

How Effective are Alberta Primary Care Networks?

December 5, 2011

This brief summarizes an evaluation of Alberta Primary Care Networks (PCNs), which will be published on December 5th, 2011 in the Canadian Medical Association Journal (CMAJ)¹, a high-impact biomedical journal circulated to over 70,000 physicians twice monthly.

Research Highlights

What does the new research tell us?

- In Alberta, people with diabetes managed in PCNs had small improvements in care and outcomes compared to those not managed in a PCN.
 - These improvements were more evident among people with established diabetes compared to those with newly-diagnosed diabetes.
- PCNs do not appear to change the frequency of primary care or specialist visits.
- Although increased use of appropriate medications and retinal screening were observed for patients with diabetes cared for in PCNs, there is room for further improvement.

What are its implications?

- The outcomes assessed in this study can be used as quality-improvement markers to gauge the future impact of primary care networks or other health care reforms.
- More information is needed to inform how best to implement comprehensive chronic disease management programs in PCNs to care for patients with diabetes.
- This research highlights important gaps in electronically-available information that are needed to better monitor and evaluate PCNs in the future, including measures of obesity, smoking status, functionality and quality of life.

What is the problem?

About 1 in 20 people in Alberta have diabetes and this number continues to rise. People with diabetes are at higher risk of poor health outcomes and consume more health resources than people without diabetes. **Primary Care Networks (PCNs)** were implemented in Alberta in 2005. PCNs are voluntary partnerships between groups of local family physicians and Alberta Health Services (AHS).

PCNs operate within a mixed payment environment, receiving a per-capital payment of \$50 per patient per year from Alberta Health and Wellness. Physicians continue to be compensated for insured medical services using either fee-for-service or existing alternate payment arrangements.

¹ Manns BJ, Tonelli M, Zhang J, et al. Enrolment in primary care networks: impact on outcomes and processes of care for patients with diabetes. CMAJ December 5th, 2011 [in press].

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PCNs work to achieve five objectives:

- 1) increasing the proportion of Albertans with ready access to primary care
- 2) managing access to appropriate around the clock primary care services
- 3) increasing the emphasis on health promotion, disease and injury prevention and care of patients with complex problems or chronic disease
- 4) improving the coordination of primary care with hospitals, long-term and specialty care
- 5) facilitating the greater use of multi-disciplinary teams in primary health care.

PCNs utilize per-capita funds to best meet these five objectives. For example, per-capita funds may be used to hire allied health care professionals (including pharmacists or nurses who may manage patients with chronic diseases), or for other initiatives, including patient education programs.

The Alberta Innovates Health Solutions - Interdisciplinary Chronic Disease Collaboration (**ICDC, see www.icdc.ca**) is a novel collaboration between policy makers and health care decision-makers, providers, scientists and educators from 14 key disciplines. The ICDC evaluated the impact of PCNs on the care and outcomes of patients with diabetes.

Objectives

The objectives of this research were to examine differences in care and outcomes of patients with diabetes and whether receiving care in a primary care network was associated with better care and outcomes.

Standard measures to assess quality of care and outcomes were used to determine impact, including:

- a. Hospitalization or emergency room visits for diabetes-specific conditions;
- b. Glycosylated hemoglobin (A1C) level, a measure of blood sugar (glycemic) control;
- c. Use of recommended medications;
 - i. Use of ACE inhibitors / ARBs in patients with signs of kidney disease (proteinuria)
 - ii. Use of statins
 - iii. Use of metformin where use of oral hypoglycemic medication is indicated
- d. Visits to primary care physicians and specialists.

Methods

Albertans with diabetes were identified from administrative data. Patients with *existing* diabetes were defined as those with an established diagnosis of diabetes from October 2007 to April 2008. Patients with existing diabetes managed by a PCN physician were compared to patients with existing diabetes who were managed by non- PCN providers.

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Patients with *newly diagnosed* diabetes were those with a diagnosis of diabetes in 2007-08. Patients with newly diagnosed diabetes managed by a physician registered in a PCN were compared with a physician not registered in a PCN. Patient outcome measures were assessed over an 18 month period.

There may be important differences in the type of patients managed by primary care physicians registered in a PCN versus those managed by physicians not registered in a PCN. These differences can lead to differences in measures of quality of care, making it difficult to understand the effectiveness of PCNs. To overcome this problem, adjustments in estimates of effectiveness based on patient characteristics such as age, gender, socioeconomic status, existing disease, diabetes duration, glycemic control, and kidney function were made using statistical methods.

Results

Over 75,000 patients managed in one of 18 primary care networks were identified, and compared to 75,000 matched patients managed outside a primary care network.

In patients with existing diabetes:

- Care within a PCN was associated with a 20% reduction in the rate of admissions to hospitals and visits to emergency departments for diabetes-specific conditions.
- Patients in PCNs had lower average blood sugars (A1C of 7.20 vs. 7.26) and increased testing (an average 1.87 to 2.02 A1C tests per year).
- More patients in PCNs were seen by optometrists/ophthalmologists (~26 vs. 31%).
- More patients took statin drugs (56 vs. 54%) and more patients with proteinuria took ACEs and ARBs (82 vs. 80%).
- No measurable change was seen for the appropriate use of oral hypoglycemic agents or visits to primary care physicians and specialists.

In over 15,000 people with newly-diagnosed diabetes, those managed by physicians in PCNs in 2007 had similar rates of hospitalization or emergency room visits, but better glycemic control and higher use of statins and metformin (the recommended first line oral hypoglycemic agent), compared with patients with newly diagnosed diabetes in 2003 who were managed by these same physicians.

When newly diagnosed patients managed by physicians in PCNs in 2007 were compared to those managed outside of PCNs, similar rates of hospitalization or emergency room visits were observed but these patients had better glycemic control and higher use of metformin.

Implications of Findings

These findings suggest some improvements in care and outcomes for people with diabetes seen by providers in primary care networks. The modest nature of the improvements suggest that primary care networks are operating successfully but should now consider how to best use their limited resources to implement the optimal mix of chronic disease management programs to support care of patients with

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diabetes. Given that there are currently 40 PCNs, involving approximately 2364 family physicians and serving more than 2.6 million Albertans, with more PCNs in development, understanding how best to support care within PCNs to obtain optimal health outcomes should be seen as high priority.

Future evaluation should consider focusing attention on other important outcomes that could not be evaluated in this project. This includes premature death, cardiovascular events, other markers of adequacy of care, equity of care, and costs. This information will provide a more complete picture of the impact of PCNs on patients with chronic diseases like diabetes.

Our research provides a baseline against which future changes in health care can be compared. In particular, there are areas in which quality of care appeared to be suboptimal (e.g., the use of statins and visits to eye doctors) suggesting opportunities for targeted education and facilitation through PCN-directed programs. Acknowledging budgetary limitations, further consideration of whether the optimal mix of chronic disease management programs is being offered across all PCNs appears warranted.

Finally, this research highlights important pieces of electronic information that could improve the monitoring and evaluation of PCNs. This includes measures of patient body weight, smoking status, functional status and patient satisfaction or health-related quality of life.

This research was supported by the Alberta Innovates Health Solutions - Interdisciplinary Team Grants Program and the Canadian Institutes of Health Research Partnerships for Health System Improvement Program.



The ICDC is funded through the AHFMR Interdisciplinary Team Grants Program. AHFMR is now Alberta Innovates – Health Solutions.