Community Respiratory Illness Surveillance Program (CRISP)
Situation Report: October 13 (Reporting period Sept 11-Oct 8, 2022)

Summary:

- Overall, respiratory viral activity in Saskatchewan is increasing.
- Rhinovirus (common cold) has the highest percent positivity (25.3%) of all respiratory pathogens this reporting period.

COVID-19

- Test positivity in Saskatchewan has decreased from 11.0% to 9.3%; highest test positivity (13.5%) in South East (Weyburn/Estevan area).
- Confirmed cases and deaths have slightly decreased; both are predominately among those 60 and older.
- Currently, the Omicron sublineages BA.4/BA.5 are the most commonly detected variants of concern with BA.5 dominant.
- The number of COVID-19 outbreaks in high-risk settings have increased this reporting period compared to previous.
- COVID-19 hospitalizations have remained plateaued since July 2022 at approximately 160 admissions per week; ICU admissions remain stable at approximately nine per week.
- With the exception of Regina, all areas of the province have less than 50% of their population up-to-date[1] for COVID-19 vaccines and just over a third of individuals aged 50+ have had an additional booster dose (37%).
- Since bivalent boosters became available to higher-risk residents in the province September 12 and expanded to all residents 18+ as of September 29, only 3.6% of individuals aged 18+ years have received a bivalent booster dose (n = 30,016 doses).

Influenza

- No lab-confirmed influenza was detected this week.
- Influenza immunization campaign launched October 11, 2022.

Other Respiratory Viruses[2]

- Other respiratory viruses have increased this reporting period (from n = 76 to n = 82).
- Test positivity rate among the other respiratory viruses is four times that of COVID-19 (36% vs 9.3%).

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

[2] *Respiratory Syncytial Virus (RSV); Parainfluenza viruses 1 – 4 (PIV 1 – 4); Adenovirus (ADV); Rhinovirus (RV); Human Metapneumovirus (HMPV)*

Table 1: Viral indicators by surveillance period, Sep 11 – Oct 8, 2022

Report date	COVID-19 case count[1]	COVID-19 test positivity	COVID-19 outbreaks	Influenza case count	Influenza test positivity	Co-infection[2] case count	Influenza outbreaks	'Other'[3] case count	'Other'[3] test positivity	Co-infection[2] outbreaks	'Other'[3] outbreaks
Oct 02 – 08	474	9.3%	17	0	0.0	0	0	82	36%	0	0
Sep 25 – Oct 01	556	11.0%	11	0	0.0	0	0	76	40%	0	0
Sep 18 – 24	469	8.8%	9	1	<1%	0	0	63	31%	0	0
Sep 11 – 17	488	9.0%	19	2	<1%	1	0	46	25%	0	1

Notes: *[1]Cases based on the week of lab detection; effective Sep 25 2022 includes cases who tested positive more than once >= 90 days apart;* [2]*Persons infected with more than one respiratory virus concurrently;* [3]*Respiratory Syncytial Virus (RSV); Parainfluenza viruses 1 – 4 (PIV 1 – 4); Adenovirus (ADV); Rhinovirus (RV); Human Metapneumovirus (HMPV). See Technical Notes page 8 for further details.*

Table 2: Sentinel* indicators by surveillance period, Sep 11 – Oct 8, 2022

Report date	School illness absenteeism >=10%[1]	RLI** ED visits per 1,000[2]	RLI** 811 calls per 1,000	COVID-19 Wastewater indicator[3]	Sentinel provider test positivity[4]	Most commonly detected virus: Sentinel providers[4]
Oct 02 – 08	Data pending	30.7	88.8	Moderate (n = 3); Moderate-high (n = 2); High (n = 4)	23.1%	Rhinovirus
Sep 25 – Oct 01		21.6	98.7	Moderate (n = 2); High (n = 5)	50.0%	Rhinovirus
Sep 18 – 24		26.8	72.9	Moderate (n = 3); High (n = 6)	28.6%	Rhinovirus
Sep 11 – 17		26.9	95.8	Low (n = 1); Moderate (n = 2); Moderate-high (n = 2); High (n = 4)	21.7%	Rhinovirus

Notes: **Sentinel surveillance refers to sampling programs representative of the population;* [1]*Data flow pending; **Respiratory-like illness (RLI);* [2] *Based on reports from eight of thirteen reporting areas;* [3]*Count of wastewater treatment facilities reporting low, moderate or high levels of viral load causing COVID-19 infection (see Technical Notes page 8 for details);* [4]*Respiratory Virus Panel (RVP) Report covering the period September 11, to October 8, 2022.*

Table 3: Outcome, health care capacity and immunization coverage indicators by surveillance period, Sep 4 – Oct 8, 2022

Report date	Hospital admissions – COVID-19[1]	ICU admissions – COVID-19	Hospital admissions – Influenza	ICU admissions – Influenza	% of staffed inpatient beds occupied by COVID-19 patients[2]	Deaths – COVID-19[3]	Deaths – Influenza	Total eligible population up-to-date – COVID-19 vaccine[4]	Total eligible population up-to-date – Influenza vaccine[5]
Oct 02 – 08	162	9	Data pending**	Data pending*	11.1%	5	0	46%	1%
Sept 25 – Oct 01	174	9			10.4%	11	0	46%	–
Sept 18 – 24	189	9			10.1%	7	0	45%	–
Sept 11 – 17	170	6			9.6%	16	0	45%	–

Notes:

**Technical work in progress re: data linkage between hospitalization and laboratory-confirmed Influenza data*

[1]Due to data entry lag, most recent week can be under-count by up to 20%, and previous three weeks may be under-count up to 10%

[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*

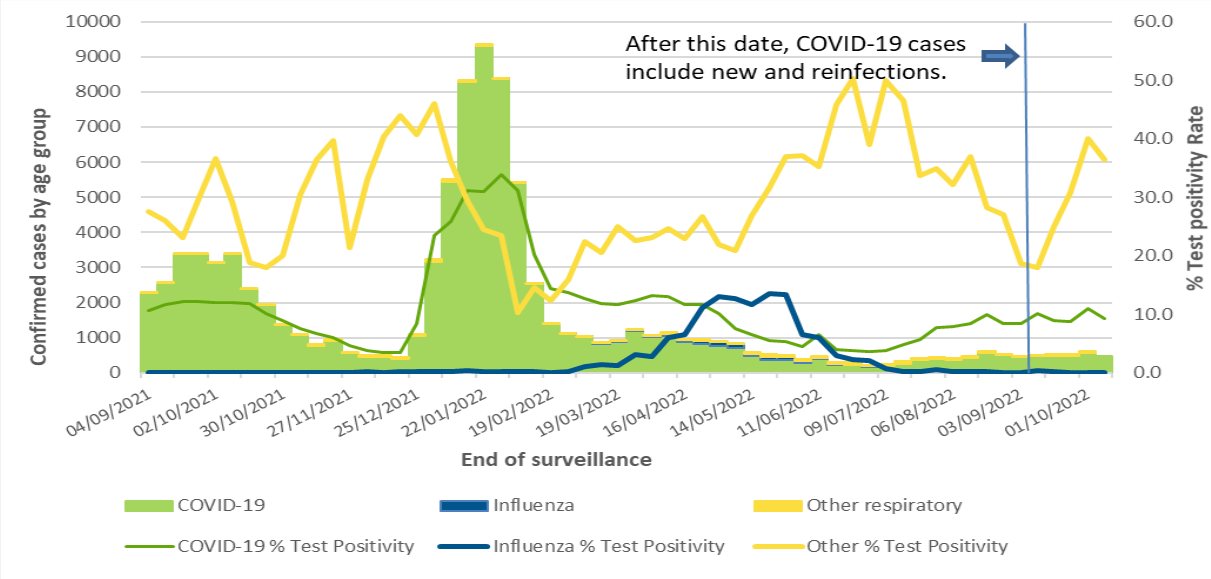
[3]*Includes deaths entered into Panorama IOM among laboratory confirmed cases. Deaths reported based on the actual date of death. Deaths reported in previous periods subject to change due death reporting data lags*

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

[45] *Up-to-date = received a vaccination within the current influenza season, age 6 months+*

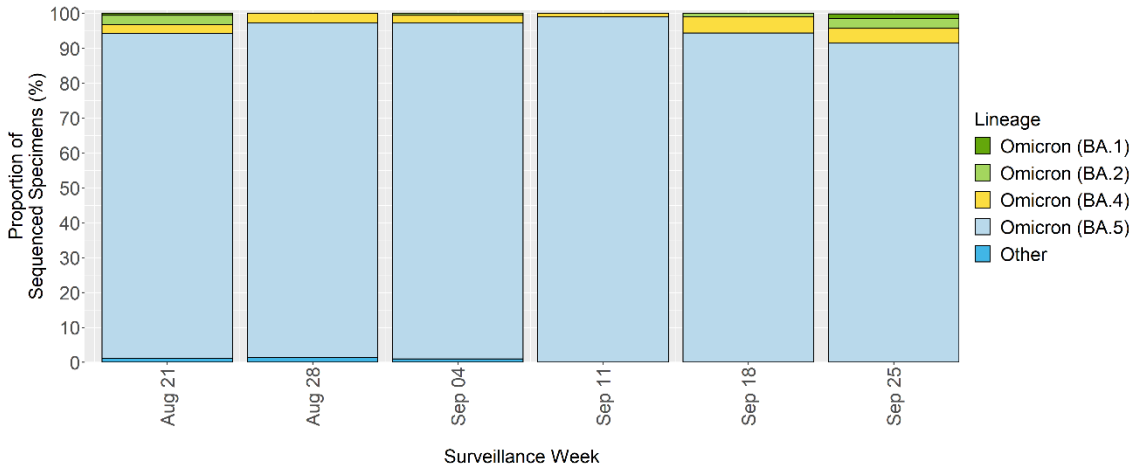
See Technical Notes page 8 for details

Figure 1: Epidemic curve, respiratory illness, by etiologic agent and test positivity, Aug 29, 2021 to Oct 8, 2022



NOTE: Data source(s): Panorama IOM extracted on October 10, 2022 (COVID-19 cases)
Respiratory Virus Detections Surveillance System (influenza and other respiratory) (RRPL extracted Oct 10, 2022)
For the week of October 2 to 8, 2022, there were 474 COVID-19 cases (44 were 0 to 19 years; 167 were 20 to 59 years; and 263 were 60 years and older).
For the week of October 2 to 8, 2022, there were no influenza lab detections
For the week of October 2 to 8, 2022, there were 82 other viral lab detections (parainfluenza, adenovirus, human metapneumovirus, rhinovirus, coronavirus).

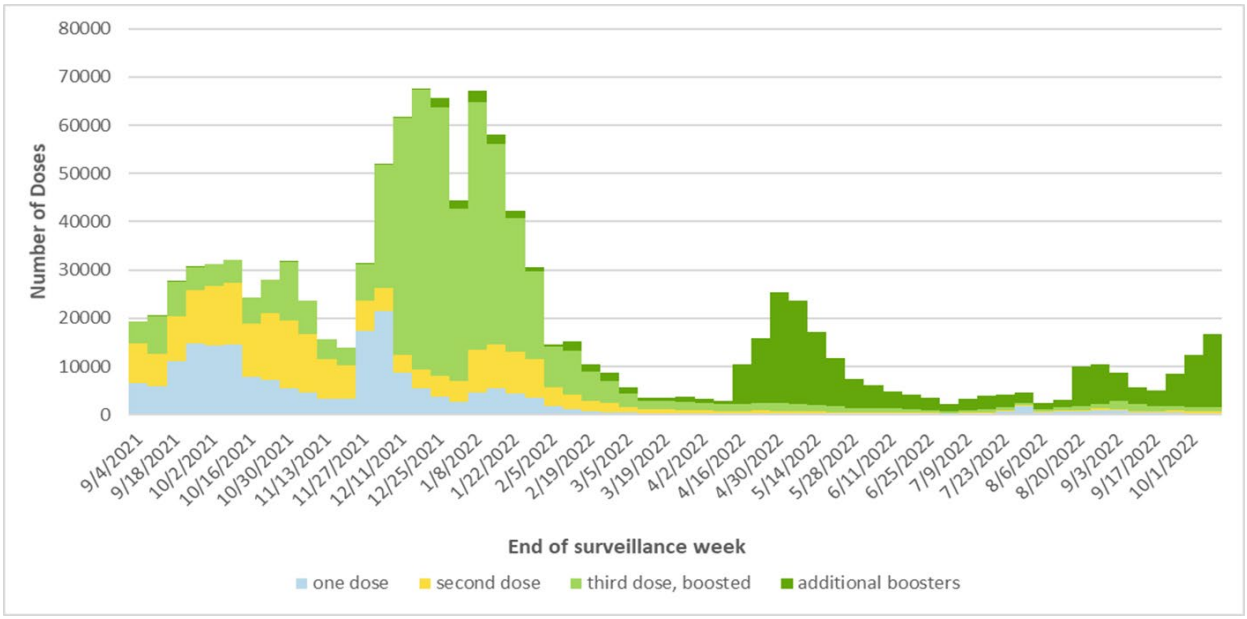
Figure 2: COVID-19 Sequencing and typing results by week, August 21, 2022 to September 25, 2022



Lineage	Aug 21	Aug 28	Sep 04	Sep 11	Sep 18	Sep 25
Omicron (BA.1)	1	0	0	0	0	1
Omicron (BA.2)	5	0	1	0	2	2
Omicron (BA.4)	5	6	4	2	9	3
Omicron (BA.5)	177	223	187	208	186	65
Other	2	3	2	0	0	0
Total	190	232	194	210	197	71

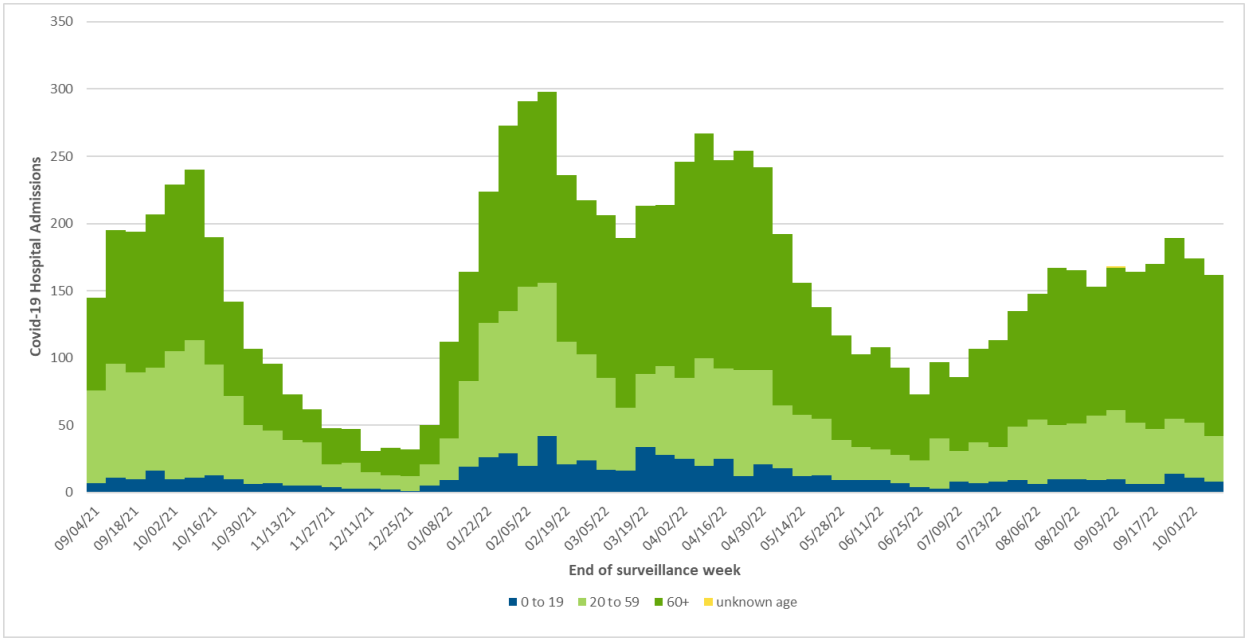
Data source(s): Roy Romanow Provincial Laboratory, Saskatchewan Health Authority.
NOTE: Omicron sublineages BA.4/BA.5 are the most commonly detected variants of concern, with BA.5 dominant (96% of current reporting period). RRPL continues to monitor for emerging variants in Saskatchewan. These include BA.2.75 (6 detections to date), BA.4.6 (36 detections to date), BF.7 (1 detection to date), and BQ.1.1 (17 detections to date).

Figure 3: Number of COVID-19 vaccines doses by dose number and week, Aug 29, 2021 to Oct 8, 2022



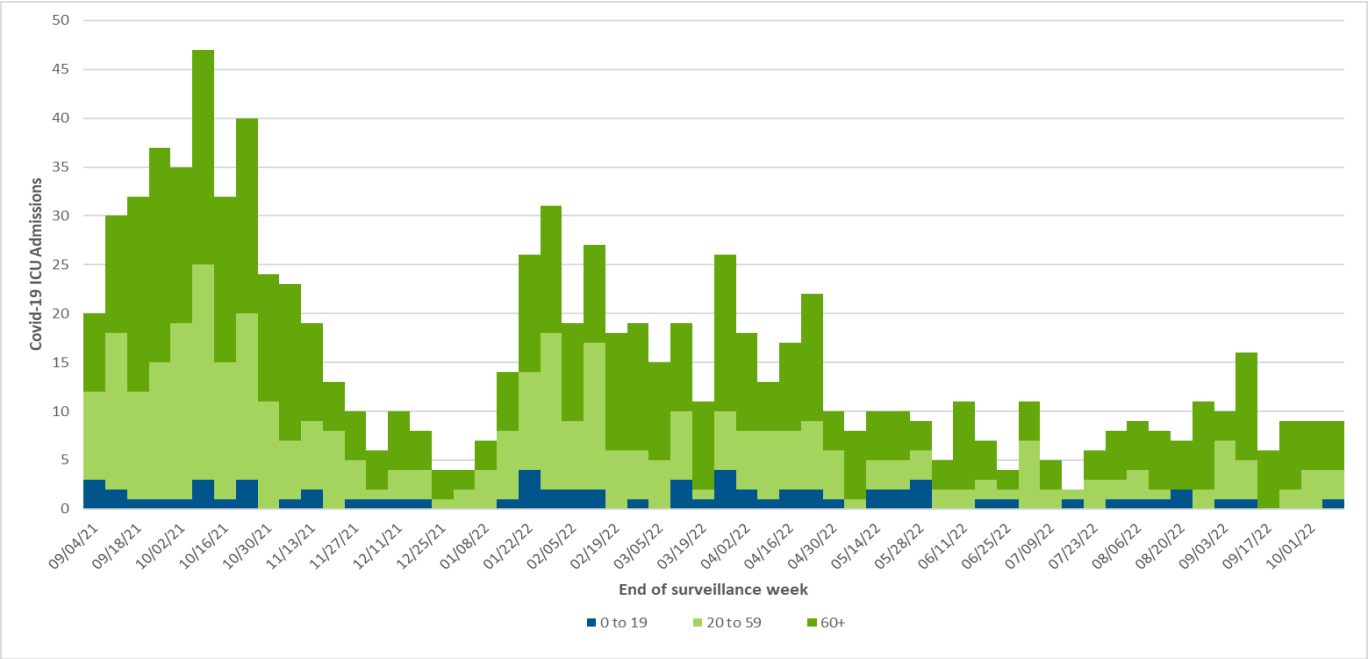
Data source(s): Panorama October 10, 2022
NOTE: From October 2 to 8, 2022, there were 16,685 doses of COVID-19 vaccine administered, of which 15,134 were additional boosters.
n = 985,226 dose 1; n = 920,507 dose 2; n = 516,000 dose 3; n = 208,425 dose 4; total doses = 2,630,158

Figure 4: COVID-19 Hospital admissions by age group and week, Aug 29, 2021 to Oct 8, 2022 (n = 9,192)



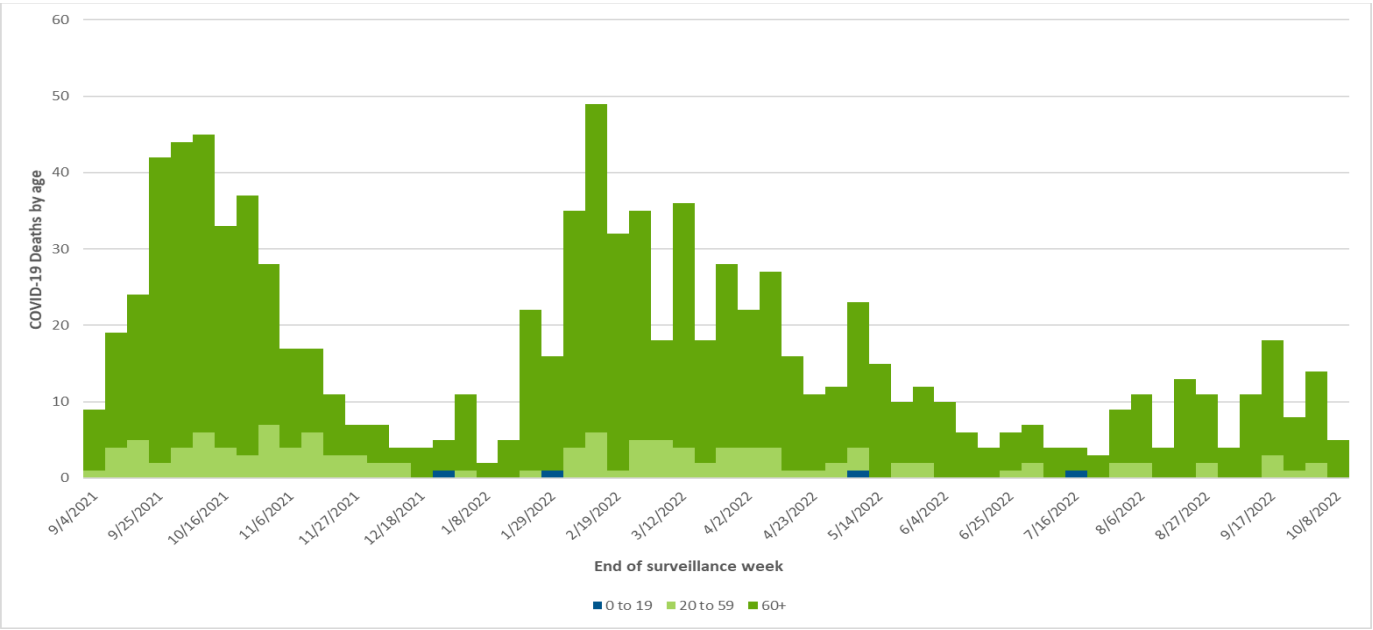
Data source(s): Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RPPL, Panorama); data extracted on October 10, 2022
Note: Because of the delay in date-tested result, it affects the total number of COVID 19 admissions for a particular day. This lag in data impacts mostly the last few weeks from the day the report is updated. Figure shows only new admitted cases.

Figure 5: COVID-19 ICU admissions by age group and week, Aug 29, 2021 to Oct 8, 2022 (n = 896)



Data source(s): Digital Health Analytics, Saskatchewan Health Authority, Episode of Care methodology (Admission, Discharge, Transfer Database (ADT, RPPL, Panorama); data extracted on October 10, 2022
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 few weeks from the day the report is updated. Figure shows only new admitted cases.

Figure 6: COVID-19 deaths by age group and week, Aug 29, 2021 to Oct 8, 2022 (n = 1,566)



Data source(s): Panorama IOM extracted on October 10, 2022 (cases)

Saskatchewan

Table 4: Community Respiratory Infection Surveillance Program Indicators by zone, Oct 02 - 08, 2022

Location	Test positivity – COVID-19[1]	Test positivity – Influenza	RLI* visits to EDs per 1,000[2]	RLI* 811 calls per 1,000[3]	School illness absenteeism >=10%[4]	Wastewater indicator with weekly trend[5]	Total eligible population up-to-date vaccination – COVID-19[6]	Total eligible population up-to-date vaccination – Influenza[7]
Far North West (Meadow Lake and area)	10.3%	0.0%	21.7	–		N/A	24%	–
Far North Central	0.0%	0.0%	No report	–		N/A	14%	2%
Far North East (La Ronge and area)	11.1%	0.0%	No report	–		N/A	24%	–
North West (North Battleford/ Lloydminster and area)	11.8%	0.0%	17.8	92.8		High ↓	35%	1%
North Central (Prince Albert and area)	6.3%	0.0%	No report	–		Moderate ↓	40%	1%
North East (Melfort and area)	5.2%	0.0%	169.8			N/A	43%	1%
Saskatoon	9.4%	0.0%	10.6	64.7	Data pending	High ↓	49%	1%
Central West (Kindersley and area)	12.0%	0.0%	78.3	103.0		N/A	43%	1%
Central East (Yorkton/Melville and area)	9.4%	0.0%	No report	–		Moderate-High ↑	45%	1%
Regina	9.2%	0.0%	47.9	–		High ↑	51%	2%
South West (Swift Current/Maple Creek and area)	7.1%	0.0%	75.5	92.4		Moderate ↓	40%	1%
South Central (Moose Jaw and area)	11.3%	0.0%	No report	72.3		Moderate ↔	44%	1%
South East (Weyburn/Estevan and area)	13.5%	0.0%	158.4	–		Moderate-High ↑	39%	1%

Notes: *[1]by week of lab detection; effective Sep 25 2022 includes cases who tested positive more than once >= 90 days apart; [2]Based on reports from eight of thirteen reporting areas; [3]811 data available at the five Integrated Service Areas geographical level; [4]Data flow pending; *Respiratory-like illness (RLI); [5]Count of wastewater treatment facilities reporting low, moderate or high levels of viral load causing COVID-19 infection, data not available (N/A) for all areas of the province; ↑= increase compared to previous; ↓= decrease compared to previous; ↔ = no change); data source: University of Saskatchewan and Regina wastewater research teams; [6]Up-to-date = completed a primary series and at least one additional booster, age 5+ years; [7]Up-to-date = received a vaccination within the current influenza season, age 6 months+*

Technical Notes:

1. *Laboratory surveillance: C*onducted 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 Saskatchewan. 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: C*omprise 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, 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 in Saskatchewan. This includes patients with C-19 related illness, incidental COVID infection, and patients under investigation.

9. *COVID ICU admissions* is the number of C-19 positive cases that during the surveillance week were admitted to an ICU location in Saskatchewan. This includes both infectious and non-infectious cases.

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 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.

11. *COVID-19 cases:* Effective September 4 – 10, 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.

12. *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

13. *COVID-19 Immunizations:* Up-to-date COVID-19 vaccination is considered 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 Covered Population, 08-Jul-2021 Ministry of Health version (2021 Version 1).

14. *Influenza immunizations:* Up-to-date Influenza vaccination is considered the proportion of people, 6 months and older, having one influenza dose this season divided by the eligible population found in the Covered Population, 08-Jul-2021 Ministry of Health version (2021 Version 1). Vaccination for the current influenza season officially begins October 11, 2022. Some doses have been administered prior to the official clinic start date.

15. *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=∑(8am covid census) ÷ ∑(8am beds staffed and in operation) × 100%.** Where "bed staffed and in operation = "Planned beds" + "Surge Beds" - "Closed" and ∑(…) 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).