British Columbia (BC) COVID-19 Situation Report Week 43: October 18 – October 24, 2020

This bulletin provides weekly data and refers to <u>pandemic phases</u> defined by population-level changes specified in the table* below. Note also that unlike other summaries based on report date, this bulletin mainly adopts episode date defined by dates of illness onset, hospital admission, or death. Only when these dates are unknown, report date is used.

Table of Contents	Upswing in COVID-19 surveillance indicators in BC: Fraser Health Authority predominantly affected
Case counts and epi-curve 2	COVID-19 incidence per 100,000 population in BC has steadily increased since week 31 (August) with a notable jump from week 41 (17.6) to week 42 (24.5) (October). Incidence for current report week 43 (20.2) was highest in Fraser Health Authority (FHA: 35.6), lowest in Vancouver Island Health Authority (VIHA: 0.6). Tallies for recent weeks are expected to increase as data, patably enset datas, become more complete.
Test rates and % positive3Age profile, testing and cases4	weeks are expected to increase as data, notably onset dates, become more complete. SARS-CoV-2 test positivity increased between weeks 41-43 (1.4%, 2.1%, 2.9%), being highest in FHA (2.0%, 3.6%, 4.6%) and lowest in VIHA (0.2% each week). Positivity also increased from week 41-43 in Interior (0.4%, 0.7%, 1.9%) and Northern (1.0%, 1.3%, 2.6%) HAs but was more stable in Vancouver Coastal HA (1.3%, 1.6%, 1.6%).
Severe outcome counts <u>6</u>	In week 43, testing rates decreased in children <15 years old but increased in other age groups relative to the average test rate across prior weeks of Phase 3b. Positivity exceeded 2% in most age groups, highest in 15-19 (3.5%) and 20-39 year olds (3.1%).
Age profile, severe outcomes 7	More care facility outbreaks occurred after vs before Phase 3a (63 vs 48), but with half as many associated cases (362 vs 613). In week 43, 15 outbreaks were reported.
Likely sources of infection 8	Alongside the increase in cases, a gradual increase in hospitalizations has been observed since week 33. During the first wave, the peak tally of hospitalizations per week was 107 (week 13, mid-March) whereas to date during the second wave the
Care facility outbreaks 9	peak tally is about half that at 55 (week 41). Given the recent upswing in cases from week 42, the ultimate timing of the [delayed] peak in severe outcomes has yet to be determined. In week 43, there were 50 hospitalizations.
Clinical indicators <u>10</u>	In total, 258 COVID-associated deaths were reported in BC, of which two-thirds occurred before Phase 3a, two-thirds were associated with a care facility outbreak, and 86% were 70+ years. In week 43, 5 deaths were recorded, all 70+ years.

*<u>Pandemic phases</u> defined by implementation or relaxation of population-level mitigation measures in BC:

PRE-PHASE 1 Before implementation January 15 (wk 3) to March 13 (wk 11), 2020 From earliest onset date	PHASE 1 Implementation March 14 (wk 11) to May 18 (wk 21), 2020 From start of March break Additionally: • Mass gatherings >50 banned (Mar 16) • Traveller self-isolation required (Mar 17) • Service restrictions (Mar 18) • US/Canada border closure (Mar 20)	PHASE 2 Initial relaxation May 19 (wk 21) to June 23 (wk 26), 2020 Re-opening of services Additionally: • Gradual/part-time return to school of K-12 students for 2019-20 school year (Jun 1)	PHASE 3a Further relaxation June 24 (wk 26) to Sept 12 (wk 37), 2020 Broader re-opening Additionally:	PHASE 3b Start of school year Sept 13 (wk 38) to Current (wk 43), 2020 From first complete epidemiological week of 2020-21 school year
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A. COVID-19 case counts and epidemic curve

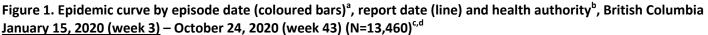
As shown by the gray line in **Figure 1**, there were 1,656 COVID-19 cases reported in week 43, a sudden and substantial twothird increase over week 42 (999), the latter just a 10% increase over week 41 (900). The weekly tally by report date, however, includes cases with illness onset distributed over preceding weeks.

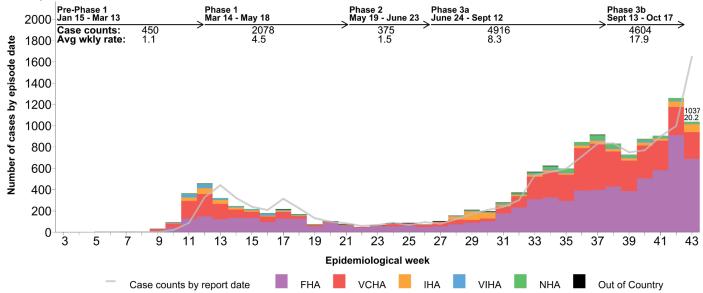
The coloured bars in **Figure 1** instead display the epidemic curve by episode date (i.e. illness onset date and only if that is unavailable, then report date). This similarly shows a gradual increase in cases since week 31, but a sudden jump beginning in week 42 (1,261 cases; 24.5 per 100,000), representing a 40% increase over week 41 (907 cases; 17.6 per 100,000).

Incidence based on episode date for the current report week 43 (20.2 per 100,000) already exceeds the average weekly incidence across preceding weeks 38-42 of Phase 3b (17.9 per 100,000) but is expected to increase further as data, notably onset dates, become more complete. In **Figure 1 and Table 1**, the recent surge in COVID-19 cases is driven by Fraser Health Authority where week 42 and 43 incidences so far are 47.1 and 35.6 per 100,000, respectively. Conversely, incidence in week 42 and 43 were lowest in Vancouver Island Health Authority at 1.2 and 0.6 per 100,000, respectively.

Table 1. Case tallies by episode date^a and health authority of residence^b, British Columbia January 15, 2020 (week 3) – October 24, 2020 (week 43)^c

Health authority of residence:	FHA	IHA	VIHA	NHA	VCHA	Outside Canada	Total n/N (%)
Week 43, case counts	690	74	5	17	250	1	1,037
Week 43, incidence per 100,000 ^d	35.6	8.9	0.6	5.9	20.7	NA	20.2
Cumulative counts, weeks 3 ^c to 43	7,509	717	253	396	4,496	89	13,460
Laboratory-diagnosed	7,404	683	247	365	4,437	88	13,224 (98)
Epidemiologically-linked	105	34	6	31	59	1	236 (2)
Active	1,247	74	7	19	358	5	1,710 (13)
Discontinued isolation	6,092	641	240	374	4,007	83	11,437 (85)
Deceased	119	2	6	3	128	0	258 (2)
Cumulative incidence per 100,000 ^d	387.2	85.9	29.2	137.9	371.4	NA	260.2





The average weekly rate by phase in Figure 1 is derived as the incidence divided by the number of weeks for Pre-Phase 1 (8 weeks), Phase 1 (9 weeks), Phase 2 (5 weeks), Phase 3a (11.5 weeks), and Phase 3b, excluding the current report week (5 weeks). The current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed.

a. Episode date is the illness onset date, or if onset date remains unknown, then the date the case was reported to the health authority.

b. FHA=Fraser; IHA=Interior; VIHA=Vancouver Island; NHA=Northern; VCHA=Vancouver Coastal Health Authorities

c. First onset date of a case in BC was January 15, 2020. Data presented were extracted after noon on Thursday, October 29, 2020.

d. All per capita rates/incidences and BC population estimates in the current report are based on PEOPLE2020 population estimates (n= 5,139,568).

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B. Test rates and percent positive

As shown by the bars in **Figure 2**, the weekly number of respiratory specimens tested for SARS-CoV-2 in BC has steadily increased from week 33 (~20,000) to weeks 40 and 41 (~70,000), declining slightly in weeks 42 and 43 (~60,000).

Conversely, the percent that were SARS-CoV-2 positive (i.e. percent positivity, shown by the line in **Figure 2**) declined from week 33 (2.4%) to week 41 (1.4%), increasing above 2% again in week 42 (2.1%) and approaching 3% in week 43 (2.9%).

As shown in **Figure 3**, Fraser Health Authority had the highest positivity rate, increasing across weeks 41 to 43 (2.0%, 3.6%, 4.6%). Percent positivity also increased in Interior (0.4%, 0.7%, 1.9%) and Northern (1.0%, 1.3%, 2.6%) Health Authorities. Greater variability due to smaller population size and, in turn, specimens tested should be taken into account when interpreting the latter. Positivity was more stable in Vancouver Coastal (1.3%, 1.6%, 1.6%) and Vancouver Island (0.2% each week) Health Authorities.

Figure 2. Number of specimens tested and percent SARS-CoV-2 positive, by collection week, British Columbia March 15, 2020 (week 12) – October 24, 2020 (week 43)^a

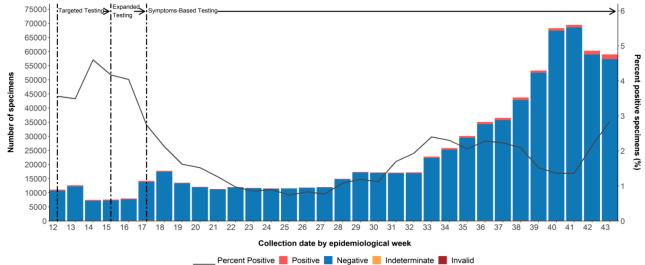
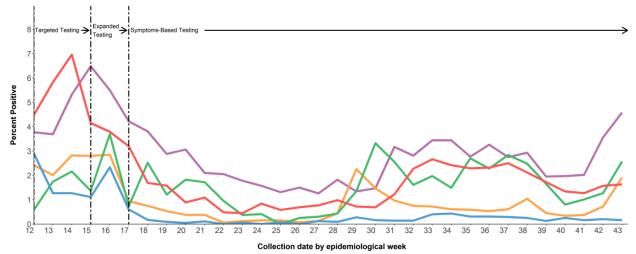


Figure 3. Percent SARS-CoV-2 positive, by health authority and collection week, British Columbia March 15, 2020 (week 12) – October 24, 2020 (week 43)^a



-FHA-IHA-NHA-VCHA-VIHA

a. PLOVER extract on October 29, 2020 reflecting all clinical diagnostic laboratories in BC. Laboratory testing criteria: <u>http://www.bccdc.ca/health-info/diseases-conditions/covid-19/testing/phases-of-covid-19-testing-in-bc</u>

b. FHA=Fraser; IHA=Interior; VIHA=Vancouver Island; NHA=Northern; VCHA=Vancouver Coastal Health Authorities

C. Age profile – Testing and cases

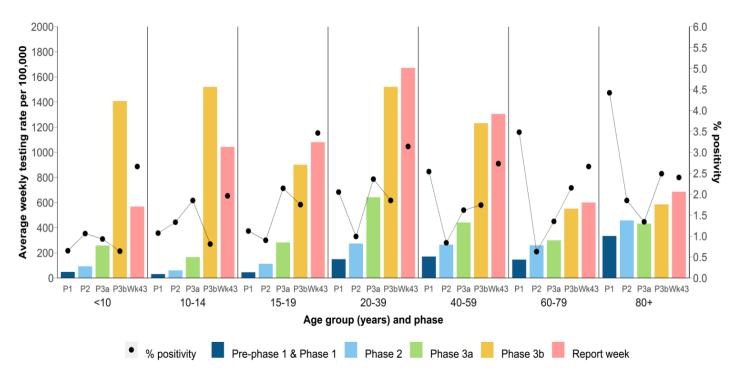
As shown by the coloured bars in **Figure 4**, testing surged in Phase 3b compared to Phase 3a, notably among children <15 years old following the start of the 2020-21 school year. Compared to average weekly testing rates across weeks 38-42 of Phase 3b, in week 43 testing rates decreased among children <15 years old, whereas it increased in those 15 years of age and older. The highest test rates in week 43 were among adults 20-39 years old.

As shown by the dots in **Figure 4**, the percent positivity was higher in week 43 compared to preceding weeks 38-42 of Phase 3b for all age groups except elderly adults 80+ years. Overall, positivity in week 43 was 2% or more in all age groups, lowest in children 10-14 years (2.0%) and elderly adults 80+ years (2.4%), but highest in teens 15-19 years (3.5%) and adults 20-39 years (3.1%).

Children 15-19 years old contributed slightly more in week 43 (7%) than across weeks 38-42 (5%) or in Phase 3a (5%). Whereas in Phase 3a adults 20-39 years comprised more than half (53%) of all cases, they contributed less in weeks 38-42 (42%) and current report week 43 (44%) (**Figure 5** and **Figure 6**). Conversely, adults 40-69 years comprised a greater share of cases in week 43 (35%) and across weeks 38-42 (37%) of Phase 3b compared to Phase 3a (30%).

Median age of cases across the pandemic is 37 years: 52 years in Pre-/Phase 1; 40 years in Phase 2; 33 years in Phase 3a; 36 years for Phase 3b (excluding week 43) and 34 years in week 43 (not shown).

Figure 4. Average weekly SARS-CoV-2 testing rates and percent positive by age group and phase^a, British Columbia January 20, 2020 (week 4) – October 24, 2020 (week 43)^b



a. Phase based on specimen collection date, of which January 20 was the earliest. The average weekly rate by phase is derived as the phase-specific per capita test rate divided by the number of weeks for Pre-Phase 1 + Phase 1 (P1: 17 weeks), Phase 2 (P2: 5 weeks), Phase 3a (P3a: 11.5 weeks), and Phase 3b, excluding the current report week (P3b: 5 weeks). The current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed.

b. PLOVER extract on October 29, 2020 reflecting all diagnostic laboratories in BC. Laboratory testing criteria: <u>http://www.bccdc.ca/health-info/diseases-conditions/covid-19/testing/phases-of-covid-19-testing-in-bc.</u>

Figure 5. COVID-19 case distribution by known age group (years) and episode date, British Columbia <u>March 15, 2020 (week 12)</u> – October 24, 2020 (week 43) (N= 12,925)

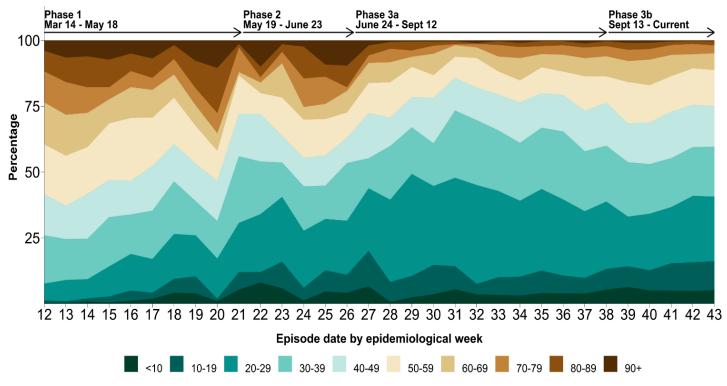
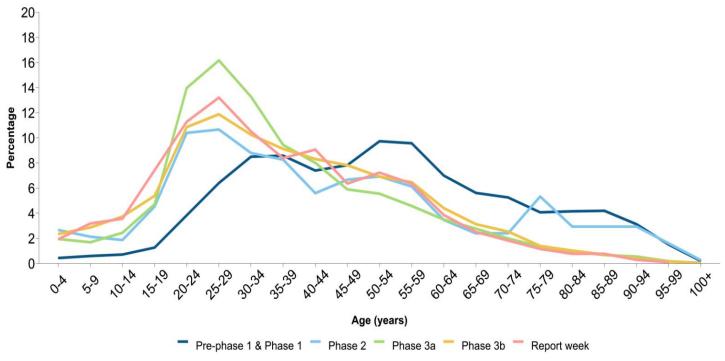


Figure 6. COVID-19 case distribution by known age group (years) and pandemic phase^a, British Columbia January 15, 2020 (week 3) – October 24, 2020 (week 43) (N=13,427)



a. The current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed.

D. Severe outcome counts and epi-curve

Alongside the increase in cases, increase in hospitalizations has been observed since week 33. Of cases within the Lower Mainland hospitalized since week 33, 58% were from Fraser and 42% were from Vancouver Coastal Health Authority.

Overall, nearly 80% of COVID-19 cases in BC accrued after Phase 3a re-opening (10,557/13,460; 78%). As shown in Table 2 and Figure 7, however, most hospitalizations (524/948; 55%) and deaths (172/258; 67%) occurred before Phase 3a. During the first wave, the peak number of hospitalizations per week was 107 (week 13) whereas to date during wave two the peak number is about half that at 55 (week 41). Similarly, the peak number of deaths per week during the first wave was 26 (week 15), whereas to date during the second wave the peak number is about half that at 10 (week 40). Given the recent upswing in cases from week 42, the ultimate timing of the [delayed] peak in severe outcomes has yet to be determined for wave two.

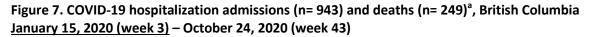
Median age of hospitalizations before vs. after Phase 3a is 68 vs. 61 years and of deaths is 85 vs. 87 years (not shown). Overall, males comprise 6,742/13,414 (50%) cases, 560/946 (59%) hospitalizations, 185/295 (63%) ICU admissions, and 148/258 (57%) deaths with known sex to date (not shown).

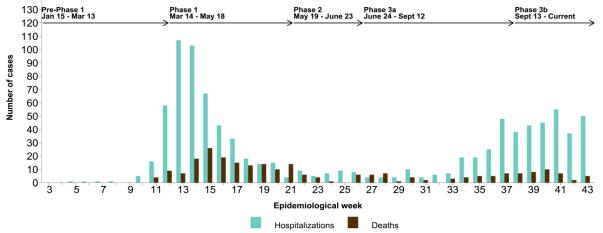
Table 2. COVID-19 severe outcomes by episode date^a, health authority of residence, and phase, British Columbia January 15, 2020 (week 3) – October 24, 2020 (week 43)

Health authority of residence:	FHA	IHA	VIHA	NHA	VCHA	Outside Canada	Total n/N (%)
Ever Hospitalized	503	45	26	32	336	6	948/13,460 cases (7) ^b
Pre-Phase 1 & Phase 1 (17 weeks)	245	29	25	12	175	2	488/948 (51)
Phase 2 (5 weeks)	27	1	0	2	5	1	36/948 (4)
Phase 3a (11.5 weeks)	98	5	0	10	40	2	155/948 (16)
Phase 3b (5 weeks, excluding week 43)	107	10	1	7	93	1	219/948 (23)
Week 43	26	0	0	1	23	0	50/948 (5)
Ever ICU	137	16	9	16	115	2	295/13,460 cases (2) ^b
Pre-Phase 1 & Phase 1 (17 weeks)	76	13	9	7	67	1	173/295 (59)
Phase 2 (5 weeks)	7	0	0	1	2	0	10/295 (3)
Phase 3a (11.5 weeks)	25	1	0	7	15	1	49/295 (17)
Phase 3b (5 weeks, excluding week 43)	19	2	0	0	27	0	48/295 (16)
Week 43	10	0	0	1	4	0	15/295 (5)
Deaths	119	2	6	3	128	0	258/13,460 cases (2) ^b
Pre-Phase 1 & Phase 1 (17 weeks)	55	2	5	0	83	0	145/258 (56)
Phase 2 (5 weeks)	22	0	0	0	5	0	27/258 (10)
Phase 3a (11.5 weeks)	20	0	0	1	25	0	46/258 (18)
Phase 3b (5 weeks, excluding week 43)	20	0	1	2	12	0	35/258 (14)
Week 43	2	0	0	0	3	0	5/258 (2)

Episode date defined by date of case illness onset, hospital admission or death; only when these dates are unknown is report date used. a b.

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





By epidemiological week corresponding to hospitalizations with known admission date and deaths with known death date.

E. Age profile, severe outcomes

As shown in **Table 3 and Figure 8**, elderly adults 70+ years comprise 10% of COVID-19 cases, generally commensurate with their share of the general population of BC (14%), but are over-represented among hospitalizations (42%) and deaths (86%).

Older adults 60-69 years comprise 8% of COVID-19 cases, and a greater proportion of hospitalizations (19%) but a commensurate proportion of deaths (10%) relative to their share of the BC population (13%).

Adults 40-59 years comprise 28% of COVID-19 cases and 26% of hospitalizations, which is commensurate with their share of the BC population (27%), but they are under-represented among COVID-19 deaths (5%).

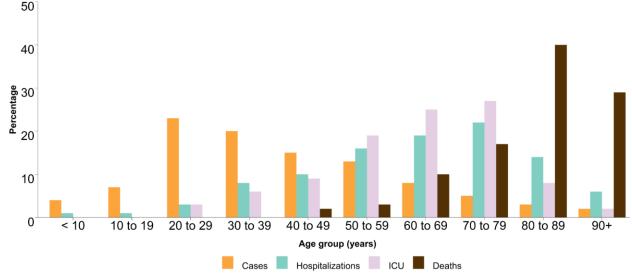
Adults 20-39 years comprise a greater share of COVID-19 cases (43%) than their share of the BC population (27%), but are under-represented among COVID-19 hospitalizations (11%) and deaths (0%).

Children <20 years are under-represented overall among COVID-19 cases (11%) as well as severe outcomes (2% or less), relative to their share of the BC general population (19%).

Table 3. Age distribution^a: COVID-19 cases, hospitalizations, ICU admissions, deaths and British Columbia population January 15, 2020 (week 3) – October 24, 2020 (week 43)

Age group	Cases	Hospitalizations	ICU	Deaths	General BC population ^b
(years)	n (%)	n (%)	n (%)	n (%)	n (%)
<10	516 (4)	11 (1)	0 (0)	0 (0)	469,351 (9)
10-19	960 (7)	6 (1)	0 (0)	0 (0)	527,805 (10)
20-29	3,121 (23)	33 (3)	8 (3)	0 (0)	697,691 (14)
30-39	2,701 (20)	77 (8)	18 (6)	0 (0)	735,052 (14)
40-49	2,018 (15)	93 (10)	28 (9)	4 (2)	646,035 (13)
50-59	1,792 (13)	152 (16)	57 (19)	7 (3)	718,272 (14)
60-69	1,062 (8)	179 (19)	73 (25)	27 (10)	673,131 (13)
70-79	641 (5)	213 (22)	81 (27)	43 (17)	435,062 (8)
80-89	408 (3)	130 (14)	25 (8)	102 (40)	187,443 (4)
90+	208 (2)	53 (6)	5 (2)	75 (29)	49,726 (1)
Total	13,427	947	295	258	5,139,568
Median age	37	65	65	85	41

Figure 8. COVID-19 cases, hospitalizations, ICU admissions and deaths by age group, British Columbia January 15, 2020 (week 3) – October 24, 2020 (week 43) (N=13,427)^a



a. Among those with available age information only.

b. Based on PEOPLE2020 population estimates.

F. Likely sources of infection

As shown in **Table 4** and **Figure 9**, local contact with a known case or cluster has most often been considered the source of infection across all pandemic phases to date.

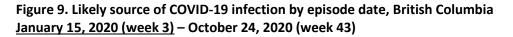
Prior to Phase 1, international travel was also a frequently cited source of SARS-CoV-2 infection in part reflecting high risk testing that targeted returning travelers. However, travel-related restrictions introduced in Phase 1 limited that contribution thereafter with clusters, such as in care facility settings, becoming a more prominent source.

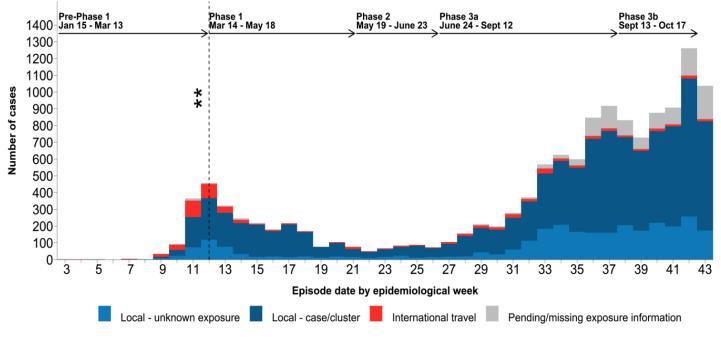
Since around mid-Phase 3a more cases have cited unknown local exposure or that information remained pending or missing. International travel has been cited less often since Phase 3b and these patterns have been generally maintained through week 43.

Table 4. Likely source of COVID-19 infection by pandemic phase^a of episode date, British Columbia January 15, 2020 (week 3) – October 24, 2020 (week 43)

Phase n (row %)	International travel	Local – case/cluster	Local - unknown	Pending/missing
Pre-Phase 1	135 (30)	207 (46)	95 (21)	13 (3)
Phase 1	188 (9)	1,498 (72)	350 (17)	42 (2)
Phase 2	30 (8)	261 (70)	82 (22)	2 (1)
Phase 3a	181 (4)	3,204 (65)	1,173 (24)	358 (7)
Phase 3b ^a	67 (1)	2,966 (64)	1,055 (23)	516 (11)
Week 43	13 (1)	651 (63)	174 (17)	199 (19)
Total	614 (5)	8,787 (65)	2,929 (22)	1,130 (8)

a. The current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed.





** March 16: Travel related restrictions introduced.

G. Care facility outbreaks

As shown in **Table 5 and Figure 10** the number of care facility outbreaks is greater in the period following Phase 3a reopening (63) compared to before Phase 3a (48), but the number of associated cases among residents is reduced by more than half (173 vs. 382) and among staff or visitors is lower by about 20% (189 vs. 231). Of 5,641 cases in total in BC with episode date in Phase 3b (inclusive of week 43), 179 (3%) have been associated with care facility outbreaks, a proportion similar to Phase 3a overall (184/4,917; 4%), but lower than before Phase 3a (613/2,903; 21%).

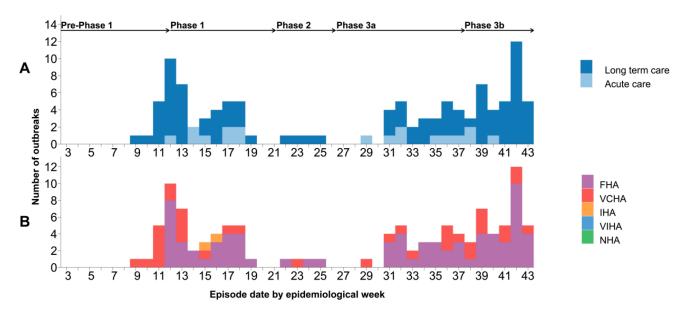
More than two-thirds of all COVID-19 deaths in BC have been associated with care facility outbreaks (181/258; 70%) and of those, more than two-thirds occurred before Phase 3a (120/172; 70%).

There were 15 new care facility outbreaks reported in week 43 (12 of which were reported by Fraser Health Authority), with 10 of these outbreaks having earliest onset date in preceding weeks. All of the 5 deaths in week 43 involved elderly adults 70+ years in a care facility setting. Two were from Fraser and three were from Vancouver Coastal Health Authorities.

Table 5. COVID-19 care facility outbreaks^a and associated cases and deaths by phase of episode date^b, BC January 15, 2020 (week 3) – October 24, 2020 (week 43) (N=111)

	Outbreaks		Cases ^b		Deaths ^b			
		Residents	Staff/visitors	Total	Residents	Staff/ visitors	Total	
Total	111	555	420	976	181	0	181	
Pre-/Phase One (17 weeks)	44	331	213	544	96	0	96	
Phase 2 (5 weeks)	4	51	18	69	24	0	24	
Phase 3a (11.5 weeks)	27	91	93	184	39	0	39	
Phase 3b ^c (5 weeks)	31	64	85	150	17	0	17	
Week 43	5	18	11	29	5	0	5	
Active outbreaks ^d	21	-	-	-	-	-	-	
Outbreaks declared over ^d	90		-	-	-	-	-	

Figure 10. COVID-19 care facility outbreaks^a by earliest case onset^e, facility type (A) and health authority^f (B), BC January 15, 2020 (week 3) – October 24, 2020 (week 43) (N=111)



a. Long term care facilities include: group homes (community living), independent living, assisted living, and other residential facilities. Care facility (acute/long-term care/independent living) outbreaks have at least one lab-confirmed COVID-19 staff or resident.

b. Week/phase allocation for cases according to earliest symptom onset date and for deaths by death date, or if unavailable, then date case was reported to health authority.

c. The current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed.

d. As of October 17, 2020

e. Earliest date of onset of outbreak cases are subject to change as investigations and data are updated.

f. FHA=Fraser; VCHA=Vancouver Coastal; IHA=Interior; VIHA=Vancouver Island; NHA=Northern Health Authorities

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H. Clinical indicators

HealthLink calls (**Figure 11**) related to COVID-19 have shown an overall increasing trend from about week 28 stabilizing from week 39 to 41 at >13,000 calls per week but decreasing in weeks 42 and 43 to just over 10,000 calls.

BC Medical Services Plan (MSP) general practitioner claims (**Figure 12**) related to COVID-19 (including telehealth) showed slight increase from week 37 reaching >5,000 visits in week 40 but decreasing thereafter to just over 2,500 visits in week 43.

Figure 11. HealthLink BC calls related to COVID-19, British Columbia March 1, 2020 (week 10) – October 24, 2020 (week 43)

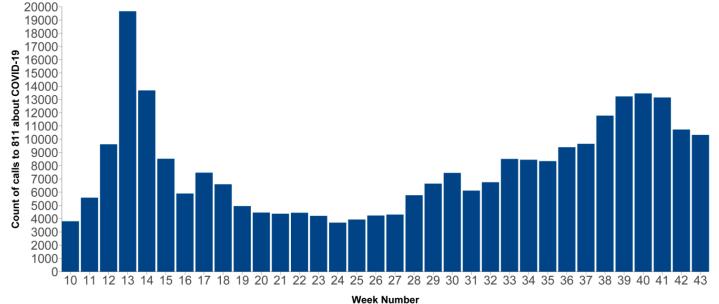


Figure 12. Medical Service Plan (MSP) claims (including telehealth) for COVID-19, British Columbia March 1, 2020 (week 10) – October 24, 2020 (week 43)

