



WHAT'S THE HOLD-UP? FACTORS AFFECTING WAIT TIMES IN WINNIPEG'S EMERGENCY ROOMS

A summary of the report *Factors Affecting Emergency Department Waiting Room Times in Winnipeg* by Malcolm Doupe, Dan Chateau, Shelley Derksen, Ricardo Lobato de Faria, Joykrishna Sarkar, Ruth-Ann Soodeen, Scott McCulloch, and Matt Dahl.

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Every day, there are about 610 visits to ERs in Winnipeg. Those visits translate to more than 5,000 hours of care provided by ER doctors and nurses each day. But for patients, a large portion of this time may be spent waiting, which can be stressful and frustrating. Long ER wait times are a major concern for healthcare planners,

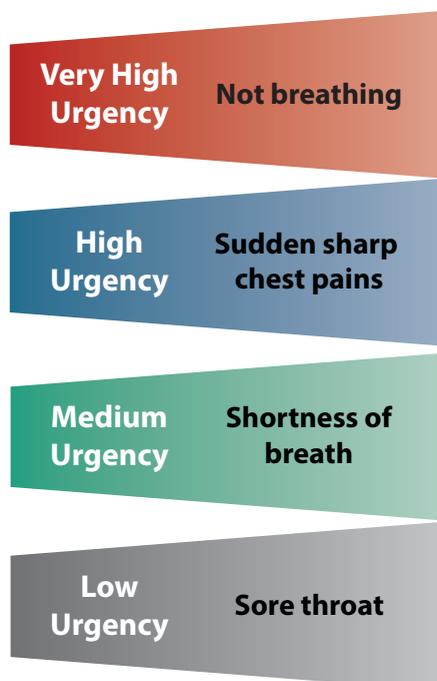
so they tasked researchers at the Manitoba Centre for Health Policy (MCHP) with studying what could cause delays in the ER. Using a new data system that collects more detailed information on ER patients, we set out to learn what factors affect ER wait times.

Long ER wait times are a major concern for healthcare planners

Emergency Rooms Are Busy Places

Emergency rooms provide care to people with conditions that arise suddenly, like heart attacks or injuries from car accidents. Because these conditions are unexpected, patients arrive at the ER without appointments, and usually in an ambulance. The ER must be prepared to treat any number of different illnesses or injuries at any point in time. Crowded ERs make it more difficult for doctors and nurses to care for their patients in a timely way. This means that newly arriving patients could have longer wait times.

Figure 1. Assessing Patients at the ER



A Closer Look at What Happens in the ER

When patients first arrive at the ER, the urgency of their medical need is assessed. Figure 1 shows some examples of how patients are assessed from very high urgency to low urgency.

In general, patients with very high urgency conditions never wait to see an ER doctor – after all, it’s a matter of life and death. But for patients with lower urgency levels, several factors can affect how long they wait in the ER. Imagine that you are a patient arriving at the ER. What might affect your wait time?

In general, patients with very high urgency conditions never wait to see an ER doctor

If there are many other people waiting at the ER when you arrive, you may have to wait to see a doctor. Patients with the most urgent medical conditions will be seen first, so if the reason for your visit is less urgent, your wait time might be longer. Doctors often order medical tests or scans to help with caring for their patients, and it can take some time to get results from these tests. If you are going to be admitted to the hospital after your ER visit is over, the number of other patients waiting to be admitted, or the number of hospital beds available might also contribute to your wait time. It’s important to know which of these factors add the most to ER wait times, so that healthcare planners can focus on the main ones.

What We Studied

To test which factors are most important, researchers at MCHP analyzed data from Winnipeg ERs. We looked at the kinds of conditions that bring patients to Winnipeg ERs, and the factors that could affect their wait times. We used data held in the Manitoba Population Research Data Repository at MCHP. The data tell us many different things about Manitobans, such as their age, sex, and the average income in the area where they live. It also tells us about their contacts with the healthcare system, including information about visits to ERs. However, before the data arrive at MCHP, all of the personal information in the files is removed or scrambled to protect the privacy of the people involved. This means we can track Manitobans’ patterns of healthcare use without ever knowing exactly “who” they are.

We studied patterns of ER visits in Winnipeg, where there are six hospitals with adult ERs. First we looked at trends of ER visits over a ten-year span (2003 to 2013). Then we used our most recent data (from 2012/13) in a detailed study of which factors affect ER wait times.

Which factors add the most to ER wait times?

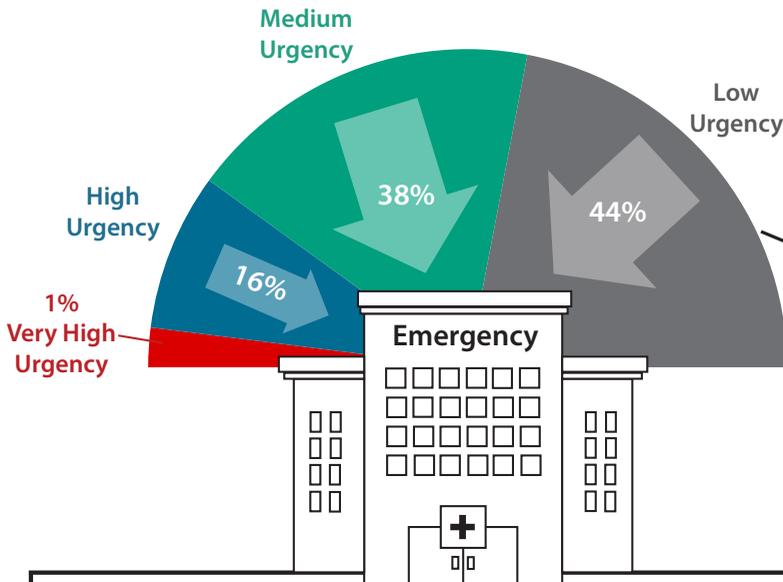
What We Found

How has ER use changed over the past ten years?

Over the past ten years, Winnipeg ERs have gotten busier. The number of visits per day increased by 12% from 2003 to 2013. Compared to ten years ago, more ER patients today have lower urgency concerns. More patients also leave the ER without seeing a doctor. Figure 2 shows what an average day in Winnipeg ERs looks like.

Figure 2. An Average Day in Winnipeg Emergency Rooms

On average, there are 610 ER visits in Winnipeg each day.



How busy are Winnipeg ERs?

Ten years ago, there were about 550 ER visits each day. But those numbers have increased by 12% since then. Now there are about 610 visits each day.

What kinds of medical emergencies bring people to the ER?

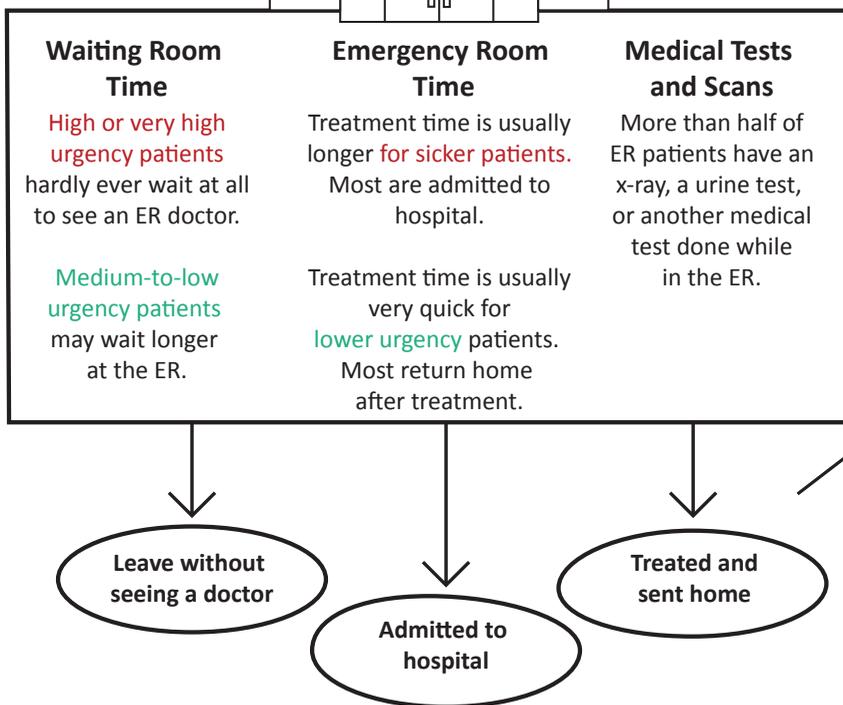
Only a very small number of ER visits are for very highly urgent reasons. Most patients who come to the ER have illnesses or injuries that are medium-to-low urgency.

What happens during an ER visit?

Patients with low urgency concerns might wait longer at the ER, because patients with high urgency concerns are seen first. The nurses and doctors in the ER may run medical tests on patients to help with their treatment.

What happens after an ER visit?

After seeing an ER doctor, a patient might be admitted to the hospital for a longer stay. They might be sent home after treatment. Some patients who go to the ER leave without ever seeing a doctor.

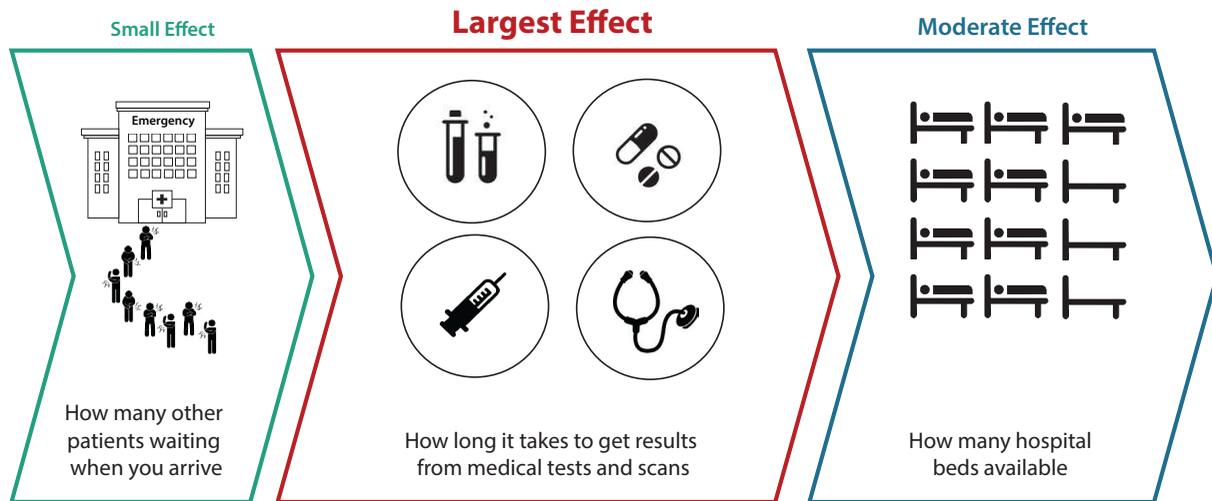


What factors affect ER wait times the most?

Figure 3 summarizes our study's findings on the key factors affecting wait times.

It may sound surprising, but we found that for patients newly arriving at the ER, the number of patients already waiting there had only a small effect on wait times. This was especially true if the newly arriving patients had higher urgency concerns than the patients already waiting at the ER. On the other hand, for newly arriving patients, processes like medical tests and scans done in the ER had a big effect on wait times. This makes sense when you think about all the steps involved in having these sorts of tests done. For example, say a doctor examines a patient and orders an x-ray. The x-ray machine and the technician to run it need to be available. The patient is brought to the room where the x-ray will be taken. The technician performs the x-ray. A doctor then reads the results of the x-ray and decides on the treatment. That's a lot of steps, and that's just for one kind of test!

Figure 3. The Most Important Factors for Emergency Room Wait Times



Lastly, factors like the time it takes to be admitted to the hospital had a medium-sized effect on wait times for newly arriving patients. Does a backlog of patients occur because the hospital is full? Well, only for about one third of visits. When we looked closely, we saw that for $\frac{2}{3}$ of ER visits, the number of hospital beds available and the types of patients using those beds did not affect how long it took for ER patients to be admitted. For the other $\frac{1}{3}$ of ER visits, there was a stronger relationship between how many beds were available and how long patients waited to be admitted. From this finding, we know wait times are about more than whether there is space available in the hospital.

What This Means for Emergency Rooms in Winnipeg

This study on factors affecting ER wait times highlights some important new findings. It shows that making ER wait times shorter is not as simple as creating more spaces in the ER or in the hospital. In general, patients who need care urgently are tended to right away, and the number of empty hospital beds is not usually a big driver of longer wait times. However, the study also points to some key areas that could be improved to ensure wait times are as short as possible. Medical tests and scans done in the ER help doctors treat patients, but can be very time consuming. It's important that ER doctors agree on when these tests are truly needed. Healthcare planners could also focus on ways to admit patients to hospital more quickly once it's decided that a hospital stay is needed. Future work will help us understand more about what types of changes are needed, and how these would best be put into action.

The Manitoba Centre for Health Policy is a unit of the Department of Community Health Sciences at the University of Manitoba's Max Rady College of Medicine, Rady Faculty of Health Sciences. MCHP conducts population-based research on health services, population and public health and the social determinants of health.

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