# Community Respiratory Illness Surveillance Program (CRISP) Situation Report: December 08, 2023 (Reporting Period November 19 – December 02, 2023)

## Summary


- The number of COVID-19 cases continued to decline for the third consecutive week from 496 in the week ending November 11 to 308 in the current week. Test positivity for the most recent surveillance week was 10.4% compared to 15.5% at the beginning for the four-week period.
- Influenza test positivity in the current reporting week increased to 32.8% compared to the previous reporting week (30.4%). All 13 geographical locations reported test positivity greater than 17%). Influenza Type A accounted for 99.0% of the positive lab detections.
- Respiratory Syncytial Virus (RSV) increased to 93 cases in the last two weeks compared to 53 cases in the previous two-week period. Test positivity in the most recent week increased to 2.6% for the most recent surveillance week.
- COVID-19 and Influenza account for 34% and 53% of hospitalizations due to viral respiratory illnesses across the province, respectively. The RSV, 'Other' respiratory viruses, and co-infected cases collectively account for 13% of viral respiratory illnesses. Total hospital admissions for respiratory viruses decreased from 633 for the previous two weeks to 514 for the most recent two weeks, reflecting a 19% decrease in the number of hospitalizations.
- Sentinel surveillance indicators of respiratory transmission in the community have increased:
    - Weekly visits to the emergency departments for respiratory-like illnesses (RLI) increased from 30.4 per 1,000 to 33.4 per 1,000 visits in the most recent week.
    - School-absenteeism for the week ending December 2, 2023, increased to 15.5% from 13.7% the previous week.
    - Calls to HealthLine 811 for respiratory-like illness slightly decreased from 137.8 to 136.9 per 1,000 calls in the most recent week.
    - Influenza A was the most detected virus in the province.
    - Current wastewater-based surveillance data shows that SARS-CoV-2 levels in many of the surveilled areas of the province remain elevated, continuing the trend observed in recent weeks.


## COVID-19

- The number of positive tests for COVID-19 decreased from 395 in the week ending November 25 to 308 in the most recent week.
- COVID-19 cases were highest in the 20-64 years age group (46.7%), followed by 65 and above (40.1%).
- There were 22 COVID-19 outbreaks reported in high-risk settings in the past two weeks compared to 29 in the previous two-week period.
- EG.5 and its sublineages (denoted as EG.5*) were the most commonly detected variants (58.4% of the current reporting period), followed by XBB.1.16* (16.6%) and XBB.1.9.2* (7.0%).

- COVID-19 hospitalizations dropped from 280 for the previous two weeks to 174 for the most recent two weeks. COVID-19 ICU admissions dropped from 25 for the previous two weeks to 11 for the most recent two weeks.
- The proportion of staffed inpatient beds occupied by COVID-19 patients increased to 8.6% for the most recent week.
- In the last two weeks, three deaths associated with COVID-19 were reported.
- Of those aged six months and older, 16.1% have received at least one dose of COVID-19 vaccine on or after September 18. For those aged six months to 64 years, all the zones except Saskatoon (12.5%) and Regina (12.3%) have less than 10% vaccination coverage. For those 65 years and older, Far North West (31.2%), Far North Central (13.2%), Far North East (39.3%), and North West (39.8%) have less than 40% coverage. All other zones have between 40% and 50% coverage except Regina (52.9%).

## Influenza

- There was an increase in test positivity reported across the Far North Central, North West, Central, Regina and the South. Seven locations (Far North West, Far North Central, Far North East, Central East, Regina, South Central and South East) reported test positivity higher than the provincial average of 32.8%.
- There were five influenza-associated deaths reported in this reporting week.
- Influenza hospitalizations have decreased marginally from 280 the previous two weeks to 271 for the most recent two weeks. Influenza ICU admissions remained stable at 39 for the previous two weeks and 38 for the most recent two weeks.
- As of December 2, 2023, 21.2% of the Saskatchewan population received influenza vaccine this season. For those aged 65 years and older overall coverage was 54.5%, the highest was in Regina (59.1%) and lowest in Far North Central (26.4%). For those aged less than 65 years the overall coverage was 14.3%; the highest was in Saskatoon (16.9%) and lowest was in Far North Central (7.4%).

## RSV and Other Respiratory Viruses[1]

- Other respiratory viruses decreased to 102 positive lab detections in the current reporting two weeks compared to 156 detections in the previous two-week period. Test positivity in the most recent week increased slightly to 9.7% from 8.1% in the previous week.
- RSV hospitalizations have increased to 21 for the most recent two weeks from the 10 hospitalizations for the previous two weeks. Hospitalizations for 'Other' respiratory viruses have decreased to 27 for the most recent two weeks from 41 for the previous two weeks. 'Other' respiratory viruses ICU admissions have decreased to three for the most recent two weeks from seven for the previous two weeks.
- Outbreaks due to 'other' viruses have decreased. There were no outbreaks reported in high-risk settings over the past two weeks**.**

Notes: [1] *Other respiratory viruses: Parainfluenza viruses 1 – 4; Adenovirus; Human Metapneumovirus, seasonal Coronavirus and Entero/Rhinovirus; * Represents all sublineages of Omicron*

**Table 1: Viral indicators by surveillance period, November 05 – December 02, 2023**

| Report date | SARS-CoV-2 positive laboratory test | SARS-CoV-2 test positivity | COVID-19 outbreaks | Influenza positive laboratory test | Influenza test positivity | Influenza outbreaks | RSV positive laboratory test | RSV test positivity | RSV Outbreaks | 'Other'[1] positive laboratory test | 'Other'[1] sample positivity | 'Other'[1] outbreaks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov 26 - Dec 02 | 308 | 10.4% | 10 | 815 | 32.8% | 7 | 58 | 2.6% | 0 | 53 | 9.7% | 0 |
| Nov 19 - 25 | 395 | 13.8% | 12 | 675 | 30.4% | 4 | 35 | 1.7% | 0 | 49 | 8.1% | 0 |
| Nov 12 - 18 | 426 | 13.9% | 11 | 594 | 31.0% | 3 | 28 | 1.6% | 0 | 66 | 11.1% | 1 |
| Nov 05 - 11 | 496 | 15.5% | 18 | 505 | 27.0% | 0 | 25 | 1.4% | 0 | 90 | 13.6% | 2 |

***Notes:*** [1]*Parainfluenza viruses 1 – 4; Adenovirus; Human Metapneumovirus, seasonal Coronavirus and Entero/Rhinovirus. See Technical Notes for details*

[#]*Starting with the week of Oct 22-28, the method for calculating test positivity for "Other" respiratory viruses has changed to more accurately reflect the number of positive results in laboratory samples tested for "other" respiratory viruses. For example, during the week of Oct 22-28, 64 of 347 samples tested for "Other" respiratory viruses were positive for one or more of these viruses, which results in a test positivity of 18.4%. Samples that tested positive for more than one of the "Other" viruses are counted only once.*

**Table 2: Patient-confirmed respiratory illness by age group, November 26 – December 02, 2023**

| Age group (Years) | COVID-19 case count | Influenza case count | RSV case count | 'Other' virus case count[1] |
|---|---|---|---|---|
| 0 – 4 | 15 (6.2%) | 142 (19.1%) | 33 (67.3%) | 53 |
| 5 – 19 | 17 (7.0%) | 170 (22.9%) | 5 (10.2%) | |
| 20 – 64 | 113 (46.7%) | 320 (43.1%) | 8 (16.3%) | |
| ≥65 | 97 (40.1%) | 110 (14.8%) | 3 (6.1%) | |
| **Total** | **242 (100%)** | **742 (100%)** | **49 (100%)** | **53 (100%)** |

***Notes:*** *[1]Parainfluenza viruses 1 – 4; Adenovirus; Human Metapneumovirus, seasonal Coronavirus and Entero/Rhinovirus; age-specific data is unavailable for other respiratory pathogens. Individuals with co-infection of "Other" viruses are only counted once. Due to the rounding, total percentage may not add to 100%. See Technical Notes for further details.*

**Table 3: Sentinel* indicators by surveillance period, November 05 – December 02, 2023**

| Report date | School illness absenteeism [1] | RLI** ED visits per 1,000[2] | RLI** 811 calls per 1,000 | SARS-CoV-2 Wastewater indicator[3] | Sentinel provider test positivity | Most commonly detected virus: Sentinel providers[4] |
|---|---|---|---|---|---|---|
| Nov 26 - Dec 02 | 15.5% | 33.4 | 136.9 | Low (n=1), Medium (n=7), Medium-High (n=1) | 56% (n=14) | Influenza A |
| Nov 19 - 25 | 13.7% | 30.4 | 137.8 | Low (n=2), Medium (n=6), High (n=1) | 35% (n=9) | Influenza A |
| Nov 12 – 18 | 12.3% | 34.2 | 129.8 | Low n=1, Medium n=2, Medium-High n=5 | 80% (n=20) | Influenza A |
| Nov 05 – 11 | 13.7% | 34.9 | 140.8 | Low n=6, Medium n=2 | 55% (n=12) | Influenza A |

*Notes: *Sentinel surveillance are sampling programs representative of the population; [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. [2]Respiratory-like illnesses (RLI) are based on reports from ten of thirteen reporting areas for all report date. [3]Count of wastewater treatment facilities reporting low, moderate or high levels of viral load causing COVID-19 infection. See Technical Notes and appendix for details. [4]Most commonly detected virus in Sentinel providers: COVID-19, Influenza A/B, RSV, Adenovirus, Metapneumovirus, Rhinovirus, Parainfluenza viruses 1-4, and seasonal Coronaviruses (229E, HKU1, NL63, and OC43).*

**Table 4: Outcome, health care capacity and immunization coverage indicators by surveillance period, Saskatchewan, November 05 – December 02, 2023[¥]**

| 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] | Proportion of population with COVID-19 vaccine administered[4] | Proportion of population immunized for Influenza vaccine[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nov 26- Dec 02 | 73 | 5 | 140 | 24 | 9 | 1 | 8.6% | 0 | 1 | 16.1% | 21.2% |
| Nov 19 - 25 | 101 | 6 | 131 | 14 | 12 | 4 | 8.3% | 3 | 4 | 15.5% | 20.1% |
| Nov 12 – 18 | 128 | 9 | 138 | 21 | 7 | 1 | 8.0% | 3 | 2 | 14.7% | 18.9% |
| Nov 05 – 11 | 152 | 16 | 142 | 18 | 3 | 0 | 7.9% | 3 | 3 | 13.5% | 17.4% |

*[¥]Additional information on hospital admission stratified by respiratory organism and age group is provided below in **Figure 3** and **4** respectively. Viral infection may not be the main reason for the admission.*

**Cases by respiratory organisms across the age groups**

- From November 19 to December 02, 2023, there were 514 respiratory illness cases hospitalized with lab-positive COVID-19 (174), influenza (271), RSV (21), other respiratory illnesses (27), and co-infected cases (21). The COVID-19 lab positives were among the age groups of 0-19 (11), 20-59 (44) and ≥60 (119). The Influenza lab positives were among the age groups of 0-19 (69), 20-59 (95) and ≥60 (107). The RSV lab positives cases were among the age groups of 0-19 (15), 20-59 (2) and ≥60 (4). The other respiratory lab positives were in the age group of 0-19 (10), 20-59 (10), and ≥60 (7). The Co-infection lab positives were in the age groups of 0-19 (11) and 20-59 (7) and ≥60 (3).
- From November 19 to December 02, 2023 there were 61 respiratory illness cases admitted to the ICU with lab-positive Covid19 (11), influenza (38), RSV (5), other respiratory illnesses (3), and co-infected cases (4).The COVID-19 lab positives were among the age groups of 0-19 (2), 20-59 (1) and ≥60 (8).The Influenza lab positives were among the age groups of 0-19 (2), 20-59 (25) and ≥60 (11). The RSV lab positives cases were among the age group of 0-19 (5). The other respiratory lab positives were in the age groups of 0-19 (1) and 20-59 (2). The Co-infection lab positives were in the age group 0-19 (3) and 20-59 (1).

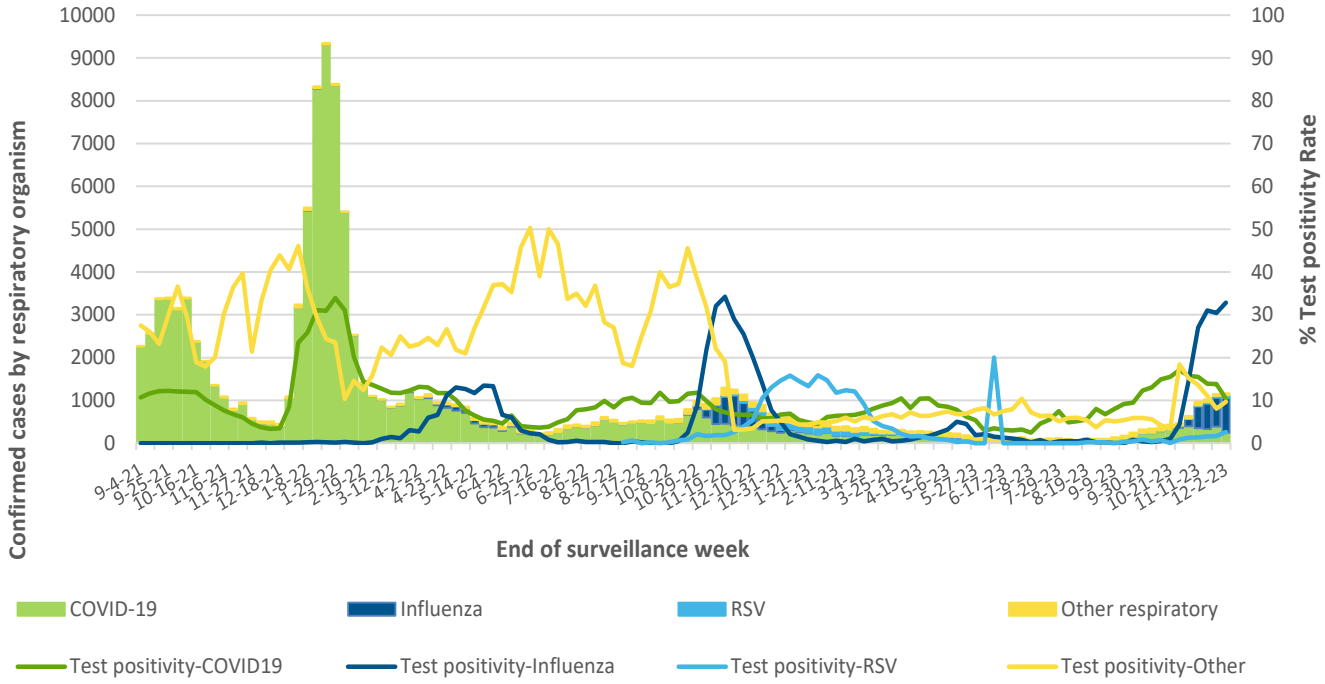
***Notes:** [1] The delay in date tested result affects the total number of Influenza (A/B), RSV and other respiratory virus admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. The counts for influenza, RSV, and other respiratory virus-associated hospital and ICU admissions refer to individuals with laboratory or point of care 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 respiratory 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]The fall immunization campaign for COVID-19 and influenza started on October 10, 2023. The first doses of COVID-19 and influenza vaccines arrived in SK the week of September 18. Coverage is based on doses administered on or after September 18, 2023.*

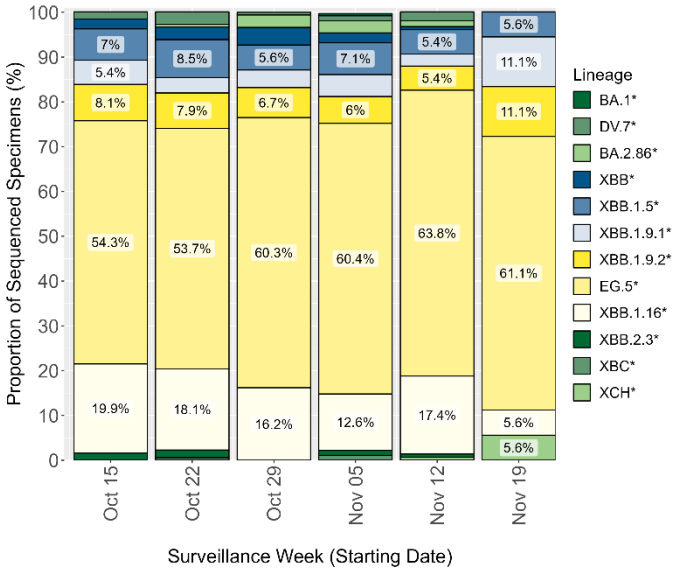
**Figure 1: Epidemic curve, respiratory illness by organism and test positivity, August 29, 2021 – December 02, 2023**




*Data sources: Panorama IOM extracted on December 4, 2023 (COVID-19 cases)*
*Respiratory Virus Detections Surveillance System (influenza and other respiratory) (RRPL extracted December 4, 2023)*
*As of September 4, 2022, COVID-19 cases include new and reinfections.*
*For the two weeks of November 19 to December 2, 2023, there were:*

- *632 COVID-19 cases (77 were 0 to 19 years; 240 were 20 to 59 years; and 315 were 60 years and older).*
- *1,490 influenza lab detections*
- *93 RSV lab detections*
- *102 other viral lab detections (parainfluenza, adenovirus, human metapneumovirus, rhinovirus, coronavirus)*

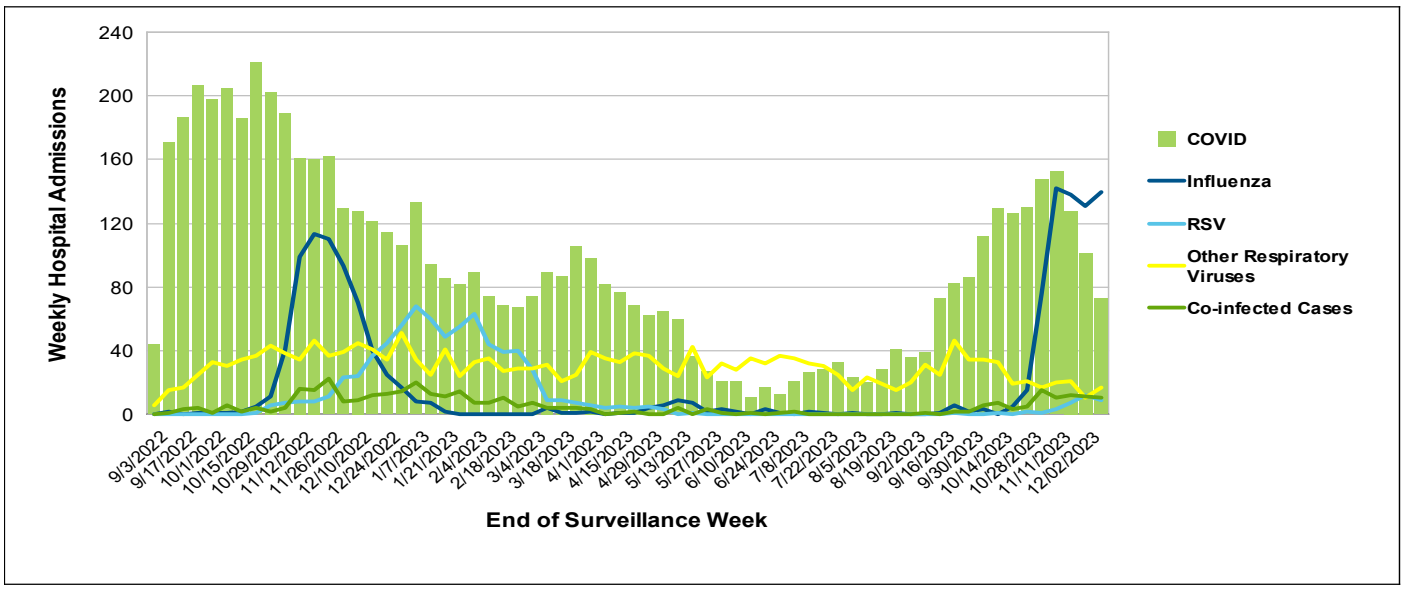
**Figure 2: Percentage of SARS-CoV-2 variants by surveillance week starting*, October 01 – November 19, 2023**

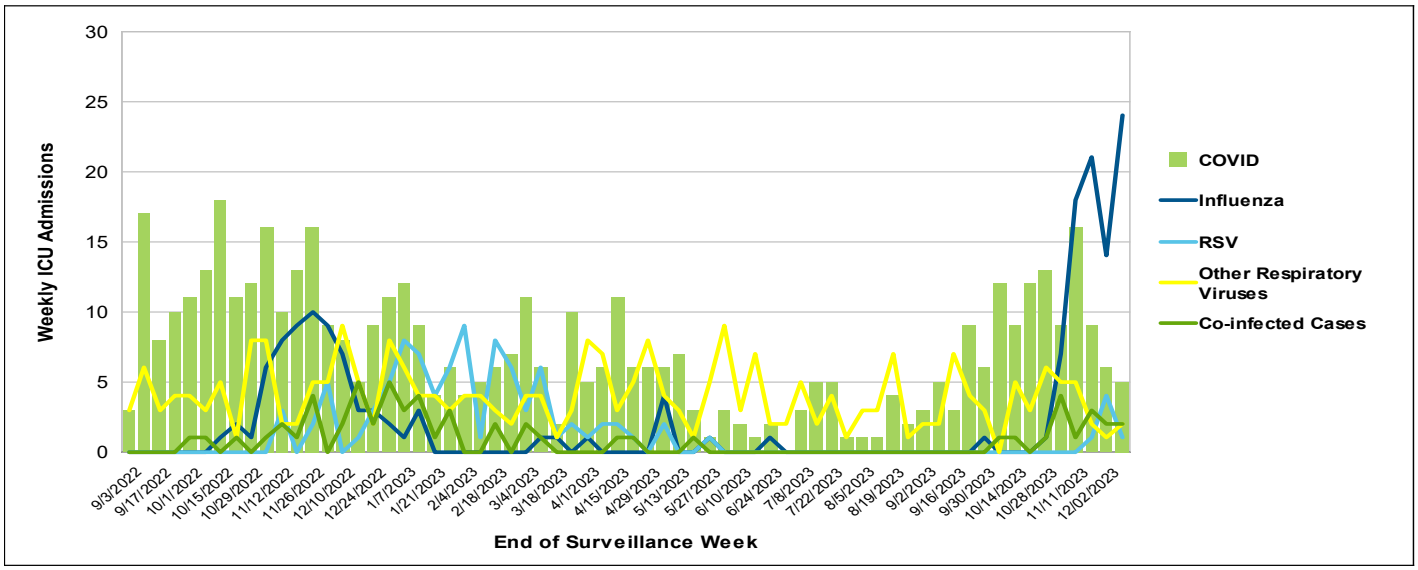



| Lineage | Oct 15 | Oct 22 | Oct 29 | Nov 05 | Nov 12 | Nov 19 |
|---|---|---|---|---|---|---|
| BA.1* | 0 | 0 | 0 | 1 | 0 | 0 |
| DV.7* | 3 | 5 | 1 | 2 | 3 | 0 |
| BA.2.86* | 0 | 1 | 5 | 5 | 2 | 0 |
| XBB* | 4 | 5 | 7 | 4 | 1 | 0 |
| XBB.1.5* | 13 | 15 | 10 | 13 | 8 | 1 |
| XBB.1.9.1* | 10 | 6 | 7 | 9 | 4 | 2 |
| XBB.1.9.2* | 15 | 14 | 12 | 11 | 8 | 2 |
| EG.5* | 101 | 95 | 108 | 110 | 95 | 11 |
| XBB.1.16* | 37 | 32 | 29 | 23 | 26 | 1 |
| XBB.2.3* | 3 | 3 | 0 | 2 | 1 | 0 |
| XBC* | 0 | 1 | 0 | 2 | 0 | 0 |
| XCH* | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 186 | 177 | 179 | 182 | 149 | 18 |

**Data Source:** *Roy Romanow Provincial Laboratory, Saskatchewan Health Authority, as of December 6, 2023*
The most recent VOC data available from the Provincial database is as of surveillance week ending November 19, 2023
* Surveillance weeks correspond to specimen collection date.

**Figure 3: The number of COVID-19, influenza, RSV, other respiratory viruses, and co-infected cases admitted to hospital and ICU by week of the admission, September 02, 2022 – December 02, 2023***



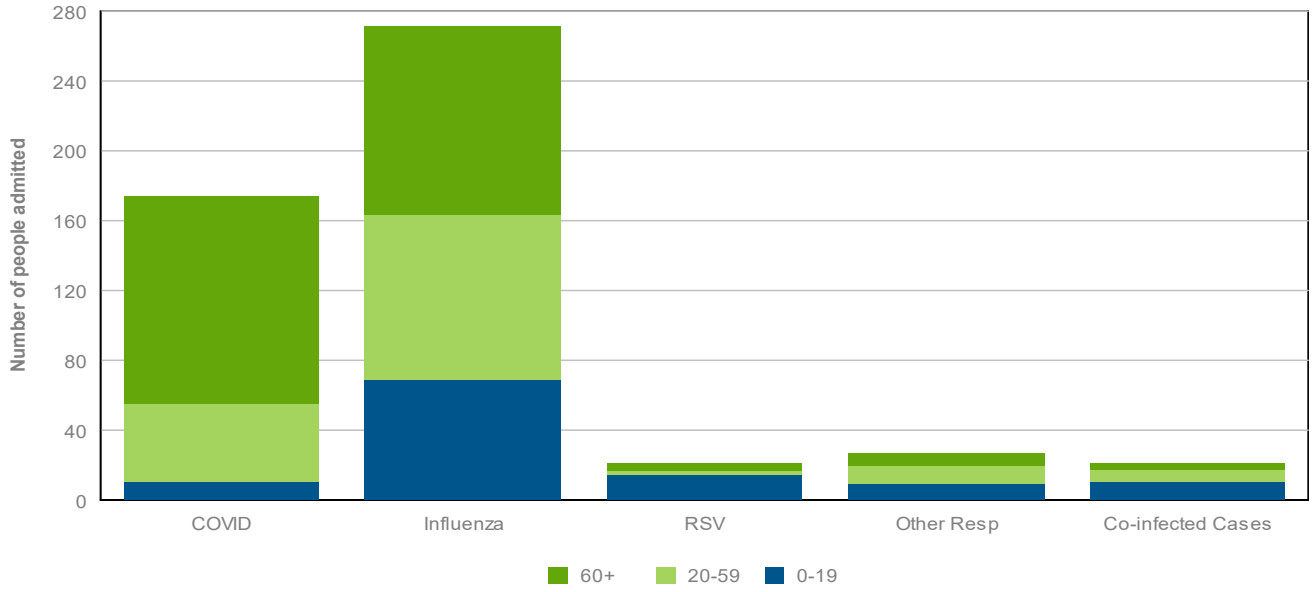




***Data source:*** *Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RRPL, Panorama); data extracted on December 05, 2023.*

** Viral infection may not be the main reason for the admission*

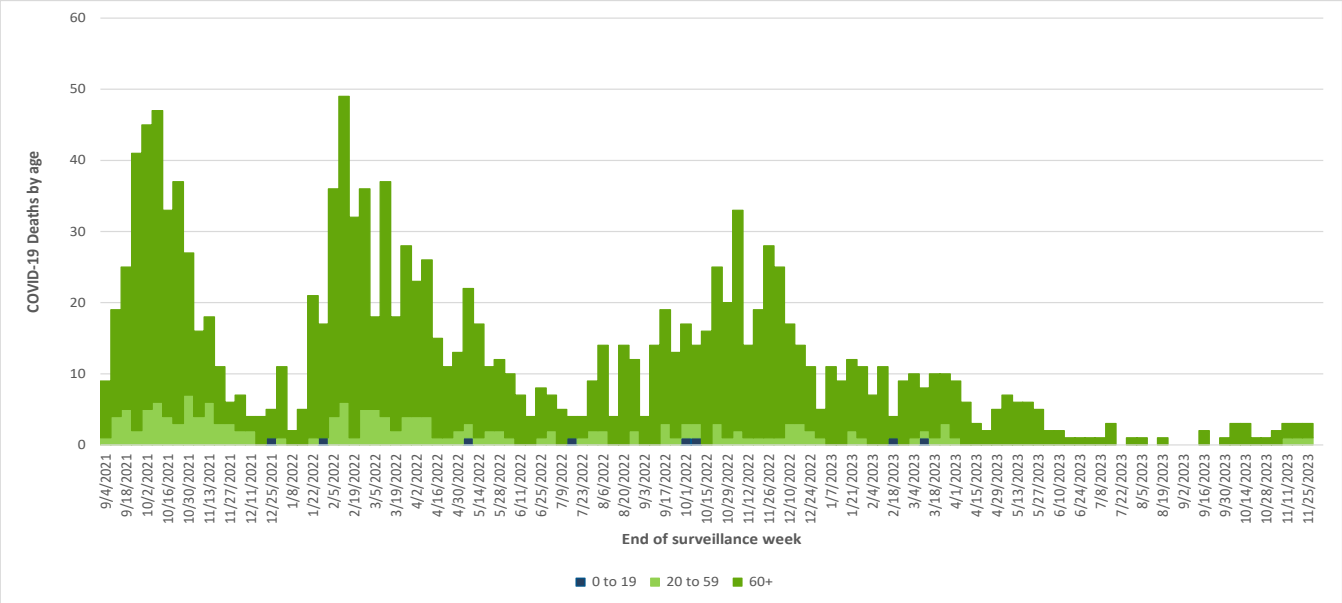
***Note:*** *The delay in date tested result affects the total number of COVID 19 admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. Includes lab or point of care positive for influenza, RSV, other respiratory viruses, four days 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 admission. 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 4: The number of COVID-19, influenza, RSV, other respiratory viruses, and co-infected cases admitted to hospital by age group, November 19 – December 02, 2023***




***Data source:*** *Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RRPL, Panorama); data extracted on December 05, 2023.*
** Viral infection may not be the main reason for the admission*
***Note:*** *The delay in date tested result 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 or point of care 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 admission. 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 5: COVID-19 deaths by age group and week, September 4, 2021 – December 02, 2023***




Source: Panorama December 4, 2023
*In the past four weeks, November 19 to December 2, there have been three deaths in COVD-19 cases, one in 20-to-59-year age group and two in the 60 years or older group.*
** Total COVID-19 deaths from March 2020 to date; n=2,027*

**Table 5: Community Respiratory Infection Surveillance Program Indicators by zone, November 26 – December 02, 2023**

| Location | Test positivity – SARS-CoV-2 [1] (positive lab tests) | Test positivity – Influenza (positive lab tests) | Test positivity – RSV (positive lab tests) | RLI* visits to EDs per 1,000[2] | RLI* 811 calls per 1,000[3] | School illness absenteeism[4] | Wastewater indicator† | Proportion of population with COVID-19 vaccine administered[5] | | Proportion of population with Influenza vaccine adminstered[5] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | <65 Yrs | ≥65 Yrs | <65 Yrs | ≥65 Yrs |
| **Far North West** (Meadow Lake & area) | 10.3% (6) | 33.3% (37) | 0.0% (0) | No data | No data | 8.1% | Medium | 4.2% | 31.2% | 8.4% | 42.7% |
| **Far North Central** | 0.0% (0) | 100% (4) | 0.0% (0) | No data | No data | 2.3% | No Data | 2.4% | 13.2% | 7.4% | 26.4% |
| **Far North East** (La Ronge & area) | 2.0% (1) | 59.7% (40) | 0.0% (0) | No data | No data | 12.4% | Low | 5.9% | 39.3% | 11.9% | 47.1% |
| **North West** ( Lloydminster & area/North Battleford) | 11.8% (19) | 19.0% (53) | 4.9% (12) | 43.1 | 101.4 | 17.3% | Medium | 5.2% | 39.8% | 9.1% | 47.3% |
| **North Central** (Prince Albert & area) | 8.0% (13) | 28.7% (37) | 0.0% (0) | 23.8 | No data | 13.0% | No Data | 8.5% | 45.5% | 12.9% | 53.0% |
| **North East** (Melfort & area) | 8.3% (3) | 28.7% (25) | 0.0% (0) | 85.5 | 125.5 | 14.8% | No Data | 9.6% | 44.3% | 14.1% | 52.0% |
| **Saskatoon** | 8.1% (56) | 22.1% (67) | 1.0% (3) | 16.5 | 120.3 | 13.8% | Medium | 12.5% | 49.9% | 16.9% | 56.5% |
| **Central West** (Kindersley & area) | 13.0% (6) | 31.1% (14) | 4.9% (2) | 88.8 | No data | 13.8% | No Data | 7.6% | 48.2% | 13.8% | 57.2% |
| **Central East** (Yorkton/Melville & area) | 11.4% (33) | 35.5% (81) | 1.8% (3) | 40.0 | No data | 15.5% | Medium | 7.4% | 43.8% | 12.1% | 51.9% |
| **Regina** | 10.1% (44) | 37.2% (241) | 4.3% (28) | 40.7 | 149.6 | 18.4% | Medium | 12.3% | 52.9% | 16.0% | 59.1% |
| **South West** (Swift Current/ Maple Creek & area) | 12.3% (8) | 17.1% (13) | 5.6% (4) | 34.5 | 167.7 | 12.4% | Medium | 8.3% | 42.8% | 13.1% | 50.5% |
| **South Central** (Moose Jaw &area) | 8.6% (13) | 33.3% (63) | 1.1% (2) | 6.4 | No data | 16.8% | Medium-High | 8.3% | 45.9% | 12.8% | 53.9% |
| **South East** (Weyburn/Estevan & area) | 13.5% (13) | 47.5% (67) | 0.8% (1) | 81.8 | 151.9 | 17.5% | Medium | 6.5% | 41.6% | 12.2% | 52.8% |
| **Unknown/Out of Province** | 13.0% (93) | 41.2% (73) | 3.5% (3) | No data | No data | 13.9% | - | - | - | - | - |
| **SASKATCHEWAN** | **10.4% (308)** | **32.8% (815)** | **2.6% (58)** | **33.4** | **136.9** | **15.5%** | - | **9.9%** | **46.9%** | **14.3%** | **54.5%** |

*Notes: [1]By week of lab detection; effective Oct 30, 2022, includes cases who tested positive more than once >= 90 days apart; ^ [1]For COVID-19 test positivity, all tests reported were performed within the province. *Respiratory-like illness; [2] Based on reports from ten of thirteen reporting areas. [3] 811 data available at the six Integrated Service Areas geographical level; [4] Unknown represents the number of students who were absent from the class due to illness with no known geography for the school. School absenteeism is the proportion of scheduled children who were absent from the class due to illness. The type of illness is not specified. †SK overall estimate is currently unavailable as this metric tends to overestimate and underestimate WW level due to varied patterns across regions, which is difficult to synchronize with the population size of each region.; [5]The fall immunization campaign for COVID-19 and influenza started on October 10, 2023. The first doses of COVID-19 and influenza vaccines arrived in SK the week of September 18. Coverage is based on doses administered on or after September 18, 2023*

# 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 Roy Romanow Provincial Laboratory Wastewater Testing Team. Viral load for each zone was used to determine risk levels (Low, Medium, Medium-High, and High) based on viral copies per unit volume and weekly change percentage. Locations sampled include Saskatoon, Regina, Moose Jaw, North Battleford, Swift Current, Yorkton, Weyburn, Estevan, Meadow Lake, Melville, Town of Battleford, La Ronge, Unity, Assiniboia, Maple Creek, Lumsden, Watrous, Île-à-la-Crosse, Birch Hills, Southey, and Pasqua First Nation.

4. Respiratory-Like Illness (RLI) cases in Emergency Departments (EDs) across different regions of Saskatchewan are recorded using two primary systems: the Sunrise Clinical Manager (SCM) and the local public health offices (LPHO).

   The SCM ED data encompasses information from eight zones, namely Central East, North Central, North West, Regina, Saskatoon, South Central, South West, and South East (data received from both systems). On the other hand, the LPHO ED data covers three zones: North East, Central West, and South East (data received from both systems). It's important to note that the Far North West, Far North Central, and Far North East regions do not currently participate in RLI Surveillance for ED.

   Digital Health Analytics (DHA) compiles and summarizes SCM data over a 7-day monitoring period, spanning from Sunday to Saturday. In contrast, the LPHO aggregates raw data received from ED's on the prescribed data collection form. The data is monitored for a minimum of 24 hours, on at least one day each week. The specific timing of this monitoring may vary depending on the ED's schedule.

5. 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.

6. 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

7. 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.

8. 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 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.

9. 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 linages 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.

   VOC lineages BA.1, BA.2, BA.2.75, CH.1.1, BA.5, BQ.1, BQ.1.1, XBB, XBB.1.5, XBB.1.9.1, XBB.1.9.2, EG5, XBB.1.16, XBB.2.3, and XBF are all classified under the WHO label of "Omicron". Lineages that are not explicitly indicated in the analysis are aggregated under their corresponding parent lineage. Percentages are shown when a lineage or variant group constitutes 5% or more of total specimens evaluated for a given surveillance week.

10. 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.

11. 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.

12. 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.

13. 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.

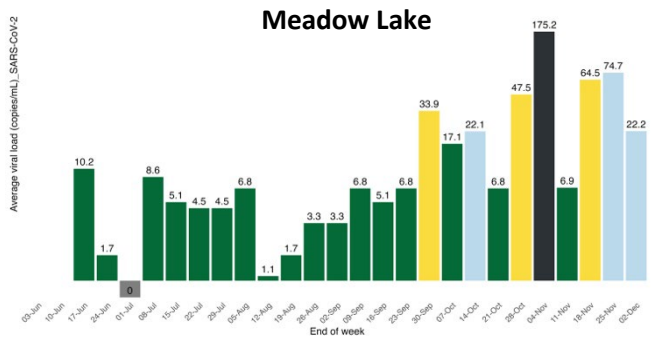
14. Staffed Inpatient beds: Weekly average COVID Occupancy is a 7-Day average percentage of acute inpatient beds staffed and in operation COVID positive patients occupy. The full calculation of this metric is: Average COVID occupance=$\sum$(8am covid census) ÷ $\sum$(8am beds staffed and in operation) × 100%. Where "bed staffed and in operation = "Planned beds" + "Surge Beds" - "Closed" and $\sum$(…) 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).

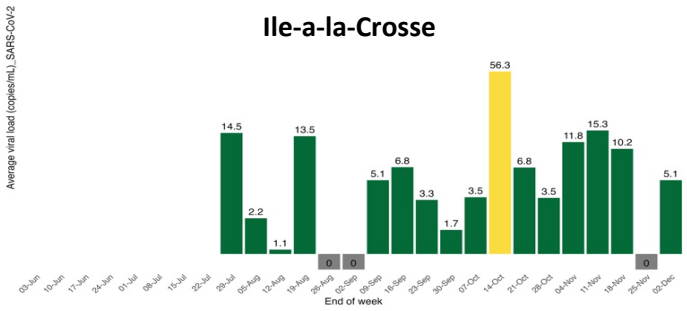
15. Rate of COVID-19 hospitalization (ICU or Death) were calculated by summing the daily number of hospitalizations (ICUs or Deaths) for the period by vaccine status (numerator) divided by the mid period population by respective vaccine status (denominator), multiplied by 100,000. This estimate is further 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. Relative risk estimates methodology is described elsewhere. See Namrata Bains. *Standardization of Rates* (March 2009).

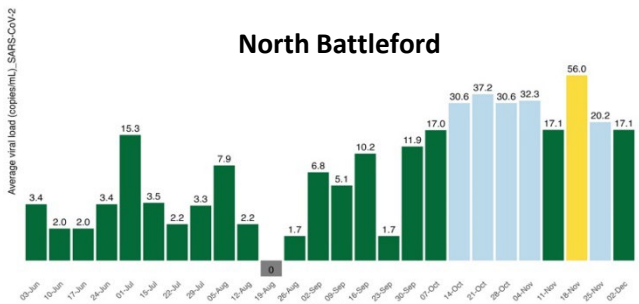


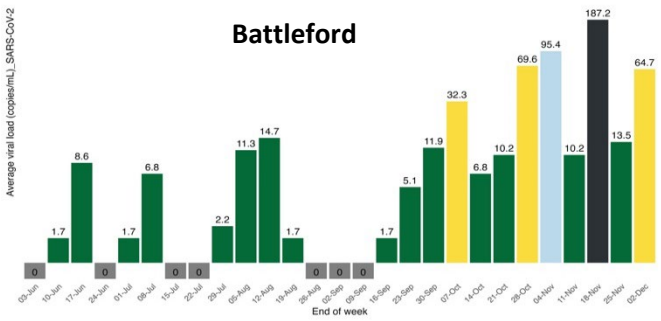
Saskatchewan

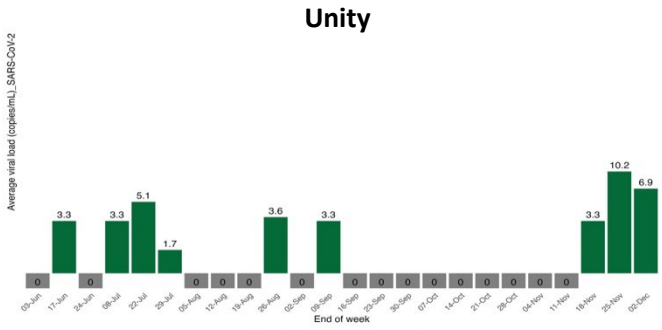
## Appendix: Wastewater Surveillance for SARS-CoV-2 by cities, Saskatchewan

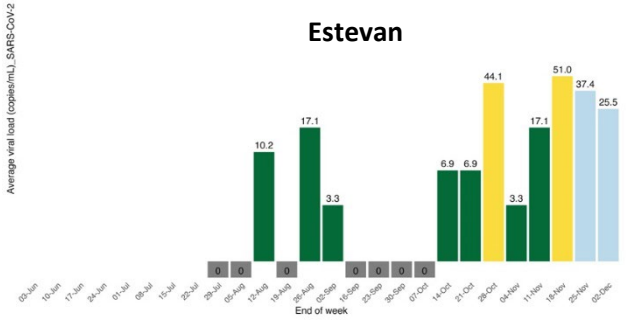


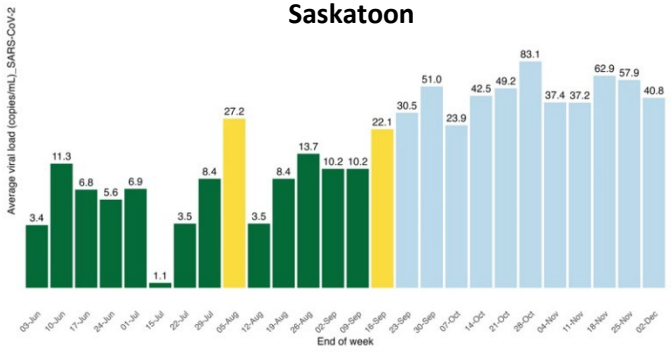



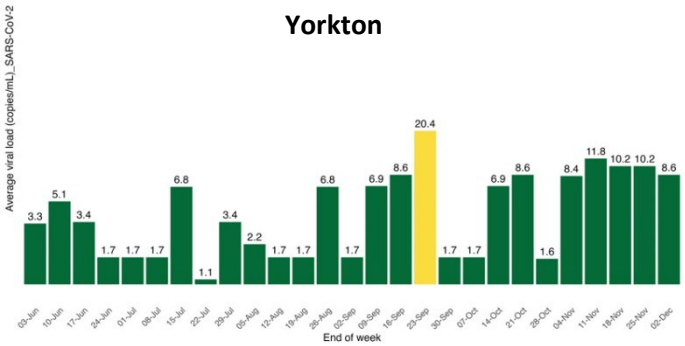



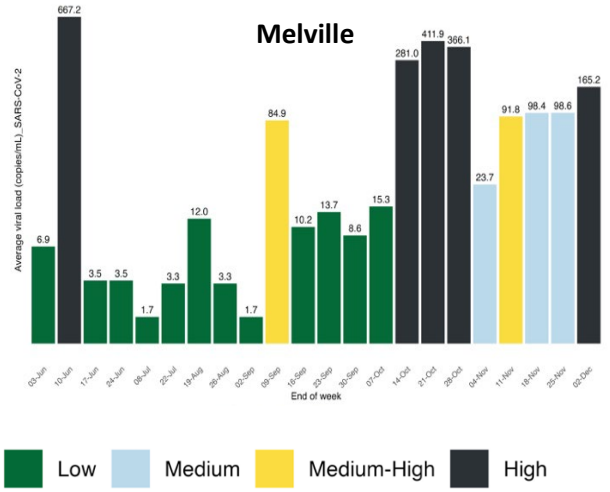



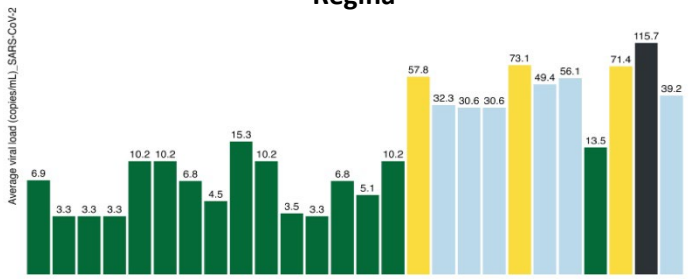



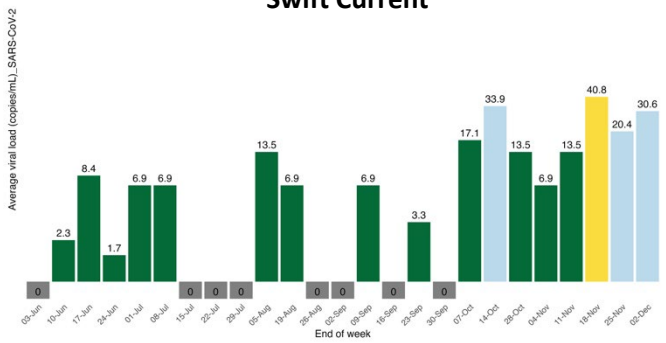

**Quantitative Interpretation**:

- Low: 0-20 copies per mL.
- Medium: 20-100 copies per mL and weekly change < 100%.
- Medium – High: 20-100 copies per mL and weekly change > 100%.
- High: > 100 copies per mL.

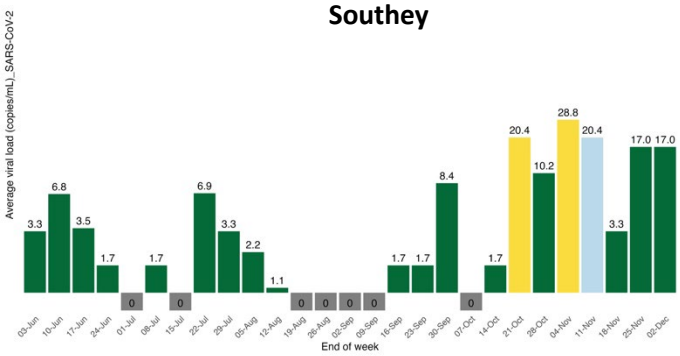
## Regina



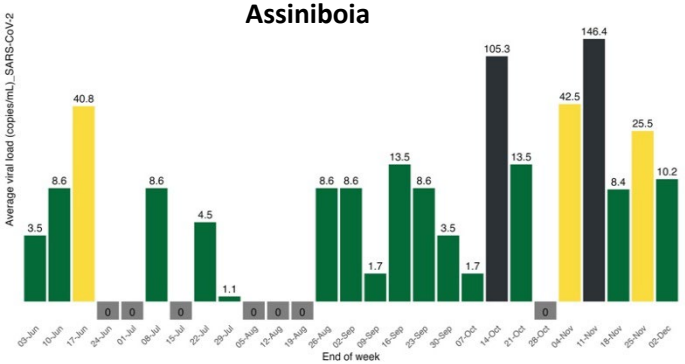

## Swift Current



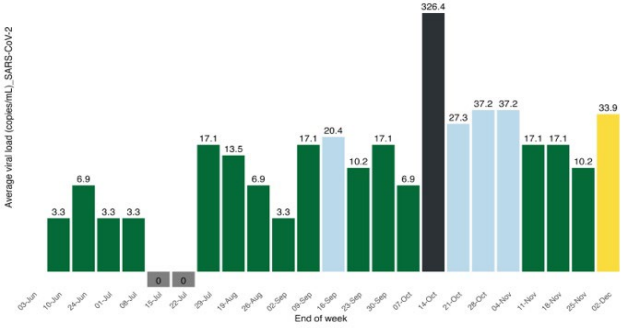

## Southey



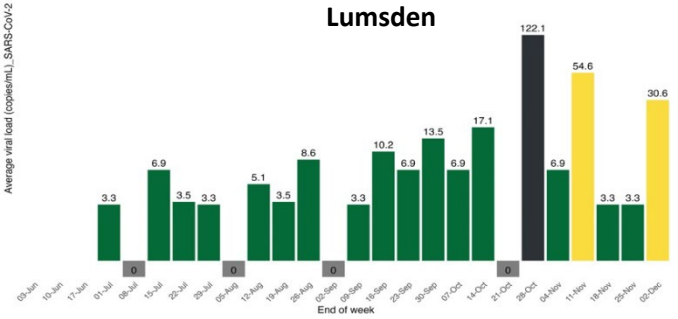

## Assiniboia



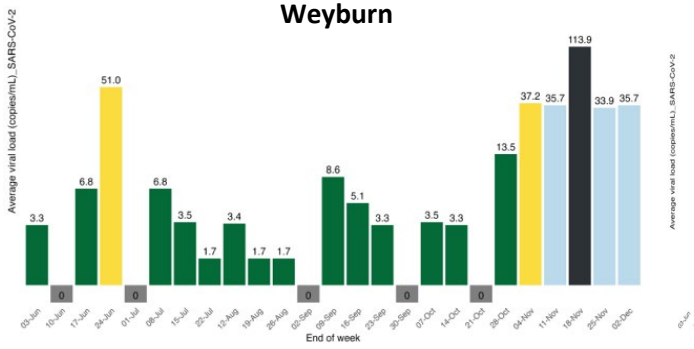

## Moose Jaw



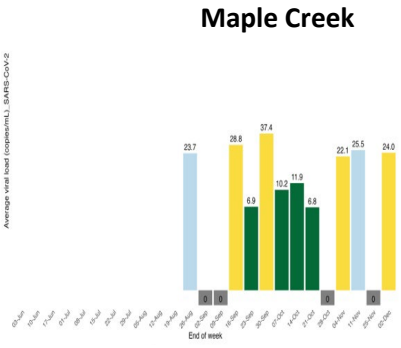

## Lumsden



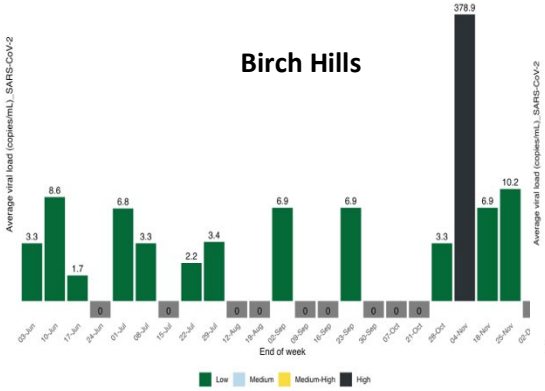

## Weyburn



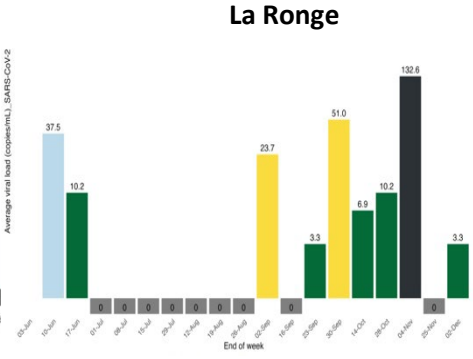

## Maple Creek




## Birch Hills




## La Ronge




**Quantitative Interpretation**:

- Low: 0-20 copies per mL.
- Medium: 20-100 copies per mL and weekly change < 100%.
- Medium – High: 20-100 copies per mL and weekly change > 100%.
- High: > 100 copies per mL.

Low Medium Medium-High High



Saskatchewan