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Assessing Manitoba's Nursing Homes: Is Good Good Enough?

MANITOBA CENTRE FOR HEALTH POLICY

Summary by RJ Currie and Carolyn De Coster, based on the report: *Using Administrative Data to Develop Indicators of Quality Care in Personal Care Homes* by Malcolm Doupe, Marni Brownell, Anita Kozyrskyj, Natalia Dik, Charles Burchill, Matt Dahl, Dan Chateau, Carolyn De Coster, Aynslie Hinds and Jennifer Bodnarchuk

It's well known that nursing home residents are susceptible to hip fractures. But if we were to ask you how many occur each year in Manitoba nursing homes, what would you guess? 200? 250? 300?

If you guessed 250, you'd be right; the average is just under that. Now, since the answer met your expectations, is that good? Does 250 hip fractures a year seem an acceptable amount? What if you guessed 200? Suddenly it's worse than you expected. Are you now thinking that something should be done?

Comparisons. Expectations. Acceptability. Those concepts are at the heart of this study by MCHP, an up-close look at nursing homes (a.k.a. *personal care homes* or *PCHs*) in Manitoba.

We undertook this study at the request of Manitoba Health. Specifically, we were asked to develop a means of using administrative data (records of physician billings, hospitalizations, PCH use and prescribed drugs) to measure the quality of care offered by Manitoba's PCHs.

To that end, we developed 10 measures—called *Quality Indicators*—that we think offer a very good picture of what is going on in Manitoba nursing homes.

Six quality indicators (QIs) look at adverse events—hip fractures, for example—and four look at medication. Among the things we are trying to find out: Does quality of PCH care vary between RHAs (Regional Health Authorities)? Within each RHA, does quality of care vary from one PCH to another? Is there a connection between certain PCH characteristics and better quality of care? Is there a relationship between different QIs—such as bed sores or taking high-risk drugs—and certain resident characteristics?

We see QIs as having a two-fold purpose. First, they can be used to highlight potential shortcomings in the nursing home system, identifying PCHs where possible problems may exist. Decision-makers will then know where to look and can follow up. Second, they will also highlight PCHs that are providing comparatively better care. There is an obvious advantage to this: other PCHs may look at them and ask, What are they doing differently? Can we do some of those things here?

As mentioned, our QIs are divided into two groups. The first group (six indicators) we call *Diagnostic QIs*. Diagnostic QIs are based on how often PCH residents were admitted to hospital or were seen by a physician for one of the following: hip fractures, non-hip fractures, falls, respiratory infections, bed sores or fluid and electrolyte imbalances.

Since some residents were not in a PCH over the entire study period, or were in and out, these QIs only counted if they occurred in the PCH. So if a PCH resident was, say, hospitalized briefly, then had a fall while in hospital, it wouldn't count against the PCH.

The second group (four indicators) we call *Drug-Related QIs*. They focus on those residents who were taking: nine or more drugs at one time; benzodiazepines (used to treat things like anxiety and

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insomnia); antipsychotic medications; and drugs considered high risk for seniors. Residents taking these drugs are more prone to disorientation, falling and getting injured.

Drug-related QIs were assessed only for residents admitted to a PCH during the five-year study period. We looked at the drugs the residents were taking during the 100 days prior to admission to a PCH, skipped the 90 days after admission, then looked at drug use for the following 100 days.

Rates for all QIs were adjusted for resident sex, age, and level of care to help ensure fair comparisons between RHAs and PCHs. The following are some of our key findings.

PCH and resident characteristics

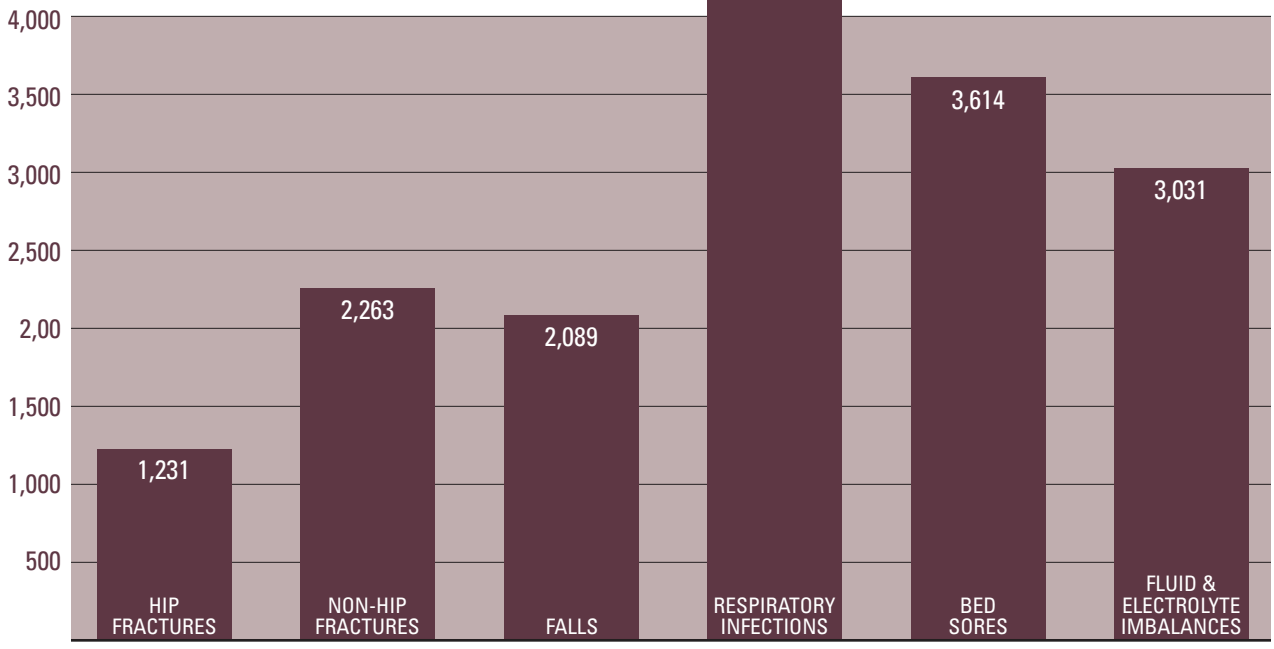
- PCHs in Winnipeg (WRHA) and Brandon RHA tend to be larger than those in other RHAs and all of them are free-standing. About 40% of them are proprietary (for profit). In the other RHAs it is common for PCHs to be part of another health care facility, and relatively few are proprietary.

- PCHs in North Eastman, Interlake and South Eastman RHAs have the highest staff (nurses and aides) to resident ratios, while Central and Brandon RHAs have the lowest.

- In Winnipeg, the not-for-profit PCHs tend to have higher staff-to-resident ratios than the for-profit homes. In fairness, we should mention that we did not have staffing data for all PCHs.

- Over half of Manitoba PCH residents are aged 85 or older. In addition, about 65% have been diagnosed with dementia and 70% diagnosed with two or more chronic diseases. Not surprisingly then, close to 70% of PCH residents in Manitoba need what is considered the highest level of care.

- In Winnipeg's for-profit PCHs, the average age of residents is below the provincial average, while at the same time they tend to have more residents requiring higher levels of care. They also have a higher turnover of residents. Assiniboine RHA is almost the reverse of that: residents tended to be older, they're assigned lower levels of care, but resident turnover is about average.



1. Diagnostic Quality Indicators; Manitoba Average: April 1999 to March 2004

Diagnostic Quality Indicators

- Of the six diagnostic QIs, respiratory infection tops the list with 7,958 cases reported across 122 PCHs over five years (Fig. 1). The least common is hip fracture, with 1,231 cases reported. Rates for the six QIs are similar across almost all RHAs. The exception is WRHA's for-profit PCHs, where rates are higher than average across all indicators.

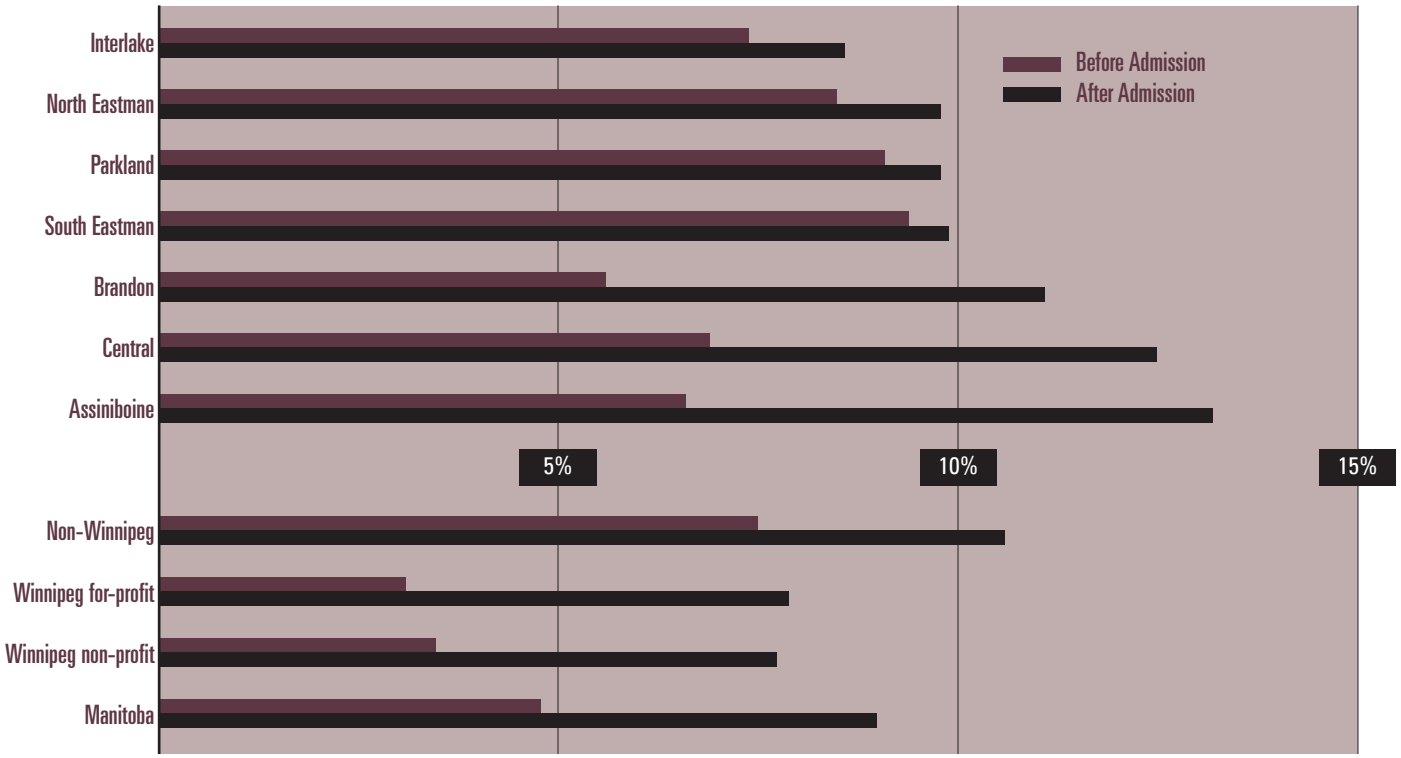
Rates vary considerably between PCHs within each RHA. For each QI, PCHs are ranked on a percentage scale according to how frequently adverse events occurred. Therefore, a low score is a good score: the lower a PCH's score, the better it is doing compared to other PCHs; the higher its score, the worse it is doing.

- 40 of 122 PCHs rank above 90% for at least one diagnostic QI, while eight rank above 90% for two QIs. One PCH has scores above 90% for four of six indicators. These are facilities where follow-up investigation seems in order.
- 42 of 122 PCHs ranked below 10% for at least one diagnostic QI; ten of these ranked below 10% for two QIs. One PCH ranked below 10% for four out of six. So these facilities might serve as models for any initiative aimed at improving quality of care.

Drug-Related Quality Indicators

Only 89 PCHs are included in our drug-related QIs. That's because we don't have data on drugs supplied to PCHs from hospital pharmacies. So we had to exclude PCHs that received drugs from hospitals. It's a situation we hope can change; having data from these 33 PCHs would obviously give a more complete picture.

- In terms of prescribing high-risk drugs, rates are similar from one RHA to the next.
- Across all RHAs, residents are more likely to receive high-risk drugs if more than one physician is prescribing for them.
- In general, it appears drug prescribing increases after admission to PCH (Fig. 2).



2. Percent of Residents Dispensed Nine or More Different Drugs, Before vs. After Being Admitted to a PCH: Manitoba and RHA Averages: April 1999 to March 2004

- While 4.8% of residents were taking nine or more drugs pre-admission, the number jumps to 9% after admission.

- 24 out of 89 PCHs rank in the bottom 10% for at least one of the four drug-related QIs. One PCH ranks below this threshold for three of them. Lessons may be learned from these facilities with respect to optimizing drug use.

- 16 PCHs rank above the 90% mark for at least one drug-related QI. One ranks above this threshold for three of them. Problems with inappropriate prescribing may exist in these facilities.

Conclusions

When we ranked Manitoba PCHs, we took into account resident characteristics like age, sex and level of illness. Yet we still saw that some PCHs performed better than others. So we asked, Are there things that we can use to identify who's at risk?

The answer is far from straightforward.

Take for example, fractures. The ideal number would be "0," but it's not a realistic expectation. Older people, like those in nursing homes, are more susceptible to fractures. But interestingly, it is the healthier PCH residents, those needing lower levels of care, who are at greater risk for fractures. This is likely because they are more mobile, more "on the go," and therefore more likely to fall.

Meanwhile, frailer patients, those requiring higher levels of care, have fewer fractures. But, since these people spend more time sitting down or lying down, they are more likely to suffer bed sores.

Consider also the jump we see in patients taking nine or more drugs after admission to a PCH. Does that mean PCHs are over-medicating their residents? Maybe. It could also mean some residents are under-medicated before they get there.

This report does not suggest ways to optimize the quality of PCH care in Manitoba. But it has made it clearer which periods of time patients are more at risk for an adverse event, or for having their drug load increased. Residents in their first few months in a PCH seem particularly at risk.

We also have learned that residents with two (or more) doctors prescribing to them are more likely to be taking potentially dangerous drugs. So when it comes to prescribing, having only one physician seems the safer way to go.

So it's complicated, and this study is not about finger pointing. Our indicators simply identify which facilities "score" better in each of ten indicators of quality of care.

Where do we go from there? Well a logical first step would be to look at the lower—meaning better—scoring PCHs for each indicator and see what can be learned from them. Can some of what they are doing be applied in the other PCHs to improve their scores for that indicator? This applies even to PCHs in, say, the next to best percentile—arguably a good score, but it can get better.

And just because a PCH is in the highest percentile of a given QI, it doesn't mean they are doing a bad job. In fact there isn't a "right" rate for any of this. It just means they aren't doing as well as other PCHs in that area of care. Nevertheless, we did find some good and not-so-good news at the facility level.

The good news is that quality doesn't depend on the size of the facility (number of beds). There are many small PCHs on a par with large PCHs.

The not-so-good news is that rates of all diagnostic QIs tend to be higher at many of the for-profit PCHs in Winnipeg. These facilities in general (meaning not all of them) also tend to dispense more antipsychotic medication to their patients. We know that this is not due to differences in resident characteristics because we've accounted for that. Regardless, its something that decision-makers may want to take a closer look at.

And that's the point. Much of what happens next boils down to expectations and deciding what is acceptable. There's nothing to suggest that care is substandard in Manitoba PCHs. On the other hand, there's much to suggest it can improve. If intervention or improvement strategies are in order, decision-makers will need to know where to aim. PCH quality indicators can help point the way.

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