

A Prevention Strategy: Eliminating FASD in Indigenous Communities

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ABSTRACT

Many Aboriginal¹ communities in Canada appear to be particularly vulnerable to FASD. This article proposes a prevention strategy for eliminating FASD in these communities. The approach has several key elements.

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^{**} J.D. (2012).

^{***} J.D. (2017).

¹ We begin with a note on terminology. This article has been written over a number of years, during which there has been a recent shift in official terminology in Canada concerning references to First Nations, Inuit, and Metis persons and communities in Canada. The *Constitution Act, 1982*, being schedule B to the *Canada Act 1982* (UK), 1982, c 11, s 35(2) defines Aboriginal People as including the Indian, Inuit, and Metis people of Canada. In 2016, however, Canada adopted the United Nations Declaration on the rights of Indigenous Peoples (see Declaration on the Rights of Indigenous Peoples, GA Res 61/295 (Annex), UNGAOR, 61st Sess, Supp No 49, Vol III, UN Doc A/61/49 (2008) 15, Article 3). The Supreme Court of Canada used the word "Indigenous" as well as "Aboriginal" in the course of deciding that the word "Indian" in s 91(24) of the *Constitution Act* should be construed as including all three communities (see *Daniels v Canada (Indian Affairs and Northern Development)*, 2016 SCC 12, [2016] 1 SCR 99). The government of Canada established the Inquiry into Missing Indigenous Women and Children. We have researched and written this article over the past five or six years, however, during which time most of the literature and official reports were still using "Aboriginal". We decided that the title of this study should reflect the more modern term, but that we should maintain the use of "Aboriginal" in the main body to be consistent with the predominant usage in the literature we cite.

The first element is a recognition that the impact of each case of FASD can be devastating not only in terms of avoidable suffering of a child throughout their life, but also in terms of adverse impacts on the communities in which that child will live. Investment in prevention may result in benefits that far exceed the costs. Secondly, every child of an Aboriginal community is also a citizen of a province or territory and of Canada, and the prevention of FASD should be a concern to public authorities and all societies. In Aboriginal communities, however, the most effective approaches may be ones in which the communities play a lead, or even a primary role, in defining a multi-pronged strategy suited to its individual circumstances. A pan-Canadian overall “prevention strategy” that integrates individual communities might be useful, and could involve many opportunities and incentives for individual communities to develop strategies that are suited to their own circumstances and judgment. Lastly, the particular prevention strategy adopted by any public authority should consider (and can incorporate) potential for improvements at all levels, from the cellular level in an individual to the most general level of community developments. This article will attempt to provide a reasonably thorough review of what efforts have been attempted to prevent FASD at various levels (from micro- to macroscopic), and what has proved effective in practice.

Regardless of which strategies are implemented, all strategies—from a pan-Canadian framework (or from individual community strategies within that framework) should include clearly and numerically defined targets (such as reducing incidence of FASD per birth by a certain percentage in a certain amount of time) and empirical monitoring of outcomes.

I. INTRODUCTION

When a pregnant woman drinks, the alcohol consumed may act as a teratogen and damage her fetus. The negative consequences of this damage may be permanent. However, this damage is also wholly preventable. The effects of alcohol exposure on the fetus are collectively referred to under the umbrella term Fetal Alcohol Spectrum Disorder (FASD), and its costs are enormous to families, communities, and affected individuals.

The solution might seem simple: help pregnant women abstain from drinking. However, the causes and biological mechanisms behind FASD

are far more complicated than women simply being unwilling or unable to abstain from drinking alcohol. Alcohol leads to prenatal damage through a number of pathways, and its effects are caused by the interrelationship of many factors, such as poor nutrition, poly-substance use, and maternal stress. These factors are often compounded by low socioeconomic status, poverty, a lack of support networks, inaccessible health services, and cultural barriers. To prevent FASD, these factors must be addressed at individual and community levels.

Aboriginal communities seem to be among those particularly vulnerable to the incidence of FASD. As a result, this paper will focus on how these communities might best develop strategies to achieve concrete and measurable improvements within a reasonable time frame.

Community health interventions have proven successful in dealing with stubborn and pervasive health issues. For example, in North Karelia a multidimensional strategy aimed at promoting heart health and preventing chronic disease helped to achieve a 73% reduction in heart disease mortality within a particular age cohort.² The North Karelia strategy involved simple, wide-reaching, and easy-to-adopt interventions. The prevention strategy described in this paper recommends a similar tactic, hypothesizing that targeting FASD through its root causes of overall poor community health and substance abuse will benefit the entire community, as well as reduce FASD prevalence. A similar approach was taken with the Lake Alkali sobriety movement and was extremely effective.³ These community health interventions will be discussed in more detail throughout the paper as each exemplifies the multitude of ways in which FASD prevalence within Aboriginal communities could potentially be reduced. Substance abuse and poor living conditions are recognized problems within many Aboriginal communities and are strongly linked to residential school abuses and the high percentages of Aboriginal people involved with the criminal justice system.⁴ These underlying contributors

² Lindsay McLaren et al, "Out of Context? Translating evidence from the North Karelia project over place and time" (2007) 22:3 Health Education Research 414 at 414.

³ See Section X, Learning From Successes for a more detailed discussion on the Lake Alkali sobriety movement.

⁴ Truth and Reconciliation Commission of Canada, *Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada* (Winnipeg: 2015) at 174-178, online:

of FASD, as well as the disorder itself, have been explicitly acknowledged within the Truth and Reconciliation Commission's recommendations. The Commission recommended that the government recognize the need to address and prevent FASD and "develop [...] preventative programs that can be delivered in a culturally appropriate manner."⁵ This paper aims to establish the framework for a provincial or Canada-wide prevention strategy with the ultimate goal of achieving a significant decrease in FASD prevalence.

Suggested recommendations for decreasing FASD prevalence range from the microscopic biological perspective to a macro-level policy perspective. Accordingly, the framework will first examine FASD as a biological mechanism, including its symptoms, effects, and causes. A thorough understanding of how FASD affects the individual on a biological level opens the door for possible prevention strategies at the microscopic level. Such strategies include nutritional supplementation, pharmacological interventions, and the cessation of smoking. The individual will then be discussed in terms of relationships with providers of health services. These service-based interventions range from pre-pregnancy screening to determine who is at risk of having an FASD-affected birth and preparing health professionals for these encounters, to preventing unplanned pregnancies and the benefits of using non-traditional health resources. From this point, the individual's relationships with those in the surrounding community are used to determine how communities can become better educated about the causes, risks, and effects of FASD. This discussion will be heavily centered on educational facilities within the community, which can be used to directly deliver information to community members or as a "hook" to draw people to access care and information. The significance of targeting not just women, but also their partners, whose relationships directly affect women at risk of having a child with FASD, will also be discussed. Lastly, FASD will be put into a macroscopic perspective involving public policies on a provincial or

<http://www.trc.ca/websites/trcinstitution/File/2015/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf> [TRC Summary].

⁵ Truth and Reconciliation Commission of Canada, *Honouring the Truth, Reconciling for the Future: Calls to Action* (Winnipeg: 2015) at 4, online: <http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf>.

national level. Policies encouraging social assistance dependency and “deadbeat dads” may stimulate FASD risk factors. Coercive government interventions, which have been adopted in the United States, will also be discussed as a possible intervention option, though such interventions pose several issues from a practical perspective.

As a whole, this culmination of programs will be referred to throughout the paper as a comprehensive “prevention strategy”, but it should be stated at the outset that there is no silver bullet for FASD prevention. This paper sets out a number of possible programs that can be variously combined and integrated as part of an adopted strategy used by a particular community. A provincial or national project would incorporate and coordinate various community strategies. Some programs would be planned and delivered at the community level, while some might be provincial or nation-wide in their scope. To reach its goal, a provincial or national project must establish sustainable community programs that span across generations and that will continue within communities in order to create effective, long-term changes. For some communities, certain strategies in this paper will not be relevant while other communities may have experience with effective strategies that are not mentioned. As such, this paper should be treated as a jumping-off point for the development of a community prevention strategy within various communities, as its final form may be quite different from the initiative described here.

This paper is written without a specific community in mind; experts and leaders within a community that wish to implement a community strategy will be the best judges of which aspects of FASD prevention require immediate attention and which interventions are not feasible within a community. The project is flexible, with its final shape and composition determined by the community that implements it.

A. What is FASD?

FASD refers to the range of birth defects that result from prenatal alcohol exposure and includes a number of sub-classifications. It is not a problem unique to Aboriginal populations, though these populations will be the focus of the paper. For the purposes of FASD prevention policy, literature is relevant if it refers to any classification on this spectrum, including Fetal Alcohol Syndrome (FAS), Partial FAS (p-FAS), Alcohol

Related Neurodevelopmental Disorder (ARND), Alcohol Related Birth Defects (ARBD), and Fetal Alcohol Effects (FAE).⁶ At the extreme end of the spectrum, FAS involves dysmorphic characteristics, growth problems, and central nervous system abnormalities (structural, neurological, and functional).⁷ At the other end of the spectrum, prenatal exposure increases the risk of depression and low self-esteem and may affect executive functions such as impulse control and decision-making skills.⁸ The separate diagnostic criteria that exist for the subsets of FASD are similar, but not identical, while certain features are ambiguously broad or develop later in life.⁹ The difficulties that exist in diagnosing FASD may result in undiagnosed individuals receiving inadequate care and unfair treatment in the criminal justice system. It may also result in under-reported FASD prevalence statistics.

B. The Biological Mechanism of FASD

Two issues exist in identifying the mechanisms of FASD: alcohol may operate at different biological levels, or it may act upon general processes common to all cells.¹⁰ These characteristics make it difficult to understand exactly what biological pathways and cell processes are being affected by alcohol, as well as what pathways are the best targets for pharmacological solutions. However, it is thought that the detrimental effects of alcohol on the fetus are a result of a combination of alcohol-induced fetal hypoxia and free-radical oxidative stress.¹¹

⁶ Michael Pacey, *National Collaborating Centre for Aboriginal Health* “Fetal Alcohol Syndrome & Fetal Alcohol Spectrum Disorder Among Aboriginal Peoples: A Review of Prevalence” (2009), Prince George, BC: *National Collaborating Centre for Aboriginal Health* at 2-3, online: <http://www.nccah-ccnsa.ca/Publications/Lists/Publications/Attachments/34/2010_01_27_FASDAboriginalReviewPrevalence_EN_Updated_Web.pdf> [Pacey].

⁷ Louise R Floyd et al, “Recognition and Prevention of Fetal Alcohol Syndrome” (2005) 106:5 *Obstetrics & Gynecology* 1059 at 1061.

⁸ Janet R Hankin, “Fetal Alcohol Syndrome Prevention Research” (2002) 26:1 *Alcohol Research & Health* 58 at 59.

⁹ Pacey, *supra* note 6 at 25–26.

¹⁰ Ernest L Abel & John H Hannigan, “Maternal Risk Factors in Fetal Alcohol Syndrome: Provocative and Permissive Influences” (1995) 17:4 *Neurotoxicology & Teratology* 445 at 452 [Abel 1995].

¹¹ *Ibid.*

Hypoxia occurs when tissues lack oxygen and is the most common cause of cellular damage.¹² Oxygen is delivered to the fetus through the umbilical cord, but even low levels of alcohol can constrict umbilical cord arteries.¹³ The oxygen content of the blood that does get through the umbilical cord has been reduced during the mother's metabolism of the alcohol.¹⁴ Although a fetus can somewhat adapt to low blood oxygen levels, this adaptation is limited and the hypoxia causes a cascade of cell impairment, specifically affecting the brain and developing organs.¹⁵

Free oxygen radicals are produced during normal cell metabolism and "scavenged" by antioxidant enzymes.¹⁶ Because free oxygen radicals are molecules with unpaired electrons, they are unstable and can be highly damaging to cells.¹⁷ Cell damage from alcohol could arise either from an increased production of these free oxygen radicals or decreased production of cellular defence protectants.¹⁸ Altering the balance of these cells causes oxidative stress which disrupts their cellular integrity.¹⁹ This damage can occur independently of hypoxia and is exacerbated by deficiencies in antioxidant nutrients.²⁰ These biological mechanisms occur as a direct result of the provocative causes of FASD through biological conditions such as high blood alcohol levels and decreased antioxidant status. These provocative causes are themselves the result of a number of permissive factors, including alcohol intake patterns, socioeconomic status, and smoking.²¹

The mechanisms underlying FASD have been studied in non-mammalian and mammalian models, ranging from zebrafish and chick embryos to mice, sheep, and nonhuman primates.²² Though useful in

¹² *Ibid.*

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid* at 453.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Ibid* at 446-448.

²² Sarah Cavanaugh, "A transition in fetal alcohol syndrome research: The shift from

studying the teratogenic effects of alcohol upon a developing embryo or fetus, there are several limitations to FASD biological research. In mammalian models that better replicate human reproduction, interactions with anesthetics and alcohol, as well as fear responses and restraint stress may confound collected data.²³ The velocity of brain growth between mammalian models also differs from human brain growth;²⁴ this is a significant issue with studying the biological mechanisms of FASD, as alcohol-related effects on fetal brain development are perhaps the most harmful effect. Lastly, the effects of alcohol abuse are unique to humans. Experimental animals “do not consume ethanol”, “metabolize ethanol differently”, get ethanol through other means (such as injection), and have different physiological environments than humans.²⁵ As of yet, no animal model or combination of models thereof has been developed that includes all of the FASD diagnostic criteria exhibited in humans.²⁶

Alcohol consumption is commonly measured in terms of average number of drinks per day.²⁷ This is not helpful for gauging the risk that a woman’s child will have FASD as it does not effectively measure drinking patterns. Average daily consumption of one drink per day may describe someone who has a glass of wine with dinner, but it also describes someone who has seven drinks in one night while abstaining for the rest of the week. The latter is binge drinking and causes a spike in the blood alcohol level (BAL) that is more likely to damage the fetus.²⁸ Once a toxicity threshold has been exceeded, the fetal damage is a function of the amount of exposure to the alcohol: exposures to short but high BALs are expected to cause more cellular damage than prolonged, lesser exposures.²⁹ Along with higher volumes of alcohol consumed, a mother who drinks

animal modeling to human intervention” (2015) 5:2 Alcohol & Alcoholism 251 at 252-253.

²³ *Ibid* at 253.

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ Timothy A Cudd, “Animal model systems for the study of alcohol teratology” (2005) 230:6 Exp Biol Med (Maywood) 389.

²⁷ Abel 1995, *supra* note 10 at 446.

²⁸ *Ibid* at 446-447.

²⁹ *Ibid* at 447.

during the first trimester of the pregnancy is at the highest risk to have a child with alcohol-related physical features and deficiencies.³⁰

C. Rates of Alcohol Use Among Women

Alcohol consumption during pregnancy is necessary, but not determinative to having a child with FASD; some women may drink alcohol during pregnancy, but not present a child with FASD. As previously mentioned, it is the volume and timing of alcohol consumed by the mother during the pregnancy as well as other permissive factors such as poor nutrition that affect the severity of FASD in her child. These permissive factors are important and will be addressed later in the paper as potential areas for FASD interventions, but the focus of FASD prevention should be on alcohol use among women of childbearing age. Are women becoming more dependent on alcohol as a coping substance, particularly those within Aboriginal communities where FASD is expected to be most prevalent? If so, why?

This is important to address because if alcohol use amongst women is rising, particularly in younger cohorts, or if binge drinking patterns are increasing, FASD rates may increase as a result.³¹ Also, addressing overconsumption of alcohol will simultaneously address its related diseases and conditions. Twenty-five chronic diseases and conditions are entirely attributed to alcohol; it also plays a role in risks for certain cancers, tumours, neuropsychiatric conditions, and various cardiovascular and digestive diseases.³² Women's bodies react differently to alcohol and face higher risks than men's due to experiencing alcohol-related problems at

³⁰ Bonthius DJ & West JR, "Alcohol-induced neuronal loss in developing rats: Increased brain damage with binge exposure" (1990) 14:1 *Alcohol Clin Exp Res* 107; Susan Maier & James West, "Drinking patterns and alcohol-related birth defects" (2001) 25:3 *Alcohol Res & Health* 168 at 173.

³¹ Centre for Addiction and Mental Health, "Fetal alcohol spectrum disorders (FASD): An under-recognized issue, which may be on the rise globally" (2014), online: <[http://www.camh.ca/en/hospital/about_camh/newsroom/news_releases_media_advisories_and_backgrounders/current_year/Pages/Fetal-Alcohol-Spectrum-Disorders-\(FASD\)-An-under-recognized-issue,-which-may-be-on-the-rise-globally.aspx](http://www.camh.ca/en/hospital/about_camh/newsroom/news_releases_media_advisories_and_backgrounders/current_year/Pages/Fetal-Alcohol-Spectrum-Disorders-(FASD)-An-under-recognized-issue,-which-may-be-on-the-rise-globally.aspx)>.

³² Kevin Shield, Charles Parry & Jürgen Rehm, "Focus on: Chronic diseases and conditions related to alcohol use" (2014) 35:2 *Alcohol Res: Current Reviews* 155 at 155.

lower drinking levels, with lower body weight, and lower body water percentages causing higher blood alcohol concentrations.³³

In a cross-national literature review by Keyes *et al.*, evidence pointed towards younger North American cohorts, particularly those after World War II, being more likely to engage in heavy episodic drinking and development of alcohol-related disorders.³⁴ There is also evidence of a narrowing gender gap for heavy drinking and alcohol disorders as these outcomes are increasing in prevalence for women in younger birth cohorts.³⁵ This literature also examines the question as to why these cohort differences exist. Firstly, “endogenous mechanisms” such as social norms and the social transmission of alcohol consumption behaviours may be changing as social norms shift towards increased heavy episodic drinking.³⁶ Secondly, an examination of “exogenous mechanisms” such as policies, laws, and economic factors demonstrate that the problems of alcohol consumption are increasing despite increasingly strict policies.³⁷ These mechanisms do not operate independently and more data is needed to “formally disentangle these relationships.”³⁸

To effectively address alcohol use disorders among women, the reason behind the alcoholism must be analyzed. Alcohol-abusing women tend to internalize their feelings and use alcohol as a coping mechanism.³⁹ They also show higher rates of anxiety and depression than men and often have secondary disorders such as mania, major depression, panic disorder, and phobic disorder.⁴⁰ Women are likely to define themselves in relation to others, leading to guilt and shame when they fail to fulfill their expected

³³ National Institute on Alcohol Abuse and Alcoholism, *Women and Alcohol* (August 2013), [online: <http://pubs.niaaa.nih.gov/publications/womensfact/womensFact.pdf>](http://pubs.niaaa.nih.gov/publications/womensfact/womensFact.pdf).

³⁴ Katherine Keyes, Guohua Li & Deborah Hasin, “Birth cohort effects and gender differences in alcohol epidemiology: A review and synthesis” (2011) 35:12 *Alcoholism: Clin Exp Res* 2101 at 2101.

³⁵ *Ibid* at 2106.

³⁶ *Ibid* at 2108.

³⁷ *Ibid* at 2109.

³⁸ *Ibid.*

³⁹ Linda Beckman, “Treatment needs of women with alcohol problems” (1994) 18:3 *Alcohol, Health Res World* 206.

⁴⁰ *Ibid.*

social roles and may drink when they are having problems in relationships with significant others or family members.⁴¹ As will be discussed later in this paper, Aboriginal women face life stressors that put them at even greater risk of developing alcohol use disorders and face significant barriers to accessing treatment for alcohol use.

D. Risk Factors

There are several risk factors involved with FASD. These causal connections have been recognized within literature, but because of so many confounding factors, it is difficult to determine exactly what combination of factors will either produce or increase the severity of FASD. Cross-substance abuse and individual variations in how alcohol is metabolized can make connecting FASD to its causes particularly difficult. However, cases of FASD identified in studies often involve mothers “uniformly characterized by poverty”.⁴² Low socioeconomic status by itself is strongly correlated to adverse pregnancies, FAS, and other factors that lead to FASD such as poor nutrition, inner city residency, psychological stress, smoking, and poly-drug use.⁴³ There is also evidence that genetic factors can influence vulnerability to FAS and hypotheses that biological factors related to race are major contributors to FAS.⁴⁴ However, FAS predominantly occurs in low socioeconomic status populations “regardless of race”.⁴⁵ A higher prevalence of FAS among certain racial groups is more likely to reflect a socioeconomic status rather than a genetic predisposition to the effects of FAS. As it stands, there is not a strong evidentiary link between populations such as African- or Native Americans to be at greater risk for FAS than Caucasian-Americans because of genotypic population differences.⁴⁶

⁴¹ Heidi van der Walde et al, “Women and alcoholism: A biopsychosocial perspective and treatment approaches” (2002) 80:2 Spring J Counselling Development 145 at 147 [Walde].

⁴² Abel 1995, *supra* note 10 at 447.

⁴³ *Ibid* at 449.

⁴⁴ *Ibid* at 447-448.

⁴⁵ *Ibid* at 449.

⁴⁶ *Ibid* at 447.

The prevalence rates of FASD vary wildly across different socioeconomic and cultural groups. Rates even vary among groups with similar levels of alcohol consumption; prenatal alcohol exposure alone is therefore not enough to estimate risk for adverse birth outcomes. Researchers have determined several maternal risk factors that are associated with FASD, including advanced maternal age, number of pregnancies, previous births of children with FASD, living with a partner who drinks, and poverty/low socioeconomic status.⁴⁷ Psychological distress has also been linked to FAS: in a study by Kessler *et al.*, social phobias, simple phobias, depression, and drug dependence were highly predictive of future alcohol abuse.⁴⁸ Stress can enhance alcohol's toxicity and "may initiate or encourage continued alcohol abuse".⁴⁹ An increased dependency on alcohol will likely make it more difficult for a woman to abstain from drinking during pregnancy.

Much of the variable impact of FASD is related to the environmental or sociological factors affecting alcohol use. There is a web of risk factors that correlate to alcohol use and to each other, including: smoking, unemployment, poverty/low socioeconomic status, low education levels, unplanned or unwanted pregnancy, physical and sexual abuse, partner/family/community substance use, poor nutrition, access to prenatal care, and geographical isolation.⁵⁰ Notably, smoking by itself contributes to adverse pregnancy outcomes and is overwhelmingly correlated with poverty.⁵¹ Smoking contributes to hypoxia and is a major cause of low birth weight; the negative effect of smoking on a pregnant woman's body increases the destructive effects of alcohol.⁵² A notably

⁴⁷ Phyllis Lewis, Virginia Shipman & Philip May, "Socioeconomic status, psychological distress, and other maternal risk factors for fetal alcohol spectrum disorders among American Indians of the Northern Plains" (2011) 17:2 *American Indian & Alaska Native Mental Health Research: The J of the National Center* 1 at 2.

⁴⁸ Caroline Tait, *Fetal Alcohol Syndrome Among Aboriginal People in Canada: Review and Analysis of the Intergenerational Links to Residential Schools*, (Ottawa: Aboriginal Healing Foundation, 2003) at 151 [Tait 2003].

⁴⁹ *Ibid* at 151.

⁵⁰ *Ibid* at 80, 151.

⁵¹ *Ibid* at 147.

⁵² *Ibid*.

larger amount of alcohol must be consumed to cause a significant decrease in birth weight when a woman is not smoking during pregnancy.⁵³

Based on these risk factors and the strong connection of FASD to socioeconomic status, alleviating harmful socio-behavioural factors, unplanned pregnancies, and alcohol use should be primary goals of the prevention strategy. A comprehensive prevention strategy will have positive effects throughout targeted communities if it focuses on the environmental context in which high rates of FASD occur. For example, improved nutrition in communities will mitigate other negative birth outcomes in addition to those related to FASD; it will also help address other health issues affecting communities with poor nutrition such as high rates of malnutrition or diabetes. Reductions in cigarette smoking will reduce negative birth outcomes as well as improve community health and lessen individual financial strain. Other such examples include better access to health services and increasing community support systems that address the underlying issues that lead to substance abuse.

E. The Cost of FASD

Numerous studies have attempted to estimate the cost to society of FAS and FASD. A Canadian cross-sectional survey of 148 parents of children with FASD ages 1-21 years in urban and rural communities led to a total adjusted annual expenditure of \$14,342 per child based on the 2006 dollar value.⁵⁴ The cost components of this estimate were medical, education, social services, direct costs to the patient and his/her family, productivity losses, and externalizing behaviours.⁵⁵ The authors of this study used a conservative estimate of FAS/FAE prevalence in the general population to determine the potential annual costs for Canadian children ages 1-21 years to be roughly \$344,208,000.⁵⁶ It should be noted that this study was later revised to reflect more current statistics and found total adjusted annual costs associated with FASD to be \$21,642 at a 95%

⁵³ Abel 1995, *supra* note 10 at 449.

⁵⁴ Brenda Catherine Stade et al, "The burden of prenatal exposure to alcohol: measurement of cost" (2006) 4:5 J Fetal Alcohol Syndrome.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*

confidence interval.⁵⁷ The estimated costs do not include the damage suffered by the victims of crimes perpetrated by those with FASD nor the costs to the criminal justice system. The legal system costs have also been neglected in this FAS/FASD cost estimate.⁵⁸ However, using the original estimate from Stade *et al.* of \$344,208,000, approximate costs of raising Aboriginal children 0-19 years of age affected by FAS/FAE has been extrapolated to roughly \$18,056,000.⁵⁹ These costs are affected by geographic location, age of the child, and severity of the illness, as well as the choice of prevalence estimate used.⁶⁰

Because of the behavioural issues associated with FASD, there is a suspected high prevalence of FASD within the criminal justice system.⁶¹ A literature review by Popova *et al.* helps to paint the picture of the significant costs incurred as a result of FASD prevalence in the criminal justice system. Popova estimates that the number of youth offenders with FASD on any given day in 2008-2009 ranged from 207-423; adult offenders with FASD was estimated to be 3686.⁶² In 2010/2011, the average cost for a federal inmate was \$357/day while provincial or territorial inmates cost on average \$171/day.⁶³ Daily inmate costs for provincial or territorial inmates exclude data from the Yukon and

⁵⁷ Brenda Catherine Stade *et al.*, “The burden of prenatal exposure to alcohol: revised measurement of cost” (2009) 16:1 *Can J Clin Pharmacol* 91 at 98.

⁵⁸ Diane K Fast DK & Julianne Conry, “Fetal alcohol spectrum disorders and the criminal justice system” (2009) 15:3 *Developmental Disabilities Res Rev* 250 at 251.

⁵⁹ Pacey, *supra* note 6 at 21.

⁶⁰ *Ibid.*

⁶¹ TRC Summary, *supra* note 4 at 174-175.

⁶² Svetlana Popova *et al.*, “Fetal alcohol spectrum disorder prevalence estimates in correctional systems: a systematic literature review” (2011) 102:5 *Canadian J Public Health* 336 at 338. The range for FASD prevalence in the custodial correctional population was calculated by multiplying the lowest (10.9%) and highest (22.3%) estimated percentages of FASD prevalence with the number of youth in the correctional population (N = 1,898). The estimated number of adult offenders with FASD was calculated by multiplying the percentage of adults with FASD (9.9%) with the number of adults in the custodial correctional population (N = 3,686).

⁶³ Statistics Canada, “Adult correctional statistics in Canada, 2010/2011”, by Mia Dauvergne (Ottawa: Statistics Canada, 2012), online: <<http://www.statcan.gc.ca/pub/85-002-x/2012001/article/11715-eng.pdf>>.

Nunavut.⁶⁴ By addressing FASD preventatively, before those affected with FASD become involved with the criminal justice system, the total cost of housing prisoners could be reduced and the population of prisons somewhat decreased. This is particularly important as incarceration rates have increased despite a decrease in crime rates.⁶⁵ The Correctional Service of Canada's federal budget has recently increased by 40% over a five year period, mostly to build new cells, but a significant proportion of inmates are still double-bunked in cells.⁶⁶

There is an evidentiary predicament with cases involving offenders who have a diagnosis of FASD: how can they demonstrate that their condition effectively limited their ability to foresee the consequences of their actions? This is particularly the case for those with previously undiagnosed FASD. Part of the difficulty with submitting an FASD diagnosis as evidence of the disorder affecting an accused's state of mind is that FASD is difficult to diagnose, has a wide spectrum of characteristics, and evidence of maternal alcohol abuse during pregnancy may be difficult to confirm. As a result, claiming an FASD diagnosis as a defence may be viewed by the prosecution and judge as an excuse for getting a lighter sentence. For example, in *R v. Manitowabi*, defence counsel put forth the argument that since FASD can impair one's ability to foresee the consequences of one's actions, it may provide reasonable doubt as to whether the accused had the required *mens rea* to commit the crime and foresee the probable consequences of his actions.⁶⁷ The appellate judge held that although the appellant suffered from FASD, it failed "to provide a basis upon which a trier of fact could reasonably conclude that the appellant's FASD had an effect on his understanding of the probable consequences".⁶⁸ In this case, evidence of maternal alcohol abuse during

⁶⁴ *Ibid.*

⁶⁵ Maureen Brosnahan, "Canada's prison population at all-time high", *CBC News* (25 November 2013), online: <<http://www.cbc.ca/news/canada-s-prison-population-at-all-time-high-1.2440039>> [Brosnahan].

⁶⁶ *Ibid.*

⁶⁷ 2014 ONCA 301 at para 4, 2014 CarswellOnt 5078.

⁶⁸ *Ibid* at para 6.

pregnancy could not be confirmed and the doctor could only conclude that the appellant *may* be suffering from FASD.⁶⁹

In another case, *R v. Ramsay*, the sentence of an appellant with FASD was influenced by the aggravating factors of a previous criminal record and second set of criminal offences committed while on judicial interim release;⁷⁰ both of these factors may have been similarly affected by impaired decision making as a result of FASD. Costs to the criminal justice system and offenders with FASD are unlikely to be reduced by adopting a *Gladue*-like approach for those with FASD as it does not solve the difficulty of proving an individual's FASD. This approach may also provide too much leniency to offenders with minor FASD impairment. FASD prevention is a more logical and straight-forward solution to reducing the number of offenders with FASD and costs to the criminal justice system while maintaining the justice system's integrity.

Although Popova *et al.*'s review did not involve a thorough analysis of Aboriginal offenders with FASD in the criminal justice system, it can be hypothesized that a significant proportion of those with FASD in the criminal justice system are Aboriginal. The number of visible minorities in Canadian prisons has increased by 75% during the past decade.⁷¹ This is based on the presumed high prevalence of FASD in Aboriginal populations and the over-representation of Aboriginal people in the criminal justice system.⁷² In 2013, 61% of inmates in Manitoba were Aboriginal offenders.⁷³ This hypothesis is supported by the conclusions found in a study done by MacPherson and Chudley involving Manitoba's Stony Mountain Institution. In this study, 66% of the participating prisoner population identified themselves as Aboriginal and the incidence of FASD was found to be 10 times that of the general population.⁷⁴

⁶⁹ *Ibid* at para 33.

⁷⁰ 2012 ABCA 257 at para 10, 2012 CarswellAlta 1504.

⁷¹ Brosnahan, *supra* note 65.

⁷² Canada, Correctional Service, *Demographic Overview of Aboriginal Peoples in Canada and Aboriginal Offenders in Federal Corrections*, modified 2013-08-15 (Ottawa: CSC), online: <<http://www.csc-scc.gc.ca/aboriginal/002003-1008-eng.shtml>>.

⁷³ *Ibid.*

⁷⁴ Patricia MacPherson & Albert Chudley, "FASD in Correctional Population: Preliminary results from an incidence study" (Powerpoint presentation delivered at the 2nd International Conference on FASD: Research, Policy, and Practice around the

Another study in BC examined youth who were ordered to attend a Youth Sexual Offence Treatment Program; the authors found that 27% of Aboriginal youth participating in the program were diagnosed or suspected to have FASD compared to 4.3% of non-Aboriginal youths.⁷⁵ However, this higher proportion of Aboriginal Canadians with FASD may simply be because of the unequal and small sample size due to the over-representation of Aboriginal people in this prison population. There has been little research completed on the incidence of FASD in prison populations, despite substantial evidence suggesting a link between FASD and crime.⁷⁶

There is also the issue of the immeasurable human cost incurred by individuals affected by FASD and their families. Alcohol use can affect the child's ability to bond with his or her mother, father, and extended family.⁷⁷ A child affected with FASD will face, depending on the severity of the disorder, a variety of social, psychological, and physical challenges. This child may have difficulty in school, both socially and academically, which may later affect his or her pursuit of higher education or careers. Specific costs on individual families such as feelings of guilt and shame, financial strain, child-related stress, and effects on the family climate and marriages are also difficult to measure.⁷⁸ The true costs of FASD are much broader than those prevalent in research studies, causing an underestimate of the need for effective FASD prevention projects.

World, Victoria, BC, 7-10 March 2007), online: <events.onlinebroadcasting.com/fas/090707/ppts/correctional.ppt>.

⁷⁵ Rojas EY & Gretton HM, "Background, offence characteristics, and criminal outcomes of Aboriginal youth who sexually offend: A closer look at Aboriginal youth intervention needs" (2007) 19:3 Sex Abuse J Res Treat 257 at 274.

⁷⁶ Fred Boland et al, *Fetal Alcohol Syndrome: Implications for Correctional Service* (Ottawa: Correctional Service Canada, 1998), online: <<http://www.csc-cc.gc.ca/research/r71e-eng.shtml>>.

⁷⁷ *Aboriginal Approaches to Fetal Alcohol Syndrome/Fetal Alcohol Effects*, ed by Kim Anderson (Toronto: Ontario Federation of Indian Friendship Centres, 2002) 1 at 4, online: <www.ofifc.org/sites/default/files/docs/20080101_Aboriginal_Approaches_FASD.pdf> [Anderson].

⁷⁸ Heather Olson et al, "Family Matters: Fetal Alcohol Spectrum Disorders and the Family" (2009) 15:3 Developmental Disabilities Res Rev 235 at 236.

Part of any successful prevention project must be the gathering of information about the incidence and costs in all dimensions of FASD. A provincial or national prevention project should include, as a fundamental effort, measures to greatly increase the gathering and reporting of all aspects of FASD, including diagnoses; identification by schools of the number of students who are diagnosed with FASD or provided with services to assist them in this regard; the numbers of offenders within the criminal justice system who have FASD and estimate of the cost of their interaction with the system; and costs of victims of crime.

F. Barriers to Successful FASD Prevention

There are a number of barriers to effective treatment of substance use for high-risk women. Some of these barriers are within the medical profession itself.⁷⁹ Service workers dealing with prenatal care may not inquire about alcohol use or provide information regarding the negative effects of alcohol on birth outcomes. A study by France *et al.* on barriers perceived by health professionals in addressing alcohol usage among their patients found four themes.⁸⁰ The first theme was health professionals' perceptions of patients: either professionals felt that their patients did not drink and knew not to drink, or felt that women who drink at high-risk levels have concurrent contextual issues that the professionals did not feel comfortable addressing.⁸¹ The latter was also at play in the second theme: professionals' prioritization of their practice. Professionals perceived that the burden of consultation about alcohol issues was too large and the ability to properly deal with alcohol use was limited by time constraints and other higher priority issues.⁸² Third was concerns for the client and the professional relationship, as the studied health care professionals felt that asking about alcohol use could add to the anxiety or guilt felt by women who expressed concern about alcohol use prior to their own knowledge of their pregnancy, or interfere with trust-building between

⁷⁹ France K et al, "Health professionals addressing alcohol use with pregnant women in Western Australia: Barriers and strategies for communication" (2010) 45:10 *Substance Use & Misuse* 1474.

⁸⁰ *Ibid* at 1479.

⁸¹ *Ibid* at 1479-1480.

⁸² *Ibid* at 1481.

physicians and patients.⁸³ Lastly, health professionals felt that they lacked the skills and resources to properly manage alcohol-related interventions. This prevented them from raising the issue of alcohol with pregnant women as they lacked confidence in both the ability to support pregnant women drinking at high levels, and the available referral options.⁸⁴

Women at risk of giving birth to a child with FASD also face significant barriers which can be categorized as system-level, program-level, and personal/social.⁸⁵ System-level barriers make it difficult to develop and link comprehensive programs that support women, such as housing and health care; program-level barriers present access and coordination issues; and personal/social barriers affect women's abilities to benefit from support and prevention services.⁸⁶ System-level barriers may pose one of the most significant barriers to pregnant women and mothers who have substance abuse problems in that there is a fear of child apprehension by social services if she seeks help for her problems.⁸⁷ Also, pregnant women with substance abuse issues often have multiple intersecting problems; programs and support systems created to help pregnant women address alcohol use may have narrow mandates that are incapable of dealing with more than one issue.⁸⁸

Though alcohol is the teratogen responsible for FASD, the prevalence of FASD in Aboriginal communities is a more complex matter. It is not simply the case of convincing pregnant women to stop drinking, as FASD is not exclusively the result of a lifestyle choice. Other issues such as income inequality, poverty, and social exclusion directly affect Aboriginal populations and contribute to barriers in preventing FASD. For Aboriginal women who are pregnant and abusing substances, more specific barriers to FASD prevention exist: fear of child apprehension, availability of prenatal care and childcare, stigma of being a pregnant

⁸³ *Ibid.*

⁸⁴ *Ibid* at 1482.

⁸⁵ Nancy Poole & Amy Salmon, "Barriers to Accessing Support for Pregnant Women and Mothers with Substance Use Problems" British Columbia Centre of Excellence for Women's Health, 2007, 1 at 1 [Poole].

⁸⁶ *Ibid.*

⁸⁷ *Ibid* at 2.

⁸⁸ *Ibid.*

addict, and barriers to treatment programs are only a few examples.⁸⁹ A comprehensive prevention strategy must be designed with the existence of these barriers in mind and take positive steps to help both health professionals and women in need of services overcome them.

II. CONTEXT: ABORIGINAL COMMUNITIES

A. Prevalence in Aboriginal Communities

Somewhat of a contradiction exists with regard to the prevalence of FASD in Canadian Aboriginal communities: while there is widespread recognition that FASD is prevalent and represents a serious threat to Aboriginal health, there is inconclusive epidemiological evidence about the incidence of both FAS and FASD in Aboriginal communities and Canada at large.⁹⁰ Several difficulties exist in estimating prevalence of FAS/FASD rates, including but not limited to: case ascertainment, misclassification of exposure and risk, denominators or population at risk, source of data, timing of case ascertainment, sample size, geographic biases, and assumptions of homogeneity.⁹¹ These are largely the result of the wide range and delayed onset of FAS/FASD symptoms, vague classification of the illness, and studies that focus on particular geographic populations, many of which are known to have a clear public health concern regarding high rates of FAS/FASD.⁹² Despite difficulties in measuring prevalence rates due to the variables involved in FAS/FASD and its measurement, several studies have attempted to estimate the rates of FAS/FASD through passive surveillance as well as clinic- and population-based studies.⁹³

⁸⁹ Saskatchewan, Commission on First Nations and Métis Peoples and Justice Reform, *Fetal Alcohol Spectrum Disorders and the Justice System* by Rae Mitten (CFNMPJR, 2004), s 9 at 15.

⁹⁰ Pacey, *supra* note 6 at 1.

⁹¹ *Ibid* at 8-10.

⁹² *Ibid*.

⁹³ *Ibid* at 8.

Authors	Year Published	Location	Variety	Rate (per 1000 live births)
Williams et al. ⁹⁴	1999	NE MB	FAS	Incidence: 7.2
Square ⁹⁵	1997	MB First Nations reserve	FAS + partial FAS	Prevalence: 100
Chudley ⁹⁶	1997	MB	FAS	Prevalence: 61
		MB	FAE	Prevalence: 33
Asante and Nelms-Maztke ⁹⁷	1985	Northern BC	FAS + FAE	Prevalence: 25
		Yukon	FAS + FAE	Prevalence: 46
Robinson et al. ⁹⁸	1987	BC Aboriginal community	FAS	Prevalence: 190
Habbick et al. ⁹⁹	1996	SK (1988-1992)	FAS	Prevalence: 0.589
		SK (1973-1977)	FAS	Prevalence: 0.515

Table 1: Demonstrating the range in FAS rates across Aboriginal studies in Canada.¹⁰⁰

There are currently no national statistics on FASD rates in Canada, but estimates have been made based on representative samples for Aboriginal communities.¹⁰¹ These estimates cannot be generalized to other

⁹⁴ Williams R, Odaibo F & Mcgee J, "Incidence of fetal alcohol syndrome in Northeastern Manitoba" (1999) 90:3 Can J Public Health at 192-194.

⁹⁵ Square D, "Fetal alcohol syndrome epidemic on Manitoba reserve" (1997) 157:1 Can Med Association J 59-60 [Square, 1997].

⁹⁶ A E Chudley et al, "Fetal Alcohol Spectrum Disorder: Canadian guidelines for diagnosis" (2005) 172 (Supp) Canadian Medical Association Journal S1-S21, cited in Pacey, *supra* note 6 at 19.

⁹⁷ Asante KO & Nelms-Maztke J, *Report on the survey of children with chronic handicaps and fetal alcohol syndrome in the Yukon and Northwest British Columbia* (Whitehorse: Council for Yukon Indians, 1985), cited in Pacey, *supra* note 6 at 19.

⁹⁸ Robinson GC, Conry JL & Conry RF, "Clinical profile and prevalence of fetal alcohol syndrome in an isolated community in British Columbia" (1987) 137:3 Can Med Association J 203 at 205.

⁹⁹ Habbick BF et al, "Foetal alcohol syndrome in Saskatchewan: unchanged incidence in a 20-year period" (1996) 87:3 Can J Pub Health 204.

¹⁰⁰ Table largely adapted from Pacey, *supra* note 6 at 18-19.

¹⁰¹ Canada FASD Research Network, "FASD Fact Sheet", (accessed 31 August 2016)

communities or Canadian populations, but can give an approximation of the prevalence of FASD seen in Aboriginal communities (see Table 1). It is estimated that the prevalence of FAS/FAE in high-risk populations, including First Nations and Inuit communities may be as high as 1 in 5.¹⁰² The rates of FAS/FAE in some First Nations and Inuit communities are much higher than the national average which is estimated to be somewhere between 123-740 FAS and 1000 FAE babies born each year.¹⁰³ FAS/FAE has been termed a “northern epidemic” and \$1.7 million in funding is reported to be made available every year to support a new initiative addressing FAS/FAE impact on First Nations and Inuit reserve communities.¹⁰⁴

B. Poverty

High rates of alcohol use have been correlated with low socioeconomic conditions such as low income, education, and occupational status.¹⁰⁵ Though there is not one direct cause of FASD, the link between poverty and alcohol makes low socioeconomic status a significant factor. Social factors are thought to be directly linked to physical and mental health problems, family dysfunction, violence, poor education, and crime, all of which are associated with pregnancy and substance abuse.¹⁰⁶ In addition, factors related to poverty are either directly provocative or exacerbate other provocative factors for FAS; this includes inadequate diet or poor nutrition, inner-city residency, psychological stress, high parity, smoking, and drug abuse.¹⁰⁷ Aboriginal women in particular have disproportionate experiences with poverty, poor nutrition,

online: < <http://canfasd.ca/media/fasd-fact-sheet/>>.

¹⁰² BC FAS Resource Society, *Community Action Guide: Working together for the prevention of FASD* (BC Ministry for Children and Families, 1998) at 14.

¹⁰³ Canada, Health Canada, “It Takes a Community: Framework for the First Nations and Inuit Fetal Alcohol Syndrome/Fetal Alcohol Effects Initiative”, prepared by the FASE/FAE Technical Working Group (Ottawa: Health Canada, 1997) at 1, online: <<http://www.turtleisland.org/healing/fasfae1.pdf>> [Community].

¹⁰⁴ *Ibid* at 5.

¹⁰⁵ Tait 2003, *supra* note 48 at 34.

¹⁰⁶ *Ibid* at 92.

¹⁰⁷ Abel 1995, *supra* note 10 at 449.

and social isolation and are the poorest and most marginalized group in Canada.¹⁰⁸ A Manitoba study on alcohol abuse and pregnancy exemplifies this in its finding that the majority of women living in extreme poverty are Aboriginal.¹⁰⁹ This low socioeconomic status results in limited access to prenatal care, addictions treatment, and other health care services, especially for geographically isolated communities. It is also related to the inaccessibility of proper nutrition that may aggravate FASD birth defects.¹¹⁰

C. History of Abuse and Human Rights Violations

The arrival of settler populations and the imposition of certain government policies, such as residential schools, have had a number of adverse impacts on Aboriginal communities. Many children in these schools suffered a range of human rights violations including psychological and sexual abuse.¹¹¹ These experiences contribute to psychological problems later in life. For example, males who were sexually abused as children are commonly diagnosed with numerous disorders, including antisocial personality disorder, alcohol and drug use, anxiety, PTSD, and lifetime affective disorders.¹¹² Children in residential schools who were not abused physically or sexually still suffered emotional abuse as they were forcibly taken from their families and encouraged to feel shame about their heritage and adopt another culture's customs and practices.¹¹³ The human rights of the families were also violated in that they were denied the right to raise their own children by their own culture and traditions.¹¹⁴

¹⁰⁸ Tait 2003, *supra* note 48 at xx.

¹⁰⁹ Caroline Tait, *A study of the service needs of pregnant addicted women in Manitoba* (Winnipeg: Prairie Women's Health Centre of Excellence (PWHCE), 2000) at 37, online: <http://www.gov.mb.ca/health/documents/PWHCE_June2000.pdf> [Tait 2000].

¹¹⁰ Anna Patten et al, *Nutritional supplementation and fetal alcohol spectrum disorder* (Canada FASD Research Network).

¹¹¹ Deborah Chansonneuve, *Addictive Behaviours Among Aboriginal People in Canada* (Ottawa: Aboriginal Healing Foundation, 2007) at 12 [Chansonneuve].

¹¹² Tait 2003, *supra* note 48 at 43.

¹¹³ *Ibid* at 54.

¹¹⁴ *Ibid*.

This history must be acknowledged in any project that attempts to involve Aboriginal communities as it impacts and shapes present-day Aboriginal communities. The intergenerational impacts from the residential schools are linked to the increased rate of discord in Aboriginal communities.¹¹⁵ Aboriginal children who were forcibly removed from their families to be “civilized” in residential schools had their attachments to family and community severed. Consequently, as many of these children reached adulthood, they had not been taught parenting, relational, and social skills, and had difficulty creating relationships with others.¹¹⁶ The mental health of children is shaped by how their anxieties regarding abandonment and separation are dealt with: a child in distress who is then calmed learns to internalize the caregivers’ external soothing so that he or she can self-soothe.¹¹⁷ Children who are instead punished for expressing separation anxiety or abused at a young age may develop attachment disorders that can lead to addictive behaviours as a means of coping with emotional pain.¹¹⁸

Child maltreatment is recognized as being related to a higher risk of adolescent and adult alcohol consumption and disorders, but it is only one of the recognized stressors that influence alcohol use disorders.¹¹⁹ Other stressful life experiences may also be related to alcohol use, such as common stressful life events experienced by adults in interpersonal, occupational, financial, and legal domains, as well as minority stress.¹²⁰ Although what is considered to be sufficiently “stressful” may be subjective, it is generally accepted that Aboriginal peoples have been widely impacted by one or more stressful life experiences.

Some acute stressful life events common in epidemiologic research of stress and alcohol include: death or serious illness of a family member or

¹¹⁵ *Ibid* at 17.

¹¹⁶ *Ibid* at 15.

¹¹⁷ *Ibid* at 19.

¹¹⁸ *Ibid* at 20.

¹¹⁹ Katherine Keyes, Mark Hatzenbuehler & Deborah Hasin, “Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors” (2011) 218 *Psychopharmacology* 1 at 2, 5 [Keyes 2011].

¹²⁰ *Ibid* at 2. Minority stress is defined as “exposure to specific stressors that result from minority status, especially prejudice and discrimination events”, *ibid* at 8.

close friend; major financial crisis or difficulties paying bills; breakup of a romantic relationship; interpersonal problems; trouble with the police; and being a victim of a violent crime.¹²¹ Though anyone is at risk for these problems, Aboriginal people are statistically more likely to experience some of these stressful life events than non-Aboriginal people. In 2009, more than one-third of the Aboriginal population reported having been the victim of a crime compared to one-quarter of non-Aboriginal people.¹²² Aboriginal people are also more likely than non-Aboriginal people to be the victim of non-spousal violence, to experience multiple victimizations, and be sexually or physically assaulted by their spouse.¹²³ In all provinces and territories, there is a larger representation of Aboriginal adults in correctional services than in the general population.¹²⁴ This representation extends to the female population as well: more Aboriginal female offenders are represented “among the female correctional population than Aboriginal males within the male correctional population”.¹²⁵ As for financial crises, these are likely to be relatively common among Aboriginal women. The median income of Aboriginal women in 2005 was \$5,000 less than that of non-Aboriginal women and \$3,000 less than Aboriginal men.¹²⁶ Lastly, Aboriginal women may be more likely to experience stress related to the illness or death of a loved one. In 2006, a smaller proportion of Aboriginal people reported excellent or very good health in comparison with the general population.¹²⁷ Generally, Aboriginal people have poorer health than the general Canadian population, with higher

¹²¹ *Ibid* at 7.

¹²² Statistics Canada, “Violent victimization of Aboriginal people in the Canadian provinces, 2009”, by Samuel Perreault (Ottawa: Statistics Canada, 2011), online: <<http://www.statcan.gc.ca/pub/85-002-x/2011001/article/11415-eng.pdf>>.

¹²³ *Ibid*.

¹²⁴ Statistics Canada, “The incarceration of Aboriginal people in adult correctional services”, by Samuel Perreault (Ottawa: Statistics Canada, 2009), online: <<http://www.statcan.gc.ca/pub/85-002-x/2009003/article/10903-eng.htm>>.

¹²⁵ *Ibid*.

¹²⁶ Statistics Canada, “First Nations, Métis and Inuit Women”, by Vivian O’Donnell and Susan Wallace (Ottawa: Statistics Canada, 2011) at 33, online: <<http://www.statcan.gc.ca/pub/89-503-x/2010001/article/11442-eng.pdf>> [O’Donnell and Wallace].

¹²⁷ *Ibid*.

prevalence of risk factors underlying health conditions and barriers to addressing health issues.¹²⁸

Aboriginal people are also likely to experience stressors through prejudice and discrimination events; these stressors can range in severity and are linked to higher risks of substance use disorders.¹²⁹ As Aboriginal women will experience a combination of discrimination based on their gender as well as race, their risk of developing a disorder is even higher, as research shows that the risk increases “as a function of the number of domains in which discrimination was reported”.¹³⁰

Victimization by way of child maltreatment may be linked to alcohol use. Child maltreatment can range from mild to severe emotional or physical threats. It can also be acute or chronic throughout childhood. Though genetic predisposition may confound the relationship between child maltreatment and increased risk for substance use disorders, some studies have controlled for this familial history and still indicate the relationship.¹³¹ However, sexual abuse itself may not be an independent predictor of adult alcohol dependency or abuse.¹³² Theoretical connections between childhood abuse and alcoholism in women may be facilitated by low self-esteem and withdrawing from normative friend circles into fringe groups, which may be more likely to value heavy drug and/or alcohol use.¹³³ Research indicates that Aboriginal women in Manitoba are uniquely vulnerable: they experience higher levels of alcohol abuse as a result of childhood or adult abuse.¹³⁴ The link between abuse and FASD is exemplified in a study by Jasinski *et al.* in which African-American women

¹²⁸ The State of Knowledge of Aboriginal Health: A review of Aboriginal Health in Canada (Prince George, BC: National Collaborating Centre for Aboriginal Health, 2012), online: <http://www.nccah-ccnsa.ca/Publications/Lists/Publications/Attachments/52/SOK_report_EN_web.pdf>.

¹²⁹ Keyes 2011, *supra* note 119 at 9.

¹³⁰ *Ibid.*

¹³¹ *Ibid* at 5.

¹³² Tait 2003, *supra* note 48 at 45-50.

¹³³ Brenda A Miller, William R Downs & Maria Testa, “Interrelationships between Victimization Experiences and Women’s Alcohol Use” (1993) 11 J Studies on Alcohol Supplement 109 at para 29.

¹³⁴ Tait 2000, *supra* note 109 at 10.

who were physically abused as children were 6.5 times more likely to engage in binge drinking, and those who experienced multiple sexual victimizations were four times more at risk for binge drinking behaviours than women who had experienced a single instance of sexual abuse.¹³⁵ Although few studies examine substance abuse during pregnancy and its relationship to physical and sexual abuse, there is evidence that women deemed to be “high risk” commonly suffer child and adult abuse.¹³⁶

D. Stigma

A prevention strategy should aim to avoid implementing initiatives that will stigmatize Aboriginal community members. The issue of alcohol abuse in many Aboriginal communities has received significant public attention and resulted in the “drunken Indian” stereotype that has become common in Canadian society.¹³⁷ This stereotype implies that Aboriginal people are irresponsible and reckless with regard to their alcohol consumption for reasons that are genetic or inherent in traditional Aboriginal culture.¹³⁸ A prevention strategy should avoid this stereotype and aim to dispel it among its participants and within the community. It should recognize the alcohol abuse seen in many Aboriginal communities occurs for a variety of reasons; it is difficult to determine why a certain group of individuals may or may not abuse alcohol. Aboriginal people do not appear to be biologically susceptible to alcohol or alcohol abuse; this susceptibility has not been proven in scientific literature and biological racial classifications are difficult, if not impossible, to empirically apply in research.¹³⁹

¹³⁵ Jana L Jasinski, Linda M Williams & Jane Siegel, “Childhood Physical and Sexual Abuse as Risk Factors for Heavy Drinking among African American Women: A Prospective Study” (2000) 24:8 Child Abuse & Neglect 1061 at para 26.

¹³⁶ Tait 2003, *supra* note 48 at 50.

¹³⁷ *Ibid* at 23-24.

¹³⁸ *Ibid*.

¹³⁹ *Ibid* at 19-23. See page 20 specifically: many alcohol studies in the 1970s focused on race and metabolism. The most well-known of these was a study by Fenna *et al.* in 1971. In this study, Inuit and Indian hospital patients were compared to Euro-Canadian volunteers. To examine the rate of metabolism of alcohol, rates of sobering up were compared between Aboriginal and non-Aboriginal participants. The study found that Inuit and Indian patients had slower rates of disappearance of blood alcohol. The implication was that Aboriginal drinkers took a longer time to ‘sober up’.

Aboriginal women in particular are faced with “individual and institutional discrimination and disadvantages on the basis of race, gender, and class.”¹⁴⁰ This stigma is further increased when Aboriginal women have substance abuse problems.¹⁴¹ This public perception not only affects the mental well-being of these women, but also prevents them from accessing care or assistance when they are pregnant and abusing substances. Aboriginal women who have substance abuse problems should not be portrayed as “weak or deviant” by prevention initiatives; the choice to consume alcohol during pregnancy should instead be acknowledged as one that is more complicated.¹⁴² Aboriginal women will more positively receive service providers who approach them in a non-judgmental manner, who are respectful, and who include them in decisions.¹⁴³ This approach should be adopted by all those involved in prevention strategies to achieve effective and respectful communication towards Aboriginal women who are at risk of having children with FASD. Most importantly, discriminatory judgments towards Aboriginal women should be avoided. Some women may perceive the threat of child services apprehending her child as a greater risk than not seeking treatment for her substance abuse; discriminatory attitudes and a lack of understanding discourage at-risk women from seeking services or attempting to change behaviours.¹⁴⁴

III. PROJECT TARGETS

In this section, we outline the components of what we believe is required to create an effective prevention strategy for the prevention of FASD in Aboriginal communities [the Project]. The Project includes interventions on a spectrum from micro- to macroscopic, and combines community-based campaigns with those offered by services available generally to all Canadians, such as government programs and educational

The Alberta study, however, was not corroborated by subsequent studies in other Aboriginal groups, some of which actually showed opposite results.

¹⁴⁰ *Ibid* at para 26.

¹⁴¹ *Ibid*.

¹⁴² *Ibid* at 164.

¹⁴³ *Ibid* at 178.

¹⁴⁴ *Ibid* at 182.

institutions, in an effort to create a collaborative, self-sustaining program that will result in a decrease of FASD rates and improved birth outcomes.

Intervention	Short Term	Long Term
Nutritional	Creation of a school-based nutrition education and provision program	Increased nutritional awareness among youth and community
	Family-based dietary intervention program	Improved nutrition in targeted homes
	Community meals program Accessible grocery store or farmer's market	Improved access to nutrition for the community
Primary Education	Consultation, planning and design of general FASD education campaign	An iterative campaign that evolves based on feedback from community and leaders
	Launch of general campaign to raise awareness about FASD and support for local programs	High level of campaign recall; significant improvement in knowledge of FASD and how to prevent it
	Launch of specific campaign targeting at-risk community members; would contain information about how to access all community services and partners in FASD Prevention	Increased knowledge of FASD prevention resources in the community by service workers and community leaders; increase knowledge and access for at-risk community members
Screening	Accessible screening of women of child-bearing age and referral to appropriate programs	Screening of all community members in contact with service professionals and referral to appropriate programs; reduced drinking levels in screened individuals
Brief Interventions	Health and service professionals trained in culturally appropriate brief interventions	Improved cultural awareness among professionals; more effective use of intervention program for individuals
	All women who score sufficiently high on screening offered brief interventions	Reduce risk of FASD in majority of women who receive brief interventions; monitor efficacy of specific intervention programs

Case Management/ Mentoring	Formation of a case management training program or partnership	Establish trusting relationships between women and mentors; increase involvement in support services
Midwifery	Training or partnering with a midwifery program to develop capacity within the community	Increase births that occur in the community; increase mother's control over birth process
Treatment Centre	Creation of a local treatment centre or partnership with existing treatment centre (must be nearby community)	Increase access to treatment; offer collaborative treatment programs available in one central location
	Create and implement child care and transportation program for women accessing treatment	All women who require transportation or child care to access treatment are able to
	Address high turnover rates of professionals in community services by improving information carry-over	Decrease loss of programming goals and service history; increase efficacy of services and training
Partner Targeting	Increased awareness of impact of partner's behaviours on at-risk women; pregnant women's partners counselled on FASD	Increased willingness to abstain from alcohol during pregnancy; increase in community role models
Education	Designation of a facility which offers comprehensive family and community-based services, including a focus on early childhood education and childcare	Increase in those seeking treatment/support who would otherwise forgo it; improve relationships between parents and children
	Design and implement programs/workshops for students about alcohol use and avoiding unplanned pregnancy; provide information about FASD and prevention	Increased knowledge about FASD and prevention; significant reduction in unplanned pregnancies among youth; reduction in binge drinking behaviours among youth
	Design and implement a collaborative learning partnership program with a university	Improved graduation rates; give opportunities for students in their communities to work with health and education programs

Final Project Goals	<ul style="list-style-type: none"> • Significant reductions in children born with FASD; • Birth weights and negative birth outcomes that are closer to the national average; • 100% service access for women at risk; • Fully integrated collaborative partnership between services; • A self-sustaining program that trains new service professionals in the community; and • Overall increased knowledge of causes and effects of FASD
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IV. APPROACH OF THE PREVENTION STRATEGY

A. Adopting a Multi-Pronged and Coordinated Strategy

Aboriginal communities face numerous social and health issues, the existence of which has led to fragmented, ineffective services. Gaps in services are among the most significant barriers to population health in Aboriginal communities.¹⁴⁵ Moreover, administrators in Aboriginal communities “have expressed frustration with this model in which individual service is based on a specific ‘need’ or ‘problem’, rather than on the functioning of the ‘whole person.’”¹⁴⁶

A prevention project would not view FASD as a narrow-focused problem affecting an individual mother and child. FASD is a complicated issue affecting individuals, families, and communities; it is not possible to prevent FASD in isolation. FASD prevention requires the entire community and partnerships between multiple service providers working together to promote continuous and better-coordinated services. Women who drink alcohol during pregnancy are often dealing with issues of poverty, abuse, and mental health issues; thus interventions must take a comprehensive approach. By viewing FASD prevention through an entire-community lens, a prevention strategy will create and nurture collaborative partnerships whose functions transcend single issues.

¹⁴⁵ *Ibid* at 80.

¹⁴⁶ Jessica Ball, “Centring Community Services Around Early Childhood Care and Development” (2009) 1:4 *Child Health & Education* 183 at para 6.

From 2002 to 2003, Health Canada consulted with organizations across Canada to discuss a “Framework for Action” on FASD.¹⁴⁷ The feedback and advice on the draft Framework has been taken into account in writing this prevention strategy proposal. The exception to incorporating this feedback are statements directed towards providing more support to those already affected with FASD as this Project focuses primarily on preventing rather than alleviating the effects of FASD. This focus will more effectively separate the variety of core needs involved with FASD.¹⁴⁸ The prevention strategy also addressed facilitating community action rather than directing it, suggesting potential roles for various groups within action plans in a flexible manner, and ensuring women are not targeted as the “problem”.¹⁴⁹ The prevention strategy has also incorporated the need for creating a positive vision; streamlined and clear goals; strong guiding principles; an appreciation of the underlying causes of FASD, social stigma of drug and alcohol use; and sensitivity to those affected by FASD.¹⁵⁰ By examining gaps in past FASD initiatives, this prevention strategy aims to avoid the shortcomings of similar projects and establish collaborative, respectful relationships with organizations across Canada who share an interest in addressing FASD.

B. Holistic Approach

FASD prevention efforts in Canada should be guided by principles such as raising awareness, reaching those at risk, working with those affected, and creating linkages between related programs and initiatives.¹⁵¹ These support the view of health, widely held among members of Aboriginal communities, as one of holistic wellness, and stress the importance of collective approaches that integrate the individual with community and family. Prevention strategies should acknowledge the uniqueness of each Aboriginal community as each community faces its

¹⁴⁷ Public Health Agency of Canada, *Fetal Alcohol Spectrum Disorder (FASD): A Framework for Action* (Ottawa: Public Health Agency of Canada, 2003), at 22, online: <http://www.phac-aspc.gc.ca/publicat/fasd-fw-etcaf-ca/pdf/fasd-fw_e.pdf>.

¹⁴⁸ *Ibid* at 24.

¹⁴⁹ *Ibid*.

¹⁵⁰ *Ibid* at 24-25.

¹⁵¹ Community, *supra* note 103 at 4-6.

own issues, has its own capabilities and expertise, and will prioritize the many prongs of FASD prevention differently. Initiative participants should have active roles in individual projects and activities, including but not limited to planning, carrying out, and evaluating the initiatives.¹⁵² Furthermore, expectations and requirements for initiatives such as the prevention strategy must be flexible and allow each community to tailor the initiative to its diverse needs and circumstances.¹⁵³ Lastly, the prevention strategy should meet the social, cultural, and language needs of the target groups in these communities: tools and resource materials must be “culturally sensitive, user-friendly, easily understood, and translated ... when appropriate.”¹⁵⁴

While respecting and engaging the perspectives of Aboriginal communities is crucial, a prevention strategy cannot necessarily rely exclusively on the measures that are adopted by communities. Every resident of an Aboriginal community is also a resident of a province and of Canada, and every child in an Aboriginal community has a right to their concern. Public authorities at the provincial and federal levels must be prepared to not only contribute funding to programs at the community level, but to provide programs in respect of activities that are outside of the territorial or legal jurisdiction of a community. Federal and provincial authorities may have to provide directly for programs in some areas where a community has jurisdiction, but is not open to providing programs that supplement actions that are selected by communities. They may also have to step in more extensively where a local community, for reasons such as a dysfunctional political culture, is not able to develop a reasonable program of FASD prevention.¹⁵⁵ Such government interventions should be

¹⁵² *Ibid* at 8.

¹⁵³ *Ibid*.

¹⁵⁴ *Ibid*.

¹⁵⁵ For example, see *Hamilton Health Sciences Corp v DH*, 2014 ONCJ 603, 123 OR (3d), wherein Justice Edward found that the right to pursue traditional medicine instead of the course of prescribed treatment (chemotherapy) was a constitutionally protected Aboriginal right. Justice Edward later clarified his decision (see: 2015 ONCJ 229) to specify that “the right to use traditional medicines must remain consistent with the principle that the best interests of the child remain paramount”, suggesting there may be an implicit limitation on Aboriginal rights when it comes to the wellbeing of children. The clarification also stated that “...the Haudenosaunee have both an Aboriginal right to use their own traditional medicines and health practices, and the

cautious, however, in light of a past history in Canada of many policies by outside authorities that have been oppressive, discriminatory, ineffective, or counterproductive, such as many aspects of the residential schools policy. Outside government interventions should operate to every reasonable extent in a way that is collaborative and supportive of Aboriginal communities. This will help to build trusting relationships both within and outside the community, as well as support democratic decision-making within the community and self-determination.¹⁵⁶

C. The Importance of the Aboriginal Perspective

It is essential that the initiatives resulting from the prevention strategy are based on Aboriginal values and perspectives on health and community. Multi-component, community-wide initiatives that raise awareness and reduce alcohol consumption among pregnant women are often effective.¹⁵⁷ These types of initiatives require solidified organizational structures to assist the project within the community as well as a core group of community members who are invested and involved in the project's implementation.¹⁵⁸ The reason for the common use of this style of initiative amongst Aboriginal communities or populations with a wide proportion of Aboriginal members is likely because they involve and engage community members and pay due attention to local and cultural beliefs.

It is paramount to the success of projects such as this prevention strategy that the Aboriginal culture and way of life is appropriately

same right as other people in Ontario to use the medicines and health practices available to those people." See also (Joint Submission of the Parties at 2-3), online: <http://www.blg.com/en/NewsAndPublications/Documents/HHSC_v__DH_-_Joint_Submission_-_APR2015.PDF>. This decision has been highly criticized. See, for example: Asher Honickman, "Asher Honickman: A questionable judgment on traditional medicine", *National Post* (21 November 2014), online: <<http://news.nationalpost.com/full-comment/asher-honickman-a-questionable-judgment-on-traditional-medicine>>.

¹⁵⁶ Self-determination and circles of democracy are two of four core recommendations for "Frameworks for the Future". Social and economic developments should also be promoted. Wanda McCaslin, & Yvonne Boyer, "First Nations Communities at Risk and in Crisis: Justice and Security" (2009) 5:2 *J Aboriginal Health* 61 at 79.

¹⁵⁷ Tait 2003, *supra* note 48 at 166-67.

¹⁵⁸ *Ibid* at 167.

respected and preserved. Ignorance towards Aboriginal cultures and beliefs is likely to result in feelings of oppression and paternalism, ultimately negating the positive progress made with local Aboriginal communities. Interviews should be conducted within the community to establish the expectations, needs, and desires of that particular community. These should include, but not be limited to women of childbearing age, community leaders, and youth. Women of childbearing age are the targeted group for many of the interventions discussed in the paper since their feedback can help to tailor the initiative so it is more responsive to their needs and ultimately more effective. Community leaders are essential to the prevention strategy since they can help engage community members, and know what resources are already available or need to be made available. Lastly, to create permanent changes, FASD prevention must engage multiple generations. Women who are presently at risk for having a child with FASD will not always be of childbearing age, and without intervention the issues they face will carry on to the next generation. It is important to engage youth early in their lives in order to target substance use and underlying social issues that lead to women becoming at-risk for FASD births.

The Project requires that members of the involved community perceive FASD to be a problem no matter what the prevalence is; its strategy must be driven by a local desire to implement programs that reflect local priorities if it is to be successful. Community-fitting approaches are more likely to be effective than top-down, expert-driven strategies purported to be best practices and imported from other contexts.¹⁵⁹ Community-based healing models have proven to be successful with regard to addictions prevention and intervention programs in Aboriginal communities.¹⁶⁰ These models counter the impacts of residential school abuse and colonization through four strategies:

- (1) Restoring a sense of belonging through pride in identity, family, community, and ancestry;
- (2) Restoring the wisdom of traditional teachings, practices, and medicines that promote balance health for the mind, body, heart, and spirit throughout the lifespan;

¹⁵⁹ *Ibid.*

¹⁶⁰ Chansonneuve, *supra* note 111 at 34-35.

- (3) Providing opportunities to practice new ways of thinking, behaving, and living with others who are also committed to balanced health; and
- (4) Restoring the roles of women and Elders and strengthening the capacity of individuals, families, and communities to resolve their own problems.¹⁶¹

In developing “best practices” to FASD prevention, the guidelines set out in *The Aboriginal Healing Foundation Research Series*—an in-depth publication that heavily guides this proposal—should be followed.¹⁶² Prevention strategy initiatives should explain how and why these are the preferred prevention mechanisms with reference to scientific evidence and the perspectives of relevant parties, should be sensitized to the specifics of Aboriginal people rather than the general population, and implement traditional Aboriginal knowledge.¹⁶³

D. Harm Reduction

The Project embraces harm reduction principles, as the smaller gains experienced in harm reduction outcomes can effectively treat short-term mental and physical health problems while serving as a jumping off point for a longer-term individual health plan.¹⁶⁴ The principle of universal access to all programs means that people should not be denied access to services even if they are unable to fully abstain from alcohol or other substances. Some examples of harm reduction include counselling, tapering-off programs, and “buddy” systems.¹⁶⁵ Even if a woman is unable to abstain completely, reducing alcohol intake will still lead to fewer negative birth outcomes and an improvement in that woman’s health. Prevention efforts must be capable of assisting women even if they present to service workers while abusing alcohol. Women who are unable to stop drinking completely, particularly those of childbearing age, are the most in need of assistance and the Project must be capable of meaningfully engaging with them. Lastly, the harm reduction approach aligns with an Aboriginal approach to addictions in that it “recognizes the inherent value and worthiness of all human beings; does not judge behaviour but

¹⁶¹ *Ibid* at 35.

¹⁶² Tait 2003, *supra* note 48.

¹⁶³ *Ibid* at 159-160.

¹⁶⁴ Chansonneuve, *supra* note 111 at 31-34.

¹⁶⁵ *Ibid* at 34.

encourages safety and self-respect in decision-making; and emphasizes building on successes, learning from mistakes;[sic] and proceeding at an individual's own pace."¹⁶⁶

E. Data Collection

In order to determine the success or failure of a specific intervention as well as that of the prevention strategy as a whole, relevant information must be collected at all project levels with the informed consent of participants. Without adequate information collection, intervention efforts are likely to fail because they cannot effectively measure the program's impact or success nor determine what areas of the program require changes in order to succeed.

Organizations often receive funding to develop intervention programming, but the formal evaluation of such programs is equally important.¹⁶⁷ A common evaluation framework is required for the future comparison of performances of different initiatives with regard to cost and efficacy; the prevention strategy must decide upon a method of formal evaluation upon its outset. The framework used to assess the Millennium Development Goals (MDGs) may be useful to adopt in the Project for measuring large-scale effectiveness: its evaluation framework includes a conceptual model outlining pathways expected to affect the MDGs, lists standard indicators of measurement with clear measurement plans, and provides guidelines for compatible evaluation designs.¹⁶⁸ Traditionally, health-programme evaluations have used experimental approaches in which those who received intervention efforts are compared with those who did not.¹⁶⁹ This is problematic in that it ignores external factors such as socioeconomic fluxes, changes in existing health services, and other health interventions present in the same area. It also does not account for

¹⁶⁶ *Ibid.*

¹⁶⁷ Alberta Centre for Child, Family and Community Research, *Advancing the Fetal Alcohol Spectrum Disorder (FASD) Research Agenda A Compendium of Research and Knowledge Mobilization Project Summaries*, at 13 online: <<https://policywise.com/wp-content/uploads/2016/08/FASD-Research-Summary-Report.pdf>>.

¹⁶⁸ Cesar G Victoria et al, "Measuring Impact in the Millennium Development Goal Era and Beyond: A New Approach to Large-Scale Effectiveness Evaluations" (2011) 377 *Lancet* 85 at 85.

¹⁶⁹ *Ibid.*

pre-existing baseline levels and trends in key indicators that affect initiative impact.¹⁷⁰ Similarly, programme evaluations that focus on a before-and-after design cannot determine what changes are attributable to the programme or other factors.¹⁷¹

Instead, the focus should be on trying to understand why programmes have been carried out in some areas rather than others, and which of the various programmes works best in a given area.¹⁷² The manner in which a community is selected to receive programming must be well-documented; pre-existing baseline data that will be used in impact indicators can be gathered at the community level.¹⁷³ Different indicators can be continuously monitored while integrating relevant information from different existing databases to create the foundation for evaluations, and new information about program implementation can be incorporated throughout the program.¹⁷⁴ Additional data collection through various methods (i.e. sampling, household surveys, health-facility assessments, etc.) should not be solely focused on measurements reflecting end goals (i.e. reduced incidence of FASD) because the “documentation of inputs, training, supervision, quality of care, and delivery channels is essential for understanding why programmes succeed or fail.”¹⁷⁵ By focusing on more minute aspects of program delivery, areas that fail to be effective can either be altered or abandoned. This approach will also show which efforts are actually reaching the target population at the community level.¹⁷⁶ Through a systemic approach to prevention strategy initiatives, common barriers and effective methods can be more easily determined, ultimately creating a more comprehensive and valuable project.

Gaps in data, barriers to data collection, and study limitations should be recorded, as collecting accurate data on FASD prevalence within Aboriginal communities may be met with several barriers. Firstly, prevalence rates in Canada are estimated since FASD is so difficult to

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid* at 86.

¹⁷² *Ibid* at 87-88.

¹⁷³ *Ibid* at 88.

¹⁷⁴ *Ibid* at 88 and 89.

¹⁷⁵ *Ibid* at 90.

¹⁷⁶ *Ibid.*

diagnose.¹⁷⁷ This may make determining a baseline for data collection difficult, particularly in communities where FASD is likely underreported. This in turn will affect the final program impact of reducing FASD incidence. Also, because the number of children born with FASD requires women to be actively having children, communities with less women of childbearing age may pose a difficulty in creating accurate measurements of incidence due to the small sample size. Furthermore, there are numerous other variables at work that may affect FASD incidence. For example, birth control programs (pharmacological, educational, or otherwise) adopted within a community may alter the birth rate, average age of pregnant mothers, partner attitudes towards birth control, and alcohol use during pregnancy. Birth control programs may also have more long-term effects that will not be measured in a short-term project. Lessened birth rates does not necessarily mean lessened FASD incidence within a community; detailed data collection is required to determine the effects of such confounding variables.

Other barriers to data collection and program evaluation that should be kept in mind during program design and development include incomplete coalitions of service providers, high turnover rates of community members as well as health professionals, data collection methods that will rely on subjective interpretations, access and use of services outside the community, community cooperation, and difficulty in obtaining follow-ups with individuals. According to *Evaluation of the Fetal Alcohol Spectrum Disorder (FASD) Initiative 2008-2009 to 2012-2013*—a publication developed by both government and non-governmental organizations—there are five main goals of FASD initiatives: “1) increasing public and professional awareness as well as understanding of FASD, 2) increasing capacity, 3) creating tools 4) expanding knowledge and 5) supporting action.”¹⁷⁸ Data collection should aim to reflect the prevention strategy’s impact on these goals. This will demonstrate how the expected outcome of a reduced incidence of FASD will be achieved.

¹⁷⁷ Public Health Agency of Canada, *Evaluation of the Fetal Alcohol Spectrum Disorder (FASD) Initiative 2008-2009 to 2012-2013*, prepared by Evaluation Directorate (Ottawa: Public Health Agency of Canada, 2014) at 4.1., online: <http://www.phac-aspc.gc.ca/about_apropos/evaluation/reports-rapports/2013-2014/efasdi-eietaf/index-eng.php#a4.1> [Evaluation of FASD Initiative].

¹⁷⁸ *Ibid* at 2.2.

Information gathered should respect the relevant research protocols for Aboriginal communities. For example, Manitoba First Nations have adopted the principles of Ownership, Control, Access, and Possession (OCAP®) which ensure self-determination over research involving First Nations.¹⁷⁹ A community owns information collectively, has the right to control all aspects of research and information management processes that impact it, must have access to information and data about the community, and can assert and protect its ownership.¹⁸⁰ The communities involved with the prevention strategy should not simply view Aboriginal community members as research subjects, but should consult the community in order to support its development and improve its health and well-being.¹⁸¹ Benefits of OCAP include rebuilding community trust, improved quality and accuracy of data collection, more democratic research methods, increased participation, promoting First Nations perspectives, and encouraging meaningful capacity development.¹⁸² Accountability protocols differ for different Aboriginal Communities; researchers should familiarize themselves with the applicable principles at the outset of the prevention strategy in relevant communities.¹⁸³

F. Defining Success

Program success may be measured in numerous ways, from large-scale to small-scale effects, and in a qualitative or quantitative manner. Any measurements will be based on the needs and issues of the community in which the project takes place. Some metrics will measure the overall success of the program. These may include birth weights, diagnoses of

¹⁷⁹ First Nations Information Governance Centre, *OCAP: Ownership, Control, Access and Possession*, sanctioned by the First Nations Information Governance Committee, Assembly of First Nations (Ottawa: National Aboriginal Health Organization, 2007), online: <<http://fnigc.ca/ocap.html>>.

¹⁸⁰ *Ibid.*

¹⁸¹ *Ibid.*

¹⁸² Brian Schnarch, "Ownership, Control, Access, and Possession (OCAP) or Self-Determination Applied to Research: A critical analysis of contemporary First Nations research and some options for First Nations communities" (2004) 1:1 *J Aboriginal Health* at 32-33.

¹⁸³ *Framework for Research Engagement with First Nation, Metis, and Inuit Peoples* (Manitoba: University of Manitoba, 2013).

FASD, rates of alcoholism in the community and specifically among women between 18 and 45, and “dual protection” rates (reduction in alcohol use combined with increased birth control use/family planning). Other metrics will measure the success of specific interventions related to FASD. These may include recall of public awareness campaigns, percentage of women accessing health care who are screened for problem drinking, changes in drinking behaviours following brief interventions, and percentage of those who complete treatment programs. Finally, data may indicate the changes in the public health context of the community that have an indirect effect on FASD: graduation and employment rates, tobacco use, attendance at child-care facilities, or food security in the community.

While the metrics governing overall success are important, the smaller-scale measurements of success are necessary in order to determine which parts of the comprehensive approach are effective and which require changes. Specific outcomes should be identified in order to track and analyze program impact and enhance performance measurement. To assist in planning what the expected outcomes of specific activities will be at different project levels, the *Logic Model for the Public Health Agency FASD Initiative* may be useful in designing and monitoring an initiative’s outcomes and effects:

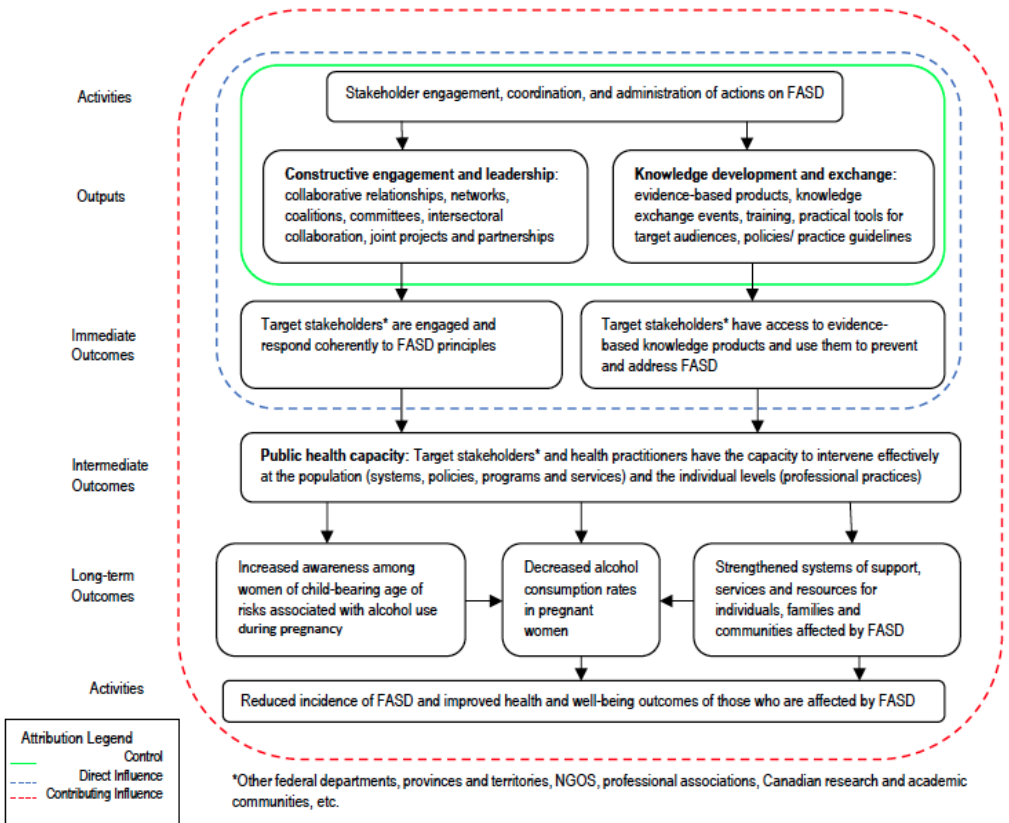
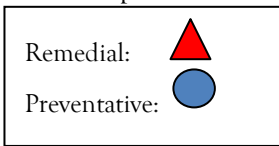


Figure 1: Logic Model for the Public Health Agency FASD Initiative¹⁸⁴

V. INTERVENTIONS

FASD prevention interventions can be categorized as primary, secondary, and tertiary. Primary prevention involves activities undertaken with a healthy population to enhance health.¹⁸⁵ These strategies are public-directed, but focus on



¹⁸⁴ Figure adapted from the Evaluation of FASD Initiative, *supra* note 177.

¹⁸⁵ Gary Roberts & Josephine Nanson, *Best Practices: Fetal Alcohol Syndrome/Fetal Alcohol Effects and the Effects of Other Substance Use During Pregnancy* (Ottawa: Health Canada, 2001).

individual behavioural change; in the context of FASD reduction strategies, examples include posters, warning labels, limiting alcohol availability, and public health promotion strategies.¹⁸⁶ Secondary prevention refers to efforts to stop the progression of problems through early detection and early treatment of people identified as being high-risk; it involves brief therapeutic attention and referral to treatment services.¹⁸⁷ Tertiary prevention focuses on minimizing damage to the fetus and reducing the likelihood of future pregnancies being affected by alcohol use and can involve treatment, birth control, and parenting programs.

The purpose of interventions may be to alleviate the harm caused by FASD or to prevent further incidence. Prevention initiatives need not wait for vulnerable groups to become pregnant or develop substance use issues to act. The Project should be focused on helping young women avoid unplanned pregnancy and alcohol abuse (or alternatively, plan for a healthy, substance-free pregnancy) by understanding the reasons why these issues occur, particularly in the context of Aboriginal communities. The type and extent of the intervention chosen will be highly dependent upon community involvement and cooperation, available resources, and level of funding allocated to the project. Most interventions have been focused upon because they are effective and practical potential solutions to FASD prevention, such as nutritional interventions and the use of early childhood care and development programming to lessen service fragmentation. However, the shortcomings of potential interventions have not been ignored. The discussion of possible interventions in this paper will begin with those that are narrowly focused upon the individual at a biological level, then broaden to the effects of services on individuals, then to the effects of community campaigns, and lastly, to broad-based public policies that are expected to affect FASD prevalence rates.

¹⁸⁶ Tait 2003, *supra* note 48 at 161.

¹⁸⁷ British Columbia, Ministry of Health and Ministry Responsible for Seniors, *Alcohol and Other Drug Problems and BC Women: A Report to the Minister of Health from the Minister's Advisory Council on Women's Health*, by Nancy Poole (Ottawa: November 1997) at 10.

VI. DIRECT HEALTH INTERVENTIONS

A. Pharmacological and Nutritional Intervention

1. Pharmacological Interventions

Drug therapy and pharmacological intervention are promising treatment avenues for pregnant women with substance abuse problems and alcohol addictions.¹⁸⁸ If a pregnant woman also suffers from an alcohol abuse disorder, “the decision to prescribe an anti-addictive medication must be guided after the benefits are weighed with potential risks.”¹⁸⁹ Not everyone with addictive disorders qualifies for drug therapy; there were no FDA-approved medications available to those “dependent on stimulants, hallucinogens, cannabis, or inhalants”.¹⁹⁰

Treatment of alcohol addictions have been somewhat successful, but do not come without consequences. Benzodiazepines are commonly used to treat alcohol withdrawal.¹⁹¹ Some studies have indicated high levels of congenital anomalies among children born to women who used benzodiazepines during pregnancy, although causation is unclear due to the high incidence of other substance exposures, including alcohol.¹⁹² Benzodiazepines are one of many pharmacotherapies for alcohol addiction that attempt to detoxify to reduce or prevent withdrawal symptoms.¹⁹³ Another category of pharmacotherapy for addiction includes medications

¹⁸⁸ Richard E Wilcox & Brian A McMillen, “The Rational Use of Drugs as Therapeutic Agents for the Treatment of the Alcoholisms” (1998) 15:2 Alcohol J 161.

¹⁸⁹ William Rayburn & Michael P Bogenschutz, “Pharmacotherapy for pregnant women with addictions,” (2004) 191:6 Am J of Obstetrics & Gynecology 1887.

¹⁹⁰ *Ibid.* While drugs such as methadone and buprenorphine have been used to treat opioid addiction in women, including pregnant women, the use of such drugs is not licensed for the treatment of opioid addiction during pregnancy. In addition, as of 2011 no licensed therapies exist for addiction or abuse of benzodiazepines, stimulants or cannabis. See Rajashekhar Moorthy Madgula, Teodora Groshkova & Soroya Mayet, “Illicit drug use in pregnancy: effects and management” (2011) 6:2 Expert Rev of Obstetrics & Gynecology 179 [Madgula, Groshkova & Mayet].

¹⁹¹ *Ibid.*

¹⁹² U Bergman et al, “Effects of exposure to benzodiazepine during fetal life,” (1992) 340: 8821 The Lancet at 694.

¹⁹³ Rayburn, *supra* note 189 at 1889.

that prevent or minimize relapse such as disulfiram.¹⁹⁴ Disulfiram, a drug used to assist in abstinence from alcohol, has been met with mixed results in controlled studies of non-pregnant adults as it leads to an accumulation of acetaldehyde when alcohol is ingested.¹⁹⁵ Researchers theorize that toxicity from high levels of acetaldehyde is possible among pregnant women who drink alcohol and nonspecific foetal abnormalities have been reported with first trimester exposure.¹⁹⁶ Naltrexone, an opioid antagonist that dampens the positive effect of alcohol, is also used to assist alcohol abstinence,¹⁹⁷ however, there is evidence that animal offspring exposed to naltrexone have altered behaviour, and recent findings suggest that it is “less effective for women than for men”.¹⁹⁸ For women who are likely to become pregnant and have alcohol abuse issues, as well as their partners and the partners of already-pregnant women, pharmacological therapies may be helpful. However, because of the risks to both mothers and fetuses, it is recommended that psychosocial treatments such as intervention programs be attempted prior to prescribing anti-addictive medications.¹⁹⁹

2. Nutritional Intervention

Other than anti-addictive medications, nutrient supplementation may prove advantageous to children exposed to alcohol while in the womb. A number of studies have been conducted on animals to gauge the effects of nutritional intervention on alleviating the detrimental effects of alcohol on the fetus. Nutrient supplementation poses less of a toxicity risk to the fetus and may be a better option in treating pregnant women with alcohol abuse problems. For example, vitamin E has been shown to reduce alcohol-induced cerebrovascular damage in rats, and antioxidant levels have been shown to decrease as a direct result of ethanol exposure.²⁰⁰ This

¹⁹⁴ *Ibid* at 1889.

¹⁹⁵ *Ibid*.

¹⁹⁶ *Ibid*.

¹⁹⁷ *Ibid*.

¹⁹⁸ *Ibid*.

¹⁹⁹ *Ibid* at 1886-1887. See also Madgula, Groshkova & Mayet, *supra* note 190.

²⁰⁰ BM Altura BM & A Gebrewold, “Alpha-tocopherol attenuates alcohol-induced cerebral vascular damage in rats: possible role of oxidants in alcohol brain pathology and stroke” (1996) 220:3 Neuroscience Letters 207; H Rouach et al, “Changes in some pro- and antioxidants in rat cerebellum after chronic alcohol intake” (1997) 53:4

nutritional intervention supports the hypothesis that free radical processes are a key player in ethanol-induced brain disturbances in fetal development.²⁰¹

Study	Nutrient	Model	Results
Ieraci and Herrera ²⁰²	Vitamin B ₃ (nicotinamide)	Mice	Prevents alcohol-induced hyperactivity and memory impairment; protects against ethanol-induced apoptosis
Lee et al. ²⁰³	Black Ginseng	Mice	Restored organogenesis to normal or higher than normal levels after alcohol treatment caused decreased morphological scores (abnormalities of embryonic structures)
Summers, Rofe, and Coyle. ²⁰⁴	Zinc	Mice	Limits spatial memory impairments caused by ethanol exposure; timing of zinc administration may be critical to limiting these impairments
Marino, Aksenov, and	Vitamin E	Rats	Protective effect on neuronal loss; did not prevent alcohol-

Biochem Pharmacol 539.

- ²⁰¹ JJ Mitchell, M Paiva M & MB Heaton, “Vitamin E and beta carotene protect against ethanol combined with ischemia in an embryonic rat hippocampal culture model of fetal alcohol syndrome” (1999) 263:2-3 Neuroscience Letters 189 [Mitchell 1999a].
- ²⁰² Alessandro Ieraci & Daniel G Herrera, “Nicotinamide protects against ethanol-induced apoptotic neurodegeneration in the developing mouse brain” (2006) 3:4 PLoS Med 101.
- ²⁰³ Se-Ra Lee et al, “Black ginseng inhibits ethanol-induced teratogenesis in cultured mouse embryos through its effects on antioxidant activity” (2009) 23:1 Toxicol In Vitro 47.
- ²⁰⁴ Brooke L Summers, Allan M Rofe & Peter Coyle, “Prenatal zinc treatment at the time of acute ethanol exposure limits spatial memory impairments in mouse offspring” (2006) 59:1 Pediatr Res 66.

Kelly ²⁰⁵			induced learning deficits
Endres et al. ²⁰⁶	ADNF-12	Mice	Improved developmental milestones after alcohol insult both in quality and earlier achievement
Thomas, Abou, and Dominguez ²⁰⁷	Choline	Rats	Reduced severity of alcohol-related effects on birth and brain weights, alterations in reflex development, and most behavioural measures
Marrs et al. ²⁰⁸	Retinoic acid (vitamin A)	Zebrafish	Rescued alcohol-induced developmental defects (characteristic phenotypical features of FASD)

Table 2: Examples of studies on animal models that have observed positive effects of nutrient supplementation on alcohol exposure affecting developmental outcomes.

A more complicated issue arises when considering vitamin A supplementation. Although alcohol is thought to negatively affect retinoic acid metabolism, and thus positively affect neurogenesis, over-supplementation of vitamin A can act as a teratogen.²⁰⁹ Furthermore, the

²⁰⁵ Melissa D Marino, Michael Aksenov & Sandra Kelly S, "Vitamin E protects against alcohol-induced cell loss and oxidative stress in the neonatal rat hippocampus" (2004) 22:5-6 *Int J of Dev Neuroscience* 363.

²⁰⁶ M Endres et al, "Prevention of alcohol-induced developmental delays and learning abnormalities in a model of fetal alcohol syndrome" (2005) 193:3 *American J Obstetrics and Gynecology* 1028.

²⁰⁷ Jennifer Thomas, Elizabeth J Abou & Hector Dominguez, "Prenatal choline supplementation mitigates the adverse effects of prenatal alcohol exposure on development in rats" (2009) 31:5 *Neurotoxicol Teratol* 303.

²⁰⁸ James Marrs et al, "Zebrafish fetal alcohol syndrome model: effects of ethanol are rescued by retinoic acid supplement" (2010) 44:7-8 *Alcohol* 707.

²⁰⁹ Mark S Ballard, Muxin Sun & Jenny Ko, "Vitamin A, folate, and choline as possible preventive intervention to fetal alcohol syndrome. Medical hypotheses" (2012) 78:4 *Med Hypotheses* 489.

liver damage caused by prolonged alcohol use also affects appropriate levels of vitamin A, as the mobilization of vitamin A from the liver may increase with excessive alcohol consumption; this mobilization can itself cause birth defects.²¹⁰

Appropriate levels of vitamin A are beneficial to pregnancies while excesses result in fetal damage; more research is required to assess the most appropriate vitamin dosage to prevent harming the mother or fetus.²¹¹ To avoid the harmful effects of excess vitamin A on the fetus, there is some evidence that β -carotene protects against ethanol-induced neurological damage seen in fetuses.²¹² As β -carotene is a precursor to vitamin A, β -carotene supplementation could be used to supply pregnant women with an appropriate amount of vitamin A without risking teratogenic effects.²¹³ However, supplements would not be appropriate for the general population and could have adverse side effects on pregnant mothers who are smokers, as β -carotene supplementation among smokers is associated with a greater incidence of lung cancer and death.²¹⁴

Micronutrient supplementation may be a promising harm reduction intervention for pregnant women who continue to drink when fetal toxicity is not a risk. In a Ukrainian study by Chambers, moderately to heavily alcohol-exposed pregnant women were compared to those who were low alcohol-exposed or unexposed pregnant women; women were

²¹⁰ Mary E Cogswell, Pamela Weisberg & Catherin Spong, "Cigarette Smoking, Alcohol Use and Adverse Pregnancy Outcomes: Implications for Micronutrient Supplementation" (2003) 133:5 J Nutrition 1722 at 1727.

²¹¹ Alice Rumbold et al, CA, "Vitamin supplementation for preventing miscarriage" (2011) Cochrane Database Syst Rev [Rumbold].

²¹² J Jean Mitchell, Michael Paiva & Marieta Barrow Heaton, "The antioxidants vitamin E and beta-carotene protect against ethanol-induced neurotoxicity in embryonic rat hippocampal cultures" (1999) 17:2 Alcohol 163 [Mitchell 1999b]; Mitchell 1999a, *supra* note 201.

²¹³ Institute of Medicine, Food and Nutrition Board, *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc* (Washington, DC: National Academy Press, 2001).

²¹⁴ CA Redlich et al, "Effect of supplementation with beta-carotene and vitamin A on lung nutrient levels" (1998) 7:3 American Association for Cancer Research & American Society of Preventive Oncology 211; William A Pryor, Wilhelm Stahl, and Cheryl L Rock, "Beta Carotene: from Biochemistry to Clinical Trials" (2000) 58:2 Nutrition Reviews 39.

randomly assigned to one of two micronutrient groups or a standard of care group.²¹⁵ After birth, physical dysmorphological features were examined when the children were newborns, at 6 months, and at 12 months of age.²¹⁶ It was found that the alcohol's effect was attenuated by multi-micronutrient supplementation: the mother's baseline nutritional status on select micronutrients was found to be associated with certain alcohol-related facial features.²¹⁷

3. *Barriers to Interventions*

There are a number of barriers to the use of pharmacological and nutritional interventions in humans. Studies on the effects of FASD are done via cell cultures or animal studies, both of which have limitations. Cell culture studies allow researchers to study effects on a molecular level and manipulate experimental conditions, but extrapolating this data to animal models may not account for other body mechanisms that occur simultaneously.²¹⁸ Another shortcoming of this methodology is that oxygen-free radicals that are produced in ethanol-induced oxidative stress may have a different destructive potential in cell cultures compared to *in vivo*.²¹⁹ Animal models such as mice are chosen to reflect human pathophysiology, but may have different genetic features which change how ethanol is involved in biochemical processes; as a result, extrapolation to human models may not be possible.²²⁰ Additionally, because there are many biological mechanisms by which prenatal alcohol exposure damages developing cells, and exact biochemical processes are still unknown, the extent to which preventing alcohol from operating in a particular pathway provides FASD protection is not clear.

²¹⁵ Christina Chambers, "The potential benefit of a multi-micronutrient supplement in pregnant women who consume alcohol" (2012) 34:3 *Neurotoxicology and Teratology* 370.

²¹⁶ *Ibid.*

²¹⁷ *Ibid.*

²¹⁸ Cohen-Kerem Raanan & Gideon Koren, "Antioxidants and fetal protection against ethanol teratogenicity: Review of the experimental data and implications to humans" (2003) *Neurotoxicology Teratology* 3.

²¹⁹ *Ibid.*

²²⁰ *Ibid.*

With regard to nutritional and pharmacological interventions, it is particularly difficult for service workers in all fields to assist people with severe substance abuse issues. Delivery of a specific vitamin to individuals who need it may be easier said than done. Women with substance abuse issues access prenatal care later and nutritional intervention at this point does little to prevent the prenatal alcohol exposure that occurs before a mother attends prenatal care or she knows she is pregnant. To address this, one possibility is the widespread delivery of vitamin and mineral supplementation through fortification of common foods consumed by the entire public, but this may endanger a significant proportion of the public. This strategy would expose a large number of community members to possible toxicity issues in order to prevent FASD in a small subset of people.

However, mandatory food fortification is not unheard of and should not be immediately ruled out: the addition of folic acid to grain products such as white flour and pasta has been a practice in Canada since November 1998.²²¹ Another common example is milk fortified with Vitamin D.²²² These were both governmental responses to public health needs and significantly lessened the deficiency-diseases of neural tube defects and rickets respectively.²²³ Specific fortified foods may be used to target and benefit specific communities living in poverty who cannot access necessary vitamins and minerals. For example, in poor rural areas of Bangladesh, the staple carbohydrate of rice is fortified to ensure that even those living in the poorest socioeconomic conditions can receive essential nutrients.²²⁴ As supplementation has been shown to be influenced by economic status and educational background, with higher levels of

²²¹ Canada, Health Canada, "Prenatal Nutrition Guidelines for Health Professionals: Folate Contributes to a Healthy Pregnancy", (Ottawa: HC, 2009) at 3.

²²² Dietitians of Canada, "Food Sources of Vitamin D", (23 November 2016), online: <<https://www.dietitians.ca/Your-Health/Nutrition-A-Z/Vitamins/Food-Sources-of-Vitamin-D.aspx>>.

²²³ Theodore H Tulchinsky, "The Key Role of Government in Addressing the Pandemic of Micronutrient Deficiency Conditions in Southeast Asia" (2015) 7:4 *Nutrients* 2518.

²²⁴ World Food Programme, "Fortified Rice Enhances Nutrition Benefits of Social Safety Nets for the Poorest in Bangladesh" (31 July 2013), online: <<https://www.wfp.org/news/news-release/fortified-rice-enhances-nutrition-benefits-social-safety-nets-poorest-bangladesh>>.

supplementation according to higher levels of educational and economic backgrounds, food fortification may be a better avenue for delivering nutrients to some lower socioeconomic communities.²²⁵

Though still an important aspect of prenatal care, making food or beverage fortification the focus of a prevention strategy may invite continued alcohol consumption and neglects wider health determinants, allowing serious health problems to persist in return for FASD prevention benefits which are scientifically unknown. Until there is much more research on toxicity and positive effects, caution with individual nutrient delivery is required. This is particularly true with regard to fat-soluble vitamins such as vitamins A, D, E, and K which accumulate to the point of becoming toxic when consumed in excess, though some water-soluble vitamins are toxic in excess as well.²²⁶ By over-supplementing pregnant women, there is potential for teratogenicity and the negative effects of hypervitaminosis such as those seen with vitamins A (fatigue, hair loss, skin changes, and abdominal discomfort) and B (nausea, vomiting, and weakness).²²⁷

4. *Improving Access to Nutritious Foods: Overall Nutrition*

An emphasis should instead be placed on a healthy diet generally and could be achieved through programs based in schools, at community centers, or through family interventions. By focusing on improving overall nutrition rather than increased dosages of a particular nutrient, the prevention strategy can extend benefits beyond fetal protection to positive change for families and communities. Associations between maternal dietary intake and adverse birth outcomes as well as between socioeconomic and environmental factors with birth outcomes are considered interrelated.²²⁸ As alcoholic beverages have high caloric values and minimal nutritional benefits, those who use alcohol as a main energy

²²⁵ Lorenzo Botto et al, "International retrospective cohort study of neural tube defects in relation to folic acid recommendations: are the recommendations working?" (2005) 330:571 *Brit Med J*.

²²⁶ Leslie Alhadeff, C Thomas Gualtieri & Morris Lipton, "Toxic Effects of Water-Soluble Vitamins" (1984) 42:2 *Nutrition Reviews* 33.

²²⁷ Rumbold, *supra* note 211.

²²⁸ Kathleen Abu-Saad & Dora Fraser, "Maternal Nutrition and Birth Outcomes," (2010) 32 *Epidemiologic Reviews* 5 at 22.

source will experience primary malnutrition.²²⁹ Proper diets may help to reduce this as well as the secondary malnutrition that occurs as a result of alcohol-induced inhibition of nutrient absorption.²³⁰

The prevention strategy can aim to achieve better nutrition in communities either by making healthy choices more accessible to the community as a whole or to individual families. For example, the *SHARE-ACTION Program* includes regular home visits by dietary counsellors.²³¹

The SHARE-ACTION Program

In the Six Nations Reserve, Aboriginal Health Counsellors made regular home visits to assist families in setting dietary and physical activity goals for each household member.

Another innovative approach to combatting inaccessible nutritious food options has been developed by Wholesome Wave: *The Fruit and Vegetable Prescription Program*. At-risk patients can be given a prescription by doctors so that they can purchase fruits and vegetables from local farmer's markets to stay healthy.²³² Wholesome Wave also developed the *Double Value*

Coupon Program which provides families with access to affordable healthy and fresh produce.²³³ An additional approach is the *Women, Infants, and Children Farmers' Market Nutrition Program*.²³⁴ Established by the United States' Congress in 1992, this program provides fresh fruits and vegetables to participants based on certain eligibility criteria. It also provides health care referrals and nutrition education at no cost to low-income women who are pregnant or postpartum as well as infants and children up to five years old at nutritional risk.²³⁵ These creative solutions for at-risk

²²⁹ Abel 1995, *supra* note 10 at 449.

²³⁰ *Ibid.*

²³¹ Del Grosso P et al, *Assessing the Evidence of Effectiveness of Home Visiting Program Models Implemented in Tribal Communities: Final Report* (Washington, DC: US Department of Health and Human Services, August 2011).

²³² Wholesome Wave (2014-2017), online: <<https://www.wholesomewave.org/our-initiatives>>.

²³³ *Ibid.*

²³⁴ United States Department of Agriculture, "WIC Farmers' Market Nutrition Program", (USDA Food and Nutrition Service, February 2015), online: <<http://www.fns.usda.gov/fmnp/wic-farmers-market-nutrition-program-fmnp>>.

²³⁵ *Ibid.*

communities who would otherwise be unable to access healthy food options may be viable options for some Aboriginal communities and should be considered.

B. Smoking Cessation

Research suggests that women who drink are more likely to smoke, and women who smoke are more likely to drink: some studies have shown that 70 to 90% “of women who reported excessive drinking were also smokers.”²³⁶ More generally, in a representative study of women of childbearing age (18-44 years of age) with accessible health care, approximately 12.3% reported concurrent alcohol use and cigarette smoking; this study did not account for capability of accessing said health care nor patterns of drinking.²³⁷ Alcohol’s effects on a fetus are augmented among women who smoke. Like alcohol, tobacco smoke contains ingredients which “directly reduce blood flow and oxygen content [...], and decrease both overall nutrient availability and levels of specific nutrients whose absence may either retard growth [...] or promote teratogenesis through free radical formation”.²³⁸ This increases the risk of miscarriage, premature birth, stillbirth, and lower birth weight and size.²³⁹

Women who smoke cigarettes and use alcohol concurrently are often more addicted, less able to resist cross-substance craving, and less motivated to quit.²⁴⁰ There is also research suggesting that smoking status could be used as an indicator for high-risk drinking and a clinical marker for greater possibility of relapse of those in treatment for substance or alcohol abuse.²⁴¹ Combining intervention strategies, either sequentially or simultaneously, may be most effective in addressing this concurrent use.²⁴² A meta-analysis literature review indicates that smoking cessation

²³⁶ James Tsai et al, “Concurrent Alcohol Use or Heavier Use of Alcohol and Cigarette Smoking among Women of Childbearing Age with Accessible Health Care,” (2010) 11:2 *Prevention Science* 197 at 198 [Tsai].

²³⁷ *Ibid* at 203.

²³⁸ Abel 1995, *supra* note 10 at 451.

²³⁹ Chansonneuve, *supra* note 111 at 92.

²⁴⁰ Tsai, *supra* note 236 at 198.

²⁴¹ *Ibid* at 204.

²⁴² *Ibid* at 198.

interventions provided during addiction treatments led to a 25% increase in the likelihood of long-term abstinence from alcohol or illicit drugs.²⁴³ Among those who use both tobacco and alcohol, there is considerable interest and receptiveness to such dual-recovery programs.²⁴⁴

Long-term change of both tobacco and alcohol use is “challenging and may require sustained and multi-faceted [sic] efforts”.²⁴⁵ The prevention strategy should attempt to include smoking cessation programs at every level, from primary public education campaigns to brief interventions to dual-recovery programs in treatment centres. Attention should be paid to advancements in nicotine dependence treatment, particularly where it may directly impact alcohol use. For example, a recent study by King *et al.* on naltrexone in treating nicotine dependence explored its ability to reduce alcohol consumption.²⁴⁶ Naltrexone was found to significantly reduce weekly heavy drinking rates and improve quitting outcomes for smoking among heavy drinkers; this study involved immediately sequential treatment of nicotine patches and behavioral counseling.²⁴⁷ As previously mentioned, pharmacological intervention such as this may be better suited to at-risk women who are not yet pregnant as it may cause fetal abnormalities.

A significant reduction in tobacco use measured by the amount of cigarettes smoked and smoking patterns over a given period of time by at-risk women should be the goal of this portion of the prevention strategy. Community, family, and partner use of tobacco may be concurrently targeted and measured in order to reduce tobacco use. This may encourage at-risk women to decrease the amount they smoke, stop smoking altogether through peer support, and increase overall awareness of the negative impacts of cigarette smoking. A global study of Indigenous communities in Australia, New Zealand, Canada, and the USA identified

²⁴³ JJ Prochaska, K Delucchi & SM Hall, “A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery,” (2004) 72:6 *J Consulting & Clinical Psychology* 1144.

²⁴⁴ Tsai, *supra* note 236 at 198.

²⁴⁵ *Ibid* at 204.

²⁴⁶ Andrea King et al, “Naltrexone decreases heavy drinking rates in smoking cessation treatment: An exploratory study” (2009) 33:6 *Alcoholism: Clinical and Experimental Research* 1044.

²⁴⁷ *Ibid.*

features associated with successful smoking cessation interventions: successful interventions were integrated, flexible, community-based approaches that addressed known barriers and facilitators.²⁴⁸ Most of the interventions examined were multi-component and none assessed efficacy of solely pharmacotherapy: counseling and medication for smoking cessation used in tandem was more effective than either alone.²⁴⁹ Also, enhancing cultural appropriateness of interventions was recommended as a strategy: this included engaging in community consultation to meet the needs of the population, conducting interventions in community-based and culturally-safe settings, and ensuring community ownership of programs.²⁵⁰

VII. SERVICE-BASED INTERVENTIONS

A. Health Professionals

Every health and service professional working in the community should be knowledgeable about FASD and capable of directing women or partners in need to the appropriate service partner if a woman presents with issues outside of their area of expertise. The Society of Obstetricians and Gynaecologists of Canada recommends that health professionals periodically screen all women who are pregnant or of child-bearing age for alcohol consumption; ideally this could occur prior to pregnancy to allow women time to seek treatment.²⁵¹ The prevention strategy should adopt and expand this screening process to include an informative referral system. By incorporating direction to appropriate services in the screening process, more women will be informed as to where they can receive the treatment they need and have an opportunity to ask questions about their options. It is equally important that every service worker who interacts with women who may have substance issues be non-judgmental and open

²⁴⁸ Michelle DiGiacomo et al, “Smoking cessation in Indigenous populations of Australia, New Zealand, Canada, and the United States: Elements of effective interventions” (2011) 8:2 *Int J of Environmental Research of Public Health* 388.

²⁴⁹ *Ibid.*

²⁵⁰ *Ibid.*

²⁵¹ George Carson et al, “Alcohol use and pregnancy consensus clinical guidelines” (2010) 32:8 *J of Obstetrics and Gynaecology of Can* S1 online: <<https://sogc.org/wp-content/uploads/2013/01/gui245CPG1008E.pdf>> [Clinical Guidelines].

to assisting them. This will encourage women to follow through with other treatment options with the program.

Women may have diverse points of entry into the prevention strategy and will experience different barriers to accessing treatment and care at various levels; these barriers can be classified as individual, community, program, and systemic.²⁵² As these barriers are intertwined, service workers must remember to take each woman as an individual with a unique perspective and history in order to provide the best possible care. One of the more preventable challenges facing women seeking treatment is the differing expectations and philosophies of agencies as well as the extensive participation requirements of various services.²⁵³ Programs run by the prevention strategy should aim to be as simple as possible to encourage active participation in its services. It can do this by coordinating its services to minimize conflicts and create easy-to-follow schedules, uniform intake procedures, and identical regulations. As a result, participants are more likely to be able to understand and follow the program. As many women who seek treatment may already be mothers, service programs that require physical presence should aim to offer simultaneous child-minding or be delivered to the home.

Prevention strategies require health service workers to use plain language, to be culturally sensitive, and culturally competent; health service workers should be proactive in identifying issues that threaten health and practice a full range of health promotion activities.²⁵⁴ Better communication between health service workers and at-risk individuals is key to creating an effective preventative program in that it will establish trusting relationships between individuals and service workers. This will also alleviate the stigma facing pregnant women who are substance

²⁵² Karen Gelb & Deborah Rutman, *A literature review on promising approaches in substance use treatment and care for women with FASD* (Victoria: Research Initiatives for Social Change Unit, University of Victoria, 2011) at 20, online: <<https://www.uvic.ca/hsd/socialwork/assets/docs/research/Substance%20Using%20Women%20with%20FASD-LitReview-web.pdf>>.

²⁵³ *Ibid.*

²⁵⁴ Dianne Kinnon, *Improving Population Health, Health Promotion, Disease Prevention and Health Protection Services and Programs for Aboriginal People* (NAHO, 2002) at 31, online: <http://www.naho.ca/documents/naho/english/pdf/research_pop_health.pdf> [Kinnon].

abusers. Where stigma attached to pregnant use of substances increases, high-risk women might simply move to communities where the stigma is not as strong, and environmental risk factors and access to services are worse. Stigma also prevents women from being honest with service workers about their substance use.

There is also an issue with regard to mitigating the effects of those already diagnosed in Aboriginal communities. Health professionals must be able to more accurately assess and diagnose the wide range and severity of symptoms included under FASD so that prevalence statistics of FASD in Aboriginal communities are accurate and affected individuals are referred to appropriate medical care and resources. In a study by Clarke *et al.*, medical practitioners in Canada were surveyed to assess their understanding and attitudes towards the diagnosis of FASD: only 60% of the random sample of health care respondents in that study was able to recognize combination of growth, brain, and facial abnormalities that lead to the most accurate assessment of FAS.²⁵⁵ This was despite the fact that 75% of the study participants believed that such a diagnosis was within the scope of their practice.²⁵⁶

Another barrier to health services for Aboriginal communities is access to resources. There is a shortage of health professionals in Aboriginal communities and a need for more Aboriginal health care providers, promotion/prevention workers, and trained health program administrators.²⁵⁷ There is also an issue of access to programs: transportation to health services and child-minding are both major cost barriers to participating in prevention and support programs for many Aboriginal communities.²⁵⁸ Simple low-cost solutions may be providing bus tickets or day care services. Barriers to available treatment also include an inability to provide services for pregnant women, inadequate child care, and lack of comprehensive treatment and the ability to offer counselling in a number of areas. Many treatment centres do not have the ability to offer follow-up care, leading to relapse in substance abuse. Some women do not

²⁵⁵ Margaret Clarke *et al.*, "Approaches of Canadian providers to the diagnosis of fetal alcohol spectrum disorders" (2005) 3:2 *J Fetal Alcohol Syndrome Int* 1.

²⁵⁶ *Ibid.*

²⁵⁷ Kinnon, *supra* note 254 at 29.

²⁵⁸ *Ibid* at 33.

wish to enter residential programs out of fear of losing existing children, housing, or employment.²⁵⁹

Yet another barrier to accessing health services involves inappropriate locations of services, such as health services located in the same building as child social assistance services, discouraging attendance out of fear of child apprehension.²⁶⁰ Health services that operate more like “places” rather than “programs” may be more successful: women would not be required to attend, but can drop into the place to use its services.²⁶¹ An example of this is Winnipeg’s *Street Connections*, which provides access to various service providers, builds positive support networks, and creates a sense of belonging in a non-judgmental environment.²⁶² Women-only centres should not be overlooked: some women may not access community-based services because they are afraid of encountering men and do not consider them safe for themselves or their children.²⁶³ Women who wish to enter into drug and alcohol treatment programs often have difficulty finding a program that suits their needs. Programs may be male-only or intended primarily for men without special knowledge or experience with women’s particular issues or needs.

An ideal component to the prevention strategy would be to train and educate community leaders or members on health services so programs not requiring the presence of a trained health professional could be delivered on site. By separating these programs from those that require a health professional such as a nurse or physician, the limited number of professionals available could be more efficiently allocated. This would also help to ensure that community members are actively involved in programming, encourage ongoing participation, and safeguard the continuation of the project.

A centre created by or partnering with this project should take the appropriate steps to address and remove these barriers. Such a centre

²⁵⁹ Poole, *supra* note 85.

²⁶⁰ Aboriginal women are less likely to seek treatment for substance abuse for fear their children will be apprehended and placed in adoptive homes or formal arrangements of some kind. See Chansonneuve, *supra* note 111 at 65.

²⁶¹ Tait 2003a, *supra* note 48 at 177.

²⁶² *Ibid.*

²⁶³ *Ibid* at 178.

would have transportation and child care solutions for women using its services as well as follow-up care for former patients/members. The centre would ideally be centrally located with respect to the targeted community and have the ability to offer counselling and care in a number of different areas, including but not limited to other substance use, psychological care for mental health issues, and parenting and other life skills. The centre should combine “one stop” and “drop in” capabilities, making it feel safe for women who worry about stigma or losing their children to visit for whatever needs may require addressing. If the centre is incapable of assisting in a particular area, staff should be informative and clear about available resources.

B. Screening for Alcohol Use

Screening community members for drinking issues is an important first step in determining which members of the community need assistance in preventing FASD. In some cases, positive results occurred following screening alone.²⁶⁴ There are three levels of screening women of childbearing age and pregnant women for alcohol use and dependence:

- **Level I:** involves practice-based approach such as motivational interviewing and supportive dialogue
- **Level II:** includes structured questionnaires that can involve direct questions (TFLB) or indirect screening (AUDIT, BMAST/SMASST, CAGE, CRAFFT, T-ACE, and TWEAK)
- **Level III:** uses laboratory-based tools to confirm the presence of drug(s) and exposure levels²⁶⁵

Screening methods can range from very simple, such as the T-ACE system, or offer variable complexity, such as the BMAST/SMASST method.²⁶⁶ One of the more successful approaches to screening pregnant women is motivational interviewing which has also been successful in reducing heavy drinking among women of childbearing age.²⁶⁷ Staged screening does not have to be complex and is an essential tool for

²⁶⁴ Grace Chang et al, “A brief intervention for alcohol use in pregnancy: A randomized trial,” (1999) 94:10 *Addiction* 1499.

²⁶⁵ Clinical Guidelines, *supra* note 251 at S13.

²⁶⁶ *Ibid* at S16.

²⁶⁷ Deshpande, *infra* note 337 at 54.

determining which level of services and intensity of intervention will best assist the patient in achieving reduction of unhealthy substance use. In addition to assisting healthcare professionals with integrating alcohol

The T-ACE System

1. How many drinks does it take to make you feel high? **Tolerance**
2. Have people annoyed you by criticizing your drinking? **Annoyed**
3. Have you felt you should cut down on your drinking? **Cut Down**
4. Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover? **Eye Opener**

The first question scores 2 if the answer is over 2. Questions 2-4 are worth 1 each. A score of 2 or more is positive for risk drinking.

interventions into their practice, screening comes across as less judgmental and more likely to obtain accurate results if it is seen as routine questioning. Advised interview techniques involve an introductory statement, asking questions in past tense, and open-ended questions to encourage dialogue.²⁶⁸

Screening is less likely to be successful if it comes across as an interrogation. It is important that screening questions come from non-judgmental professionals who do not react negatively to the patient's responses. It is advised not to ask questions that seem accusatory or

too direct, nor should guilt-inducing statements be used as an incentive to stop alcohol use.²⁶⁹ Health professionals should keep in mind that it may not be the nature of the questions, but the manner in which they are asked that can be perceived as threatening or confrontational.²⁷⁰ In addition to presenting the screening as routine, the questions in the screening test can be interwoven with other questions. The focus of screening is not on forcing women to admit to drinking while pregnant, but in assessing the patient's health as a whole and finding out if a woman needs assistance in any area. This may include substance abuse, but could also focus on factors provoking the substance abuse and its severity.

²⁶⁸ Clinical Guidelines, *supra* note 251 at S14.

²⁶⁹ *Ibid* at S15.

²⁷⁰ Margaret Leslie & Gary Roberts, *Enhancing fetal alcohol syndrome (FAS)-related interventions at the prenatal and early childhood stages in Canada* (Ottawa: Canadian Centre on Substance Abuse, 2001) at 38.

C. Brief Interventions: Reducing Alcohol-Affected Pregnancies

Brief interventions can take a variety of forms, ranging from truly brief to a number of discussions with the patient over an extended period of time. They may be particularly effective in motivating pregnant women to decrease or stop substance use and should aim to focus on coping mechanisms that are culturally appropriate and specific to local circumstances.²⁷¹ One review of the literature identified common elements to the success of brief interventions:

Feedback: clients provided with personal and individualized feedback

Responsibility: an emphasis placed on personal responsibility for change and freedom of choice

Advice: supportive and clear recommendations on the need for change

Menu: different options for clients to choose from in order to choose change in a way that is sensible to them

Empathy: practitioner style is empathetic, warm, and reflective

Self-efficacy: self-efficacy is reinforced²⁷²

In a study by Chang *et al.*, the brief intervention consisted of a 45 minute session with a physician, discussing drinking goals while pregnant, identifying risk situations, alternatives to drinking, and the recommendation of abstinence during pregnancy.²⁷³ This brief intervention was not more effective than screening alone: the women reduced their alcohol consumption only as much as the control group. However, it is well-established that brief interventions can be effective in reducing risky drinking in clinical trials, though few address both drinking and effective contraception through one intervention.²⁷⁴ *Project CHOICES*,

²⁷¹ Tait 2003a, *supra* note 48 at 179.

²⁷² *Ibid.*

²⁷³ Grace Chang *et al.*, "A brief intervention for prenatal alcohol use: An in-depth look" (2000) 18:4 *J of Substance Abuse and Treatment* 365.

²⁷⁴ Louise R Floyd *et al.*, "Preventing alcohol exposed pregnancies: A Randomized

a collaborative study run by several American universities, does address both and found that a brief motivational intervention considerably decreased the risk of alcohol-exposed pregnancies in high-risk women through targeting a change in risky drinking and ineffective contraception use.²⁷⁵ Healthy Child Manitoba launched a branch of *Project CHOICES* in which women who are sexually active and drinking alcohol regularly are offered up to four short individual sessions with a counsellor to talk about their drinking behaviours and the use of contraception.²⁷⁶

An example of a more intensive brief intervention can be seen in the *Protecting the Next Pregnancy Project* which was based on a cognitive behavioural approach over a five-year period and targeted women who drank heavily during an index pregnancy to view the effects on both the index and subsequent infant.²⁷⁷ Those in the experimental group had lower rates of risk for drinking than the control group and improved subsequent birth outcomes.²⁷⁸ Another intensive intervention is Alberta's *First Steps*, which involves an advocacy/case management model to offer personalized support over a three year period and actively implicates case managers in the lives of women and their families.²⁷⁹ Clients showed significant reductions in their overall needs, increases in the regular use of a family planning method, and had only three births heavily exposed to alcohol.²⁸⁰

Controlled Trial" (2007) 32:1 Am J of Preventative Medicine 1 at 7.

²⁷⁵ *Ibid.*

²⁷⁶ Project Choices (accessed 2016), online: <<https://www.gov.mb.ca/healthychild/fasd/choices.html>>.

²⁷⁷ Janet R Hankin, "Protecting the Next Pregnancy: Maternal Drinking and Infant Developmental Outcomes" (Paper presented at the annual meeting of the American Sociological Association, Atlanta Hilton Hotel, Atlanta, GA, 16 August 2003) at 5-7.

²⁷⁸ *Ibid* at 9.

²⁷⁹ Carmen Rasmussen et al, "The effectiveness of a community-based intervention program for women at-risk for giving birth to a child with fetal alcohol spectrum disorder (FASD)" (2012) 48:1 Community Mental Health J 12.

²⁸⁰ *Ibid* at 16, 18, 19. "If each First Steps client who was a binge drinker during the index pregnancy had had a subsequent birth heavily exposed to alcohol, we would have expected approximately 1.6–6.9 births of children with FAS. Instead, only three births were heavily exposed to alcohol, giving an expected FAS incidence of 0.14–0.63."

One literature review suggests that a reason for the success of brief interventions is that they increase a patient's readiness for change.²⁸¹ The motivational interviewing (MI) process focuses on patients' indecisiveness about changing drinking behaviour while maintaining an optimistic attitude about change and avoiding arguments or evoking patient defensiveness.²⁸² A study done by *Project Match* indicates that motivational enhancement therapy yields beneficial and relatively lasting effects, and has been as effective in reducing drinking and related problems as more extensive alcohol treatments.²⁸³ The specific format for MI may vary in number and approach. For example, maximally effective interventions involving Aboriginal women in urban settings may require accounting for the women's specific cultural needs and characteristics in order to bridge the cultural gap between primary care physicians and Aboriginal patients.²⁸⁴ This would involve making the intervention culturally appropriate, accessible, and non-threatening.²⁸⁵

An intervention program adapted from Dr. Gary Bloch at the University of Toronto has recently begun to be implemented in Manitoba, and focuses on the number of health risks associated with poverty. This intervention encourages primary health physicians to screen every patient by asking the simple question: "Do you ever have difficulty making ends meet at the end of the month?"²⁸⁶ Patients that are living in poverty are then directed to resources which help them learn about and access financial benefits; examples include filing tax returns, Child Tax Benefit

²⁸¹ Nancy Sheehy Handmaker & Paula Wilbourne, "Motivational Interventions in Prenatal Clinics," (2001) 25:3 *Alcohol Research and Health* 219 at 220.

²⁸² WR Miller & S Rollnick, *Motivational Interviewing: Preparing People to Change Addictive Behavior* (New York: Guilford Press, 1991).

²⁸³ Project MATCH Research Staff, "Matching alcoholism treatments to client heterogeneity: Project MATCH post-treatment drinking outcomes" (1997) 58:1 *J Studies on Alcohol* 7.

²⁸⁴ Paul Masotti et al, "Urban FASD interventions: Bridging the cultural gap between Aboriginal women and primary care physicians" (2003) 1:17 *J Fetal Alcohol Syndrome Int* at 4-5.

²⁸⁵ *Ibid* at 5.

²⁸⁶ The Manitoba College of Family Physicians, "Poverty: A clinical tool for primary-care in Manitoba" (Manitoba: MCFP), online: <<http://www.gov.mb.ca/health/primarycare/providers/docs/clinicaltool.pdf>>.

or Universal Child Care Benefit, and the Manitoba Prenatal Benefit.²⁸⁷ They are also directed to resources and services such as counselling, free tax preparation programs, and advocacy-oriented organizations.²⁸⁸ This tool is beautifully simple and could be used to help Aboriginal community members in accessing resources to aid alcohol abuse, FASD prevention, and overall health.

Metrics used to determine the success of screening and brief interventions may be procedural (the implementation of screening and brief interventions) or substantive (the results among women who receive interventions). The Project aims to screen the majority of women who are of childbearing age so that each woman who scores sufficiently high on the chosen test can receive follow-up care in the form of a brief intervention program. This would be the desired minimum for follow-up care for these women. Ideally, more follow-up would be available to suit the variety of needs of these women. The form that this intervention takes may be tailored to the community and its needs. The goal of these interventions is to see a significant reduction in the amount of alcohol consumed, incidences of binge drinking, and negative birth outcomes. As such, part of the project will be to follow-up with those who have received interventions to determine their efficacy.

D. Midwifery

Programs for Aboriginal midwifery are part of a safe and culturally appropriate birth plan; midwifery is experiencing renewal in some Aboriginal communities and may be an appropriate prevention strategy.²⁸⁹ An increase in midwifery may also result in fewer pregnant Aboriginal women having to live outside their communities while waiting to give birth. Where pre- and post-natal care is unavailable, the present practice is to transport First Nations women at 36-37 weeks of pregnancy to a tertiary care provincial hospital; this gives First Nations women little choice in their childbirth experience.²⁹⁰ Midwifery offers Aboriginal women who

²⁸⁷ *Ibid.*

²⁸⁸ *Ibid.*

²⁸⁹ Tait 2003a, *supra* note 48 at 182-183.

²⁹⁰ First Nations Centre, *Birthing through First Nations Midwifery Care* (National Aboriginal Health Organization, 2009) at 4.

may not normally be able to give birth in their community this option. More access to local health workers who are trained in childbirth and prenatal care such as midwives may also lessen the high infant mortality rate seen in First Nations populations. For example, in 2000, the infant mortality rate in First Nations populations was 6.2 per 1000 live births, which is consistent with the rate among the lowest income groups in urban Canada.²⁹¹ In several provinces, Aboriginal midwifery provides for a blend of traditional and contemporary practices to address specific practices and needs for First Nations women.²⁹² Knowledge and skills pertaining specifically to FASD and substance abuse could be added to Aboriginal midwifery programs and act as complements to a curriculum that already has shown the ability to improve birth outcomes.

There are presently six university-based midwifery education programs available in Canada.²⁹³ There was a program in Manitoba until 2016, but it was cancelled due to high program costs and low graduate numbers.²⁹⁴ An agreement was made between the Government of Manitoba and McMaster University, so that Manitoba students could take the rest of their program in Manitoba through McMaster, while completing their clinical rotations in Manitoba.²⁹⁵ Depending on the timeline of the prevention strategy, this may not be a viable intervention option for Aboriginal communities in Winnipeg. However, if possible, a community undertaking the prevention strategy should attempt to partner with the University College of the North and encourage community members interested in traditional midwifery to establish an Indigenous midwifery

²⁹¹ *Ibid* at 6.

²⁹² *Ibid* at 8-9.

²⁹³ Canadian Association of Midwives, "Midwifery Education", online: <<https://canadianmidwives.org/education/>>.

²⁹⁴ Nick Martin, "Only 13 Left in Midwifery Program", *Winnipeg Free Press* (3 January 2017), online: <<http://www.winnipegfreepress.com/local/only-13-left-in-midwifery-program-409445315.html>>.

²⁹⁵ Nick Martin, "Education Minister Looks at Expanding Midwife Programs", *Winnipeg Free Press* (1 May 2017), online: <<http://www.winnipegfreepress.com/local/education-minister-looks-at-expanding-midwife-programs-420939643.html>>; CBC News, "University of Manitoba Reaches Agreement on Midwifery Program with McMaster", *CBC News* (5 August 2016), online: <<http://www.cbc.ca/news/canada/manitoba/manitoba-midwifery-mcmaster-1.3709466>>.

program. Involving more Aboriginal community members in this program would benefit all parties.

E. Unplanned Pregnancy

When pregnancy is unplanned, as is often the case with teenage pregnancies, a mother may not take steps to curb substance use as she does not know that she is pregnant. Women whose pregnancies are unplanned will not be in contact with health professionals to the same extent as women planning on having children. Manitoba is above the national average when it comes to rates of teenage pregnancies (for women aged 15 to 19), and teenage pregnancy rates increased by nearly 15% in the province in 2013.²⁹⁶ Teenage pregnancies are more common among “disadvantaged” teens and result in children who are more likely to experience childhood morbidities.²⁹⁷ As of 2000, rates of teenage pregnancy were four times higher among First Nations adolescents, twelve times higher in Inuit communities, and eighteen times higher on reserves in comparison to the general Canadian population.²⁹⁸ This is likely the result of a combination of factors, including lower socioeconomic conditions, lack of access to contraceptives, and substance use. Aboriginal youth who frequently use alcohol and other drugs are more likely to engage in risky sexual behaviour that leads to unplanned pregnancy.²⁹⁹

²⁹⁶ See Statistics Canada, “Teen pregnancy, by outcome of pregnancy and age group, count and rate per 1,000 women, Canada, provinces and territories, 2003 to 2004” (Ottawa: Statistics Canada), online: <<http://www.statcan.gc.ca/pub/82-221-x/2008001/tmaps-tcartes/dt-td/5202346-eng.htm>>. See also Zosia Bielski, “Why teen pregnancy is on the rise again in Canada (and spiking in these provinces)”, *Globe and Mail* (29 January 2013), online: <<http://www.theglobeandmail.com/life/health-and-fitness/health/why-teen-pregnancy-is-on-the-rise-again-in-canada-and-spiking-in-these-provinces/article7927983/>>.

²⁹⁷ Ontario, Ministry of Health and Long Term Care, “Initial Report on Public Health” (Ottawa: MOHLTC, 2012), online: <http://www.health.gov.on.ca/en/public/publications/pubhealth/init_report/tp.html>.

²⁹⁸ Emilia Ordolis, “A story of their own: Adolescent pregnancy and child social welfare in Aboriginal communities” (2007) 3:4 *First Peoples Child & Family Rev* 30.

²⁹⁹ S London, “Canadian Aboriginal Youth: Social, Interpersonal Factors are Key to Sexual behaviour,” (2009) 41:3 *Perspectives on Sexual and Reproductive Health*.

Reducing unplanned pregnancy is thus an important cornerstone of prevention strategies.

In a 2003 survey of BC Aboriginal youth, average age 15, 34% of young men and 35% of young women had engaged in sexual intercourse; 21% and 41%, respectively, had not used a condom during their most recent sexual intercourse.³⁰⁰ Both genders' likelihoods of being sexually experienced increased with age, history of living on a reserve, and high lifetime level of substance abuse.³⁰¹ The study notes that "predictors of risky sexual behaviour [substance use and sexual abuse] are more prevalent among Indigenous youth than among other youth" and thus it is imperative that these concerns are included in prevention planning for Aboriginal youth, especially those on reserves.³⁰²

Factors such as feeling connected to school, having learned about the culture from the community, volunteering, and family connections resulted in lesser odds of risky sexual behaviour.³⁰³ Of the surveyed adolescents, 75% of women and 55% of men reported that "if they were involved in a pregnancy, their peers would be angry."³⁰⁴ In general, although unmarried youth say it is important to them to avoid unplanned pregnancy, this priority does not necessarily translate into action. Many who do not wish to be pregnant fail to use birth control properly and consistently or may not use it at all. A focus group of Inuit youth gave a variety of reasons for not using birth control when engaging in sexual activity such as not having access to contraception, shyness in acquiring or asking a partner to use contraception, fear of side effects, and beliefs that the body is naturally supposed to carry a child if healthy (and should only rely on contraceptives if the woman is unhealthy).³⁰⁵ Some women may actively try to become pregnant or are indifferent to becoming pregnant despite knowing the risks involved with a pregnancy affected by substance

³⁰⁰ *Ibid.*

³⁰¹ *Ibid.*

³⁰² *Ibid.*

³⁰³ *Ibid.*

³⁰⁴ *Ibid.*

³⁰⁵ Linda Archibald, "Teenage pregnancy in Inuit communities: Issues and perspectives" (Ottawa: Pauktuutit Inuit Women's Association, 2004) at 15-16.

abuse. As advanced age can be a provocative factor for FAS,³⁰⁶ attempts to become pregnant while younger should not necessarily be discouraged. Some women may desire to have a baby to meet a psychological need of being desired and loved. Others may have been victims of sexual assault and decide to continue the pregnancy. Ultimately, a woman's desire to have a child or continue an unplanned pregnancy should not be dissuaded as it is a personal choice. Instead, interventions should aim to fully inform her of the risks of alcohol use during pregnancy and unprotected sex, as well as the benefits of having a stable support system and lifestyle in raising a child.

A possible innovative approach to preventing FASD is supplying Aboriginal women with a more available form of birth control paired with information about contraceptives. This approach was recently undertaken through the *Contraceptive CHOICE Project* in St. Louis through the Washington University of Medicine.³⁰⁷ The project educated participants about reversible contraception and provided them with their choice of reversible contraception at no cost with the goal of reducing unintended pregnancies.³⁰⁸ By the project's conclusion, pregnancy, birth, and abortion rates were found to be significantly lower than national rates for sexually active teenagers.³⁰⁹ An emphasis was placed on long-acting, reversible contraceptive (LARC) methods and 72% of the teens involved chose the use of this device in comparison to the 5% in the United States in 2009.³¹⁰ These methods would not require young women to remember to book an appointment with a doctor to receive an injection nor remember to properly take oral contraceptive pills. This type of intervention may be an effective way to decrease incidents of unplanned pregnancies as well as FASD, but may be criticized in that it does not protect women from sexually transmitted diseases nor address the main issue of alcohol abuse and its negative consequences. Regardless of whether the prevention strategy adopts this specific approach, it is still important to improve access

³⁰⁶ Tait 2003, *supra* note 48 at 149.

³⁰⁷ Gina Secura et al, "Provision of no-cost, long-acting contraception and teenage pregnancy" (2014) 371 N Engl J Med 1316.

³⁰⁸ *Ibid.*

³⁰⁹ *Ibid.*

³¹⁰ *Ibid* at 1320.

to contraceptives and educate women about contraceptive options and usage. Even if contraceptives are accessible, improper usage will not significantly reduce unplanned pregnancy rates.

In devising a solution to unplanned pregnancy, it may be helpful to examine the large decrease in unplanned teen pregnancies in the United States. This decrease began in the 1990s and has reached historic lows, with lessened rates across all 50 states and among all racial and ethnic groups.³¹¹ It is believed that the decline is primarily attributed to improvements in teens' contraceptive use, but there are other factors at play suspected of influencing teens' behaviours.³¹² Better sex education programs have helped to increase public awareness about unplanned pregnancy and the transmission of sexual diseases.³¹³ Changing social attitudes and family norms, such as American women getting married and having children later in life, may also have influenced the trend.³¹⁴

In an American review of media directed towards adolescents and involving sexual activity, there were overall themes of males portrayed as "obsessed with sex and sexual performance" while girls were responsible for sexual safety and pregnancy prevention.³¹⁵ Few fathers were shown as involved in raising their children.³¹⁶ Though the aforementioned methods primarily focus on the woman's role in preventing unplanned pregnancies, it is important to include men in the equation. Using contraceptives should not be perceived as the woman's sole responsibility, as men have an equal opportunity to encourage their partners' use of birth control and STD protection, as well as provide male contraception. Both partners should be held accountable for making the decision to be sexually active and educated appropriately, be it through school programs, parents, or their own devices. As the internet increases adolescents' exposure to media sources, health information may be more accessible and provide an outlet

³¹¹ Heather D Boonstra, "What is behind the declines in teen pregnancy rates?" (2014) 17:3 *Guttmacher Policy Rev.*

³¹² *Ibid.*

³¹³ *Ibid.*

³¹⁴ *Ibid.*

³¹⁵ Stacey Hust, Jane Brown & Kelly L'Engle, "Boys will be boys and girls better be prepared: An analysis of the rare sexual health messages in young adolescents' media" (2008) 11:3 *Mass Communication and Society* 3 at 14 and 16.

³¹⁶ *Ibid* at 319.

for adolescents to ask sensitive or personal questions.³¹⁷ The medical community has emphasized that it should be easier for adolescents to access hormonal methods of birth control and increase the use of IUDs in young patients;³¹⁸ this is exemplified in the aforementioned Project CHOICES study.

F. Preventing Pregnancy to Reduce FASD Incidence

While the foregoing paragraph describes how access and education on contraceptive methods has been shown to reduce unplanned pregnancy for women in high-risk situations, the possibility must be considered that some women will choose - or at least not plan against - having children despite circumstances of higher risk. It is reasonable to conclude that a woman who has children without the means to support herself, or who is without a partner to assist with the demands of childrearing, is more likely to be poor and stressed.³¹⁹ Despite the effects resulting from less-than-optimal circumstances, women in these high-risk conditions may - perhaps rationally, though this may not be apparent or may be to the surprise of an outsider - consider becoming pregnant as having compelling benefits compared to waiting. A potential mother might decide that having a child now would confer the dignity and self-esteem of motherhood when she is not otherwise feeling respected, particularly if she perceives that she has few or no opportunities to develop skills and a career even if she delays pregnancy. Perceived benefits might include bringing forward a person to love, and to love her, when she is otherwise feeling isolated and abused; that her circumstances will attract the attention of health care professionals, social workers, or others in helping professions that she has thus far felt unable to access; that she might finally have the help of government programs in supporting the

³¹⁷ *Ibid.*

³¹⁸ J Hulme et al, "Barriers and Facilitators to Family Planning Access in Canada" (2015) 10:3 Health & Policy.

³¹⁹ Sarah Damaske, Jenifer L Bratter & Adrienne Frech, "Single mother families and employment, race, and poverty in changing economic times" (2017) 62 Soc Sci Res 120. The authors did not identify Aboriginal women as a specific subgroup in their research, but did find that in addition to a rise in poverty among single mothers between 2001 and 2010, maternal race attenuates the effects of poverty. It is possible that the increased detrimental effects of poverty experienced by most minority women found in this study could also apply to Aboriginal women.

household; and that she will be better-off (or at least not worse-off) materially than she would be had she delayed becoming pregnant.

We would therefore suggest that a major focus of a prevention strategy should be on ensuring that women have (and are aware that they have) credible alternatives to having children in higher-risk conditions. A prevention strategy in this respect in an Aboriginal community, for example, could focus on promoting the quality and accessibility of education and training for young people; enhancing educational and career opportunities for members of the community both in its locale and in other Aboriginal communities, including urban reserves and mainstream areas; promoting awareness of career training and job opportunities both within the community and outside of it; and promoting visits to the community from role models who are members of that community or of comparable ones, but who have found educational and career opportunities in other locations, be they within Aboriginal culture or the economic mainstream.³²⁰

In the spectrum of measures from the microscopic to the macroscopic, and on the spectrum from individual choices to community development, it may be that this middle ground will end up being among the most

³²⁰ Most studies in preventing pregnancy are focused on teens and adolescents. In a study on the likelihood of teenage mothers to have a closely-spaced second birth after the birth of their first child, Kalmuss and Namerow found that "involvement in any schooling, and perhaps the orientation toward the future that this implies, serves as a deterrent to a closely spaced second birth." Only teenagers who had previously given birth were studied, but it is possible that making women aware of options and opportunities in terms of education and employment could encourage women at high risk of becoming pregnant and giving birth to children with FASD to delay pregnancies until their risk levels are reduced. See Debra S Kalmuss & Pearila Brickner Namerow, "Subsequent childbearing among teenage mothers: the determinants of a closely spaced second birth" (1994) 26:4 *Family Planning Perspectives*, online: EBSCOhost <<http://uml.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=c8h&AN=107385775&site=ehost-live>>. In terms of factors that can encourage women to delay childbearing, see Allan F Ambrose, Peter A Morrison & Linda J Waite, "Teenagers Willing to Risk Single Parenthood: Who Is at Greatest Risk?" (1988) 20:1 *Family Planning Perspectives* 13 at 13, who find that "...when [first-time teenaged mothers'] educational expectations were used as proxy measures of the potential opportunity costs of single parenthood, the results revealed that the higher their educational expectations, the lower their willingness to have an out-of-wedlock birth."

effective and economic options. Assisting and supporting women who are already pregnant is a worthy policy, but supportive interventions post-conception may be too late to prevent harm to many children. Furthermore, waiting until communities comprehensively improve their social and economic conditions may take decades, especially for communities with small populations located in remote locales with few resources. A focus on encouraging women to choose to delay having children where circumstances are favourable should absolutely involve measures to improve overall growth in the community, economy, and society, but it should also involve programs in the here and now that attempt to maximize access to opportunities that already exist. Such current programs can be fairly easily empirically defined and scored. For example, a program might focus on measures such as school participation rates, or graduation and employment rates for young people, allowing for the impact of the program to be assessed relatively quickly (within a few years, rather than a few decades, of initiation). Such interventions could be run alongside longer-term community development endeavours, ideally resulting in immediate effects in FASD reduction and compounding effects after the successful implementation of long-term community improvement programs.

G. Case Management

Many studies have used case management for women who are at high risk for substance abuse during pregnancy, which may also be an effective approach towards FASD prevention.³²¹ These management approaches often combine drinking cessation and birth control – “dual protection” – with assisting women with other determinants of health: it focuses on “abstinence from alcohol when pregnant, abstinence or reduction of drinking when not pregnant, and/or birth control when not pregnant.”³²² To be most effective, case management should do the following: establish trusting relationships, involve strong communication networks and coordinated services, use written contracts, teach basic life skills, establish close communications with clients’ significant others, provide

³²¹ Philip May et al, “Enhanced case management to prevent fetal alcohol spectrum disorders in Northern Plains communities” (2008) 12 *Matern Child Health J* 747 at 748.

³²² *Ibid* at 749.

transportation to important appointments, support prevention advocates, and be supervised through a strong administration.³²³ Some case management may be more intensive and go beyond its basic services. For example, in a study by Douglas-Siegel and Ryan, the effect of recovery coaches for mothers with substance abuse problems on youth with juvenile delinquency problems was examined. It was hypothesized that mothers with substance abuse problems were impacting their children's "delinquent" behaviour and suggested that by assisting the mothers, the risk of youth delinquency was reduced.³²⁴ This may be a useful avenue to explore with the prevention strategy: using case management to involve others who may directly influence women's at-risk behaviour, either during or prior to pregnancy, to alleviate the risk of substance abuse while pregnant.

H. Advocates and Mentors

Some programs have used paraprofessionals who act as care workers and advocates for women in high-risk categories. An example of this is the *Seattle Birth to 3 Program*, a five-year federally funded research demonstration project that measured efficacy of a paraprofessional advocacy model on high-risk mothers with substance abuse.³²⁵ Its advocates provide services in the context of relational theory, emphasizing the positive interpersonal relationships of women within an intervention setting.³²⁶ Each paraprofessional had a caseload of no more than 15 women and their families for the period of three years following the birth of a child diagnosed with FASD.³²⁷ Rather than providing direct substance abuse treatment, the program consisted of home visitations and linking

³²³ T M Grant, C C Ernst & A P Streissguth, "An intervention with high-risk mothers who abuse alcohol and drugs: The Seattle Advocacy Model" (1996) 86:12 *Am J of Public Health* at 1816 at 1817.

³²⁴ Jonah Douglas-Siegel & Joseph Ryan, "The effect of recovery coaches for substance-involved mothers in child social welfare: Impact on juvenile delinquency" (2013) 45:4 *J of Substance Abuse Treatment* 381.

³²⁵ Cara Ernst et al, "Intervention with high-risk alcohol and drug-abusing mothers: II. Three-year findings from the Seattle model of paraprofessional advocacy" (1999) 27:1 *J of Community Psychology* 19 at 20.

³²⁶ *Ibid.*

³²⁷ *Ibid.*

women and their families to community resources.³²⁸ By the end of the three-year period, 85% of clients completed some form of substance treatment and clients with highest levels of involvement with their advocates were more than twice as likely to have completed inpatient treatment than those least involved.³²⁹ Similarly, women with higher levels of advocacy involvement had higher rates of using a reliable method of regular birth control, child custody, and abstinence from alcohol/drugs.³³⁰

Prevention strategies could adopt this approach and further it by training community members to become paraprofessionals. These workers can be more effective as integral members of the community who are familiar with the community's values, culture, needs, and its members; this creates a strong relationship of trust between clients and paraprofessionals, unlike a traditional social worker.³³¹ Other benefits of using trained community members include open and sensitive referral and assessment processes and the incorporation of traditional spiritual values, language, and communication styles.³³²

The *InSight Mentoring Program* is an outreach program supported by the Manitoba government that provides intensive support on a one-to-one basis for up to three years to pregnant women or those who have recently given birth.³³³ Mentors work with women to identify personal goals, choose a family planning method, access alcohol treatment, and get health care for themselves and their children.³³⁴ They also connect with community services, find transportation to appointments, and address housing, violence, and child custody problems.³³⁵ For women who completed the program, 98% became involved with community services and 65% participated in addictions treatment and support programs; at its end, 44% were using reliable contraception and 29% were not using

³²⁸ *Ibid* at 21.

³²⁹ *Ibid* at 29.

³³⁰ *Ibid* at 29 and 30.

³³¹ Anderson, *supra* note 77 at 12.

³³² *Ibid* at 7-11.

³³³ Healthy Child Manitoba, "InSight Mentoring Program", online: <<http://www.gov.mb.ca/healthychild/fasd/insight.html>>.

³³⁴ *Ibid*.

³³⁵ *Ibid*.

alcohol or drugs.³³⁶ The *InSight Mentoring Program* can be a model for a mentorship or advocacy program and may be a promising future partner in prevention initiatives.

The implementation of an advocacy or mentoring program takes time: the model programs examined here take three years to complete. Within two years of the start of a community prevention strategy, a team of advocates or mentors should be fully trained. The team should be of such a size that it is capable of meeting the needs of all women at high risk in the community. This will vary depending on which community is involved in the initiative. The number of women one mentor/advocate can effectively service at one time without damaging client relationships because of time and resource restraints must be determined. Mentors and/or advocates should know how to build long-term positive and trusting relationships with clients, link clients to community resources, and set realistic goals.

VIII. EDUCATION AND AWARENESS INTERVENTIONS

A. Public Education Campaigns

An educational program requires its targets to self-initiate the desired behaviour. They are appropriate for those who change their behaviours once they understand the positive implications of desired behaviours and negative consequences of present behaviours.³³⁷ It assumes targeted individuals have the motivation, opportunity, and ability to do this.³³⁸ When developing a primary prevention strategy, it is important to determine the target group and solicit opinions from that group in order to design a maximally effective program. Five suggested target groups for FASD programs are women who drink during pregnancy, women who might be pregnant but not realize it, adolescents, partners and supporters

³³⁶ Manitoba, Healthy Child Manitoba, “Insight Program” (Manitoba), online: <https://www.gov.mb.ca/healthychild/fasd/insightsp_en.pdf>.

³³⁷ Sameer Deshpande et al, “Promoting alcohol abstinence among pregnant women: Potential social change strategies” (2005) 23:2 *Health Marketing Quarterly* 45 at 50 [Deshpande].

³³⁸ *Ibid.*

of pregnant women, and health services workers.³³⁹ Primary intervention is more likely to be successful when targeting women who have not yet reached a stage of compulsive alcoholism as they may be more able to self-initiate due to lesser alcohol dependency. Educational programs on their own may not be as successful with those who have developed a stage of compulsive alcoholism as it may limit their ability to change their behaviours. This is important to designing FASD interventions as the compulsive, involuntary drinking and denial of the dangers of alcohol abuse are both associated with FAS.³⁴⁰

Protection Motivation Theory (PMT) can be used to help identify the variables involved in “fear-appeals” (a fear appeal is an informative communication involving a threat to one’s well-being) and their cognitive mediational effects.³⁴¹ PMT has been applied as a framework for health education interventions to mediate protective health behaviour and one of its main fields of application has been in reducing alcohol use.³⁴² This theory can be used to assist in achieving the goal of behavioural changes through an educational campaign. A successful public service announcement builds upon this theory by fulfilling six requirements:

1. The individual must feel vulnerable to the consequences;
2. The threat must be severe;
3. The response to the threat must effectively create change;
4. The individual must feel confident in their own ability to change;
5. The costs of adopting the change must be small; and
6. The rewards of not adopting the change must be small³⁴³

While the threat must be severe, studies have found that fear-based messages may backfire whereas some focus groups of high-risk women

³³⁹ *Ibid* at 59.

³⁴⁰ Tait 2003, *supra* note 48 at 163.

³⁴¹ Sarah Milne, Paschal Sheeran & Sheina Orbell, “Prediction and intervention in health-related behaviours: A meta-analytic review of protection motivation theory” (2000) 30:1 *J of Applied Social Psychology* 106 at 107 [Milne].

³⁴² Henk Boer & Erwin Seydel, *Protection Motivation Theory*. In *Predicting Health Behaviour: Research and Practice with Social Cognition Models* (Buckingham: University Press, 1996) at 99.

³⁴³ Magdalena Cismaru, *Using Protection Motivation Theory to Increase Persuasiveness of Public Service Communications*, (Regina: The Saskatchewan Institute of Public Policy, University of Regina, 2003) at 5-6.

viewed “scare tactics” and overstatements as less credible.³⁴⁴ Similarly, mass media messages have proven particularly effective with young adults, but an overly strict message of the detrimental effects of alcohol on a fetus should be avoided.³⁴⁵ There is also some evidence that coping-appraisal variables are more strongly associated with intention (the strongest predictor of behaviour) than with threat-appraisal variables.³⁴⁶ Coping-appraisal involves an individual’s assessment of a coping response to the appraised threat and includes response efficacy, self-efficacy, and response costs.³⁴⁷ Response efficacy involves beliefs that the recommended coping response will effectively reduce the threat; self-efficacy involves beliefs of whether one is able to perform the recommended coping response; and response costs involve beliefs about the costs of performing the recommended response.³⁴⁸

Messages may be specifically designed to play upon the emphasis of these factors to most effectively impact the target audience. For example, in a study to reduce abusive drinking in junior high students, severity and probability of consequences were varied across messages to determine which messages were most impactful while efficacy was held constant by upholding abstinence as the recommended response.³⁴⁹ In preventing FASD, these factors are important to recognize. Women who grow up in communities where parents and partners regularly abuse alcohol may not feel that alcohol has a significant negative effect on birth outcomes; it is not perceived as a severe consequence. They may know of healthy children who were born to drinking mothers or a woman’s own mother may have consumed alcohol while pregnant. Alternatively, the fear of child social assistance apprehending their children while a woman seeks treatment may be perceived as a more serious cost than the potential harmful effects

³⁴⁴ Ellen Branco & Lee Ann Kaskutas, “If it burns going down...”: How focus groups can shape fetal alcohol syndrome (FAS) prevention” (2001) 36:3 Substance Use and Misuse 333 at 338-339.

³⁴⁵ Tait 2003, *supra* note 48 at 165.

³⁴⁶ Milne, *supra* note 341 at 133-134.

³⁴⁷ *Ibid.*

³⁴⁸ *Ibid* at 109.

³⁴⁹ RD Stainback & RW Rogers, “Identifying effective components of alcohol abuse prevention programs: Effects of fear appeals, message style and source expertise” (1983) 18:3 Int J of Addictions 393.

of alcohol on a pregnancy. Women with issues of depression may have low self-efficacy and not have faith in their ability to successfully reduce substance use. They may also have low response efficacy and may believe that the offered programming will be ineffective.

A similar conception of public health messaging posits two main components: the seriousness and likelihood of the threat and the efficacy of the response.³⁵⁰ Efficacy must be higher than threat to have a successful campaign.³⁵¹ FASD presents a severe danger to the fetus of women who drink during pregnancy. It is therefore tempting to increase the threat level of educational messages. However, if the threat is perceived to be higher than efficacy, the response is defensive: an individual responds with avoidance, denial, anger, and rationalizing. Fear-based FASD campaigns have potentially serious repercussions in that they can increase stigmas, stress, and fear of disclosure of substance use during pregnancy, as well as decrease willingness to access health/support services. Tones that are more positive, supportive, and avoid blame strategies are likely to be more effective.³⁵² Messages are much more effective when they increase the level of response efficacy by providing information about resources and educating social supports in the community that assist women at risk.³⁵³

Health communication campaigns are most successful when focused on large populations that are lower risk.³⁵⁴ Full awareness is the first step towards achieving behavioural change, but broad awareness campaigns can only do so much on their own, as can be seen with both posters and warning labels on alcoholic beverages (which have limited impact on awareness and behaviour).³⁵⁵ These campaigns may not be effective on women who drink heavily during pregnancy, but may be on women considered lower-risk.³⁵⁶ As such, an increase of knowledge about high risk

³⁵⁰ Canada, Health Canada, "What We Have Learned: Key Canadian FASD Awareness Campaigns", prepared by Wendy Burgoyne (Ottawa: HC) at 15-16 [Key Campaigns].

³⁵¹ *Ibid* at 16.

³⁵² *Ibid* at 41.

³⁵³ *Ibid* at 16.

³⁵⁴ *Ibid* at 36 and 5. Success is defined as measurable increases in awareness and message recall.

³⁵⁵ Roberts, *supra* note 185.

³⁵⁶ *Ibid* at 14.

behaviour, such as the effects of fetal alcohol exposure, may not be enough to change the behaviour.³⁵⁷ While broad-based community-wide education is important for prevention in that it helps the public realize the need to support and assist service workers and those at-risk, education campaigns must also specifically engage high-risk groups. Effective reduction in health risk behaviours tend to identify or target specific behaviours and attitudes.³⁵⁸ Research on adolescents, a potential high-risk target group, shows that prevention strategies more effectively change behaviour when interactive experiences are used to teach skills that avoid unhealthy risk behaviours.³⁵⁹ An example of this is messages that provide coping techniques or point to concrete and available support services.

Before the creation of a public information campaign, organizers should consult with members of the community, specifically those belonging to the aforementioned targeted groups (see page 197). In Aboriginal communities, public health campaigns may be most effective if they directly involve local community organizations and members; members should be involved in creating and broadcasting the health message.³⁶⁰ Their input should influence the campaign's choice of media, distribution, and message. The level of knowledge of the group of women being targeted also affects the campaign strategy: those who do not know the risks of FASD generally respond to an emotional appeal while those who are thinking about changing specific risk behaviour are more likely to respond to an educational or rational approach.³⁶¹ Examples of these would be information about the consequences of prenatal alcohol exposure and clear direction on safe alcohol use during pregnancy respectively.³⁶² Identifying what the population already knows and any misconceptions are essential in choosing an effective message.³⁶³

³⁵⁷ Robert G LaChausse, "The Effectiveness of a Multimedia Program to Prevent Fetal Alcohol Syndrome" (2008) 9:3 Health Promotion Practice 289 at 293 [LaChausse].

³⁵⁸ *Ibid* at 292.

³⁵⁹ Nancy Tobler, "Lessons learned" (2000) 20:4 J of Primary Prevention 261.

³⁶⁰ Tait 2003, *supra* note 48 at 165.

³⁶¹ Key Campaigns, *supra* note 350 at 40.

³⁶² *Ibid*.

³⁶³ *Ibid* at 41.

In general, the campaign should provide a clear message that reflects the community's values while maintaining a clear identity across Aboriginal communities (since consistent identity enhances the messages and objectives).³⁶⁴ The clarity of the message is also important. Mass media messages should not be excessively alarming. For example, the Manitoba Medical Association released a video that resulted in the majority of participants believing that a single drink of alcohol could harm a developing fetus when scientific evidence does not support increased fetal danger as a result of rare social drinking.³⁶⁵ Public health campaigns directed towards decreasing drug and alcohol use by pregnant mothers were less positively received when they presented a vague message or focused too much on individuals rather than the community and her family.³⁶⁶

Campaign planners should be aware of possible negative outcomes of the chosen campaign. For example, awareness campaigns need to be careful not to reinforce judgemental attitudes towards pregnant women who continue to use alcohol as this will increase societal stigmas towards these women.³⁶⁷ These stigmas may influence the attitudes of health professionals, family members, and partners, resulting in feelings of shame, low self-esteem, and fear of seeking treatment in pregnant women. To combat this, messages about FASD should be well-thought out and linked with information about how to contact service professionals knowledgeable in FASD. When deciding on images and messages to use in campaigns, care should be taken to ensure that they do not come across as controversial, alienating pregnant women or misrepresenting the message.³⁶⁸

Measures of success would include positive feedback in surveys (extent to which messages were actually received, viewed positively, and thought to have some potential practical good) and increased requests for demand for resources to expand such programs from community leaders.³⁶⁹ A

³⁶⁴ *Ibid* at 40.

³⁶⁵ Tait 2003, *supra* note 48 at 165.

³⁶⁶ *Ibid*.

³⁶⁷ Key Campaigns, *supra* note 350 at 21.

³⁶⁸ *Ibid* at 42, 46-47.

³⁶⁹ *Ibid* at 62.

prevention initiative also aims to measure increased knowledge of FASD and local supports as well as the reduction of high-risk behaviours among the targeted groups exposed to the campaign. Ideally, due to the comprehensive nature of a prevention initiative, enough data will be collected to determine whether rates of FASD have declined or if usage of local services has increased. This will more effectively track a campaign's progress and its effects as well as suggest areas that require re-evaluation to better achieve project goals. This will also more efficiently use funds and resources.

B. Early Childhood Education and Care for Those Affected by FASD

Early childhood education and care presents an interesting and promising solution to the issue of fragmented services, particularly with treatment centres, seen in some Aboriginal communities. It is also a way in which some of the negative effects experienced by children with FASD can be alleviated through improved nutrition, increased parent participation, and targeted and informed childcare. A comprehensive and welcoming system of childcare for children with FASD can also be useful for the prevention of FASD births. Women who have previously delivered a child with FASD and are still of childbearing age and abusing substances are at risk of having another child with FASD. Caring for one or more children with FASD as well as managing substance abuse issues may make it difficult for them to become informed and subsequently seek assistance. Additionally, lack of access to childcare is a significant barrier to treatment for pregnant women and mothers with substance abuse problems.³⁷⁰

Fragmented services often result in practitioners specializing in different domains of child and family health that are located outside of a community's reach, be it geographically, culturally, socially, or administratively.³⁷¹ Fragmented services may be one of the most significant barriers to population health in these communities due to inaccessibility, communication breakdown, and dependence on individuals' and

³⁷⁰ Poole, *supra* note 85.

³⁷¹ Jessica Ball, "Centring community services around early childhood care and development: Promising practices in Indigenous communities in Canada" (2009) 1:4 Child Health and Education 183.

specialists' own initiatives in seeking and supplying treatment.³⁷² Also, with practitioners acting separately rather than as a team, knowledge of needs, goals, and service history of the community is lost when professional staff leave the community; as Indigenous communities experience a high turnover rate, this is particularly problematic.³⁷³

Facilities for early childhood care and education are excellent places to focus integrated service delivery. Children's well-being is a strongly held cultural value and parents need and want trustworthy child care; a reputable and accessible child care facility acts as a magnet, drawing community members in. Women who are at risk of having another child with FASD may be willing to engage with a child care centre in order to provide care for their children, but not be willing to seek supports or services for themselves. A community prevention strategy should take advantage of this by providing accessible and non-threatening support for at-risk women at these centres through staff that get to know parents and draw their attention to particular programs. By identifying at-risk women and offering support and comprehensive treatment, the prevention strategy can support subsequent healthy pregnancies while assisting children who need specialized care.

A notable example of this is Lil'wat Nation in British Columbia: fifteen community members enrolled in early childhood care and development (ECCD) training and the community opened a multiplex facility located 200 metres from the full-service school.³⁷⁴ The multiplex acts as a cultural gathering place that houses a preschool program, infant care centre, after-school care program, health services wing, and examination room.³⁷⁵ The services delivered in the child-care centre are diverse and integrated: occupational therapy, child care, developmental monitoring, and preventive dentistry are all included.³⁷⁶ In the same multiplex is a community kitchen, health information and promotion area, health services, and family services; it also delivers programs such as alcohol and drug counselling, parent support programs, and tobacco

³⁷² *Ibid* at 184-185.

³⁷³ *Ibid* at 185.

³⁷⁴ *Ibid* at 194.

³⁷⁵ *Ibid.*

³⁷⁶ *Ibid.*

reduction and diabetes prevention.³⁷⁷ This is a prime example of using ECCD programs and child care as an integration site for full community programming that focuses on individuals as a whole and encourages community members to participate in social and health programs.

This style of community services was compared across several Aboriginal communities in Canada by researcher Jessica Ball: she observed that the common thread is integrating service delivery with the need to support the “whole child”.³⁷⁸ The service model for these facilities is family and community centered and ECCD can be used to “ladder” community members into language, nutrition, health, social development, and cultural programs.³⁷⁹ The programs offered should be comprehensive and population based, specifically designed to meet local needs. There are multiple “hooks” suggested by Ball in her research other than the primary offering of child care to secure families to community-based supports aimed at overall wellness. These include involving community members in ECCD programs and community events as mentors, helpers, and planners, co-locating programs with cultural meeting places, and holding open houses and “family days” to entice the whole community.³⁸⁰ This “hub” model provides service delivery consistent with Aboriginal values and increases resource efficiency, social support from and for all community members, “ladders” services for children and families (especially those at risk), enhances outreach for service providers to individuals, and helps community capacity-building.

C. Adolescents: School Programs

Part of a comprehensive prevention strategy involves specialized education targeted at young people who are at risk for binge drinking and unplanned pregnancy. Adolescents should know the facts about FASD and how to prevent it at an age prior to or when they begin to encounter sexual activity and substance use. Teaching students about FASD can emphasize that they, as future leaders of the community, are well placed to work with families and community members to prevent FASD through

³⁷⁷ *Ibid.*

³⁷⁸ *Ibid* at 183.

³⁷⁹ *Ibid* at 194-195.

³⁸⁰ *Ibid.*

increased awareness, mentorship programs, or educational campaigns. Three kinds of campaigns have been recommended to be used to prevent alcohol use among adolescents: message campaigns for low-risk drinkers, marketing campaigns for social drinkers, and community-based campaigns for high-risk drinkers.³⁸¹ Low-risk drinkers are more likely to drink responsibly once they are made aware of the consequences of alcohol use, social drinkers may respond positively to attractive social alternatives such as after-school programs, and high-risk drinkers would benefit from a multidisciplinary community-based approach.³⁸²

Schools are also excellent places to implement programs that address gaps in other social determinants of health. Teaching problem-solving and decision-making skills, helping boost self-esteem and combat depression, and implementing a nutritional education program will help build stronger communities as well as prevent FASD. Students should also be involved in raising FASD awareness in the community and amongst themselves. Peer-based and leadership programs will help to develop skills, empower youth, and may increase the efficacy of school-based intervention programs.³⁸³ Though more research is needed as to the most effective style of prevention strategies for youth of child-bearing age and may vary depending on FAS/FASD risk level, programs are more likely to be effective if they are “well planned, evidence based, and include interactive, skill-building activities.”³⁸⁴ A multidisciplinary approach to youth-based programs is likely to have a positive influence on drinking behaviours.³⁸⁵

Educational partnerships with universities can provide valuable training and university credit to young adults, allowing students to remain in their home communities to provide leadership and effective services. In addition to increasing the capacity of local services, this would effectively increase the cultural appropriateness of services in Aboriginal communities by “train[ing] community members themselves and involv[ing] the whole community as much as possible in the

³⁸¹ Deshpande, *supra* note 337 at 60.

³⁸² *Ibid.*

³⁸³ Lyn Boulter, “The effectiveness of peer-led FAS/FAE prevention presentations in middle and high schools” (2007) 51:3 *J of Alcohol & Drug Education* 7 at 16-17.

³⁸⁴ LaChausse, *supra* note 357 at 292-293.

³⁸⁵ Deshpande, *supra* note 337 at 56.

conceptualization, delivery, application, and evaluation of training.”³⁸⁶ A partnership between the community and university educators can develop locally-based delivery of university-accredited education grounded in Aboriginal culture that qualifies students for employment in all settings. First Nations Partnership Programs have found success using the Generative Curriculum Model which focuses on uncovering community-relevant knowledge sources and creating fresh understanding by using reflection and dialogue.³⁸⁷ In these first partnership programs, three quarters of the students completed the program (compared with forty percent and below in traditional universities) and ninety-five percent of graduates remained in their own communities.³⁸⁸ Sixty-five percent of graduates “introduced new programs for children, youth, and families.”³⁸⁹

The *Integrated Nursing Access Program* has a similar goal of building upon Aboriginal community values to increase community capacity, cultural identity, and empowerment while providing educational opportunities. Developed by the University of Western Ontario, this program addresses the difficulty in recruiting community health nurses for the northern Labrador region as well as the education and socioeconomic limitations placed on northern Labrador Aboriginal peoples.³⁹⁰ This program uses an approach that combines personal experience with university skills that are learnt within a culturally-relevant context in order to overcome such limitations.³⁹¹ The first group of students had achieved a higher retention rate (68%) compared to other access programs, indicating the success of applying Aboriginal culture to student learning.³⁹²

Through educational partnerships, the Project can develop culturally relevant, useful services in a small or remote community. The

³⁸⁶ Jessica Ball, “As if Indigenous Knowledge and Communities Mattered: Transformative Education in First Nations Communities in Canada” (2004) 28:3 *The Am Indian Quarterly* 454 at 456 [Ball].

³⁸⁷ *Ibid* at 460.

³⁸⁸ *Ibid* at 461.

³⁸⁹ *Ibid*.

³⁹⁰ Carole Orchard et al, “Integrated nursing access program: An approach to prepare Aboriginal students for nursing careers” (2010) 7:1 *Int J of Nursing Education Scholarship* 1 at 2-3.

³⁹¹ *Ibid* at 6.

³⁹² *Ibid* at 18-19.

contributions students can make have the potential “to make remarkable differences to the quality of life and level of accessible, culturally safe services”.³⁹³

D. Partner Targeting

Social risk factors attributed to maternal alcohol use during pregnancy involve women’s male partners.³⁹⁴ Male partners are involved in the negotiation of family planning; supportive male partners can mitigate the risk of an unplanned pregnancy and the possible use of alcohol before the pregnancy is known.³⁹⁵ Male partners are also involved in the amount of drinking that is tolerated or encouraged, and those opposed to the woman’s intention to stop drinking influence her inability to reduce her alcohol consumption.³⁹⁶ Paternal drinking itself is a risk factor for maternal drinking.³⁹⁷ Paternal substance abuse may also be a social stressor that affects the mother and child, leading the mother to use substances as a coping mechanism.³⁹⁸ Additionally, relationship stability is a predictor of alcohol use during pregnancy: couples with higher relationship stability are at lower risk for maternal alcohol use.³⁹⁹ Lastly, physical and sexual abuses in a relationship are also risk factors leading to women drinking during pregnancies.⁴⁰⁰

Placing more of a focus on the roles of male partners as an FASD prevention strategy would further involve the community and lessen some of the negative effects male partners can have on pregnant women’s substance abuse. Support workers should encourage partners’ positive involvements in social relationships with women and educate partners on

³⁹³ Ball, *supra* note 386 at 461.

³⁹⁴ The focus on male partners in this paper does not mean to exclude same-sex relationships, but is simply focusing on research on heterosexual relationships.

³⁹⁵ Robin Gearing, Ted McNeill & Fernand Lozier, “Father involvement and fetal alcohol spectrum disorder: Developing best practices” (2005) 3:14 J Fetal Alcohol Syndrome Int 1 at 4 (Gearing).

³⁹⁶ *Ibid.*

³⁹⁷ *Ibid.*

³⁹⁸ *Ibid.*

³⁹⁹ *Ibid* at 4.

⁴⁰⁰ *Ibid.*

their abilities to limit negative influences in their relationships. For example, men should be made aware of the effect their drinking habits may have on their partners, how they may be encouraging alcohol use at times when it is damaging, and how they can directly or indirectly oppose partner abuse.⁴⁰¹ By incorporating the role of the partner in education, treatment, and prevention of FASD, at-risk women are more likely to be successful in reducing alcohol consumption. Also, by promoting positive male role models and limiting parental alcohol abuse, partners will be better prepared to support their children in avoiding behaviours that may encourage alcohol abuse and ultimately contribute to FASD in later generations.

IX. POLICY-BASED INTERVENTIONS

A. Coercive Government Policies

Coercive responses are those which use the legal system to push pregnant women into treatment in order to protect the fetus from the effect of its mother's alcohol consumption. For the most part, these responses have failed. In Canada, the leading relevant case, decided in 1997, is *Winnipeg Child and Family Services (Northwest Area) v. G (DF)*.⁴⁰² The Supreme Court decided that courts do not have the jurisdiction to “step into the shoes of the parent” and make orders in the best interests of a fetus.⁴⁰³

While the Supreme Court of Canada refused to extend the court's *parens patriae* jurisdiction to fetal protection, the decision left open the possibility that extended legislation on this matter passed by Parliament or provincial legislatures would be constitutional.⁴⁰⁴ In the United States, some state governments have adopted legislation that allows for the prosecution of women who use drugs or alcohol while pregnant; the modification of civil child abuse and neglect statutes to remove children from their mother's care; and testing designed to “catch” pregnant women

⁴⁰¹ *Ibid* at 7.

⁴⁰² [1997] 3 SCR 925, 152 DLR (4th) 193.

⁴⁰³ *Ibid* at para 49.

⁴⁰⁴ *Ibid* at para 58.

who are using drugs or alcohol.⁴⁰⁵ Those in favour of such approaches would note that government tends to react strongly to postnatal child abuse and do not necessarily accept as an excuse the fact that the parent, including the mother, is beset with personal difficulties such as poverty or addiction. Furthermore, by placing an emphasis on preventing likely harm to the future child, the government can move the issue away from one of freedom of choice during pregnancy. Advocates for these government interventions argue that a woman who chooses to continue a pregnancy “assumes certain obligations to refrain from causing harm to the future child” and that the state’s strong interest in curbing substance abuse associated with fetal damage prevents a mother from being shielded from government intervention.⁴⁰⁶ Arguably, if a mother can be held accountable for child abuse, should she not also be held accountable for creating a harmful situation for her future child? If these programs are shown to be effective in curbing substance abuse during pregnancy and reduce the number of alcohol-affected pregnancies, the value of the mother’s privacy and autonomy should be weighed against that of the quality of life of the future child. As it stands, only Tennessee has specifically criminalized drug use during pregnancy, though several other states have used criminal law to uphold convictions that a woman’s substance abuse is equivalent to child abuse.⁴⁰⁷

Coercive approaches have been met with a variety of criticisms: coercive government intervention invades upon a woman’s decisional autonomy; weighs the fetus’ constitutional rights as more valuable than the woman’s; discourages women from seeking medical care, resulting in increased risks to both the woman and fetus; and is a slippery slope to forcing other medical treatment upon pregnant women.⁴⁰⁸ It may also

⁴⁰⁵ David Brody & Heidee McMillin, “Combating fetal substance abuse and governmental foolhardiness through collaborative linkages, therapeutic jurisprudence, and common sense: Helping women help themselves” (2001) 12:2 *Hastings Women’s LJ* 243 at 244 (Brody).

⁴⁰⁶ Susan Fortney, “A jurisprudential analysis of government intervention and prenatal drug abuse” (2002) 17:1 *J of L & Health* 11 at 20.

⁴⁰⁷ Guttmacher Institute, *State Policies in Brief: Substance Abuse During Pregnancy* (Washington, DC: Guttmacher Institute, June 2015), online: <http://www.guttmacher.org/statecenter/spibs/spib_SADP.pdf>.

⁴⁰⁸ Lisa C Ikemoto, “Furthering the Inquiry: Race, class, and culture in the forced medical treatment of pregnant women” (1992) 59:3 *Tenn L Rev* 487 at 496-498.

discriminate against women of lower socioeconomic classes and of racial backgrounds prevalent in these classes. These governmental interventions are regarded by many as ineffective because of the nature of addiction: threatening a woman with an assortment of punitive actions is unlikely to stop her substance abuse if she is dependent upon it.⁴⁰⁹ There is also the issue of how the government should penalize women for drinking during pregnancy. A monetary fine would require placing a value on the infant's quality of life, and mothers with substance abuse issues who live in poverty would unlikely be able to afford it. Other potential punitive measures are civil commitment or mandatory treatment. These are problematic for mothers who already have children, forcing them to find some form of childcare which may not be available to them due to lack of financial, community, or familial support. Civil commitment and mandatory treatment would also result in discrimination for substance users, particularly for women who are already faced with discrimination for being minorities or living in poverty. These forced treatments, if unsuccessful, may stifle future attempts to seek treatment. Punitive measures would absolutely deter women from seeking support for substance abuse, prenatal care, and postnatal support for their children affected with FASD. Lastly, a punitive system diverts money away from addiction treatment towards law enforcement, when more funding could lessen treatment barriers such as a lack of available centres, financial, familial, social, and psychological barriers.⁴¹⁰

If government interventions were considered an effective mode of deterrence for a pregnant woman's decision to use alcohol during her pregnancy, it would be difficult to successfully carry out these punitive measures in the case of FASD. As the causes and severity of FASD are widely variable and FASD is difficult to diagnose, a mother with a child exhibiting symptoms akin to FASD may be held liable for the child's impairments despite not drinking during pregnancy. Alternatively, the mother may have consumed alcohol during early stages of pregnancy when she was unaware that she was pregnant, unwittingly endangering the child. A punitive government intervention that creates the possibility of the accused being convicted of such criminal offences, even though the trier of

⁴⁰⁹ Brody, *supra* note 405 at 250.

⁴¹⁰ *Ibid* at 256.

fact might otherwise have reasonable doubt on his or her own, would violate the mother's presumption of innocence under s. 11(d) of the *Charter*.⁴¹¹ It may also infringe upon her s. 7 *Charter* rights by infringing upon her life, liberty, or security.⁴¹²

To justify such an infringement, the Crown would need to satisfy the *Oakes* test.⁴¹³ In order to meet the test, four elements would be required: (1) the reason for limiting the right must be pressing and substantial; (2) the measures carried out to limit the right must be rationally connected to the objective for which it was enacted; (3) the means should impair the right "as little as possible"; and (4) the more severe the deleterious effects of a measure on individuals or groups, the more important the objective must be.⁴¹⁴ It is unlikely that the courts would accept such a limitation on a woman's rights: the pursuit of children's best interests is not a principle of fundamental justice as there is no consensus that it is essential to justice and it fails to produce manageable standards.⁴¹⁵ In contrast, the principles of fundamental justice would be violated if an innocent person was imprisoned as a result of a criminal offence.⁴¹⁶ A woman who is addicted to a substance and acts in a morally involuntary way may then have no choice but to commit the crime. However, because of the broadness of this reasoning (i.e. that substance addiction could exculpate the addicted accused of a crime committed as a result of his or her addiction) it is unlikely that the latter reasoning will be adopted in practice. Moreover, there is no indication that any political party in Canada has any intention to legislate in this way.

⁴¹¹ *Canadian Charter of Rights and Freedoms*, Part I of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982 (UK), 1982*, c 11, s 11(d).

⁴¹² *Ibid*, s 7.

⁴¹³ Derived from the 1986 Supreme Court decision, *R v Oakes*, [1986] 1 SCR 103, 53 OR (2d) 719.

⁴¹⁴ *Ibid* at paras 69-71.

⁴¹⁵ *Canadian Foundation for Children, Youth and the Law v Canada (AG)*, [2004] 1 SCR 76 at paras 11-12, 234 DLR (4th) 257.

⁴¹⁶ Kent Roach, "The Protection of Innocence Under Section 7 of the Charter" (2006) 34 SCLR 249 at 249.

B. Encouraging Paternal Engagement

When addressing unplanned pregnancies and single parent households, the male figure tends to disappear from the discussion. By ignoring the role of the father in pregnancies and child rearing, effectively promoting the “deadbeat dad” stereotype, interventions are missing an opportunity to reduce stress on mothers as single parents. This is exemplified via a recent Canadian study which sampled child protection cases to better understand social workers’ practice with fathers and categorized them as risk, asset, risk and asset, or irrelevant.⁴¹⁷ Almost 50% of fathers were considered irrelevant; only 50% of those perceived as an asset to the mother were contacted, and 75% of fathers were contacted when perceived as an asset to the children.⁴¹⁸ Not offering fathers the opportunity to be involved in their children’s lives when this could be beneficial is a waste of a potentially valuable resource. There will be some situations in which both mother and child would benefit without the father in their lives (i.e. when he is abusive or a partnership would be unstable or damaging to the mother and/or child). Alternatively, a capable father may want to be in a relationship with the child and/or mother, but the mother chooses to be a single parent for personal reasons. As the mother knows her relationship with the father more intimately than any social worker, this decision is ultimately the mother’s and should be respected.

The purpose of discussing this area of policy intervention is not to debate a woman’s decision to include the father in raising the child, but simply to suggest that men should be targeted in interventions and encouraged to be responsible and supportive fathers while maintaining positive relationships with the mother when possible. Increased reliance on and availability of social assistance may allow family breakdown to more readily occur as more women feel financially able to bear the costs of a single-parent household. Some men may feel as though their role of a provider has been replaced by government social assistance policies and disengage from the child’s life. However, total familial abandonment by fathers may not be the most beneficial outcome.

⁴¹⁷ Susan Strega et al, “Connecting father absence and mother blame in child welfare policies and practice” (2008) 30:7 *Children & Youth Services Rev* 705.

⁴¹⁸ *Ibid.*

In addressing paternal involvement, maternal alcohol use may be able to be reduced, protective factors encouraged during pregnancy, and children already born with FASD will benefit from increased familial support. Single parents tend to be more socially isolated, work longer hours, receive less emotional and parental support, and are more likely to experience stressful life changes; parental effectiveness is increased with support and reduced with stress.⁴¹⁹ As such, a woman at risk of having a child affected with FASD would likely benefit from the support of the father of the child, which would reduce stress pre- and postnatally. For example, father involvement has shown to lower the chances of premature birth in women with chronic stress.⁴²⁰ This is of particular importance to at-risk women who are struggling with alcohol as a coping mechanism as there is evidence that those without effective coping responses are more likely to drink when they encounter stressful situations.⁴²¹ As previously mentioned (see *Partner Targeting*), partners can have positive impacts on a woman's pregnancy by discouraging behaviours that will harm the fetus such as substance use. Men who are actively involved with their children and responsible for child care can support women both in and outside the home. There is also evidence that positive father-child relationships can encourage positive gender role perspectives and encourage children's development on multiple levels.⁴²²

However, fathers may feel as though they are in an adversarial position to the mother and support services; they may perceive child social assistance as an "absolute power", feel a need to prove themselves as adequate parents, and feel unsupported or discouraged to become involved with their children.⁴²³ While choosing whether to be involved in

⁴¹⁹ Marsha Weinraub & Barbara Wolf, "Effects of stress and social supports on mother-child interactions in single- and two-parent families" (1983) 54:5 *Child Development* 1297 at 1309.

⁴²⁰ JA Gaudino, B Jenkins, & RW Rochat, "No fathers' names: A risk factor for infant mortality in the state of George, USA" (1999) 48:2 *Social Science and Medicine* 253.

⁴²¹ Lynne M Cooper et al, "Stress and alcohol use: Moderating effects of gender, coping, and alcohol expectancies" (1992) 101 *J Abnormal Psychology* 139.

⁴²² Michael E Lamb & Catherine Tamis-LeMonda, *The Role of the Father: An Introduction*, in ME Lamb, ed, *The Role of the Father in Child Development* (Hoboken, New Jersey: John Wiley & Sons, 2004).

⁴²³ Susan Strega et al, "Working with me, working at me: Narratives of fathers in child welfare" (2008) 19:2 *J of Progressive Human Services*; Speake S, Cameron S & Gilroy

his child's life is a personal decision, there are certain structural factors that may influence a father's decision. For example, there are few support programs for Aboriginal fathers across Canada, with prevalence varying from province to province.⁴²⁴ In a national scan of father-involvement programs in Canada, only four programs were recognized in Manitoba in comparison to fifteen in British Columbia.⁴²⁵ Barriers to these programs included a lack of funding, program access, finding suitable outreach workers, and attracting and sustaining participating fathers.⁴²⁶ Programs encouraging father involvement must reflect the varied dynamics of family life, particularly for Aboriginal families which do not always mirror the typical non-Aboriginal family. In 2006, more Aboriginal teenage girls reported to be parents than non-Aboriginal teenage girls and a larger percentage of Aboriginal women were in common-law relationships as opposed to marriages.⁴²⁷ In 2011, one-third of Aboriginal children were living in a lone parent family, compared to 17.4% of non-Aboriginal children; the majority of the Aboriginal children were living with a female lone parent.⁴²⁸ More young families and single-parent households require programs to be flexible to difficulties surrounding finding child support, accommodating school commitments, lesser work experience or job stability, and methods of reaching out to fathers who may not be actively involved in their children's lives.

Government policies aimed at father involvement must also support the various types of Aboriginal families in order to be effective. For example, young fathers are particularly likely to have limited resources to financially support their child and may be more focused on completing

R, "Young single non-residential fathers: Their involvement in fatherhood" (1997) 2:3 Child Family Social Work 135; Paul Tyrer et al, "Dealing with it': Experiences of young fathers in and leaving care" (2005) 35 British J Social Work 1107.

⁴²⁴ Jessica Ball & Sarah Moselle, *Aboriginal Father Involvement Programs: National Scan* (Father Involvement Research Alliance, March 2013) at 16.

⁴²⁵ *Ibid* at 26-51.

⁴²⁶ *Ibid* at 16.

⁴²⁷ O'Donnell & Wallace, *supra* note 126 at 19-20.

⁴²⁸ Statistics Canada, *Aboriginal Peoples in Canada: First Nations People, Métis and Inuit*, Catalogue No 99-011-X2011001 (Ottawa: Statistics Canada, 2011), online: <<http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/99-011-x2011001-eng.pdf>>.

their education or gaining job experience than being involved with their child. These men are often not married and may not be involved with the mother of the child romantically or otherwise.⁴²⁹ As such, with the father living in a separate residence from the child, he may not be able to receive benefits that lessen the financial burden of job training or education. He may choose to finance his own pursuits rather than child support. In attaining postsecondary education, fathers without dependent children living with them full-time are not eligible for supplementary funding to assist in fulfilling their parental responsibilities while funding their education.⁴³⁰ Addressing competing financial needs such as this may encourage paternal involvement.

Employment policies may also limit how much a father can be involved in his child's life. Fathers who work long hours, shift work, or whose work requires long periods away from his child are less likely to be able to see their child or opt for shared custody.⁴³¹ Policies relating to working conditions and parental leave vary according to provincial legislation, as does available child care.⁴³² In Manitoba, employees can apply for up to 37 weeks of parental leave in one continuous period so long as they have worked for the same employer for at least seven consecutive months and are a parent through birth or adoption.⁴³³ This results in a gap for fathers who have yet to find steady employment, or who are temporarily or self-employed. Also, employers are not required to pay the employee during his leave.⁴³⁴ As Canadian men were still earning higher average total incomes than Canadian women in 2008,⁴³⁵ it is likely

⁴²⁹ Donna Lero, Lynda Ashbourne & Denise Whitehead, *Inventory of Policies and Policy Areas Influencing Father Involvement* (Father Involvement Research Alliance, 2006) at 75 [Father Policies].

⁴³⁰ *Ibid* at 76.

⁴³¹ Heather Juby, Celine Le Bourdais, C & Nicole Marcil-Gratton, "Sharing roles, sharing custody? Couples' characteristics and children's living arrangements at separation" (2005) 67 *J of Marriage and Family* 157 at 159-160.

⁴³² Father Policies, *supra* note 429 at 30-31.

⁴³³ Manitoba, Labour and Immigration, "Employment Standards" (Manitoba: L&I, 31 March 2015), online: <<http://www.gov.mb.ca/labour/standards/doc,parental-leave,factsheet.pdf>>.

⁴³⁴ *Ibid*.

⁴³⁵ Statistics Canada, *Economic Wellbeing*, by Cara Williams, Catalogue No 89-503-X

that a man will continue working while the mother takes majority or full parental leave to lessen financial pressures. There may also be a workplace culture that discourages men from using parental leave despite it being an option via public policy.⁴³⁶

These barriers are compounded for low-income fathers. These fathers will need to spend more time at work away from their child in order to make ends meet. When living separately from the mother, the father may need to move away from his child to seek more substantial employment and then not be able to afford travel for visitations. The opposite may be true if the mother relocates with the child, but the father must stay where he is due to his finances or inability to find employment elsewhere. As the workplace affects fathers' physical and emotional well-being, it may act as an enabler or barrier to how fathers engage their children beyond mere physical availability.⁴³⁷ Policies assisting low-income families tend to disadvantage fathers who are living separately from their child or residing in a common-law relationship. Employment and Income Assistance (EIA) can supplement low-income families, but whether one is married or in a common-law relationship will affect how EIA is paid.⁴³⁸ Under the Canada Child Benefit, to be eligible the parent must live with the child (though this can apply to shared custody) and be the one primarily responsible for the child's care.⁴³⁹ This is not uncommon of social assistance benefit programs.⁴⁴⁰ Lastly, minimum wage levels overlook parental status, minimizing the differences in financial needs between parents and non-

(Ottawa: Statistics Canada, December 2010), online: <<http://www.statcan.gc.ca/pub/89-503-x/2010001/article/11388-eng.pdf>>.

⁴³⁶ Susan Lewis & Linda Haas, "Work-life integration and social policy: A social justice theory and gender equity approach to work and family" in EE Kossek & SJ Lambert, eds, *Work and Life Integration: Organizational, Cultural and Individual Perspectives* (Mahwah, NJ: Lawrence Erlbaum Associates Publishers, 2005) at 349-374.

⁴³⁷ G Russell & P Hwang, "The impact of workplace practices on father involvement" in Michael E Lamb, ed, *The Role of the Father in Child Development* (New York: John Wiley & Sons, 2004).

⁴³⁸ Manitoba, Labour and Immigrations, "Employment and Income Assistance" (Manitoba: L&I, 2015), online: <http://www.gov.mb.ca/fs/eia/pubs/eia_living_with_another_adult.pdf>.

⁴³⁹ Canada, Canada Revenue Agency, "Canada Child Benefit- Before You Apply" (28 June 2016), online: <<http://www.cra-arc.gc.ca/bnfts/ccb/bfrpl-eng.html>>.

⁴⁴⁰ Father Policies, *supra* note 429 at 44.

parents while leaving noncustodial fathers ineligible for increased government resources.⁴⁴¹

There is also room in public policy and father involvement programming to address the barriers to child involvement faced by non-resident fathers. Beyond physical distance, financial barriers, and limited visitations are personal barriers such as substance abuse, street life involvement, incarceration, and histories of violence. This is particularly important for some Aboriginal communities as rates of substance use, unemployment and poverty, disorganized social systems, and violence are reported as major problems.⁴⁴² By developing programs and policies that better support fathers as well as mothers, some of these barriers could be reduced. Perhaps most importantly, more funding should be put towards community programming that can help fathers in overcoming personal and systemic barriers to allow them to become more involved in their child's life. Putting an emphasis on the relationship between the father and his child, rather than on the father as a financial figure, may be more effective in engaging fathers in their children's lives and sustaining that engagement. Child social assistance practices should work on becoming father-inclusive by acknowledging fathers and creating plans to include them throughout the social assistance process. They should search for contact information for birth fathers as well as father figures, take the time to interview these people, and engage them to identify their strengths rather than simply identifying their weaknesses.⁴⁴³ Services offering parenting programs should consider the specifics of Aboriginal communities to best support father-child relationships. Acknowledging and encouraging the role of the father in FASD prevention and mitigation will likely benefit the mother, child, father, and community.

⁴⁴¹ *Ibid* at 45.

⁴⁴² Canada, Public Health Agency of Canada, *The Human Face of Mental Health and Mental Illness in Canada 2006* (Ottawa: PHAC, 2006) at 167-171, online: <http://www.phac-aspc.gc.ca/publicat/human-humain06/pdf/human_face_e.pdf>.

⁴⁴³ Christopher Walmsley, *Fathers and the Child Social Welfare System*, (Federation of Child and Family Services of BC).

C. Social Assistance Programs

1. *Reducing FASD by Reducing Poverty* ●

Poverty reduction and attempting to rectify socioeconomic inequality is part of the most macroscopic level of analysis of any social problem, including prevention of FASD. Issues such as poverty, stress, and poor living conditions are embedded within the larger issue of the state of Aboriginal communities, including issues such as generally high levels of unemployment, and low levels of income, housing, and availability of social services. Intervention plans could reasonably take into account some of these very broad issues and attempt to make practical progress with them as part of a plan specifically focused on reducing FASD. While any intervention would have to consider the impact of economic development (or a lack thereof) of First Nations communities on- and off-reserves within the context of FASD prevention, and one cannot ignore the resolution of the problem of economic development of First Nations communities when addressing FASD, this paper will not attempt to add significantly to the debate, but rather briefly identify some of the macro-level issues and a range of solutions. Given that this paper's focus is specifically on the prevention of FASD, addressing strategies for taking on these macro-level issues comprehensively would require discussion of a much wider debate in Canada than can effectively be covered in this paper.

Before sketching out the elements of that larger debate, two points must be emphasized. Firstly, while socioeconomic disparity is an overarching issue that affects many areas of FASD development and treatment, it is not the only factor that contributes to the FASD cycle, and therefore should not be considered as a hurdle that must be overcome before attempting to deal with the issue of FASD. Any possible resolution must, of course, consider the larger problem; but there are many potential steps to prevent FASD, reviewed here, that can produce improvements as, or even before, progress is made on these wider issues. For example, solutions to problems that are heavily influenced by socioeconomic status, including the provision of basic education⁴⁴⁴ and the virtual eradication of

⁴⁴⁴ United Nations Educational, Scientific, and Cultural Organization (UNESCO), "Education for All Global Monitoring Report," brochure: *Education Transforms Lives* (Paris: UNESCO, 2013) (investing in education can actually prevent a variety of

some diseases,⁴⁴⁵ have been implemented even with the larger question of economic inequality remaining unresolved.

Secondly, the pursuit of resolutions for very broad issues – such as the promotion of increased income levels and employment in Aboriginal communities, particularly on reserve – could potentially have significant impacts on FASD prevention. Therefore, broad intervention strategies can still be part of an overall community-based strategy for FASD prevention, despite not being directly geared towards the prevention of that particular disorder.⁴⁴⁶ Employment opportunities in a community can be enhanced by community-level efforts to reduce overall poverty and unemployment, such as by developing programs to enhance education, training, and employment opportunities, as well as by finding ways in which to secure the location of more employers at or near a community.⁴⁴⁷

economically disadvantageous consequences). See also GEM Report, “We will never eradicate poverty without quality education for all”, *World Education Blog* (17 October 2013), online: <<https://gemreportunesco.wordpress.com/2013/10/17/we-will-never-eradicate-poverty-without-quality-education-for-all/>> (extreme poverty cannot be fully alleviated without improving access to education).

⁴⁴⁵ For example, providing vaccinations to highly disadvantaged communities can effectively wipe out a disease, such as smallpox, even though a host of other challenges remain to be addressed. Jean-Jacques Muyembe-Tamfum et al, “Smallpox and its eradication in the Democratic Republic of Congo: Lessons Learned” (2011) 29 *Vaccine* D13.

⁴⁴⁶ For example, employment programs aimed at individuals (e.g. education or vocational training; matching job seekers with employment opportunities; providing transport to work sites) might be effective in reducing some risk factors. An individual who would otherwise be at considerable risk of bearing a child with FASD might choose to pursue training and employment before bearing children, allowing them to start a family under less-stressful circumstances, with an income and other resources that contribute to the ability to purchase nutritious food, travel to medical appointments, and so on. See Jane Leber Herr, “The Labour Supply Effects of Delayed First Birth” (2015) 105:5 *Am Econ Rev* 630 at 630. Women who become first-time mothers later face a higher wage at their child’s birth than those who become mothers earlier, and that women who receive a college degree tend to work less for the first year after the child’s birth than before the birth, compared to women with a high-school education who work more (*ibid* at 637).

⁴⁴⁷ Joan E Moss, Claire G Jack, & Michael T Wallace, “Employment Location and Associated Commuting Patterns for Individuals in Disadvantaged Rural Areas in Northern Ireland” (2004) 38:2 *Regional Studies* 121 at 134, online: <www.tandfonline.com/doi/abs/10.1080/09500800410001651111> (“[C]haracteristics of labour markets in rural areas of low population density typically demonstrate a limited diversity of

Many approaches have been proposed to combat the high levels of unemployment and poverty in some communities, some of which focus on transfers from federal and provincial governments to be put towards improving health, education, and social programs,⁴⁴⁸ while others focus on creating various forms of economic partnerships with the public sector and private enterprises outside of the community, such as mining companies. These solutions are not mutually exclusive, and issues exist with both options. Concern has been expressed that increased transfers from other governments, or resource sharing arrangements with mining and other private developers,⁴⁴⁹ are not a sufficient solution if they merely transmit money without generating employment, creating business opportunities, and promoting self-sufficiency. Additionally, limiting factors on the success of governmental interventions include concerns about creating and reinforcing dependency, rather than encouraging the growth of strong economies,⁴⁵⁰ while environmental concerns such as

employment and remuneration opportunities and reliance upon traditional declining sectors.” They also specify that improving mobility of rural dwellers should be a top priority, as well as focusing employment opportunities within regional centres.)

⁴⁴⁸ Lisa L Patterson, *Aboriginal Roundtable to Kelowna Accord: Aboriginal Policy Negotiations, 2004-2005* (Ottawa: Library of Parliament, Parliamentary Research Service, 2006); see also Canada, Department of Finance Canada, *Growing the Middle Class*, tabled in the House of Commons by William Francis Morneau (Ottawa: Department of Finance Canada, 2016) at 133-148 (new educational and economic funding initiatives by the Trudeau government); *First Nations Child and Family Caring Society of Canada and the Assembly of First Nations v Attorney General of Canada (Representing the Minister of Aboriginal Affairs and Northern Development Canada) and Chiefs of Ontario and Amnesty International Canada* (25 August 2014), T1340/7008 at para 627, online: CHRT <https://fncaringsociety.com/sites/default/files/CHRC%20Closing%20Submissions_0.pdf> [First Nations Family Caring Society of Canada] (CHRT decision specifying that “First Nations children are entitled to at least the same child welfare funding and services as those provided to all other children in Canada.”).

⁴⁴⁹ The model for building Hydro projects in Manitoba now typically involves making the community in whose traditional territories the project is located in effect an equity partner in the project by committing to employ a significant share of Aboriginal contractors and employees. Examples of where this has occurred include the Wuskwatim and Keeyask projects. More information and examples of Hydro-related settlement agreements are available at Government of Manitoba, “Indigenous and Municipal Relations” (2016), *Manitoba.ca* (provincial government website), online: <<http://www.gov.mb.ca/ana/>>.

⁴⁵⁰ Calvin Helin, *Dances with Dependency: Out of Poverty Through Self-Reliance*, 1st ed

damage to the natural environment and hunting areas exist as concerns for private sector partnerships.⁴⁵¹

Other authors have emphasized the need for more internally-generated entrepreneurship, including the creation of formal property rights sufficient for individuals in the Aboriginal community to be secure in their individual ownership of a business or to use their ownership to obtain business loans.⁴⁵² Part of the solution, though complicated, is bringing together the incompatible viewpoints held between parties who advocate how to best solve the issue of Aboriginal inequality, particularly for on-reserve populations.⁴⁵³ Government legislation and policies that assimilate Aboriginal people into Canadian culture should be avoided, but so should the impoverished conditions that many on-reserve Aboriginal Canadians currently face.

One strategy that could conceivably improve economic conditions for Aboriginal communities is increasing the level to which Aboriginal individuals are able to self-govern. At the same time, there is conflicting evidence that self-government may not produce sufficient material and social improvement unless there are sufficient checks and balances with the government, particularly with regard to separating political dealings

(Vancouver: Orca Spirit, c2006).

⁴⁵¹ See for example Heather Myers, "Changing Environment, Changing Times Environmental Issues and Political Action in the Canadian North" (2001) 43:6 *Environment: Science and Policy for Sustainable Development* 32.

⁴⁵² See Hernando de Soto, *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (New York: Basic Books, c2000) and Thomas Flanagan, Christopher Alcantara, & Andre Le Dressay, *Beyond the Indian Act: Restoring Aboriginal Property Rights* (Montreal: McGill-Queen's University Press, 2010).

⁴⁵³ This is exemplified in the rejection of the 2004 Taxpayers report's main recommendation of phasing out the reserve system because community-held property is considered to be a "basic tenant of Aboriginal life" and reserve lands are "all that is left of the land that [Aboriginal people] used to occupy and possess". While respect for and preservation of Aboriginal culture is a necessity, this report raises important questions about the economic viability of Aboriginal reserves that need to be discussed rather than dismissed. See Bill Curry, "Dump First Nation reserve system, says report" *CanWest News Service* (of Don Mills, ON) (18 April 2004) quoting Andy Mitchell and Phil Fontaine respectively, online: <<http://proxy2.lib.umanitoba.ca/login?url=http://search.proquest.com.proxy2.lib.umanitoba.ca/docview/460845708?accountid=1456>>.

from the administration of assistive programs.⁴⁵⁴ Ineffectual leadership or gaps in responsibilities can lead to inefficient use of funding by band councillors.⁴⁵⁵

Another major issue for Aboriginal communities, especially those on reserve, is physical isolation. A report published in 2004 by the Canadian Taxpayers Foundation shows that the *Indian Act* has segregated Aboriginal Canadians by placing them on reserves, creating a system that “limits their ability to fully participate in the economy.”⁴⁵⁶ The course of modern development in Canada has seen a huge shift in population from rural areas to urban areas; the major exception is in Aboriginal reserve communities, where populations are often growing quite quickly in relation to the Canadian average.⁴⁵⁷ Urbanization tends to be associated

⁴⁵⁴ Strategies like the Harvard Project endorse maintaining the integrity of Aboriginal civil services from undue political disturbances and, as in any community, protecting individual and minority rights from oppression by any dominant factions by utilizing “stable political institutions and policies, independent court system [sic] or other dispute-resolution mechanisms, a capable bureaucracy and the separation of politics from day-to-day business management.” Canada, Parliamentary Information and Research Service, *The Harvard Project on American Indian Economic Development: Findings and Considerations*, by Tonina Simeone (Ottawa: Library of Parliament. 2007). For example, there is limited accountability for the funding given to reserve Chiefs responsible for allocating the money as there is no requirement for reserve governments to reveal their financial records. (Fiss, *infra* note 456 at 3). Testimonies also point to corruption through the band offices, such as buying votes, nepotistic practices, and self-payment through contracts by band councillors. (Fiss, *infra* note 456 at 2).

⁴⁵⁵ John Kiedrowski, “First Nations housing is not up to code”, *The National Post* (11 January 2013), online: <<http://news.nationalpost.com/full-comment/john-kiedrowski-first-nations-housing-is-not-up-to-code>>. Kiedrowski writes that, for example, band councils have the responsibility of ensuring housing meets building codes and what houses are to be repaired. Due to no access to building standards, using unqualified workers, or poor construction practices, homes that would have lasted decades if built properly only last a few years.

⁴⁵⁶ Tanis Fiss, *Apartheid: Canada's Ugly Secret* (Canadian Taxpayers Federation, 2004) at i [Fiss].

⁴⁵⁷ As of 2011, off-reserve Aboriginal people constituted the fastest growing segment of Canadian society, with 56% of Aboriginal people living in urban areas (compared to 49% in 1996). Canada, Aboriginal Affairs and Northern Development Canada, “Urban Aboriginal Peoples” (Ottawa: AANDC, 1 December 2014), online: <<https://www.aadnc-aandc.gc.ca/eng/1100100014265/1369225120949>>.

with economic growth – in concentrated areas, it is easier to find others with whom to associate for business and employment purposes; and even with today’s e-commerce capabilities, distance, and transportation costs remain a factor in the success of enterprises.⁴⁵⁸ In some Aboriginal communities there has been a shift of population from the traditional reserve community to urban areas, which could conceivably result in the loss of talent and leadership in urban Aboriginal communities and the need to find ways of ensuring that those who leave rural Aboriginal communities for urban centres retain productive family, cultural, and economic contacts with their communities of origin. Furthermore, there are significant issues of poverty among many urban Aboriginal populations in Canada,⁴⁵⁹ and merely moving to an urban area may not necessarily solve problems, and could in fact create other challenges, such as feelings of isolation from the urban mainstream and separation from family and friends in the traditional community due to a lack of support programs and huge cultural adjustments.⁴⁶⁰

Part of an overall strategy to ameliorate conditions in traditional communities in Canada, may in effect, take the form of robust policies to increase physical access; this would include building high quality roads,⁴⁶¹ improving aircraft or airship⁴⁶² access, and better internet and telecommunication infrastructure. Lowered transportation costs and increased access could also potentially have positive downstream effects, such as encouraging employers and services to locate to the area. Lowering

⁴⁵⁸ See for example Laura Galloway, John Sanders & David Deakins, “Rural small firms’ use of internet: From global to local” 27:3 J of Rural Stud 254 (rural economy in Scotland is sustained by local trade, despite the advent of ecommerce capabilities. A balance of focus on local and external focus is recommended to maximize business).

⁴⁵⁹ Kate Rexe, *A Nation in Distress: The Political Economy of Urban Aboriginal Poverty* (MA Thesis, Carleton University, 2007) [unpublished].

⁴⁶⁰ Fiss, *supra* note 456 at 5.

⁴⁶¹ Northwest Territories, Department of Transportation, “Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories”, (Yellowknife: Government of Northwest Territories, November 2000), online: <<http://www.pws.gov.nt.ca/pdf/grd/ch3/NWT%20HighwayStrategy.pdf>>.

⁴⁶² Barry E. Prenice & Stuart Russel, “Competing Technologies and Economic Opportunities for Northern Logistics: The Airship Solution” (Paper delivered at the 44th Annual Canadian Transportation Research Forum, 2009), 44th Annual Meeting Proceedings 685.

the cost and improving the availability of nutritious food, and making it easier for residents of remote communities to travel to healthcare services or have healthcare providers visit them are other important considerations.

Beyond improving the effects of physical isolation, improved education, training, health and social services for members of traditional communities can be important in promoting physical and emotional health, and economic security. The Canadian Human Rights Commission (CHRC) has established that Canada must ensure reasonably equal funding for Aboriginal communities in areas such as child and family services.⁴⁶³ Furthermore, physical isolation cannot be the only factor impacting the earning power of Aboriginal Canadians, since non-Aboriginal Canadians have higher median earnings than employed Aboriginal Canadians both in urban (\$7,083 higher) and rural (\$4,492 higher) settings.⁴⁶⁴ Aboriginal Canadians who work on reserves experience a significant level of income degradation compared to non-Aboriginal Canadians who work on reserves, and disparities in income continue to exist for Aboriginal groups who do not have reserves.⁴⁶⁵ The income gap between Aboriginal and non-Aboriginal populations extends beyond this factor. Another possible reason is the difference in education attained: 28.9% of Aboriginal people aged 25-64 were reported to have no certificate, diploma, or degree compared to 12.1% of non-Aboriginal people of the same age group.⁴⁶⁶ Similarly, 48.4% of Aboriginal people aged 25-64 had a postsecondary qualification in 2011 compared to 64.7% of non-Aboriginal people.⁴⁶⁷ This likely affects the income disparity, but it is not the sole cause: the level of educational attainment for Aboriginal men and women has increased, but disparity in incomes between non-Aboriginal and Aboriginal people for education levels below a Bachelor's

⁴⁶³ First Nations Child and Family Caring Society of Canada, *supra* note 448.

⁴⁶⁴ Daniel Wilson & David Macdonald, *The Income Gap Between Aboriginal Peoples and the Rest of Canada*, (Ottawa: Canadian Centre for Policy Alternatives, 2010) at 13.

⁴⁶⁵ *Ibid.*

⁴⁶⁶ Statistics Canada, "The educational attainment of Aboriginal peoples in Canada: National Household Survey", Catalogue No 99-012-X2011003 (Ottawa: Statistics Canada, 2011) at 5, online: <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-012-x/99-012-x2011003_3-eng.pdf>.

⁴⁶⁷ *Ibid* at 4-5.

degree persists.⁴⁶⁸ A study measuring employment in visible Canadian minorities found that as of 1996, even with post-secondary education, racial minorities and Aboriginal people experience lower employment rates compared to non-visible minority Canadians, no matter the field of study.⁴⁶⁹ Non-visible minority Canadians are also three times as likely as Aboriginal Canadians to be in the highest income quintile despite the same level of education.⁴⁷⁰ More available jobs with equivalent pay levels, lesser discrimination, and abandoning Canada's assimilation-style policies are needed to help close this gap.⁴⁷¹

With the federal government diverting most of its funding towards on-reserve populations, services that are frequently used by Aboriginal people remain underfunded and not adapted to their cultural needs. Part of the solution rests in more efficient allocation of government resources, such as supporting Aboriginal people who choose to leave reserves. An example of this is the Urban Aboriginal Strategy which took effect April 1, 2014 and aims to increase the participation of urban Aboriginal populations in the economy and support urban Aboriginal programming.⁴⁷² Better support through public policy for Aboriginal populations both on- and off-reserve will help to alleviate the socioeconomic conditions many Aboriginal people face and ultimately lower poor health outcomes and disease prevalence.

In order to solve wide-scale issues like those pertaining to the incidence, prevalence, prevention, and treatment of FASD, both micro- and macro-level analyses must be undertaken. While part of the overall solution must address macro-level problems such as socioeconomic inequality and development, resolving issues fully could take decades or generations to accomplish. As such, while addressing the issue of social inequality is important to the eradication of FASD, this paper does not

⁴⁶⁸ Canadian Council on Social Development, *Unequal Access: A Canadian Profile of Racial Differences in Education, Employment and Income* (Canadian Race Relations Foundation, 2000) at 17, online: <<http://crrf-fcrr.ca/images/stories/pdf/unequal/Engfin.pdf>>.

⁴⁶⁹ *Ibid* at 19.

⁴⁷⁰ *Ibid* at 22.

⁴⁷¹ *Ibid* at 17 and 28.

⁴⁷² Canada, Indigenous and Northern Affairs Canada, "Urban Aboriginal Strategy" (Ottawa: AANDC, Modified 1 January 2016), online: <<https://www.aadnc-aandc.gc.ca/eng/1432837046128/1432837073962>>.

purport to contribute to the debate of which solutions would be most effective at reducing inequality; however, this paper does recommend that attempting to treat or ameliorate the effects of FASD should not be postponed until socioeconomic change can be achieved, particularly because some health issues have been virtually resolved even though the broader social context between Aboriginal and non-Aboriginal Canadians remains in a less-than-equal state. Furthermore, since finding resolutions to large-scale social issues can have a direct impact on FASD prevention, these solutions can still be considered as part of a wider FASD prevention program, even though they should not necessarily be considered a focus of, or a barrier to, the prevention program itself.

D. Alcohol Regulation

As mentioned earlier in this paper, alcohol use among women is becoming increasingly popular and is likely to increase incidences of FASD and other diseases if not more effectively regulated (See *Rates of Alcohol Use among Women* at page 131). Though the focus of this paper has been mostly on the effects of alcohol use among Aboriginal women at risk of having an alcohol-affected pregnancy, this problem is far wider reaching. Those at risk of having a child with FASD are not necessarily Aboriginal or afflicted with alcoholism. Any woman capable of having a child and who consumes alcohol can have a child with FASD (particularly if her consumption pattern is binge drinking). This portion of the paper is not meant to stigmatize women who choose to use alcohol nor limit their autonomy. Instead, it aims to propose policy changes that could benefit Canadian society as a whole and limit the negative effects of alcohol use experienced by women. Alcohol use is widely prevalent in Canadian society: in 2010-2011, Canadians were reported to have spent \$20.3 billion on alcoholic beverages with real direct revenues to provinces and territories from alcohol sitting at \$3.40 billion.⁴⁷³ However, as a result of the wide range of direct and indirect costs related to alcohol consumption, such as productivity losses, prevention research, enforcement, and health care costs, it is likely that this amounts to an overall deficit of \$1.15 billion

⁴⁷³ Gerald Thomas, *Analysis of Beverage Alcohol Sales in Canada*, Report 2/3 in Alcohol Price Policy Series (Ottawa: Canadian Centre on Substance Abuse, 2012) at 9-10.

to governments across all provinces and territories.⁴⁷⁴ More effective policies regulating alcohol use may help to prevent risky drinking patterns before they develop, particularly in youth, and lessen governmental financial burdens by alleviating the effects and costs of alcohol use.

In a cross-cultural study of alcohol use involving twenty-four countries, the gender gap in prevalence rates of drinking was shown to be shrinking in many countries from 1998 to 2006.⁴⁷⁵ The increased prevalence in women was hypothesized to be a result of changing social roles, increased effectiveness of marketing, or ineffective policies or programs directed at girls.⁴⁷⁶ New product development also plays a role. For example, flavoured alcoholic beverages are more popular among younger drinkers and females in secondary schools students in the United States in every age group.⁴⁷⁷ This demonstrates that adult women are not the only ones hurt by alcohol companies' marketing – campaigns that aim to target adults simultaneously target youth. A study on alcohol marketing found that television advertising reached 96% of the adult population while simultaneously reaching 89% of youth ages 12-20.⁴⁷⁸ Similar percentages of youth in comparison to adults were targeted through magazine advertisements while radio advertisements were placed in programming with a disproportionate number of listeners below the legal drinking age.⁴⁷⁹ Other advertising outlets include sponsorship in sports events, product placement in film and television, music, mobile phones, and social media.⁴⁸⁰ This over-exposure to alcohol advertising may be

⁴⁷⁴ *Ibid* at 11-14.

⁴⁷⁵ Bruce Simons-Morton et al, "Gender specific trends in alcohol use: cross-cultural comparisons from 1998 to 2006 in 24 countries and regions" (2009) 54 (Suppl 2) *Int J of Public Health* 199.

⁴⁷⁶ *Ibid* at 206.

⁴⁷⁷ Lloyd D Johnston et al, *Monitoring the future national survey results on drug use, 1975-2006*, Vol 1: Secondary School Students, (Bethesda, MD: National Institute on Drug Abuse, 2007).

⁴⁷⁸ Center on Alcohol Marketing and Youth, *CAMY monitoring report: Youth exposure to alcohol advertising on television and in national magazines, 2001 to 2006*, (Washington, DC: 2007).

⁴⁷⁹ *Ibid*; Jernigan D et al, "Youth exposure to alcohol advertising on the radio – United States, June-August 2004" (2006) 55:34 *Mortality and Morbidity Weekly Report* 937.

⁴⁸⁰ David Jernigan, "The extent of global alcohol marketing and its impact on youth" (2010) 37:1 *Spring Contemporary Drug Problems* 57.

particularly worrisome with regard to youth. Findings show that alcohol advertising can shape the perceptions about alcohol use among both youth and young adults, but only youth attitudes and perceptions predicted positive expectancies about alcohol and intentions to drink.⁴⁸¹

Drinking culture has expanded in postsecondary environments as well, particularly where binge drinking is promoted. Notwithstanding the fact that, traditionally, male undergraduate students have been more likely than women to engage in binge drinking,⁴⁸² there has been an increase in frequent binge drinking among female undergraduates.⁴⁸³ The motive behind this increase is unknown, although it may be a response to shifting traditional gender roles and the abandonment of the negative stigma traditionally associated with women's drinking.⁴⁸⁴ One study proposed that women who frequently binge drink are copying male drinking behaviours not to achieve a sense of equality or power, but because these behaviours elevated their social position and made them more sexually appealing to their male peers.⁴⁸⁵ It may be argued that because this is a short-lived life stage, the risks are minimal. But this is not the case. Heavy alcohol use during college has been found to be associated with alcohol use problems after post-secondary education,⁴⁸⁶ and women who develop drinking problems tend to develop them more quickly than men do.⁴⁸⁷ This is coupled with women's aforementioned physiological vulnerability to excessive alcohol use, as well as binge drinking's connection to injury, sexual harassment and assault, violence, and academic impairment, which

⁴⁸¹ Kenneth Flemming, Esther Thorson & Charles Atkin, "Alcohol advertising exposure and perceptions: Links with alcohol expectancies and intentions to drink or drinking in underaged youth and young adults" (2004) 9 *J of Health Communication* 3.

⁴⁸² Patrick O'Malley & Lloyd Johnston, "Epidemiology of alcohol and other drug use among American college students" (2002) 14 *J of Stud on Alch* 23.

⁴⁸³ Amy Young et al, "Drinking like a guy: Frequent binge drinking among undergraduate women" (2005) 40:2 *J of Substance use and misuse* 241.

⁴⁸⁴ *Ibid* at 247.

⁴⁸⁵ *Ibid* at 261.

⁴⁸⁶ Susan O'Neill, Gilbert Parra & Kenneth Sher, "Clinical relevance of heavy drinking during college years: cross-sectional and prospective perspectives" (2001) 15:4 *Psychology of Addictive Behaviors* 350.

⁴⁸⁷ Carla A Green, "Gender and use of substance abuse treatment services" (2006) 29:1 *Alcohol Research and Health* 55.

may all have negative implications later in women's lives.⁴⁸⁸ As alcohol abuse has been linked to unprotected sex, it may be that binge drinking is a risk factor for unintended pregnancies.⁴⁸⁹ One study surveying over 70,000 respondents in the United States found not only that binge drinking is a risk factor for unintended pregnancy, but also that binge drinkers were more likely than non-binge drinkers to expose their fetus to "risk factors for adverse pregnancy outcomes."⁴⁹⁰

Alcohol marketing's effect on youth, particularly young women, and increases in female drinking are important areas to address in regard to FASD prevention. Encouraging excessive alcohol use, particularly binge drinking, in women who are soon to be or currently sexually active likely increases the risk of FASD. This is particularly true for populations where excessive drinking is correlated with unprotected sexual activity for both genders. There are a number of ways to regulate alcohol, some of which are expected to be more effective than others. One proposal is altering the drinking age to deter drinking in younger populations and college-age drinking. The United States' use of a higher minimum legal drinking age of 21 years has been generally successful and shows an association with lowered rates of alcohol consumption among youth and related health and social problems.⁴⁹¹ However, regulating minimum drinking age should not be the primary or only defence against abusive drinking. Other controls such as social attitudes, marketing limits, alcohol costs and availability, and enforcement measures are also important.

A recent comprehensive comparison of provinces was conducted to determine the efficacy of alcohol control policies across Canada and rate the most influential policies.⁴⁹² Manitoba was found to have only 45.7% of

⁴⁸⁸ Perkins HW, "Surveying the damage: A review of research on consequences of alcohol misuse in college populations" (2002) 14 J of Stud on Alc Supp 91.

⁴⁸⁹ See, for example, Christiane Poulin & Linda Graham, "The association between substance use, unplanned sexual intercourse and other sexual behaviours among adolescent students" (2001) 96 Addiction 607.

⁴⁹⁰ Timothy Naimi et al, "Binge drinking in the preconception period and the risk of unintended pregnancy: Implications for women and their children" (2003) 111 Suppl Pediatrics 1136 at 1140.

⁴⁹¹ Traci L Toomey & Alexander C Wagenaar, "Effects of minimum drinking age laws: review and analyses of the literature from 1960 to 2000" (2002) 63:2 J of Studies on Alcohol 206 at 209.

⁴⁹² See Giesbrecht N et al, *Strategies to Reduce Alcohol-Related Harms and Costs in Canada: A*

an ideal score and ranked 7th out of the 10 sampled provinces.⁴⁹³ The most effective policies in reducing alcohol harm and consumption were determined to be pricing, control system, and physical availability based on the policies' respective effectiveness and scope.⁴⁹⁴ Notably, young adult drinkers have been shown to be particularly price-sensitive, suggesting prices in general may potentially be controlling risky drinking behaviours.⁴⁹⁵ Pricing alcohol higher based on higher alcoholic content may be an effective strategy to deterring risky drinking behaviour as well.⁴⁹⁶ Annual adjustments to minimum prices to keep alcohol prices attuned to inflation and establishing minimum standard drink costs for different purchasing settings would potentially increase public health and safety as well as public finance.⁴⁹⁷ The report recommended a minimum price of \$1.50 per standard drink from an off premise outlet and \$3.00 per standard drink for alcohol from on premise outlets.⁴⁹⁸ It also recommended that prices be indexed to inflation and that prices be regulated over time as well as according to strength of alcohol content.⁴⁹⁹

1. On-Reserve Alcohol Prohibition

There is the argument that Aboriginal leaders should ban alcohol on reserves, but this may be easier said than done. A total prohibition is bypassed by bootleggers and home-brewed alcohol so those addicted can still obtain liquor, leaving the root problem of alcohol addiction unsolved.⁵⁰⁰ It may also exacerbate the use of drugs on reserve as they are easier to smuggle in and may be less expensive than smuggled alcohol on

comparison of Provincial Policies (Toronto: Centre for Addiction and Mental Health, 2013) [Provincial Policies].

⁴⁹³ *Ibid* at 49.

⁴⁹⁴ *Ibid* at 47.

⁴⁹⁵ Gerald Thomas, *Price Policies to Reduce Alcohol-Related Harm in Canada: Alcohol Price Policy Series, Report 3/3* (Ottawa: Canadian Centre on Substance Abuse, 2012) at 2.

⁴⁹⁶ *Ibid* at 3.

⁴⁹⁷ *Ibid*.

⁴⁹⁸ Provincial Policies, *supra* note 492 at 50.

⁴⁹⁹ *Ibid* at 50-51.

⁵⁰⁰ "Banning Booze Won't Solve Problems", *CBC News* (1 February 2008) online: <<http://www.cbc.ca/news/canada/manitoba/banning-booze-won-t-solve-problems-on-reserves-chiefs-1.705400>>.

more isolated reserves.⁵⁰¹ Another challenge is that there may be limited police available to enforce the bans.⁵⁰² One potential option to reduce alcohol abuse is through the price control of alcoholic beverages; recent studies have shown all drinking levels are responsive to price.⁵⁰³

Criticism aside, this proposed solution of banning liquor may not be a viable one due to recent legislative changes. Under the *Indian Act*, a reserve seeking to ban the sale, purchase, and possession of alcohol requires the drafting of a bylaw which must be approved by the majority of residents through a vote at a special meeting called for the reason of considering the by-law.⁵⁰⁴

X. LEARNING FROM SUCCESSSES

Preventable public health issues such as FASD and the detriment they pose to society on both a macro and micro level are not a new source of concern. Several projects have already been proposed and put into action to combat FASD. In an analysis of the Public Health Agency of Canada's FASD Initiative, six critical success factors were identified:⁵⁰⁵

- Leadership
- The ability to build strong, trusting partnerships
- Shared vision and clear roles
- The ability to make strategic investments
- Responsiveness and adaptability
- The right people with the right skills/approaches

By analyzing successful initiatives, it can be determined how these factors operate, which approaches are most effective, and how inefficient resource use can be avoided. The most notable findings included strong internal leadership, effective reciprocal and respectful communication, and providing substantial benefits for member participation. These benefits could include building knowledge and skills in participants, rewarding relationships, and providing leadership opportunities.

⁵⁰¹ *Ibid*; Tait 2003, *supra* note 48 at 163.

⁵⁰² *Ibid* (CBC).

⁵⁰³ Tait 2003, *supra* note 48 at 162.

⁵⁰⁴ *Indian Act*, RSC 1985, c I-5, s 85.1.

⁵⁰⁵ Evaluation of FASD Initiative, *supra* note 177.

Dedicated leadership that comes from within the community rather than imposed from the outside is required to address specific community needs. A community that implements a project surrounding FASD should have someone living in or close to the community who is willing to make FASD prevention a priority and has the knowledge and ability to coordinate each element of the comprehensive strategy.

A. FASD Action Network

The *FASD Action Network* was established in Ontario in 2002 with the purpose of promoting awareness around women's alcohol use during pregnancy as well as prevention and support for those living with FASD.⁵⁰⁶ Health and service providers were invited to join and develop an action plan that would include risk avoidance and reduction, enhancing health, early interventions, and treatment/rehabilitation programming.⁵⁰⁷ The functioning of this program has been examined by Clarke-McMullen through the lens of the Internal Coalition Outcome Hierarchy Model, which uses the following seven constructs to evaluate the organization's internal processes: shared social vision, efficient practices, knowledge and training, relationships, participation, activities, and resources.⁵⁰⁸

The first level of analysis is process-level evaluation: it focuses on program operations, activities, functions, and the performance of the group and involves sufficient resources, completed activities, and diverse participation.⁵⁰⁹ One important finding was that despite not having sufficient funding for its programming, the *FASD Action Network* continued to operate by pooling funds and having all members work together in the interest of FASD prevention, awareness, and support; other public health coalitions with sufficient funding have failed because of conflict, unequal work distribution, and frequent leader turnover.⁵¹⁰ To make do with limited resources, funds were used creatively to carry out network activities, each member was given sufficient time to participate,

⁵⁰⁶ Donna Clarke-McMullen, "Evaluation of a successful fetal alcohol spectrum disorder coalition in Ontario, Canada" (2010) 27:3 *Public Health Nursing* 240 at 242.

⁵⁰⁷ *Ibid.*

⁵⁰⁸ *Ibid* at 241.

⁵⁰⁹ *Ibid* at 243.

⁵¹⁰ *Ibid.*

and projects were “tagged onto existing programs wherever possible.”⁵¹¹ Prior to taking action, problems were identified through scanning communities to determine which community actions could resolve them, and to set activity targets as well as yearly plans.⁵¹² Diverse participation is a feature routinely identified in successful coalitions and was present in the *FASD Action Network*: as the program grew, so did its member diversity. The program initially consisted of a public health nurse, school team nurse, addiction worker, consultant on women’s substance use, infant development home visitor, and Aboriginal nurse.⁵¹³ It later expanded to include children’s mental health workers, paediatricians, educators, a geneticist, and parents of children with FASD.⁵¹⁴

With a solid coalition base, the focus can then move to sustainable outcomes to examine relationships, new knowledge and training for members, and efficient collaboration practices.⁵¹⁵ The *FASD Action Network* had a strong core member group that facilitated the community capacity-building process that involved rewarding, positive relationships; it also had strong leadership that facilitated learning.⁵¹⁶ Its leadership style facilitated a reciprocal relationship between leaders and participants as well as an opportunity to gain knowledge and expertise that could be applied at members’ own worksites.⁵¹⁷ This leadership style provided benefits of participating in the coalition that outweighed “the effort and time commitment”, thus maintaining “active member participation”.⁵¹⁸ With regard to new knowledge and training, a leader may act as a resource broker, linking the community to the appropriate partner and showing members of the coalition where they can be most effective.⁵¹⁹ Subgroups formed to accomplish specific targets, but remained linked to the main organization through shared knowledge and resources such that capacity-

⁵¹¹ *Ibid.*

⁵¹² *Ibid.*

⁵¹³ *Ibid.*

⁵¹⁴ *Ibid.*

⁵¹⁵ *Ibid* at 244.

⁵¹⁶ *Ibid.*

⁵¹⁷ *Ibid.*

⁵¹⁸ *Ibid.*

⁵¹⁹ *Ibid.*

building activities were working on multiple levels within the community.⁵²⁰ Federal and provincial connections directed some of the goals and activities of the *FASD Action Network* by providing updated information and suggestions that were subsequently worked into the programming to increase community and member knowledge.⁵²¹

The success of the *FASD Action Network* has some tangible lessons for developing an FASD prevention strategy. A coalition requires strong leadership and should engage a cross-section of interested professionals, identify the knowledge level of the community, and raise awareness prior to employing best practices.⁵²² Yearly plans are important for motivating members while “funding can be found if agencies work together”.⁵²³ Areas identified for improvement within the *Action Network* were new member orientation and preparation for network leaders, as well as matching lead agency mandates to the projects in order to sustain involvement and adoption of the program.⁵²⁴ Effective leadership and positive member relations across project levels is clearly one of the most important aspects to a successful project.

B. The North Karelia Project

The *North Karelia Project* was a successful community health intervention launched in Finland in 1971 in response to having the world’s highest rates of death from coronary heart disease.⁵²⁵ This project recognized the role of lifestyle-related risk factors that increased chronic disease rates and proposed a preventative community-based approach to target the whole population; it would work with a range of organizations and change general risk-related lifestyles to transform North Karelia’s social and physical environment.⁵²⁶ The project used an integrated approach to prevention that targeted the main common behavioural risk

⁵²⁰ *Ibid* at 244-245.

⁵²¹ *Ibid* at 244.

⁵²² *Ibid* at 246.

⁵²³ *Ibid*.

⁵²⁴ *Ibid*.

⁵²⁵ Pekka Puska, “The North Karelia Project: 30 years successfully preventing chronic diseases” (2008) 53 *Special Issue Diabetes Voice* 26 at 26.

⁵²⁶ *Ibid* at 27.

factors for a range of chronic diseases, including unhealthy diet, smoking, and physical inactivity.⁵²⁷ Significant changes were observed in risk-related lifestyles and risk factors in the North Karelia population which continued over a thirty-year period: the mortality rate for coronary heart disease among working-age men in 2006 was 85% lower than the period between 1969 and 1971 and rates of stroke and tobacco-related cancers among men have greatly diminished.⁵²⁸ This project exemplifies the effectiveness of community-based approaches in chronic disease control, i.e. programs that combine “community involvement with environmental and policy-based measures”.⁵²⁹ The *North Karelia Project* employed community involvement on multiple levels including healthcare, the food industry, local media, and schools; building close collaborations with diverse organizations was essential to its success.⁵³⁰

There are many similarities between this paper’s proposed FASD prevention strategy and the *North Karelia Project*. Both are responses to needs of specific communities and measure the effect of programming on a target community. As was done with the *North Karelia Project*, the data obtained in FASD community interventions from the smaller target community could then be used to address the issue of prevention on a national scale.⁵³¹ Both projects also look beyond immediate causes and to population risk factors and engage diverse community organizations. Also, addressing North Karelia’s high rates of disease posed similar obstacles to treating FASD in Canadian Aboriginal communities: North Karelia was a low socioeconomic area with minimal medical resources and its local culture was a traditional one that was resistant to change.⁵³²

There are also significant differences between the two projects, most notably the complicated and sensitive history of Aboriginal communities that has resulted in high rates of substance abuse and the suspected high

⁵²⁷ *Ibid.*

⁵²⁸ *Ibid* at 27-28.

⁵²⁹ *Ibid* at 28.

⁵³⁰ *Ibid.*

⁵³¹ *Ibid* at 27.

⁵³² Pekka Puska, “Successful prevention of non-communicable diseases: 25 year experiences with North Karelia Project in Finland” (2002) 4:1 Public Health Medicine 5.

prevalence rates of FASD in Aboriginal communities. Treating a disease caused by behaviours that involve addiction and coping mechanisms is likely to be much more difficult than implementing simpler behavioural changes that involve lifestyle and dietary choices. Strategies that specifically target high-risk people and underlying causes of alcohol use should be implemented in addition to targeting the whole community. This should all be done while employing culturally appropriate practices and encouraging sustainable programming within Aboriginal communities.

C. Alkali Lake Sobriety Movement

The story of Alkali Lake is an excellent example of an Aboriginal community creating change from within to decrease its issues of substance abuse while increasing its autonomy and building capacity. This intervention is one solution that directly addresses internal community problems such as substance abuse and poverty which in turn would directly impact FASD prevalence. The sobriety movement's interventions exemplify several of those discussed in this proposal.

Prior to its sobriety movement, Alkali Lake was afflicted with community alcoholism; the community's foundations had been weakened by the introduction of alcohol by European traders, easy alcohol access, and residential school experiences.⁵³³ A small group of individuals became sober with the support of an AA counselor who visited the community.⁵³⁴ Most notably were Phyllis and Andy Chelsea who brought significant changes to the community and shifted the group's role to that of an intervention team.⁵³⁵ Andy Chelsea became the Chief of the reserve and used his authority to become the strong leader that the community needed in order to bring about community-wide change.⁵³⁶ He set up weekly alcohol awareness meetings run by counsellors who also provided counselling to individuals and their families, launched a community newspaper that was used as an educational tool, and generated "dialogue about community wellbeing."⁵³⁷ He also adopted a facilitative and

⁵³³ Michael Bopp & Judie Bopp, *The Esketemc (Alkali Lake) Community Story: A Case Study* (Calgary: Four Worlds Centre for Development Learning, 2011) at 9, 11.

⁵³⁴ *Ibid* at 15.

⁵³⁵ *Ibid*.

⁵³⁶ *Ibid* at 16.

engaging leadership style to address the community's needs and wants and limited access to alcohol by stopping alcohol delivery services and bootlegging.⁵³⁸

Andy also recognized that the social assistance relied upon by 90% of the residents was primarily being spent on alcohol and the nearest grocery store was severely overcharging Alkali Lake Band members.⁵³⁹ This made adequate nutrition extremely inaccessible for the community. In response to this, the Band initiated a voucher system so that individuals who were drinking heavily would receive vouchers for food, goods, and services rather than money, and Phyllis was trained to become the Band's "welfare aid" to manage the social assistance funds and implement this change.⁵⁴⁰ A grocery store was opened on the reserve to directly challenge the nearest grocery store's monopoly and improve the community's economy.⁵⁴¹ Band money was also allocated to encourage access to alcohol treatment such as paying for child care arrangements, repairing a person's house when they were away for treatment, and providing employment for those who maintain sobriety after treatment.⁵⁴²

The Alkali Lake Sobriety Movement presents a clear example of the type of community-based prevention that communities should strive for. It was unique to that community's needs; involved training local community members and increasing self-sustainability; relied on strong leadership that revolved around effective communication; and used what community resources were available to it. This movement focused on the community-wide pattern of living that was at the root of its substance abuse, and remodelling the community on economic, social, political, and cultural levels.⁵⁴³ Effective interventions included cultural renewal, building learning opportunities, developing the community's economy, and creating alternative social and recreational opportunities;⁵⁴⁴ all of these are

⁵³⁷ *Ibid* at 17-18.

⁵³⁸ *Ibid.*

⁵³⁹ *Ibid* at 19.

⁵⁴⁰ *Ibid.*

⁵⁴¹ *Ibid* at 20.

⁵⁴² *Ibid* at 23.

⁵⁴³ *Ibid.*

⁵⁴⁴ *Ibid* at 24-27.

recommended as strategies for the present prevention initiatives. The Alkali Lake movement also serves as a reminder that lessening substance abuse in communities, as well as FASD, should not be expected to be a quick fix. It will take years for positive changes to occur within communities and to heal generation-wide abuses. It is vital that initiatives focus on becoming self-sustaining and accepted within communities so this change can be achieved.

XI. SUMMARY OF PREVENTION STRATEGY

A. Prevention Strategy Principles

The causes of FASD are complicated. Alcohol use alone does not cause FASD – poor nutrition, poverty, patterns of drinking, childhood and adult abuse, and use of other substances all contribute.

FASD is expensive, but prevention is not. In addition to economic calculations indicating the high costs of care, education, and lost productivity, FASD places an enormous human cost on individuals, families, and communities. Relative to these costs, prevention strategies are a bargain.

To prevent FASD, an Aboriginal conception of health is not just culturally appropriate, but also potentially productive. The idea of health as total wellness that encompasses all social determinants of health should be embraced in order to comprehensively deal with FASD and its root causes.

Aboriginal communities face many health and social issues. FASD prevention requires recognizing the historical reality facing Aboriginal people and the difficulties many have had to, and continue to, overcome. The Project can act as a lens through which defects in community health determinants can be highlighted and as a catalyst for greater integration of services and effective capacity-building that can improve all health outcomes, not just those of FASD.

There are many barriers to FASD prevention. Women face significant obstacles to accessing services. These obstacles can limit access even when

these women want to do their best to combat substance issues. Many service professionals also find it difficult to address FASD issues, even when they come in contact with people who need help. By recognizing these barriers, the prevention initiatives can work to overcome them.

Each community is unique. Not only are the issues and capabilities of each community different, but so are traditional teachings and health priorities. The prevention strategy is intended to guide a community with the creation of a customized FASD prevention program that fits local needs.

Success will come largely from community-based participation. A project will not be imposed on a community by outside experts. FASD prevention cannot succeed without community support being integrated and without collaborating with service partners. Project leadership must come largely from within the community.

Goals are integral to success. The Project must have targets to aim at and those working on the project must know whether those targets are being met. As such, hard statistical goals and data collection are required to ensure that the Project is operating effectively.

B. Prevention Strategy Recommendations

Prevention is comprehensive. The Project involves interventions at every level – individual, family, and community-wide.

Harm reduction is the logical strategy. Abstinence should be a goal of the Project, but even reductions in substance use will lead to better health outcomes for mothers and children.

FASD prevention starts before pregnancy and before addiction. An important element of eliminating FASD is understanding why substance use is a chronic issue and why women who use substances have unplanned pregnancies. It is vital to involve community youth in prevention programming in order to achieve long-term change.

Improve nutrition. Individual nutrients are not a silver bullet for FASD prevention. However, poor nutrition remains a problem of poverty and alcoholism that must be addressed as part of a comprehensive wellness plan.

Public education programs can be effective. They must be carefully planned, avoid stigma and fear, and raise awareness while directing people to services. The more people in the community know about FASD and the detrimental effects of substance abuse, the more support the rest of the project will have.

Health and service workers must be trained in FASD, substance abuse, and cultural competency. Interactions between health and service workers with at-risk women in the community are opportunities to treat or direct women appropriately. Negative interactions will discourage women from seeking care and support.

Universal screening is an important first step. Screening is necessary for determining which community members need what level of assistance. Even without follow-up, screening can help decrease substance use. Screening should never come across as an interrogation nor be judgemental.

Brief interventions are non-intrusive and cost-effective. With only a few short meetings with women at risk, brief interventions can positively change unhealthy behaviour. Brief interventions can range in intensity and length and should be tailored to the community involved.

Case management, advocates and mentors work on the most vulnerable. These intensive strategies have shown success working with women at the highest risk of having a child with FASD. Case management is an opportunity to train community members to increase agency and encourage positive relationships that direct at-risk women to appropriate support.

Aboriginal midwifery leads to better birth outcomes. Expanding these training programs in Manitoba would lead to valuable partnerships for the prevention strategy. Training more Aboriginal midwives would allow more

women to have control over their childbirth plan and provide much-needed pre- and post-natal care.

Treatment centres must be designed for Aboriginal women. Facilities built for men with substance issues cannot effectively address the barriers to treatment faced by Aboriginal women who may be pregnant at the time of admission. Specific needs of Aboriginal women must be taken into account when offering substance abuse treatment, such as child care and accessibility.

Stop smoking. Smoking compounds the negative prenatal effects of alcohol. Women who are heavy drinkers are most likely to be heavy smokers.⁵⁴⁵ Quitting smoking not only leads to better birth outcomes, it may also help people reduce drinking.

People around women at risk are important. The existence of social supports and family/partner substance use are important factors affecting a pregnant woman's attempts to abstain from alcohol. A partner's attitudes towards substance use, birth control, and abuse must also be addressed by a comprehensive prevention strategy.

Prevention can be centered on schools and education. ECCD can "hook" community members who otherwise would not obtain much-needed services. By running programs for students in primary and secondary schools, the prevention strategy can help "ladder" community members to support programs. With proper training of service professionals, these programs will not only benefit children in the community, particularly those with FASD, but will also increase community capacity if service professionals are pulled and trained from within the community.

Prevention strategies reinforce each other. These strategies work together and have compounding effects. By combining the most appropriate strategies for the community in question, the prevention strategy can make

⁵⁴⁵ Tsai, *supra* note 236.

the most efficient use of the community's resources and address its particular needs.

XII. CONCLUSION

This paper proposes that government, community programs, and academic experts partner with Aboriginal communities in order to conduct a variety of Karelia-like community health projects that are aimed at reducing FASD. Governments would provide a substantial level of funding to support five years of programming, which would benefit the community involved in the project as well as provide important empirical evidence of effective FASD interventions. Aboriginal leaders and community members would be full partners with the projects: they must be involved in identifying community-specific problems and needs, implementing strategies that will most effectively target these problems, and engaging the community in carrying out the chosen interventions. Academic experts would help in planning and carrying out these projects, most notably in measuring progress and data collection. Community partners with pre-established programs would be extremely useful in providing much-needed resources to lessen the costs of the project and encourage its self-sustainability after the five-year program is completed.

In each pilot community, a variety of measures would be considered. FASD is only one problem out of many social and economic issues prevalent in various Aboriginal communities. Addressing some of the larger socioeconomic issues is likely to assist in FASD prevention, but this should not preclude short-term or immediate reduction interventions from being attempted. There are multiple approaches to addressing each problem, and it is up to the community and project leaders to decide what the most realistic and effective solution is. Adequate nutrition is a prime example of this: on more isolated reserves, the main source of groceries may be a store in which fresh and wholesome food is too expensive or inaccessible. A program that reduces the cost of wholesome food and educates community members in nutrition might be included as an intervention strategy. Reducing the cost of food might be accomplished by subsidy, but it might also be accomplished on a more sustainable basis simply by reducing transportation costs or opening a local food store. The lack of access to safe drinking water experienced by some reserves is an analogous issue. Focusing on basic health issues such as these are likely to

improve the effects of FASD and overall community health, because by appropriately allocating funding towards basic nutrition, the massive costs of widely impacting health issues that affect many Aboriginal communities such as FASD, malnutrition, diabetes, obesity, and heart disease could be significantly decreased.⁵⁴⁶

The prevention strategy described in this paper strives for community capacity building and culturally appropriate practices. By requiring community leadership, the project encourages program development from within; this is more likely to succeed because of leaders who are deeply connected to the community and its social assistance. Community leaders will also be more attuned to the community needs and available resources. Wherever possible, community members should be encouraged to become involved in the programming as leaders. This would create positive role models within the community, education and career-building opportunities, and culturally appropriate programming. It would also increase the likelihood of a self-sustainable program. Involving more community members in intervention programs also decreases the likelihood of negative program reception and feelings of patriarchy; programs should be based on reciprocal feedback, understanding, and respect between the community and outside participants. However, setting community goals should not be an exclusive strategy; ultimately the Canadian government should be concerned about every individual, and the development of community goals should not preclude health services from intervening in individual cases if there is a need to do so. While a joint program between community leaders and outside participants is the optimal scenario for program success, and the Canadian government should encourage Aboriginal communities to design and deliver their own programs, attempts to provide FASD prevention support cannot be absolutely contingent on full cooperation of Aboriginal peoples' own government, as desirable as that is. When it is impossible to secure the support from the community's leaders, or through the nature of the program, the overall strategy can include elements that are already being offered to all Canadians (rather than being tailored to a specific Aboriginal

⁵⁴⁶ Heart & Stroke Foundation, *Overweight, Obesity, and Heart Disease and Stroke*, position statement (H&SF, 2017), online: <<http://www.heartandstroke.ca/-/media/pdf-files/canada/2017-position-statements/obesity-ps-eng.ashx?la=en>>.

community), or elements that focus on individual, rather than community-wide intervention.

Because of the comprehensive nature of this proposal, isolating the impact of each element is likely to be challenging. Which specific interventions or community changes result in success in increased FASD awareness, capacity building, and reduction in FASD and substance abuse will be difficult to measure. However, because of the multiple issues that lead to FASD and its underlying causes, a multi-faceted approach is required. This will not only address each community as a unique entity, but more effectively address the multiple levels of support required in the communities – ideally covering the entirety of the micro- to macro-level intervention spectrum. Furthermore, individual efforts may have negligible impact on their own, but still exist as significant facets of an overall program. Confounding variables will exist when measuring the impacts of prevention strategy interventions; this is an acknowledged potential shortcoming of the Project.

Regardless, program efficacy can still be effectively measured by establishing baseline levels in the community prior to implementing initiatives, as well as documenting inputs, training, and delivery channels throughout the program. The focus of the Project should not just be on the final outcome of FASD reduction, particularly as this will be a short-term project. It should also focus on what areas of the program are most effective to build upon these areas as things progress, or as new programs are implemented in other communities. Effects of specific interventions may not translate from one Aboriginal community to another because of the respective communities' unique characters. As more communities participate in prevention strategies, more data will be available to determine the effect of confounding intervention variables.

Because Manitoba's population has a large percentage of Aboriginal people, the choice of pilot communities could include very different situations. According to Statistics Canada (2006), 15.5% of the province's population is Aboriginal with 36.3% of Aboriginal Manitobans living in Winnipeg and 34.8% living in northern Manitoba.⁵⁴⁷ Communities will have different access to resources and different community structures, as

⁵⁴⁷ Government of Manitoba, *Aboriginal People in Manitoba*, online: <<https://www.gov.mb.ca/ana/resources/pubs/abpeoplembweb.pdf>>.

well as various backgrounds of Aboriginal ancestry. The most feasible place for the Project's start is thought to be a community where there is a political community organization already in place, solidified statistics on membership and residency, and opportunities for provincial and federal governments to combine expertise and resources. Ideally, the prevention strategy would collaborate with the Assembly of Manitoba Chiefs and their member communities. The Assembly of Manitoba Chiefs was recently involved with an enormous survey project that addresses the health of children, youth, and adults through a variety of health conditions, services, and behaviours.⁵⁴⁸ There were 35 participating First Nations in Manitoba and 80% of its target sample was reached; these were varied in population size, location, accessibility, and language territories.⁵⁴⁹ This longitudinal health survey would be an extremely useful resource in community selection, measuring baseline levels, and designing effective interventions to meet specific community needs. By establishing a relationship with the Assembly of Manitoba Chiefs, the prevention strategy could be most effectively placed and be guided from the start by strong community leaders.

Another issue that must be considered is how broad a pilot should be: should the focus be only on FASD, or more broadly on related issues, such as minimizing health issues associated with economic conditions and nutrition? There are trade-offs to either approach. A narrower focus may result in more concentrated resource allocation and clearer planning and data collection. A broader focus may do more immediate good in the affected community, draw funding and resources from more overlapping programs, and provide for more sustainable outcomes.

The immediate policy need is to recognize that FASD is an important problem, particularly for low socioeconomic and Aboriginal communities. It has debilitating impacts on individuals, families, and communities, as well as massive costs on justice, social, and education systems. The federal and provincial governments must make it a priority to take action, particularly with programs such as this prevention strategy, which will have multiple advantageous effects on community-wide health. We would

⁵⁴⁸ Assembly of Manitoba Chiefs, *Regional Health Survey* (Winnipeg: AMC, 2007), online: <http://amc.manitobachiefs.com/index.php?option=com_content&view=article&id=155&Itemid=138>.

⁵⁴⁹ *Ibid.*

propose that federal, provincial and Aboriginal officials as well as academic and community experts organize a collaborative committee to discuss the first pilot projects that could be conducted. This would include what communities are suitable for initial selection and what kind of funding should be made available and by whom, and in the context of what broad objectives and processes. The next step would be identifying clear target goals, measurement procedures, and available resources from pre-established programs. Confronting FASD from multiple perspectives through a collaborative approach will benefit entire communities directly, while other communities will indirectly benefit through empirical feedback to combatting FASD.