Nurse Practitioners: Improving Access to Primary Care on Prince Edward Island

By

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Abstract

Presently, 8200 Prince Edward Island (PEI) residents do not have access to a family physician or primary care. Effective integration of nurse practitioners (NP) will improve access to this care with equivalent health outcomes. This document evaluates the effectiveness of integrating the NP role in two primary care collaborative models on PEI, and compares collaborative and non-collaborative models with respect to access and quality of care. This paper also shows that an existing Ontario NP led clinic model is effective in improving access to primary care. Findings demonstrate that integrating NPs in collaborative models can improve access to care, health outcomes and patient satisfaction.

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Background

Health Canada estimates chronic disease will account for 73% of all deaths and that chronic disease deaths will increase by 15% in the next decade (Grant, 2009). According to Grant (2009), Canada stands to lose $9 billion in the next decade from premature deaths due to chronic disease. Health authorities across Canada have introduced new approaches to primary care in an effort to mitigate some of those costs and provide better access to primary care. In 2007, Ontario introduced their "Family Care for All" strategy to improve access to primary care for Ontarians. The approach was to introduce nurse practitioner- (NP) led clinics in Ontario. The Minister of Health and Long Term care (MOHLTC) developed a guide to help communities integrate NP-led clinics. Introductory remarks to support this decision stated that:

"Through NP-Led Clinics, patients are able to establish a continuous relationship with healthcare providers for comprehensive family care close to home. As a collaborative team practice, NP-Led Clinics emphasize health promotion and improve management of chronic disease, through both treatment and monitoring. NPs support their patients in improving their self-management skills. NP-Led clinics help to keep patients healthier and ensure diseases are better managed, which leads to reduced Emergency Room visits." (MOHLTC, 2010).

The first Canadian NP-led clinic treated its first patient in Sudbury, Ontario, in 2007. Marilyn Butcher and Roberta Heale, responsible for developing this model of care,

clarified in a November 2010 interview in the *Canadian Nurse Journal* that "NP-led clinic" does not imply NPs working without help or support. Physicians and other healthcare clinicians work collaboratively to offer this care. Presently, 26 NP-led clinics operate in Ontario.

Access to Care

Access to care means providing access that appropriately supplies the healthcare demands of clients. Guillford (2002) defines access as:

"If services are available and there is an adequate supply of services, then the opportunity to obtain health care exists, and a population may 'have access' to services. The extent to which a population 'gains access' also depends on financial, organisational and social or cultural barriers that limit the utilisation of services. Services available must be relevant and effective if the population is to 'gain access to satisfactory health outcomes'."

In Canada and on PEI, two metrics measure access; timely access to care and quality of care. Timely access to care takes many forms and should not be based solely on access to a family physician. Access to other healthcare professionals who offer specialized care is vital for clients. Healthcare providers such as NPs, registered nurses (RN) and other allied healthcare professionals can provide services including chronic care management, self-management skills, and health promotion. The result is better access to a variety of specialized resources, resulting in improved quality of care.

The Nurse Practitioner

The Association of Registered Nurses of PEI (ARNPEI) regulates the role of the nurse practitioner. The ARNPEI acts both as the professional organization and the regulatory body for registered nurses on PEI. The association created the NP Standards of Practice (2012) which is a document for legal and professional expectations of practice. In addition, Health PEI requires all practicing NPs to be registered with ARNPEI and mandates a minimum of two years of nursing experience. A Pan-Canadian environmental scan from the Nurse Practitioner Association of Ontario (NPAO) provides a list of NP abilities and capabilities on PEI (see Appendix 1). Essentially, the NP scope of practice is very broad and includes the ability to independently evaluate, diagnose and treat basic and complex illnesses.

In an interview in Ottawa in November 2015, Josette Roussel[1], Senior Nurse Advisor for the Canadian Nurse Association (CNA), discussed the NP role in primary care and ways to assure effective healthcare integration on PEI. I segmented questions into three categories: NP role, impact on MDs, and expectations.

NP role

Roussel stated that NPs have no limitations in complexity or type of visits. The CNA and ARNPEI define the NP role clearly (see Appendix A). Roussel discussed questions regarding patient flow, same-day availability and clinical support. While existing models in other provinces offer guidance, an evaluation of current practices and client demands will determine how PEI will efficiently integrate the NP role.

[1] Josette Roussel, senior advisor, Canadian Nurse Association (CNA)

Impact on MDs

The impact on MDs and their practices is a significant issue because MDs often view the NP role as disruptive to their current practices. Roussel clearly stated that the integration of the NP is collaborative and is not meant to be competitive. Collaboration and engagement with MDs is necessary for NPs to be efficient in providing care. NP-led clinics in Ontario and other Canadian models all have collaborating MDs. Often, MDs are resistant because of poor knowledge of the NP of role. Efficient integration of NPs on PEI requires a clear communication plan.

Expectations

Setting clear goals and expectations related to the NP role is necessary to assure efficient use of resources and quality of care. Russel (2009) discusses various metrics such as panel sizes, patients seen per day and length of appointments. In general, the integration of NPs should allow a practice to increase capacity by 600-800 patients. A 2015 panel size[2] study for NPs (Misener-Martin, 2015) concludes that while a 600-1000 panel size is acceptable, patients' demographics and general clinic capacity determine the proper panel size. A 2014-15 access to care evaluation on PEI by the Hay Group concludes that, in a collaborative practice on PEI, the integration of an NP increases clinic capacity by 600-800 patients. Misener-Martin (2015) also evaluates daily expectations regarding patients seen per day, finding an acceptable range of nine to

[2] A panel size is defined by the number of patients attached to a specific MD.

fifteen patients per day. Roussel supports this and states that this is the average for most NPs in Canada.

Patient care and satisfaction

A meta-analysis in the British Medical Journal (Kanda, 2015) reviewing 11 trials and 23 observational studies concludes that patient satisfaction is higher when NPs (rather than MDs) provide service, with no observed difference in patient health status. Deonne Brown, an NP and professor from the American Academy of Nurse Practitioners who researched consumer perspectives on NPs and independent practices, concludes that 82% of patients were satisfied or very satisfied with NP care compared to 70% when others provided the care. (Brown, 2015).

A systematic review by Laurant in 2005 evaluates health outcomes for patients receiving care from family physicians versus NPs, and demonstrates comparable health outcomes (Laurant, Reeves, Hermens, Braspenning, Grol, and Sibbald, 2005). This review excludes emergency services and notes that advanced practical nurses and NPs provided nursing care.

Health on PEI

The population of PEI is 144,000. The median age on July 1, 2015 was 43.7 years, an increase of 0.3 since 2014. Since 1971, the median age has increased by 18.9 years, from 24.8 to 43.7 (CPHO, 2015). According to the Chief Public Health Office of PEI, one in five adults will be over 65 years of age by 2020 and one in three by 2040.

Another alarming statistic is that 60% of PEI residents18 years and older are overweight or obese. The Chief Public Health Office also states that 31% of the population is likely to suffer from "any chronic condition" (i.e., chronic obstructive pulmonary disease [COPD], arthritis, heart and stroke, diabetes and cancer). In contrast, the Canadian average is 28%. PEI residents are also above average in alcohol consumption rates and most are less likely to be physically active than the average Canadian[3].

On PEI, primary care receives approximately 15% of the overall healthcare budget — hospitals receive most of the funding (HIU, 2015). Allocating most financial resources to our hospitals is a fundamental flaw in our strategy because it indicates that we wait for patients to get sick rather than provide better support to prevent sickness.

Primary care access on PEI

Of approximately 144,000 residents on PEI, 8200 do not have access to one of 88 FTE (full time equivalent) primary care physicians or family physicians. In 2008, Health PEI and the Department of Health integrated the role of the NP to support primary care and improve access for residents. The integration on the NP role on PEI is gradually gaining acceptance but has been challenging. Many seasoned physicians view this integration as disruptive to their current practices.

Across the Maritimes, as of September 2015, the total number of NPs in New Brunswick, Nova Scotia, Newfoundland and Labrador are 98, 154 and 136 respectively. Currently, 24 NPs work on PEI (NPAO, 2015). Although these results show that, per capita, New Brunswick has fewer NPs, PEI is still at a deficit.

[3] http://www.gov.pe.ca/photos/original/CPHO_Trends_14.pdf

The average wait time for a regular appointment in primary care as of January 2015 is 16 days, with a range of 0 to 147 days. Health PEI has targeted a two-day wait time for regular office visits with some degree of same-day availability (33% to 50%) for more urgent appointments. Health PEI is also actively using Lean Six Sigma business concepts to improve efficiencies and reach this two-day target[4]. This methodology of eliminating waste by evaluating processes in a business using specific metrics can be very effective. Health PEI is successful in reducing wait times but has not achieved the expected target.

Case study- A collaborative model -

Preface

Evaluating the use of NPs was necessary in the summer of 2014 for the Harbourside Health Center in Summerside, PEI, a collaborative health center providing primary care to approximately 4200 patients. Front-line staff includes 3.6 full-time equivalent (FTE) salaried family physicians (MDs), two nurse practitioners (NPs) and two registered nurses (RNs), supported by four licensed practical nurses (LPNs) and six medical clerks. This health center also employs a diabetes education RN, a registered dietitian, and a registered community dietitian (RD). MDs are responsible for hospital inpatients and the occasional hospitalist on-call week. The center provides nurse and dietitian services o HHC affiliated patients and any PEI resident.

[4] The Lean six sigma methodology evaluates process and provides tools to help eliminate waste and defects in a business.

The challenge

In May 2015, the number of FTE MDs decreased to 2.6. As a result, wait times for normal office visits increased from 2-3 weeks to 5-6 weeks in June 2015. On average, patient complaints increased from one per month to two to five complaints per *week*. The health center hired two additional NPs to mitigate the impact on patient care, bringing the total number of NPs to four. Two were seasoned NPs and two were new recent graduates of the University of Prince Edward Island. Each NP provided access to approximately eight pre-scheduled appointments and seven same-day appointments. Additional roles included clinics, prescription-refill-only walk in clinic services for affiliated patients, and daily paperwork (two hours) to review clinic lab work from clinicians on vacation or otherwise unavailable. The role of the MD changed to address this challenge. Collaborative time increased to support NPs and RNs. MDs continued to provide care to 25-28 patients daily. Hospital in-patient care continued to absorb the resources of one FTE physician.

Results

Available appointments

The Institute for Healthcare Improvement (IHI) uses third next available appointment (TNAA) as a metric to measure access to primary care[5]. This metric assumes that the third (rather than next) available appointment is the best measure of access to primary care because the next available appointment could be a cancellation and, as such, not a true reflection of access to this clinician.

[5] http://www.ihi.org/search/pages/results.aspx?k=Third%20next%20available%20appointment

Figure 1 shows TNAA at Harbouside Health Center from June 2015 to January 2016. The graph clearly shows a decline in TNAAs. Two factors might have contributed to this decline. First, the addition of an NP and the improved efficiency of their role had a large impact in providing access. Second, additional MD support was a factor in providing a total of six weeks of support to the clinic.

Initially, Harbourside Health Center MD perception of this model was negative. Their attitude changed when the MD group noted an improvement in patient satisfaction due to a significant decline in TNAA. MD collaboration played an important role in successfully facing this challenge because the addition of two NPs providing care to 1200 patients required teamwork, collaboration and adjustments to efficiently process paperwork.

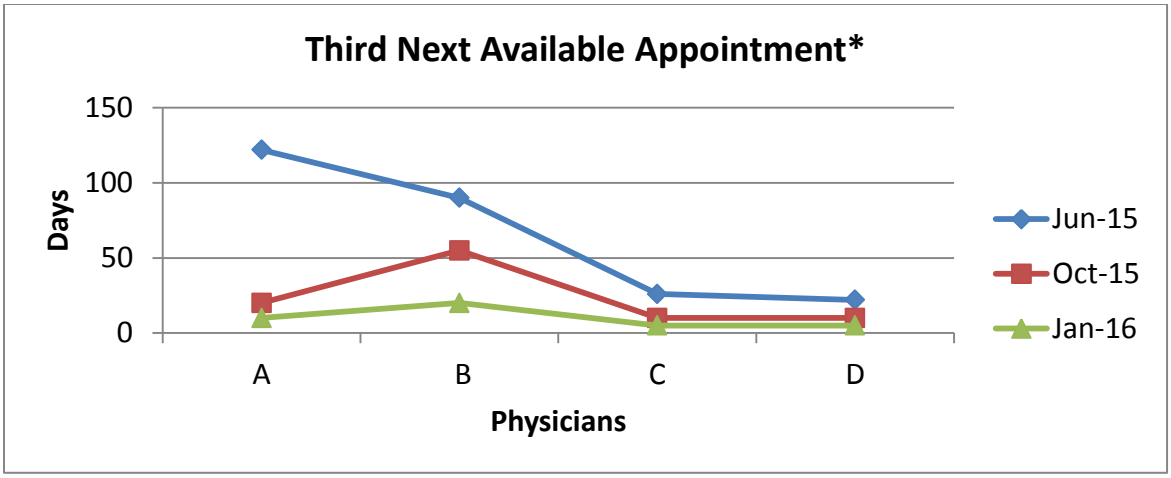

*Figure 1 data from I-Core appointment management system.

Figure 1. Third Next Available Appointment days per MD in 2015 at the Harbourside Health Center.
The third next available appointment is a standard metric to measures access to care. Physicians (X-axis) are demonstrated as A, B, C and D. The third next available appointment is demonstrated in days (y-axis). Data is represented from June 2015 to January 2016.

Emergency department visits are another measure of access to care. The number of emergency department (ED) visits is inversely related to better quality of care and health outcomes. At Harbourside, the addition of two NPs did not negatively affect patient care. ED visit averages from June 2015 to October 2016 were 3.9% to 4.5%.

Hospital admissions

Hospital admissions can also reflect quality of care in regards to access to primary care. Table 1 summarizes hospital admissions for the Harbourside Health Centers' affiliated clients. January 2015 shows admissions with normal clinic staffing (3.6 FTE MDs) while June 2015 shows the initial impact of the loss of one MD. September 2015 depicts admissions with reduced MD support with an increase in NP staffing.

Physician	Hospital Admissions*		
	January 2015	**June 2015**	**September 2015**
A	2	11	8
B	10	7	2
C	11	16	17
D	11	7	8
Total	**34**	**41**	**35**

*Admissions to Prince County Hospital in Summerside, PEI.

Table 1. Hospital admissions from the Harbourside Health Center clients in 2015.
Table I represents hospital admission at the Prince County hospital from physicians A, B, C and D from January 2015 to September 2015.

The increase in admissions in June was due the loss of an MD. The addition of two NPs in June decreased admissions to normal clinic levels by September 2015. Locum MDs provided some support in July and August but the MD:NP ratio remained 1:2 until mid-September.

ED visits

Measuring emergency department visits is another way to evaluate the value of NPs. The health information unit (HIU) of health PEI provides data on ED visits. Table 2 demonstrates that the average percentage of ED visits from the Harbouside Health Center was 4.3% with a range of 4.1% to 4.5%. There were no significant changes after the loss of an MD and the addition of two NPs. This evaluation included data from other health centers or non-collaborative centers. To ensure an accurate comparison, I consider the

number of patients per MD or panel size. The result is a percentage of patients per MD that visit the emergency department in a month. There is no difference between the two models. I conclude that the addition of NPs in a primary care practice improves access without compromising quality of care when measured by emergency department visits.

Model	Emergency visits (visits/number of patients) *		
	January 2015	June 2015	January 2016
Collaborative health centers	4.1%	4.5%	4.3%
Non-Collaborative health teams	4.5%	4.4%	4.5%

*ER visits/month for Physician A+B+C/panel size of physician A+B+C

Table 2. Prince County Hospital emergency department visit percentages from Harbouside Health Center affiliated clients

Table 2 represents percentages of clients admitted to the Prince County Hospital emergency department in two models of care; collaborative and non-collaborative. This table compares data from January 2015, June 2015 and January 2016.

A Model for PEI

The NP in existing models

Although the addition of an NP in a fee for service (FFS) practice or a family health team has been in place in BC since 2007, this concept is in its early stages on PEI.

DiCenso (2010) evaluates this model based on access to care, cost of care, patient satisfaction, and MD acceptance. In this model, family physicians average 30-35 patients per day with the NP averaging 15 patients per day. The addition of an NP allows the practice to increase capacity by 600 patients. MDs do not lose income and access to care significantly improves. The NP is salaried and funded by the province. The NP role also includes assisting with hospital rounds and teaching. A qualitative survey reports an increase in job satisfaction from all healthcare professionals supported by better collaboration and general trust and respect amongst clinicians. Patients also feel they have improved access to care from healthcare teams compared to a single provider.

An example of a practice using this model on PEI includes three FFS MDs and one NP providing care to 9000 patients. Additionally, 1.8 FTE diabetic educator RNs, 1.2 FTE mental health counselors, and 1 FTE COPD educator RN support this practice. This model addresses access to care issues because the collaborative approach allows for 200 appointments a day with 30% same-day availability. Using emergency visits as a metric to evaluate the effectiveness of care; this practice is similar to other practices on PEI with ER visits per month ranging from 3.9% to 4.5%. Limited data is available to evaluate this model. Further analysis should include cost per patient or cost per service data. The Hay Group 2015 evaluation for Health PEI suggests a panel size of 5300 to 6800 patients for a practice with three MDs and one NP. At 9000, the example practice is well above the average panel size. More data on patient outcome and satisfaction would provide a better understanding of this model.

The Harbourside Health Center offers a similar collaborative model but is distinct in that MDs are salaried, not FFS. The integration of two NPs in this model allows for short wait times and increased same-day availability, as well as general clinic support. While this model offers its affiliated patients great access to care, it does not encourage accepting new patients. Provincial incentives fail to encourage salaried MDs to reach the expected 1500 patient panel size. The FFS model on PEI has three MDs providing access to over 9000 clients while the salaried models offer care to 4200 patients with four MDs. The salary model is the best approach for quality of care but accountability measures need to be in place to ensure appropriate clinic capacity. According to the Hay Group report, four MDs and two NPs should provide quality care to 6000 to 8000 patients.

NP-led clinics

NP-led clinics have the ability to significantly improve access to primary care. The integration of NPs in collaborative healthcare teams is valuable on PEI, but ultimately, the provincial healthcare system, must integrate the NP-led clinic model. The integration of this model requires new legislation on autonomy and NP scope of practice. The MOHLTC "NP-led Clinic" document provides an important guide for this integration.

Access to care outside normal working hours is an example that supports the need for NP led clinics on PEI. Evaluation of weekly ED visits shows an increase in visits on Mondays and Fridays, early morning and in the evening (HIU, 2015). The healthcare system expects clients to adapt to normal clinic hours while offering few choices when they require care outside of those hours. Evening and weekend clinics would require MD

collaboration but would provide access to care while decreasing ER use due to limited normal clinic hours. For example, the province of Manitoba integrated the NP role in various models such as quick care clinics or mobile clinics[6]. Their analysis identified the need for rural and off hour access to reduce trips to the ED..

Payment Modality

Payment modality does not define quality of care. The two most common payment modalities are annual salary and fee for service (FFS). Both modalities are viable but limited solutions. For example, a performance evaluation on cost/patient ratio suggests that a salaried NP costs more than an FFS NP. In this case, the FFS NP might be incented by volume to the detriment of the holistic approach that defines nurse practitioners. Both modalities are acceptable and not a factor, if managed properly, in selecting a model. Presently, NPs on PEI are salaried.

Limitations

Access to care is the most important measure when evaluating the integration of effective models in primary care. Clearly, financial implications are also important. It is difficult to evaluate models on the quality of care metric because of the limited availability of data. Comparing different models requires more data such as cost per client or cost per visit. Decision makers must also consider financial implications if lack of access to primary care. For example, poor access often results in increased ER visits.

Decision makers must also consider MD payment modalities. The integration of the NP in FFS health teams improves access to care but could also increase overall costs.

[6] http://www.gov.mb.ca/health/primarycare/public/access/quickcare.html

For example, the cost of MDs billing an FFS code for NP provided care may differ from the cost of a salaried NP providing the same care. Client input is also necessary. Health PEI performs regular patient surveys to improve services. The surveys do not compare various models or differentiate between various healthcare clinicians.

Conclusion

PEI is struggling to offer access to primary care. Chronic disease on PEI is higher than the Canadian average while the population is aging. Healthcare on PEI needs to embrace the role of the NP to improve access to care and to mitigate current and future health challenges. NPs are effective in providing access to care, quality chronic care management and self-management skills while maintaining a high level of care and patient satisfaction. A collaborative model of care provides improved chronic disease and general health management, and a high level of employee and client satisfaction.

Ontario embraced an NP-led model while BC chose a family health team integration model. Manitoba used innovation and created NP travelling clinics. Those models all require collaboration between NP and MDs to be successful.

Determining the most efficient model for PEI requires more research and data. All models discussed improve access and are viable options, but they have limitations. Further research needs to conduct a health outcome and cost analysis to determine the efficiency each option. Of all models, the NP-led clinic can significantly improve access. Most rural areas on PEI could benefit from this approach.

The integration of NPs on PEI must be collaborative and not competitive for success. A strong communication plan should be the first step to assure efficient integration and sustainability of the model.

Appendix 1

A Pan-Canadian Environmental Scan of the Scope of the Nurse Practitioner

Published by: the Nurse Practitioners' Association of Ontario

Authors: Spence, L, Agnew, T. & Fahey- Walsh, J. (2015).

1. NPs synthesize health information using critical inquiry and clinical reasoning to diagnose health risks and states of health/illness.
2. NPs systematically collect and interpret health data by performing comprehensive and focused health assessments using multiple tools and sources of data.
3. NPs diagnose disease, disorders, injuries and conditions and identify health needs while considering the client's response to the health/illness experience.
4. NPs communicate the diagnosis to clients and to interdisciplinary team members as required.
5. NPs can order and interpret laboratory tests.
6. NPs can order and interpret reports of X-rays concerning the following areas (skeletal, abdomen, chest or breast).
7. NPs must prescribe drugs in accordance with the guidelines established by the ARNPEI Diagnostic and Therapeutic Committee. As of November 2011, all NPs will be eligible to prescribe controlled drugs and substances.
8. NPs are not authorized to admit/treat/discharge patients from hospital.
9. NPs are required to have a collaborative agreement with a physician.
10. NPs are authorized to independently refer to specialists.
11. NPs are not authorized to complete a driver medical.
12. NPs can complete short-term disability forms.

*Information for this environmental scan was provided by Paul Boudreau from the Association of Registered Nurse of PEI.

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