

# Taking the Pulse of COVID-19 in Saskatchewan—in 8 maps (August 2021)

Results from the Social Contours and COVID-19 Survey

August 5, 2021

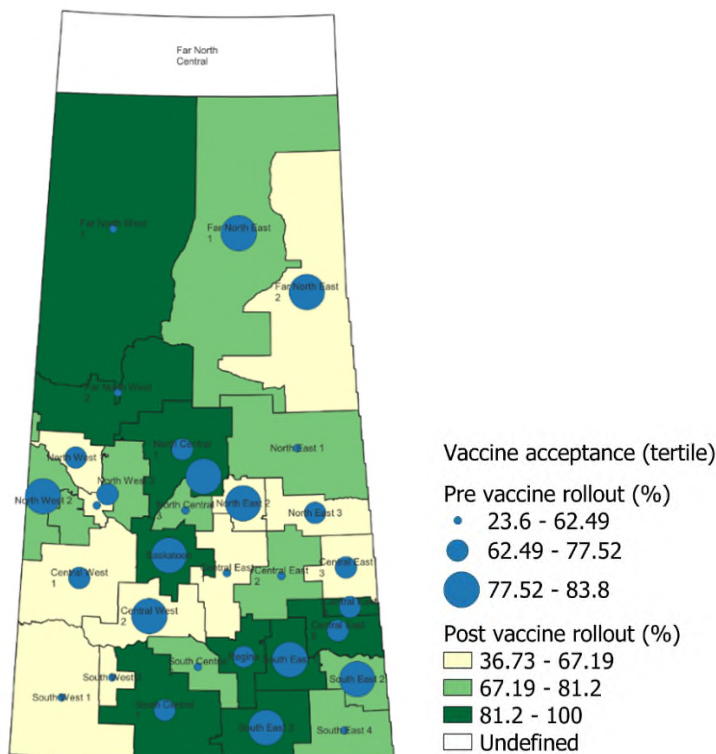
From May 4, 2020 (Phase 1 of the Re-open Saskatchewan Plan), SPHERU researchers have collected data about COVID-19 from Saskatchewan residents through our [Social Contours and COVID-19 Survey](#). This survey has four objectives: 1) to collect behavioural, perceptual, social, and place-based data (i.e., how we act, think, interact, and move); 2) assign a COVID-19 risk level to people and places, over time; 3) identify lower- and higher-risk places in our province; and 4) communicate this information to public health officials and the general public.

Data below are based on Social Contours and COVID-19 study, as of June 7th, 2021; this includes 10,627 respondents to date (unless otherwise indicated). Results are weighted by age, gender, and location of residence (Census 2016, Saskatchewan adult population). In this brief, notable findings from an analysis of before and after Saskatchewan began its COVID-19 vaccination campaign are reported.

## PART 1: In which areas (sub-zones) in Saskatchewan do we see COVID-19 vaccine acceptance or hesitancy or refusal since the vaccine campaign began compared to before?

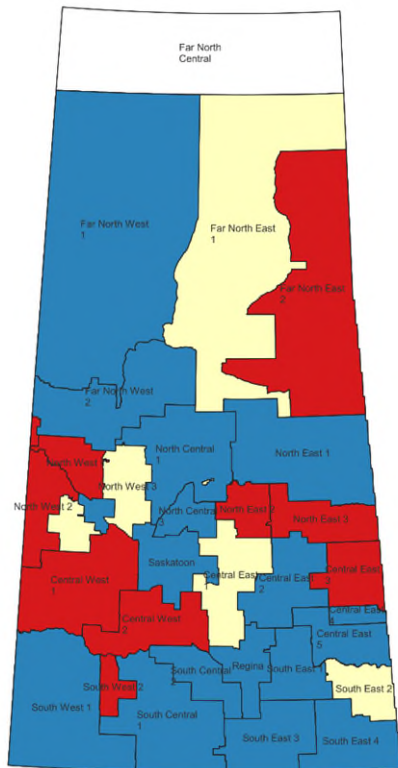
Fig 1.1 COVID-19 vaccine acceptance rates across Saskatchewan

### A. Post vaccine (in green) vs pre vaccine rollout



The map above shows the COVID-19 vaccine acceptance rates **remained lowest** during the pre and post vaccine rollout periods (before and after December 14, 2020) across South West 1, South West 2, Central East 1, and North West 4, i.e. in both periods, these zones had the lowest self-disclosed vaccine acceptance rates. At the opposite end, South East 1, South East 3, and Saskatoon had the highest vaccine acceptance rates, both before and after the vaccine rollout.

### B. Change in rates from pre to post vaccine rollout



% changes in rates of vaccine acceptance (pre and post vaccine rollout)

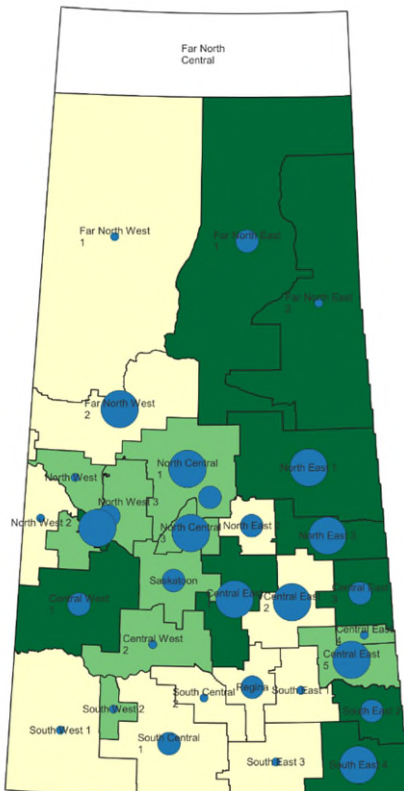
- Red: Decrease (-50.21% - -7.16%)
- Yellow: No change
- Blue: Increase (9.74% - 323.73%)
- White: Insufficient sample

This map shows changes in vaccination acceptance rates from before the vaccine campaign began to after. The red zones changed to a lower vaccine acceptance, those in yellow did not change, and vaccine acceptance increased in the blue zones.

Vaccine acceptance rates decreased in 29% of all sub-zones (in red), with North East 3 with the lowest decrease, at -7.16% and Central West 2 the highest, at -50.21%. Vaccine acceptance increased in 54.84% of the sub-zones, ranging from a low of 9.74% in North Central 1 to a high of 323.73% in Far North West 1.

Fig 1.2 COVID-19 vaccine hesitancy rates across Saskatchewan

### A. Post vaccine (in green) vs pre vaccine rollout



Vaccine hesitancy (tertile)

Pre vaccine rollout (%)

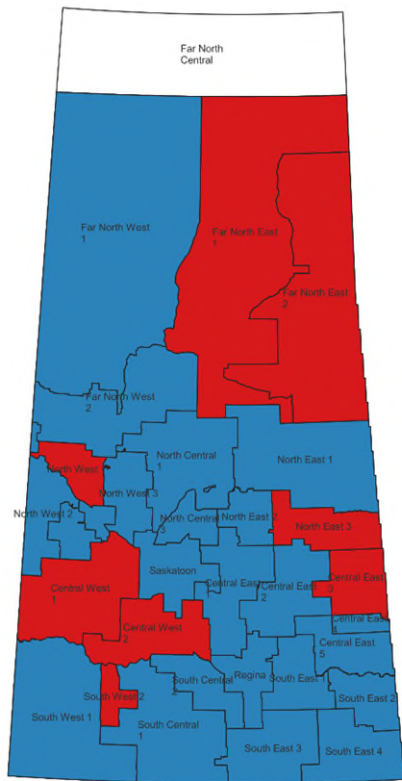
- Small blue dot: 1.68 - 10.43
- Medium blue dot: 10.43 - 16.2
- Large blue dot: 16.2 - 34.56

Post vaccine rollout (%)

- Yellow: 0 - 6.61
- Light Green: 6.61 - 11.42
- Dark Green: 11.42 - 38.36
- White: Undefined

The map on the left shows COVID-19 vaccine hesitancy rates **remained highest** during the pre and post vaccine rollout periods across North East 1, North East 3, North West 4, Central East 1, and South East 4. **After** the COVID-19 vaccine rollout began, vaccine hesitancy rates were highest in Central East 1 (11.48%), North East 1 (12.6%), South East 2 (13.35%), North West 4 (15.71%), South East 4 (16.66%), Far North East 1 (18.8%), Central West 1 (24.05%), Central East 3 (26.06%), North East 3 (32.47%), and Far North East 2 (38.36%).

### B. Change in rates from pre to post vaccine



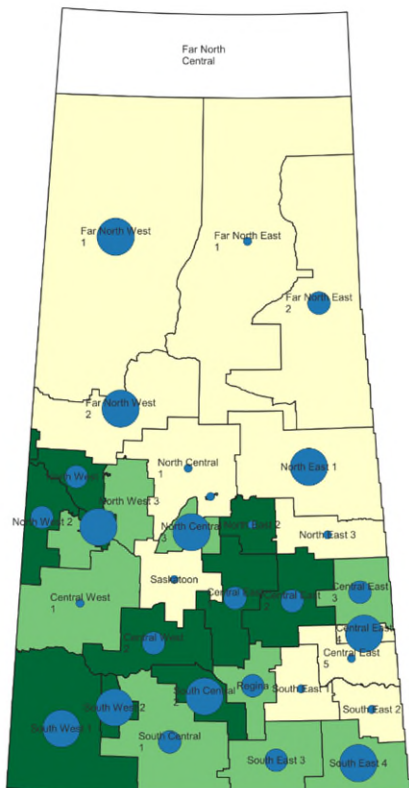
% changes in rates of vaccine hesitancy (pre and post vaccine rollout)

- Decrease (-100.00% - -8.69%)
- No change
- Increase (16.05% - 293.03%)
- Insufficient sample

This map shows vaccine hesitancy rates increased in 26% (or n=8) of all the Saskatchewan COVID-19 sub-zones (in red). The increase in hesitancy ranged from a low of 16.05% in Far North East 1 to 293.03% in Far North East 2.

Fig 1.3 COVID-19 vaccine refusal rates across Saskatchewan

### A. Post vaccine (in green) vs pre vaccine rollout



Vaccine refusal (tertile)

Pre vaccine rollout (%)

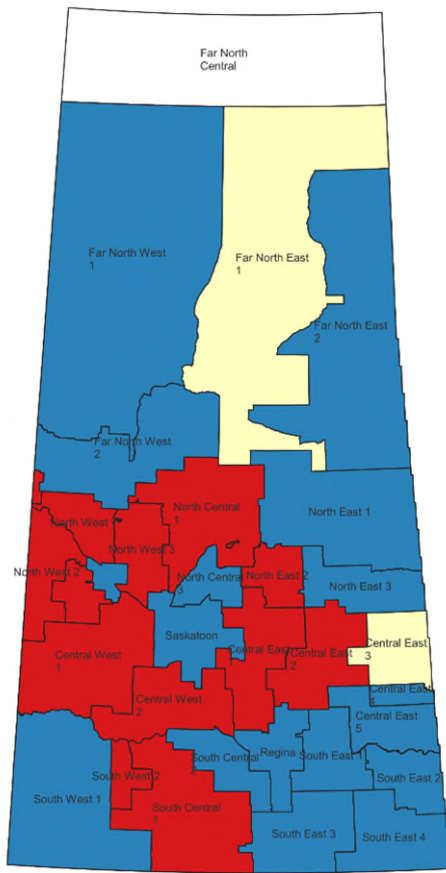
- 0 - 10.47
- 10.47 - 23.07
- 23.07 - 74.72

Post vaccine rollout (%)

- 0 - 7.57
- 7.57 - 15.64
- 15.64 - 51.85
- Undefined

This map shows COVID-19 vaccine refusal rates **remained highest** during the pre and post vaccine rollout periods across North West 4, South Central 2, South West 1, and South West 2. **After** the COVID-19 vaccine rollout began, refusal rates were, in order, low to high: North West 4 (17.1%), North West 2 (20.78%), Central East 2 (21.95%), Central East 1 (24.17%), South Central 2 (27.41%), North East 2 (30.02%), North West 1 (33.46%), South West 1 (35.57%), Central West 2 (49.25%), and South West 2 (51.85%).

## B. Change in rates from pre to post vaccine



% changes in rates of vaccine refusal (pre and post vaccine rollout)

- Decrease (-100.00% - -12.20%)
- No change
- Increase (13.77% - 331.64%)
- Insufficient sample

This map shows vaccine refusal rates **increased** in 39% of the sub-zones (n=12), which are in red. Vaccine refusal rates ranged from a low of 13.77% in South Central 1 to 331.64% in Central West 2.

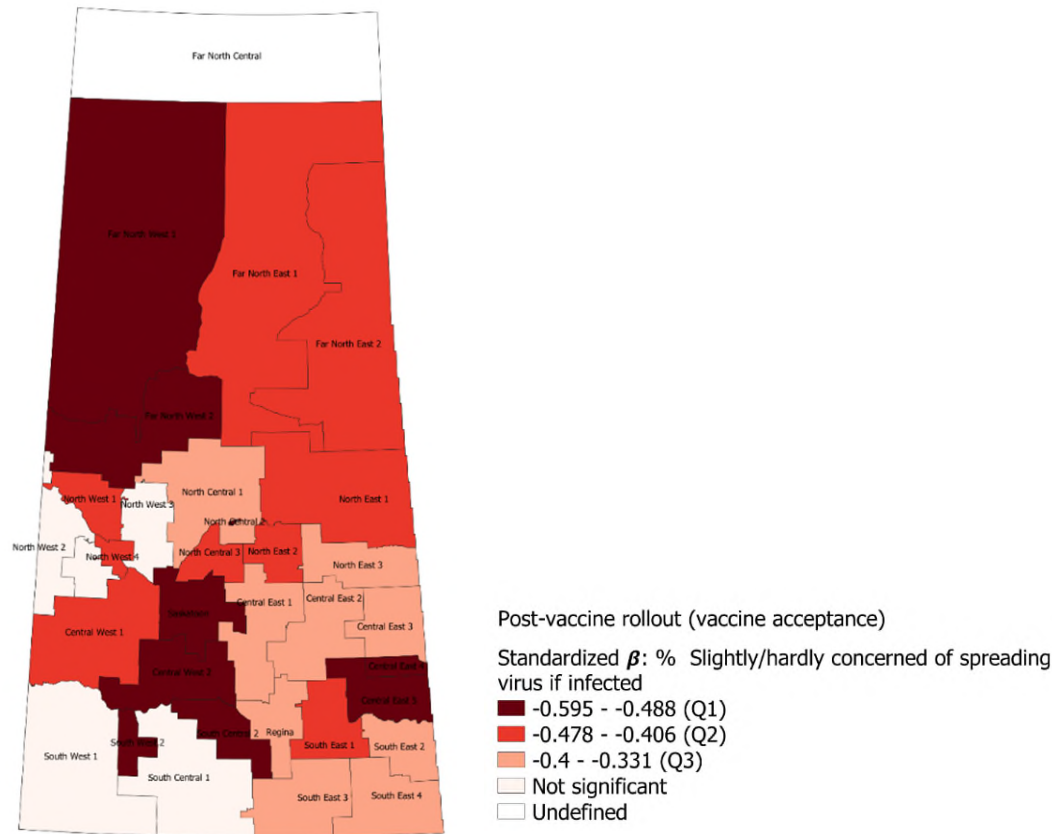
## PART 2: What factors at an area-level (sub-zones) are associated with COVID-19 vaccine acceptance or hesitancy or refusal since the vaccine campaign began in Saskatchewan?

This section reports selected results from a geographically-based analysis of data from the Social Contours and COVID-19 longitudinal panel survey (multivariate multiscale geographically weighted regression or MGWR). The variables included in the geographical modeling are classified into sociodemographic, risk exposure behaviour, mitigating behaviour, and perceptual domains.

*Note: Far North Central sub-zone had insufficient samples, therefore were dropped from further analysis.*

## 2.1 What factors are related to vaccine acceptance at sub-zone level?

**Fig 2.1 Hardly or slightly concerned about spreading coronavirus and vaccine acceptance rates by COVID-19 sub-zones, Saskatchewan, December 14, 2020 to May 2021.**



This map shows that there is a statistically significant pattern at sub-zonal level between vaccine acceptance and those who say that they are hardly or only slightly concerned about spreading the coronavirus. Those sub-zones with higher proportion of survey respondents who say they are hardly or only slightly concerned (shown in darker shades of red/brown) are the same sub-zones where there are lower rates of vaccine acceptance. These sub-zones—lower concern about spreading the virus and lower vaccine acceptance rates—are in northern regions, central west and pockets in south east region.

We also found that those zones had a higher proportion of respondents who perceived the pandemic as a small threat to their communities and lower vaccine acceptance (map not shown).

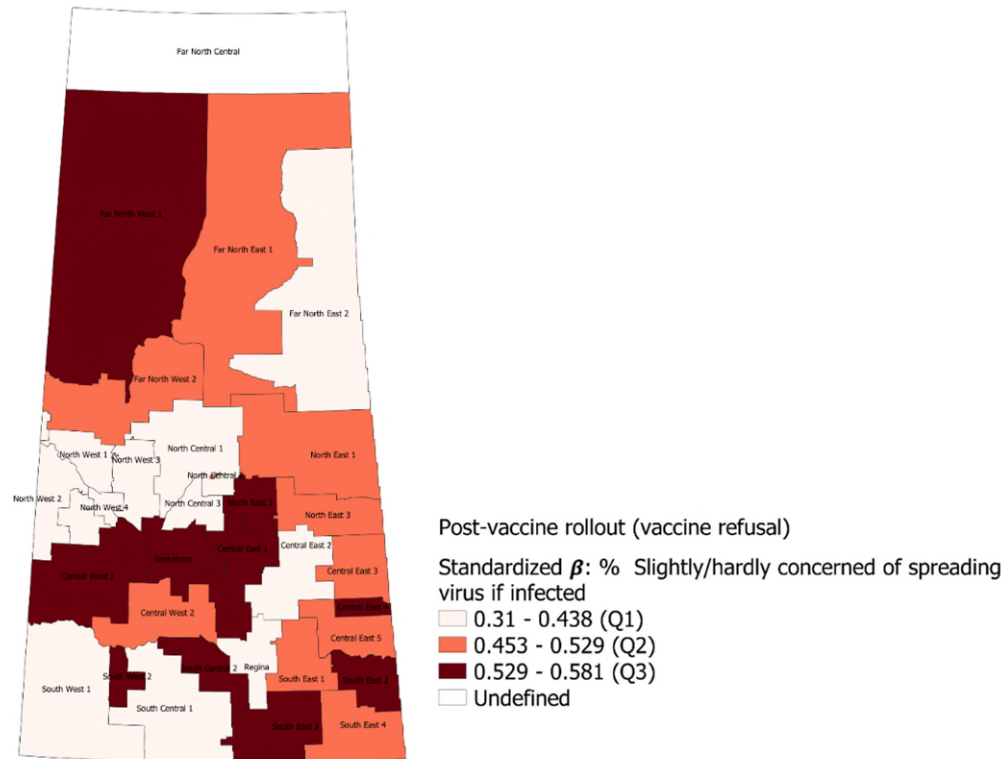
## 2.2 What factors are related to vaccine hesitancy at sub-zone level?

There were spatial homogeneities in the associations between the perceived size of threat posed by COVID-19 to one's community, compliance with physical distancing measures, and vaccine hesitancy rates (not mapped). Five percentage increase in those who perceived COVID-19 as a small threat to the communities and practiced social distancing regularly increase vaccine hesitancy rates by 3.05% and 4.45%, respectively.



## 2.3 What factors are related to vaccine refusal at sub-zone level?

**Fig 2.3 Hardly or slightly concerned about spreading coronavirus and vaccine refusal rates by COVID-19 sub-zones, Saskatchewan, December 14, 2020 to May 2021.**



This map shows there is a statistically significant pattern at sub-zonal level between vaccine refusal and those who say they are hardly or only slightly concerned of spreading the coronavirus. Those sub-zones with a higher proportion of survey respondents who say they are hardly or only slightly concerned (shown in darker shades of red/brown) are also the same sub-zones where there are higher rates of vaccine refusal. These sub-zones—i.e., lower concern about spreading the virus and higher vaccine refusal rates—were Saskatoon, Far North West 1, Central West 1, Central East 1, North East 2, South West 2, South Central 2, South East 3, South East 2, and Central East 4. Numerically, we estimate a 5% increase in the proportion of people who were less concerned about spreading COVID-19 increases vaccine refusal rates by a factor ranging from 1.6% to 2.9%.

We also estimated that 5% increase in the share of the people who practiced physical distancing regularly is associated with 2.1% decrease in vaccine refusal rates (not mapped).

### For more Social Contours and COVID-19 Saskatchewan survey results:

<https://spheru.ca/covid-19/socialcontours/covid-19-results.php>

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For more information on the project visit: <https://spheru.ca/covid-19/socialcontours/covid-19.php> or email [social.contouring@usask.ca](mailto:social.contouring@usask.ca)