

Nursing Scholarship In and For the Northern Canadian Context

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Abstract

The University of Northern British Columbia (UNBC) School of Nursing is located at 54° north latitude, the southern edge of what is generally considered the Circumpolar North. UNBC was established in 1990 as a university in the North for the North. The UNBC School of Nursing has embraced this intent in all of its work. This report describes the school's approach to the creation and translation of meaningful faculty science and scholarship for this northern Canadian context. The unique needs and factors that characterize rural, remote, and northern communities preclude a strictly academy-based approach to the generation of research questions to be addressed and research methodologies to address them. Partnerships with communities, health care service providers, and agencies are essential to effective knowledge translation. Faculty members in the School of Nursing rely on such partnerships both in the education of students and for research. Synergistic partnerships, combined with a multidisciplinary approach, foster research on significant questions for practice, and support organizational change that addresses the health and service needs of northern populations. The school's practice-driven, reality-based approach to nursing education incorporates this process of knowledge generation and translation in order to assist graduates in responding to the unique realities, health determinants, and needs of northern, rural, and remote Canadian populations. This report is part of a special collection from members of the University of the Arctic Thematic Network on Northern Nursing Education. The collection explores models of decentralized and distributed university-level nursing education across the Circumpolar North.

Keywords: Nursing scholarship; nursing education; rural and northern Canada; rural and northern nursing practice; integrated knowledge translation

The research and scholarship of nurse educators is essential not only to support evidence-based practice, but also for development and maintenance of high quality, university level, nursing education (Canadian Association of Schools of Nursing [CASN], 2013). Over the past seven years, there has been an enhanced focus on developing a scholarly environment in the School of Nursing at the University of Northern British Columbia (UNBC), and on increasing the amount and quality of scholarship in the areas of discovery, teaching, integration, and application (Boyer, 1990). Faculty members, and the graduate students they supervise, fulfill this scholarship requirement through processes that capitalize on relationships with practice partners and interdisciplinary teams, generating knowledge that is relevant both to the health of northern populations and to the northern, rural, and remote Canadian nursing workforce.

There is comparatively little health care research that focuses specifically on the health of populations, and health human resources, of northern British Columbia (BC) and Canada. It is in these areas that the scholarship produced in the UNBC School of Nursing excels. Nevertheless, the logistics of conducting research within northern, rural, and remote environments can be challenging. The unique needs and factors that characterize rural, remote, and northern communities preclude a strictly academy-based approach to the generation of problems and questions to be addressed, as well as the methodologies used to address them. The participation of health authorities, northern communities, and those in front-line practice is key to the success of meaningful research, knowledge generation, and its translation into practice and organizational change.

The following is a discussion of how those in the UNBC School of Nursing have approached the scholarship of discovery, teaching, integration, and application (Boyer, 1990; CASN, 2013) in the context of northern, rural, and remote Canada, with key examples to illustrate the processes undertaken. In addition, the importance of this scholarship for the integration of nursing education, research, and practice in a northern context will be examined.

Background

The University of Northern British Columbia was established in 1990 as a university in the North for the North. It has five campuses, the largest of which is in Prince George, British Columbia (BC), and their locations range from 56.25° to 52.98° north latitude. It is situated within BC's Northern

Health Authority (NHA), which covers the northern two-thirds of BC. The School of Nursing offers graduate nursing education by distance, based out of Prince George, and its baccalaureate nursing degree at three UNBC campuses—Prince George, Quesnel, and Terrace. Its rural nursing specialty certificate program is the only one offered in Canada. UNBC is the province’s northern-most university and a member institution of the University of the Arctic, and it supports research originating in many academic disciplines relevant to human and environmental health in Canada and the Circumpolar North. The UNBC School of Nursing focuses its programs on the preparation of nurses at the graduate and undergraduate levels for practice in northern, rural, remote, and First Nations communities.

Collaborative Partnerships: The University and Health Care

In 2005, the Northern Health Authority and UNBC began to build a multi-level, inter-organizational partnership aimed at improving access, quality, and sustainability of health care, through the production of relevant evidence and its translation, as well as the education of practitioners for northern communities. The partnership emerged in part from the Rural and Northern Practice and its Development (RNP) Investigative Team based in the School of Nursing at UNBC, and the Closing the Gap capacity-building initiative at NHA, both funded by the Michael Smith Foundation for Health Research. This partnership has continued with the intent to go beyond reliance on relationships between individual researchers and decision makers, to create structures and processes that foster an ongoing organizational relationship that contributes purposefully to knowledge creation and translation. The partnership is being developed in two ways: creating a joint framework that encourages relevant and responsive research, research capacity development, and research knowledge exchange and translation; and building existing collaborative evaluation and research projects into a coordinated program, linking them into Northern Health’s strategic directions of *Quality of Work Life* and *Quality of Services*, and UNBC’s strategic directions in *Rural Health Research*. The RNP also plays an important role in supporting and facilitating northern relevant faculty research and scholarship through mentorship by senior faculty, assistance with research grant management, and the hiring and housing of research assistants. The partnership between UNBC and NHA, enhanced by our joint commitment to community engagement, provides a unique environment for the creation of knowledge and its translation into practice.

The RNP is closely linked with another partnership initiative, the UNBC Health Research Institute (HRI) that a nursing faculty member co-leads and in which several nursing faculty members actively participate. The HRI engages in joint initiatives for knowledge creation, synthesis, and exchange between UNBC, the NHA, the Provincial Health Services Authority, and other key community and professional stakeholders (HRI, 2016a). Members of the HRI conduct research in one or more of five broad focus areas: biomedical, clinical, social and environmental determinants of health, Aboriginal (Indigenous) health, and health services and policy (HRI, 2016b). School of Nursing faculty members are engaged in research of discovery, application, and integration (Boyer, 1990) in at least three of these focus areas and have been recipients of seed grant research funding through the institute.

Population Health in Northern Canada and British Columbia

The School's research and scholarship is shaped by the needs of people living in rural and northern communities. The health and lifespans of rural and northern populations in Canada are generally poorer than those of more southerly, metropolitan populations (Canadian Institute for Health Information [CIHI], 2006; DesMeules et al., 2012; Ostry, 2009, 2012; Pampalon, Hamel, & Gamache, 2010). This is due in part to living with poorer determinants of health, including education, socio-economic status, housing, food insecurity, and decreased access to services, when compared with southern Canadian populations (DesMeules et al., 2012; CIHI, 2006; Kashaninia, 2011, 2012; Statistics Canada, 2015). In addition, the per capita numbers of Indigenous Canadians is higher in the rural and remote North (CIHI, 2006; Statistics Canada, 2015). Canadian Indigenous peoples experience higher rates of diabetes, heart disease, hypertension, cancer, and arthritis, as well as suicide, motor vehicle accidents, and poisoning, than the non-Indigenous Canadian population (CIHI, 2006; Ostry, 2009). According to one study (Ostry, 2009), the more remote (and northerly) a community is, the higher the rates of mortality. These statistics are particularly driven by high mortality among youth and people under the age of 45, the majority of whom are Indigenous.

The health of people in the NHA reflects the population health characteristics for Canada discussed above. In BC, the NHA reported the highest prevalence rates, as well as the highest increase in rates between 2003 and 2008, for hypertension, cardiovascular disease, asthma, and chronic obstructive pulmonary disease (Provincial Health Services Authority [PHSA], 2010). The NHA has the highest percentage of current

smokers and self-reported overweight or obese adults, a high prevalence of osteo- and rheumatoid arthritis, and among the poorest self-perceived overall health and mental health when compared to other BC health authorities (PHSA, 2010). Additionally, the NHA has the highest rates in BC of teen pregnancy; and, among those aged 15 to 24, it has the highest rate of deaths due to motor vehicle accidents (Kishaninia, 2012). Suicide is among the top three causes of injury death for all ages in the NHA (British Columbia Vital Statistics, 2013).

Health Human Resources in Northern Canada and Northern British Columbia

Health human resources for rural and northern communities is a prime focus of the UNBC School of Nursing's faculty research. Overall, recruitment and retention of health professionals in Canada's North are problematic. The distribution of general practice physicians is markedly more scattered and lacking in rural and northern Canada than in the south. There is very little access to specialist services, which generally are clustered in large urban centres sometimes hundreds of kilometres from those who require them (CIHI, 2005). Nursing staff shortages are a chronic challenge, as is a stable cadre of managerial leadership (Hanlon, MacLeod, & Bentham, 2007; MacLeod, John, Lindsey, & Manahan, 2009; Place, Harlos, & MacLeod, 2009). Added to staffing challenges, delivery of health services is costly as northern populations are dispersed across wide geographic distances, and travel, including emergency transport to southern medical facilities, may be hampered by weather (Place et al., 2009).

Rural and northern nursing practice is characterized as multi-specialist and demands a high degree of flexibility and innovation (MacLeod & Place, 2015; Place et al., 2009). The variety of situations and human health needs across the lifespan that are confronted by rural, remote, and northern nurses requires the ability to call to mind, and act on, knowledge and expertise that may be seldom used. Such nurses must be prepared for whatever comes through the doors of the facility and often work at the margins of their scopes of practice with a high degree of autonomy (MacLeod & Zimmer, 2005). The need for continuing education and access to evidence-based resources is great where on-site, interdisciplinary backup and needed equipment may be limited (Lindsey, 2007; MacKinnon, 2011; MacLeod & Place, 2015). Despite the need, there continues to be maldistribution of the nursing workforce in rural, remote, and northern Canada. In 2015, in British Columbia, 7.2% of regulated nurses worked in rural and remote areas of the province, where 11.2% of

the population lived, while in the three northern territories, the proportion was 38.3% of nurses to 51.8% of the population (CIHI, 2016).

This brief profile of health in northern Canada and BC's NHA demonstrates the need for both strategic health research and the deployment of health human resources in order to address unique rural, remote, and northern contexts and the health disparities between northern and southern populations. It is these issues and challenges that much of the UNBC School of Nursing faculty scholarship seeks to address.

Northern-Relevant Nursing Research

Research undertaken by faculty of the UNBC School of Nursing addresses three broad areas of inquiry: the health of northern populations; the nature of nursing practice in rural, remote, and northern Canadian settings; and nursing education for rural, remote, and northern nursing practice. Examples in each of these areas of inquiry are presented with a focus on some of the more developed programs of research.

Health of Northern Populations

Nursing research on the health of northern populations has been diverse in focus and has involved the collaboration of nursing faculty with those from other disciplines such as health sciences, social work, physiotherapy, medicine, and toxicology. Some examples of the varied topics of research include the effects of environmental contaminants on food safety and security in Nunavut (Fillion et al., 2014); the health of precariously employed northern women 45 years of age and older (Hemingway et al., 2012); and northern women's physiological and lived-experience recovery from hysterectomy (Zimmer & Lochhead, 2014). In addition, nursing faculty members of the HRI have been partnering with the university's Community Development Institute and the Natural Resources and Environmental Studies Institute on the effects of climate change, and the cumulative effects of resource extraction including the effects on human health (Gillingham, Halseth, Johnson, & Parkes, 2016).

Highlight: Rural and Northern Cardiac Care

One nursing faculty member, Davina Banner, has directed her focus of inquiry on cardiac disease, a leading cause of morbidity and mortality in the NHA (PHSA, 2010) and among Indigenous peoples across Canada (CIHI, 2006). Banner describes her program of research as interdisciplinary, with three overlapping foci centred around cardiac care: 1) the identification,

management, and support of patients with complex cardiac and chronic conditions in rural and northern communities; 2) the development of innovative professional practice and health service delivery in rural and northern communities; and 3) research and professional practice capacity building for nurses. In particular, this program of research has studied management and support of patients with cardiovascular conditions in the rural and northern context through exploring patient and provider experiences and how these can inform the development of health services and systems. Facets of this research have included inquiry into patient and provider experiences of specific cardiac conditions, such as atrial fibrillation, along with other research exploring the experiences of patients receiving innovative, centrally delivered care (e.g., older patients undergoing the transcatheter aortic valve implantation procedure), and virtually-delivered health care services (Banner et al., 2015; Clark et al., 2016; Lear et al., 2015).

This program of research has been facilitated by a commitment to meaningful collaborations and partnerships with key stakeholders and knowledge users. This has fostered development of research that is relevant and responsive to the needs of those in rural and northern communities. In particular, the NHA has been a major participant in this research program to date, and this faculty member has worked directly with administrations, nurses, and physicians within the health authority to identify practice challenges and to co-create research approaches to address these (Banner, MacLeod, & Johnston, 2010). Through this process, team members work to establish trusting relationships, develop mutual goals, and clearly articulate expectations and needs. Furthermore, collaborative practices are delineated to ensure that the practicalities of the partnerships are addressed, including arranging for meetings to allow for regular group exchange and feedback.

While there are many benefits to a collaborative approach to research, there are also challenges. First, it can be challenging to establish ongoing engagement. A large component of this is the competing demands placed on group members and this can mean that the nature of research partnerships changes over time. Second, research studies that are very focused on regional practices can give rise to sensitive information, particularly where communities are small and care providers and clients well known to one another. Team members must be sensitively engaged in the communication and messaging that takes place within research studies. Third, resources are needed to support the development and maintenance of collaborative teams. This can include research funding

to support a research coordinator to ensure the smooth running of team activities and travel supports for members to attend meetings. While there can be challenges, collaborative teams can foster the development of responsive research that can improve patient and health service outcomes (Banner, Jenke, & King-Shier, 2015).

Nature of Nursing Practice in Rural, Remote, and Northern Canadian Settings
Martha MacLeod, one of our most senior faculty members, and the founder of the RNP, has developed a program of study on the nature of rural and remote nursing practice in Canada, the findings from which have been taken up in policy and practice across Canada and internationally. The first national study, funded primarily by the Canada Health Services Research Foundation in 2001, was the only inquiry at the time to describe Canadian rural, remote, and northern nursing (Kulig et al., 2006; MacLeod et al., 2004; MacLeod, Kulig, Stewart, Pitblado, & Knock, 2004; MacLeod et al., 2008; Stewart et al., 2005; Zibrik, MacLeod, Zimmer, 2010). In 2014, this faculty member was funded by the Canadian Institutes of Health Research (CIHR) to conduct a second study to explore the nature of rural and remote nursing practice ten years on. This study has been completed and preliminary findings are being reported (see: <http://www.unbc.ca/rural-nursing/en/publications>). The second study was conducted with a broadened scope of participants that included registered psychiatric nurses and licensed practical nurses as well as RNs and nurse practitioners. A sample of 3,822 nurses in rural, remote, and northern settings across Canada was surveyed using questions to elicit quantitative and qualitative data. A number of faculty members from the School of Nursing are involved in this research as co-investigators, but the research team as a whole is comprised of nurse scholars, and members from other disciplines, from universities across Canada. This research has particular significance for employers and policy makers because it focuses on multiple issues related to rural and northern health human resources. Areas of focus include nurse preparedness for practice in rural and remote contexts; nurses' engagement in primary health care; recruitment and retention of nurses; as well as providing a current, comprehensive description of the roles and functions of nurses practising in various rural, remote, and northern work environments and with differing scopes of practice.

All studies included in this faculty member's program of research have been conducted to have the maximum impact for stakeholders through the use of integrated knowledge translation (iKT). This is an approach

that incorporates knowledge translation throughout the research process. That is, knowledge users are equal partners with researchers, contributing insights, topics, and questions for inquiry; thus the resulting findings have maximum use for knowledge users (CIHR, 2015). Extensive consultation was conducted previous to both national studies, and advisory groups made up of end-users involved throughout the research process. In addition to numerous publications and graduate student theses, results of the first study were disseminated to large and small audiences through presentations to health authorities, professional nursing colleges and associations, and at national and international nursing conferences. The same pattern of dissemination is underway for the second study. End-of-study dissemination to knowledge users is a key principle of iKT (CIHR, 2015).

Nursing Education for Practice in Rural, Remote, and Northern Settings

The research on the nature of nursing practice in rural and remote Canada has had important implications for the development of nursing education that prepares graduates to work in rural and northern contexts. As described above, nurses who work in small facilities and nursing stations face challenges and a need for “knowledge at their fingertips” (MacLeod, 1998) in a way that nurses in larger, better-resourced contexts do not. UNBC School of Nursing faculty have dedicated a great deal of scholarship to researching, describing, and implementing educational programs to fulfill the school’s commitment to prepare nurses for practice within northern Canada (MacLeod & Place, 2015; Place, MacLeod, John, Adamack, & Lindsey, 2012; MacLeod et al., 2014; Zimmer et al., 2014). Based on input from managers and practitioners in the NHA and other health authorities in BC where nurses are deployed in small, remote communities, the school has developed, and offers, specialty post-basic rural/remote education, a four-year baccalaureate program that prepares graduates to work in these settings, and a nurse practitioner master’s degree program that prepares nurses to work in primary care roles where there are few supporting health professionals.

One of the most significant accomplishments of the school has been the development and implementation of the Rural Nursing Certificate Program (RNCP) through an action research approach. This program, designed for post-graduate RNs, was prompted by the first national study on nurses in rural and remote Canada (MacLeod et al., 2004), and arose out of the themes that were generated in focus groups with 236 rural/remote RNs from across BC (MacLeod, Lindsey, Ulrich, Fulton, & John, 2008). The

findings from this research resulted in the shaping of a curriculum that is “practice-driven and reality-based,” responsive to the nuances and needs of practice trends while maintaining university-level academic standards (MacLeod, et al., 2008, p. 299). The program is comprised of seven courses, guided by ongoing input from nursing practice leaders and based on the needs of rural and remote populations. Courses undergo review and revision on a regular basis with participation from expert rural/remote practitioners. Responsiveness of the school has been demonstrated in curriculum revision early on, which expanded the focus from multi-specialist acute care to true multi-specialist practice—this includes chronic disease management and palliative care in the community, and the knowledge and awareness needed to live and work in small communities as a culturally competent practitioner. In order to enrich the rural, remote, and First Nations focus of the four-year baccalaureate program, third and fourth year undergraduate students have been integrated into some of the RNCP courses. Learning with and from RNs who are currently working in rural and northern contexts, and practicum experiences alongside them, contributes to the clinical imagination of undergraduate students who will, themselves, be employed in these settings upon graduation.

Integrating Nursing Research, Practice, and Education

The research endeavours of UNBC School of Nursing faculty members have been integrated in influential ways into northern nursing practice and education. This integration occurs at a number of levels including direct knowledge translation with those in policy development and practice, as described in examples above. In nursing education, research and the conduct of research is integrated into course content and resources, student capacity-building for research, and the fostering of student scholarship relevant to rural, remote, and northern nursing practice.

As the NHA moves to locating health care services in primary care homes, delivered by integrated health care teams, health care planners draw on a faculty member’s scoping review of RNs’ transition to roles in primary health care (Banner et al., 2010). This, in turn, influences how nursing students are introduced to the primary health care setting and learn to practice as members of integrated primary care teams.

Faculty members’ research publications and expertise are integrated into the content of relevant nursing courses. For example, the rural health chapter of the community health textbook by Stamler and Yiu is co-authored by two UNBC nursing faculty members and colleagues drawing on the national rural and remote nursing practice research (Kulig et al.,

2016). This text is regularly used in community health practice courses at the undergraduate level. Each year, undergraduate students learn how to search for and synthesize research relevant to a problem in nursing practice identified by RNs they meet in the clinical setting. The synthesized literature is presented as a conference-quality research poster. Students display and discuss the posters in health facilities for practising health care personnel, helping in a small way to contribute to evidence-based practice tailored to the northern context. Faculty research expertise serves to guide students in this activity, assisting them to exercise the skills needed in conducting a literature review and the principles of knowledge translation.

Graduate students, as a part of their education, are regularly engaged in the scholarship of discovery, integration, and application. In some cases, this is in conjunction with faculty programs of research and in others it is through first steps in developing their own programs of research. Using selected data from the first rural and remote nursing study, one student focused on the professionalism of acute care nurses working in small facilities in small isolated communities (Zibrik, MacLeod, & Zimmer, 2010). Another graduate student example of discovery research explored outcomes of anemia management in northern hemodialysis patients (Saunders, MacLeod, Salyers, MacMillan, & Ogborn, 2013). Linking with renal specialists, this research provided the opportunity to analyze the provincial renal database with a northern lens. As a final requirement for their MScN degree, nurse practitioner students write a publishable capstone paper including an integrated literature review relevant to a problem in primary care, with recommendations for nurse practitioner practice, education, and future research. This exercise in the scholarship of integration and application is, once again, guided by faculty research expertise, and makes a significant contribution to the practice of all primary care providers. By means of their work with nursing faculty and practice partners, graduate students and post-doctoral fellows learn how to advance knowledge, education, and practice through engaged scholarship (Bowen, 2015; Bowen & Graham, 2013).

Some students at both the graduate and undergraduate levels are provided with opportunities to work as research assistants. In this capacity they are trained in interviewing, research design, literature searching and synthesis, research team development, and integrated knowledge translation. Many have the opportunity to add their names to the dissemination of findings in the form of publications and poster presentations (e.g., Kandola, Banner, O'Keefe-McCarthy, & Jassal, 2014).

Posters and oral presentations are regularly presented at the Northern Research Days annual conference put on by the Innovation and Development Commons, another joint initiative between the NHA and UNBC for the integration of education, research, and practice.

Conclusion

The scholarship of faculty members at the UNBC School of Nursing has specialized in, and capitalized on, the university's vantage point in northern British Columbia. This scholarship has been tremendously facilitated by the strong, collaborative relationship between the university, the School of Nursing, and the NHA. The synergy of this relationship has fostered a research culture that is integrally connected to northern nursing practice and the health of northern populations within the social, multi-cultural, and environmental milieu of Canada's North above 50 degrees.. The commitment of the school to iKT and a practice-driven approach to education and knowledge generation has served to further support relevant and responsive programs of research that optimize the health and patient outcomes for rural and northern communities both in northern British Columbia and Canada as a whole.

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