

How Long Does it Take to Hear Back from Winnipeg? An Analysis of Specialty Consult Services  
and their Response Times

By: Mikayla Gawiak

Home for the Summer Project - June to July 2019

Flin Flon, MB

Supervisors: Dr. Stacey and Debbie Grimes

## Introduction

Manitoba is comprised of one large urban center and many highly dispersed rural and northern communities<sup>1</sup>. Medicine in rural communities is historically provided by family doctors, who not only provide ambulatory care out of family medicine clinics, but cover emergency departments and inpatient medicine wards as well<sup>2</sup>. This not only allows for a wide scope of practice but also a wide variety of presentations that are to be managed by the family physician. Therefore, to treat patients effectively, not only do these physicians require exceptional training, but they also need robust support when their knowledge and resources are exhausted, something that is not uncommon in rural and remote hospitals in Manitoba. This has led to 600-700 patients being transferred to WRHA sites annually for critical care and admission to internal medicine and surgical services<sup>1</sup>.

Manitoba's main tertiary centers are located in Winnipeg, primarily Health Sciences Center (HSC) and St. Boniface Hospital (St. B) provide most specialized services in the province. This includes specialty medical and surgical services, pediatrics and diagnostic imaging. There are few centers outside of Winnipeg, specifically in the north, where specialty services are provided. In some northern rural communities, such as Flin Flon, there are no specialty services, besides varying general surgery and anesthesia coverage. Therefore, consulting specialty services in the WRHA is very common from the medicine wards and emergency departments for urgent inpatient care.

However, in the current system for consults between rural health regions and the WRHA, rural physicians page HSC or St. B, who in turn forward your call to the on call physician, who is usually working on the wards (Fig 1). The rural physician is to then wait for the on call physician to return their call. This creates a period where a patient's care is at a standstill as the rural physician waits to hear back from the urban specialist. Furthermore, urban specialists have either own patients on the wards and then must respond to rural consults, nearly doubling their work load.

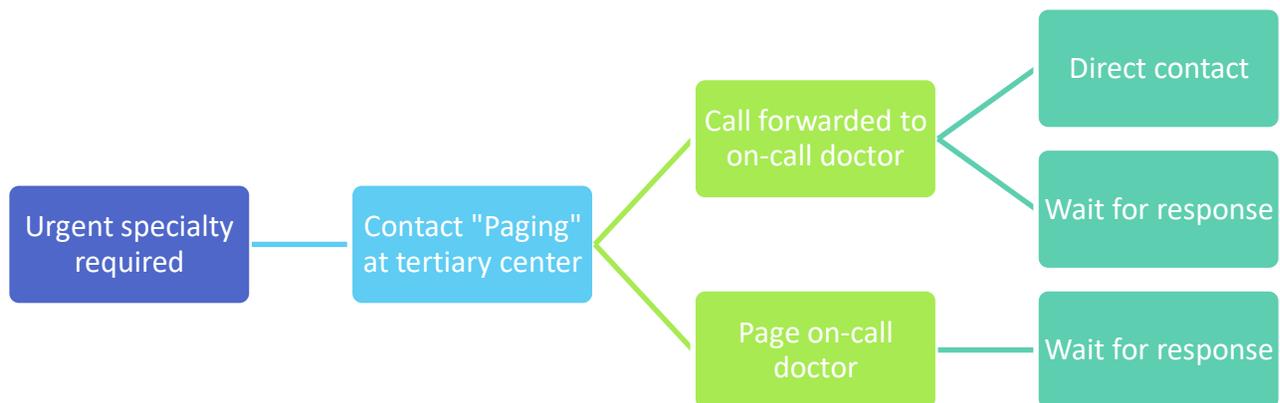


Figure 1. Flow chart of current specialty consult system.

Shared Health has recognized that access to specialized care is lacking in rural and remote areas of Manitoba<sup>1</sup>. As it is unrealistic for each rural center to have a full team of medical and surgical specialist, Shared Health has proposed implementation of stationary specialist physicians whose job is to solely respond to rural consults<sup>1</sup>. This would allow rural centers to possibly have quicker and more efficient access to specialty services. For further insight into the demands of specialty services in rural centers, information regarding which services are being consulted and their response times are

required. Since Flin Flon has very few specialty services, even though their detachment area covers roughly 7,000 people, this site provides an excellent opportunity to track the frequency of specialist consults and their respond times.

There is a large body of literature that supports how a delay in treatment and intervention in rural centers leads to sub optimal health care to those rural patients<sup>3,4,5</sup>. However, literature surrounding response times for urgent consults is limited, especially involving rural centers. Therefore, this has not only created a gap in knowledge, but also suggests that this needs to be addressed to further enhance the health care in rural and remote regions.

## **Methods**

Physicians of the medicine wards and emergency departments of both Flin Flon General Hospital (FFGH) and St. Anthony's General Hospital (SAGH), which is located in The Pas, have been asked to complete a four question survey with each specialty consult to assess the frequency and response times of urban specialists for Manitoba patients only. Patients residing in Saskatchewan were not included, since Saskatchewan tertiary centers were consulted in those cases, even though those patients present to the FFGH. The data was to be collected for 6 weeks and was analyzed to assess which specialties are consulted to the most and least and which specialties have the best and worst response times.

Data collected included specialty type, the intent of the consult (ex. advice, transfer or both), time of which the consult was initiated, the time of which the consult was answered and the date. The intent of consult was used to assess the acuity of the consult, where a consult to transfer a patient has a higher acuity than a consult for solely advice. Furthermore, the data was divided into day shift (8h00-20h00) or night shift (20h00-8h00) and week day or weekend. Moreover, to assess whether a specialty consult responded in adequate time, 8 minutes was used for a cut off as this was the average response telephone response time for specialty consults in a study performed in a tertiary urban center<sup>6</sup>. To analysis whether there was difference between these groups, a one-way ANOVA was performed.

## **Results**

### Demo graphics

The total number of consults that resulted in a survey being filled out was 15. FFGH ED completed nine, FFGH Medicine ward completed five and SAGH ED completed one (Table 1). During the 6 weeks of data collection, eight physicians worked in either the ED or Medicine ward.

Table 1. Raw data for Emergency Department (ED) and Medicine Ward (MW) specialty consults from the Flin Flon General Hospital (FFGH) and the St. Anthony's General Hospital (SAGH).

	Specialty	Intent	Date	Time of 1st contact	Time of response	Response time (mins)
<b>FFGH ED</b>	Neurology	Advice	28-Jun	21:00	21:20	20
	Orthopedics	Both	28-Jun	14:14	15:45	91
	Hematology	Advice	09-Jul	20:03	20:13	10
	Plastics	Advice	14-Jul	14:35	14:43	8
	Cardiology	Both	16-Jul	1:41	2:00	19
	Peds ER	Advice	17-Jul	23:35	23:37	2
	GI Bleed Team	Transfer	30-Jul	8:40	9:05	25
	Vascular Surgery	Both	31-Jul	12:35	12:42	7
	Vascular Surgery	Advice	07-Aug	21:55	22:05	10
	Orthopedics	Both	09-Aug	6:10	8:00	110
<b>SAGH ED</b>	Specialty	Intent	Date	Time of 1st contact	Time of response	Response time (mins)
	Orthopedics	Both	28-Jun	14:14	15:45	91
<b>FFGH MW</b>	Specialty	Intent	Date	Time of 1st contact	Time of response	Response time (mins)
	Infectious Disease	Advice	09-Jul	15:15	15:18	3
	Nephrology	Advice	27-Jul	11:54	11:56	2
	Internal Med HSC	Transfer	31-Jul	16:05	16:10	5
	Nephrology	Advice	31-Jul	15:40	15:55	15
Endocrine	Advice	01-Aug	10:45	10:55	10	

### Specialty Type

While pooling the ED and Medicine ward consults, there were nine to Internal Medicine specialties, five to surgical specialties and one to pediatrics, which was pediatrics ED (Figure 2). The variety in the Internal Medicine consults were wide spread, with only nephrology being consulted twice (Figure 3). In regards to surgical services, vascular surgery and orthopedics were both consulted twice, and plastics once (Figure 4).

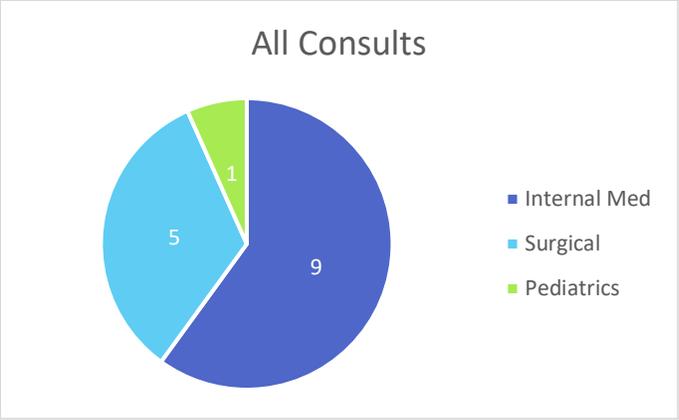


Figure 2. Distribution of all consults from ED and MW.

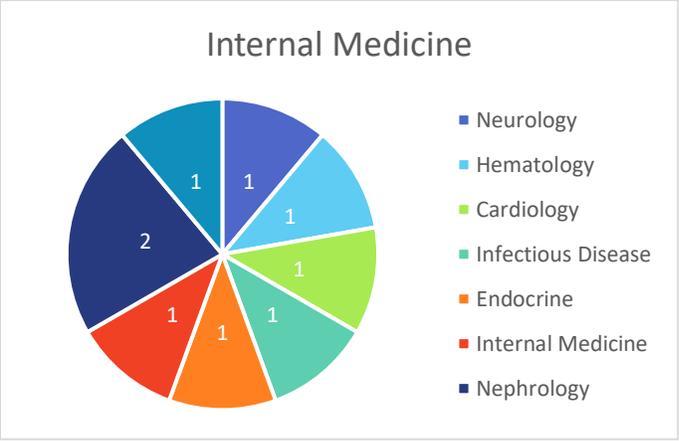


Figure 3. Distribution of Internal Medicine consults.

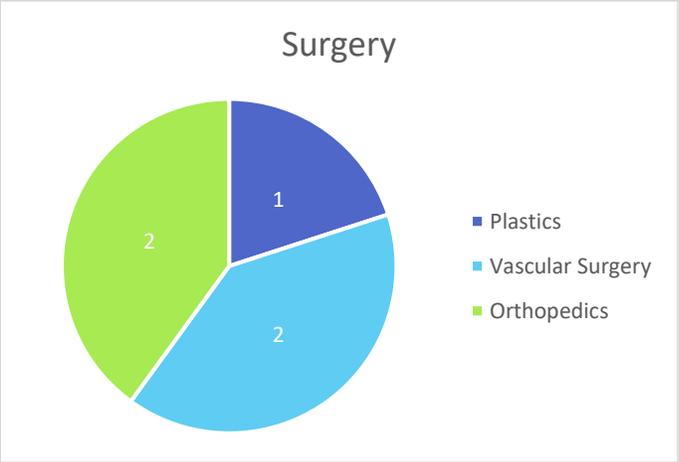


Figure 4. Distribution of Surgery consults.

### Consult Intent

Consults for medical advice were nine, consults for transfer were two and consults which were for both advice and transfer were four (Figure 5). The mean response time (Figure 6) for advice consults was 8.9 minutes ( 2.0), transfer consults was 15 minutes (10), advice and transfer was 57 minutes (26). The mean response time for advice consults was significantly lower than the mean response time for advice and transfer ( $p < 0.01$ ).

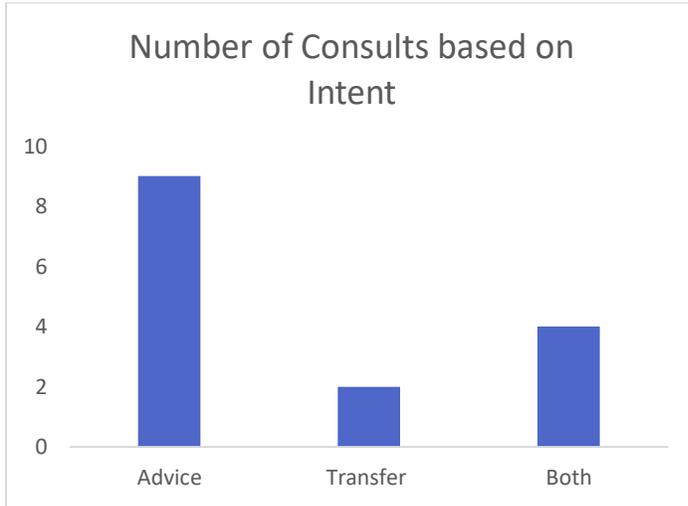


Figure 5. Number of Consults based on intent.

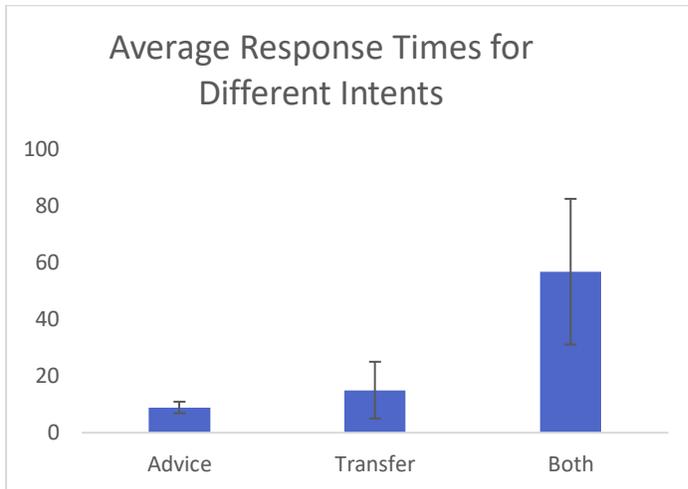


Figure 6. Mean response times comparing different intents.

### Response Times

As previously mentioned, the cut off for an adequate response time was 8 minutes. There were six consults whose response was less than or equal to 8 minutes and nine consults whose response was longer than 8 minutes (Figure 7).

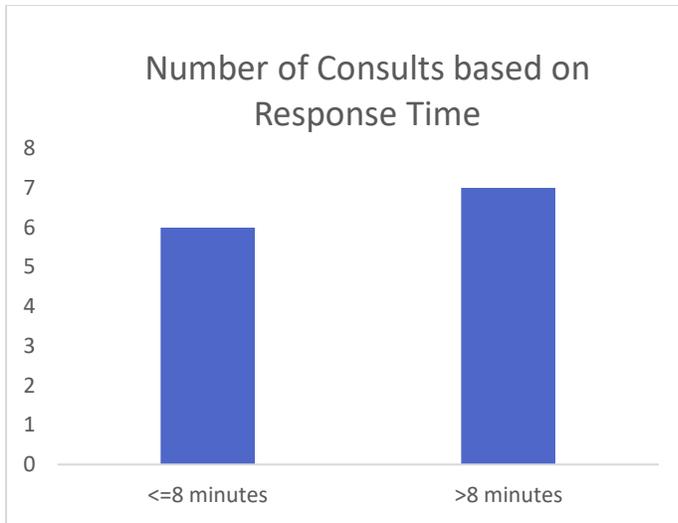


Figure 7. Number of consults based on response time.

Time of Day

Since the FFGH medicine ward only has a physician staffed for the day shift, all five consults from the Medicine ward occurred between 8h00 and 20h00. However, in the ED four consults occurred during day shift and 6 occurred during night shift (Figure 8). The mean response time for a consult during day shift, including both the ED and medicine ward, was 18.44 minutes (9.4) and the mean response time for consult during the night shift was 28.5 minutes (14.3). The mean values were not significantly different,  $p>0.05$ .

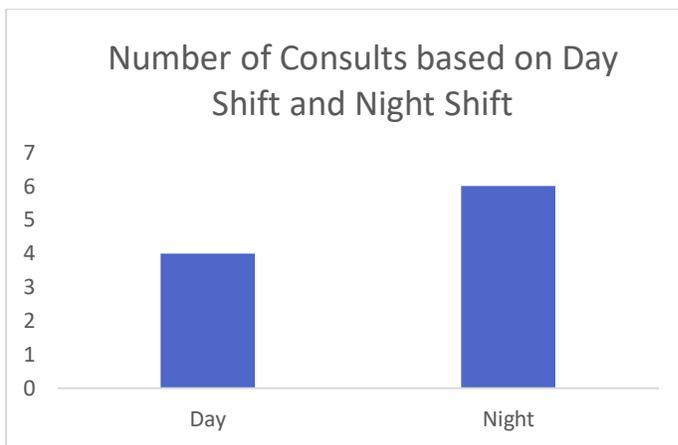


Figure 8. Number of consults based on whether it was day shift or night shift.

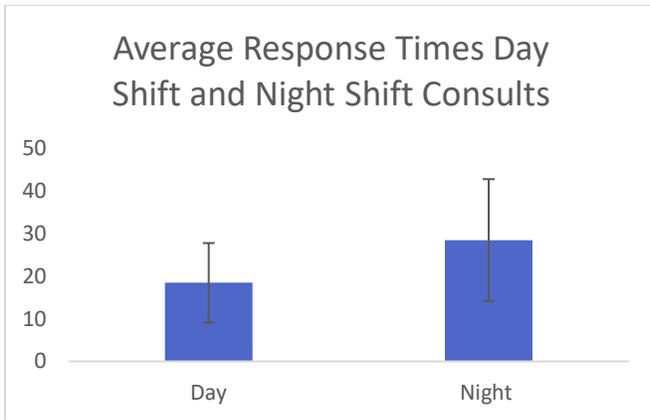


Figure 9. Mean response times comparing day shift and night shift consults.

#### Time of the Week

Out of the 15 consults that were recorded, 13 occurred during the week and two occurred during the weekend/holiday (Figure 10). The mean response times were 25.2 minutes (9.5) and 5 minutes (1.2) respectively (Figure 11).

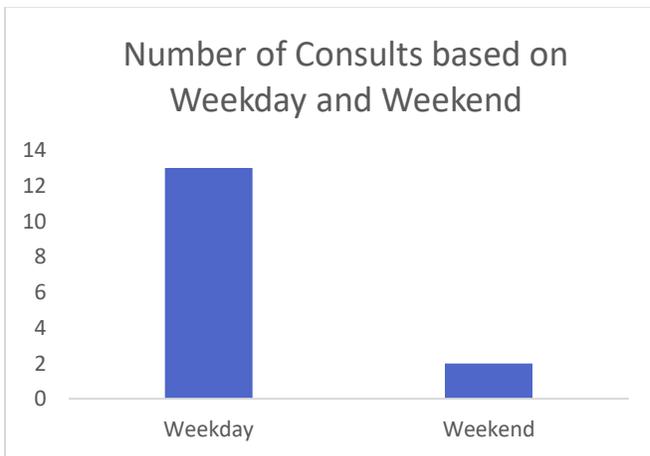


Figure 10. Number of ED consults based on whether to it was a weekday or weekend.

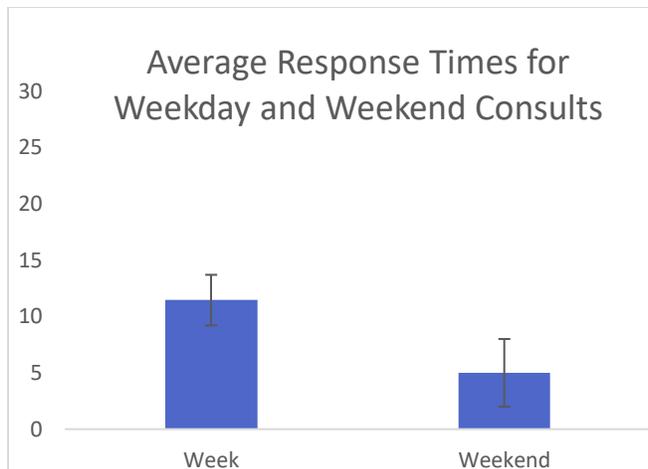


Figure 11. Mean response times comparing weekday and weekend consults.

### Discussion/Limitations

In rural medical centers, consulting urban specialty services for urgent care is not uncommon, due to the limited resources in rural and remote regions. However, due to the current system for consulting services, urban specialist patient loads increase drastically when they receive rural consults. This leaves rural patients care being stagnant while waiting for the urban specialist to return the consult but also increases the urban specialist's work load, which in turn may have negative effects on the health care of those in urban centers. With a push to enable rural patients to stay in their respective rural hospitals without being transferred to urban sites<sup>1</sup>, the need for improved consulting services and system needs to be established. This would not only impact the health care of rural patients but also urban patients. To further understand the demand of specialty service consults better, this study aims to explore which services are in high demand and their response times.

In regard to the demand of specialty consults, the total number of consults (n=15) that were followed by the completion of a survey did not reflect a high demand for consults. However, it must be noted that the sample size did not accurately reflect the patient population that did present to the FFGH ED and medicine ward. Firstly, Flin Flon is a border town. Half of its residents reside in Saskatchewan while the other half reside in Manitoba. This decreased the population by half. Secondly, in the surrounding area, there are multiple Indigenous reserves, especially in northern Saskatchewan who are brought to Flin Flon for care. The health disparities between Indigenous and non-Indigenous people is widely studied, where Indigenous peoples have higher rates of physical, mental, and emotional illnesses and injuries, and earlier and higher rates of mortality than do their non-Indigenous counterparts<sup>7</sup>. These health disparities are most likely caused by later presentation, frequent severe or complicated illnesses, inadequate access to good clinical care, and inadequate follow-up, compliance with drugs, and prevention of complications<sup>7</sup>. Although there was no data collected to compare the number of Manitoba to Saskatchewan patients, it was observed that many of those who presented with more complex health problems were from Saskatchewan. Therefore, due to the nature of this study only involving Manitoba patients, the patient sample did not reflect the patient population that presented to the ED and who were patients on the medicine wards who required specialty consults. Thirdly, it is known that physicians have a less than 50% completion rate when it comes to survey completion<sup>8</sup>. Even with the support of all eight physicians in Flin Flon, there might have been consults where a survey was

not completed. However, one could conclude that a town similar size to Flin Flin would have nearly double the amount of consults if all patients were Manitoban and with the assumption that only 50% of the consults were followed by the completion of the studies survey. Fourthly, the attempt to involve St. Anthony's General Hospital in this study was not successfully accomplished, this is mostly likely due to the high turnover of physicians and a lack of in-person recruitment for the study. With the 15 consults, the variety of specialist services consulted was wide spread with only nephrology, vascular surgery and orthopedics being consulted twice, all other specialties were only consulted once. This suggests that more data needs to be collected to gain a better understanding of which services are in highest demand.

In regards to response times, it was observed that most cases were "less acute" where the physician was only seeking advice. This suggests that physicians are striving to manage patients in rural hospitals. However, when the physicians were seeking both advice and/or transfer, the response time was observed to be greater than the other acuties. Both the even split and lack of significant difference between consults occurring during the day and night suggest that both of those shifts require similar consult services. Even though the majority of ED consults occurred during the week, there was no significant difference between these groups in regards to response times. This suggests that balance of supply and demand for specialty consults are similar between the week and weekend.

Due to the nature of the ED and medicine wards in regards to the split between Manitoba and Saskatchewan patients, the specialty consult system of Saskatchewan was observed. Saskatchewan's system is called Acute Care Access Line (ACAL) where physicians call into a physician consult who then connects the rural physician to possibly many urban specialties and services transportation services in an online conference call, and then further connects this physician to admitting services. It was very interesting to observe the difference in system organization<sup>9</sup>. When speaking with a FFGH ED physician, they stated that they have encountered negative experiences with Manitoban specialty services. However this physician further said that when dealing with Saskatchewan's ACAL system, they have never encountered an unpleasant or negative interaction. Since Manitoba and Saskatchewan have similar population demographics<sup>10,11,12</sup>, this anecdote suggests that Manitoba could look to the ACAL system for inspiration on how to facilitate a more efficient communication between rural physicians and urban specialists.

## References

1. Shared Health. *Better Care , Closer to Home.*; 2019. <https://sharedhealthmb.ca/clinical-planning-updates>.
2. Schubert N, Evans R, Battye K, Gupta T Sen, Larkins S, McIver L. International approaches to rural generalist medicine: A scoping review. *Hum Resour Health*. 2018;16(1):1-27. doi:10.1186/s12960-018-0332-6.
3. Williams T, Savage L, Whitehead N, et al. Missed Acute Myocardial Infarction (MAMI) in a rural and regional setting. *IJC Hear Vasc*. 2019;22:177-180. doi:10.1016/j.ijcha.2019.02.013.
4. Chauhan V, Negi PC, Raina S, et al. Smartphone-based tele-electrocardiography support for primary care physicians reduces the pain-to-treatment time in acute coronary syndrome. *J Telemed Telecare*. 2018;24(8):540-546. doi:10.1177/1357633X17719395.
5. Kornelsen J, McCartney K, Newton L, Butt E, Sax M. Rural Patient Transport and Transfer : Findings from a Realist Review. *Appl Policy Res Unit*. 2016:168. [https://www.divisionsbc.ca/sites/default/files/Divisions/Rural and Remote/Rural Patient Transport Report - FINAL.pdf](https://www.divisionsbc.ca/sites/default/files/Divisions/Rural%20and%20Remote/Rural%20Patient%20Transport%20Report%20-%20FINAL.pdf)<https://med-fom-crhr.sites.olt.ubc.ca/files/2016/12/rural-patient-transport-and-transfer-findings-from-a-realist-review.pdf><https://www>.
6. Vosk A. Response of consultants to the emergency department: a preliminary report. *Ann Emerg Med*. 1998;32(5):574-577. doi:10.1016/s0196-0644(98)70035-6.
7. Gracey M, King M. Indigenous health part 1: determinants and disease patterns. *Lancet*. 2009;374(9683):65-75. doi:10.1016/S0140-6736(09)60914-4.
8. Bolt EE, Van Der Heide A, Onwuteaka-Philipsen BD. Reducing questionnaire length did not improve physician response rate: A randomized trial. *J Clin Epidemiol*. 2014;67(4):477-481. doi:10.1016/j.jclinepi.2013.09.012.
9. Acute Care Access Line: Linking physicians to provide better care for patients (Part 3 of 3). The Region Reporter. <https://regionreporter.wordpress.com/2016/08/12/acute-care-access-line-linking-physicians-to-provide-better-care-for-patients-part-3-of-3/>. Published 2016. Accessed July 15, 2019.
10. Manitoba 2016 Census Profile. Statistics Canada.
11. Saskatchewan 2016 Census Profile. Statistics Canada.
12. Aboriginal Peoples in Canada: First Nations People, Métis and Inuit. Statistics Canada. <https://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/99-011-x2011001-eng.cfm>. Published 2011. Accessed August 25, 2019.