COVID-19: Modelling Update

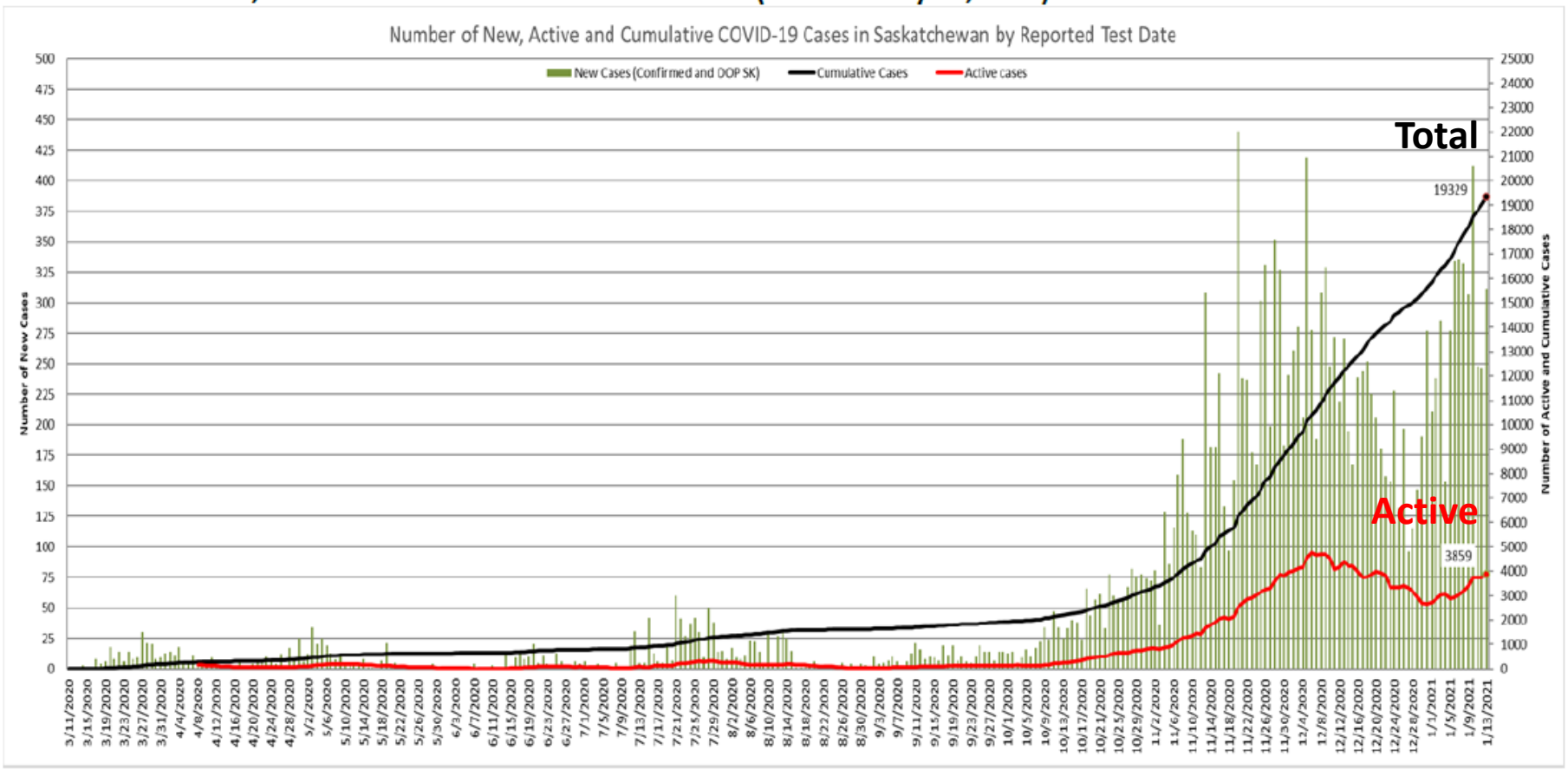
January 14, 2021

- Modelling cannot predict what will happen.
- It tells us what could happen over the next six months, based on actions taken.
- It supports decision makers by comparing the potential impact of public health measures and behaviour changes.
- Goal: to make the best policy decisions based on public health information, keeping children in school, and not exceeding the health system's capacity to care for both COVID-19 and non-COVID-19 patients.

Assessing our Situation: COVID- 19 Indicators

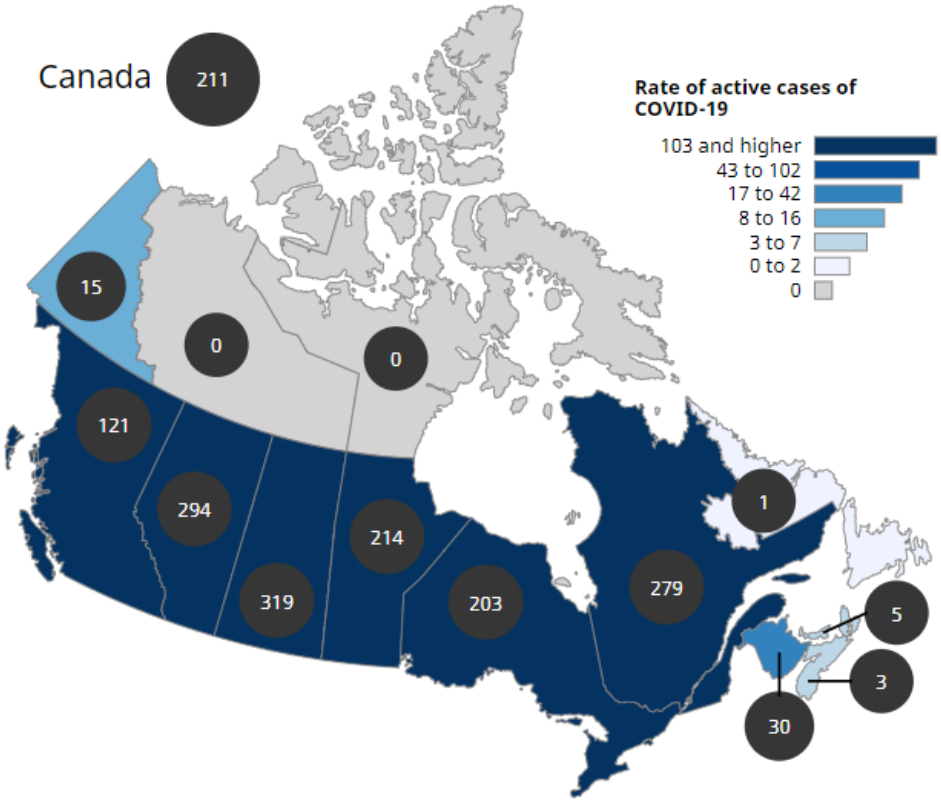
Saskatchewan's Epidemic Curve
Mar 11, 2020 – Jan 13, 2021 (19,329 cases)

Number of New, Active and Cumulative COVID-19 cases (as of January 13, 2021)



Source: PHB notifications and RRPL Daily Test Count Table

COVID-19 Active Cases per 100,000

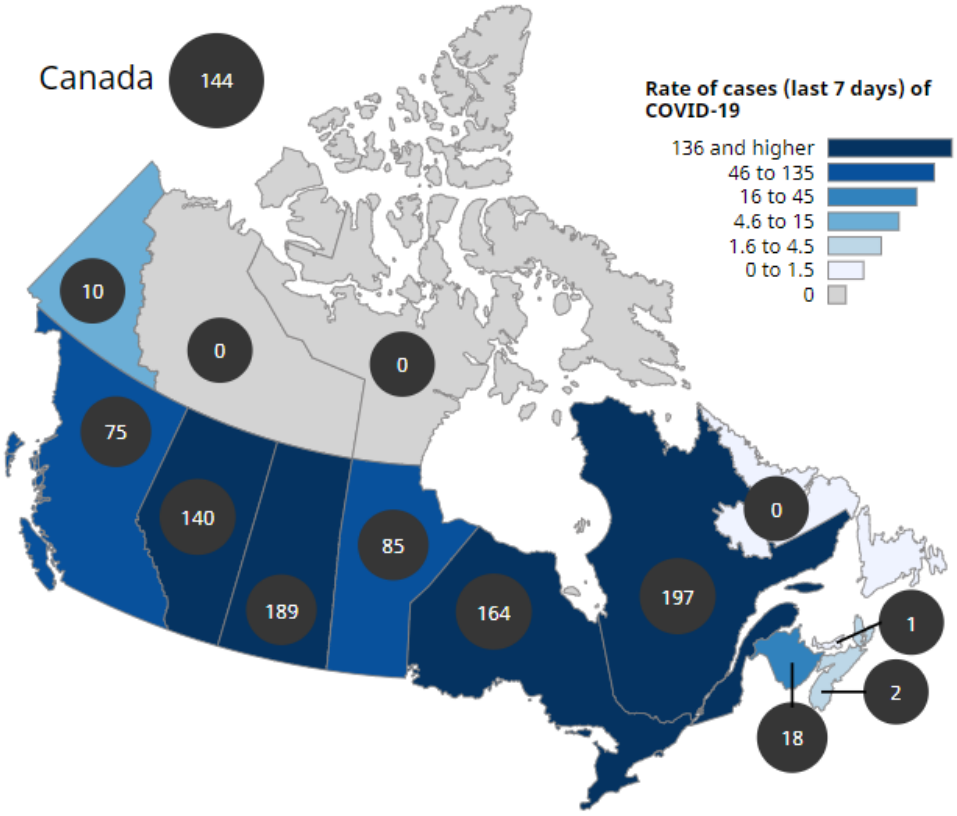


To date:

- **19,329 total cases**
- **3,859 active cases**
- **781 hospitalized (169 in ICU)**
- **206 deaths (1.1% fatality rate)**

Source: Public Health Agency of Canada, Jan 14, 2021 https:https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html?stat=rate&measure=active#a2

COVID-19 Rate per 100,000, Last 7 Days (Jan 7, 2020-Jan 13, 2021)



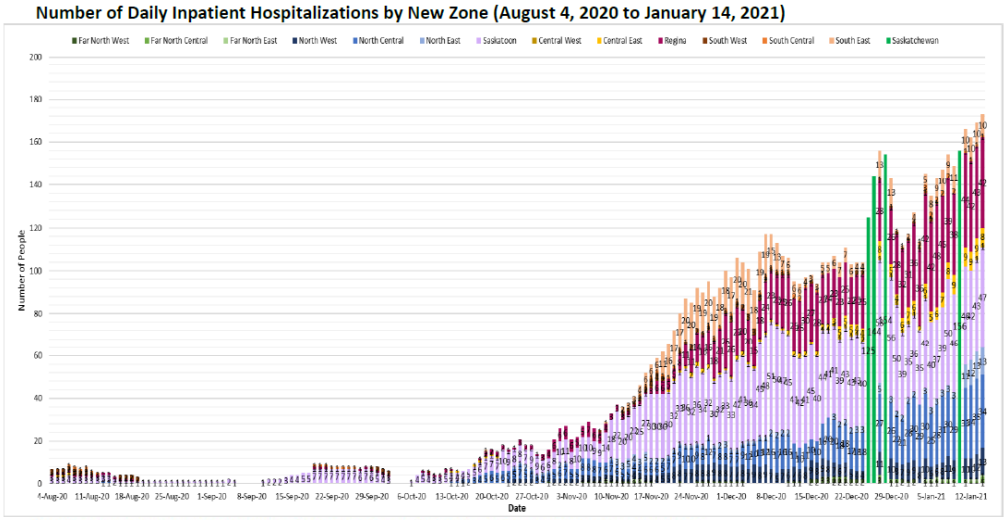
In the last seven days :

- **2193 cases**
- **25.9/100,000 avg 7 day new case rate**
- **75 new hospitalizations 13 new ICUs**
- **22 deaths**

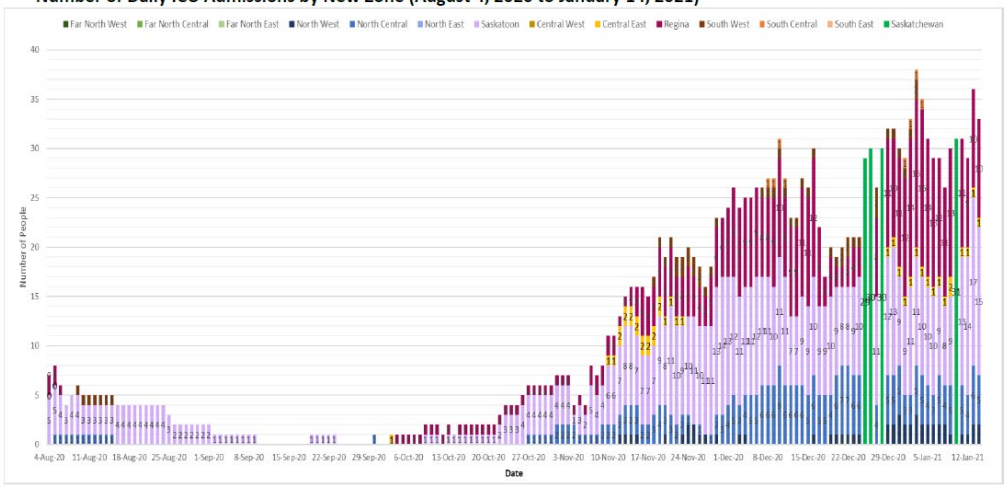
Source: Public Health Agency of Canada, Jan 14, 2021 https:https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html?stat=rate&measure=total_last7#a2

COVID-19 Hospital and ICU Case Census, Aug 4, 2020 – Jan 14, 2021

Hospitalization

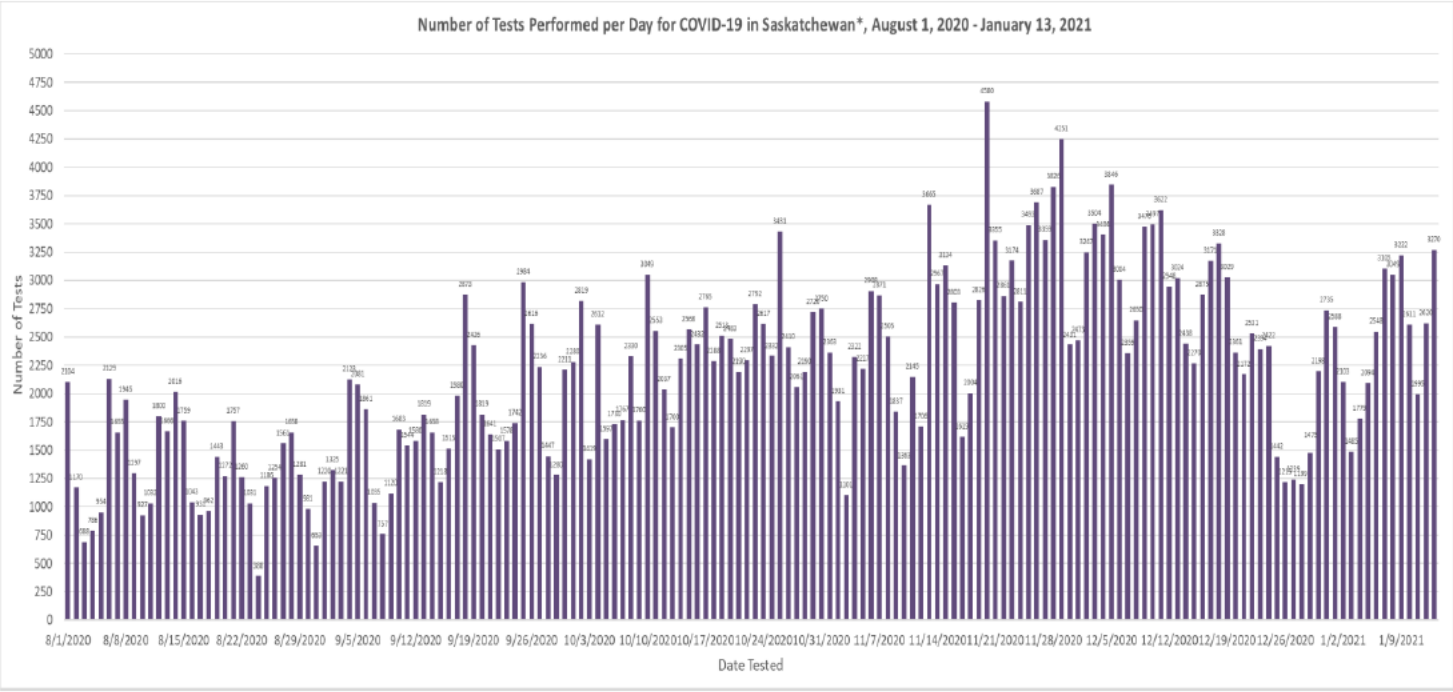


ICU



Provincial COVID-19 Testing, Aug 1, 2020 to Jan 13, 2021

Summary of Tests Performed per Day for COVID-19 (August 1 – January 13, 2021)



Source: RRPL Daily Test Count Table

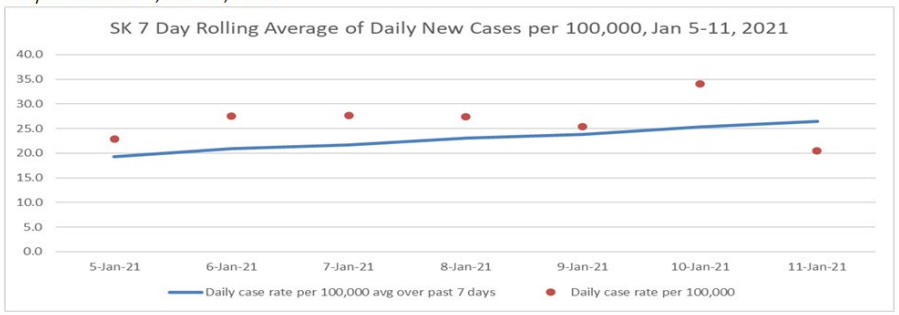
Available with daily dashboard posting at Saskatchewan.ca/covid19

Indicator Summary (Jan 5 -Jan 11, 2021)

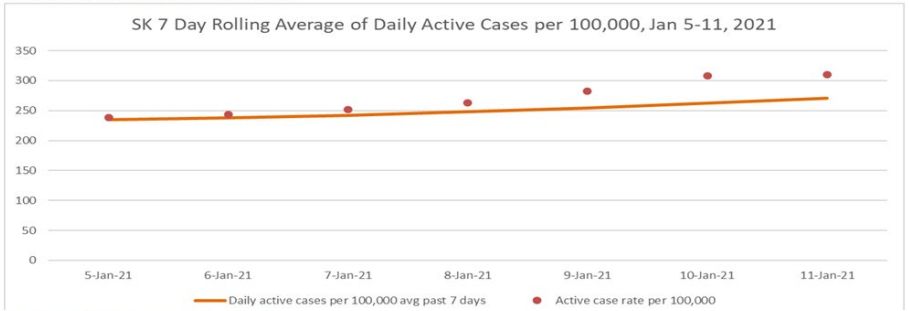
	7 day average (Jan 5-11, 2021)					
Zone	Daily new cases	Daily new case rate per 100,000	Daily active cases	Daily active case rate per 100,000	Daily test positivity (%)	Daily testing rate per 100,000
Far North West	15.7	52.6	190.3	637.1	17.2	260.7
Far North Central	3.6	12.0	29.7	1116.2	31.3	499.1
Far North East	36.0	120.5	407.7	1685.1	25.2	533.2
North West	38.7	129.6	379.6	451.2	21.7	196.5
North Central	46.1	154.5	585.4	651.8	20.0	252.4
North East	14.7	49.3	103.3	244.4	21.4	172.7
Saskatoon	64.9	217.2	556.4	166.2	13.5	167.4
Central West	2.9	9.6	35.3	93.6	7.1	119.0
Central East	9.4	31.6	140.9	140.9	7.1	150.7
Regina	51.1	171.2	526.1	192.5	9.2	228.7
South West	1.0	3.3	14.3	36.1	6.6	63.9
South Central	5.3	17.7	49.6	80.2	6.2	198.5
South East	22.3	74.6	203.1	223.0	14.8	195.7
SK	320.7	26.5	3283.0	271.1	12.3	219.7
79 active cases have pending residence locations						

Indicator Summary (Jan 5 – Jan 11, 2021)

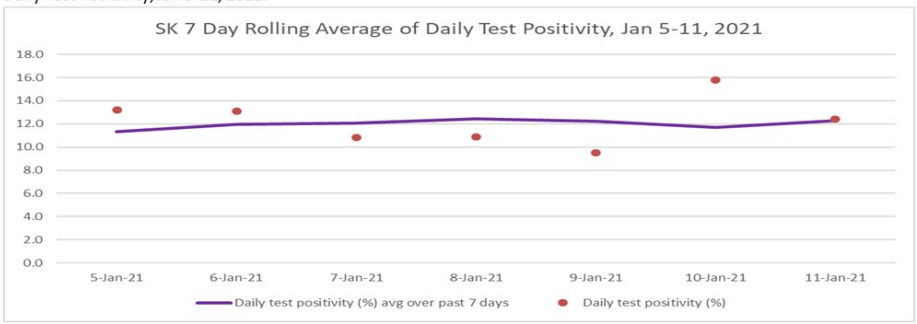
Daily New Case Rate, Jan 5-11, 2021:



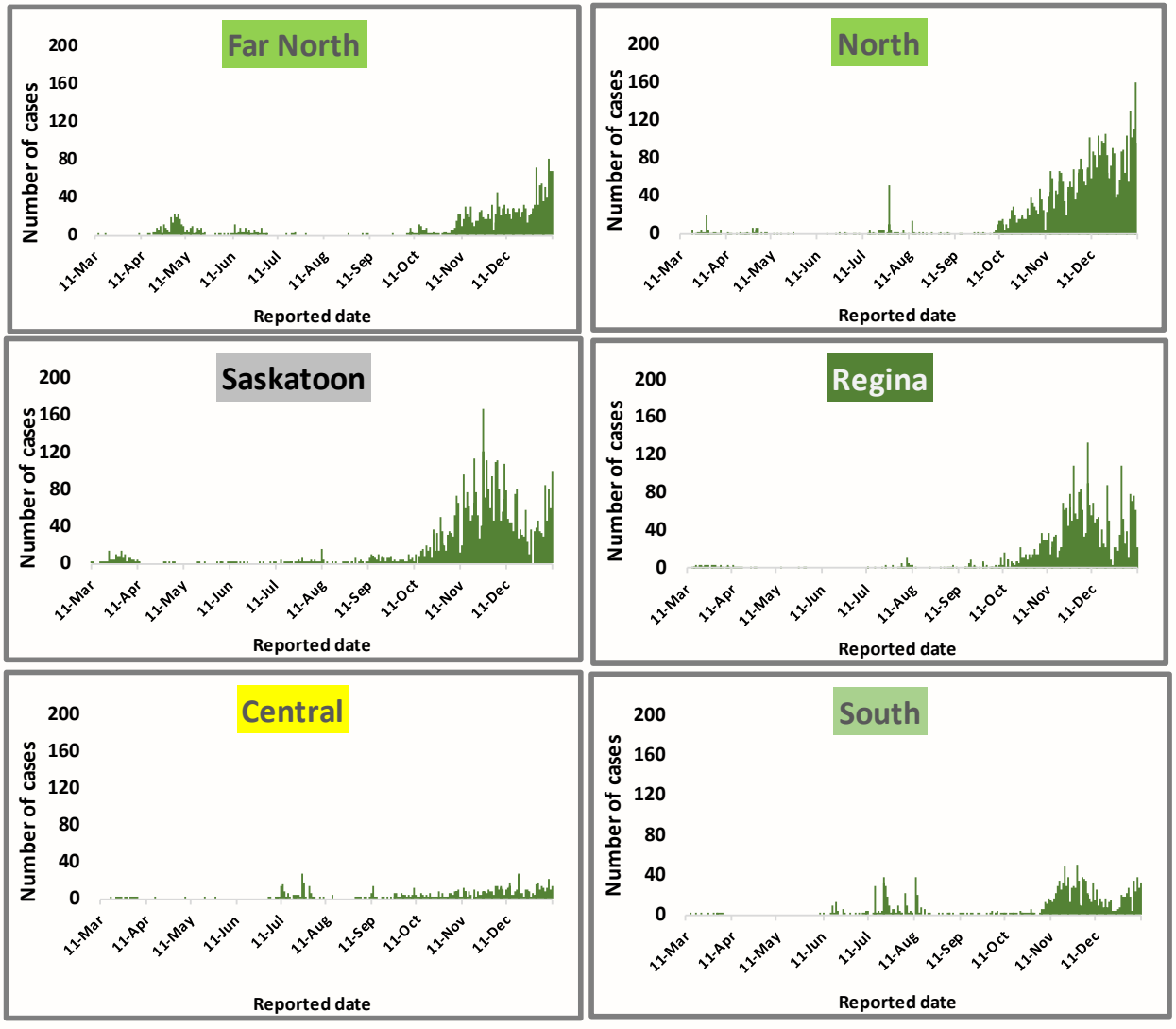
Daily Active Case Rate, Jan 5-11, 2021:



Daily Test Positivity, Jan 5-11, 2021:



Area Epidemic Curves, Mar 11 – Jan 10



COVID-19 Hospital, ICU and Deaths by Age Groups (to Jan 10, 2021)

Number of hospitalization, ICU and deaths, to Jan 10, 2021			
Age group	**Number of cases ever hospitalized**	**Number of cases ever in ICU**	**Number of Deaths**
19 and under	18	1	0
20 to 39	99	11	11
40 to 59	178	59	13
60 to 79	265	76	62
80+	190	17	113
Total	**750**	**164**	**199**

Hospitalization and Death Rate (%) by Age Based on Cumulative COVID-19 Cases to Jan 7, 2021

Saskatchewan				
Hospitalization and death rate (%) by age group, as of January 7, 2020				
Age group	**# Hospitalized**	**Rate (%) Hospitalized**	**# Deaths**	**% Death**
0-19	17	0.5%	0	0.0%
20-39	89	1.5%	9	0.1%
40-59	164	3.8%	11	0.3%
60-79	247	11.3%	54	2.5%
80 +	164	21.3%	100	13.0%
SK	**681**	**4.1%**	**174**	**1.0%**

Data source: Panorama, January 7, 2021

Canada				
Hospitalization and death rate (%) by age group, as of January 7, 2021, 2020				
Age group	**# Hospitalized***	**Rate (%) Hospitalized**	**# Deaths**	**% Death**
0-19	440	0.5%	0	0.0%
20-39	2482	1.4%	0	0.0%
40-59	5974	4.1%	321	0.2%
60-79	11841	16.8%	3862	5.5%
80 +	10727	24.0%	10773	24.2%
SK	**31464**	**6.1%**	**14956**	**2.9%**

Data source: Stat Canada, January 7, 2021

** Cumulative total includes unknown/unspecified cases*

COVID-19 Hospital and ICU by Age - Jan 5, 2021

Number of current hospitalization and ICU, Jan 5, 2021		
Age group	**Number of cases hospitalized**	**Number of cases in ICU**
19 and under	3	0
20 to 39	21	3
40 to 59	30	12
60 to 79	66	14
80+	42	1
Total	**162**	**30**

COVID-19 Exposures by Type (to Jan 10, 2021)

	Cases Jan 4 – Jan 10, 2021	Total Cases to Date from March
Health Care Workers	43	869
International Travel	0	157
Domestic Travel	4	149
Health Care Setting	40	194
Congregational/Communal Living Setting	0	751
Mass Gatherings	8	269
Workplace	29	414
Household Exposure	125	1662
Social Exposure	65	567
Public Facilties	14	307
School/Daycare	0	72
Unknown/Not identified	496	4696
Pending	1423	4311

Note: case totals are more than the reported total of cases as HCWs may also be counted in other exposure categories, depending on exposure.

COVID-19 Cases with Unknown and Pending Exposure (Oct 1 to Jan 3, 2021)

Number of cases with exposure unknown, pending and no identified exposure, Oct 1 – Jan 10, 2021

Year	Month	Week #	Unknown	No identified exposure	Pending
2020	**October**	40		5	2
		41		35	4
		42		26	24
		43	1	72	22
		44		107	24
	November	45	1	172	62
		46	6	269	206
		47	5	373	186
		48	10	523	171
		49	5	123	40
	December	49	8	337	123
		50	20	438	267
		51	15	318	606
		52	12	333	438
		53	31	171	389
2021	**January**	1	4	99	229
		2	205	288	1091
		3	137	11	261
Grand Total			**460**	**3700**	**4145**

COVID-19 Outbreaks (Jan 4-10)

Outbreak settings *	Confirmed outbreaks
Special care homes (incl. private, affiliates)	2
Personal care homes	
Hospital (acute, rehab)	1
Communal/congregate living	3
(group/retirement homes/apartment building)	
Shelter	
Places of worship	
Community events (funerals, weddings, casino)	
Restaurant/bar	3
House gatherings	1
Team sports/fitness centres	
Community wide (remote or geographically defined)	
Store (small grocery)	
Correctional facilty	
Workplace	6
retail/grocery	
manufacturing/assembling/food processing	2
corrections/policing	1
office	1
food service (restaurant, fast food, bar)	
health facility (LTC, PCH, acute)	1
mining	
Retirement home	1
other (day care, grooming/fitness centre)	

**Description (excludes schools and child care centres)*

18 new outbreaks were reported in the weeks of January 4-10

Mean, Median, Range of Contacts per Case Past Two Weeks (Dec 21- Jan 3, 2021)

Mean, median, range contacts per case past 2 weeks Dec 21 - Jan 3, 2021		
Measure	**CLOSE contacts per case past 2 weeks**	**ALL contacts per case past 2 weeks**
Mean	4.4	5.5
Median	3.0	4.0
Range	1-35	1-75

**Includes contacts of cases reported in the last 2 weeks, Dec 6 to 20, 2020*

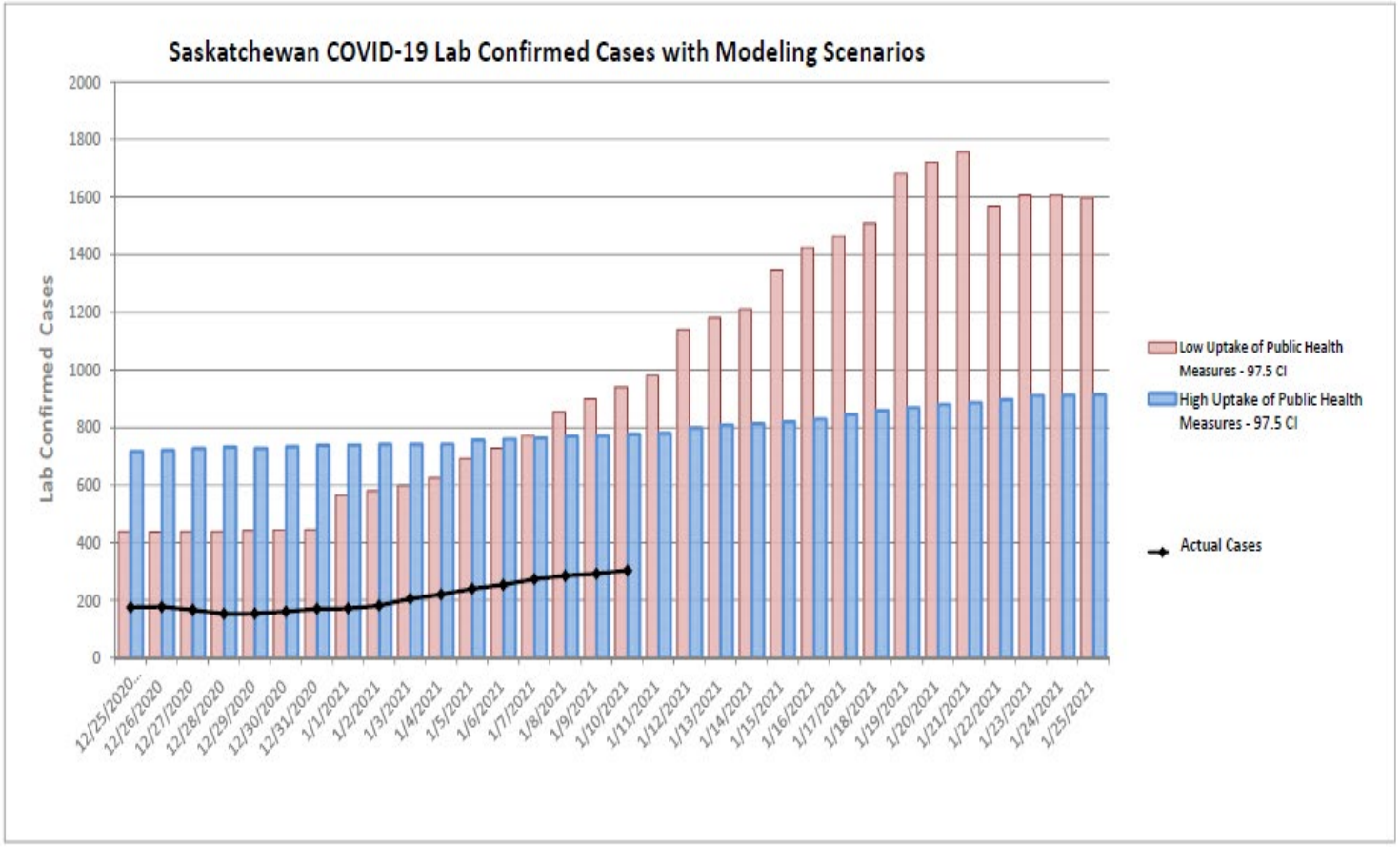
**Summarized by source (case) Zone - cases out of province or country are excluded.*

**Includes cases who named at least one contact*

**ALL contact types include close, non-close, not a contact, and missing exposure types.*

COVID-19 Modelling Update Scenarios

Impact of Public Health Measures on Lab Confirmed Cases - Based on Trends of Dec 25-Jan 12

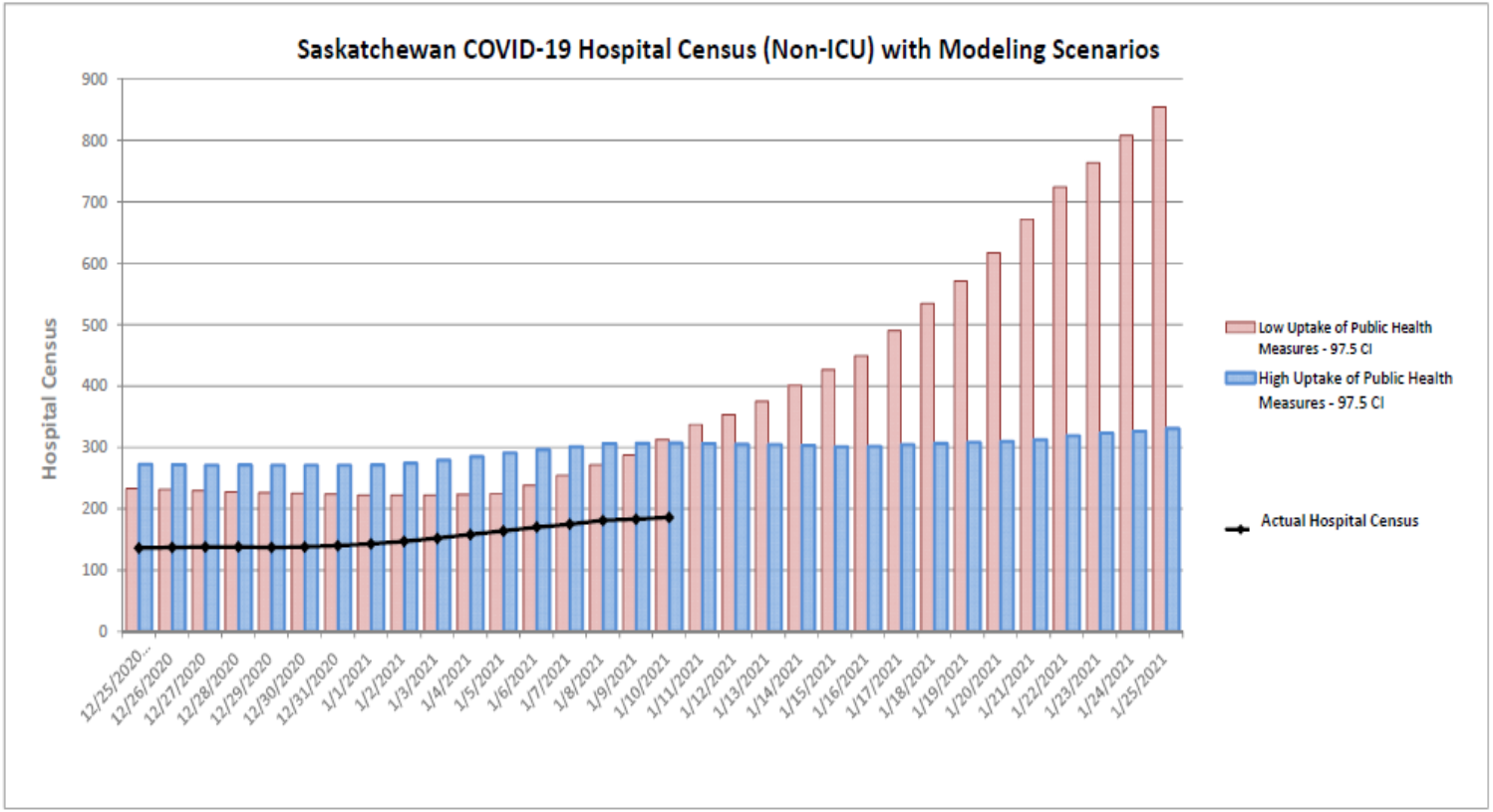


CEPHIL Agent Based Model study results with 95% quantile

Modelling chart includes holiday season trend.

Rate of growth depends on degree of uptake of public health measures.

Impact of Public Health Measure on Hospital Census Based on Trends Dec 25-Jan 12



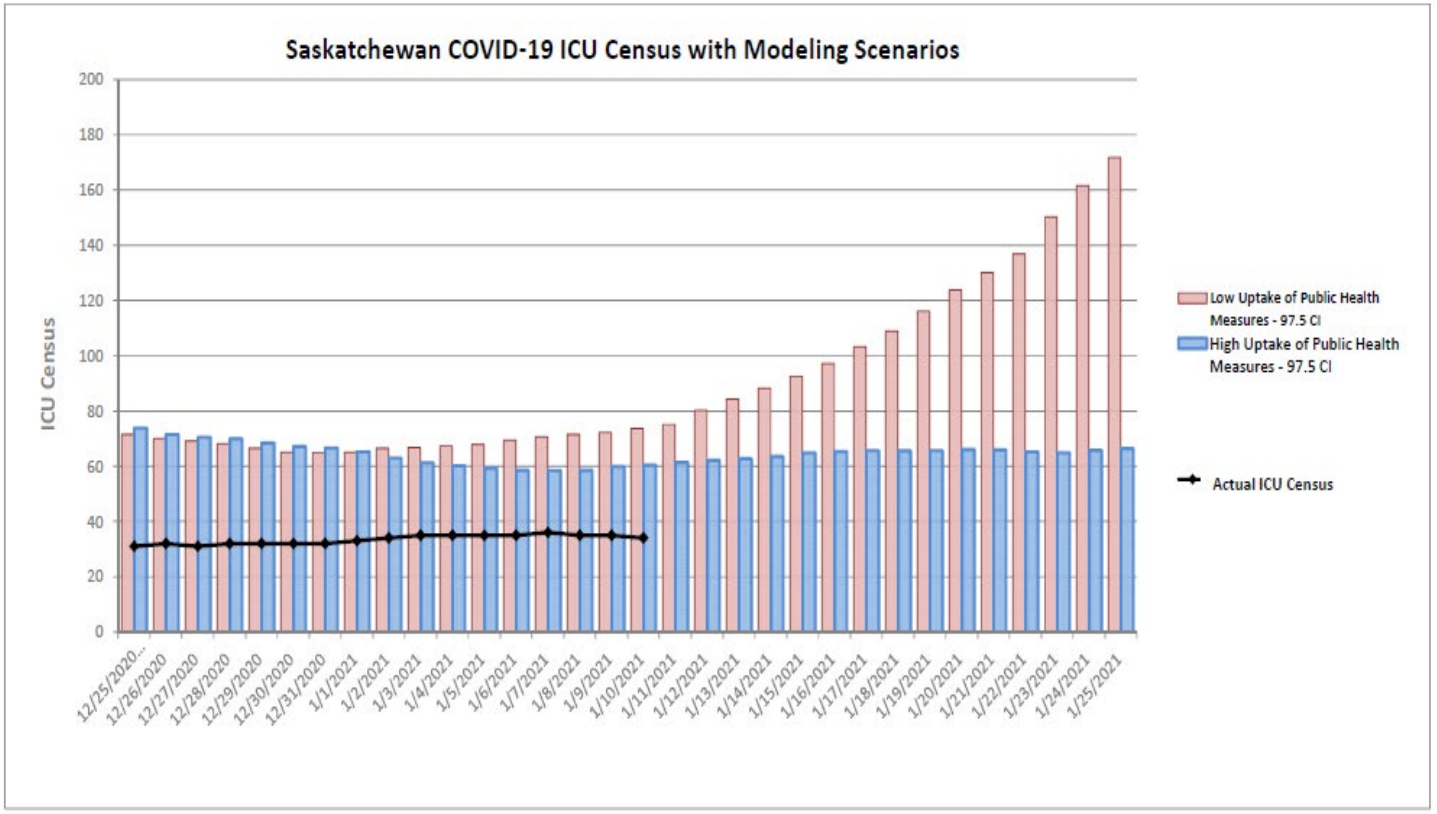
CEPHIL Agent Based Model study results with 95% quantile

Modelling chart includes holiday season trend.

Hospital census changes lag behind changes to cases by 1-2 weeks.

Rate of growth slower with higher uptake of public health measures.

Impact of Public Health Measures on ICU Census Based on Trends Dec 25-Jan 12



CEPHIL Agent Based Model study results with 95% quantile

Modelling chart includes holiday season trend.

ICU census changes lag behind cases by 1-2 weeks and hospital census by another week.

Rate of growth depends on degree of uptake of public health measures.

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

Simple measures reduce the risk of infection:

- **Follow the mandatory mask order**
- **Physically distance**
- **Reduce close contacts and non-essential travel**
- **Outdoors is better than indoors**
- **Washing hand/sanitizing often**
- **Abide by the public health guidelines in every public space**

Public Health Order is available at saskatchewan.ca/COVID19