Gimli Emergency Room: Patient Use and Understanding

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Gimli, Manitoba

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Background and Community Profile

The RM (rural municipality) of Gimli belongs to the Interlake Eastern Regional Health Authority.[1] Of the communities included in the Interlake-Eastern Regional Health Authority, 18 of those communities have health facilities.[2] Within the region, which includes an overall area of 61,000 km^2 and a population of 126,000 residents, there are 10 hospitals, 16 long term care sites, 6 primary care centres, 17 EMS stations, 1 quick care clinic, and 6 dialysis sites.[3] These sites are staffed by a total of 3,100 healthcare professionals.[3]

The RM of Gimli, which translates to "heavenly abode" in Icelandic was established in 1875.[4] The community remains the largest population of Icelandic people outside Iceland. The average age of RM of Gimli residents was 51.4 years old, this was well over the provincial average of 39.4.[8] The percentage of the population 65 years or older was 33.5% of the population, this was nearly double the provincial average of 15.6% of the population in the age bracket.[8]

The town of Gimli is located along the western border of Lake Winnipeg - about a 55-minute drive north of the city of Winnipeg.[4] In 2016 Gimli had a population of 6,181[6], accounting for 4.7% of the Interlake- Eastern RHA population with 4,644 private dwellings.[7,8] However, only 2,942 of these private dwellings are occupied by usual residents.[6] The population of Gimli drastically increases during the months of May to October due to an influx of both tourists and cottagers.[9] The annual Icelandic Festival alone attracts approximately 30,000 tourists.[9] Gimli also has a much higher proportion of over 65 year olds at 33% compared to the provincial proportion of 15%.[7]

Ambulance/EMS	Interlake Regional
Hospital/Community Health Centre	Gimli Community Health Centre
	Diagnostic Services- Lab and X-Ray
	Community Cancer Program
	Physician Assistant
	Dialysis
Personal Care Home	Betel Home Foundation
Community Health Services	Public Health, Mental Health, Home Care
	Gimli Community Health Office
Services to Seniors	Adult Day Program
	Seniors Resource Council
	Gimli New Horizon's Club
Meal Programs	New Harbour / New Haven- Meals on Wheels
Transportation	Gimli Handivan
Medical Clinic	Gimli Medical Centre

Figure 1: Health Care Services in Gimli.[10]

The major healthcare facility in Gimli is the Gimli Community Health Centre which plays host to the Johnson Memorial Hospital, the Community Health Office and the Gimli

Clinic. The Hospital has 26 acute care beds, making it the third most in the region after Selkirk and Beausejour.[11] The Emergency Room in the hospital sees the second highest number of ER visits excluding scheduled outpatient visits) which makes it the busiest in the region only second to Selkirk. Gimli has the 4th busiest EMS station for Primary calls and the second busiest EMS station for IFTs (inter facility transfers). A complete list of services available in Gimli is displayed in figure 1. Gimli acts as a hub for the northern portion of the IERHA and services a wide and populous area.

GIMLI ER

Cumulatively 10 weeks were spent at the Gimli Community Health Centre. Most of the time was spent with physician supervisors in their clinic or experiencing the other health care services detailed in Figure 1. During the time in Gimli shadowing in the ER was especially interesting. The Gimli ER is staffed from 9:00 to 17:00 4 days a week by a Physician Assistant. There is in fact no one specific doctor (or doctors) assigned to run the Gimli ER. The PA is instead covered through call shifts between the doctors who work in the Gimli family clinics. If there is no doctor on call for a particular shift, then the ER is closed.

According to the PA,

> "Gimli is the "Only rural ER in Manitoba (and Canada) to utilize a PA. (Unless you consider Selkirk ER rural, but I don't, compared to Gimli and other surrounding ERs)". The Gimli ER also "works autonomously without physician coverage on site, but available if need be. All other ERs that use PAs are urban and have MDs also on site to work in tandem".

He also mentioned that there is "not enough MD/PA coverage. Some days the ER is closed (unique to Gimli and other truly rural ERs) due to lack of medical staff providers".

As time was spent in the ER several observations were noted. One of the most troubling observations was the large amount of non emergent visits to the ER. The majority of patients coming to the ER were triaged as 4s and 5s on the Canadian Triage and Acuity Scale.

All patients upon arrival to the ER report to the registration desk (or nursing station if unstaffed). After a wait a triage nurse will assess the patient using the Canadian Triage and Acuity Scale (CTAS) to create an order of need so that the P.A. or one of the on call physicians can judge who should be seen next.

The Canadian Triage and Acuity Scale (CTAS) is a five point scale designed to ensure that the sickest patients are seen first when the ER is busy or at capacity, as well as ensuring that a patient's need for care is reassessed while in the ER.[12]

Canadian Triage and Acuity Scale (CTAS)[13]

1. **Resuscitation:** Conditions that are a threat to life or limb and requiring immediate aggressive medical interventions. Examples include: cardiac arrest, heart attack, major trauma, loss of consciousness, severe respiratory distress.)

2. **Emergent:** Conditions that are a potential threat to life, limb or function requiring rapid medical intervention. Examples include: moderate respiratory distress, vomiting blood, altered level of consciousness, severe high blood pressure.

3. **Urgent:** Conditions that could potentially progress to a serious problem requiring emergency intervention. May be associated with discomfort or affect ability to function at work and with activities of daily living. Examples include: mild respiratory distress, high blood pressure with no symptoms, abdominal pain, or headache.

4. **Less Urgent:** Conditions that are less urgent and would benefit from interventions or reassurance within two hours. Examples include: urinary tract infection, minor laceration, injured limb, sore throat.

5. **Non Urgent:** Conditions that may be acute but are non-urgent or chronic conditions with or without evidence of deterioration. Interventions for these conditions can be delayed or even referred to other areas of the hospital or health-care system. Examples include: medications request, minor scrapes and bites, dressing changes, mild nausea and diarrhea.

Patients who fall under triage scores of 4 and 5 will wait a long time before obtaining care and may often after waiting be sent home, to the walk in clinic or told to follow up with their family doctor.

After making these observations 2 research questions were proposed:

1. Analyze ER data from the IERHA to determine if there is a large or disproportionate difference between non urgent triaged patients in the Gimli ER compared to the IERHA.

2. Create a survey to gauge the use and understanding of the ER and walk in clinic in Gimli. This way correlation and causation can be proposed as well possible solutions to remedy them.

Methods and Data

In order to assess the first research question year end data for all 10 ERs in the IERHA was obtained. The complete data is taken from from April 2016 to March 2017. This gives a perspective of seasonal variation as well as a large enough picture to draw summary conclusions.

Table 1. shows an example of the ER data analyzed for Gimli. In addition to the 5 triage levels patients in the ER could also be classified as "Not Triaged" (Triage 8) and as a "Scheduled OPD". These two categories were excluded from summary calculations and comparisons as scheduled patients are not assigned a triage number. All patients should be triaged but in some hospitals large amounts of patients are not assigned a triage number and this skews the overall numbers. These two categories are assessed and discussed only for Gimli ER.

GIMLI	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Total Year
Triage 1	3	4	5	2	3	2	3	3	2	3	5	2	37
Triage 2	55	49	62	71	67	47	37	48	49	50	44	63	642
Triage 3	124	150	151	233	175	154	111	123	134	163	126	128	1,772
Triage 4	216	221	248	298	248	248	189	161	189	194	167	200	2,579
Triage 5	174	191	238	295	293	210	172	168	160	159	164	134	2,358
Not Triaged	62	123	113	194	119	136	90	105	88	80	88	77	1,275
Scheduled OPD	42	42	43	33	25	42	43	38	33	51	46	47	485
TOTAL OPD VISITS	676	780	860	1,126	930	839	645	646	655	700	640	651	9,148
LAMA	7	7	5	9	15	7	3	0	0	0	0	3	56
LWBS	22	13	12	18	19	14	7	1	8	5	3	4	126
Deaths in ER	1	0	1	0	1	0	0	0	0	0	0	0	3
DOA	0	0	0	0	0	0	0	0	0	0	0	0	0
Observation Hold	22	19	23	15	15	23	11	24	24	24	20	20	240
Admitted as IP	26	28	26	30	22	22	17	0	32	39	37	42	321

Table 1. 2016/2017 Summary Triage Data for Gimli ER

Community Emergency Room	Triage 5 %	Untriaged %
Arborg	44	1.2
Ashern	27	3.8
Beausejour	29	9.0
Eriksdale	39	1.8
Gimli	32	14.7
Pinawa	8	2.2
Pine Falls	13	4.3
Selkirk	11	1.4
Stonewall	25	7.8
Teulon	N/A	N/A

Table 2. IERHA Emergency Room Percent of Patients Untriaged and Non Urgent ('16/'17)

Teulon ER was excluded from tables and graphs as their sample size was the smallest of all of the ERs. This is shown in the fluctuation of data from month to month. Half way through the data set ER visits dropped and outpatient visits spiked signalling a change in the operation and intake procedures of the ER.

In order to answer the second research question a survey of 6 yes or no questions evaluating patient knowledge of the walk in centre, the Gimli emergency room, and the understanding of when to use either a clinic or the emergency department was developed. When patients presented to their appointment with their physician (Dr. RC Patel) at the Gimli Community Health Centre, they were asked if they would participate in this survey. The questions were asked verbally and recorded. In total, 14 surveys were completed fully. The surveys were voluntary and no identifying patient information was recorded.

	Patient's Response	
Survey Questions	**Yes**	**No**
Do you know that there is a walk-in clinic in Gimli	71.4%	28.6%
Do you know when the walk-in clinic is open?	35.7%	64.3%
Would you use the walk-in clinic if you needed to?	100%	-
Have you ever used the Gimli ER?	78.6%	21.4%
Do you know that the Gimli ER is not always open?	85.7%	14.3%
Do you know when to use a clinic versus the ER?	78.6%	21.4%

Table 3. Patient Knowledge of Gimli ER and Walk In - Survey Responses

Discussion

When observing the statistics in Table 2., and its accompanying graphical form by month in figure 2., it is easily seen that there is a wide variation in non urgent ER use in the IERHA. (Non urgent being defined as a triage level 5). The month to month variation is more limited in the larger ERs and Pinawa but sites such as Arborg, Eriksdale and Beausejour vary more.

There is a range of 8% in Pinawa to 44% in Arborg. Gimli falls on the higher end of this range at 32% of all triaged ER patients being non urgent. This represents a large proportion of the third busiest ER department in the IERHA.

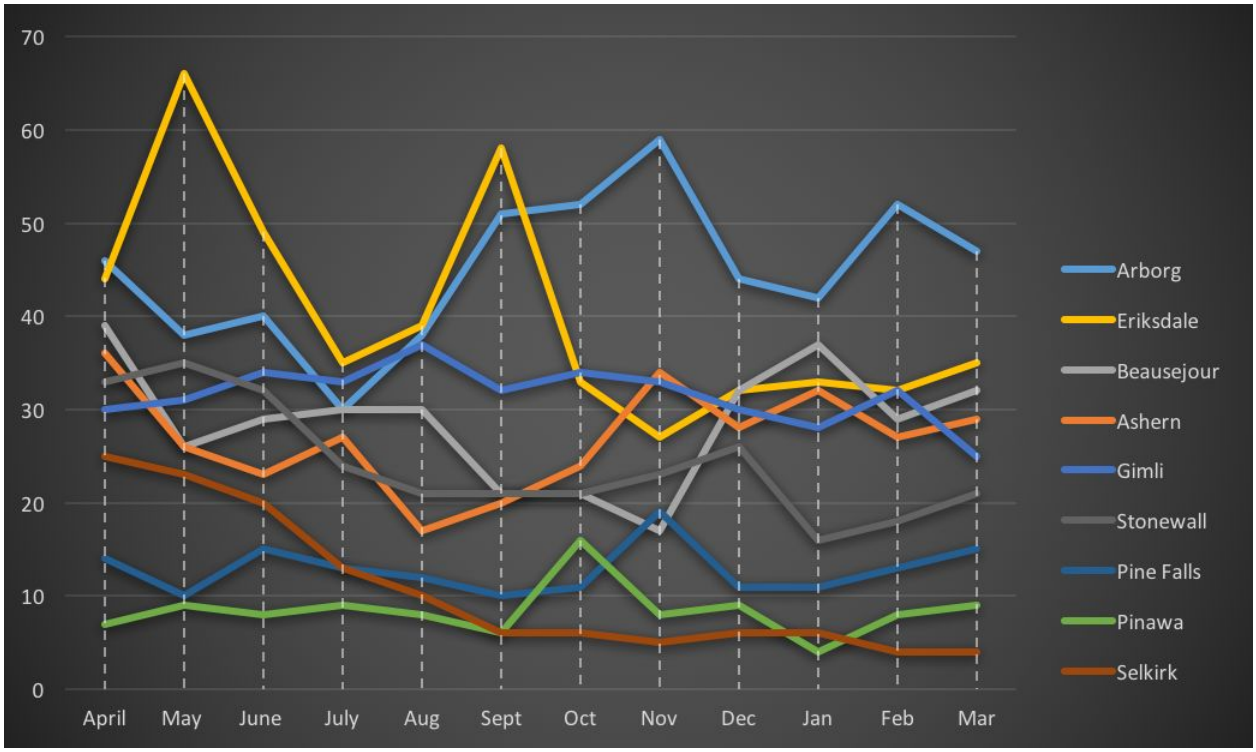

Figure 2. IERHA ERs - Triage Level 5 Percentage of Total Unscheduled ER Visits

In Manitoba statistics show that between 30 per cent and 40 per cent of the people visiting Emergency could have their needs met by attending one of several alternative sources of care, including their family doctor, an Urgent Care Centre, a Minor Injury Clinic or a QuickCare Clinic.[14] The two largest ERs in the IERHA (Selkirk and Pinefalls) both have drastically lower non urgent cases at 11 and 13% respectively, well below the provincial average. Gimli Breaks that trend slightly higher at 32%.

The spatial distribution of the ERs in the IERHA can be seen in Figure 5. There also appears to be a regional difference in the non urgent case numbers. In 2012 the IERHA was created from the former North Eastman and Interlake Health Authorities. The ERs at Pine Falls, Beausejour and Pinawa were all in the former North Eastman region. All three of these sites have lower than average non urgent cases. Stonewall and Selkirk are both close to Winnipeg and have

lower numbers. The remaining 5 ER sites of Teulon, Gimli, Arborg, Eriksdale and Ashern are are in a similar geographic of the interlake. As well these 5 sites are among the 6 highest numbers of non urgent cases in the IERHA. This could be due to management, geographic distribution, population demographics, or procedural reporting. Unfortunately the causation is outside of the scope of this project but the geographic differences are interesting nonetheless.

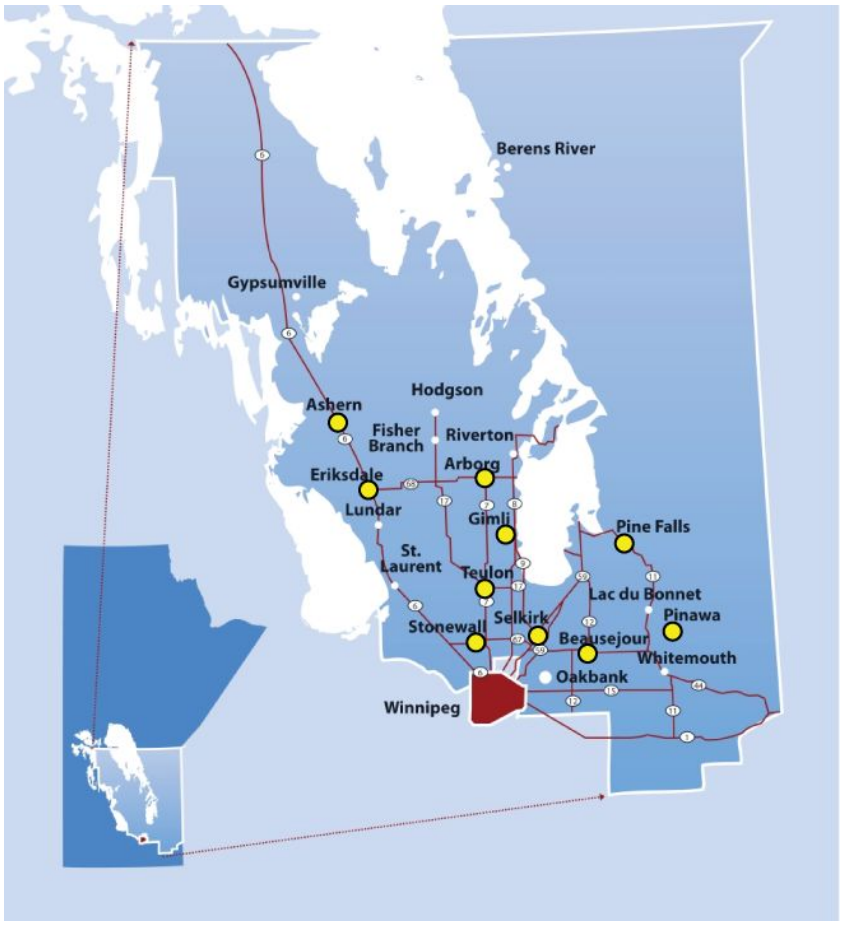

Figure 3: Communities in the Interlake-Eastern Regional Health Authority[1] with Emergency Rooms Highlighted in Yellow

In figure 3. the distribution of ER visits by triage level in Gimli can be seen. The expected distribution of cases in a population would be an increasing number of cases from triage 1 (resuscitation required) to triage 5 (non urgent). In an ideal ER there would be no Triage 5 and therefore an ideal distribution would increase from triage level 1 through 4. This is clearly seen in the distribution of ER patients in Gimli. In fact most months there are more triage 4 patients than triage 5, one can assume that this means there are patients that are making the decision to not seek emergency care or are going elsewhere such as the walk in clinic in Gimli.

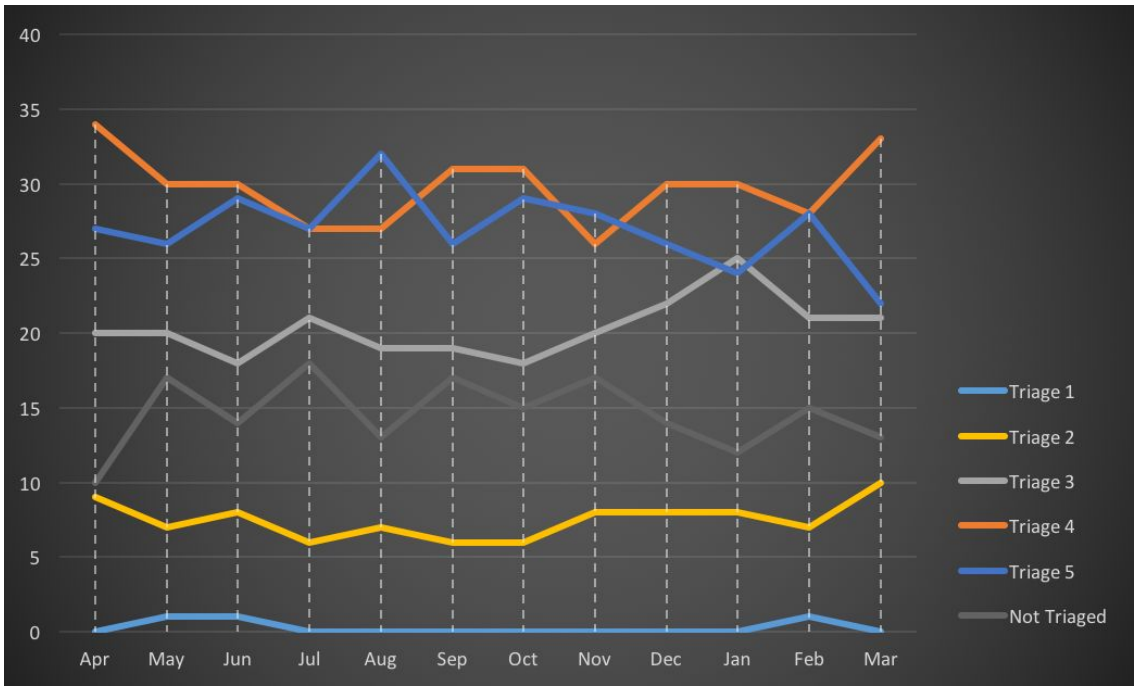

Figure 4. 2016/2017 Triage Levels at Gimli ER as a Percentage of Total Unscheduled Visits

A startling discovery when observing the data was the amount of non triaged patients in the Gimli ER. Theoretically every patient should be triaged when coming into the ER. There are multiple reasons why a patient may not be triaged including: transposition or data entering error, patient was seen before triage, and the patient left after checking in but before being triaged. 14% of ER patients in Gimli are not triaged. This is much higher than the second worst site of Beausejour where 9% are not triaged.

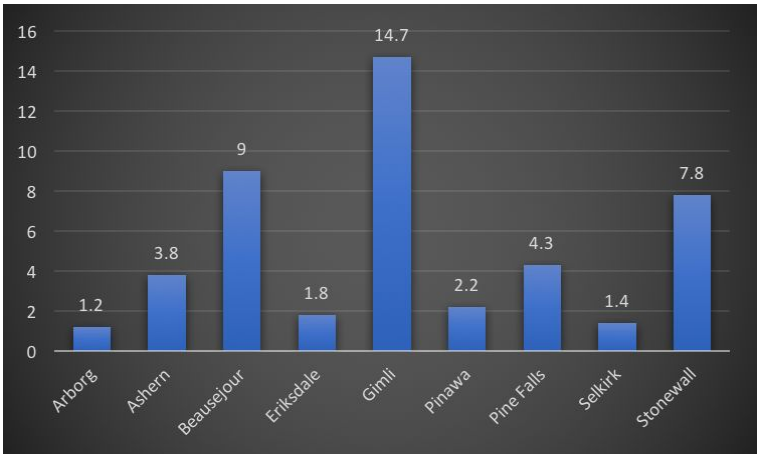

Figure 5. Percentage of Non Scheduled ER Patients not Being Triaged

There are a few consequences to patients not being triaged. 1. They may not receive adequate medical care. 2. They may not receive timely medical care. 3. Statistics may consequently show an inaccurate picture of the ER and 4. Funding and nursing positions are

based on ER numbers and the proportion of urgent cases. This higher than normal proportion of patients not being accounted for can affect patient care on many levels.

In order to obtain a patient perspective a total of 14 surveys were collected. When the patients presented for their appointment and were waiting for the doctor to see them, permission would be requested to collect data for the survey and their answers were recorded. However, at times, the doctor entered the room before the survey was completed and as a result the uncompleted surveys were discarded. As well, some chose to not participate in the survey. Finally, this data could only be collected during a shift with Dr. RC Patel and there were many Home for the Summer shifts that were not in his clinic. Altogether, this resulted in a smaller than desired sample size.

Based on the data, it was observed that a majority of people were aware of the walk-in clinic but many did not know the days or hours that it was open during the week. The Gimli Walk-In clinic is run by one of the family physicians Dr. Rhoma in his office from Monday-Thursday during regular office hours (09:00-17:00). And from May 19th- September 4th 2017, other doctors from in and outside of Gimli continue running the Walk In clinic for non urgent health concerns on Saturday, Sunday, and statutory holidays. There is therefore walk-in coverage 6 days a week in Gimli during peak season.

As well, based on the data, the majority of people knew that they Gimli ER is not always open and most claimed that they knew when to use the ER versus a clinic.

As stated, the sample size was smaller than desired. However, there were other factors that increased the difficulty of interpreting the data. For instance, it is important to note that all of the individuals who participated in this survey were either from Gimli or nearby regions such as Winnipeg Beach or Matlock. They were also all patients of Dr. RC Patel and therefore not necessarily in need of a walk-in clinic. Furthermore, one participant, despite answering “yes” to the question “do you know that there is a walk-in clinic in Gimli”, had also mentioned that he had only heard about the walk-in clinic 2 weeks ago, despite living in the nearby region of Matlock for 17 years.

As mentioned previously, in addition to clinic hours, time was also spent a few days each week working in the ER with the physician assistant. From speaking to patients in the ER who were triaged as either a 4 or a 5, all but one of the patients were not aware of the walk in clinic. After informing those patients about the walk-in clinic, they chose to pursue their care at the walk-in because the wait time would be shorter. The one patient who did know about the walk-in clinic stated that she knew about the walk-in clinic because Dr. Rhoma was her family doctor but that she specifically chose the ER because she wanted to be seen sooner.

Since it was observed that many patients in the ER did not know about the walk-in clinic, it would have been useful to also survey those patients. This would have increased the sample size and increased the diversity of patients participating in the survey (i.e it would have included both locals and non-locals and patients who do not have a family doctor).

With limited data it cannot be concluded whether or not locals/non-locals or patients without a family doctor are aware of the walk-in clinic. As mentioned, only patients of Dr. RC Patel were surveyed. The data obtained suggests that there should be more information about the hours and days that the walk-in clinic operates (both during the year and during the summer)

Conclusion

In conclusion the Gimli ER is a distinct ER within the IERHA. The community and the ER might benefit from better advertising and promotion of the walk in clinics located within the same building as an alternative to care. When a patient presents to the ER they have to wait to be seen by a doctor before being offered to go somewhere else. It is a liability for admissions or triage staff to divert patients. Therefore it would be beneficial to target the patients before they come in to the ER. This could be done through education or by the family doctors in the clinics at the Gimli Community Health Centre. In addition it is a bigger financial burden on the system for a patient to access the ER rather than a walk in or a family doctor. As well a closer look or tighter regulations around triage and admissions may benefit both patients and the ER by decreasing the amount of untriaged patients to a level on par with the rest of the region.

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