

British Columbia (BC) COVID-19 Situation Report
Week 51: December 19- December 25, 2021

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Epidemic curve and regional incidence	2	The provincial incidence by episode date was 271 per 100K, with 14,099 cases in week 51.
Test rates and % positive	3	Incidence by Health Authority has increased since week 49 (the week of the last report) to week 51:
Age profile, testing and cases	4	<ul style="list-style-type: none"> • Since week 49, Fraser Health incidence increased (from 41 to 342 per 100K). • Since week 49, Vancouver Coastal incidence increased (from 44 to 363 per 100K). • Since week 49, Interior Health incidence increased (from 78 to 162 per 100K). • Since week 49, Island Health incidence increased (from 85 to 139 per 100K). • Since week 49, Northern Health incidence increased (from 66 to 115 per 100K).
Severe outcomes	6	As shown by the bars in Figure 5, testing rates increased in all age groups between week 49 and week 51. Testing rates in week 51 were highest in those aged 20-39, at 2,455 per 100k, and second highest in those aged 5-9, at 2,040 per 100k.
Age profile, severe outcomes	7	Age-specific incidences increased across all age groups from week 49 to week 51. Incidence rates increased the most significantly in 20-29 year-olds (from 70 to 606 per 100K), and in 30-39 year-olds (from 72 to 416 per 100K).
Care facility outbreaks	8	Testing of MSP-funded specimens increased from ~51,300 in week 49 to ~88,700 in week 51. The positivity of MSP-funded specimens increased from 5.1% in week 49 to 16.7% in week 51.
Modeling	9	The number of hospital admissions has increased slightly since week 49, from 111 hospitalizations in week 49, to 124 hospitalizations in week 51. In week 51, 40-59 year-olds had the highest number of hospital admissions (38 hospitalizations).
Wastewater surveillance	9	Since week 49, there has been a weekly average of <1 death in those <50 years of age, 1 death in 50-59 year-olds, 2 deaths in 60-69 year-olds, 8 deaths in the 70-79 year-olds, and 5 deaths in the 80+ year-olds (data not shown). The number of deaths may increase over time as data becomes more complete.
Additional resources	10	By case of earliest onset date, 11 new outbreaks were reported in healthcare settings in week 51.
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BELOW ARE IMPORTANT NOTES relevant to the interpretation of data displayed in this bulletin:

- Episode dates are defined by dates of illness onset. When those dates are unavailable, earliest laboratory date is used (collection or result date); if also unavailable, then public health care report date is used. Analyses based on episode date (or illness onset date) may better represent the timing of epidemic evolution. Episode-based tallies for recent weeks are expected to increase as case data, in particular onset dates, are more complete.
- The weekly tally by surveillance date (result date, if unavailable then report date) includes cases with illness onset date in preceding weeks. Episode dates for hospital admission, ICU, and death are defined by admission and death dates. When unavailable, surveillance date is used.
- As of June 15, 2021, per capita rates/incidences for year 2020 are based on Population Estimates 2020 (n= 5,147,772 for BC overall) and for year 2021 are based on PEOPLE 2021 estimates (n= 5,194,137 for BC overall).
- Laboratory data include Medical Service Plan (MSP) funded (e.g. clinical diagnostic tests) and non-MSP funded (e.g. screening tests) specimens.
- Data sources include: Health Authority case line list data, laboratory PLOVER data, PHSA Provincial Immunization Registry (PIR), and hospital data (PHSA Provincial COVID19 Monitoring Solution (PCMS)).
- Case data were extracted on January 03, 2022, laboratory data on December 31, 2021, PIR vaccine coverage date on December 31, 2021, and PCMS hospitalization data on January 03, 2022.

A. COVID-19 case counts and epidemic curves

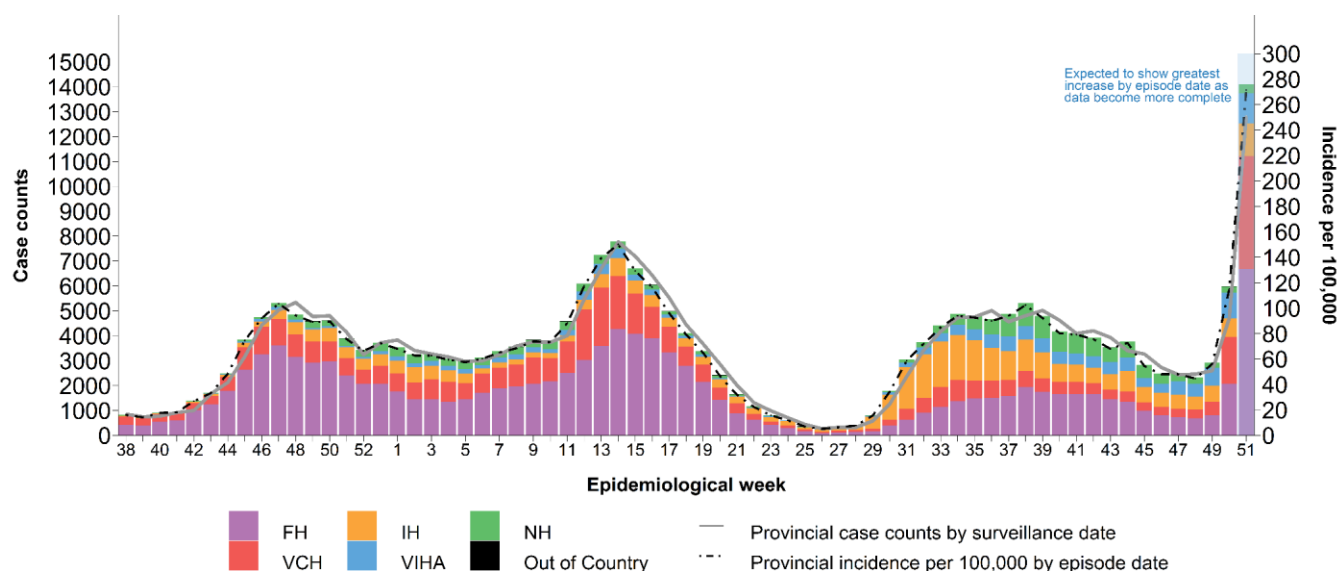
Up to week 51, there have been 244,544 cases for a cumulative incidence of 4,702 per 100K ([Table 1, Figure 1](#)). The provincial incidence by episode date was 271 per 100K (14,099 cases) in week 51, which has increased from 56 per 100K in week 49. The near 5-fold increase is due to the emergence of Omicron variant in BC (see [VoC Reports](#)). Incidence by episode date may increase as data become more complete in recent weeks

As shown in [Figure 2](#), incidence has increased sharply in all HAs from week 49 to week 51. Incidence increased the most dramatically in Fraser Health (FH) and Vancouver Coastal Health (VCH), from 41 per 100k in week 49 to 342 per 100k in week 51 for FH, and from 44 to 363 per 100k in VCH. In Interior Health (IH), incidence increased from 78 in week 49 to 162 per 100k in week 51, in Vancouver Island Health (VIH) from 85 to 139 per 100k, and in Northern Health (NH) from 66 to 115 per 100k. These rates may increase as data become more complete.

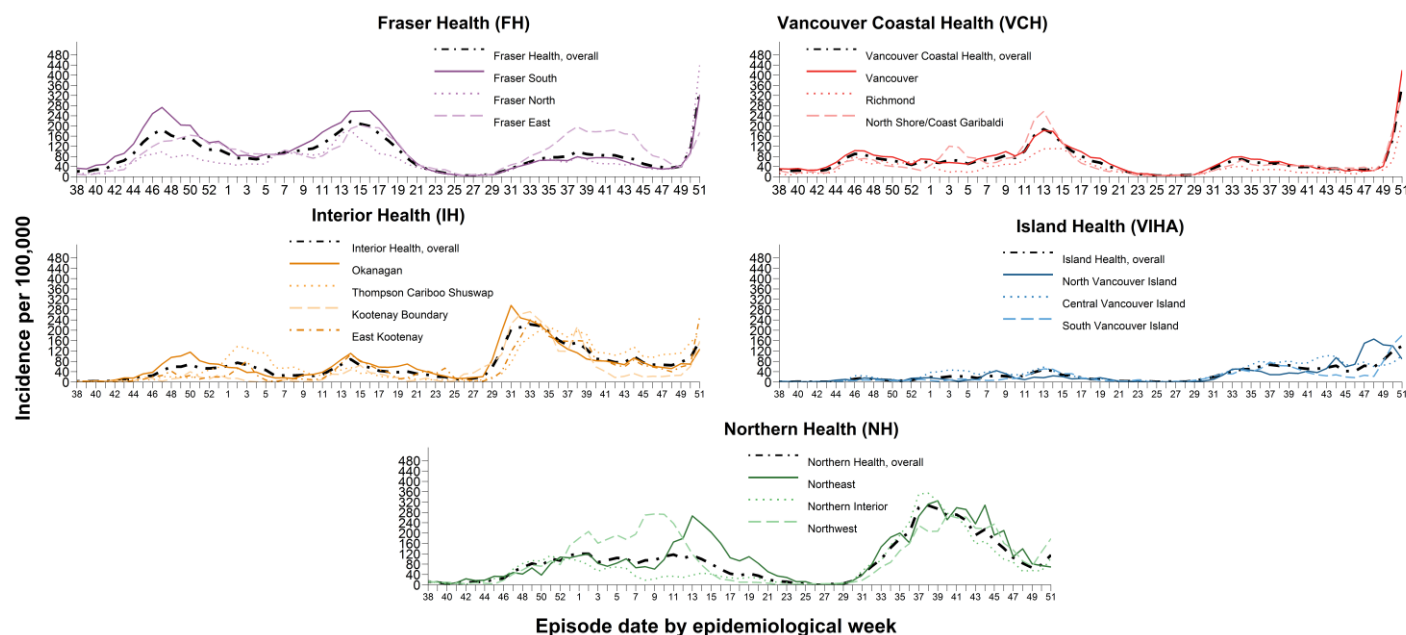
Table 1. Episode-based case tallies by Health Authority, BC, Jan 15, 2020 (week 3) – Dec 25, 2021 (week 51) (N= 244,544)

Case tallies by episode date	Health Authority of Residence					Outside Canada	Total
	FH	IH	VIHA	NH	VCH		
Week 51, case counts	6,685	1,330	1,208	349	4,523	4	14,099
Cumulative case counts	119,707	37,003	16,389	18,754	52,382	309	244,544
Week 51, cases per 100K population	342	162	139	115	363	NA	271
Cumulative cases per 100K population	6,117	4,508	1,890	6,199	4,202	NA	4,702

Figure 1. Episode-based epidemic curve (bars), surveillance date (line) and Health Authority (HA), BC Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51) (N= 236,694)



**Figure 2. Weekly episode-based incidence rates by HA and health service delivery area (HSDA), BC
 Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51) (N= 236,694)**



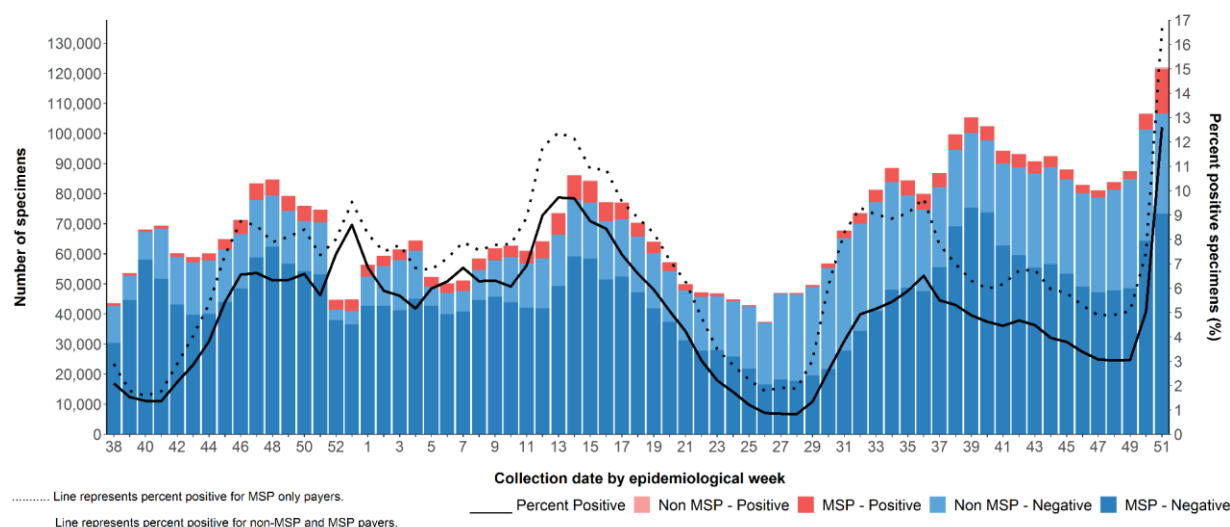
B. Test rates and percent positive

As shown by the darker-colored bars in [Figure 3](#), testing of MSP-funded specimens increased from ~51,300 in week 49 to ~88,700 in week 51. The positivity of MSP-funded specimens increased from 5.1% in week 49 to 16.7% in week 51.

As shown in [Figure 4](#), the per capita testing rates (Panel A) increased across all HAs. Testing rates in week 51 were highest in FH and VCH at 2,202 per 100K and 1,711 per 100K, respectively.

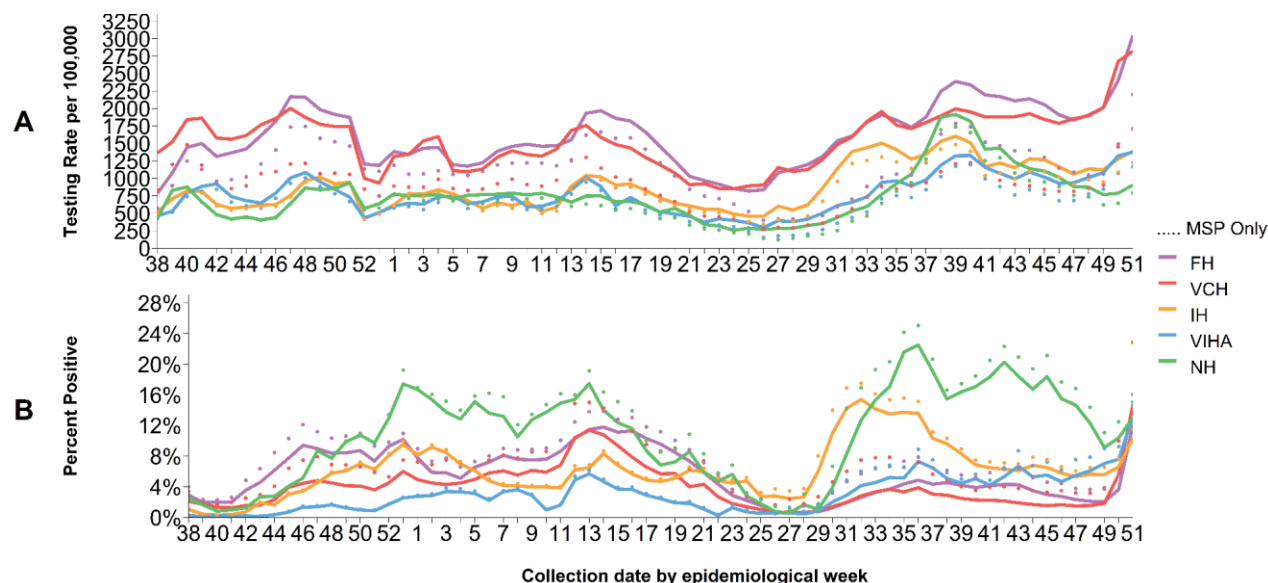
Percent positivity (Panel B) for MSP-only specimens increased in all HAs in week 51. Percent positivity in week 51 ranged from a low of 11.5% in IHA to a high of 22.9% in VCH.

**Figure 3. Number of specimens tested and percent SARS-CoV-2 positive, by collection week, BC
 Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51)**



Note: Invalid (n = 2804) and indeterminate (n = 10893) results have been excluded

Figure 4. Testing rates and percent SARS-CoV-2 positive by Health Authority and collection week, BC Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51)



Data source: laboratory PLOVER data

C. Age profile – Testing and cases

Testing rates and percent positivity by age group

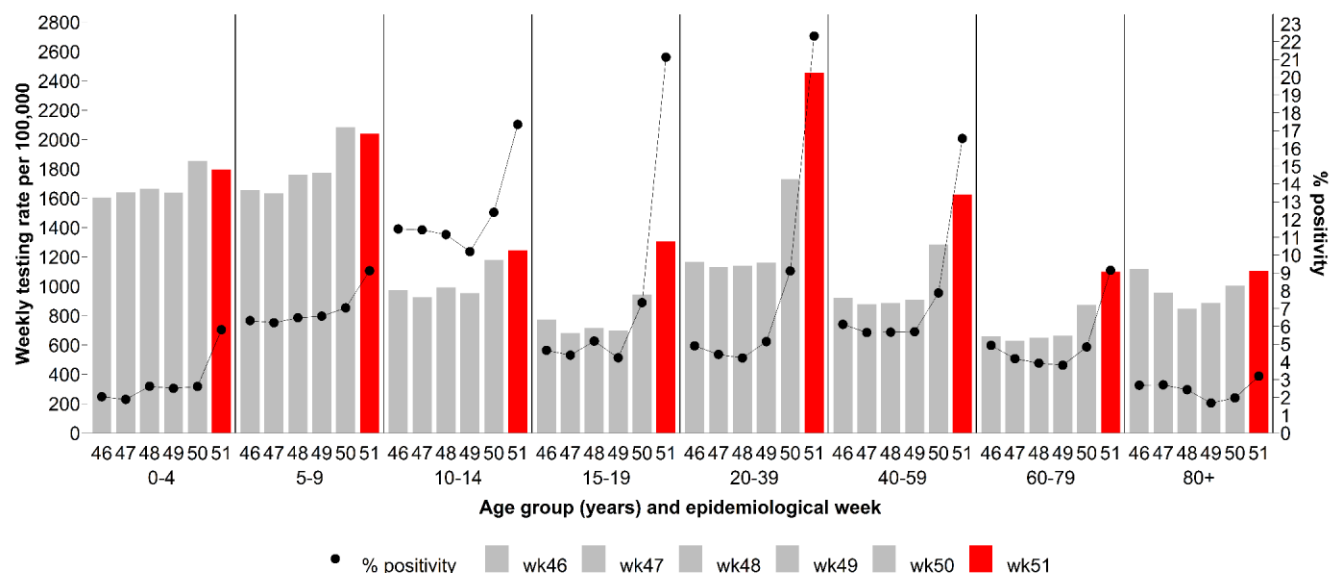
As shown by the bars in [Figure 5](#), testing rates increased in all age groups between week 49 and week 51. Testing rates in week 51 were highest in those aged 20-39, at 2,455 per 100k, and second highest in those aged 5-9, at 2,040 per 100k.

As shown by the black dots in [Figure 5](#), the percent positivity increased in all age groups. The highest percent positivity in week 51 was in the 20-39 year-olds at 22.3%.

Case distribution and weekly incidence by age group

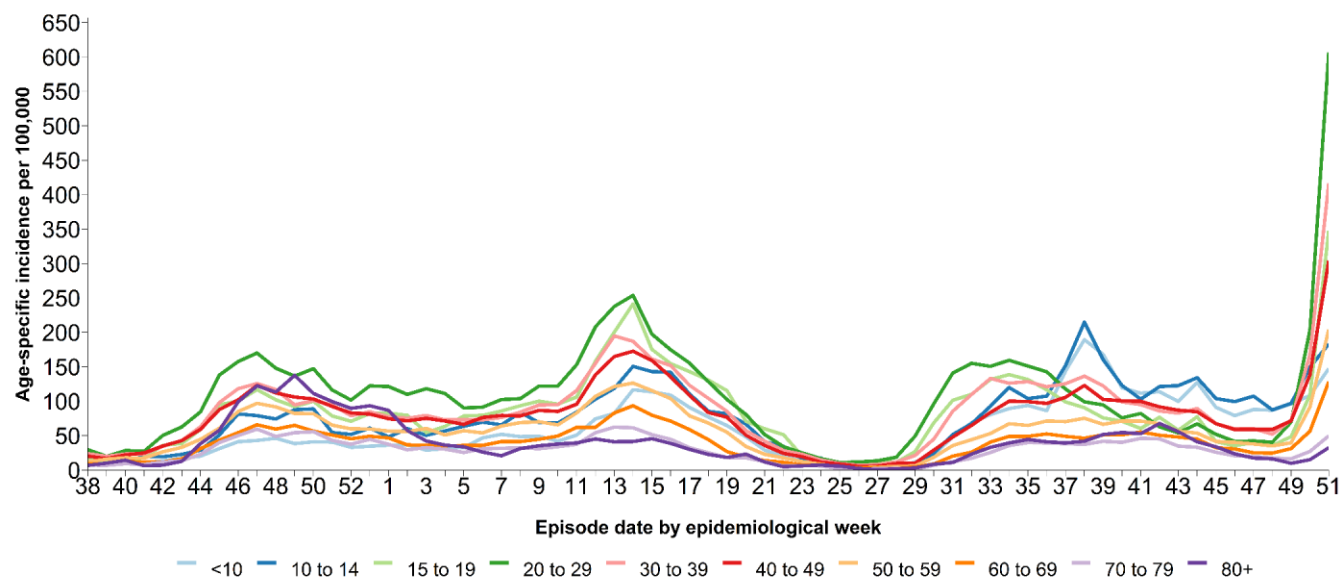
As shown in [Figure 6](#), age-specific incidences increased across all age groups from week 49 to week 51. The incidence rate in children <10 of age increased from 96 per 100K in week 49 to 148 per 100K in week 51. The incidence rates also increased from week 49 to week 51 in those aged 70-79 (from 16 to 50 per 100K) and 80+ (from 10 to 33 per 100K). From week 49 to week 51, the incidence rate increased in 15-19 year-olds (from 49 to 348 per 100K), 20-29 year-olds (from 70 to 606 per 100K), and 30-39 year-olds (from 72 to 416 per 100K). Age-specific incidences may increase as data become more complete. Detailed information about age-specific incidence by vaccination status can be accessed at [BCCDC COVID-19 Regional Surveillance Dashboard](#) moving forward.

Figure 5. Average weekly SARS-CoV-2 MSP testing rates and MSP percent positive by known age group, BC Nov 20, 2021 (week 46) – Dec 25, 2021 (week 51)



Data source: laboratory PLOVER data

Figure 6. Weekly age-specific COVID-19 incidence per 100K population by epidemiological week, BC Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51) (N= 236,678)



D. Severe outcome counts and epi-curve

The number of hospital admissions has increased slightly since week 49, from 111 hospitalizations in week 49, to 124 hospitalizations in week 51. In week 51, 40-59 year-olds had the highest number of hospital admissions (38 hospitalizations). The weekly number of deaths decreased from 21 in week 49 to 14 in week 51. Those aged 60-79 accounted for the highest number of deaths in week 51 (7 deaths) ([Table 2, Figure 8](#)). Detailed information about outcomes by vaccination status can be accessed at [BCCDC COVID-19 Regional Surveillance Dashboard](#).

Cumulatively, there have been 19 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 cases of MIS-C since the last report. The median age of all cases is 9 (range 1-15) years.

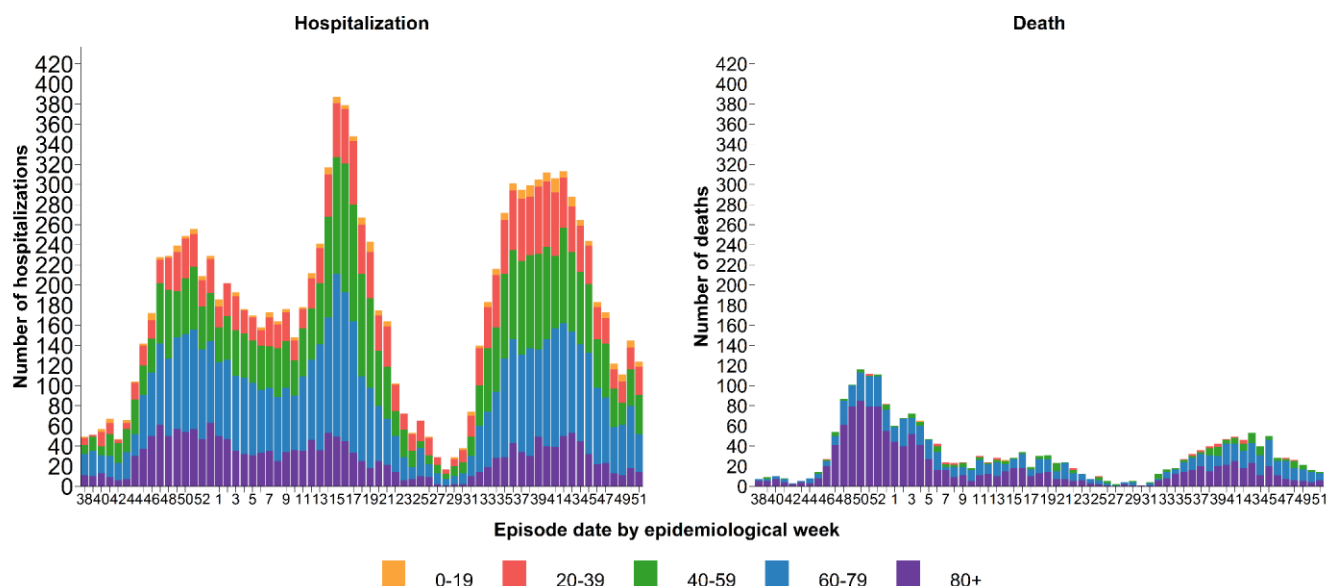
Table 2. COVID-19 severe outcomes by episode date, Health Authority of residence, BC
 Jan 15, 2020 (week 3) – Dec 25, 2021 (week 51)

Severe outcomes by episode date	Health Authority of residence					Residing outside of Canada	Total n/N ^a (%)
	FH	IH	VIHA	NH	VCH		
Week 51, hospitalizations	60	25	18	10	11	0	124
Cumulative hospitalizations^b	6,088	2,102	772	1,408	2,465	14	12,849/244,544 (5)
Week 51, ICU admissions	7	11	8	1	2	0	29
Cumulative ICU admissions^b	1,211	625	229	342	655	2	3,064/244,544 (1)
Week 51, deaths	3	2	6	3	0	0	14
Cumulative deaths	1,131	298	143	274	575	0	2,421/244,544 (1)

a. Cases with unknown outcome are included in the denominators (i.e. assumed not to have the specified severe outcome).

b. Data source: Health Authority case line lists only. Data may be incomplete and subject to change

Figure 8. Weekly COVID-19 hospital admissions and deaths by age groups, BC, Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51)



Data sources: Health Authority case line list data and PHSA Provincial Immunization Registry

E. Age profile, severe outcomes

Table 3 displays the distribution of cases and severe outcomes. In week 51, median age of hospital admissions, ICU admissions and deaths was 61 years, 62 years and 82 years, respectively, based on Health Authority case line lists only (data not shown).

Since week 49, there has been a weekly average of <1 death in those <50 years of age, 1 death in 50-59 year-olds, 2 deaths in 60-69 year-olds, 8 deaths in the 70-79 year-olds, and 5 deaths in the 80+ year-olds (data not shown). The number of deaths may increase over time as data becomes more complete.

Table 3: Age distribution: COVID-19 cases, hospitalizations, ICU admissions, deaths, and BC population by age group Jan 15, 2020 (week 3) – Dec 25, 2021 (week 51) (N= 244,509)^a

Age group (years)	Cases n (%)	Hospitalizations n (%) ^b	ICU n (%)	Deaths n (%)
<10	19,117	178 (1)	17 (<1)	2 (<1)
10-19	27,608	139 (<1)	29 (<1)	0 (<1)
20-29	52,834	756 (1)	97 (<1)	6 (<1)
30-39	46,433	1,389 (3)	277 (1)	30 (<1)
40-49	35,526	1,486 (4)	348 (1)	53 (<1)
50-59	28,399	2,054 (7)	625 (2)	138 (<1)
60-69	18,663	2,411 (13)	771 (4)	282 (2)
70-79	9,212	2,325 (25)	665 (7)	537 (6)
80-89	4,697	1,586 (34)	221 (5)	791 (17)
90+	2,020	546 (27)	23 (1)	582 (29)
Total	244,509	12,870	3,073	2,421
Median age^c	34	61	62	82

- Among those with available age information only.
- Data sources: Health Authority case line lists and a subset of PHSA Provincial COVID19 Monitoring Solution (PCMS) data for children <20 years of age. PCMS data were included as of June 8 2021. Due to this change in data source, additional admissions that occurred since the start of the pandemic are now included in age groups 0-9 and 10-19 years.
- Median ages calculated are based on Health Authority case line lists only.

F. Care facility outbreaks

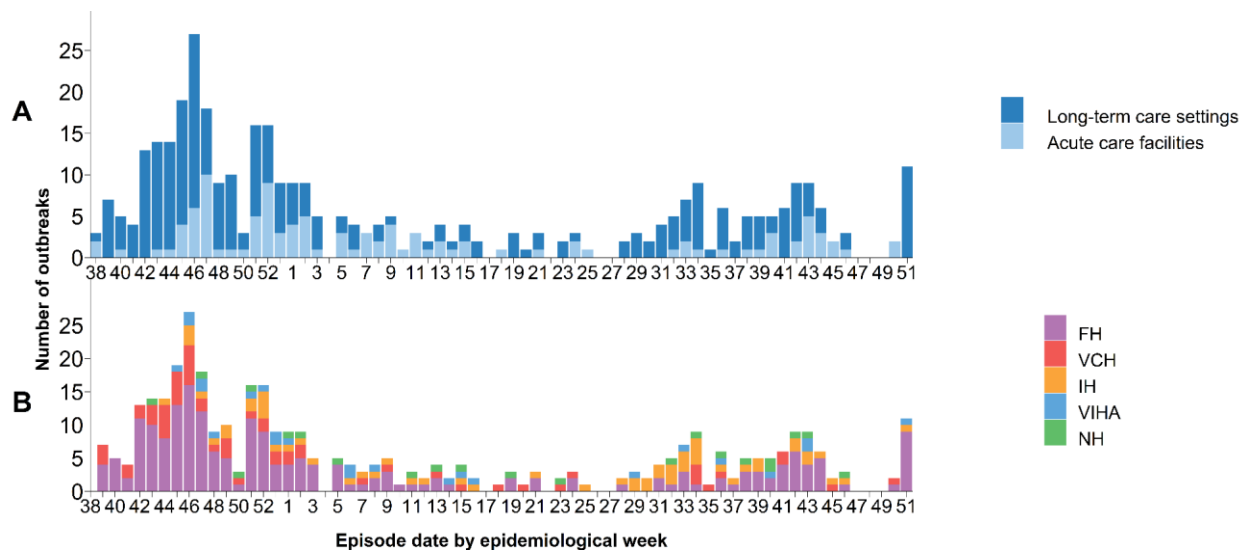
As shown in [Table 4](#) and [Figure 9](#), 435 care facility (acute and long-term care setting) outbreaks were reported in total in BC to the end of week 51. In week 51, 11 new outbreaks were declared, based on earliest case onset date. Two of the 14 (14%) deaths reported in week 51 were associated with an outbreak in a care facility.

Table 4. COVID-19 care facility^{a,b} outbreaks by earliest case onset^{a,c}, associated cases and deaths by episode date, BC^d Jan 15, 2020 (week 3) – Dec 25, 2021 (week 51) (N=435)

Care facility outbreaks and cases by episode date	Outbreaks	Cases				Deaths			
		Residents	Staff/other	Unknown	Total	Residents	Staff/other	Unknown	Total
Week 51, Care Facility Outbreaks	11	17	16	0	33	2	0	0	2
Cumulative, Care Facility Outbreaks	435	4,555	2,672	8	7,235	1,215	0	0	1,215

a. New outbreaks reported since the last report with an earliest case onset date prior to the current reporting week will be included in the cumulative care facility outbreak total.

Figure 9. COVID-19 care facility^b outbreaks by earliest case onset^c, facility type (A) and Health Authority (B), BC^d Sept 13, 2020 (week 38) – Dec 25, 2021 (week 51) (N=367)



- b. Care facility settings include acute care or long-term care settings (defined as long-term care facility or assisted living).
 c. Earliest dates of onset of outbreak cases are subject to change as investigations and data are updated.
 d. As of week 46, VCH and FH no longer declare outbreaks with single staff cases unless there is evidence of transmission within the facility.

G. Modeling

Current Rt estimates for BC are considered unreliable due to recent and ongoing changes in the ascertainment of case counts, including capacity limitations of PCR testing and the use of rapid antigen tests.

H. Wastewater surveillance

The BCCDC and Metro Vancouver have been testing for SARS-CoV-2 in wastewater at five wastewater treatment plants (representing 50% of BC's population) since May 2020, in order to assess whether COVID-19 virus is present and how it might be changing over time. The wastewater surveillance lab was closed from Dec. 20 – Jan, 4th, so data is unavailable and the graphs will be updated in the next report.

I. Additional resources

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

For maps and geographical distribution of cases and vaccinations, visit the BCCDC COVID-19 Regional Surveillance Dashboard here: <http://www.bccdc.ca/health-professionals/data-reports/covid-19-surveillance-dashboard>

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/

J. Appendix

[Vaccination phases](#) defined by vaccine eligibility of target populations in BC

Vaccination Phase 1 (December 2020 – February 2021)

Target populations include residents, staff and essential visitors to long-term care settings; individuals assessed and awaiting a long-term care placement; health care workers providing care for COVID-19 patients; and remote and isolated Indigenous communities.

Vaccination Phase 2 (February 2021 – April 2021)

Target populations include seniors, age ≥80; Indigenous peoples age ≥65 and Indigenous Elders; Indigenous communities; hospital staff, community general practitioners and medical specialists; vulnerable populations in select congregate settings; and staff in community home support and nursing services for seniors.

Vaccination Phase 3 (April 2021 – May 2021)

Target populations include people aged 60-79 years, Indigenous peoples aged 18-64 and people aged 16-74 who are clinically extremely vulnerable.

Vaccination Phase 4 (May 2021 – November 2021)

Target populations include everyone 12+ years. In September, third dose is available for people who are clinically extremely vulnerable.

Vaccination Phase 5 (November 2021 – Present)

Target populations include everyone 5+. Children aged 5-11 are eligible at the end of November. Everyone 18 and older will be invited to get a booster dose within 6-8 months of their second dose.