# Assessing the Performance of Rural and Northern Hospitals



## THE MANITOBA CENTRE FOR HEALTH POLICY AND EVALUATION

Imagine you're a manager in one of Manitoba's rural or northern Regional Health Authorities. You receive data showing that in one or more areas in your RHA, when residents are hospitalized, over 90% of them don't go to their local hospital. What do you do? Downsize the hospital? Expand its services? Close it? Convert it to another kind of health care facility that better suits local needs?

Well, most likely you'd look at the matter much more closely. But the point is, that's the kind of information managers in rural and northern RHAs are looking for, a starting point from which they can begin tailoring health care services to meet the needs of their residents. It's the kind of information the Manitoba Centre for Health Policy and Evaluation provides in this report on rural hospitals.

Manitoba Health asked MCHPE to develop a method of assessing rural hospital performance. With over two billion dollars budgeted for Manitoba's health care system yearly, politicians, health care managers and the public increasingly want information about health care operations—hospitals in particular. Our report offers Manitobans a preliminary look at how rural hospitals function in this province.

To RHAs it offers answers to questions such as: Are hospitals meeting the hospitalization needs of their region? How acute is the care they provide? Which areas have the greatest need for hospital services? Are some areas using more hospital services than expected? Are hospitals discharging their patients efficiently? Are hospital beds full?

Answering these questions presented quite a challenge.

### Challenges and New Approaches

Virtually none of the existing literature on hospital performance assessment was useful for our analysis of Manitoba's rural and northern hospitals. Most such previous studies focussed on urban or teaching hospitals. Their applicability to rural hospitals is limited: smaller hospitals generally deal with less severe cases, have lower volumes, and a much higher proportion of non-specialist physicians and nurses. They also have different economies of scale: small hospitals might be far more efficient than a large urban hospital at dealing with, say, uncomplicated pneumonia, but less capable of treating severe heart failure.

So this work, with its focus solely on rural and northern hospitals, appears to be the first of its kind. We developed a set of indicators tailored especially for rural hospitals that cover multiple aspects of their performance.

A key feature of our method is the inclusion of a population-based perspective. We look at how much hospital care populations are using. This is then weighed against a population's need for hospital services, arrived at using population characteristics that are clearly associated with the need for health care—like age, gender, socioeconomic status and premature mortality rates. For this study, we looked at physician service areas (PSAs) from rural and northern RHAs in Manitoba, and ranked all 51 by their need for health care services.

In addition, we developed three indicators specifically for this report. Intensity of services looks at the proportion of cases involving surgery or deliveries, the complexity of typical medical cases, and the proportion of cases that had a length of stay greater than one day. Another measure, discharge efficiency, calculates how long a hospital's stays should be, given the type of cases it treats, then compares them to how long stays actually are. A third indicator looks at the share each institution had of local hospitalizations. In other words, for every 100 people hospitalized in a particular community, how many of them stayed in their local hospital?

We also included a fourth measure common in hospital assessments, occupancy rates.

Each hospital was ranked (a) in relation to the other hospitals in rural Manitoba and (b) in relation to hospitals of similar size and function—major rural, intermediate rural, small rural, small multi-use and northern isolated. And since many hospitals in rural Manitoba handle a low volume of cases, we based our performance analysis on a three-year average (fiscal years 96/97-98/99) rather than a single year.

#### **Findings**

Our analysis of hospital performance benefitted immensely from the division of rural hospitals into five different categories. Since hospitals were compared to other institutions of similar size and function, it allowed for fairer and therefore more meaningful comparisons to be drawn. This was especially helpful in comparing usage rates and intensity of services

There are a lot of empty beds in Manitoba's rural hospitals. Occupancy rates across the 68 hospitals we studied averaged less than 60%. Twenty hospitals had rates below 50%. Only one rural hospital reported an occupancy rate above 80%.

□ There are important differences in the rates at which rural residents use their local hospi-

tals. Only 11 of 68 hospitals provided more than 50% of the hospitalizations their area residents used. On the other hand, 18 hospitals provided less than 10% of area residents' hospitalizations, meaning over 90% were hospitalized elsewhere.

□ Residents of about one PSA in five used hospital services at a rate more than 10% higher than their "need" profile suggested.

□ Usage rates are related to hospital type. Few local residents used small rural and small multi-use hospitals (Fig. 1). In contrast, northern isolated hospitals had above average usage rates, demonstrating how dependent northern residents are on them. Major rural hospitals had the largest share of local use.

Intensity of services is closely related to hospital type. Virtually all of the hospitals scoring in the high range of our intensity scale were major rural or intermediate rural hospitals. The lowest intensity scores were recorded by small rural and northern isolated hospitals.

After adjusting for differences in hospital type, no one type of hospital appeared less



#### 1. Occupancy vs. Share of Hospitalizations at Small Multi-Use Hospitals: 96/97-98/99

efficient than another. However, within each hospital grouping—such as intermediate rural—some hospitals were more efficient in discharging patients than others.

Discharge efficiency is unrelated to the intensity of services the hospital provides.

Occupancy rates can be a misleading indicator for judging hospital performance. Many hospitals that recorded high occupancy rates also had low intensity scores and/or poor discharge efficiency.

## Interpreting the Data

First of all, we must emphasize that while this assessment is in many respects a report card, it is in no way an action plan. It gives RHAs the lowdown on how their hospitals are performing and how much use area residents are making of them. It does not offer specific recommendations on what to do with, say, a hospital that ranks low on discharge efficiency and local usage. Such decisions are beyond the scope of this report and are better left up to each RHA with its local perspective on area needs. What this study offers is a first step toward making those decisions.

That being said, it is clear that the number and function of Manitoba's rural hospitals needs to be reassessed. And we can illustrate here some possible ways RHAs might use this study to that end. At the same time we'll point out some possible conclusions and potential mis-conclusions that might be drawn from any or all of the indicators used in this hospital assessment.

For instance, hospitals performing well on a variety of indicators might be used as benchmarks, a standard to aim for in trying to improve all rural hospitals. If an institution combines high intensity services with good discharge efficiency and high occupancy rates, one can assume they are doing a lot of things right. Even more so if their level of use corresponds to the community's need. To RHA managers such facilities may provide a model: "What are they doing that our other hospitals are not?"

On the other side of the coin, hospitals that aren't performing well will draw a great deal of attention. In improving the system, these are the likely targets of change. This is where it is



particularly important to consider not just one indicator, but all indicators, to try to get the full story on how a hospital is functioning.

For example, one might look at northern isolated hospitals, which have 23% occupancy rates—much lower than the other types of hospitals—and conclude there is little need for them. But they also account for more than one-third of hospitalizations of local area residents, a usage rate much higher than many "fuller" rural hospitals to the south (Fig. 1). The most obvious reason for this is that the next hospital is hundreds of kilometres away (Fig. 2). Whatever the reason, it's clear that residents depend on these hospitals; low occupancy rates don't tell the whole story. High occupancy rates can be equally misleading. Many hospitals that reported high occupancy rates received low scores on the discharge efficiency and intensity measures. Their high occupancy rates may, compared to other hospitals, reflect a practice of admitting patients who are not as sick, or perhaps keeping their patients longer.

Even with two or more indicators, it's still possible to jump to a wrong conclusion. At first glance a hospital with unusually low scores might be seen as simply inefficient. However, given the comparatively low number of patients some rural hospitals treat each year, it could also be the result of just one or two unusually long stays in one year. Or, it could reflect an unusual event like the departure of a physician.

So it's worth repeating: hospitals should not be assessed on the basis of a single indicator, several need to be taken into account. A poor score on one or two indicators signals that further investigation is required.

This seems especially true when looking at shares of hospitalizations. True, if in a given area, 90% of the hospitalizations don't take place in the local hospital, it strongly suggests that the local hospital isn't really needed by the community. But does that mean the hospital isn't performing well? Maybe. That it should be closed? Maybe. It could just as likely mean that the needs of the community have changed, and therefore so should the role of the hospital.

For example, in another MCHPE report, *Alternatives to Acute Care* (1996), we found that in some cases, a large proportion of patients using small rural hospitals were longstay elderly patients. Instead of residing in long term care facilities (which may not have been available), they were having extended stays as hospital patients. The hospitals were in fact serving as nursing homes. So here is a situation where an RHA might consider changing the role of the facility—from hospital to nursing home—to make it better serve the apparent needs of the community.

Many other factors can influence a community's need for its hospital. Even something like a new highway. Perhaps a once-busy small rural hospital now sees residents "voting with their feet" to bypass it because a much larger facility is suddenly just as easy to get to. This in turn might snowball: the local hospital is under-used; routine procedures aren't so "routine" anymore; residents' confidence in the hospital erodes; which leads to even less use; and so on.

This is where the RHAs might start to consider "constellations of hospitals." If a hospital has become redundant with another not far away, then maybe it should be converted to something else. Here is where local input on what makes sense is vital. Perhaps a community health care centre with more primary care doctors or nurses would better serve. Or perhaps an emergency centre. Instead of three small hospitals each offering the same limited services, they can, as a constellation of hospitals or health care facilities, offer a broader range of complementary services.

Of course it may well be that some underused and low scoring hospitals will be targeted for closing. And doubtless, concerns will be raised. A look at Saskatchewan's experience should allay some of those concerns. There, they closed over 50 small rural hospitals in the early nineties. Follow-up studies in these regions showed that health, as indicated by mortality rates, actually improved after hospital closures—more so in these areas than elsewhere in the province. So, the closing of small local hospitals didn't imperil the lives of residents. In fact, their life expectancy increased.

Whatever decisions RHAs make about the future of their rural hospitals, they now have a tool that can help them. This assessment pulls into focus a much larger picture of how each hospital is performing than was previously possible. Coupled with their local perspective, it's up to each RHA to take it from there.

Summary by RJ Currie based on the Report: Assessing the Performance of Rural and Northern Hospitals in Manitoba: A First Look by David Stewart, Charlyn Black, Patricia Martens, Sandra Peterson and David Friesen

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