Cases and Testing

Case Incidence

At the provincial level, the 7-day moving average COVID-19 case incidence rate among children under 12 years increased sharply in early September 2021, peaked during the week of September 26, 2021, followed by a general decline with some smaller peaks and valleys (Figure 5).

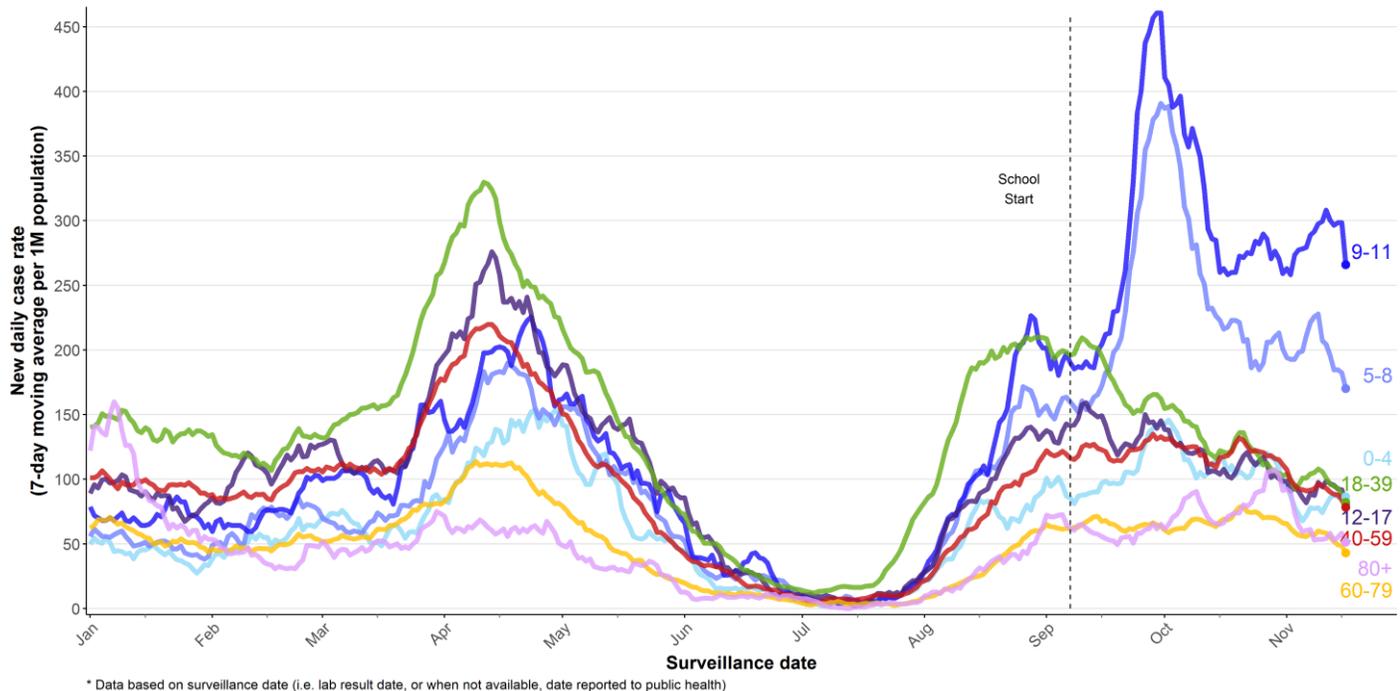


Figure 5: Rate of COVID-19 cases by age group, BC, January 1 to November 16, 2021

Regional differences in case incidence rates reflect community vaccination coverage as well as community prevalence: regions with higher community vaccination rates, such as Vancouver Coastal Health, have generally experienced lower case rates among children (Figure 6, Figure 7).

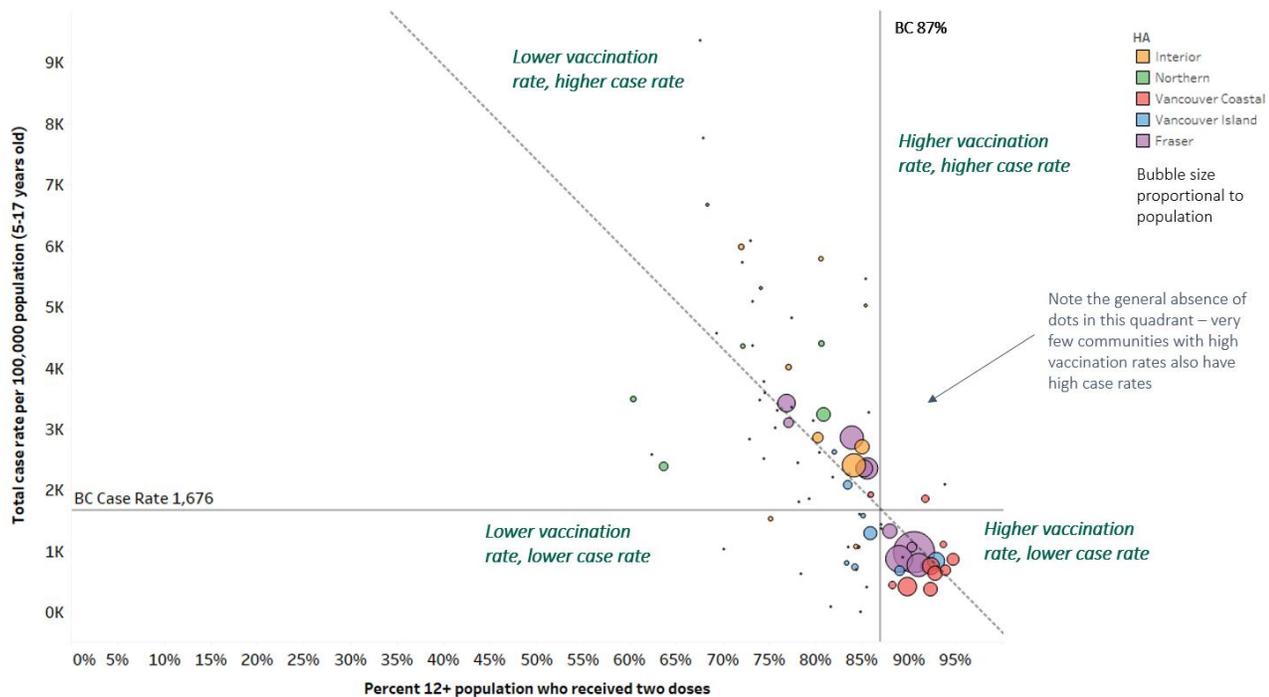


Figure 6: Case rate among school-age population (5-17 year-olds) per 100,000 population, by Local Health Area (LHA) vs. percentage population 12 years and older who received a second dose of COVID-19 vaccine, BC, August 20 to November 19, 2021

Masking requirements were introduced for K-3 classes (approximately 5-8 years-old) on October 4, 2021, though case incidence rates within these age groups had already started to decline (Figure 7). Masks can provide an added layer of protection against COVID-19 transmission; however, it is difficult to assess the impact of mask wearing among younger grades. There are many factors that contribute to the risk of COVID-19 infection, including rates in the community, vaccination coverage, and contact with others through social networks. The fact that rates are higher among 9-11 year-olds does not mean that there is no benefit to masking, rather it suggests there are numerous factors related to risk.

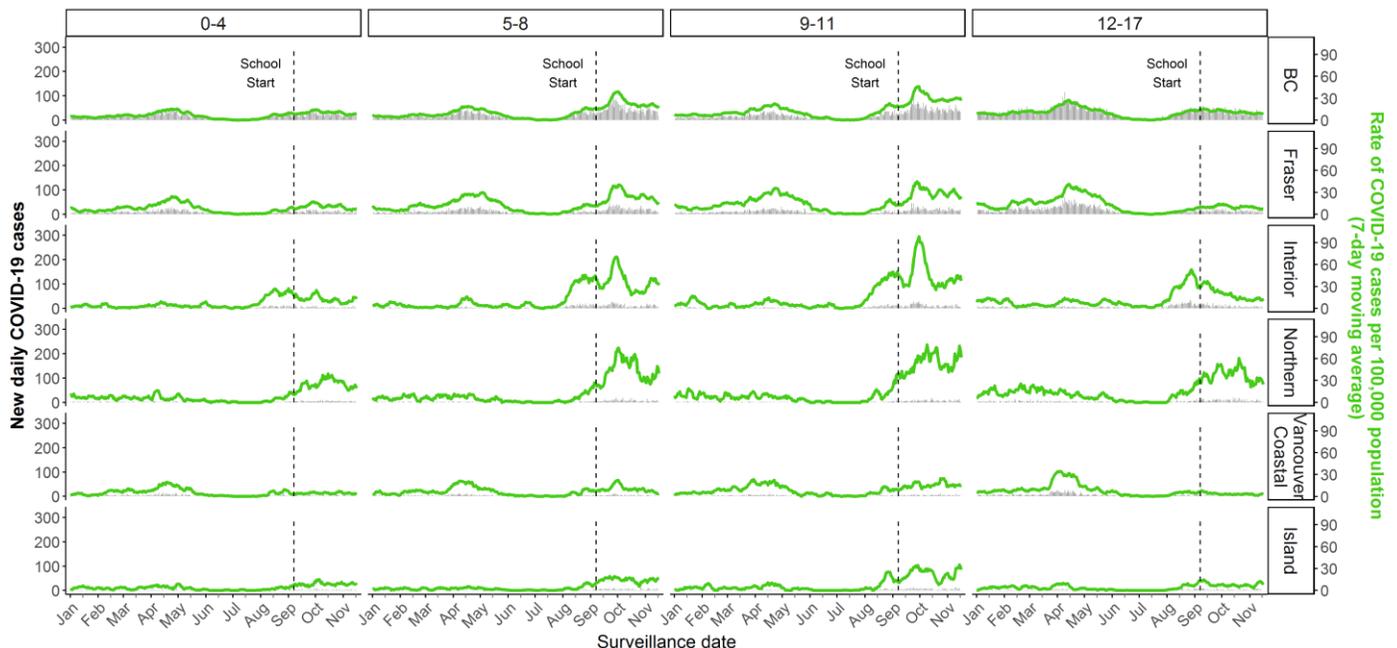


Figure 7: Count and rate of COVID-19 cases by HA and by age group, 0-17 year-olds, BC, January 1 to November 16, 2021

COVID-19 case incidence rates among the unvaccinated population show that children under 12 years-old are generally at lower risk of infection than other age groups, even after returning to school in [September](#). Case incidence among fully vaccinated individuals is lower compared to unvaccinated individuals across all age groups and time (Figure 8).

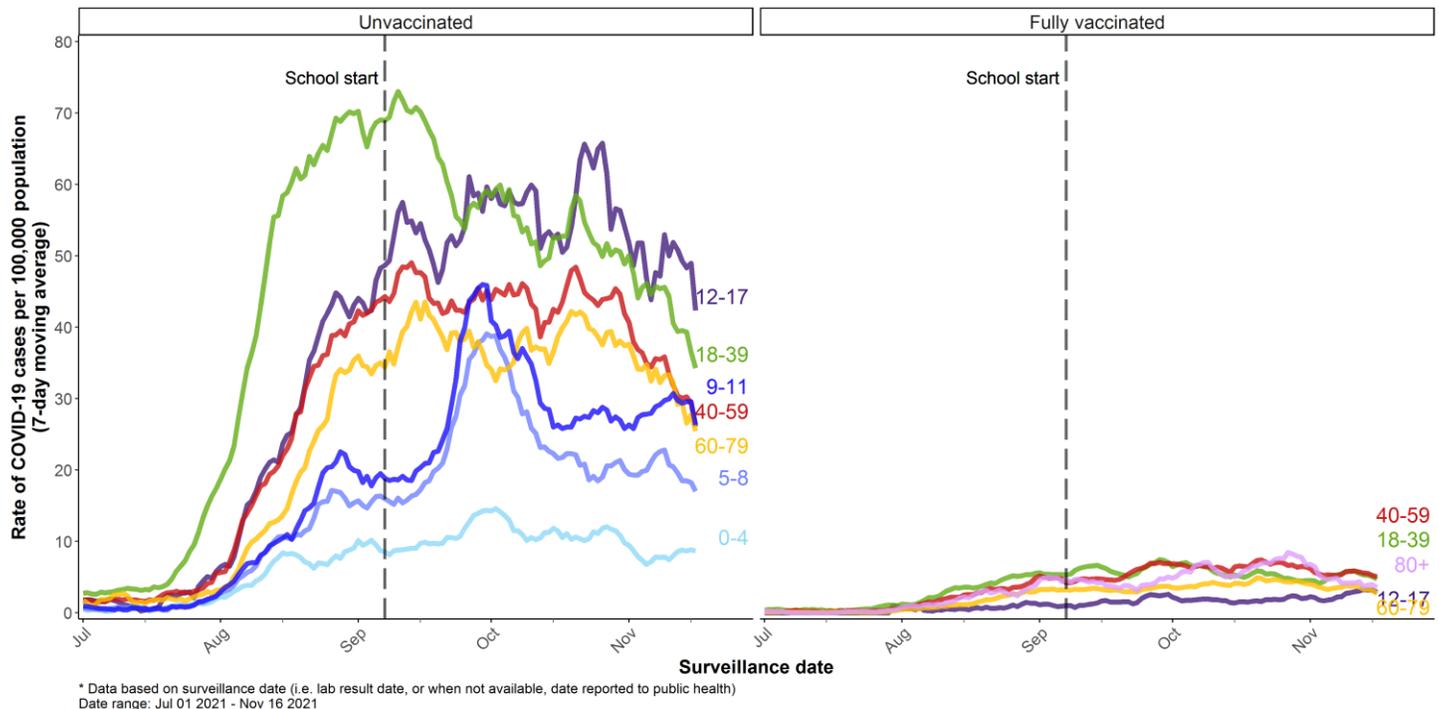


Figure 8: Case rate of COVID-19 by age and vaccination status, BC, January 1 to November 16, 2021

Testing Volumes and Positivity

A steep incline in COVID-19 testing among all pediatric age groups began soon after the 2021-2022 school year start (Figure 9). By the end of September, the testing rate among 5-8 year-olds had quadrupled from four weeks prior, reaching ~600 tests per 100,000 population. This was the highest testing rate of any age group and the highest ever during this pandemic. The increased testing in the pediatric and adolescent populations may be related to [other circulating respiratory viruses](#) causing similar symptoms to COVID-19 that often become more common following the start of school and respiratory season.

Testing rates declined in October and have been relatively stable since the beginning of November among 5-17 year-olds; the rate for the 0-4 age group remains stable. Test positivity, the percentage of all tests performed that are positive, is relatively stable for 0-4 and 5-8 year-olds but has increased for 9-11 and 12-17 year-olds since late October. The 9-11 age group has the highest test positivity rate among the pediatric population while reporting the second lowest testing rate (Figure 9).

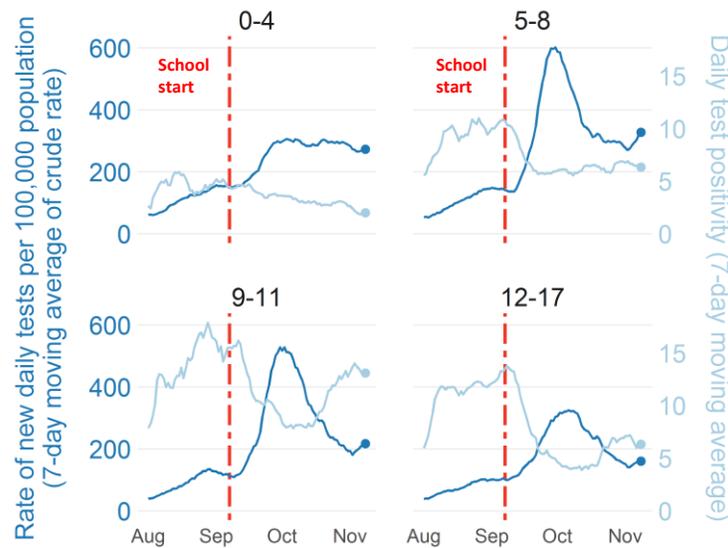


Figure 9: Rate of daily testing and test positivity (%) of COVID-19 by pediatric age group, 0-17 year-olds, BC, August 1 to November 16, 2021

D. Severe Outcomes

Hospitalization and Deaths

Most children are at low risk for acquiring COVID-19 and, if they do, they most commonly have mild or no symptoms. Among 28,373 cases in 5-17 year-olds in BC, there have been 114 hospitalizations, 13 critical care admissions, and no deaths from January 2020 to November 16 (for hospitalizations and critical care) and 17 (for cases and deaths), 2021.

The hospitalization rate for children has remained low and stable throughout the pandemic. Children and youth (0-17 years-old) have consistently experienced the lowest hospitalization rate of all age groups. Rising case rates among children in BC since late summer 2021 have not translated into a significant increase in hospitalizations (Figure 10). Additional hospitalization and critical care numbers can be found in the weekly [Data Summary](#) slides.

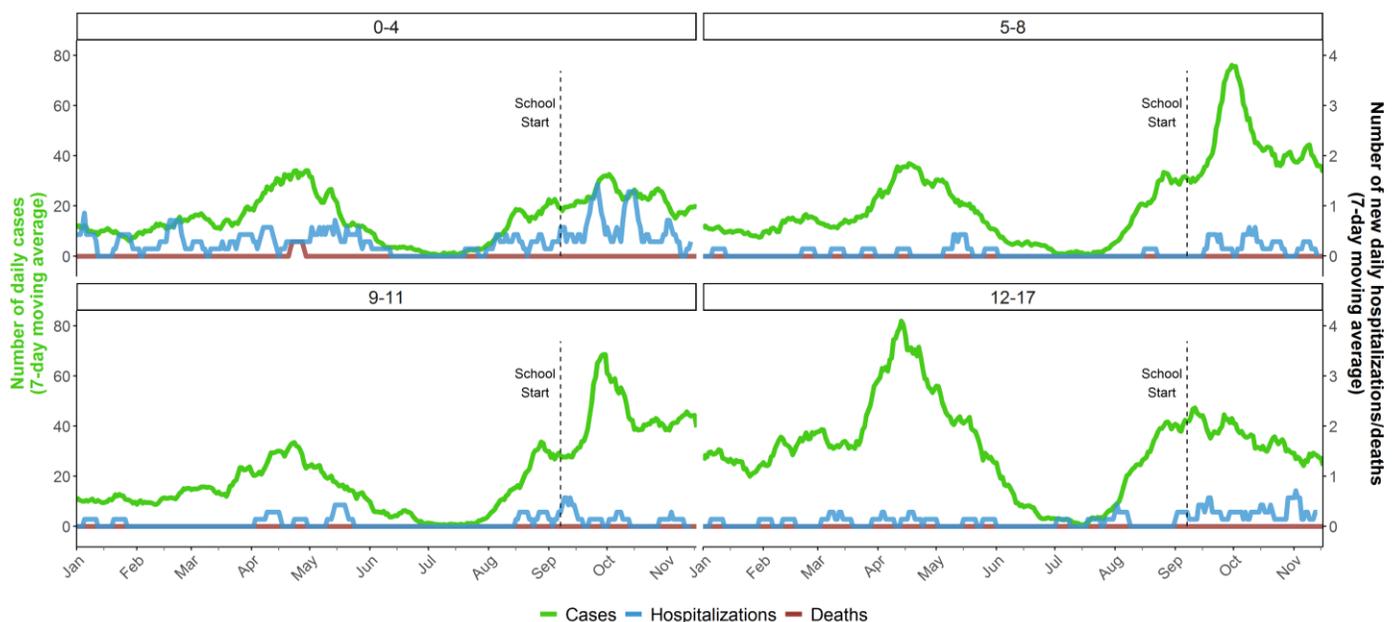


Figure 10: New daily COVID-19 cases, hospitalizations and deaths by pediatric age groups, 0-17 year-olds, BC, January 1 to November 16, 2021

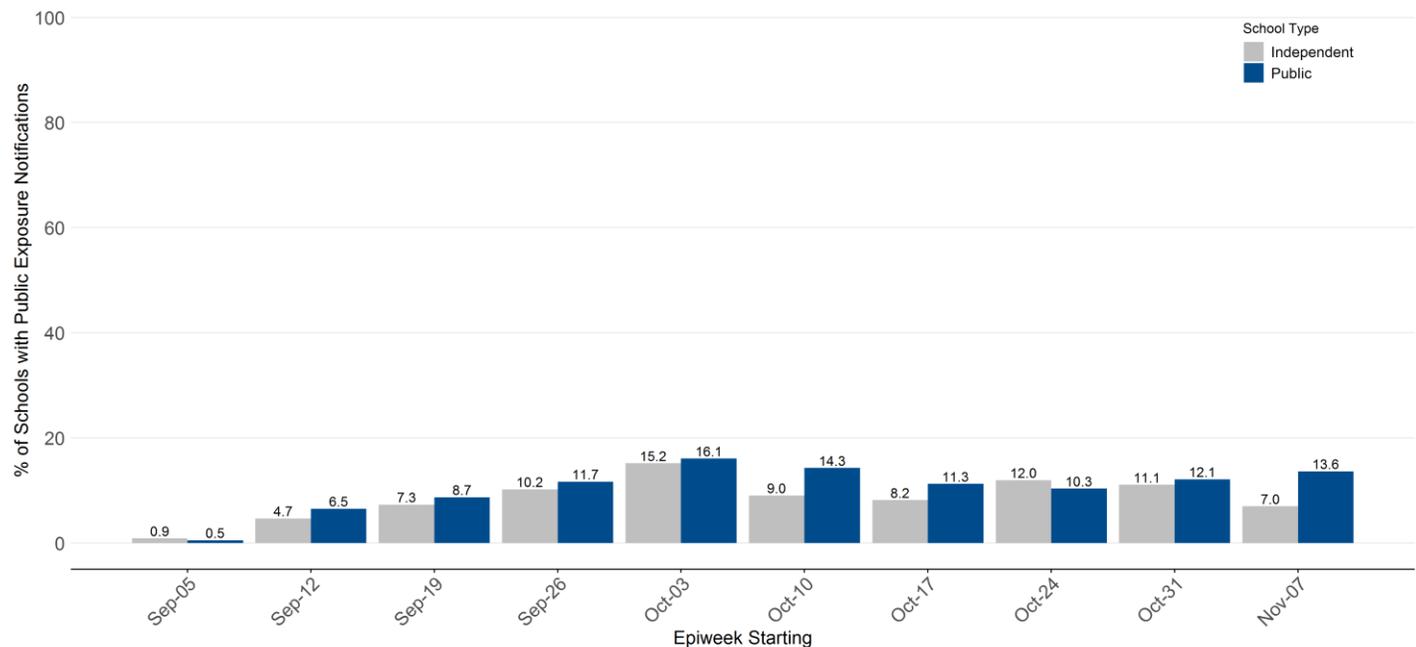
E. Public Notifications of Potential Exposures in K-12 Schools

When a student or staff member of a K-12 school receives a positive COVID-19 test, [public health contact tracing and investigation are triggered](#). If they attended school while infectious and public health staff identify a risk of onward transmission of COVID-19 to the groups they were a part of, regional health authorities will post a notification of a potential exposure to their website. Notification of a potential exposure does not mean disease transmission in the classroom or learning environment has occurred.

As of November 13, 2021, there have been 2,975 [public notifications](#) of potential COVID-19 exposures among 830 K-12 schools⁵ in BC for the 2021-2022 school year (schools may have had more than one public exposure notifications during this period). This represents 112 (or 33%) independent schools and 718 (or 47%) public schools in BC (Table 1). Overall, the percentage of public and independent schools with potential exposure notifications peaked with the case incidence rate in early October and is currently elevated and relatively stable (Figure 11).

Table 1: Percentage of BC public and independent schools with public notifications of potential COVID-19 exposures, September 7 to November 13, 2021

School Type	Schools with public exposure notice	Total number of schools	Percent schools with public exposure notice
Independent	112	343	32.7%
Public	718	1519	47.3%
Total	830	1,862	44.6%



Data Source: BC Ministry of Education, Updated 2021-11-13

Figure 11: Percentage of BC public and independent schools with public notifications of potential COVID-19 exposures by epi week and school type, September 5 to November 13, 2021

⁵ Facility types included: standard, alternate, continuing education; facility types excluded: district distance education, long term Provincial Resource Program, summer school, youth custody.

F. K-12 School COVID-19 Case Clusters

Description of school-aged children in BC

There are 647,843 school-age children (5-17 year-olds) in BC as of 2020, representing approximately 12.6% of the overall BC population. Throughout the course of the pandemic, COVID-19 cases among the school-age population have generally followed community trends and reflected community COVID-19 activity (Figure 12). Between September 7 and November 9, 2021, a total of 8,103 reported COVID-19 cases in BC were among those of school age.

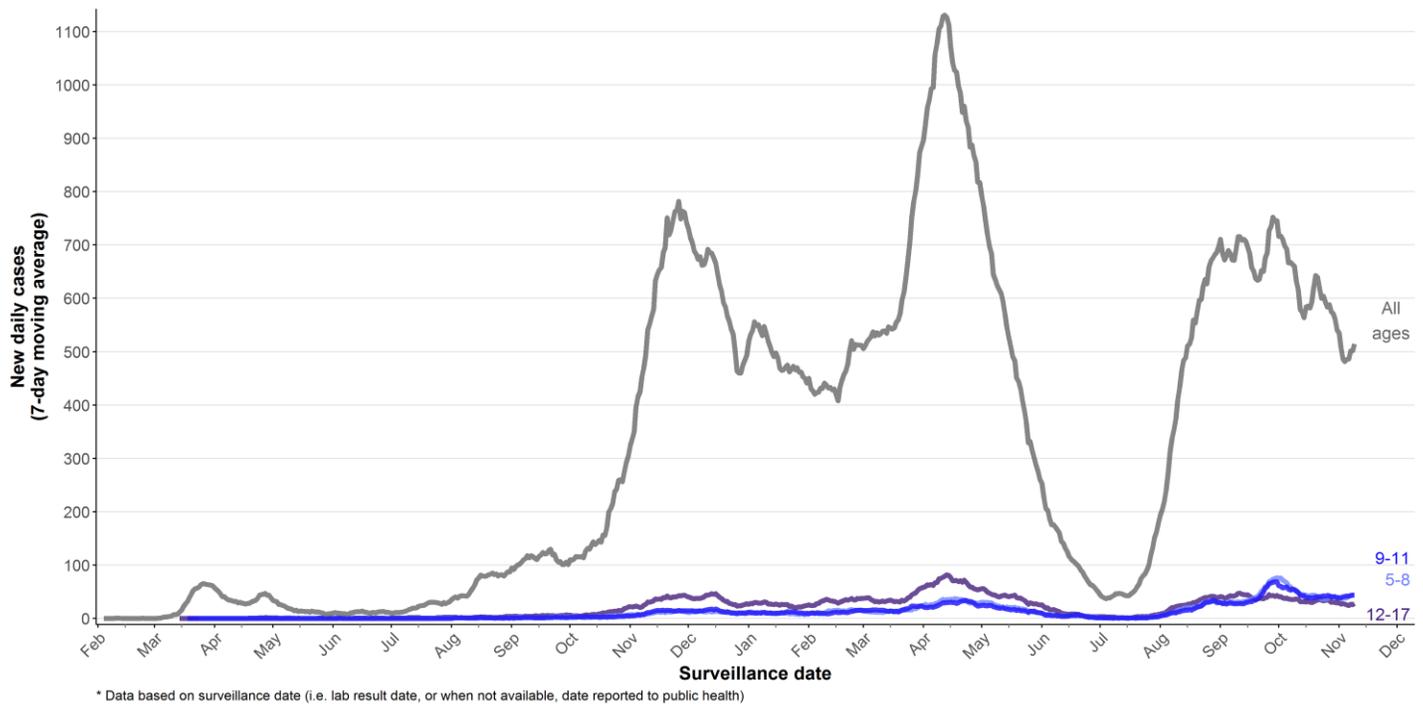


Figure 12: New daily cases of COVID-19 in BC, all and school age (5-17 years-old), January 1, 2020 to November 9, 2021

BC K-12 School Cluster Reporting System for COVID-19

The BC K-12 School Cluster Reporting System for COVID-19 is a province-wide system for reporting COVID-19 case clusters (see text box) at K-12 schools. Working in collaboration with the five regional health authorities, the BC Centre for Disease Control co-ordinates and collates cluster-related data for provincial reporting.

Through review of contact tracing records, regional health authorities examined the COVID-19 cases reported since the beginning of the 2021-2022 school year among students and staff in K-12 schools. These analyses assessed where the individual may have acquired the virus as well as any transmission that may have occurred in the school setting.

School case clusters:

- School clusters are defined as two or more cases that were reported within a 14-day period where transmission was likely within the school.
- Multiple clusters may be reported per school.
- A cluster's status transitions from active to closed when no additional case is linked to the cluster for 14 days after the last reported case or last exposure.
- All the data related to case clusters in this report include cases among both students and staff in the school community.

Between September 7 and November 6, 2021,⁶ there have been 382 confirmed COVID-19 clusters⁷ identified in 217 (or 12%) of the 1,862 K-12 schools in BC. A total of 1,467 cases were linked to these clusters. As of November 6, 2021,⁶ 75 clusters in 55 schools remained active. For all clusters, cluster size ranged from 2 to 18 cases with a median of 3. A median cluster size of 3 cases was consistent between closed and active clusters. There have been no COVID-19 case clusters identified in 1,645 (88%) BC K-12 schools since the beginning of the 2021-2022 school year (Figure 13).

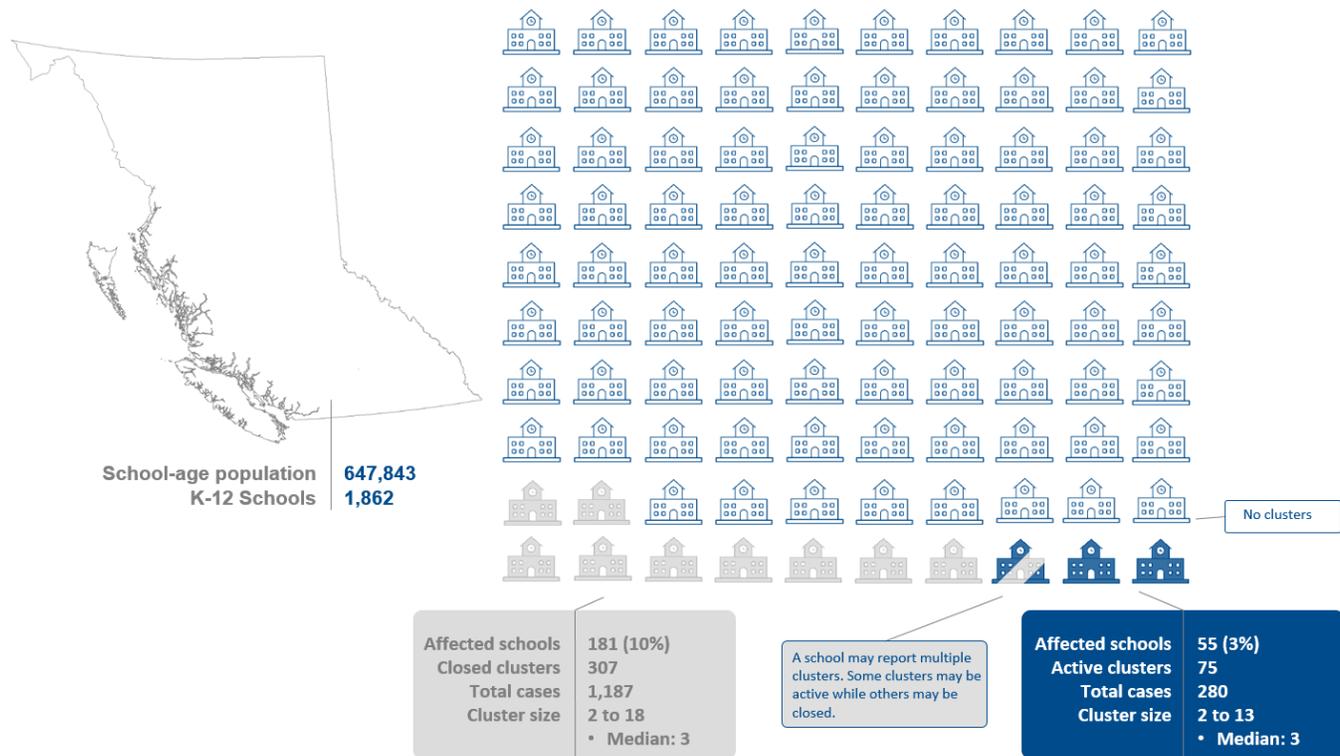


Figure 13: COVID-19 case clusters in BC K-12 schools, September 7 to November 6, 2021⁶

When a COVID-19 case cluster is detected, additional public health measures may be recommended or required by a Medical Health Officer (MHO) to prevent transmission in the school. An outbreak may be declared when there is sustained, uncontrolled, widespread transmission of COVID-19 within a school, and an MHO determines extraordinary public health measures are necessary to stop further transmission in the school or school community. These may include implementing additional health and safety measures within the school, testing of all potentially exposed individuals or in rare cases, ordering the school to close for a certain amount of time. Where multiple separate clusters have occurred in a school and an outbreak is declared, all clusters may be combined and reported as a single outbreak.

There have been four outbreaks declared in four BC K-12 schools since the start of the school year, with a case range of 35 to 62 cases per outbreak. Please note that as of November 9, 2021 two school outbreaks remain active and case counts are considered preliminary. In addition to the outbreaks included in the current analysis, one additional outbreak has recently been reported.

In summary, COVID-19 cases within schools make up a small proportion of overall cases in BC. Most of the K-12 school clusters reported in BC during the first nine weeks of the 2021-2022 school year were slightly larger than the median cluster size reported in the previous school year by [Vancouver Coastal Health](#) and [Fraser Health](#) (before the Delta variant was circulating widely in BC) and involved a median of 3 cases.

⁶ Data for Interior Health are as of November 9, 2021.

⁷ Where multiple separate clusters have occurred in a school and an outbreak is declared, all clusters may be combined and reported as a single outbreak and excluded from cluster summary.

G. Data Sources and Notes

Data sources include: BC K-12 School Cluster Reporting System for COVID-19, HA case line list data, laboratory PLOVER data, PHSA Provincial Immunization Registry (PIR), Ministry of Health Immunization Population Coverage Report, hospital data PHSA Provincial COVID-19 Monitoring Solution (PCMS), and the Ministry of Health's Health Sector Information, Analysis and Reporting (HSIAR) vaccine coverage data.

Daily cases are reported by surveillance date. For epi-linked cases, this is the date it was reported to public health. For all lab-confirmed cases, the lab result date is used. If a lab result date is not available, the date the case was reported to public health is used.

Population estimates for case incidence, hospitalization, and death rates are from PEOPLE 2021.

Vaccination coverage is estimated using the Client Roster for the denominator as of March 12, 2021. Age is calculated as age as of December 31, 2021.

Laboratory data include Medical Service Plan (MSP) funded (e.g. clinical diagnostic tests) and non-MSP funded specimens (e.g. screening tests).

Public exposure notifications data were provided by the BC Ministry of Education.

Data may be corrected over time as additional data flow into the system.

BC K-12 School Cluster Reporting System for COVID-19:

- Regional data for BC K-12 School Cluster reporting System for COVID-19 was generated by staff of the Population Health Observatory and COVID-19 School Hub Team (Fraser Health), Epidemiology and Surveillance Unit and Communicable Disease Unit Schools Team (Interior Health), Population Health Assessment Surveillance & Epidemiology Team (Island Health), Population & Public Health Support Unit epidemiologists, Cluster Coordinators, and Communicable Disease Clinical Coordinators (Northern Health), and Public Health Surveillance Unit and Case and Contact Tracing teams (Vancouver Coastal Health).
- Each health authority has their own public health practices and data collection systems for case management and cluster reporting. Variation in data collection and data systems exist among health authorities. Cluster data are based on confirmed transmission in the school learning environment. Asymptomatic transmission, transmission between cases unknown to public health, or cases with multiple sources of potential acquisition may not be captured. Clusters are provided at the classroom(s) or school level depending on the health authority data collection process. Where a start of cluster or outbreak declared date was not recorded, this may have been imputed using the second earliest reported date. Staff who support the entire school and not specific classrooms, such as education assistants, librarians or janitorial staff, may be excluded from the data. Missing cluster end dates may be imputed as the last school exposure date plus 14 days.

H. Additional Resources

COVID-19 Updates

[BCCDC Data Summary](#) - The weekly surveillance deck is a summary of COVID-19 related indicators that can help inform the pandemic response in BC.

[BC COVID-19 Situation Report](#) - Provides a more in-depth look at COVID-19 epidemiology, underscoring data and key trends. This report includes information on Multi-System Inflammatory Syndrome (MIS-C).

[BC COVID-19 Pandemic Update](#) – BC Ministry of Health daily update on COVID-19

Case Definitions

[COVID-19 Case Definition](#)

BC K-12 School Guidance

[Public Health Communicable Disease Guidance for K-12 Schools](#) – outlines the prevention measures recommended for public, independent, and First Nations K-12 schools in B.C. to reduce the risk of communicable diseases, including COVID-19 in K-12 schools.

Provincial COVID-19 Dashboards

[BCCDC COVID-19 Dashboard](#) – Daily provincial and health authority level reporting of case incidence, death, hospitalization and laboratory data.

[BCCDC Regional Surveillance Dashboard](#) – Regional reporting of case and vaccine data at local level. Updated twice a week.

[BCCDC COVID-19 Epi App](#) – Case incidence, death, hospitalization, laboratory and limited vaccine data for regional and global comparisons. Updated three times a week.