

Community Respiratory Illness Surveillance Program (CRISP)

Situation Report: January 06, 2023 (Reporting Period Dec 18 –31, 2022)

Summary

- COVID-19 lab-confirmed cases decreased from 326 to 302. Test positivity increased to 6.7%.
- Influenza positive lab tests decreased from 122 to 69 with a test positivity of 5.0%.
- RSV activity is increasing – from 167 to 176 positive lab tests with the highest respiratory virus test positivity of 14.6%, mainly in preschool age children.
- The majority of respiratory virus hospitalizations continue to be COVID-19, followed by RSV.
- Weekly visits to Saskatchewan emergency departments for respiratory-like illness (RLI) are stable at 33.2 per 1,000 visits last week compared to 32.3 per 1,000 this week. Calls to 811 HealthLine for RLIs have increased over the past month, from 116 to 141 per 1,000 calls.

COVID-19

- COVID-19 test positivity in Saskatchewan was 6.7%, an increase from 5.8% last week. Cases are largely in the 65 and over age group (47%).
- The number of new COVID-19 outbreaks in high-risk settings remained steady at four to six per week over the past month.
- BA.5 and its sublineages (denoted as BA.5*) are the most commonly detected variants at 93.9% of current reporting period, followed by BA.2* (4.0%) and BA.4* (1.4%).
- The first detections of Omicron sublineage XBB.1.5 occurred in this reporting period.
- COVID-19 hospitalizations decreased from 103 to 92 admissions per week.
- COVID-19 ICU admissions remain stable at eight admissions per week – most were 60+ years old.
- The proportion of staffed inpatient beds occupied by COVID-19 patients has decreased from 6.5% to 5.7% in the most recent week compared to the previous week.
- COVID-19 deaths have dropped from an average of 11 deaths per week in the previous three weeks to three reported deaths in the most recent week.
- Having a COVID-19 booster in the last six months reduces the risk of a COVID-19 death eight times compared unvaccinated individuals and over four times compared to those without a recent booster dose.
- With the exception of Regina, all areas of the province have less than 50% of their population up-to-date¹ for COVID-19 vaccines. Less than half of individuals aged 50+ have had more than one booster dose (46%).
- Of those aged five years and older, 21% have received their latest booster dose in the last six months. Only 18% of individuals aged 12+ years have received a bivalent booster dose (n = 191,441 doses).

* Represents all sublineages of Omicron

¹ Up-to-date = completed a primary series and at least one additional booster, age 5+ years

Influenza

- Influenza detections decreased from 122 to 69 positive lab test in this reporting period.
- Influenza test positivity dropped from 20.1% in the first week of December to 5.0% in the week ending December 31.
- Influenza cases are predominately in the 20 – 64 year age group (41.0%).
- One influenza outbreak in a high-risk setting was reported in the past week.
- Influenza hospitalizations have decreased in this reporting period; however, influenza ICU admissions increased.
- Deaths due to Influenza continue to occur with three deaths reported in the last two weeks.
- The influenza immunization campaign launched October 11, 2022. To date, one-quarter of the Saskatchewan population (25%) have received an influenza vaccine, a one percent increase from the previous reporting period. This is a 12% decrease in doses administered compared to the same time last year.
- Test positivity remains highest in the Far North East (La Ronge and area) at 15.8% and North East (Melfort and area) at 25.0%.

Other Respiratory Viruses²

- RSV detections increased over the past month from 83 to 176 cases last week. Lab test positivity tripled from 5.0% to 15%.
- RSV cases are largely in the pediatric age group – in the most recent surveillance week 124 cases (71%) were aged 0 – 4 years.
- RSV hospitalizations have increased slightly from 44 hospitalizations to 47 in the most recent week. The majority of RSV hospitalizations occurred in children aged 0 – 19 years.
- ‘Other’ respiratory viruses fluctuated between 121 to 155 lab confirmed cases per week over the past month.
- Outbreaks of ‘other’ viruses in high-risk settings varied between zero and five outbreaks per week over the past month.

²Parainfluenza viruses 1 – 4 (PIV 1 – 4); Adenovirus (ADV); Rhinovirus (RV); Human Metapneumovirus (HMPV); NOTE: RSV test positivity now exceeds 1% and is reported separately.

Table 1: Viral indicators by surveillance period, December 18– 31, 2022

Report date	COVID-19 positive laboratory test	COVID-19 test positivity	COVID-19 outbreaks	Influenza positive laboratory test	Influenza test positivity	Influenza outbreaks	RSV positive laboratory test	RSV test positivity	'Other' ¹ positive laboratory test	'Other' ¹ test positivity	'Other' ¹ outbreaks
Dec 25 – Dec 31	302	6.7%	4	69	5.0%	1	176	14.6%	121	5.3%	2
Dec 18 – Dec 24	326	5.8%	5	122	7.7%	2	167	13.0%	135	5.2%	3
Dec 11 – Dec 17	376	5.8%	6	268	14.2%	4	153	10.4%	155	5.1%	5
Dec 04 – Dec 10	427	6.6%	4	411	20.1%	7	83	5.4%	121	3.5%	0

Notes: ¹Parainfluenza viruses 1 – 4; Adenovirus; Human Metapneumovirus, seasonal Coronavirus. See Technical Notes for further details.

Table 2: Patient-confirmed respiratory illness by age group, December 25-31, 2022

Age group (Years)	COVID-19 case count	Influenza case count	RSV case count	Others case count ¹
0 - 4	18 (8%)	15 (23%)	124 (71%)	N/A
5 - 19	13 (5%)	7 (11%)	11 (6%)	
20 - 64	97 (40%)	27 (41%)	17 (10%)	
≥65	113 (47%)	17 (26%)	24 (14%)	
Total	242 (100%)	66 (100%)	176 (100%)	121

Notes: ¹Parainfluenza viruses 1 – 4; Adenovirus; Human Metapneumovirus, seasonal Coronavirus; age-specific data is unavailable for other respiratory pathogens. Due to the rounding, total percentage may not add to 100%. See Technical Notes for further details.

Table 3: Sentinel* indicators by surveillance period, December 18–31, 2022

Report date	School illness absenteeism $\geq 10\%$ ¹	RLI** ED visits per 1,000 ²	RLI** 811 calls per 1,000	COVID-19 Wastewater indicator ³	Sentinel provider test positivity	Most commonly detected virus: Sentinel providers
Dec 25 – Dec 31	N/A	32.3	140.5	No data	15.4	Adenovirus
Dec 18 – Dec 24	8.5%	33.2	100.7	Low (n=2); Moderate (n=5);	41.7	Rhino virus
Dec 11 – Dec 17	13.2%	32.0	99.7	Low (n=3); Moderate (n=4);	32.0	Parainfluenza virus
Dec 04 – Dec 10	14.0%	47.0	115.6	Low (n=3); Moderate (n=3); Moderate-High (n=1)	30.8	Parainfluenza virus

Notes: *Sentinel surveillance are sampling programs representative of the population; **Respiratory-like illness (RLI); ¹ School absenteeism is the proportion of scheduled children who were absent from the class due to illness. The type of illness is not specified. Due to Christmas break schools were closed and no absenteeism data was available for the most recent reporting week; Not Available (N/A). ²Dec 18-Dec 24 based on reports from eight of thirteen reporting areas; Dec 25-Dec 31 based on reports from seven of thirteen reporting areas. ³Count of wastewater treatment facilities reporting low, moderate or high levels of viral load causing COVID-19 infection (see Technical Notes for details); Due to the holidays, the University of Regina and University of Saskatchewan Waster Water teams didn't provide data for the week Dec 25-31.

Table 4: Outcome, health care capacity and immunization coverage indicators by surveillance period, December 18–31, 2022[‡]

Report date	Hospital admissions – COVID-19 ¹	ICU admissions – COVID-19	Hospital admissions – Influenza	ICU admissions – Influenza	Hospital admissions – RSV	ICU admissions – RSV	% of staffed inpatient beds occupied by COVID-19 patients ²	Deaths – COVID-19 ³	Deaths – Influenza ³	Total eligible population up-to-date – COVID-19 vaccine ⁴	Total eligible population immunized for Influenza vaccine ⁵
Dec 25 – 31	92	8	14	4	47	3	5.7%	3	2	45.9%	25%
Dec 18 – 24	103	8	24	2	44	3	6.5%	7	1	45.9%	25%
Dec 11 – 17	116	7	40	4	38	1	7.4%	11	1	45.8%	24%
Dec 4 – 10	120	8	72	8	24	0	8.4%	16	2	45.8%	23%

[‡]Additional information on hospital admission stratified by respiratory organism and age group is provided below in **Figure 5** and **6** respectively. Viral infection may not be the main reason for the admission.

³Deaths due to Influenza continue to occur with three deaths reported in the last two weeks, for a total of fifteen during this season.

Cases by respiratory organisms across the age groups

- From December 18 – 31, 2022, there were 403 respiratory illness cases hospitalized with lab-positive Covid19 (195), influenza (38), RSV (91), other respiratory illnesses (60), and co-infected cases (19). Among the 403 cases, 195 Covid19 lab positives were among age groups of 0-19 (11), 20-59 (46), and ≥60 (138). Influenza lab positives (38) were among age groups of 0-19 (6), 20-59 (6), and ≥60 (26). For RSV lab positives (91), cases were among the age groups of 0-19 (68), 20-59 (7) and ≥60 (16). For other respiratory lab positives (60), cases were in the age group of 0-19 (32), 20-59 (10), and ≥60 (18). For Co-infections lab positives (19), cases were in the age group of 0-19 (15), 20-59 (1), and ≥60 (3).
- From December 18 - 31, 2022, there were 39 respiratory illness cases admitted to the ICU with lab-positive Covid19 (16), influenza (6), RSV (6), other respiratory illnesses (5), and co-infected cases (6). Among the 39 cases, 16 Covid19 lab positives were among age groups of 20-59 (5) and ≥60 (11). Influenza lab positives (6) were among age groups of 0-19 (1), 20-59 (3) and ≥60 (2). For RSV lab positives (6), cases were among the age groups of 0-19 (4), 20-59 (1) and ≥60 (1). For other respiratory lab positives (5), cases were in the age group of 0-19 (2), 20-59 (2), and ≥60 (1). For Co-infections lab positives (6), cases were among the age groups of 0-19 (4) and ≥60 (2).

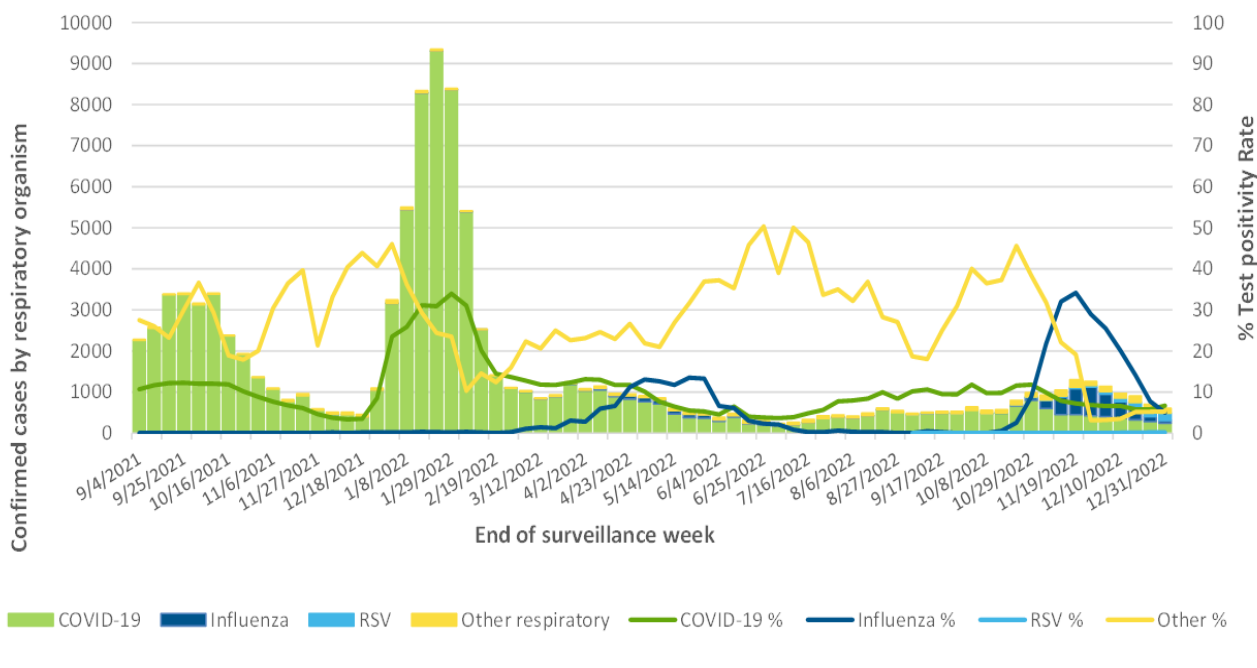
Notes:

¹ Because of the delay in date tested result, it affects the total number of Influenza (A/B), RSV and other respiratory virus admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. The counts for influenza, RSV, and other respiratory virus-associated hospital and ICU admissions refer to individuals with laboratory tests positive for influenza, RSV, and other respiratory viruses, respectively, occurring within four days before the admission date AND/OR at any point during the hospital stay. The counts for COVID-19 hospital and ICU admissions refer to individuals with laboratory tests positive for COVID-19 virus, occurring within 21 days before the admission date and/or at any point during the hospital stay or 7 days from the discharge. Episodes of care considers patients total movement within the health system related to their condition. It combines 2 or more admission from 2 or more different facilities, if they are transfers (No break in care). Transfer: Admission to any other hospital within 24 hours of discharge from previous hospital. Co-infected cases: positive for influenza and RSV or, positive for influenza and other respiratory virus or positive for RSV and other respiratory viruses or, positive for COVID-19 and influenza or, positive for COVID-19 and RSV or, Positive for COVID-19 and other resp viruses. Other includes: Parainfluenza 1-4, Adenovirus, Enterovirus, Human Metapneumovirus, Rhinovirus, Seasonal Coronavirus (O43, NL63, 229E, HKU1f.)² 7-day average of percentage of acute inpatient beds staffed and in operation that are occupied by COVID-positive patients as of 8AM census

³ Includes deaths entered into Panorama IOM among lab-confirmed cases. Deaths reported based on the actual date of death..Deaths reported in previous periods subject to change due death reporting data lags

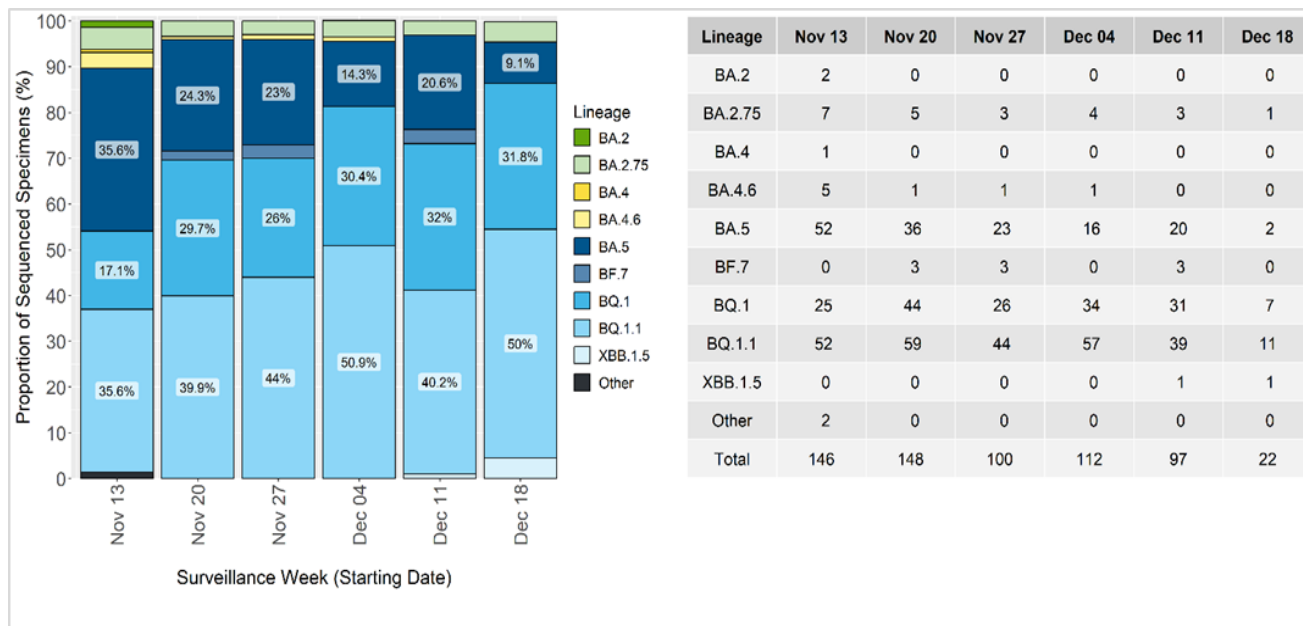
⁴ Up-to-date = completed a primary series and at least one additional booster, age 5+ year. ⁵ Up-to-date = received a vaccination within the current influenza season, age 6 months+ See Technical Notes for details.

Figure 1: Epidemic curve, respiratory illness by respiratory organism and test positivity, August 29, 2021 - December 31, 2022



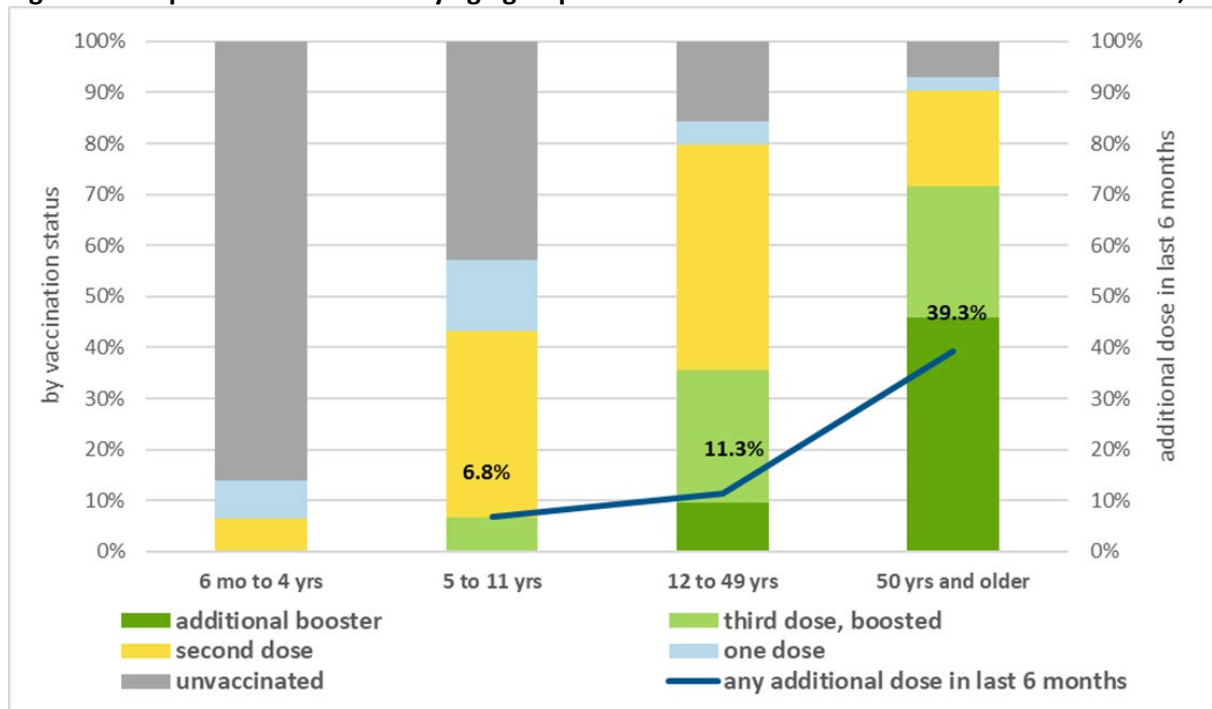
Data sources: Panorama IOM extracted on January 2, 2023 (COVID-19 cases). Respiratory Virus Detections Surveillance System (influenza and other respiratory) (RRPL extracted January 3, 2023). As of September 4, 2022, COVID-19 cases include new and reinfections. For the two weeks of Dec 18 to Dec 31, 2022, there were 523 COVID-19 cases (71 were 0 to 19 years; 182 were 20 to 59 years; and 270 were 60 years and older). For the two weeks of Dec 18 to Dec 31, 2022, there were 191 influenza lab detections. For the two weeks of Dec 18 to Dec 31, 2022, there were 343 RSV detections. For the two weeks of Dec 18 to Dec 31, 2022, there were 256 other viral lab detections (parainfluenza, adenovirus, human metapneumovirus, rhinovirus, coronavirus)

Figure 2: Percentage of SARS-CoV-2 variants by surveillance week*, November 13 – December 18, 2022



Data Source: Roy Romanow Provincial Laboratory, Saskatchewan Health Authority, as of January 4, 2023
 The most recent VOC data available from the Provincial database is as of surveillance week ending December 18, 2022
 * Surveillance week correspond to specimen collection date.

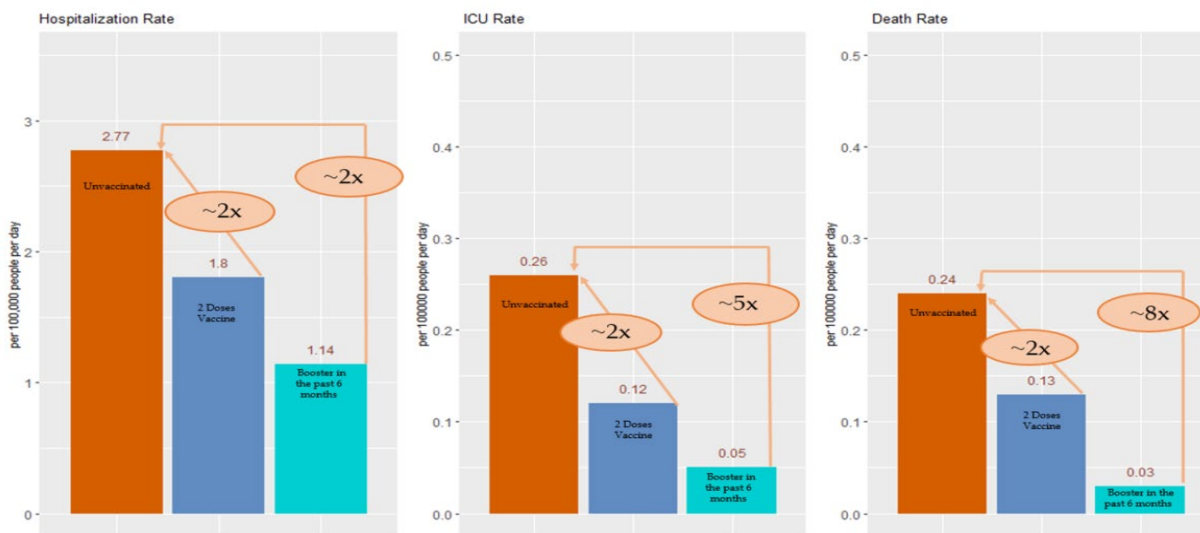
Figure 3: Proportion of residents by age group and COVID-19 vaccination status to December 31, 2022



Data source(s): Data sources: Panorama January 2, 2023; Saskatchewan Covered Population, 12-Nov-2022, Ministry of Health version (2022 Version 2)

Note: Of those five years and older: 45.9% have completed their series and received a booster dose. 21.1% have received their latest dose in the last six months. Of those 12 years and older, 18.4% were administered a Moderna or a Pfizer bivalent. As of Dec 31, 2023, cumulatively doses administered are as follows: dose 1, n=992,032; dose 2, n=926,501; dose 3, n=530,373; completed plus 2 or more additional doses, n=359,658; total doses = 2,808,564

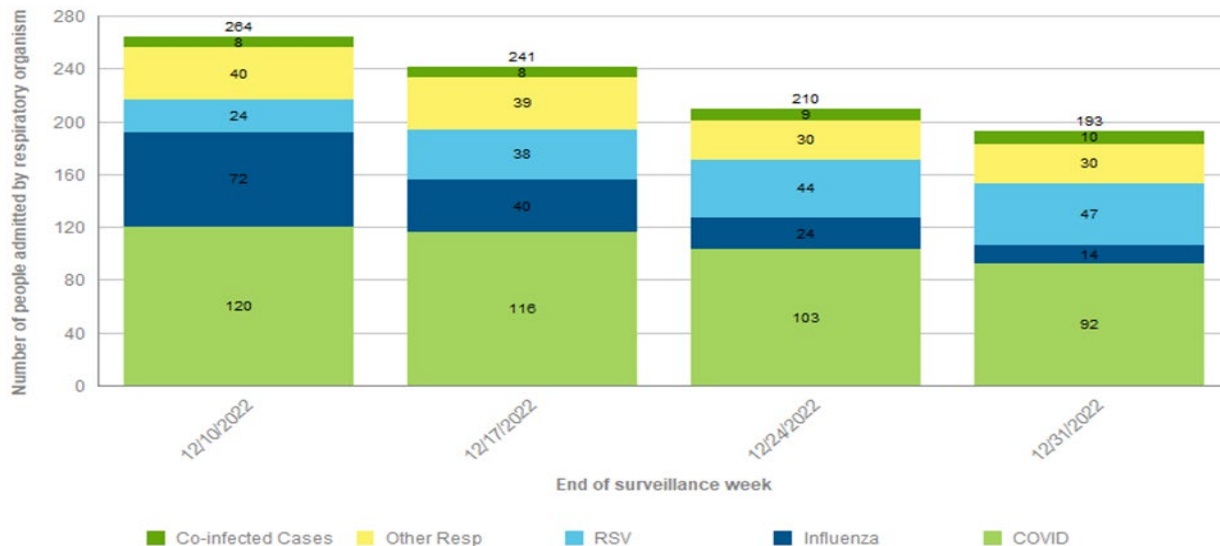
Figure 4: Booster dose within last 6 months reduces the risk of Hospitalization, ICU admission or Death (age adjusted rates), June 24, 2022 – December 24, 2022



Data Source: Digital Health Analytics, Saskatchewan Health Authority

Definitions: Unvaccinated - Individuals with no record of vaccine received or vaccinated with first dose but less than 21 days from receiving the first dose. Vaccinated with 2 doses - Individuals who have received their second dose for more than 14 days or their third dose is less than 14 days. Booster in the past 6 months - Individuals who have received any booster dose (3rd, 4th, 5th and so on) within the last 6 months. Details on methodology is provided in the technical notes.

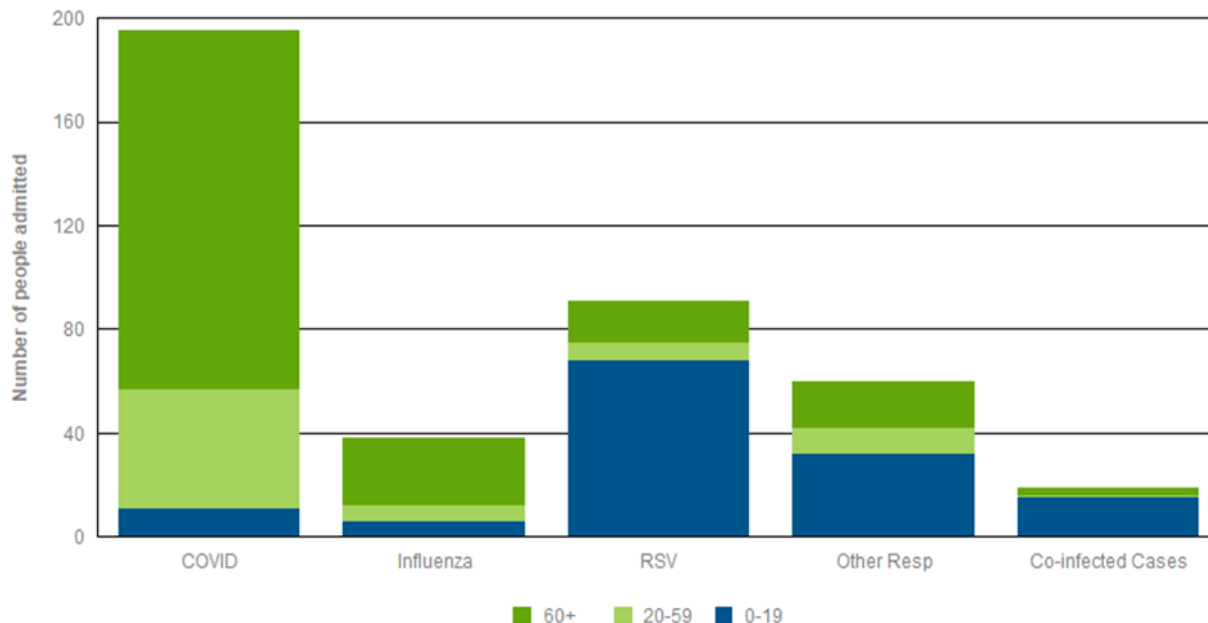
Figure 5: The number of COVID-19, influenza, RSV, other respiratory viruses and co-infected cases admitted to hospital by week of the admission, December 04 – 31, 2022*



Data source(s): Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RPPL, Panorama); data extracted on January 3, 2023. * Viral infection may not be the main reason for the admission.

Note: Because of the delay in date tested result, it affects the total number of COVID 19 admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. Includes lab positive for influenza, RSV, other respiratory viruses, four days prior to date of admission AND/OR at any point during admission. Episode of Care considers patients total movement within the health system related to their condition. It combines 2 or more admissions from 2 or more different facilities, if they are transferred (no break in care). Transfer = admission to any other hospital within 24 hours of discharge from previous hospital. Co-infected cases = positive for Influenza and RSV, or, Influenza and 'other', or, RSV and 'other', or, COVID-19 and Influenza, or, COVID-19 and RSV, or, COVID-19 and 'other'.

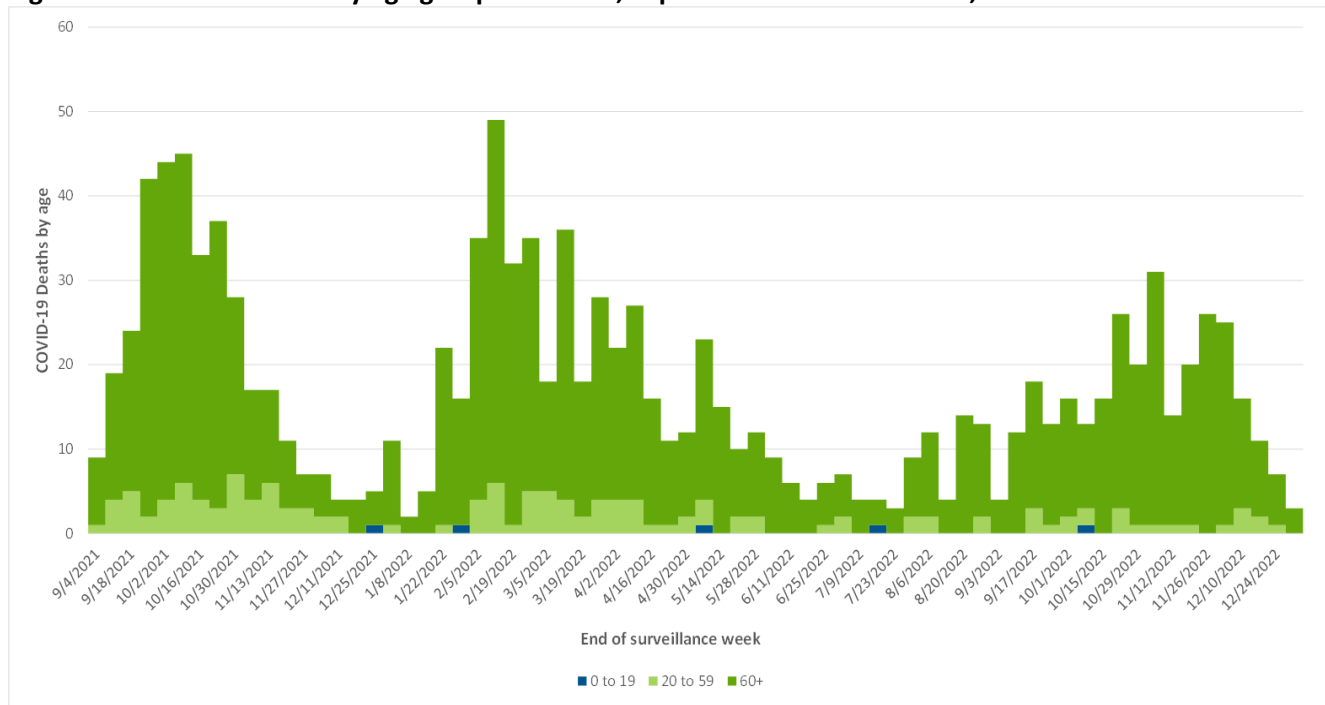
Figure 6: The number of COVID-19, influenza, RSV, other respiratory viruses and co-infected cases admitted to hospital by age group, December 18 – 31, 2022*



Data source(s): Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RPPL, Panorama); data extracted on January 3, 2023. * Viral infection may not be the main reason for the admission

Note: Because of the delay in date tested result, it affects the total number of COVID 19 admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. Includes lab positive for influenza, RSV, other respiratory viruses, four days prior to date of admission AND/OR at any point during admission. Episode of Care considers patients total movement within the health system related to their condition. It combines 2 or more admissions from 2 or more different facilities, if they are transferred (no break in care). Transfer = admission to any other hospital within 24 hours of discharge from previous hospital. Co-infected cases = positive for Influenza and RSV, or, Influenza and 'other', or, RSV and 'other', or, COVID-19 and Influenza, or, COVID-19 and RSV, or, COVID-19 and 'other'.

Figure 7: COVID-19 deaths by age group and week, September 4 - December 31, 2022*



Data source(s): Panorama January 2, 2022

In the past two weeks, Dec 18 to Dec 31, there have been 10 deaths in COVID-19 cases, one in the 20 to 59 age group, and nine in the 60 years or older group. * Total COVID-19 deaths from March 2020 to December 31, 2022 (n = 1,800)

Table 5: Community Respiratory Infection Surveillance Program Indicators by zone, December 25 – 31, 2022

Location	Test positivity – COVID-19 ¹ (positive lab tests)	Test positivity – Influenza (positive lab tests)	RLI* visits to EDs per 1,000 ²	RLI* 811 calls per 1,000 ³	School illness absenteeism >=10% ⁴	Wastewater indicator ⁵	Total eligible population up-to-date vaccination – COVID-19 ⁶	Total eligible population immunized for– Influenza ⁷
Far North West (Meadow Lake and area)	13.9% (10)	2.6% (1)	No data	-	Not Available	-	24.3%	10%
Far North Central	100% (2)	0.0% (0)	No data	-		-	14.4%	3%
Far North East (La Ronge and area)	16.7% (6)	15.8% (3)	No data	-		-	24.9%	8%
North West (North Battleford/ Lloydminster and area)	8.9% (18)	1.1%(1)	24.6	126.7		No data	35.4%	17%
North Central (Prince Albert and area)	9.2% (14)	6.0% (3)	10.1	-		No data	40.6%	21%
North East (Melfort and area)	2.4% (2)	25.0% (3)	112.9	123.8		-	43.9%	25%
Saskatoon	8.0% (64)	3.8% (10)	16.9	158.2		No data	48.9%	26%
Central West (Kindersley and area)	14.7% (11)	2.4% (1)	77.3	-		-	43.9%	28%
Central East (Yorkton/Melville and area)	7.0% (25)	3.0% (5)	No data	-		No data	45.7%	24%
Regina	6.5% (32)	6.4% (24)	58.4	124.8		No data	51.6%	26%
South West (Swift Current/Maple Creek and area)	1.2% (1)	3.9% (2)	No data	153.8		No data	40.8%	25%
South Central (Moose Jaw and area)	5.9% (11)	2.7% (2)	No data	-		No data	44.2%	25%
South East (Weyburn/Estevan and area)	8.4% (15)	8.1% (8)	147.8	142.9		No data	39.3%	23%
Unknown/Out of Province	5.1%^ (91)	3.2% (3)						
SASKATCHEWAN	6.7%	5.0%	32.3	140.5				45.9%

Notes: ¹by week of lab detection; effective Oct 30, 2022 includes cases who tested positive more than once >= 90 days apart; ^ For COVID-19 test positivity, all tests reported were performed within the province. ²Based on reports from five of thirteen reporting areas; ³811 data available at the five Integrated Service Areas geographical level; ⁴Due to Christmas break schools were closed and no absenteeism data is available for this reporting week.; *Respiratory-like illness; ⁵ Due to the holidays, the University of Regina and University of Saskatchewan Waster Water teams didn't provide data for the week Dec 25-31 ⁶Up-to-date = completed a primary series and at least one additional booster, age 5+ years; ⁷received a vaccination within the current influenza season, age 6 months+; Does not include doses administered through NITHA or FNIHB, therefore some zones underestimated coverage. ^Includes positive tests with pending locations. Numbers in parenthesis represents positive lab tests.

Technical Notes

1. **Laboratory surveillance:** Conducted through epidemiological analyses and Laboratory surveillance: Conducted through epidemiological analyses and positivity rate monitoring (counts and proportion of positive specimens, week of specimen collection, age category, geographical area, etiological type where applicable) of selected respiratory specimens submitted to the provincial laboratory in SK. Whole genome sequencing is conducted to detect changes (emergence of sub-lineages, variant proportion, etc) of clinical and public health importance among circulating respiratory organisms.
2. **Sentinel health providers:** Comprise a geographical-based network in practices across the province (n = 13 zones) who submit one to two specimens weekly to the Virology Section of the Roy Romanow Provincial Laboratory (RRPL), Saskatchewan Health Authority, from patients presenting with respiratory-like symptoms. Specimens are tested for a wider complement of respiratory organisms to monitor respiratory illness activity in the community. Assessment of co-infection (infected by more than one respiratory virus organism concurrently) occurs through sentinel provider submissions.
3. **Wastewater data:** Provided by the University of Saskatchewan and University of Regina Wastewater Team. Viral load for each zone was used to determine risk level (Low, Medium, Medium-High, High) using a four-bin system based on 100% of early Omicron peak reported. Locations sampled, includes: Saskatoon, Regina, Lumsden, North Battleford, Prince Albert, Yorkton, Swift Current, Moose Jaw, and Weyburn
4. **Data collection from Emergency Departments (ED):** Monitoring is done for a twenty-four hour period on at least one-week day (the exact time vary with the ED schedule). The ED reports to local public health services in their area on Wednesday afternoon and public health report to the Ministry of Health on Thursday each week. The count of Respiratory Like Illness (RLI) patients as a proportion of total ED admissions is captured.
5. **Reporting ED surveillance information:** Because there is no centralized data capture source for ED admissions in the province, each health area sets up a mechanism for EDs to report to public health services. Public health aggregates raw data from their EDs on the prescribed data collection form and sends it to the Ministry of Health for overall provincial monitoring. FNIHB and NITHA will report to the local zone which the ED or health centre is located. This does not preclude monitoring in First Nations health care facilities.
6. **HealthLine 811 callers with Respiratory Symptoms (RLI):** This count of response protocols collected by HealthLine nurses specific to callers reporting respiratory-like symptoms. HealthLine data is collected for a seven day week, Monday to Sunday. Data is transformed into the rate of callers with respiratory symptoms from each Integrated Service Area (ISA) per 1000 calls from that ISA concerning any type of symptom.
7. **A confirmed outbreak:** Defined as two or more lab confirmed respiratory virus cases in high-risk settings where transmission is evident or there is a high level of suspicion of transmission. Outbreaks are reported by the week they were reported to the local public health office and not necessarily in the week that the outbreak began. For this report outbreaks in high risk settings comprise long term care facilities, personal care homes and group homes
8. **COVID hospitalized admissions** is the number of C-19 positive cases that during the surveillance week were admitted as an inpatient to an acute care facility. This includes patients with C-19 related illness, incidental COVID infection, and patients under investigation. COVID ICU admissions is the number of C-19 positive cases that during the surveillance week were admitted to an ICU location in SK. This includes both infectious and non-infectious cases.
9. **Influenza, RSV and other respiratory virus admissions:** Delays in testing results affect the total number of Influenza, RSV and other respiratory virus admissions for a particular day. This lag in data has the greatest impact on the two days prior to when the report is updated. Counts include individuals who are laboratory positive for influenza, RSV, and other respiratory viruses, within four days prior to date of admission AND/OR at any point during the hospital stay. Episode of Care considers patients' total movement within the health system related to their condition. It combines 2 or more admissions from 2 or more different facilities, if they are transfers (i.e., no break in care). Transfer: Admission to any other hospital within 24 hours of discharge from previous hospital. Co-infected Cases = if positive for Influenza and RSV or, positive for Influenza and Other Respiratory viruses or, positive for RSV and Other respiratory viruses or, positive for Covid-19 and Influenza or, positive for Covid-19 and RSV or, positive for Covid-19 and Other Respiratory viruses.
10. **Variant of concern (VOC):** VOCs are SARS-CoV-2 viruses that have undergone genetic modification or mutation causing altered virus infectivity, replication and pathogenicity. As a result it can alter host immune response. The Roy Romanow Provincial Laboratory (RRPL) tests for and monitors COVID-19 variants of concern (VOCs) in Saskatchewan. Confirmation of VOC lineages is done by conducting whole genome sequencing (WGS) at RRPL or the National Microbiology Laboratory. one to two weeks to complete WGS. Data sources for VOCs analysis include testing data from the RRPL, and epidemiological information from Panorama. Where geographical zone is missing in RRPL or Panorama data, the Saskatchewan postal code file is used to identify cases' geographical information.
11. **VOC Lineages B.1.1.529, BA.1, BA.2, BA.2.3.20, BA.2.75, BA.4, BA.4.6, BA.5, BF.7, BQ.1, BQ.1.1, and XBB.1.5** are all classified under the WHO Label of "Omicron". Omicron lineages BA.2.3.20, BA.2.75, BA.4.6, BF.7, BQ.1, BQ.1.1, and XBB.1.5 are emerging global variants that RRPL continues to monitor. Lineages that are not explicitly listed are aggregated under their corresponding parent lineage (e.g., BA.1, BA.2, BA.4, or BA.5). Previously, BA.2.3.20 and BA.2.75 were sublineages aggregated with BA.2; BA.4.6 was aggregated with BA.4; BF.7, BQ.1, and BQ.1.1 were aggregated with BA.5. "Other" represents non-Omicron lineages as well as recombinant genomes – these include 2 cases of recombinant genomes that do not have a designated lineage name at the time of this publication. Percentages are shown when a lineage constitutes 5% or more of total specimens evaluated for a given surveillance week. BA.5 and its sublineages (denoted as BA.5*) are the most commonly detected variants (93.9% of current reporting period), followed by BA.2* (4.0%) and BA.4* (1.4%). * Represents all sub-lineages of Omicron.
12. **COVID-19 cases:** Effective September 4, 2022, COVID-19 cases are based on lab detection and include cases who tested positive more than once 90 days, or further, apart. Prior to this, cases include, only, first time cases reported and entered into Panorama.
13. **COVID-19 Deaths:** Includes deaths entered into Panorama IOM among laboratory confirmed cases. Deaths are reported based on the actual date of death. Deaths in previous periods may be adjusted from previous reports due to data lag
14. **COVID-19 Immunizations:** Up-to-date (UTD) COVID-19 vaccination is the proportion of people having completed a primary series and one booster for ages five and older divided by the eligible population found in the Saskatchewan Covered Population, 12-Nov-2022 Ministry of Health version (2022 Version 2). Though vaccinated children six months to four years of age may be technically UTD, this specific definition does not apply to them. In addition, UTD in last six months is calculated by the proportion of people having received one or more boosters within the previous six months.
15. **Influenza immunizations:** UTD Influenza vaccination is the proportion of people, six months and older, having one influenza dose this season divided by the eligible population found in the Saskatchewan Covered Population, 12-Nov-2022 Ministry of Health version (2022 Version 2). Vaccination for the current influenza season officially began October 11, 2022. Some doses were administered prior to the start date.
16. **Staffed Inpatient beds:** Weekly average COVID Occupancy is a 7-Day average percentage of acute inpatient beds staffed and in operation COVID positive patients occupy. The full calculation of this metric is: $\text{Average COVID occupancy} = \frac{\sum(8am \text{ covid census})}{\sum(8am \text{ beds staffed and in operation})} \times 100\%$. Where "bed staffed and in operation" = "Planned beds" + "Surge Beds" - "Closed" and $\sum(\dots)$ indicates summation over 7-day period from Sunday to Saturday. 8am COVID census is taken from the ADT patient registration, which is fed to the provincial data-mart and archived hourly. 8am planned bed, surge beds, and closed beds is compiled via data feeds from APF (Saskatoon & Regina) and the provincial bed edits interface (INH & IRH).
17. **Rate of COVID-19 hospitalization (ICU or Death)** were calculated by summing the daily number of hospitalizations (ICUs or Deaths) for the period by vaccine status (numerator) divided by the mid period population by respective vaccine status (denominator), multiplied by 100,000. This estimate is further divided by the number of days to obtain the daily rate. Denominator for individuals in the Booster in the past 6-months group are all Saskatchewan residents who have had their booster dose within the last 6 months. To eliminate bias of age all rates are adjusted by age. Direct standardization method is employed using the Saskatchewan population as the standard population. Age at first dose used in the rate calculation. Individuals with unknown age are excluded from age-specific analyses. Estimates of relative risk (i.e. rate ratios) is obtained by comparing vaccinated with 2 doses (Any Booster dose) and unvaccinated. Risk estimates may differ from other reports due to differing methodologies.