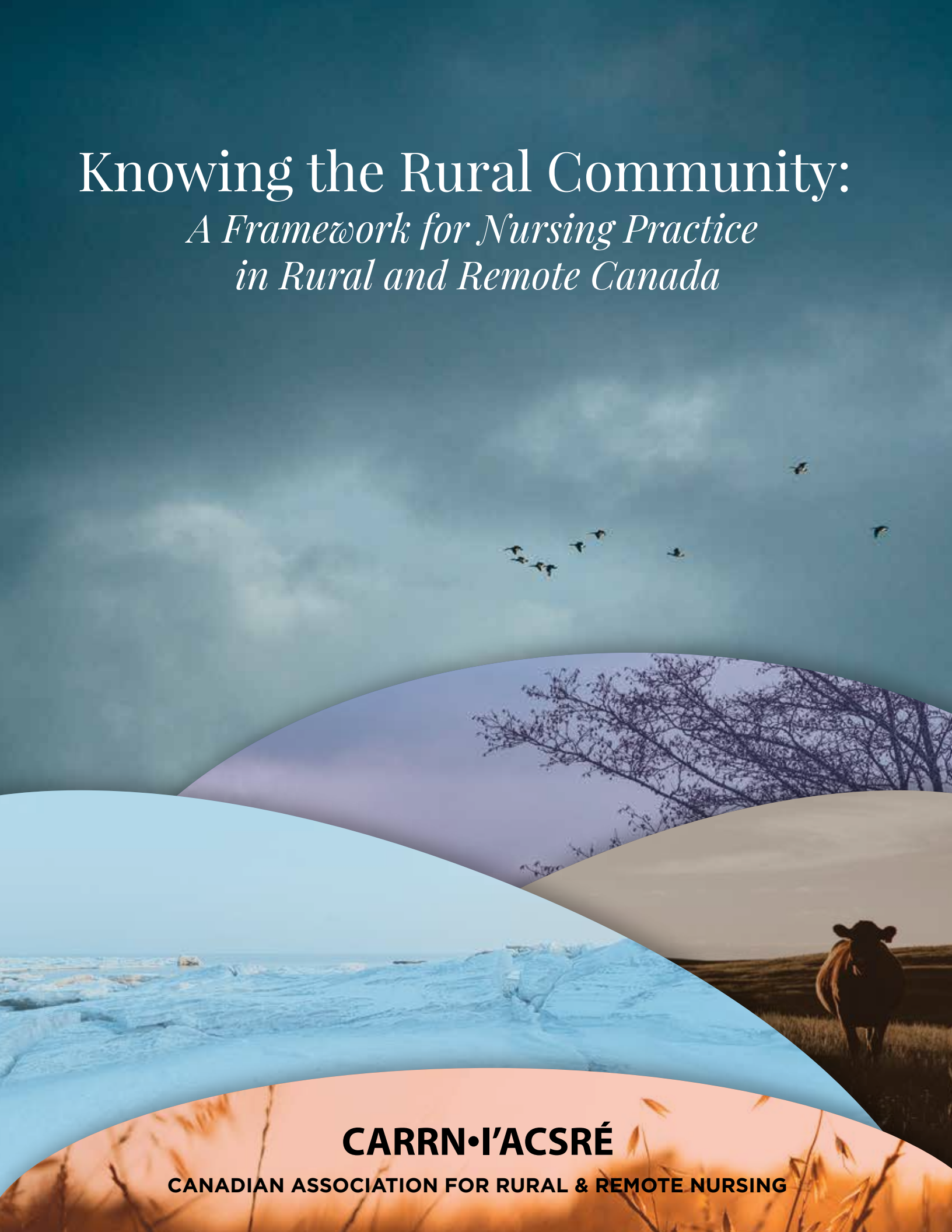
Knowing the Rural Community:

A Framework for Nursing Practice in Rural and Remote Canada



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Introduction & Background

In spring 2020, the Canadian Association for Rural and Remote Nursing (CARRN) leadership spearheaded the development of a framework document to guide the professional practice of all categories of nurses working in rural and remote Canada. This document describes the background and rationale for *Knowing the Rural Community: A Framework for Nursing Practice in Rural and Remote Canada*, its development, and a discussion of the application of the *Framework* to practice, policy and research. This *Framework* was envisioned to unify efforts to improve the health of Canadians living in rural and remote locales, and compliment the work undertaken by the authors of the *Rural Road Map for Action*.[1]

The proportion of those Canadians in 2016 residing outside of a census metropolitan area (CMA, population centres of at least 100,000 people) or a census agglomeration (CA, population cores of at least 10,000 people) and defined by Statistics Canada as rural was 16.8%.[2] These 5.9 million rural and remotely-living residents represent many diverse cultures, including those of Indigenous peoples[3] and immigrants.[4] Across Canada, the economies supporting rural and remote communities include farming, ranching, tourism, mining, oil production, fisheries, forestry and health care. In 2018, the number of nurses, including registered nurses (RNs), licensed practical nurses (LPNs, known as registered practical nurses in Ontario), registered psychiatric nurses (RPNs) and nurse practitioners (NPs), working in rural and remote regions was 43,527, or 10.8% of all Canadian nurses (Appendix A).[5] Unfortunately, more recent data from 2019 on workforce geography is missing for Manitoba RNs and NPs.[5]

The first coordinated Canadian rural nursing research effort was undertaken between 2001-2004 and was entitled the *Nature of Nursing Practice in Rural and Remote Canada* (RRNI).[6] The research included documentary analyses, qualitative inquiry and a national survey of rural and remote nurses. A second national survey (RRNII) expanded upon the initial study. The RRNII study began in 2012 with pilot studies, followed by the national survey data collection in 2014; the original three co-principal investigators led a team of nurse researchers and an advisory team from across Canada.[7] From this extensive body of work, which included all regulated nurse groups, characteristics, distribution and the nature of rural and remote nursing practice are now available nationally and at provincial levels.[8]

Additional research endeavours over the past twenty years have added knowledge about the recruitment and retention of nurses to rural and remote areas,[9-11] examined the health beliefs of rural residents,[12-13] and in general, broadened understanding of rural health in Canada. Findings from these studies about rural health and rural nursing are beginning to be reflected in policy and educational initia-

tives.[14] Increasingly, the importance of rural and remote nursing practice is being recognized in policy documents, including how nurses contribute to the health of rural and remote communities.[15-16]

Rural health frameworks have been advanced by provincial governments in Canada[17-18] and in other nations,[19-20] although they typically focus on service delivery or quality improvement.[21] In 2006, a federal population-level framework for Canadian rural health was developed,[22] yet it does not reflect the interface that occurs between rural or remote communities and health professionals in the promotion of health. The two recent Canadian documents that did inform the *Framework* development were: a review of frameworks on the determinants of health;[23] and, the Canadian Institute for Health Information (CIHI) Rural Health Systems Model.[24] The goal of the *Framework* development was to synthesize existing rural nursing evidence to guide actions by nurses, community members, other health practitioners, policy-makers, regulators and educators to promote the health of Canadians who live in rural and remote areas.

Definitions of Rural and Remote

To fully understand rural and remote nursing practice, definitions of *rural* and *remote* require contemplation. Research studies that focus on rural and remote health issues in Canada, routinely use the *Rural and Small Town Canada* definition—communities that are outside the commuting zone or urban centres with populations of 10,000 or more[25] to identify participants and groups of nurses who work in such settings. No common definition of remote exists. While north of the 60th latitude has been used, it is problematic, as this geographic demarcation defining 'remote' does not include the northern reaches of most provinces, where communities are often inaccessible by road.[26]

The national multi-methods study, RRNI,[6] included a random sample of rural RNs and all RNs working in outpost settings and northern territories in Canada. From a subsample of 1285 RNs, an analysis was completed to identify RNs' definition of rurality.[27] Four themes emerged from the data that described rural and remote:

- community characteristics such as limited amenities including banks and stores, small population size, local economy based upon agriculture, fishing, ranching. Rural communities were described as semi-isolated but remote areas were described as isolated or Arctic/northern;
- geographical location including accessibility described in time or mileage with rural communities being 20 minutes to 5 hours away and remote being 45 minutes to 14 hours away from health care facilities;
- health human and technical resources including more limited availability of health resources and limited technology and equipment; and,
- nursing practice for both rural and remote settings included nurses being first-contact providers with expanded responsibilities and autonomy.

Despite the lack of a conclusive definition for rural and remote, it is crucial to recognize the importance of rural and remote nursing practice in conditions that include isolation from health care specialists; limited communication connectivity, resources and facilities; coping and planning for unpredictable weather and travel conditions; high burden of mental health and substance abuse disorders; and, working with an extended scope of practice, but with a limited number of regulated nurses.

Development of a *Framework for Nursing Practice in Rural and Remote Canada*

The *Framework* development was completed in several steps. A set of guiding principles was established at the beginning of the project. An exploration of recent Canadian documents on the determinants of health followed. Next, a focused literature review of international literature to identify existing rural nursing models or frameworks was undertaken. From the accumulated evidence, key elements were identified, with the eventual formulation of the *Framework* diagram and document. Finally, critical appraisal of the document by nurses with expertise in rural and remote nursing transpired and revisions were made. The process of framework development is described in more detail below.

1. Guiding Principles

Nursing Practice

Principles germane to nursing practice that guided the *Framework* development included:

- holistic, patient-centred care;
- community empowerment;
- philosophy of primary health care;
- cooperation and collaboration;
- the influence of the determinants of health; and,
- the professional practice of all regulated nurses in Canada.

Patient-centred care requires that the clinician actively involve the patient and family in health service planning and decision-making.[28-29] Respectful communication that fosters partnership with the patient/family has shown benefit with better health outcomes and patient satisfaction,[29] and is key to providing culturally safe care.[30] By extension, cooperative interpersonal practice relationships and mutual support fosters engagement and empowerment at the community-level.[31] The philosophy underpinning primary health care (PHC) implies more than just the first point of contact with the health care system. Social justice, health equity, active public participation and an emphasis on prevention and promotion, as well as care and cure, are inherent within the PHC philosophy.[32] The interpersonal skills of the professional nurse are core to the practice of nursing.[33] Cooperation and collaboration between nurses, other health care professionals and the community are essential to achieve satisfactory outcomes for patients, families and communities.[34-36] Finally, the social determinants of health strongly influence the health outcomes of populations, in particular, vulnerable populations. Given the health disparities that exist in rural and remote Canada, an expanded discussion about the determinants of health follows.

Rural-Urban Disparities

- Mortality from injury and poisoning substantially higher in rural Canada[a]
- Higher proportions of rural and remote residents reported fair or poor health status[a]
- Greater proportions of rural Canadians reported being overweight compared to urban counterparts[a]
- Men living in the most remote parts of Canada are at increased risk of suicide[a]
- Level of education is a major correlate to the variation in earnings between rural and urban workers[b]
- Income earnings of rural people are about 25% lower than those in large metropolitan areas[b]
- Of the 1.67 million Indigenous peoples in Canada in 2016, there are 339,595 who live on-reserve[c]
- The labour participation rate for Indigenous peoples in Canada is 61%, whereas for those on-reserve the participation rate is 48%[c]
- In 2016, 24% of Indigenous people living on-reserve had attained either a college or university education compared to 35% of all Indigenous people and 54% of all Canadians[c]

a Canadian Institute for Health Information. (2006). *How healthy are rural Canadians?* Ottawa: CIHI.

b Beckstead, D., et al. (2010). *Cities and growth: Earning levels across urban and rural areas: The role of human capital.* Ottawa: Statistics Canada. https://www150.statcan.gc.ca/n1/pub/11-622-m/11-622-m2010020-eng.pdf

c Statistics Canada. (2020). 2016 Census Aboriginal community portraits. Ottawa: Statistics Canada. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/abpopprof/infogrph/select.cfm?Lang=E

Determinants of Health in Relation to the Framework

Health is not only determined by access to health care and biological influences, but by the non-medical, structural factors affecting health, such as income, housing and education, known as social determinants of health.[23] The Canadian Nurses Association (CNA) identified in their 2013 position statement that all nurses have "a professional and ethical responsibility to promote health equity" and "must include the social determinants of health in their assessments and interventions with individuals, families and communities."[37, p.1]

In the document, nurses are expected to act by providing sensitive and empowering care, as well as to advocate for health equity.

Over the past fifty years, our awareness has grown regarding the extent to which biological, social and environmental factors influence health outcomes. Nearly 50% of all outcomes can be ascribed to economic and social factors, whereas health care services account for 25% of outcomes, 15% is attributed to genetics/biology and the natural and built environment influences 10% of health outcomes.[38] In 2019, the Government of Canada[39] outlined the following elements as the main determinants of health (DOH):

- income and social status;
- social supports and coping skills;
- education and literacy;
- employment and working conditions;
- physical environments;
- healthy behaviours;
- childhood experiences;
- biology and genetic endowment;
- access to health services;
- gender;
- culture; and,
- race/racism.

Numerous frameworks have been developed to describe and explain the determinants of health. One notable Canadian framework is the *First Nations Holistic Policy and Planning Model* developed in 2013 by the Assembly of First Nations (AFN).[23] Health determinants in the model include:

- urban/rural;
- racism and discrimination;
- on/off reserve;
- environmental stewardship;
- social services and supports;
- lands and resources;
- lifelong learning;
- economic development;
- housing;
- employment;
- legal and political equity;
- historical conditions and colonialism;
- community readiness;
- language, heritage and strong cultural identity; and,
- self-determination and non-dominance.

The identification of urban/rural, off/on reserve and lands and resources highlight the importance of 'place' to Indigenous health. The model provides a useful approach for those working in both Indigenous and non-Indigenous communities. The health determinants presented in the *Framework* diagram were adapted from both of the aforementioned lists.

The health impact of the natural environment in rural, remote and northern areas of Canada is undoubtedly larger than in urban centres. In a recent review article, Reid[40] argues for a theoretical framework of rural determinants of health that acknowledges the unalterable effects of geography and topography in accessing health care and their influence on rural health outcomes. In his diagrammatic representation of rural determinants of health, geographic and environmental determinants are depicted as immutable factors that result in an unequal playing field that influence rural health events. Whereas geography cannot be altered, health systems can, and is the most changeable factor in Reid's model. From our perspective, Reid's argument for geography as a rural determinant of health resonates with our experience and is supported by the rural and remote nursing literature. Overall, it underscores the additional challenges for nurses who practice in rural and remote settings.

2. Literature Review Methods

Search strategy

To identify relevant evidence to construct a framework, electronic databases utilizing OVID and EBSCO platforms were searched. These included ProQuest, the Cumulative Index of Nursing and Allied Health Literature (CINAHL) and Medline. Key search words using appropriate BOOLEAN operators included: (Nurs* or Nursing) AND (practice or care or clinical or social determinants) AND (rural or remote or outpost or frontier or outback) AND (framework or model or theory or approach).

Inclusion/exclusion criteria

The international literature from 1996 to present was searched and restricted to English-only articles. Midwifery references were excluded, as were dissertations and the grey literature. Articles were included if they: a) provided a framework for rural or remote nursing; or, b) discussed models of rural or remote health.

Article review process

Titles were first reviewed by both consultants for relevancy, yielding a total of 188 titles. Further abstract review was completed as a joint effort by both consultants. A total of 61 articles were then read in full for relevancy, with 22 publications retained for framework development (Figure 1).

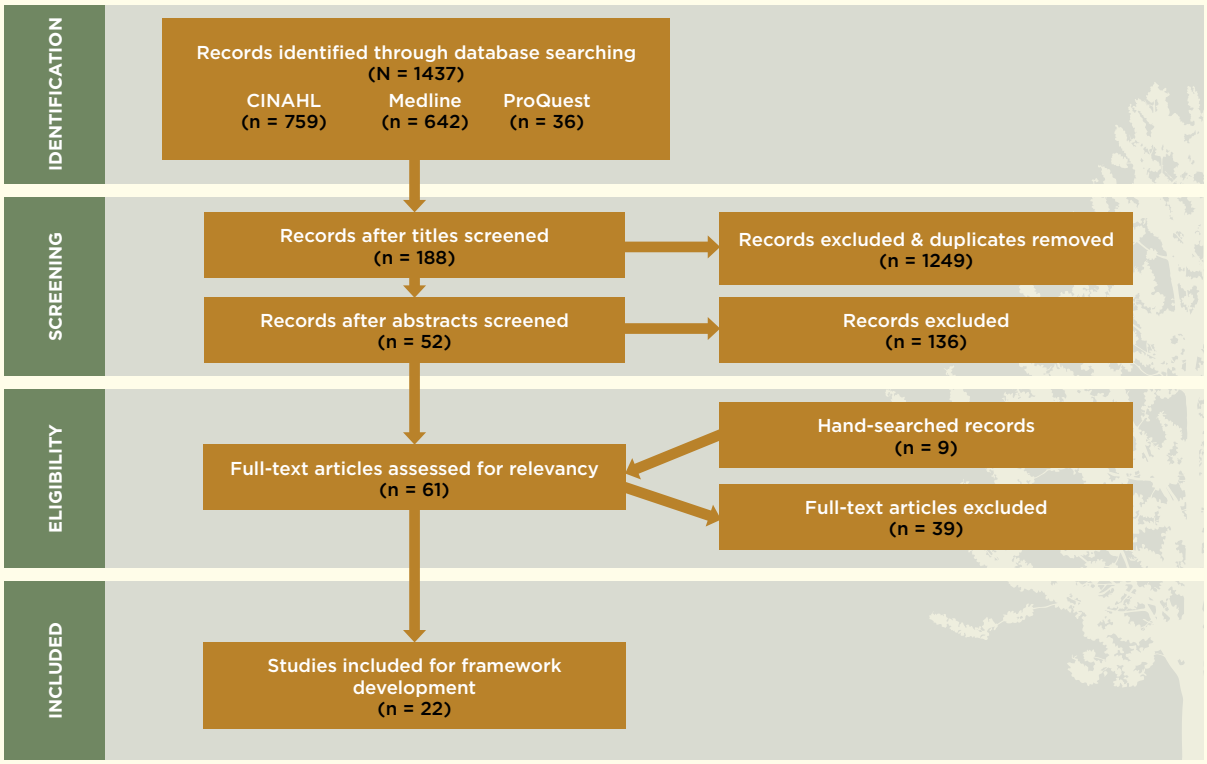

Figure 1. PRISMA diagram of literature search, framework development

3. Identifying Elements and Categories

Literature Research Findings

Long and Weinert, nurse researchers at Montana State University, were the first authors in North America to posit a rural nursing theory in 1989.[41] From nearly a decade of ethnographic and survey research on rural health and health care in Montana, the researchers undertook retroductive theory development to identify key concepts and relational statements regarding rural health in Montana. The key concepts were: a) work and health beliefs; b) isolation and distance; c) self-reliance; d) lack of anonymity; e) outsider/insider; and, f) old-timer/newcomer.[41] Three relational statements were proposed:

- "…rural dwellers define health primarily as the ability to work, to be productive, to do usual tasks" (p. 10);
- "…rural dwellers are self-reliant, and resist accepting help or services from those seen as 'outsiders'…" (p. 10); and,
- "…health care providers in rural areas must deal with a lack of anonymity and much greater role diffusion…" (p. 11).

Over the years, the theory has been revised and the only relational statement that remains unchanged is the third, regarding lack of anonymity.[42] In a 2012 review of the state of the science on rural nursing, Long and Weinerts' theory was the most predominant theoretical framework cited in studies.[43] However, the review authors lament that there has been minimal testing of theories, with the majority of investigations focused on disease management in rural populations. Two key concepts originally identified by Long and Weinert – isolation and distance, and lack of anonymity, identified in the Canadian literature as 'being visible'[44] – emerged in our analysis, described below.

Attention to the determinants of health (DOH), including geography, was paramount in our construction of a rural and remote nursing practice framework. Of the 22 publications

retained for the conceptualization of the framework, four articles specifically applied the determinants of health to rural populations;[40, 45-47] three publications focused on the concepts for the development of rural nursing theory;[41-42, 48] another three presented ecologic perspectives that highlighted the role of environment and place;[49-51] and, two addressed frameworks for rural nursing leadership and implementation.[52-53] In six publications, frameworks were identified for ethical decision-making in rural acute care,[54] multidisciplinary rural professional development,[55] rural and remote health,[20] rural community case management,[56] primary health care logic model,[57] and, rural health program planning.[58] The remaining four articles consisted of discussion papers regarding rural framework development,[59-60] an integrative review,[43] and a research article that is specific to outpost nursing in Canada.[61] Publication dates ranged from 1989 to 2020 and originated from five countries: United States (n=9), Australia (n=6), Canada (n=5), New Zealand (n=1) and South Africa (n=1).

Identification of key elements and categories

We identified key framework elements from each article identified in the original search and tallied the aggregate results (see Appendix B). The components of rural health and rural and remote nursing that emerged from our analysis were:

- care (n=5)
- community, and importance of participatory engagement (n=11);
- collaborative communication and teamwork (n=3);
- geography and environment (n=8);
- integrated health systems (n=5);
- knowing the rural context (n=8);
- lack of anonymity (e.g., being visible) (n=4);
- leadership (n=2);
- determinants of health, and socioeconomic resources (n=8); and,
- social justice, and diversity (n=2).

As the original search strategy proved to be too narrow to fully capture the nature of rural and remote nursing practice in Canada, additional publications were retrieved, including references from a companion CARRN document, *Rural and Remote Nursing Practice in Canada. An Updated Discussion Document.*[62] The following attributes from the recent literature characterize Canadian rural and remote nursing practice in the community context:

- being visible and known in the community;[44]
- understanding rural and northern contexts;[52, 54]
- being part of the community;[13, 63] and,
- coping with geography, weather and travel.[64]

Within the workplace, the nurse's role is described as being "complex, generalist practice"[13] characterized by:

- multiple skills, working to full scope;[13]
- being versatile;[44]
- maintaining confidentiality;[44,54]
- being prepared;[44]
- expanded practice;[61, 65]
- culturally safe care;[30, 66] and,
- the blurring of professional boundaries.[54]

In formulating the *Framework for Nursing Practice in Rural and Remote Canada*, we categorized the identified components and attributes into five main categories: a) larger society/social determinants of health; b) role of place/the rural or remote context; c) rural and remote peoples/communities; d) rural and remote nursing; and, e) health outcomes. Given the inter-connectedness of the larger society with place and local environments, an ecologic approach illustrating the macro-, meso- and micro-levels of interaction was chosen. As shown in Figure 2, each level intersects with each other.

Knowing Rural & Remote Communities

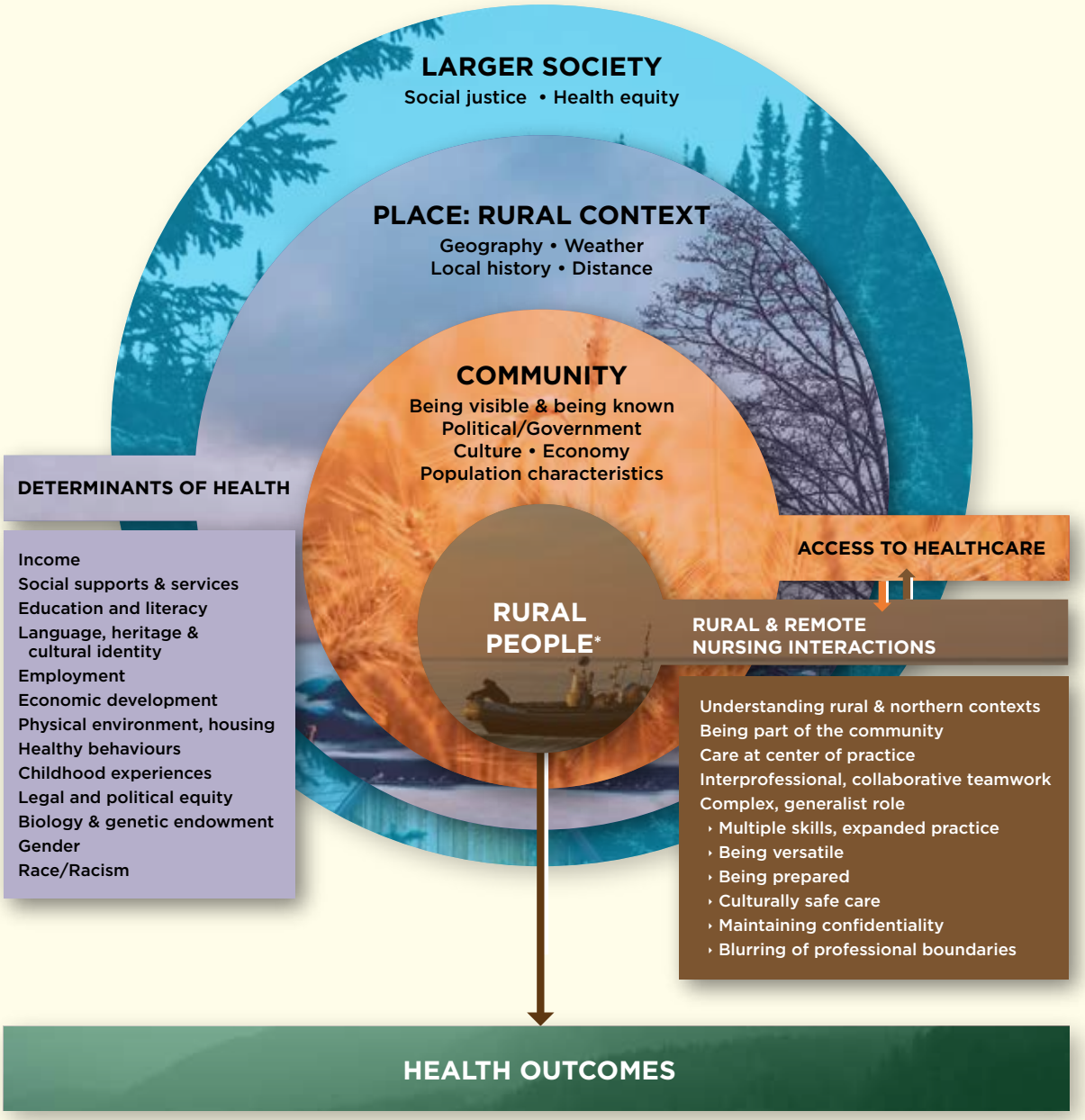

Figure 2. "Knowing Rural & Remote Communities": A Framework for Nursing Practice in Rural & Remote Canada

4. Descriptive Explanation of the Final *Framework* Diagram

Societal values and beliefs influence how education, income, employment, physical environments and other determinants of health are structured and distributed within rural communities. However, each rural or remote community is also profoundly shaped by its geography, local history, weather patterns and distance from urban centres. Within this rural context, communities have unique population characteristics, culture, politics, economies, health care facilities and services that can have an effect on the health of their residents. In small rural and remote communities, one is not unknown, and being present and being known[44] affects social interactions and relationships between residents, requiring health care professionals to navigate the blurring of personal and professional boundaries.[54, 67]

The community and its residents are central to the care provided by rural and remote nurses. To be effective, it is imperative that nurses in these settings understand and are responsive to the rural, remote or northern context and are mindful of multiple perspectives. Nursing care, whether it be in a hospital, clinic or community setting, must incorporate knowledge of the local milieu[52-53] and the broader determinants of care affecting the rural or remote community and its residents. Respect for local wisdom, along with cultural understanding,[68] fosters a reciprocal relationship of shared decision-making with residents and the larger community as a whole.

Clinical facilities vary depending on the size of the community, but in all settings, collaborative intra- and interprofessional teamwork[13,51,55,69] amongst professionals is critical for the smooth operating and safe functioning of health services.[70] Within the uniqueness of the rural or remote environment, nurses rely on strong health assessment skills as they care for patients of all ages and situations. This has been termed an "expert generalist" role that requires flexibility, creativity, autonomy and often working to full scope of practice or well beyond.[13,60,71] Clinical decisions invariably are affected by the distance to specialists, as well as options for transport based on local geography and weather. Knight and colleagues[49] view rural and remote nurses as "ambiguity masters", based on the complex external forces that shape their practice.

As previously mentioned, access and use of healthcare services contributes an estimated 25% of health outcomes in a population. For rural and remote communities, even with the delivery of exceptional healthcare services, efforts to improve health outcomes may be hampered if root causes or "upstream"[72] societal issues are not addressed. It is therefore incumbent upon nurses working in these areas to advocate for economic stability, safe and accessible housing, clean water, nutritious food and robust educational systems. Advocacy is tailored to the community context towards the goal of achieving health equity.[73] The *Framework* reflects the influence of societal factors on the local community and the interface with nursing that can improve the health of residents living in rural and remote Canada.

5. Critique and Modifications of the *Framework* Document and Diagram

The CARRN Executive and individuals with research expertise in rural and remote nursing comprised the Committee responsible for the overall framework initiative and reviewed the document drafts. In addition, an external advisory group was developed through invitations to nursing professional bodies to review the document. All efforts were made to ensure there was representation of all four regulated nursing groups. In mid-August 2020, the framework document, two visualizations of the framework diagram drafted by the consultants, and a scoring sheet were distributed to

all reviewers (n=30) for critique. The response rate was 93% (n=28) with representation from Newfoundland & Labrador, New Brunswick, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon. Sixteen reviewers live in rural or remote communities, and the reviewers have the following professional backgrounds: NP (n=14), RN (n=11), LPN (n=1) and RPN (n=2). Workplace backgrounds of the reviewers include primary care, long-term care, population and public health, family health teams, nursing regulation and academic settings. Among the reviewers, the average length of time in nursing is 26.1 years, and for time in rural or remote nursing practice, the mean is 15.9 years.

Ratings from a Likert scale of 1 to 5 (strongly disagree to strongly agree) were overall favorable for thoroughness (4.4); recent; appropriate literature (4.4); captures reality of rural and remote (4.2); critical elements included (4.3); and, ease of explaining framework to others (4.1). A slight majority of reviewers (57%) preferred the framework diagram of overlapping circles compared to an alternate, more linear drawing that was presented to them. Excellent comments from all the reviewers as to how to improve the draft diagram were tabulated for our graphic artist in late September. Frequent consultation between the graphic artist and the consultants resulted in Figure 1 of this document that captured input from the reviewers.

Reviewers suggested modification to the document text, including additional sources, organization of content and the identification of omissions. The total sum of their input strengthened the document. The final document subsequently was sent to the CARRN Executive for final approval.

Implications for Clinical Practice, Rural Nursing Education, Research & Policy

The following three exemplars illustrate how the *Knowing the Rural Community: A Framework for Nursing Practice in Rural and Remote Canada* document can be utilized to inform rural and remote nursing practice.

Two exemplars: Addressing local effects of climate change

Exemplar One:

A 45-year-old woman who lives on farm in rural, central Saskatchewan comes to the local health clinic in the early Fall for an appointment with her NP who grew up in a neighbouring community and has been her primary caregiver for five years. The woman expresses that she is not feeling well. As the NP gathers information about the presenting illness and history before completing the physical examination, the woman relates that her family has been under tremendous financial strain, given the wheat crop failure this year from severe drought and grasshoppers. She also mentions that they could not afford to take out crop insurance this year. Temperatures soared between 35 and 40 degrees Celsius for weeks on end during the growing season, and over the summer, some experts warned that this season was a harbinger of climate change.

Using the rural and remote nursing practice *Framework*, the NP appreciates the larger forces that are affecting the client:

a) the local economy is heavily reliant upon crop production and global markets;
b) the rural landscape is altered by climate change, which in turn, is creating havoc with the local economy;
c) the financial strain caused by the crop failure is directly affecting the woman; and,
d) concern and worry over her family's ability to survive the financial hardship is a major factor in the woman's clinical presentation in clinic today.

The physical examination did not uncover any abnormalities. As the encounter continues, the NP listens and observes closely to the woman's story,[74] asks about the woman's access to informal social supports and how the rest of the family is coping before developing a care plan with the woman that accentuates her strengths and resilience. Given this encounter, the NP is alerted that additional individuals within the community may be at-risk during the financial downturn, and begins to screen other patients for financial insecurity by asking if they are having any trouble making ends meet. The CNA has clearly outlined the role for nurses to increase community capacity and to promote behavioural change to improve adaptation to climate change.[75]

Along with the LPN, RN and one physician at the clinic, the NP organizes a meeting one

evening with local churches, social support services and the mayor in the community to identify avenues to promote community-wide initiatives to build upon the resilience of the farming community and to support the mental health of people.[76] Although the clinic already had hand-outs in the lobby regarding social services contact information and the dangers of heat waves and how to avoid heat stroke,[75,77] a decision is made to provide information about the mitigation of climate change on a prominent bulletin board in the clinic lobby. Information for the bulletin board is gathered by the NP after consulting with local agricultural experts about mitigation strategies, such as alternative crops, as well as financial relief sources. Aware that many farmers perceive the drought as a normal cycle of farming, the NP tailors the mitigation messages to persuade in a way that reflects the local reality. This example illustrates several components of the model: the importance of rural place (weather and geography), rural community (basis for economy, community relationships, use of local knowledge), and social determinants of health (i.e., social supports, income, physical environment) being experienced by rural people against a backdrop of social justice in terms of addressing climate change.

Exemplar Two:

In a northern region of Canada, an Inuit man in a remote community arrives to the nursing station in early spring with "belly" complaints. The nurse thoroughly examines him, but identifies no symptoms or signs that warrant concern or red-flags. During the encounter, the nurse learns that the man has recently been 'up-river' at a hunting cabin. The nurse, who has been in the community for several years, then questions him about the water supply at the cabin. He reports that there is a small stream that runs by the cabin, and that with the increased temperatures on the land this spring, the stream was running high, with several caved-in embankments. The nurse reconsiders her assessment, knowing that run-off and changes to water levels can affect water quality[78] and decides to get bloodwork and asks the client to collect a stool sample for ova and parasites. She is also aware that community members who venture to outlying cabins are dependent upon local streams for their water supply.

The importance in this scenario of the nurse knowing the remote context is clear. By further exploring the man's whereabouts and circumstances, key data emerges that affects the clinical decision-making process by the nurse. In addition, from living in the community, the nurse directly sees the effects that climate change is having on the remote Inuit community, creating uncertainty and in some cases, limiting the ability of Inuit to forage off the land, hunt and fish.[76] Food insecurity is a concern.[77] The nurse undertakes an informal needs assessment to more accurately determine the number of community members who rely on stream water when going 'up-river.' Speaking with the community elders, the nurse asks them about traditional water gathering when changes occur in watercourses. Following this exchange, the elders and the nurse ask to speak at the next town council about the issue; from their combined efforts, traditional ways are incorporated into the local public awareness campaign to prevent potential zoonotic infections in the community and when people are out on the land. This example illustrates how the model is used to provide care. By seeking their counsel and listening to the elders, the nurse demonstrates respect and care.[79] In addition, the nurse considers the DOH such as the physical environment, culture, and healthy behaviours along with the remote context (geography, distance) to understand the people within the clinic catchment area. A combination of these factors affects the remote nursing interactions that influence health outcomes in this Inuit community.

Exemplar: Expanded practice in a remote setting

Exemplar Three:

On a late December afternoon, an 18-year-old youth walks into a two-nurse, community clinic in a remote, fly-in community complaining of "stomach pain." One of the nurses, who has worked in the community for three years, takes a history, and notes that the youth, who she knows as typically very gregarious, is very quiet, appears anxious and has a hard time describing the pain. Other presenting symptoms and signs include lack of appetite and a low-grade fever. The youth denies urinary symptoms or back pain, and reports that his last bowel movement was normal. Upon examination of the abdomen, the nurse observes that the abdomen is flat, without pulsation, bowel sounds active, and no increased discomfort with percussion or palpation of the abdomen. No pain is elicited with release of abdominal pressure, nor with the iliopsoas muscle test. A urine sample for dipstick shows a normal pH, no WBCs, proteinuria or hematuria. At this point, the nurse confers with the other nurse, who has just finished seeing another client for a prenatal visit. The two agree that despite the relatively normal findings, they suspect something is 'wrong.' Both go back into the exam room together and repeat the abdominal exam, and then explain to the teen that they are concerned, and to fully assess what might be wrong, a rectal exam is needed.[80] *The rectal exam elicits a strong pain response, confirming the nurses' working diagnosis of possible pelvic appendicitis.*[80] *The on-call physician is contacted via telehealth video link by the first nurse, who reports the findings, and using the video link, facilitates an exchange between the physician and teen. Both nurses are cognizant of the dwindling daylight and they advocate for a medivac, reminding the physician that the runway has no lights. At this point the physician agrees that the youth needs to be seen in the referral hospital, and that a medivac will be organized. The nurses speak with the teen about the presumed diagnosis, the possibility of surgery and ask if there are family or friends to call. In preparation for the travel, the nurses draw blood to take to the hospital, start an intravenous line, insert a nasogastric tube to decompress the stomach prior to the flight, and complete documentation to accompany the teen. Family members arrive at the clinic and are briefed by the nurses regarding the possible diagnosis and planned medivac. The medivac team from the hospital is met by the maintenance worker at the airport and they are taken to the clinic, whereby the team examines the youth before transport by SUV to the awaiting plane. Following arrival at the receiving hospital, the surgeon confirms the presumptive diagnosis with a CT scan*[81] *and the teen has emergency surgery in late evening.*

The remote context, namely the influence of 'place' with respect to geography, weather and distance, strongly shapes the approach and decision-making of the two nurses in the scenario, who must not only competently assess the ill youth, but also consider community factors in any potential medivac. The arrival of the youth to the clinic highlights the need of nurses to be prepared for the unexpected[44] in a clinic environment where nurses care for people of all ages. In this scenario, the complex, generalist practice by the nurse, also referred to as "expert generalist" practice,[82] begins with the thorough assessment of the youth that demonstrates expanded practice.[83] Suspicion that something was 'wrong' underscores sound decision-making based on observation, knowledge and experience[63] that led to the nurses' conclusion that a rectal examination was needed. Collaboration and teamwork are evident when the nurses confer with each other and the on-call physician via a telehealth video-link. The use of technology is increasingly being used in some provinces

and territories;[84] telehealth video links can increase and improve access to care in rural and remote communities by providing virtual access to physicians and specialists. Using and maintaining the video link is one additional skill that must be mastered by nurses working in small clinics.[85] The broad scope of practice, as well as working to full scope or beyond,[71] are exemplified by the nurses knowing what is needed for a successful medivac, as well as how to properly emotionally prepare the youth for transport. At the center of this scenario is the focus of the nurses upon the appropriate care for the youth and his family.

Implications for nursing education

Across Canada, the social determinants of health are covered in nursing curricula; yet, dedicated course work in rural and remote nursing is limited in Canada. From our review of university and college websites in February 2020, only two institutions have certificate programs focused on rural (University of Northern British Columbia) or remote (Aurora College in partnership with University of Victoria) nursing, both in northern educational settings. Threaded curriculum that focuses on northern health can be found in three additional programs, all located in communities considered to be "north" (University College of the North in partnership with University of Manitoba; Lakehead University; and, Nunavut Arctic College in partnership with Dalhousie University). The three nursing programs that offer stand-alone coursework with rural content are located in Alberta and Saskatchewan (University of Lethbridge; Saskatchewan Polytechnic/ University of Regina; and, University of Saskatchewan). (See Appendix C for program websites). It is quite probable that rural content is taught within courses at other institutions, but not described on websites. The rural and remote nursing practice *Framework* dovetails well with existing curriculum on the social determinants of health and the importance of intra- and interprofessional collaboration, and could seamlessly be incorporated in programs with dedicated rural nursing content. The *Framework* can provide scaffolding for future students to learn and to practice concepts key to rural and remote nursing practice, alongside their rural and remote nursing preceptors.

Implications for research & policy

To advance the scientific knowledge base in rural and remote nursing, debate and testing of theory, models and frameworks are needed.[43] *Knowing the Rural Community: A Framework for Nursing Practice in Rural and Remote Canada* provides an initial fundamental model to identify and evaluate the links between factors such as the determinants of health, the unique characteristics of rural or remote communities, rural and remote nursing practice and health outcomes at the individual and community level, and student learning in these settings. Furthermore, its acceptability to people living in rural and remote communities, including Indigenous peoples, should be gauged. Finally, we anticipate that the *Framework's* overall utility will undergo scrutiny and change, as new evidence related to rural health issues and evaluations of the *Framework* in its current form emerge.

Rural and remote nurses must be included in policy development given their insight, understanding and knowledge of the rural or remote context within which they live and practice.[86] Nursing students would benefit from course content that informs them of rural and remote research, policy development, implementation and science. At the local level, it is also key that rural and remote nurses, as well as their employers, understand the importance of their participation and membership on committees to address community issues as a form of policy influence and involvement. This document can be utilized in discussions with health ministers, health sectors and other decision-makers and organizations such as CARRN to highlight the significance of rural and remote

nursing practice on health outcomes. In particular, nursing regulators, educators, employers, associations and unions can view the document as a starting point for collaboration to address nursing issues that ultimately affect rural and remote-living residents, such as education, recruitment and retention. The *Framework* document has the potential to serve as a foundation for policy recommendations at the local, provincial and federal levels by nurse managers and leaders, executive directors, regulators and health care organizations.

Limitations

Due to resource and time limitations, the *Framework* was developed without broad consultation and feedback from Indigenous or Francophone nurses and communities, nor from community members in rural and remote Canada.

Dissemination and The Way Forward

The document will be distributed to the CNA, licensing bodies for all groups of regulated nurses, the Canadian Association of Schools of Nursing (CASN), the Canadian Federation of Nurses Unions (CFNU), health ministries, the rural division of Infrastructure Canada, and health care delivery systems across Canada, including First Nations and Inuit Health. CARRN will disseminate this document through their website and will send it directly to their membership. Organizations such as the Canadian Rural Revitalization Foundation (http://crrf.ca/) will also be provided a copy of this document for wide distribution to municipalities. Availability to the international community will occur through the CARRN website.

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Appendix A

Rural nursing workforce, by province and regulated status, 2018

PROVINCE		Urban count	Urban %	Rural count	Rural %	Total*
Newfoundland & Labrador	NP	102	62.2	62	37.8	168
	RN	4,320	75.3	1,417	24.7	5,869
	LPN	1,358	59.1	938	40.9	2,376
Prince Edward Island	NP	17	60.7	11	39.3	29
	RN	1,110	71.3	446	28.7	1,666
	LPN	407	66.1	209	33.9	725
Nova Scotia	NP	119	68.0	56	32.0	182
	RN	6,838	76.1	2,151	23.9	9,442
	LPN	2,606	64.4	1,438	35.6	4,252
New Brunswick	NP	73	57.9	53	42.1	130
	RN	6,183	80.2	1,530	19.8	8,037
	LPN	2,281	70.9	936	29.1	3,394
Quebec	NP	411	82.4	88	17.6	509
	RN	62,461	89.8	7,057	10.2	71,479
	LPN	22,360	95.5	1,056	4.5	27,604
Ontario	NP	2,674	81.9	358	18.1	3,206
	RN	90,620	94.9	5,194	5.1	102,396
	LPN	41,546	91.8	3,721	8.2	49,968
Manitoba	NP	134	77.0	40	23.0	193
	RN	9,280	79.9	2,336	20.1	13,172
	LPN	1,999	61.9	1,230	38.1	3,373
	RPN	696	70.2	296	29.8	1,077
Saskatchewan	NP	103	47.9	112	52.1	228
	RN	8,286	78.7	2,236	21.3	10,825
	LPN	2,393	70.3	1,013	29.7	3,649
	RPN	672	89.1	82	10.9	825
Alberta	NP	476	94.4	28	5.6	529
	RN	30,706	90.1	3,372	9.9	35,691
	LPN	10,295	83.5	2,029	16.5	14,805
	RPN	953	73.6	342	26.4	1,334
British Columbia	NP	313	87.9	43	12.1	465
	RN	33,482	94.3	2,012	5.7	37,592
	LPN	10,549	91.7	959	8.3	12,152
	RPN	2,562	97.6	75	2.4	2,787
Yukon	NP	8	100.0	0	-	8
	RN	380	81.9	84	18.1	473
	LPN	-		-		195
	RPN	-		-		5
NWT/Nunavut	NP	22	48.9	23	51.1	50
	RN	360	48.6	381	51.4	806
	LPN**	29	30.5	66	69.5	107
Nunavut	LPN	-		-		132
Canada	NP	4,452	83.6	874	16.4	5,697
	RN	254,026	90.0	28,263	10.0	297,448
	LPN	95,823	87.6	13,595	12.4	122,732
	RPN	4,883	86.0	795	14.0	6,028

*Total count higher than sum of urban & rural workforce numbers, due to missing data on workplace geography
Percentage denominator calculated based on sum of urban and rural counts, not total

**Only NWT

Table 4 Supply and workforce of regulated nurses, by type of provider and jurisdiction, provinces/territories with available data, 2010 to 2019[5]

Appendix B

Components Cited in Literature (n=22)

CITATION	Care (n=5)	Community, Participatory engagement (n=11)	Collaborative Communication Teamwork (n=3)	Geography Environment (n=8)	Integrated Health Systems (n=5)	Knowing Rural Context (n=8)	Lack of anonymity (n=4)	Leadership (n=2)	SDH/SES resources (n=8)	Social Justice/ Diversity (n=2)
Alzghoul & Jones-Bonofiglio (54)	✓	✓								
Ayers-Kawakami & Paquiao (45)				✓		✓			✓	
Bidwell & Copeland (55)			✓							
Bourke, et al. (20)				✓	✓	✓			✓	
Bourque, Gunn & MacLeod (52)					✓	✓		✓		
Hauenstein et al. (53)	✓	✓			✓	✓				
Henly (46)	✓	✓				✓				
Keyzer (48)	✓	✓								✓
Knight, Kenny & Endacott (49)			✓			✓				
Lee & McDonagh (42)							✓			
Leight (47)		✓							✓	
Long & Weinert (41)				✓			✓			
Muirhead & Birks (60)					✓	✓				
Reid (40)				✓					✓	
Ryan-Nicholls & Racher (59)		✓		✓					✓	
Shreffler (50)				✓	✓				✓	
Smith et al. (51)		✓	✓							
Stanton & Packa (56)	✓	✓					✓			✓
Tarlier, Johnson & Whyte (61)		✓								
Wakerman & Humphreys (57)		✓		✓		✓	✓	✓	✓	
White (58)		✓							✓	
Williams et al. (43)				✓						

Appendix C

Websites of Canadian Nursing Programs with Rural Content

UNBC

- Rural Nursing Certificate: https://www.unbc.ca/nursing/rural-nursing-certificate
- Northern Baccalaureate Nursing Program: https://www.unbc.ca/nursing/rural-nursing-certificate

Aurora College (with University of Victoria)

- Post Graduate Certificate in Remote Nursing: http://www.auroracollege.nt.ca/_live/pages/wpPages/ProgramInfoDisplay.aspx?id=125&tp=PRG

University of Lethbridge

- Program Planning Guide, list of BN courses: https://www.uleth.ca/sites/ross/files/imported/ppgs/2019-20/nurs_bn.pdf
- Faculty of Health Sciences website: https://www.uleth.ca/healthsciences/bn

Saskatchewan Polytechnic/University of Regina

- Year 4 courses: https://www.sasknursingdegree.ca/scbscn/year-4/
- General website, Faculty of Nursing: https://www.uregina.ca/nursing/programs/index.html

University of Saskatchewan

- Year 4 approved elective: https://nursing.usask.ca/documents/programs/BSN-PDBSN-restricted-electives.pdf
- College of Nursing website: https://nursing.usask.ca/programs/bachelor-of-science/organization.php

University College of the North (with University of Manitoba)

- General website: https://soar.ucn.ca/ICS/Programs/Degree_Programs/Bachelor_of_Nursing
- Calendar info: https://soar.ucn.ca/ICS/Programs/

Lakehead University

- General website: https://www.lakeheadu.ca/programs/undergraduate-programs/nursing/node/1571
- Nursing courses: http://csdc.lakeheadu.ca/~/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=26&topicgroupid=25218

Nunavut Arctic College (with Dalhousie University)

- Program Description: https://arcticcollege.ca/health
- Course descriptions: https://static1.squarespace.com/static/5b1954d75cfd798b94327249/t/5b4649a11ae6cffb586868f5/1531333054653/Bachelor+Of+Science+In+Nursing+%28BScN%29+%28Arctic+Nursing%29.pdf

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