

British Columbia (BC) COVID-19 Situation Report

Week 39: September 25- October 01, 2022

Data for week 39 (September 25 - October 01, 2022) may differ from the data published in the BCCDC weekly report. Data was extracted on October 10, 2022 for this situation report compared to October 12, 2022 for the latest weekly report.

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Testing rates and percent positivity 4	Incidence by Health Authority from week 38 to week 39: <ul style="list-style-type: none"> Fraser Health incidence remained stable at 9 per 100K Interior Health incidence remained stable at 18 and 20 per 100K Vancouver Island Health incidence remained stable at 17 and 16 per 100K Northern Health incidence remained stable at 12 and 14 per 100K Vancouver Coastal Health incidence remained stable at 12 and 13 per 100K
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Wastewater surveillance 10	The number of people in hospital with a positive COVID-19 test was stable at 198 in week 38 and 39. The number of people in critical was stable at 31 in week 38 and 29 in week 39. In week 39, 60+ year-olds had the highest number of people admitted to hospital with a positive COVID-19 test, with 73 hospitalizations in 60-79 year-olds and 91 hospitalizations in 80+ year-olds. In week 39, 60-79 year-olds had the highest number of people admitted to critical care (17 critical care admissions).
Additional resources 11	The weekly number of deaths reported so far for the time period corresponding to week 39 from any cause among people testing positive for COVID-19 was 35. In week 39, 60-79 and 80+ year-olds had the highest number of reported deaths from any cause among people testing positive for COVID-19, with 11 and 23 deaths in these age groups, respectively. From week 20 to week 33, where the underlying cause of death (UCD) has been reported for at least 95% of the post-transition deaths, an average of 43% of these deaths were reported to have COVID-19 as their UCD.
	In week 39, based on earliest symptom onset, 5 new care facility outbreaks (all in long-term care) were declared.

BELOW ARE IMPORTANT NOTES relevant to the interpretation of cases, hospitalizations, and deaths:

- Due to changes in testing strategies in BC in 2022 focusing on targeted higher risk populations, current case counts are an underestimate of the true number of COVID-19 cases in BC. This underestimation has increased compared to the period prior to the emergence of the Omicron variant in BC. Please see definition of cases below.
- Hospital data include admissions for people who test positive for COVID-19 through hospital screening practices, regardless of the reason for admission. Therefore, reported hospitalizations overestimate the true number of people who are hospitalized specifically due to COVID-19 infection.
- Pre-transition (case line list) deaths include COVID-19 related deaths reported by Health Authorities up to April 1, 2022. As of April 2, 2022, post-transition (automated linkage) deaths include people who died from any cause recorded in Vital Statistics within 30 days of their first positive COVID-19 lab result date. Deaths reported after the system transition use a broader definition and will overestimate the true number of deaths due to COVID-19 since death registration is recorded before the underlying cause of death is determined. Due to the change in data source for death data, the number of pre-transition deaths should not be compared to the number of post-transition deaths.

BELOW ARE IMPORTANT NOTES relevant to the interpretation of data displayed in this bulletin:

- Cases include lab confirmed, lab probable, and epi-linked cases. Case definition can be found at [http://www.bccdc.ca/health-professionals/clinical-resources/case-definitions/covid-19-\(novel-coronavirus\)](http://www.bccdc.ca/health-professionals/clinical-resources/case-definitions/covid-19-(novel-coronavirus)). Cases include those reported in Health Authority case line lists for the first time and those with first positive laboratory results in the Provincial Laboratory Information Solution (PLIS) up to April 1, 2022. As of April 2, 2022, only first positive laboratory results in the PLIS are included and cases who are residents from outside of BC are not included.
 - Episode date is defined by date of illness onset when available. When illness onset date is unavailable, earliest laboratory date is used (collection or result date); if also unavailable, then public health case report date is used. As of April 2, 2022, episode date reflects earliest laboratory date (collection or result date) only. Analyses based on episode date may better represent the timing of epidemic evolution. Episode-based tallies for recent weeks are expected to increase as case data are more complete.
 - Surveillance date is defined by lab result date, if unavailable, then public health case report date is used. As of April 2, 2022, surveillance date reflects lab result date only. The weekly tally by surveillance date includes cases with illness onset date in preceding weeks.
 - Hospitalizations include those reported by Health Authorities up to April 1, 2022. As of April 2, 2022, hospitalizations are defined as individuals who test positive for COVID-19 and are hospitalized as recorded in the PHSA Provincial COVID-19 Monitoring Solution (PCMS). Hospitalizations for individuals 0-19 years-old are reported by linked hospitalization episodes from the PCMS since the beginning of the pandemic. Episode date for hospitalization is defined by admission date, if unavailable, surveillance date is used.
 - Critical care admissions (HAU, ICU, and critical care surge beds) include individuals who test positive for COVID-19 and are in critical care admission as recorded in the PCMS. Episode date for critical care admission is defined by critical care admission date, if unavailable, surveillance date is used. Previously only ICU admissions were presented in this report. Critical care admissions comprises a broader category than ICU admissions and therefore, the number of critical care admissions should not be compared to number of ICU admissions from previous weeks.
 - Deaths include COVID-19 related deaths reported by Health Authorities up to April 1, 2022. As of April 2, 2022, deaths are any COVID-19 lab positive cases who died from any cause recorded in Vital Statistics within 30 days of their first positive lab result date. Episode date for death is defined by death date, if unavailable, surveillance date is used.
 - As of April 2, 2022, data on Health Authority outbreaks are compiled from outbreak files provided by the Health Authorities.
 - Laboratory PLOVER data include Medical Service Plan (MSP) funded (e.g. clinical diagnostic tests) and non-MSP funded (e.g. screening tests) specimens.
 - Per capita rates/incidences for year 2020 are based on Population Estimates 2020 (n= 5,147,772 for BC overall), for year 2021 are based on PEOPLE 2021 estimates (n= 5,194,137 for BC overall), and for year 2022 is based on PEOPLE 2021 estimates (n= 5,263,772 for BC overall).
 - Data sources include Health Authority case line lists, PHSA Provincial COVID-19 Monitoring Solution (PCMS), Vital Statistics, laboratory PLOVER data, and aggregate outbreak files from Health Authorities.
 - Integrated case data (including surveillance variables created using Health Authority case line lists, PCMS, and Vital Statistics) were extracted on October 10, 2022, laboratory PLOVER data on October 05, 2022, and Health Authority outbreak files on October 05, 2022.
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A. COVID-19 case counts and epidemic curve

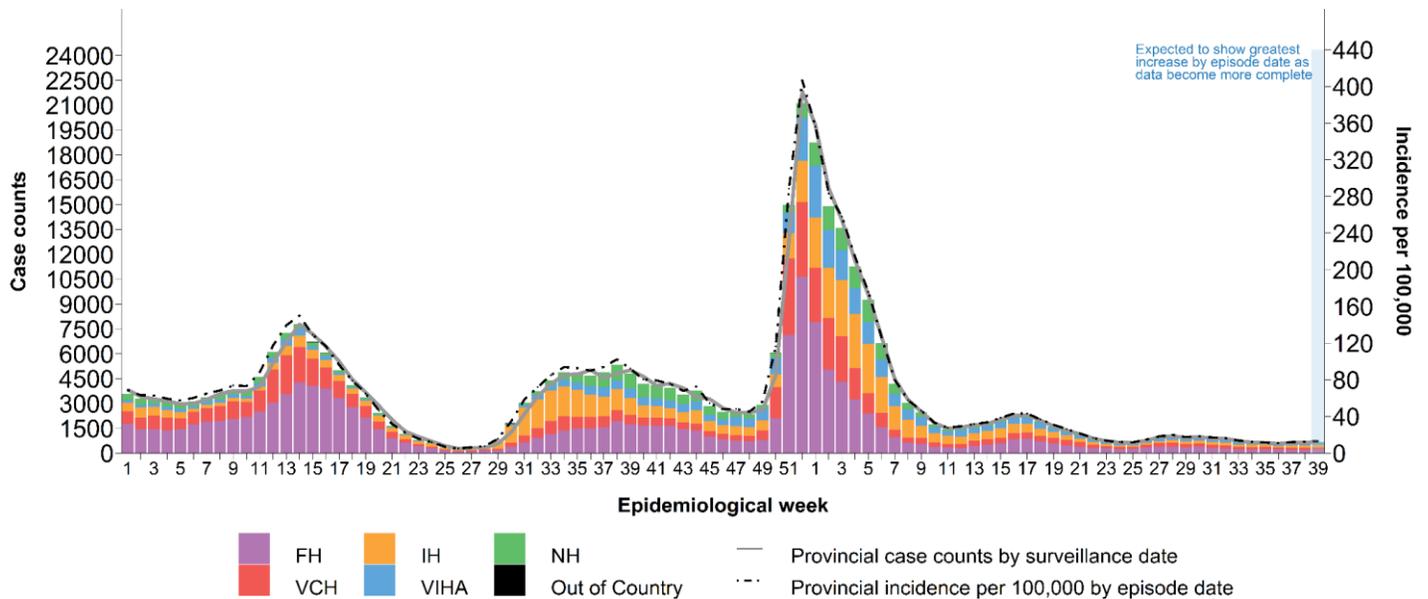
Due to changes in testing strategies in BC in 2022 focusing on targeting higher risk populations, current case counts are an underestimate of the true number of COVID-19 cases in BC. This underestimation has increased compared to the period prior to the emergence of the Omicron variant in BC. Up to week 39, there have been 385,647 cases for a cumulative incidence of 7,326 per 100K (Table 1, Figure 1). The provincial incidence by episode date was 13 per 100K (684 cases) in week 39, which has remained stable since last week.

Incidence rates from week 38 to week 39 remained stable in all HAs. In week 39, the highest incidence rate was in Interior Health (IH) at 20 per 100K. Incidence by episode date may increase as data become more complete in recent weeks.

Table 1. Episode-based case tallies by Health Authority, BC, Jan 15, 2020 (week 3) – Oct 01, 2022 (week 39) (N= 385,647)

Case tallies by episode date	Health Authority of Residence					Outside Canada	Total
	FH	IH	VIHA	NH	VCH		
Week 39, case counts	171	168	139	44	162	0	684
Cumulative case counts	168,884	68,720	38,527	31,081	78,044	391	385,647
Week 39, cases per 100K population	9	20	16	14	13	NA	13
Cumulative cases per 100K population	8,499	8,295	4,377	10,154	6,185	NA	7,326

Figure 1. Episode-based epidemic curve (bars), surveillance date (line) and Health Authority (HA), BC Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39) (N= 329,797)

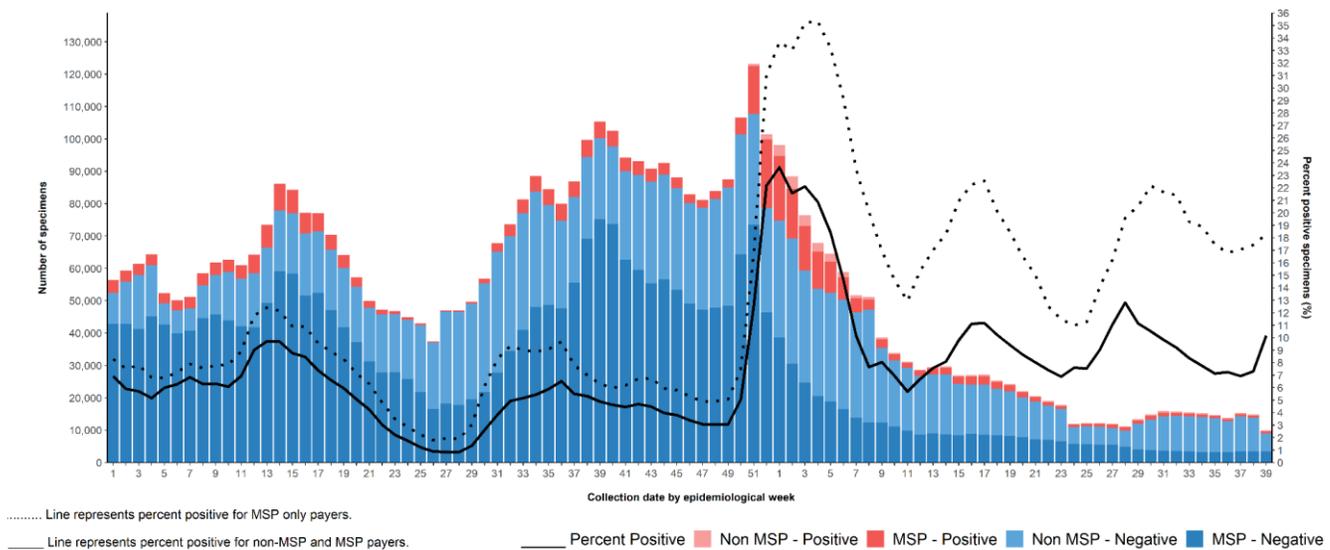


B. Test rates and percent positive

COVID-19 testing guidelines recommend testing for people who have COVID-19 symptoms, and are at risk of more severe disease or live/work in high-risk settings. As shown by the darker-colored bars and dotted line in Figure 2, the number of MSP-funded specimens remained stable at ~4,200 in week 38 and 39. The percent positivity of MSP-funded specimens remained stable at 17.4% in week 38 and 18.3% in week 39.

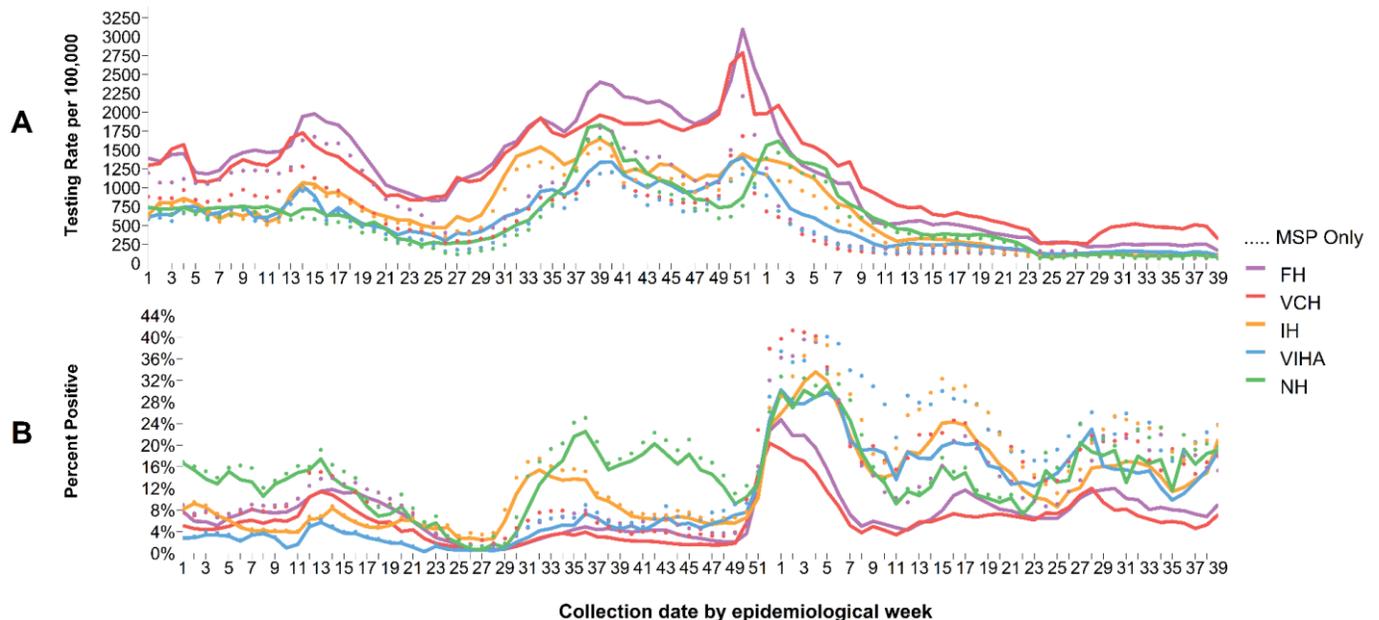
As shown by the dotted lines in Figure 3, the per capita testing rates for MSP-funded specimens (Panel A) remained stable in all HAs except for Interior Health (IH) where the testing rate increased from 87 per 100K in week 38 to 94 per 100K in week 39, and Fraser Health (FH) where the testing rate decreased from 67 per 100K in week 38 to 62 per 100K in week 39. The percent positivity (Panel B) for MSP-funded specimens decreased or remained stable in all HAs except IH, where the percent positivity increased from 20.8% in week 38 to 23.6% in week 39.

Figure 2. Number of specimens tested and percent SARS-CoV-2 positive, by collection week, BC Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39)



Note: Invalid (n = 3483) and indeterminate (n = 19957) results have been excluded

Figure 3. Testing rates and percent SARS-CoV-2 positive by Health Authority and collection week, BC Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39)



Data source: Laboratory PLOVER data

C. Age profile, testing and cases

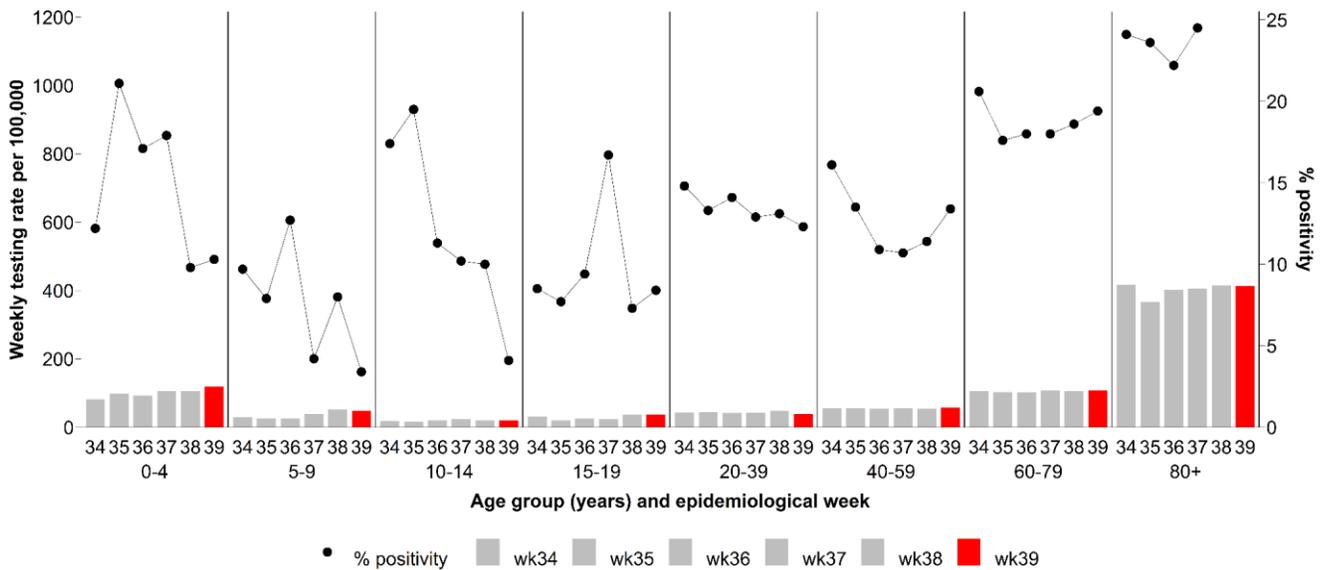
Testing rates and percent positivity by age group

As shown by the bars in [Figure 4](#), the per capita testing rates for MSP-funded specimens between week 38 and week 39 decreased or remained stable in all age groups except 0-4 year-olds. As shown by the black dots in [Figure 4](#), percent positivity between week 38 and week 39 decreased or remained stable in all age groups except 40-59 and 80+ year-olds.

Case distribution and weekly incidence by age group

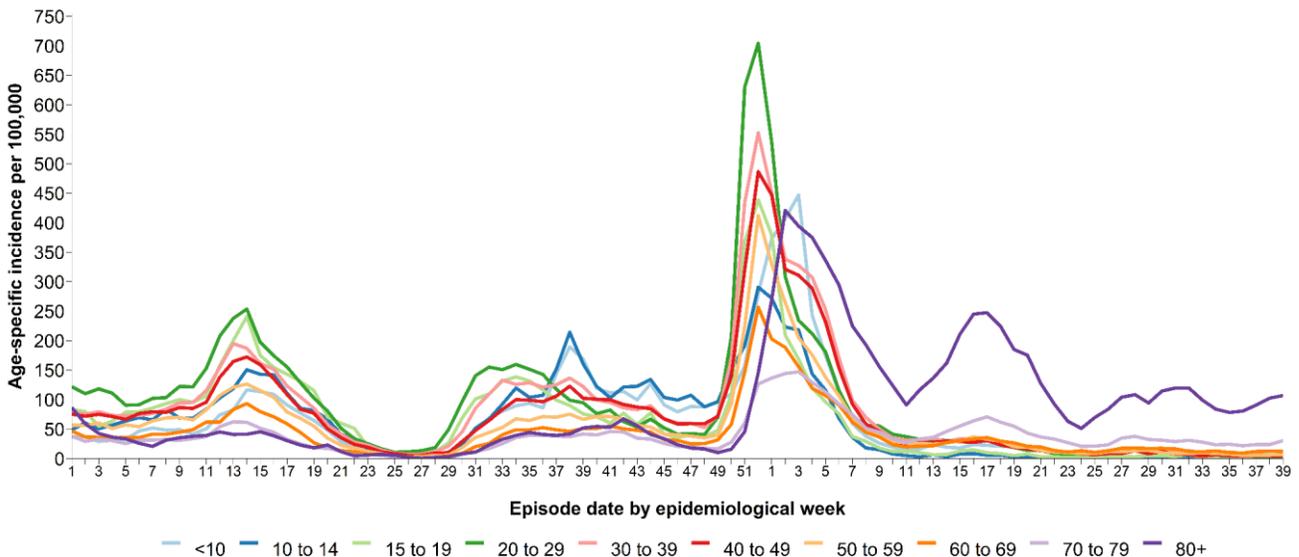
As shown in [Figure 5](#), age-specific incidence rates between week 38 and week 39 decreased or remained stable in all age groups except in 70-79 and 80+ year-olds.

Figure 4. Average weekly SARS-CoV-2 MSP testing rates and MSP percent positive by known age group, BC Aug 27, 2022 (week 34) – Oct 01, 2022 (week 39)



Data source: Laboratory PLOVER data

Figure 5. Weekly age-specific COVID-19 incidence per 100K population by epidemiological week, BC Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39) (N= 329,705)



D. Severe outcomes

Hospital data include admissions for people who test positive for COVID-19 through hospital screening practices, regardless of the reason for admission. Therefore, reported hospitalizations overestimate the true number of people who are hospitalized specifically due to COVID-19 infection. The number of people in hospital with a positive COVID-19 test remained stable at 198 in week 38 and 39. The number of people in critical care was stable at 31 in week 38 and 29 in week 39.

As of April 2, 2022, death data include people who test positive for COVID-19 and died from any cause (COVID-19 or non-COVID-19) within 30 days of their first positive lab result date. The weekly number of deaths reported so far to have occurred during week 39 from any cause among people testing positive for COVID-19 was 35 ([Table 2](#)). This number is expected to change with subsequent data refreshes.

Cumulatively, there have been 33 confirmed cases of [Multi-system Inflammatory Syndrome in children and adolescents \(MIS-C\)](#) in BC since January 1, 2020. There have been no new confirmed case of MIS-C since the last report. The median age of all cases is 9 years old (range from 4 months old to 16 years old).

**Table 2. COVID-19 severe outcomes by episode date, Health Authority of residence, BC
Jan 15, 2020 (week 3) – Oct 01, 2022 (week 39)**

Severe outcomes by episode date	Health Authority of residence					Residing outside of Canada	Total n/N ^a (%)
	FH	IH	VIHA	NH	VCH		
Week 39, hospitalizations	59	24	40	15	60	0	198
Cumulative hospitalizations	12,898	4,729	3,004	2,279	5,775	17	28,702/385,647 (7)
Week 39, critical care admissions ^b	12	3	3	2	9	0	29
Cumulative critical care admissions^b	2,661	1,056	462	824	1,183	4	6,190/385,647 (2)
Week 39, deaths	9	6	12	0	8	0	35
Cumulative deaths, pre-transition (case line list)^c	1,348	367	241	330	716	0	3,002/356,446 (1)
Cumulative deaths, post-transition (automated linkage)^c	443	283	259	50	307	0	1,342/29,201 (5)

- Cases with unknown outcome are included in the denominators (i.e. assumed not to have the specified severe outcome).
- Due to the change in data source for hospitalization data, ICU admissions are no longer available. Critical care admissions are now being provided, which comprises a broader category than ICU admissions (please see Important Notes on Page 2 for more information). Number of critical care admissions should not be compared to number of ICU admissions from previous weeks.
- Pre-transition (case line list) deaths include COVID-19 related deaths reported by Health Authorities up to April 1, 2022. As of April 2, 2022, post-transition (automated linkage) deaths are any COVID-19 lab positive cases who died from any cause recorded in Vital Statistics within 30 days of their first positive lab result date. Deaths reported after the system transition use a broader definition and will overestimate the true number of deaths due to COVID-19 since death registration is recorded before the underlying cause of death is determined. Due to the change in data source for death data, the number of pre-transition deaths should not be compared to the number of post-transition deaths.

E. Age profile, severe outcomes

Table 3 displays the distribution of cases and severe outcomes. In week 39, the median age of hospital admissions, critical care admissions, pre-transition deaths, and post-transition deaths with underlying cause of death (UCD) as COVID-19 was 68 years, 64 years, 82 years, and 85 years, respectively.

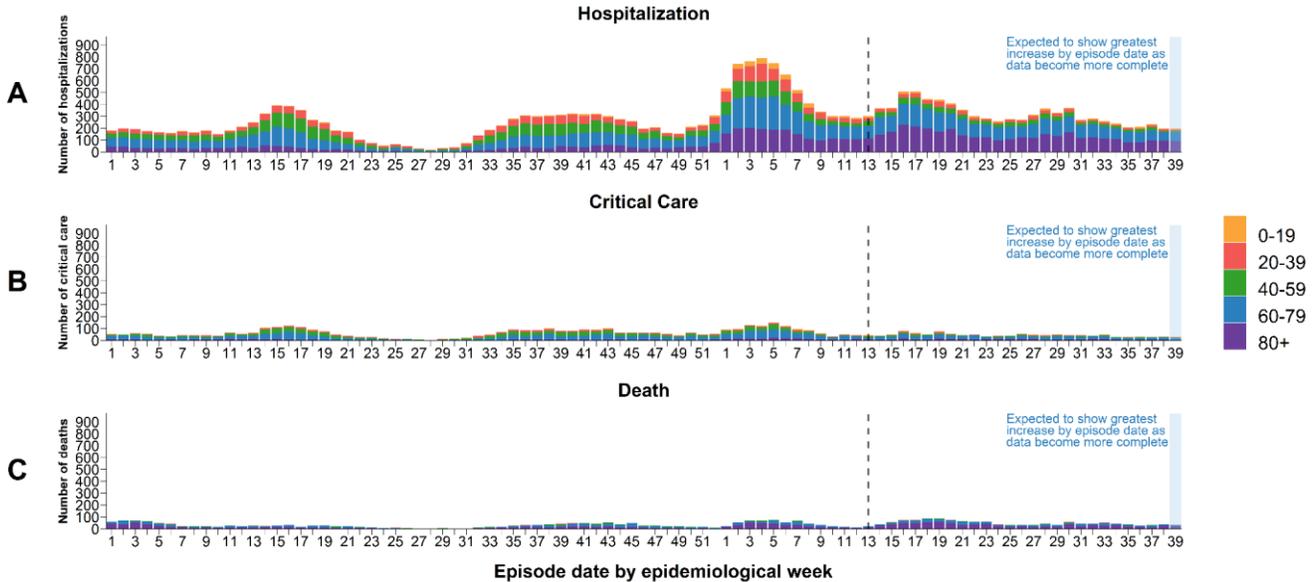
In week 39, 60+ year-olds had the highest number of new hospital admissions with a positive COVID-19 test, with 73 hospitalizations in 60-79 year-olds and 91 hospitalizations in 80+ year-olds. In week 39, 60-79 year-olds had the highest number of people admitted to critical care (17 critical care admissions). In week 39, 60-79 and 80+ year-olds had the highest number of deaths from any cause among people testing positive for COVID-19, with 11 and 23 deaths in these age groups, respectively (**Figure 6**).

Table 3: COVID-19 cases, hospitalizations, critical care admissions, and deaths by age group, BC, Jan 15, 2020 (week 3) – Oct 01, 2022 (week 39) (N= 385,616)^a

Age group (years)	Cases	Hospitalizations n (%)	Critical care admissions ^b n (%)	Pre-transition (case line list) deaths ^c n (%)	Post-transition (automated linkage) deaths ^c		
					UCD as COVID-19 ^d n (%)	UCD as non-COVID-19 ^d n (%)	UCD pending ^d n (%)
<10	31,249	613 (2)	77 (<1)	2 (<1)	2 (<1)	3 (<1)	0 (<1)
10-19	35,936	385 (1)	56 (<1)	0 (<1)	0 (<1)	3 (1)	0 (<1)
20-29	73,796	1,414 (2)	214 (<1)	6 (<1)	1 (<1)	8 (<1)	0 (<1)
30-39	70,856	2,438 (3)	453 (1)	31 (<1)	1 (<1)	9 (<1)	1 (<1)
40-49	54,699	2,307 (4)	598 (1)	64 (<1)	2 (<1)	9 (<1)	1 (<1)
50-59	44,760	3,326 (7)	1,102 (2)	166 (<1)	7 (<1)	39 (1)	3 (<1)
60-69	31,560	4,731 (15)	1,523 (5)	353 (1)	43 (1)	66 (2)	16 (<1)
70-79	19,361	5,680 (29)	1,419 (7)	655 (4)	107 (2)	161 (4)	24 (1)
80-89	15,161	5,424 (36)	657 (4)	989 (10)	194 (4)	218 (4)	34 (1)
90+	8,238	2,384 (29)	91 (1)	736 (15)	179 (6)	179 (6)	32 (1)
Total	385,616	28,702	6,190	3,002	536	695	111
Median age	37	68	64	82	85	82	82

- a. Among those with available age information only.
- b. Due to the change in data source for hospitalization data, ICU admissions are no longer available. Critical care admissions are now being provided, which comprises a broader category than ICU admissions (please see Important Notes on Page 2 for more information). Number of critical care admissions should not be compared to number of ICU admissions from previous weeks.
- c. Pre-transition (case line list) deaths include COVID-19 related deaths reported by Health Authorities up to April 1, 2022. As of April 2, 2022, post-transition (automated linkage) deaths are any COVID-19 lab positive cases who died from any cause recorded in Vital Statistics within 30 days of their first positive lab result date. Deaths reported after the system transition use a broader definition and will overestimate the true number of deaths due to COVID-19 since death registration is recorded before the underlying cause of death is determined. Due to the change in data source for death data, the number of pre-transition deaths should not be compared to the number of post-transition deaths.
- d. Since underlying cause of death (UCD) takes approximately 8 weeks to be recorded, all-cause mortality is initially reported and then retrospective evaluations of underlying cause of death are provided here to better understand true COVID-19 mortality. UCD as COVID-19 are deaths that have been determined to be caused by COVID-19 in their Vital Stats record. UCD as non-COVID-19 are deaths that have been determined to be not attributable to COVID-19 in their Vital Stats record that are reported as deaths due to a lab positive COVID-19 test within 30 days of death. UCD pending are all post-transition deaths that do not yet have a recorded UCD.

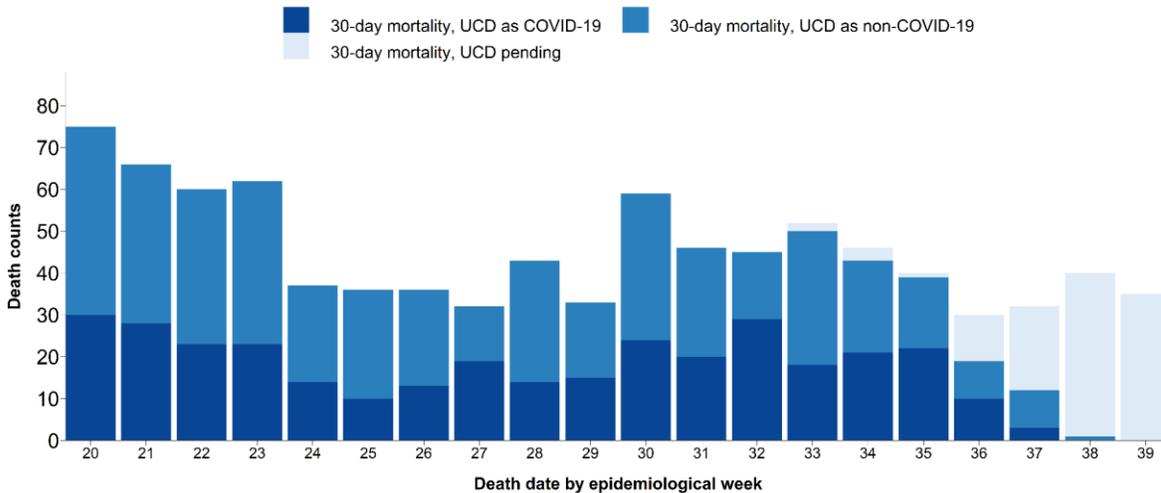
Figure 6. Weekly COVID-19 hospital admissions (A), critical care admissions (B), and deaths (C) by age groups, BC, Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39)^a



a. Among those with available age information only.

Figure 7 displays the number of post-transition deaths (i.e. people who test positive for COVID-19 and died from any cause within 30 days of their first positive lab result date) by underlying cause of death as recorded in Vital Statistics from week 20 to week 39 in 2022. From week 20 to week 33 where the UCD has been reported for at least 95% of the post-transition deaths, an average of 43% of these deaths were reported to have COVID-19 as their UCD. Post-transition deaths with complete UCD are expected to increase over time.

Figure 7. Post-transition deaths by underlying cause of death, BC, May 15, 2022 (week 20) – Oct 01, 2022 (week 39)^{a,b}



- a. As of April 2, 2022, post-transition (automated linkage) deaths are any COVID-19 lab positive cases who died from any cause recorded in Vital Statistics within 30 days of their first positive lab result date. Deaths reported after the system transition use a broader definition and will overestimate the true number of deaths due to COVID-19 since death registration is recorded before the underlying cause of death is determined. Due to the change in data source for death data, the number of pre-transition deaths should not be compared to the number of post-transition deaths.
- b. Since underlying cause of death (UCD) takes approximately 8 weeks to be recorded, all-cause mortality is initially reported and then retrospective evaluations of underlying cause of death are provided here to better understand true COVID-19 mortality. UCD as COVID-19 are deaths that have been determined to be caused by COVID-19 in their Vital Stats record. UCD as non-COVID-19 are deaths that have been determined to be not attributable to COVID-19 in their Vital Stats record that are reported as deaths due to a lab positive COVID-19 test within 30 days of death. UCD pending are all post-transition deaths that do not yet have a recorded UCD.

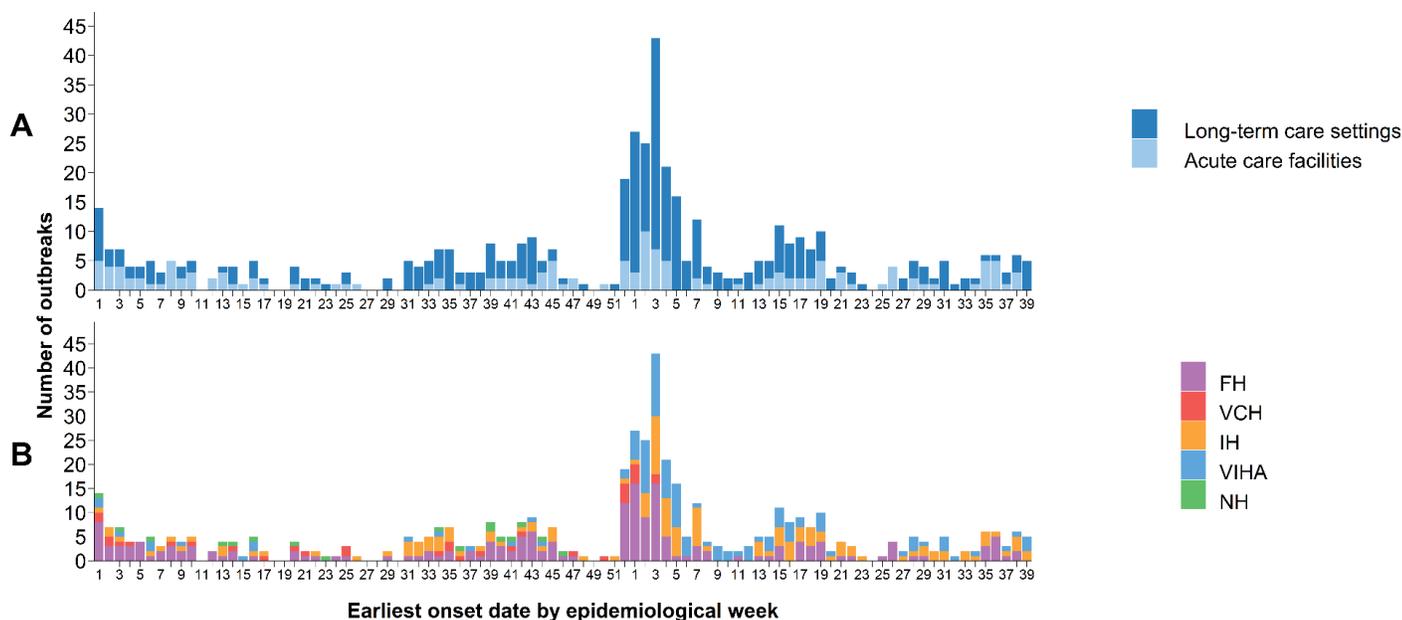
F. Care facility outbreaks

As shown in [Table 4](#) and [Figure 8](#), 729 care facility (acute care and long-term care settings) outbreaks were reported in total in BC to the end of week 39. In week 39, based on earliest symptom onset date (if unavailable, then outbreak declared date is used), 5 new care facility outbreaks (all in long-term care) were declared.

Table 4. COVID-19 care facility^a outbreaks by earliest case onset^{b,c}, associated cases and deaths by episode date, BC Jan 15, 2020 (week 3) – Oct 01, 2022 (week 39) (N=729)^{d,e}

Care facility outbreaks and cases by episode date	Outbreaks	Cases			Deaths		
		Residents	Staff/other	Total	Residents	Staff/other	Total
Week 39, Care Facility Outbreaks	5	79	1	80	0	0	0
Cumulative, Care Facility Outbreaks	729	10,379	3,819	14,198	1,460	0	1,460

Figure 8. COVID-19 care facility^a, outbreaks by earliest case onset^{b,c}, facility type (A) and Health Authority (B), BC Jan 3, 2021 (week 1) – Oct 01, 2022 (week 39) (N=484)^{d,e}



- Case and death counts include PCR positive cases only for outbreaks in NHA and VIHA. Vancouver Coastal Health, Fraser Health Authority, and Interior Health Authority outbreaks may also include those diagnosed by rapid antigen tests or considered as suspect reinfection.
- Earliest dates of onset of outbreak cases are subject to change as investigations and data are updated. If unavailable, outbreak declared date is used.
- New outbreaks reported since the last report with an earliest case onset date (if unavailable, outbreak declared date is used) prior to the current reporting week will be included in the cumulative care facility outbreak total.
- Cases with unknown role are included in the case count for Staff/other.
- Data might be incomplete or vary from what was reported previously due to updates by Health Authorities.

G. Wastewater surveillance

The BCCDC and Metro Vancouver measure SARS-CoV-2 in wastewater at five wastewater treatment plants (treating wastewater from 50% of BC’s population). To account for changing wastewater volume due to rainfall or snowmelt, SARS-CoV-2 concentrations are normalized to wastewater flow. Normalized SARS-CoV-2 wastewater levels (measured as viral copies per day) are shown alongside incident COVID-19 cases in each wastewater catchment area in [Figure 9](#) and [Figure 10](#). The BCCDC’s test results are obtained from the liquid fraction of the wastewater sample. Other organizations, such as the National Microbiology Laboratory, test from the solid fraction of wastewater and therefore, their results are not directly comparable.

Key messages with results through to October 8, 2022:

- SARS-CoV-2 viral loads measured in most wastewater plants in Metro Vancouver are stable. Northwest Langley, which historically has had more variable viral loads than other plants, has seen a more sustained increase in viral loads.
- Data from Lion’s Gate plant are excluded from trend analysis, as data from this plant is more variable than expected. This may be due to unique features of the plant’s operation, though the exact cause is under review. Though not included in our analysis, these data are included in our figure and identified as excluded.
- Viral loads at Annacis Island WWTP (Fraser North and South), have increased slightly over the past two weeks.
- Viral loads at Northwest Langley WWTP (Northwest Langley), have increased over the past five weeks.
- Viral loads at Iona Island WWTP (Vancouver), have increased slightly over the past three weeks.
- Viral loads at Lulu Island WWTP (Richmond), has decreased slightly over the past five weeks.

Figure 9. Wastewater surveillance, FH

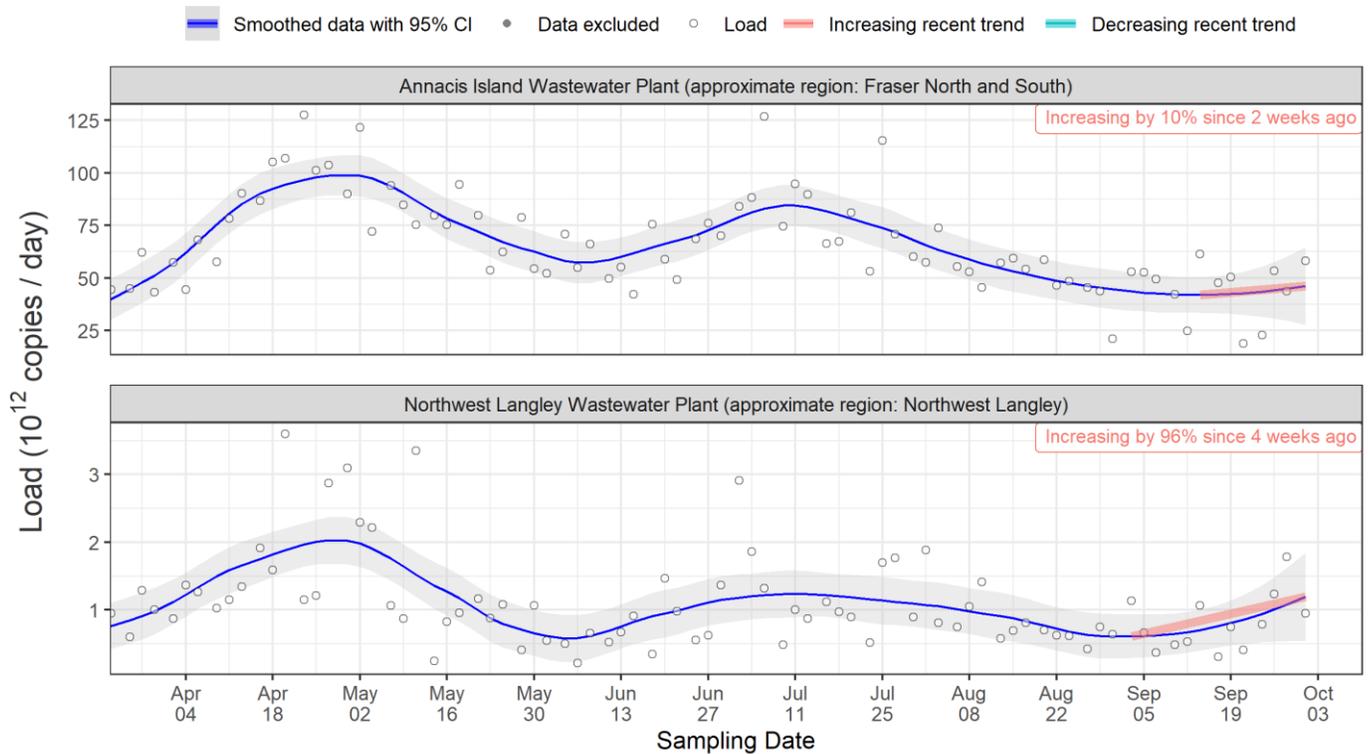
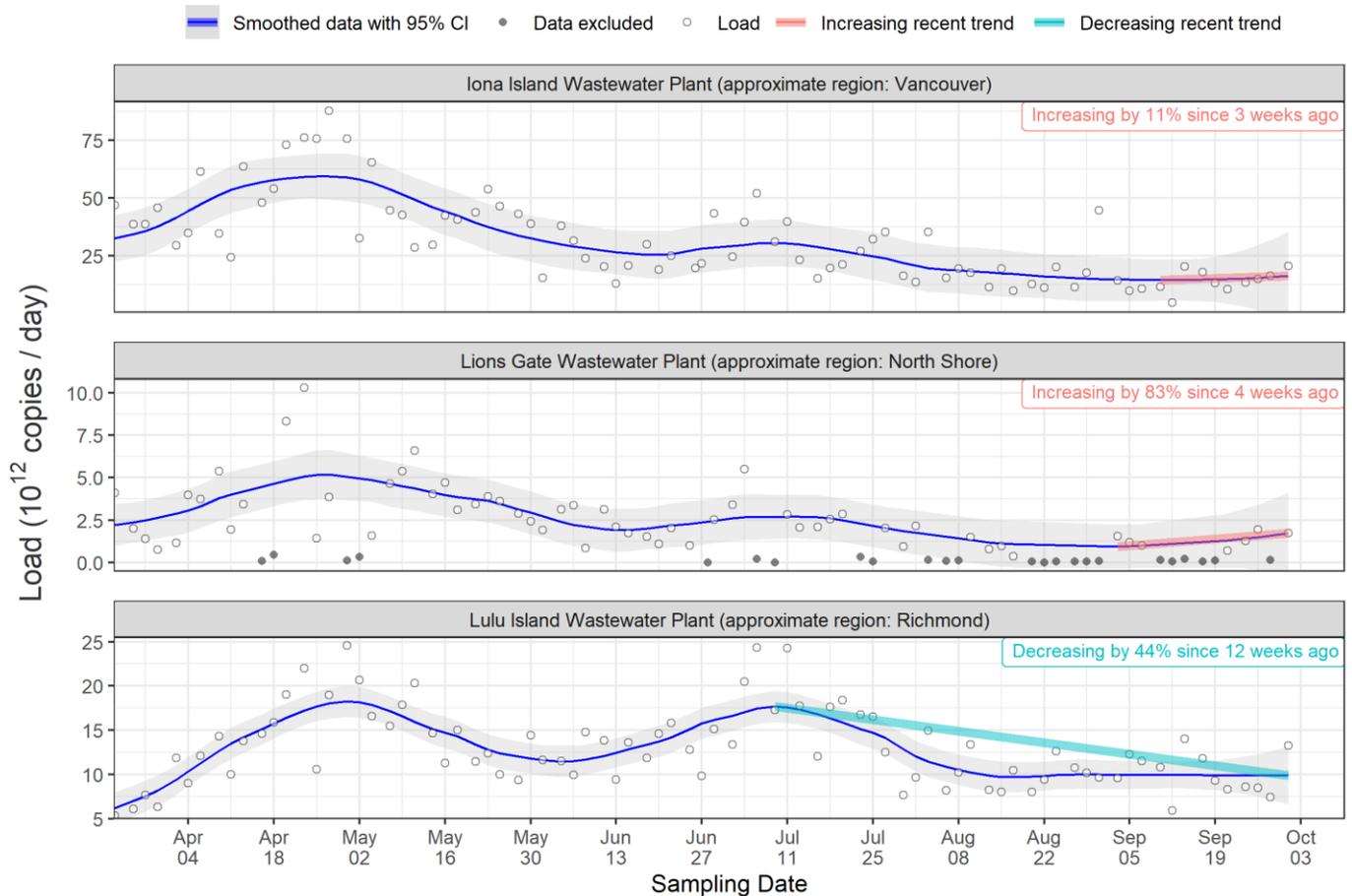


Figure 10. Wastewater surveillance, VCH



Note: Data are smoothed using LOESS (Locally Estimated Scatterplot Smoothing).

H. Additional resources

For COVID-19 vaccination coverage data, visit the COVID-19 Vaccination Coverage Dashboard here:

<http://www.bccdc.ca/health-professionals/data-reports/covid-19-surveillance-dashboard>

Variant of concern (VOC) findings are available weekly here: <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/data#variants>

For local, national, and global comparisons of BC to other jurisdictions on key epidemiological metrics, visit the BCCDC COVID-19 Epidemiology App here: https://bccdc.shinyapps.io/covid19_global_epi_app/

BC's COVID-19 Immunization Plan is updated regularly here: <https://www2.gov.bc.ca/gov/content/covid-19/vaccine/plan>