PREVENTIVE HEALTH CARE FOR CHILDREN

BENEFITS, COSTS AND PREVENTION STRATEGIES

THE SOCIAL AND FINANCIAL RETURNS OF CHILDREN'S PREVENTIVE HEALTH INTERVENTIONS

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Canada has one of the best health care systems in the world, but it is under pressure from an increasing prevalence of health care problems, particularly — in recent years — among Canadian children. When health problems go unaddressed they can have lifelong consequences, making it even more important to advocate for preventive health resources targeted toward children.

This article outlines how the social determinants of health disproportionately impact children living in poverty, and suggests steps to be taken to address and reduce the disparity in accessing health care. It then identifies and explores three key areas of concern for children's health:

1 **INADEQUATE PRENATAL CARE FOR FAMILIES LIVING IN POVERTY**

2 **THE NEED TO ENHANCE THE 18-MONTH WELL-BABY VISIT**

3 **ADDRESSING THE MENTAL HEALTH NEEDS OF CANADIAN CHILDREN**

Specific actions to address these health care issues are outlined and the economic and social impact of these measures are examined.

Background

Imagine a society where all of the adults who interact with children — parents, families, policy makers, teachers, doctors, nurses, child care workers, and neighbours — actively and collectively engage in preventing childhood health problems before they develop into illnesses (and the hardship and burdens that result).

Visualize a Canada where a broad continuum of prevention activities extends well beyond the provision of services to individual children and families; a continuum that includes public education efforts to change social norms and behaviour, community activities that engage parents, and public policies and institutions that support families. This type of broad-based, communitywide strategy is what we should strive for, in order to promote the health and well-being of populations as a whole.

Canada has one of the best health care systems in the world,[1] but it is under pressure from an increasing prevalence of health care problems,[2] particularly — in recent years — among Canadian children.[3] When health problems go unaddressed they can have lifelong consequences, making it even more important to advocate for preventive health resources targeted toward children.

Early investment in child health and development, as economists have argued, is an important driver of a country's economic growth.[4,5] In as much as government's attention may be focused on 'justifiable' spending to pave the way for economic growth, dollars spent on today's children offer the best possible return on public investment toward ensuring a strong economy and a healthy nation, in part because healthy children grow up to be healthy, well-functioning adults.[6] Through well-conceived policy and adoption of proven preventive strategies, we can all promote the health of children for the benefit of the child, the family, the community and society.

Governments are key players in this cause, as their legislative powers can help to safeguard many key aspects of child health and wellbeing, and create a public environment that nurtures growth and development.[7] Canada, though among the world's richest countries, lags far behind most wealthy western nations in terms of child-related policies:[8,9] multiple international assessments by both the Organization for Economic Co-operation and Development (OECD) and the United Nations Children's Fund (UNICEF) found Canada to be one of the weakest jurisdictions for family policy and policies and programs promoting early child development.[10,11] Despite the public focus on mental health, poverty, and child development in Canada and their costs to the individual and to society, the growing prevalence of these same problems among Canadian children has been largely overlooked, as recent reports have highlighted.[12,13]

We can significantly reduce chronic disease across all age groups by promoting healthy lifestyles and improving the environments in which children live and work. However, individually-focused programs are useful, but their benefits are often only short-term.[14] To achieve sustained reductions in the growth of preventable chronic diseases, and to create lasting improvements in the health and wellbeing of people and communities, we need a prevention system that is coordinated, responsive, sustainable, and complementary to our

health care system. It must implement multi-faceted approaches to improve children's nutrition, educate parents, mobilize physicians and other health care providers, involve schools and community organizations, and work with all community stakeholders.

Disparities in children's health and accessibility to care

Canadians are among the healthiest people in the world,[15] but some individuals and groups of Canadians are not as healthy as others. Health Canada identified the social determinants of health as:

- **INCOME AND SOCIAL STATUS**
- **SOCIAL SUPPORT NETWORKS**
- **EDUCATION AND LITERACY**
- **EMPLOYMENT OR WORKING CONDITIONS**
- **SOCIAL ENVIRONMENTS**
- **PHYSICAL ENVIRONMENTS**
- **PERSONAL HEALTH PRACTICES AND COPING SKILLS**
- **HEALTHY CHILD DEVELOPMENT**
- **BIOLOGY AND GENETIC ENDOWMENT**

- **HEALTH SERVICES**
- **GENDER**
- **CULTURE**[16]

These determinants of health do not exist in isolation from each other, but rather function in an intricate web.[17] Educational achievement is often related to a person's type of employment and job satisfaction, income, and housing; overcrowded housing often results in the conditions that lead to increased transmission of infection and illness, which often requires time off work to recover; which leads to decreased income, which may force people to live in overcrowded housing.

Strategies to reduce health disparities and increase the health and well-being of Canadian children must address broader socio-economic issues that lie at the root of these disparities. This requires an action plan with wide involvement from government, professional medical and health care organizations and providers, academic medical centers, and community-based and minority advocacy organizations.

Canada cannot narrow the health gap without also addressing disparities in educational opportunity, employment, economic security, and housing. Investments in public policies and programs to enhance economic and social accessibility for children and their families will achieve substantial taxpayer savings to the publicly funded health, social and corrections systems while at the same time improving the quality of people's lives.[18]

Poor children in wealthy Canada

The Canadian House of Commons, in 1989, committed to ending child poverty by the year 2000. There was some initial success: the child poverty rate fell from 15.8% in the mid-1980s to 12.8% in the mid-1990s. Since then, however, the rate has increased to 15.1% in the late 2000s and today stands at 13.7%[19] — backtracking from earlier progress.

Shamefully, Canada is one of the few wealthy developed countries with higher poverty rates, and has the dubious distinction of being one of the very few wealthy nations where the gap between rich and poor has widened over the past two decades.[20]

According to a recent comparative study of 17 of the world's wealthiest countries, Canada has the third highest child poverty rate. Countries like Denmark, Finland, Norway, and Sweden, have the lowest rates,[21] with less than 7% of children living in poor households[22] — compared to Canada's 13.7%.[22] Canada's child poverty rate is over four percentage points higher than the 17-country average.[24] In Canada, more than one in seven children lives in poverty.[25] The rates of child poverty are higher among single

parent households (59.2%), Aboriginal households (43.4%) and households of visible minorities (35.9%).

Having children grow up poor in a wealthy country like Canada is very expensive. Because health and well-being is linked to financial resources,[26,27,28] improving access to health care services for all Canadians is a smart, effective and efficient way to reduce the costs we all incur because our neighbours do not have enough resources.

Children from low-income families are the most vulnerable when it comes to poor health: they experience more physical, behavioural and mental health problems;[29] they are more likely to be overweight and obese;[30] they do less well at school, and are more likely to drop out; they experience less labour market success than people from more affluent family backgrounds;[31,32] and they are more likely to live in poverty as adults.[33] Children who live in poverty have been shown to have higher incidence of mortality, oral health disease, mental health conditions, and long term illnesses.[34]

Despite this vulnerability, low-income children have fewer physician visits (37), less continuous care, less timely preventive care, lower levels of primary health care service utilization, and more unaddressed needs regarding preventive child health services and anticipatory guidance than their more affluent counterparts.[35]

LEVEL OF SPECTRUM	DEFINITION OF LEVEL
INFLUENCING POLICY AND LEGISLATION	Developing strategies to change laws and policies to influence outcomes
CHANGING ORGANIZATIONAL PRACTICES	Adopting regulations and shaping norms to improve health and safety
FOSTERING COALITIONS AND NETWORKS	Bringing together groups and individuals for broader goals and greater impact
EDUCATING PROVIDERS	Informing provider who will transmit skills and knowledge to others
PROMOTING COMMUNITY EDUCATION	Reaching groups of people with information and resources to promote health and safety
STRENGTHENING INDIVIDUAL KNOWLEDGE AND SKILLS	Enhancing an individual's capability of preventing injury or illness and promoting safety

Source: Larry Cohen, Rachel Davis, and Leslie Mikkelsen, "Comprehensive Prevention: Improving Health Outcomes through Practice," *Minority Health Today* Vol. 1 (March/April 2000): 38-41.

1. Prenatal Care

Improving the well-being of mothers and infants is an important public health goal for Canada.[36,37,38] It determines the health of the next generation and can help predict future public health challenges for families, communities, and our health care system.

The majority of newborns in Canada are usually healthy because most women receive some prenatal care (25), our standard of living is generally high,[39] and births are attended by skilled, competent physicians and midwives.[40]

When considering the number of women who die as a result of pregnancy and childbirth or the number of women who develop complications as the result of childbirth, women in Canada fare better today than in previous generations. They also, comparatively, fare better than women in most other countries[41] — although recent figures indicate maternal mortality rates in Canada are actually increasing.[42]

It is important to note, however, that for all Canadian women this is not always the case, reflecting differences in access to care and other conditions that result in healthy pregnancies. For example, many Indigenous women,[43] women from low-income backgrounds, immigrant women, as well as women living in some regions of Canada,[44] are at higher risk of complications.

Difficulty in accessing prenatal care services in the U.S., recent research reveals, is associated with late initiation of prenatal care and fewer medical consultations.[45,46] Similar research regarding unequal access and quality of prenatal care has been carried out in Canada. Social and demographic factors are significant. A study by the Public Health Agency of Canada[47] found that younger mothers (aged 15–19 years), women with less than a high school education and women living in a household at or below the low income cut-off were more likely to experience late prenatal care visits, as well as fewer medical check-ups during pregnancy. There was also considerable prenatal care variation among the Canadian provinces and territories in the proportion of women who were found not to access prenatal care as early as they wanted. The proportions ranged from 26.4% in the Northwest Territories, 18.6% in Manitoba, 7.0% in Nova Scotia and 4.7% in Newfoundland and Labrador, and 9.2% in Nunavut. The two most common reasons for not getting prenatal care as early as wanted were: "doctor/health care provider unavailable" (53.0%) and "doctor/health care provider would not start care earlier" (30.2%).

Prenatal care has important implications for maternal health and ongoing health care for infants and families,[48] and its effectiveness is dependent on women receiving care early in pregnancy,[49] starting in the first trimester, and continuing at regular intervals throughout pregnancy.[50] The Society of Obstetricians and Gynaecologists of Canada recommends a standard prenatal visits with a heath care provider every four to six weeks in early pregnancy, every two to three weeks after 30 weeks' gestation, and every one to two weeks after 36 weeks' gestation. The effectiveness of this standard for Canadian women, however, has not been established. A reduction in the number of prenatal care visits, as well as its timing, has been recommended by expert panel in both the U.S. and the UK.[51]

Women who receive prenatal care are more likely to have access to screening and diagnostic tests that can help to identify problems

early; services to manage developing and existing problems; and education, counselling, and referral to reduce risky behaviours like substance use and poor nutrition. Early initiation of (ongoing) prenatal care allows for timely diagnosis and treatment of numerous health problems. These health benefits are enhanced among socially disadvantaged, high risk-populations that usually experience difficulty in obtaining adequate prenatal care.

Prenatal care helps with early identification and intervention of some common maternal health problems including: anemia, mental health conditions, high blood pressure (hypertension), diet, obesity, diabetes, as well as other infections which may affect the health of the mother and child.[52] Pregnancy symptoms and complications can range from mild and annoying discomforts to severe, sometimes life-threatening, illnesses.

Prenatal care involves three major components:

- **Risk assessment**
- **Treatment for medical conditions or risk reduction**
- **Education**

By identifying and mitigating potential risks and helping women to address behavioural factors, such as tobacco and alcohol use, prenatal care is effective in detecting, treating and preventing conditions that can result in poor maternal or infant health outcomes.[53,54]

Prevention

Provinces have taken a variety of steps to improve women's access to prenatal care services. Yet there is still the need to expand programs to ensure that all pregnant women benefit from early and adequate prenatal care. This requires a multi-faceted approach including both policy and practice.

2. Enhanced 18-month well-baby visit

The first 18 months of a child's life has a measurable effect on their ongoing health and well-being.[55] In Canada, as in many other countries,[56] the enhanced 18-month well-baby visit allows health care professionals to engage in a broader discussion with parents on topics that include their child's development.

The visit is an opportunity to monitor growth and development for early identification of potential health risks, and for referral to appropriate community resources for necessary early intervention and treatment.[57] Not only can this visit identify developmental concerns such as speech delay and autism, it also comes at a time when families face issues such as child care (especially centre-based care, which typically starts at this age), behaviour management, nutrition/eating, sleep and vision and hearing screening, all of which can affect development.[58] The enhanced 18-month baby visit, apart from illness-related visits, is often the final regularly scheduled visit where children (and their families) see their primary care provider until the child is four years of age or starts school. During this gap, it is important that families know when to consult their primary care provider, and how to connect with supportive community resources.

Recent nationwide research reveals that about two-thirds of the developmental vulnerabilities (language/cognitive, physical or social-emotional) experienced by school-aged Canadian children are preventable,[59] and can be addressed with effective implementation and utilization of the 18-month well-baby visit.[60]

Barriers to access

However, a recent statement by the Canadian Paediatric Society found Ontario was the only province to meet all the recommended guidelines for enhanced 18-month baby visits;[61] furthermore, there is significant variation in how, where, and in what context the well-baby visits, including immunizations, are carried out across the other provinces.

Within provinces, take-up of the 18-month well-baby visit by parents and families varies widely across Canadian neighbourhoods, depending on socioeconomic, cultural, family and local governance factors. Children from low-income families, new immigrant children, and children whose parents/families display a lack of awareness of child development are two to three times more likely to face barriers that make it difficult to benefit from the enhanced 18-month visit.[62] Yet, children from these population groups are at greater risk of preventable health care problems such as obesity, poor nutrition, maltreatment, accidental poisoning and injury.

The 18-month well-baby visits not only improve children's quality of life, but also reduce long-term costs to the Canadian health care system. As evolving neuroscience reveals, failure to review, monitor and address developmental problems in the first 18 months of child's life has significant social and economic costs. Not only can it negatively affects school performance, it can reduce overall well-being and, ultimately, decrease employment opportunities later in life. If left unchecked at the early years, especially in the first

18 months of life, it's estimated that developmental vulnerability could reduce Canada's economic growth by as much as 15% to 20% by 2060. The Canadian Pediatric Society reports that each 10% of unchecked children vulnerability will reduce Canada's gross domestic product by 10% over the working lifetime of these children.[63]

3. Mental health need for children

The World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being — not merely the absence of disease or infirmity.[64] Good mental health is associated with better physical health outcomes, improved educational attainment, increased economic participation, and rich social relationships.[65]

Unfortunately, one million Canadian children and youth live with a mental health problem or illness today,[66] and of the more than 6.7 million people in Canada presently living with a mental illness, up to 70% of these illnesses began in childhood.[67] However, only one in five Canadian children who experience clinically significant mental

health problems have been offered interventions[68] — about 80% go undiagnosed and do not receive ready access to appropriate treatment.

Children's mental health challenges are usually context-dependent, directly influenced by their immediate surroundings including: the wellbeing of the adults in their immediate environment, income security, affordable housing, the quality of life in their communities, access to supports and services, difficulties adjusting to life events, and their experience of loneliness and/or isolation.[69] In order to prevent the social, physical, biological and economic impact of mental health problems, all provinces and territories in Canada require a comprehensive strategy that recognizes the inter-relations of the social determinants of health. Addressing the social determinants of health will lead to a holistic intervention of children's health care issues.

Research demonstrated the effectiveness of early intervention in preventing a range of mental illness, such as conduct disorder, autism, mood disorders, and psychosis. Early diagnosis and intervention particularly benefit those affected by mental illnesses such as depression and dementia, as well as those who care for them.[70] Improved availability of early intervention services for children and young people could prevent up to 50% of adult mental illnesses in our society.[71]

FACTS ABOUT MENTAL ILLNESS IN CANADA

Did you know?

More than 6.7 million people in Canada are living with a mental health problem today.[72]

80% of Canadians will be directly affected by a mental illness in family members, friends or colleagues.[73]

70% of mental health problems and illnesses have their onset during childhood.[74]

1 in 5 Canadian children live with a mental illness.[75]

Only 1 in 5 children who need mental health services receives help.[76]

3.2 million Canadian children and young people are at risk of developing depression.[77]

Early prevention interventions for children could avert up to 50% of all mental illnesses.[78]

The economic cost of mental illnesses in Canada is estimated to be in excess of $50 billion a year. [79,80]

Mental illnesses can be effectively prevented or treated.[81,82]

Cost savings through prevention

No other health condition comes close to mental illness when we compare the combined effect of prevalence, persistence and extent of impact.[83]

Mental illness has not only a human and social cost, but also an economic one[84,85] — in Canada, well in excess of $50 billion in any given year.[86,87] Mental health problems and illnesses have the highest direct health care cost in Canada and it is the third contributor to the total annual economic burden in Canada, out of the top seven major health conditions.[88] A recent statement by the Mental Health Commission of Canada[89] reported the average medical cost per capita per year for people diagnosed with mental illness to be $2,515, compared to $643 for those without a mental illness. With more than four out of 10 (or 43%) Canadians experiencing mental health illnesses and related problems in their lifetime, the cumulative costs for providing them with treatment, care and support services will exceed $2.3 trillion over the next 30 years[90] if effective prevention strategies are not implemented.

Where children are concerned, the social and economic cost of mental illness includes poor educational achievement, a greater risk of suicide and substance misuse, antisocial behaviour, and early pregnancy.[91] Several studies have established that if poor mental health is not prevented or treated in childhood, it will likely lead to a broad range of poor health outcomes in adulthood, including higher rates of adult mental illness, lower levels of employment, low earnings, marital problems and criminal activity.[92,93,94,95] It's estimated that improved availability of early intervention services for children could have saved up to 50% of the cost related to adult mental illness.[96]

Investing in steps and programs targeting prevention and early detection of mental health problems for children would, at minimal

expense, improve their quality of life but also reduce long-term costs to the Canadian health care system. Reducing incidence by an average of 10% — a target that is very achievable with effective preventive measures — our country can expect an annual reduction of $1.7 billion in total economic costs from the impact of mental illnesses after 10 years; and the cost reduction will increase to $4.7 billion by 2041.[97]

There is evidence that promotion, prevention and early intervention targeted at children's mental illness can produce significant net cost benefits.[98] In the U.K., a lifetime estimated savings of £230,000 (about $365,000) has been made from preventing conduct disorder in one child through early intervention.[99]

Other analysis suggests that effective preventive interventions have the potential to avert 26% of cases of conduct disorder, and that it would only take 1.6% of cases to be diverted for the prevention program to pay for itself.[100] Further, improving the mental health of one child from moderate to high can result in a lifetime savings of $140,000.[101] With this in mind, if Canada commits, through intensified investments, to preventing conduct disorders in just 10% of the 85,000 children afflicted with them,[102] it could potentially mean realizing as much as $3.1 billion in lifetime savings.

Actions on child mental health

Since the majority of lifelong mental illnesses develop before adulthood, prevention targeted at children and youth can generate greater personal, social and economic benefits than intervention at any other time in the life course. Consequently, prevention and promotion interventions should include some key targets.

A. Interventions to prevent maternal depression

Effective interventions to improve maternal mental health, including early identification and effective treatment, also improve the mental health of the whole family.[103] Maternal depression, for example, is considered a risk factor for the socio-emotional and cognitive development of children. Women of childbearing age are particularly at risk for depression, and the consequences on the child can extend from infancy into toddlerhood, preschool and even school-age. Maternal depression could influences the development of the school-age child and the adolescent.[104]

To help identify and prevent maternal depression, health professionals should intensify parenting programs (including home visiting programmes, peer support and telephone peer support for mothers and pregnant women at high risk of mental illness) which will help to reduce rates of post-natal mental illness for mothers (and the resulting impact on children). Health visitor training to improve detection also reduces levels of post-natal depression.[105]

B. Prevention of childhood stress

Stress is an inevitable part of human life, but it is a major risk factor for mental health disorders. Symptoms of mental illnesses have been strongly linked to the negative effects of stress,[106,107] and children are particularly vulnerable.[108] Stress can worsen an episode of mental illness and, according to the Canadian Mental Health Association,[109] people with severe stressful experiences are three times more likely to suffer a major depressive episode in their lifetime.

All children experiences stress, even before they are born[110] — and, arguably, a certain level of stress helps children develop the skills needed to cope with and adapt to new and potentially threatening situations throughout their lives. However, all children benefit from

learning how to deal with stress and, as parents and caregivers, our support is necessary for children to learn how to respond to stress in a positive, healthy manner.

Stress becomes negative when it is severe enough to overwhelm the effective coping capacity of a child. Severe and prolonged stress in children can lead to a variety of short- and long-term health problems; in fact, up to 90% of illnesses developed by children are related to stress.[111] Severe stress can disrupt early brain development[112] and compromise functioning of the nervous and immune systems.[113] It can lead to health problems later in life including alcoholism, depression, eating disorders, heart disease, cancer, and other chronic diseases.[114]

Programs that help prevent stress in children will result in a reduction in the risk of related mental health problems. Many mental health problems in children can be identified, properly diagnosed and effectively treated within communities through enhanced primary care services working in collaboration with families and trained community agencies. Research on effective prevention interventions[115,116] has found that community treatment options can increase access to mental health care for children and their families, decrease stigma associated with stand-alone mental health services facilities, and reduce pressures on secondary and tertiary mental health services.

WHAT PARENTS SHOULD KNOW ABOUT THE CAUSES OF STRESS IN CHILDREN[117]

Change — moving to a different home or school, starting school for the first time

Having too much to do. Kids need some quiet time.

Feeling different from other kids or being teased or bullied

Fighting or arguing among family members, not getting along well with siblings

Having trouble with schoolwork

Being yelled at by family, friends or teachers

Family break-up

Most of all, when they feel lonely and unloved

C. Pre-school and school-based interventions

School becomes a key part of children's environments in early years, with children spending an average of six to seven hours per day in school. Therefore, teachers and peers have significant opportunities to witness and assess children's social, physical and mental wellbeing, potentially making schools an active and positive resource in addressing the mental health care needs of children.

Parents, daycare providers, teachers, and other adults who interact frequently with children must have sufficient knowledge and skills to identify and care for children who have been exposed to stressful experiences. They must also be familiar with support services to meet the needs of children whose problems cannot be adequately addressed by front-line staff.

Pre-school and early education programs (including parent training and child social skill training) are very effective in enhancing cognitive and social skills, school readiness, improved academic achievement and positive effect on family outcomes including for siblings, as well as prevention of emotional and conduct disorder in children,[118] and anxiety and depression before adulthood. A three-year systematic review of pre-school and early education programs in England, on home visiting by health care workers to check on the functioning of children, parenting support and training to provide support to children and identify problems early on, showed that such programs result in better social behaviour and, ultimately, greater independence and self-regulation in children. Outcomes for families include more supportive parenting, enhanced home learning environments, and a better understanding of the child and family support services available to assist parents where necessary.[119]

School-based interventions should include violence and bullying prevention, social and emotional learning programmes, and increased efforts to prevent child mental health problems and sexual abuse.[120] Implementation of effective school-based violence prevention programmes will lead to reductions in aggressive behaviour, conduct problems and attention span problems, as well as improvements in social skills and social relationships, school performance, school attendance, and attitudes towards violence and bullying.[121] At a community level, strategies should include increased social cohesion and safer community spaces for children, as well as

community education programs (for parents and other adults as well) on how to support and improve the health of all children through stress reduction.

D. Enhancing social cohesion

Creating healthy communities that nurture children and support their families goes beyond identifying and minimizing stress (including its causes and effects). Social networks are important in promoting community and individual well-being, support and resilience, thereby helping to minimize or prevent mental illness through fostering a sense of belonging.[122,123,124,125] Communities with higher levels of social capital (including group and peer support programs for families, neighbourhood improvement, and access to safe green community spaces when kids can meet and play) have lower rates of crime, better health, higher educational attainment and better economic growth. Social health is associated with reduced mental health problems in children,[126] reduced mortality, including mortality from cancer, reduced coronary artery disease and reduced cognitive decline.[127]

Conclusion

Canada's investment in children's preventive health care will more than pay for itself, not just in terms of individuals' suffering avoided and quality of life gained,[128] but also through a reduced need for public health care services and an increased opportunity for a larger proportion of the future population to be more fully engaged — civically, socially and economically.[129]

However, this should not, and does not need to, be achieved by diverting funds currently allocated for the care and support of children and their families. The prevention of health care problems in children is a complementary endeavour, and should not compete for funding and other resources.

The continuing disproportionate burden of illness remains a major obstacle to improving the health of Canadians. The cost of leaving children's health care problems unchecked and unsupported at the community or individual level has significant negative ramifications (social, emotional, and economic). The cost of expensive and avoidable complications resulting from the aggregated lack of preventive care, missed diagnoses, poorly managed care, and untreated conditions

translates into billions in lost health care dollars and diminished productivity, in addition to further entrenching the inequality that is already far too prevalent in our society.

Investing in preventive health care interventions, such as prenatal care, newborn screening at 18-month baby visits, and mental health care in childhood, not only saves lives and improves health, but also saves money. It is estimated that for every $1 spent on preventive health care for children, $16 is saved in the medical cost of treating illnesses that could, otherwise, have been avoided.[130] Prevention is, thus, not only cost-effective, but also part of a systematic and multidimensional approach to addressing and eliminating health disparities for Canadian children — and, ultimately, improving the quality of life for all Canadians, regardless of their socio-economic status.

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ENDNOTES

1 Mikkonen, J. & Raphael, D. (2010). Social Determinants of Health: The Canadian Facts. Toronto: York University School of Health Policy Management.
2 Raphael, D. (2009). Social Determinants of Health by Dennis Raphael, 2nd Edition. Canadian Scholar's Press.
3 Janus, M. and Offord, DR. (2010). The economic costs of early vulnerability in Canada. Can J Public Health. 101(3):S8-S12.
4 Children's Safety Network, Pacific Institute for Research and Evaluation. (2010). *Injury Prevention: What Works? A Summary of Cost-Outcome Analysis for Injury Prevention Programs (2010 update)*. Newton, MA: Education Development Centre.
5 Smartrisk (2009). The Economic Burden of Injury in Canada. Accessed April 18, 2013. Available: www.smartrisk.ca/downloads/burden/Canada2009/EBI-Eng-Final.pdf
6 Murray, CJ. & Lopez, AD. (1997) Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease. Lancet: 349(9064):1498-504.
7 Canadian Paediatric Society. (2012). *Are we doing enough? A status report on Canadian public policy and child and youth health*. Ottawa, ON: Canadian Paediatric Society.
8 ibid.
9 Anderson, A. (2012). From Rose-Coloured Glasses to Reality: addressing the family policy deficit in Canada. Healthcare quarterly vol. Special issue July 2012
10 ibid.
11 Janus, M. and Offord, DR. (2010). The economic costs of early vulnerability in Canada. *Can J Public Health*. 101(3):S8-S12.
12 The Conference Board of Canada. How Canada Performs: child poverty. http://www.conferenceboard.ca/hcp/details/society/child-poverty.aspx Accessed May 23 2013.
13 UNICEF Office of Research (2013). 'Child Well-being in Rich Countries: A comparative overview', *Innocenti Report Card 11*, UNICEF Office of Research, Florence.
14 Guyer, B., M, S., Grason, H., Frick, K., Perry, D., Sharkey, A. and McIntosh, J. (2009). Early Childhood Health Promotion and Its Life Course Health Consequences. Academic Pediatrics 2009;9:142–9.
15 Mikkonen, J. & Raphael, D. (2010). Social Determinants of Health: The Canadian Facts. Toronto: York University School of Health Policy Management.
16 Raphael, D. (2009). Social Determinants of Health by Dennis Raphael, 2nd Edition. Canadian Scholar's Press.
17 WHO (2008). Commission on the Social Determinants of Health, *Closing the Gap in a Generation*. Geneva: WHO.
18 U.S. Department of Health and Human Services, *Healthy People 2010*, 2nd ed. (Washington, DC: U.S. Government Printing Office, November 2000).
19 Statistics Canada. Persons in low income before tax (2006 to 2010). http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil41a-eng.htm Accessed May 23 2013.
20 Canadian Paediatric Society. (2012). *Are we doing enough? A status report on*

Canadian public policy and child and youth health. Ottawa, ON: Canadian Paediatric Society.
21 UNICEF Office of Research (2013). 'Child Well-being in Rich Countries: A comparative overview', *Innocenti Report Card 11*, UNICEF Office of Research, Florence.
22 ibid.
23 Statistics Canada. Persons in low income before tax (2006 to 2010). http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil41a-eng.htm Accessed May 23 2013.
24 The Conference Board of Canada. How Canada Performs: child poverty. http://www.conferenceboard.ca/hcp/details/society/child-poverty.aspx Accessed May 2013.
25 ibid.
26 Kathryn M. et al (2004). Narrowing the Income Gaps in Preventive Care for Young Children: Families in Healthy Steps. Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 81, No. 4.
27 Children's Defense Fund (2006). Improving Children's Health: understanding children's health disparities and promising approaches to address them. Washington D.C
28 Totten, M. (2007) The Health, Social and Economic Benefits of Increasing Access to Recreation for Low-Income Families. Research Summary Report. Ministry of Health Promotion, Ontario.
29 National Collaborating Centre for Aboriginal Health (2011). Social Determinants of Health: Access to health services as a social determinant of first nations, inuit and metis health. Prince George, BC.
30 Totten, M. (2007) The Health, Social and Economic Benefits of Increasing Access to Recreation for Low-Income Families. Research Summary Report. Ministry of Health Promotion, Ontario.
31 Mikkonen, J. & Raphael, D. (2010). Social Determinants of Health: The Canadian Facts. Toronto: York University School of Health Policy Management.
32 Raphael, D. (2009). Social Determinants of Health by Dennis Raphael, 2nd Edition. Canadian Scholar's Press.
33 Kathryn M. et al (2004). Narrowing the Income Gaps in Preventive Care for Young Children: Families in Healthy Steps. Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 81, No. 4
34 Lucas, P. J., McIntosh, K., Petticrew, M., Roberts, H., & Shiell, A. (2008). Financial benefits for child health and well-being in low income or socially disadvantaged families in developed world countries. *Cochrane Database of Systematic Reviews*, (2), 006358.
35 Kathryn M. et al (2004). Narrowing the Income Gaps in Preventive Care for Young Children: Families in Healthy Steps. Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 81, No. 4.
36 Ontario Ministry of Children and Youth Services. Your child's enhanced 18-month well-baby visit. http://www.children.gov.on.ca/htdocs/English/topics/earlychildhood/health/your_enhanced_18-month.aspx. Accessed May 1, 2013.

37 Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.
38 Mental Health Commission of Canada (MHCC) (2009). Toward Recovery and Well-Being: A Framework for a Mental Health Strategy for Canada. Mental Health Commission of Canada, National Library of Canada.
39 Canadian Institute for Health Information (2006). Giving Birth in Canada: the costs. Ottawa, ON.
40 Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.
41 Women and Health Care Reform (2007). Maternity Matters. Why should we be concerned about the state of maternity care? Winnipeg, Canada.
42 Public Health Agency of Canada (2011). Maternal Mortality in Canada. Accessed: 04 July 2013. http://www.phac-aspc.gc.ca/rhs-ssg/maternal-maternelle/mortality-mortalite/index-eng.php.
43 National Collaborating Centre for Aboriginal Health (2011). Social Determinants of Health: Access to health services as a social determinant of first nations, inuit and metis health. Prince George, BC.
44 Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.
45 Kathryn M. et al (2004). Narrowing the Income Gaps in Preventive Care for Young Children: Families in Healthy Steps. Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 81, No. 4.
46 Bassani, D., Surkan, P. & and Olinto, M. (2009). Inadequate use of prenatal services among Brazilian women: The Role of Maternal Characteristics. International Perspectives on Sexual and Reproductive Health. 35(1).
47 Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.
48 Alexander GR, Kotelchuck M. (2001). Assessing the role and effectiveness of prenatal care: history, challenges, and directions for future research. *Public Health Rep.*116(4):306-16.
49 Disease Control Priorities Project (2008). Controlling Birth Defects: Reducing the Hidden Toll of Dying and Disabled Children in Low-Income Countries. http://www.dcp2.org/file/230/dcpp-twpcongenitaldefects_web.pdf. Read 29/04/2013.
50 Alexander GR, Kotelchuck M. (2001). Assessing the role and effectiveness of prenatal care: history, challenges, and directions for future research. *Public Health Rep.*116(4):306–16.
51 Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.
52 A project of the U.S Department of Health and Human Health Services Office on Women's Health. http://www.womenshealth.gov/pregnancy/you-are-pregnant/pregnancy-complications.cfm Accessed May 18 2013.
53 WHO (2006). March of Dimes Meeting on the Management of Birth Defects and Haemoglobin Disorders. Geneva: WHO.

54 Carroli G, Rooney C, Villar J. (2001). How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. Paediatr Perinat Epidemiol. 15 Suppl 1:S1–42.
55 Canadian Paediatric Society (2011). Getting it right at 18 months: In support of an enhanced well-baby visit. Canadian Paediatric Society – Early Years Task Force. Paediatr Child Health 2011;16(10):647-50.
56 ibid.
57 Ontario Ministry of Children and Youth Services. Your child's enhanced 18-month well-baby visit. http://www.children.gov.on.ca/htdocs/English/topics/earlychildhood/health/your_enhanced_18-month.aspx. Accessed May 1, 2013.
58 Canadian Paediatric Society (2011). Getting it right at 18 months: In support of an enhanced well-baby visit. Canadian Paediatric Society – Early Years Task Force. Paediatr Child Health 2011;16(10):647-50.
59 Hertzman, C. (2010). Social geography of developmental health in the early years. Health CQ.14:32-40.
60 Canadian Paediatric Society (2011). Getting it right at 18 months: In support of an enhanced well-baby visit. Canadian Paediatric Society – Early Years Task Force. Paediatr Child Health 2011;16(10):647-50.
61 ibid.
62 Canadian Paediatric Society. (2012). *Are we doing enough? A status report on Canadian public policy and child and youth health*. Ottawa, ON: Canadian Paediatric Society.
63 Canadian Paediatric Society (2011). Getting it right at 18 months: In support of an enhanced well-baby visit. Canadian Paediatric Society – Early Years Task Force. Paediatr Child Health 2011;16(10):647-50.
64 World Health Organization Commission on the social determinants of health. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. doi: December 11 2012.
65 Mental Health Commission of Canada (MHCC) (2009). Toward Recovery and Well-Being: A Framework for a Mental Health Strategy for Canada. Mental Health Commission of Canada, National Library of Canada.
66 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
67 ibid.
68 Canadian Mental Health Association. *Mental health for all*. Fast Facts about Mental Illness. http://www.cmha.ca/media/fast-facts-about-mental-illness/#.UZPkY7W-moM. Accessed May 18/2013.
69 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
70 Parry-Langdon N, Clements A, Fletcher D (2008) *Three Years On: Survey of the Development and Emotional Well-Being of Children and Young People.* Office for National Statistics. http://www.ons.gov.uk/ons/index.html. Accessed May 23 2013.

71 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
72 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
73 Ontario Shores. Centre for Mental Health Sciences. Mental Health Facts. http://www.ontarioshores.ca/about_mental_illness/mental_health_facts/. Accessed May 18 2013.
74 Mental Health Commission of Canada. The Facts. http://strategy.mentalhealthcommission.ca/the-facts. Accessed May 09 2013.
75 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
76 Canadian Mental Health Association. *Mental health for all*. Fast Facts about Mental Illness. http://www.cmha.ca/media/fast-facts-about-mental-illness/#.UZPkY7W-moM. Accessed May 18/2013.
77 ibid.
78 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
79 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
80 Ontario Shores. Centre for Mental Health Sciences. Mental Health Facts. http://www.ontarioshores.ca/about_mental_illness/mental_health_facts/. Accessed May 18 2013.
81 The Sandbox Project White Paper (2012). Action Through Collaboration: strategic action to improve the wellbeing of Canadian children and youth.
82 Mental Health Commission of Canada. The Facts. http://strategy.mentalhealthcommission.ca/the-facts. Accessed May 09 2013.
83 Friedli, L. and Parsonage, M. (2007) Mental Health Promotion: *Building the Economic Case*. Belfast: Northern Ireland Association for Mental Health.
84 Children's Defense Fund (2006). Improving Children's Health: understanding children's health disparities and promising approaches to address them. Washington D.C.
85 Friedli, L. and Parsonage, M. (2007) Mental Health Promotion: Building the Economic Case. Belfast: Northern Ireland Association for Mental Health.
86 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.

87 Mental Health Commission of Canada. The Facts. http://strategy.mentalhealthcommission.ca/the-facts. Accessed May 09 2013.
88 Public Health Agency of Canada. (2009). Investing in prevention – The economic perspective: Key findings from a survey of the recent evidence. www.phac-aspc.gc.ca/ph-sp/pdf/preveco-eng.pdf. Accessed May17 2013.
89 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
90 Smetanin, P., Stiff, D., Briante, C., Adair, C.E., Ahmad, S. & Khan, M. (2011). The life and economic impact of major mental illnesses in Canada: 2011 to 2041. Risk Analytics on behalf of the Mental Health Commission of Canada.
91 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
92 Mikkonen, J. & Raphael, D. (2010). Social Determinants of Health: The Canadian Facts. Toronto: York University School of Health Policy Management.
93 Raphael, D. (2009). Social Determinants of Health by Dennis Raphael, 2nd Edition. Canadian Scholar's Press.
94 National Collaborating Centre for Aboriginal Health (2011). Social Determinants of Health: Access to health services as a social determinant of first nations, inuit and metis health. Prince George, BC.
95 Canadian Institute for Health Information (2006). Giving Birth in Canada: the costs. Ottawa, ON.
96 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
97 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
98 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
99 Friedli, L. and Parsonage, M. (2007) Mental Health Promotion: Building the Economic Case. Belfast: Northern Ireland Association for Mental Health.
100 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.
101 Smith, J.P., & Smith, G.C. (2010). Long-term economic costs of psychological problems during childhood. Social Science & Medicine, 71 (1), 110–115.
102 Mental Health Commission of Canada. Why Investing in Mental Health will contribute to Canada's Economic Prosperity and to the Sustainability of our Health Care System - Backgrounder - Key Facts. http://www.mentalhealthcommission.ca/node/742. Accessed May 16 2013.

103 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
104 Canadian Paediatric Society (2004). Maternal depression and child development. Canadian Paediatric Society Mental Health and Developmental Disabilities Committee Paediatr Child Health 2004;9(8):575-83.
105 Dennis C, Hodnett E, Reisman HM, *et al* (2009) Effect of peer support on prevention of postnatal depression among high risk women: multisite randomised controlled trial. *BMJ*, 338, a3064.
106 Chassin, L., Ritter, J., Trim R. S., & King, K. M. (2003). Adolescent substance use disorders. In E. J. Mash & R. A. Barkley (Eds.), Child psychopathology (2nd ed., pp. 199 – 230). New York: Guilford Press.
107 Schmeelk-Cone, K. H., & Zimmerman, M. A. (2003). A longitudinal analysis of stress in African American youth: Predictors and outcomes of stress trajectories. Journal of Youth and Adolescence, 32, 419-430.
108 Suldo, S. et al (2008). Relationship among stress, coping and mental health in high-achieving high school students. Psychology in the Schools, 45(4). Wiley Periodicals, Inc. Publications.
109 Canadian Mental Health Association. Mental Illness in the Workplace. Accessed: 21 June 2013. http://www.cmha.ca/mental_health/mental-illness-in-the-workplace/#.Uce22Zy0Qq4.
110 Middlebrooks JS, Audage NC. (2008) The Effects of Childhood Stress on Health Across the Lifespan. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
111 Canadian Mental Health Association. Mental Health for All Fact Sheet. Kids Have Stress Too! (KHST!) can help. http://letstalk.bell.ca/pdf/fact-sheets/cmha/kids-have-stress-too.pdf Accessed May 22 2013.
112 Hertzman, C. (2010). Social geography of developmental health in the early years. Health CQ.14:32-40.
113 The Sandbox Project White Paper (2012). Action Through Collaboration: strategic action to improve the wellbeing of Canadian children and youth.
114 Middlebrooks JS, Audage NC. (2008) The Effects of Childhood Stress on Health Across the Lifespan. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
115 The Sandbox Project White Paper (2012). Action Through Collaboration: strategic action to improve the wellbeing of Canadian children and youth.
116 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
117 Canadian Mental Health Association. Mental Health for All Fact Sheet. Kids Have Stress Too! (KHST!) can help. http://letstalk.bell.ca/pdf/fact-sheets/cmha/kids-have-stress-too.pdf Accessed May 22 2013.
118 Anderson LM, Shinn C, Fullilove MT, et al (2003) The effectiveness of early childhood development programs: A systematic review. *American Journal of Preventive Medicine*, 24, 32-46.

119 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
120 Ttofi MM, Farrington DP, Baldry AC (2008) Effectiveness of Programmes to Reduce School Bullying. Swedish National Council for Crime Prevention.
121 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
122 Mikkonen, J. & Raphael, D. (2010). Social Determinants of Health: The Canadian Facts. Toronto: York University School of Health Policy Management.
123 Raphael, D. (2009). Social Determinants of Health by Dennis Raphael, 2nd Edition. Canadian Scholar's Press.
124 National Collaborating Centre for Aboriginal Health (2011). Social Determinants of Health: Access to health services as a social determinant of first nations, inuit and metis health. Prince George, BC .
125 The Sandbox Project White Paper (2012). Action Through Collaboration: strategic action to improve the wellbeing of Canadian children and youth.
126 Parry-Langdon N, Clements A, Fletcher D (2008) *Three Years On: Survey of the Development and Emotional Well-Being of Children and Young People*. Office for National Statistics. http://www.ons.gov.uk/ons/index.html. Accessed May 23 2013.
127 Royal College of Psychiatrists (2010). No Health Without Public Mental Health: the case for action. Position Statement PS4/2010. London, UK.
128 ibid.
129 Armstrong, P. & Armstrong, H. (2010). Wasting Away: The Undermining of Canadian Health Care 2E - Wynford Project Edition (Toronto: Oxford University Press).
130 Children's Defense Fund (2006). Improving Children's Health: understanding children's health disparities and promising approaches to address them. Washington D.C.