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## **Early Childhood Development among First Nations: The Case for Early Intervention**

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at the University of Ottawa



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## KEY MESSAGES

- 1) There are well-known health and socioeconomic gaps between Indigenous peoples and the non-Indigenous population in Canada and around the world.
- 2) Current demographic projections suggest that if these disparities are not addressed, it will have economic implications with regard to significant opportunity costs and increased spending on social programs.
- 3) International evidence has shown that early childhood intervention programs can improve short and long-term outcomes among disadvantaged populations. While Canada's current suite of programs (for example, Aboriginal Head Start on Reserve and Aboriginal Head Start in Urban and Northern Communities) are well-intentioned, more programming is needed with a performance framework linked to results, and not just outputs.
- 4) The Canadian government has made a commitment to improving relationships with Indigenous peoples. To improve outcomes, we make four recommendations:
  - a) Apply a more rigorous approach to evaluation for existing programs. This means developing outcome targets that are guided by international data on early childhood development.
  - b) Increase funding for culturally-centred pilot programs that adapt to the needs of the community and focus on improving maternal and child health and early childhood development, such as the Martin Family Initiative's Early Years program.
  - c) Re-allocate funding for early childhood development and early intervention programs in a way that drives outcomes. This means aligning inputs and activities to outcomes.
  - d) Ensure that capacity for evaluation is built in First Nation communities with transparent reporting to enhance accountabilities by both the federal government and First Nations for ongoing monitoring and resource alignment to early childhood development.

## INTRODUCTION

For First Nations peoples living on-reserve, Canada has constitutional (legal) obligations to fund health, social and education programming.<sup>1</sup> According to Departmental Results Report data published by the federal government, approximately \$5.6 billion was spent on programs targeting First Nations health and education in 2016-17 fiscal year.<sup>2</sup> Despite sizable financial contributions, little is known about the impact of health and education programming. This is because performance frameworks used to evaluate many of these programs tend to measure inputs and outputs, but largely fail to understand whether they actually improve long-term outcomes. However, the widespread disparities that continue to persist among Indigenous populations in Canada indicate a need for programs to be delivered more efficiently and effectively, whereby inputs are aligned with outcomes.

## DISPARATE OUTCOMES AMONG INDIGENOUS PEOPLES

For years, major disparities in health and quality of life among Indigenous populations around the world have been well-documented, falling short in nearly every indicator of health and human development compared to non-Indigenous populations.<sup>3</sup> Indigenous peoples in Canada, which include First Nations, Inuit, and Métis groups, are no exception. Their outcomes across health, social and employment indicators fall below those of the general population (see Table 1).

<b>TABLE 1: HEALTH, SOCIOECONOMIC, AND FAMILY WELFARE OUTCOMES AMONG INDIGENOUS PEOPLES COMPARED TO THE NON-INDIGENOUS POPULATION IN CANADA</b>			
<b>Domain</b>	<b>Indicator</b>	<b>Indigenous</b>	<b>Non-Indigenous</b>
Health status	Life expectancy (years) <sup>6</sup>	64 & 73 (Inuit men and women respectively), 73-74 & 78-80 (Métis & FN men and women respectively)	79 (men), 83 (women)
	Infant death (per 1,000 live births) <sup>7</sup>	9.6	4.4
	Suicide mortality <sup>8</sup>	6.5, 3.7, and 2.7 times higher in areas with a high concentration of Inuit, First Nations, and Métis, respectively, compared to areas of low concentration	
	Lung cancer incidence <sup>9</sup>	2.6, 1.7, and 1.4 times higher in areas with a high concentration of Inuit, First Nations, and Métis, respectively, compared to areas of low concentration	
	Diabetes (excluding gestational) <sup>10</sup>	Prevalence among Indigenous peoples (excluding those on reserve and in Northern communities) is 1.6 times that of non-Indigenous people	
	Tuberculosis <sup>11</sup>	293.8, 32.0, and 6.5 times higher among Inuit, First Nations, and Métis, respectively, compared to Canadian-born non-Indigenous people	
Socioeconomic status	High school completion <sup>12</sup>	70%	86.3%
	Completion of bachelor's degree <sup>13</sup>	10.9%	28.5%
	Employment rate <sup>14</sup>	62.5%	75.8%
	Living in home in need of major repairs <sup>15</sup>	21.7%	6.8%
	Food insecurity <sup>16</sup>	Prevalence among Inuit, First Nations off reserve, and Métis is, respectively, 3.7, 2.7, and 2.2 times that among non-Indigenous adults	
Family Welfare	Percentage of the population of all children in foster care (under 14) <sup>17</sup>	52.2% (despite making up 7.7% of population in this age group)	47.8%
	Percentage of women experiencing spousal violence <sup>18</sup>	10%	6%
	Percentage of women becoming mothers in teenage years <sup>19</sup>	45, 28, 20% of Inuit, First Nations on-reserve, and Métis respectively	6%
	Percentage of children aged 0-4 living with lone parent <sup>20</sup>	34%	13%
	Early childhood development <sup>21</sup>	Prevalence of developmentally vulnerable kindergarten children is 2.0 times higher among Indigenous compared to non-Indigenous children	

A 2018 report by the Public Health Agency of Canada, “Key Health Inequalities in Canada: A National Portrait”,<sup>4</sup> conveys the disparities among health indicators such as life expectancy, infant mortality, suicide mortality, chronic disease, alcohol and tobacco use, core housing need and food insecurity between Indigenous and non-Indigenous peoples in Canada. These results are problematic for the overall well-being and long-term development of Canada’s fastest growing population, which increased by 42.5% between 2006 and 2016<sup>5</sup> (four times that of the non-Indigenous population), representing potential lost opportunities and costs. The aggregate results, as reflected in Table 1, suggest there is room for improvement. Leveraging an international corpus of peer-reviewed research and cases of early childhood development programs from the United States, this brief makes the case for early intervention to improve outcomes for Indigenous children in Canada.

## THE SIGNIFICANCE OF HEALTHY EARLY CHILDHOOD DEVELOPMENT

A globally recognized strategy to reducing health and socioeconomic disparities is to implement a life course approach to health promotion, disease prevention, health and social services and programming, and intervention.<sup>22</sup> Early childhood has been identified as a particularly important stage of development in this regard. A significant body of research displays a strong association between experiences (and in turn, development) in early childhood to health and socioeconomic outcomes in adulthood. This has led to three major conclusions that are considered to be virtually irrefutable: (1) the early years are the most important period of development across the lifespan, (2) experiences during this time are influential in shaping an individual’s life trajectory, and (3) “disadvantage starts before birth and accumulates throughout life”,<sup>23</sup> therefore, actions taken to reduce inequalities should start with a focus on the early years.<sup>24</sup>

The early years of life, generally defined as the period from gestation to age 8,<sup>25</sup> are a critical period for physical, language-cognitive, and social-emotional development. More specifically, the period from gestation to age 5 are characterized by rapid brain development and is a time where neuroplasticity (the ability to make connections between neurons) is culminated.<sup>26</sup> The complex interaction between the individual child (i.e. genetic factors), and their environment (including experiences and exposures) is what propels development.<sup>27</sup> This makes experiences of disadvantage in the early years a fundamental source of inequity, as adversity during this time can potentially result in cumulative, long-lasting impacts on health across the life course, longevity, and the capacity to learn.<sup>28</sup>

What do children need to thrive developmentally? Healthy early childhood development (ECD) begins with good maternal health, as exposures in utero can impact both biological and neurological development.<sup>29</sup> In addition to adequate nourishment and uptake of antenatal care services, maternal health status and health behaviours influence development in utero. Also critical to health in infancy is exclusive breastfeeding, which is not only important for nourishment, but also for protection against infection, cognitive development and developing a secure attachment to the child’s primary caregiver.<sup>30</sup> Adequate maternal and child nutrition before and after birth is influential in promoting physical growth and brain development, which has consequences for language-cognitive and social-emotional development, and ultimately, for future health and socioeconomic outcomes.

Other factors as they relate to maternal health and parenting skills include warm, responsive relationships with primary caregivers and ample opportunities to play and explore their environment. Opportunities to play not only reinforce secure attachment to caregivers, but also serve a purpose in social-emotional development by providing a space to socialize with other children. In fact, it is argued that the quality of relationships and parenting in early childhood carries the heaviest weight among the factors that drive healthy development.<sup>31</sup>

Given the importance of the child’s environment in promoting development, circumstances within the family unit in many cases underpin ECD, as they are the main source of nurture and stimulation. The extent to which families are capable of providing a healthy environment is closely connected to its social and economic resources (see Table 2). Socioeconomic status is considered to be the most influential force behind disparities in ECD.<sup>32</sup> This makes the implications of poverty more than a lack of financial resources to meet basic needs. Poverty is multidimensional and can influence “social belonging, cultural identity, respect and dignity, and information and education”.<sup>33</sup> The impacts of poverty can be long-term and multigenerational in nature. Poverty during pregnancy has been linked to worse birth outcomes such as abnormal birth weight<sup>34</sup> and increased risks for pre-term birth, intrauterine growth restriction, and infant death.<sup>35</sup> Furthermore, poverty is associated with poorer cognitive and social-emotional development, which often impacts levels of school readiness and educational outcomes among children.<sup>36</sup> For example, parents with limited education have been found to be less likely to read to their children, limiting linguistic development and comprehension skills.<sup>37</sup>

**TABLE 2: EXAMPLES OF SOCIAL AND ECONOMIC RESOURCES AT THE FAMILY LEVEL INFLUENCING ECD, ADAPTED FROM THE WHO REPORT “EARLY CHILD DEVELOPMENT: A POWERFUL EQUALIZER” (2007)**

Social Resources	Economic Resources
<ul style="list-style-type: none"> <li>• Parenting skills</li> <li>• Parental education</li> <li>• Cultural practices</li> <li>• Intra-familial relations</li> <li>• Health status</li> </ul>	<ul style="list-style-type: none"> <li>• Wealth</li> <li>• Occupational status</li> <li>• Dwelling conditions</li> </ul>

A growing body of research has also displayed that exposure to chronic stress in early childhood, which is often associated with low socioeconomic status, can have detrimental effects on neurological development. Referred to as toxic stress, risk factors include poverty, child abuse or neglect, maternal depression, and parental substance abuse.<sup>38</sup> Toxic stress has been found to alter the architecture of the developing brain, which “can have potentially permanent effects on a range of important functions such as regulating stress physiology, learning new skills, and developing the capacity to make healthy adaptations to future adversity”.<sup>39</sup> This is exacerbated by the fact that parents with low socioeconomic status often lack the agency or resources to cope with adversity.<sup>40</sup>

The consequences of not reaching one’s full developmental potential in the early years can influence an entire life trajectory. ECD is a cumulative process, and the curiosity and motivation to learn is built on earlier experiences. Optimal development in physical, language-cognitive, and social-emotional domains enhances the child’s ability and motivation for life-long learning.<sup>41</sup> Economist James J. Heckman,<sup>42</sup> a Nobel laureate known for his work in ECD, notes that, “most of the gaps at age 18 that help to explain gaps in adult outcomes are present at age five”. Thus, disparities in cognitive and noncognitive development are evident before school-age. The consequences are often discussed in the parameters of school readiness. These gaps tend to widen as opposed to shrink as the child proceeds through formal schooling and are predictive of future school performance and educational attainment.<sup>43</sup> Disadvantaged children have higher rates of school dropout, grade retention, and placement in special education.<sup>44</sup>

Educational attainment is important as it often translates into levels of skill and ability in society, which are linked to a host of outcomes in adulthood.<sup>45</sup> More obvious impacts of low education are reduced rates of employment and earnings. Failure to complete high school is linked to higher rates of welfare dependency and criminality.<sup>46</sup> Other outcomes linked to poor cognitive and noncognitive development include lower post-secondary attendance and higher rates of teenage pregnancy,

incarceration, and participation in risky activities.<sup>47</sup> While skills related to achievement outcomes in school are undoubtedly important for future success, Heckman argues that equal attention must be paid to the development of noncognitive skills that are relevant for participation in the work force and in society, which include those such as socioemotional regulation, personality factors, motivation, perseverance, and the capacity to collaborate with others.<sup>48</sup> Furthermore, the effects of being exposed to chronic stress and adverse childhood experiences should not be underestimated, as they have been associated with higher rates of chronic disease in adulthood, alcoholism and substance abuse, depression and other mental health issues, teenage pregnancy, obesity, physical inactivity, and smoking.<sup>49</sup>

## WHAT DOES THIS MEAN FOR INDIGENOUS POPULATIONS?

A substantial evidence base outlines how disadvantage in early childhood can lead to the manifestation of health and socioeconomic disparities in adulthood, and it is through this lens that widespread inequalities among Indigenous populations should be revisited. The unique history of Indigenous peoples, including the lasting impacts of colonisation that have transcended generations, has resulted in a cyclical pattern of disadvantage that persists in their communities. Child poverty rates reflect this: approximately 40% of Indigenous children live in poverty, compared to 17% of the non-Indigenous population.<sup>50</sup> A report by the Canadian Centre for Policy Alternatives estimate this figure to be even higher, with 60% of First Nations on-reserve, 30% of non-status First Nations, 25% of Inuit, and 22% of Métis children living in poverty.<sup>51</sup> Cindy Blackstock, a well-known academic and First Nations child advocate in Canada has suggested that child poverty should be measured by the extent to which “parents or caregivers [are able to] ensure that each child in the family has the opportunity to reach his or her full developmental potential”.<sup>52</sup>

The disparity in outcomes<sup>53</sup> is indicative of the conditions that Indigenous children are born into and grow in – something that is especially troubling given the sensitive nature of development in the early years. The life circumstances of Indigenous populations invariably limit the capability of Indigenous parents to provide an environment that fosters healthy ECD. These issues are further exacerbated by chronic underfunding and lack of culturally appropriate social services in areas such as health and education.<sup>54</sup>

The implications of these complex inequalities are compounded by a demographic shift. According to the 2016 census, nearly 30% of First Nations, 22% of Métis, and 33% of Inuit were under the age of 14, and children aged 0-4 accounted for 8.7% of the total Indigenous population.<sup>55</sup> Proportionally, there are more children and youth than seniors in these communities, and the population is continuing to grow.<sup>56</sup> This represents a growing portion of the population that may not reach their full potential because of lost opportunities in their early years.

Addressing these realities faced by Indigenous peoples in Canada is not only a matter of social justice but also contains a strong economic rationale. The costs associated with not investing in children, particularly Indigenous children, are significant. If the fastest growing, youngest population is also a disproportionately unhealthy one, this raises two important issues of concern, beyond the matter of basic social welfare. First, the direct economic burden of socioeconomic health inequalities is already estimated to be \$6.2 billion annually, with Canadians in the lowest income group accounting for 60% of this cost.<sup>57</sup> This would only be expected to increase given the current demographic outlook and health inequalities among the Indigenous population. Second, with future contribution to the Canadian labour force in mind, inequalities among Indigenous peoples represent a lost opportunity cost.

A recent report by the Centre for the Study of Living Standards estimated that by 2031, Canada's gross domestic product (GDP) would be \$36.4 billion greater "if the Indigenous education attainment gap and related gaps for employment rates and income by level of employment were closed".<sup>58</sup> Improving health and socioeconomic conditions of Indigenous peoples should matter to every Canadian citizen and taxpayer, as there will be ramifications if disparities are not addressed.

### **EARLY INTERVENTION: WHAT DOES THE EVIDENCE SAY?**

Leveraging the strong evidence base highlighting how a child's environment can bolster or inhibit healthy ECD, early intervention initiatives have emerged in response to the growing economic and social inequality internationally.<sup>59</sup> As Phillips and Shonkoff articulate this concept, "early intervention may be important, not because doors remain permanently closed without it, but because with it, doors swing open that might otherwise have been inaccessible at that moment in the child's development."<sup>60</sup> It is not only a preventative approach to avoid poor outcomes that are more difficult to rectify later in life, it has also emerged as a remarkably cost-effective strategy as a result of the societal benefits they can produce.<sup>61</sup>

Numerous early intervention programs among socioeconomically disadvantaged populations focus on maternal and child health and early childhood education given their association with healthy development and outcomes across the life course. Studies evaluating the effectiveness have largely been compiled in high-income countries, targeting low-income families—particularly in the United States. Two of the most common approaches to early childhood intervention that aim to improve maternal and child health and ECD outcomes among at-risk populations include home visiting and centre-based early childhood education (or pre-school).<sup>62</sup> There are also examples of interventions that combine the two approaches, such as the Martin Family Initiative's (MFI) Early Years program.

Home visiting is a strategy that has been employed for decades to improve maternal and child health and child development outcomes. Overall, these programs aim to support parents by enhancing knowledge and understanding of child development (as well as actions they can take to promote stimulation and growth), improving parent-child relationships, and connecting them with existing services in the community.<sup>63</sup> The idea is that helping parents, particularly mothers, can translate into benefits for both parent and child. Perhaps the most well-known, rigorously evaluated example to date is the Nurse-Family Partnership (NFP). Randomized control trials evaluating the effects of the NFP began in 1978, and since then have expanded across the United States and globally.

Early childhood education and care is another widely implemented approach to improving developmental outcomes of children; in fact, most OECD countries offer this as a universal program for 3 to 6-year-olds in some capacity.<sup>64</sup> However, ages at which early education begins varies. For example, in the Nordic countries (including Sweden, Denmark, Finland and Norway), parents are entitled to the public provision of early childhood education and care from age 1, with very low parental contribution costs based on income ( $\leq 15\%$ ). Most continental European countries also have relatively low parental contribution fees. In liberal economies, parental costs are much higher (for example, up to 82% in Canada). The authors of this review concluded that "a public supply side investment model, managed by public authorities, brings more uniform quality and superior coverage of childhood populations (1- to 6-year-olds) than parent subsidy models".<sup>65</sup>

Early childhood education aims to counteract early disadvantage by improving cognitive and non-cognitive abilities and closing gaps in school readiness by providing a stimulating environment and learning opportunities, as well as a space for socialization. Ensuring that children are better prepared



when entering school can improve educational achievement—a key factor in social mobility and escaping poverty.<sup>66</sup> As Shonkoff states, “high-quality early childhood programs designed to produce positive effects on educational achievement and later workforce participation offer an important, unrecognized infrastructure for addressing the stress-related roots of social class disparities in health”.<sup>67</sup> While the theoretical foundation underpinning early intervention is widely agreed upon, evaluation of the approaches to early intervention have varied. There is substantial diversity in the design and content of each program depending on available resources and community needs, as well as variation in the methodological rigour of evaluations. In 2005, the RAND Corporation<sup>68</sup> released a comprehensive report consolidating the evidence for 20 different previously evaluated early childhood interventions in the United States and reported that “statistically significant benefits were found in at least 70 percent of the programs that measured an outcome in that domain”. Three programs that are considered exemplary due to their evaluation design and lengthy follow-up period include the

<b>TABLE 3: SUMMARY OF OUTCOMES OF SELECT PROGRAMS WITH A HIGH-QUALITY EVIDENCE BASE.</b>		
<b>Program</b>	<b>Type of intervention</b>	<b>Select Outcomes – intervention vs. control</b>
Nurse-Family Partnership <sup>69</sup>	Home-visiting targeting first time, low-income mothers <sup>70</sup>	<ul style="list-style-type: none"> <li>• Improved prenatal health; reduction in smoking during pregnancy and pregnancy complications</li> <li>• Improved maternal mental health</li> <li>• Reduced child maltreatment incidents and childhood injuries</li> <li>• Fewer youth arrests and youth substance abuse</li> <li>• Reduced welfare use</li> <li>• Increased maternal employment and earnings</li> <li>• Improved cognitive outcomes</li> </ul>
High/Scope Perry Preschool Project <sup>71</sup>	Centre-based and home visit preschool program targeting low-income, African American children <sup>72</sup>	<ul style="list-style-type: none"> <li>• Higher school achievement test scores</li> <li>• Increased high school completion</li> <li>• Increased earnings and employment</li> <li>• Reduced welfare dependency</li> <li>• Fewer arrests and prison sentences</li> <li>• Reduced drug use and teenage pregnancy</li> </ul>
Carolina Abecedarian Project <sup>73</sup>	Centre-based preschool and health program targeting at-risk, disadvantaged children <sup>74</sup>	<ul style="list-style-type: none"> <li>• Higher educational attainment</li> <li>• Lower rates of grade retention and special education placement</li> <li>• Higher rates of college graduation</li> <li>• Higher odds of consistent employment</li> <li>• Less likely to be on public assistance</li> <li>• More likely to postpone parenthood</li> <li>• Lower prevalence of risk factors for cardiovascular and metabolic diseases</li> </ul>

Nurse-Family Partnership, the Perry Preschool Project, and the Carolina Abecedarian Project. The rigorous and consistent evaluation of these programs has enabled researchers to see both the impact of early intervention over the life course and have a more comprehensive estimate of the cost-effectiveness of the programs. Documented outcomes of these programs are listed in Table 3.

The outcomes of these programs demonstrate significant benefits for the individual, families, and society. Advances in the science of human development and early intervention initiatives have resulted in a paradigm shift in not only how we understand the manifestation of disparities, but also how we can ameliorate them.

## WHAT IS CURRENTLY BEING DONE? CANADA'S COMMITMENT TO EARLY CHILDHOOD DEVELOPMENT AMONG INDIGENOUS POPULATIONS

The current government has pledged a commitment to improving outcomes and quality of life among Indigenous populations across Canada since it was sworn in in 2015. Prime Minister Justin Trudeau has stated that “no relationship is more important to Canada than the relationship with Indigenous Peoples”.<sup>75</sup> To attempt to achieve a renewed relationship, structural changes (i.e. the division of Indigenous and Northern Affairs Canada (INAC) into two departments: Indigenous Services Canada and Crown-Indigenous Relations and Northern Affairs Canada) have been accompanied by substantial investments Indigenous affairs, with the government pledging \$8.4 billion dollars' worth of funding in Budget 2016 (\$100 million to support early learning and child care on reserve),<sup>76</sup> \$3.4 billion in Budget 2017,<sup>77</sup> and an additional \$5 billion over 5 years in Budget 2018.<sup>78</sup> A number of target areas were identified in Budget 2018 to achieve their overarching objectives. Some of the most significant investments were made in Indigenous health (\$1.497 billion over 5 years), First Nations child and family services (\$1.449 billion over 5 years), and health supports for survivors of the Indian Residential School System (\$248.6 million over 3 years).<sup>79</sup> The government's recently tabled Budget 2019 represents a continued commitment with \$4.5-billion over 5 years dedicated to Indigenous programs. Notably, \$1.2 billion of this is earmarked to support the implementation of Jordan's Principle, which aims to enhance access to health, education and social services for First Nations children.<sup>80</sup>

In partnership with the Assembly of First Nations, Inuit Tapiriit Kanatami, and Métis National Council, the Government of Canada recently announced a \$1.7 billion-dollar investment over 10 years “to strengthen early learning and child care programs and services for Indigenous children and families starting 2018-19”.<sup>81</sup> This financial commitment is complemented by a newly developed Indigenous Early Learning and Child Care Framework, “with the goal of providing Indigenous children with the best possible start in life”.<sup>82</sup> This framework is a guide for culturally-appropriate early learning and child care in Indigenous communities that is “anchored in self-determination”. Following intensive engagement activities in the development of this framework, several gaps were identified in Indigenous early learning and child care, including a lack of services and funding, concerns about the quality of services currently implemented, as well as a lack of equitable access to these services.<sup>83</sup> This echoes distinguished gaps in funding for First Nations child welfare prevention services, which could play a significant role in supporting healthy ECD among at-risk families if it were adequately resourced for prevention and wrap-around, family-focused services and programming. The current First Nations Child and Family Services (FNCFS) system incentivizes the placement of children in care to unlock funding. [The Institute of Fiscal Studies and Democracy's report](#) on the cost and operating baseline of FNCFS agencies highlights funding gaps and suggests a shift in structure is needed in order to enable children to thrive.

There exist several federally funded and operated programs that promote maternal and child health and early childhood education, development and care. Some examples include: the First Nations and Inuit Child Care Initiative, Aboriginal Head Start On-Reserve (AHSOR), and Aboriginal Head Start in Urban and Northern Communities (AHSUNC). These programs are funded and implemented by several different departments, and as a result, “Aboriginal childcare services differ in quantity, quality,

and accessibility across provincial/territorial jurisdictions,”<sup>84</sup> making it difficult to consistently evaluate their impact.

While the funding allocations reflect the federal government’s priorities, it is equally important to examine how efficiently and effectively the money is spent. Do the current programs actually improve outcomes? Are these programs cost-effective? Answering these questions would be a first step in supporting the delivery of improved outcomes for Indigenous children, with better alignment of inputs to support results.

Aboriginal Head Start (AHS) is perhaps one of the most well-known programs, and has been regarded as a successful, culturally appropriate intervention to support ECD. AHS serves children aged 0-6 but is primarily a centre-based program targeting 3 to 5-year-olds. Communities design their own programs to suit individual culture and needs (for example, some decide to offer a home visiting component as well). With a focus on spiritual, emotional, intellectual and physical growth, programs must support one or more of the following components: education, health promotion, culture and language, nutrition, social support and parental/family involvement.<sup>85</sup> Although the foundation of the program is essentially the same, there are two streams based on whether families live on- or off-reserve: Aboriginal Head Start in Urban and Northern Communities (AHSUNC), funded by the Public Health Agency of Canada, and Aboriginal Head Start On-Reserve (AHSOR), funded by Indigenous Services Canada.<sup>86</sup>

The most recent national-level evaluation of the AHSUNC program reported notable improvements in school readiness and knowledge of Indigenous languages and culture among participating children; enhanced caregiving skills, social support and mental health among parents; and evidence that programs have been able to leverage other services in the community to meet the needs of children and families.<sup>87</sup> However, accessibility remains an important barrier to participation. With a program expenditure of \$174.1 million dollars from 2011-12 to 2015-16 (an average of \$34.8 million dollars per year), the budget “has remained constant since the program’s inception” in 1995.<sup>88</sup> At the time of evaluation, funding had not been responsive to inflation, population growth and evolving needs for over two decades. As the evaluation describes, “sites have seen a reduction of resources available to them due to, for instance, increases in the cost of food, gas, salaries, and number of children in need of special education, as well as continuing difficulties with staff recruitment and retention,” which has “potential of affecting programming quality.”<sup>89</sup>

Although enhancements in ECD have been documented in the AHSUNC program, there is room for improvement when it comes to performance measurement. Current tools used to measure program results do “not provide full coverage of the program’s performance indicators,” nor have they allowed for an empirical understanding of how participation impacts the long-term, ultimate outcome of improving health and well-being.<sup>90</sup> Currently, there is only anecdotal evidence to support this. As the evaluation notes, analyzing this can be difficult given how several factors influence well-being, but if current outcomes among Indigenous people are any indication, one could argue that there is a case for further investigation. Tracking outcomes more comprehensively and over the long-term is important for strategic program development; this would give communities the ability to refine the planning process and make changes if necessary along the way. It would also assist in supplying the evidence to support whether the investment is worth it – especially in light of stagnant funding levels. In this evaluation, “cost, output and outcome data available for this program did not allow for a quantified analysis of the extent to which the resources invested in the program are sufficient and whether they are maximized in terms of outputs and outcomes”.<sup>91</sup>

The AHSOR program was most recently evaluated within a cluster of Healthy Child Development (HCD) programs, which target maternal, infant, child and family health and early childhood development. In addition to AHSOR, this cluster included the Fetal Alcohol Spectrum Disorder (FASD) program, Canada Prenatal Nutrition Program—First Nation and Inuit Component (CPNP—FNIC), the the Maternal and Child Health (MCH) program, and the Children’s Oral Health Initiative (COHI). This group of programs had an expenditure of \$547.5 million from 2008-09 to 2012-13 and faced similar challenges in evaluating the effectiveness and efficiency from a quantitative standpoint.

While extensive information has been gathered qualitatively through prolonged engagement with stakeholders, there is a lack of quantifiable performance data both at baseline and at follow-up over the years. In fact, the evaluation report states that “some FNIHB staff indicated there had been no clear definition of what information was required or no clear method for collecting data”.<sup>92</sup>

A lack of performance data has resulted in an inability to track outcome trends and evaluate the cost-effectiveness of these programs. While the Treasury Board of Canada’s Policy on Results<sup>93</sup> outlines procedures to assess resource utilization to understand effectiveness and efficiency of federal programs, the most recent evaluation of the HCD cluster (in which AHSOR is situated) reported that “the financial information provided for the program did not facilitate the assessment of whether program outputs were produced efficiently, or whether expected outcomes were produced economically”.<sup>94</sup>

To address this, the evaluation included a literature review on the efficiency of prevention activities more broadly, drawing from examples that have already been evaluated such as the Perry Preschool Project. Thus, Canada lacks not only a comprehensive picture of the impact of early intervention programs on developmental outcomes among Indigenous children, but also information on the degree to which the programs currently run are done so efficiently. The gap in performance data only reifies the more general data gap that exists to understanding Indigenous well-being in Canada.

### **FILLING THE GAPS: WHAT CAN CANADA DO DIFFERENTLY?**

It is clear that intervening early matters in order to create the opportunity for a better life trajectory. However, it is difficult to comprehensively understand what is effective and what is not without the right evaluation plans and tools in place. The Indigenous population in Canada exhibits characteristics and outcomes similar to those faced by disadvantaged populations who have seen success from quality early intervention initiatives.

As the fastest growing population in Canada, with more children than adults proportionally in these communities, it makes social and economic sense for Canada to invest effectively in this group.

The federal government has legal obligations to provide health, education, and social welfare services to First Nations peoples living on-reserve; therefore, the bulk of existing federal programming targets this population. Programs that seek to improve outcomes in ECD and maternal and child health for First Nations families currently exist, such as AHSUNC and AHSOR.

Other initiatives designed to improve outcomes among Indigenous populations exist. Two such programs are the Martin Family Initiative’s (MFI) Early Years Program in Canada, and the Family Spirit Program from Johns Hopkins Center for American Indian Health in the United States.<sup>95</sup>

The Early Years Program employs a dual intervention approach of targeting parents through home visitation and children through early learning. The goal is to intervene early and ameliorate the impact of transgenerational trauma on the developmental trajectories of First Nations children. As the program develops, it is designed to leverage existing community and federal and provincial government resources to support and nurture First Nations families from gestation to school entry. The program’s evaluation framework is designed to capture results by comparing a child’s development to the baseline of their entry into the program. The qualitative and quantitative information will enable Early Years to adapt its approach (should it be necessary) to meet the needs of participants and communities. In collaboration with Maskwacis Health Services and the Ermineskin Cree Nation, this program is being piloted in Maskwacis, a First Nation in Alberta, providing an opportunity to survey the program’s incremental progress and to assess its replicability.<sup>96</sup>

The Family Spirit Program is a home-visiting intervention for American-Indian teenage mothers living in reservation communities in the United States, “designed to promote family-based protective factors and reduce behavioural health disparities among American Indian teen parents and their children”.<sup>97</sup> A culture-centred approach is employed to educate parents on healthy development and lifestyle for themselves and their children. The contents of the program include a focus on the reduction of behaviours such as harsh parenting and abuse that are associated with behavioural problems in children, as well as maternal mental health and behaviour that are incongruent with positive parenting.<sup>97</sup> Recruitment for this program took place between 2006 and 2008, and thus has been able to publish data on its outcomes (see Table 4).

<b>TABLE 4: OUTCOMES OF AMERICAN-INDIAN TEEN MOTHERS AND CHILDREN WHO PARTICIPATED IN THE FAMILY SPIRIT PROGRAM: 3-YEAR FOLLOW-UP<sup>99</sup></b>	
<b>Maternal Outcomes (Pregnancy to 36 months postpartum)</b>	
Parental competence	Maternal emotional and behavioural outcomes
<ul style="list-style-type: none"> <li>• Greater parenting knowledge</li> <li>• Greater parental locus of control</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer depressive symptoms</li> <li>• Fewer externalizing problems</li> <li>• Lower past month use of marijuana</li> <li>• Lower past month use of illegal drugs</li> </ul>
<b>Children’s emotional and behavioural outcomes (ages 0-3)</b>	
<ul style="list-style-type: none"> <li>• Fewer externalizing problems</li> <li>• Fewer internalizing problems</li> <li>• Fewer dysregulation problems</li> </ul>	

This study measured maternal outcomes in two domains (parental competence, and maternal emotional and behavioural outcomes) using self-report surveys and observational techniques. Behavioural and emotional outcomes among children were measured using a parental report survey. These outcomes are linked to healthy ECD, particularly in regard to behavioural problems among children.<sup>100</sup> Mothers in the intervention group exhibited significantly greater parenting knowledge, which had the largest effect size among all outcomes. They also reported a greater parental locus of control, which included factors such as parental efficacy and both parent and child control, as well as fewer depressive symptoms. In the domain of maternal emotional and behavioural outcomes, the greatest effect sizes were observed in outcomes related to substance abuse, with lower past month of marijuana use and illegal drug use. Additionally, mothers displayed fewer externalizing problems, which included issues such as opposition, defiance, rule breaking and social problems. Among children, improved outcomes were observed in externalizing (such as impulsivity, defiance, and aggression), and internalizing behaviours (such as anxiety, distress, and withdrawal).

The Early Years and Family Spirit programs share similarities with other tried and tested approaches to early intervention. For example, both contain home visitation approaches that mimic qualities of the Nurse-Family Partnership, aiming to help parents help their children. Walkup and colleagues<sup>101</sup> argue that a home-visiting approach, especially by paraprofessionals in the community, is relevant in the American-Indian context. American-Indians have traditionally been a difficult to reach population and home-visiting by nature reduces access barriers and enhances program retention.<sup>102</sup> Furthermore, visitation by paraprofessionals enhances access to culturally-appropriate care and offers an alternative to contexts that traditionally experience a shortage of trained healthcare professionals.<sup>103</sup> American-Indians may also be good candidates for home visiting interventions as they exhibit several risk factors similar to those among other disadvantaged populations who have responded well to this approach.<sup>104</sup> These justifications can very likely to be extended to Indigenous populations in Canada.

However, there are a few key ways in which they differ and are adapted to the Indigenous context. One fundamental difference is a rigorous, experimental approach to evaluation, which has not been thoroughly undertaken. This provides a unique opportunity to establish Canada's first longitudinal dataset tracking early intervention outcomes in the Indigenous context – an initiative which is long overdue. As discussed, this is essential to responding to participant needs, improving program effectiveness, and thus outcomes. Like the AHS programs, the MFI's Early Years Program also focuses on leveraging existing community programs implemented by the federal government, which are often delivered in a piecemeal fashion. This is an opportunity to maximize the use of existing resources, which is a win-win for the government and Indigenous communities. Both programs emphasize the importance of engaging and empowering the community by employing community-based participatory research models, something that is particularly important for Indigenous populations. Research suggests that community ownership over all aspects of programming is crucial to the success of maternal and child health programs among Indigenous communities, which includes ownership over defining the needs of the community, designing culture-based and holistic programs to address these needs, and participation in program implementation, and evaluation.<sup>105</sup> A systematic review by Smylie<sup>106</sup> and colleagues found that community ownership over Indigenous health promotion programs was associated with the success of several outcomes, such as birth outcomes, uptake and access to antenatal care services, pre-natal substance abuse, breast-feeding, childhood nutrition and developmental outcomes, and exposure to Indigenous culture.

## SUGGESTIONS FOR MOVING FORWARD

In summary, as the federal government moves forward with their commitment to Indigenous peoples, there are some key points to consider when attempting to improve outcomes for First Nations children:

- 1) Disparities exist in Indigenous communities, and there is strong evidence in the science of early childhood development and early intervention on how to improve the situation. It won't be an instant transformation, and it won't be a perfect one, but studies suggest that it can and does work.
- 2) Canada has an opportunity to build on the foundations of the programs it already has established in health and education for Indigenous peoples. By leveraging the complementary approaches of programs such as the Early Years program, the current government has an opportunity to work with communities to foster sustainable change.
- 3) Regardless of the angle from which it is viewed, investing early in Indigenous people has long-term fiscal and economic benefits in addition to social gains, leading to better results for Canadians.

**OVERVIEW OF THE MFI'S EARLY YEARS PROGRAM AND JOHNS HOPKINS UNIVERSITY'S FAMILY SPIRIT HOME VISITING PROGRAM**

Program	The Early Years (Martin Family Initiative) <sup>107</sup>	Family Spirit Home Visiting Program (Johns Hopkins University) <sup>108</sup>
Goals of Program (long term outcomes)	<ul style="list-style-type: none"> <li>(1) Reduce vulnerability on Early Development Instrument (EDI)</li> <li>(2) Increase early literacy, language, and executive function</li> <li>(3) Decrease maternal stress</li> <li>(4) Reduce apprehensions, or in cases of placement, increase use of kinship care</li> <li>(5) Increase children's positive cultural identity</li> </ul>	<ul style="list-style-type: none"> <li>(1) Improved parental competence</li> <li>(2) Improved children's social, emotional, and behavioural outcomes</li> <li>(3) Improved maternal social, emotional and behavioural outcomes</li> </ul>
Intervention (target group, timing, frequency, staff)	<ul style="list-style-type: none"> <li>• Two-phase, combined home visiting and centre-based early childhood education approach delivered from gestation to approximately age 4</li> <li>• Targeting newly pregnant First Nations mothers living on-reserve</li> </ul> <p>Phase one (currently being piloted):</p> <ul style="list-style-type: none"> <li>• One-on-one home visits delivered from second trimester of pregnancy to age two (longer if needed)</li> <li>• Frequency of visits range from 1.5 hours bi-weekly to 2.5 hours weekly</li> <li>• Delivered by trained paraprofessionals from the community</li> </ul> <p>Phase two:</p> <ul style="list-style-type: none"> <li>• Creation of universal Child Development Centre that either combines or strengthens existing early learning opportunities depending on community needs</li> </ul>	<ul style="list-style-type: none"> <li>• One-on-one home visiting approach delivered from pregnancy to age three</li> <li>• Targeting expectant American Indian teens (age 12-19 years) at ≤28 weeks' gestation</li> <li>• Approximately 45 visits, 1-hour duration</li> <li>• Delivered by female, Native, trained paraprofessionals from the community</li> </ul>
Program Activities	<p>Phase one:</p> <ul style="list-style-type: none"> <li>• Home visitors provide education on mental health/coping with stress, healthy behaviours during pregnancy, newborn care, infant/child nutrition, parenting, and family planning; assist in goal-setting to reduce substance dependency and gain education and employment; promote strategies to incorporate community language and culture at home; encourage uptake and refer to antenatal care and other health and human services</li> <li>• Complemented by pre and post-natal, centre-based programming and talking circles</li> </ul> <p>Phase two:</p> <ul style="list-style-type: none"> <li>• Curriculum-based, pedagogical program</li> <li>• Centre will offer meals and interaction with responsive adults, parents, and Elders</li> <li>• Free childcare for infants to attend from 3-months</li> </ul>	<ul style="list-style-type: none"> <li>• Lessons focus on parenting skills, maternal drug abuse prevention, and life skills and positive psychosocial development</li> <li>• Use table-top flip charts</li> <li>• Each lesson includes rapport building, review of previous lesson and past referrals, teaching of lesson material, question/answer period, distribution of summary handout</li> </ul>

(table continued)

Program	The Early Years (Martin Family Initiative)	Family Spirit Home Visiting Program (Johns Hopkins University)
Evaluation design	<ul style="list-style-type: none"><li>• Community-based participatory, mixed, methods, quasi-experimental study design</li><li>• Intervention group compared to older cohort of children and will be assessed at kindergarten entry</li><li>• Pilot currently underway in Maskwacis, Alberta (First Nation reserve)</li><li>• Intention to recruit 50 women</li><li>• Data collected at baseline and varying points depending on the measure, including some after each visit, at three-months and one year post-natal, every 6 months, annually, after each referral, or after particular program activity</li><li>• Ongoing evaluation (process and summative) allows program to adapt to community needs</li></ul>	<ul style="list-style-type: none"><li>• Community-based participatory, randomized control study design</li><li>• Control group receives Optimized Standard Care (transportation to antenatal care and well-baby visits, pamphlets about child care and resources, referrals to local services)</li><li>• Study sites include four reservation communities in southwestern US (rural and isolated)</li><li>• 322 participants recruited, 240 retained</li><li>• Follow-up at 36 weeks' gestation and 2, 6, 12, 18, 24, 30 and 36 months postpartum</li></ul>



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