

British Columbia (BC) COVID-19 Situation Report

Week 44: October 25 – October 31, 2020

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Pandemic phase definitions	2	<p>During wave one, weekly COVID-19 incidence in BC peaked at 9 per 100,000 in week 12 (mid-March). After Phase 3a re-opening of services in week 26 (June), incidence has consistently surpassed 10 per 100K since week 33 (mid-August), increasing gradually to 18 per 100K by week 41 but jumping to 26 per 100K in week 42 (mid-October). Incidences for recent weeks 43 and 44 are already at least 30 per 100K, recognizing these will increase as data become more complete. Overall increased incidence through the month of October (week 41-44) is variably apparent in most Health Authorities, most substantially in Fraser Health Authority, least so to date in Vancouver Island Health Authority.</p>
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Test rates and % positive	4	<p>Percent positivity increased between week 41 and 44 (through October) from 1.4% to 3.8%. Prior peak positivity provincially was 4.6% during week 14 of wave one, a period of targeted high-risk testing when the number of tests per week was eight times lower. In Fraser Health Authority, positivity tripled from week 41 to 44 (2.0% to 6.1%) with increase in percent positivity in other HAs also, but less markedly.</p>
Age profile, testing and cases	5	<p>Week 44 testing rates decreased in children <15 years old but increased in other age groups compared to prior weeks of Phase 3b (defined by the start of the school year). Percent positivity increased in week 44 to at least 3.0% in all age groups, highest at 5.1% in teens 15-19 years and elderly adults 80+ years.</p>
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Likely sources of infection	9	<p>Of 266 COVID-associated deaths recorded in total by end of week 44, about two-thirds occurred before Phase 3a, two-thirds were associated with a care facility outbreak, and 85% were 70+ years. In week 44, eight deaths were recorded of which two were associated with a facility outbreak and six were 70+ years old.</p> <p>More care facility outbreaks occurred after vs before Phase 3a (75 vs 48), but with a third fewer resident cases (244 vs 382). In week 44, 12 outbreaks were reported.</p>
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BELOW ARE IMPORTANT NOTES relevant to the interpretation of data displayed in this bulletin:

- 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.
- Data are provided by epidemiological week. Episode-based tallies and incidences for recent weeks, notably the current report week, are expected to increase as case data, notably onset dates, become more complete.
- Per capita rates/incidences are based on PEOPLE2020 population estimates (n=5,139,568 for BC overall).
- This bulletin refers to [pandemic phases](#) defined by population-level changes as described in the [Table*](#) on the next page.
- Unless otherwise specified, the current report week, although part of Phase 3b, is excluded from derivations across prior weeks of Phase 3b to enable comparison, as displayed in some figures and tables.

*Table of [pandemic phases](#) 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	PHASE 1 Implementation March 14 (wk 11) to May 18 (wk 21), 2020	PHASE 2 Initial relaxation May 19 (wk 21) to June 23 (wk 26), 2020	PHASE 3a Further relaxation June 24 (wk 26) to Sept 12 (wk 37), 2020	PHASE 3b Start of school year Sept 13 (wk 38) to Current (wk 44), 2020
From earliest onset date	From start of March break Additionally: <ul style="list-style-type: none"> ○ Mass gatherings >50 banned (Mar 16) ○ Traveller self-isolation required (Mar 17) ○ Service restrictions (Mar 18) ○ US/Canada border closure (Mar 20) 	Re-opening of services Additionally: <ul style="list-style-type: none"> ○ Gradual/part-time return to school of K-12 students for 2019-20 school year (Jun 1) 	Broader re-opening Additionally: <ul style="list-style-type: none"> ○ Re-opening non-essential travel in BC, hotels, TV/film ○ Return to in-class learning for 2020-21 school year, partial week (Thurs, Sept 10) 	From first complete epidemiological week of 2020-21 school year

A. COVID-19 case counts and epidemic curve

Report tallies by week

As shown by the gray line in [Figure 1](#), there have been at least 1000 new COVID-19 reports per week in BC since week 42, including 1665 reports in week 43 (a two-third increase over week 42) and 1944 reports in week 44. The weekly tally by report date, however, includes cases with illness onset date in preceding weeks. In that regard, analyses based on episode date (i.e. illness onset date and only if that is unavailable, then report date) may better represent the evolution of the epidemic curve. The bars in [Figure 1](#) display the epidemic curve (i.e. tally of COVID-19 cases in BC by epidemiological week) based on episode date, coloured by health authority.

Cumulative tallies and incidence: provincially and by health authority (HA) (not shown)

Provincially, there has been a cumulative tally of 15,612 cases between week 3 (mid-January) and week 44 (end of October), corresponding to a cumulative incidence of 302 per 100,000 (100K). By HA, this cumulative tally (and incidence) includes: 9,036 cases in Fraser Health Authority (FHA: 466 per 100K); 4,984 cases in Vancouver Coastal Health Authority (VCHA: 412 per 100K); 796 cases in Interior Health Authority (IHA: 95 per 100K); 430 cases in Northern Health Authority (NHA: 150 per 100K); and 276 cases in Vancouver Island Health Authority (VIHA: 32 per 100K).

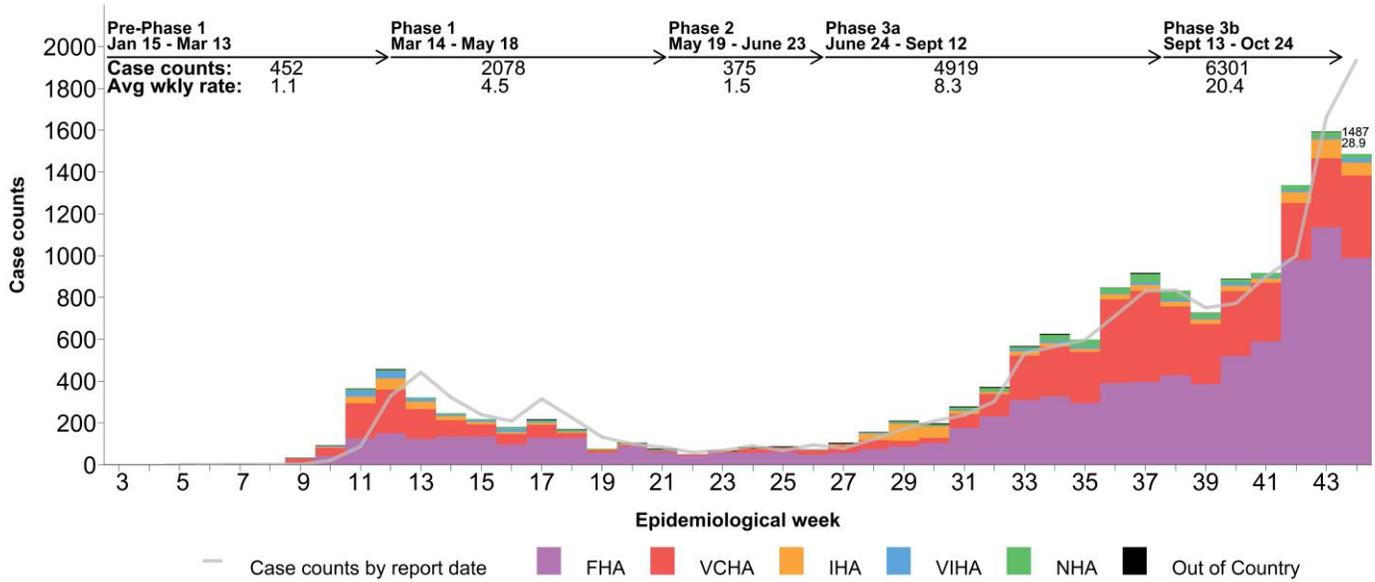
Episode-based tallies and incidence by week: provincially and by HA and health service district area (HSDA)

As shown in [Figure 1](#), the weekly tally of COVID-19 cases by episode date in wave one peaked provincially during week 12 (mid-March), corresponding to a weekly incidence of 9 per 100K. After the Phase 3a re-opening of services, weekly incidence has consistently surpassed 10 per 100K since week 33 (mid-August), with gradual increase to 18 per 100K by week 41 (mid-October) but jumping to 26 per 100K in week 42. Incidence increased further to 31 per 100K in week 43, and as of data extraction for this bulletin is already 29 per 100K in week 44. Incidence for recent weeks will increase as data, notably onset dates, become more complete.

As shown in [Figure 2](#), overall increase in incidence between week 41 and 44 is evident in all HAs, driven by FHA (increase from 30 to 51 per 100K) and VCHA (23 to 33 per 100K). In FHA, Fraser South HSDA has been most affected and in VCHA, Vancouver HSDA is driving rates. In IHA where week 41 to 44 rates increased from 3 to 8 per 100K, this has primarily been within the Okanagan HSDA. Incidence in NHA showed greater variability between weeks 41 and 44. In VIHA, incidence rates increased minimally between week 41 and 44 from 1 to 2 per 100K, notably in North Vancouver Island, while remaining the lowest rates overall by HA.

It warrants repeating that episode-based tallies for recent weeks will further increase as data become more complete.

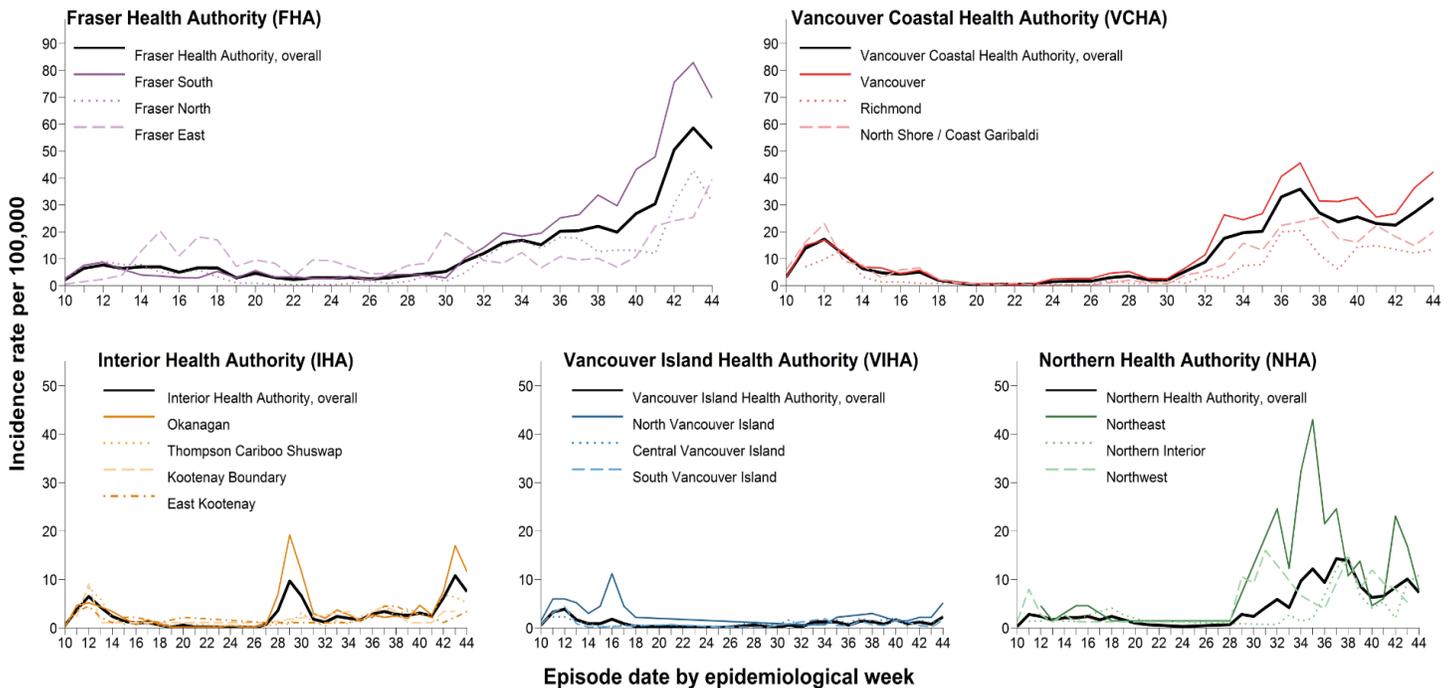
Figure 1. Episode-based epidemic curve (bars)^a, report date (line) and health authority (HA), British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44) (N= 15,612)



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 (6 weeks), excluding the current report week.

a. First onset date of a case in BC was January 15, 2020. Displayed data extracted after noon on Thursday, November 5, 2020.

Figure 2. Weekly episode-based incidence rates by HA and health service delivery area (HSDA), British Columbia March 1, 2020 (week 10) – October 31, 2020 (week 44)



B. Test rates and percent positive

As shown by the bars in [Figure 3](#), the weekly number of respiratory specimens tested for SARS-CoV-2 in BC steadily increased from week 33 (~20,000) to weeks 40 and 41 (~70,000 each week), declining slightly in weeks 42 to 44 (~60,000 each week). Conversely, as shown by the line in [Figure 3](#), the percent that were SARS-CoV-2 positive (i.e. percent positivity) has increased steadily from 1.4% in week 41, to 2.2% in week 42, 2.8% in week 43 and 3.8% in week 44. Prior peak positivity provincially was in wave one during week 14 (4.6%) when testing was targeted to high risk individuals and the number of tests per week (~7,500) was eight times lower than in week 44.

As shown in [Figure 4](#), the SARS-CoV-2 testing rate per capita by health authority in BC was highest in VCHA, increasing substantially since week 32 to a peak of ~2000 per 100K population in weeks 40 and 41, followed by FHA where test rates also peaked in weeks 40 and 41 at ~1,500 per 100K. Conversely, the highest percent positivity was in FHA, where this has tripled across weeks 41 to 44 (2.0%, 3.6%, 4.5%, and 6.1%, respectively). Increase in percent positivity through the month of October (week 41-44) is also seen in VCHA (1.3%, 1.6%, 1.6%, and 2.3%), IHA (0.4%, 0.7%, 1.9% and 1.7%), and NHA (1.0%, 1.3%, 2.6% and 2.4%), although the latter two HAs are subject to greater variability given lower testing volumes. Positivity remained lowest in VIHA across this period (0.2%, 0.2%, 0.2% and 0.4%).

Figure 3. Number of specimens tested and percent SARS-CoV-2 positive, by collection week, British Columbia March 15, 2020 (week 12) – October 31, 2020 (week 44) ^a

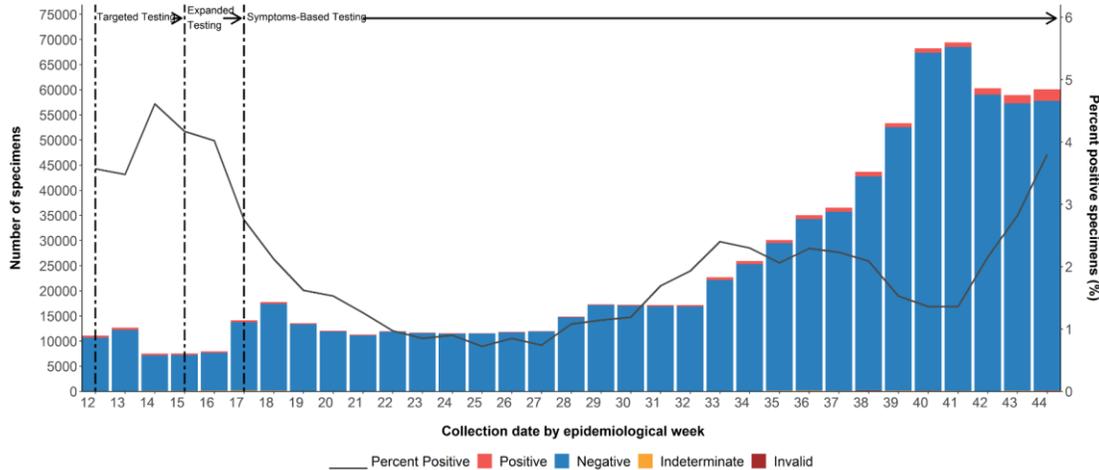
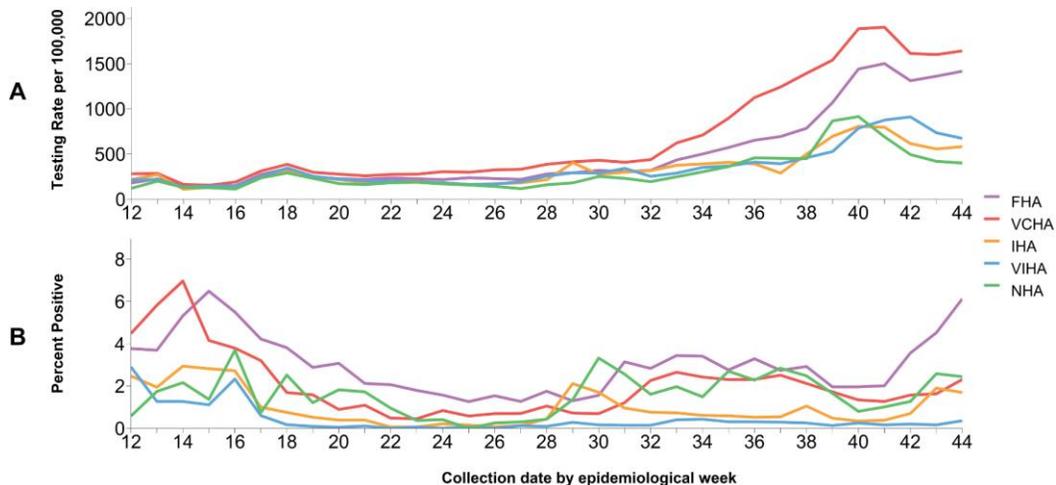


Figure 4. Testing rates and percent SARS-CoV-2 positive by health authority and collection week, British Columbia March 15, 2020 (week 12) – October 31, 2020 (week 44) ^a



a. PLOVER extract on November 5, 2020 reflecting all clinical diagnostic laboratories in BC.
 b. FHA=Fraser; IHA=Interior; VIHA=Vancouver Island; NHA=Northern; VCHA=Vancouver Coastal Health Authorities

C. Age profile – Testing and cases

Testing rates by age group

As shown by the coloured bars in [Figure 5](#), 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 38-43 of Phase 3b, week 44 testing rates decreased among children <15 years old, whereas it increased in all other age groups. The highest testing rates in week 44 were among adults 20-39 years old.

Percent positivity by age group

As shown by the dots in [Figure 5](#), the percent positivity in week 44 was at least 3% in all age groups and substantially higher than weeks 38-43 of Phase 3b for all age groups. In week 44, positivity was lowest in children <10 years old (3.0%), but highest in teens 15-19 years (5.1%) and elderly adults 80+ years (5.1%). In adults 20-39 years, percent positivity was 3.8%.

Case distribution by age group

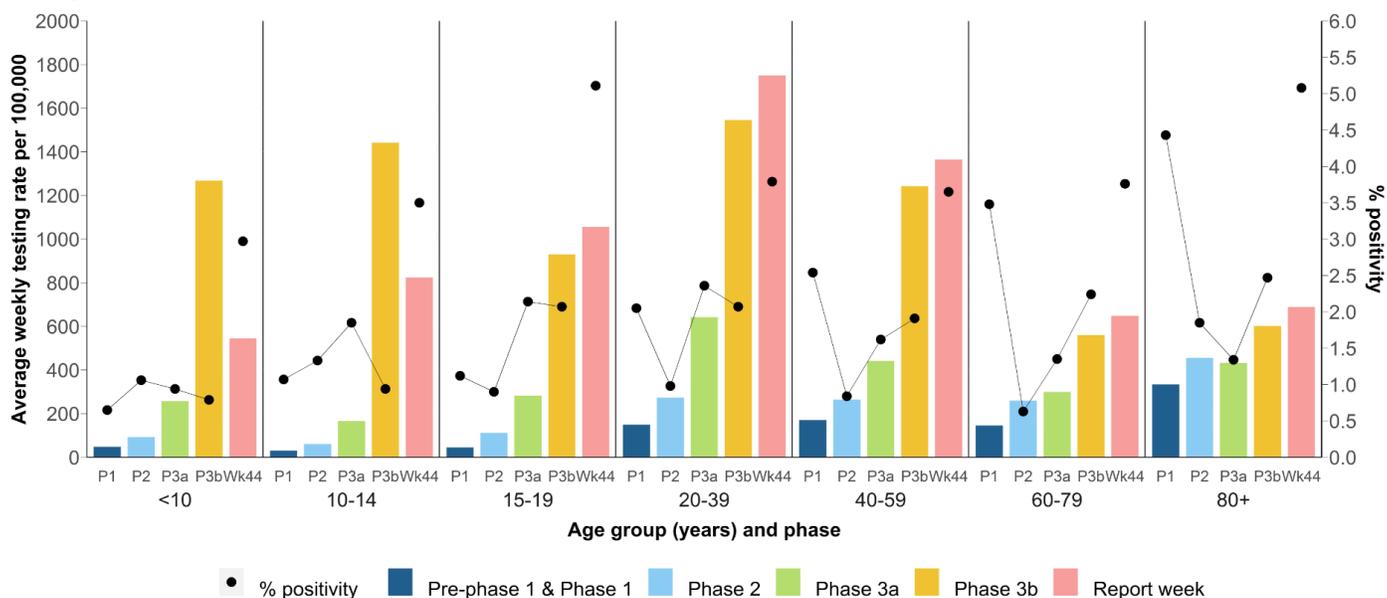
Children 10-19 years old contributed more in week 44 (12%) than across weeks 38-43 of Phase 3b (9%) or in Phase 3a (7%), notably teens 15-19 years (8%, 6%, 5%, respectively). Whereas in Phase 3a adults 20-39 years comprised 53% of all cases, they contributed less in weeks 38-43 of Phase 3b (43%) and current report week 44 (41%) ([Figure 6](#) and [Figure 7](#)). Adults 40-69 years comprised a greater share of cases in week 44 (36%) and weeks 38-43 of Phase 3b (36%) compared to Phase 3a (30%).

Incidence rates of cases by age group (not shown)

Among age groups as defined in Figure 5, incidence rates per 100K population in week 44 were highest in adults 20-39 years (43 per 100K), closely followed by 15-19 year-olds (41 per 100K) and lowest in children <10 years old (13 per 100K). Of note, incidence increased substantially from week 43 to 44 in elderly adults 80+ years (from 11 to 26 per 100K).

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 44) and 35 years in week 44 (not shown).

Figure 5. Average weekly SARS-CoV-2 testing rates and percent positive by age group and phase^a, British Columbia January 20, 2020 (week 4) – October 31, 2020 (week 44)^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: 6 weeks).

b. PLOVER extract on November 5, 2020 reflecting all diagnostic laboratories in BC. Laboratory testing criteria: <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/testing/phases-of-covid-19-testing-in-bc>.

Figure 6. COVID-19 case distribution by known age group (years) and episode date, British Columbia
 March 15, 2020 (week 12) – October 31, 2020 (week 44) (N= 15,073)

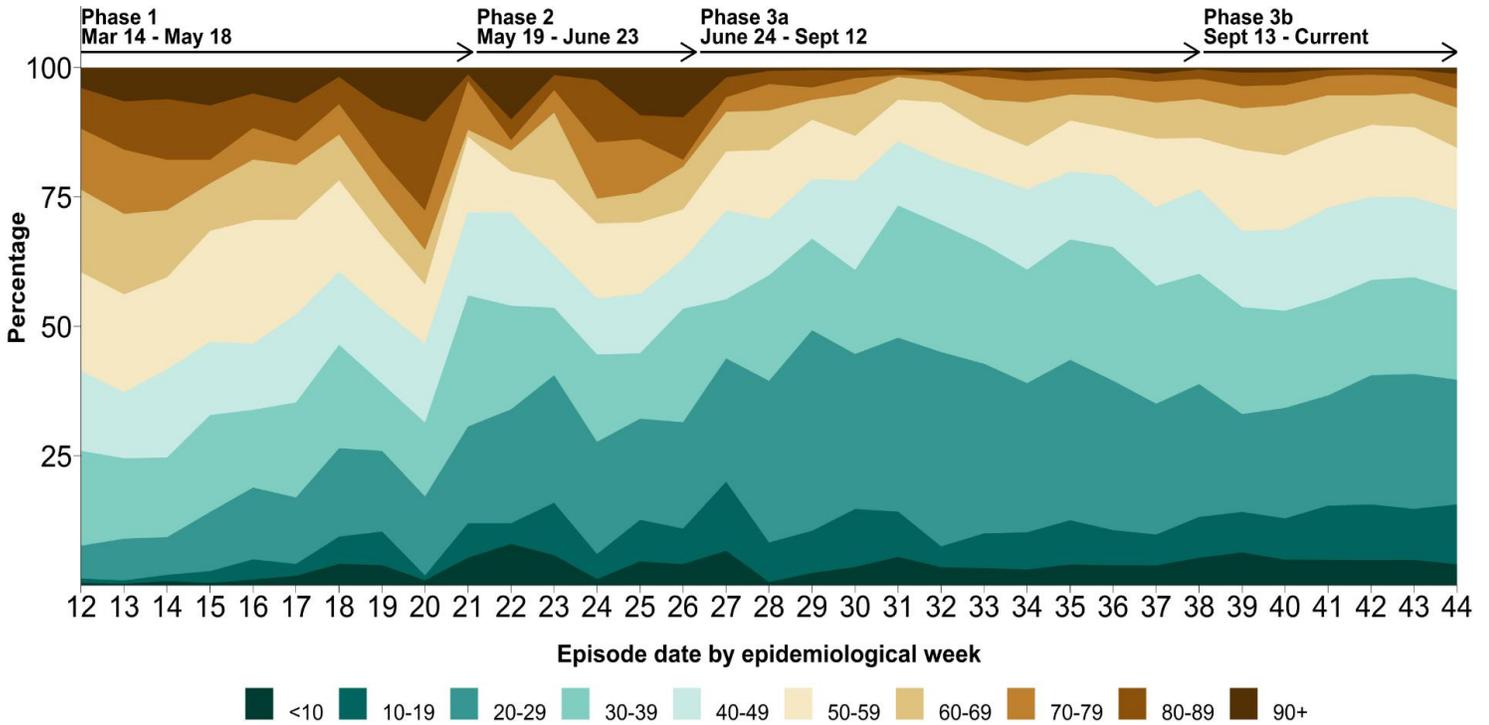
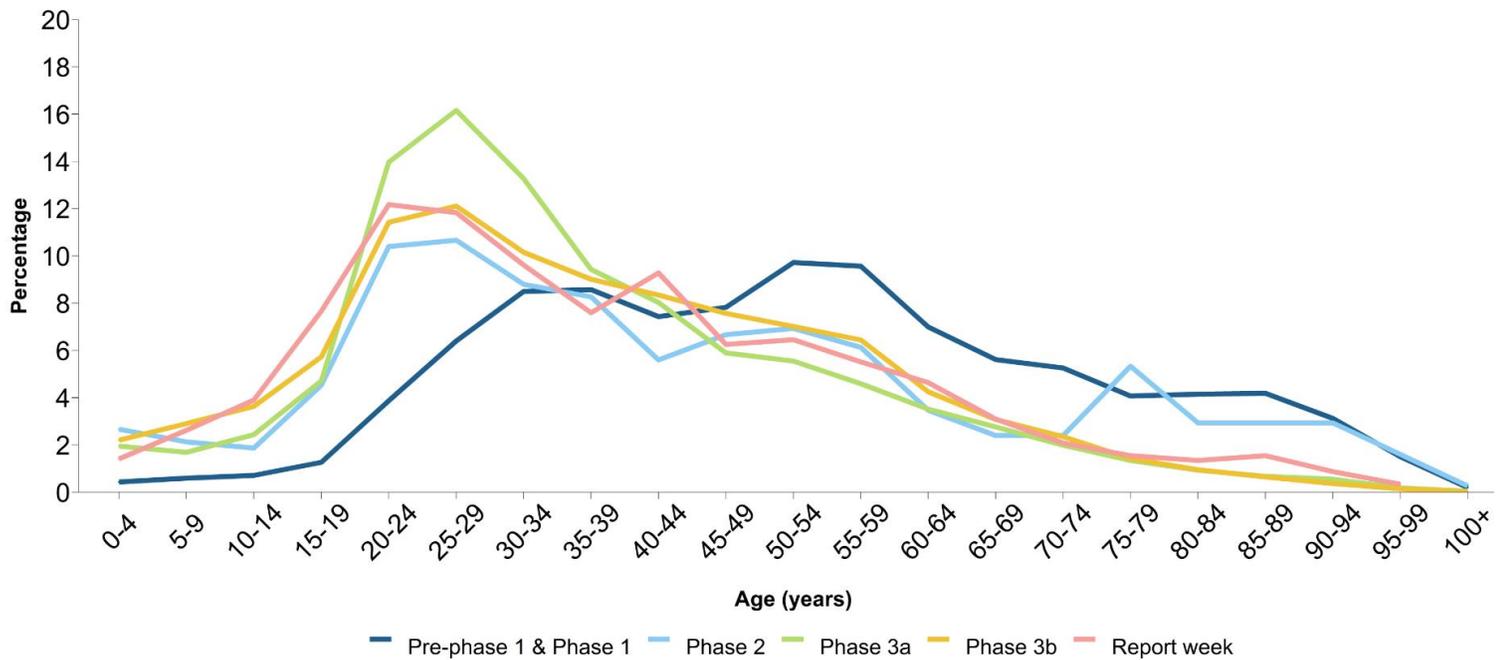


Figure 7. COVID-19 case distribution by known age group (years) and pandemic phase, British Columbia
 January 15, 2020 (week 3) – October 31, 2020 (week 44) (N= 15,577)



D. Severe outcome counts and epi-curve

Alongside the increase in cases, the number of hospitalizations has increased since week 33, peaking at 67 hospital admissions during the current report week 44 (Figure 8). Of the 8 deaths in week 44, two were associated with a care facility outbreak and 6 were 70+ years old. Of the 6 that were not associated with a care facility outbreak, 4 were 70+ years.

During the first wave, the peak number of hospitalizations per week was 107 in week 13 whereas to date during wave two the peak number of hospitalizations to date is about 35% lower than that at 67 hospitalizations in week 44. Similarly, the peak number of deaths during the first wave was 26 in week 15, whereas to date during the second wave the peak number is less than half that at 10 deaths in week 40. Given the ongoing increase in cases, however, the ultimate timing of the [delayed] second wave peak in severe outcomes has yet to be determined.

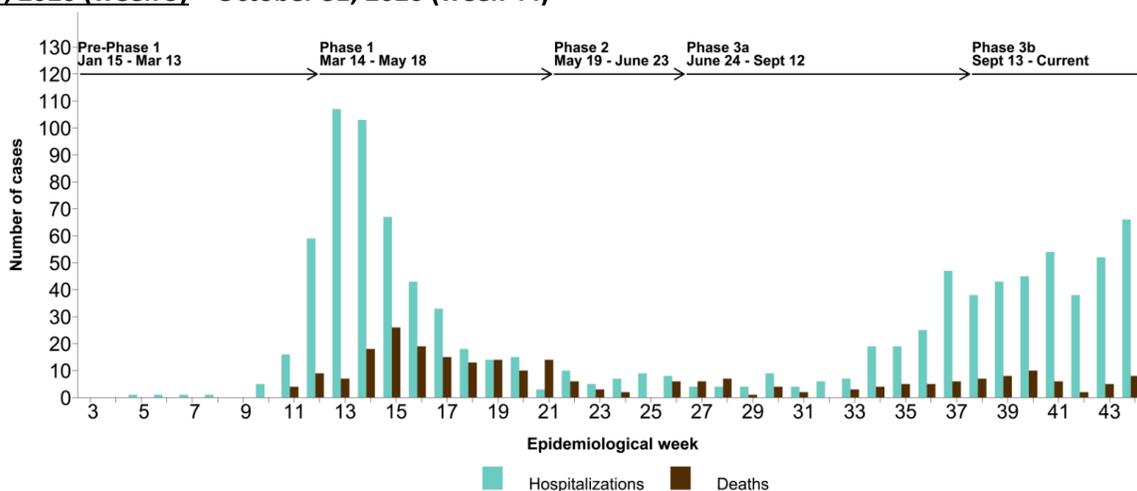
Overall to date, ~ 80% of COVID-19 cases in BC accrued after Phase 3a re-opening (12,707/15,612; 81%). As shown in Table 2 and Figure 8, however, more hospitalizations (527/1,019; 52%) and deaths (173/266; 65%) occurred before Phase 3a. Overall, males comprise 7,878/15,560 (51%) cases, 609/1,017 (60%) hospitalizations, 187/301 (62%) ICU admissions, and 154/266 (58%) deaths with known sex to date (not shown).

Table 2. COVID-19 severe outcomes by episode date, health authority of residence, and phase, British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44)

Health authority of residence:	FHA	IHA	VIHA	NHA	VCHA	Outside Canada	Total n/N (%)
Ever Hospitalized	549	45	26	32	361	6	1,019/15,612 cases (7)^a
Pre-Phase 1 & Phase 1 (17 weeks)	246	29	25	12	177	2	491/1,019 (48)
Phase 2 (5 weeks)	26	1	0	2	6	1	36/1,019 (4)
Phase 3a (11.5 weeks)	96	5	0	10	40	2	153/1,019 (15)
Phase 3b (6 weeks, excluding week 44)	136	10	1	8	116	1	272/1,019 (27)
Week 44	45	0	0	0	22	0	67/1,019 (7)
Ever ICU	140	16	9	16	118	2	301/15,612 cases (2)^a
Pre-Phase 1 & Phase 1 (17 weeks)	76	13	9	7	67	1	173/301 (57)
Phase 2 (5 weeks)	6	0	0	1	2	0	9/301 (3)
Phase 3a (11.5 weeks)	25	1	0	7	15	1	49/301 (16)
Phase 3b (6 weeks, excluding week 44)	29	2	0	1	32	0	64/301 (21)
Week 44	4	0	0	0	2	0	6/301 (2)
Deaths	119	2	6	3	128	0	266/15,612 cases (2)^a
Pre-Phase 1 & Phase 1 (17 weeks)	55	2	5	0	83	0	146/266 (55)
Phase 2 (5 weeks)	22	0	0	0	5	0	27/266 (10)
Phase 3a (11.5 weeks)	20	0	0	1	25	0	45/266 (17)
Phase 3b (6 weeks, excluding week 44)	20	0	1	2	12	0	40/266 (15)
Week 44	3	1	0	0	4	0	8/266 (3)

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

Figure 8. COVID-19 hospitalization admissions (n= 1,010) and deaths (n= 255) British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44)



E. Age profile, severe outcomes

As shown in [Table 3](#) and [Figure 9](#), elderly adults 70+ years comprise 9% of COVID-19 cases, commensurate with their share of the general population of BC (14%), but are greatly over-represented among hospitalizations (42%) and deaths (84%).

Older adults 60-69 years comprise 8% of COVID-19 cases, and a greater proportion of hospitalizations (18%) but a commensurate proportion of deaths (11%) relative to their share of the BC population (13%).

Adults 40-59 years comprise 28% of COVID-19 cases and 27% 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 (44%) than their share of the BC population (27%), but are under-represented among COVID-19 hospitalizations (13%) and deaths (0%).

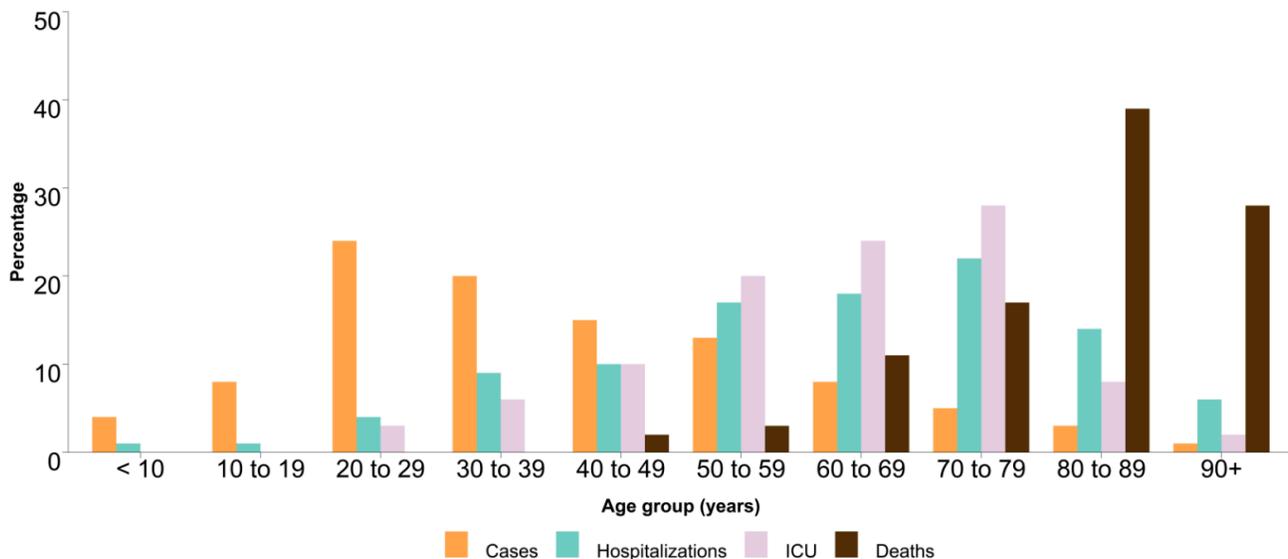
Children <20 years are under-represented overall among COVID-19 cases (12%) as well as severe outcomes (2% or less), relative to their share of the BC general population (19%).

Median age after vs. before Phase 3a is younger for hospitalizations (59 vs. 69 years) but older for deaths (86 vs. 84 years).

Table 3. Age distribution^a: COVID-19 cases, hospitalizations, ICU admissions, deaths and British Columbia population January 15, 2020 (week 3) – October 31, 2020 (week 44)

Age group (years)	Cases n (%)	Hospitalizations n (%)	ICU n (%)	Deaths n (%)	General BC population n (%)
<10	605 (4)	11 (1)	0 (0)	0 (0)	469,351 (9)
10-19	1,188 (8)	7 (1)	0 (0)	0 (0)	527,805 (10)
20-29	3,661 (24)	38 (4)	8 (3)	0 (0)	697,691 (14)
30-39	3,077 (20)	87 (9)	18 (6)	0 (0)	735,052 (14)
40-49	2,351 (15)	103 (10)	29 (10)	4 (2)	646,035 (13)
50-59	2,062 (13)	168 (17)	60 (20)	7 (3)	718,272 (14)
60-69	1,227 (8)	185 (18)	72 (24)	29 (11)	673,131 (13)
70-79	721 (5)	222 (22)	84 (28)	46 (17)	435,062 (8)
80-89	456 (3)	139 (14)	25 (8)	105 (39)	187,443 (4)
90+	229 (1)	58 (6)	5 (2)	75 (28)	49,726 (1)
Total	15,577	1,018	301	266	5,139,568
Median age	37	64	65	85	41

Figure 9. COVID-19 cases, hospitalizations, ICU admissions and deaths by age group, British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44) (N=15, 577)^a



a. Among those with available age information only.

F. Likely sources of infection

As shown in [Table 4](#) and [Figure 10](#), local contact with a known case or cluster has most often been considered the source of infection across all pandemic phases to date.

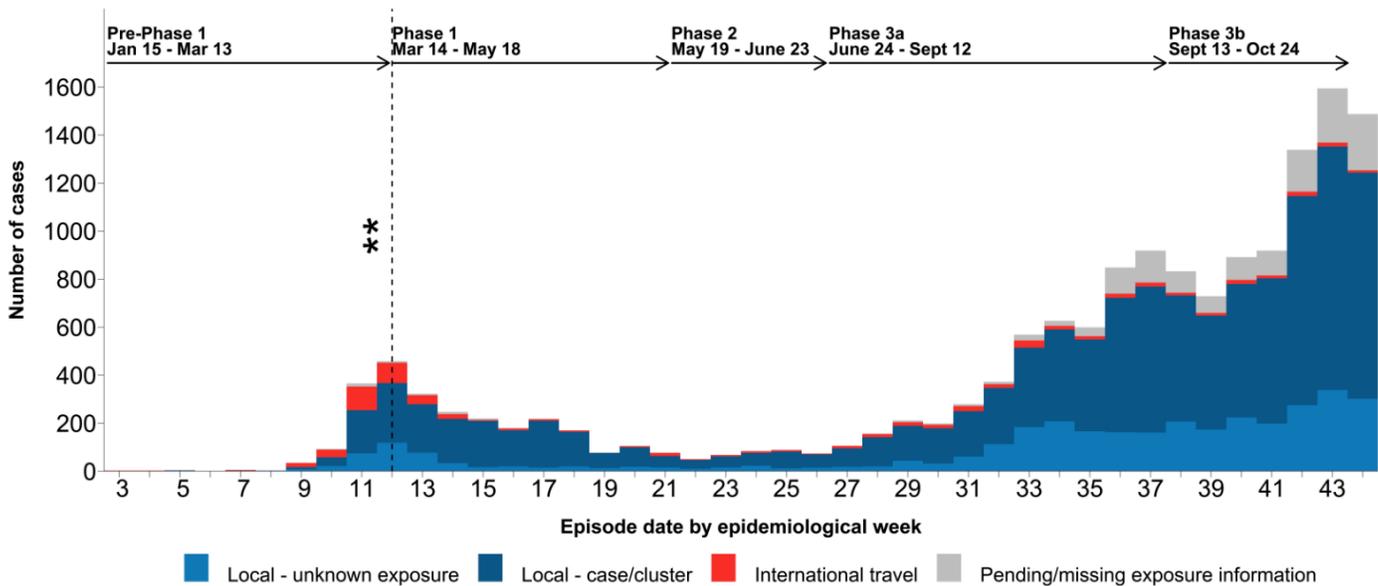
Prior to Phase 1, international travel was also a frequently cited source of SARS-CoV-2 infection in part reflecting high risk testing that targeted returning travelers. However, travel-related restrictions introduced in Phase 1 limited that contribution thereafter with clusters, such as in care facility 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 44.

Table 4. Likely source of COVID-19 infection by pandemic phase of episode date, British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44)

Phase n (row %)	International travel	Local – case/cluster	Local - unknown	Pending/missing
Pre-Phase 1	135 (30)	208 (46)	95 (21)	14 (3)
Phase 1	188 (9)	1498 (72)	350 (17)	42 (2)
Phase 2	30 (8)	261 (70)	82 (22)	2 (1)
Phase 3a	181 (4)	3,207 (65)	1,174 (24)	357 (7)
Phase 3b ^a	84 (1)	4,046 (64)	1,415 (22)	756 (12)
Week 44	10 (1)	941 (63)	302 (20)	234 (16)
Total	628 (4)	10,161 (65)	3,418 (22)	1,405 (9)

Figure 10. Likely source of COVID-19 infection by episode date, British Columbia January 15, 2020 (week 3) – October 31, 2020 (week 44)



** March 16: Travel related restrictions introduced.

G. Care facility outbreaks

As shown in [Table 5](#) and [Figure 11](#) the number of care facility outbreak reports is more than 50% greater after Phase 3a re-opening (75) compared to before Phase 3a (48), but the number of associated cases among residents is about one third lower (244 vs. 382). The number of associated cases among staff or visitors is about the same (235 vs. 231). Of 7,788 cases in total in BC with episode date in Phase 3b (inclusive of week 44), 295 (4%) have been associated with care facility outbreaks, a proportion similar to Phase 3a overall (184/4,919; 4%), but lower than before Phase 3a (613/2,905; 21%).

More than two-thirds of all COVID-19 deaths in BC have been associated with care facility outbreaks (183/266; 69%) and of those, more than two-thirds occurred before Phase 3a (121/173; 70%).

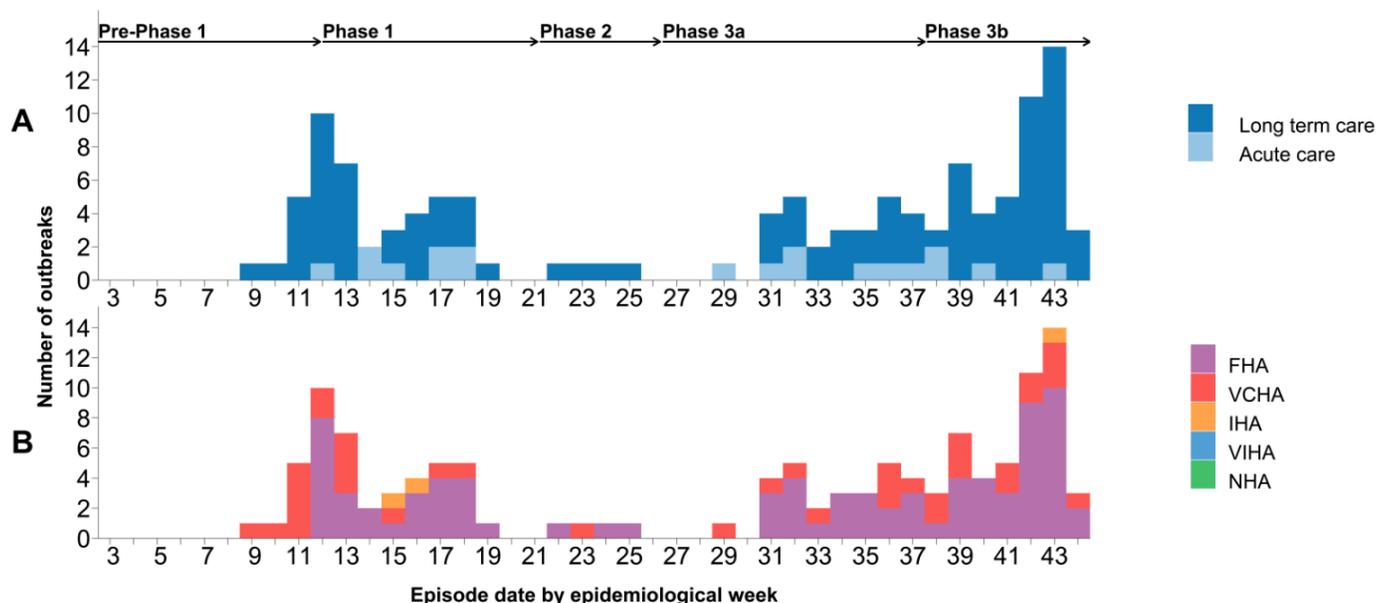
There were 12 new care facility outbreaks reported in week 44 (8 of which were reported by Fraser Health Authority, 3 by VCHA and 1 by IHA), with 8 of these outbreaks having earliest onset date in preceding weeks.

Two of the 8 deaths reported in week 44 involved elderly adults 80+ years in a care facility setting in Fraser Health Authority.

Table 5. COVID-19 care facility outbreaks^a and associated cases and deaths by phase of episode date, BC January 15, 2020 (week 3) – October 31, 2020 (week 44) (N=123)

	Outbreaks	Cases			Deaths		
		Residents	Staff/visitors	Total	Residents	Staff/ visitors	Total
Total	123	626	464	1,092	183	0	183
Pre-/Phase One (17 weeks)	44	331	213	544	97	0	97
Phase 2 (5 weeks)	4	51	18	69	24	0	24
Phase 3a (11.5 weeks)	27	91	93	184	38	0	38
Phase 3b (6 weeks)	45	87	112	199	22	0	22
Week 44	3	66	30	96	2	0	2
Active outbreaks ^b	25	-	-	-	-	-	-
Outbreaks declared over ^b	97	-	-	-	-	-	-

Figure 11. COVID-19 care facility outbreaks^a by earliest case onset^c, facility type (A) and health authority^d (B), BC January 15, 2020 (week 3) – October 31, 2020 (week 44) (N=123)



- 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. As of October 31, 2020
- c. Earliest dates of onset of outbreak cases are subject to change as investigations and data are updated.
- d. FHA=Fraser; VCHA=Vancouver Coastal; IHA=Interior; VIHA=Vancouver Island; NHA=Northern Health Authorities

H. Clinical indicators

HealthLink calls ([Figure 12](#)) 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. In week 44, call volume increased to just over 11,000 calls.

BC Medical Services Plan (MSP) general practitioner claims ([Figure 13](#)) related to COVID-19 (including telehealth) showed slight increase from week 37 reaching >5,000 visits in week 40 but decreasing thereafter to stabilize at around 3,000 visits in weeks 42 and 43; and increasing to just over 3,100 visits in week 44.

Figure 12. HealthLink BC calls related to COVID-19, British Columbia
March 1, 2020 (week 10) – October 31, 2020 (week 44)

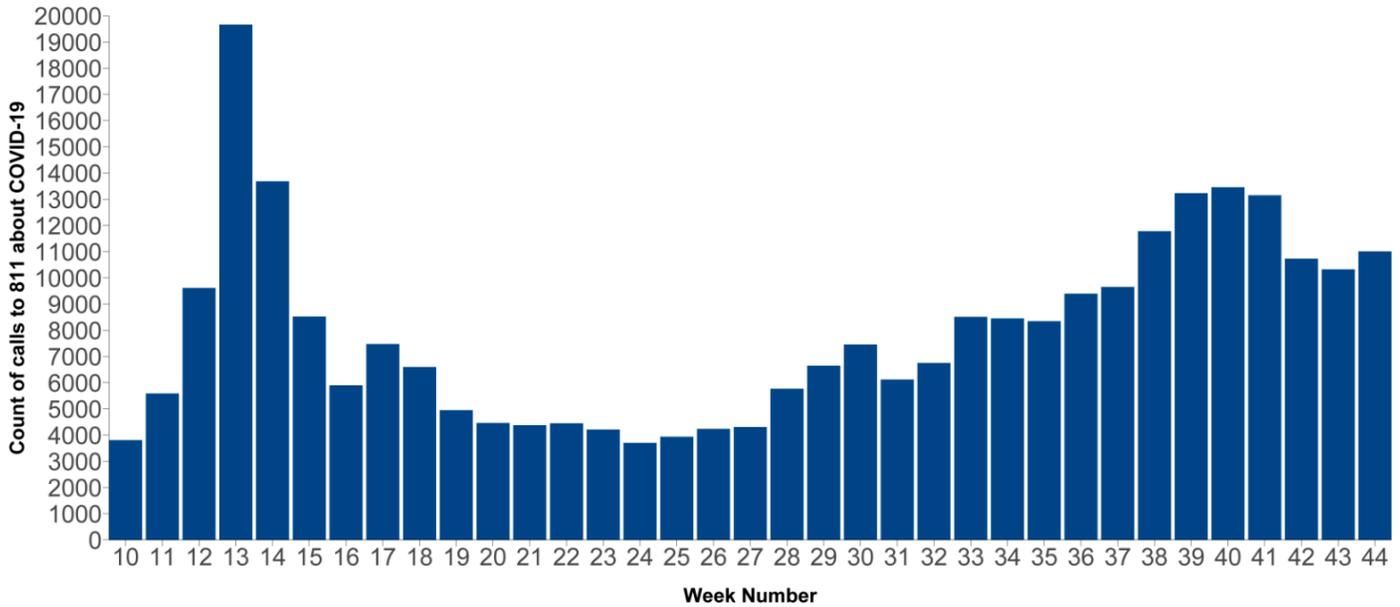


Figure 13. Medical Service Plan (MSP) claims (including telehealth) for COVID-19, British Columbia
March 1, 2020 (week 10) – October 31, 2020 (week 44)

