

**ROLE OF NURSE PRACTITIONER IN ADDRESSING
ABORIGINAL DIABETES PREVENTION**

by

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PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN NURSING: FAMILY NURSE PRACTITIONER

UNIVERSITY OF NORTHERN BRITISH COLUMBIA
May 2011

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Abstract

The current epidemic of Type-2 diabetes among Aboriginal Peoples in Canada has been associated with the poor socioeconomic status of Aboriginal Peoples. Most strategies in diabetes prevention treat health behaviour as an individual choice and ignore how the social determinants of health shape people's health behaviour. The purpose of this project is to explore how NPs might more effectively approach diabetes prevention in Aboriginal communities. This integrative literature review includes a critical analysis of Aboriginal community-based diabetes prevention strategies. A synthesis of their shared characteristics shows that effective community-based diabetes prevention strategies are congruent with primary health care and social justice perspectives on health, which focus on empowering communities and correcting institutionalized discrimination. Community-based strategies empower communities to take control of health promotion efforts and improve community resources and infrastructures that support healthier lifestyles. With an understanding of community-based programs, NPs can begin identifying how primary health care and social justice perspectives can strengthen existing diabetes prevention efforts in Aboriginal communities.

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Acknowledgement

I would like to thank my advisory committee of Dr. Martha MacLeod and Dr. Denise Tarlier for their guidance, support, and patience in the writing of the project. I would like to thank Jenna Innes for her support in the writing of this project. Finally, I would like to thank my parents Andrew and Winnie King for their constant love and encouragement and for teaching me the value of hard work and perseverance.

CHAPTER 1:

Introduction

Although the risk of developing Type-2 diabetes can be significantly reduced with diet and lifestyle modifications, conventional medical care has not reduced its rising incidence in Canada. Nowhere is the failure of conventional medical care in diabetes prevention more evident than among Aboriginal Peoples¹, among whom type-2 diabetes has been increasingly recognized as a population health epidemic. The prevalence of type-2 diabetes among Aboriginal Peoples has been measured exceeding national averages by 3 to 5 times (Ho, Gittelsohn, Harris, & Ford, 2006). Current measures may underrepresent its true extent. Health Canada estimates for every known case of diabetes in Aboriginal Peoples, there are 2 to 3 undiagnosed cases (Health Canada, 2005a). The lack of success in reducing diabetes rates among Aboriginal Peoples is in large part due to inadequate attention to their socioeconomic marginalization (Adelson, 2005). Adopting models of theory and practice that account for the full range of factors influencing Aboriginal Peoples' health is essential to bring about effective diabetes prevention.

The health of any population is strongly related to its socioeconomic status. Although the relationship between poverty and poor health is complex, there are several specific associations linking the two. First, unhealthy lifestyles are likely to be established behavioural norms in an impoverished community thus support for individuals seeking to change personal health behaviours are more likely to be scarce (Alvaro et al., 2011). Second, the disempowering experience of poverty is a significant barrier to good health. Impoverished individuals are more likely to be lacking many personal and material resources that would empower healthier lifestyle

¹ Aboriginal Peoples (or Aboriginal Peoples in Canada) is the preferred term to collectively describe Canadian Aboriginals, who include First Nations Peoples, Inuit, and Metis Peoples (Hill, 2009). Unless otherwise specified, where I use the terms Aboriginal Peoples or Aboriginal, it refers to Canadian Aboriginals.

choices (Raphael, Bryant, & Rioux, 2006). In addition to limited financial resources, poverty is associated with poor literacy (Raphael, 2004), poor mental health (Raphael et al., 2006), and limited control over one's life (Raphael et al., 2006).

Among Aboriginal Peoples, the high incidence of diabetes and other chronic diseases is strongly associated with their socioeconomic marginalization: high levels of poverty, low literacy, substandard housing, sedentary lifestyles, poor diets and inadequate food supplies, unsafe environments, and a lack of community infrastructure are all commonplace in many Aboriginal communities (Adelson, 2005; Richmond & Ross, 2009).

Contrary to the evidence associating the high incidence of diabetes and other chronic diseases with socioeconomic marginalization, Canada's healthcare system largely ignores the influences of poverty on health in primary care practice (Raphael, 2003). The explanation behind this oversight lies in the systemic adherence to a medical model that is inadequate for promoting population health. Canadian healthcare is based on an entrenched paradigm of health known as the biomedical model, which defines health as the absence of disease occurring in individuals (Raphael, 2003). In primary care practice based on a biomedical model, providers focus on tertiary disease treatment and disease screening rather than disease prevention. Where disease prevention does occur, it focuses on attempting to change the behavioural choices of individuals, who are viewed in isolation of their communities and the socioeconomic determinants that shape their choices. The biomedical model's limited perspective does not account for the influence of contextual factors, and the degree of control an individual can exert over those factors. Primary care practice based on a biomedical model poorly serves Aboriginal Peoples, whose considerable socioeconomic barriers to health continue to be minimized or ignored by Canada's healthcare

system. If headway is to be made in Aboriginal diabetes prevention, novel approaches are needed that have the potential to address underlying socioeconomic determinants of health.

Primary care practice based on primary health care (PHC) and social justice frameworks offers a promising alternative in Aboriginal health and diabetes prevention. In PHC perspectives, the health of populations is related to broad prerequisites of health. The Ottawa Charter for Health Promotion's health prerequisites include "peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity" (WHO, 1986, Prerequisites for Health). According to PHC perspectives, improvements in the health of a population can be made by improving on the population health prerequisites. Social justice perspectives are based on the premise that societal discrimination can foster the socioeconomic inequity facing certain groups and call for this discrimination to be identified and corrected (Canadian Nurses Association, 2006).

Based on PHC and social justice perspectives of health, community-based health interventions have emerged in recent years as promising approaches in Aboriginal diabetes prevention. Community-based interventions attempt to foster population health and prevent disease by building up internal community resources and infrastructures. A major goal of such interventions is to empower populations to address their own health needs by targeting community capacity building and collective mobilization (Merzel & D'Aflitti, 2003; Smith-Morris, 2006). Community-based health interventions offer a compelling template for effective diabetes prevention strategies among Aboriginal Peoples.

Nurse practitioners (NPs), as new players in the Canadian healthcare system, appear to be the ideal primary care providers to integrate community-based diabetes prevention strategies into

Aboriginal communities. What distinguishes NPs from other primary care providers is their educational background and practice philosophy which are aligned with PHC and social justice perspectives on health. NP educational programs and the Canadian Nurses Association [CNA] promote a holistic understanding of health that considers all factors that shapes health, including socioeconomic status (CNA, 2005a; CNA, 2005c). With a comprehensive understanding of health, NPs can identify that effective diabetes prevention needs to address both individual and contextual factors in the lives of their clients.

The purpose of this project is to explore how NPs can more effectively address diabetes prevention in Aboriginal communities by bringing PHC and social justice perspectives into their practice. An integrated literature review was conducted searching for combinations of key terms in the CINAHL, Medline, Native Health, Google scholar, and the McMaster APN databases. Key search terms included combinations of First Nations, American Indian, Aboriginals, Indigenous Peoples, diabetes, diabetes prevention, community-based diabetes prevention, and community capacity building. For background information on the health and socioeconomic profile of Aboriginal Peoples, additional terms were added, including health, mental health, chronic disease, socioeconomic status, social determinants of health, and social justice. Current health and socioeconomic data on Aboriginal Peoples were obtained from various Canadian governmental websites. For the discussion in Chapter 3 comparing health models, the key terms biomedical model, primary healthcare, and social determinants of health were used. Most of the acquired literature was scanned for further references.

Scholarly articles published in peer reviewed academic journals constitute the majority of sources. All the literature in this review was also evaluated for quality. The majority of current

articles on community-based diabetes prevention programs are non-randomized cohort studies. The optimum standard of controlled randomized trials is often not feasible in the community setting due to the practical difficulties of randomizing and isolating variables between intervention and control groups. The strength of studies was evaluated by analyzing the statistical data included in the studies. Particular attention was paid to sample size and statistical significance of study findings. Where peer reviewed articles were not available, secondary sources included Canadian government websites as well as websites from reputable international health organizations such as the World Health Organization.

Discussion begins in Chapter 2 with a brief health and socioeconomic profile of Aboriginal Peoples, focusing on the unique features of Aboriginal communities as they relate to health outcomes and diabetes prevention. In Chapter 3, the biomedical health model is contrasted with PHC perspectives on health. These two models are compared in terms of their ability to account for the influences of contextual factors, and thus succeed as an effective approach to diabetes prevention in Aboriginal communities. Chapter 4 presents a critical analysis of the literature exploring community based interventions in Aboriginal diabetes prevention with a particular focus on qualities of interventions that make them particularly successful. In the final chapter I discuss areas that NPs should focus on to begin addressing diabetes prevention in Aboriginal communities through a PHC and social justice lens.

CHAPTER 2:

A Profile of Aboriginal Peoples

For NPs to begin to understand how diabetes prevention may be more effectively approached in Aboriginal communities, it is necessary for NPs to recognize the relationship between Aboriginal poverty and poor health. This chapter outlines a historical and socioeconomic profile of Aboriginal Peoples and their links to the current epidemic of type-2 diabetes.

The Colonization of Aboriginal Peoples

Understanding the history of the colonization of Aboriginal Peoples is essential to understanding their contemporary socioeconomic status. The Canadian government's intent of colonization was to undermine Aboriginal culture and assume control of their vast territories and resources (Frawley-Henry, 2003). For example, Aboriginal Peoples were denied the right to represent themselves or vote in Canadian elections and were required to remain within designated areas known as reserves (Frawley-Henry, 2003). Aspects of Aboriginal culture and spirituality, such as sundances and potlatches, were declared illegal (Frawley-Henry, 2003). Where not outlawed, Aboriginal medicine and spirituality (and its practitioners) were widely ridiculed (Waldran, Herring, & Young, 2006). As Aboriginal traditions were pitted against "civilized culture", Aboriginal culture increasingly became sources of shame and division within Aboriginal communities (Aboriginal Healing Foundation [AHF], 2004).

Arguably the culmination of the colonization of Aboriginal Peoples was the creation of residential schools. Under the pretence of providing Aboriginal children with education (and converting them to Christianity), many Aboriginal children were coerced or taken from their

families and placed into government and church run institutions (AHF, 2004). Many children remained in residential schools indefinitely with little to no contact with their family and culture. There are extensive reports of frequent physical and sexual abuse occurring within residential schools (AHF, 2004). The trauma and destruction to Aboriginal individuals, families, communities, and culture resulting from residential schools continues to this day: Aboriginal cultural legacies have become extensively eroded and lost (AHF, 2004).

The provision of healthcare has also been a vehicle of colonization. The “TB evacuation” was another federally enforced institutionalization of Aboriginal Peoples, conducted with considerable cultural and human insensitivity (Adelson, 2005). In the first half of the last century, the federal Department of Indian Affairs oversaw the enforced evacuation and prolonged (and sometimes permanent) separation of many Aboriginal families into tuberculosis sanitariums (Waldram et al., 2006). For example, upon completion of treatment, many Aboriginal individuals were not returned to their communities (Waldram et al., 2006). Given the example of the TB evacuation, one can understand how healthcare has been viewed by Aboriginal Peoples as a vehicle of colonization and cultural trauma.

Levels of healthcare funding have been and continue to be vehicles of the socioeconomic marginalization of Aboriginal Peoples (Waldram et al., 2006). As Aboriginal Peoples became increasingly destitute via colonization, dependence on governmental health and welfare services became commonplace (Waldram et al., 2006). Budgets for healthcare services have by and large been inadequate to meet the health needs of Aboriginal Peoples (Waldram et al., 2006). Current healthcare budgets in Aboriginal communities continue to be grossly inadequate (Lavoie, Forget, & Browne, 2010).

Access to healthcare services and professionals is also poor in many rural and remote Aboriginal communities (Adelson, 2005; Cass, 2004). Commonplace issues include a lack of qualified primary care providers, high rates of practitioner turnover, and large patient loads (Shah, Gunraj, & Hux, 2003). Aboriginal Peoples have very high rates of ambulatory care sensitive² hospital admissions, supporting the evidence that they have inadequate access to primary care services (Lavoie, et al., 2010; Shah et al., 2003). Current evidence also suggests Aboriginal Peoples have inadequate access to medical specialists (Cass, 2004; Shah et al., 2003). For example, very high rates of limb amputation among Aboriginal diabetics indicates inadequate access to medical specialists whose oversight has been shown to reduce the risk of amputation (Shah et al., 2003). The evidence regarding the inadequacy of healthcare services to Aboriginal communities indicates that the current structure of healthcare provision is itself an institutionalized barrier to optimal Aboriginal health.

A Socioeconomic Profile of Aboriginal Peoples

As will be discussed in the next chapter, the health of a population is strongly influenced by its socioeconomic status. The socioeconomic profile of Aboriginal Peoples is dismal. The average income for an Aboriginal person living on a reserve is 49% of the national average income; off reserve it is 58% (Statistics Canada, 2001, as cited by Mendelson, 2006). Aboriginal unemployment ranges between 150 to 362% of the national unemployment average (Mendelson, 2006). Fifty-nine percent of Aboriginal adults living on reserve have not completed high school (Mendelson, 2006). Only 56% of homes in Aboriginal communities meet minimum standards for adequate living environments (Health Canada, 2005b). Finally, as a hallmark statistic of

² Ambulatory care sensitive conditions are medical conditions typically well managed on an outpatient basis.

Aboriginal marginalization, 16% of inmates in the Canadian penal system are Aboriginal, despite only composing 3% of the Canadian population (Canadian Criminal Justice Association, 2000).

Many Aboriginal communities have inadequate infrastructure and resources to support community health and wellness (Adelson, 2005). Accessibility to healthy foods is often lacking, especially in remote and isolated Aboriginal communities (Ho, Gittelsohn, Harris, & Ford, 2006). Lack of affordable and reliable transportation may be another significant health issue, hampering access to both healthier foods and healthcare services in larger communities.

Finally, the federal budget supporting Aboriginal individuals and communities continues to be inadequate and perpetuates Aboriginal poverty (Raphael et al., 2006). Many Aboriginal communities are lacking in infrastructure and development that supports population health (Adelson, 2005). Many Aboriginal communities continue to struggle meeting basic public health requirements such as safe drinking water (National Aboriginal Health Organization, 2002) or housing that meets minimum safety standards (Health Canada, 2005). Infrastructure supporting healthy lifestyles is also lacking in many Aboriginal communities. For example, many Aboriginal communities may be lacking in safe or appropriate places to walk or exercise (Ho et al., 2006).

A Health and Lifestyle Profile of Aboriginal Peoples

The cultural trauma of colonization and the continued socioeconomic marginalization of Aboriginal Peoples is associated with their poor health profile (Adelson, 2005). Health and lifestyle norms common among Aboriginal Peoples are influenced and reinforced by their socioeconomic status (Reading, 2009). In particular, mental health issues are commonplace in many communities and have great impact on Aboriginal health and wellness (AHF, 2004).

The marginalization of Aboriginal culture has been implicated in creating widespread collective and individual disempowerment (AHF, 2004). Thirty percent of Aboriginals report recent feelings of sadness and depression (Health Canada, 2007). Feelings of helplessness and powerlessness are commonplace among Aboriginal Peoples (AHF, 2004). Seventy-three percent of Aboriginal communities report widespread issues with alcohol abuse (AHF, 2007).

Mental health issues facing many Aboriginal Peoples are significant barriers to health promotion and disease prevention. Among Aboriginal individuals lacking in adaptive internal resources, such as feelings of empowerment or positive self-esteem, their motivation for changing unhealthy lifestyles is likely to be limited (AHF, 2004). Similarly, following healthier lifestyles may not be a priority because of more immediate safety and wellness concerns such as the violence associated with substance abuse.

The rapid increase in type-2 diabetes among Aboriginal Peoples has been attributed to the disintegration of traditional Aboriginal diets and lifestyles (Katzmarzyk & Malina, 1998). Traditional Aboriginal diets were high in protein, moderate in fat, and low in carbohydrates (Hanley et al., 2000; Young et al., 2000). Conversely, the current diet of many Aboriginal Peoples is high in processed carbohydrates and simple sugars, high in saturated fat, variable in protein, and low in fibre (Gittelsohn et al., 1998; Liu et al., 2006). Common food preparation methods among Aboriginal Peoples have also become less healthy. In comparison to traditional food methods of boiling and roasting foods (Ho et al., 2006), frying foods with high amounts of added lard, shortening, and fat has become a common practice (Gittelsohn et al., 1998).

Traditionally, many Aboriginal Peoples were very physically active with hunting and gathering activities until the beginning of the last century (Gittelsohn et al., 1998). Sedentary

lifestyles have become a social norm among Aboriginal Peoples (Young, Reading, Elias, O'Neil 2000; Samson & Pretty, 2006). Akin to North American cultural norms, Aboriginal Peoples spend significant time watching television; extended time spent watching television is implicated in metabolic disease risk (Hanley et al., 2000).

This dramatic shift to a poor diet and sedentary lifestyles among Aboriginal Peoples has been associated with the rise in Aboriginal diabetes. The rate of type-2 diabetes among Aboriginal Peoples is 3 to 5 times above Canadian population averages (Ho et al., 2006). A recent epidemiological study revealed that between 1980 and 2005, the prevalence of diabetes among Saskatchewan Aboriginal Peoples rose from 9.5 to 20.3% among women and from 4.9 to 16% among men; comparative rate increases among non-Aboriginal Peoples were 2.0 to 5.5% among women and from 2.0 to 6.2% among men (Dyck, Osgood, Hsiang, Gao, & Stang, 2010). By 2005, close to 50% of Aboriginal women and 40% of Aboriginal men aged 60 and older had diabetes; among non-Aboriginal comparison groups, at age 80 and up, less than 20% of women and less than 25% of men had diabetes (Dyck et al., 2010). If the Dyck et al. study is representative of broader Canadian trends, the peak age of diabetes incidence among Aboriginal Peoples is currently between 40 and 49. In comparison, among non-Aboriginal peoples the peak age of diabetes incidence is greater than age 70 years (Dyck et al., 2010).

The most predictive risk factor for type-2 diabetes is obesity (Canadian Diabetic Association [CDA], 2008). Obesity rates are high among Aboriginal Peoples: 32% of Aboriginal men and 40% of Aboriginal women meet body mass index (BMI) criteria for obesity, compared to national averages of 26% among men and 23% among women (Human Resources and Skills Development Canada, 2011). Compared to a national average of 24%, 58% of Aboriginal

children living on reserve are estimated to be overweight or obese (Public Health Agency of Canada, 2009).

The major cardiovascular morbidity and mortality risks of diabetes are high among Aboriginal Peoples³. For example, heart disease and hypertension among Aboriginal adults is two to three times the national average (Smylie et al., 2001). End stage renal disease among Aboriginal Peoples is two to four times the national average (Smylie et al., 2001).

Gestational diabetes, the onset of maternal diabetes during pregnancy, is a significant health issue facing Aboriginal females. In addition to the immediate health risks of poor maternal glycemic control to both mother and fetus, gestational diabetes is also strongly associated with future metabolic risk for both mother and child (CDA, 2008). Thus gestational diabetes may be a significant vehicle by which FN's diabetes risk is propagated between generations. It is estimated that the gestational diabetes prevalence rate in Aboriginal Peoples is between 8 and 18% (CDA, 2008). In comparison, the national prevalence of gestational diabetes is 3.7% (CDA, 2008).

The socioeconomic and health profile of Aboriginal Peoples is associated with the current epidemic of type-2 diabetes among Aboriginal Peoples. In order to meaningfully address Aboriginal diabetes prevention, nurse practitioners need to incorporate approaches that take into account the socioeconomic influences on Aboriginal health. In the next chapter it will be argued that Primary Health Care (PHC) and social justice perspectives show promise for Aboriginal diabetes prevention.

3 Cardiovascular risks encompass macro-vascular (coronary heart disease, hypertension, peripheral vascular disease) and micro-vascular (retinopathy, neuropathy, nephropathy) conditions (McCance & Huether, 2006).

CHAPTER 3:

Comparing Biomedical and PHC Models In Disease Prevention

To understand how diabetes prevention among Aboriginal Peoples is currently approached, it is necessary to understand the biomedical health model which underlies the provision of western health care. Health policy and primary care based only on biomedical perspectives are limited in their potential to improve the health of Aboriginal Peoples. In comparison, health policy and primary care based on primary health care (PHC) perspectives of health show great potential for improving Aboriginal health. In particular, community-based approaches, based in PHC perspectives of health, offer a promising approach to Aboriginal diabetes prevention. By incorporating PHC and social justice perspectives into their practice, NPs have the potential to more effectively address diabetes prevention among Aboriginal peoples.

Biomedical Approaches to Healthcare and Its Limitations

Models of health attempt to explain what creates health in individuals and populations. Models of health also provide conceptual frameworks for healthcare delivery, guiding the strategies and actions to be taken to address health issues (Ontario Health Promotion Resource Centre, 2010). For example, a primary care provider whose guiding health model conceptualizes health in terms of individual physical health is unlikely to consider if and how social and environmental living conditions contribute to disease (Raphael et al., 2006; Wade & Halligan, 2004). Similarly, the structure, policy, and practices of a healthcare organization will reflect the underlying assumptions of the health model subscribed to by the health organization. If health is viewed as the result of biological functioning or lifestyle choices, health policy and

professionals' practices will likely prioritize screening for and treating disease in individuals and public education strategies will advise people to improve their lifestyles.

In the western world, the biomedical model is the dominant model of health. In the biomedical tradition, health is defined by the absence of deficits of dysfunction (Raphael et al., 2006). Deficit and dysfunction are viewed in terms of biological functioning, and priority is given to the medical screening and treatment of individuals for disease (Raphael et al., 2006).

The dominance of the biomedical model of health can be observed in healthcare's structure, policy, and primary care practices. The structure and policy of western healthcare is increasingly orientated around short term disease control and specialized curative care (World Health Organization [WHO], 2008). There is a decline in public access to primary care providers, whose holistic approaches to patient care are increasingly discouraged within modern specialist-orientated healthcare structures (WHO, 2008). In most primary care practices, priority is given to screening for disease in individual patients, who are managed with medications and then medically monitored (CNA, 2005c). Health promotion and disease prevention strategies are generally limited to advising people to make healthier lifestyle choices, which are assumed to be an individual's free choice and therefore personal responsibility (Raphael, 2004).

A deficit of biomedical based healthcare is its failure to account for and address non-biological influences on individual and population health (Browne, 2001). Raphael et al. (2006) argue that there is strong evidence to demonstrate that individual health and health behaviours are highly influenced by shared socioeconomic living conditions across a population. Despite strong evidence associating socioeconomic living conditions with population health, Canadian healthcare largely ignores socio-economic influences on health in both public policy and primary

care practice (Raphael, 2004). Although the failure to address socioeconomic status influences limits the efficacy of health promotion efforts among all groups, health promotion efforts among the most marginalized groups such as Aboriginal Peoples may be the most affected (Colagiuri, Colagiuri, Yach, & Pramming, 2006). Health promotion and disease prevention efforts that largely ignore the socioeconomic marginalization of Aboriginal Peoples are destined to have limited effectiveness.

The continuing failure to address the detrimental health effects of Aboriginal socioeconomic status can be observed in current healthcare policy and primary care practices. For example, a Health Canada educational website for Aboriginal diabetes prevention stresses the importance of following a proper diet and exercising regularly to decrease one's risk of developing diabetes (Health Canada, 2010). In the current guidelines of the Canadian Diabetes Association (CDA, 2008), practitioners are told to identify modifiable risk factors in their Aboriginal patients (obesity, inactivity, poor diets) and to encourage patients to modify their lifestyles. In both examples, there is no acknowledgement of how the socioeconomic marginalization of Aboriginal Peoples has shaped their poor health behaviours, only that their health behaviours are poor.

The established norm in healthcare policy and practice of educating and advising individuals to change their health behaviours (while ignoring the socioeconomic determinants of that behaviour) promotes victim-blaming (Raphael, 2004). Victim blaming is blaming impoverished people for their poor health and lifestyle choices (Raphael, 2004). If health care professionals subscribe to a perspective that assumes all individuals are equally free to choose their health behaviours, patients are likely held to be responsible if they do not adhere to

prescribed behaviours. Among health care providers who provide services to Aboriginal Peoples, there is a well- documented tendency among healthcare providers to blame Aboriginal patients for treatment non-compliance (Adelson, 2005; Cass, 2004). Socioeconomic influences on health (such as income, education, food supply, social environments, and community infrastructure) continue to be minimized or ignored among many primary care practitioners (Cass, 2004).

A final limitation of biomedical perspectives specific to Aboriginal health is the incompatibility of biomedical health definitions with traditional Aboriginal perspectives of health. In traditional Aboriginal perspectives, health is seen as a combination of physical, emotional, mental, and spiritual wellness, as well as one's connectedness with family and community (Adelson, 2005). In contrast, biomedical perspectives define health as the absence of disease or dysfunction. Approaches that work towards mutually agreeable perspectives and values surrounding health and healthcare may strengthen the ability of healthcare providers and Aboriginal communities to collaborate in health promotion and diabetes prevention.

Primary Health Care Perspectives on Health

Primary health care (PHC) draws from the biopsychosocial health model, which has a holistic definition of health. In biopsychosocial perspectives, health is viewed as a product of biological health, psychosocial influences, and socioeconomic living conditions (Thomas-MacLean, Tarlier, Ackroyd-Stolarz, Fortin, & Stewart, 2003). Based in biopsychosocial perspectives, PHC approaches to health promotion seek to comprehensively identify and address individual, institutional, and population trends that shape population health (Raphael et al., 2006). Definitions of PHC can be expansive and difficult to distil. An early definition of PHC is offered as provided by WHO (1978):

Primary health care is essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part of both the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community.

The qualities of PHC include socially acceptable methods, universal accessibility, affordability, community participation, community self-reliance and self-determination. Community focused healthcare is an underlying theme in WHO's definition of PHC. Community focused healthcare engages communities as active partners in determining their own healthcare needs and priorities rather than treating communities as passive recipients (Feenstra, 2000). In contrast, conventional biomedical-based health approaches are potentially the antithesis of community focused health care, if one considers current healthcare trends of increasing centralization of services, declining access to primary care providers, and increasing specialization of medical providers, access to whom is carefully controlled by healthcare structures (WHO, 2008).

PHC perspectives have evolved since the WHO's 1978 definition. The WHO Ottawa Charter for Health Promotion's (1986) health prerequisites included peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice, and equity (WHO, 1986). In a 2002 conference on social and health policy at York University, a list of nine key social determinants of health (SDOH) were developed, later to be expanded into fourteen SDOH. The

expanded York Conference list includes Aboriginal status, early life conditions, education, employment and working conditions, food security, gender, health care services, housing, income and income distribution, social safety net, social exclusion, and unemployment and employment security (Raphael, 2004). It is noteworthy that Aboriginal status earned the label of a Canadian SDOH, due to the profound socioeconomic marginalization of Aboriginal Peoples in Canadian society (Raphael, 2004).

An understanding of health determinants (or SDOH) will likely continue to evolve. However, an essential theme in understanding PHC perspectives is that socioeconomic living conditions are predictive of population health: “The weight of the evidence suggests that the SDOH have a direct impact on the health of individuals and populations, are the best predictors of individual and population health, structure lifestyle choices, and interact with each other to produce health” (Public Health Agency of Canada, 2004, as cited by Raphael, 2003, p.1). The promise of PHC perspectives in promoting Aboriginal health lies in the ability of PHC perspectives to address the underlying socioeconomic determinants that shape the health of Aboriginal Peoples.

Browne (2001) observes that healthcare's failure to meaningfully address socioeconomic health determinants is not accidental. Rather, the biomedical paradigm continues to dominate in part because its underlying assumptions of health are most congruent with the dominant liberalist (or neo-liberalist) political ideology among western governments (Browne, 2001). State non-involvement in socioeconomic regulation is also advocated in liberalist ideology, as the free market economy's invisible hand is thought to serve the public welfare (Browne, 2001). Under increasing liberalist governmental ideology, there has been a decline in governmental funding in

social welfare policy including healthcare (York Conference, 2002). The continuing neglect of healthcare policy and practice to address socioeconomic health determinants can be viewed in accordance with liberalist government priorities.

Public awareness on the SDOH also remains low. The media largely ignores SDOH in discourse, instead focusing on the importance of healthcare and personal health habits as the most important health determinants (Gasher, Hayes, Hackett, Gutstein, Ross, & Dunn, 2007; Raphael, 2011). For example, a recent Canadian Broadcasting Corporation (CBC) online news article on diabetes among Aboriginal females associates the rise of Aboriginal diabetes with the loss of traditional lifestyles and rising obesity rates. With the exception of a vague acknowledgment of environmental influences on Aboriginal diabetes, no mention is made on the socioeconomic status and living conditions of many Aboriginal Peoples that is associated with unhealthy Aboriginal lifestyles (CBC, 2010). Government and media reinforcement of the importance of health care and individual health behaviours continue to shift public awareness away from more accurate perspectives of population health.

PHC and Social Justice Approaches

Although PHC approaches in health can identify and seek to rectify Aboriginal socioeconomic health determinants, social justice approaches are required to identify institutionalized discrimination and inequity in governmental and healthcare policy and practice that continue to undermine Aboriginal health and wellness. Effective Aboriginal diabetes prevention will require both PHC and social justice approaches in healthcare policy and primary care practice.

The concept of social justice emerged from the watershed 1978 Declaration of Alma Ata

that stated health should be a fundamental human right instead of a special privilege of select groups. Social justice perspectives call to attention the relationship between the unequal distribution of socio-economic resources within populations and the predictive burden of increased disease among the impoverished (CNA, 2009). Social justice then calls for examination of if and how governmental policy and systems influence and reinforce the socioeconomic burden on disadvantaged groups (CNA, 2009).

The task of re-defining and re-approaching Aboriginal health promotion and diabetes prevention from PHC and social justice perspectives may appear daunting. Fortunately, there already exist models of Aboriginal diabetes prevention that offer templates for implementing PHC and social justice approaches into diabetes prevention. Community-based approaches provide effective methods for approaching diabetes prevention in Aboriginal communities. By incorporating these community-based health promotion strategies into their practice, NPs have great potential to effectively address diabetes prevention in Aboriginal communities.

CHAPTER 4:

Indigenous⁴ Community-Based Diabetes Prevention Programs

Chapter 4 presents a literature synthesis of Indigenous community-based diabetes prevention programs. With an understanding of the shared qualities of successful community-based programs, NPs may begin identifying how to effectively bring PHC and social justice perspectives into their diabetes prevention efforts in Aboriginal communities.

The theme of community empowerment unifies the qualities of Indigenous community-based diabetes prevention programs. The most successful programs enable Indigenous communities to address diabetes prevention from within by empowering these communities to strengthen local resources and infrastructures that support the ability of community members to make and sustain healthier lifestyle changes.

“Empowerment refers to the process by which people gain control over the factors and decisions that shape their lives. It is the process by which they increase their assets and attributes and build capacities to gain access, partners, networks, and/or a voice, in order to gain control” (WHO, 2011, para 1).

The concept of community capacity building is closely related to the concept of community empowerment. Labonte and Laverack (2001) define community capacity building as follows: “Community capacity building describes a generic increase in community groups' ability to define, analyze and act on health (or any other) concerns of importance to their members” (p. 115). Capacity building denotes a continuous dynamic process whereby communities are better able to address future needs by building community resources in the

⁴ In this critical analysis, studies of community-based diabetes prevention programs occurring among all international Indigenous peoples were reviewed. The term Indigenous will refer to all international Indigenous Peoples and the term Aboriginal will continue to be specific to Canadian Aboriginals.

course of interventions and programs (Labonte & Laverack, 2001). Although there are clear parallels between community capacity building and community empowerment, community capacity building may be viewed as a dynamic process whereby community empowerment evolves more slowly. Both concepts may be viewed synonymously as broader PHC philosophies that seek to enable communities to mobilize and build supportive environments that promote community health.

Under a framework of community empowerment and capacity building, the qualities of successful Indigenous community-based diabetes strategies will be synthesized in this chapter. The qualities include community control or ownership of programs, tailoring programs to communities, supportive social environments, changing public policy, culturally safe approaches, sustainability of interventions, and appropriate evaluation strategies.

Community Control and Ownership of Interventions

Given the history of the colonization of Aboriginal Peoples, it is not surprising that self-determination and self government are fundamental priorities of Aboriginal Peoples (Smith-Morris, 2006). Self government and self-administration are seen among Aboriginal Peoples as a means to correct their long standing socioeconomic disempowerment (Christopher, Watts, Knows, McCormick, & Young, 2008). In this quest for autonomy, Aboriginal communities are demanding ownership and control of their healthcare services, including community health promotion programs (Struthers et al., 2003).

The World Health Organization (WHO) advocates that health promotion be empowering to communities and that it “should not be promoted and enhanced through a top-down, expert-driven approach” (WHO, 1984, as cited by Potvin et al., 2003, p. 1295). Contrary to WHO

recommendations, top-down, expert-driven interventions continue to be the predominant method of health promotion programming in Canada (Potvin et al., 2003). However, expert-driven health promotion programs are especially incongruent with Aboriginal priorities of self-determination and are poorly received in Aboriginal communities (Smith-Morris, 2006).

The current literature on Indigenous diabetes prevention supports that programs with extensive community participation or control are more successful than those with nominal community input (Struthers et al., 2003). The success of programs with greater community control is associated with their respect for Indigenous priorities of self-determination. Programs offering community control are more accepted by Indigenous communities (Smith-Morris, 2006)

A focus on community ownership and control of health promotion denotes an important characteristic of successful community-based interventions. Although community-based is the preferred descriptive term in the current literature, the terms community-focused or community-owned more accurately describe the required qualities of successful health promotion as these terms signify actual community empowerment. Unfortunately, any program delivered in a community may be described as community-based regardless of the amount of community control existing. For example, an expert driven program with no community control might be labelled community-based. In any case, as community-based is the preferred descriptive term in the current literature, it will be used in this discussion.

Failures of many Indigenous diabetes prevention programs may be accounted for by a failure to understand the importance of enabling community control. For example, Daniel et al. conducted a study evaluating the efficacy of community-based interventions in diabetes prevention (1999). At the conclusion of a two year study, a wide variety of community-based

interventions failed to demonstrate even incremental impact (Daniel et al., 1999). Although not acknowledged by the authors, their program's lack of impact may have been associated with a lack of community control. Community participation appeared to be limited to hiring community members to deliver preconceived programming developed by the authors. Enabling meaningful community input and control were not discussed as potential influences on the impact of interventions.

A common challenge to Indigenous self-administration of health promotion programs is a lack of necessary community resources and expertise (Potvin et al, 2003). Collaborative approaches that form partnerships between Indigenous communities and outside professionals are becoming established as successful approaches in Indigenous diabetes prevention. The acceptance of collaborative approaches is attributable to their inherent respect of Indigenous control over community interventions (Ho et al., 2006; Macaulay et al., 1997). The lesson for health promotion in Aboriginal communities is that forming partnerships with community stakeholders is an acceptable and effective approach to health promotion in Indigenous communities.

The process of community assessment offers a means to understand the unique context of each Aboriginal community, including questions about identifying community stakeholders. Mckenze, Neiger, and Thackeray (2009) advocate gaining support among the highest level of administration in any setting because high level administration is the most capable of providing health promotion programs with support. High level administrators in an Aboriginal community would therefore be appropriate targets for relationship building in order to gain community support for future health promotion efforts.

Although finding high level administrative support is important, equally important is finding local stakeholders who can participate in all stages of programming (Mckenze et al., 2009). A common strategy in the current literature for enabling community participation has been the recruitment of community health workers (CHWs⁵) to participate in programs. In studies where CHWs have been empowered with adequate training and support, their involvement has been associated with increased intervention impact. For example, in the New Zealand Te Wai O Rona Diabetes prevention program, 20 Maori CHWs were educated in physiology, communication skills, and motivational interviewing (Simmons et al., 2008). The CHWs then organized and coordinated their own caseloads as health counsellors. The expanded responsibilities of CHWs were associated with increased community acceptance and impact of the intervention.

In Canada, CHWs or community health representatives (CHRs) are community members employed to provide a variety of healthcare services. Based on government sources and job descriptions, the roles of CHWs include providing basic physical care to clients, monitoring clients' health and well being, providing health promotion and education, acting as client and community health advocates, acting as a cultural liaison, and various administrative duties. CHWs usually acquire the knowledge and skills to perform their duties through educational programs, varying in length from 36 weeks to one year (Government of Alberta, 2008; Government of the Northwest Territories, 2005).

Outside the realm of community-based health interventions, CHWs (or CHRs) are largely

5 Community health representative (CHR) is the preferred term in Canada, however CHW is the preferred term in the current literature and will be used in this project. A description of the roles and education of CHRs/CHWs in Canada will be made further on.

underutilized in many Aboriginal communities. Smith-Morris (2006) observes that CHWs are often disempowered in Aboriginal healthcare centres, receiving limited professional support, inadequate funding, limited decision making power, and limited resources. By failing to utilize CHWs to their potential, many Aboriginal communities may be losing an opportunity to increase the efficacy of health promotion efforts.

Although ownership and control of health promotion interventions are associated with program efficacy, the capacity of an Aboriginal community will determine if community ownership can be an immediate reality. Community members may not yet have the skills or expertise to independently implement health promotion programs. Regardless, meaningful community participation can be promoted at every level of community capacity.

Tailoring Programs to Individual Communities

For diabetes prevention interventions to be empowering to Aboriginal communities, programs must build upon existing community resources. For example, advocating for elaborate exercise classes in an Aboriginal community without the financial resources or infrastructure to support the proposed intervention possibly would have limited success. It is disempowering to a community to propose unrealistic programs. Because the uniqueness of every Aboriginal community affects the efficacy of interventions, it is crucial that programs are developed and tailored to community needs and abilities (Ho et al., 2008).

Tailoring programs to an Aboriginal community requires that the uniqueness of each Aboriginal community is recognized. Aboriginal peoples and communities are not homogeneous (Smith-Morris, 2006). Beyond distinct languages and traditions, communities have unique experiences with government institutions and outside professionals (Smith-Morris, 2006).

Aboriginal communities vary widely in terms of existing community infrastructure and resources (Rosencrans et al., 2008). For example, not all Aboriginal communities have (or have control over) schools, healthcare centres, grocery stores, or recreation facilities.

Every Aboriginal community has a unique social environment (Ho et al., 2006). For example, community attitudes towards diabetes prevention may vary between passive resignation and active mobilization (Ho et al., 2006). Attitudes and norms surrounding diet and exercise vary among communities (Ho et al., 2006). If regular exercise and healthy diets are uncommon in a community, there may be minimal interest among individuals for changing their lifestyles, and minimal social support for any individual's attempt to make lifestyle changes.

Related to the social environment is the concept of community readiness. Community readiness refers to a community's ability to mobilize and take action on an issue (Smith-Morris, 2006). Overly ambitious health promotion interventions implemented without significant community interest or participation are likely to have limited impact (Smith-Morris, 2006). Understanding a community's ability and willingness to mobilize around diabetes prevention allows programs to be appropriately tailored to the readiness level of that community (Smith-Morris, 2006).

Community assessments are needed to determine an Aboriginal community's unique social environment and readiness to mobilize around diabetes prevention. There are helpful tools for determining community readiness that have been validated for use in Indigenous communities. For example, Peercy, Gray, Thurman, and Plested (2010) developed the Community Readiness model to evaluate community readiness to mobilize on health issues. The Model has been extensively validated, including among North American Indigenous

communities on chronic disease issues (Percy et al., 2010). Once the level of community readiness is known, programs appropriate to the current level of community readiness can be proposed in partnership with community stakeholders.

In Indigenous communities, gaining trust and credibility is essential for program planners seeking community buy in for proposed interventions (Christopher et al., 2008). The process of conducting a community assessment offers an opportunity for building trust with Aboriginal community members. The process of community assessment provides a venue for communities to interact with program planners and observe if and how local input and perspectives are solicited. For example, there may be significant differences between what a program planner envisions and what community preferences are. How differences are negotiated speaks volumes about how outside professionals respect and prioritize community empowerment. Performing a community assessment not only produces valuable information for program design, it also serves as a starting point for building the relationships required to establish an effective community-based program.

Supportive Social Environments

“Health enhancing behaviours are determined more by collectively shaped social identities than by individual rational choice, as assumed in traditional information-based health education” (Teufel-Shone, 2006, p.228). Shared social contexts reinforce individual behaviours via social pressure to conform to established behavioural norms (Campbell & Jovchelovitch, 2000). Shared social contexts also shape individual behaviour by providing (or not providing) social support for individual behavioural choices (Schulz et al., 2005).

Aboriginal diabetes prevention is more successful when interventions address the social

norms that shape health behaviours (Smith-Morris, 2006). As noted in Chapter Two, sedentary lifestyles are behavioural norms in many Aboriginal communities. Programs that promote active lifestyles in FN communities may be asking individuals to go against established behavioural norms. Going against established norms presents a sizeable barrier to changing one's lifestyle (Schulz et al., 2005; Stahl et al., 2001). Prevailing attitudes towards diabetes prevention among Aboriginal peoples also presents a barrier to diabetes prevention. The growing familiarity of many communities with type-2 diabetes has shaped collective attitudes of normalization and passive acceptance towards diabetes (Smith-Morris, 2006). Shared feelings of helplessness and inevitability surrounding diabetes and other chronic diseases are commonplace (Ho et al., 2006). Effective diabetes prevention strategies in Aboriginal communities prioritize the creation of supportive social environments for individuals attempting to alter their lifestyles (Merzel & D'Afflitti, 2003).

The failure of conventional education and information based strategies in Aboriginal diabetes prevention may be partially attributable to a failure to understand the social influences of health behaviour. Conventional health promotion strategies typically treat lifestyle as an individual choice and do not address the shared social context of health behaviours. Conversely, the current literature suggests that the success of Aboriginal community-based interventions is associated with their ability to promote supportive social environments.

Group activities. There is significant evidence in the current literature that group-based exercise strategies can successfully promote regular exercise in Indigenous communities. Among the strongest examples include the New Mexico Zuni Diabetes Prevention Project and the North Carolina Cherokee Choices Worksite Wellness Program. Specifically, exercise classes, buddy-

support systems, team activities, and weight loss competitions were used to foster regular exercise (Bachar et al., 2006; Health et al., 1991). Impressively, both programs reported high participation numbers, low attrition rates, and were associated with significant weight loss and glycemic improvements (Bachar et al., 2006; Health et al., 1991; Leonard, Leonard, & Wilson, 1986).

The authors of the Zuni and Cherokee Choices studies did not provide a detailed analysis of the influence of social context on the success of each intervention. However, supportive social environments were established within the group activities. The current evidence in health promotion does support the claim that group activities can influence lifestyle changes for several reasons. First, group activities can promote social support for lifestyle changes via the influence of peer pressure on individual behaviours (Teufel-Shone, 2006). Second, group activities can increase the visibility and social acceptability of new health behaviours (Teufel-Shone, 2006). Third, group activities can promote feelings of pride and empowerment among participants (Teufel-Shone, 2006). The latter benefit of group activities may be particularly beneficial in Aboriginal communities, where passive attitudes to diabetes prevention may be commonplace.

The Zuni and Cherokee Choices programs employed group exercise to successfully promote active lifestyles. There is evidence that even passive educational approaches to diabetes prevention can influence health behaviours in impoverished communities where there is a supportive social environment. For example, in the Pasos Adelante diabetes prevention program, health education seminars in an impoverished Hispanic community focused on educating participants on healthy nutrition and physical activity (Staten et al., 2005). Results of the Pasos Adelante educational seminars were impressive (Staten et al., 2005). Two hundred and sixteen

participants completed three years of program attendance. From baseline, participants almost doubled their weekly time spent exercising, halved their consumption of sweetened beverages, and significantly increased their weekly consumption of fruits and vegetables (Staten et al., 2005).

The success of this intervention was associated with its creation of a supportive social environment, including peer support (Staten et al., 2005). Group interactions and activities created social support for participants to improve their lifestyles. The social context provided participants the opportunity to role model health behaviours (and their benefits) to each other and to the community (Staten et al., 2005): “[community members] frequently commented on seeing people walking and observing that some were losing weight” (Staten et al., 2005, p. 6). The success of the Zuni, Cherokee Choices, and Pasos Adelante programs demonstrate the efficacy of group activities in diabetes prevention interventions.

Peer support strategies. A second social support strategy for reinforcing lifestyle changes in Indigenous community-based programs has been peer support. For example in the New Zealand Maori Te Wai o Rona intervention, CHWs were trained to provide lifestyle counselling and peer support to community members (Simmons, Rush, & Crook, 2008). Each CHW managed a caseload of community members whom they visited to provide specific lifestyle change messages and personal encouragement. The intervention was associated with weight loss among participants (Simmons et al., 2008). Alternatively, in the Pasos Adelante diabetes prevention program, community members facilitated education seminars (Staten et al., 2005). Delivery of the seminars by local community members was associated with the social acceptability of the educational messages, which strengthened the impact of the intervention

(Staten et al., 2005).

The success of the Te Wai o Rona and Pasos Adelante interventions is substantiated in the current evidence on peer support strategies. Merzel & D'Afflitti (2003) identified that the use of trained community peers, with similar lifestyle characteristics to a target population, is one of the most influential strategies for health promotion. The efficacy of peer support strategies for influencing health behaviour has been attributed to the influence of peer relationships and role modelling (Merzel & D'Afflitti, 2003). There is also strong evidence that receiving regular personal encouragement can sustain lifestyle changes in individuals (Simmons et al., 2008).

The strong influence of peer relationships among Indigenous peoples is well documented in the literature: “There is no better person to teach a Cree than a Cree” (Boston et al., 1997, pp. 7). The perceived equality of peer relationships is associated with the impact of peer support strategies among Indigenous Peoples.⁶ Conversely, the unequal power relationships in conventional provider-client relationships (where the provider has more power and control over decision making) is poorly accepted in Indigenous communities and is a barrier to effective diabetes prevention (Smye, Josewski, & Kendall, 2010).

Targeting Public Policy

The socioeconomic living conditions in many Aboriginal communities presents a significant barrier to diabetes prevention. As discussed in Chapter Two, the socioeconomic status of Aboriginal Peoples is a significant determinant of Aboriginal health and health behaviours. Specific to diabetes prevention, common socioeconomic barriers to health include inadequate access to healthy foods and a lack of community infrastructure supporting active lifestyles. Many Aboriginal communities lack access to healthy foods (Carnethon, 2008) and do not have safe and

⁶ The influence of peer relationships will be further developed in the section on cultural safety.

appropriate places to exercise (Smith-Morris, 2006).

Changing public policy is recognized as a means for changing structural and environmental elements that impede the ability of community members to choose healthier lifestyles (Carnethon, 2008). By modifying public policy to address structural and environmental barriers to healthy lifestyles in a community, the efficacy of promoting lifestyle changes can be improved. For example, public policy that mandates the accessibility of healthy foods enables communities to adopt healthier diets. Public policy also has the ability to influence behavioural and social norms (Brownson, Haire, Joshu, & Luke, 2006). Public policy that mandates the establishment of infrastructure supporting active lifestyles can facilitate community members adopting more active lifestyles.

School programs: a model for public policy change. In Indigenous communities, school-based diabetes prevention programs have demonstrated how supportive policy and infrastructure can enable the adoption of healthier lifestyle choices. In many school-based programs health education curricula are combined with school policy change surrounding student diet and exercise. In the Sandy Lake, Kahnawake, Zhiiwaapenewin Akino'maagewin (ZA), Zuni, and Cherokee Choices interventions, a curriculum of diabetes prevention was combined with supportive school policy to encourage healthier lifestyles among students (Macaulay et al., 2003; Rittenbaugh et al., 2003). For example, the Sandy Lake and Kahnawake communities implemented school policies banning high sugar and high fat snacks as well as mandating that healthy lunches be served to all primary students (Macaulay et al., 2003). School policy in the Zuni secondary school removed high sugar beverages and unhealthy snack foods from the school and provided water coolers for student use (Rittenbaugh et al., 2003). School

policies mandating (or promoting) increased physical activity among students was also common among all the above examples.

The evidence indicates that school policy changes are associated with improved student health behaviours (Macaulay et al., 2003; Paradis et al., 2005; Rittenbaugh et al., 2003; Saksvig et al., 2005). Among the examples given, the school with the most ambitious policy changes had the greatest improvement in health behaviours. In the Zuni school intervention a fitness centre was constructed for student use. The Zuni program was associated with greater improvements in health behaviours than the other examples. Moreover, the Zuni school intervention was associated with improvements of glycemic control (Rittenbaugh et al., 2003). The current literature on Indigenous school based programs supports the conclusion that the promotion of healthy lifestyles is strengthened by supportive environments. However, community schools are a much smaller intervention target than are communities as a whole.

Building supportive community infrastructure. Many Aboriginal communities continue to have inadequate (or precarious) access to basic population health requirements such as appropriate housing (Health Canada, 2005b) or safe drinking water⁷ (National Aboriginal Health Organization, 2002). For communities continuing to struggle with meeting basic population health needs, it appears unlikely that building infrastructure to support active lifestyles will be prioritized. However, for Aboriginal communities that have basic public health needs met, creating infrastructures that support active lifestyles is a promising strategy in diabetes prevention. With the creation of supportive infrastructures, communities can increase their capacities to support healthier lifestyles.

⁷ Up to 25% of Aboriginal communities have inadequate facilities to ensure safe access to drinking water (National Aboriginal Health Organization, 2002).

A deficit in the current literature is the absence of studies examining the available infrastructure in Aboriginal communities that supports health and active lifestyles. Many Aboriginal communities do indeed lack infrastructure and facilities that support active lifestyles (Smith-Morris, 2006). For instance, in a study of the Zhiiwaapenewin Akino'maagewin community (ZATPD intervention), the authors reported a lack of adequate safe and appropriate places to walk (Ho et al., 2008). The reasons given for the lack of adequate walking places included environmental conditions (frequently dusty or muddy roads), loose animals, and motor vehicle traffic (Ho et al., 2008). From the writer's experiences as a community health nurse in remote Aboriginal communities, many communities lack exercise facilities. When existing exercise equipment is present, it is frequently located in undesirable and restricted locations.

There are several examples of Aboriginal communities using public policy to create infrastructure to support active lifestyles. The Sandy Lake and Kahnawake communities funded the construction of walking trails to promote regular exercise (Ho et al., 2006; Potvin et al., 2003). Although the community usage of those walking trails has not been formally evaluated, the Kahnawake Schools Diabetes Prevention website reported significant increases in year round walking traffic since the construction of the walking trails (KSDPP, 2011).

Perhaps the most ambitious example of creating exercise infrastructure in an Indigenous community was the New Mexico Zuni community, where a fitness centre was constructed⁸ (Rittenbaugh et al., 2003). The fitness centre included a climbing wall, weight equipment, cardiovascular equipment, and various other indoor and outdoor sports equipment. The Zuni fitness facility was staffed with community members employed as fitness trainers and peer supporters. Access to the facility was open to all community members. Based on daily

⁸ The same fitness centre noted in the Zuni school example.

attendance rates of 150 persons by the third year of operation, the fitness centre appeared to be well used.

The Sandy Lake, Kahnawake, and Zuni community examples demonstrate that supportive community infrastructure enables increased physical activity in Indigenous communities. A caveat in advocating for infrastructure development is that the current community capacity will dictate the level of infrastructure growth that communities can reasonably achieve. As discussed in the section on formative research, knowing the current resources and abilities of a community is essential for tailoring programs to that community. For example, the construction of a fitness centre (as with the Zuni example) may require considerable funding, which may be out of financial reach for many communities. However, the construction of new community facilities may not necessarily be required to successfully address diabetes prevention. Many Aboriginal communities may already possess infrastructure that could support active lifestyles if appropriately utilized. In the original Zuni Diabetes Project, widespread community participation in exercise classes, which were held in a school gymnasium, resulted in significant weight loss and glycemic improvement (Leonard et al., 1986). Public policy decisions can increase opportunities for exercise merely by improving the accessibility of existing community resources.

Healthy food policies. Improving community access to healthy foods has been another important target area of public policy in Indigenous community-based diabetes prevention. Carnethon (2008) describes the food supply of many Aboriginal communities as “food deserts”, where one needs to leave communities to find healthy foods (p. 943). In many Aboriginal communities, junk foods such as chips and pop are among the most available and affordable food

items (Rosencrans et al., 2008). Meanwhile healthier food choices such as fresh produce have poor availability or prohibitive costs (Richmond & Ross, 2009).

Food supplies in many Indigenous communities are influenced by several factors. The cost and availability of foods is partially determined by their shelf life, and healthier perishable items such as fresh produce have a limited shelf life (Richmond & Ross, 2009). Issues of shelf life become increasingly relevant in more remote communities as food must travel farther and last longer before being consumed. Another important factor is the low consumer demand for healthy food choices in many Indigenous communities (Rosencrans et al., 2008). The lack of demand means that healthy, fresh foods are less likely to be stocked and likely to cost more if they are sold. A low consumer demand for healthy food items is related to a lack of accessibility and prohibitive cost (Richmond & Ross, 2009). Poor dietary knowledge and skill in discriminating healthy food choices may also influence the low consumer demand for healthy food choices in Aboriginal communities (Willows, 2005). In other words, the interplay of a low consumer demand for healthy foods and the availability of healthy foods in Aboriginal communities appears to be a vicious circle.

Establishing public policy changes that seek to ameliorate the accessibility of healthy foods for entire communities is indeed an ambitious challenge. The majority of public policy changes intended to improve access to healthy foods have occurred in schools rather than in the larger community. Changes in school food policies have been associated with improved dietary trends among students (Paradis et al., 2005; Rittenbaugh et al., 2004; Saksvig et al., 2005), and illustrate that public policy can promote and enable changes in diet. There is one example in the literature of an Indigenous community modifying its food supply. The remote Australian

Aboriginal community of Looma mandated the availability of fresh produce and other healthy food choices in a community owned store. Improving community dietary habits was associated with improved trends in population glycemic control after a two year period (Rowley et al., 2000).

From the Looma example, several observations can be made about setting community-wide food policies. First, the remoteness of the Looma community likely enabled community decision makers to control the supply of foods coming into the community store. Attempting to modify the food supply in less isolated communities that have access to multiple food sources may be of little value. Second, although not discussed by Rowley et al. (2000), bringing a steady supply of perishable foods into an isolated community is likely to be associated with increased costs. If the increased costs are not subsidized, the foods may not be affordable to community members. Third, Rowley et al. reported widespread community support for changing public policy regarding the availability of healthy food. The success of the Looma public policy decisions was likely strengthened by the high level of community support. Without widespread community participation, it may be difficult to pass public policy that is unwanted or unpopular. There are obvious barriers to introducing public policy with the intention of changing the food supply of a community. The cost and resources required to implement healthy food policies could be significant and potentially difficult to enforce if food stores within the community are privately owned and unwilling to comply. Without significant community support the enactment of healthy food policies may not be possible.

Fortunately, public policies may not need to be as comprehensive or ambitious as attempting to modify a community's food supply in order to be effective. There is strong

evidence that “point of decision” prompts (such as in-store promotions that identify healthy foods to consumers) do influence consumer behaviour (Brownson, Haire-Joshu, & Luke, 2006). Both the Sandy Lake and ZATPD programs employed food labelling strategies as interventions. In both cases, although the efficacy of food labelling strategies was not evaluated in isolation of other interventions, food labelling strategies were associated with improvements in sales of healthier foods (Ho et al., 2008). However, if the cost of healthier food choices continues to be prohibitive in many remote Aboriginal communities (Richmond & Ross, 2009), subsidization may be necessary to ensure that promoted healthy foods can become sustainable choices in communities.

Culturally Safe Programs

A unifying quality of successful Aboriginal community-based diabetes prevention programs is their ability to deliver culturally safe health promotion. Cultural safety is a broad concept and understanding cultural safety requires familiarity with related concepts, including cultural awareness, cultural sensitivity, and cultural competence (Aboriginal Nurses Association of Canada [ANAC], 2009).

Cultural awareness is the understanding that another's culture is different to one's own (ANAC, 2009). Cultural sensitivity is being polite and respectful to another's cultural differences (ANAC, 2009). Cultural competence is the development of attitudes, knowledge, and skills that allow one to successfully communicate and interact with another culture. Cultural competency is the ability to take action and effectively interact with another culture, (ANAC, 2009).

The concept of cultural safety builds on the concepts of cultural awareness, cultural sensitivity, and cultural competence. Cultural safety is understanding cultural differences through

a critical social justice lens and taking action to remedy inequities affecting certain cultural groups (ANAC, 2009). Culturally safe practice denotes a reflective process where providers (or health care systems) identify and take action to correct power imbalances, institutional discrimination, and the socioeconomic marginalization of specific cultural groups (National Aboriginal Health Organization [NAHO], 2008; Syme, Josewki, & Kendall, 2010). Culturally safe healthcare practice rectifies power imbalances by empowering individuals or groups to be active decision makers in their own healthcare (ANAC, 2009).

Given the socioeconomic marginalization faced by Aboriginal Peoples, the importance of culturally safe health promotion in Aboriginal communities is clear. A lack of culturally safe programming is among the reasons why Aboriginal patients and communities have been increasingly unwilling to accept health and educational programs delivered by non-Aboriginals (Daniel et al., 1999, Struthers et al., 2003). Among the reasons for the success of community-based diabetes prevention programs is their ability to deliver culturally safe health promotion.

Strategies that empower communities to participate in the planning and delivery of diabetes prevention programs are effective approaches for promoting culturally safe interventions (Potvin et al., 2003; Struthers et al., 2003). Programming led by local community members is more likely to promote interventions based in local values and perspectives (Potvin et al., 2003). The success of CHW delivered interventions⁹ can be associated with receiving health promotion messages from trusted community members rather than from outsiders (Potvin et al., 2003). The impact of peer counselling strategies in Aboriginal communities may be viewed from a cultural safety perspective. Peer counselling relationships are accepted by Aboriginal clients because they can provide an equal power balance between provider and client,

⁹ As discussed in the section on community control of interventions.

unlike conventional therapeutic relationships where the provider has greater power than the client (NAHO, 2008).

A final discussion point relates to issues of cultural competence and cultural safety. Smith (2008) offers an important warning about “othering” Aboriginal cultures. To “other” another culture means to view it as necessarily exotic (Smith, 2008). The stereotypes of the noble savage is a historical example of “othering”. Arguably, the practice of “othering” still continues in subtler forms. Smith-Morris (2006) cautioned against packaging established health promotion programs in Aboriginal cultural symbols, a common strategy in conventional health promotion. Smith-Morris's caution does not lie in the cultural acceptability of the Medicine Wheel itself, but in the appropriateness of an outsider's use of cultural symbols to sell imposed interventions. An important feature of cultural competence and safety is to show respect and caution when using Aboriginal culture and its symbols. Culturally safe practice requires the recipients of care, not the providers, to determine what is culturally appropriate (Syme et al., 2010).

Promoting traditional lifestyles in diabetes prevention. Related to discussions of cultural safety and competence is examining the efficacy of promoting traditional diets and exercise in Aboriginal diabetes prevention. Following traditional diets is often associated with feelings of wellness and is a popular health promotion strategy among Aboriginal peoples (Willows, 2005). There is scientific evidence that the nutritional content of traditional Aboriginal diets is very healthy (Kuhnlein, Receveur, Soueida, & Egeland, 2004; University of Northern British Columbia [UNBC], 2008).

A limitation in analyzing the efficacy of promoting traditional diets is the paucity of studies on the benefits of following traditional diets. Existing literature has been inconclusive on

the effectiveness of diabetes prevention strategies that promote traditional Aboriginal diets (Gittelsohn, 1998, Wortman et al., 2010). In a study by Gittelsohn et al. (1998), individuals who regularly consumed traditional foods had higher rates of obesity than individuals who did not. However, Gittelsohn et al. did not account for confounding variables that may have influenced their findings. Regardless of the foods eaten, where caloric intake exceeds caloric expenditure, weight gain is likely to occur. As Gittelsohn et al.'s research did not comprehensively examine the dietary patterns of study participants, it is impossible to interpret their results in terms of whether traditional foods in themselves are more associated with higher rates of obesity.

Largely absent in the existing literature is any discussion (or even speculation) regarding how the activity levels of traditional Aboriginal lifestyles may have influenced health. Traditional hunter gatherer lifestyles were associated with high energy expenditures (Samson & Pretty, 2006). There may be potential research value in questioning how modern sedentary living has influenced the current epidemic of type 2 diabetes among Aboriginal peoples.

O'Dea (1984) examined the health benefits of comprehensive traditional lifestyles (i.e. both diet and activity levels) by following ten Australian Aboriginals who returned to a traditional foraging lifestyle. After seven weeks, all participants had significant improvements in fasting glucose, fasting insulin, post-prandial glucose clearance, and lipids. The dramatic improvements in the O'Dea study were linked to both the nutritional content of their diet (low calorie, low carbohydrate, low fat) and the significant energy expenditure of a foraging lifestyle (O'Dea, 1984). It is unknown if the participants continued following traditional lifestyles.

There are practical limitations to promoting traditional diets as a means to preventing type-2 diabetes. First, traditional food sources may no longer be available or accessible in many

Aboriginal communities (UNBC, 2008). Second, there are valid concerns about the amount of environmental contaminants present in many game foods (Reading, 2009). Third, there is evidence that the modern approximations of traditional diets have questionable sustainability. For example, Wortman et al. (2010) promoted weight loss among 40 Aboriginal and non-Aboriginal patients by placing them on diets approximating traditional Aboriginal diets. After four months, 29 of 40 patients had dropped the diet. Although the remaining 11 participants had mild improvements in fasting lipids and hemoglobin A1C values, the value of the intervention may be moot with an attrition rate of 73%.

Although future studies may clarify the benefits of following traditional Aboriginal diets, the current literature remains inconclusive. Given the widespread feelings of wellness and social acceptability of traditional diets, the promotion of traditional diets is generally well received among Aboriginals. Additionally, it is important to recognize that the health benefits of traditional Aboriginal lifestyles can be associated with physical activity levels as well as diet (Katzmarzyk & Malina, 1998; O'Dea, 1984). By framing physical activity as part of traditional lifestyles, regular exercise may be more effectively promoted in Aboriginal communities. It remains to be seen how promoting traditional diets and physical activity may be realistically approached as effective diabetes prevention interventions.

Sustainability of Intervention Efforts

The current literature on Aboriginal diabetes prevention supports the need for long-term health promotion efforts in order to change population health trends (Macaulay et al., 2003; Teufal-Shore, Fitzgerald, Teufel-Shore, & Gamber, 2009). Long-term commitments to diabetes prevention require long-term funding. A common threat to the sustainability of Aboriginal

diabetes prevention efforts has been the instability and short span of funding (Smith-Morris, 2006). Most funding for Aboriginal diabetes prevention programs come from external sources and are often linked with concurrent time limited research projects (Smith-Morris, 2006). For example, a recent pilot study of diabetes prevention strategies among New Zealand Maori measured significant weight loss and improved glycemic control among participants (N=60). A larger study of 5240 Maori participants was underway however the program funding was terminated prior to the completion of data collection (Simmons et al., 2008). The anticipated results of the large study have been lost, as have anticipated program benefits.

Diabetes prevention programs managed by communities have demonstrated greater sustainability than externally controlled programs (Smith-Morris, 2006). For example, both the Sandy Lake and Kahnawake community diabetes prevention programs began in the 1990s and continue to date. Both programs commenced when communities entered into partnerships with diabetes researchers to study and develop programs to treat type-2 diabetes (Harris et al., 1997; Macaulay et al., 1997). Both communities have prioritized the importance of diabetes prevention and financially committed to perpetual funding of community diabetes prevention programs.

The association between community ownership of diabetes prevention programs and program sustainability is influenced by several factors. Where there is community ownership, there has been community prioritization and mobilization around the issue of diabetes prevention (Rowley et al., 2000). Locally administered programs are more likely to be accepted and supported by communities (Smith-Morris, 2006). Organizational and administrative stability is a requirement for long-term program stability (Shediac-Rizkallah & Bone, 1998). Health promotion programs that are locally administered and delivered must be compatible with local

community capacity and resources (Shediac-Rizkallah & Bone, 1998). In comparison, externally driven programs typically rely on external resources that can exceed community capacities (Shediac-Rizkallah & Bone, 1998).

Program sustainability is also associated with the development of internal community skills and expertise. Community members trained with the appropriate skills and resources to deliver health promotion have the potential to become ongoing champions for diabetes prevention (Shediac-Rizkallah & Bone, 1998). Programs that rely on outside professionals are less sustainable because their expertise is lost when they leave communities (Rowley et al., 2000; Teufel-Shone et al., 2009).

Appropriate Program Evaluation

Evaluating the success of diabetes prevention programs can be empowering (or disempowering) to communities. A successful program can become a source of pride and accomplishment to a community while an unsuccessful program risks reinforcing attitudes of defeat and resignation towards diabetes prevention.

Targeting achievable goals is crucial for diabetes prevention programs that are seeking to empower communities (Macaulay et al., 2003; Potvin et al., 2003). There has been a call in the literature for choosing evaluation measures that are realistically achievable in the short term of six months to two years (Ho et al., 2006; Macaulay et al., 2003; Potvin et al., 2003). The most realistic short term goals of diabetes prevention programs include improving a community's knowledge of healthy lifestyles and developing personal skills (such as discriminating healthy food choices) (Bachar et al., 2006; Ho et al., 2008; Saksvig et al., 2005; Simmons et al., 2003).

There are examples of community programs that have increased both physical activity

levels and improved dietary patterns among participants in the short term. However in many cases, programs that have reported lifestyle improvements have also put concurrent public policy or infrastructure in place that supported healthier lifestyles in the communities. In communities without supportive public policy or infrastructure in place, targeting improvements in community lifestyle behaviours may be unrealistic.

A limitation of the current literature is the lack of discussion on how community empowerment can be framed as an intervention goal. Because community empowerment and community capacity building are open concepts, any growth in community autonomy or capacity made in the course of programs can be seen as measures of community empowerment. For example, participation in the planning and delivery of any intervention can be viewed as a community achievement. By drawing attention to increases in community autonomy and capacity building, communities may recognize and feel pride about their achievements.

If community empowerment is a unifying theme of effective diabetes prevention programs, the question of who is performing program evaluation is important. Without meaningful involvement of community stakeholders in program goal setting and evaluation, the process of evaluation is in danger of becoming yet another example of outsider judgement and marginalization. For program evaluation to be empowering, the process of evaluation should be under significant community control.

Conclusion

The success of community-based approaches in diabetes prevention is related to their incorporation of PHC and social justice perspectives. The multifaceted qualities of successful programs empower Aboriginal communities to take control of programs and deliver

interventions that build up community health promoting resources. The synthesized qualities of successful Aboriginal community-based diabetes prevention programs include community control and ownership of programs, tailoring programs to communities, supportive social environments, public policy changes, culturally safe approaches, program sustainability, and appropriate evaluation strategies. With an understanding of effective community-based programs, NPs can begin identifying how PHC and social justice perspectives can be brought into diabetes prevention efforts in Aboriginal communities.

CHAPTER 5:

Discussion and Conclusion

The purpose of this project is to explore where NPs need to focus their efforts to more effectively address diabetes prevention in Aboriginal communities. Based on an analysis of the literature, it is evident that NPs need to approach diabetes prevention through PHC and social justice perspectives. Community-based approaches empower communities to take control of their own diabetes prevention efforts and to improve on the SDOH that support healthier community lifestyles. NPs who practice through a PHC and social justice lens will have an improved chance of effectively addressing diabetes prevention in Aboriginal communities.

NP Role in Aboriginal Diabetes Prevention

The current literature supports that the most effective Aboriginal diabetes prevention occurs where individuals are supported in their efforts to improve health behaviours with community level interventions that enable healthier lifestyles (Ho et al., 2008; Merzel & D'Aflitti, 2003). It follows that health care professionals working towards Aboriginal diabetes prevention should be positioned to address diabetes prevention at both an individual and community level. Through their role as primary care providers, NPs are well-positioned and prepared to address diabetes prevention at individual and community levels.

NPs are distinguished as autonomous primary care providers who practice from a holistic nursing background yet also practice in the traditional domain of medicine (Hamric et al., 2009). The NP role as primary care provider gives NPs both access to and an understanding of individuals and communities. Through therapeutic partnerships that NPs form with clients, NPs are able to gain an intimate understanding of the health and lives of their clients. In contrast,

other health care professionals who are not in the privileged position of primary care providers may not have the same holistic understanding of clients' lives.

A nursing background prepares NPs to view the health of each client through a PHC and social justice lens (CNA, 2005c; CNA, 2009a; CNA, 2009b). NP assessments of a client's health are comprehensive, examining all dimensions that shape a client's health and health behaviours (CRNBC, 2011). By viewing a client in the context of community, the NP is able to recognize that community level interventions strengthen the ability of individuals to make healthier choices (Browne & Tarlier, 2008). Through their comprehensive understanding of the health and lifestyles of clients, NPs are in a position to identify which community level interventions may best support individuals to follow healthier lifestyles.

To take action at a community level, NPs are well prepared to work with Aboriginal communities to improve the contextual factors that influence the current epidemic of type 2 diabetes among Aboriginal Peoples. Through NP competency in collaboration and reciprocal relationship building (CNA, 2005a), NPs are prepared to work with community stakeholders to raise awareness and advocate for establishing supportive community infrastructure and public policy that enables individuals to improve their lifestyles. NPs are also prepared to advocate with and for Aboriginal communities to raise awareness of Aboriginal health from a critical social justice perspective.

For example, an NP may assess an Aboriginal client who is obese. With the NP's understanding of diabetes, the NP recognizes that increasing central body adiposity is associated with insulin resistance and increases the client's risk of developing type 2 diabetes (McCance & Huether, 2006). The NP knows that for the client to reduce the risk of developing diabetes,

he/she will need to improve poor dietary patterns and increase physical activity. The NP can then provide counselling and education on identifying and choosing healthier foods and work with that client to set lifestyle goals.

However, the NP identifies that the client's ability to choose healthier lifestyles is limited in that community. The local grocery store has limited healthier food choices. There are also limited opportunities in that community for individuals to follow active lifestyles. The NP recognizes that by improving community accessibility to healthier food choices and by creating opportunities for physical activity, the client's ability to sustain a healthier lifestyle will be strengthened. Through the NP's synthesized understanding of the lifestyles and preferences of clients, the NP identifies infrastructure or public policy that is appropriate for that community.

Through a social justice lens, the NP may question why the Aboriginal community is lacking in supportive policy and infrastructure that other non-FN communities may have in place. The NP can then work with community stakeholders to raise awareness on the importance of establishing supportive public policy and infrastructure in that community. As a partner with community stakeholders, the NP can advocate among community and governmental policy makers for public policy that enables Aboriginal individuals to follow healthier lifestyles in their communities.

The capability of NPs to promote lifestyle changes in Aboriginal communities is strengthened by their competencies in health promotion and reciprocal relationship building. Romanow (2002) advocates that the central focus of primary care should be health promotion and disease prevention. NPs distinguish themselves among primary care providers by routinely including health promotion and disease prevention activities into primary care appointments

(CNA, 2005a; CRNBC, 2011). Consequently, NPs generally schedule sufficient clinical consultation times to provide effective health education and counselling (Horrocks et al., 2002; Kinnersley et al., 2000; Litaker et al., 2003). The relevance to effective diabetes prevention is that the clinical prioritization of health education and counselling has been shown to influence a client's health behaviour (Elley, Kerse, Arroll, & Robinson, 2003). Primary care providers that routinely provide clients with health promotion and disease prevention activities in clinical appointments have the potential to increase client and community interest in achieving healthier lifestyles.

An NP's competency in collaboration has the potential to strengthen diabetes prevention efforts in an Aboriginal community by building culturally safe relationships with clients and communities. The current literature on cultural safety supports that Aboriginal individuals and communities need to be engaged as active partners rather than as passive recipients (NAHO, 2008). NPs are skilled in forming therapeutic client-NP partnerships where the client and NP mutually negotiate and establish that client's health goals (CNA, 2005a; Hamric et al., 2009). The practice philosophy of NPs is well suited to building strong therapeutic partnerships with Aboriginal clients and community stakeholders. By engaging Aboriginal clients and community stakeholders as equal partners, NPs have the potential to establish productive working relationships to effectively influence both the health behaviours of clients and the decisions of community stakeholders.

Although NPs are well prepared to effectively address Aboriginal diabetes prevention, the current structure of NP positions as primary care providers may not enable NPs to optimally address Aboriginal diabetes prevention. Based on current job postings and the status quo,

conventional role expectations for NPs continue to be limited to providing individually focused primary care. If NPs are to more effectively address diabetes prevention, NPs will need to advocate for practice structures that enable NPs to fully realize their potential as primary care providers who are capable of simultaneously working in partnership with community stakeholders. For example, NPs may need to advocate for dedicated time in their work schedule for collaborating with community stakeholders in health promotion initiatives.

Addressing Aboriginal Diabetes Prevention

The Ottawa Charter for Health Promotion (WHO, 1986) suggested five domains in which action can be taken to improve population health. The five domains include strengthening community action, building healthy public policy, creating supportive environments, developing personal skills, and reorienting health services (WHO, 1986).

Reorient health services. Self-administration offers Aboriginal communities the opportunity to take control and organize primary care services according to community preferences and needs. In Aboriginal communities with established self-administered health programs, NPs may enable community control over primary care services by becoming employees of Aboriginal communities. By NPs (and other health care professionals) working as community employees, communities will have greater control in shaping the primary care environment according to community preferences. By providing their services to Aboriginal communities, NPs will also be addressing the social justice issue of inadequate access to quality primary care services in Aboriginal communities (Shah et al., 2003).

Within their role as primary care providers, NPs can advocate for the establishment of community controlled and delivered diabetes prevention programs. In the primary care

environment, the most logical community members to assume more responsibility in diabetes prevention are CHWs (or CHRs). Based on the success of CHW- led interventions in diabetes prevention, there is strong evidence that by enabling increased CHW responsibility and control, the efficacy of diabetes prevention efforts can also be increased.

NP-CHW team-centred care may prove to be an effective and well-received strategy for improving the quality of primary care and the effectiveness of diabetes prevention efforts. For example, given the success of CHW-led health education, counselling, and peer support strategies in the current literature, increasing CHW involvement in these areas of primary care is promising. In addition, Cass et al. (2002) argue that having Aboriginal staff as intercultural interpreters significantly decreases miscommunication between providers and patients. NP-CHW team centred care may offer both the NP and the CHW the opportunity to mentor each other and improve the effectiveness of diabetes prevention in primary care.

The question remains regarding how NPs could promote increasing CHW roles in the primary care environment. First, advocating among administrators and community-decision makers on the value of increasing CHW roles would be necessary. Second, it appears likely that CHWs will require further education and training to prepare them for increased clinical roles. It remains to be seen what education and training for CHWs would be most the appropriate. Third, it appears likely that CHWs will require ongoing clinical support as they transition into new roles. As NPs are competent to act as clinical educators, resources and mentors (CNA, 2005a), NPs are well prepared to support CHWs in their new roles. Fourth, effective clinical collaboration between NPs and CHWs will require close working relationships. NPs can employ their competencies in collaboration to establish effective working relationships with CHWs.

Develop practice skills. NPs working with Aboriginal Peoples need to develop culturally competent and safe practice (CNA, 2005b). Culturally competent and safe practice begins with developing awareness of and sensitivity to Aboriginal culture and issues facing Aboriginal Peoples. NPs need to understand how the socioeconomic marginalization of Aboriginal Peoples has shaped Aboriginal health and wellness (Smylie, 2000). There is a growing abundance of literature that can support NPs in understanding Aboriginal culture and health. For example, Waldram, Herring, and Young (2006) have written a detailed book linking the colonization and socioeconomic marginalization of Aboriginal Peoples to Aboriginal health. Alternatively, Smylie (2000) has written a comprehensive practice guideline for health care providers seeking to understand and interact more effectively with Aboriginal clients.

To deliver culturally safe primary care in Aboriginal communities, NPs need to cultivate a primary care practice that empowers clients to become active participants in their own healthcare (ANAC, 2009). An NP's competencies in collaboration and partnership building will assist NPs in delivering culturally safe care to Aboriginal clients. However, determining what is culturally safe practice requires active participation of the recipients of care (Syme et al., 2010). In their reciprocal relationships with clients and coworkers, NPs will need to assess and negotiate the most appropriate approaches to empowering clients in a particular community.

NPs can to advocate for the development of community skills in health promotion and diabetes prevention. The NP role in advocating for CHW skill development has already been discussed. In the long term, it may be that formal education among community members in areas of health promotion will enable communities to effectively address diabetes prevention from within. However, practical and realistic approaches to diabetes prevention require that

communities build skills and expertise with their existing human resources.

Strengthen community action. To more effectively address diabetes prevention in Aboriginal communities, NPs must expand their umbrella of action beyond the primary care context into community action. A call to broaden the NP role does not imply that the role of the NP should shift away from that of primary care provider. Rather, NPs need to add the responsibilities of advocating for and supporting community health promotion efforts to their existing role.

NPs will need to advocate among community decision makers and stakeholders regarding the ways community interventions can promote and support diabetes prevention in Aboriginal communities. The goal of advocacy efforts will be to foster interest in developing community controlled interventions in diabetes prevention. The optimal role of the NP in the process of developing community interventions in diabetes prevention will be as partner and professional resource. By maintaining the role of partner and professional resource, NPs can enable health promotion that is community controlled and functions within the existing capacity of a community. An NP can work with community stakeholders through all stages of program development and implementation. For example, an NP can conduct a community assessment with stakeholders to understand the unique context and capacity of the community. An NP can support community stakeholders in choosing interventions that are realistic and sustainable within their existing capacity. Once community stakeholders have chosen preferred interventions, NPs can work with stakeholders in setting program goals, planning program delivery, and program evaluation.

Expanding the umbrella of NP action is an ambitious goal. An immediate challenge will

be creating space in the daily demands of primary care practice to work with communities to strengthen their diabetes prevention efforts. NPs will need to advocate for their expanded role as supportive partners in diabetes prevention.

Create supportive environments. NPs can advocate for strategies that build supportive social networks in Aboriginal communities for individuals who are attempting to improve their lifestyles. In particular, both peer support strategies and group activities have demonstrated efficacy as diabetes prevention interventions in Indigenous communities. The promising role of CHWs as peer supporters and lifestyle counsellors has already been discussed.

NPs can advocate in Aboriginal communities for establishing group exercise activities. Community lead group exercise interventions have demonstrated a notable ability to foster regular physical activity in Indigenous communities and to improve the glycemic health of participants. NPs can partner with community decision makers and participants to assess and plan those activities that are most appropriate for a community.

An ideal approach for NPs to implement group-based activities into Aboriginal communities may be group medical appointments. Within the primary care context, group medical appointments have demonstrated great efficacy in improving patient self-management of chronic disease including diabetes (Kirsh et al., 2007; Noffsinger, 1999; Watts et al., 2009). The success of group medical appointments has been attributed to a number of factors, including improved patient access to health care providers, the impact of peer support and role modelling, and the collaborative patient-provider relationships established in group appointments (Department of Veterans Affairs, 2008). Studies examining the efficacy of group medical appointments in Aboriginal communities have yet to be published. Nevertheless, group medical

appointments have great potential as diabetes prevention strategies in Aboriginal communities due to the social context of group appointments.

Build healthy public policy. NPs need to advocate in Aboriginal communities for public policy that supports healthier lifestyles. There may be meaningful opportunities for Aboriginal communities to establish healthier public policy within their current capacity. For example, establishing healthy school policies may be a realistic goal for communities that have assumed administrative control of community schools. Moreover, the issue of child health has demonstrated a consistent ability to mobilize Aboriginal communities (Ho et al., 2006). NPs can also advocate for existing community infrastructure to be used in new ways to support active lifestyles. For example, as in the Zuni Diabetes Project, a school gym can provide a community with access to exercise space when not in use during school hours.

NPs need to advocate among government policy makers and the Canadian public on the link between Aboriginal poverty and poor health. Aboriginal health is unquestionably a social justice issue. Current levels of government funding are grossly inadequate for the needs of Aboriginal Peoples and condemns them to poor health (Adelson, 2005). By calling attention to the SDOH, government policy makers and the Canadian public can be made aware of the link between health and socioeconomic status (CNA, 2005c). If the cycle of Aboriginal poverty and chronic disease is to be broken, the federal government must increase funding levels that enable Aboriginal communities to improve their resources and living conditions.

There are established agencies that are dedicated to improving the health and resources of Aboriginal Peoples. Specific to diabetes prevention, the Aboriginal Diabetes Initiative is a federal program that prioritizes helping Aboriginal communities improve their internal expertise

and capacity in diabetes prevention. The Aboriginal Diabetes Initiative also prioritizes helping Aboriginal communities improve the quality of their food supply (Health Canada, 2010). By increasing funding levels of established programs such as the Aboriginal Diabetes Initiative, the ability to Aboriginal Peoples to improve the health of their communities will be strengthened.

Conclusion

The purpose of this project is to explore how NPs can more effectively approach diabetes prevention in Aboriginal communities. In answer to this question, NPs need to ground their primary care practice in PHC and social justice perspectives, which enable NPs to begin addressing the underlying socioeconomic influences of poor Aboriginal health. Effective diabetes prevention requires the recognition that individuals attempting to change their lifestyles are doing so in the context of their socioeconomic environment. Many Aboriginal communities are lacking in supportive resources and infrastructures that enable individuals to choose healthier lifestyles. Fundamentally, the health of Aboriginal Peoples can be linked with a long history of socioeconomic disempowerment and marginalization in Canadian society. Until Aboriginal communities are able to establish internal resources and infrastructures that support the health of their populations, the current epidemic of type-2 diabetes in Aboriginal communities is unlikely to improve.

NPs are positioned and prepared to work with Aboriginal communities to address diabetes prevention. NPs' nursing background brings needed PHC and social justice perspectives into their understanding of Aboriginal health. As primary care providers, NPs have the potential to deliver culturally safe care where Aboriginal clients are empowered as decision makers in their own healthcare. With NPs' skills in partnership building and collaboration, NPs can work

with Aboriginal communities to support community ownership and control of diabetes prevention interventions. NPs can work with Aboriginal communities to increase community skills, resources, and infrastructures that support healthier lifestyles.

Ultimately, for Aboriginal diabetes prevention to be more effectively addressed, the SDOH in Aboriginal communities needs to improve. The greatest contribution of NPs in Aboriginal diabetes prevention may be advocating for just and equitable treatment of Aboriginal Peoples in Canadian society.

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