



An Early Child Development Strategy for Australia?

*Lessons from Canada*¹

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Introduction

Canada and Australia share several characteristics that make the Canadian experience in early child development relevant to Australia at a time when it, too, is considering making a social investment in early childhood. We are both highly urbanised, immigrant societies, with significant Aboriginal minorities whose children comprise a disproportionate share of those who are vulnerable. We have inherited the English tradition of individual family responsibility for child-raising and so Canada and Australia share, with the United States, the dubious distinction of being the three societies with the highest rates of single-parent family poverty among the world's wealthy countries. Finally, we both face the challenge of moving from a resource-based to a knowledge-based economy where, it is reasonable to assume, the intellectual and social demands will be much greater than at present, in order to achieve a given rate of economic return.

In Canada, the past ten years have been a time of renewed focus on early childhood and the challenge of making a strong collective commitment to our young children. We have a new National Children's Agenda and a Federal-Provincial agreement on an early child development strategy, which is being funded by Federal transfer payments to the provinces. The impetus for this has come from several sources. There has been a renewed recognition, emerging from research evidence, that the experiences of early childhood

can have a profound lifelong impact on a child's health, well-being, and competence. Furthermore, it has become clear that, by the time Canadian children reach school, large, yet modifiable differences in their development have emerged according to urban neighbourhood, rural region, ethnicity, and socioeconomic status that tend to track forward in time, limiting the life chances of the vulnerable. Evidence from our new National Longitudinal Survey of Children and Youth suggests that as many as one-quarter of Canada's young children may be developmentally vulnerable at school entry. The economic sectors of society are concerned that we will not make a successful transition to a knowledge-based economy if a large fraction of the next generation's labour force will not achieve sufficient intellectual or social competence to cope with it. The social sectors point out that in other wealthy countries that take more collective responsibility for young children than the English-speaking countries do, the problems of developmental vulnerability appear to be much less marked than ours. Thus, a broad, though fragile consensus has emerged that we must pay more attention to early child development than we have in recent decades.

Scientific Background: Population Health and Early Child Development

Life expectancy varies by as much as five years among the world's 30 richest countries. These differences



cannot be accounted for by differences in national income or by differences in expenditure on health care. Research on the determinants of health suggests the explanation is to be found in the social environment, including the impact that the social environment has on early child development.

This research has revealed a consistent pattern: higher socioeconomic standing is associated with better health. Researchers call this the “gradient effect,” and it has been found in all wealthy societies, and regardless of whether income, education, occupation or a combination of these measures is used to define socioeconomic status.

The Gradient Effect

There are four fundamental aspects of the gradient. First, the gradient cannot be explained away by reverse causation or differential mobility. In other words, it represents a “causal” relationship between the socioeconomic and psychosocial environment and health over the life course. Second, the gradient is influenced at various levels of social aggregation, from the level of the nation, through the level of civil society² to the most intimate level, in terms of the degree and quality of social support individuals receive. In order to understand what makes some wealthy societies healthier than others, and some population subgroups within society healthier than others, it is necessary to consider the character of the socioeconomic and psychosocial environment at each of these levels of social aggregation. Third, the gradient effect is evident for virtually all of the major diseases that affect health and well-being in our society. Fourth, as the major diseases have changed over time, the gradient effect has replicated itself on the new diseases as they have emerged.

These latter two points deserve special emphasis. A century ago there was a gradient effect for the major causes of disease and death of the era, which were primarily infectious diseases such as tuberculosis. Over

the next several decades mortality from infectious diseases waned and was replaced by chronic diseases, such as heart disease, as the principal causes of death. At first, the new diseases were thought to be diseases of the rich. After all, heart disease could only attack those who were privileged enough to live long enough to get it! But over time the socioeconomic gradient replicated itself on the chronic diseases. In the case of heart disease this pattern emerged by the 1950s, as it did for most cancers, arthritic conditions and dementia, and by the late 20th century, it was also reflected in the trio of accidents, poisonings and violence. These patterns point to the existence of fundamental biological processes connecting socioeconomic and psychosocial circumstances to human resilience and vulnerability to disease, and strongly suggest a role for early child development in the process.

Linking Early Child Development to Later Health, Well-being, and Competence

Exposure to both beneficial and adverse circumstances over the life course will vary for each individual and will constitute a unique “life exposure trajectory”, that will manifest as different expressions of health and well-being and, at the level of the group, in gradients over the entire life course. Gradients appear early in life in relation to infant mortality and low birth weight; then in terms of cognitive and behavioural development by school age. By early adulthood gradients emerge for mental health status, obesity and a series of limiting longstanding illnesses. In late adulthood gradients are found for dementia and chronic diseases. Thus, health, well-being and competence all show gradient patterns which, in turn, have common life course determinants.

There are, of course, an infinite number of ways in which exposure to expression relationships can unfold over time. In some instances, there will be contemporaneous

among lower middle class children, to more than 35 per cent among poor children (Ross & Roberts, 1999). According to what we know about its determinants, this gradient is largely modifiable, but once the gradient in school readiness has established itself, it tends to track forward in time. Children in schools with few delayed children tend to move forward quickly, while children in schools with high proportions of delayed children tend to move forward more slowly. Thus, the individual is affected directly by his/her readiness and indirectly through the group, which is affected by the distribution of levels of readiness across the classroom and the school.

In Canada, the NLSCY has helped reveal a variety of factors, amenable to policy intervention, that influence early child development. At the level of the family, these are income, parental education, and the quality of parenting. Child development in Canada improves, on average, with increasing family income and increasing education of the parent who has the most contact with the child (usually the mother). Also, the children of parents whose self-reported parenting style is apathetic, inconsistent or authoritarian have poorer development than others even after taking family socioeconomic circumstances into account. At the neighbourhood level safety and cohesion are positive factors for child development, even after family factors are taken into account, while neighbourhood ghettoization of poverty is a negative factor (Kohen, Hertzman & Brooks-Gunn, 1998). At the broader level, access to formal childcare programs is a positive influence.

Policy Translation

In seeking to address the issue of improving child development as a society, the evidence presented above leads to five strategic conclusions for policy makers. Fortunately, these conclusions are highly convergent when it comes to their implications for policy, since an environmental focus, intersectoral and multi-level collaboration, addressing

gradients, and adopting an outcome orientation can be addressed by a common policy thrust.

1. The fact that the developing brain is an “environmental organ” means that improving child development is a question of improving the environments in which children grow up, live and learn; it is not simply a question of fulfilling specific service mandates to narrowly-defined client populations. The challenge is one of adopting an environmental perspective when agencies have traditionally understood their role to be the provision of one-on-one client services.
2. The fact that health, well-being and competence all have essentially the same determinants means that the objectives of a wide variety of government and non-government agencies can be met by acting in concert. In other words, there is a powerful evidentiary basis for intersectoral action for child development. For example, the laws and regulations that support or inhibit flexible work arrangements for those with young children are not within the control of Ministries of Health, but much of the evidence which shows that such arrangements could improve the quality of children’s development relates to health outcomes.
3. Early results from the National Longitudinal Survey of Children and Youth show that determinants of child development have an impact at all levels of social aggregation: family, neighbourhood, community and economy. This underlines the importance of a strategy that is not only intersectoral, but also multi-level, and has strong local leadership. Ensuring quality care arrangements, increasing neighbourhood safety and cohesion, and ensuring that neighbourhoods do not become ghettoized all require leadership at the municipal and neighbourhood level. Improving parenting skills requires leadership from individuals who have credibility with society, on the

one hand, and vulnerable families on the other.

4. The gradient in child development demonstrates that there is room for improvement in the environments in which most children grow up, right across the socioeconomic spectrum, and not just in those walks of life traditionally considered “high risk”. In other words, the issue is one of “universal access” to environments that will support healthy child development, not just one of protecting those at high risk.

Consider, for example, the range of policies that affect the intersecting issues of child care and worklife/homelife conflict: parental workplace leave and flexible hours; quality child care and early childhood education programs; and extended maternity or family leave to take care of young children. Parents across the socioeconomic spectrum, regardless of their income, education and parenting style, report that the combined demands of work and family are highly stressful. This claim is backed up by studies of daily fluctuations in stress hormone levels among working women. Family-friendly workplace policies can alleviate family stress and promote parent-child affiliation, particularly in the first years of life. Such policies can take some of the pressure off juggling work and family responsibilities and, conceivably, contribute to more satisfying home life and better productivity at work. In Norway, where such policies are more closely attended to than in any of the English-speaking societies, early child health and well-being, insofar as it can be compared, appears to be ahead of Canada and the United States (Phipps, 1999).

5. There is need for an outcome orientation in child development, based on the three main dimensions of early child development: physical, cognitive, and social-emotional-behavioural. Until now, none of the wealthy countries in the world have had a data infrastructure capable

of monitoring early child development across the whole population like they have had with respect to basic indicators such as infant mortality and low birth weight. Given the wide variety of influences on child development, societies need a system for monitoring differences in the quality of child development over time, between localities, and among subgroups of the population whose development has traditionally been systematically different. The system should monitor changes in the determinants of healthy child development over time and place. In short, it needs a population-based, person-specific, longitudinal data system. The nationwide birth cohort studies are a useful component of such a system, but they need to be complemented by a broader system of population data flows that are valid at the level of the local community.

Recent Progress Towards Improving Outcomes for Children

Despite the pressures that face families worldwide, there is reason for optimism that progress can be made in improving early child developmental outcomes. There has been a rediscovery, in the policy world, of the role of early childhood as a lifelong determinant of health, well-being and competence. This has occurred because issues of early child development have begun to be expressed in a credible vocabulary for modern society - the vocabulary of science. Recent insights from neurobiology, developmental psychology and longitudinal studies of children give credibility to notions once held as common sense. This development has provided children with a network of allies whose credibility extends into policy circles inaccessible to traditional child advocates and anti-poverty groups. In Canada, the clearest example of this is the 1999 Ontario Early Years Study that recommends a comprehensive child development strategy, based upon the knowledge base reviewed in the first part

exposure and expression. If a piano were to fall on your head, the exposure and the effects on health and well-being are simultaneous, unequivocal and easily measured. But in most cases the connections from exposure to expression will play out over long stretches of the life course. The possible long-term exposure to expression relationships cluster into three generic patterns: “latency”, “cumulative”, and “pathway”.

With respect to latent effects there is consistent evidence that events in foetal and infant life can “program” the function of a number of organ systems, and influence adult physical health. For example, illnesses such as coronary heart disease and elevated blood pressure have been directly associated with events in early life (Barker, 1992). An infant’s weight at one year has been associated with risk of death from heart disease during adulthood. Infants who are born at term but are small for their gestational age may be at increased risk for adult-onset diabetes, high blood pressure and heart disease several decades later (Marmot & Wadsworth, 1997).

Similarly, a key requisite for optimal child development is secure attachment to a trusted caregiver, with consistent caring, support and affection early in life. A child’s, adolescent’s and, ultimately, an adult’s emotional health and habitual way of reacting to new situations have their basis in the early relationships between the infant/toddler and the people primarily responsible for his or her care.

Specific stimulation, such as talking and play, are critical for the development of language and cognitive skills. Effective parenting practices are some of the most important protective factors in promoting optimum early child development. Family (including socioeconomic) stability, close and supportive relationships, and security are protective factors in the lives of children. The results from early childhood stimulation and support programs for disadvantaged children suggest that the payback in terms of

adult outcomes can endure for a lifetime.

In summary, latent effects on subsequent health, well-being, and competence can be seen for the three key pathways of early development: physical, cognitive-intellectual, and social-emotional-behavioural. In our work on health in adulthood in the 1958 British Birth Cohort, we found that those with relatively rapid physical growth during the first seven years of life, who were read to consistently in the pre-school years, and who adjusted easily into school, were one-fifth as likely to be in a state of fair or poor health by age 33 as those who grew slowly, were not read to consistently, and had trouble adjusting to school (Hertzman, Power, Matthews & Manor, 2001).

Other early life experiences set individuals onto life trajectories that, in turn, affect health, well-being and competence over time. These are called “pathway effects”. Status differences at birth are associated, on average, with different levels of stability, security and stimulation in early childhood that, in turn, affect the child’s readiness for schooling. Between birth and age six, children develop the essential language and cognitive skills required to learn reading and arithmetic. They also develop their ability to manage emotions and stress, and to cooperate with others. Lack of school readiness puts children at risk of academic, social and behavioural difficulties in school, leaving before high school graduation, becoming involved in criminal behaviour, becoming pregnant as a teenager, and becoming addicted to tobacco, alcohol and other drugs (Keating & Hertzman, 1999).

Behavioural problems and failure in school are associated with low levels of mental well-being in early adulthood. School failure also affects future success and well-being, since level of formal education predicts job market success. Also, psychosocial working conditions, that is, the balance of workplace demands with control, and the balance of effort and reward, are powerful determinants of health in adult life (Karasek & Theorell, 1990). Psychosocial working conditions tend

to be much more favourable for those who have had a successful school career. By the fifth decade of life, those who are stuck in poor jobs are far more likely to develop high rates of disability and absenteeism, and to die prematurely, and from the full range of major causes of death, particularly those who are also socially isolated (Marmot, Smith, Stansfeld, Patel, North, Head, White, Brunner & Feeney, 1991).

A third process linking early life environment and adult health recognises the importance of “cumulative effects” - the accumulation of advantage or disadvantage over time, based upon the duration and intensity of exposure to a variety of risk factors. For instance, the status of one’s parents helps to determine the community where one grows up, which, by the early school years, starts to influence the child’s life chances through the social networks, community values and opportunities which present themselves.

There is no reason to suppose that latent, pathway and cumulative factors only act alone. Any early life event that could exert a latent effect could also be the first step along a lifelong pathway that might have implications for health, well-being or competence in the future. Similarly, any early childhood intervention designed to improve health and well-being in the long run will occur within a specific context which will provide a mixture of opportunities and barriers.

We studied the combined influence of latent, pathway and cumulative effects in the 1958 British Birth Cohort Study. The latent factors and their effects were as described above. The cumulative-pathway factors that influenced later health were: combined socioeconomic circumstances at age 0, 7, 11 and 16; socioemotional adjustment at age 11 and 16; and end-of-school qualifications. Children who were in the lowest socioeconomic group throughout childhood, were poorly adjusted to school at ages 11 and 16, and left school before graduation were six times more likely to report poor health by age 33. The statistical

model showed that the latent effects acted independently of the pathway-cumulative effects that, in turn, acted independently of life circumstances of the Cohort members at age 33. In other words, latent, pathway, and cumulative factors from childhood were each exerting their effect on health in adulthood.

Studies in neurobiology, neurodevelopment and early intervention show that conception to school age is a critically important time in brain development. The brain of the developing foetus produces brain cells (neurons) at a rate of tens of millions per week such that, by the time a baby is born, it has virtually all the neurons it will ever have. However, the neurons of a newborn are not connected together the way they are in an adult brain, but rather as a kind of random mass. Over the first several years of life, and at a diminishing rate thereafter, there is a rapid process of “sculpting” of neuron-to-neuron connections, during which some connections are reinforced and others die away. This process is important because human experience is a crucial determinant of the manner and degree of connectedness which, in turn, is a crucial determinant of subsequent human consciousness. Spending one’s early years in a relatively unstimulating, emotionally and physically unsupportive environment will tend to affect brain development in adverse ways, and increase the risk of delays in cognitive development.

Thanks to our National Longitudinal Survey of Children and Youth (NLSCY), we know that the variations in early childhood circumstances experienced by otherwise ‘normal’ Canadian children make a huge difference in their development. By kindergarten age, a socioeconomic gradient in readiness for school has emerged in Canada. For instance, the NLSCY shows that there is a 4.5 fold increase in the proportion of children with delayed vocabulary development across the household income spectrum; ranging from less than 8 per cent for children from Canada’s most affluent families, to approximately 20 per cent

of this paper (McCain & Mustard, 1999). In Britain, the recent Acheson Report (Acheson, 1998) makes recommendations that a strategy of reducing health inequalities through intervening in contemporary circumstances should be supplemented with policies to improve circumstances in early childhood.

What Should an Early Child Development Strategy Look Like?

How might our understandings of the determinants of healthy child development be reflected in an early child development strategy? I would argue that a partnership between all levels of government, and non-governmental organisations should support early child development initiatives in local jurisdictions that fulfil the following principles³.

Comprehensive

Early child development programs must incorporate three basic components: early childhood education, childcare and parenting/caregiving support. Comprehensive early child development programs should meet the needs of parents who are at home as well as those who participate in the paid labour force.

Universally Available and Accessible

All families should have the opportunity to participate in early child development programs. That opportunity should not be overly compromised by prohibitive financial costs or targeted eligibility requirements, although affordable fees may apply. Furthermore, no children should be excluded, regardless of aptitudes, abilities, disabilities or geographic location. This does not mean, however, that all children should be required to attend early child development programs.

Integrated

Integrated early child development programs should create holistic environments for young children and their families. They should integrate existing program pieces across education, social services and health sectors. They should also combine programs and resources from various levels of government.

Community-driven

The design of early child development environments, the allocation of resources, and the delivery of programs should rest with intersectoral authorities in communities. They are more likely to be sensitive to community cultural values and geographic realities. Legally established local authorities should include representation from public health, education, human services, child care, the voluntary sector and recreation to ensure that the environments of childhood are fully covered.

Quality

Governments should establish standards of practice that reflect current knowledge and understanding of child development.

Accountability

Early child development initiatives should be accountable to governments and the public in terms of finances, administration and performance. This will require ongoing monitoring and an outcome orientation. Local communities should be able to use outcome information to measure their progress and allocate resources.

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(Endnotes)

¹ This paper is adapted from an article written for a Canadian audience: Hertzman, C. (2000). "The case for an early child development strategy for Canada". ISUMA 11-18.

² In this paper, civil society is meant to encompass the full range of functions "above" the intimate realm of family and informal social support, but "below" the national socioeconomic environment. Factors such as social trust, social embeddedness, psychosocial working conditions, the responsiveness of institutions to individual and changing needs, and neighbourhood cohesion and safety all fit this definition.

³ These principals were put forward by the author and colleague Jane Bertrand for Canadian policy purposes. They, in turn, draw on the work of Battle and Torjman of the Caledon Institute of Social Policy.

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