



EARLY CHILDHOOD DEVELOPMENT

CMA Position Statement

EXECUTIVE SUMMARY

Adult health is pre-determined in many ways in early childhood and even by events occurring before birth. The years between conception and the start of school are the time when crucial developments in physical, social, cognitive, emotional and language domains take place. Disruptions during this period can lead to weakened physiological responses, influence brain architecture, and influence how the neuroendocrine, cardiovascular and other systems are developed.^{1,2} Experiences in early life can even ‘get under the skin’, changing the ways that certain genes are expressed.^{3,4}

Negative experiences such as poverty or family or parental violence can have significant impacts on this important period of development. Even for those children who don’t encounter these types of barriers, there can be problems in the early years. Evidence suggests that adult diseases should be viewed as developmental disorders that begin in early life.⁵

Just as children are susceptible to negative influences in early life, the period of rapid development means that effective

interventions can minimize or eliminate these outcomes. Intervening in the early years has been shown to have the potential to impact developmental trajectories and protect children from risk factors that are present in their daily environments.⁶

At the government and national level there are four main areas of action: Early childhood learning and care; Support for parents; Poverty reduction; and Data collection for early childhood development.

The CMA Recommends that:

1. The federal government, in collaboration with the provinces and territories, implement a national early learning and care program that ensures all children have equal access to high quality child care and early learning.
2. The federal government commit to increasing funding for early childhood development to 1% of GDP to bring Canada in line with other OECD countries.

3. Programs such as early childhood home visiting be made available to all vulnerable families in Canada.
4. Governments support the expansion of community resources for parents which provide parenting programs and family supports.
5. A national strategy to decrease family violence and the maltreatment of children, including appropriate community resources, be developed and implemented in all provinces and territories.
6. The federal government work with provinces and territories to adopt a national strategy to eradicate child poverty in Canada with clear accountability and measurable targets.
7. Provinces and territories implement comprehensive poverty reduction strategies with clear accountability and measurable targets.
8. The federal government work with the provinces and territories to create a robust and unified reporting system on early childhood to ensure that proper monitoring of trends and interventions can take place.
9. The federal government work with the provinces and territories to continue to implement the early development index in all jurisdictions. In addition, work should be supported on similar tools for 18 months and middle childhood.

10. The federal government support the development of a pan-Canadian platform that can share evidence and best practice, and focus research questions around the early years.

While most of what is necessary for early childhood development will be done by governments and stakeholders outside of the health care system, there are opportunities for physicians to influence this important social determinant both through medical education, and clinical practice.

The CMA Recommends that:

11. Curriculum on early brain, biological development and early learning be incorporated into all Canadian medical schools.
12. Continuing CME on early brain, biological development and early learning be available to all primary-care providers who are responsible for the health care of children.
13. All provinces and territories implement an enhanced 18 month well-baby visit with appropriate compensation and community supports.
14. Physicians and other primary care providers integrate the enhanced 18 month visit into their regular clinical practice.
15. Comprehensive resources be developed for primary-care providers to identify community supports and

services to facilitate referral for parents and children.

16. Efforts be made to ensure timely access to resources and programs for children who have identified developmental needs.
17. Physicians serve as advocates on issues related to early childhood development. They should use their knowledge, expertise and influence to speak out on the need and importance of healthy development in the early years.
18. Physicians continue to include literacy promotion in routine clinical encounters with children of all ages.
19. National Medical Associations work with governments and the non-profit sector to explore the development of a clinically based child literacy program for Canada.

Background

Adult health is pre-determined in many ways in early childhood and even by events occurring before birth. The years between conception and the start of school are the time when crucial developments in physical, social, cognitive, emotional and language domains take place. The early childhood period is the most important development period in life.⁷

Disruptions during this period can lead to weakened physiological responses, influence brain architecture, and influence how the neuroendocrine, cardiovascular and other systems are developed.^{8,9} Experiences in early life can even ‘get under the skin’, changing

the ways that certain genes are expressed.^{10,11}

According to research done by the Centers for Disease Control and Prevention in the adverse childhood event (ACE)^a study, child maltreatment, neglect, and exposure to violence can significantly impact childhood development. The study involved a retrospective look at the early childhood experiences of 17,000 US adults and the impact of these events on later life and behaviour issues. An increased number of ACEs was linked to increases in risky behaviour in childhood and adolescence¹² and to a number of adult health conditions including alcoholism, drug abuse, depression, diabetes, hypertension, stroke, obesity, heart disease, and some forms of cancer.^{13,14} The greater the number of adverse experiences in childhood the greater the likelihood of health problems in adulthood.¹⁵ A high level of ACEs was linked to language, cognitive and emotional impairment; factors which impact on school success and adult functioning.¹⁶ Finally, the study found a correlation between experiencing ACEs, suicide, and being the victim of or perpetrating intimate partner violence.¹⁷

Poverty is a significant barrier to healthy child development. Children who grow up in poor families or disadvantaged communities are especially susceptible to the physiological and biological changes associated with disease risk.¹⁸ Poverty is associated with a number of risk factors for healthy development

^a The adverse childhood events are: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, mother treated violently, household substance abuse, household mental illness, parental separation or divorce, incarcerated household member.

<http://www.cdc.gov/ace/prevalence.htm#ACED>

including: unsupportive parenting, inadequate nutrition and education, high levels of traumatic and stressful events¹⁹, including higher rates of traumatic injuries²⁰, poorer housing, lack of services, and limited access to physical activity.²¹ Children from low-income families score lower than children from high-income families on various measures of school readiness, cognitive development and school achievement^{22,23}, and this gap increases over time with children of low-income families being less likely to attend post-secondary education and gain meaningful employment.²⁴ Children who grow up in poverty are more likely to be poor as adults^{25,26} and to pass this disadvantage on to their own children.^{27,28} Children living in poverty have more problem behaviours such as drug abuse, early pregnancy, and increased criminal behaviour.²⁹ Finally, economic hardship in childhood has been linked to premature mortality and chronic disease in adulthood.³⁰

Early adverse events and poverty are serious impediments to healthy development, however, it is not just disadvantaged children that need attention. The early years are critical for all children regardless of socio-economic status. Evidence suggests that adult diseases should be viewed as developmental disorders that begin in early life.³¹ By 2030, 90% of morbidity in high income countries will be related to chronic diseases.³² These diseases are due in large part to risk factors such as smoking, poor nutrition, alcohol and drug abuse, and inadequate physical activity.³³ These risk factors can be heavily influenced by the environment in which people live and can be increased by poor early childhood experiences.^{34,35} Health promotion and disease/injury prevention programs targeted at adults would be more effective if investments

were made early in life on the origins of those diseases and conditions.^{36,37}

Areas for Action

While there is reason for concern regarding early childhood development, there is positive news as well. Just as children are susceptible to negative influences in early life, the period of rapid development also means that effective interventions can minimize or eliminate these outcomes. Intervening in the early years has been shown to have the potential to impact developmental trajectories and protect children from risk factors that are present in their daily environments.³⁸

Government and National:

Early Childhood Learning and Care

Research suggests that 90% of a child's brain capacity is developed by age five, before many children have any access to formal education.³⁹ More than one quarter of Canadian children start kindergarten vulnerable in at least one area of development.⁴⁰ Approximately two thirds of these deficiencies can be considered preventable. Evidence suggests that each 1% of excess vulnerability in school readiness leads to a reduction in GDP of 1% over the course of that child's life.⁴¹ Children who aren't ready for kindergarten are half as likely to read by the third grade, a factor that increases the risk of high school drop-out significantly.⁴² While it is possible to intervene later to address these learning deficiencies, these interventions are less effective and much more costly.⁴³

High quality early childhood programs including programs to nurture and stimulate children and educate parents are highly correlated with the amelioration of the effects

of disadvantage on cognitive, emotional and physical development among children.^{44,45} A recent analysis of 84 preschool programs in the United States concluded that children participating in effective pre-school programs can acquire about a third of a year of additional learning in math, language and reading skills.⁴⁶ Since the implementation of the universal childcare program in Quebec, students in that province have moved from below the national average on standardized tests to above the average.⁴⁷

In addition, effective early childhood learning programs offer a significant return on investment. Research done on US preschool programs found a return on investment of between four and seventeen dollars for every dollar spent on the program. Evidence from the Quebec universal child care program indicates that the program costs are more than covered by the increased tax revenues generated as a result of increased employment among Quebec mothers. For every dollar spent on the Quebec program, \$1.05 is received by the provincial government with the federal government receiving \$0.44.⁴⁸

In terms of early childhood learning and care, Canada is lagging far behind – tied for last place among 25 countries in Organization for Economic Cooperation and Development (OECD) early childhood development indicators.^{b,49} Canada spends the least amount

^b The indicators used for the comparison include: Parental leave of one year with 50% of salary; a national plan with priority for disadvantaged children; subsidized and regulated child care services for 25% of children under 3; subsidized and accredited early education services for 80% of 4 year-olds; 80% of all child care staff trained; 50% of staff in accredited early education services tertiary educated with relevant qualification (this is the only indicator that Canada met); minimum staff-to-children ratio of 1:15 in pre-

of money on early childhood learning and care of all countries in the OECD (0.25% of GDP)⁵⁰, or one quarter of the recommended benchmark. Of this money, fully 65% is attributable to Quebec's universal daycare program.⁵¹ Canadian families face great pressures in finding affordable and accessible quality early childhood learning and care spots across the country. In Quebec 69% of children 2-4 regularly attend early childhood learning programs; outside of Quebec the number falls to 38.6%. The challenges for low-income families are even more pronounced with almost 65% of poor children 0-5 receiving no out-of-home care.⁵² The federal government and the provinces and territories must work to bring Canada in line with other OECD countries on early childhood learning and care.

The CMA Recommends that:

1. The federal government, in collaboration with the provinces and territories, implement a national early learning and care program that ensures all children have equal access to high quality child care and early learning.
2. The federal government commit to increasing funding for early childhood development to 1% of GDP to bring Canada in line with other OECD countries.

school education; 1.0% of GDP spent on early childhood services; child poverty rate less than 10%; near-universal outreach of essential child health services. UNICEF (2008) *The child care transition: A league table of early childhood education and care in economically advanced countries*. Available at: http://www.unicef-irc.org/publications/pdf/rc8_eng.pdf

Support for Parents

A supportive nurturing caregiver is associated with better physical and mental health, fewer behavioural problems, higher educational achievement, more productive employment, and less involvement with the justice system and social services.⁵³ Studies have demonstrated that improved parental-child relationships can minimize the effects of strong, prolonged and frequent stress, referred to as toxic stress^{54,55}, and that the effects of poverty can be minimized with appropriate nurturing and supportive parenting.⁵⁶ Parental support programs can act as a buffer for children at the same time as strengthening the ability of parents to meet their children's developmental needs.⁵⁷ Caregivers who struggle with problems such as depression or poverty may be unable to provide adequate attention to their children undermining the attachment relationships that develop in early life. The relatively limited attention that is focused on addressing the deficiencies in time and resources of parents across all socio-economic groups can undermine healthy childhood development.⁵⁸

One approach that has been shown to improve parental functioning and decrease neglect and child abuse is early childhood home visiting programs, sometimes referred to as Nurse Family partnerships. These programs provide nursing visits to vulnerable young mothers from conception until the children are between two and six depending on the program. The home visits provide prenatal support, educate parents about early childhood development, promote positive parenting, connect parents with resources, and monitor for signs of child-abuse and neglect.⁵⁹ Results from several randomized controlled trials of these programs in the United States have

shown that the program reduces abuse and injury, and improves cognitive and social and emotional outcomes in children. A 15 year follow-up study found lower levels of crime and antisocial behaviour in both the mothers and the children that participated in these programs.⁶⁰ In Canada Nurse Family Partnerships were first piloted in Hamilton, Ontario. They are now undergoing a broader implementation and review in the Province of British Columbia. These programs should continue to be supported and expanded to all families who would benefit from this proven early childhood intervention.

Many Canadian provinces have established community resources for parents. Alberta has recently announced plans to establish parent link centres across the province. These will deliver parenting programs, and be home to community resources and programs.⁶¹ Similar programs exist in other provinces such as the early years centres in Ontario⁶², and family resource centres in Manitoba.⁶³ Early Childhood Development Centres in Atlantic Canada are combining child care, kindergarten and family supports into early childhood centres that are aligned with schools.⁶⁴

While these programs can go a long way in reducing abuse and neglect, there is still a need for an overarching strategy to reduce neglect and child abuse across the country. As the ACE study in the United States clearly demonstrated, exposure to early adverse events such as family violence or neglect have troubling implications for adult health and behaviours.⁶⁵ Action must be taken to ensure that avoidable adverse events are eliminated.

The CMA Recommends that:

3. Programs such as early childhood home visiting be made available to all vulnerable families in Canada.
4. Governments support the expansion of community resources for parents which provide parenting programs and family supports.
5. A national strategy to decrease family violence and the maltreatment of children, including appropriate community resources, be developed and implemented in all provinces and territories.

Poverty reduction

In 1989 the Canadian government made a commitment to end child poverty by 2000. As of 2011, more Canadian children and their families lived in poverty than when the original declaration was made.⁶⁶ Canada ranks 15th out of 17 peer countries with more than one in seven children living in poverty (15.1%).⁶⁷ Canada is one of the only wealthy nations with a child poverty rate that is actually higher than the overall poverty rate.⁶⁸ Child poverty is a provincial and territorial responsibility as well. As of 2012, only four provinces had child poverty strategies that met the guidelines put forward by the Canadian Paediatric Society.^{c,69}

Poor children grow up in the context of poor families which means that solutions for child

^c To meet the CPS guidelines a province/territory requires anti-poverty legislation promoting long-term action and government accountability for at least three years, and has a poverty reduction strategy with specific targets.

poverty must necessarily minimize the poverty of their parents.⁷⁰ Efforts to increase the income as well as employment opportunities for parents, in particular single parents, must be part of any poverty reduction strategy.⁷¹ Programs, such as affordable child care, that allows parents to be active participants in the work force represent one approach.^{72,73} Quebec's program of early childhood care has increased female workforce participation by 70,000 and reduced the child poverty rate by 50%.⁷⁴

Addressing poverty could minimize problem areas in child development. According to a 2009 report by the Chief Public Health Officer of Canada, of 27 factors seen as having an impact on child development, 80% of these showed improvement as family income increased.⁷⁵ Increasing income has the greatest impact on cognitive outcomes for children the earlier in life the reduction in poverty takes place.⁷⁶ The federal government and the provinces and territories must work to ensure that poverty does not continue to be a barrier to the healthy development of Canadian children.

The CMA Recommends that:

6. The federal government work with provinces and territories to adopt a national strategy to eradicate child poverty in Canada with clear accountability and measurable targets.
7. Provinces and territories implement comprehensive poverty reduction strategies with clear accountability and measurable targets.

Data Collection for Early Childhood Development

The evidence shows the importance of early childhood development for later success and health. In order to properly design effective interventions to mitigate developmental concerns, there is a need for appropriate data on early childhood health indicators and interventions. Given the variation in outcomes of children among different communities and demographic groups, there is a need for individual level data which is linked to the community level. This will allow providers and governments to develop appropriate interventions. Such an approach is being used by the Manitoba Centre for Health Policy, the Human Early Learning Partnership in British Columbia, and Health Data Nova Scotia. Researchers at these centres are creating a longitudinal data set by linking administrative data from a range of sources.⁷⁷ Such data sets should be supported in all provinces and territories.

Another tool being used to measure the progress of Canadian children is the Early Development Instrument (EDI). This tool is a 104 item checklist completed by teachers for every child around the middle of the first year of schooling. The checklist measures five core areas of early child development that are known to be good predictors of adult health, education and social outcomes. These include: physical health and well-being; language and cognitive development; social competence; emotional maturity; and communication skills and general knowledge.^{78,79} This tool has been used at least once in most of the provinces and territories with a commitment from most jurisdictions to continue this monitoring.⁸⁰ While this is a good start, it gives only a snapshot of development. Ideally a monitoring

system plots several points of time in development to identify trajectories of children. Ontario has introduced an enhanced well baby visit at 18 months. This clinical intervention could allow for the capture of development data at an earlier time. There is a need for more comprehensive information at the 18-month and middle childhood phases.⁸¹

The CMA Recommends that:

8. The federal government work with the provinces and territories to create a robust and unified reporting system on early childhood to ensure that proper monitoring of trends and interventions can take place.
9. The federal government work with the provinces and territories to continue to implement the early development index in all jurisdictions. In addition, work should be supported on similar tools for 18 months and middle childhood.
10. The federal government support the development of a pan-Canadian platform that can share evidence and best practice, and focus research questions around the early years.

Medical Education:

Given the importance of early childhood experiences on adult health there is a need for a greater understanding of the biological basis of adult diseases. The medical community needs to focus more attention on the roots of adult diseases and disabilities and focus prevention efforts on disrupting or minimizing these early links to later poor health outcomes.⁸² The science of early brain

development and biology is rapidly evolving. There is a need to ensure that future and current physicians are up to date on this information and its implications for clinical practice.⁸³ The Association of Faculties of Medicine and the Norlien foundation have partnered to provide funding and support for a series of e-learning tools on early brain and biological development.⁸⁴

Continuing medical education does exist for some components of early childhood development and more work is underway. The Ontario College of Family Physicians has developed a CME that explores early childhood development for practitioners.⁸⁵ These initiatives must be supported and expanded to all physicians who provide primary care to children and their families.

The CMA Recommends that:

11. Curriculum on early brain, biological development and early learning be incorporated into all Canadian medical schools.
12. Continuing CME on early brain, biological development and early learning be available to all primary-care providers who are responsible for the health care of children.

Clinical Practice:

While many of the threats to early childhood development lie outside of the hospital or medical clinic, there are a number of ways that physicians can help to address this important determinant of health within their practices. Primary care practitioners are uniquely qualified to address this fundamental population health issue,⁸⁶ and can provide one

important component in a multi-sectoral approach to healthy early childhood development.⁸⁷

Screening and support for parents

The health care system is the primary contact for many child-bearing mothers, and for many families, health-care providers are the only professionals with whom they have regular contact during the early years.^{88,89} According to data from the Institute for Clinical Evaluative Sciences, 97% of Ontario children aged zero to two are seen by a family physician.⁹⁰ Within a patient-centred medical home, health-care providers can give support and information to parents about issues such as parenting, safety, and nutrition, and can link them to early childhood resources^d, and other supports such as housing and food security programs.^{91,92} Primary-care providers can help patients connect with public health departments who have many healthy baby and healthy child programs.⁹³

Primary-care providers can ensure that screening takes place to identify risk factors to appropriate development.⁹⁴ This screening should take place as early as the prenatal stage and continue throughout childhood. Screening should include regular assessments of physical milestones such as height, weight and vision and hearing etc. In addition, providers can identify risk factors such as maternal depression, substance abuse, and potential neglect or abuse.⁹⁵ Given the negative consequences of early violence and

^d For a list of some of the resources available for early childhood development across the country please see the Canadian Paediatric Society Resource Page: <http://www.cps.ca/en/first-debut/map/community-resources>

neglect on childhood development⁹⁶, this is a key role for primary-care providers. Screening for social issues such as poverty, poor housing and food insecurity should also be completed.⁹⁷

A significant time for screening occurs at 18 months. This is the time for the last set of immunizations and in many cases the last time a child will have a regularly scheduled physician visit before the start of school.⁹⁸ The 18 month well baby visit provides an opportunity to screen for not only medical concerns but child development as well. The enhanced 18 month well baby visit^e developed in Ontario combines parental observations and clinical judgment to screen for any risks a child might have.⁹⁹ In Ontario, parental observation is captured through the Nipissing District Developmental Screen (NDDS). The parents complete this standardized tool and report the results to their physicians or other primary-care providers. The NDDS checklist is not meant to be a diagnostic tool but instead helps to highlight any potential areas of concern while also providing information to parents about childhood development. The ‘activities for your child’ section which accompanies the tool can also help reinforce the importance of development.¹⁰⁰

^e For more detailed information on the enhanced 18 month well baby visit please see the Canadian Paediatric Society Position statement- Williams R & J Clinton. Getting it right at 18 months: In support of an enhanced well-baby visit. *Canadian Paediatric Society*. Ottawa, ON; 2011. Available: <http://www.cps.ca/documents/position/enhanced-well-baby-visit> (Accessed 2014 Jan 24).

For resources available to Ontario primary-care providers please visit: <http://machealth.ca/programs/18-month/default.aspx>

As part of the visit primary-care providers fill out a standardized tool known as the Rourke Baby Record. This tool is an evidence based guide which helps professionals deliver the enhanced visit. This combined with the parental report through the NDDS, allows for a complete picture of the physical as well as the development health of the child at 18 months. Primary-care providers can use the results to discuss parenting and development and link children to specialized services, as necessary, and other community supports and resources. In Ontario early child development and parenting resource system pathways have been developed in many communities to help ensure that primary care providers can be aware of the resources and supports available for their patients.¹⁰¹ As was already noted, almost two thirds of vulnerabilities in readiness for school can be prevented.¹⁰² Appropriate identification through screening is a first step in correcting these issues. While the expansion of this approach is currently being reviewed in Nova Scotia, it should be implemented in all provinces and territories with appropriate compensation mechanisms and community based supports. Additionally, consideration should be made to developing screening tools for physicians outside of primary care, ie. emergency departments, who see children who might not have regular primary care physicians.

The CMA Recommends that:

13. All provinces and territories implement an enhanced 18 month well-baby visit with appropriate compensation and community supports.

14. Physicians and other primary care providers integrate the enhanced 18 month visit into their regular clinical practice.
15. Comprehensive resources be developed for primary-care providers to identify community supports and services to facilitate referral for parents and children.
16. Efforts be made to ensure timely access to resources and programs for children who have identified developmental needs.
17. Physicians serve as advocates on issues related to early childhood development. They should use their knowledge, expertise and influence to speak out on the need and importance of healthy development in the early years.

Literacy

By 18 months disparities in language acquisition begin to develop.¹⁰³ According to US research, by age four, children of families on welfare will hear 30 million less words than children from families with professional parents.¹⁰⁴ This can lead to ongoing disparities in childhood learning as evidence suggests that exposure to reading and language from parents is fundamental for success in reading by children.¹⁰⁵

Physicians and other primary-care providers can play a role in helping to reduce these disparities. They can encourage reading, speaking, singing and telling stories as part of

a daily routine.^f Studies have demonstrated that when physicians discuss literacy with parents and provide them with appropriate resources, such as developmentally appropriate children's books, increases in reading frequency and preschool language scores have been found.¹⁰⁶

One program which has integrated reading and literacy into clinical practice is the 'Reach out and Read' program in the United States. This program partners with physicians, paediatricians, and nurse practitioners to provide new developmentally appropriate books to children ages 6 months through 5 years, as well as guidance for parents about the importance of reading.^{107,108} The success of this program has been significant with parents in the program being four to ten times more likely to read frequently with their children, and children scoring much higher on receptive and expressive language scores on standardized tests.¹⁰⁹ Given the success of this program for American children, a similar program should be explored in the Canadian context.

The CMA Recommends that:

18. Physicians continue to include literacy promotion in routine clinical encounters with children of all ages.
19. National Medical Associations work with governments and the non-profit sector to explore the development of a clinically based child literacy program for Canada.

^f For information and resources on early literacy please see the Canadian Paediatric Society at: <http://www.cps.ca/issues-questions/literacy>

Conclusion

The early years represent the most important time of development. The first five years can ‘get under the skin’ and influence outcomes throughout the life course. Negative experiences such as poverty, violence, poor nutrition, and inadequate parenting can determine behaviours as well as adult health outcomes. Effective early interventions can help to minimize or capitalize on these experiences. Government actions and supports to reduce poverty, child abuse, violence and to enable parents to care for their children are necessary. In addition, appropriate high quality early childhood learning and care programs are required for all Canadians regardless of socio-economic status. Finally, health care providers can play a role in identifying children at risk, supporting their parents to encourage healthy childhood development, and advocating for communities that ensure all Canadian children have the opportunity to grow up happy and healthy.

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