
Executive Summary on the Health Benefits of Investing in Early Childhood

On behalf of the Developmental Origins of Chronic Diseases in Children Network
of Manitoba (DEVOTION)

www.devotionnetwork.com

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Why Should Governments Care about Early Childhood? There is overwhelming evidence that many of the chronic diseases that plague Manitobans, like heart disease and diabetes, have their roots in early life. For example, children exposed to type 2 diabetes in their mother's womb are 14 times more likely to develop type 2 diabetes themselves before adulthood¹. Early childhood is a defining period in the mental and social development of individuals. Improving conditions for physical, nutritional and social health during the early years of life has been proven to decrease the incidence of non-communicable chronic diseases (NCCDs), encourage healthy lifestyle in adults and reduce the financial burden on our healthcare system. More importantly, interventions delivered early in life seem to confer lifelong protection from these conditions and promote long-term societal economic gains. For instance, breastfeeding cuts the risk of type 2 diabetes in women and their children by 25%² and intensive child care increases gains in lifetime education, social and income outcomes (see Fig. 2). Accordingly, expert health panels like the World Health Organization³ and The World Bank⁴ created conceptual frameworks for early childhood development (ECD) to enhance public health and economic potential with a focus on health, nutrition, and early learning. Particularly:

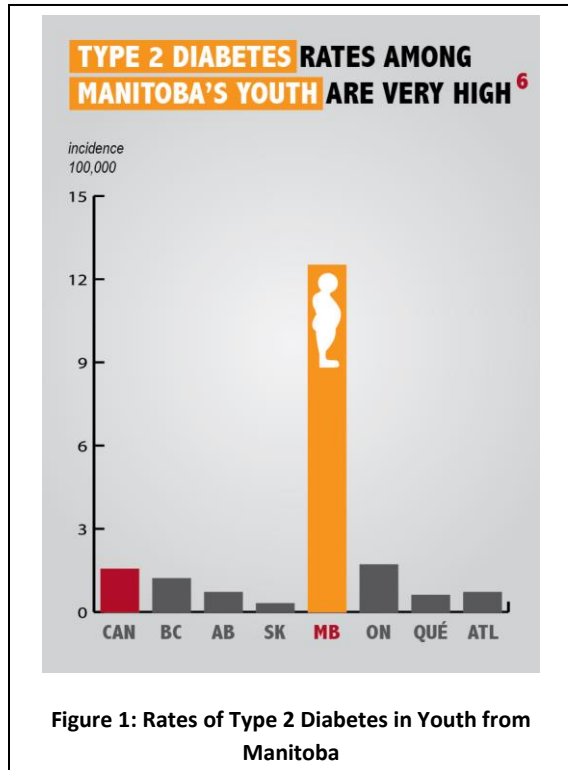
- Breastfeeding promotion
- Prenatal care
- Formal early learning.

*The World Bank, WHO and Nobel Laureate in Economics, James Heckman, reported in 2016 that there is **strong** economic justification for investing in early childhood, especially in children younger than 3 years⁵. A focus should be placed on:*

- Health (e.g. disease prevention)
- Nutrition (e.g. breastfeeding)
- Security and safety (e.g. reduce adversities such as neglect or violence)
- Responsive care giving (e.g. responsive parenting)
- Early childhood education (e.g. access to quality child care)

Enabling Nurturing Care in Youth is Integral for Reaching Developmental Potential in Adulthood:



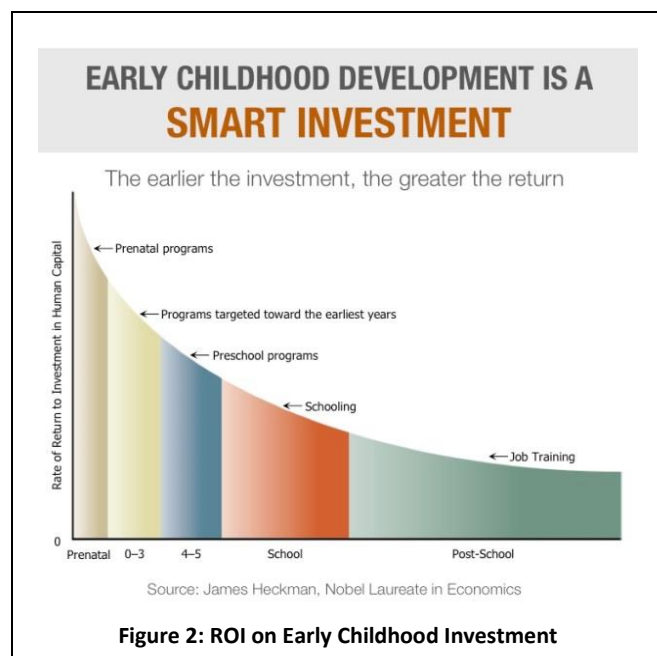


Why Invest in Manitoba-made Solutions?

Manitoba youth are disproportionately affected by some chronic diseases (Figure 1). A national surveillance study found that Canadian Indigenous children (<18) had the highest incidence of type 2 diabetes, with a majority of cases found in Manitoba. In comparison to other parts of Canada, Manitoba had a 20-fold higher incident rate of type 2 diabetes⁶. Physicians, scientists and stakeholders launched a research group in 2012 to address these trends, securing over \$22 million to launch patient-centred prevention, treatment and discovery programs to reduce the burden of type 2 diabetes⁷. The DEVOTION Network has recently expanded these efforts to address high rates of asthma and allergy among Manitoba's children.

Investing in Early Life is Smart: To improve health care sustainability in Manitoba, quality early childhood development programs should be used to prevent adult chronic disease. One of the first pivotal studies to demonstrate this association and highlight the fact that early interventions can lead to a healthy childhood and disease-free adulthood is the *Abecedarian Project*⁸. This program illustrated that children in their first five years of life who were given nutritional and social support were more likely to be economically stable, healthier and thus less of a burden on the healthcare system.

Economist and Nobel Laureate James Heckman illustrates that investments during the early years yield considerably higher results than equivalent investments made during the primary or secondary school years or beyond (Figure 2)⁹. Similarly, TD Economics has reported that the benefits society reaps from



giving children high-quality education in their first years of life far outweigh the costs. With every dollar that governments spend, the economic return to society down the line ranges between \$1.50 and \$3.00¹⁰.

With a key focus to reduce the burden and costs associated with NCCDs, DEVOTION is an interdisciplinary team of clinicians, patients, scientists, and provincial policy makers whose focus is to transform the maternal-child landscape in Manitoba. The DEVOTION Network works collaboratively with the Healthy Child Office of Manitoba to develop this science and address the expert calls to action for early life public health strategies (Appendix A).

Scientists within DEVOTION are international experts that evaluate state of the art scientific programs/interventions, addressing the key priority areas identified by international expert committees:

- *Breastfeeding promotion*: \$5M CHILD Study of 1000 mother-child pairs¹¹
- *Prenatal Care*: \$2M PIIPC and PIIPC North projects¹²
- *Formal early interventions*: \$2M PAX and Lord Selkirk Abecedarian Projects¹³

Partnering with Indigenous Communities is Vital: Recognizing that these solutions cannot be found in isolation, this work is done in collaboration with Indigenous partners to identify cultural ways of healing and encourage health and wellness within communities that are disproportionately affected by chronic disease in youth. This includes supporting the desire and need to bring birthing practices back to First Nations communities, together with the recent formation of an Indigenous doula initiative within Manitoba.

“We are not just talking about bringing birthing back to our First Nation communities, we are bringing back a way of life, going back to our ways of healing. Our grandmothers must be at the centre of bringing wellness back to our communities.” – Leona Star, DEVOTION Indigenous Program Director

In December 2016, a Grandmothers gathering was held in Sagkeeng First Nation to guide the doula initiative. The outcomes from this gathering prioritized the need to:

- Create further opportunities for women and families to participate in ceremonies, sharing creation stories on inherent rights and responsibilities of women
- Create a communication model to support actions (i.e. knowledge translation, language resources)
- Identify communities (nationally and internationally) that have successfully brought birthing back to their communities
- Apply for funding for community engagement on Elder gatherings, with a focus on maternal child health to include birthing

The DEVOTION Network has created a pipeline for taking discoveries in early childhood research and directing findings into practice/policy for the benefit of Manitoban's. We are extremely well positioned to implement, support and impact projects that will bring evidence-based solutions for disease prevention and to improve long-term sustainability within Manitoba's healthcare system. Quality early childhood development programs have the ability to reduce the incidence of adult NCCDs, and have been proven to yield a high return on investment. Additionally, these programs should be an integral part of preventative healthcare spending which also includes social and nutritional support.

In the past 18 months the DEVOTION Network has leveraged funding 5:1, securing \$7.5M in federal funding to support research designed to reduce the burden of chronic disease in youth. We are currently on pace to create Canada's largest transdisciplinary network of scientists, stakeholders and Indigenous community members dedicated to early life solutions to ensure Manitoba youth reach their full social and health potential. In closing, the DEVOTION Network is uniquely poised to address international calls for integrating state of the art science into public policy for health promotion through early life interventions.

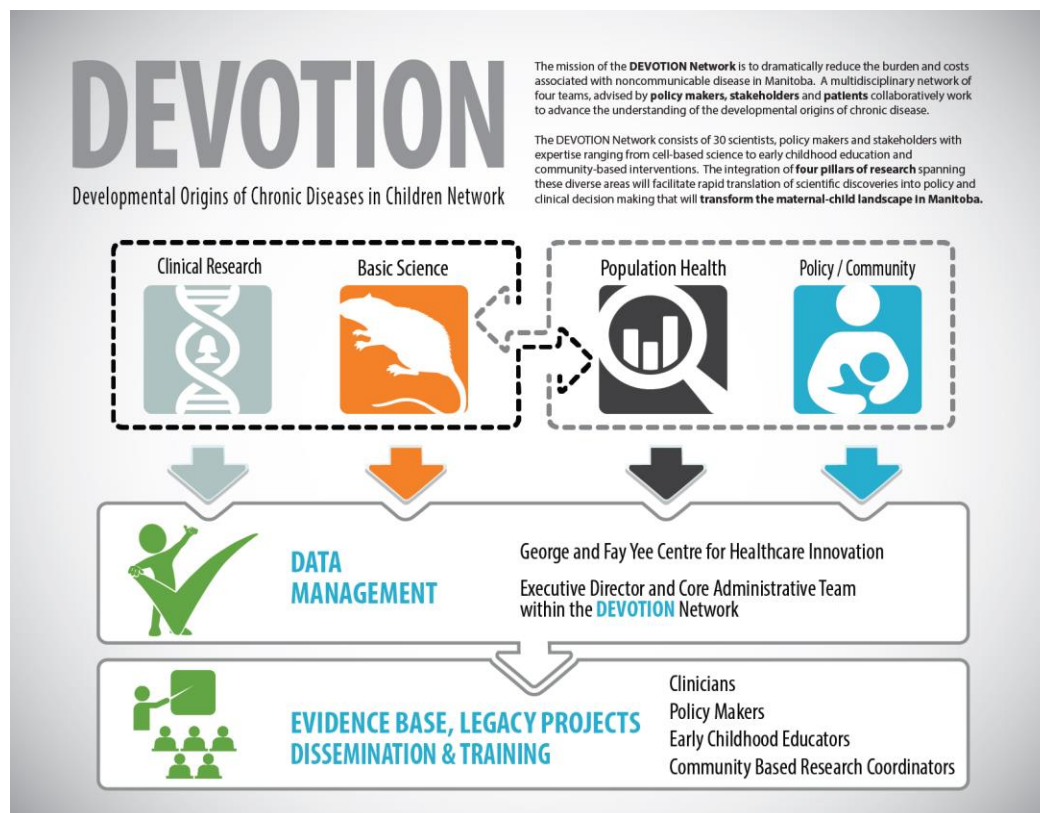


Figure 3: DEVOTION Network Framework

INVEST IN

EARLY CHILDHOOD DEVELOPMENT

TO REDUCE RATES OF ADULT NON-COMMUNICABLE DISEASE (NCCDs)

– the leading cause of death, disability & healthcare expenditures worldwide.*

Our **DEVOTION** team targets early life solutions to address the leading NCCDs that impact the lives of Manitoba's children:

OBESITY

CONGENITAL DIAPHRAGMATIC HERNIA

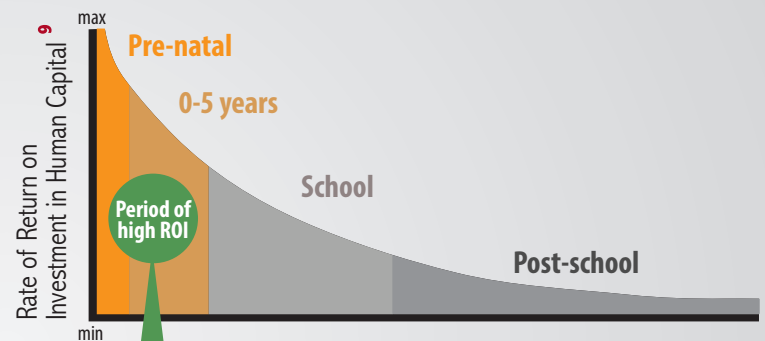
DIABETES-RELATED CARDIAC & RENAL DISEASE

TYPE 2 DIABETES

ASTHMA & ALLERGY

ISSUE IN-DEPTH: In Manitoba, indigenous children have a 20-fold higher incident rate of type-2 diabetes than the Canadian average.⁶ Type-2 diabetes is associated with obesity and increased risk of cardiac & renal disease.

TO IMPROVE HEALTHCARE SUSTAINABILITY & ROI



Children given nutritional & social support in this period are more likely to be more economically stable, have better health in their 30s, and have a lower burden on the healthcare system overall.⁸

STEPS TOWARD A NURTURING ENVIRONMENT⁵

HEALTH	Disease prevention
NUTRITION	Breastfeeding
SECURITY & SAFETY	Reduce adversities (neglect, violence)
RESPONSIVE CARE GIVING	Responsive parenting
EARLY CHILDHOOD EDUCATION	Access to quality child care

References: Please refer to DEVOTION's January 2017 Executive Summary on the Health Benefits of Investing in Early Childhood^{5,6,8,9,*}

The **Developmental Origins of Chronic Conditions in Children Network (DEVOTION)** is an interdisciplinary team of clinicians, patients, scientists, and provincial policy makers focussed on reducing the burden of chronic disease in Manitoba, particularly among children at highest risk. Working with indigenous partners, we aim to identify and support projects that incorporate evidence-based solutions for disease prevention & improve long-term sustainability within our healthcare system.

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