

# Seasonal Patterns of Winnipeg Hospital Use

THE MANITOBA CENTRE FOR HEALTH POLICY AND EVALUATION



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If patterns of the last 11 years hold true, this winter in Winnipeg two things are likely to happen: there will be an overcrowding problem in hospital emergency departments; there will also be an influenza outbreak. There are preventive measures that can be taken to minimize the flu problem. And interestingly, those same measures are among several that might also reduce the winter overcrowding crisis in Winnipeg hospitals.

That's right. Increased programs of vaccination could be the shot in the arm that the Winnipeg hospital system and its emergency departments need this winter.

These are just some of the findings and recommendations in this, MCHPE's latest report. We were asked by Manitoba Health to work with the Winnipeg Hospital Authority to examine patterns of use in Winnipeg acute care hospitals. Seasonal hospital overcrowding—of particular concern to the public—is a focal point for the study: when exactly do these high pressure periods occur? why do they occur? what, if anything, can be done about it?

But before we go any further, let's backtrack a little, to February, 1998. "Health care is clogged everywhere", "Crowding forces ER patients into hallways..."—media headlines such as these told the story: Winnipeg hospitals were in a state of crisis. And in many, if not all of those stories, bed closures were singled out for blame. More beds were said to be the solution.

Unfortunately for that argument, overcrowding incidents go back to before bed closures began. "Bed shortages blamed for

patient lineups" (Jan. 6, 1989); "Grace emergency under pressure" (March 13, 1991)—these Winnipeg Free Press headlines are several years old. Yet, they tell much the same story from a time when there were over 700 more beds in the Winnipeg hospital system than there are now. In short, regardless of the number of beds in the system, seasonal overcrowding persists. It seems the cause of the problem lies elsewhere. But where?

## *Methods and Findings*

This report does not look at emergency departments specifically, but at the larger problem of hospital overcrowding. Patients end up on stretchers in hallways of overcrowded ERs when all available beds are occupied. So we looked at seasonal patterns of use for Winnipeg's seven acute care hospitals over the last 11 years to find out how often hospitals are full, and why.

In each year, we tracked the number of patients in hospital or admitted to hospital each day. To effectively assess if and when overcrowding exists, we had to establish roughly how many patients per day is "normal" in the Winnipeg hospital system. We call this norm the *census range*. Small rises above census range the system can handle. But at a certain point—which we call the *high pressure level* (technically the mean plus 2 standard deviations) the system is strained to its limit: beds aren't available, backups result. These occurrences we call *high pressure periods*. Using this as our measuring stick, here is what we found.

- Since 1988—before bed closures—these high pressure periods have happened almost every year. They occurred in the winters of 1988, 1989 and 1991 when there were about 700 more beds in the system (Fig. 1a). The same level of pressure has been seen in the winters that followed, regardless of the number of beds in the hospital system (Fig. 2a).
- Anywhere from December to April, for a period lasting one to three weeks, the number of medical patients (non-surgical) climbed above the high pressure level, much higher than at any other time during the year. The February 1998 rush on Winnipeg Emergency rooms that received so much media attention occurred during one of these high pressure periods (Fig. 2a).
- The high pressure period is to some extent predictable; we know it will occur in winter. So too, is the relative magnitude of the problem: each day, for a one to three week period, the number of medical patients in all Winnipeg hospitals combined will be up to 10% higher than normal—about 70 to 80 patients.
- The large increase in medical patients during the winter months corresponds to increases in influenza-associated illnesses—pneumonia, influenza, and other respiratory conditions (Fig. 1a & b; Fig. 2a & b). Influenza-associated illnesses seem largely responsible for high pressure periods. Nearly 3/4 of the patients hospitalized with such illnesses are aged 65 years or older.

#### *Overcrowding: Misconceptions and Facts*

Hospital overcrowding is a serious problem that has understandably received a great deal of public attention. But it has also given rise to several misconceptions which, before solutions can be discussed, need to be separated from the facts.

One misconception, as we discussed earlier, is that more beds will make the problem go away. Another is that hallway medicine is a recent problem. But while the term “hallway medicine” is relatively new, the problem is not. Over-crowding incidents have seemingly blindsided Winnipeg hospitals almost every year for over a decade.

What may also be surprising to some is that these high pressure periods are essentially a once-a-year phenomenon of relatively short (though intense) duration. Our data show that it occurs sometime between December and April, lasting about one to three weeks.

It is during these high pressure periods that real overcrowding occurs. Patients who need to be admitted to hospital—in fact are admitted—have to stay on stretchers in emergency departments because all available beds are occupied. This group of patients in this set of circumstances is cause for serious concern.

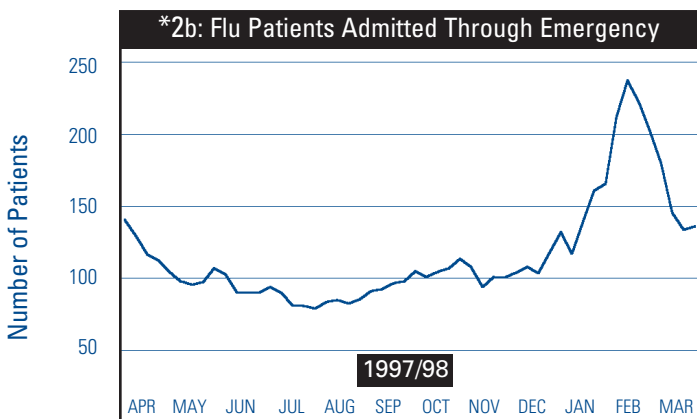
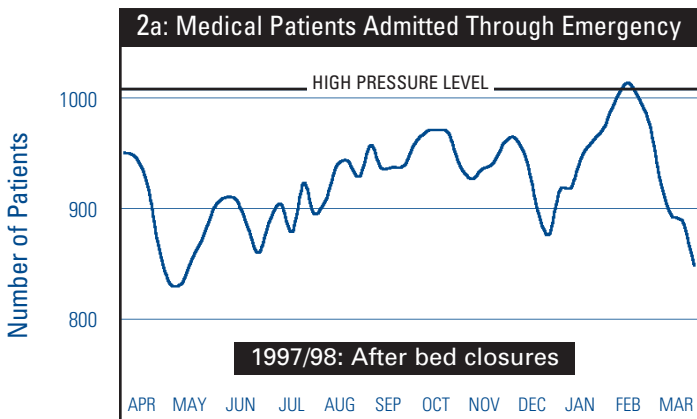
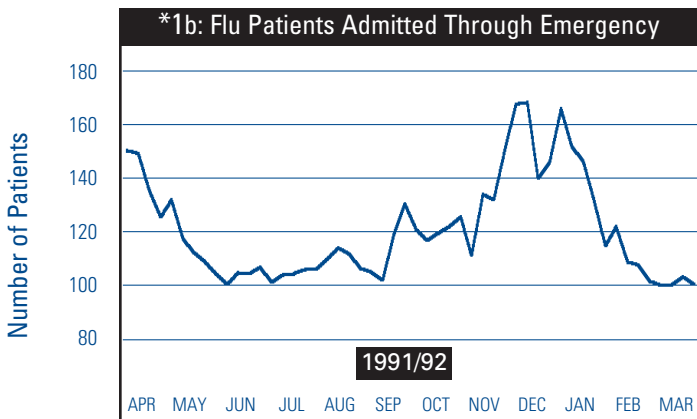
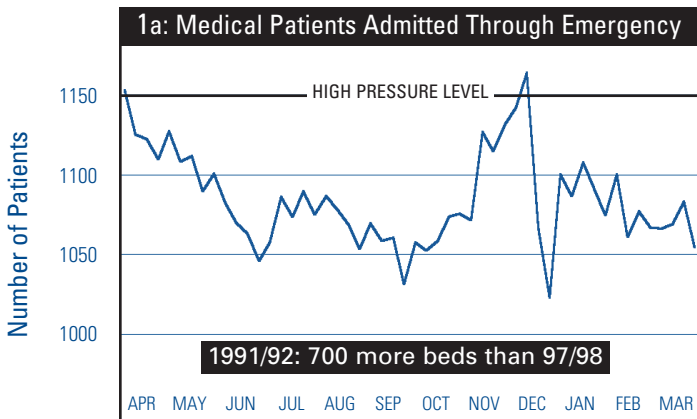
In all of these periods identified in our study, Winnipeg hospitals admitted roughly the same number of surgical patients, but were swamped with unusually high numbers of medical admissions, causing a system-wide back-up. By unusually high, the data show roughly 80 more medical patients than normal in hospital each day. And most of these “extra” patients had a common complaint—the flu or a related illness.

So the next high pressure period in Winnipeg ERs is, to some extent, predictable. That is, we know roughly when it will happen, how long it will last, the typical size of the problem, that many of the patients will have flu-related illness, and that the impact on hospitals and patients will be profound. What, then, might be done about it?

#### *Easing Overcrowding*

Our report offers several ideas to try to avert another hospital crisis. These suggestions are not necessarily unique or original; some of them came from the WHA and WCA; some of them are already being put into place. None of them are guaranteed fixes, nor are they easy to put in place.

The most obvious suggestion, given the impact of the flu on Manitobans and the hospital system, is a major campaign to increase influenza vaccinations. This applies particularly to high-risk groups—people over 65 and individuals with chronic conditions. This might include standing orders for nurses to identify and vaccinate high-risk patients in hospital. Community-based campaigns to heighten awareness among physicians, nurses, and the public might also be considered.



\*Figures 1b and 2b include flu-associated illness

Other suggestions involve being better prepared for the rush. More beds don't appear to be the solution. What is needed is some way to free-up some existing beds for a short period of time until the number of patients in the hospital system returns to normal levels. There are several possible ways to go about this.

More patients might be treated in Observation Units—designated areas set aside for the short term care of patients—rather than being admitted to hospital. During high pressure periods, these units would also offer a practical and more dignified alternative to hallways for those waiting to be admitted. That being said, it should be noted that the number of observation beds in Winnipeg is falling—about 20% over the last 4 to 5 years.

Related to that, as documented in our report *Alternatives to Acute Care* (1996), many patients in hospital do not require hospitalization. That's not to say they don't need care; our study showed that 98% of admissions needed some form of care. But many of them could be more appropriately cared for with alternative services, such as home care. This is especially true for patients who have been in hospital for eight days—about 70% of patients.

However, as our 1996 report also pointed out, there aren't nearly enough of these services available. As several physicians indicated to us, if more alternative care options were in place, a number of their patients wouldn't be in hospital. So the following suggestions are contingent upon more alternative care facilities and services being in place.

Those suggestions are: prior to admission, screening patients that do not come through the emergency department and patients with circulatory, respiratory, and digestive disorders; review and optimization of current referral and discharge procedures; added emphasis on early discharge (at least during the high pressure winter period); regular reviews of patients' need to be in hospital, in particular after the eighth day of stay.

Timely discharge is also hampered by the fact that many services—such as home care, physiotherapy, or diagnostic tests—are not available or can't be arranged on weekends. So some patients who might be discharged on say, Friday evening, are left in hospital until Monday. Having these services available on weekends could go a long way toward freeing up beds.

### *Managing the Crisis*

Given the fact that we don't know precisely when these high pressure periods will hit, we have several suggestions that might make any future crisis more manageable.

One often-heard suggestion is to simply add more beds. But, as mentioned, having more beds didn't avert a crisis in the past. What's more, studies elsewhere suggest the strong likelihood that those beds would fill up before the crisis hits—urban hospitals run at or near capacity.

Another suggestion, arguably with more promise, is to have beds in reserve, to be opened when the crisis hits. But, beds need people to look after them; so along with beds in reserve, you would need staff in reserve.

A more workable solution might be to free up existing beds by the introduction of swing beds. Currently, hospitals have beds used only for surgical patients, and beds used only for medical patients. During the high pressure periods, a small block of surgical beds could be switched to medical beds.

This idea might meet with resistance from some surgeons out of legitimate concerns that these beds might not “swing” back. To engender cooperation—in fact to make the idea work—hospital administration would have to make sure the switch is temporary, and beds revert back to surgical beds after the crisis.

That being said, what happens to the patients who were scheduled for surgery during that time?

Two other strategies could be part and parcel of this initiative. First, the WHA might consider scheduling less surgery from January to April, when most of the high pressure periods have occurred. This could be offset by scheduling 5-10% more surgery at times that traditionally have been slow—specifically weekends, the last two weeks of December, and the summer. The aim is not to reduce surgeries, but to distribute them more evenly across the calendar.

Are we suggesting that patients be bumped from January to August?—No. Conceivably,

less winter surgery overall would facilitate the rescheduling of procedures to a time still in winter, and not long after the bed crisis. Even better, more December procedures would allow some people to have their surgery sooner.

Second, given how many inpatient procedures are now successfully performed as outpatient procedures, perhaps more outpatient surgery is possible during the winter.

These proposals would require system-wide cooperation. For example, it's probable that some surgeons will be willing to operate during traditional holiday periods. But will anesthesiologists? Nurses? Support staff? Surgeons can't do it alone.

### *Conclusion*

Seasonal bed pressure in hospitals has been a problem in Winnipeg—in fact across Canada—almost every winter for the last 11 years. The good news is that these high pressure periods can be anticipated and quite possibly managed.

Much of what is put forth in our report involves changing the way the system is managed to free up beds in a hospital system that typically runs at near capacity. Difficult as that is, it is doubly so on short notice. Hospitals are large and complex—big ships that can't turn on a dime. Still, they can be turned. And every change in direction has a ripple effect, causing waves throughout the health care system.

Crisis management, though it may be necessary, is seldom ideal. A logical and potentially pre-emptive first step appears to be a comprehensive campaign of flu vaccination. Reducing how many Manitobans get the flu in the first place might stop hospital overcrowding before it starts. An ounce of prevention could be worth a pound of cure.

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