

COVID-19 Vaccinations and Breakthrough Infections

Analysis based on new COVID-19 cases reported December 1-31, 2021

COVID-19 Vaccinations Work

- Measured at 21 day mark to allow for necessary immune response to first dose
- Fully vaccinated is two doses of a two-vaccine series, or one dose of a single vaccine series – third/booster doses recommended for all eligible residents
- Two weeks after second dose is when optimum protection begins
- It is anticipated that serious illness rates will decrease as residents receive second doses and booster doses

Reported COVID-19 Cases – December 2021

Total*	Unvaccinated or First dose <3 weeks*	Vaccinated, First dose => 3 weeks	Vaccinated, Second dose =>2 weeks	Vaccinated, First booster dose =>2 weeks
4,621	1,289	79	2,804	362
% of cases	27.9%	1.7%	60.7%	7.8%
Estimated SK case rate per 100,000 - denominator based on receipt of one dose, completed series, or completed series plus booster				
Estimated cases/100,000	447.3	100.8	380.6	356.3

* the total of 4,621 cases includes 87 cases for whom a case record had not yet been entered into Panorama at the time of extract. Vaccination status information was not available for these cases, thus removed from unvaccinated category.

- There were 4,621 cases reported in December. Of these, 27.9% (1,289) were unvaccinated. Of the December cases, 4.9% (227) were less than five years old, and 11.2% (519) were 5-11 years old.
- Of the 2,804 cases with the second dose, 8.9% (250) had comorbid conditions and 5.7% (159) of cases were 65 years and older.
- Of the 362 cases with the first booster dose, 17.4% (63) had comorbid conditions and 24.3% (88) of cases were 65 years and older.
- **Estimated case rates were 447.3/100,000 for the unvaccinated, 100.8/100,000 in those with first dose, 380.6/100,000 for those with second dose, and 356.3/100,000 with the first booster dose.**

COVID-19 Hospitalizations – December 2021

Total	Unvaccinated or First dose <3 weeks	Vaccinated, First dose => 3 weeks	Vaccinated, Second dose =>2 weeks	Vaccinated, First booster dose =>2 weeks
65	26	5	27	7
% of hospitalization cases	40.0%	7.7%	41.5%	10.8%
Estimated SK hospitalization rate/100,000 - denominator based on receipt of one dose, completed series, or completed series plus booster				
Estimated hospitalizations/100,000	9.0	6.4	3.7	6.9

- Of the 4,621 December cases, 65 (1.4%) cases were hospitalized with 40.0% (26) unvaccinated. Of these 65 cases, 3.1% (2) were less than five years and 40.0% (26) were 65 years and older.
- Of the 27 hospitalized cases with the second dose, 51.9% (14) had comorbid conditions and 48.1% (13) of cases were 65 years and older.
- Of the seven (7) hospitalized cases with the first booster dose, 71.4% (5) had comorbid conditions and 57.1% (4) of cases were 65 years and older.
- **Estimated hospitalization rates were 9.0/100,000 for the unvaccinated, 6.4/100,000 in those with first dose, 3.7/100,000 for those with second dose, and 6.9/100,000 in those with the first booster dose.**

COVID-19 ICU Admissions – December 2021

Total	Unvaccinated or First dose <3 weeks	Vaccinated, First dose => 3 weeks	Vaccinated, Second dose =>2 weeks	Vaccinated, First booster dose =>2 weeks
15	10	0	3	2
% of ICU cases	66.7%	0.0%	20.0%	13.3%
Estimated SK ICU rate/100,000 - denominator based on receipt of one dose, completed series, or completed series plus booster				
Estimated ICU cases/100,000	3.5	0.0	0.4	2.0

- Of the 4,621 cases reported in December, 15 (0.3%) cases were admitted to ICU with 66.7% (10) unvaccinated. Of these 15, no cases were less than 20 years old.
- Of the three (3) ICU cases with the second dose, 66.7% (2) had comorbid conditions and 66.7% (2) were 65 years and older.
- Of the two (2) ICU cases with the first booster dose and both cases had comorbid conditions.
- **Estimated ICU rates were 3.5/100,000 for the unvaccinated, and 0.4/100,000 in those with the second dose, and 2.0/100,000 in those with the first booster dose.**

COVID-19 Deaths – December 2021

Total	Unvaccinated or First dose <3 weeks	Vaccinated, First dose => 3 weeks	Vaccinated, Second dose =>2 weeks	Vaccinated, First booster dose =>2 weeks
7	4	0	3	0
% of Death cases	57.1%	0.0%	42.9%	0.0%
Estimated SK death rate/100,000 - denominator based on receipt of one dose, completed series, or completed series plus booster				
Estimated deaths/100,000	1.4	0.0	0.4	0.0

- Of the 4,621 cases reported in December, seven (0.2%) cases had fatal outcomes. Of the cases who died, 57.1% (4) were unvaccinated. Of the fatal cases, 57.1% (4) were 65 years and older, and 71.4% (5) with at least one comorbid condition.
- Of the three (3) deaths among people with the second dose, one (1) case had comorbid condition and two (2) cases were 65 years and older.
- There were no deaths reported in the group with the first booster dose and no deaths among December cases under 20 years of age.
- **Estimated death rates were 1.4/100,000 for the unvaccinated and 0.4/100,000 in those with second dose.**

COVID-19 Hospitalizations – January 10, 2022

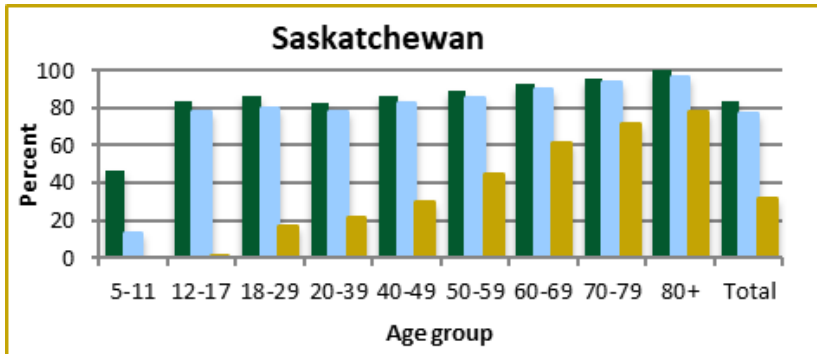
	Acute Care		ICU	
Age Group	COVID infectious	COVID Non-infectious	COVID infectious	COVID Non-infectious
11 and under	1	1	1	
12 to 19				
20 to 29	2	2		1
30 to 39	4	7	1	1
40 to 49	6	4	1	1
50 to 59	4	2		
60 to 69	12	15	2	1
70 to 79	14	4		2
80+	22	6	2	
Total	65	41	7	6

As of 4:15 PM on January 10, 2022

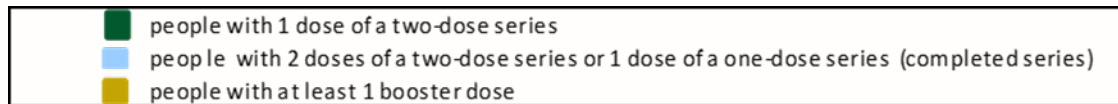
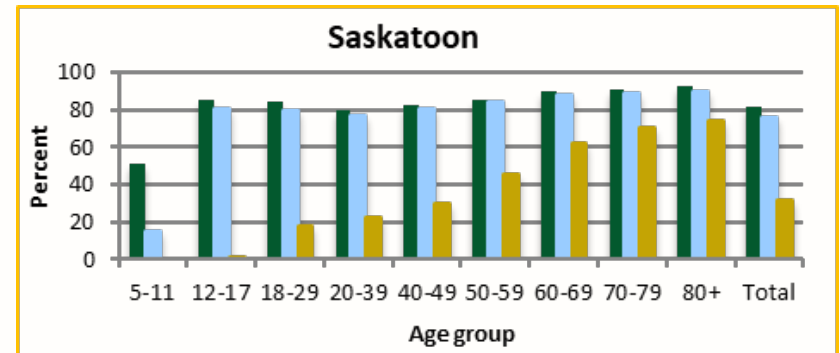
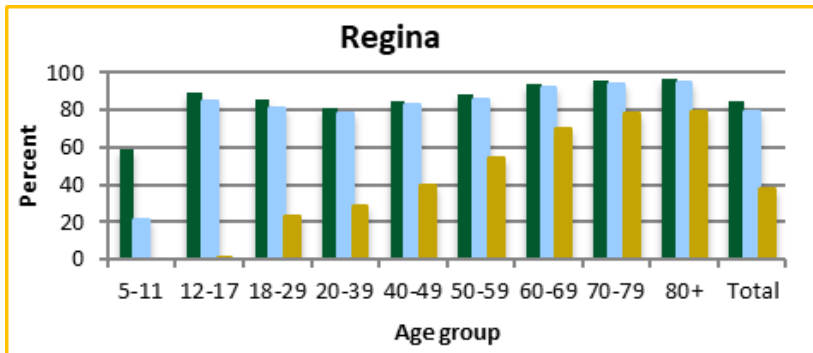
- Seven (10.8%) of the 65 infectious COVID-19 patients in acute care were less than 40 years old.
- Two (28.6%) of the seven infectious COVID-19 patients in ICU were less than 40 years old.
- No SK resident was in out-of-province ICU (data not shown) since December 14, 2021.

Data source: SHA dashboard, hospital census data

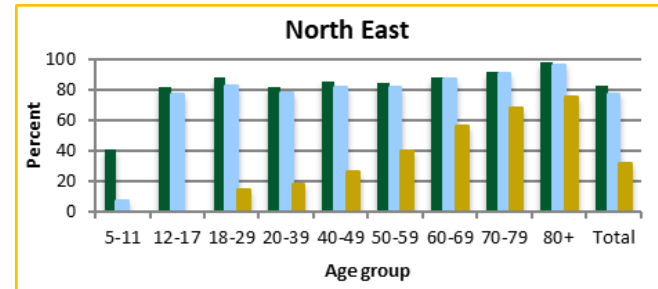
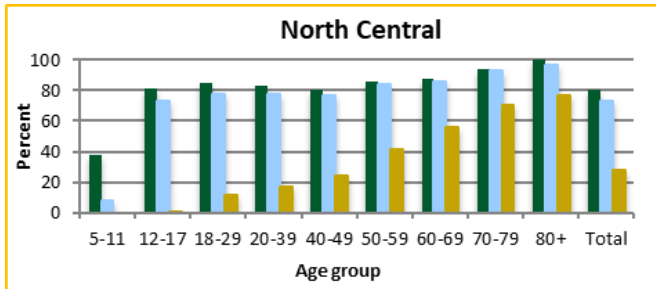
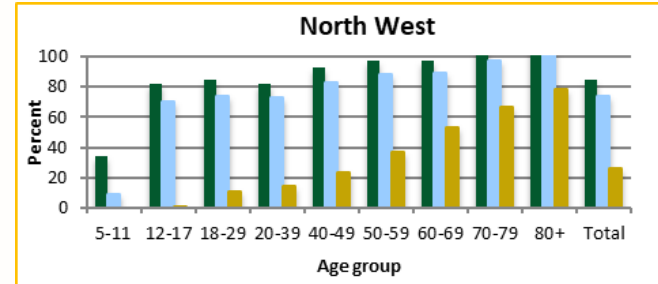
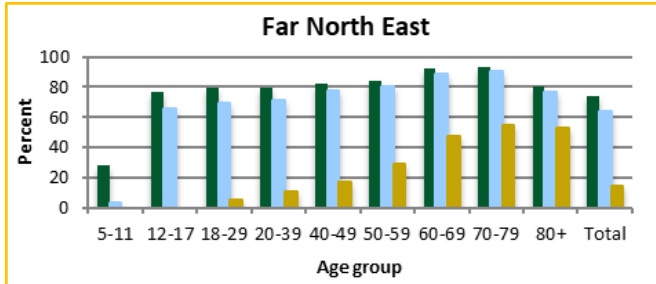
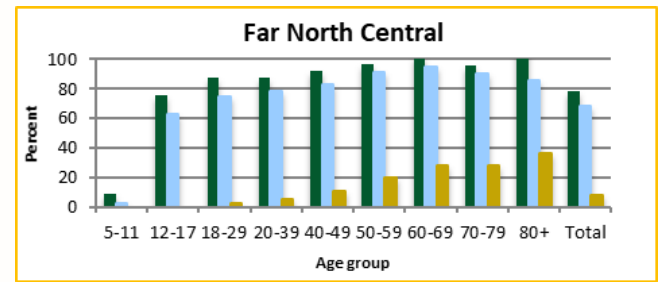
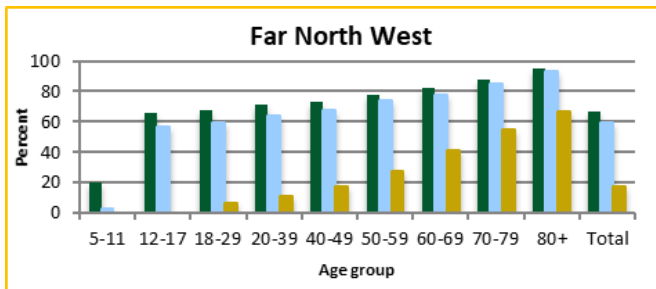
COVID-19 Vaccinations



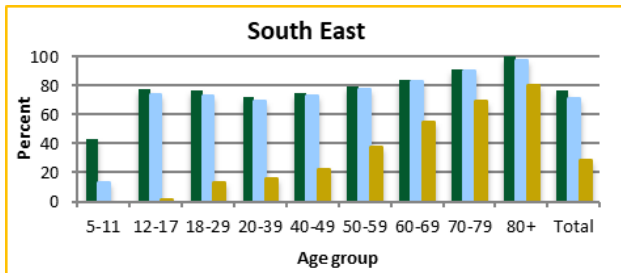
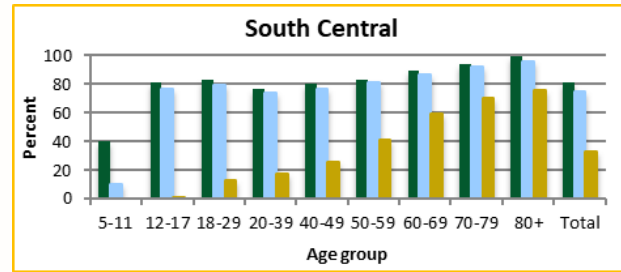
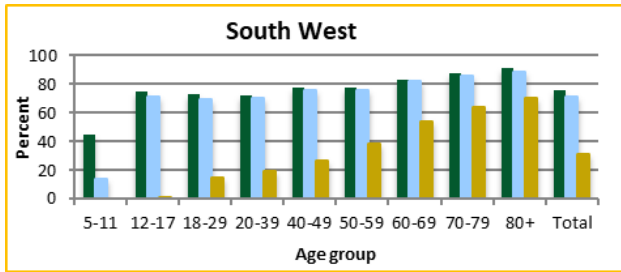
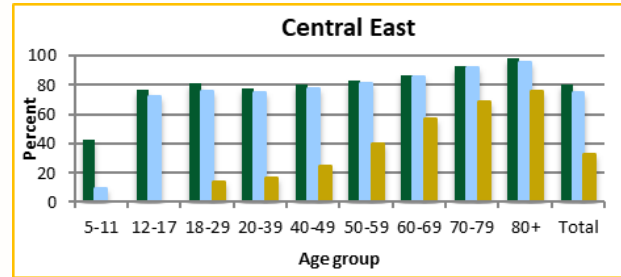
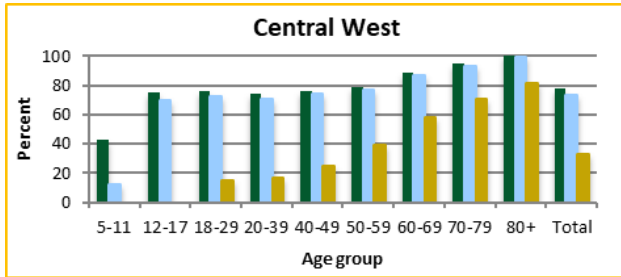
First dose, completed series, and booster uptake by population, provincially and by zone



As of January 09, 2022- this week's integrated report date.
Data source: Panorama January 11, 2022.



people with 1 dose of a two-dose series
 people with 2 doses of a two-dose series or 1 dose of a one-dose series (completed series)
 people with at least 1 booster dose



■ people with 1 dose of a two-dose series
■ people with 2 doses of a two-dose series or 1 dose of a one-dose series (completed series)
■ people with at least 1 booster dose

Notes:**Data sources:**

- *Comorbidities include* hypertension, cardiovascular disease, diabetes, lung disease, pregnancy, obesity.
- Numerator data source: Panorama, IOM and RRPL. Results are by reported date, as of December 31, 2021 and extracted on January 4, 2022.
- Out-of-province tested SK residents are not included in this analysis.
- Denominator data source: Panorama immunization registry extract on January 11, 2022 for doses administered up and including January 9, 2022.
- Denominator for the first booster immunization as crude estimate of the number of people with a first booster based on all doses following a completed two-dose primary series (i.e., doses following a one-dose primary series excluded).

Caveat:

- This is an estimate of the proportion of new cases by vaccination status based on those reported as immunized by December 1, 2021.
- A first booster is receipt of vaccine 28 days or more after completing the primary series.
- Although the dates between cases and immunized are not perfectly aligned, it will provide an estimate of the share of cases among each vaccination group.
- Please note these proportions cannot be used to describe infection after immunization because time to build immunity has not been taken into account.
- A completed series is receipt of one dose of a one-dose vaccine or receipt of two doses of a two-dose series where the minimum interval criterion is met.
- ICU admission proportions and death proportions are based on small numbers and will be quite variable.
- Not all recent COVID-19 cases have been entered into Panorama database.

The actions taken by the people of Saskatchewan collectively will determine the outcome.

Layering simple measures reduce the risk of infection:

- Get the vaccine as soon as you are eligible to receive it, including third/booster doses
- Mask whenever you are away from your home
- Physically distance
- Stay home with even the mildest symptoms
- Use rapid tests to monitor
- Reduce close contacts and non-essential travel
- Outdoors is better than indoors
- Wash hands/sanitize often

COVID-19 information is available at saskatchewan.ca/COVID19