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Community Health Sciences

PHYSICIAN INTEGRATED NETWORK

A summary of the report, *Physician Integrated Network Baseline Evaluation: Linking Electronic Medical Records and Administrative Data* by Alan Katz, Bogdan Bogdanovic, and Ruth-Ann Soodeen

Summary written by A. J. Levin

A New Way of Looking at Primary Care

Family doctors are the key to the healthcare of most Canadians. They treat acute infections and chronic diseases, and offer preventative care to their patients; but it turns out we aren't measuring how good the care we are getting is. Two kinds of data can help us complete the picture.

Last time you went to your doctor for a check-up, or to treat an infection, did the doctor take notes on paper or a computer? For decades, car rental companies have kept track of their cars and of how much their customers owe using computers and small handheld devices. Electronic patient records have also been around for something like 30 years, but they haven't caught on as well.

Electronic medical records (EMRs) help family doctors provide better care to their patients. Yet in Canada, primary-care providers — typically a family doctor in a clinic who bills Manitoba Health directly for every patient who visits — have been slow to use EMRs. There are probably lots of reasons for this. It may be because healthcare providers feel that typing in front of a monitor may interfere with the care they are trying to provide. Still, without electronic records, it's hard to measure what kind of care we are getting, and family doctors may be missing important information that could help with patients' health.

Another way to get a sense of the quality of Manitobans' care is to look at administrative data. These include records of doctors' claims to Manitoba Health for treating patients, plus records of immunization, and prescription drug claims from the provincial Drug Programs Information Network (DPIN). The DPIN system is useful both for administering Pharmacare, where the province pays for the cost of patients' medications, and for making sure that the drugs that are prescribed do not interact in negative ways.

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There are records of this administrative information stored at the Manitoba Centre for Health Policy (MCHP), but this information still has some gaps in it. Getting information from the actual patient records — with patient names and other identifiable information removed to protect confidentiality — may fill some of those gaps. It's important to measure how healthcare providers work at preventing diseases, and how well they manage serious chronic

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illnesses like heart disease, diabetes, and asthma (Table 1). Stopping people from having to go to the emergency room or to expensive specialists in the first place is much better than treating them after the fact, both for their own health and for saving money in the health system.

Introducing the Physician Integrated Network

This is where the Physician Integrated Network (PIN) comes in. Manitoba Health set up PIN with a number of goals in mind. They wanted to refocus the system on primary care providers, and show that Manitobans receive high-quality care. Another aim was to help family doctors work better with other health fields because there's been some concern that family doctors are isolated from other healthcare providers. Doctor burnout is another problem, and with a doctor shortage, PIN hopes to make doctors' work easier.

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Manitoba Health also hopes PIN could help physicians address and manage chronic diseases, since an increasing number of Manitobans have one or more chronic conditions. The program also hopes to improve patients' access to doctors, and to create a system to manage information so doctors can make better decisions. To help clinics join PIN, Manitoba Health offered funds besides the regular service fees doctor get, called Quality-Based Incentive Funding, to support high-quality care.

Phase 1 of PIN ran from August 2007 to August 2008. It involved three participating clinics: Agassiz Medical Centre in Morden, Dr. C.W. Wiebe Medical Centre in Winkler, and Assiniboine Clinic in Winnipeg. A fourth clinic, the Steinbach Family Medical Center, was also part of the study but did not get funding at this stage.

Analyzing PIN Results

Manitoba Health asked researchers at MCHP to look at the EMR information from the four clinics that were in Phase 1 of PIN. Names and addresses were removed to protect patients' privacy. The aim was to compare the data from the clinic EMR records to the administrative data housed at MCHP, and look for patterns among groups of patients. The study looked at a number of quality indicators, including some developed by the Canadian Institutes for Health Information (CIHI) and others developed in past MCHP studies.

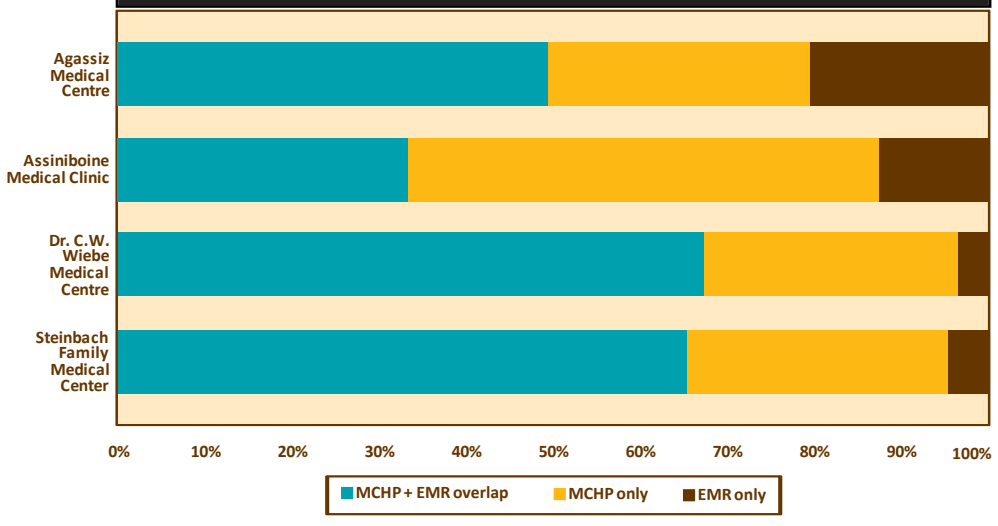
Table 1: EMR Indicators

Preventive Care
Cervical cancer screening (Pap tests/smears)
Childhood immunizations
Influenza vaccination (flu shots) for seniors
Mammography screening (for breast cancer)
Chronic and Acute Disease Care
Antibiotic prescription use
Follow-up care by doctors after prescribing an antidepressant
Asthma care
Benzodiazepine (an anti-anxiety drug) prescriptions for seniors
Prescriptions for congestive heart failure
Diabetes care
Beta-blockers prescribed after heart attacks
Cholestrol-lowering drugs prescribed after heart attacks

A huge challenge was that the administrative information from the data Repository at MCHP was for the 2007 fiscal year, ending March 31, 2008. Meanwhile, Phase 1 of PIN ran from August 2007 to August 2008. So there wasn't an exact overlap in the data. And to make things worse, because the EMR information couldn't be extracted easily, there was no overlap at all for that period for two of the clinics. Even so, the study provided useful results.

Another challenge researchers faced was deciding which patients to include in the study. At first glance, this seems simple. If Joe Smith went to Clinic A, there is a record of a visit in the Repository. So Joe should be included in the study. But what if Joe went to Clinic B as well? Which clinic should he be included in? Clinic A doctors say Joe is not

Figure 1: Patient Allocation



really their patient, because he only used Clinic A's walk-in clinic just that once — so do we include Joe in Clinic A's quality of care measurements?

In Manitoba, we don't have a formal arrangement between family doctors and their patients. Patients often visit more than one clinic. Family doctors feel responsible for the ongoing care of the people they see regularly, but not necessarily for other people who go to more than one doctor or clinic, or who may rarely show up in any clinic. In some provinces, such as Ontario and Quebec, there's a system where patients enrol with the doctor, putting a formal relationship in place.

To assign patients to a clinic for PIN, the clinic doctors had two ways of approaching this. In some clinics, doctors looked at the lists of patients who visited them and decided if they felt each patient was "theirs," that is somebody who was in their practice. In other clinics, the EMR listed who the patient's family doctor was. The researchers at MCHP had another way of deciding: they used the Repository to see which doctor the patient visited most often. One of the key lessons from PIN was that the ways of deciding which patients to include in a clinic's core patient group did not always agree (Figure 1).

Another important finding was that there were differences in how physicians used EMRs. For example some doctors typed into the record that they requested a cholesterol test, while others merely checked a box stating that the test was requested. It was much easier to keep track of what was done in an EMR when the check boxes were used! So it was hard to make comparisons or to measure clinic quality consistently.

Also there were differences in typical age ranges of patients at the different clinics. For example, the Assiniboine Medical Clinic had more middle-aged people and seniors than the Manitoba average, and fewer children and teens. On the other hand, the Steinbach Family Medical Centre had more infants, toddlers, and young children as patients than the Manitoba average (Figures 2 and 3).

Figure 2: Assiniboine Medical Clinic - Distribution by Age: 2005/06-2007/08

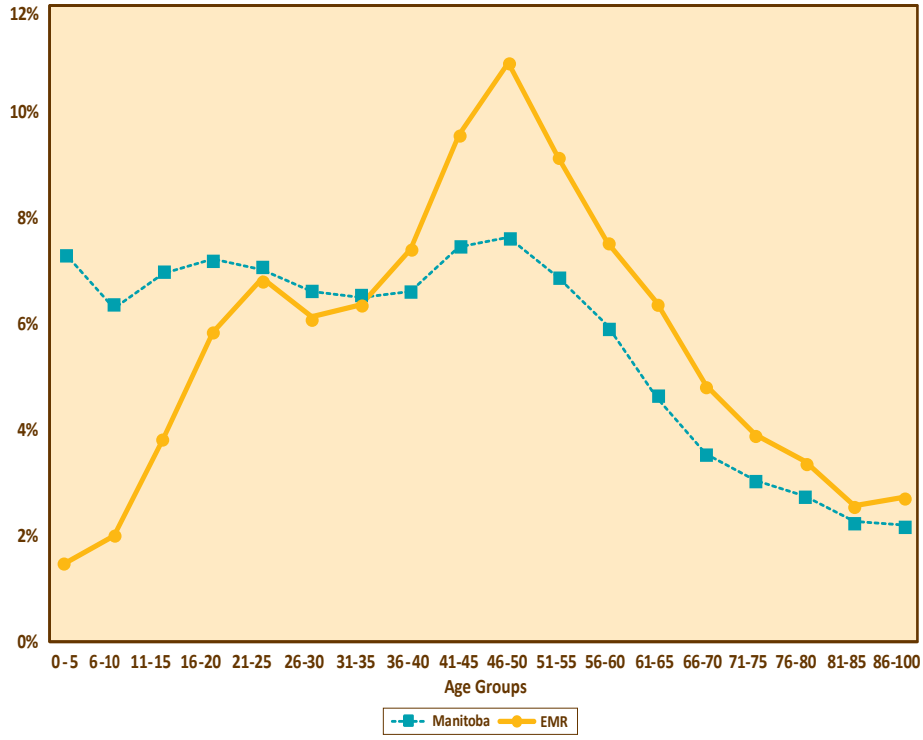
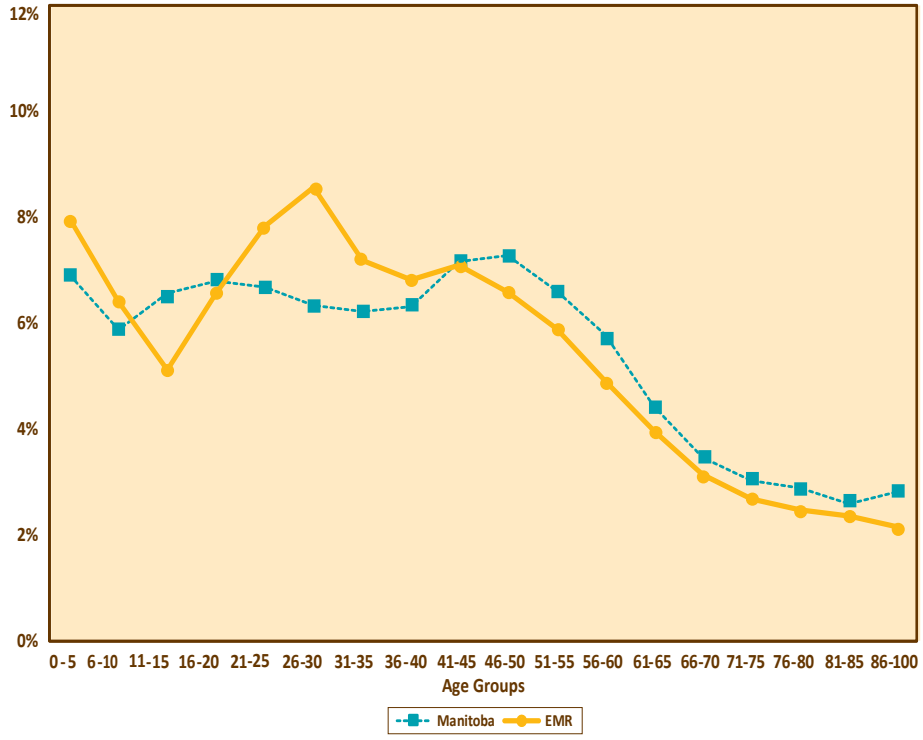


Figure 3: Steinbach Family Medical Center - Distribution by Age: 2005/06-2007/08



The differences in age ranges are important to the clinics' planning. A clinic with a lot of young patients will need to make sure that the children receive immunizations to help prevent diseases like measles and whooping cough. On the other hand, a clinic with more senior patients will need to provide the kind of complex care some older patients need.

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The good news is that there were improvements to the use of EMRs because of PIN. For example, EMR software approved to be sold in Manitoba now has to have certain standard fields, so that important information can be easily found in the records. Also, the doctors are learning how to make better use of their own EMRs. For example, they can start using the EMR information for such things as graphing how a patient's blood pressure changes with each visit and how it responds to treatment.

There were some other important findings. For example, all of the four clinics had areas where they offered better and worse care than average – things like immunization for children, or follow-up of people with diabetes. This could help clinics target the areas where they need the biggest improvement without sacrificing the areas where they already offer excellent healthcare.

The Way Forward

With more, and standardized, electronic patient records, we should be able to get a handle on clinic strengths and weaknesses, and on how we can use EMRs to improve care both in individual clinics and across the province.

As primary-care renewal in Manitoba moves forward, more clinics (and the patients who get their care at those clinics) will join PIN. Physicians will need to take full responsibility for the patients attending those clinics to receive potential funding for doing a good job based on the Quality-Based Incentive Funding. For this to happen, there may need to be more formal patient enrolment in clinics. This should lead to better quality medical care for all the patients involved.

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Mail: 408 Brodie Centre, 727 McDermot Avenue
Winnipeg, Manitoba, R3E 3P5
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