



**FRAMEWORK INDICATORS
A REVIEW OF COVID -19 STATISTICS
UPDATED TO DECEMBER 15, 2021
REVISED VERSION**

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Risk Indicators for Monitoring COVID-19 Transmission in Saskatoon

Indicator	Green Minimal Risk	Yellow- Caution	Orange High Risk	Red Critical
7 Day Average Weekly Cases Per 100,000 persons	0 to 10	11 to 20	21 to 30	Greater than 30
7-Day Average Test Positivity Rate (%)	0 to 3.0%	3.1 to 6.0 %	6.1% to 10%	Greater than 10%
Effective Reproduction Rate	Less Than 1.0	1.01 to 1.2	1.21 to 1.4	Greater than 1.4
Vaccination Rates of Total Population (%)	90% or greater	75 to 90%	60 to 75 %	Less than 60%

Saskatoon's Status as of December 15, 2021

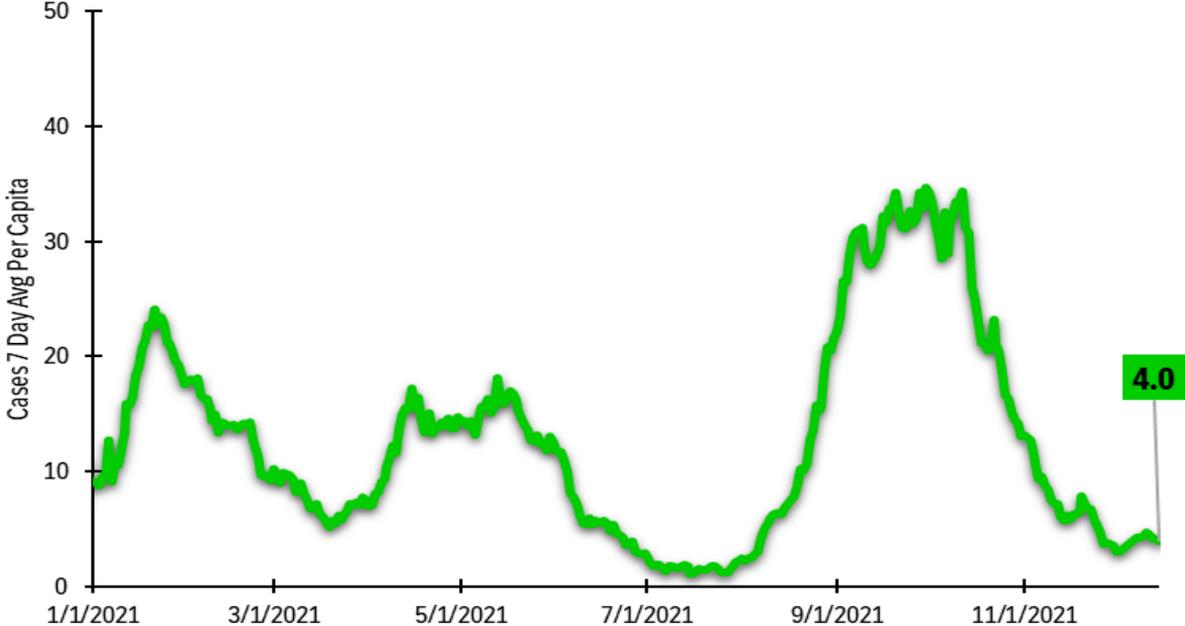
The data charts and trends on the subsequent slides.

Primary Indicator	Status as of December 15, 2021	Trend from last week
7 Day Average Weekly Cases Per 100,000 persons	4	↓
7-Day Average Test Positivity Rate (%)	3.5%	↔
Effective Reproduction Rate (Sample Mean)	0.92	↓
Vaccination Rates of Total Population (%)	69.0%	↑
Status (risk)	Yellow (caution)	

Primary COVID-19 Transmission Risk Indicators - Saskatoon

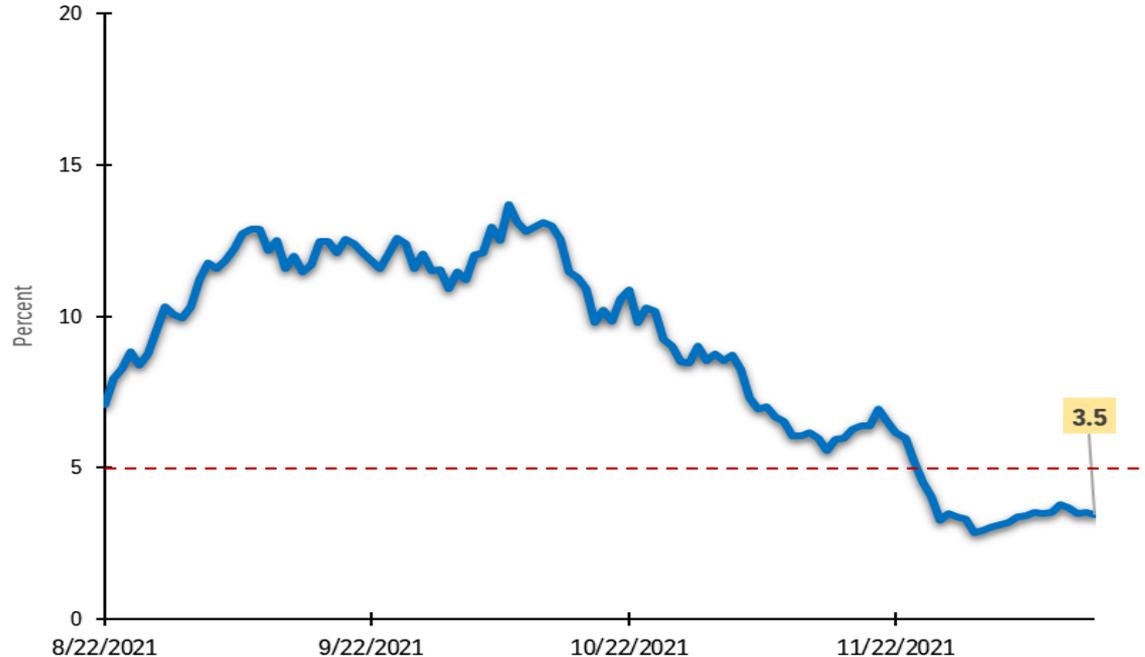
NEW CASE COUNTS PER CAPITA: This slide show the 7 day average of cases adjusted for 100,000 population for the Saskatoon zone. This is revised from previous versions and removes all other zones. The goal here is to show the trendline over the reporting period, which begins January 1, 2021.

Saskatoon 7 Day Average New Cases Per Capita



Test Positivity Rates 7 Day Average: This slide shows the 7 day average the test positivity rate for the Saskatoon zone. It is calculated by taking the 7 day average of new cases divided by the 7 day average of new tests and converting to a percentage. The data starts on August 22, 2021 because there is no testing data by zone for late June, all of July, and the first two weeks of August. The red line indicates the World Health Organization Standard of 5% for a controlled level of positive cases. A test positivity rate of less than 5% typically means the transmission is under control, however, with variants of concern it is suggested to be 3% or less.

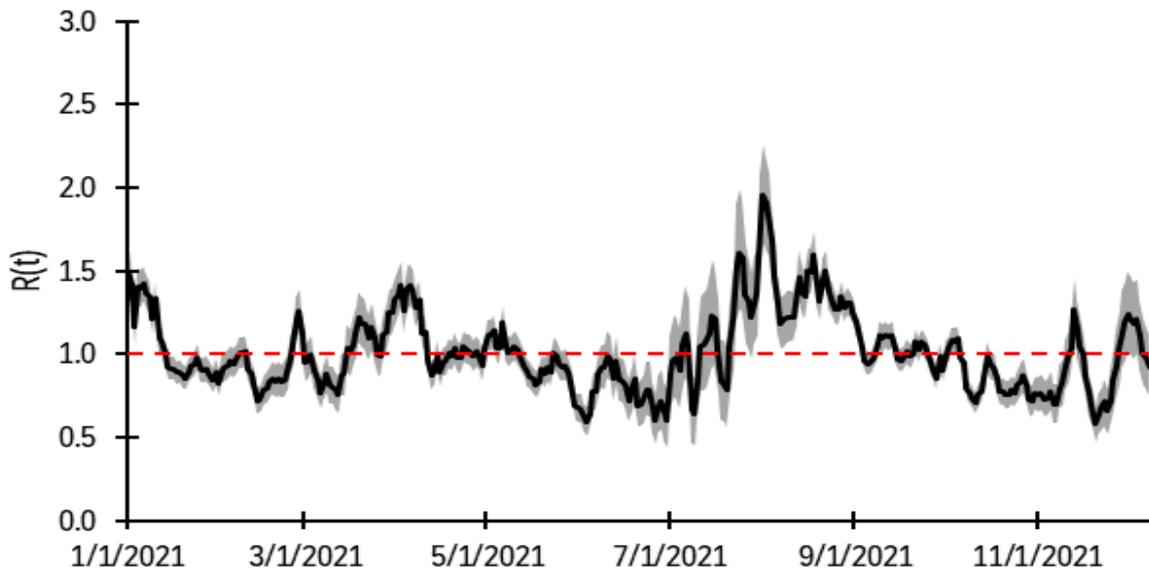
Saskatoon Test Positivity Rate 7-Day Average



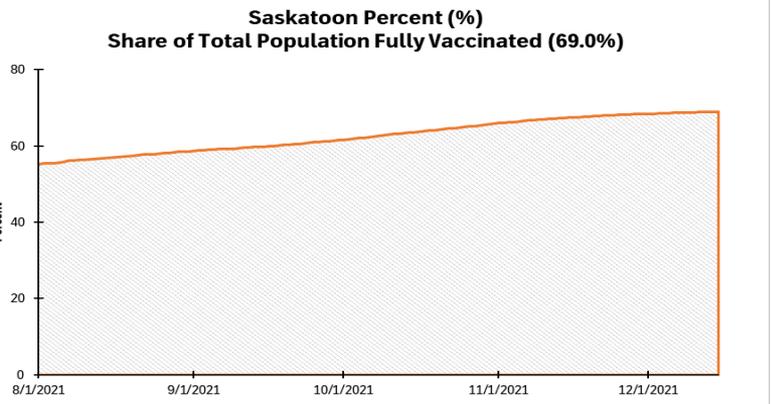
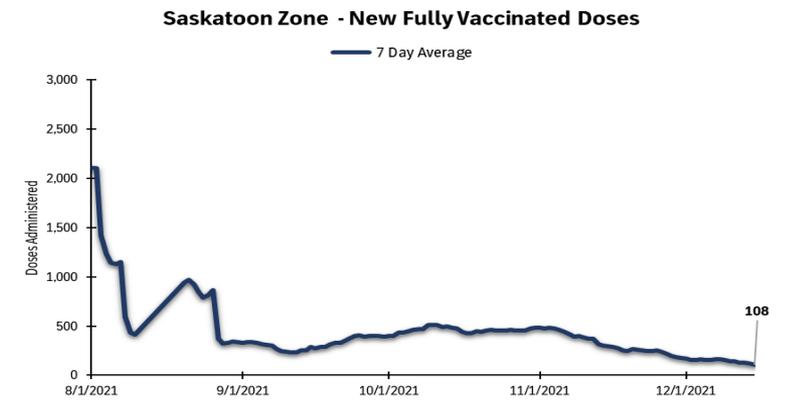
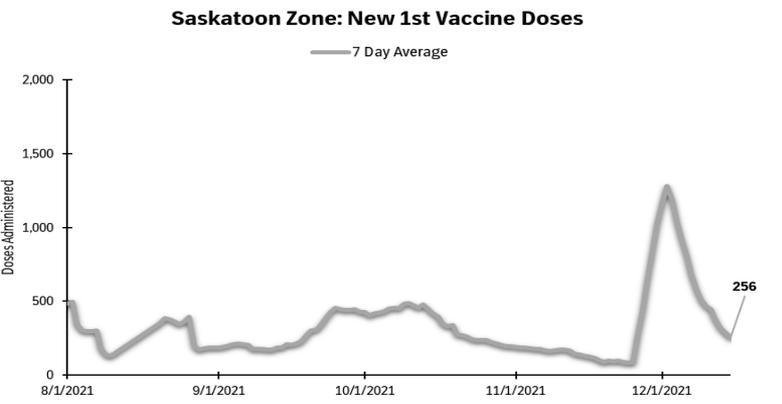
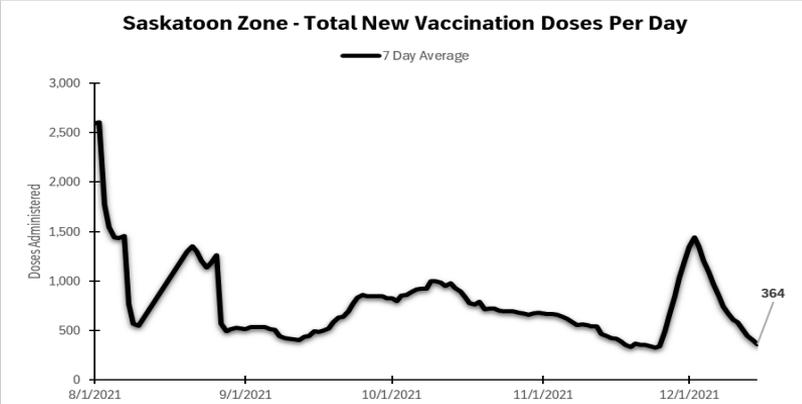
This slide estimates the Effective Reproduction Number (Rt) for Saskatoon. A few points to note here. (1) The dates are lagged because Rt uses recent case history to estimate the infection rate that caused them, referred to as the "presumed transmission date". This date occurs about 7 days prior to reporting of new cases. (2) An Rt above 1 means that COVID-19 is growing exponentially. An Rt below 1 means that cases will eventually die out. (3) Rt is based on the SEIR epidemiological model with assumptions. I use the Cori, et.al method to determine the Rt (described here: <https://doi.org/10.1093/aje/kwt133>). (4) The Rt is estimated as the mean using 95% confidence intervals.

Saskatoon Zone - Effective Reproduction Number (Rt)

Mean = 0.92 (Black Line) 95% Confidence Interval (Grey Shade)

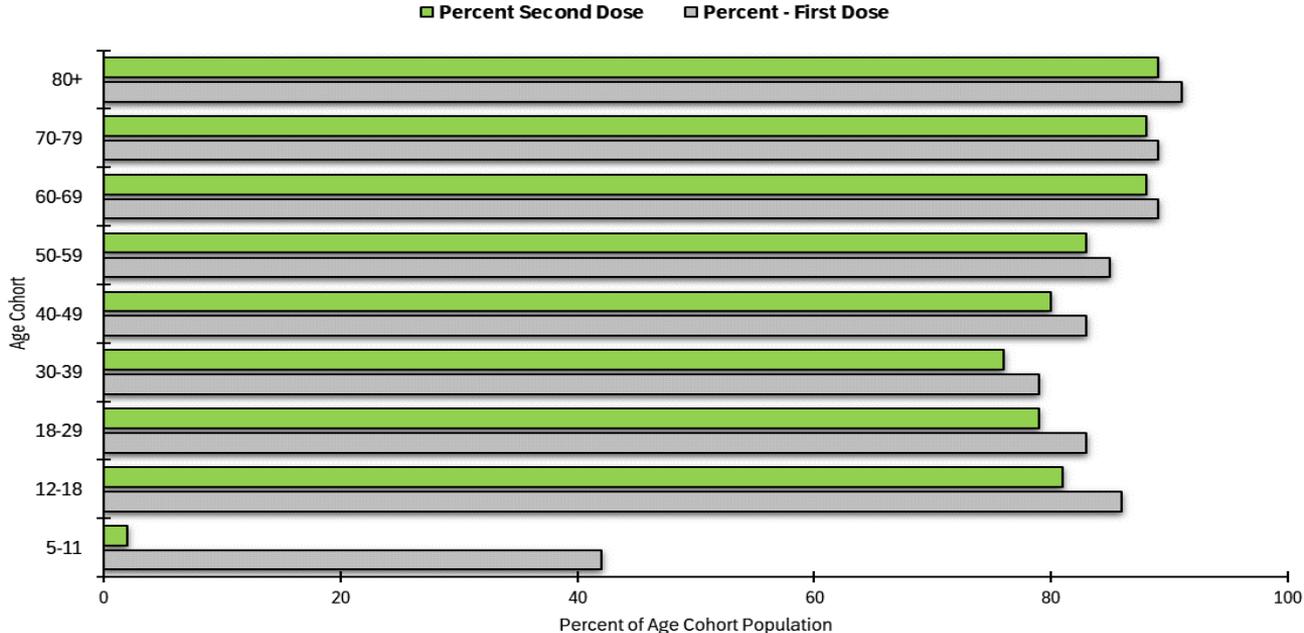


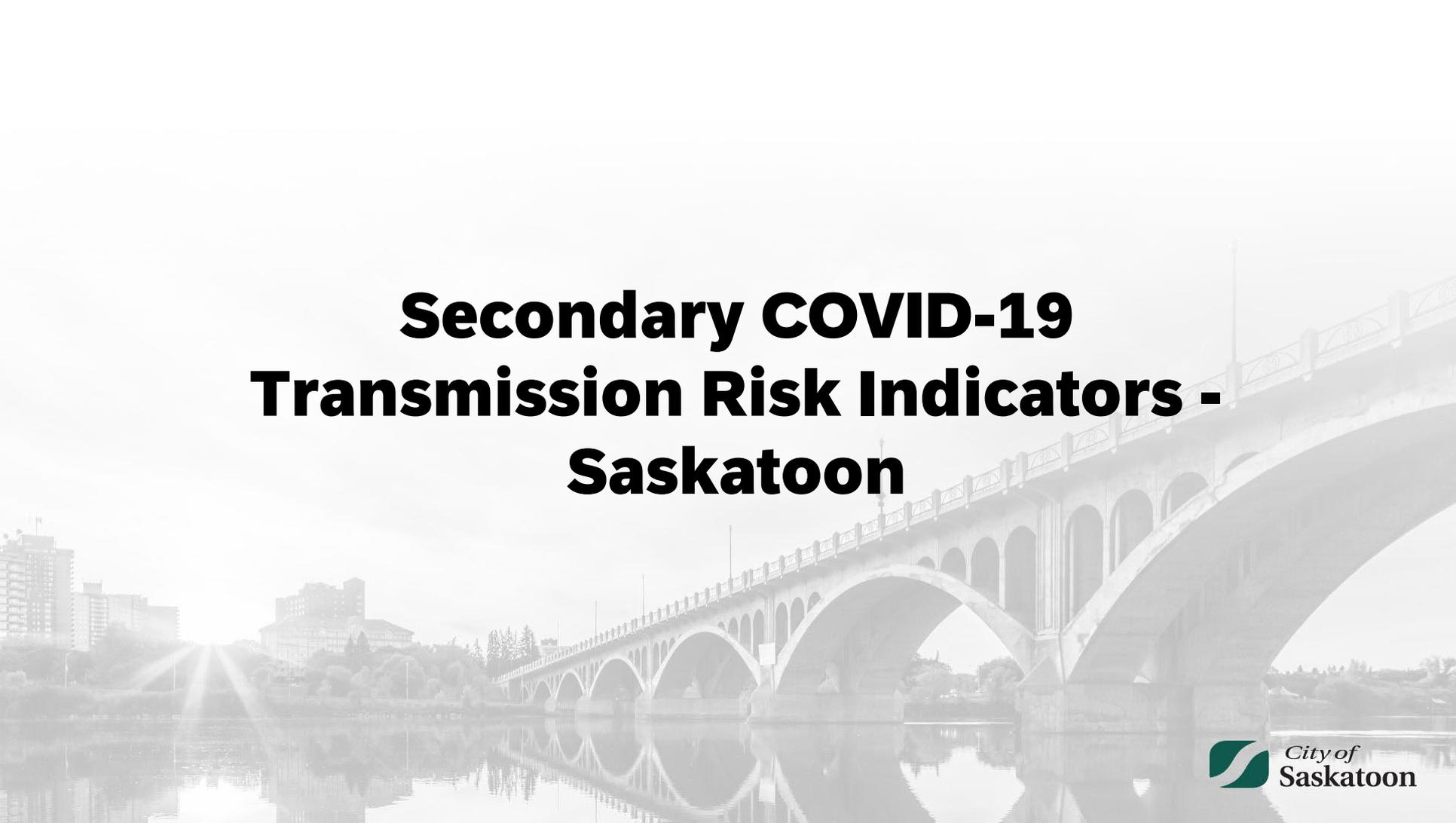
Vaccines Trends Saskatoon Zone. This slide is revised and shows vaccinations for the Saskatoon zone is a few different ways, since August 1, 2021. The line charts use 7-day averages for vaccination doses. The first chart shows new total vaccination doses. The second chart shows new first vaccination doses, and the third chart shows fully vaccinated doses. There is a noticeable surge in early December, but that has fallen sharply. Full vaccination doses have fallen to slightly over 100 per day. Finally, the fourth chart shows a time series of percent share of the Saskatoon population fully vaccinated. This rate has been growing 0.3 percentage points week over week.



Saskatoon Vaccine Progress by Age. The table on this slide shows vaccinations for the Saskatoon by age cohort. The grey bar is the percent share of the population in that age cohort with a first vaccination dose. The green bar is the percent share of the population in that age cohort with a second vaccination dose (deemed to be fully vaccinated).

Saskatoon Zone- Vaccination Rates By Age Cohort - As of Decemeber 15, 2021





Secondary COVID-19 Transmission Risk Indicators - Saskatoon

Wastewater Testing: The charts on this slide show the wastewater samples collected in Saskatoon. This is a predictive model that tests wastewater samples to determine the concentration of SARS-COV-2 and its variants. The analysis reveals Viral RNA load in Saskatoon's wastewater has increased by 619.4% (based on averages of 3 individual daily measurements) in this reporting period (up to December 8) compared to the weekly average of the previous reporting period. **Please note that this number appears disproportionately large due to levels below the limit of detection in the past reporting period**, where both overall RNA load and that specific to the Delta VOC were below the detection limit in the December 1 sample. The Omicron variant has not shown up in samples tested during the period.

Saskatoon - Current Numbers

SARS-CoV-2



Wastewater Virus Load
(normalized)

6,176 /100 ml

▲ 619.4%*



Delta Variant

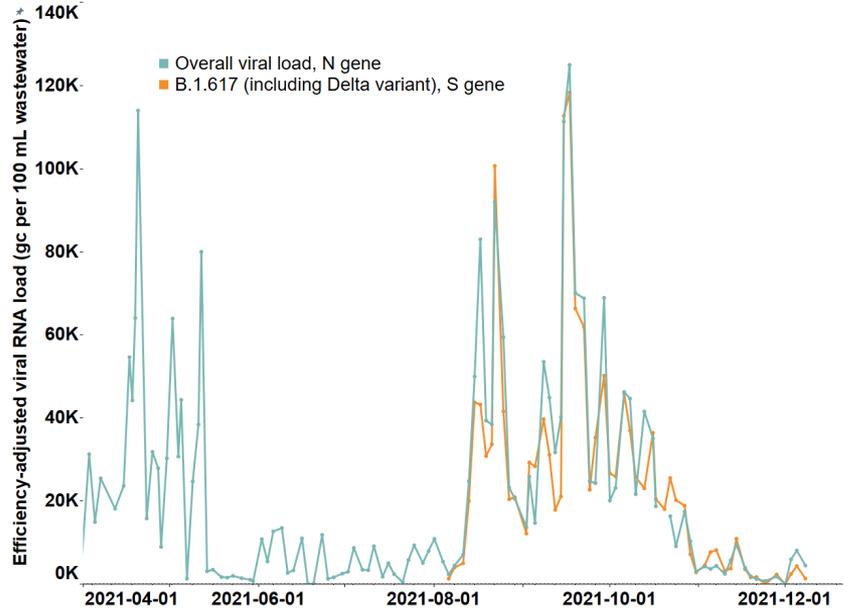
2,712 /100 ml

▲ 248.6%*

⌚ Average of 3 individual measurements from the period Dec 2 - Dec 8, 2021

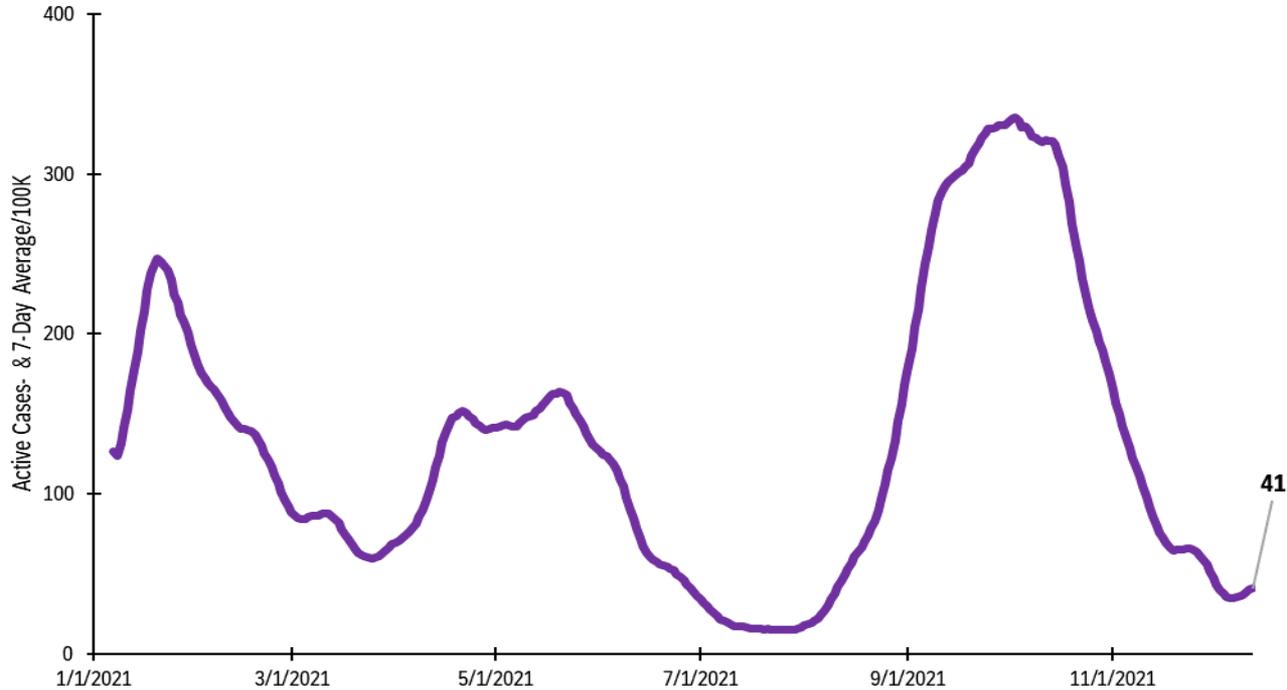
* Note that this number appears disproportionately large due to levels below the limit of detection in the past reporting period

Viral RNA load in wastewater, City of Saskatoon



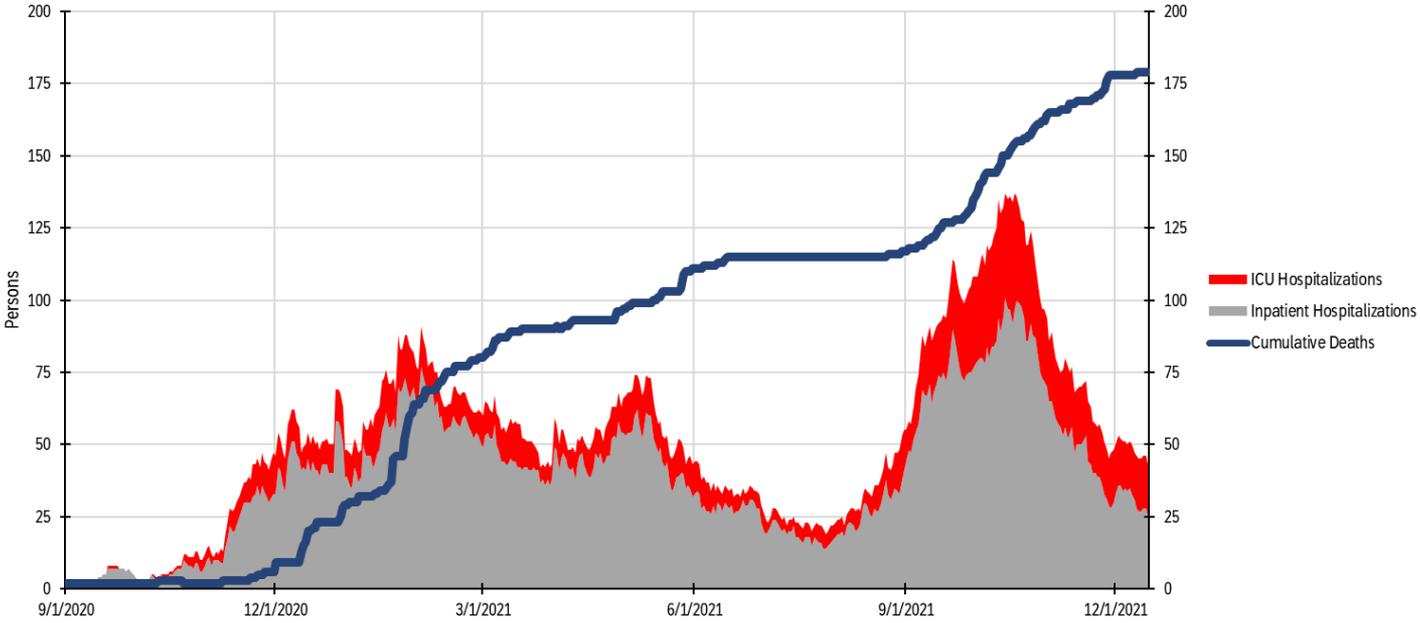
ACTIVE CASE COUNTS PER CAPITA: This slide show the 7 day average of active cases adjusted for 100,000 population for the Saskatoon zone. This is a new chart and the purpose is to show the trendline over the reporting period, which begins January 1, 2021.

Saskatoon Zone Active Cases 7-Day Average Per Capita



Saskatoon Hospitalizations & Deaths. This slide shows inpatient (grey) and ICU (red) hospitalizations for the Saskatoon zone. The blue line is COVID fatalities. Fatalities tend to follow an increase in ICU hospitalizations but lagged by about one week. As of December 15, there 25 Inpatient and 18 ICU, sitting at May 2021 levels. As a result, fatalities have stayed flat over the last couple of weeks.

Saskatoon Zone Hopsitalizations & Deaths - As reported on December 8, 2021
Source: <https://dashboard.saskatchewan.ca/health-wellness/covid-19/cases>





**QUESTIONS, COMMENTS OR
SUGGESTIONS?**
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