

British Columbia (BC) COVID-19 Situation Report

Week 40: October 02- October 08, 2022

Data for week 40 (October 02 - October 08, 2022) may differ from the data published in the BCCDC weekly report. Data was extracted on October 17, 2022 for this Situation Report compared to October 19, 2022 for the latest Weekly Report.

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Testing rates and percent positivity 4	Incidence by Health Authority from week 39 to week 40:
Age profile, testing and cases 5	<ul style="list-style-type: none"> Fraser Health incidence remained stable at 9 per 100K Interior Health incidence remained stable at 20 and 18 per 100K Vancouver Island Health incidence remained stable at 16 and 15 per 100K Northern Health incidence remained stable at 14 per 100K Vancouver Coastal Health incidence remained stable at 13 and 15 per 100K
Severe outcomes 6	Testing of MSP-funded specimens remained stable at ~4,200 in week 39 and 40. The percent positivity of MSP-funded specimens remained stable at 18.2% in week 39 and 18.5% in week 40.
Age profile, severe outcomes 7	The per capita testing rates for MSP-funded specimens in week 40 increased only in 80+ year-olds. Percent positivity between week 39 and week 40 decreased or remained stable in all age groups except 10-14 and 80+ year-olds.
Care facility outbreaks 9	Age-specific incidence rates between week 39 and week 40 decreased or remained stable in all age groups except in 80+ year-olds where age-specific incidence rate increased from 108 per 100K in week 39 to 119 per 100K in week 40.
Wastewater surveillance 10	The number of people in hospital with a positive COVID-19 test decreased from 251 in week 39 to 191 in week 40. The number of people in critical care increased from 30 in week 39 to 37 in week 40. In week 40, 60+ year-olds had the highest number of people admitted to hospital with a positive COVID-19 test, with 71 hospitalizations in 60-79 year-olds and 83 hospitalizations in 80+ year-olds. In week 40, 60-79 year-olds had the highest number of people admitted to critical care (15 critical care admissions).
Additional resources 11	The weekly number of deaths reported so far for the time period corresponding to week 40 from any cause among people testing positive for COVID-19 was 41. In week 40, 60-79 and 80+ year-olds had the highest number of reported deaths from any cause among people testing positive for COVID-19, with 12 and 29 deaths in these age groups, respectively. From week 21 to week 35, 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 40, based on earliest symptom onset, 3 new care facility outbreaks (2 in long-term care and 1 in acute-care facilities) 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 17, 2022, laboratory PLOVER data on October 12, 2022, and Health Authority outbreak files on October 12, 2022.
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A. COVID-19 case counts and epidemic curve

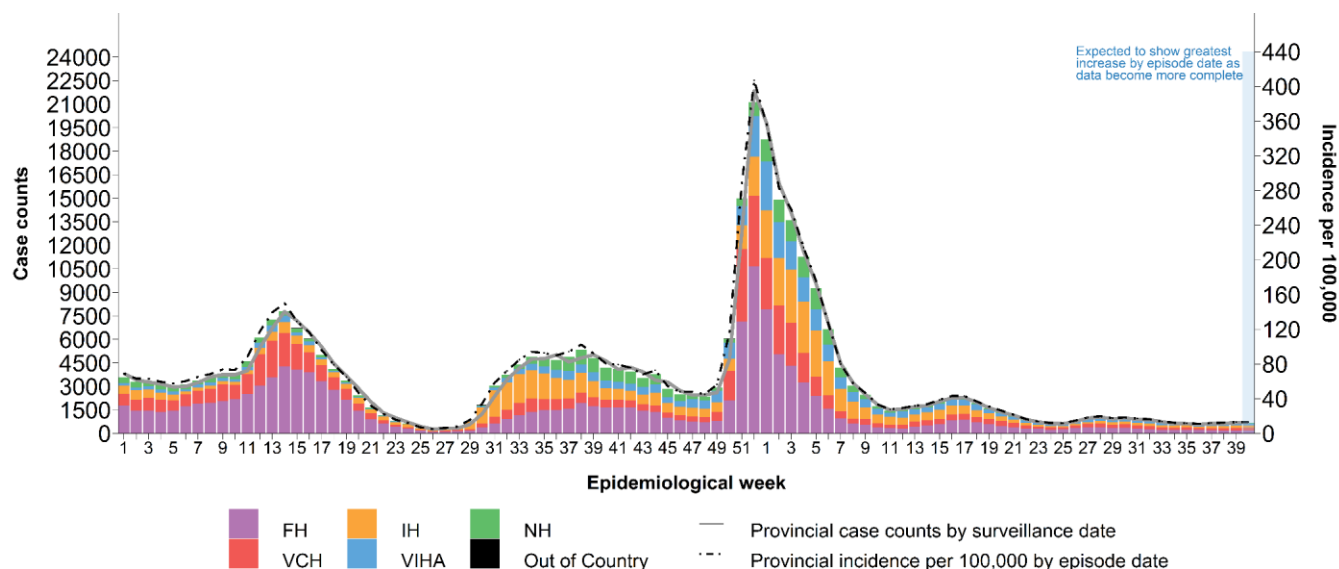
Due to changes in testing strategies in BC in 2022 focusing on targeting higher risk populations, current case counts are an underestimate of the true number of COVID-19 cases in BC. This underestimation has increased compared to the period prior to the emergence of the Omicron variant in BC. Up to week 40, there have been 386,337 cases for a cumulative incidence of 7,340 per 100K ([Table 1, Figure 1](#)). The provincial incidence by episode date was 13 per 100K (689 cases) in week 40, which has remained stable since last week.

Incidence rates from week 39 to week 40 remained stable in all HAs. In week 40, the highest incidence rate was in Interior Health (IH) at 18 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 08, 2022 (week 40) (N= 386,337)

Case tallies by episode date	Health Authority of Residence					Outside Canada	Total
	FH	IH	VIHA	NH	VCH		
Week 40, case counts	172	149	132	43	193	0	689
Cumulative case counts	169,053	68,869	38,659	31,125	78,240	391	386,337
Week 40, cases per 100K population	9	18	15	14	15	NA	13
Cumulative cases per 100K population	8,507	8,313	4,392	10,169	6,200	NA	7,340

Figure 1. Episode-based epidemic curve (bars), surveillance date (line) and Health Authority (HA), BC Jan 3, 2021 (week 1) – Oct 08, 2022 (week 40) (N= 330,487)



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 39 and 40. The percent positivity of MSP-funded specimens remained stable at 18.2% in week 39 and 18.5% in week 40.

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 Vancouver Island Health (VIHA) where the testing rate increased from 78 per 100K in week 39 to 85 per 100K in week 40. The percent positivity (Panel B) for MSP-funded specimens decreased or remained stable in all HAs except Vancouver Coastal (VCH), where the percent positivity increased from 17.9% in week 39 to 21.4% in week 40.

Figure 2. Number of specimens tested and percent SARS-CoV-2 positive, by collection week, BC
 Jan 3, 2021 (week 1) – Oct 08, 2022 (week 40)

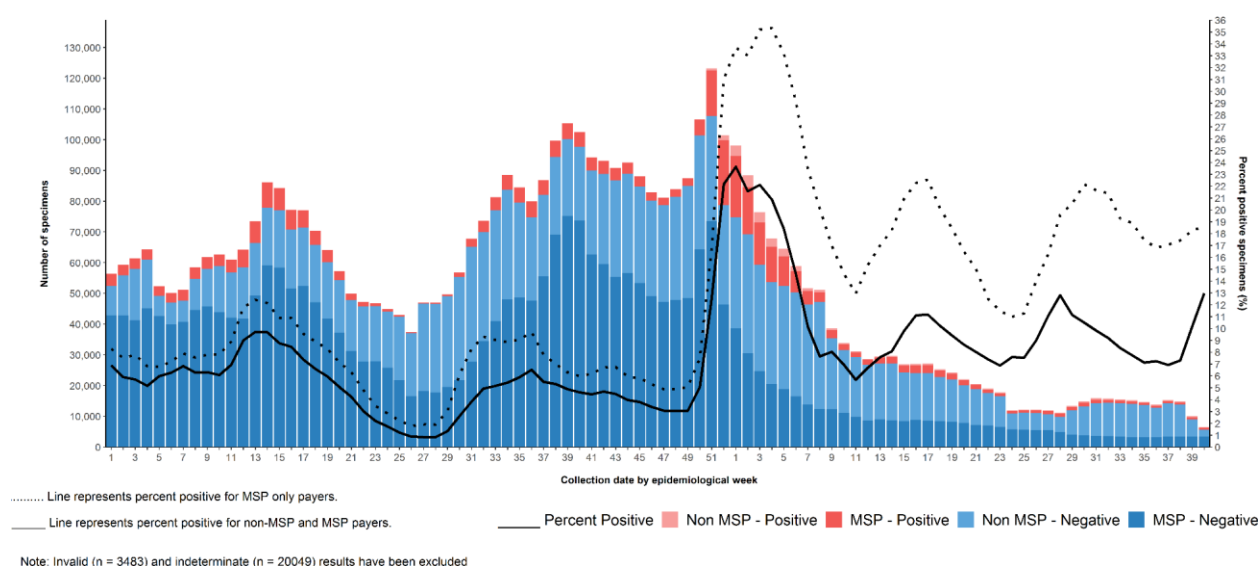
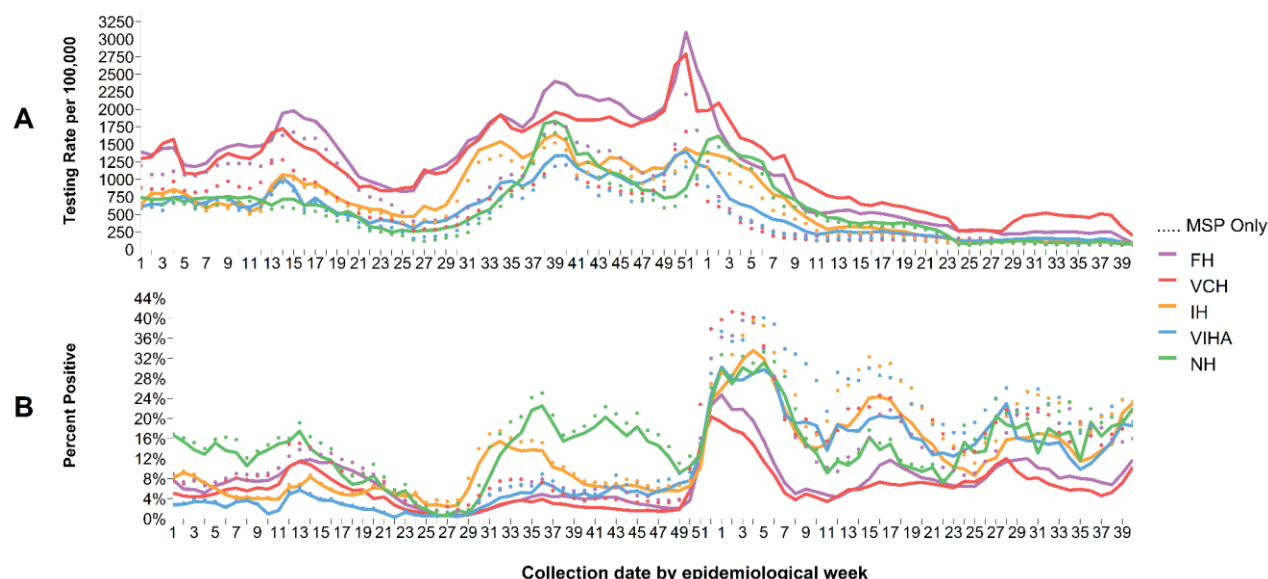


Figure 3. Testing rates and percent SARS-CoV-2 positive by Health Authority and collection week, BC
 Jan 3, 2021 (week 1) – Oct 08, 2022 (week 40)



Data source: Laboratory PLOVER data

C. Age profile, testing and cases

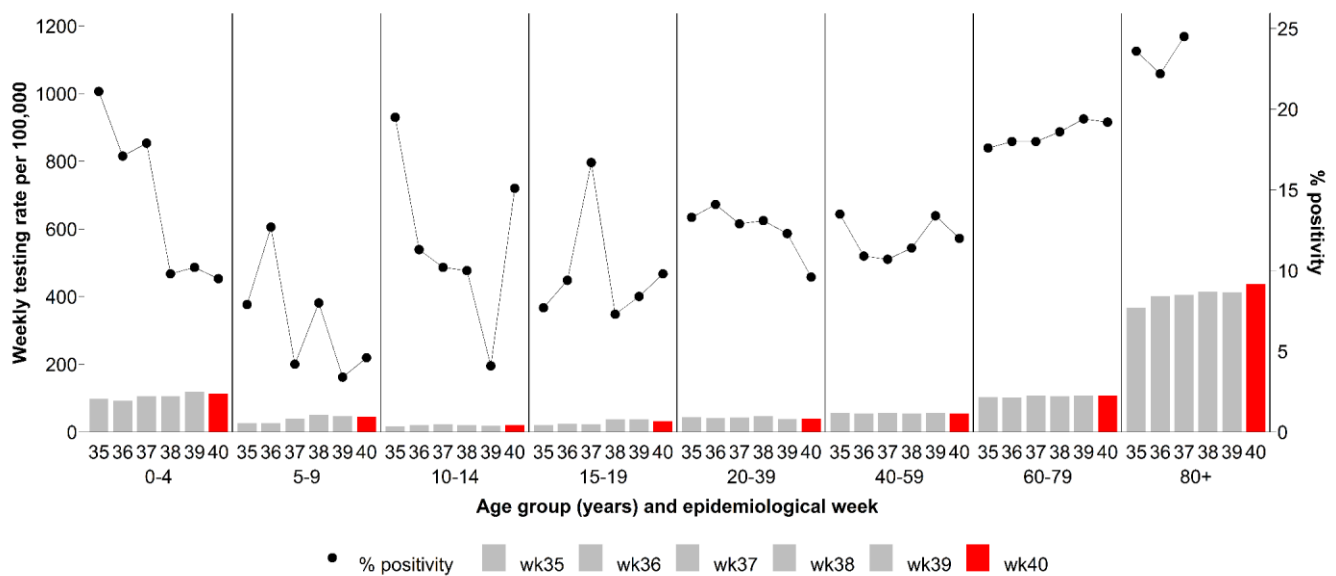
Testing rates and percent positivity by age group

As shown by the bars in [Figure 4](#), the per capita testing rates for MSP-funded specimens increased only in 80+ year-olds. As shown by the black dots in [Figure 4](#), percent positivity between week 39 and week 40 decreased or remained stable in all age groups except 10-14 and 80+ year-olds.

Case distribution and weekly incidence by age group

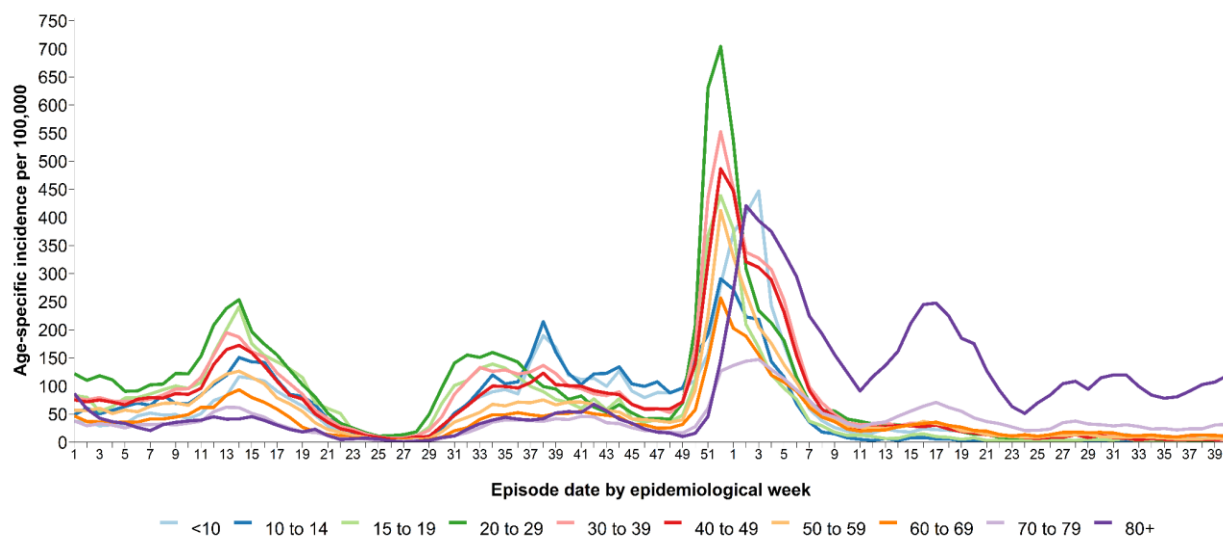
As shown in [Figure 5](#), age-specific incidence rates between week 39 and week 40 decreased or remained stable in all age groups except in 80+ year-olds where age-specific incidence rate increased from 108 per 100K in week 39 to 119 per 100K in week 40.

Figure 4. Average weekly SARS-CoV-2 MSP testing rates and MSP percent positive by known age group, BC Sep 03, 2022 (week 35) – Oct 08, 2022 (week 40)



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 08, 2022 (week 40) (N= 330,395)



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 decreased from 251 in week 39 to 191 in week 40. The number of people in critical care increased from 30 in week 39 to 37 in week 40.

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 40 from any cause among people testing positive for COVID-19 increased from 36 in week 39 to 41. This number is expected to change with subsequent data refreshes. ([Table 2](#)).

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 08, 2022 (week 40)**

Severe outcomes by episode date	Health Authority of residence					Residing outside of Canada	Total n/N ^a (%)
	FH	IH	VIHA	NH	VCH		
Week 40, hospitalizations	64	30	41	13	43	0	191
Cumulative hospitalizations	13,004	4,776	3,062	2,299	5,847	17	29,005/386,337 (8)
Week 40, critical care admissions ^b	15	6	2	5	9	0	37
Cumulative critical care admissions^b	2,678	1,062	464	830	1,194	4	6,232/386,337 (2)
Week 40, deaths	8	11	3	3	16	0	41
Cumulative deaths, pre-transition (case line list)^c	1,348	367	241	330	716	0	3,002/356,440 (1)
Cumulative deaths, post-transition (automated linkage)^c	451	295	263	53	323	0	1,385/29,897 (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 40, 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.

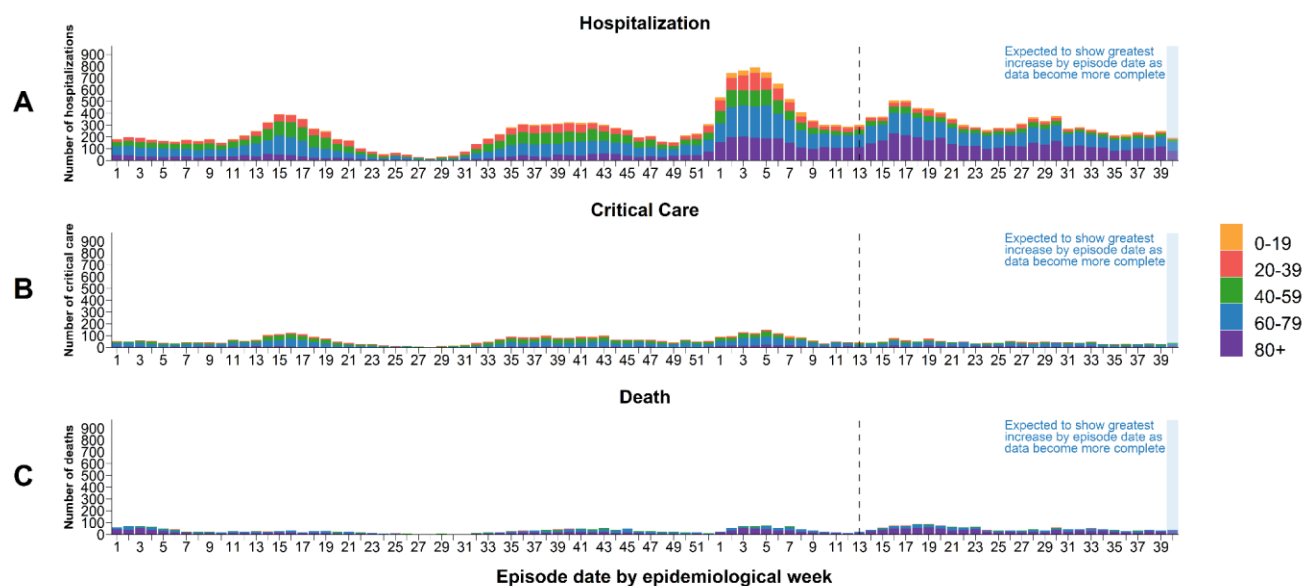
In week 40, 60+ year-olds had the highest number of new hospital admissions with a positive COVID-19 test, with 71 hospitalizations in 60-79 year-olds and 83 hospitalizations in 80+ year-olds. In week 40, 60-79 year-olds had the highest number of people admitted to critical care (15 critical care admissions). In week 40, 60-79 and 80+ year-olds had the highest number of deaths from any cause among people testing positive for COVID-19, with 12 and 29 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 08, 2022 (week 40) (N= 386,306)^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	31,276	620 (2)	77 (<1)	2 (<1)	2 (<1)	3 (<1)	0 (<1)
10-19	35,949	387 (1)	56 (<1)	0 (<1)	0 (<1)	3 (1)	0 (<1)
20-29	73,816	1,418 (2)	214 (<1)	6 (<1)	1 (<1)	8 (<1)	0 (<1)
30-39	70,883	2,443 (3)	453 (1)	31 (<1)	1 (<1)	10 (<1)	0 (<1)
40-49	54,736	2,324 (4)	600 (1)	64 (<1)	2 (<1)	10 (<1)	0 (<1)
50-59	44,795	3,346 (7)	1,109 (2)	166 (<1)	7 (<1)	41 (1)	1 (<1)
60-69	31,635	4,766 (15)	1,535 (5)	353 (1)	45 (1)	73 (2)	10 (<1)
70-79	19,513	5,754 (29)	1,426 (7)	655 (4)	110 (2)	165 (3)	27 (1)
80-89	15,351	5,526 (36)	668 (4)	989 (10)	204 (4)	221 (4)	37 (1)
90+	8,352	2,421 (29)	94 (1)	736 (15)	183 (5)	185 (6)	36 (1)
Total	386,306	29,005	6,232	3,002	555	719	111
Median age	37	68	64	82	85	81	86

- Among those with available age information only.
- 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.
- 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.

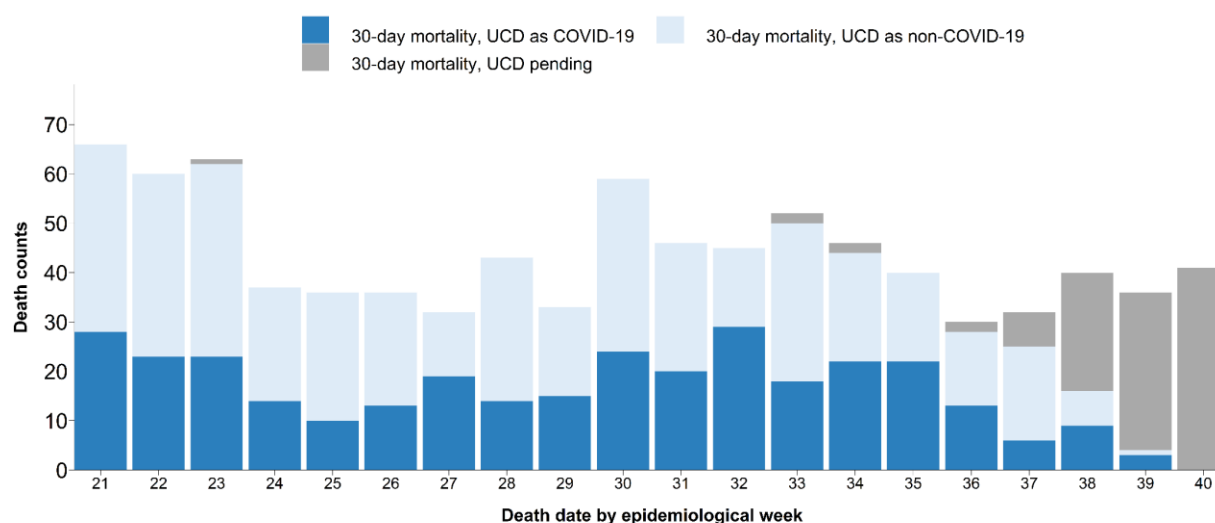
Figure 6. Weekly COVID-19 hospital admissions (A), critical care admissions (B), and deaths (C) by age groups, BC, Jan 3, 2021 (week 1) – Oct 08, 2022 (week 40)^a



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 21 to week 40 in 2022. From week 21 to week 35 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 22, 2022 (week 21) – Oct 08, 2022 (week 40)^{a,b}



- 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.
- 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.

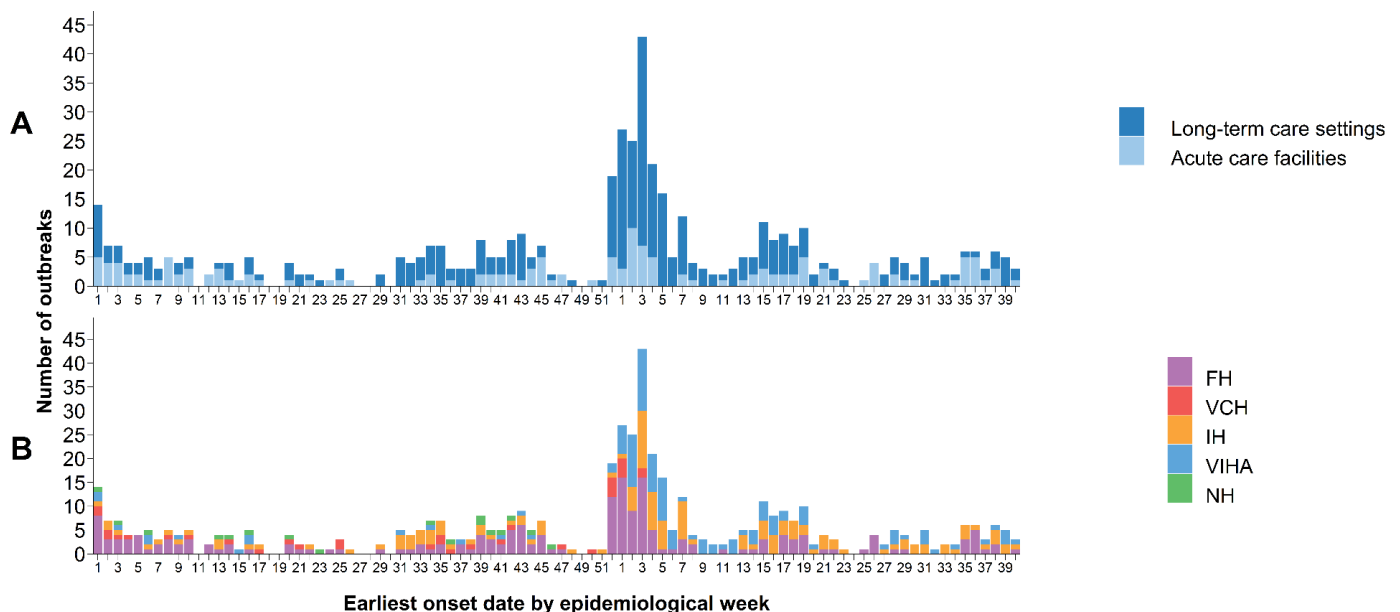
F. Care facility outbreaks

As shown in [Table 4](#) and [Figure 8](#), 732 care facility (acute care and long-term care settings) outbreaks were reported in total in BC to the end of week 40. In week 40, based on earliest symptom onset date (if unavailable, then outbreak declared date is used), 3 new care facility outbreaks (2 in long-term care and 1 in acute-care facilities) 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 08, 2022 (week 40) (N=732)^{d,e}

Care facility outbreaks and cases by episode date	Outbreaks	Cases			Deaths		
		Residents	Staff/other	Total	Residents	Staff/other	Total
Week 40, Care Facility Outbreaks	3	30	0	30	0	0	0
Cumulative, Care Facility Outbreaks	732	10,425	3,819	14,244	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 08, 2022 (week 40) (N=487)^{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 15th October, 2022:

- SARS-CoV-2 viral loads measured in most wastewater plants in Metro Vancouver are quite stable.
- 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 decreased over the past week.
- Viral loads at Iona Island WWTP (Vancouver), have stabilized this past week.
- Viral loads at Lulu Island WWTP (Richmond), have increased slightly over the past week.

Figure 9. Wastewater surveillance, FH

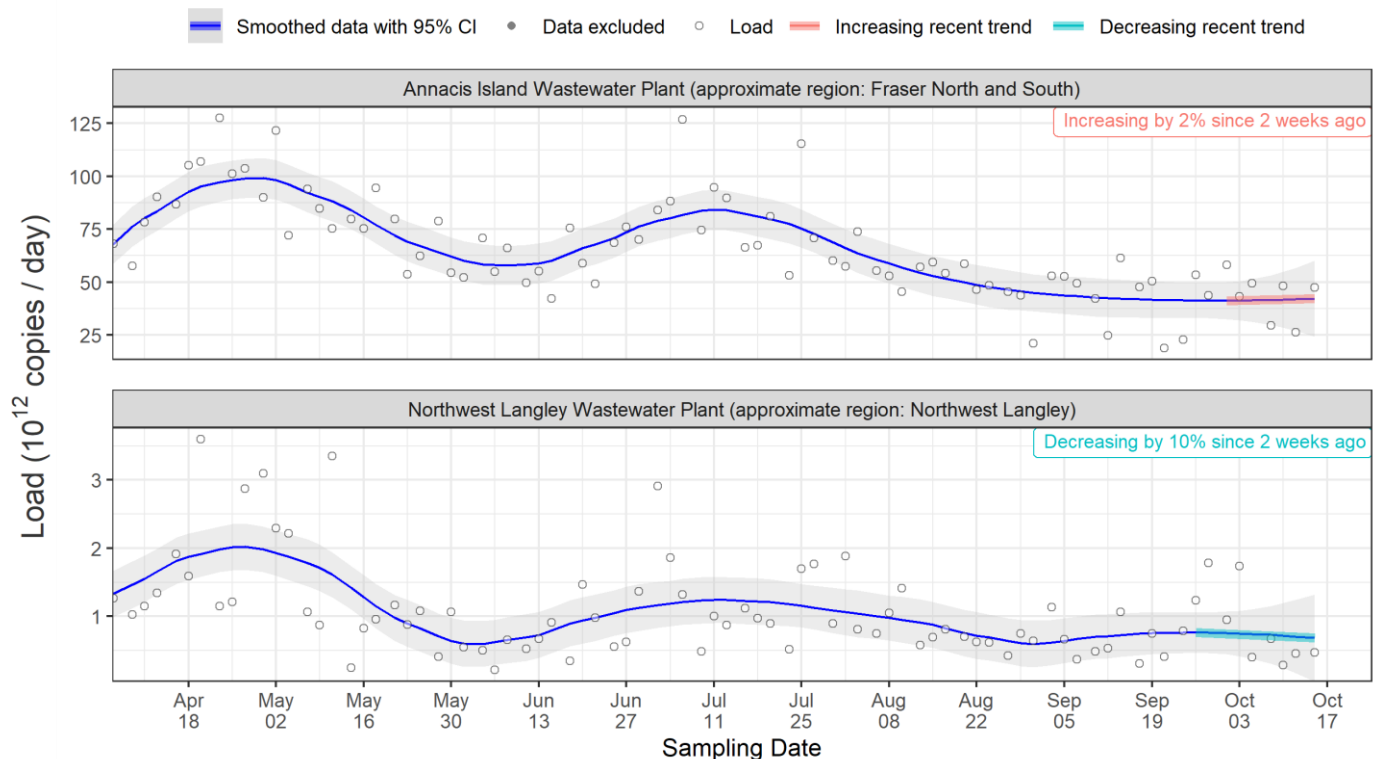
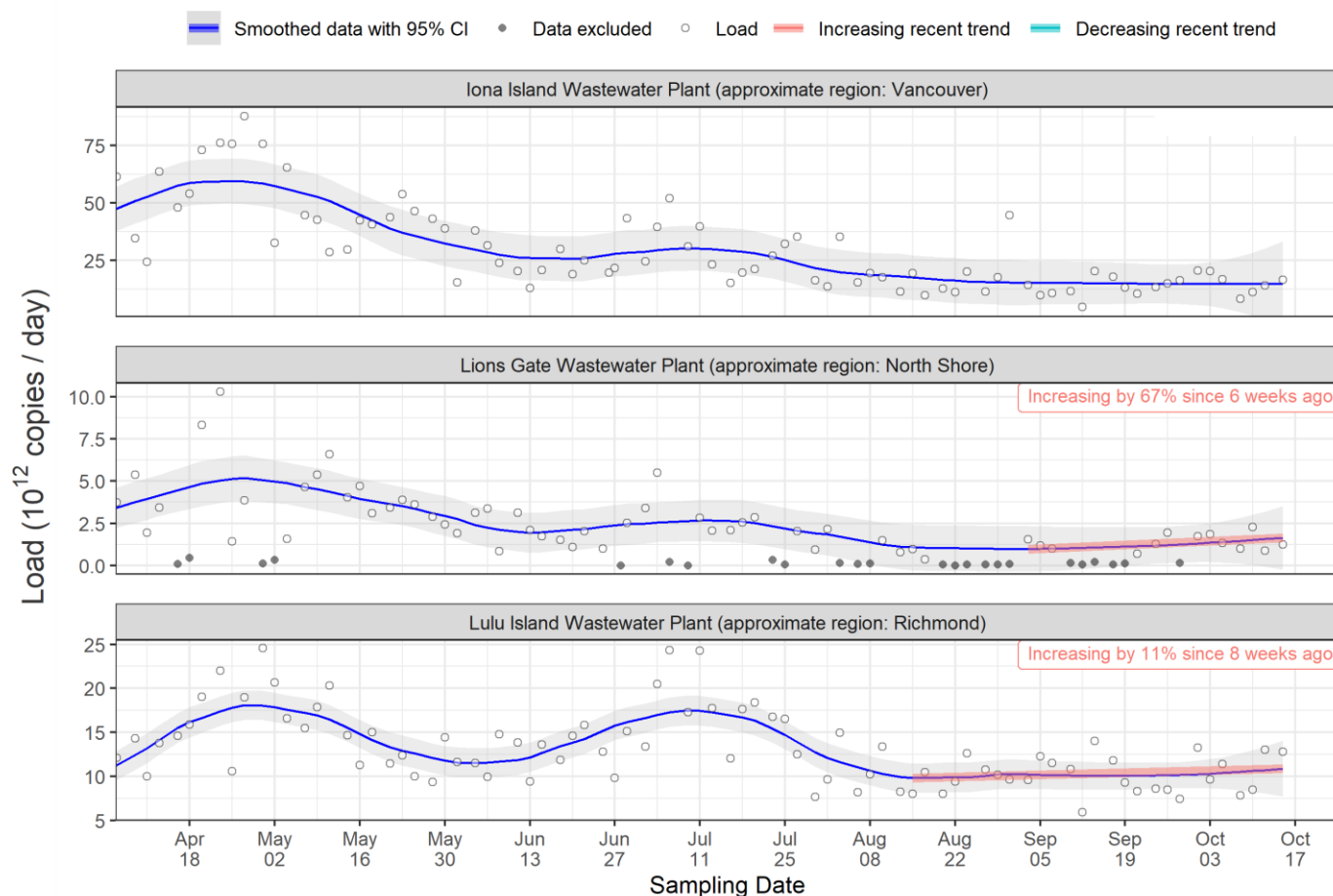


Figure 10. Wastewater surveillance, VCH



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>