

Better for Ourselves and Better for Our Patients: Chronic Disease Management in Primary Care Networks

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Abstract

Capital Health in Edmonton, Alberta, implemented a system-wide chronic disease management model to support people with chronic disease and their primary care physicians. Groups of family physicians, in partnership with the health region, developed primary care networks to provide services that are customized to meet the priorities of the local community. Management of chronic disease is a cornerstone service, and diabetes management is the most fully developed program. Key to its success are standardized protocols, consistent follow-up and patient education by trained primary care nurses. This model will be used as a template for the management of other chronic diseases.

Background

As Canada's population ages, more people are living longer with chronic diseases such as diabetes, high blood pressure, heart failure, lung disease, kidney disease and depression. But the prevalence of these medically complex conditions comes at a price – billions of healthcare dollars are spent treating patients in physician's offices, emergency rooms and hospitals every year. Left undiagnosed or untreated, chronic disease may also exact serious health and economic consequences from patients, families and communities.

Diabetes results in more patient visits to family physicians and higher hospital admission rates than any other chronic disease. Affecting more than two million Canadians, diabetes costs \$13.2 billion annually, a figure predicted to increase to \$15.6 billion by 2010 (Canadian Diabetes Association 2006). Surveys indicate that up to one-third of Canadians are unaware that they have diabetes, increasing their risk of developing serious complications down the road, including amputation, eye disease, kidney failure, heart disease, stroke and nerve damage.

Traditionally, family physicians in Capital Health – Canada's largest academic health region, encompassing Edmonton and the surrounding area – managed patients with diabetes on their own or referred them to specialists in diabetes clinics. That approach had several drawbacks: patients often had to see several specialists; clinics had long wait lists; patients were seen on a first-come, first-served basis, regardless of need; treatment models were variable; and follow-up was limited. In addition, there was no way to track or share patient information or outcomes. Diabetes management lacked consistency, coordination and support.

In 2003, Capital Health undertook two significant steps toward managing chronic disease more effectively, beginning with diabetes. First, it adopted a chronic care model and implemented it across the system to redesign services for adult patients with diabetes, a program that is unique in Canada. Second, Capital Health, with the other health regions, entered

into a unique primary healthcare agreement with Alberta Health and Wellness and the Alberta Medical Association (AMA). As a result, a group of family physicians, in co-operation with Capital Health, launched the first of the province's primary care networks (PCNs) in May 2005. The networks use a co-operative team approach to improve access to, and coordination of, primary care services and to focus on care for patients with chronic disease. In 2006, Capital Health introduced a new component to its diabetes program – regional screening of test results to identify as many patients as possible with the disease – ideally 100%.

The following case study outlines the steps taken in Capital Health to significantly remodel and integrate health services to support patients with chronic disease and the primary care physicians who actively manage them within a multidisciplinary team environment.

Each network is unique. It may define itself by geography, referral patterns or the existing population.

The Traditional Model of Care for Chronic Disease

Until recently, the conventional model of care for patients with chronic disease such as diabetes was for the family physician to manage them in the office in 10- or 15-minute blocks, in keeping with a volume-driven, episodic health system. Patients could also be referred to diabetes specialty clinics, where they would make gains only to return to their pre-existing level of functioning months later.

Under this model, the impact of diabetes on the health system would be truly felt 10 years down the road, as the 80,000 diabetes patients in Capital Health “slowly head for the nearest emergency department,” says Dr. Neil Bell, chair of the Chronic Disease Management (CDM) Steering Committee for the Edmonton West Primary Care Network. The system was not working well for patients, or for their frustrated family physicians.

Capital Health's CDM Model

To address these issues, Capital Health introduced its Regional Diabetes Program in April 2003 to provide integrated, system-wide services for adults with diabetes. The region embraced a new service model, based on the principles of Wagner's chronic care model (Epping-Jordan et al. 2004), to help improve patient care and access to services. The program was to be a template for other chronic diseases.

A critical component of the program is the use of standardized clinical protocols and guidelines adopted from the Canadian

Diabetes Association (Canadian Diabetes Association Clinical Practice Guidelines Expert Committee 2003) and approved by the region's specialists. Two unique features are a single point of entry and a consistent triage process for referral to diabetes services. Physicians refer patients through a central booking office (Capital Health Link, the region's 24-hour health advice and information line); patients self-refer to standardized education modules. Depending on how well controlled the patient's diabetes is, services may include group or individual education, assessment by a diabetes team and referral to specialty clinics.

Patient data and test results from across the region are collected in a central disease registry. In 2006, Capital Health began to screen each blood glucose test result recorded in the registry in the past few years and to monitor new results to identify people with diabetes or at high risk of developing it. Those with abnormally high glucose levels will be contacted and encouraged to participate in a diabetes management program, either through their family physician or through the primary care Regional Diabetes Program.

Primary Care Reform in Alberta: PCNs

Shortly after the Regional Diabetes Program began, the provincial health regions, Alberta Health and Wellness and the AMA signed a historic eight-year agreement that acknowledged the need to promote primary healthcare in Alberta. Dr. Richard Lewanczuk, medical director for CDM, says “the timing was perfect” for the idea of creating networks and bringing care of patients with chronic disease back into the community.

Initial Concept

The launch of PCNs was years in the making, according to Dr. Rick Spooner, chair of the CDM Steering Committee for Edmonton Southside Primary Care Network, the longest operating network in the province. The idea of a co-operative of family physicians and other health professionals was first published by the College of Family Physicians of Canada (1995). “But it didn't seem right to hand off responsibility to nurses and pharmacists because that wasn't the way business had been done in the fee-for-service system,” says Spooner.

From Concept to Launch: Alberta's First PCN

Then, in November 2003, with the signing of the trilateral agreement, the impetus came for physician groups to work closely with Capital Health to establish local primary care initiatives. Spooner and others called a meeting of interested physicians in the catchment area.

The AMA, which had put aside seed money to form the initiatives, met with the physicians and Capital Health representatives to work out an agreement between both parties and Alberta Health and Wellness. A general manager was hired to help guide them through their relationship and the establish-

ment of shared governance. Consultants from the AMA offered advice on financial and legal issues. Geographic boundaries were established, and 12 clinics – 50% of the area's physicians – joined.

The executive committee included representatives from each clinic and from Capital Health. The physicians developed a business plan to prioritize the programs they wanted to deliver from the basket of services set out by the province. A unique feature of the initiatives (which became PCNs) is that physicians can customize their approach to best meet the local population's needs. Subcommittees formed to manage these focus areas. The business plan was approved by the executive and submitted to government for funding. One issue eventually resolved was how to compensate physicians who may not see a patient in person but who supervise the nurses who do.

A year after initiating the process, the physicians began to develop programs and hire nurse leaders and registered nurses. The Edmonton Southside PCN today is composed of 12 clinics, 60 family physicians, 13 nurses, four mental health navigators and one dietician. A pharmacist will soon be added. The goal is to have at least one nurse in every clinic and a ratio of about two to three nurses for every physician.

Since the Regional Diabetes Program was introduced in Capital Health, wait times to see a specialist have been reduced from several months to several weeks or days, and the number of new referrals has almost tripled as the capacity of the system has increased.

One Size Does Not Fit All

Five other PCNs have launched in Capital Health, with two more under development. Each has between 25 and 105 physician members. Joining is optional. Approximately 550 physicians, or 50%, have joined a PCN to date.

Each network is unique. It may define itself by geography, referral patterns or the existing population. Committees may be structured in different ways. Health professionals may come from various fields and work centrally or within each clinic. This flexibility allows family physicians to determine the set-up of their PCN and to take a more active role in effecting primary care reform.

CDM in the Primary Care Setting: A Multidisciplinary Team Approach

Management of patients with chronic disease is a cornerstone service that is part of all PCNs. Diabetes has the most developed program because its protocols are well standardized.

At the Southside network, three nurse practitioners oversee 10 registered nurses, who are placed in specific clinics. When the nurses were recruited, they were told that they are part of the team there – not just a guest in the clinic. The nurses spend three or four days per week at the clinics and one day receiving training.

The networks provide comprehensive care for patients with diabetes. A patient may see the nurse, the family physician or both, and spend time discussing ways to manage the disease. The primary care nurse closely monitors patients with diabetes and provides reports to the clinic physician. The nurses at the Southside clinics use practice guidelines and standardized protocols, such as monitoring a patient's lipid levels and blood pressure, that vary little from those used by other PCNs or the region. Nurses in each practice keep a disease registry in which they list the patients and what kind of disease control they have. Nurses develop an intervention for patients whose diabetes is not well controlled.

Although the region has developed education modules, when patients leave the program, they eventually forget what they have learned. PCN nurses therefore provide ongoing diabetes education, an important motivator for self-management. Patients who self-manage do better for longer than those who do not self-manage.

Follow-up is key to managing diabetes, and nurses use standardized protocols to follow up patients proactively after each visit to make sure they have, for example, seen an ophthalmologist or had the sensation in their feet checked. If a patient is due to return in three months and does not show up, the nurse will call.

Primary Care Nurses: Training for a New Role

Nurses had no training in diabetes management when they started work at the networks. Specific training for primary care chronic disease management nurses, as they are called, has come from various resources. The region held classes for both the Edmonton West and Edmonton Southside networks. A pharmacy professor from the University of Alberta spoke with Southside nurses about lipid and insulin management. Dietitians, pharmacists and others will provide additional training when hired by the networks. Each network arranges its own training, but Spooner expects that, one day, training will be coordinated.

The Edmonton West PCN is also exploring skills enhancement for physicians. Among the possibilities are continuing medical education courses, workshops or time spent with specialists learning, for example, how to start patients on insulin.

Linkages to Specialists and Capital Health

Network teams interact with regional programs and services in several ways. Physicians refer patients to specialists, diabetes

clinics and education by faxing a form to Capital Health Link. Teams can also call a diabetes information and advice line (DIAL) run by a regional community diabetes team (nurses and dietitians). At the Southside PCN, nurses use this resource almost daily.

Ongoing efforts are being made to create more linkages and to integrate PCN chronic disease programs with regional programs.

PCNs: A Work in Progress

Networks and clinics do not all operate the same way, partly because each site has to adapt its resources to resolve its own logistical barriers. For instance, some clinics do not have extra space for additional staff, and others have no electronic medical record and cannot track patients easily. According to Spooner, a lack of physical space, a major obstacle that no one predicted when the tripartite agreement was signed, is the biggest impediment to change in primary care right now.

For other clinics, change itself is a big issue. Bell notes that bringing in a new person to look at charts, talk to patients and do things differently is stressful for everyone – staff, doctors and patients. “They have to buy in to this whole thing,” he observes. Primary care teams thus consider PCNs, and the chronic disease management program, to be a work in progress, one in which they are learning as they go. The expectation is that nurses will be able to manage patients with differentiated illness, in which the diagnosis and management protocol are known. Physicians, on the other hand, will diagnose and manage undifferentiated illness.

Once the diabetes program is up and running, other disorders such as lipid disorders, hypertension and heart disease will be added. Diabetes is associated with these disorders, but their protocols are not as well established as those for diabetes. Chronic diseases such as obesity, asthma, chronic obstructive pulmonary disease and renal disease will eventually be included also.

The team approach frees physicians to see more patients, to concentrate on those who need them and to take satisfaction from knowing they are doing a good job.

Results

Since the Regional Diabetes Program was introduced in Capital Health, wait times to see a specialist have been reduced from several months to several weeks or days, depending on urgency, and the number of new referrals has almost tripled as the capacity of the system has increased. On the screening side of the program, more than 90% of people with diabetes have been

identified to date, and 59% of them reach their diabetes treatment goals. Within two years, the region hopes to be able to identify 100% of the population with diabetes.

Although it is still early days to determine the effects of diabetes management within PCNs – the oldest having been operating for less than two years – the response from primary care physicians and patients has generally been positive. In the old model, family physicians felt isolated and marginalized by a health system that had them “putting out fires” rather than fully using their skills. In the new environment, with Capital Health’s support, network physicians not only have access to more resources but have control over them too.

The team approach frees physicians to see more patients, to concentrate on those who need them and to take satisfaction from knowing they are doing a good job. Seeing that the primary care nurses can take care of some things takes a burden off their shoulders, says Spooner. Instead of isolation, there is a structure in place for team members to support each other. Instead of an absence of benchmarks for diabetes, there are standardized targets. Some physicians did not welcome the change and were concerned that the nurses would take over their patients, but that has not materialized. “When people know what they’re supposed to do, then turf protection disappears rapidly,” notes Spooner.

The focus on primary care has the additional benefit of reorganizing family medicine, which may make it more appealing to students. According to Bell, fewer young doctors have been attracted to family medicine, but the PCN structure is making it a more interesting way to practise.

Patients with chronic disease are finding that the new system also functions better for them. Now, they can speak with the nurse or physician, or both, about how to manage diabetes. And although some patients initially think they are losing their family doctor, once they understand the nurse and doctor are working together, there is no problem, according to Spooner. As part of follow-up care, if a patient forgets an appointment, the nurse will call and explain why it is important, “a major advance in improvement in quality of care,” he says. In addition, unless they need to see a specialist, patients travel to just one location, the PCN clinic.

Statistics on patient encounters at the Edmonton Southside PCN were recently collected. For February–December 2006, nurses and mental health navigators had 53,347 patient encounters, while physicians had 350,000 encounters. Spooner concludes that the nurse and social worker increased the productivity of the clinic by 10%, despite the cramped working conditions.

He believes that the PCN process has been very successful. Bell would like to see a longer funding cycle because it takes the first 18 months to get programs started. Having the nurse training completed and the disease registry built prior to opening would be ideal. However, he agrees that the results seem to be

living up to the basic principle that the PCN physicians had in mind when they started out – “better for ourselves and better for our patients.”

Conclusion

One way to create a sustainable health system is to move away from an acute care model toward a chronic care model in which primary care providers actively manage diabetes and other chronic diseases. In support of this solution, Capital Health implemented a system-wide chronic care model of screening and treatment, and backed the opening of a new entity, the PCN. This solution is unique in Canada. “No other full region has one central integrated structure that runs from specialists to primary care physicians to patients,” notes Lewanczuk.

The structure of PCNs brings the care of patients with chronic disease back into the family physician's office, where a primary care team works to improve coordination of services. As part of an integrated model of chronic care management, PCNs may help to alleviate the economic impact of chronic disease on an overburdened health system. **HQ**

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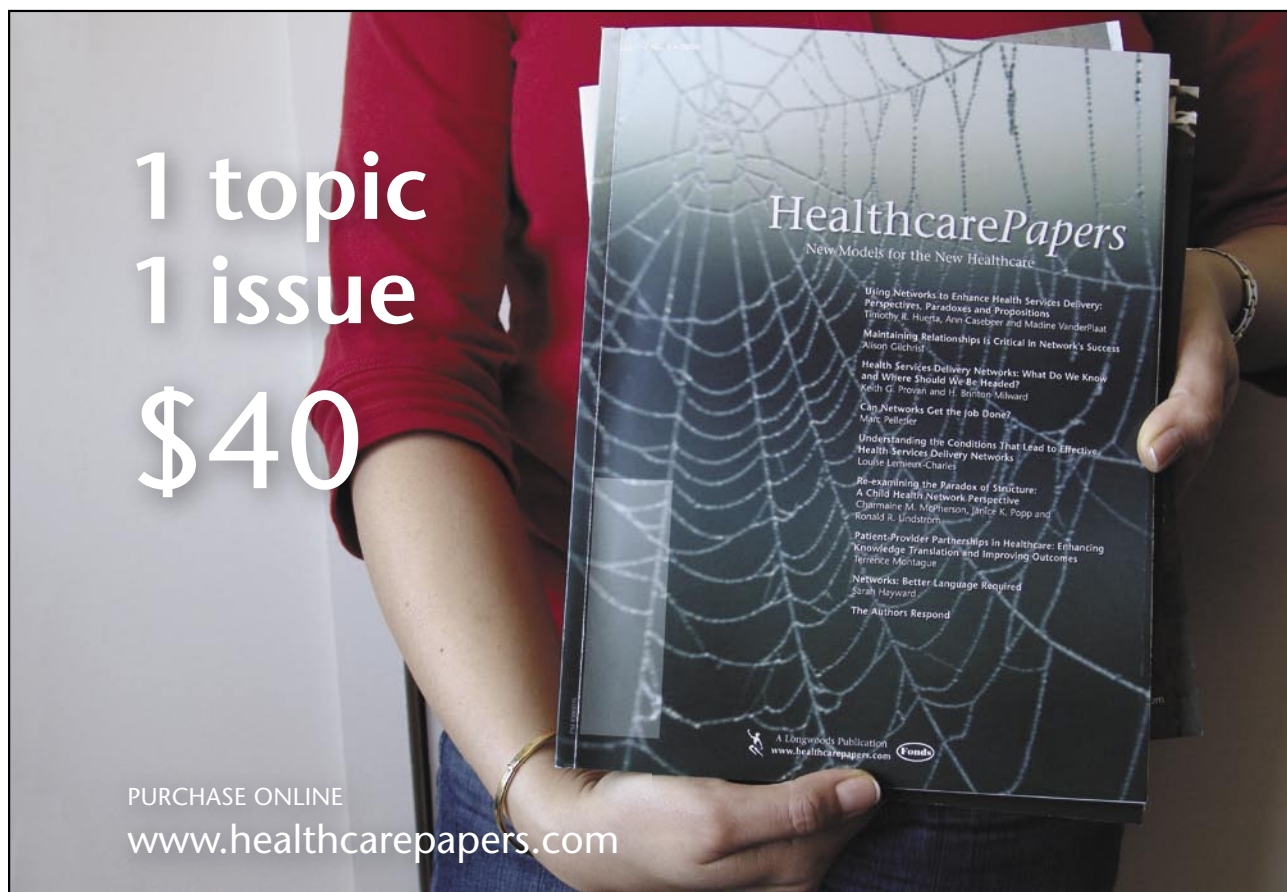
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