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Healthy Foundations.

Nursing's Role in Building Strong Aboriginal Communities

REPORT MARCH 2015

Healthy Foundations: Nursing's Role in Building Strong Aboriginal Communities

Heather Exner-Pirot and Lorna Butler

Preface

Education is a key factor in improving the socio-economic outcomes of Canada's Aboriginal population. In order to improve the accessibility of post-secondary education in rural and remote Aboriginal communities, many education, social science, and trades programs have been established locally, which improve recruitment and retention rates. However, due to the comparative complexity and greater costs of offering a health sciences education, fewer options exist for baccalaureate programs in nursing and other health fields, despite the demonstrable need.

The Canadian health care system would benefit from an increase in the number of Aboriginal health practitioners, and in particular nurses, who make up the largest cohort of health professionals in Aboriginal communities. This report assesses the current status of the Aboriginal-registered nursing workforce, articulates the social and economic benefits that Aboriginal registered nurses provide, and provides a case study of how new technologies enable a distributed learning baccalaureate nursing program in the remote communities of La Ronge and Île-à-la-Crosse in Northern Saskatchewan, which serves as a model for future expanded community-based nursing education delivery.

To cite this report:
Exner-Pirot, Heather, and Lorna Butler. *Healthy Foundations: Nursing's Role in Building Strong Aboriginal Communities.* Ottawa: The Conference Board of Canada, 2015.

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Acknowledgements

This report was prepared for The Conference Board of Canada's Saskatchewan Institute under the oversight of Diana MacKay, Executive Director, Education, Skills and Immigration. Dr. Heather Exner-Pirot, Strategist for Outreach and Indigenous Engagement, University of Saskatchewan College of Nursing, and Dr. Lorna Butler, Dean, University of Saskatchewan College of Nursing, authored this report.

The authors would like to thank Carole Stonebridge, Senior Research Associate, The Conference Board of Canada; Dr. Greg Poelzer, Associate Professor, University of Saskatchewan, and Executive Chair, International Centre for Northern Governance and Development; and Dr. Mari Wolff Skaalvik, Vice Dean, Department of Health and Care Studies, UiT The Arctic University of Norway, for their constructive feedback.

The authors gratefully acknowledge Rebecca Dravland, Legal Researcher, University of Saskatchewan, for her research assistance, and its Advisory Board members for their valuable input: Lois Berry, Associate Dean, University of Saskatchewan College of Nursing; Shavonne Custer, RN, Nursing Supervisor at the Prince Albert Grand Council; Esther Dorion, RN, Community Health Nurse at Lac La Ronge Indian Band Health Services; Duane Favel, Mayor of Île-à-la-Crosse; Nap Gardiner, former Chair of the Northern Health Strategy; Fjola Hart Wasekeesikaw, Executive Director, Aboriginal Nurses Association of Canada; and Glenn Lafleur, Chair of the Board of Governors, Northlands College.

The design and method of research as well as the content of this report were determined by the authors, who are responsible for the report's scope, methodology, and findings.

The Saskatchewan Institute

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EXECUTIVE SUMMARY

Healthy Foundations: Nursing's Role in Building Strong Aboriginal Communities

At a Glance

- One of the best ways to improve the quality of care for Northern and Aboriginal communities is to strengthen the number of Northern and Aboriginal health professionals, and in particular nurses who form the largest category of health care providers in these regions.
- Although improvements in the number of Aboriginal nurses have been made in the past 15 years, additional efforts and strategies are needed to reach proportional representation in Saskatchewan and Canadian health workforces.
- Distributed, off-campus educational opportunities are an important way of educating residents of Northern and Aboriginal communities and establishing a local skilled workforce.
- New technologies are also making the delivery of high-quality nursing programs in rural and remote locations feasible.

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A stable and competent health care workforce is critical to the health and prosperity of any society, but perhaps nowhere more so than in Northern and Aboriginal communities. There, additional challenges arising from the social determinants of health, difficulty in accessing a full range of health services, and cultural barriers to obtaining quality care make good health care an important public policy aim. As part of Canada's provincial and national goals in improving health equity, better efforts are needed to address these challenges.

One of the best ways to improve the quality of care, and thus health outcomes, for Northern and Aboriginal communities is to strengthen the number of Northern and Aboriginal health professionals, and in particular nurses who form the largest category of health care provider in these regions. In recent years, there has been a growing recognition of the importance of developing an Aboriginal health workforce, most notably through the efforts of the Aboriginal Health Human Resources Initiative (AHHRI). However, the development of an Aboriginal health workforce is not simply a workforce shortage or a skills development issue. Having sufficient numbers of qualified, local Aboriginal nurses to provide health care in Aboriginal communities is also a critical economic, cultural, and social issue. Resolving this challenge needs to be a central strategy in improving Aboriginal quality of life and well-being. It would also require better access to nursing education for Aboriginal and Northern residents.

This report seeks to establish that:

- While improvements in the number of Aboriginal nurses and other health care professionals have been made in the past 15 years, additional efforts and strategies are needed to reach proportional representation in the Saskatchewan and Canadian health workforce.

Continued and expanded efforts to increase the number of Aboriginal nurses in the Canadian public health system are required to improve health equity.

- An increase in the number of Aboriginal nurses would have positive impacts in a number of areas, including:
  - improving access and continuity of care;
  - reducing nursing turnover rates in Northern and Aboriginal communities;
  - reducing the costs involved in attracting and retaining outside nursing professionals;
  - improving the health and well-being of workers and communities;
  - attracting and retaining workers, families, and businesses;
  - spurring economic development through a better educated and well-paid local workforce (as the health sector is typically the second-largest employer in rural and remote areas);
  - improving community self-sufficiency and self-determination.
- Distributed, off-campus educational opportunities are an important way of educating residents of Northern and Aboriginal communities and establishing a local skilled workforce. To address the need for greater stability in the rural and remote health workforce and deliver their programs in rural and remote locations, the health sciences need to think of new and effective ways of delivering their programs.
- New technologies are making the delivery of high-quality nursing programs in rural and remote locations feasible. The College of Nursing at the University of Saskatchewan has established an innovative new delivery model using remote presence robotics to provide high-quality but cost-effective nursing education to the Northern communities of Île-a-la-Crosse and La Ronge.

Continued and expanded efforts to increase the number of Aboriginal nurses in the Canadian public health system are required to improve health equity. Investments and innovations in distributed nursing education are a necessary condition for achieving this goal long term and should be promoted across the country.

CHAPTER 1

Introduction

Chapter Summary

- There is an opportunity for significant economic growth and social development if the potential of Saskatchewan's young and growing Aboriginal population can be realized.
- Aboriginal nurses play a critical role in improving health and wellness in Aboriginal communities.
- Although traditional nursing and health sciences programs are relatively difficult and expensive to deliver off-campus, new technologies are making distributed, community-based nursing programs more practicable, as the University of Saskatchewan program in Île-à-la-Crosse and La Ronge demonstrate.

Saskatchewan has a growing Aboriginal population, estimated to rise from 16 per cent in 2006 to 24 per cent in 2031. In Northern Saskatchewan (defined as the Northern Administrative District, or NAD), the Aboriginal proportion of the population is 86 per cent, and hosts the youngest population in Canada, with 34 per cent under the age of 15 years. This demographic shift brings both challenges and opportunities. The challenge is in how the province will respond to the low educational attainment rates, poor housing conditions, health concerns from suicide to diabetes, and latent societal racism that impact Saskatchewan's Aboriginal communities. The opportunity is in the prosperity, diversity, and well-being the province will derive if leaders jointly promote Aboriginal inclusion in, and influence on, the economy and key institutions. Saskatchewan stands to inherit a demographic dividend if the potential of its entire population is reached.

To that end, much has been said about improving K–12 education systems and bringing Aboriginal knowledge and role models into schools—an important and necessary discussion that has featured strongly in federal, provincial, territorial, and Aboriginal circles. The conversation around Aboriginal health and health care is comparatively underdeveloped. Though the need to improve the health outcomes of Aboriginal peoples is well recognized, provincial and national discussions on policy solutions have failed to capture the media's attention in the same way.

Until health care systems are more representative of the clients they purport to serve, the struggle to achieve health equity for Aboriginal peoples will continue.

One area of general consensus is the need to increase the number of Aboriginal nurses and other health care professionals. This is, of course, predicated on the ability to increase the number of Aboriginal nursing and health science students. While much progress has been made in the past 15 years in increasing the number of Aboriginal health professionals, proportional representation in the health sector remains elusive. Until health care systems are more representative of the clients they purport to serve, the struggle to achieve health equity for Aboriginal peoples will continue.

Strengthening the Aboriginal Nursing Workforce

It is difficult to have a conversation about Aboriginal or Northern health without talking about nursing. Registered nurses are the single-largest health care professional group in the country, and are even more ubiquitous in Northern communities and First Nation health centres, where primary care and the prevention and management of chronic diseases are key areas of responsibility and concern. In the Northwest Territories and Nunavut, for example—jurisdictions for which demographic data are easily collected and are comparable to Northern and Aboriginal communities in Saskatchewan—39 per cent of nurses worked in a community health setting, versus 14 per cent for the country as a whole.[1] While there is demand and need for more Aboriginal health professionals in every occupational category, arguably the greatest impact would come from a sharp rise in Aboriginal nurses.

Schools of nursing have made good efforts in the past 20 years to improve the recruitment and retention of Aboriginal students (e.g., through bridging and access programs, equity seats, targeted support services, and more recently through improvements to curriculum). The main organizational stakeholders, such as the Canadian Association of Schools of Nursing (CASN), the Aboriginal Nurses Association of Canada (ANAC), and the Canadian Nurses Association (CNA), have all prioritized strengthening Aboriginal student numbers.

1 Canadian Institute for Health Information, *Regulated Nurses.*

Among the best ways to improve post-secondary educational attainment levels in rural and remote areas is to offer more post-secondary programs in those areas.

However, there is a limit to how successful the task of attracting Aboriginal students to schools of nursing will be if the main strategies are limited to making traditional urban campuses more welcoming. The incredible rise in the number of Aboriginal teachers in the past generation can largely be attributed to the growth of community-based, university-credited Teacher Education Programs (TEPs) beginning in the 1970s, of which Saskatchewan's Northern Teacher Education Program (NORTEP), Indian Teacher Education Program (ITEP), and Saskatchewan Urban Native Teacher Education Program (SUNTEP) programs were early models.[2] Ample evidence and inherent logic suggests that among the best ways to improve post-secondary educational attainment levels in rural and remote areas is to offer more post-secondary programs in rural and remote areas.[3] As Aboriginal students have often faced discrimination at mainstream campuses, or been exposed to predominately Western perspectives that may conflict with their worldview and identity,[4] there is even stronger rationale to target community-based programs in Aboriginal communities.

Because education, social sciences, and humanities programs are generally lecture-based and dialectical types of programs, they have been among the first to take advantage of new technologies and platforms for distance and distributed educational delivery. Many trades programs also offer community-based instruction, though often on an ad hoc rather than ongoing basis.

The health sciences rely heavily on the teaching and practising of clinical skills, which necessarily involve investments in labs, small group instruction, clinical practice sites, and hands-on learning. This has often made small, community-based programs both expensive and impracticable.

2 Patterson Eastmure, "Honouring the Past."

3 See Newton, *Northeastern Saskatchewan Aboriginal Students' Perception*; Sisco and Stonebridge, *Towards Thriving Northern Communities*; Gum, "Studying Nursing in a Rural Setting."

4 See Restoule and others, "Supporting Successful Transitions."

However, as technologies improve there are opportunities to try innovative ways of teaching the skills typically taught in a campus-based setting, in a community-based one. The many compelling reasons why the number of Aboriginal nurses and other health professionals needs to be improved encourage the identification of new ways in which those health professionals can be educated.

Study Objectives

A recent report by the Centre for Rural and Northern Health Research on developing supportive educational environments for Aboriginal nurses articulated the goal of increasing "the participation of Aboriginal people—*as Aboriginal people*—in the province's nursing workforce."[5] This means building "environments where individuals feel safe, respected, and in which cultural understandings of health are valued."[6] This is true in both educational and health care institutions, and efforts must continuously be made to realize these goals.

Research conducted for this report finds that health outcomes for Aboriginal peoples can be improved by expanding educational options and developing the Aboriginal health professional workforce. This report:

- outlines the current Aboriginal health human resources context, with a focus on nursing;
- articulates the many economic, social, and health reasons why strengthening the Aboriginal nursing workforce is an important and strategic public policy goal;
- describes one particularly promising example of using new technologies to deliver community-based nursing education from the University of Saskatchewan's College of Nursing.

5 Minore and others, "Developing Supportive Workplace and Educational Environments," 1.

6 Ibid.

CHAPTER 2

The Current Aboriginal Health Human Resources Context

Chapter Summary

- Although the number of Aboriginal registered nurses has increased in the past 15 years, it is still significantly below proportional representation.
- The most common strategies to recruit and retain Aboriginal students include access/bridging programs, equity seats, Aboriginal-specific programs and services, indigenization of curriculum and campus life, and delivery of off-campus community-based programs.
- Many Aboriginal learners have greater success in locally delivered programs due to accessibility, proximity to support networks, ability to meet family obligations, and reduced financial costs associated with relocation, transportation, and daycare.

Concern with the low number of Aboriginal health professionals, and the impact this has on Aboriginal peoples' health, was publicly and memorably provided by the Royal Commission on Aboriginal Peoples (RCAP) in 1996. Therein, the commissioners articulated that:

> No amount of intervention from outsiders, however well meant, will help Aboriginal people achieve well-being. What outside forces cannot bring about, Aboriginal people can do for themselves. They can make the best decisions about the kind of health and healing services that will restore them to whole health—and they can do the work of making healing centres and lodges a success.[1]

To remedy the lack of Aboriginal health professionals, RCAP proposed "that governments and educational institutions undertake to train 10,000 Aboriginal people for careers in the health and social services, including the full range of professional and managerial roles, over the next 10 years."[2]

The Assembly of First Nations (AFN) report card on the progress of the RCAP recommendations in 2006 argued that Canada had made no commitment to doing so.[3] In September 2004, however, the First Ministers—the provincial and territorial premiers plus the prime minister—announced a Pan-Canadian Health Human Resources Strategy, which included $100 million toward an Aboriginal Human Health Resources Initiative (AHHRI), distributed equally over the five-year period from 2003–08. Licensed and non-licensed workers targeted by AHHRI included nurses (registered nurses, registered psychiatric nurses, and licensed practical nurses), physicians, pharmacists, psychologists,

1 Royal Commission on Aboriginal Peoples, *Highlights From the Report*.

2 Ibid.

3 Assembly of First Nations, *Royal Commission on Aboriginal people at Ten Years.*

Good progress has been made in increasing the number of Aboriginal nurses and other health professionals since the RCAP report was issued in 1996.

health administrators, community mental health workers, community health representatives, and others concerned with the provision of health care services to Aboriginal people.[4]

AHHRI's stated three goals are:

- increasing the number of Aboriginal health care workers in the workforce;
- improving the retention of health care workers in Aboriginal communities, reducing staff turnover, and encouraging Aboriginal health care workers to practise within their communities;
- adapting the present health professional curricula to reflect Aboriginal cultural and traditional needs and knowledge, in order to deliver optimal care to Aboriginal clients.[5]

Making Progress

Just how much progress has been made in increasing the number of Aboriginal nurses and other health professionals since the RCAP report was issued in 1996? Statistics Canada data suggest that good progress has indeed been made.

National Data

Emily Lecompte of Health Canada's AHRRI determined from a comparison of 1996, 2001, and 2006 Census data that the RCAP goals had indeed been achieved, with the absolute number of Aboriginal health workers rising from 8,840 in 1996 to 21,805; furthermore, their proportion increased from 1.2 per cent of all health workers to 2.15 per cent. [6] Although this 59 per cent increase in absolute numbers is a huge achievement, it is worth noting that the Canadian Aboriginal population itself increased 45 per cent over the same period. The 2.15 per cent of health workers who identified as Aboriginal in 2006 was still far short of

4 McBride and Gregory, "Aboriginal Health Human Resources Initiatives."

5 Ibid.

6 Lecompte, "Aboriginal Human Health Resources."

being proportional to the country's Aboriginal representation of 3.8 per cent of the Canadian population.[7] Between 2001 and 2006, gains were highest for First Nations (+101 per cent, to 7,530 workers) and Métis (+86 per cent, to 10,835), and were stable for Inuit (430, +0 per cent), which represents a decline in real terms.[8]

In terms of registered nurses specifically, those who self-identified as Aboriginal increased from 2,335 in 1996, to 3,250 in 2001, 5,360 in 2006, and 7,945 in 2011—a growth of 240 per cent in 15 years.[9] Aboriginal registered nurses make up 2.9 per cent of the total Canadian registered nurse workforce; however, Aboriginal people make up 3.8 per cent of the Canadian population. Registered nurses make up 77 per cent of the self-identified Aboriginal health professional workforce,[10] compared with only 59 per cent of the total Canadian health professional workforce. These figures confirm Aboriginal nurses' disproportionate importance in Aboriginal health care.[11]

Rural and Remote Data

A 2005 survey of rural and remote registered nurses from across Canada found that of 3,933 respondents, 210, or 5.3 per cent, identified themselves as of Aboriginal ancestry. Of those Aboriginal nurse respondents, 11.9 per cent worked in British Columbia/Alberta; 33.5 per cent in Saskatchewan and Manitoba; 16.7 per cent in Ontario and Quebec; 21.1 per cent in the Atlantic provinces; and 16.7 per cent in the three territories.[12] While the original national survey focused on the nature of nursing practice in the rural and remote areas of Canada, data from self-identified registered nurses with Aboriginal ancestry showed

7 Ibid.

8 Ibid.

9 Lecompte, "Aboriginal Human Health Resources"; Statistics Canada, Special Tabulation.

10 Health professionals as defined by Statistics Canada include physicians, dentists, veterinarians, pharmacists, occupational therapists, optometrists, chiropractors, speech pathologists, dieticians, nutritionists, physiotherapists, audiologists, and registered nurses; they do not include licensed practical nurses and their equivalent.

11 Statistics Canada, Special Tabulation.

12 Stewart and others, *Aboriginal Registered Nurses in Rural & Remote Canada,* 13.

As the province's Aboriginal population grows, so will its Aboriginal health workforce.

that they were younger, more likely to work in remote settings, more likely to be required on call, more likely to be the first health care contact within their community, and more likely to think of their role as advanced practice than non-Aboriginal respondents.[13]

Saskatchewan Data

The Government of Saskatchewan does not regularly collect data on the number of Aboriginal nurses registered in the province; nor does the Saskatchewan Registered Nurses Association or ANAC. However, Wilson and Sarson quote a Saskatchewan Job Futures report that identified Aboriginal people as constituting 6.8 per cent of the orderlies, aides, and other assistants; 5.6 per cent of licensed practical nurses and dental hygienists or therapists; 3.7 per cent of registered nurses and nurse supervisors; 2.7 per cent of pharmacists, dieticians, and nutritionists; 0.9 per cent of general practitioners; and 0 per cent of dentists, physiotherapists, occupational therapists, optometrists, chiropractors, and other health-diagnosing and -treating professionals in Saskatchewan.[14,15]

According to the 2011 National Household Survey, there were 760 self-identified Aboriginal nurses registered in Saskatchewan, representing 6.1 per cent of the registered nursing workforce, though the total Saskatchewan Aboriginal population stands at 16.7 per cent.[16]

As the province's Aboriginal population grows, so will its Aboriginal health workforce. Of the University of Saskatchewan's six health science colleges, Aboriginal students made up 8.3 per cent of the health sciences student body in the 2014–15 academic year (Dentistry, 12 students/11.1 per cent; Medicine, 75 students/6.7 per cent;

13 Ibid., vii–viii.

14 Wilson and Sarson, "Literature Review," 105.

15 Government of Saskatchewan, *Saskatchewan Job Futures*.

16 Statistics Canada, *National Household Survey, 2011.*

Nursing was the second-most numerous position and had the second-highest turnover and vacancy rates.

Veterinary Medicine, 15 students/3.4 per cent; School of Public Health, 5 students/2.6 per cent; Pharmacy and Nutrition, 21 students/4.1 per cent; and Nursing, 155 students/14.9 per cent).[17]

Northern Saskatchewan Data

In contrast, the Northern Saskatchewan health human resources data are highly reliable and current. In both 2007 and 2011, the Northern Labour Market[18] Health Sector Training Sub-Committee collected and documented the human resources needs and gaps in Northern Saskatchewan health services, including the region's 10 health authorities and 30 different employers operating in 55 sites across the North.[19] Actual data and feedback were obtained for 95 per cent of the positions.

Nursing was the second-most numerous position (behind social service workers) and had the second-highest turnover and vacancy rates, though both had improved between 2007 and 2011. However, respondents identified registered nurses as the occupation most in shortage.

The proportion of the Northern workforce that was Aboriginal, at just over 73 per cent, was very near representative of the region's 86 per cent Aboriginal population and an improvement from 2008's rate of 62 per cent. However, for positions requiring a university degree—which encompasses registered nurses—the Aboriginal proportion of the workforce was 35 per cent.[20]

17 University of Saskatchewan internal data.

18 The Northern Labour Market Committee was established in 1983 to discuss and address labour market issues in Northern Saskatchewan and ways to jointly fund training programs. It has since evolved to include over 80 agencies drawn from the training, funding, economic development, government, Aboriginal agency, and industry sectors operating in the Northern region of Saskatchewan.

19 Laurence Thompson Strategic Consulting, *A Report on Northern Health Human Resource Data*.

20 Ibid.

Primary strategies for the recruitment and retention of Aboriginal nursing students include preparation, recruitment, bridging, progression, and retention.

Existing Post-Secondary Strategies

A growth in the number of Aboriginal registered nurses in Canada is predicated on a growth in the number of Aboriginal registered nursing students. Two major surveys of the members of the CASN, in 2002 and 2007, attempted to gather the latter information. These surveys found that the number of baccalaureate (as opposed to diploma) Aboriginal nursing students in Canada jumped from 237 to 730 in those five years, with the majority of growth occurring in the Western provinces.[21] Saskatchewan had the highest number of Aboriginal nursing students in 2007, at 202, as a result of its 16.6 per cent equity seats and the supports provided by the Native Access Program to Nursing (NAPN). These positive trends are consistent with higher educational attainment for Aboriginal peoples in general. However, there is clearly room for improvement across the board. To put this into context, in the 2007–08 academic year, CASN identified a national enrolment in 135 schools of 33,687 nursing students,[22] with Aboriginal students accounting for only 2.2 per cent of the national total.

Primary strategies for the recruitment and retention of Aboriginal nursing students, as identified by the 2002 National Task Force on Recruitment and Retention Strategies, are:

- *Preparation*—a focus on K–12 achievement and success in science and math, and the marketing of health careers to secondary-level students.
- *Recruitment*—including visible recruitment efforts and the presence of role models.
- *Admission, nursing access, and bridging programs*—such as equity seats, preparatory and transition programs, and bridging programs from licensed practical nurse to registered nurse.

21 Gregory and Barsky, *Against the Odds*.

22 Canadian Association of Schools of Nursing, *Nursing Education in Canada Statistics, 2007–08*.

- *Progression*—including support programs, tutoring, indigenization of curriculum, and adequate student funding.
- *Post-graduate recruitment and retention*—targeted mentoring programs and efforts to move Aboriginal nurses into management and teaching positions.[23]

Internationally, the World Health Organization (WHO) has identified similar strategies to address the global shortage of rural and remote health workers. Whereas 50 per cent of the world's population lives in rural areas, only 38 percent of nurses and 24 per cent of physicians do. WHO recommends:

- using targeted admission policies to enrol students with a rural background in education programs for various health disciplines, in order to increase the likelihood of graduates choosing to practise in rural areas;
- locating health professional schools, campuses, and family medicine residency programs outside of capitals and other major cities, as graduates of these schools are more likely to work in rural areas;
- designing continuing education and professional development programs that meet the needs of rural health workers and are accessible from where they live and work, so as to support their retention.[24]

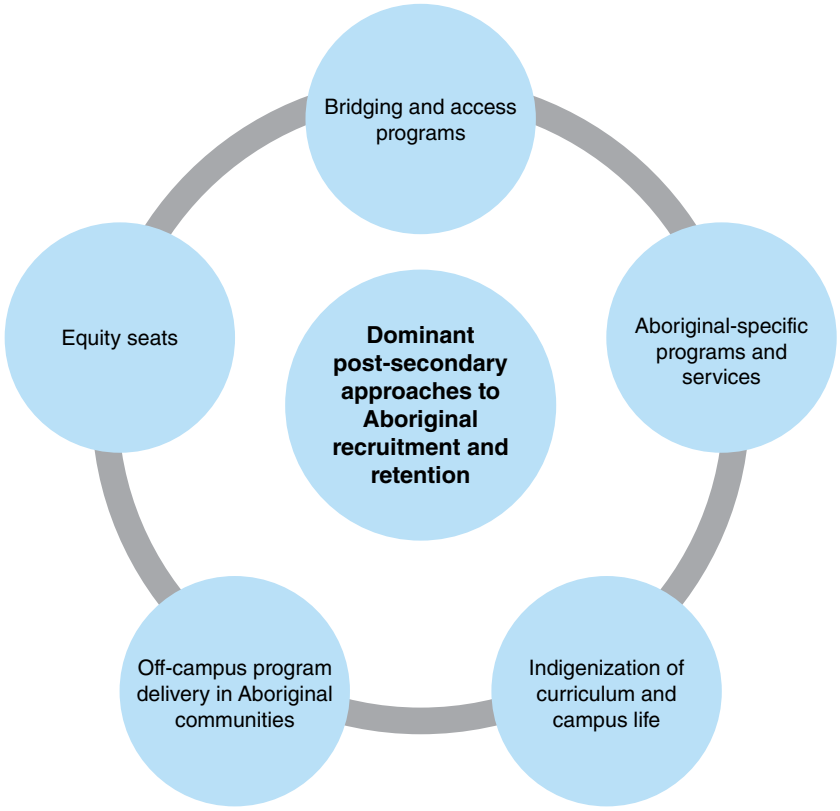
All of these strategies require efforts from a combination of stakeholders, including teachers, health regions and authorities, post-secondary institutions, communities, and governments. For Canadian post-secondary institutions, however, a handful of strategies have been most common. (See Exhibit 1.)

23 National Task Force on Recruitment and Retention Strategies, *Against the Odds.*

24 World Health Organization, *Increasing Access to Health Workers*.

Exhibit 1

Dominant Post-Secondary Approaches to Aboriginal Recruitment and Retention



Source: University of Saskatchewan College of Nursing.

Bridging and Access Programs

A number of bridging and access programs have been established across Canada over the past three decades, primarily in smaller colleges and schools or in regions with significant (>10 per cent) Aboriginal populations.

Some institutions have moved away from access programs, focusing on tutorial support and academic and personal advising for existing nursing students.

In the field of nursing, Gregory and Barsky[25] identified eight access/bridging/transition programs meant to assist Aboriginal students in meeting admission requirements and provide ongoing tutorial and personal support.[26] Of these, the oldest is Saskatchewan's Native Access Program to Nursing, originally established in 1985 to serve a national need, at a time when Canada's Aboriginal health workforce included "13 doctors, 3 dentists, 1 pharmacist, 1 physiotherapist and 335 nurses of whom approximately 35 were baccalaureate prepared."[27]

Access programs on the whole have been successful in creating a pathway for students who may be returning to school after many years' absence, or who may not have the grades and pre-requisites to directly enter nursing or other health programs. They also promote study skills that engender success as those students go on to the regular program. The downside is that they add up to another year of study to what is already a huge time commitment with a four-year degree, as Aboriginal students are frequently mature students with dependents. They also demand significant instructional capacity and support, making them expensive to run as they usually do not produce any actual accreditation.

As a result, some institutions such as the University of Saskatchewan have moved away from their access programs, focusing instead on tutorial support and academic and personal advising for existing nursing students. Red River College, by contrast, continues to offer its ACCESS program which targets Aboriginal people, immigrants, and single parents, but only at its Winnipeg campus.

25 Gregory and Barsky, *Against the Odds,* 7–8.

26 The eight programs in 2007 included Thompson Rivers University's Aboriginal Nursing Project (including the Pre-Health Program), the Native Access Program to Nursing at the Saskatchewan Institute of Applied Science and Technology and the University of Saskatchewan, Red River College's ACCESS program, Lakehead University's Native Nurses Entry Program, St. Clair College's Pre-Nursing Program, Memorial University of Newfoundland Integrated Nursing Access Program, Aurora College's Nursing Access Program, and Nunavut Arctic College's Nursing Access Program.

27 Roberts, *Building Health Care Capacities,* 1–2.

One of the most promising strategies for improving the recruitment and retention of Aboriginal students is providing distributed or distance programs.

Cultural Competency and Indigenization of Curriculum

Much of the current emphasis in Aboriginal recruitment strategies for post-secondary institutions, and especially universities, is to make the institution a more welcoming and inclusive place. To that end, a large variety of specialized programs meant to serve Aboriginal students and address Aboriginal issues have cropped up across the country.

Efforts have similarly been made by ANAC and CASN to improve, on a national scale, the education that nursing students receive with regards to Aboriginal health issues and contexts. A major outcome has been the development and dissemination of a framework entitled Educating Nurses to Address Socio-Cultural, Historical, and Contextual Determinants of Health Among Aboriginal Peoples 2013. This framework was part of a suite of initiatives undertaken by ANAC, as part of its Making It Happen project, to strengthen Aboriginal human resources with support from AHHRI. But it also reflects a broader trend of integrating cultural competency and safety concepts into health education and practice. In addition to better addressing historical Aboriginal–Canadian relations and their legacies, many nursing programs are beginning to include traditional Indigenous health concepts, such as the Medicine Wheel or holistic approaches to healing, as part of their course content. Cultural competency is not particular to Aboriginal client care, but is meant to build the capacity of health care workers and systems to address the needs of an ethnically, linguistically, and religiously diverse clientele.

Distributed Learning

In addition to access and bridging programs, Aboriginal-specific programs, and curriculum changes, one of the most promising strategies for improving the recruitment and retention of Aboriginal students is by providing distributed or distance programs in Aboriginal communities.

While it has been suggested that programs should be restructured to maximize the use of distance education, this is not a perfect solution.

In their consultation with Aboriginal nurses and health care administrators, Aboriginal nursing students, and nursing school administrators and faculty, Minore and others found that many students from rural or remote communities often felt forced out of their comfort zone and cut off from everything familiar to them when they moved to a city for their college or university education. Acknowledging this fact, interviewees in each of their categories suggested that programs should be restructured to maximize the use of distance education, thereby allowing students to spend more time in their home communities.[28]

However, it is also clear that distance education is not a perfect solution. McMullen and Rohrbach, in their study of successful distance learning programming in Canada, found that distance education can lack structure, is often subject to conflicting interests in the development of curricula, and can be inadequately linked to appropriate technology.[29] Perceptions that distance education is second-rate can also impact enrolment and success. However, the most commonly noted issue was a lack of personal contact with other students and instructors. According to Gibb, in her discussion of Indigenous distance learners in Australia, "Self-responsibility for acquiring knowledge and life-long learning are familiar ways of gaining cultural knowledge through instruction and one's lived experience. What is unfamiliar to most learners is the social decontextualization and technologization of learning."[30]

In the University of Manitoba's distributed nursing program, delivered through interactive video technology for example, the time lag between the on- and off-campus sites meant that remote students had trouble fully participating in class discussions and felt excluded.[31] Russell and others further suggested that distance education students felt disadvantaged in comparison with on-campus students, complaining that they had no "real" instructors who cared about them and understood

28 Minore and others, "The Effects of Nursing Turnover."

29 McMullen and Rohrbach, *Distance Education in Remote Aboriginal Communities.*

30 Gibb, "Distance Education and the Issue of Equity Online," 22.

31 Care, "The Learning Experiences."

their culture.[32] Similarly, Newton reported that Aboriginal off-campus students wanted more personal contact, especially guidance, from mentors and role models.[33]

As Gibb summarizes, distance education—online in particular—does allow greater flexibility for students in managing personal or family priorities. However, she also argued that students' other concerns—such as personal connectedness with teaching staff and other learners, greater relevancy of course content to concerns of Aboriginal communities' health needs, as well as academic learning skills and more negotiated learning through classroom dialogue—cannot be accommodated through traditional methods of distance education.[34]

Since it is widely recognized that the establishment of a distributed education program has the potential to make post-secondary education accessible to previously underserved communities (especially Aboriginal and Northern ones), the key question is how to use new technologies and strategies to develop the interpersonal connections that students need to succeed. Distance education strictly defined may rely on individualized, online learning, but community-based, distributed programs that adopt a blended model of learning (e.g., face-to-face, videoconference, online) are gaining in feasibility and popularity, and nursing programs can reflect this.

32 Russell and others, Recognizing and Avoiding," 355.

33 Newton, *Northeastern Saskatchewan Aboriginal Students' Perceptions.*

34 Gibb, "Distance Education and the Issue of Equity Online."

CHAPTER 3

The Case for More Aboriginal Nurses

Chapter Summary

- There is a strong case to promote an increase in the number of Aboriginal registered nurses, especially in Aboriginal communities.
- Local Aboriginal nursing workforces promote community prosperity, not only through the improvement of community health and well-being, but also in the transfer of health care dollars (typically the second-largest economic sector in a rural economy) to community professionals rather than imported workers.
- Evidence suggests that local Aboriginal nurses can improve health outcomes through better cultural understanding and continuity care, which encourages local residents to be more proactive in accessing care.

Evidence suggests that local Aboriginal nurses may provide better care through improved cultural understanding and continuity care, which encourages some local residents to be more proactive in accessing care. Few stakeholders question the merit of having more Aboriginal nurses working in Aboriginal communities. However, it is worth being explicit in what the benefits actually are. Though improved health outcomes are important factors, they are not the only ones.

Community Prosperity

Most of us understand intuitively that community health and wellness impacts community prosperity. Healthy residents are more productive in their paid employment, their educational endeavours, and civic activity; they also cost less in health care expenses, reducing the burden on public institutions and allowing taxpayer dollars to be directed to other public goods. Furthermore, a good local health care system—one that is responsive, accessible, and effective—not only helps retain existing workers and employers, but is also important in attracting job-creating businesses and industries, as well as retirees.[1] The health sector is also well paying, with average annual wages in Saskatchewan equal to $72,400 for registered nurses, $95,100 for pharmacists, and $181,000 for physicians—all before Northern bonuses are factored in.[2]

1 Doeksen, Johnson, and Willoughby, *Measuring the Economic Importance of the Health Care Sector.*

2 Northern Labour Market Committee, *Northern Saskatchewan Regional Training Needs Assessment*.

In a rural community, the health sector is often the second-largest employer, providing up to 15 per cent of total employment.

In terms of actual economic impact, Doeksen, Johnson, and Willoughby outlined the significant effect that the health sector has in a rural economy. It is often the second-largest employer (after the school system) in a rural community and provides up to 15 per cent of total employment.[3] This contributes to a large economic multiplier effect.

Nosbush and Bighead, reporting for the Northern Inter-Tribal Health Authority and drawing on Eric Howe's[4] work on First Nations educational attainment, calculated the lifetime return on investment that each Northern nursing graduate can expect to see based on his or her university degree: an individual monetary benefit of $903,074 for females and $672,994 for males; an individual non-monetary benefit of $2,709,222 for females and $2,018,982 for males; and a societal benefit of $1,404,782 per female and $1,046,880 per male—for a total economic benefit per Northern nursing graduate (accounting for the male-female ratio) of over $4,900,000.[5] This is significant in a region with the second-lowest median annual income in the country, at $13,600.[6]

Cultural Competence

Several studies have demonstrated that the ethnicity of a health care provider may affect a patient's comfort and satisfaction and that cultural discontinuity between patients and health care professionals can lead to discomfort, conflict, and an ineffective provider–patient relationship.[7] Browne suggests that "although the physical aspects of patient care may

3 Doeksen, Johnson, and Willoughby, *Measuring the Economic Importance of the Health Care Sector.*

4 Howe, *Mishchet Aen Kishkayhtamihk Nawut Ki Wiichiihtonaan*.

5 Nosbush and Bighead, "Adopting Technology."

6 Centre for the North, "Money Talks."

7 See Cantor and others, "Physician Service to the Underserved"; Saha and others, "Patient–Physician Racial Concordance"; LaVeist and Nuru-Jeter, "Is Doctor–Patient Race Concordance?"

Many Aboriginal clients prefer Aboriginal nurses for a variety of reasons.

be fulfilled, relating to patients on the basis of assumptions and other forms of relational disengagement may have significant ramifications for the quality of care that people receive."[8]

Research suggests that many Aboriginal clients prefer Aboriginal nurses for a variety of reasons. These include comfort in discussing personal issues, familiarity with values and language, and not feeling judged. Some Aboriginal clients also experience discomfort with government institutions (including hospitals)—a legacy of the residential school era—which Aboriginal health care workers can help mitigate. As Minore and others iterate, this does not imply that First Nations, Inuit, and Métis people will accept only the attention of Aboriginal clinicians; rather that they "lend a measure of familiarity and, therefore, reassurance."[9]

Similarly, Van Herek, Smith, and Andrew, reporting on maternal health, found that providers who lack an understanding of Aboriginal worldviews and contexts are likely to adhere to the idea that Western parenting strategies are superior. The result is that "Aboriginal women experience some level of vulnerability accessing mainstream care in their role as mothers. They often do not feel safe accessing mainstream services for themselves or their children in fear of being labeled 'bad mothers'."[10] Access to mainstream health care, therefore, is frequently characterized by interactions that reinforce colonial power dynamics and devalue Aboriginal beliefs, knowledge, and ways of life.

Continuity of Care and Retention

Continuity in the process of care is defined as "the likelihood that consumers will receive needed health services, in a proper sequence, and within an appropriate interval of time."[11] It is well recognized, both as an important factor in providing quality care and as challenging

8 Browne, "Clinical Encounters," 2175.

9 Minore and others, *Developing Supportive Workplace and Educational Environments,* 23.

10 Van Herek, Smith, and Andrew, "Identity Matters," 62.

11 Nutting, Shorr, and Burkhalter, "Assessing the Performance," 286.

The demands placed on remote or outpost nurses make retaining them for long periods and replacing them difficult.

to achieve in Northern and Aboriginal communities. As Minore and others articulate, remote or outpost nurses face high expectations and demands, both in terms of their professional capabilities and their personal commitment.[12] While often highly rewarding, the demands placed on these nurses make retaining them for long periods and replacing them difficult, as high levels of experience are required. A lack of continuity in care can affect patient trust, thus impacting compliance and the divulgence of personal information, or even making and keeping regular check-ups, which ultimately affects patient outcomes. These discontinuities are particularly detrimental to patients living with illnesses requiring ongoing care, such as cancer, diabetes, and mental health—illnesses with high incidence in Northern Saskatchewan.[13]

The situation can reach critical levels. A 2010 Health Canada report identified Northern Ontario as having some of the lowest nurse retention rates in the country; one community, Sioux Lookout, hired 50 nurses in a three-year period and lost 45 of them, for a 10 per cent retention rate.[14] Poor retention of nurses is expensive; CBC reported that it cost up to $106,000 in additional salary costs per nurse, per year to rely on private agencies to fill gaps.[15] A Government of Nunavut recruitment website advertised to new nurses a base salary of $81,081 to $120,900; plus a Northern allowance of $15,106 to $34,555; plus an annual special allowance of $9,000 to $19,500; and significant signing, retention, and mentorship allowances on a continuing basis.[16]

In Northern Saskatchewan, it is assumed that nurses that take the Northern nursing program are much more likely to stay and work there when they graduate, and most students have reported that they intend to—thus improving continuity of care. Studies on rural health

12 Minore and others, “The Effects of Nursing Turnover.”

13 Ibid.

14 Porter, *First Nations Hurt by Nursing Shortage.*

15 Ibid.

16 Government of Nunavut, *Nunavut Nurses: Salary and Bonuses.*

professional retention have come to similar conclusions,[17] and there is some local precedent to draw on. When NORTEP was established in La Ronge, only 3 per cent of teachers in Northern Saskatchewan schools were Aboriginal, though 75 per cent of their students were. Today, 25 per cent of teachers in the Northern Lights School Division are Aboriginal, and 91 per cent of NORTEP's 260 graduates are employed as teachers, many of them in Northern Saskatchewan.[18]

What is harder to quantify, but easy to recognize, is the impact that having this cohort of university-educated Northerners has had in the region's communities, with many NORTEP grads filling civic, administrative, and leadership roles. Northern Saskatchewan has far fewer residents with a university degree than the province as a whole (8.3 per cent vs. 17.1 per cent in 2006) and has one of the lowest high school diploma attainment rates in the country. (See Chart 1.) It is expected that future nursing graduates will similarly fill leadership roles, improving the well-being of communities far beyond the health care system.

Community Self-Sufficiency

When positions of power in Aboriginal communities are occupied by non-local professionals, they reaffirm existing colonial power dynamics. In many cases, cultural differences in health care, public administration, or education are still seen as a deviation from "normative whiteness."[19]

Local Leadership

However, when roles in sectors such as health care are held by community members, they can empower the community. Understanding the needs of the community and traditional health beliefs allows local

17 See Strasser and Neusy, "Context Counts"; Molanari, Jaiswal, and Hollinger-Forrest, "Rural Nurses"; Minore and others, "The Effects of Nursing Turnover on Continuity of Care."

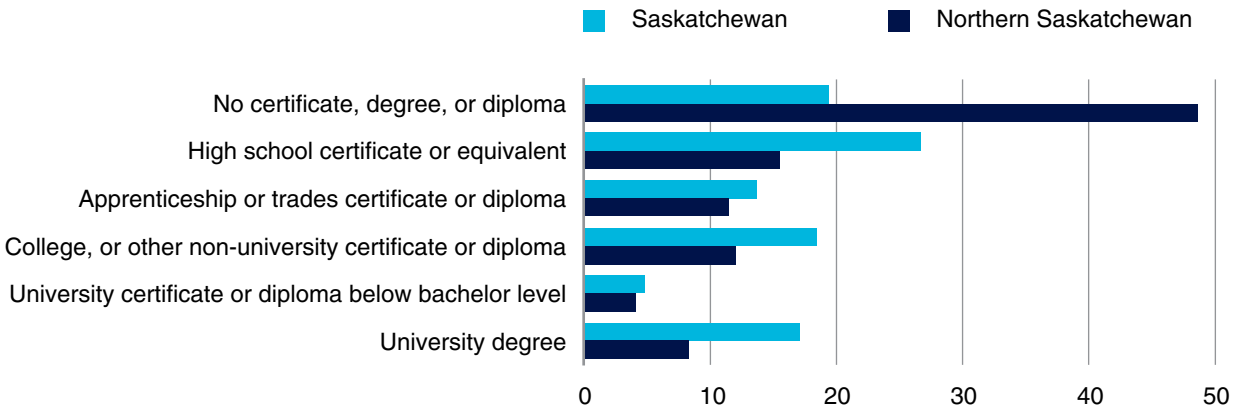
18 Michel, *Nortep-Norpac History and Background.*

19 Puzan, "The Unbearable Whiteness of Being (In Nursing)," 197.

Chart 1

Levels of Education, Population Aged 25 to 64 Years, Northern Saskatchewan and Saskatchewan, 2006

(per cent)



Source: Northern Labour Market Committee.

nurses to legitimize the perspectives and experiences of their patients. Katz and others' study of Native American nurses in the United States working in their home communities found that "being Native American was seen as vital to a holistic understanding of Native American people and their health."[20] In the same vein, Van Herek, Smith, and Andrew found that "for some women, having Aboriginal service providers was also about the safety of being with someone who 'looked like them,' who reflected their own identity."[21] Local nurses can create a more comfortable and welcoming health care environment by replacing a formerly unequal power dynamic with a more level one.

By occupying a position of authority, Aboriginal health care professionals working in their home community have the potential to become what Kilpatrick and others refer to as "boundary crossers."[22] Boundary crossers are professionals who live in a community but are employed by

20 Katz and others, "Retention of Native American Nurses," 397.

21 Van Herek, Smith, and Andrew, "Identity Matters," 64.

22 Kilpatrick and others, "Boundary Crossers, Communities, and Health," 286.

an overarching health system. This dual membership allows them to use their first-hand knowledge as community members to lead actions and build community health capacity.

While health care professionals do not necessarily need to come from the community they serve, locals are often more effective in this role. As Talier and others found, non-Aboriginal "nurses were not really a part of the community or of the *other* world they associated with it; the local community was not *their* world."[23] Despite official community membership, non-Aboriginal nurses working in Aboriginal communities can often lack the sense of responsibility toward the community and insight into community needs that such capacity-building requires. This role can be better served by Aboriginal community members themselves, who, as Katz and others suggest, often feel an intense sense of duty toward their hometowns.[24] The Canadian Council on Learning reports that for many Aboriginal students, "the value of individual learning cannot be separated from its contribution to the collective well-being,"[25] and therefore "90 percent of First Nations adults strongly believe that they have a personal responsibility to make their community a better place for future generations."[26] This sense of loyalty, combined with the unique position that nurses occupy in their communities, can enhance the capacity of Aboriginal nurses to improve health and well-being in their communities.

Reputation-Building

Local delivery of post-secondary education also builds the reputation of a community, attracting students, professionals, and economic development. The importance of this for Île-à-la-Crosse in particular has been articulated on several occasions by its mayor, Duane Favel, who believes that the community's ability to host a successful baccalaureate

23 Talier, Browne, and Johnson, "The Influence of Geographical and Social Distance," 140.

24 Katz and others, "Retention of Native Amercian Nurses."

25 Canadian Council on Learning, *Post-Secondary Education in Canada,* 10.

26 Ibid., 53.

nursing program could eventually attract other post-secondary programs. His hopes are validated by community experiences with the Northern Ontario School of Medicine (NOSM). There, stakeholders recognize that "NOSM is a source of civic pride and an affirmation of the north's potential as the region enlarges its knowledge-based economy," and "has enriched the reputation of the host universities and affiliated health care institutions, thereby enhancing the ability to recruit new physicians, researchers, and scientists to the north."[27]

Labour Force Wellness and Productivity

There is a strong and well-documented link between healthy workers and decreased absenteeism, fewer short and long-term disability claims, better employee engagement and satisfaction, and productivity. Where local workers can access safe and quality care in their own communities, they will be more likely to enjoy and maintain good health, by having regular physicals, seeking medical care, and proactively addressing health issues.

Role Models

In addition to creating more accessible and stable health care services and serving as leaders in the community, the presence of local nurses also helps to empower local youth. Community members visible in the health care workforce serve as role models, encouraging students in the community to pursue health care careers. Spence, White, and Maxim found that the proportion of adults with post-secondary qualifications in remote communities was the strongest influence on the academic success of youth.[28] Similarly, the Canadian Council on Learning found that young adults whose parents attended university were much more likely to go on to university themselves.[29] The presence of successful role models in a community makes the pursuit of post-secondary

27 Centre for Rural and Northern Health Research, *Exploring the Socio-Economic Impact,* ix.

28 Spence, White, and Maxim, "Modeling Educational Success."

29 Canadian Council on Learning, *Post-Secondary Education in Canada.*

education a possibility for local students. The educational success of a community is therefore self-perpetuating, resulting in a more representative, stable, and educated workforce in the long term.

CHAPTER 4

The University of Saskatchewan Model

Chapter Summary

- The University of Saskatchewan has used a variety of technologies, including remote presence robotics, to offer a full baccalaureate nursing program to the Northern communities of Île-à-la-Crosse and La Ronge.
- Both students and faculty have had good acceptance of and satisfaction with the remote presence technology, which helps address the challenge of new technology uptake in rural and remote health care delivery and can be a significant factor in stabilizing a regional workforce.
- The greatest challenges in establishing a Northern or distributed nursing program include the expense of implementation, technological difficulties, accessing support from campus-based student services, faculty engagement, and recruiting students with an adequate background in the natural sciences.

In 2008, the Northern Health Sector Training Sub-Committee of the Northern Labour Market Committee[1] completed a data collection effort to determine human resources needs and gaps in Northern health services. Following input from 10 health authorities and 30 employers in Northern Saskatchewan, it found that of the region's 1,283 health care positions, 10 per cent were vacant, the overall turnover rate was 19 per cent, and 170 new hires would be required each year in the next five years.[2] Registered nurses made up the largest proportion of the health care workforce but were also identified as the occupation in shortest supply.

As a result of these findings, the Sub-Committee invited post-secondary institutions in Saskatchewan to join discussions to create a workforce plan for Northern Saskatchewan. The University of Saskatchewan's College of Nursing offered to collaborate with the communities, Northlands College, and the regional health authorities to dedicate nursing seats in the North, for the North. This culminated in a strategic alliance among the partners to establish a Bachelor of Science in Nursing (BSN) program in the North.

1 The Northern Labour Market was formed in 1983 with a mandate to identify and assess emerging labour market and economic development issues in Northern Saskatchewan, and to subsequently develop recommendations and initiate actions that enable residents of Northern Saskatchewan to benefit from training, employment, and economic activities in their region. The Northern Labour Market Health Sector Training Sub-Committee was formed in 2006 and is the health sector's direct connection to this work.

2 Laurence Thompson Strategic Consulting, *A Report.*

Distance education has a long and relatively successful history in Northern communities.

Remote Presence

Distributed learning was not new to the College of Nursing, as the Nursing Education Program of Saskatchewan (NEPS), a collaborative program with the Saskatchewan Institute of Applied Science and Technology (SIAST) and First Nations University of Canada (FNUC) that ended in 2014, had campuses in Prince Albert (population 42,000), Saskatoon, and Regina. However, delivery to Northern Saskatchewan posed different challenges. Within even the largest community, La Ronge—with a population of only 3,000 residents—recruitment and retention of qualified personnel, including Master's-prepared instructors and PhD-prepared faculty to teach the nursing program in the North, would have been both challenging and prohibitively expensive. There is an acute shortage of PhD-prepared nursing faculty in the country. In 2011, there were 89 graduates from 15 doctoral programs but 215 available full-time faculty positions.[3] In 2012, the graduate number declined by 25.8 per cent, with only 66 graduates.[4] It is often difficult for even mainstream campuses in large urban settings to fill all of their nursing faculty vacancies.

Distance education has a long and relatively successful history in Northern communities, where adequate supports and opportunities exist, particularly in the social sciences and the humanities. Although much of a nursing curriculum can be done via videoconference, online, or other methods, the clinical skills component posed the largest hurdle to distributed nursing education. The solution came in the form of robotics—a RP-7i remote presence robot, made by Californian medical manufacturer InTouch Health®. (See Exhibit 2.)

The robots—nicknamed "RoboGale (a nod to Florence Nightingale) in the lab located in Air Ronge, and ÎleXPERT (Île-à-la-Crosse Professional Expertise Remote Technology [PERT]), in Île-à-la-Crosse, were adopted

3 Canadian Association of Schools of Nursing, *Registered Nurses Education in Canada Statistics, 2010–11.*

4 Canadian Association of Schools of Nursing, *Registered Nurses Education in Canada Statistics, 2011–12.*

Exhibit 2
Northern Students With the RP-7i Remote Presence Robot

Source: University of Saskatchewan College of Nursing.

for use in clinical skills labs. The robot allows the campus-based faculty member to communicate and move around independently in the lab, moving from bedside to bedside and in front of the class, to teach and assess clinical competencies. The robot is approximately five feet tall with an articulated flat-screen monitor for a "head," a dual camera configuration for direct and peripheral vision, and full on-board audio.

The robot also has a number of health assessment functionalities. By attaching peripherals such as digital stethoscopes, otoscopes, ophthalmoscopes, or dental cameras, the faculty member is able to see and hear what the student sees and hears in real time. This can even be an advantage over face-to-face teaching (e.g., if the faculty member is using the stethoscope to teach about heart sounds and electrocardiograms, he or she can hear the heartbeat at the same time

The robot has a number of health assessment functionalities, which can be an advantage over face-to-face teaching.

as the student, and provide feedback as they listen together). In a face-to-face experience, the faculty member and student would take turns listening through a regular stethoscope, where a time lag exists and differences between faculty and student observation often occur.

Similarly, because the robot has such a powerful camera, it can zoom in on an area and provide higher definition and acuity than the human eye (e.g., if examining a skin rash or wound).

Site Selection

Two sites for the program were established: one in La Ronge (population 3,000), the largest community in northern Saskatchewan as well as home to the main Northlands College campus; and one in Île-à-la-Crosse (population 1,400) in the region's west side. Ten seats were allocated in La Ronge and five in Île-à-la-Crosse. Although Île-à-la-Crosse was not home to a Northlands College satellite campus, the community had an ideal integrated primary care facility, with the acute-care hospital, long-term care, and the medical clinic housed at one end and linked to a daycare; a physiotherapy clinic which borders an Olympic-sized gymnasium; and a high school located on the opposite end of the facility. Adequate space was available for post-secondary classrooms in the central part of the facility.

The College of Nursing's new BSN program was designed as a non-direct entry. The first, or pre-professional, year for students interested in pursuing nursing began at Northlands College in the 2011–12 academic year. A total of 122 applications were received, of which 68 were admitted into the pre-professional year, effectively doubling the number of university full-load equivalents (FLEs) at Northlands College. NORTEP/NORPAC in La Ronge also offered pre-professional year courses. Fourteen students met all pre-requisites and went on to the first year of nursing (second year of the four-year degree) in 2012–13, though many more remained in school as they continued to accumulate credits or upgrade.

The Northern nursing program has engendered academic success in the students, and produced a high retention rate.

Initial skepticism existed over whether the robot would be effective, whether the students would engage with the faculty via the robot, and whether it would provide a quality teaching experience. Although remote presence has many demonstrated clinical uses (particularly in telestroke networks in the U.S.), the College of Nursing was the first in the world to use it for undergraduate teaching purposes.

Any fears were quickly assuaged. One of the lab instructors, Professor Carol Ann Bullin, recalled being asked by some students on a break in the second day of labs if she wanted them to bring her a coffee. "And I said, 'Are you guys being funny or what?' And they caught themselves and they said, 'We really thought you were there.' And that was testimony to the fact that you sort of fit right in."[5]

Indeed, patient satisfaction surveys that have been done with remote presence technology have indicated high levels of satisfaction with the quality of care[6] and were replicated to assess the Northern nursing students' satisfaction. Within the program, 94 per cent of students felt comfortable with the professor teaching them using the robot; 63 per cent strongly agreed, and 31 per cent agreed that the combination of an on-site registered nurse facilitator and remotely connected professor provided a good learning environment; only 6 per cent thought the RP-7i was annoying.

More importantly, the Northern nursing program has engendered academic success in the students. The Northern cohort's first Observed Structured Clinical Examinations, in spring 2013, saw a 100 per cent pass rate—a huge milestone for the program. The retention rate has also been high. In the first two years of the program, of the 23 students accepted into the Northern nursing program, only one (3 per cent) withdrew (for personal, not academic reasons). A 97 per cent retention rate in a degree nursing program far exceeds national averages of

5 University of Saskatchewan College of Nursing, *Delivering U of S Undergraduate Education.*

6 See, for example, Mendez and others, "The Use of Remote Presence"; Sucher and others, "Robotic Telepresence."

Aboriginal approaches to health and cultural competency are articulated in the College of Nursing's curriculum across the province.

70 to 80 per cent. Since then, several students have withdrawn or fallen out-of-cohort, meaning they will not graduate in three years (plus the pre-professional year). This is not atypical for Northern students; many are mature, still working, and/or parents. The program itself allows six years for completion of the 90 nursing credit units. However, the College expects to see 10 of the first 14 students convocate on schedule in spring 2015.

Curriculum Model

Many successful distributed university programs, particularly those aimed at Northern or Aboriginal students, have been adapted to reflect Indigenous pedagogies, local contexts, language, and culture, and have been delivered in different cycles than a "mainstream" degree.

The context for baccalaureate nursing education is different in many ways. Nursing programs must be accredited, which means it can be difficult and expensive to modify delivery of the program in certain geographical areas. In addition, baccalaureate nurses are prepared to become registered nurses, following the successful writing of the Canadian Registered Nurse Examination (CRNE), to be replaced by the National Council Licensure Examination (NCLEX) in 2015. This means that nursing program curricula must prepare students to be successful in the particular elements assessed by the CRNE or NCLEX, leaving nursing programs with limited discretion over the topics to be taught. It is, therefore, more difficult to modify nursing curricula for a particular context than it is in education, the social sciences, or humanities. However, Aboriginal approaches to health and cultural competency are articulated in the College of Nursing's curriculum across the province. The Saskatchewan Registered Nurses Association makes a point of assessing its inclusion in its Competence Assurance.

It is well worth noting, however, that the preference from Northlands College and community stakeholders was not to have a modified nursing program. Rather, they were explicit in wanting the same program offered to the North, resulting in the same qualifications, as students received

in Saskatoon, Regina, and Prince Albert. The key reason given was safeguarding the professional reputation of the graduates of the Northern program—community members did not want external employers to see the Northern students' qualification as "less than."

Additionally, from the health regions' perspective, it was important that patients were confident in the ability and knowledge of their local nurses. Stakeholders also spoke of the lateral violence that can occur (although rare), of Aboriginal clients wanting a "real nurse"—a non-Aboriginal one—and rejecting local professionals. A nursing program that was the same as those delivered in the rest of the province would thwart such complaints and assuage concerns. Furthermore, nurses working in Northern communities often have many more demands placed on them than most nurses working in urban areas; it was therefore important that their education be rigorous and comprehensive.

A decentralized nursing program that began in Northern Norway in the early 1990s had a similar experience, with stakeholders wanting to see a largely identical nursing program as that offered in the larger university centre, in Tromsø. However, as the program built up trust and reputation, it gradually contextualized itself for the particular needs of the rural communities in which it is offered.

There are differences between the two communities where the University of Saskatchewan program is offered—Île-à-la-Crosse is smaller and predominantly Métis, while La Ronge hosts Northern Saskatchewan's largest non-Aboriginal population but is adjacent to the province's largest First Nation, Lac La Ronge Indian Band—a fact that has influenced how community engagement has been pursued. In La Ronge, the nursing program is one of many that operate through Northlands College, which has a number of structures in place for community engagement and oversight, which the College of Nursing naturally falls under. In Île-à-la-Crosse, however, there was a need for a local advisory group in the form of a Nurse Education Committee. Regular meetings and semi-annual reporting, providing information on program indicators—such as student numbers and success rates, clinical placements, K–12

The Northern nursing program does attempt to reflect its Northern context.

outreach, and relevant research—has been instituted to inform various stakeholders of the program's progress. The reports are available on the college's website.

The Northern nursing program does attempt to reflect its Northern context. Clinical placements are done in local sites when possible (e.g., using schools for pediatric placements or local addictions centres for the mental health placement). Overall, the Northern program has about the same degree of local variability for clinical placement experiences as the other three College of Nursing campuses in Saskatchewan. The Northern program has been successful in achieving a context-relevant experience for its students.

Technological learning tools, including Blackboard, WebCT, videoconferencing, and online resources, have been adopted by the College of Nursing across the province, though the Northern sites have more videoconferenced classes than average. The key difference in the Northern delivery of the program is the use of the remote presence telerobotic system. As iterated above, students have generally been satisfied with the employment of the robot. In some regards, the use of the robot can even be superior to face-to-face lectures, as instructors can record, take images, graphically highlight areas of concern or interest, and send images and recordings back to students for future review. It has also spurred creative ways to teach and provide learning experiences. For example, to extend an oral health program offered by nursing students in Saskatoon K–12 schools, two faculty members who specialize in pediatrics and the College's Information Communications Technology Director worked with the College of Dentistry to adapt a dental light and camera to assess elementary school children's oral health in Northern clinical placements. This assessment is done in real time, allowing faculty to provide instruction and feedback to the nursing students within an inter-professional context, while providing a preventative health benefit through oral screening. Not only has this been the first application of remote presence technology in dentistry; it is one of the very first teledentistry applications in Canada. (See Exhibit 3.)

Exhibit 3
Delivering Oral Care Through Teledentistry

Source: University of Saskatchewan College of Nursing.

Remote presence technology promises to create greater independence for nurses working in rural and remote contexts, and provide greater client access to tertiary-level specialists without, for example, having to travel hundreds of kilometres for a short appointment. One of the greatest advantages of using remote presence to teach nursing students is that it will greatly increase their proficiency and desire to use it once they are practising nurses. As the experience with telehealth shows, uptake can be difficult and time-consuming when it occurs with existing practitioners, even where there are long-term cost and efficiency savings. (See "Overcoming Telehealth Challenges.")

Overcoming Telehealth Challenges

A Northern health care access program from Brandon University identified this conundrum: while new technologies could expand and improve locally provided services and increase the number of health care specialists while reducing transportation time and costs, "health care providers highlighted the need to have long term staff in place to take advantage of the technology, citing restrictions in staff training availability and scope of practice standards as barriers that prevent technologies such as Tele-health and local specialized equipment from being used to their full potential."[7]

Source: Brandon University.

One of the greatest expected impacts of the Northern nursing program is that the students will be fully immersed in the use and practice of remote presence technology, ensuring they are uniquely equipped to understand and use the technology in their clinical practice and to develop new uses in a rural/remote nursing context. The College is now considering how to provide on-campus students in Saskatoon, Regina, and Prince Albert with some of the exposure to and experience with remote presence technology, so its urban students are not disadvantaged vis-à-vis innovative uses of technology. An evaluation of graduates' use of various technologies will be conducted in future years.

Remote presence technology is already positively impacting remote communities. For example, the conveniently located ÎleXpert in the Île-à-la-Crosse health care facility has supported the extended use of the robot by Northern Medical Services. After class, the physicians have occasionally used the robot to connect Saskatoon-based specialists for consultations, allowing clients to be better cared for in their home community.

7 Brandon University, *Health Care Access of Northern Residents*.

Investing in the education of health professionals who stay and work in rural and remote areas provides a positive return on investment.

Challenges

To be sure, establishing a Northern or distributed nursing program has its challenges, including the expense of implementation, technological difficulties, accessing support from campus-based student services, faculty engagement, and perhaps most significantly, recruiting students with an adequate background in the natural sciences. From conversations with other distributed programs, these are not unique challenges; however, better practices would improve the feasibility of developing more distributed programs across the country.

The Cost

Establishing any new health science program requires a significant financial commitment. However, as discussed in Chapter 3, a cost-benefit analysis will almost always demonstrate that investing in the education of health professionals who stay and work in rural and remote areas provides a positive return on investment in the medium and long term.

The College of Nursing is working closely with the provincial government to determine a budget model that adequately resources both La Ronge and Île-à-la-Crosse. This allocation will represent the annual expenditures required to maintain a distributed campus regardless of the number of students involved—things such as classroom space, information technology, maintenance, lab space and equipment, communications, and on-site facilitator and tutorial support.

Overall, the College's marginal cost per student is presently estimated as 51 per cent higher than that of students enrolled at its established sites. The College also benefits from significant in-kind contributions from Northlands College, particularly in terms of student services.

Technological Infrastructure

One of the greatest concerns in developing a nursing program that is highly dependent on technology, from videoconferencing and online library access to Blackboard and remote presence, is the reliability of Internet connections to Northern locations. When it was originally decided to add a Northern program option to the College of Nursing, La Ronge and Île-à-la-Crosse were largely considered as two endpoints of a "Northern" site. However, the differences in network capabilities and facilities, not to mention of the communities themselves, quickly made it apparent that each site was unique. Although the College still sometimes speaks of "a" Northern program, in practice it has two sites with different issues and needs. The issue of connectivity made this clear.

La Ronge, as a community, benefits from an abundance of connectivity, due to its location, size, and role as a regional administrative centre. The SRNet network, Saskatchewan's research and education network, connects to Northlands College, and has a capacity of 100 megabits per second (Mbps) in La Ronge. However, Northlands College generally relies on the CommunityNet network, which connects its various Northern campuses, but has a capacity of only 3 Mbps (currently being upgraded to 10 Mbps). The College has worked with Northlands to increase access and use of SRNet, which nursing uses for videoconferencing. However, the remote presence robot is located away from the main La Ronge campus, in the adjacent community of Air Ronge's nursing skills lab. The Air Ronge site is not connected to SRNet or CommunityNet but relies on a standard residential connection. This is sufficient for the robot, which is optimized for a low bandwith speed of 300 to 700 kilobits per second. However, connectivity is complicated if the Internet is used simultaneously for other purposes, such as students' handheld devices.

Île-à-la-Crosse is generally oversubscribed as a community, and connectivity can be an issue. The integrated facility in which the nursing program is located has a CommunityNet connectivity of 8 Mbps for all of its health and education services. This is shared between the College, the hospital, and the high school. In general, videoconferencing

Ongoing acceptance by faculty has been critical to the implementation of the Northern nursing program.

and remote presence are feasible; however, at peak times such as at 3:00 p.m.—when high school students get out of class—usage spikes and College connectivity is often compromised, affecting class scheduling.

By comparison, Parkland College, the College of Nursing's newest distributed site in Yorkton (a town of 19,000 in southeast Saskatchewan), has a CommunityNet connection of 100 Mbps, currently being upgraded to 300 Mbps. Differences clearly exist between towns and cities in the Southern part of the province, even those located in rural areas and the Northern half. However, the provincial telecommunications Crown corporation Sasktel has made significant and ongoing efforts to upgrade connectivity in Northern communities and the situation is improving.

The College is also learning the nuances of being context-relevant beyond the curriculum. After an extended period without online access in winter 2013, and several subsequent technological interventions, it was discovered that the satellite dish in Île-à-la-Crosse needed to be swept clear of accumulated snow. While this was an unfamiliar experience at the College's main campuses, it was an important consideration in relation to the use of technology in rural and remote regions.

Faculty Support

Because universities are organized on a collegial model of governance, ongoing acceptance by faculty has been critical to the implementation of the Northern nursing program. In general, there has been good support, but some apprehension on two main issues. The first is the teaching method. Most faculty had limited experience in teaching via videoconference, and pedagogical adaptations had to be made to accommodate the style. This progressed relatively easily. More intimidating was teaching with the robot. As with most new technologies, faculty who taught using the robot developed understanding and comfort with it, and built awareness of necessary teaching style differences. But the time and practice required to implement a new teaching method should not be underestimated.

The greatest challenge to the nursing program's success has been recruiting students with the necessary high school science requirements.

A greater concern was the faculty time needed to teach smaller, off-site cohorts. The College of Nursing, like virtually every school of nursing across the country, has faced difficulty in filling tenure-track faculty positions due to the paucity of PhD-prepared nursing graduates in Canada (and the world). Expanding its teaching requires increasing its teachers, which is not always a simple matter of budget allocation. The College of Nursing leadership has been successful in allocating teaching responsibilities to cover exclusively Northern courses without affecting instruction on the main campuses. But there has been discussion on how much instruction and student services should look the same as central campuses and how much they should be different.

Preparation in Sciences

By far the greatest challenge to the success of the Northern nursing program has been the ability to recruit students with the necessary high school science requirements to enter the pre-professional year; and for those students to then successfully complete the science-heavy pre-professional year, which includes chemistry, biology, statistics, and nutrition. Although all of these courses pose problems (students generally fare better in the social sciences and humanities), chemistry appears to be the most problematic; or rather, if a student does well in chemistry, he or she is likely to be successful in the other courses.

Much has been written and tried regarding Aboriginal student success in high school science. In many Aboriginal and remote communities in Saskatchewan, however, chemistry and physics may not even be offered in high school, as only one science—generally biology—is needed to receive a high school diploma. The K–12 system in those areas also experiences challenges in hiring science teachers. High school students who wish to take chemistry or physics are often directed to online courses, which can be isolating and demanding. Of the 69 Northern applicants to nursing in 2011 who were not accepted into the pre-professional year, 55 per cent lacked a high school math

and/or chemistry requirement. Only a handful of applicants for the pre-professional year have come directly out of high school, with the majority applying as mature students and many upgrading.

It is worth noting that the chemistry requirement is a challenge for all nursing applicants—not just Northern and Aboriginal students—though generally, non-Aboriginal students have better access to high school sciences. However, it is most pronounced as a barrier to enter nursing in the Northern program. Other campuses generally have high numbers of applicants, given the population base, and filling seat capacity effectively is not an issue. However, in the 2014–15 academic year, the College had only one qualified application for the five seats provided in Île-à-la-Crosse, meaning the student had to be transferred to another site. The College of Nursing is working with Northlands College, the Department of Chemistry, and community stakeholders to try to improve the situation, through the University of Saskatchewan Science Ambassador program, alternative pedagogies for teaching the pre-professional chemistry, and outreach to community stakeholders to build awareness of the problem.

Other Northern Nursing Programs

It would be misleading to infer that the University of Saskatchewan is the first or the only university to have a nursing program delivered in the North; several others have been operating for years. They include:

- University of Northern British Columbia with collaborative delivery to Terrace (population 11,000) via Northwest Community College, and Quesnel (population 15,000) via College of New Caledonia;
- University College of the North, through a joint baccalaureate offered with the University of Manitoba, to its campuses in The Pas (population 10,500) and Thompson (population 13,000);
- Lakehead University, which offers a community-based program where students can take the majority of their course work in Dryden (population 8,000), Fort Frances (population 8,000), Kenora (population 15,000), or Sioux Lookout (population 5,500);

While rural/ Northern distributed programs cannot guarantee their graduates will practise in the region, they increase the odds that they will.

- Aurora College, in collaboration with the University of Victoria, to its Yellowknife campus;
- Nunavut Arctic College (NAC), in collaboration with Dalhousie University, at its Iqaluit campus.

Little research has been done in evaluating these programs and comparing student success and regional retention rates. However, it is clear from the territorial experience that teaching in the North does not guarantee that graduates will remain in the North.[8] A 2012 Canadian Institute for Health Information report on regulated nurses found that of the 240 graduates of the Aurora and NAC programs working as nurses in Canada, only 65 per cent were employed in the territories—the lowest proportion in Canada.[9]

The Globe and Mail further reported that 97 per cent of Nunavut's registered nurse workforce is from Southern Canada or abroad; and that after more than 13 years, Nunavut Arctic College's nursing program—the only one for which publicly available information was found—has graduated only 37 people.[10]

However, other research suggests this may be an exception. Larson, Playford, and Wheatland, looking at the Australian context, found that rural schools graduate a significantly higher proportion of rural-working graduates—about double—than their urban counterparts.[11] Indeed, Flinders University's Bachelor of Nursing Rural Clinical School in Australia found that the majority of its nursing students indicated that they would still be living in a rural area in five years' time,[12] while the Northern Ontario School of Medicine found that nearly two-thirds of

8 When evaluating statistical data on Northern-specific indicators, it is often necessary to default to the territorial experience as they are naturally broken into their Northern area through political jurisdiction. Northern-specific data for the provinces can be much more difficult to elicit.

9 Canadian Institute for Health Information, *Regulated Nurses 2012*.

10 Chase, "In Nunavut's Remote Corners."

11 Larson, Playford, and Wheatland, "Does Teaching an Entire Nursing Degree?"

12 Gum, "Studying Nursing in a Rural Setting."

its graduates chose to practise in Northern Ontario or other rural and remote regions.[13] It is also likely that as a critical mass of registered nurses live and work in particular geographic areas, turnover will fall and retention will rise, as the isolation and stress related to the demand currently placed on most Northern nurses decreases.

The conclusion may well be that while rural or Northern distributed programs cannot guarantee that their graduates will practise in the region, it certainly increases the odds that they will. A secondary but perhaps more important outcome from a public policy perspective, which Larson, Playford, and Wheatland identify, is that these programs make a university education far more accessible to a population that is underserved in that regard (regardless of future location intentions), providing significant individual benefits for their graduates.[14]

13 Strasser, Roger, and Neusy, "Context Counts."

14 Larson, Playford, and Wheatland, "Does Teaching an Entire Nursing Degree?"

CHAPTER 5

Conclusions

Chapter Summary

- Aboriginal and Northern nurses provide quality care to Aboriginal clients and communities, improve community prosperity by adding to the economic base, and improve the health and productivity of the local labour force through better and more accessible primary care.

- New technologies, such as remote presence robotics, are making the high-quality delivery of distributed nursing education much more practicable and feasible (from both a human resources and financial standpoint), and Aboriginal and Northern residents are more likely to get a nursing education and practise in rural, remote, and Northern communities if they have an opportunity to receive their education in those same communities.

- Aboriginal and Northern communities would benefit economically, culturally, and socially if governments invested in, and post-secondary institutions delivered, more distributed options for baccalaureate nursing education in particular and health science education in general.

This report has outlined the Saskatchewan Aboriginal health human resources challenge; provided compelling economic, social, and health rationale to make the issue a public policy priority; and described a successful new model for distributed nursing education that could be replicated to address the challenge. However, any distributed nursing program will be a reflection of existing institutional capacity, local pedagogical preferences, and the delivery methods of the relevant school of nursing. The larger lesson is that technology is making the delivery of nursing education more realistic in a rural/remote setting, and there is a demonstrated social benefit of doing so.

While registered nurses are the single-largest category of health professional in the North, an entire spectrum of health care providers is needed to provide quality health care. It is insufficient, therefore, to focus only on improving the rural and remote accessibility for university nursing education. To that end, many licensed practical nursing programs exist as community-based programs across the country. For Northern Saskatchewan, the College of Nursing Northern Program was only one of several new locally delivered programs recommended by the Northern Labour Market Health Training Sub-Committee in 2008, with support from AHHRI, to increase the number of Northerners with appropriate credentials for a career in the health sector. Others include a Mental Health and Addictions Certificate, currently with 13 students; a Health Directors program, resulting in First Nations Health Managers Association Certification, with 14 students; and a licensed practical nurse diploma program, accredited through SIAST, with 9 students (as of December 2013). The Saskatchewan Indian Institute of Technologies (SIIT) also offers a Health Care Aide program and Northlands College, in partnership with SIAST, offers a Continuing Care Assistant certificate. In

The challenge of distributed nursing education is a practical one.

combination with the Northern nursing program, Northern Saskatchewan is becoming much better positioned to fill local positions with local professionals and reduce turnover and attrition in the health sector. However, there are still communities in the region that are underserved, even by these distributed programs, such as in the northernmost Athabasca region.

Future Considerations

In 1996, RCAP recommended expanding community-based teacher education programs at universities that did not already have such programs in place.[1] This same imperative exists for nursing.

Nurses have the capacity not only to deliver and improve systems of primary care—a cost-effective way to frame health care that leads to improved wellness—but also to take a leadership role in community development. Aboriginal worldviews do not treat health as a purely biomedical issue, but as part of a continuum that includes social, spiritual, mental, and physical well-being. In the same vein, many Aboriginal nurses contribute to a holistic sense of well-being for their clients and communities that goes far beyond physical health. Indeed, it is difficult to imagine achieving long-term improvements in Aboriginal community well-being and prosperity without a foundational role for Aboriginal nurses.

In many ways, the challenge of distributed nursing education is a practical one; while difficult to address, it is not a "wicked" problem, as described by Ritter and Webber,[2] in the sense that the desired outcome is known and a solution is feasible. However, it must contend with the essentially wicked problem of Aboriginal student achievement in the K–12 system, particularly in regards to the sciences. The modern nursing profession is highly technical and science-based, and requires an advanced understanding of pharmaceuticals, anatomy, pathophysiology,

1 Royal Commission on Aboriginal Peoples, *Highlights From the Report,* 491.

2 Rittel and Webber, "Dilemmas in a General Theory of Planning."

Many of the barriers faced by Aboriginal students in accessing nursing education are also experienced by non-Aboriginal students.

and nutrition. Balance must be found, however, between the strengths, capabilities, and worldview of Aboriginal learners and communities, and the demands of the profession.

It is also imperative that Aboriginal boys and men see nursing, and other healing professions, as complementary to their ambitions and interests. In many ways, the nursing profession is a welcome counterbalance to the increasingly male-dominated resource economies in Aboriginal and Northern areas. However, it would be problematic if such an important and integral community profession was perceived as gendered, or unusual, for males. More Aboriginal male nurse role models are needed.

Finally, many conclusions reached in this report apply not only to Aboriginal communities, but also to Northern, rural, and remote ones, and in some respects to ethnic minority populations in Canada. Nursing is a profession in which client comfort and trust is essential to success, and the more reflective health care professionals are of the populations they serve, the closer they will come to achieving health equity. But in order to have equity in the health system, educational systems must act first. Many of the barriers faced by Aboriginal students in accessing nursing and other post-secondary education are also experienced by non-Aboriginal students who may be marginalized in different ways.

Julian Tudor Hart articulated the inverse care law in 1971, which states that the availability of good medical or social care tends to vary inversely with the need of the population served.[3] The same can be said for good education. Ultimately, policy-makers and educational institutions must continue to innovate and experiment with strategies to make nursing education more responsive and accessible to rural and remote Aboriginal communities.

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3 Hart, "The Inverse Care Law."

APPENDIX A

Bibliography

Anonson, June M., Joyce Desjarlais, Jackie Nixon, Lori Whiteman, and Alteta Bird. "Strategies to Support Recruitment and Retention of First Nations Youth in Baccalaureate Nursing Programs in Saskatchewan, Canada." *Journal of Transcultural Nursing* 19, no. 3 (July 2008): 274–83.

Assembly of First Nations. *Royal Commission on Aboriginal People at Ten Years: A Report Card.* 2006. www.turtleisland.org/resources/afnrcap2006.pdf (accessed January 15, 2015).

Brandon University. *Health Care Access of Northern Residents*. www.brandonu.ca/rdi/projects/health-care-access-of-northern-residents (accessed February 11, 2014).

Browne, Annette J. "Clinical Encounters Between Nurses and First Nations Women in a Western Canadian Hospital." *Social Science and Medicine* 64, no. 10 (May 2007): 2165–76.

Canadian Association of Schools of Nursing. *Nursing Education in Canada Statistics, 2007–08*. Ottawa: CASN, 2009.

—. *Registered Nurses Education in Canada Statistics 2010–11*. Ottawa: CASN, 2012.

—. Registered *Nurses Education in Canada Statistics 2011–12*.Ottawa: CASN, 2013. www.cna-aiic.ca/~/media/cna/page-content/pdf-en/nsfs_report_2010-2011_e.pdf (accessed January 17, 2014).

Canadian Council on Learning. *Post-Secondary Education in Canada: Who Is Missing Out?* Ottawa: Canadian Council on Learning, 2009. ccl-cca.ca/pdfs/LessonsInLearning/04_01_09-E.pdf (accessed January 13, 2014).

—. *The State of Aboriginal Learning in Canada: A Holistic Approach to Measuring Success*. Ottawa: Canadian Council on Learning, 2009.

Canadian Institute for Health Information. *Regulated Nurses, 2012—Summary Report*. Ottawa: CIHI, 2012. secure.cihi.ca/free_products/RegulatedNurses2012Summary_EN.pdf (accessed January 13, 2014).

Cantor, Joel C., Erika L. Miles, Laurence C. Baker, and Dianne C. Barker. "Physician Service to the Underserved: Implications for Affirmative Action in Medical Education." *Inquiry* 33, no. 2 (Summer 1996): 176–80.

Care, W. Dean. "The Learning Experiences of First Nations Nursing Students in a Distance Education Environment." In *Native Voices in Research*, eds. Jill Oakes, Rick Riewe, Kimberly Wilde, Alison Edmunds, and Alison Dubois, 83–94. Winnipeg: Aboriginal Issues Press, 2003.

Centre for Rural and Northern Health Research. Exploring the Socio-Economic Impact of the Northern Ontario School of Medicine. Thunder Bay and Sudbury: Lakehead and Laurentian Universities, 2009. www.nosm.ca/uploadedFiles/About_Us/Media_Room/Publications_and_Reports/FINAL_Report_(NOSM_Socioeconomic_Impact_Study-2009-11).pdf (accessed March 27, 2014).

Centre for the North. "Money Talks." *Here, the North.* Map series, Ottawa: The Conference Board of Canada, July 2010.

Chase, Steven. "In Nunavut's Remote Corners, Nurses Form the Backbone of Health Care." *The Globe and Mail*, January 23, 2014. www.theglobeandmail.com/news/national/the-north/in-nunavuts-remote-corners-nurses-form-the-backbone-of-health-care/article16480170 (accessed March 27, 2014).

DeLapp, Tina, Mary Ann Hautman, and Mary Sue Anderson. "Recruitment and Retention of Alaska Natives Into Nursing (RRANN)." *Journal of Nursing Education* 47, no. 7 (July 2008): 293–97.

Doeksen, Gerald A., Tom Johnson, and Chuck Willoughby. *Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts*. Mississippi State: Southern Rural Development Centre, No. 202, 1997.

Gibb, Heather H. "Distance Education and the Issue of Equity Online: Exploring the Perspectives of Rural Aboriginal Students." *The Australian Journal of Indigenous Education* 35(2006): 21–29.

Government of Nunavut. *Nunavut Nurses: Salaries and Bonuses*. www.nunavutnurses.ca/english/jobs/salary_bonuses.shtml (accessed March 21, 2014).

Government of Saskatchewan. *Saskatchewan Job Futures, NOC Index.* Quoted in Alex Wilson and Janet Sarson, "Literature Review on the Participation of Aboriginal Students in Postsecondary Health Education Programs in Saskatchewan." *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health* 6, no. 3 (Winter 2008): 103–27.

Gregory, David, and Janine Barsky. *Against the Odds: An Update on Aboriginal Nursing in Canada*. Ottawa: Canadian Association of Schools of Nursing, 2007. www.uleth.ca/dspace/bitstream/handle/10133/522/Against_the_Odds_2007_Update_April_16.pdf?sequence=4 (accessed March 20, 2014).

Gregory, David, and Jean Harrowing. "Indigenous People's Health and Health-Care Equity: Seven Years Later." *Canadian Journal of Nursing Research* 44, no. 2 (June 2012): 15–18.

Gregory, David, Em M. Pijl-Zieber, Jeannette Barsky, and Melissa Daniels. "Aboriginal Nursing Education in Canada: An Update." *The Canadian Nurse* 104, no. 4 (2008): 24–28.

Gregory, David, Mary Jane L. McCallum, Karen R. Grant, and Brenda Elias. "The Swampy Cree Tribal Council and Aboriginal Governance: A Case Study of Nursing Education in Northern Manitoba." *Canadian Journal of Nursing Research* 40, no. 2 (June 2008): 132–49.

Gum, L.F. "Studying Nursing in a Rural Setting: Are Students Adequately Supported and Prepared for Rural Practice? A Pilot Study." *Rural and Remote Health* 7, no. 1 (January–March 2007): 628–45.

Hart, Julian Tudor. "The Inverse Care Law." *The Lancet* 297, no. 7696 (February 1971): 405–12.

Howe, Eric. *Mishchet Aen Kishkayhtamihk Nawut Ki Wiichiihtonaan: Bridging the Aboriginal Education Gap in Saskatchewan.* Saskatoon: Gabriel Dumont Institute, 2011. www.nwtopportunities.com/sites/default/fiÎles/educationemployment.pdf (accessed March 21, 2014).

Katz, Janet R., Gail O'Neal, C. June Strickland, and Dawn Doutrich. "Retention of Native American Nurses Working in Their Communities." *Journal of Transcultural Nursing* 21, no. 4 (October 2010), 393–401.

Kilpatrick, Sue, Brian Cheers, Marisa Gilles, and Judy Taylor. "Boundary Crossers, Communities, and Health: Exploring the Role of Rural Health Professionals." *Health and Place* 15, no. 1 (March 2009): 284–90.

Labun, Evelyn. "The Red River College Model: Enhancing Success for Native Canadian and Other Nursing Students From Disenfranchised Groups." *Journal of Transcultural Nursing* 13, no. 4 (October 2002): 311–17.

Larson, Ann, Denese Playford, and Belynda Wheatland. "Does Teaching an Entire Nursing Degree Rurally Have More Workforce Impact Than Rural Placements?" *Contemporary Nurse* 35, no. 1 (April–May 2010): 68–76.

Laurence Thompson Strategic Consulting. *A Report on Northern Health Human Resources Data Collection.* Saskatoon: Laurence Thompson Strategic Consulting, 2008.

LaVeist, Thomas A., and Amani Nuru-Jeter. "Is Doctor–Patient Race Concordance Associated With Greater Satisfaction With Care?" *Journal of Health and Social Behavior* 43, no. 3 (September 2002): 296–306.

Lecompte, Emily. “Aboriginal Health Human Resources: Access to Health, Healing and Wellness.” *National Aboriginal Health Organization Conference*. Held at Ottawa, November 24–16, 2009. www.naho.ca/conference/presentations/B4-HHR-O-Lecompte%20AHHRI.pdf (accessed March 21, 2014).

—. “Aboriginal Human Health Resources: A Matter of Health.” *Journal of Aboriginal Health* 8, no. 2 (March 2012): 16–22.

McBride, Wendy, and David McGregory. “Aboriginal Health Human Resources Initiatives: Towards the Development of a Strategic Framework.” *Canadian Journal of Nursing Research* 37, no.4 (December 2005): 89–96.

McMullen, Bill, and Andreas Rohrback. *Distance Education in Remote Aboriginal Communities: Barriers, Learning Styles and Best Practices.* Prince George: College of New Caledonia Press, 2003. www.cnc.bc.ca/__shared/assets/Distance_Education_in_Remote_Aboriginal_Communities7675.pdf (accessed January 12, 2015).

Mendez, Ivar, Michael Jong, Debra Keays-White, and Gail Turner. “The Use of Remote Presence for Health Care delivery in a Northern Inuit Community: A Feasibility Study.” *International Journal of Circumpolar Health* 72, no. 21112 (August 2013). http://www.circumpolarhealthjournal.net/index.php/ijch/article/view/21112# (accessed January 15, 2015).

Michel, Herman. *Nortep-Norpac History and Background of the Organization Fact Sheet*. La Ronge: NORTEP/NORPAC, 2010.

Minore, Bruce, Margaret Boone, Helen Cromarty, Mary Ellen Hill, Mae Katt, Peggy Kinch, Shevaun Nadin, Earl Nowgesic, and Alice Sabourin. *Developing Supportive Workplace and Educational Environments for Aboriginal Nurses*. Thunder Bay: Lakehead University, 2013. www.cranhr.ca/pdf/Aboriginal_Nurses_Study_March_2013.pdf (accessed March 11, 2014).

Minore, Bruce, Margaret Boone, Mae Katt, Peggy Kinch, Stephen Birch, and Christopher Mushquash. "The Effects of Nursing Turnover on Continuity of Care in Isolated First Nations Communities." *Contemporary Journal of Nursing Research* 37, no. 1 (March 2005): 86–100.

Molanari, Deanna L., Ashvin Jaiswal, and Tamara Hollinger-Forrest. "Rural Nurses: Lifestyle Preferences and Education Perceptions." *Online Journal of Rural Nursing and Health Care* 11, no. 2 (Fall 2011): 16–26.

National Task Force on Recruitment and Retention Strategies. *Against the Odds: Aboriginal Nursing.* Ottawa: Health Canada, June 2002.

Newton, Patricia Lee. *Northeastern Saskatchewan Aboriginal Students' Perceptions of Their Distance Education Experiences and the Relationship to Their Aboriginal Culture*. Master's Thesis, Athabasca: Athabasca University, 2007. dtpr.lib.athabascau.ca/action/download.php?filename=MDE/NewtonPatThesis.pdf (accessed March 11, 2014).

Northern Labour Market Committee. *Northern Saskatchewan Regional Training Needs Assessment Report 2011–2012*. La Ronge: Ministry of Advanced Education, Employment and Immigration, 2012. career.kcdc.ca/pdf/2011-regional-training-needs.pdf (accessed March 12, 2014).

Nosbush, Linda, and Charles Bighead. "Adopting Technology in Remote and First Nations Health Services." *Building the Scholarship of Remote Presence Telementoring: Extending the Application in Health Education and Practice Invitational Forum*. Held at Saskatoon, March 3–5, 2014.

Nutting, Paul, Gregory Shorr, and Barton R. Burkhalter. "Assessing the Performance of Medical Care Systems: A Method and Its Application." *Medical Care* 19, no. 3 (March 1981): 281–96.

Patterson, Barbara J., Anne M. Krouse, and Linda Roy. "Student Outcomes of Distance Learning in Nursing Education: An Integrative Review." *Computers, Informatics, Nursing* 30, no. 9 (September 2012): 475–88.

Patterson Eastmure, Lori. “Honouring the Past, Touching the Future: Twenty-Two Years of Aboriginal Teacher Education in the Yukon.” *The Northern Review* 34 (Fall 2011): 35–60.

Porter, Jody. *First Nations Hurt by Nursing Shortage*. Thunder Bay: CBC News, April 20, 2012. www.cbc.ca/news/canada/thunder-bay/first-nations-hurt-by-nursing-shortage-1.1184843 (accessed March 11, 2014).

Puzan, Elayne. “The Unbearable Whiteness of Being (In Nursing).” *Nursing Inquiry* 10, no. 3 (September 2003):193–200.

Restoule, Jean-Paul, Angela Mashford-Pringle, Maya Chacaby, Christine Smillie, Candace Brunette, and Gail Russel. “Supporting Successful Transitions to Post-Secondary Education for Indigenous Students: Lessons From an Institutional Ethnography in Ontario, Canada.” *The International Indigenous Policy Journal* 4, no. 4 (November 2013): 1–10. ir.lib.uwo.ca/iipj/vol4/iss4/4 (accessed March 12, 2014).

Rittel, Horst and Melvin Webber. “Dilemmas in a General Theory of Planning.” *Policy Sciences* 4 (June 1973): 155–69.

Roberts, Rose. *Building Health Care Capacities in Aboriginal Communities: The Story of the Native Access Program to Nursing*. n.d. Author’s copy.

Royal Commission on Aboriginal Peoples. *Highlights From the Report of the Royal Commission on Aboriginal Peoples: Gathering Strength*. Canada: Ministry of Supply and Services Canada, 1996. www.aadnc-aandc.gc.ca/eng/1100100014597/1100100014637#chp5 (accessed March 12, 2014).

Russell, Cynthia K., David M., Gregory, W. Dean Care, and David Hultin. “Recognizing and Avoiding Intercultural and Miscommunication in Distance Education.” *Journal of Professional Nursing* 23, no. 6 (November–December, 2007): 351–61.

Saha, Somnath, Miriam Komaromy, Thomas D. Koepsell, and Andrew B. Bindman. "Patient–Physician Racial Concordance and the Perceived Quality and Use of Health Care." *Archives of Internal Medicine* 159, no. 9 (May 1999): 997–1004.

Sisco, Ashley, and Carole Stonebridge. *Toward Thriving Northern Communities.* Ottawa: The Conference Board of Canada, 2010. www.conferenceboard.ca/e-library/abstract.aspx?did=3946 (accessed March 12, 2014).

Smith, Dawn, Sara Tedford Gold, Seraphina McAlister, and Maureen Sullivan-Bentz. "Aboriginal Recruitment and Retention in Nursing Education: A Review of the Literature." *International Journal of Nursing Education Scholarship* 8, no. 1 (March 2011): 1–22.

Sowan, Azizeh K., and Louise S. Jenkins. "Designing, Delivering, and Evaluating a Distance Learning Nursing Course Responsive to Students' Needs." *International Journal of Medical Informatics* 82, no. 6 (June 2013): 553–64.

Spence, Nicholas, Jerry White, and Paul Maxim. "Modeling Educational Success of First Nations Students in Canada: Community Level Perspectives." *Canadian Ethnic Studies* 39, no. 1-2 (2007): 145–167.

Statistics Canada. *Canadian National Health Survey, 2011.* Ottawa: Statistics Canada, 2011.

—. Special Tabulation. *2011 Persons Aged 15 Years and Over in Private Households by Sex (3), Age Groups (8), Aboriginal Identity (8), Highest Certificate Diploma or Degree (11), Selected Major Field of Study. Based on CIP 2011 (33) and Selected Occupations—Occupation (Based on the NOC-S 2006)—Historical (28) for Canada, Provinces and Territories, 2011, National Household Survey*. Ottawa: Statistics Canada, 2014.

Stewart, N.J., C. D'Arcy, J.R. Pitblado, D.G. Morgan, D. Forbes, G. Remus, B. Smith, M.E. Andrews, J. Kosteniuk, J.C. Kulig, and others. "A Profile of Registered Nurses in Rural and Remote Canada." *Canadian Journal of Nursing Research* 37, no. 1 (March 2005): 122–45.

Stewart, N.J., J.C. Kulig, K. Penz, M.E Andrews, S. Houshmand, D.G. Morgan, M.L.P. MacLeod, J.R. Pitblado, and C. D'Arcy. *Aboriginal Registered Nurses in Rural & Remote Canada: Results From a National Survey.* Saskatoon: University of Saskatchewan, College of Nursing, 2006.

Strasser, Roger, and Andre-Jacques Neusy. "Context Counts: Training Health Workers in and for Rural and Remote Areas." *Bulletin of the World Health Organization* 88, no. 10 (October 2010): 777–82.

Sucher, J.F., S.R. Todd, S.L. Jones, T. Throckmorton, K.L. Turner, and F.A. Moore. "Robotic Telepresence: A Helpful Adjunct That Is Viewed Favorably by Critically Ill Surgical Patients." *American Journal of Surgery* 202, no. 6 (December 2011): 843–47.

Talier, Denise S., Annette J. Browne, and Joy Johnson. "The Influence of Geographical and Social Distance on Nursing Practice and Continuity of Care in a Remote First Nations Community." *The Canadian Journal of Nursing Research* 39, no. 3 (September 2007): 126–49.

University of Saskatchewan College of Nursing. *Delivering U of S Undergraduate Education and Remote Presence Telementoring.* March 3, 2014. www.youtube.com/watch?v=ryCU0PQuz6Q#t=56 (accessed April 20, 2014).

Usher, Kim, David Lindsay, and Wendy Mackay. "An Innovative Nurse Education Program in the Torres Strait Islands." *Nurse Education Today 25*, no. 6 (August 2005): 437–41.

Van Herek, Kimberley Ann, Dawn Smith, and Caroline Andrew. "Identity Matters: Aboriginal Mothers' Experiences of Accessing Health Care." *Contemporary Nurse* 37, no. 1 (December/January 2010–2011): 57–68.

Walker, Judith, Dawn DeWitt, Julie Pallant, and Christine Cunningham. "Rural Origins Plus Rural Clinical School Placement Is a Significant Predictor of Medical Students' Intentions to Practice Rurally." *Rural and Remote Health* 12, no. 1908 (January 2012): 1–9.

West, Roianne, Leeona West, Karen West, and Kim Usher. (2011). "*Tjirtamai*—'To Care For': A Nursing Education Model Designed to Increase the Number of Aboriginal Nurses in a Rural and Remote Queensland Community." *Contemporary Nurse* 37, no. 1 (December/January 2010–2011): 39–48.

Wilson, Alex, and Janet Sarson. "Literature Review on Participation of Aboriginal Students in Postsecondary Health Education Programs in Saskatchewan." *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health* 6, no. 3 (Winter 2008): 103–27.

Wilson, Denise, Caroline McKinney, and Mereana Rapata-Hanning. "Retention of Indigenous Nursing Students in New Zealand: A Cross-Sectional Survey." *Contemporary Nurse* 38, no. 1-2 (April–June 2011): 59–75.

World Health Organization. *Increasing Access to Health Workers in Remote and Rural Areas Through Improved Retention: Global Policy Recommendations.* Geneva: World Health Organization, 2010. www.carrn.com/files/WHO2010.pdf (accessed March 12, 2014).

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PUBLICATION: 6870
PRICE: Complimentary