



First Nations and Métis Health Service: St. Paul's Hospital Chart Audit Report

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General Introduction & Background

In Canada, First Nations and Métis people experience significant health disparities and a lower health status compared to the rest of the Canadian population (Adelson, 2005). These disparities are the result of years of social, political, economic and cultural inequities, which may be present in hospital settings. Differences in culture and language result in First Nations and Métis patients experiencing barriers to access appropriate care (Adelson, 2005). This may lead to increased length of stay, which can escalate hospital costs.

Access to appropriate and responsive primary health care services has been identified as critical to achieving improvements in health status for Aboriginal people (Adelson, 2005; Canadian Institute for Health Information, 2004; Frohlich et al., 2006). It has been found that the aged-standardized mortality rate (ASMR) for medically treatable diseases (i.e. diseases which could have been avoided through appropriate and timely health care intervention) is 2 to 5 times higher for status First Nations people compared to the rest of the population (British Columbia Provincial Health Officer, 2009). This is likely due to insufficient primary health care services, which suggests a gap within the health care system (British Columbia Provincial Health Officer, 2009).

A large portion of the patients admitted to St. Paul's Hospital in Saskatoon, Saskatchewan are of Aboriginal descent. Although this population is largely being served by the Saskatoon Health Region, little is known about the characteristics of the First Nations and Métis population using these services. The *First Nations and Métis Health Service* within the Saskatoon Health Region is trying to better serve this population, as it aims to provide an integrated and culturally respectful approach to support First Nations and Métis people in the care of the Saskatoon Health Region. Services provided by the unit include: links to traditional supports such as ceremonies and elders; coordination of care to provide assistance with transportation, accommodations, meals, etc. within the First Nations and Inuit Health Branch Guidelines; patient advocacy to foster communication between the staff and clients; facilitation of services such as ensuring appropriate care for patients with complex needs; and resources to connect with Health Canada's Non-Insured Health Benefits (NIHB).

Purpose

Upon request from Gabe Lafond, Director of the First Nations and Métis Health Service, the Office of the Vice-President Research and Innovation staff conducted a chart audit to determine the characteristics of the First Nations and Métis patients that St. Paul's Hospital is serving. Specifically, the chart audit investigated First Nations and Métis patients' reasons for admission, length of stay, whether they experienced a delay in discharge, were admitted through the Emergency Department, if they had a primary care provider, and their primary residence within the province. Information gathered through this project will be used for quality improvement purposes within the Saskatoon Health Region.



Results

Patient charts that did not fit the inclusion criteria were not examined and no data was recorded. A total of 103 charts were included in the analysis. Of the patient charts examined, patients were admitted from February 2012 to December 2013. All of the participants were First Nations. Métis patients were unable to be identified due to the current standards of recording information in health record charts. No method currently exists for patients to self-identify; therefore making it extremely difficult to identify Métis patients. First Nations patients can be identified through recording of their DIAND (Department of Indian Affairs and Northern Development) number, which identifies them as registered Indians under the Indian Act. The representation of Métis people is a limitation of this quality improvement work, which is discussed in the limitations section.

Demographic and Clinical Results

The mean age of participants was 48.4 (\pm 17.5) years. There were 50 male and 53 female participants, in which the primary spoken language was English (98 participants). For five participants, the primary spoken language was both English and Cree. Of the 103 patient charts, 33 participants resided in rural areas, 55 in urban areas and 13 on a reserve. Seventy-six of the participants had a primary care provider (i.e. a family physician). The number of comorbidities was categorized and 9% of patients had no comorbidities, 22% of patients had 1 to 2 comorbidities, 43% had 3 to 5 comorbidities and 17% had 6 or more comorbidities. Please refer to Table 1 for a summary of the demographics and clinical data.

Reason for admission was examined and of the 103 patients, the most common reason for admission was an infection, occurring in 26% of cases (note: the infection category included both respiratory and skin infections). Following infections, surgical procedures and intestinal or gallbladder issues occurred in 9% of the participants. Seven percent of admissions were due to cancer and another 7% of patients were admitted for fractures or wounds. Six percent of patients were admitted for respiratory issues and another 6% were admitted for cardiology issues. Five percent of patients were admitted for complications from a condition or surgery, 5% for renal issues, 4% for overdose and 2% were admitted for urology conditions. For a summary of the reasons for admission, please refer to Table 2.

Of the charts reviewed, 70% of the patients were admitted to St. Paul's Hospital through the Emergency Department. The chart audit was also able to identify the number of admissions prior to the current admission for each patient to St. Paul's Hospital in the previous year. There were 28 participants who were not admitted to St. Paul's Hospital in the previous year, 11 participants were admitted once in the last year, 23 participants were admitted twice in the last year, and 41 participants (i.e. 40%) were admitted three or more times in the last year. The number of Emergency Department visits in the last year, prior to the current visit to St. Paul's Hospital was also recorded. Of the 103 charts, 50% did not have a prior visit to the Emergency Department at St. Paul's Hospital in the last year, 31% of patients had 1 visit, 12% had 2 visits and 8% had 3 or more visits in the last year. For discharge location, 42 participants were discharged home, 3 to a family member's home, 8 to another hospital and 12 to another care facility. Please refer to Table 1 for a summary of the above data.

It was found that 28% of the participants had a delay in discharge. When the reason for the delay in discharge was examined, it was found that 17% experienced additional medical issues, therefore delaying their discharge. Results showed that 11% were delayed due to navigational/benefit issues such as transportation, bed availability in home community (specifically long term care beds), family availability, medical equipment availability at home, wait time for equipment and approval from NIHB (Non-Insured Health Benefits).

The chart audit also recorded whether the patient had additional physical or psychological issues. The majority of the patients (56%) were found to have no physical or psychological issues. However, 26% had physical health problems, 5% had psychological problems, and 6% had both physical and psychological health problems. It was also found that 4% of patients had a substance abuse problem and 2% had environmental problems, such as their home not being fit for their medical needs.

Table 1. Demographics & Clinical Data

	Absolute Number	Percent
Gender		
Male	50	49%
Female	53	51%
Primary Language Spoken		
English	98	95%
English/Cree	5	5%
Residence		
Rural	33	32%
Urban	55	53%
Reserve	13	13%
Primary Care Provider		
Yes	76	74%
No	27	26%
# of Comorbidities		
0	9	9%
1 - 2	23	22%
3 - 5	44	43%
6 +	17	17%
Admittance to Hospital		
Admitted through ED	72	70%
Other	31	30%
# of Admissions to St. Paul's Hospital in Previous Year		
0	28	27%
1	11	11%
2	23	22%
3 or more	41	40%
# of ED Visits to St. Paul's Hospital in Previous Year		
0	51	50%
1	32	31%
2	12	12%
3 or more	8	8%
Discharge Destination		
Home	42	41%
Family Members Home	3	3%
Another Hospital	8	8%
Another Care Facility	12	12%
Delay in Discharge		
Yes	29	28%
No	68	66%

Note: The number of missing data points varies in each indicator due to the availability of information in each chart. Emergency Department (ED).



Table 2. Reason for Admission

Reason for Admission	Absolute Number	Percent
Infection	27	26%
Surgical Procedures	9	9%
Intestinal or Gallbladder Issues	9	9%
Oncology	7	7%
Fractures or Wounds	7	7%
Respiratory	6	6%
Cardiology	6	6%
Complications from a Condition or Surgery	5	5%
Renal	5	5%
Overdose	4	4%
Urology	2	2%
Other	16	16%

Note: 'Other' included conditions that did not fit in any of the categories listed above (i.e. pregnancy, dehydration or seizures).

Demographic & Clinical Results Continued

The mean length of stay for the entire data set was 11.2 (\pm 17.1 days). When length of stay for rural, urban and reserve were compared, it was found that length of stay for those who lived on reserve (31.3 \pm 29.9 days) was significantly longer than those who lived in rural (7.0 \pm 11.5 days) or urban (9.1 \pm 12.7 days) settings ($p < 0.05$) (Figure 1). Length of stay was also found to be significantly longer for those who had a delay in discharge. The mean length of stay for those with a delay in discharge (25.3 \pm 25.6 days) was significantly longer than the mean length of stay for those without a delay in discharge (5.3 \pm 5.5 days) ($p < 0.05$) (Figure 2).

Length of stay was not significantly different between those who had a primary care provider (10.2 \pm 15.6 days) and those who did not have a primary care provider (13.9 \pm 20.7 days) ($p = 0.345$). Length of stay was also not significantly different between those who were admitted through the Emergency Department (12.2 \pm 17.4 days) and those who were not admitted through the Emergency Department (8.7 \pm 16.4 days) ($p = 0.360$). Results also showed there was no significant difference in the number of comorbidities per residence (rural, urban, reserve) ($p = 0.579$). Rural participants had 3.4 (\pm 3.0 comorbidities), urban had 3.9 (\pm 2.2 comorbidities) and reserve had 3.2 (\pm 1.9 comorbidities).

Residence Mapping Results

Postal code data was analyzed and mapped to determine where the chart audit participants resided in Saskatchewan. The analysis showed that 48 participants were from the Saskatoon Census Metropolitan Area, 25 from rural south Saskatchewan, 19 from rural north Saskatchewan and 9 from small cities. Please refer Figure 3 for the participant residence map.

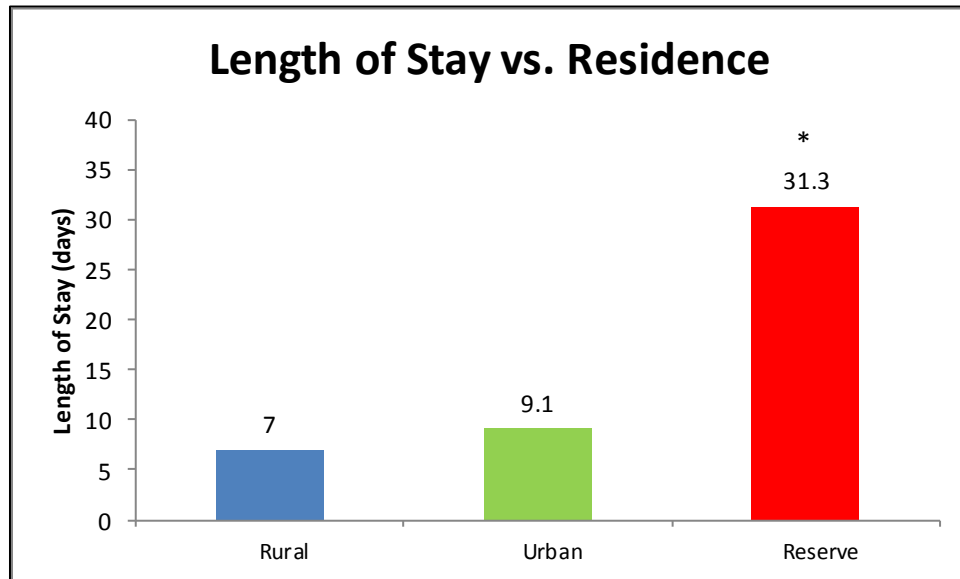


Figure 1. Length of Stay vs. Residence. * Length of stay for those who resided on reserve was significantly longer than those who resided in urban or rural settings ($p < 0.05$).

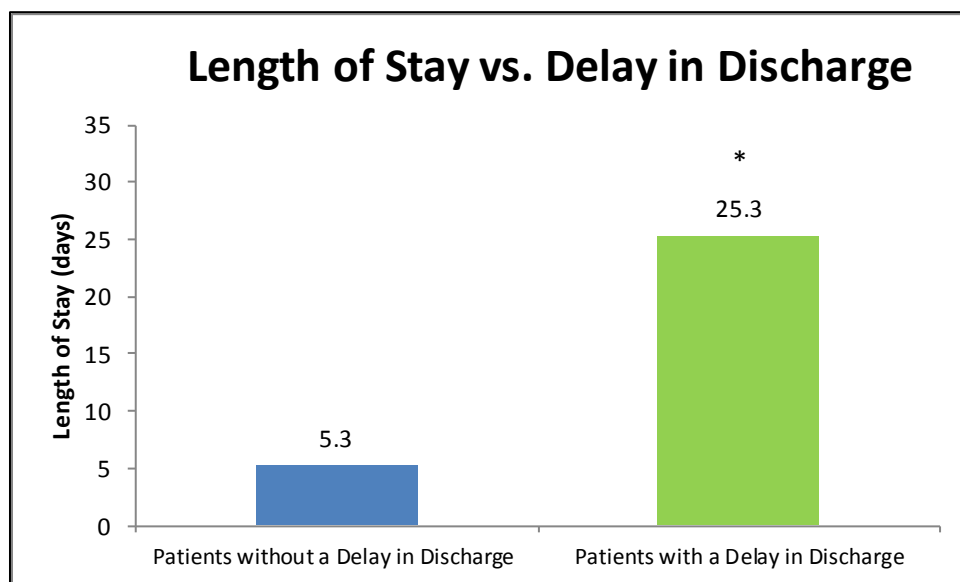
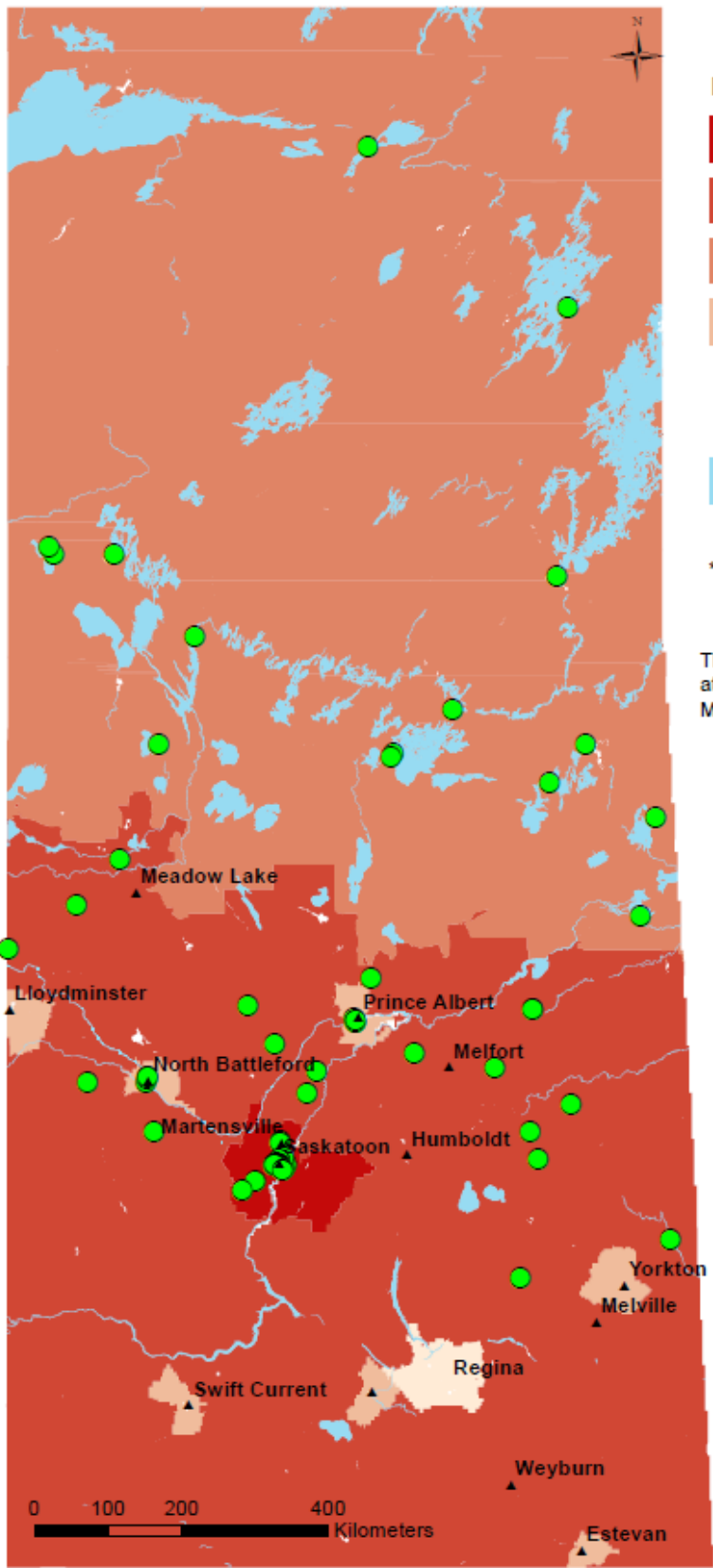


Figure 2. Length of Stay vs. Delay in Discharge. * Length of stay for patients who had a delay in discharge was significantly longer than those who did not have a delay in discharge ($p < 0.05$).



- Participant Location
- Region: Number of Participants**
- Saskatoon CMA*: 48
- Rural South: 25
- Rural North: 19
- Small Cities: 9
- ▲ City
- Water

*CMA (Census Metropolitan Area)

This map was prepared by Dr. Weiping (Winston) Zeng at The Spatial Initiative, University of Saskatchewan on May 12, 2014

Figure 3. Participant Residence Map



Discussion

The purpose of the chart audit was to determine the characteristics of the First Nations and Métis patients within St. Paul's Hospital in Saskatoon, Saskatchewan. Of the many characteristics explored, delay in discharge and the reason for the delay was a very interesting and important finding. Of the 103 patients, 28% were found to have a delay in discharge, in which 17% of the delays were due to the patient having additional medical issues. Additional medical issues varied, but included incidents where a patient fell out of bed, which may have delayed their recovery. Other medical issues identified included increased infection or a complication with the patient's condition. An interesting number of patients (11%) were delayed for non- medical issues such as transportation, inability to contact family members, lack of beds or equipment in their home communities and inability to gain approval for equipment from Non-Insured Health Benefits (NIHB). Of the patients waiting for a bed, some were waiting for a long term care bed or a bed within their home community, but none were available. Some patients could not return home, as their community did not have the right medical equipment, while others had to wait for approval of medical equipment, further delaying their discharge. These results provide preliminary evidence to show that not all delays in discharge with First Nations patients were health related, as some were navigational in nature. This emphasizes the need for more work in the area to better understand these issues so they can be resolved.

It is important to highlight the significant difference in length of stay between those who lived on reserve (31.3 days) compared to those who lived in rural (7.0 days) or urban (9.1 days) areas. Those who lived on reserve stayed in hospital approximately 23 days longer. It may be speculated that individuals who lived on reserve had issues with transportation or proper access to care in the home community, which could have resulted in increased length of stay. This preliminary work suggests that further investigation into the factors associated with hospital length of stay for individuals living on reserve is warranted.

An interesting finding from the chart audit was that 70% of the patients were admitted to hospital through the Emergency Department. The high rate of First Nations and Métis patients admitted through the Emergency Department may be a reflection of the lack of primary care services available to this population (British Columbia Provincial Health Officer, 2009). It is important to continue to document the usage of the Emergency Department in this population and to determine if the visits are for appropriate use. Another important finding was that 40% of the participants were admitted to St. Paul's Hospital 3 or more times in the last year. This rate of 40% is extremely high considering this data only includes those that were admitted to St. Paul's Hospital and does not take into consideration admission to any other hospitals within Saskatoon or in Saskatchewan.

Length of stay was not significantly different between those who had a primary care provider (10.2 days) and those who did not have a primary care provider (13.9 days). Although not statistically significant, one might speculate that this result is clinically significant as the preliminary data suggests that having a primary care provider resulted in 4 fewer days spent in hospital for First Nations people. Further work in this area is needed in partnership with Aboriginal communities to continue to investigate these findings.

Finally, it is important to discuss the residence mapping data (Figure 3). The data showed that St. Paul's Hospital provides services to First Nations people across the province. The majority of the patients were from the Saskatoon area; however, Figure 3 shows that St. Paul's Hospital serves many patients from rural areas, and importantly from rural north areas in Saskatchewan. Of the 103 charts pulled, 19 patients resided in the rural north area. This is extremely important to identify, as this data begins to provide an understanding of where the First Nations patients come from to access services.



Limitations

The main limitation of this chart audit was the inability to identify Métis patients. Currently, patients admitted to hospital in the Saskatoon Health Region have no option to self-identify. First Nations patients could be identified in the chart through their Department of Indian Affairs and Northern Development (DIAND) number. First Nations individuals are covered by non-insured benefits, a Federal program responsible for covering the provision of health care and other medical expenses for First Nations people. If an individual is covered by non-insured benefits, it is indicated in the chart and therefore that individual can be identified as First Nations. However, there are no indicators in the chart to identify an individual as Métis. This limitation was a significant barrier to the scope of the project and will continue to make conducting quality improvement work on this population difficult. Aboriginal researchers have highlighted the under-representation of Métis people in their work for several years (Kumar, Wesche, & McGuire, 2012).

A second limitation of this quality improvement work was missing data. The availability of the data that could be gathered for the chart audit depended on what was recorded in the chart. There was minimal missing data; however, not all indicators were recorded for all 103 charts that were reviewed. Finally, this report is limited in the generalizability of the results. This chart audit was conducted in one hospital within the Saskatoon Health Region and contained data from First Nations patients only. Although this data provides valuable insight, the preliminary work of this project should be taken with caution.


General Conclusion

The chart audit identified that almost 30% of First Nations people had a delay in discharge, which could be attributed to a number of factors including transportation issues, bed availability in the home community, medical equipment availability in the home community and wait time for approval from NIHB (Non-Insured Health Benefits). The chart audit also provided preliminary evidence that First Nations people who lived on reserve stayed in hospital significantly longer than those who lived in urban or rural areas. This report will assist the Saskatoon Health Region in beginning to understand the Aboriginal population that it serves. Importantly, this chart audit highlights the need for patients to have the option to self-identify upon admission to hospital. These results support the need for research to further examine the underlying reasons for prolonged hospitalization in Aboriginal patients to work towards providing optimal care for this population.

Methodology

The Office of the Associate Vice-President Research – Health, University of Saskatchewan/Vice-President Research and Innovation, Saskatoon Health Region carried out this quality improvement work with the First Nations and Métis Health Service and a Masters of Public Health practicum student. Prior to conducting the chart audit, the project was approved by the Biomedical Research Ethics Board at the University of Saskatchewan and Operational Approval was obtained from the Saskatoon Health Region. A retrospective chart audit was completed by pulling charts from July 2013 to January 2014. Inclusion criteria included any First Nations or Métis patient that was admitted to the general medicine or renal ward in St. Paul's Hospital in Saskatoon, Saskatchewan.

A Masters of Public Health practicum student, under the supervision of staff in the Vice-President Research and Innovation Office and staff in the First Nations and Métis Health Service, developed the audit tool that was used for data collection. The chart audit tool was developed by reviewing the literature and by looking at the specific questions that were being investigated in the quality improvement work. The chart audit tool consisted of 32 items. The first section consisted of patient



demographics including age, gender, primary language spoken, and postal code. The next items included clinical information such as the date admitted, date discharged, whether the patient had a primary care provider, whether the patient was admitted through the Emergency Department, the number of previous admissions in the calendar year, the reason for admission and the presence of comorbidities. The audit tool also collected data on the reasons for any delay in discharge, as noted by the care team. Each chart that met the inclusion criteria was carefully reviewed and the variables were recorded using the chart audit tool. Identifying patient information, such as patient name was not recorded.

Charts were pulled through the Health Records Department at St. Paul's Hospital and were held in the department attached to the medical library. The Health Records Department was accessible 24 hours; however, a proxy card was required for entry and charts were not removed from the department. Valuable information was most often found in the discharge summary, progress notes, referral sheets, pre-admission medication forms, nursing admission forms, physical and occupational therapy assessments, social work notes, nursing assessment and history notes. Depending on the loquaciousness of the writer, the complexity of the issue at hand, the length of the patients stay in hospital, and the disciplines involved in the case, the progress notes were extensive or minimal. The length of the chart depended on all of the above mentioned variables and the review of each chart varied in duration from 10 minutes to 1.5 hours.

Data Analysis

Data was analyzed using IBM SPSS Statistics 21. Descriptive statistics were used to summarize the demographic data and clinical characteristics. Descriptive data was analyzed using frequency counts and percentages. One-way ANOVA's (Analysis of Variance) and t-tests were used to analyze planned comparisons. Length of stay was compared for the following variables: residence (rural, urban and reserve), primary care provider (yes, no), delay in discharge (yes, no) and admittance through the Emergency Department (yes, no). Also, the number of comorbidities was compared for residence (rural, urban and reserve). Significance was accepted at $p < 0.05$. Where appropriate, Tukey's B was used for post-hoc tests.

Using the postal codes from the chart review, a mapping analysis was conducted to determine where each of the participants resided in Saskatchewan. The Social Science Research Lab (SSRL) at the University of Saskatchewan conducted the mapping analysis using ArcGIS, a geographic information system (GIS) for working with maps and geographic information.



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