

**Access Barriers to Primary Health Care:**  
*Indigenous People and the Role of the Physician Assistant in Northern Manitoba*

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## Abstract

This capstone project compares Manitoba and Alaska health care reform policy in the context of northern Indigenous Health. Additionally, this paper compares northern Manitoba and Alaska Physician Assistant utilization rates. Two questions are investigated: (i) ) Will the current primary care reform policy improve access barriers to primary care for northern and remote Indigenous communities in Manitoba and if not, what other options might be available? (ii) Are Physician Assistants utilized within northern and remote Indigenous communities in Manitoba to address current service delivery challenges? Indigenous people in Manitoba experience significant health inequities as reflected in health indicators published in government documents and academic papers. Despite Manitoba's primary care reform policy and in light of a recent Auditor-General's report on northern health care, current systems do not appear to be addressing these issues and access barriers exist. A review of the literature using internet search engines by key words was performed. Important government and health websites were reviewed. Key informants were sought who had expertise in Indigenous health care, health system reform and current Physician Assistant policy and training. The topics examined were: Indigenous sociopolitical perspective, the effects of racism and colonization on Canadian Indigenous people, current health care issues and health care reform initiatives in Manitoba. The following are four significant findings of this study: (i) it is not yet known if current primary health care reform policy will improve access barriers for northern and remote Indigenous communities in Manitoba due in part to the complexity of the federal/provincial/Indigenous peoples arrangement and because there is no pre or post data for the selected health indicator (ii) an option called the "Nuka System of Care" exists, is culturally relevant, is structured to address access barriers related to jurisdictional discrepancies and staffing shortages and has resulted in better health for the Alaska Natives (iii) there is evidence that Physician Assistants are underutilized to address service delivery challenges within northern and remote Indigenous communities in Manitoba (iv) both the "Nuka" system and Physician Assistants could help address access barriers and service delivery challenges for northern and remote Indigenous communities in Manitoba if adopted but further research and evaluation would be needed before policy change could occur.

## Introduction

This study was undertaken to inform my future practice as a Physician Assistant (PA) about the health care delivery challenges that I observed during my previous career as a paramedic and Registered Nurse. I worked in various Indigenous communities in Alberta, Northwest Territories, Nunavut and Manitoba throughout my 14 year career before beginning the Masters of Physician Assistant Studies program at the University of Manitoba in 2013. I have witnessed that Indigenous people possess exceptional strength, courage, perseverance and culture despite significant social and political challenges. The health care professionals that provide services for Indigenous communities are dedicated and do their best within the confines of a complex health system to provide the highest quality care. Unfortunately, limited access to timely primary care and health inequities for northerners appear persistent and need to be addressed. To explore these concerns two questions were posed in this paper: (i) Will the current primary care reform policy improve access barriers to primary care for northern and remote Indigenous communities in Manitoba and if not, what other options might be available? (ii) Are Physician Assistants utilized within northern and remote Indigenous communities in Manitoba to address current service delivery challenges?

Primary health care is an important component of any health care system. In 1978, the World Health Organization (WHO) issued a report on the importance of primary health care based on the findings of the International Conference on Primary Health Care held in Alma-Ata, USSR (1). This report defines health as the state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity and sets forth that health is a fundamental human right, and that health inequality is unacceptable (1). The WHO (1978) defines primary health care as essential health care based on “socially acceptable methods and technology” made accessible to individuals, families and communities and is an important part of a country’s “health system”

and “economic development” (1 p2). Primary health care is the first level of contact between individuals, the family, and the community within the health system and it should bring health care as close as possible to where people live and work (1). In relation to health and primary health care, the WHO (1978) explains that “the promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life and to world peace” (1 p2). In a 2008 follow up paper the WHO reported that primary health care remains the cornerstone of health systems and health systems are constituents of the architecture of contemporary societies (2).

The results section of this paper discusses: (i) health care within northern and remote Indigenous Communities (ii) Indigenous health status (iii) Manitoba health care reform policy (iv) Alaska health system reform policy (v) Physician Assistants in Manitoba and (vi) Physician Assistants in Alaska. This paper makes two recommendations based on the findings and provides eight areas of future research.

## Methods

Preparatory literature provided by the project mentor include the following references: (i) Timely Deaths: Medicalizing the Deaths of Aboriginal People in Custody (3) (ii) Getting Slammed: White Depictions of Race Discussions as Arenas of Violence (4) (iii) Memorializing Colonial Power: The Death of Frank Paul (5) (iv) Exposing the Hidden Curriculum Influencing Medical Education on the Health of Indigenous People in Australia and New Zealand: The Role of the Critical Reflection Tool (6). The objective of this literature review was to provide an Aboriginal sociopolitical perspective and familiarize the author with the effects of racism and colonization on Canadian Indigenous people. This was necessary to ensure Indigenous

perspectives and values guided the review. Preparatory literature chosen by the author include the following references: (i) The Original Intentions of the Indian Act (7) (ii) Indicators of Northern Health: A resource for northern Manitobans and the Bayline Round Table (8) (iii) Primary Health Care in Canada: Systems in Motion (9). The objective of this literature review was to gain perspective on current issues within northern Manitoba health care and health care reform initiatives throughout Manitoba and Canada. Finally, the book titled “*Pedagogy of The Oppressed*” by Paulo Freire was recommended by the project mentor and added an additional perspective on the theory behind the complex relationship that exists between Indigenous people, governments and the overall Canadian sociopolitical framework (10).

A review of the literature was undertaken using internet search engines by key words primary health care, primary care, health care, reform policy, Manitoba, Indigenous health, Indigenous people(s), access barriers, health systems, patient centered medical home(s), Physician Assistants and Alaska. Literature was chosen based on the availability (only free articles were used), relevance to Manitoba, Canada or Alaska Indigenous peoples, primary health care in Manitoba, Canada or Alaska and northern and remote communities in Manitoba or Alaska. Literature was limited to documents published within the last ten years. The exception was the Declaration of Alma-Ata published by the World Health Organization in 1978 due to its significance to the evolution of primary health care and the 2004 Final report of The Canadian Nursing Advisory Committee due to its significance to nursing shortages in northern and remote Indigenous communities in Canada. Important websites utilized were: Health Canada, Manitoba Health, Northern Health Region, Alaska’s Southcentral Foundation, Canadian Medical Association, Canadian Association of Physician Assistants, American Academy of Physician Assistants, American Association of Family Physicians, Statistics Canada and the Manitoba

Bureau of Statistics. Key informants were sought and interviewed who had expertise in Indigenous health care, Manitoba Health reform policy, Alaska health systems and Alaska and Manitoba current physician assistant policy, training and employment.

This study compares Manitoba's "health care reform policy" with Alaska's "health system reform policy". Furthermore, selected health indicators including all-cause mortality, cancer mortality, infant mortality, and suicide rates are presented. Measures were sought for the effectiveness of each reform policy at improving access to primary care. This study compares the utilization of Physician Assistants in Manitoba, the Northern Health Region and Alaska.

## Findings

### 1. Health care in remote Indigenous communities

#### 1.1. Federal responsibilities

The federal role in the provision of health services to Manitoba's northern and remote Indigenous communities stems from The Parliament of Canada, under section 91 [24] of "*The Constitution Acts (1867-1982)*" that possesses exclusive jurisdiction over "Indians, and lands reserved for the Indians" (11). This provides the historical and legislative basis for the complex relationship that exists between the federal and provincial governments with Indigenous peoples in the domain of health and social services. Health Canada reports on their website that: Health Canada (i) acts as a funder when it enters into contracts to provide services or transfers funds to First Nations and Inuit organizations and communities to deliver community health services; (ii) acts as a service provider through the First Nations and Inuit Health Branch and provides supplemental health benefits to more than 849,000 eligible First Nations and Inuit across Canada to cover the costs of insured benefits like drugs, dental, vision, and medical transportation and;



(iii) has three strategic outcomes and the third one states “First Nations and Inuit communities and individuals receive health services and benefits that are responsive to their needs so as to improve their health status” (12).

#### 1.1.1. First Nations and Inuit Health Branch

This information was extracted from the First Nations and Inuit Health Branch (FNIHB) section of the Canada Health website (13). Health Canada reports that FNIHB: (i) is the branch of Health Canada that works as the “service provider”; (ii) works with First Nations and Inuit in order to “improve health outcomes; to ensure the availability, access, and quality of health services”; (iii) supports greater control of the health system by First Nations and Inuit people; (iv) “provides”, or “supports”, the delivery of community based health programs on-reserve and in Inuit communities, as well as drug, dental and other health services to “eligible First Nations and Inuit” regardless of where they live; (v) provides primary care services to remote and isolated First Nations reserves where “provincial services are not readily available”; (vi) as of 2007, it provides the following programs [Table 1] (13).

#### 1.1.2. Nurses and nursing stations

The information in this section was extracted from the spring 2015 Auditor General of Canada’s report titled “*Access to Health Services for Remote First Nations Communities*” (14). The federally administered nursing stations that are found throughout Manitoba’s northern Indigenous communities are the cornerstone of their primary health care. The Auditor General (2015) reported that Health Canada operates 21 nursing stations and 1 nursing station is operated by First Nations peoples. Within these community nursing stations, registered nurses are often the first point of contact with the health system, provide a vast number of primary health care services

and sometimes have to “work outside their legislated scope of practice in order to provide essential health services in remote First Nations Communities”. The Auditor General (2015) of Canada states that Health Canada is not ensuring that “appropriate supporting mechanisms” are in place that allow nurses to provide essential health services (14). Observed roles of northern nurses include: perform clinical care, provide perinatal services, manage and counsel patients on chronic disease management and psychosocial issues and administer immunizations. Public health, home care, wound care, hospice care, palliative care, and support for northerners living with disabilities are other roles. Furthermore, nurses perform a number of traditionally non-nursing services that include the ordering and interpretation of laboratory and diagnostic tests, prescribe medications and liaising between regional physicians for referrals and access to specialized services. According to the 2002 final report of the Canadian Nursing Committee titled “*Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses*”, the responsibility of nurses in northern Indigenous communities to perform non-nursing activities has been increasing due to staff shortages in medicine, nursing, allied health and administration which has contributed to service delivery challenges (15 p16).

## 1.2. Provincial responsibility

Section 92 [7] of “*The Constitution Acts (1867-1982)*” provides executive legislative authority over the “Establishment, Maintenance, and Management of Hospitals” and “Asylums” to the provinces (11). Manitoba Health states on its website that it “operates under the provisions of the legislation and responsibilities of the Minister of Health” (16). Manitoba Health delivers services & programs both directly and partially “through grant agencies, arm’s length health authorities, independent physicians, or other service providers paid through fee-for-service or

alternate means” (16). It manages insured benefits and the cost of “medical, hospital, personal care, Pharmacare and other health services.” (16).

The Regional Health Authority that is responsible for the delivery of health services in northern Manitoba is the Northern Health Region (NHR); its geographical borders are depicted in **[Figure 1.0]**. The NHR reports on its website: (i) that it serves more than 40 communities through its 5 hospitals, 15 health centers, 20 Nursing Stations, and 7 personal care homes; (ii) describes their region as having the largest geographical area of the 5 Regional Health Authorities in Manitoba at 396,000 km<sup>2</sup> (152,897 mi<sup>2</sup>); (iii) serves a population of 74,175; (iv) serves Thompson, Flin Flon, The Pas, First Nations communities and others (17) (18). In 2012, the NHR reports on its website that population estimates suggested that about 40% of residents live on-reserve and the remaining 60% live off-reserve” (17). Finally, the Manitoba Bureau of Statistics reports in its July 2005 report titled “*Manitoba’s Aboriginal Community: A 2001 to 2026 Population & Demographic Profile*” that in 2004 “Aboriginals in Manitoba comprised 14.8 % of the population” and “are expected to comprise 17.1 % of the population” by 2017 (19 p11-12); the NHR reports on its website that, as of 2006, 67.4% of residents within the NHR self-identify as Aboriginal (17).

## **2. First Nations Health Status**

Indigenous people throughout Manitoba and Canada possess extraordinary strengths and have persevered despite countless challenges put before them. The “*Executive Summary*” from the 2015 Truth and Reconciliation Commission of Canada reported that “Aboriginal peoples and communities have been badly damaged” yet “they continue to exist” despite the residential school system (20 p6). The 2015 executive summary also reported that the health inequities discussed in this section have been prevalent since the residential school system, peaking in the in the late nineteenth and early twentieth century, and has never returned to equality with the rest of Canada’s

population (20 p92-101). Health disparities exist between Indigenous and non-Indigenous people in Manitoba and have been reported in the government of Manitoba's 2012 report titled "*Aboriginal People in Manitoba*" (21 p58-79). Health inequities in Manitoba are reflected in shorter life expectancy for First Nations males and females (7.7 years and 5.6 years respectively), higher premature mortality rates (6.6 for/1000 for First Nations and 3.3/1000 for all other Manitobans), more potential years of life lost (158.3 years/1000 for First Nations males vs 62.5 years/1000 for all other Manitoba males), higher incidence of chronic diseases like diabetes (10.4 % for First Nations vs 6.4 % for non-First Nations) and higher rates of communicable diseases such as TB (> 5.6 times higher for First Nations people) (21).

The Government of Manitoba (2012) reports that there are statistically significant differences in selected health indicators between Indigenous and non-Indigenous Manitobans (21). Manitoba Indigenous peoples experience higher all-cause mortality rates, higher cancer mortality rates, higher infant mortality rates and higher suicide rates [Chart 1.0]. The Auditor General (2015) reported that Health Canada: (i) supports, funds and provides programs and services for First Nations in remote communities and medical transportation benefits when health services are not available within the community; (ii) First Nations on-reserves in Manitoba do not have equal access to health care compared to First Nations off-reserve and that on-reserve health care is not comparable to off-reserve health care in communities that have similar geographical conditions; (iii) the current health system is not addressing the health needs of northern and remote First Nations Communities in Manitoba (14).

## 2.1. Jurisdictional discrepancies as an access barriers to primary care

This section will discuss how the jurisdictional discrepancies that exist between the federal and provincial governments create access barriers to primary care in northern and remote

Indigenous communities in Manitoba and contribute to health inequities. Mikkonen & Raphael (2010) report that access barriers are those factors that create difficulties with accessing health services; access barriers are one of the determinants of health (22 p38). Access barriers have also been discussed by the government of Manitoba (2012) and the National Collaborating Centre for Aboriginal Health (NCCA) in their 2011 report titled “*Access to Health Services as a Determinant of First Nations, Metis and Inuit Health*” and report that access barriers have a direct association with poor health outcomes and Indigenous health inequities will continue if a collaborative Indigenous-federal-provincial-partnership is not found (21) (23). Health Canada’s inability to properly fund and monitor nursing stations within northern and remote Indigenous communities in Manitoba has been identified by the Auditor General (2015) as an access barrier to primary care (14). The Auditor General (2015) also reports that Health Canada has not ensured that nursing stations are “capable” of providing “essential services” within Indigenous communities (14). The essential services described are: (i) triage (ii) emergency services and (iii) out-patient non-urgent services (14). Nursing stations are the cornerstone of primary care within northern and remote Indigenous communities and are administered and funded through a complex arrangement that involves Health Canada, First Nations and Inuit Health Branch, the province of Manitoba, Regional Health Authorities and Indigenous communities (14); an illustration of this arrangement can be found in **[Figure 1.1]** that was extracted from the article titled “*Indicators of Northern Health: A Resource for Northern Manitobans and the Bayline Regional Round Table*” (8). These relationships have resulted in jurisdictional barriers, gaps in service delivery and insufficient monitoring and training of health care personnel which has contributed to health inequities in Indigenous people by creating access barriers to primary health care (14).

## 2.2. Staffing shortages as an access barrier to primary care

Staffing shortages act as an access barrier to primary care within the context of nursing and northern and remote Indigenous communities by contributing to health inequities. Information for this section was extracted from two sources: NCCAH (2011) (23) and the 2010 Health Canada report titled “*Final Audit Report: Audit of Primary Care Nursing Services*” (24). These two reports discuss staffing challenges in northern communities in Canada and applicability has been extrapolated to describe the current service delivery challenges in Manitoba. Staffing shortages refers to insufficient presence and personal contact of people with their health care providers. The contact with health care providers should be culturally appropriate, consistent, predictable, and focus on building trusting and long lasting relationships. The NCCAH (2011) identifies that the nursing profession is considered to be in “crisis”; that nursing shortages result in “less continuity of care, which reduces the effectiveness of health services”; and that nurse staffing shortages have been identified as an access barrier (23 p2). Health Canada (2010) reported the following: (i) northern nurses face challenges managing acute and chronic illness, disease, injury, and disability in the most remote northern communities in Canada; (ii) geographical isolation, service gaps, financial restraints, jurisdictional ambiguities, language barriers, and lack of professional support complicate these challenges; (iii) increasing age of the workforce, burnout, limited professional support, isolation, as well as other factors have led to many unfilled nursing positions (24). Health Canada (2010) also reported that the three year departure rate for nurses working in remote and isolated Indigenous communities is 55 % with an 83 % departure rate for nurses under 30 years of age and a 69 % departure rate for nurses 30-40 years of age (24 p9). The NCCAH (2011) states that the high departure rate means that many of the critical functions of northern nurses are filled

by transient locum agency workers and results in “less continuity of care, which reduces the effectiveness of health services” (23 p2).

### **3. Manitoba’s health care reform policy**

The information from this section was primarily extracted from the document released in 2013 by the government of Manitoba and Manitoba Health titled “*Roadmap to Primary Care Networks in Manitoba: An Introduction*” and the Manitoba Health website (25) (26). This document outlines the strategy for development, implementation, evaluation, and funding of Primary Care Networks (PCNs) in Manitoba. PCNs are Manitoba’s vision for primary care. PCNs are a strategy to promote collaboration between, and establish strong relationships with, important stakeholders currently providing primary care services within the five Manitoba Regional Health Authorities. The government of Manitoba and Manitoba Health report that these stakeholders include: Regional Health Authorities, community organizations, fee-for-service private physician clinics, Quick Care clinics, Access Centers, mobile and outreach teams, local governments, Indigenous people, medical and surgical specialists, auxiliary services and pharmacies. Manitoba Health reports on its website that PCNs are one of the strategies to ensuring that all Manitobans have access to a family physician by the year 2015 (26). In their 2011 article titled “*Primary Health Care in Canada: Systems in Motion*” published in the Milbank Quarterly, Hutchison et.al. report that provinces such as Alberta, Quebec and Ontario have made “substantial progress” towards the patient centered medical home model of health service delivery through similar interventions (9). The interpretation of the PCN document is that PCNs are a strategy to transition the current health care system into a patient centered medical home model, fill in the gaps of care that exist and improve access.

Manitoba Health reports on its website that the “key initiative” of the PCN strategy is the development and implementation of the “My Health Teams” (MHTs) initiative (27). Manitoba Health also reports that : (i) MHTs are teams of health care providers whose purpose is “inter-professional collaboration” and “service delivery”; (ii) these teams will plan, coordinate and deliver services for a “geographic area” or “specific community” and/or population; (iii) the goals of MHTs consist of “providing excellent service to Manitobans that is designed around community needs that must provide a common set of services to their communities”; (iv) MHTs focus on “building strong partnerships” and provide “knowledge” and “access” to “high quality” and “cost efficient” primary care; (v) MHTs may include doctors, midwives, nurses and nurse practitioners (27). Information regarding the strategy of how community needs were going to be assessed, how the MHTs initiative is going to be implemented within the RHAs or what the “common set of services” will be was not found.

Selected health indicator data published in 2015 by the Northern Health Region in the document titled “*2014 Community Health Assessment*” (28) can be found in **[Chart 1.0]**. This data provides a cross-sectional analysis to quantify the quality of health systems. The data in this chart is from 2001-2012 and represents the selected health indicators of those within the Northern Health Region. These indicators do not appear to have changed over the past decade. The PCN intervention has not had sufficient time to develop to quantify its impact.

#### **4. Alaska’s health system reform policy**

This information was extracted from: (i) the 2013 article titled “*The Nuka System of Care: improving health through ownership and relationships*” (29) (ii) The 2011 Southcentral Foundation presentation titled “*The SCF Nuka Model of Care: Customer driven – Community Owned*” (30) and (iii) 2012 report titled “*Southcentral Foundation 30 year Report*” (31). The



Southcentral Foundation (SCF) is a non-profit organization that was established “in 1982 under the tribal authority of Cook Inlet Region Inc.”. Cook Inlet Region Inc. is a regional corporation that was created by the United States Congress in 1971 “under the terms of the Alaska Native Claims Settlement Act”. The SCF explains that the corporation and foundation were created because the United States Congress acknowledged:

***“From the time of European occupation and colonization through the 20th century policies and practices of the United States caused and/or contributed to the severe health conditions of Indians”***

**And**

***“If the people receiving the health services are involved in the decision making processes, better yet, if they own their own health care-programs and services have a potential for enhancement and the people and their health statistics will improve”*** (28 slide10)

The SCF was created with the intentions of improving the “health and social conditions” for Alaska Native people, as well as “enhance culture” and to “empower individuals and families to take charge of their lives” (29). Their vision for the Alaska Native people is “A Native community that enjoys physical, mental, emotional and spiritual wellness” and their mission is “working together with Alaska Native communities to achieve wellness through health and related services” (29). The services that the SCF renders are provided to over “60,000 Alaska Native and American Indian people” involving “277 federally recognized Alaska Native Tribes” (29). The total population of Alaska is approximately 730,000 so the Alaska Natives represent roughly 8.2 percent of the total Alaska population. These individuals inhabit Anchorage, the Matanuska-Susitna Valley and 55 rural Anchorage service Unit villages covering a 108,000 mi<sup>2</sup> land mass. The geographical area that the Southcentral Foundation serves stretches from the Aleutian Chain

and Pribilof Islands on the west to the Canadian Yukon border on the east [Figure 1.2]. For many years, the Alaska Native people struggled as “beneficiaries” of a health care system that was centrally controlled, bogged down with inefficiencies, disconnected from the people, and offered services that were incongruent with their cultural identity. The Alaska Natives are no longer “beneficiaries” of health care services but, rather, “customer-owners” within the “Nuka System of Care” (29) (31).

According to the SCF (2012), the Nuka System of care started with one small dental clinic that opened in 1982 and grew by focusing on long lasting relationships with people and communities at the following rate: (i) by 1993, the SCF employed 52 people, had five clinics and took over programs for “tobacco cessation services” and “chronically mentally ill adults”; (ii) by 1998, the SCF had surveyed the Native community, found out what they desired, opened up the largest Indian Health Service facility in the United States and was officially a “designated health care entity” which “obtains ownership and management of primary care and related services” for Alaska Natives; (iii) in 2012, the SCF celebrated its 30<sup>th</sup> anniversary and reports that statistical results in health indicators and overall customer-owner satisfaction have been improved in Alaska since the introduction of the “Nuka” system (31). The SCF (2013) reported: (i) that before the official implementation of the “Nuka” system in 1996, -35 % of the local Alaska Native population had a designated primary care provider and by 2013 more than 95% are enrolled in an integrated primary care team; (ii) that before Nuka, the average delay to schedule a routine appointment was 4 weeks; (iii) the “Nuka” systems customer-owners are offered same-day access and minimal or no wait lists exist; (iv) a 36% reduction in hospital days; (v) a 42% reduction in ER and urgent care usage; (vi) a 58% reduction in specialty clinic wait visits have been sustained for 10 and above years; (vii) the SCF scores in the 75 percentile or better in 75% of performance measures; and for

many like diabetes care, they score in the “95 percentile (29). The SCF (2013) also reported that customer satisfaction rates in the domain of “respect for their cultures and traditions” are at 95%; they have achieved a “25% increase in childhood immunizations”; and staff turnover is decreasing (29).

The SCF (2012) has one of the most sophisticated “out-come measurement” data collection tools in the United States called the “Data Mall” that they adopted in 2003 (31). This data collection has allowed the SCF and its employees to measure performance, compare strategies, and adopt change based on the success or failure of their peers (31). The SCF created a “Nuka Institute” in 2010 to address the national and international interest in their system which has been the recipient of the 2011 Malcolm Baldrige National Quality Award for excellence in patient centered medical home models as well as other National and International awards of excellence (31).

Selected health indicator data published in the 2009 report titled “*Alaska Natives Health Status Report*” by the Alaska Native Epidemiology Center and the Alaska Native Tribal Health Consortium can be found in [Chart 1.0]. This data provides a cross-sectional analysis to quantify the quality of health systems. The data is from 1994 and 2004 and provides a cross-sectional analysis of the selected health indicators of Alaska Natives in these two time periods. The data provided represents “before” (1994) and “after” the “Nuka” (2004) system was implemented. The “Nuka” system intervention has had sufficient time to develop and be properly evaluated.

## **5. Physician Assistants in Manitoba**

This section will discuss Physician Assistants in Manitoba and was collected from the following sources: (i) consultation with Mr. Ian Jones (32) (ii) Canadian Medical Association “*Physician Assistant Tool Kit*” (33) (iii) The Canadian Association of Physician Assistants website

(34) (iv) the article titled “*Transforming Primary Care: PAs and Patient-centered Medical Homes*” (35) and (v) “*Canadian Association of Physician Assistants Scope of Practice and National Competency Profile*” (36) . Physician Assistants (PAs) are academically prepared and skilled advanced practice health care providers (32). PAs are trained as generalists who practice medicine in a collaborative relationship with physicians and other health care providers (33). PAs take medical histories and perform physical exams, order and interpret laboratory and diagnostic tests such as blood tests and x-rays, diagnose and treat illness, develop treatment plans, counsel on preventative care, perform minor surgical and orthopedic procedures including excisions and fracture management, assist in more involved surgical procedures and prescribe medications (32) (33). The specific duties of the individual PA depend on the setting in which they work, their level of experience, their specialty and local regulations (32) (33). The Canadian Medical Association supports PAs in this role and further describes them as Physician extenders who can work in a variety of settings and operate under “defined roles” with “negotiated autonomy” (33). The support of physicians and the Canadian Medical Association is important due to the significance of PAs to the safety of the public within the physician-PA-patient relationship (33). PAs complement Physician services and improve patient access to health care and the integration of PAs into health care systems improve physical and emotional wellness (33).

In Manitoba, PAs have the ability to work remotely and are not required to have an onsite physician supervisor (32). Some estimates suggest that PAs in primary care can be used for 75% of all visits without a referral to a physician (34). PAs can increase the size and efficiency of a primary care practice in both rural and urban settings (35). Some estimates also suggest that PAs have the skills to manage up to 62% of all emergency room visits and are equally capable of performing most, if not all procedures traditionally restricted to emergency room physicians (34).

Manitoba also has the ability to produce its own PAs. The University of Manitoba offers the Masters of Physician Assistant Studies program, its class size is currently 12 students per year and is comprised of a 26 month curriculum that includes didactic and clinical components. The University of Manitoba provides the only civilian Graduate level PA education program in Canada and Manitoba is the leader in PA education, innovation, and policy development. The University of Manitoba PA program is accredited through the Canadian Medical Association and meets the National Competency Profile for Physician Assistants (34) (36).

### 5.1. Physician Assistant utilization in Manitoba

The information in this section was provided by Mr. Russ Ives, Director of the Provincial and Winnipeg Regional Health Authority Physician & Clinical Assistants Program (37). In 2015, 56 actively practicing PAs can be found in Manitoba **[Chart 1.1]**. Physician Assistant utilization data is divided into “Primary Care” and “Non-Primary Care” roles in **[Chart 1.2]**. Primary care, as defined by the Alaska Native Epidemiology Center and the Alaska Native Tribal Health Consortium (2009), is “family medicine, general internal medicine, and general pediatrics” (38). In Manitoba, Physician Assistants are utilized throughout the five Regional Health Authorities as depicted in **[Chart 1.3]**. The Winnipeg Regional Health Authority utilizes the most PAs of the five Health Authorities who primarily function within surgical programs, emergency departments, primary care, and cardiac sciences **[Chart 1.4]**. The Interlake-Eastman Regional Health Authority utilizes one PA in each of their surgical, emergency, and primary care programs; Prairie Mountain Health Region utilizes 3 PAs all within surgical programs. Within the Northern Health Region, there are currently 2 PAs; one utilized in the ER in Thompson, and one as a hospitalist in The Pas, MB **[Chart 1.5]**. As of 2015, the role of the PA has not been evaluated in northern and remote Indigenous communities in Manitoba because no PAs are working in federally administered

remote nursing stations (32) (37). It was determined that PAs are not currently employable within federally funded nursing stations as they are not included in the current contract between the Professional Institute of the Public Service of Canada and the federal government titled “*Agreement between the Treasury Board and the Professional Institute of the Public Service of Canada*” (39). This contract includes all health related employees within the Health Services group employed by the federal government.

## **6. Physician Assistants in Alaska**

The information in this section was extracted from the articles titled: (i) “*A History of the Alaska physician assistant, 1970-1980*” (40) (ii) “*Physician Assistant Census Report: Results from the 2010 AAPA Census*” (41) (iii) “*2013 Statistical Profile of Certification of Physician Assistants*” (42) (iv) “*Southcentral Foundation – Nuka Model of Care Provides Career Growth for Frontline Staff*” (43). PAs have been utilized in Alaska since 1971 and by 1977 the state had 200 PAs (40). Since then, PA utilization throughout Alaska has grown to more than 500 PAs and, as of 2013, Alaska was ranked first amongst all US regions in PAs utilization rates per 100, 000 population (41) (42). The Southcentral Foundation utilizes PAs to the fullest extent of their license and PAs are an important part of the Southcentral Foundations approach to primary care delivery (43).

### **6.1. Physician Assistant utilization in Alaska**

Alaska’s Physician Assistant utilization data shows there are almost ten times as many PAs in Alaska compared to Manitoba [Chart 1.1]. Physician Assistant utilization data in Alaska is divided almost 50/50 into “Primary-Care” and “Non-Primary Care” roles [Chart 1.2]. Primary care is defined as “Family Medicine, General Internal Medicine, and General Pediatrics” (42). Data about the specific PA utilization rates was not available from the Southcentral Foundation at the time this paper was written.

## Discussion

There is no easy solution to the complex primary care delivery model in northern Manitoba due to the jurisdictional discrepancies that exists between the federal government and the provinces. These jurisdictional discrepancies impact the relationship between Health Canada, Manitoba Health, Regional Health Authorities and Indigenous communities and have resulted in a fragmented northern health system, access barriers to primary care, and contributed to the health inequalities between Indigenous and non-Indigenous Manitobans. Access barriers are important to overcome because, as the World Health Organization (2008) points out, primary health care is the cornerstone of health systems and health systems are constituents of the architecture of contemporary societies. Health Canada is responsible for the delivery and funding of health services to Manitoba's most remote and isolated Indigenous communities and the Auditor General of Canada reported in 2015 that the system has not been addressing Indigenous issues. Manitoba's Northern Health Region, in coordination with Manitoba Health, provides health services to Indigenous and non-Indigenous communities that are not funded and serviced by Health Canada. The Auditor General (2015) reports that those on-reserves are not receiving equitable services compared to those off-reserve. While Manitoba Health and the Northern Health Region do not have jurisdictional authority to provide primary care services to remote Indigenous communities in Manitoba, they are responsible for secondary and tertiary care support. Given these divisions of labour, a more innovative and collaborative approach between the Federal Government, Health Canada and Indigenous stakeholders is needed to meet the needs of Manitoba's northern Indigenous people, resolve access barriers and address health inequities and social injustice.

If the PCNs and "My Health Teams" are unsuccessful in collaborating with Health Canada and Indigenous people in improving access barriers and meeting the needs of northern and remote

communities, an option called the “Nuka System of Care” should be considered as an optional model. There is no conclusive data to either accept or reject the hypothesis that PCNs will, or will not, result in improved access barriers to primary health care for northern and remote Indigenous communities in Manitoba because there is no pre or post implementation data for the selected health indicators. PCNs are still in the development and implementation phase. It is doubtful that Primary Care Networks are intended to be implemented within northern and remote Indigenous communities that fall within federal, not provincial, jurisdiction. However, the PCN reform policy is focused on reconnecting people and services, increasing collaboration between stakeholders and filling in the gaps in health service delivery that have been created by the fragmented northern health system and this focus could benefit northern and remote Indigenous communities in Manitoba.

PCNs and “My Health Teams” could succeed and result in improved health status for northern and remote Indigenous communities if: (i) they are implemented (ii) they can connect, establish dialogue and long-lasting relationships with Indigenous people (iii) Indigenous communities are invited to identify and direct care needs and (iv) effective collaboration and implementation of programs and services are done in a culturally appropriate manner and do so within the confines of the fragmented system. The governments of Canada and Manitoba will need to accept responsibility for the health inequities of Indigenous people, caused in part by colonization and cultural invasion, through interventions such as the residential school system and invite Indigenous communities to be full partners in decision making and service delivery for northern and remote Indigenous communities in Manitoba. If jurisdictional access barriers continue, the needs of Indigenous communities will be unmet and health inequities and social injustice within the northern health care system will persist. To properly assess the success or



failure of the PCNs in achieving the above goals, a quality improvement study should be undertaken that examines selected health indicators in Indigenous peoples post PCN implementation when a sufficient trial period has been examined.

This study also determined that PCN and “My Health Teams” are not true health system reform when compared to the “Nuka System of Care”. The “Nuka” system is structured to address access barriers related to jurisdictional discrepancies and has resulted in improved health for the Alaska Natives. It must be recognized, however, that when analyzing the health indicator data in Alaska prior to 1994 an improvement trend was already apparent which decreases the strength of this finding. The selected health status indicator improvements occurred within an Alaska population that has a similar profile and experienced similar geographical, social, and political conditions as Manitoba’s Indigenous peoples. The similarity in profiles include the following findings: Indigenous people in Alaska and Manitoba were both subjected to colonization; occupy remote northern climates; have geographic areas of similar size; have similar population counts (including total population); both experience(d) health inequities; and both have been exposed to centrally controlled and ineffective health systems. A “Nuka” model of health care could address the challenges that exist.

The most interesting finding of this study was the true difference between PCNs and the “Nuka” system. The true difference is that the “Nuka” system is a reconstructed “health care system” and not “health care reform” like the PCNs. PCNs serve to fill in the gaps in service delivery without actually addressing the root cause of health inequities, access barriers and system fragmentation; this root cause is “jurisdictional barriers”. The Southcentral Foundation and the intentions of the United States Congress address this root cause through the ideology of “true ownership”. True ownership was established when the US Congress accepted responsibility for

the poor health status of Alaska Natives, relinquished control of health services, and when the Alaska Natives accepted this responsibility. This act allowed for a complete dismantling of their centrally controlled system and it was rebuilt with a new identity including mission, vision, operational principals and core concepts that reflect the needs and cultural identity of the Alaska Natives.

Northern Manitoba could benefit from a dismantling and reconstruction of the northern health system if PCNs, the Northern Health Region, Manitoba Health, Health Canada and Indigenous partners fail to collaborate and address Indigenous health needs. The Northern Health Region and Indigenous communities have exceptional strengths and possess the ability to design and coordinate a rebuild just like the Alaska Natives did. This would only be possible with full financial and administrative cooperation and support between Indigenous communities, the federal and provincial governments and the people of Manitoba. Sufficient evidence exists to accept the hypothesis that there is another option to PCNs for northern and remote Indigenous communities in Manitoba for the following three reasons: (i) the “Nuka” system has had sufficient time to be properly evaluated (ii) the “Nuka” system has reduced access barriers for Alaska Natives as represented by improved selected health indicators for Alaska Natives and (iii) the Southcentral Foundations customer-owner population profile is relevant to Manitoba’s Indigenous people.

If Indigenous Manitoba’s were to entertain the idea of “Nuka” style reform further initial studies would need to be conducted to determine: (i) if Indigenous communities in northern Manitoba have an interest in “Nuka” style health care reform (ii) if there is other key stakeholder interest in “Nuka” style health care reform (i.e. federal and provincial governments and Regional Health Authorities) (iii) the legal and constitutional barriers to “Nuka” style health system reform in Manitoba and Canada (iv) and the cost analysis for “Nuka” style health reform.

As Manitoba's northern population ages and complex comorbid conditions become more common, community needs will increase and human resources will continue to be important. Nursing shortages and pressure on nurses to provide non-nursing services have led to service delivery challenges and access barriers for northern Manitoba Indigenous people. The Auditor General (2015) reports that Health Canada is not meeting the health needs of First Nations communities within the current service delivery framework. Physician Assistants: (i) can provide professional support to nurses (ii) can undertake clinical work and share the overall work load (iii) are trained to function at the highest level within health care teams in Manitoba so can work to their full potential if utilized within northern and remote Indigenous communities. Physician Assistants can also work without direct physician supervision. This function should be utilized to increase access to primary care, address staffing shortages, expand physician practices, reconnect Indigenous people with a primary care physician and services, and support referral services. Physician Assistants are proven members of interdisciplinary health care teams and can contribute to improved primary care access for northern and remote First Nations communities.

Significant findings from the Physician Assistant utilization data collection included in this study are: (i) Physician Assistants are underutilized within northern and remote Indigenous communities in Manitoba (ii) Physician Assistants are not employable in a civilian role, due to labour arrangements by the federal government, so Physician Assistants are not utilized within northern and remote Indigenous communities funded by Health Canada (iii) Alaska utilizes Physician Assistants at a rate of almost ten times the Manitoba rate despite having similar population profiles (iv) Alaska has a higher percent of Physician Assistants in primary care compared to Manitoba (v) the Northern Health Region has the lowest Physician Assistant utilization rates in Manitoba. If Health Canada and Manitoba Indigenous peoples were to entertain

the idea of implementing Physician Assistants within Manitoba's northern and remote communities the following three studies will be needed: (i) research that evaluates if Indigenous communities would accept a Physician Assistant as a provider within their community health facility (ii) research that evaluates the willingness of physicians and nurses to accept a physician-PA partnership within northern nursing stations and (iii) research that evaluates a cost analysis for introducing Physician Assistants into northern and remote Indigenous communities.

## Conclusion

In conclusion, it is not yet known if current primary health care reform policy will improve access barriers for northern and remote Indigenous communities in Manitoba due in part to the complexity of the federal/provincial/Indigenous peoples arrangement and because pre and post data for the selected health indicators to quantify the Primary Care Networks impact. It is also not known if PCNs will be implemented within northern and remote Indigenous communities in Manitoba. What is known is that an option called the "Nuka System of Care" exists, is culturally relevant, is structured to address access barriers related to jurisdictional discrepancies and staffing shortages, has had sufficient time to be properly evaluated and has resulted in better health for the Alaska Natives. There is evidence that Physician Assistants are underutilized to address service delivery challenges within northern and remote Indigenous communities in Manitoba. Both the "Nuka" system and Physician Assistants could be adapted to help address access barriers and service delivery challenges for northern and remote Indigenous communities in Manitoba if adopted. Further research and evaluation would be needed to define roles, costs, acceptability, and commitment of all stakeholders to address change.

## Recommendations

Two recommendations emerge based upon the research and information provided by key informants: (i) Key stakeholders should consider a “Nuka” style health reform policy in northern Manitoba if Primary Care Networks are unsuccessful in meeting the needs of northern Indigenous communities and (ii) Physician Assistant utilization in northern and remote communities in Manitoba could be increased to address the current service delivery challenges.

## Future Research

To support decision making and policy change, the following areas of future research should be explored:

1. Quality improvement study that examines selected health indicators in Indigenous peoples post Primary Care Network implementation when a sufficient trial period has been examined.
2. Research that evaluates if Indigenous communities in northern Manitoba have an interest in “Nuka” style health care reform.
3. Research that evaluates if there is other key stakeholder interest in “Nuka” style health care reform.
4. Research that evaluates the legal and constitutional barriers to “Nuka” style health system reform in Manitoba and Canada.
5. Research that evaluates a cost analysis for “Nuka” style health reform.
6. Research that evaluates if Indigenous communities would accept a Physician Assistant as a provider within their community health facility.
7. Research that evaluates the willingness of physician and nurses to accept a physician-Physician Assistant partnership within northern nursing stations.
8. Research that evaluates a cost analysis for introducing Physician Assistants into northern and remote Indigenous communities in Manitoba.

## Bibliography

1. Organization WH. Declaration of Alma-Ata [Internet]. 1978 [cited 2015 Feb 06]:3p. Available from: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0009/113877/E93944.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0009/113877/E93944.pdf?ua=1)
2. Organization WH. The World Health Report: Primary Health Care (Now More Than Ever) [Internet]. 2008 [cited 2015 Feb 06]:1-36. Available from: <http://www.who.int/whr/2008/en/>
3. Razack SH. Timely Deaths: Medicalizing the Deaths of Aboriginal People in Police Custody. Law, Culture and the Humanities [Internet]. 2011 06 [cited 2015 Feb 06];9(2):23p. Available from: <http://lch.sagepub.com/cgi/doi/10.1177/1743872111407022>.  
doi: 10.1177/1743872111407022
4. DiAngelo R, Sensoy Ö. Getting slammed: White depictions of race discussions as arenas of violence. Race Ethnicity and Education [Internet]. 2012 05 [cited 2015 Feb 06];17(1):103–128. Available from: <http://www.tandfonline.com/action/doSearch?quickLinkJournal=&journalText=&AllField=Getting+slammed%3A+White+depictions+of+race+discussions+as+arenas+of+violence&=Search&publication=40000327>  
doi: 10.1080/13613324.2012.674023
5. Razack SH. Memorializing Colonial Power: The Death of Frank Paul. Journal of American Bar Foundation [Internet]. 2012 03 [cited 2015 Feb 06];37(4):908-932. Available from: <http://doi.wiley.com/10.1111/j.1747-4469.2012.01291.x>  
doi: 10.1111/j.1747-4469.2012.01291.x
6. Ewen S, Mazel O, Knoche D. Exposing the Hidden Curriculum Influencing Medical Education on the Health of Indigenous People in Australia and New Zealand: The Role of the Critical Reflection Tool. Academic Medicine. 2012 02 [cited 2015 Feb 06];87(2):200–205. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22189879>
7. Holmes J. The Original Intentions of The Indian Act [Internet]. Joan Holmes & Associates Inc. [Internet]. 2002 04 [cited 2015 Feb 06]:34p. Available from: <http://www.joanholmes.ca/Indian Act Paper Final.pdf>
8. University, Brandon, Rural Development Institute, SPHERU U of R. Indicators of Northern Health: A Resource for Northern Manitobans and the Bayline Regional Round Table [Internet]. 2009 [cited 2015 Feb 06]:97p. Available from: <https://www.brandonu.ca/rdi/files/2011/08/IndicatorsOfNorthernHealth-FinalRpt2009.pdf>
9. Hutchison B, Levesque J-F, Strumpf E, Coyle N. Primary Health Care in Canada: Systems in Motion. Milbank Q [Internet]. 2011 [cited 2015 Feb 06];89(2):256–288. Available from: <http://www.ncbi.nlm.nih.gov.proxy2.lib.umanitoba.ca/pmc/articles/PMC3142339/pdf/milq0089-0256.pdf>
10. Freire P. Pedagogy of the Oppressed. Ramos MB, editor. New York: Herder and Herder; 1970. 186p.
11. A Consolidation of THE CONSTITUTION ACTS 1867 to 1982 (CA).
12. Canada H. [Internet]. Canada. The Government of Canada. 2015. About Health Canada-Health Canada 2013-2014 Departmental Performance Report. 2014 [cited 2015 May 20]. Available from: <http://www.hc-sc.gc.ca/ahc-asc/performance/estim-previs/dpr-rmr/2013-2014/report-rapport-eng.php#a1-3>
13. Canada H. [Internet]. Canada. The Government of Canada. 2015. First Nations and Inuit Health Branch. 2015. [cited 2015 Feb 06]. Available from: <http://www.hc-sc.gc.ca/ahc-asc/branch-dirigen/fnihb-dgspni/fact-fiche-eng.php>

14. Office of the Auditor General of Canada (CA). Spring 2015 Reports of the Auditor General of Canada- Access to Health Services for Remote First Nations Communities. Office of the Auditor General of Canada; 2015 [cited 2015 May 20]:33p. Available from: [http://www.oag-bvg.gc.ca/internet/docs/parl\\_oag\\_201504\\_04\\_e.pdf](http://www.oag-bvg.gc.ca/internet/docs/parl_oag_201504_04_e.pdf)
15. Committee CNA. Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses [Internet]. Policy Committee on Health Human Resources. 2004 [cited 2015 Jan 06]:91p. Available from: [http://rcrpp.org/documents/30762\\_en.pdf](http://rcrpp.org/documents/30762_en.pdf)
16. Health M. About Manitoba Health [Internet]. 2015 [cited 2015 Feb 06]. Available from: <http://www.gov.mb.ca/health/about.html>
17. Region NH. Finding Health Care-Our Facilities [Internet]. 2015 [cited 2015 Feb 06]. Available from: <http://www.northernhealthregion.ca/default.aspx?cid=135&lang=1>
18. Region NH. About Us [Internet]. 2015 [cited 2012 Apr 20]. Available from: <http://www.northernhealthregion.ca/default.aspx?cid=3&lang=1>
19. Statistics MB of. Manitoba's Aboriginal Community: a 2001 to 2026 Population & Demographic Profile [Internet]. 2005 [cited 2015 Feb 06]:9p. Available from: [http://www.gov.mb.ca/asset\\_library/en/statistics/demographics/Oview\\_PopProjPrelim2011\\_Free.pdf](http://www.gov.mb.ca/asset_library/en/statistics/demographics/Oview_PopProjPrelim2011_Free.pdf)
20. Canada T and RC of. Honouring the Truth, Reconciling for the Future [Internet]. 2015 [cited 2015 May 20]:388p. Available from: [http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Exec\\_Summary\\_2015\\_05\\_31\\_web\\_o.pdf](http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Exec_Summary_2015_05_31_web_o.pdf)
21. Health M. Aboriginal People in Manitoba [Internet]. 2012 [cited 2015 Feb 06]:100p. Available from: <http://www.gov.mb.ca/ana/pdf/pubs/abpeoplembweb.pdf>
22. Mikkonen J, Raphael D. Social Determinants of Health: The Canadian Facts. 2010 [cited 2015 Feb 06]:63p. Available from: [http://www.thecanadianfacts.org/The\\_Canadian\\_Facts.pdf](http://www.thecanadianfacts.org/The_Canadian_Facts.pdf)
23. Health NCC for A. Access to Health Services as a Social Determinant of First Nations, Inuit and Metis Health [Internet]. 2011 [cited 2015 Feb 06]:4p. Available from: [http://www.nccah-ccnsa.ca/docs/fact\\_sheets/social\\_determinates/Access\\_to\\_Health\\_Services\\_Eng\\_2010.pdf](http://www.nccah-ccnsa.ca/docs/fact_sheets/social_determinates/Access_to_Health_Services_Eng_2010.pdf)
24. Canada H. Final Audit Report: Audit of Primary Care Nursing Services [Internet]. 2010 [cited 2015 Feb 06]:20p. Available from: [http://www.hc-sc.gc.ca/ahc-asc/alt\\_formats/pdf/pubs/audit-verif/2010-06/final-audit-201-rapport-final-eng.pdf](http://www.hc-sc.gc.ca/ahc-asc/alt_formats/pdf/pubs/audit-verif/2010-06/final-audit-201-rapport-final-eng.pdf)
25. Health M. Roadmap to Primary Care Networks in Manitoba : An Introduction [Internet]. 2013 [cited 2015 Feb 06]:13p. Available from: <http://www.gov.mb.ca/health/primarycare/providers/pcn/docs/roadmap.pdf>
26. Health M. Primary Care [Internet]. 2015 [cited 2015 Feb 06]. Available from: <http://www.manitoba.ca/health/primarycare/public/index.html>
27. Health M. My Health Team [Internet]. 2015 [cited 2015 Feb 06]. Available from: <http://www.gov.mb.ca/health/primarycare/public/myhts/index.html>
28. Region NH. 2014 COMMUNITY HEALTH ASSESSMENT [Internet]. 2014 [cited 2015 May 20]:614p. Available from: [http://www.northernhealthregion.ca/data/1/rec\\_docs/1083\\_NHR\\_2014\\_CHA\\_Report.pdf](http://www.northernhealthregion.ca/data/1/rec_docs/1083_NHR_2014_CHA_Report.pdf)
29. Gottlieb K. The Nuka System of Care: Improving health through ownership and relationships. 2013 [cited 2015 Feb 06]:6p. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3752290/pdf/IJCH-72-21118.pdf>

30. Galbreath D, Eby D. The Southcentral Foundation. The SCF Nuka Model of Care: Community owned [Internet]. 2011 [cited 2015 Feb 06]:74 slides. Available from: <http://www.cfhi-fcass.ca/sf-docs/default-source/picking-up-the-pace-files/EbyGalbreath.pdf?sfvrsn=0>
31. Foundation TSC. Southcentral Foundation 30 year Report [Internet]. 2012 [cited 2015 May 20]:30p. Available from: [https://www.southcentralfoundation.com/files/2012\\_30-yearReport\\_web.pdf](https://www.southcentralfoundation.com/files/2012_30-yearReport_web.pdf)
32. Jones I. Consultation. 2015. This information was provided through consultation with Mr. Ian Jones (MPAS, CCPA, DFAAPA) Assistant Professor and Program Director, Faculty of Health Sciences, College of Medicine, Master of Physician Assistant Studies, University of Manitoba.
33. Association CM. Physician Assistant Toolkit [Internet]. 2012 [cited 2015 Feb 06]:36p. Available from: <https://www.cma.ca/Assets/assets-library/document/en/advocacy/PA-Toolkit-e.pdf>
34. Assistants CA of P. Canadian Association of Physician Assistants [Internet]. 2015 [cited 2015 Feb Feb 06]. Available from: <https://capa-acam.ca/about-pas/pa-fact-sheet/>
35. Kole L. Transforming Primary Care: PAs and patient-centered care. PA Prof [Internet]. 2012 [cited 2015 Feb 06];October:26p. Available from: <https://www.aapa.org/WorkArea/DownloadAsset.aspx?id=574>
36. Assistants CA of P. Canadian Association of Physician Assistants : Scope of Practice and National Competency Profile. 2009 [cited 2015 Feb 06]:29p. Available from: [https://capa-acam.ca/wp-content/uploads/2012/12/NCP\\_en\\_sept20092.pdf](https://capa-acam.ca/wp-content/uploads/2012/12/NCP_en_sept20092.pdf)
37. Ives R. Consultation. 2015. This information was provided through consultation with Mr. Russ Ives (MPAS, CCPA), Director, Provincial and Winnipeg Regional Health Authority Physician & Clinical Assistants Program, Winnipeg Regional Health Authority.
38. Alaska Native Epidemiology Center & Alaska Native Tribal Health Consortium (ANTHC). Alaska Native Health Status Report [Internet]. 2009 [cited 2015 May 20]:117p. Available from: [http://www.anthc.org/chs/epicenter/upload/01\\_HSRintro.pdf](http://www.anthc.org/chs/epicenter/upload/01_HSRintro.pdf)
39. Secretariat. Treasury Board of Canada. Agreement between the Treasury Board and the Public Service of Canada [Internet]. Labour. 2011 [cited 2015 May 20]:161p. Available from: [http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/coll\\_agre/cs/cs-eng.pdf](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/coll_agre/cs/cs-eng.pdf)  
Catalogue No. BT42-303/2014 ISBN 978-0-660-67440-7
40. Marzucco J, Hooker RS, Ballweg RM. A history of the Alaska physician assistant, 1970-1980. JAAPA [Internet]. 2013 Dec [cited 2015 May 20];26(12):45–51. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24270035>
41. American Academy of Physician Assistants. Physician Assistant Census Report: Results from the 2010 AAPA Census [Internet]. 2010 [cited 2015 Feb 06]:26p. Available from: <https://www.aapa.org/workarea/DownloadAsset.aspx?id=2147484825>
42. Assistants NC on C of P. 2013 Statistical Profile of Certified Physician Assistants: An Annual Report of the National Commission on Certification of Physician Assistants [Internet]. 2014 [cited 2015 May 20]:22p. Available from: <https://www.nccpa.net/Upload/PDFs/2013StatisticalProfileofCertifiedPhysicianAssistants-AnAnnualReportoftheNCCPA.pdf>
43. Blash L, Dower C, Chapman S. Southcentral Foundation — Nuka Model of Care Provides Career Growth for Frontline Staff Center for Health Professionals [Internet]. 2012 Jan [cited 2015 May 20]:13p. Available from: [http://futurehealth.ucsf.edu/Content/11660/2011\\_09\\_Southcentral\\_Foundation-Nuka\\_Model\\_of\\_Care\\_Provides\\_Career\\_Growth\\_for\\_Frontline\\_Staff.pdf](http://futurehealth.ucsf.edu/Content/11660/2011_09_Southcentral_Foundation-Nuka_Model_of_Care_Provides_Career_Growth_for_Frontline_Staff.pdf)



44. Health M. Map of Manitoba's Regional Health Authorities [Internet]. 2015 [cited 2015 Feb 06]. Available from: <http://www.gov.mb.ca/health/rha/map.html>
45. Foundation TS. The Southcentral Foundation [Internet]. Available from: <http://www.southcentralfoundation.com/ASU.cfm>

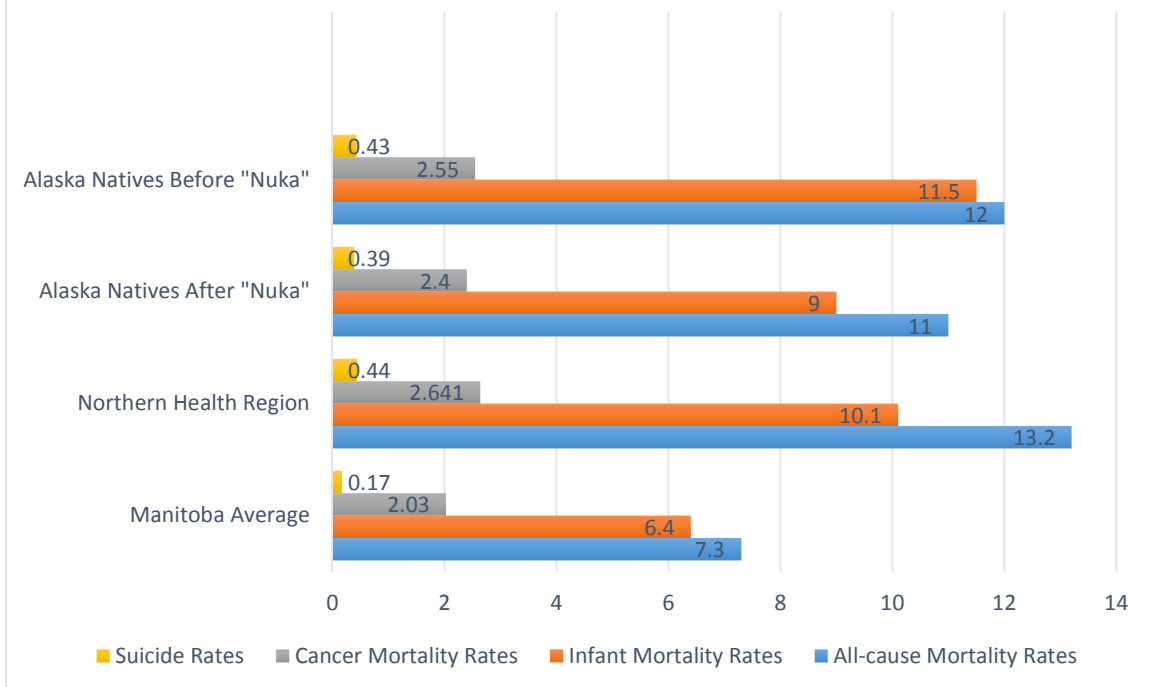
## [Appendix A]

<b>Benefits and Programs Provided to Indigenous Communities by Health Canada</b>	
<b>Non-insured health benefits</b>	<ul style="list-style-type: none"> <li>• Medically necessary goods and services to status Indians and eligible Inuit that supplement benefits provided by private or provincial/territorial programs.</li> <li>• Dental and vision care, prescription drugs, medical supplies and equipment, transportation to medical services etc.</li> </ul>
<b>Community based programs</b>	<ul style="list-style-type: none"> <li>• Healthy child development</li> <li>• Community mental wellness</li> <li>• Youth suicide prevention etc.</li> </ul>
<b>Primary Health Care</b>	<ul style="list-style-type: none"> <li>• Provides PHC in about 200 remote communities across Canada</li> <li>• Operates 223 health centers in semi-isolated communities</li> <li>• Operates 74 nursing stations in remote and semi-remote sites</li> <li>• Home and community care program in 600 communities</li> <li>• 41 alcohol and drug treatment centers</li> <li>• 9 solvent abuse centers</li> <li>• Employees 22 physicians and 675 nurses</li> <li>• Direct program delivery in 2 hospitals</li> </ul>
<b>Public health</b>	<ul style="list-style-type: none"> <li>• Programs designed to control communicable diseases such as tuberculosis</li> <li>• Monitor the safety of drinking water on-reserve</li> <li>• Monitor environmental health contaminant issues such as waste and water management and housing mold in FN communities</li> </ul>

**Table 1.0**

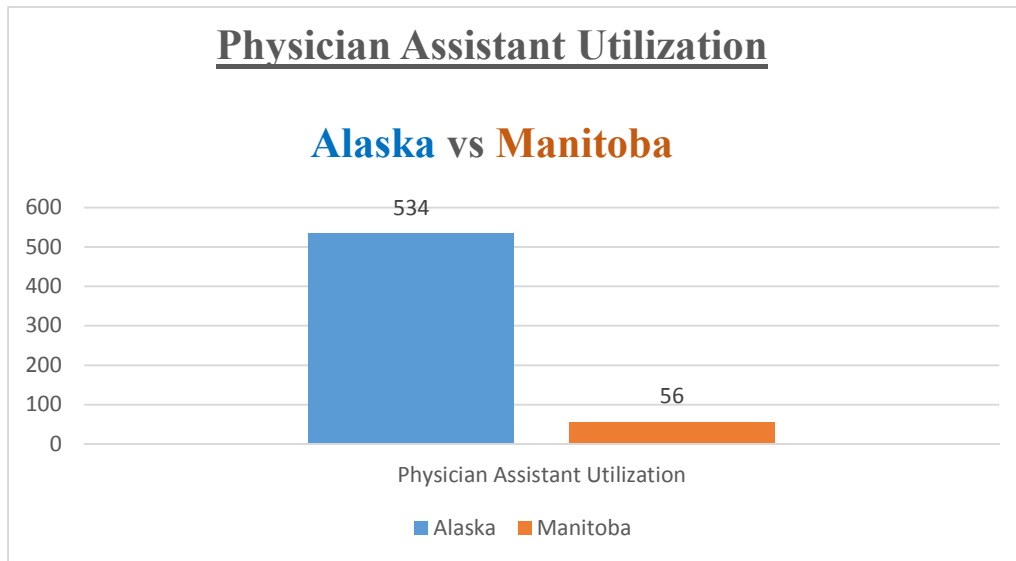
Source: (First Nations and Inuit Health Branch website) (13)

## Selected Health Indicators (Mortality Rates): Manitoba's Northern Health Region (2013) vs Manitoba Average (2013) vs Alaska Natives Before (1994) and After (2004) "Nuka" System Intervention



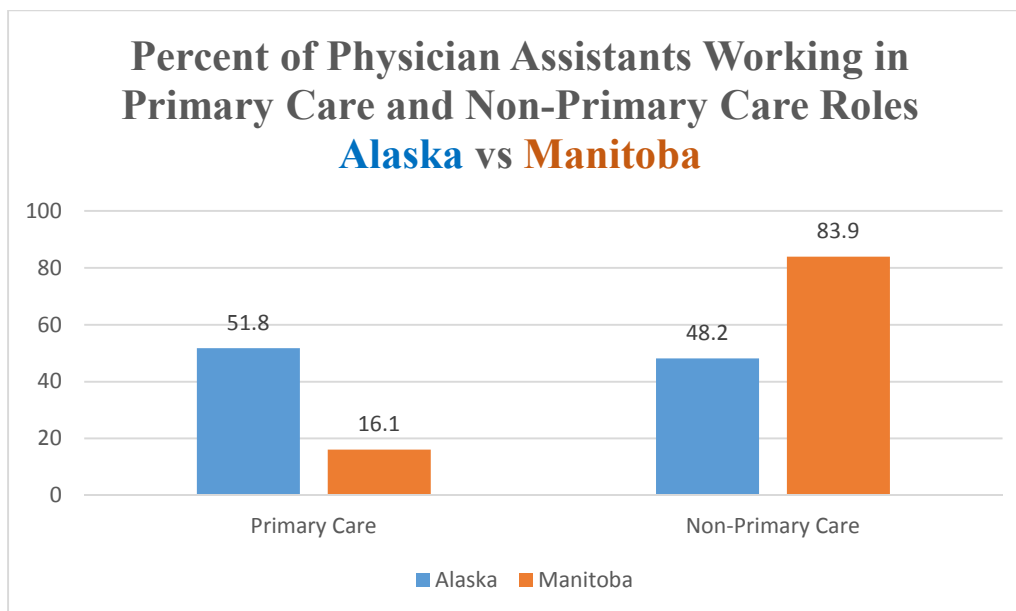
**Chart 1.0**

Source: (Northern Health Region and Manitoba average selected health indicators reported in the "2014 Community Health Assessment". Total population statistical values for cancer mortality rates are per 1,000 population (2007-2011), infant mortality rates are deaths per 1,000 live births (2007-2012), mortality rates are all-cause per 1,000 population (2007-2011), suicide mortality rates are per 1,000 population (2007-2011). Alaska Natives selected health indicators before "Nuka" and after "Nuka" system intervention reported by the Alaska Native Epidemiology Center/Alaska Native Tribal Health Consortium in their 2009 "Alaska Native Health Status Report". Alaska Native statistics extrapolated from a graphical representation and include before (1994) and after "Nuka" system intervention data-values for cancer mortality rates are per 1,000 population (1994/2004), infant mortality rates are deaths per 1,000 live births (1994/2004), mortality rates are all-cause per 1,000 population (1994/2004), suicide mortality rates are per 1,000 population (1994/2004). (28) (38)



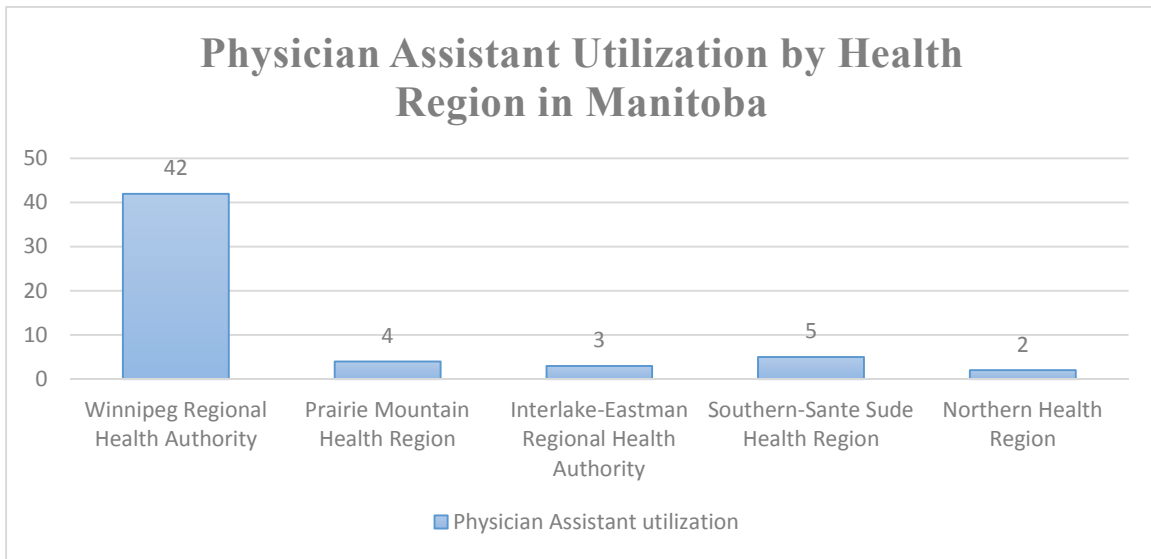
**Chart 1.1**

Source: (Alaska Physician Assistant data- American Academy of Physician Assistants, current as of 2010. Manitoba Physician Assistant utilization data - Russ Ives, Winnipeg Regional Health Authority, current as of 2015) (37) (41)



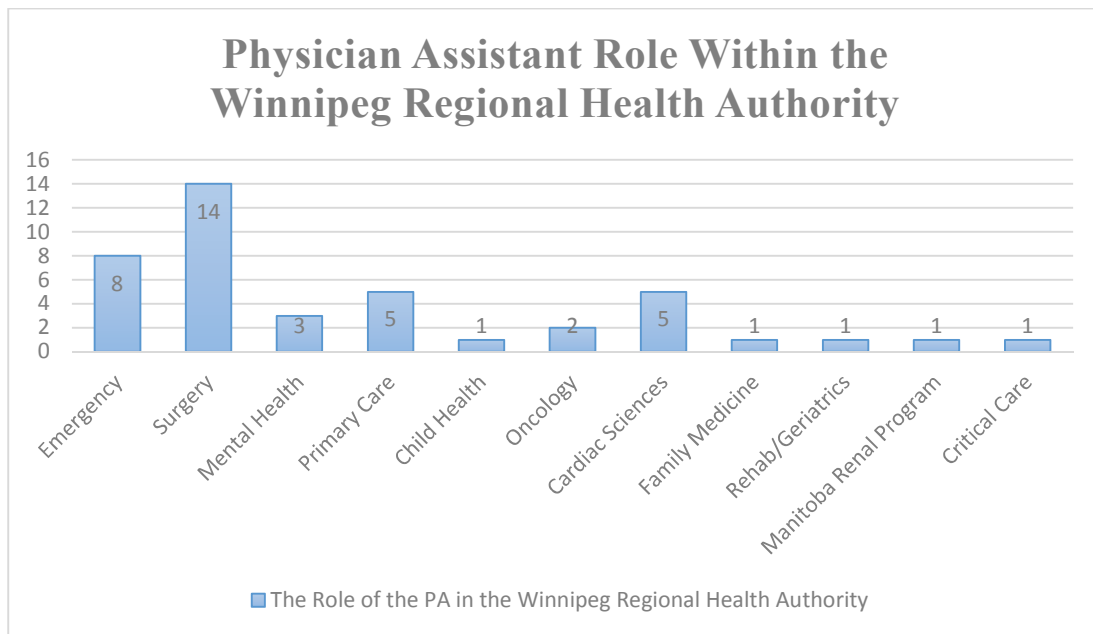
**Chart 1.2**

Source: (Alaska Physician Assistant utilization data – 2013 Statistical Profile of Certified Physician Assistants, National Commission on Commission on Certification of Physician Assistants, current as of 2014. Manitoba Physician Assistant utilization data - Russ Ives, Winnipeg Regional Health Authority, current as of 2015) (42) (37)



**Chart 1.3**

Source: (Russ Ives, Winnipeg Regional Health Authority, current as of 2015) (37)



**Chart 1.4**

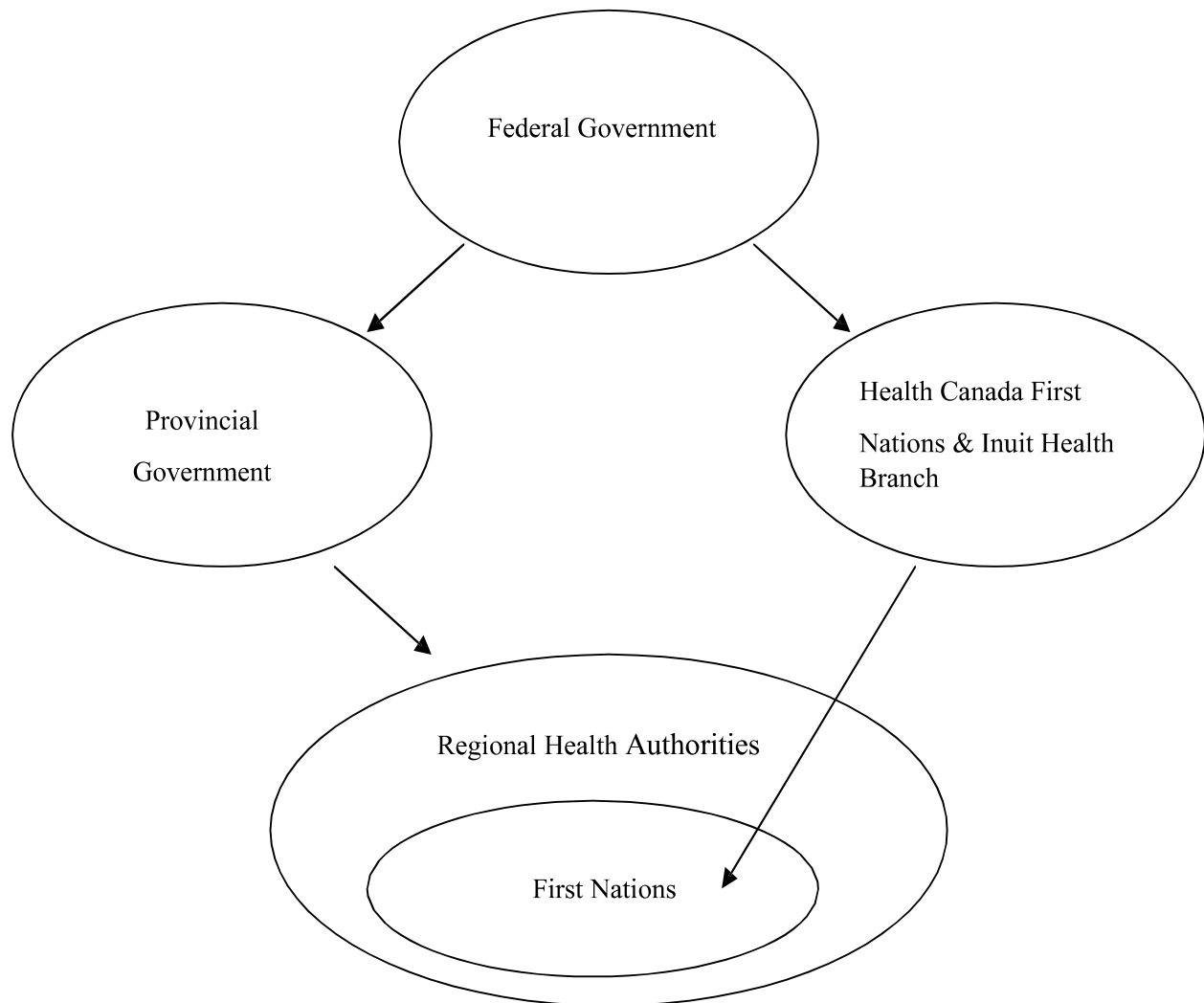
Source: (Russ Ives, Winnipeg Regional Health Authority, current as of 2015) (37)



**Figure 1.0**

Source: (Manitoba Health, current as of 2015) (44)

## Framework for current First Nation health service delivery in Manitoba

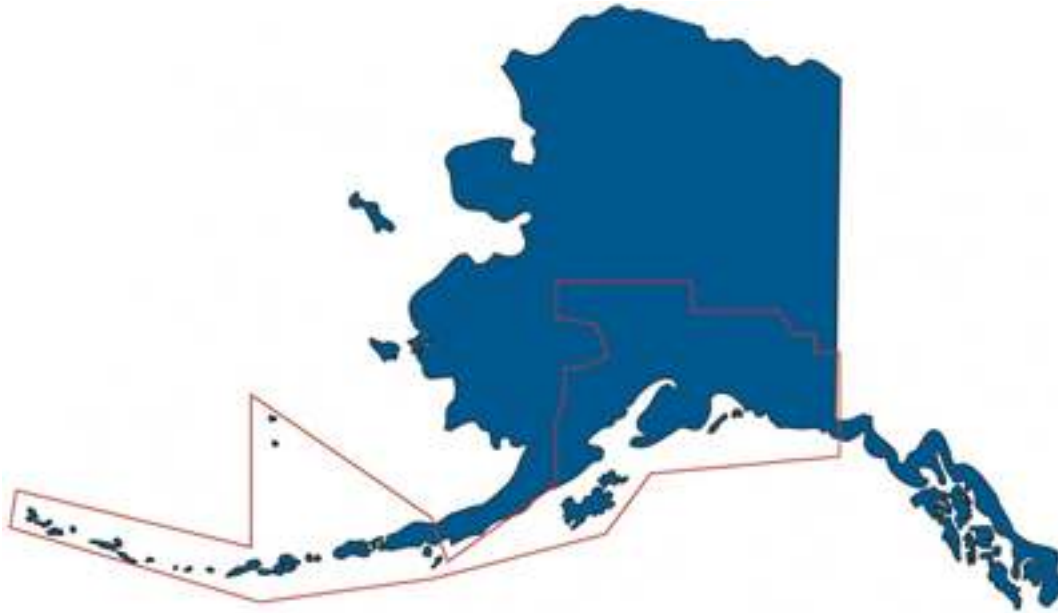


**Figure 1.1**

Source: (original work created by Catherine L. Cook, MD, 2003, extracted from “Indicators of Northern Health: A Resource for Northern Manitobans and the Bayline Regional Round”) (8 p23)



## Geographical borders of the service area for the Southcentral Foundation



**Figure 1.2**

Source: (Southcentral Foundation, current as of 2015) (45)