Community Respiratory Illness Surveillance Program (CRISP) Situation Report: November 22, 2024 (Reporting Period November 3 – November 16, 2024)

COVID-19 activity has decreased, RSV activity has increased, and Influenza activity remains at low levels in the province. Less than 20% of the population are immunized for COVID-19 (11.2%) and/or Influenza (16.3%) viruses.

Viral Indicators:

- The number of COVID-19 positive tests and test positivity rates have decreased from 366 tests (20.4%) to 203 tests (12.5%) in the past four weeks. The majority of COVID-19 cases were 65+ years.
- The percentage of influenza test positivity increased from 0.4% in the week of November 3 to 0.6% in the week ending November 16, 2024. RSV activity has increased; most cases were aged 0-4 years.
- From September 29 to November 9, KP.3.1.1 and its sublineages (denoted as KP.3.1.1*) were the most commonly detected variants (80.9%), followed by KP.3* (11.0%) and XEC (5.2%).
- In most areas with sampling programs, wastewater data indicate that COVID-19 levels shows medium to high in viral activity.

Community indicators:

- There was a decrease in school illness absenteeism from 10.3% to 9.4% between October 27 and November 16, 2024.
- Respiratory-like-Illness (RLI) calls to the HealthLine shows fluctuating call volumes, with an increase from 72.7 to 86.0 RLI calls per 1000 calls from November 3 to November 16, 2024.

Outbreaks:

- Eight (8) respiratory virus outbreaks were reported during this reporting period, of which majority (7) were due to COVID-19 virus.

Severe Outcomes (Hospitalizations/ICU admissions/Deaths):

- The total number of hospital admissions for respiratory viruses decreased by 24.4% from 213 cases for the previous two weeks to 161 for the most recent two weeks.
- No influenza-associated deaths were reported during this reporting period.
- One (1) COVID-19 associated death was reported during the last two weeks.

Table 1: Viral indicators by surveillance period, October 20, 2024 – November 16, 2024

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 10 – Nov 16	203	12.5%	2	7	0.6%	0	22	2.2%	0	72	17.2%	1
Nov 3 – Nov 9	278	16.6%	5	5	0.4%	0	16	1.5%	0	78	16.7%	0
Oct 27 – Nov 2	300	18.0%	6	2	0.2%	0	2	0.2%	0	76	18.9%	0
Oct 20 – Oct 26	366	20.4%	16	7	0.5%	0	2	0.2%	0	95	18.2%	3

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

[#]*Starting with the week of Oct 22-28, 2023, 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. Samples that tested positive for more than one of the "Other" viruses are counted only once. See Technical Notes for details.*

Table 2: Lab-confirmed respiratory illness by age group, November 10 – November 16, 2024

Age group (Years)	COVID-19 case count	Influenza case count	RSV case count	'Other' virus case count[1]
0 – 4	9 (5.6%)	0	10 (47.6%)	**72 (100%)**
5-19	7 (4.3%)	3 (42.9%)	5 (23.8%)	
20 – 64	64 (39.8%)	4 (57.1%)	3 (14.3%)	
≥65	81 (50.3%)	0	3 (14.3%)	
Total	**161 (100%)**	**7 (100%)**	**21 (100%)**	**72 (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, Saskatchewan, October 20 – November 16, 2024

Report date	School illness absenteeism[1]	RLI** ED visits per 1,000	RLI** 811 calls per 1,000	SARS-CoV-2 Wastewater indicator[2]	Sentinel provider test positivity[3]	Most commonly detected virus: Sentinel providers[3]
Nov 10 – Nov 16	9.4%	No data	86.0	Low (n= 0), Medium (n= 4), Medium-high (n= 3), High (n= 1)	58% (n=11)	RSV
Nov 3 – Nov 9	9.9%	No data	72.7	Low (n= 1), Medium (n= 8), Medium-high (n= 0), High (n= 1)	67% (n=6)	Rhinovirus
Oct 27 – Nov 2	10.3%	No data	77.3	Low (n= 2), Medium (n= 4), Medium-high (n= 4), High (n= 0)	47% (n=8)	Rhinovirus
Oct 20 – Oct 26	9.3%	No data	78.1	Low (n= 1), Medium (n= 7), Medium-high (n= 1), High (n= 1)	47% (n=8)	Rhinovirus

*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]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. [3]Most commonly detected virus in Sentinel providers: COVID-19, Influenza A/B, Respiratory Syncytial Virus (RSV), Adenovirus, Metapneumovirus, Rhinovirus, Parainfluenza viruses (PIV) 1-4, and seasonal Coronaviruses (229E, HKU1, NL63, and OC43).*

Table 4: Outcome, health care capacity, and immunization coverage indicators by surveillance period, Saskatchewan, October 20 – November 16, 2024[¥]

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	Deaths – Influenza[3]	Proportion of population with COVID-19 vaccine administered[4]	Proportion of population immunized for Influenza vaccine[4]
Nov 10 – Nov 16	45	3	0	0	5	1	5.1%	1	0	11.2%	16.3%
Nov 3 – Nov 9	84	9	0	0	6	0	5.8%	0	0	10.3%	15.0%
Oct 27 – Nov 2	100	7	1	0	1	0	5.6%	2	0	8.9%	12.8%
Oct 20 – Oct 26	88	4	2	0	0	0	5.5%	2	0	6.5%	9.6%

*[¥]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 October 20 to November 16, 2024, there were 374 respiratory illness cases hospitalized with lab-positive COVID-19 (317), influenza (3), RSV (12), other respiratory illnesses (37), and co-infected cases (5). The COVID-19 lab positives were among the age groups of 0-19 (23), 20-59 (46) and ≥60 (248). The Influenza lab positives were among the ≥60 (3). The RSV lab positives were in the age group of 0-19 (11) and ≥60 (1). The other respiratory lab positives were in the age group of 0-19 (27), 20-59 (3), and ≥60 (7). The Co-infection lab positives were in the age groups of 0-19 (4) and ≥60 (1).
- From October 20 to November 16, 2024, there were 30 respiratory illness cases admitted to the ICU with lab-positive Covid-19 (23), RSV (1), other respiratory illnesses (5) and co-infected cases (1). The COVID-19 lab positives were among the age groups 0-19 (3), 20-59 (2) and ≥60 (18). The RSV lab positive was in the age group of 0-19 (1). The other respiratory lab positives were in the age groups of 0-19 (2), 20-59 (2) and ≥60 (1). The single co-infected lab positive was in the age group of 0-19.

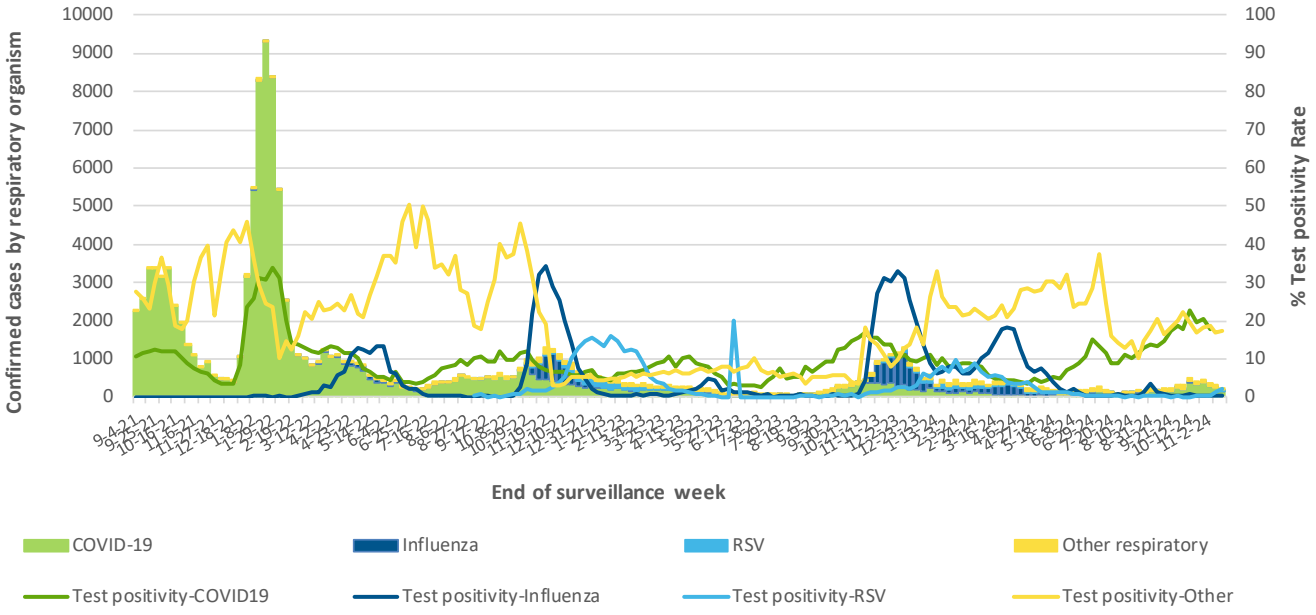
- ***Notes:*** *[1] The delay in date tested result affects the total number of Influenza (A/B), RSV and other respiratory virus admissions for a particular day. This lag in data impacts mostly the last couple of days from the day the report is updated. The counts for influenza, RSV, and other respiratory 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 15, 2024. The first doses of COVID-19 vaccines arrived the week of September 30 and the first influenza vaccines arrived in SK the week of September 23. Coverage is based on Influenza vaccine doses administered on or after September 23, 2024, and COVID-19 vaccines administered on or after September 30, 2024.

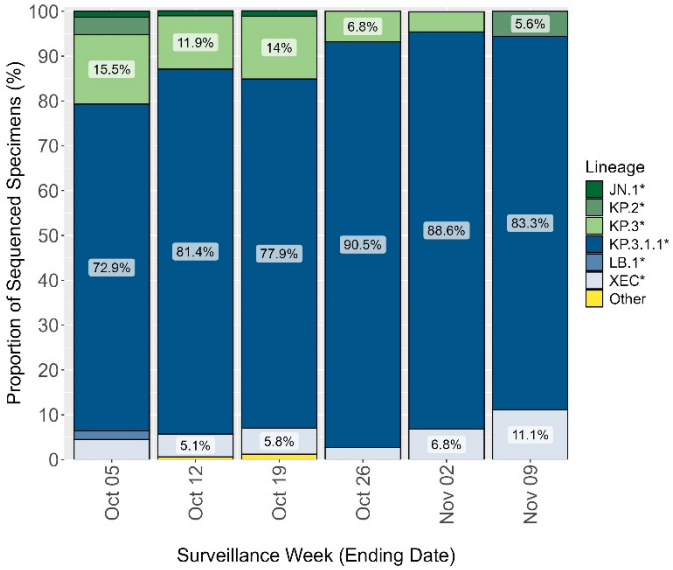
Figure 1: Epidemic curve, respiratory illness by organism and test positivity, August 29, 2021–November 16, 2024



Data sources: Panorama IOM extracted on November 19, 2024 (COVID-19 cases)
Respiratory Virus Detections Surveillance System (influenza and other respiratory) (RRPL extracted November 19, 2024)
As of November 4, 2022, COVID-19 cases include new and reinfections.
For the two weeks of November 3 to November 16, 2024, there were:

- *381 COVID-19 cases (43 were 0 to 19 years; 114 were 20 to 59 years; and 224 were 60 years and older)*
- *12 influenza lab detections*
- *38 RSV detections*
- *150 other viral lab detections (parainfluenza, adenovirus, human metapneumovirus, rhinovirus, coronavirus)*

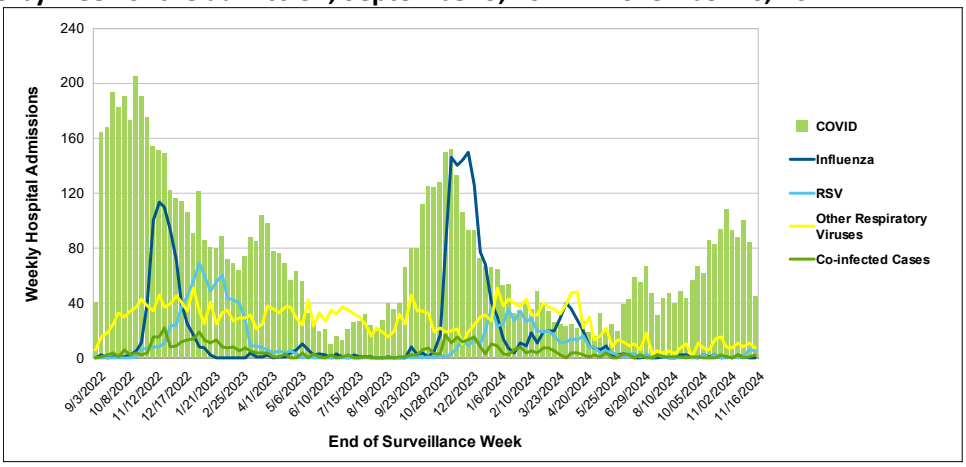
Figure 2: Percentage of SARS-CoV-2 variants, September 29 – November 9, 2024¥*

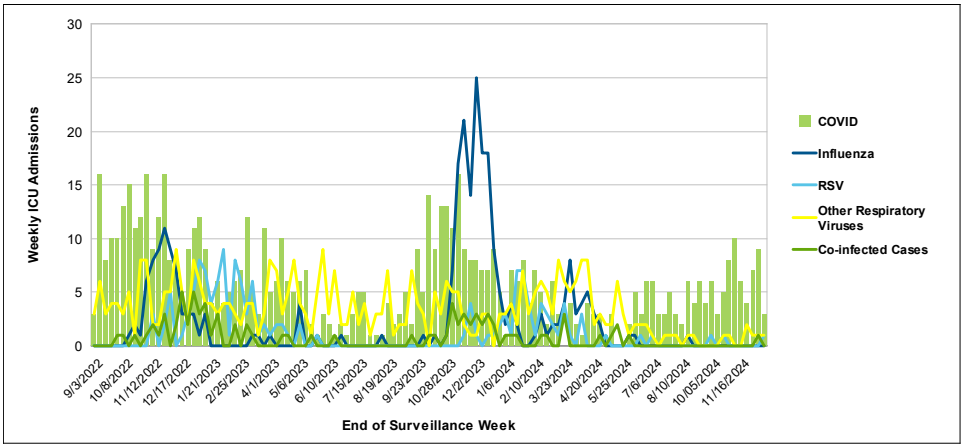


Lineage	Oct 05	Oct 12	Oct 19	Oct 26	Nov 02	Nov 09
JN.1*	2	2	1	0	0	0
KP.2*	6	0	0	0	0	1
KP.3*	24	21	12	5	4	0
KP.3.1.1*	113	144	67	67	78	15
LB.1*	3	0	0	0	0	0
XEC*	7	9	5	2	6	2
Other	0	1	1	0	0	0
Total	155	177	86	74	88	18

Data Source: *Roy Romanow Provincial Laboratory, Saskatchewan Health Authority, as of November 19, 2024*
¥ Surveillance weeks correspond to specimen collection date.
** Parent lineage reported also includes all sublineages derived from this parent lineage.*
•"Other" represents non-VOC variant groups and their sublineages.

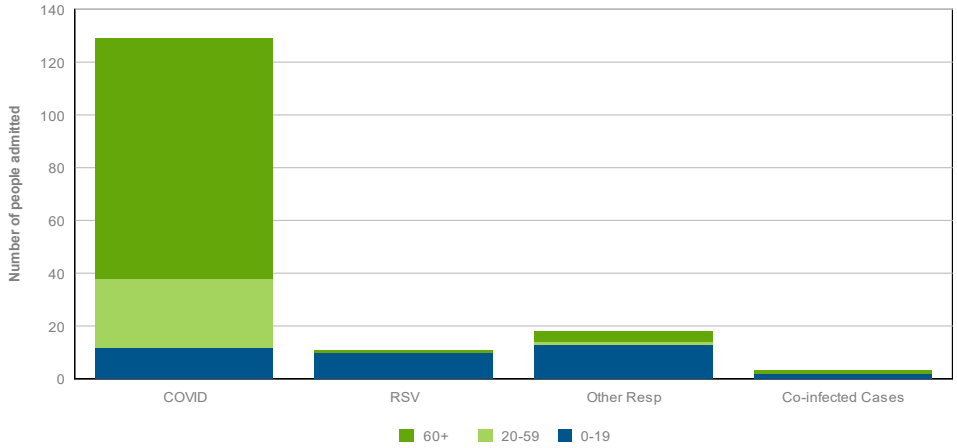
Figure 3: The number of COVID-19, influenza, RSV, other respiratory viruses, and co-infected cases admitted to hospital and ICU by week of the admission, September 3, 2022 – November 16, 2024*





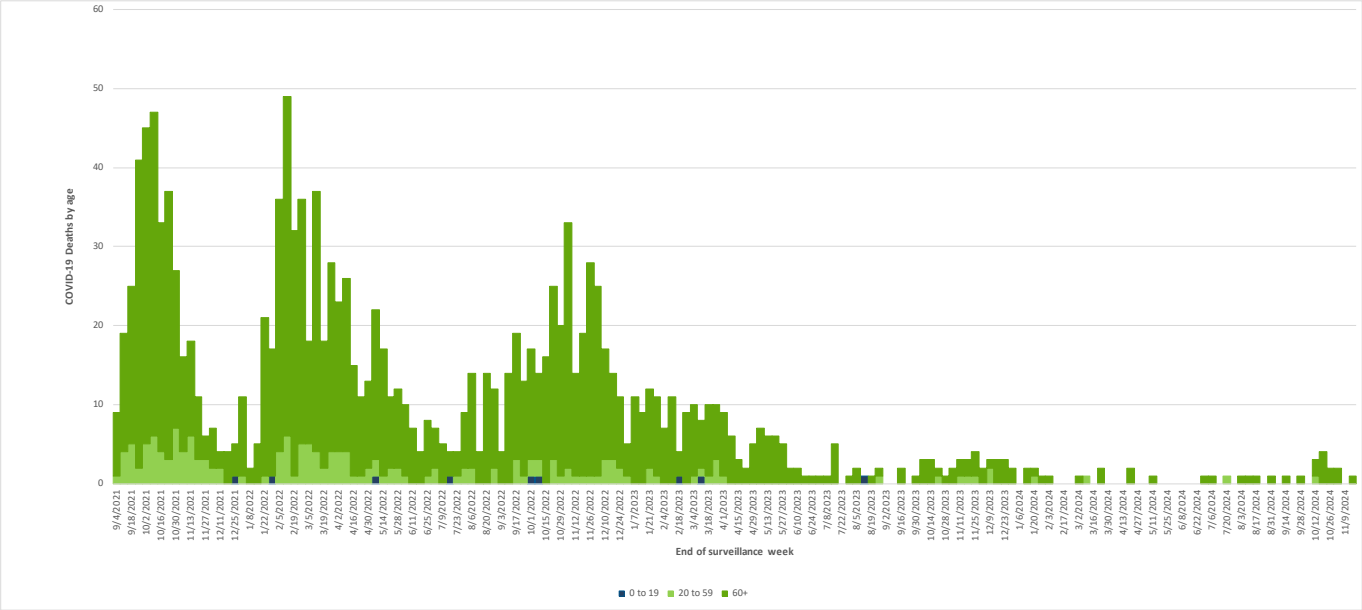
Data source: *Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RRPL, Panorama); data extracted on Nov 19, 2024* Viral infection may not be the main reason for the admission.*
Note: *The delay in date tested result affects 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 3 - November 16, 2024



Data source: Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RRPL, Panorama); data extracted on Nov 19, 2024 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 – November 16, 2024*



Source: Panorama November 19, 2024
In the past two weeks, November 3 to November 16, 2024, one death was reported among COVID-19 cases.
**Total COVID-19 deaths from March 2020 to date; n=2,083*

Table 5: Community Respiratory Infection Surveillance Program Indicators by zone, November 10 - November 16, 2024

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)	13.6% (8)	0.0% (0)	0.0% (0)	No data	-	7.0%	No data	2.3%	20.2%	5.8%	31.7%
Far North Central	0.0% (0)	0.0% (0)	0.0% (0)	No data	-	30.0%	No data	1.1%	5.2%	6.0%	14.2%
Far North East (La Ronge & area)	7.5% (3)	0.0% (0)	0.0% (0)	No data	-	9.1%	No data	3.2%	25.6%	7.6%	35.3%
North West (Lloydminster & area/North Battleford)	11.3% (6)	0.0% (0)	0.0% (0)	No data	90.9	8.9%	Medium	3.8%	30.8%	7.0%	38.9%
North Central (Prince Albert & area)	25.2% (32)	0.0% (0)	0.0% (0)	No data	-	8.1%	Medium	5.3%	33.9%	9.0%	43.0%
North East (Melfort & area)	20.1% (30)	0.0% (0)	0.0% (0)	No data	65.4	8.9%	No data	5.1%	32.5%	9.5%	41.8%
Saskatoon	24.0% (12)	0.0% (0)	2.6% (7)	No data	84.8	9.7%	High	8.0%	37.5%	12.1%	44.8%
Central West (Kindersley & area)	10.6% (105)	12.5% (3)	0.0% (0)	No data	-	7.8%	No data	5.2%	36.1%	10.9%	46.5%
Central East (Yorkton/Melville & area)	10.8% (27)	0.9% (1)	16.3% (13)	No data	-	9.9%	Medium-high	5.2%	32.8%	9.3%	42.8%
Regina	12.8% (44)	1.4% (2)	1.4% (2)	No data	88.8	10.0%	Medium	7.2%	38.1%	11.3%	47.4%
South West (Swift Current/ Maple Creek & area)	30.5% (32)	0.0% (0)	0.0% (0)	No data	90.3	6.6%	Medium-high	6.1%	33.2%	11.4%	43.3%
South Central (Moose Jaw & area)	21.2% (25)	1.3% (1)	0.0% (0)	No data	-	9.6%	No data	5.5%	34.2%	9.9%	44.4%
South East (Weyburn/Estevan & area)	31.8% (27)	0.0% (0)	0.0% (0)	No data	96.1	10.8%	No data	4.5%	30.8%	9.5%	43.8%
Unknown/Out of Province	14.0% (130)	0.0% (0)	0.0% (0)	No data	-	8.4%	No data	-	-	-	-
SASKATCHEWAN	**14.6% (481)**	**0.6% (7)**	**2.2% (22)**	**No data**	**86.0**	**9.4%**		**6.3%**	**34.8%**	**10.5%**	**44.1%**

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. [3] 811 data available at the six Integrated Service Areas geographical level; 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 15, 2024. The first doses of COVID-19 vaccines arrived the week of September 30 and the first influenza vaccines arrived in SK the week of September 23. Coverage is based on Influenza vaccine doses administered on or after September 23, 2024 and COVID-19 vaccines administered on or after September 30, 2024.

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 Microbiology section of Royal University Hospital and the Molecular Diagnostics section of 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. 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.

5. 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.

6. 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.

7. 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.

8. 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. It takes one to two weeks to complete WGS from the date a sample is collected. 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.

   Lineages BA.2.86, JN.1, XBB, XBB.1.5, XBB.1.9.1, EG.5, XBB.1.16 and XBB.2.3 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.

9. 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.

10. 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.

11. 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.

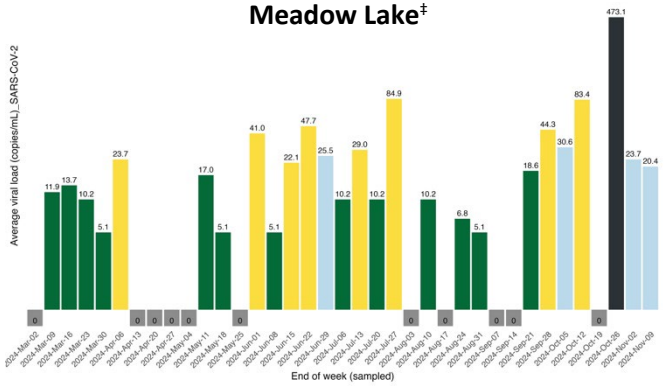
12. Influenza immunizations: UTD Influenza vaccination is the proportion of people, six months and older, having one influenza dose this season divided by the eligible population found in the Saskatchewan Covered Population, 12-Nov-2022 Ministry of Health version (2022 Version 2). Vaccination for the current influenza season officially began October 11, 2022. Some doses were administered prior to the start date.

13. 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).

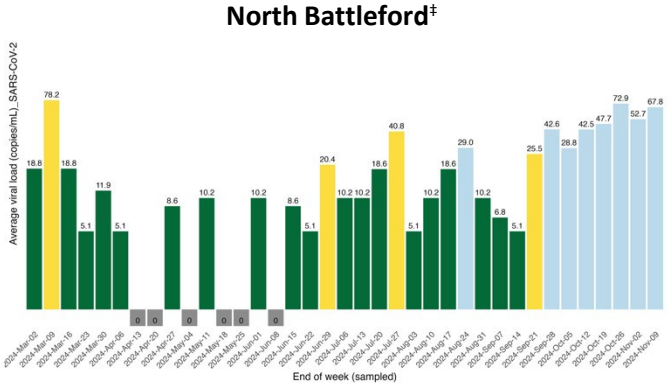
14. Rate of COVID-19 hospitalization (ICU or Death) were calculated by summing the daily number of hospitalizations (ICUs or Deaths) for the period by vaccine status (numerator) divided by the mid period population by respective vaccine status (denominator), multiplied by 100,000. This estimate is further 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).

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

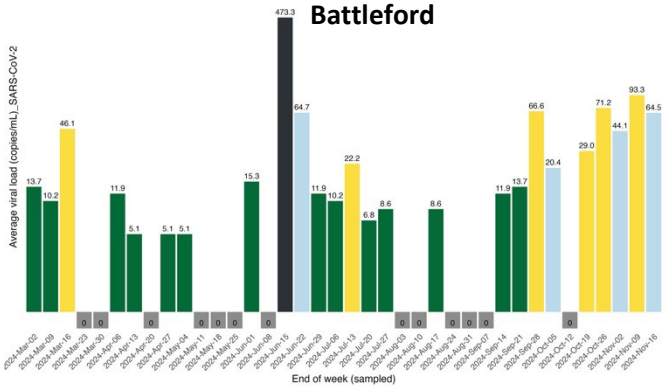
Meadow Lake‡



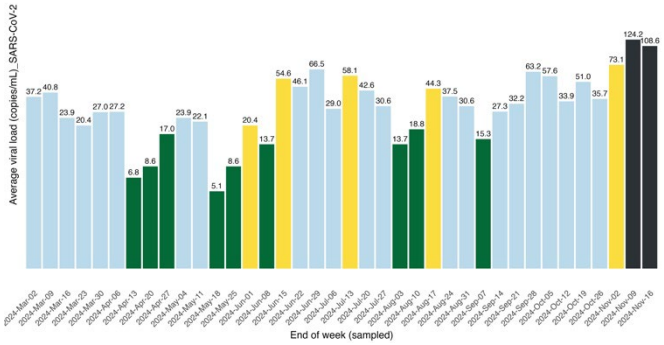
North Battleford‡



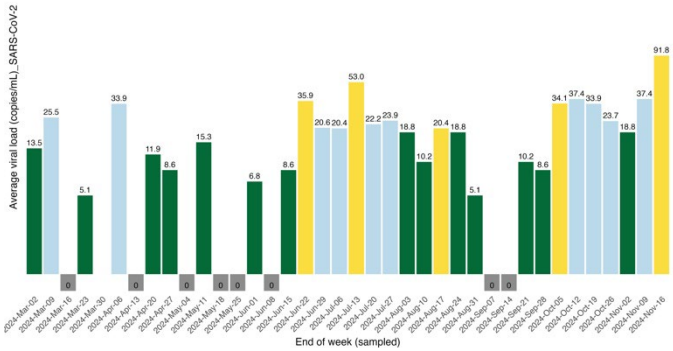
Battleford



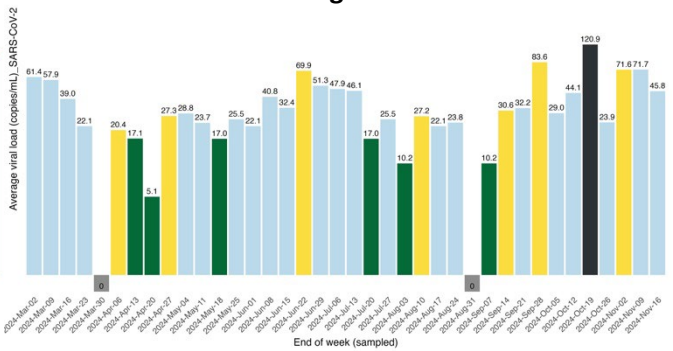
Saskatoon



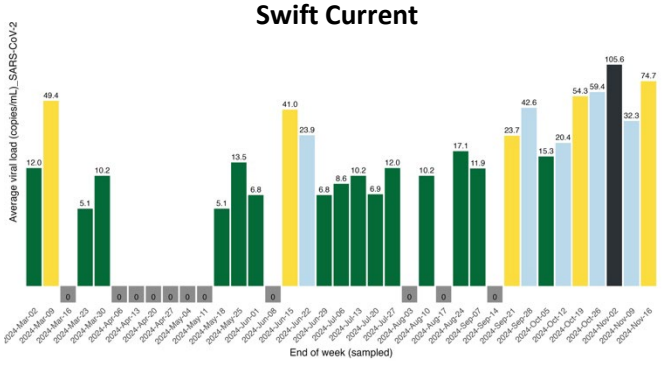
Yorkton



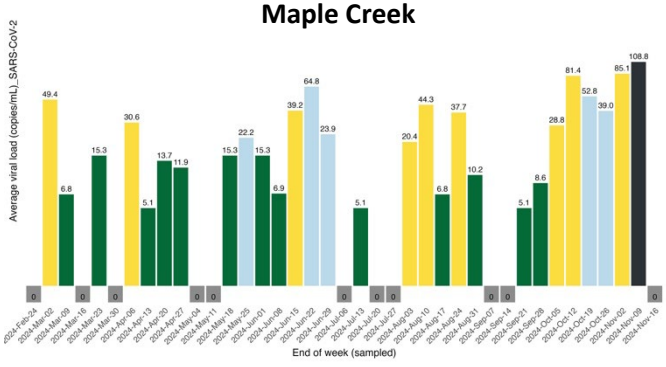
Regina



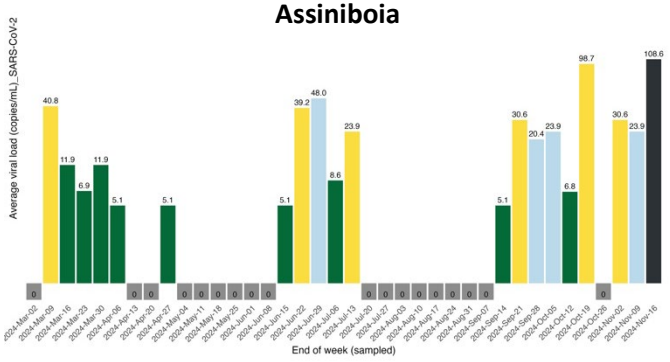
Swift Current



Maple Creek



Assiniboia



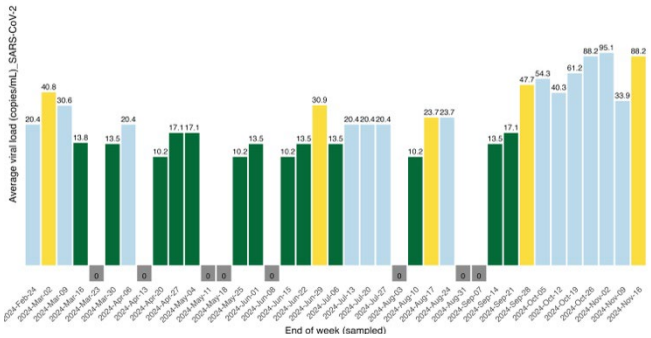
Quantitative Interpretation:

- Non-detect: 0 gene copy per mL/gene copies < LOD.
- Low: < 20 gene copies per mL.
- Medium: 20-100 gene copies per mL and weekly change < 100%.
- Medium-high: 20-100 gene copies per mL and weekly change ≥ 100%.
- High: > 100 gene copies per mL.

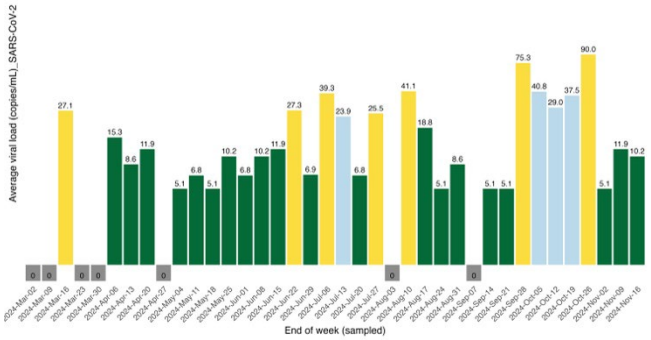


Saskatchewan

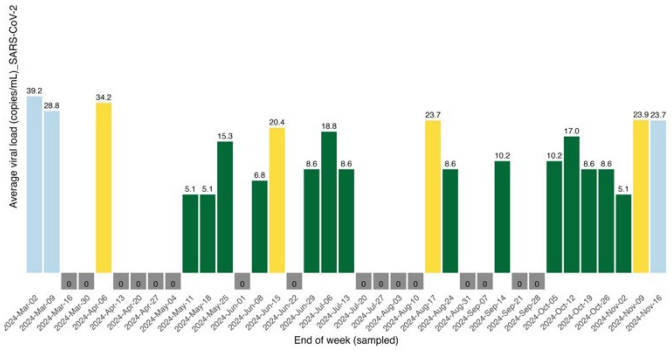
Moose Jaw



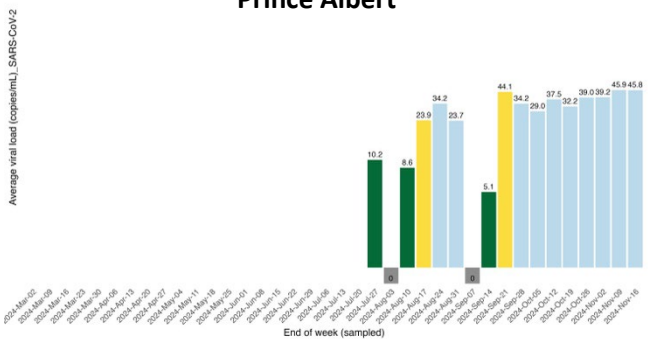
Estevan



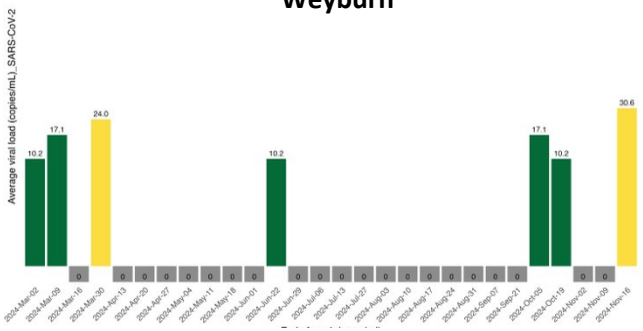
Southey



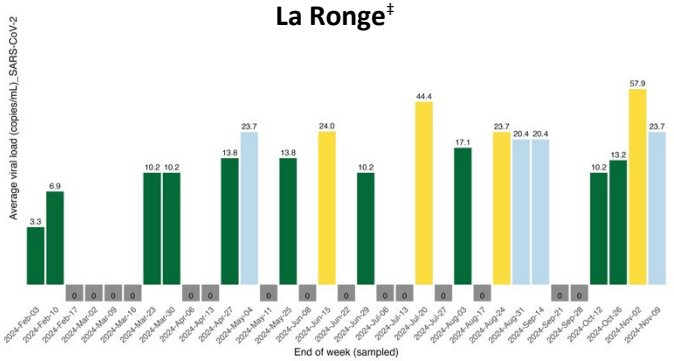
Prince Albert‡



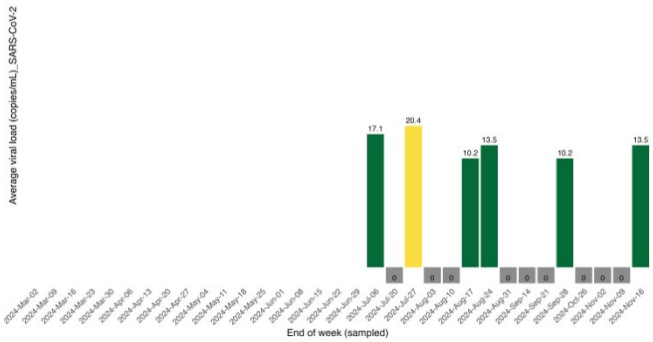
Weyburn‡



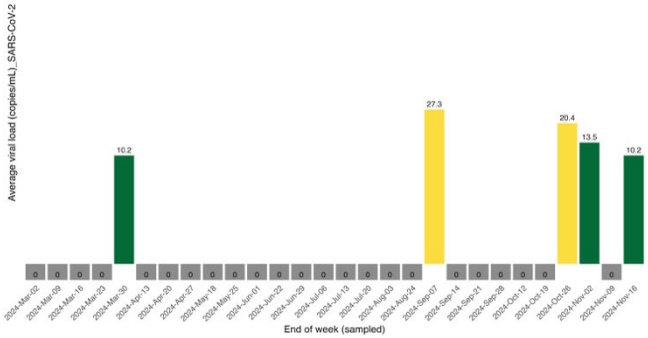
La Ronge‡



Watrous‡



Birch Hills‡



Quantitative Interpretation:

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- Medium: 20-100 gene copies per mL and weekly change < 100%.
- Medium-high: 20-100 gene copies per mL and weekly change ≥ 100%.
- High: > 100 gene copies per mL.

Low | Medium | Medium-High | High | Non-detect

‡Date gaps occurred due to the non-receipt of wastewater samples, and in some cases, due to failed post-analytical QC parameters; and including re-assignment of historical point risk estimates.

Saskatchewan