

15 *by* 15

A Comprehensive Policy Framework for Early Human Capital Investment in BC

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About the Human Early Learning Partnership

The Human Early Learning Partnership (HELP) is an interdisciplinary collaborative research institute that is directing a world-leading contribution to new understandings of early child development.

Directed by Dr. Clyde Hertzman, HELP is a partnership of over 200 faculty, researchers and graduate students from six BC universities:

- University of British Columbia
- University of Northern British Columbia
- University of Victoria
- University of British Columbia Okanagan
- Simon Fraser University
- Thompson Rivers University

HELP's mission is to create, promote and apply knowledge through interdisciplinary research to help children thrive.

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Table of Contents

Executive Summary

Full Report

- | | | | |
|----|---|----|---|
| 5 | The Future Human Capital Problem: 29% of Children in BC are Vulnerable Before They Get to School | 21 | Some Policy Gaps are Larger than Others: Recommendations 1–3 |
| 8 | The Goal: <i>15 by 15</i> on the path to <i>10 by 20</i> | 33 | <i>15 by 15</i> Recommendations 4–6 |
| 8 | The Future Human Capital Gains: Reducing Early Child Vulnerability to 10% Will Substantially Increase High School Graduation and University Eligibility | 38 | Evidence Shows that a Three Billion Dollar Annual Investment Can Reduce Early Vulnerability |
| 10 | Eliminating the Early Vulnerability Debt: Economic Benefits from Early Human Capital Investments | 41 | Patience is a Requisite Virtue |
| 13 | How do We Reduce Early Vulnerability? Lift and Flatten the Social Gradient | 44 | Since Patience is an Untenable Virtue for Some |
| 14 | The Diagnosis: Public Policy is Not Keeping Pace with Socioeconomic Change | 44 | Reallocation and Reprioritization: From Outdated Family Policy; and From Treating Illness to Promoting Health |
| 18 | An International Policy Laggard | 46 | Short and Medium Term Benefits from <i>15 by 15</i> Expenditures |
| 20 | The Remedy: <i>15 by 15</i> Policy to Promote Parental Time, Resources and Community Supports | 48 | 75 Cent Public Investment Dollars during the First Electoral Cycle |
| | | 50 | Stimulus Now |
| | | 52 | A Smart Economic Investment. A Necessary Social Investment |
| | | 53 | Evidence-Based. Not ideology. |

References

Executive Summary

The stock of human capital in British Columbia is key to its long-term economic success. This means early child development is a critical issue for business leaders, because the years before age six set in motion factors that will determine the quality of the future labour force. Today, only 71% of BC children arrive at kindergarten meeting all of the developmental benchmarks they need to thrive both now and into the future: 29% are developmentally vulnerable.

While the poor are more statistically likely to be vulnerable, the majority of vulnerable children in BC reside in the more populous middle-class. Early vulnerability is a middle-class problem.

A rate of child vulnerability above 10% is biologically unnecessary. At three times what it could be, the current vulnerability rate signals that BC now tolerates an unnecessary brain drain that will dramatically deplete our future stock of human capital. Economic analyses reveal this depletion will cause BC to forgo 20% in GDP growth over the next 60 years. The economic value of this loss is equivalent to investing \$401.5 billion today at a rate of 3.5% interest, even after paying for the social investment required to reduce vulnerability. Unnecessary early vulnerability in BC is thus costing the provincial economy a sum of money that is 10 times the total provincial debt load.

Unnecessary early vulnerability in BC costs the provincial economy a sum of money that is ten times the total provincial debt load.

The implication is clear: governments, businesses, bankers and citizens have ten times as much reason to worry about the early child vulnerability debt as we have reason to worry about the fiscal debt. Reducing early vulnerability is therefore necessary for BC to secure its long-term economic future, while it will also inject a significant economic stimulus now.

Some may hold out hope that we can compensate for high early vulnerability by increasing investments in the final years of school, in expanding post-secondary education, or in job skills training for adults. However, human development research warns against this hope because it ignores the genetic and biological reality of the human species: the early years represent the unique window in the human life course during which citizens' physical, socio-emotional and cognitive potential are especially malleable to the positive effects of strategic human capital investments. The interaction of nature and nurture "sculpts" the developing brain and other biological systems such that children who do not benefit from optimally nurturing early environments risk genetic adaptations that will limit their life-long well-being and productivity.

The early development research is now so compelling that there is a growing consensus among economists, such as Nobel Laureate James Heckman, that the most cost-effective human capital interventions occur among young children. Heckman (2008) concludes that "a major refocus of policy is required to capitalize on knowledge about the life cycle of skill and health formation and the importance of the early years in creating inequality in America and in producing skills for the workforce."

Recognizing the importance of early human capital investments, the Government of British Columbia's (2009c) Strategic Plan commits to lowering the provincial rate of early vulnerability to 15% by fiscal year 2015/16. This *15 by 15* goal is an ambitious but reasonable signpost along the way to our ultimate goal of reducing early child vulnerability to 10% by 2020. Presently, however, 93% of BC neighbourhoods have vulnerability rates that exceed even the intermediate target of 15%. Significant changes across the entire province are therefore required to create broad and equitable access to the conditions that help children and families thrive.

The requisite public policy response is a bold one. BC suffers unnecessarily high early vulnerability across income classes because it is relying on old post-war thinking to address 21st century social and economic issues. In the absence of a system of early learning and child care services, public policy in BC and much of Canada remains nostalgic for a time when some women stayed home to rear young children while some men served as sole breadwinners on behalf of their families. This nostalgia ignores the current reality: most mothers today are employed, helping to compensate for real declines in male wages, or in order to stave off persistently high rates of child and family poverty. As mothers allocate more time to employment, households struggle with less family time, in part because fathers have not managed to fill the care void. For men and women alike, work/life conflict is pervasive irrespective of earnings, and time to care personally is a common casualty.

The implication is clear: governments, businesses, bankers and citizens have ten times as much reason to worry about the early child vulnerability debt as we have reason to worry about the fiscal debt.

New policy thinking is therefore in order. International research reveals that the best strategy to reduce early vulnerability is found in comprehensive government policy which supports parents (men as much as women) to synchronize caring and earning. The implications of this research for BC means citizens and businesses must support governments to invest \$3 billion annually in the following *15 by 15* Policy Framework for Optimal Early Human Development. Half of the \$3 billion investment will support families to enjoy more time and resources to care personally, while the other half will strengthen community services.

Time Recommendations:

- *Build on maternity and parental leave* to enrich the benefit value, and to extend the total duration from 12 to 18 months, reserving additional months for fathers.
- *Build on existing employment standards* to support mothers and fathers with children over 18 months to work full-time for pay, but redefine full-time to accommodate shorter annual working hour norms without exacerbating gender inequalities in the labour market.

Resource Recommendations

- *Build on income support policies to mitigate poverty* among families with children.

Service Recommendations

- *Build on pregnancy, health and parenting supports* to ensure monthly developmental monitoring opportunities for children from birth through age 18 months, as their parents are on leave.
- *Build on early education and care services* to provide a seamless transition for families as the parental leave period ends in order to make quality services for children age 19 months to kindergarten affordable and available on a full- or part-time basis, as parents choose.
- *Build on the work of local Early Child Development (ECD) coalitions* in community planning to enhance program coordination between all local services that support families with children from birth to age six.

These six recommendations identify the public policy changes required to reap the dramatic economic returns available from reducing early vulnerability from 29% to 15% by 2015, and to 10% by 2020. Over a 60 year period, the benefits to society outweigh the costs by more than 6/1. Since a 2/1 ratio is a great return on investment, the 6/1 ratio shows that the proposed early human capital strategy is a phenomenal investment.

The reality of early human capital development, however, is that population-level improvements generate significant economic growth only after children work their way through the elementary, secondary and (sometimes) post-secondary education systems to transition into the labour market. Therefore, it will be 14 years before even the first cohort of children reaping the human capital gains from the proposed *15 by 15* investments will personally contribute dividends to the economy. Clearly, this investment strategy requires patience as a virtue.

In response, we propose policy changes that will allow individuals and businesses to recoup a substantial portion of the investment costs in relatively short order: from 33% to 62% of the requisite expenditure during the first electoral cycle; and from 39% to 47% of the expenses over the first three electoral cycles. Given these benefits, the net cost to taxpayers will only be three-quarters of the gross investment.

Immediate returns are maximized when policy innovations support the adults who care for the future stock of human capital as much as the children themselves. These adults can benefit now from the policy reforms and thus generate real economic returns much more quickly than will human capital investments in young children alone. Short- and medium-term benefits include:

- productivity gains from accelerated labour supply, especially among women
- productivity gains from reduced absenteeism as a result of improved work/life balance
- health cost savings associated with improved work/life balance
- health cost savings associated with poverty reductions
- child welfare savings, as fewer children enter the foster care system
- reductions in crime, and government expenditures on the justice system
- economic stimulus, when invested during an economic recession

In short, the *15 by 15* Policy Framework proposes a fundamental shift in how we think about health care and human capital. We recommend shifting from treating illness after the fact, to promoting health from the outset of the human life course. The research evidence makes clear that this shift will accelerate economic growth enormously over the long-term, and that the economic case for the *15 by 15* Policy Framework is solid even in the near- and medium-term. The following paper provides a detailed blueprint for policy reform, and offers HELP's world-renowned monitoring and evaluation capabilities to guide the way.

The private sector, including business, stands to capitalize the most from the economic growth that well-designed family policy will generate. It is therefore time for the BC business community to actively join the call for evidence-based human capital investments which target the life course stage that will pay the greatest return: when parents and communities care for citizens in their early years. Only this bold policy reform will prevent the brain drain that is most threatening to our economy: the future human capital losses that result from high child vulnerability today. 🇨🇦

The Future Human Capital Problem: 29% of Children in BC are Vulnerable Before They Get to School

The key to a society's long-term economic success lies in its ability to optimize human development; its ability to promote "A State of Minds," to borrow a phrase from economist Tom Courchene (2001) who recommends a human capital future for Canadians. Since globalization requires countries with developed economies to compete with less expensive labour available in other regions, our governments must compensate by generating labour that will thrive in technological-based information and knowledge industries. Thus, countries with developed economies need more than "all hands on deck" to exploit resource advantages; they also need all "heads": healthy, well-educated, innovative, creative and productively-employed adults.

The relative strength of key macroeconomic indicators for BC and Canada may lead some to assume that this goal is well in hand. Proponents may point out, for example, that Canada ranks 10th in the World Economic Forum's 2008 Competitiveness Ranking Index of over 130 countries (Porter and Schwab 2008). Canada's net debt-to-GDP level is the best in the G7 (OECD 2009), and the BC ratio is better than the Canadian average (Government of British Columbia 2009a). Unemployment levels before the onset of the current synchronized global recession were at record lows in many provinces, including in BC (BC Stats 2009). Even Canada's slide into economic recession, while dramatic, has been markedly slower than that of the US, EU and Japan.

There is reason, however, for BC to resist resting on these potentially short-sighted laurels. The BC Progress Board (2009) reports that British Columbia presently ranks 9th among Canada's ten provinces in terms of economic growth. The Government of BC (2009c; 2009f)

Today, only 71% of BC children arrive at kindergarten meeting all of the healthy development benchmarks that they need to thrive both now and into the future.

in turn illuminates worrisome patterns now evident in cohorts of children working their way through the formal school system to become the future labour supply. For instance, although BC students historically perform relatively well in national and international comparison tests, high school graduation rates have remained static at 79% since 2004/05. One third of British Columbians over age 16 do not have the literacy skills required to cope with the increasing demands of a knowledge-based economy. 22,646 children with identified special needs received supplemental funding in 2008/09 from the Ministry of Education, an increase of 4,500 in the last six years. More than 25% of BC adolescents are obese or overweight, in keeping with the 300% increase in obese adolescents across the country in the last 25 years. And more than 25% of BC children in both grades four and seven do not meet the reading expectations of the Foundations Skills Assessments (FSAs), the standardized tests administered in all classrooms around the province.

What is rarely discussed, but hugely important, is that these worrisome education indicators have their origins before children even reach the formal school system. Today, only 71% of BC children arrive at kindergarten meeting all of the healthy development benchmarks that

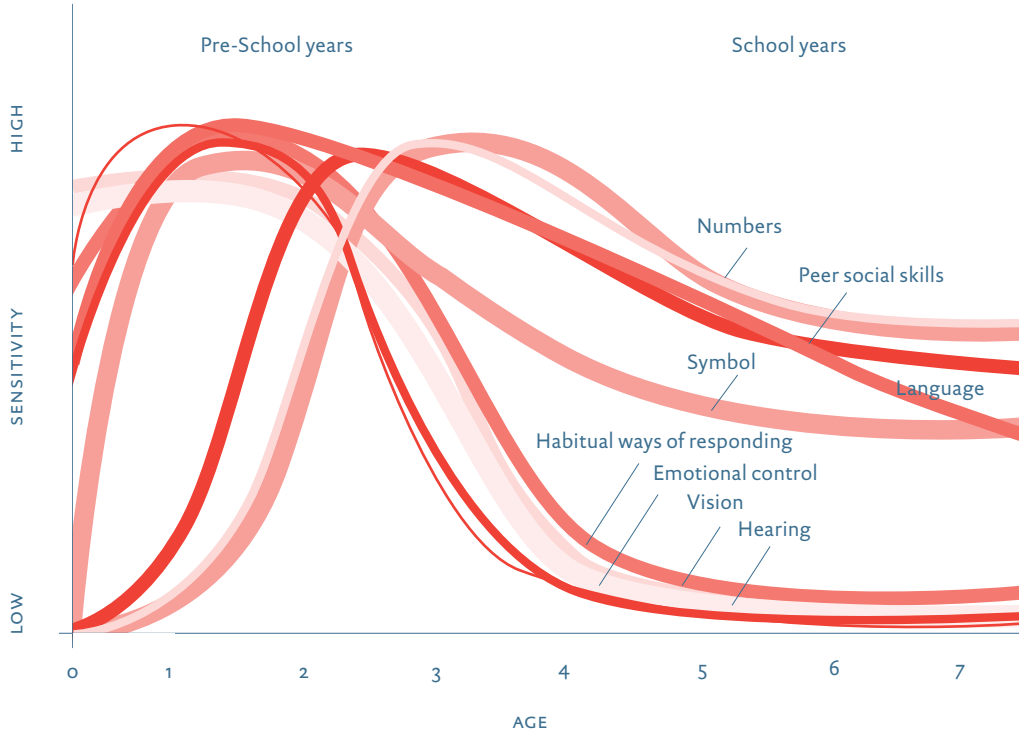
they need to thrive both now and into the future: 29% of children do not. 29% of children are vulnerable to less than optimal physical, socio-emotional and cognitive development.

Optimal development does not imply children must be rocket scientists or the next Mozart by kindergarten. Rather it implies children come to school appropriately dressed, nourished and rested; able to hold a pen, climb stairs and use the washroom independently; they get along with peers and are able to follow instructions; and they come able to tell a story, know at least 10 letters of the alphabet and write simple words. 29% of children in BC arrive at kindergarten struggling with these and other age-appropriate benchmarks. This early vulnerability rate is the canary in the coal mine predicting the future quality of BC's labor supply. It signals that BC is now tolerating an unnecessary "brain drain" that will dramatically compromise our future stock of human capital (McCain and Mustard 1999).

Recognizing the importance of early human development, the Business Council of BC (2009) commissioned Dr. Clyde Hertzman, world-renowned expert and Director of the Human Early Learning Partnership, to convene an inter-disciplinary team to participate in the Opportunity 2020 project. This forward-looking project moves beyond the current economic situation to query how British Columbia can "successfully adapt and innovate to carve out a prosperous and sustainable future built on innovation, education, training and fully leveraging the value of human capital in a global economy."

The answer to this question lies in reducing child vulnerability because the early years represent the developmental phase of the human lifespan during which society can most accelerate the stock of human capital through social investment. In these years, our genes are particularly sensitive to the environment. The interaction of nature and nurture "sculpts" the developing brain and other key biological systems. The regions of the brain

FIGURE 1: Sensitive Periods In Early Brain Development



that are so are highly sensitive to the environment during this period include all the basic competencies that we need to thrive throughout life, such as vision, hearing, emotional control, and cognitive competencies to interpret symbols and language. These are shown in FIGURE 1.

In order for these systems to develop optimally, children require stimulating and nurturing early environments. Children that grow up in such environments are more likely to thrive in all aspects of their lives. While adequate nutrition, rest, economic security, as well as physical and environmental safety are essential for healthy development, young children also need to spend their time in caring, responsive, language-rich environments that include support and positive reinforcement from parents and other adults. They need opportunities to explore their world, to play, and to learn how to speak and listen to others.

By contrast, children who do not benefit from optimally nurturing environments risk genetic expressions of vulnerability that will limit their life-long well-being. That is the risk revealed by the 29% vulnerability rate in BC. It warns that nearly one-third of the population that will begin to transition into the workforce shortly after 2020 risks enduring the consequences of sub-optimal genetic adaptations to early environments.

The consequences of sub-optimal genetic responses to the environment are serious. Literacy and numeracy skills, economic participation, criminality, and many adult health issues, including obesity, mental health (depression), heart disease, high blood pressure and non-insulin dependent diabetes, all have their roots in the early years (McCain, Mustard, and Shankar 2007). At the population-level, sub-optimal early development thus means fewer future workers will have the skills and health needed to use technologies developed elsewhere, to adapt those technologies for local purposes, or more important still, to innovate new technologies altogether.

Since labour force participants today include parents that are also caring for the next generation of citizens and workers, the time, resources and community supports available to those parents are critical for the quality of the future workforce. Indeed, recent genetic research reveals that the socioeconomic status of one's parents is a stronger predictor of genetic vulnerability in later adulthood than is one's own socioeconomic status as an adult (Hertzman 2009). To the extent that the needs of the future workforce occupy the time and energy of the parents who represent a substantial share of the current labour supply, the same time, resources and community supports are also critical for shaping present productivity levels.

Reducing child vulnerability levels is no small task. The current vulnerability rate of 29% in BC has been stable since 2007; but it rose from 26% in 2004, a 12% increase. This increase occurred over a three year period during which the province enjoyed a thriving economy as measured by GDP, unemployment levels and government surpluses, along with hundreds of local community initiatives. As British Columbians work together to rejuvenate the economy from its current slowdown it will be important to focus government action on economic growth that grows healthy populations. Reducing children's vulnerability by improving access to the conditions that promote healthy early development is necessary for BC to secure its long-term economic future, while also injecting a significant economic stimulus now. This report summarizes the evidence in support of this assertion and outlines

the actions required to meet the service plan goals of the BC government, which has committed to reduce BC's overall vulnerability rate to 15% by 2015/2016 (Government of British Columbia 2009c, p. 40), or *15 by 15*.

The Goal: *15 by 15* on the path to *10 by 20*

Research evidence indicates the current *15 by 15* goal of the BC government is an ambitious but reasonable medium-term objective that should transcend partisan politics. However, the *15 by 15* objective should only represent a signpost along the way to our ultimate goal of reducing early child vulnerability to 10% by 2020. The 10% benchmark is supported by biological data about human development, disability and frailty, along with vulnerability rates reported in the least vulnerable communities in BC and other jurisdictions. If other countries, and even other parts of BC, can enjoy early vulnerability levels that fall to around 10%, this benchmark can be achieved for all of British Columbia.

The Future Human Capital Gains: Reducing Early Child Vulnerability to 10% Will Substantially Increase High School Graduation and University Eligibility

Unique data in BC allow us to calculate what such a reduction in vulnerability would mean for high school completion rates and university eligibility. We know that 29% of BC kindergarten-age children are vulnerable developmentally because of Early Development Instrument (EDI) data that are collected by kindergarten teachers in collaboration with the Human Early Learning Partnership. The EDI is a population-based tool used to measure the state of children's development. It has been validated for a wide range of populations in urban, rural, and remote communities, and communities with particular social and cultural compositions (e.g. aboriginal communities, inner-city communities, affluent suburban communities, etc.). With its proven reliability, the EDI has now been used in jurisdictions across Canada, the United States, Australia, Chile and several other countries. The World Health Organization and the UN are also exploring how to use the EDI to monitor international progress toward achieving commitments in General Comment No. 7 of the UN Convention on the Rights of the Child. It is therefore appropriate that EDI data are the benchmark by which the BC government measures its progress towards meeting the objective of reducing vulnerability to 15% by 2015.

The EDI considers all the key domains of children's early development that have life-long impacts: physical well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge in the majority language and culture. It deepens our understanding about groups of young children — their early experiences, their current state of development, and prospects for their future health and well-being — relative to groups of young children in other neighbourhoods, communities or states. The results of the EDI are interpreted to represent the outcome of the cumulative early experiences that children in a given community have had from birth to kindergarten

entry. Variations in EDI outcomes across communities are taken to represent average differences in the qualities of stimulation, support and nurturance that children in those areas have experienced.

Building on EDI data for the population of kindergarten children, we can follow individuals as they progress through the school system to reach grade four, when children write standardized Foundations Skills Assessment (FSA) tests. These anonymized, person-specific trajectories from kindergarten to grade four can then be linked with population-level data for children in grade four for whom we have FSA data, and who have since gone on to write standardized exams in grade seven. The latter trajectories can in turn be connected to population-level information about children who have worked their way from grade seven through to high school graduation and/or the criminal justice system. The result is an important data-set with which we can simulate how vulnerability rates at kindergarten influence rates of high school completion and grade success in the light of actual trajectories traveled by British Columbian children.

The simulation provides important insights. Not all children who start out behind their classmates end up behind, and not all children who start out ahead continue to thrive. Life events, parents, teachers, friends, schools and communities can all affect children's progress after kindergarten.

However, the analysis also shows that a strong start by kindergarten goes a long way towards ensuring a successful completion of high school on time (without delaying a year or more), and with grades that render one eligible to attend university. As a result, reducing vulnerability from 29% to 15% and then 10% is projected to increase on-time graduation rates, simultaneously fulfilling another goal of the provincial government. Of those graduating, the cohort achieving university-eligible grades rises by more than one-third, from 41.5% to 50.3% and finally 55.6%.

TABLE 1: *Achievement gains projected from reduced children's vulnerability*

	On-time High School Graduates			University Eligible Grades		
	29% Vulnerability	15% Vulnerability	10% Vulnerability	29% Vulnerability	15% Vulnerability	10% Vulnerability
Male	67.0%	73.8%	77.5%	33.2%	41.7%	47.0%
Female	76.5%	82.0%	84.7%	50.2%	59.3%	64.5%
Total	71.6%	77.8%	81.0%	41.5%	50.3%	55.6%

Although the life-course simulations anticipate impressive human capital gains by reducing vulnerability at kindergarten, our projections are conservative for a number of reasons. The simulation cannot account for the positive peer effect influences that arise when the proportion of vulnerable children at the beginning of one's school career is reduced by half. Nor can the simulation account for the ways in which teachers can elevate the level of instruction in classrooms because less of their time is allocated to children struggling to keep up. There is thus ample evidence to suggest that the efficiency of elementary and high school investments in children would increase as early vulnerability declines. In quality elementary and high schools, we therefore anticipate that a decrease in population-level

vulnerability at kindergarten from 29% to 15% and eventually 10% will amplify benefits vis-à-vis school graduation rates and university eligible grade achievement to an even greater degree than the life-course simulation shows. This assessment is supported by an extensive review of the literature on skills formation conducted by Cunha and Heckman (2007) who model the economics of human capital investment (see also Mitchell, Wylie, and Carr 2008).

Eliminating the Early Vulnerability Debt: Economic Benefits from Early Human Capital Investments

A substantial research literature shows that enriching human capital by reducing early vulnerability to 10% will yield staggering long-term economic gains for private individuals, businesses and the economy in general, as well as for taxpayers and governments specifically.

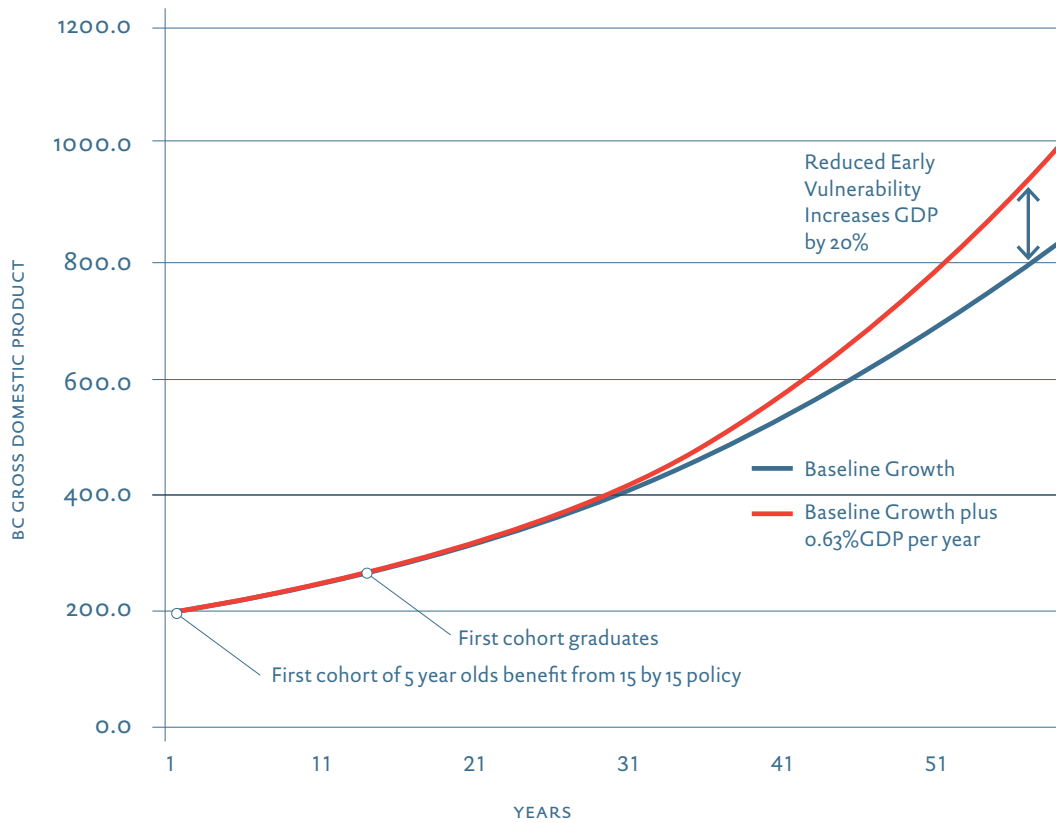
Research by Eric Hanushek, a senior fellow at the Hoover Institution of Stanford University, is particularly insightful about the economic gains generated for jurisdictions by greater stocks of human capital. He and colleagues (Hanushek et al. 2008; Hanushek and Woessman 2008) use international test score data for children age nine to fifteen to analyze the relationship between population-level cognitive skills and per capita GDP growth across countries. Their analyses show that jurisdictions which report higher average test scores in school also enjoy far higher growth rates.

Specifically, if one country's test-score performance was 0.5 standard deviations higher than another country during the 1960s, the first country's growth rate was, on average, 0.63 of one percentage point higher annually over the following 40-year period than the growth rate in the second country. Hanushek and colleagues find that higher cognitive skills accelerate GDP by this value even after controlling for the security of a country's property rights, its openness to international trade, fertility patterns and geography (Hanushek et al. 2008; Hanushek and Woessman 2008).

This enormous dollar figure signals that cost of biologically unnecessary vulnerability is ten times greater than the total debt load carried by the Government of British Columbia.

An additional 0.63 of a percentage point GDP in economic growth may not sound like much, and the figure is indeed a conservative projection relative to other estimates of the economic growth generated by increased human capital (e.g. Teulings and van Rens 2008). But we all know the power of compound interest. Accelerating economic growth by even this modest amount would increase GDP by more than 20% in 60 years time (FIGURE 2). The economic value of this accelerated GDP growth is equivalent to investing \$401.5 billion today at a rate of 3.5% interest, even after covering the social investment costs required to achieve the necessary human capital increase. This enormous dollar figure signals that cost of biologically unnecessary vulnerability is ten times greater than the total debt load carried by the Government of British Columbia (2009a, 40). The implication is clear: governments, businesses, bankers and citizens have ten times as much reason to worry today about the early child vulnerability debt as we have reason to worry about the fiscal debt.

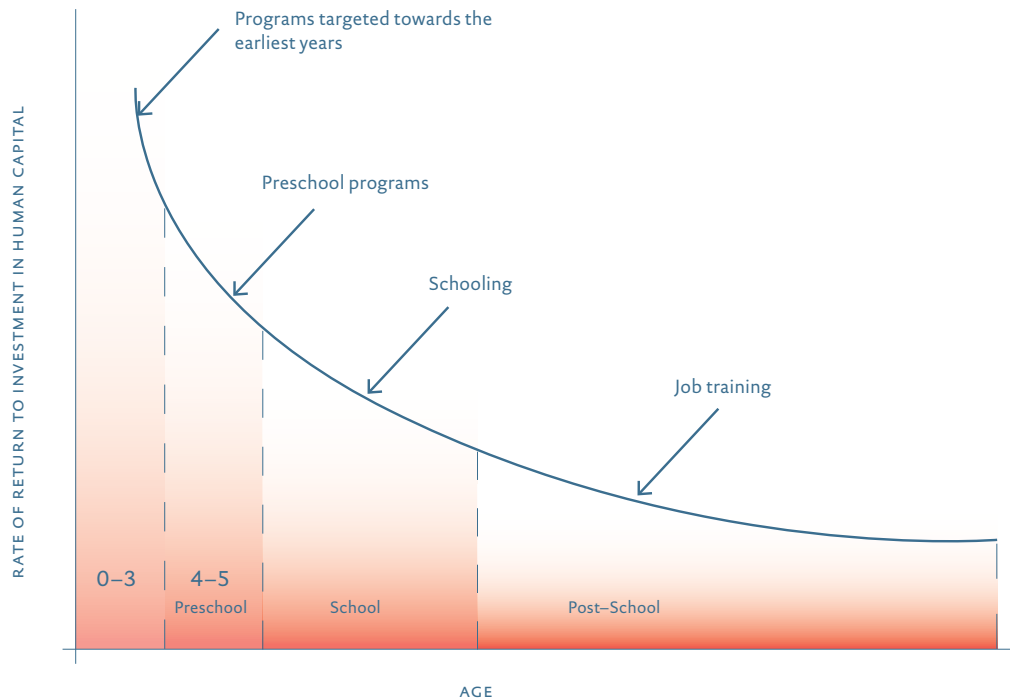
FIGURE 2: BC GDP Gains from Early Vulnerability Reduction Strategy to Increase Human Capital



A reduction in vulnerability at kindergarten from 29% to 10% is the degree of reduction in childhood vulnerability that BC needs to achieve in order to realize the literacy and numeracy gains represented by the 0.5 standard deviation improvement in test scores to which Hanushek and colleagues refer. By grade seven, the very conservative estimates generated from HELPs lifecourse simulation model indicate that achieving the midpoint *15 by 15* goal will sustain a 0.37 of a standard deviation gain in cognitive skills at age 12. As kindergarten vulnerability levels drop to 10%, the simulation model predicts achievement gains by age 12 of at least 0.58 of a standard deviation. We simulated results for twelve-year-olds to be consistent with Hanushek’s methodology, which was based on performance tests administered to children between the ages of nine and fifteen.

Some may hold out hope that dramatic improvement in population-level cognitive abilities and productivity can be realized by increased investments in high school, expanded post-secondary education, and/or job skills training for adults. However, we have already seen that human development research warns against this investment strategy because it ignores the genetic and biological reality of the human species: the early years represent the unique window in the human lifecourse during which citizens’ physical, socio-emotional and cognitive potential are especially malleable to the positive effects of nurturing environments and strategic human capital investments.

FIGURE 3: Returns to Investment in Human Capital by Age



SOURCE: Heckman (2008)

The research about biological embedding of social stimuli is now so compelling that there is a growing consensus among economists that the most cost effective human capital interventions will occur among young children. For instance, James Heckman (2008), the Nobel Laureate economist, makes this case, and illustrates the point in FIGURE 3 above, which documents the potential returns to investment in human capital by the age of the investment recipient. The graph shows diminishing returns to investment as the lifecourse progresses. Readers will already recognize the shape of the curve reported in Heckman's graph because it tracks the human sensitivity to environmental stimuli reported in FIGURE 1 above. Since increased human capital is needed for economic growth, and since the most cost-effective interventions occur in the early years, Heckman concludes that "a major refocus of policy is required to capitalize on knowledge about the life cycle of skill and health formation and the importance of the early years in creating inequality in America, and in producing skills for the workforce."

How Do We Reduce Early Vulnerability? Lift and Flatten the Social Gradient

While the provincial rate of vulnerability is 29%, BC’s EDI results reveal a social geography of opportunity: there are large and consistent differences in developmental vulnerability between neighbourhoods, communities, and regions in the province. Some of BC’s 478 neighborhoods report rates of vulnerability below 5%; others report vulnerability rates near 60%. Between one-fifth and one-half of this neighborhood variation can be explained by local socioeconomic status depending on the domain of development under consideration (Kershaw et al. 2007). This social gradient of population health is universally observed and widely studied for both individuals and neighborhoods. For virtually every measure of health, including early child development, individuals or neighborhoods lower down the socioeconomic scale experience, on average, less well-being. In terms of EDI results, neighborhoods where proportionately more families have sufficient access to private wealth to compensate for the social determinants of early vulnerability report lower EDI vulnerability rates. Conversely, those neighborhoods that report higher rates of poverty suffer higher vulnerability levels. Research evidence suggests that vulnerability rates are particularly high in BC when neighbourhood dynamics result in small population enclaves being left behind socially and economically, even by the standards of others who are relatively disadvantaged in the same neighborhoods (Kershaw and Forer 2009).

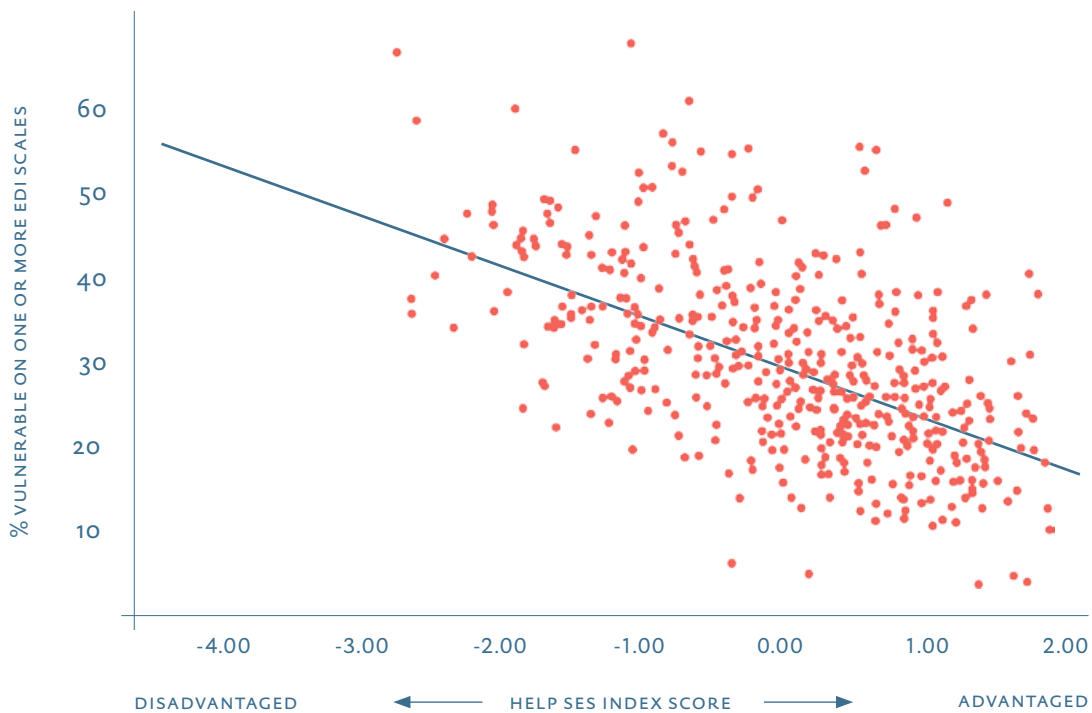
Just as importantly, however, the social gradient reveals that vulnerable development is not concentrated among “the poor.” This is the case when examining both individuals and neighborhoods. While the highest risk of vulnerability is found in the poorest neighborhoods, the largest number of children with developmental vulnerabilities are found across neighborhoods that are home predominantly to the middle-class. This finding is clearly shown in FIGURE 4 below which plots, by BC neighbourhood, children’s vulnerability and a broad measure of socioeconomic status.

While the highest risk of vulnerability is found in the poorest neighborhoods, the largest number of children with developmental vulnerabilities are found across neighborhoods that are home predominantly to the middle-class.

FIGURE 4 also shows that some of the more privileged neighbourhoods achieve vulnerability rates of less than 10%. Research indicates that population health is advanced when jurisdictions “flatten” the social gradient by providing equitable access to the conditions that support healthy child development for all, not just for those at the highest end of the socioeconomic spectrum. The neighborhoods that achieve vulnerability rates at or below 10% thus provide benchmarks toward which the entire province can strive.

Currently, however, very few neighborhoods in BC achieve vulnerability rates below 10%. In fact, 93% of BC neighbourhoods have vulnerability rates that exceed even the intermediate target of 15%. If British Columbia is to meet the 15 by 15 goal, we must make changes across the entire province in order to find ways to create broad and equitable access to the conditions that help children and families thrive. The research by Hanushek and colleagues

FIGURE 4: *The Social Gradient in Neighborhood Rates of Vulnerability: Vulnerability is a Middle-Class Problem*



(2008; 2008) confirms this viewpoint, showing that human capital investments accelerate GDP when they influence the entire population to bring everyone up to an adequate level of performance while also generating a substantial share of high performers.

The Diagnosis: Public Policy Is Not Keeping Pace with Socioeconomic Change

Effective public policy, health support programs and public awareness-raising have led to healthy birth weights for almost 95% of BC babies: only 5% are born at risk of developmental vulnerability as measured by widely accepted low birth weight standards (Kendall 2003). Yet, within five years, nearly one in three children is vulnerable. This change — nearly a full order of magnitude increase from basic biological risk at birth to developmental vulnerability by school age — highlights the degree to which our programs and policies for early childhood have not kept pace with our biomedical achievements during the prenatal period.

BC vulnerability levels at kindergarten reflect family policy that is out of step with the social and economic context. Since the end of the Second World War, social policy in Canada has presumed that women would generally be available to care for young children at home. Federally funded child care services were introduced during the war years to enable women to contribute to industry while men fought on the front lines. These services were elimina-

ted as men returned from overseas. In their place the federal government introduced the family allowance, one of Canada's first universal programs. This allowance was designed to moderate wage demands in recognition of the pressures that employers faced as male breadwinners sought to achieve the middle-class goal of a "family wage" sufficient to sustain themselves, their wives at home, and dependent children (Ursel 1992).

In the years since, Canada has retained a predominantly "cash" oriented approach to family policy for young children before they reach kindergarten. The universal family allowance was replaced in the early 1990s with targeted cash measures like the Canada Child Tax Benefit and the National Child Benefit Supplement. These federal

programs allocate funding disproportionately to low-income families with children under 18, with some modest funds reaching into the middle- and upper-income brackets. These benefits continue to represent the largest public contribution to families with children in the country, now over \$10 billion a year (\$1.3 billion in BC, estimated on a per capita basis). In 2006, they were joined by the Universal Child Care Benefit, a \$2.3 billion program that delivers \$100 of taxable income a month to all families for each child under age 6 (\$299 million in BC). A spousal and common law tax credit remains in place to help one-earner couples subsidize the cost of a full-time spouse at home, regardless of whether there are young children. This allowance costs the federal government more than \$1.3 billion a year (\$169 million in BC), and a similar measure at the provincial level costs BC another \$60 million (Kershaw 2007).

Since the end of the Second World War, social policy in Canada has presumed that women would generally be available to care for young children at home.

While these cash investments in Canadian families represent by far the largest expenditure, they cumulatively add up to a relatively modest family benefit value, around \$220 a month for the typical family. By international standards, the value of this benefit package ranks near the bottom of the pack compared to packages available in other developed economies. The most recent data rank the Canadian package in BC at 14th out of 16 countries (Kershaw 2007).

In keeping with the cash approach to family policy, the most significant policy innovation since World War II has been the introduction of maternity and parental leave. 15 weeks of maternity leave subsidize time for biological mothers to accommodate the physical demands of birth and initial breastfeeding. The parental leave component in turn subsidizes time for mothers and fathers to care for infants. In 2001 the federal government increased the parental leave period from 10 to 35 weeks. The cumulative leave benefit period per pregnancy is now 50 weeks. Although benefit values depend on previous income, the maximum value is currently \$447 per week, at a public cost of around \$3 billion per year to the federal government (\$390 million in BC). Generally women take leave, including the parental leave component. Just 15% of parental leave takers are fathers. But this rate is up dramatically from 2% in 2001 before the parental leave period was extended (Canada Employment Insurance Commission 2006).

Many families do not access the maternity and parental leave employment insurance program due to eligibility restrictions and/or inadequate remuneration levels. By contrast, only about one in five women have access to benefit top-ups from their employers (Marshall 2003).

After the 50 week leave period there is little social policy support for families with children, beyond the cash support described above, until children reach kindergarten. Most notably, governments have been slow to expand access to quality early childhood education and care programs that support parental workforce participation. Outside of Quebec, which introduced a publicly-funded child care system in 1997, only 12% of Canadian children under 12 had access to a regulated child care space in 2006 (calculated from Friendly et al. 2007). In BC, slightly more than one in three preschoolers aged three to five are enrolled in a child care centre, whereas there are only spaces available for 5% of children under age three (Goelman et al. 2008).

The still-largely post-World War II approach to family policy now confronts a socioeconomic context that has evolved substantially since the Second World War. Multiple recent studies confirm that several socioeconomic trends are significantly impacting parents' ability to care and earn, bringing public policy and economic growth in BC to an important fork in the road. We can choose not to modernize our public policy to provide families with the time, resources and supports they need, and face the resulting economic and social impacts of ongoing early childhood vulnerability and family fragility. Or, we can choose to invest in family policy that will help children, families and our economy to thrive. Research about the socioeconomic trends that indicate the need for the latter approach — a modernized family policy — includes:

Increased Labour Force Participation:

The largest labour supply increase in recent decades has occurred among female lone-parent families and married women with young children. 76% of women with children aged three to five work for pay, as do 64% of women with children under age three (Friendly et al. 2007).

Declining Real Wages, particularly among men

Increased labour force participation rates among women represent responses to a number of social and economic changes, including evolving attitudes about women's equality and shifting patterns in male income earning (Kershaw 2005). Beaudry and Green (2000) indicate that successive waves of labour market entrants since the 1970s, particularly men, have consistently fared poorly in comparison to earlier entrants regardless of education levels. The real decline in starting wages is substantial: a 1992 university educated male entrant earns approximately 20% less than his counterpart did 20 years earlier; and he is not eventually compensated for his lower initial wages by increasing returns for experience. Data indicate that this decline is particularly large in BC where, despite low unemployment, 70% of families with children earned less (in inflation-adjusted dollars) in the mid-2000's than their counterparts did in the late 1970s (Ivanova 2009). The result is that BC households today must perform considerably more paid labour per year (typically by a second adult) in order to enjoy a level of economic well-being and security earned by the one-earner family that was much more prevalent 30 years ago. Thus, when families enjoy income growth, it is generally due to increased employment time, rather than increased individual earnings (The Vanier Institute of the Family 2009).

Persistently High Rates of Child and Family Poverty

Even with the dramatic increase in labour force attachment that we witnessed over the last three decades, 16% of families with children lived in poverty in BC in 2005 (based on after-tax income) (Health Officers Council of BC 2008). This rate positions the province with the

highest child and family poverty rate in the country, an infamous status it has occupied for the last five years despite impressive economic growth.

38% of poor BC families have one adult working full-time (First Call: BC Child and Youth Advocacy Coalition, SPARC BC, and Campaign 2000 2008), a finding that casts further doubt on the sustainability of the one-earner couple model for child rearing. In fact, the National Council of Welfare (2002, Table 8.3) reports that the poverty situation would be far worse in Canada were it not for the increase in dual-earner families. According to the Council, the percentage of poor Canadian husband-wife households with children under six would triple in the absence of maternal earnings (National Council of Welfare 2002, Table 8.3). Esping-Anderson (2002, Table 2.8) reports a similar finding across many OECD countries.

Increasing After-Tax Inequality

Nationally, Statistics Canada reports that the top 20% of earners saw their incomes rise by over 16% between 1980 and 2005, whereas the bottom 20% of earners have struggled with a 21% drop in income (Statistics Canada 2009). Although public policy mitigated this market-generated inequality into the early 1990s, substantial policy changes at the federal and provincial levels in the wake of deficit reduction strategies by both federal Conservative and Liberal parties have coincided with increases in inequality even after taxes and benefits are issued. This after-tax inequality is key for understanding why BC had until recently generated record low unemployment levels while child and family poverty remained high. In 1976 the bottom half of families earned 29% of total earnings, dropping to 19% by 2006. During the same time period, the share of total earnings for the top 10% of families grew from 22% to 29%. In summary, income inequality in BC has increased such that the top 10% of BC families now earn substantially more than the bottom half (Ivanova 2009).

More Work Time, Less Family Time, more juggling of work/family balance

It takes little imagination to recognize that one cost of more employment time per family is less time to care personally. Duxbury and Higgins (2003) report that Canadian citizens in BC suffer the highest rates of work-life conflict in the country. Sauvé (2009) reports that this time crunch is exacerbated by a range of issues, including that “commuting times are increasing and modern technology has blurred the lines between work and family. Average time spent with family on a typical work day has shrunk by about three-quarters of an hour, from 250 minutes per day in 1986 to 206 minutes in 2005 — a drop of 18%.”

Neo-traditional Family Arrangements

The time poverty reported by British Columbians is real. But parental responses to this pressure vary as they grapple with the still-largely post-World War II family policy. While a majority of women with young children are employed, data from the National Longitudinal Survey of Children and Youth reveal that a significant number of children under twelve in two-parent families reside in homes that remain neo-traditional. The survey found that 36% of such children live with parents who both work full-time, compared to 33% who have at least one parent who is not employed, and 22% who have at least one parent employed part-time (Ross et al. 1996, 35-36). This data highlights the dilemma facing families today, and the stresses associated with the various options they face. Families that select reduced paid work hours risk economic insecurity, while families that pursue higher rates of paid work for personal reasons or to stave off economic insecurity suffer time shortages.

Women Disproportionately Adapt Their Schedules to Care:

In keeping with the post-war social policy expectation that women would be available to care for children, women remain much more likely to reduce their paid work hours and/or shoulder the majority of the caregiving workload on top of employment when juggling work/family balance. Regardless of their employment status and occupation, Canadian women typically retain primary responsibility for work in the home, including caregiving (Kershaw 2005). 94% of stay-at-home parents in single-earner couples are women (Statistics Canada 2000, 110). Part-time employed women are nine times more likely than men to report that child care responsibilities preclude them from pursuing full-time positions (Statistics Canada 2006a, 111). Full-time employed women typically remain responsible for organizing replacement care arrangements while they and their partners are in the labour force, as well as for coordinating the performance of domestic household work. Full-time employed women also consistently provide more unpaid caregiving than full-time employed men, and they enjoy less leisure, and correspondingly more stress, on average than their male counterparts (Silver 2000). Stress levels contribute to increased risk of heart disease (Picard 1999a) and other ailments. Rising dissatisfaction with work/family balance negatively impacts employers as employees take more time off for illness and family reasons, and more workers consider leaving their current employers in search of better balance (Sauvé 2009).

Stresses Magnified for Lone Parent Families, predominantly mothers

In 2001 almost 20% of children under 14 in BC lived in lone-parent families, and 87% of children under five in those families lived with their mothers (Friendly et al. 2007). Lone-parent families are particularly susceptible to the stresses associated with lack of time, resources and community supports.

An International Policy Laggard

The mismatch between public policy in Canada and the current socioeconomic context is recognized internationally. Most recently, UNICEF (2008) synthesized the best international research available to issue a report card that compared government policy and results for young children and their families in 25 developed countries. Based on the United Nations Convention on the Rights of the Child, a series of benchmarks were developed for measurements of child poverty, parental leave, access to essential child health services and quality early childhood education and care programs. Canada ranked in last place, achieving only one benchmark out of ten (for staff training in child care programs), a poor ranking that is supported by a range of other international comparisons (OECD 2006; Kershaw 2007). In contrast, Sweden received full marks for achieving all ten policy benchmarks, while Finland, Norway and Denmark were recognized for satisfying eight of the ten criteria.

The mismatch between public policy in Canada and the current socioeconomic context is recognized internationally.

The countries that ranked at the top in terms of family policy simultaneously enjoy top international rankings for gender equality. Since 2006, the World Economic Forum has published annual reports calculating the Gender Gap in more than 120 countries, assessing

how equitably countries divide their resources between men and women. With over 80% of their gender gaps closed by 2008, Norway, Finland and Sweden achieved the highest rankings. In contrast, Canada's ranking dropped from 14 in 2006 to 18 in 2007 to 31 in 2008 (Hausmann, Tyson, and Zahidi 2008). In between, countries such as New Zealand, the Netherlands, Germany, United Kingdom, Australia and the United States all ranked higher than Canada on both the Gender Gap and UNICEF Family Policy reports.

FIGURE 5: 2008 Gender Gap and Family Policy Rankings

Country	Gender Gap Ranking	Family Policy Score/10
Norway	1	8
Finland	2	8
Sweden	3	10
New Zealand	5	6
Denmark	7	8
Ireland	8	1
Netherlands	9	5
Germany	11	4
UK	13	5
Switzerland	14	3
France	15	8
Australia	24	2
US	27	3
Canada	31	1

SOURCE: Hausmann *et al.* (2008); UNICEF (2008)

The deteriorating Canadian gender gap ranking coincides with diminished institutional commitments to gender equality in BC. Since 2001, the BC government Ministry for Women's Equality was downgraded to representation by a Minister of State for Women's Equality, downgraded again as part of a subsequent merger into the Ministry of Community, Aboriginal and Women's Services, and then downgraded again such that the issue of women's equality no longer receives any specific institutional representation in the BC government.

The current dearth of attention to gender equality in BC is worrisome for child development because the association between strong gender equality policy and strong family policy is no coincidence. The post-war policy presumption that women would generally be available to shoulder the day-to-day caregiving needs of dependent children is now out of touch with the socioeconomic changes identified above. Society confronts a serious care gap, which requires a public policy response that equitably supports both mothers and fathers to care and earn. As we will describe in detail further on in this report, the benefits of such a public policy response — quantified primarily in reduced early childhood vulnerability, increased parental employment and reduced public health costs associated with work/life imbalance — significantly outweigh the public costs.

The Remedy: *15 by 15* Policy to Promote Parental Time, Resources and Community Supports

While children grow up in unique families which provide their primary source of influence, care and education, all parents and guardians have three overarching needs: time to care personally; resources to sustain themselves and their children; and services in their communities that support mothers and fathers to care for and educate their children; train for, find and maintain employment; and achieve work/life balance.

In response, a comprehensive *15 by 15* Policy Framework for Optimal Early Human Development would require citizens and businesses to support governments to implement the following policy changes.

Time

- Build on maternity and parental leave to enrich the benefit value, and to extend the total duration from 12 to 18 months, reserving additional months for fathers
- Build on existing employment standards to support mothers and fathers with children over 18 months to work full-time for pay, but redefine full-time to accommodate shorter annual working hour norms without exacerbating gender inequalities in the labour market

Resources

- Build on income support policies to mitigate poverty among families with children

Community Services

- Build on pregnancy, health and parenting supports to ensure monthly developmental monitoring opportunities for children from birth through age 18 months, as their parents are on leave
- Build on early education and care services to provide a seamless transition for families as the parental leave period ends in order make quality services for children age 19 months to kindergarten affordable and available on a full- or part-time basis, as parents choose
- Build on the work of local ECD coalitions in community planning to enhance program coordination between all local services that support families with children from birth to age six

Our recommendations reflect a life course perspective, which acknowledges that the relative need for time, resources and community supports will vary through different stages of children's lives, as well as between families and across neighbourhoods and communities. We therefore propose policies that support mothers, fathers and children when the latter are under 18 months, as well as policies that adapt to the evolving needs of parents and their children as the latter mature from 19 months to five years, and eventually into the formal school system.

Although the legacy of post-war family policy is out of step with current social and economic realities, our recommendations all “build” on family policy components which have at least some history in BC, and thus have potential to evolve into a comprehensive *15 by 15* policy framework. Specifically, existing government policies provide broad-to-universal access to parental leave, parenting resources and general health services. Income supports are available for lower-income families, employment supports help many workers, and employers are considering ways to achieve family-friendly workplaces. Furthermore, local community tables are collaborating to maximize the use of available resources in ways that support children and families. While imperfect, all of these family policy components provide a base from which to build.

Our recommendations reflect a life course perspective which acknowledges that the relative need for time, resources and community supports will vary through different stages of children’s lives.

Some Policy Gaps are Larger than Others: Recommendations 1 – 3

The starting place from which to build, however, is not the same for all of the required policy innovations. Some have more history or momentum in BC and Canada than others. Notably, international report cards show that Canada lags behind almost all other developed economies in terms of investment in early learning and child care services (UNICEF 2008; OECD 2006). Our poverty rates are also high by international standards (Kershaw 2007). Leave policy, in turn, is mid-ranked, in part because the federal government innovated with parental leave at the beginning of the decade, although most fathers still find relatively little time to care personally for newborns and infants. After the leave period, there are competing labour market forces at play in Canada: in general, per capita hours are declining, in part because industry and firms require a “just-in-time” workforce; but employment standards revisions over the last decade have created new opportunities to extend hours for core employees working in industries like high tech. In terms of near success stories,

Canada is close to meeting important international benchmarks for health care in support of pregnancy and early childhood (i.e. low-birth-weight; immunization), while British Columbia has been building Family Resource Program and Strong Start infrastructure to provide non-medical care opportunities for parents to interact with developmental professionals. Finally, with support from government and the United Way Success by Six program, Early Child Development coalitions have evolved in many communities across the province. If adequately resourced, these have potential to support local planning and coordination at municipal and regional levels, which will become more important as the proposed policy innovations are introduced.

Since the building blocks for policy innovation are not evenly dispersed, we start our more detailed discussion and cost estimate of the recommendations by focusing first on the policy areas for which BC is furthest behind by international standards, and which thus require attention most urgently when governments think about implementing reforms.

Three foundations for early human capital investment still require a public investment that is an order of magnitude greater than the others: early childhood education and care services; income support policies; and parental leave. We therefore provide separate cost estimates for each of these measures below, before turning attention to the other three policy recommendations for which we provide a cumulative cost estimate.

RECOMMENDATION 1

The Government of BC should build on early childhood education and care (ECEC) services to provide:

- Universal (but not mandatory) access to quality ECEC services, including children with extra support needs; and
- Seamless transitions from parental leave into ECEC services, and from ECEC services into elementary school.

Given the real declines in male wages and growing after-tax income inequality discussed above, social policy in BC and Canada must finally adapt beyond post-war expectations to acknowledge that dual-income-earning households are the best insurance policy against economic insecurity. This adaptation is anticipated by the BC Progress Board, which recognizes that Canada, like most countries, expects able-bodied adults “to look to the labour market to ensure their economic well-being” (Banting 2006). The labour market is thus the principal source of financial welfare around which social policy must be oriented, provided that adequate leave options are put in place to support men and women to care personally when care responsibilities are particularly high, as is the case following birth and in a child’s infancy.

In order for the labour market to provide the principal source of financial resources to adults now, without compromising the future stock of human capital, then enabling conditions like quality ECEC services are imperative. As a community support, ECEC services contribute to household resources by freeing all adults in dual-parent and single-parent homes to retain strong ties to the labour force. Research also shows that the same services support fathers to have more time to care personally, because stronger earnings potential among women better positions households to invite men to adapt their paid work schedules (Coltrane 1996). When ECEC services are of high quality, they in turn have enormous potential to enrich future human capital by complementing the nurturing and early education that families already provide.

Regrettably, quality early learning and care services for children while their parents work in the labour market represent the family policy issue where BC is furthest behind by international standards. The Organization for Economic Cooperation and Development (2006) review of 20 developed countries shows that Canada has the lowest overall access to regulated ECEC services. The more recent UNICEF (2008) report card confirms Canada’s ranking among the bottom of countries in terms of this issue. BC is further below the Canadian average, in part because Quebec pulls up the overall Canadian ranking. The latter is well on its way to implementing a system of child care that is available to all who want or need services for \$7 per day.

Our poor ranking in BC reflects that there are generally two types of early childhood education and care programs for children under six. The strength of our approach sees almost 90% of five year olds attend kindergarten programs in the public school system (Friendly

et al. 2007, 145). This system provides all age-appropriate children with an entitlement to part-day public programs and, for certain groups of children, full-school day programs. Publicly-planned and delivered kindergarten programs are staffed by trained, reasonably-remunerated educators working with a common curriculum.

The weakness in the system is the part-day for which children age five do not have entitlement to services, and the full-day for which children under age five have no entitlement whatsoever. The child care tradition in BC is associated with a private set of services that rely on individuals and groups to plan, develop and operate a range of home- and centre-based programs with relatively low public involvement and funding. Individual families are responsible for finding, organizing and paying the majority of the costs for their own arrangements. Approximately one-third of preschoolers aged three to five are enrolled in either a part-day or full employment-day child care centre, as are 5% of children under age three. In contrast, the UNICEF (2008) report card sets considerably higher benchmarks: subsidized, regulated ECEC spaces for 80% of four year olds; and for 25% of children under age three.

A study of family benefits available to Canadians in 2005 makes explicit the cost of this service gap for individual households in BC (Kershaw 2007). An average-earning one-earner couple with a toddler will receive a monthly family benefit of at least \$78 compared to childless couples with the same income. By contrast, dual-earner families with both parents in the labour market who must therefore pay for ECEC services incur monthly deficits in disposable income ranging from \$350 to \$500, compared to childless couples with the same earnings. In other words, the “family benefit” for one-earner couples, albeit modest at \$78 per month, moves to a “family penalty” for two-earner couples, even at relatively low household income levels because ECEC service subsidies are targeted only to the poor.

Given this discrepancy, it is clear that public funding for early childhood education and care services represents the major missing piece of the family benefit puzzle in BC, since families that supplement their personal caregiving with these high cost services generally incur significant horizontal inequities. This finding remains the case despite the introduction of the federal Universal Child Care Benefit (UCCB) in 2006, which arguably widened the gap between benefit packages available to one-earner couples and families that rely on ECEC services. Specifically, the UCCB replaced existing transfers to provinces, reducing federal funding for ECEC services. The Government of BC passed on those reductions to families by initially decreasing funding to these services, suggesting that families utilize their UCCB to pay for the resulting fee increases.

The recommendation to expand ECEC services in BC stems from an extensive body of research which repeatedly concludes that early childhood education and care programs can provide positive developmental outcomes for all children, with particular benefits for the most vulnerable, and they can support families, no matter what the “label” of the program is: kindergarten, pre-kindergarten, daycare, child care, preschool, early learning, etc. However, early childhood education and care programs only work if the underlying public policy and investments promote high quality experiences and equitable access for children and their families (Goelman et al. 2008).

Accordingly, recent increases in public investment in most developed countries have focused simultaneously on the triple objectives of quality spaces in sufficient number at affordable rates. Many jurisdictions pursue quality by building their programs on the close

associations between well-trained, qualified, appropriately compensated early childhood educators who implement high quality programs which produce positive child development outcomes.

Countries approach ECEC services with different pedagogical priorities: some tend towards preparing children for school (“school readiness”) while others tend towards preparing schools for children (i.e. adapting the school programs to suit children’s varying developmental needs). To be sure, literacy, numeracy and inquiry skills are some of the necessary competencies, yet McCain, Mustard and Shanker (2007, 49) remind policymakers and parents that young children learn through play, as they set the pathways for academic success by developing strong verbal skills, making friends and displaying persistence, creativity, interest and problem solving.

The recommendation to expand ECEC services in BC stems from an extensive body of research which repeatedly concludes that early childhood education and care programs can provide positive developmental outcomes for all children.

Research evidence confirms that effective ECEC programs which yield long-term developmental benefits have the following interactive characteristics (Ramey and Ramey 1998):

- encouragement of exploration
- mentoring in basic skills
- celebration of developmental advances
- guided rehearsal and extension of new skills
- protection from inappropriate disapproval, teasing or punishment
- a rich and responsive language environment

These characteristics are more typical of ECEC programs that have smaller group sizes and lower child/staff ratios, along with well-trained caregivers (Goelman et al. 2008).

In this light of this evidence, UNICEF established three quality benchmarks in its recent Report Card: 80% of all ECEC staff working with children under three must be trained; 50% of ECEC staff working with children aged three to five have relevant qualifications gained through post-secondary education; and a maximum staff/child ratio of 1/15 in ECEC programs with children aged three to five.

BC does not yet consistently meet any of these conditions throughout its ECEC programming. Both part-day and full-day child care centres meet the staff/child ratio benchmark, but kindergarten programs do not. Kindergarten teachers have approximately four years of post-secondary education, but early childhood qualifications are not required. In contrast, early childhood educators in licensed part-day and full-day child care centres generally have only one or perhaps two years of relevant post-secondary education. Family-based care may be licensed or unlicensed and there are no training requirements for the latter (Friendly et al. 2007).

International comparisons and trends confirm that, in general, children aged three to six have received more ECEC policy attention in recent years than younger children. The trend internationally is towards broad access to publicly-funded ECEC programs two years before school, with some portion of the day available at no cost to parents. These trends also point to the growing awareness of young children’s need for a “seamless” day, where the child stays in place and consistent, quality programs wrap themselves around her for the length of day desired by the family. The literature highlights the importance of providing preschoolers with the opportunity to participate in quality ECEC programs regardless of family income, parental employment status, special needs or ethnic/language background. We therefore recommend that the BC government increase access to quality ECEC starting with provision of voluntary full-employment-day kindergarten for all children aged three to five who need or want it, adding ECEC programs for children aged 19 months to three years over time.

The existing capital, operational and human resource (both paid and unpaid) investments in community-based child care programs provides a potential place to build service linkages to schools in a way that may enhance both economic and operational efficiency. Strengthening existing community-based ECEC programs by integrating them with new school-based programs should therefore be considered as the province moves toward implementation. Developing school-based community hubs of related education, care and health supports for children and families provides opportunities to integrate public and community services and embrace family involvement. The latter will be critical for mitigating potential concerns in some communities about the increasing role of government in family lives, including among Aboriginal communities who still rightly critique the legacy of the Indian Residential Schools in our province and across the country.

*Estimated incremental annual investment in early childhood education and care services:
\$1.5 billion*

The estimated net incremental annual operating cost of a universal (but not mandatory), quality ECEC system for BC children aged 18 months to five years is \$1.5 billion. We calculate the cost of a model starting for children age 18 months so that there are no material gaps in supporting parents to care and earn after parental leave expires. The system for which we provide a cost estimate privileges parental choice, and is not presumed to be mandatory. To this end, the service estimate includes part-time and full employment-day programs in licensed family homes, centres and schools, along with parent drop-in programs. While experience in other jurisdictions shows that parents choose to use ECEC programs when they are accessible and affordable, we do not assume full uptake. The model estimates that 85% to 90% of children aged two to five access ECEC services at least 16 hours each week (with 50% using services full-time), along with 68% of children aged 18 months to two years.

Regardless of which option parents select, our cost estimates build on existing research about the importance of broad access to quality environments. Specifically, we assume the ECEC system will have the following characteristics in order to reasonably anticipate that the substantial social investment will contribute to the requisite improvements in children’s achievement:

- Given the importance of trained, reasonably remunerated staff for achieving the service quality required to generate child development gains, the model assumes a professionally-trained workforce and increases compensation in all regulated ECEC programs substantially beyond the current average for early childhood educators in BC. Average ECEC earnings, however, remain lower than the current level for public kindergarten teachers.
- Given the importance of low child/staff ratios for achieving the service quality required to generate child development gains, the model assumes that all regulated ECEC programs meet current child care standards.
- Given the importance of social, physical and cultural inclusion for achieving developmental gains among vulnerable children identified by early screening initiatives, we follow advice from national experts in assuming that approximately 10% of spaces in BC's ECEC system will cost twice the typical space. This added cost will be necessary to reduce barriers to participation and to allow targeted additional supports as needed, within a universal approach.
- Given the importance of affordable parent fees for labour supply gains, the model assumes that, on average, parents contribute 20% of the total system costs in parent fees. The parent contribution could be organized on a sliding scale, flat fee or other basis. For example, some jurisdictions provide a free portion of the day to all children that need or want to participate in ECEC programs, charging parent fees for the extended hours they require. This model supports such an approach, and the province's existing child care subsidy program could be integrated into the system, if desired.

Currently, the cumulative federal and provincial investment in ECEC services for BC children under age six is around \$370 million annually, or about 0.2% of GDP. This funding level lags behind the average annual public funding of 0.7% of GDP provided by the 30 OECD countries. However, in its 2008 Report Card, UNICEF suggested that even 0.7% of GDP is too low, as countries that spend at this level have services "of observably poor quality." Based on consultation with OECD member countries, UNICEF established an initial benchmark for public investment of 1% of GDP, a level recommended by the former European Commission Network for Childcare.

In BC, an increase of \$1.5 billion in ECEC funding would bring the total public investment to \$1.9 billion, which is within the range of the 1% of GDP recommendation (The Government of BC (2009a, p. 13) estimates GDP in 2009 to be between \$198 and \$208 billion). The public cost per space for a child age three to five years is approximately \$9,400 for a typical space in a full-employment-day, full-year program. This is comparable to the cost per pupil (inclusive of some special needs costs) in BC's public education system (\$8,078 – 2008/09) which does not operate all year (Government of British Columbia 2009d). Our budget estimates also fit within the range of estimates used by several US experts, which suggest that high quality ECEC services for children aged three to six, with staff/child ratios at or less than 1/10, cost between US\$6,000 and US\$10,000 annually (Bennett 2008). While our proposed \$1.5 billion annual budget increase would represent an extraordinary investment by BC standards, the cumulative annual ECEC budget would still be just over half of the Danish expenditure level (2% of GDP) and considerably below the 1.75% of GDP expenditure in Norway and Sweden.

In its 2008 Throne Speech, the Government of BC committed to assessing the feasibility of full-day kindergarten for children age three to five. This is an enormously important development in BC for which the government deserves much credit. HELP was pleased to be asked by the Province's Early Childhood Learning Agency to conduct a literature review and address specific questions relating to the recently-released feasibility analysis (Government of British Columbia 2009b). The Province's assessment is generally consistent with the research analysis and international trends described above.

The province's Early Childhood Learning Agency (2009b) estimates the public operating costs of ECEC services for children aged three to five at over \$600 million per school year. The \$1.5 billion estimate arising from our costing model is comparable under these assumptions. However, our costing model adds:

- Services for children aged 18 months to three years, which are more expensive as the child/staff ratios are necessarily smaller for high quality programs
- Year round operating costs, to support additional parental labour force attachment
- Assumptions of higher service uptake for three year old children

RECOMMENDATION 2:

Build on income support policies to reduce child and family poverty by:

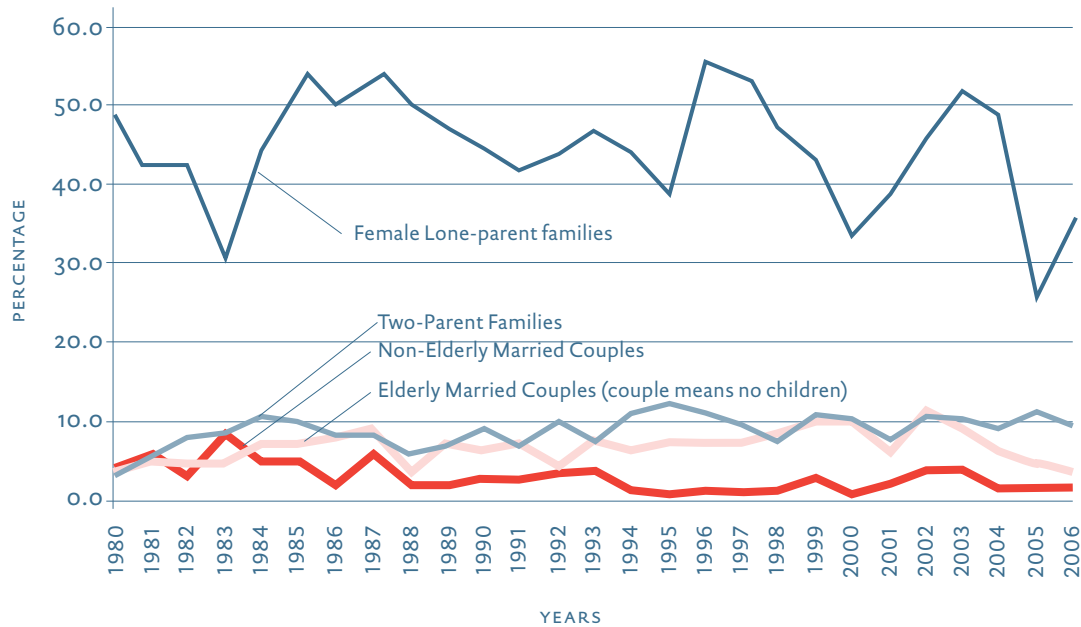
- Raising welfare benefits for parents
- Addressing wage pressures with enhanced family/in work tax credits, or raise minimum wage levels
- Making early education and care services affordable to facilitate labour supply

Between 2004 and 2007, BC enjoyed very impressive economic growth and record low unemployment levels. But during the same period, EDI data reveal that child vulnerability levels rose 12%, from 26% to 29%. These parallel trends invite us to expand how we measure progress, in part by integrating health and well-being data into our measurements.

Part of the reason for the growth in early vulnerability over this period is that BC's economic success occurred without remedying poverty levels for families with children. While Canada and BC have achieved impressive success at reducing poverty rates among seniors since 1980, Statistics Canada data reveal that the rates of poverty for couples with children in BC has doubled in that time, while the rate for lone mothers has waxed and waned, but still remains nearly four times that of couples with children. Our poverty rates must be compared to those reported in other countries like Sweden, Norway, Finland and Denmark, all of which report that fewer than 5% of families with children fall below the poverty line (Kershaw 2007).

Part of the solution to insufficient income for some families with children will be higher social assistance benefit values. Even after controlling for the socioeconomic status of BC neighborhoods, including poverty levels, the strongest predictor of EDI vulnerability rates is the proportion of local residents receiving social assistance around children's year of birth (Kershaw and Forer 2009). The available qualitative data encourage us to interpret

FIGURE 6: Poverty Trends in Canada, by Family Type



SOURCE: Health Officers Council of BC (2008)

this association by analyzing features of the welfare system which may be exacerbating the negative impact that neighborhood poverty exerts over collective socialization practices in neighborhoods (Pulkingham, Fuller, and Kershaw 2009).

The welfare benefit level is an important starting point for consideration. The National Council of Welfare (2008) shows that welfare benefit levels for single British Columbians meet just 30% of the low-income-cutoff, and that the rate for couples with two children is just 49% of the cutoff. Among lone mothers with preschool age children, their disposable income in 2004 hovered around \$400 (Canadian currency) per month with which to cover food, transportation and other non-shelter necessities, even after including federal family benefits. This value, controlling for currency exchange and purchasing power parities, is less than half of the funds available to comparable lone-mother families in the UK and Australia; and just over a quarter of the funds to which comparable Norwegian mothers are entitled. Only similar families in the US have lower benefit levels than those reported in the Canadian jurisdiction among a group of 16 affluent OECD countries for which comparable policy data are available (Bradshaw 2007; Kershaw 2007). The welfare poor thus suffer considerably higher rates of food insecurity than even the working poor, and suffer the lowest frequency of daily fruit and vegetable consumption among the working-age (Fortin 2008). It is small wonder that the concentration of social assistance in neighbourhoods correlates most strongly with

Even after controlling for the socio-economic status of BC neighborhoods, including poverty levels, the strongest predictor of EDI vulnerability rates is the proportion of local residents receiving social assistance around children's year of birth.

physical vulnerability among local children, since social dynamics that generate severe food shortage for adults will do the same for children.

BC keeps its welfare payments low out of concern that overly-generous benefits risk producing a “welfare wall”: economic incentives that induce people to opt for welfare, over work. It is worth noting, however, that countries which enjoy higher rates of labour force participation among lone mothers than in BC include countries like Norway and Denmark where social policy replaces what lone mothers would earn if making half-average employment income in the labour market — the equivalent of nearly \$11/hour in BC (Kershaw 2007). Such comparisons give reason to re-consider what really generates welfare walls. For instance, longitudinal, semi-structured, qualitative interviews with lone-mothers receiving income assistance in BC reveal that very low benefit values leave many mothers with little time to upgrade skills and pursue employment opportunities because they are struggling full-time to piece together food and other material resources for their family from a patchwork of uncoordinated systems like foodbanks, school breakfast programs, charities, and neighbourhood centres — all without affordable access to transportation (Pulkingham, Fuller, and Kershaw 2009).

While the proportion of neighbourhood residents receiving welfare around children’s year of birth is a particularly strong predictor of EDI vulnerability rates, the substantial reduction in welfare caseloads that BC witnessed in the last decade does not associate statistically significantly with vulnerability patterns in the province. This finding converges with previous work by Williamson et al. (2005) who provide evidence that overall family income-level is as, if not more, important for child development than parental activity or source of household income. It also raises questions about the extent to which the labour market is proving a sufficient source of financial well-being for citizens responsible for young children. As previously mentioned, we know that 38% of poor children in BC reside with at least one adult who works full-time.

The rates of working poor invite questions about minimum wage levels. Such questions typically polarize political debates in BC, garnering favour with labour but generating angst within the business sector. At the population level, some are concerned that increasing the minimum wage risks generating higher unemployment, although the evidence in BC provides reason to be cautious about this interpretation (Goldberg and Green 1999).

Family policy represents a partial solution to this problem. Many suggest that minimum wage legislation is too blunt an instrument, raising wages for teens, etc. who do not have the same financial responsibilities. Family policy offers a two-prong approach to (a) target income sources directly to citizens for whom we have found it difficult to minimize poverty over the last 25 years, and (b) provide enabling conditions that facilitate labour market attachment without eroding take-home pay.

Canada has a long history of pursuing the first approach. You will recall that family allowances were introduced in Canada in large part to moderate wage pressures during the economic growth following World War II. In place of the family allowance, today we have various fragmented tax measures at the federal level, including the Canada Child Tax Benefit and the National Child Benefit Supplement. Three additional programs have been added since 2006: the Universal Child Care Benefit (UCCB), the Working Income Tax Credit, and another federal Child Tax Credit. At the provincial level, there are also the BC Family Bonus

and the BC Earned Income Benefit which serve similar purposes. While this list shows that there are a lot of individual policy mechanisms that deliver support to BC families, the cumulative value is not up to the task of supporting BC families with children generally, nor ensuring that those who work full-time enjoy income-levels that bring their families above low-income-cut-offs. Indeed those measures that existed before 2006 left Canadians in British Columbia with a benefit package that ranks it 14th out of 16 countries for which there are comparable data (Kershaw 2007). The tax measures introduced since 2006 increase the benefit package value somewhat, but not enough to shift BC's ranking above position 13.

Whereas we have a strong tradition of using cash-based family policy to address the wage debate, British Columbians do not have much experience using service-based family policy to enable labour supply because we have few full-employment-day child care and early learning services. The resulting incentive effects for labour supply are adverse. A one-earner, two-parent family with a toddler contemplating full-time work for the second parent confronts significant disincentives. A gross wage of \$11/hour results in a net wage of just over \$5/hour. Taxes, EI and CPP premiums partly contribute to the reduction. But cumulatively they do not reduce the net wage on par with the reduction caused by child care services alone, even after the family deducts child care costs from the income on which they owe provincial and federal taxes (Kershaw 2007). Accordingly, as Quebec phased-in its universal child care system, that province witnessed maternal employment gains that well out-paced all other provinces (Lefebvre and Merrigan 2008; Baker, Gruber, and Milligan 2008).

This labour supply approach to mitigating family poverty rates aligns well with recent observations by the Conference Board of Canada (2008). Commenting on child poverty, the Board noted that:

Countries that have reduced poverty rates have turned away from passive, benefits-only poverty reduction schemes in favour of national anti-poverty strategies that incorporate a number of "active" policies. Active policies are social policies that integrate strategies across governments, departments, and service providers to reduce poverty and increase self-sufficiency. For example, active job policies may be set up to help people overcome obstacles to get jobs through a combination of: funding jobs training, providing child care, introducing tax incentives for lower-paid workers.

Estimated incremental annual investment in income supports to reduce poverty: \$820 million

Labour force participation is a critical source of financial resources, one that state policy cannot replace. In other words, reducing poverty among families with children is a labour market issue as much as it is a social policy issue. The more the labour market generates wage floors which are sufficient to lift adults with children out of poverty when they perform at least 30 hours of employment per week, the less expensive it will be for the state to reduce poverty rates, provided the wage floors do not compromise demand for labour. Conversely, when wage floors permit working poverty even among families in which one adult labours full-time, as we witness in BC, then governments concerned about poverty confront the need to supplement earnings.

In grappling with this issue in BC, we anticipate that in-work tax credits for low-income workers will need to rise significantly to supplement employment enabling supports like ECEC services. The National Child Benefit Supplement delivers a targeted in-work benefit

of roughly \$2,000 per year to families with annual incomes below \$21,287 (Kershaw 2007). It would cost roughly \$455 million annually to double this earnings supplement in BC, although the same funding could also be used to extend the supplement to a broader range of low-income-earning families, or to extend the Rental Assistance Program.

Given that BC's social assistance levels, in combination with federal tax credits available to those out of work, equal only half of the benefit available to comparable families with children in the UK and Australia, we also recommend a 50% increase to the support and shelter allowances for parents with children in order to narrow this gap. Since families with children represent 29% of the caseload of British Columbians receiving Temporary Assistance, and 20% of the recipients of Disability Assistance, we estimate that the annual cost of this policy change to be \$365 million. Therefore, the annual cost of building on income supports to reduce child and family poverty will add \$820 million (455 + 365) to existing provincial spending of about \$2.6 billion (Government of British Columbia 2009e, 132).

Employment enabling supports like ECEC can also help to reduce low-income rates because improving access facilitates employment and improving affordability increases net income. International experience, particularly in the Nordic countries, confirms this observation. In 1997 Quebec introduced a family policy package that included an enhanced child benefit, expanded parental leave and a significant increase in ECEC. In the 10 years that followed, Quebec has been the only province in Canada with consistently declining poverty rates (Campaign 2000 2006).

RECOMMENDATION 3

The Government of BC should build on maternity and parental leave, by working with the federal government to:

- increase total duration to 18 months
- improve coverage
- improve benefit levels
- reserve months for fathers

Clearly, labour supply matters for household economic security, and for provincial economic growth. But the human development lens we bring to this report also urges that we balance labour supply initiatives with a healthy appreciation for the rise in time poverty witnessed in recent decades. The opportunity for individuals to achieve work-life balance is therefore a key objective of the *15 by 15* policy framework.

Maternity and parental leave are critical parenting supports that promote the relationship-building so essential to early human development. Canada's current parental leave policy results in a mid-ranking assessment by UNICEF (2008) in relation to 24 other developed countries. UNICEF's assessment methodology weights the length of leave by the percentage of salary received, recognizing that parents need both time and resources to care.

The synthesis of international research by UNICEF led to it establishing a benchmark that requires at least one year of parental leave at 50% of average salary, including a portion

specifically reserved for fathers (UNICEF 2008). While the combined 50 weeks of maternity and parental leave benefits available in Canada mean that we satisfy the first criterion, we fall short on the other two. Our maximum \$447/week benefit represents 55% of maximum EI insurable earnings, or \$42,300/year. Maximum EI insurable earnings are well below average individual employment income in BC, which is about \$51,000/year. Currently, the leave system available in BC does not reserve any time exclusively for fathers. And self-employed citizens have no access to the federal leave benefit system.

The human development lens we bring to this report urges that we balance labour supply initiatives with a healthy appreciation for the rise in time poverty witnessed in recent decades.

Our recommendations respond to these shortcomings in the leave benefit system available to British Columbians. Extending parental leave to 18 months, with most of the additional 6 months reserved for fathers, addresses the concern that time for fathers may come at the expense of time for mothers. Given the gender earnings gap, however, attracting fathers to take leave, and making it financially feasible for leave uptake by the person who statistically speaking is more often the higher earner, will require that benefit levels rise toward 80% of a maximum \$60,000 in maternity/parental leave insurable income. Such benefit levels may require that the leave system be run apart from EI. The latter change would lay the ground for leave benefits to become available to those who are self-employed, and to accommodate a greater proportion of part-time employees (Kershaw 2006)

These recommendations are guided by the adage not too long, not too short and not too maternal when it comes to parental leave that promotes both healthy child development and gender equality. There is ample evidence that extended leaves may negatively impact women's labour force participation. This is particularly true for mothers with the least education, which may not be in the long-term interests of their young children or families (Bennett 2008). In addition, international comparisons make clear that gender-neutral 'parental' leave is inadequate at integrating men equally in the joys and responsibilities that come with caring for an infant. Whereas only 15% of leave takers are men in Canada with our gender neutral system, Norwegian data reveal that nearly 70% of men take the leave reserved exclusively for fathers in that country (Marshall 2003, 10).

The leave benefit system that we recommend is well on its way in one part of Canada, Quebec. Families in that province enjoy improved coverage, because eligibility extends to anyone with \$2,000 in earned income over the previous 52 weeks, including the self-employed. The maximum benefit level has been raised to between 70%-75% of \$62,000. And the Quebec system reserves five weeks of benefits for fathers (Government of Quebec 2009).

*Estimated incremental annual investment in income supports to improve parental leave:
\$585 million*

The expansion of the leave benefit system we propose would more than double the maximum benefit value and extend the leave duration by 50%, expanding family time to care in the critical early months of a child's life. The latter change has been proposed by the Ministerial Advisory Committee to Human Resources and Social Development Canada (Human Resources and Social Development Ministerial Advisory Committee 2007), and

would ensure a seamless system of support for families with young children who can transition from parental leave into early learning and care services, as we describe above. Given that the current leave benefit system costs the federal government \$3 billion annually, the changes we propose would cost between \$4 and \$5 billion more per year. In proportion with BC's share of the population (approximately 13%), the annual incremental investment in BC is approximately \$585 million (\$4.5 billion at 13%).

15 by 15 Recommendations 4 – 6:

With the foundational parental leave benefits, income support and ECEC programs in place, we group these other important policy areas together because the additional investments required will be an order of magnitude less.

RECOMMENDATION 4

Build on existing employment standards to:

- support both mothers and fathers with children over 18 months to work full-time hours for pay; but
- redefine full-time to accommodate shorter annual working hour norms without exacerbating gender inequalities in the labour market.

While two earners may be a recipe for economic security at the household level given declining real wages for men, the developmental perspective we bring to human capital investments provides strong reason to reconsider weekly and yearly full-time employment norms. The latter were historically set in an era where one-earner couples were the cultural norm. We therefore recommend that BC consider the public and private savings from work-life conflict, as well as any additional employment, that can be achieved as part of rethinking employment standards to accommodate shorter full-time norms. These would permit individuals to labour 30 to 35 hours per week (averaged over a year, excluding holidays), while remaining a core member of a team, firm or industry (see Kershaw 2005). Since ECEC services will induce substantial increases in maternal labour force participation, the BC economy will benefit from growth in total labour supply. Revisions to employment standards will in turn facilitate a more equitable distribution of paid work hours between men and women, as well as across income-groups, in order to support all individuals to synchronize their earning and caring responsibilities and aspirations.

Redistribution of work hours is typically discussed in public policy circles when the need arises to remedy unemployment and/or minimize layoffs, a pattern that is repeating itself during the current economic recession. Many companies, including the major car manufacturers, have encouraged their employees to accept work hour reductions to forestall job losses. In this context, worksharing represents the hope that a reduction in hours per full-time worker will spread the available demand for labour more broadly and thereby sustain or increase aggregate employment. The strategy has been experimented with most notably in France and Germany.

Based on a review of the worksharing literature, Kershaw (2005, chapter 8) observes that there is now a broad consensus that worktime redistribution will not be a primary solution to persistent unemployment where it exists. However, data also indicate that worktime redistribution will not exacerbate unemployment levels and is more likely to generate positive, albeit very modest, employment gains. Two findings are of particular interest: research indicates that shorter full-time hours associate with higher productivity; and extended blocks of time off — such as paid leave arrangements, career breaks or early retirement — offer the most potential for job creation through worksharing (Advisory Group 1994, 60; Contensou and Vranceanu 2000, 30-31; Freeman 1998, 209).

Although worksharing is typically considered as a policy response to unemployment, it is imperative to recognize that the *15 by 15* policy framework does not recommend redistributing paid work time to generate employment gains. The fact that the redistribution will not exacerbate unemployment is what principally matters for our argument; and any additional employment gains are a tangential benefit.

Instead, HELP is urging further public debate about employment standards and worksharing in order to feature the human development needs of families with young children. We therefore propose shorter ‘full-time’ hours (along with enriched and extended paid leave time) because the work-life balance to

HELP is urging further public debate about employment standards and worksharing in order to feature the human development needs of families with young children.

which it contributes is good for the health of individuals and family relations; and because it promotes household income security and gender equality. The household income security objective is better attained when we reject the now anachronistic post-war breadwinner/caregiver division of labour that risks household economic security because it puts all of a family’s breadwinning ‘eggs’ in ‘one basket’ even though we saw above that the contemporary labour market is dynamic, job loss and transition is frequent, and real male wages began to erode in the 1970s. Similarly, we only make progress toward gender equality when we concede that the post war vision neglects the majority of new fathers’ aspirations to be involved fathers (Lupton and Barclay 1997); as well as the strong connection between women’s employment and women’s equality (Kershaw 2005, 2006).

On the one hand, our proposal is consistent with trends already underway in the Canadian labour market. Between the 1970s and 1990s, the proportion of people working 35-40 hours per week declined with corresponding increases in the share of people working both short and long work weeks (Hall 1999; Morissette, Myles, and Picot 1995; Sheridan, Sunter, and Diverty 1996). Because more women entered the labour market during this period, the dominant trend across occupational categories saw proportionately more citizens find positions with work-weeks shorter, rather than longer, than 35 hours. On the other hand, when the data are broken down by sex, the dominant trend for both men and women is toward paid work weeks that exceed 40 hours. The implication is that Canada has witnessed a polarization in paid work hours for both men and women.

Kershaw (2005, 132-135) observes that the polarization in working time converged with job characteristics relating to earnings, education, industrial sector and age. Redistribution of paid work has therefore powered a growing gap between a core and a contingent labour

force. Long work weeks grew more common for high-wage earners, the university educated, managers, professionals and blue-collar workers in typically male industries, such as processing, machining, fabricating, construction and transport operations where paid overtime opportunities are relatively common (Sheridan, Sunter, and Diverty 1996, C19-C20; Duchesne 1997). Conversely, the growth in short work weeks was more concentrated in the predominantly female service sector, and especially among low-wage workers, persons with no post-secondary certificate, women over 55, and workers age 15 to 24 who are no longer in school (Morissette, Myles, and Picot 1995, 38; Sheridan, Sunter, and Diverty 1996, C10-C14).

In response to this polarization, a review of employment standards legislation should seek to support:

- individuals who struggle at the margins of the labour market to piece together on average 30-35 hours of paid employment per week in order to escape poverty;
- the growing contingent of older workers who seek to phase into retirement as the baby boomers age, without giving up their important leadership roles in the economy; and
- parents who currently labour long hours as core members of their firms or industries, but who struggle with the corresponding time poverty that limits their availability to care personally.

RECOMMENDATION 5

The Government of BC should build on health, pregnancy and parenting supports by:

- advancing integration of existing programs and services
- adding universal monthly in-home and community-based programs to facilitate monitoring of children's development from birth through 18 months
- moving towards evidence-based monitoring of family health policy by requiring that services to children be recorded on a single data base regardless of the Ministry funding the program

In recent years, BC has prioritized public investments in a range of pregnancy and parenting supports designed to promote mothers' and young children's health, and parents in their role as primary caregivers. These help to ensure that BC is very close to achieving international benchmarks in regards to essential health services for mothers and infant children. For instance, the UNICEF (2008) synthesis of international research assesses countries according to three indicators in this policy area:

1. Low birthweight rate of less than 6%
2. Infant mortality rate less than four per 1,000 births
3. Average immunization rate of over 95%

The 5% low birthweight rate in BC favourably exceeds the UNICEF target. The infant mortality rate in BC is 4.4 per 1000 children (Kendall 2003). This rate is better than the 5.3 figure

for all of Canada, and only slightly above the 4.0 target established by UNICEF. The average immunization rate in Canada is 92.3%, again nearly meeting the international goal of 95%.

As BC aims to build on its near-success in this policy area, the Government of BC already recognizes the value of a coordinated early years strategy, and has brought together senior staff from multiple stakeholder ministries to make this happen. Through improved integration between existing programs, across ministries and within neighbourhoods and communities — perhaps by building on or establishing local family support service hubs — improved outreach to those families that are hardest to reach is most likely to be achieved.

Furthermore, the province has recently introduced important innovations in vision, dental and hearing screening that begins to respond to research describing the importance of early recognition and attention to developmental concerns. As these expand province-wide, potentially through Strong Start and other early childhood programs, they lay the ground for adding universal monthly in-home and community-based programs to facilitate monitoring of children’s development. Such proactive monitoring will help to ensure early recognition of developmental impairments, for which effective intervention services must be available. The early childhood education and care services described above will include extra supports for children with varying abilities and for children with developmental delays. But this recommendation also accommodates the fact that early detection may increase the need for clinical, parenting and other community supports for young children and their families.

RECOMMENDATION 6

The Government of BC should build on the work of local ECD coalitions in community planning

The BC increase in early childhood vulnerability from 26% to 29% frustrates many citizens in neighbourhoods and towns across the province who report that the initial EDI data motivated them to work and volunteer harder, faster, and longer than ever before. In fact, more than 500 community initiatives were implemented across BC school districts to address local vulnerability patterns in response to EDI data collected between 1999 and 2004. There is also evidence that some school districts like Revelstoke have been empowered by corporate donations to achieve a level of collaboration and coordination among service providers and stakeholders, which helps account for the reduction of vulnerability in that district to 12%, despite the region’s relatively modest socioeconomic status.

Despite this increased local effort and integration, community development has proven insufficient to stem the tide of rising vulnerability rates, even while most regions in the province enjoyed robust economic growth and record low unemployment in recent years.

Provincial and federal governments allocated funding to Early Child Development (ECD) planning tables in communities across BC to support planning and decision making with localized resources. Stakeholders generally report that such tables have been good for local democracy as participants at the tables claim to work more effectively to foster child- and family-friendly communities. But despite this increased local effort and integration, com-

munity development has proven insufficient to stem the tide of rising vulnerability rates, even while most regions in the province enjoyed robust economic growth and record low unemployment in recent years.

This finding provides reason to worry about the extent to which vulnerability rates would have risen in the absence of recent community development ECD initiatives, and provides reason to solidify existing community efforts to coordinate resources and partners. However, the inability of local community development to consistently reduce vulnerability also signals the need to focus attention more on the policy levers available for senior levels of government to address the consequences for families that flow from the socioeconomic trends identified above. Once there is comprehensive senior government support for family policy, as urged by the first five policy recommendations, the ECD planning tables will take on added importance because they can aid in effective local implementation.

Estimated annual incremental investment in ECD community planning coalitions; women's health, pregnancy and parenting supports; and special needs services: \$95 million

Since 2000/01 BC's annual expenditures for early child development, other than ECEC, have increased by \$85 million annually for children under age six years (Government of British Columbia 2006, 49-50). There is a broad range of programs and services under the early child development umbrella, including pregnancy, parenting, learning and special needs supports, as well as research, community and Aboriginal initiatives. Additional investments in these areas have enabled various provincial ministries to expand a number of existing programs, and to introduce several other new, generally small-scale, interventions. Using these expenditures as a benchmark, the additional \$95 million we recommend will pave the way for future enhancements in the coordination and delivery of these programs and for the introduction of monthly developmental monitoring of all children under 18 months.

By contrast, our proposal to revise employment standards legislation differs from the other recommendations in the *15 by 15* framework because it does not require a new or enriched social program. That said, proposed revisions to employment standards aim to generate alternate incentives for employers. Alternate incentives would reduce costs for firms when their human resource strategies deploy workers to labour in the 35-hour range per week, as opposed to the 40-hour range. There are a myriad ways that such incentives may be created, and further dialogue is necessary with legislators and the business community to determine optimal strategies. Possibilities include modifications to the way that over-time, Employment Insurance and/or Canada Public Pension premiums are administered. Since shorter employment hours in Canada currently risk fewer, if any, fringe benefits or social protections for workers, policies designed to normalize reduced full-time hours should be accompanied by measures that mitigate this trend. Careful monitoring of economic outcomes will be necessary to ensure that the modest employment gains anticipated by worksharing research compensate for costs incurred to reorganize the incentives around which firms organize human resource and training strategies.

Evidence Shows that a Three Billion Dollar Annual Investment Can Reduce Early Vulnerability

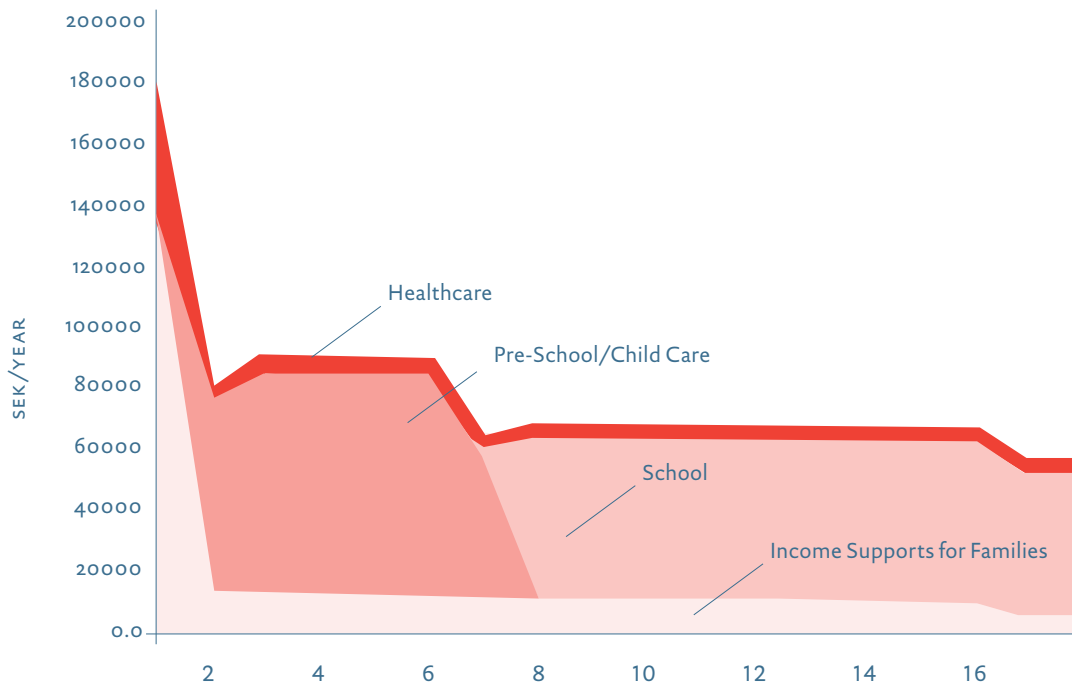
The cumulative government price tag for the six policy areas is about \$3 billion per year (see TABLE 2). About half of this social investment provides income supports that give families more time and resources to care for each other (\$1.4 billion), while the other half strengthens community supports to help families care for and educate their young children (\$1.6 billion). Among many other benefits, this is the projected price for enhancing the on-time graduation rate from 72% to 81%, and for increasing the cohort achieving university-eligible grades from 42% to 56%. These indicators in turn reflect the cognitive gains required to accelerate economic growth by 0.63 of a percentage point of GDP per year, which over 60 years would increase GDP by more than 20%. Readers will recall that the economic value of this accelerated GDP growth is equivalent to investing \$401.5 billion today at a rate of 3.5% interest, even after paying \$3 billion per year to achieve the necessary human capital increase. The resulting benefit/cost ratio is an impressive 6/1, with benefits exceeding costs by more than a factor of six.

TABLE 2: Summary of 15 by 15 Costs for Governments

<i>Time</i>	
Estimated incremental annual investment in income supports to improve parental leave	\$585 million
Employment standards revisions	Legislative Change
<i>Resources</i>	
Estimated incremental annual investment in income supports to reduce poverty	\$820 million
Total Time and Resources (Direct Support to Families)	\$1.4 billion
<i>Community Supports</i>	
Estimated incremental annual investment in early childhood education and care services	\$1.5 billion
Estimated annual incremental investment in local ECD community planning coalitions, women's health, pregnancy and parenting supports, and special needs services	\$95 million
Total Community Supports	\$ 1.6 billion
Total estimated incremental annual investment in reducing vulnerability from 29% to 10%	\$3 billion

International comparative data lend support to the benefit/cost projections that we simulate for British Columbia because the countries that already enjoy rates of early vulnerability below 15% have in place the suite of policies we recommend for BC. FIGURE 7, for instance, represents cumulative social spending in Sweden for children from birth through age 17, including income supports for families, education and health expenditures. Notice that the shape of the curve is particularly high in the early years and gradually dips as children enter

FIGURE 7: Sweden’s Public Expenditure for Children Aligns with Human Sensitivity to Context



SOURCE: S. Bremberg (2006), National Institute of Public Health, Karolinska Institute, Stockholm, Sweden

the school system. This pattern corresponds well with the shape of the curve reported for human sensitivity to context (FIGURE 1), and Heckman’s associated recommended curve for human capital investment (FIGURE 3). It is because cross-national research reveals an association between this spending pattern and less vulnerability among the population of young children that UNICEF and other international organizations urge countries like Canada to follow suit.

International associations, however, may not be sufficient for some when deciding whether to re-allocate and/or invest up to \$3 billion annually in new family policy for human capital investment purposes. Causation is the more important issue. The key question is: what causes a drop in child vulnerability rates, one that will sustain sufficiently into the future to achieve cognitive test score improvements and later accelerated economic growth?

On this issue, the existing research about ECEC services affirm that the largest element of our 15 by 15 policy package can generate most of the required half standard deviation improvement in cognitive test scores at age 12. US economist Steve Barnett (2008) is a leader in the international literature for this research area. He has conducted a meta-analysis of the hundreds and hundreds of studies about early child education and care services performed since 1960 which examine child development outcomes. By the age of school entry, the average effect on IQ and language (a half standard deviation improvement) reported across all of the studies for children from birth to age five is equivalent to closing nearly half of the achievement gap that we currently witness in British Columbia. More important still,

Barnett observes as part of his review that not all studies have been equally strong methodologically. The better designed studies, including some with randomized controls, report average effect sizes that are considerably larger than the average effect size found across all past research. Barnett (2008, 19) thus warns that average effect sizes based on calculations of all previous research offer conservative estimates of the positive effects of early learning and child care services because weaker research designs “often produce misleading results.”

Many of the studies reviewed by Barnett examine programs that target only poor children. Consequently, they neglect the social gradient in early vulnerability (see FIGURE 4), which shows that the bulk of vulnerable children reside in the middle-class. The smaller group of studies which examine effects for children who are not socioeconomically disadvantaged includes recent evaluations of pre-kindergarten programs in eight US states. In these states, Barnett (2008, 10) finds that child development gains from one year of exposure to part-day services of moderate quality produce noteworthy gains for poor and non-poor children. The average effect across the eight states closes a quarter of the achievement gap in language/cognitive development, with larger gains still for math and print awareness: 0.31 and 0.79 of a standard deviation respectively. Although these gains are not sufficient for BC to achieve the accelerated economic growth that would accompany a reduction in early vulnerability to 10% (equal to 0.95 of a standard deviation at kindergarten), they are pretty good results from one year of exposure to part-day, modest quality services. Findings from these recent studies are further buttressed by previous randomized trial research that examined children who have very high IQs (in the 97th percentile). This work found that effect sizes of quality early learning and care interventions can reach 0.82 of a standard deviation for boys who are already likely to excel, even as these children continue into second and third grade (Larsen, Hite, and Hart 1983).

The persistence of ECEC effects into later school years is important. While the early years represent that unique window in the human life course during which social influences uniquely sculpt the developing brain and body, reductions in child vulnerability at kindergarten matter most economically if the effects persist over time to enrich the stock of human capital in subsequent years. There is no doubt that some early gains from reduced vulnerability at kindergarten will fade out over time, as children and their families encounter new challenges (divorce, unemployment, ill-health, etc). For instance, HELPs analysis of BC children who transition from kindergarten to grade four, from grade four to seven, and from grade seven to grade 12 reveal that achieving Hanushek’s (2008; 2008) benchmark of a half standard deviation improvement in cognitive test scores around age 12 requires close to a full standard deviation reduction in vulnerability at age five (See TABLE 3).

This finding is consistent with ECEC research. As children who experienced ECEC work their way through school from age six to age ten, Barnett’s (2008) meta-analysis reveals that average reported benefits from exposure to early child education and care services dissipate over time, with effect sizes falling from 0.45 to just 0.16 of a standard deviation. These reports about dissipating effects have motivated much of the debate about the value of early learning investments. However, studies that continue to track children after age ten show that the average effect rises again to 0.23, for a net “fade-out” effect of 50% of the initial benefits. As discussed above, the quality of past research designs influences the average values revealed by the meta-analysis. The dip in effects sizes reported from age five to ten, followed by the renewed growth in effect size, reflects in part that the studies which track children for longer periods tend to be the methodologically better studies. Indeed,

the better designed studies, including randomized controls, report average long-term effect sizes that are larger (by a quarter of standard deviation) than the average for the less well-designed studies. Thus, the quarter of a standard deviation improvement in school achievement after age ten is a very conservative estimate.

The estimate is more conservative still, because many of the reviewed studies examine the effect that children derive from just one year in an early learning and care program, and in service contexts where the quality is often questionable. By contrast, the *15 by 15* policy recommendations would implement high quality services, and give children multiple years of exposure to the beneficial intervention, in addition to a range of income supports, family leave benefits and early health interventions. Existing evidence thus gives solid reason to project that the effect sizes of ECEC will be higher and dissipate less in BC than reported in the review of the literature should the province implement the *15 by 15* policy recommendations. The implication is that HELPs ECEC proposals alone will propel the province the majority of distance it needs to travel to achieve the requisite 0.5 standard deviations improvement in cognitive scores around age 12.

TABLE 3: Sustained Human Capital Gains from Kindergarten through Grade Seven

Early Human Capital Gains <i>(measured as proportion of a standard deviation)</i>	Age 5	>Age 10-12	% Fade Out
Barnett Meta-Analysis of ECEC Research	0.45	0.23	50%
BC: vulnerability reduced to 15% at kindergarten	0.59	0.37	38%
BC: vulnerability reduced to 10% at kindergarten	0.95	0.58	39%

Patience is a Requisite Virtue

The six recommendations we describe in this paper identify the public policy changes required to reap the dramatic economic returns available from reducing early vulnerability from 29% to 15% by 2015, and to 10% by 2020. Over the 60 year period, the benefits to society outweigh the costs by around 6/1. Since a 2/1 ratio is a great return on investment, the 6/1 ratio shows that the proposed early human capital strategy is a phenomenal investment.

Clearly, however, this investment strategy requires patience as a virtue. The reality of early human capital development is that population-level improvements generate significant economic growth after the children work their way through the elementary, secondary and sometimes post-secondary education systems to transition into the labour market. Therefore, it is 14 years before even the first cohort of children reaping the human capital gains from the proposed *15 by 15* investments will personally contribute dividends to the economy. Following Hanushek and Woessman (2008, note 42), we assume that the full impact of the *15 by 15* reforms will then not be felt for another 35 years. This long-phase in period reflects in part that the increased stock of human capital that the first cohort of *15 by 15* children brings to the labour market will be overshadowed initially by the economic activity of the older cohorts who did not benefit from the proposed early human capital interventions.

TABLE 4, columns 2 and 4 make explicit the degree to which patience is required before the dramatic economic gains from improved child development will be realized. It reports the

value of the economic benefits that would be generated for British Columbia were we to achieve the half a standard deviation improvement in cognitive skills through the proposed *15 by 15* early human capital interventions. We calculate the economic benefits based on Hanushek et al.'s (2008; 2008) conservative projection that the half standard deviation improvement in tests scores accelerates GDP growth by just 0.63 percentage points. Our simulation starts with a cohort of children who are five years old in the first year after the *15 by 15* policy recommendations are fully implemented. We assume GDP is 198.2 billion in BC, and the BC government revenues are \$38.8 billion, as reported in the 2009/10 provincial budget. We use the growth projections reported in the same budget as our baseline. The 2009/10 budget anticipates that growth will be negative in 2009/10, and will rise thereafter, until it reaches 2.6% in 2013, which is the average long-term growth forecast anticipated by the BC Ministry of Finance.

Based on these assumptions, the early human capital investment begins in Year 1; but the increased cognitive skills do not begin to have their impact on the economy until Year 14, at which point the first cohort of children will have matured from age five to nineteen. We then assume that the impact of the early human capital investments will phase in at a conservative rate of 2.9% per year over 35 years (Year 14 to 48), as cohorts benefiting from the *15 by 15* policy interventions come to represent a larger proportion of total labour supply over time, and contribute to the economy during the first 35 years of their work lives. Despite this conservative phase-in rate, the cumulative value of increased GDP powered specifically by a reduction in early vulnerability surpasses the early human capital investment by Year 37 (see TABLE 4, year 37, column 4 versus column 1). By Year 48, the economy will enjoy the first full impact of the early human capital investment on economic growth, yielding \$74.4 billion more that year alone (the equivalent of investing \$14.8 billion now at 3.5% interest) than would be achieved by the Government of BC's current growth projection of 2.6% per year. In the following years, the annual benefit value grows still greater, although we cease our calculations in year 60, when the annual benefit from the enriched stock of social capital is now a staggering \$175.2 billion (equal to investing \$23 billion now). These dramatic annual benefit values are simply the result of adding Hanushek's 0.63 percentage point acceleration to the baseline growth rate in recognition of the economic value that a richer stock of human capital can generate. Over the 60 years, the cumulative value of the economic growth that is accelerated by the early human capital investment yields a benefit that is equivalent to investing \$424.6 billion now at a rate of 3.5% interest (See TABLE 4, column 4, Year 60).

It is worth noting that TABLE 4 reveals that the taxpayer does not break even as quickly from the human capital investment as does society more generally. Just as we calculate the value of the overall societal benefit as the difference between GDP expected under the baseline growth assumptions (2.6%) and GDP projected in light of the increased growth rate produced by population-level cohorts with enhanced cognitive skills (2.6% plus 0.63%), so we can calculate benefits to municipal, provincial and federal revenue that are produced by accelerated economic growth. Since much of the benefit from the public investment spills over into the private sector in terms of gains to individual and business earnings, it takes until Year 48 for the cumulative investment until that point to be outweighed by the cumulative returns to provincial, federal and municipal coffers as a result of the higher taxes paid by children who benefit from the *15 by 15* reforms (see TABLE 4, year 48, column 2 versus column 1). The province of BC will enjoy 48% of the revenue gains thereafter; the

TABLE 4: Summary of Government Costs and Selected Benefits, by Year

(All figures are billions, cumulative, and discounted at 3.5% per year; minor rounding differences may occur)

Year	Government Benefits from				Social (individual, Business and Government) Benefits from:		
	1	2	3	(2+3)-1	4	5	(4+5)-1
	Government Costs	Reduced Vulnerability at Kindergarten	Other (i.e. Maternal Employment, Work/Life Balance, Crime Reduction)	Net Benefits (Costs)	Reduced Vulnerability at Kindergarten	Other (i.e. Maternal Employment, Work/Life Balance, Crime Reduction)	Net Benefits (Costs)
1	3.0	0.0	0.7	-2.3	0.0	0.9	-2.1
5	14.0	0.0	3.4	-10.6	0.0	4.6	-9.4
10	25.8	0.0	6.5	-19.3	0.0	9.2	-16.6
14	33.9	0.01	9.1	-24.8	0.03	13.7	-20.2
15	35.8	0.04	9.7	-26.0	0.1	14.9	-20.8
20	44.1	0.9	12.7	-30.5	2.4	21.0	-20.7
25	51.2	3.8	15.6	-31.8	10.2	26.8	-14.2
30*	57.1	9.9	18.1	-29.1	26.3	32.4	1.6*
35	62.1	20.1	20.4	-21.6	53.5	37.4	28.8
37+	63.9	25.6	21.2	-17.1	68.0	39.3	43.4
40	66.3	35.4	22.4	-8.5	94.1	41.9	69.7
43**	68.5	47.4	23.4	2.3**	125.8	44.3	101.6
45	69.8	56.6	24.0	10.8	150.3	45.8	126.2
48++	71.7	72.4	24.9	25.7	192.5	47.8	168.6
50	72.8	84.4	25.5	37.1	224.2	49.1	200.5
55	75.3	118.9	26.7	70.3	316.0	51.9	292.6
60	77.5	159.8	27.8	110.1	424.6	54.4	401.5

*Individuals, Businesses and Society break even from All Benefits in Year 30.

+Individuals, Businesses, and Society break even from Reduced Child Vulnerability Benefits alone in Year 37.

**Government breaks even from All Benefits in Year 43.

++Government breaks even from Reduced Child Vulnerability Benefits alone in Year 48.

federal government will receive 44%; and the municipal governments will collectively benefit from 8% of the cumulative revenue increases.

The 11 year lag-time between when citizens break even in their capacity as taxpayers relative to the total societal value of the human capital investment is noteworthy. One implication is that the private sector should be leading the call for early human capital investments by government, since it is private individuals and businesses that stand to derive the bulk of the returns from the investment and recoup the cumulative costs of the investment much more quickly than will public coffers. In so far as the individuals who will enjoy the future earnings

gains cannot currently vote nor lobby their elected officials, we as a society risk under-emphasizing this future-oriented human capital investment strategy unless leaders in the business sector today compensate by using their political influence to urge policy reform now. While such leadership would represent good corporate citizenship, individual and business self-interest also ought to be a determining motivation. The very family policies which help children and parents thrive are also essential social infrastructure for individuals and businesses in BC if they are to survive and thrive over the long-term.

Since Patience is an Untenable Virtue for Some

37 years before individuals, businesses and society break even as a result of reductions to early vulnerability? 48 years before the taxpayer enjoys any cumulative return? Who can afford such patience? Only the boldest elected officials willing to lead regardless of election time rhythms. And not many businesses or employers who must worry about their bottom line during a recession.

We recognize this fundamental reality, and organize the *15 by 15* policy recommendations to compensate. First, we consider opportunities to re-allocate existing funding to ensure the net cost to government is not \$3 billion. Second, we specifically propose family policy innovations which target the adults who care for the future stock of human capital as much as the children themselves. For these adults can benefit now from the policy reforms and thus generate real economic returns much more quickly than will human capital investments in young children alone. We discuss these two strategies below.

To be sure, benefit/cost research indicates that only population-level child development gains will ultimately accelerate economic growth by 20% over 60 years. Although significant, the other benefits do not grow exponentially over time in the way that the benefits from early human capital investment do. Thus, TABLE 4 shows that integrating other benefits advances the *15 by 15* cumulative benefit/cost break-even point for society by only seven years, at Year 30; and by five years for taxpayers, in Year 43.

Nevertheless, the *15 by 15* policy recommendations are designed in the light of research evidence which indicate society will recoup a substantial portion of the investment costs in relatively short order: from 33% to 62% of the requisite expenditure during the first electoral cycle; and between 39% and 47% of the expenses over the first three electoral cycles. Thereafter, returns will grow faster as society benefits from the patience it showed having waited for children who grew up with the policy reforms to finish school, enter the labour market, and accelerate GDP growth because of their richer stock of human capital.

Reallocation and Reprioritization: From Outdated Family Policy; and From Treating Illness to Promoting Health

There is no denying that \$3 billion is a big price tag. But not all of the investment needs to be new money. There are savings to be realized by replacing some extant measures in favour of building on the six proposed policy areas. For instance, spousal and common law tax credits

subsidize domestic time regardless of whether families have any children at home, let alone young children. These policy measures are an example of badly targeted social policy that is out of synch with contemporary context in which two earners represent the surest path for households to enjoy financial security, and to promote gender equality in the labour market. Nor are these policy measures cheap. The federal measure costs BC taxpayers about \$169 million per year in 2009, while we estimate that the provincial measure costs another \$60 million, for a total contribution of \$229 million towards the price of a modernized family policy for BC. This funding could be reallocated to the proposed maternity and parental leave benefit enrichment and extensions, which is a much more effective approach to subsidizing parental time for families at a life course stage when such demands are acute.

Furthermore, we are proposing a much more fundamental shift in how we think about health care. The \$3 billion price tag is slightly more than 20% of the health care budget allocated in BC for 2009/10. Although the human genome and brain is sensitive to environmental stimulation that can optimize development particularly during the early years, and to a degree that diminishes markedly as citizens mature beyond years three through seven (Keating and Hertzman 1999), investment in health and well-being occurs disproportionately in the final years of the life course. Bradshaw and Mayhew (2003), for instance, observe that Canada is among a long list of affluent countries that are financing their ballooning elderly populations at the expense of their children. Per capita spending in Canada on cash benefits and services for families with children is less than one-tenth of the value of per capita spending on benefits and services for seniors. When health care spending is added to the equation, the intergenerational disparity grows further. While government expenditures on the public education system narrow the gap for families with school age children, there is no such narrowing effect for citizens in their preschool years (Kershaw 2007, 2008).

The historical social policy innovation in which Canadians take the most pride — publicly funded medical care — now obstructs other social investment that we know will promote health and minimize the need for later illness treatment.

The right to health care is a backbone of modern social citizenship in Canada. Public opinion poll after poll has ranked this issue at the forefront of the minds and hearts of Canadians for decades. Lest we accept without debate that it is appropriate for medical care expenditures to crowd out social investment in the determinants of life-long health, determinants that include quality education and care in the early years (Kohen, Hertzman, and Willms 2002), Kershaw (2008) argues there is need to bridge common approaches to thinking about health care with child, elder and other care practices that occur outside of medical systems and infrastructure. We have therefore reached a historical juncture where we must ask ourselves what medical care we owe one another in a just society as our capacity to save lives increases dramatically with costly technology and drugs? What does it mean for a society when much of our health care expenditure is absorbed by citizens around their last year of life? What can babyboomers, who inherited almost no public debt and relatively little environmental degradation, expect in terms of health care entitlements in their senior years when they are leaving the next generation with public debtloads that surpass 30% of GDP, and serious environmental threat from global warming due to fossil fuel consumption? And what does it mean for a society when it can and does spend hundreds of thousands,

if not millions, of dollars to save a pre-term baby — one life — but is remarkably hesitant to invest in health promotion for the population through programs like early learning and care, housing, food, etc., as we document above?

In short, the historical social policy innovation in which Canadians take the most pride — publicly funded medical care — now obstructs other social investment that we know will promote health and minimize the need for later illness treatment. Until recently, consideration of the need to reprioritize some illness treatment spending in favour of health promotion was not open for genuine political discussion. This has been the case for at least two reasons: because, culturally speaking, publicly funded medical care is so important to our sense of selves as Canadians that it is electorally risky for any aspiring politician to propose substantial funding changes to where we invest health care dollars; and because current critiques of medical care distract citizens with debates about “public” versus “private” health care in the absence of a broader discussion of what health care we owe one another in a just society, versus what is reasonable for citizens to buy privately when they have the means. However, within the health care community there is a growing recognition that spending more on medical care alone is not the most effective way to improve overall population health (Health Officers Council of BC 2008). This is an important development, for as Kershaw (2008) argues, “if we leave unquestioned the place of medical care in our commitments to social care, we risk our health by failing to invest in its social determinants.”

Short- and Medium-Term Benefits from *15 by 15* Expenditures

Although TABLE 4 shows it will take population-level child development gains to accelerate economic growth at a rate that will eventually pay back the annual investment in *15 by 15* policies, research evidence makes clear that well designed early human capital investments can recoup a substantial share of the initial investment if it improves how families are supported now. Three benefit areas are particularly noteworthy:

1. The productivity gains associated with accelerated labour supply, especially among women
2. The productivity gains from reduced absenteeism as a result of improved work/life balance
3. The health cost savings associated with improved work/life balance

Increased Maternal Labour Supply

Kershaw (2005) reports that extensive historical, policy and theoretical literatures reveal that child care responsibilities structure labour market opportunities for women very differently than for men cross-nationally. Econometric studies attempt to quantify the negative influence that child care costs exert on female labour supply. Powell (1997) and Cleveland et al. (1996) use Canadian data to show that rising costs of child care services reduce the probability that mothers will either engage in paid work or purchase care arrangements, with the result that care work is shifted to unpaid and/or unregulated settings. Organizing the proposed early learning and care services to cater to the employment needs of parents

is therefore a key way to facilitate additional labour supply, predominantly among women, in addition to generating the child development benefits associated with quality environments.

Our recommendation for full-employment-day, full-year options for children age 18 months to five years responds accordingly. The short-term annual returns to the public purse can be calculated in the light of economic analyses of the impact of the Quebec child care system on maternal labour supply. While data show that quality of child care in Quebec is open to critique, economic studies by Lefebvre and Merrigan (2008) and Baker, Gruber and Milligan (2005; 2006; 2008) show that the investment now accounts for an increase in mothers' labour supply in that province which dramatically outpaces the rest of Canada since 1997. Labour supply gains have been particularly strong among women with less education, and the positive labour supply gains increase over time. Applying the findings from these two econometric studies, along with those of economists Cleveland and Krashinsky (1998), allows us to anticipate the extent to which BC parents will adapt the neotraditional care arrangements described earlier, and the resulting impacts for public revenue. We conclude that increased availability of child care increases labour force participation of mothers by 8 percentage points: a 7 percentage point increase in full time and a 1 percentage point increase in part time employment. This is multiplied by the average earnings reported for women employed full-time full-year from the 2006 census, yielding private gains of \$0.45 billion; the latter is in turn multiplied by the marginal tax rate of 46.9% (authors calculation using the Public Use Microdata File from the 2001 Census (Catalogue no.: 95M0016XCB)) to generate projected returns to BC taxpayers of \$0.21 billion per year. This projection is conservative insofar as we attribute labour supply effects to a fully implemented system in BC that is based on labour supply elasticities identified in Quebec while the province still reports frequent child care space shortages.

Over time, the value of increased maternal labour supply grows as mothers benefit from more opportunities for promotion, pay raises, and higher pension entitlements. Olivetti (2006) quantifies this value by examining the costs of maternal exits from the labour market. She finds that an additional year of work experience increases earnings by about 4%. Thus, mothers who get an additional year of experience in year 1 of our benefit-cost analysis increase their earnings thereafter by 4% in years two and later. Conservatively assuming that the remaining working life of mothers is 30 years, the impacts are fully phased in by year 31 at which point the private benefits of increased maternal employment are \$1 billion per year (before discounting).

Work-Life Balance Savings

Throughout this paper, we have argued that the caregivers of the next generation of human capital need three things to do their job well: time, resources, and community supports. While early learning and care services represent the latter, and provide parents more flexibility to devote time to private resource generation in the labour market, the *15 by 15* suite of policy proposals are equally concerned to enable parents to have sufficient time to care personally for their own children. As discussed above, work-life balance is a key *15 by 15* objective. The proposal to enrich leave benefits and extend the duration of maternity and parental leave to 18 months per pregnancy subsidizes time for mothers and fathers both to care during the human life course stage when childrearing demands are especially time-consuming, and when quality, alternative non-parental care arrangements are most

expensive to deliver. The leave benefit proposal to redistribute paid work hours around life course events is supplemented by our additional recommendation to rethink annual and/or weekly employment standards to accommodate shorter full-time norms for individuals, in the range of 30-35 hours per week averaged over a year.

Chris Higgins, Linda Duxbury and colleagues have studied extensively the public and private costs that flow from work-life imbalance in a series of studies for the Public Health Agency of Canada. They conclude that work-life imbalance costs provincial health care systems in Canada \$14.1 billion annually because role overload and work-life interferences result in additional, otherwise unnecessary, physician visits, inpatient hospital stays and visits to emergency departments (Higgins, Duxbury, and Johnson 2004). Their national data enable us to project public savings due to annual reductions in public health expenditures that will result from the additional work-life balance to which our proposals will contribute.

We extrapolate from their data very cautiously. \$4.85 billion of the total \$14.1 billion cost that Higgins and Duxbury estimate is incurred by caregivers who endure the strain associated with elder care and/or care for a disabled child apart from child care for children without extra support needs. Although this group would indeed benefit from the income and community supports and reduced annual and/or weekly “full-time” employment norms we propose, we eliminate them from our cost savings projections for BC in order to be conservative in our estimates. Of the remaining \$9.25 billion in costs, Higgins and Duxbury observe that 56% of the sample of employees on which they base their calculations had weekly child or elder care responsibilities, or both. At most, then, only about half of the \$9.25 billion in national costs will be affected by the family policies we propose to promote work life balance over the life course and annually. To be conservative, we assume that just half of this half (i.e. one-quarter) of the costs imposed by work-life conflict will be recouped as a result of the *15 by 15* measures. With 13% of the national population, BC taxpayers can anticipate \$300 million annually in work-life balance savings to public health care expenditures.

In addition to these public benefits, Higgins and Duxbury (2008) also calculate the economic costs incurred by businesses because of the worker absenteeism to which work-life conflict gives rise. Their estimate of the national value of this otherwise unnecessary expense to business ranges from \$6 to \$10 billion annually. Using the same formulae described above for calculating the public savings to health care, we project that local BC businesses can expect to save \$200 million annually as a result of the reduced absenteeism to which the *15 by 15* policy proposals will contribute.

75 Cent Public Investment Dollars during the First Electoral Cycle

- \$300 million in annual health care expenditure savings from work-life balance
- \$210-\$240 million in annual returns from additional maternal labour supply
- \$229 million reallocated from the poorly targeted spousal and common-law tax credits

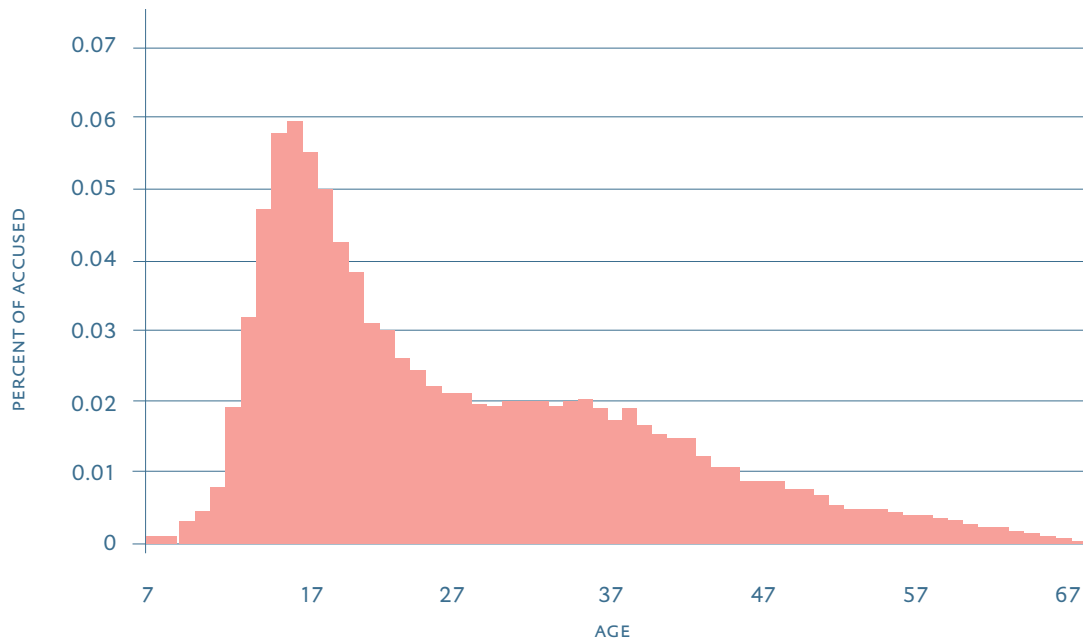
Shortly after the policy reforms are implemented, existing research evidence suggests that over \$700 million of the \$3 billion annual investment required for the *15 by 15* proposals will be returned to or reallocated from the public purse. Hence, we are really talking about no more than 75 cent public investment dollars; not 100 cent dollars. This calculation stands apart from any further re-allocation of public health care spending in order to prioritize health promotion over illness treatment. It is also calculated before any of the private gains to maternal earnings or business absentee savings are counted.

Even for those who may question the scale of the immediate savings listed in the above bullets, the 75 cent dollar is a conservative estimate of short term costs and savings because it neglects a range of benefits that ultimately require attention. For example, child welfare savings should also be anticipated because the proposed full employment-day, year round ECEC program will support vulnerable families to stay together through times of crisis while parents access needed services; and because greater income security will reduce the chances of children suffering from physical neglect. The *15 by 15* policy reforms will therefore reduce the likelihood of children entering the high-cost foster care system. More generally, poverty reduction itself will generate further savings to health care, social services and criminal justice.

Indeed, savings from crime reduction are conspicuous in their absence in our estimates insofar. Barnett's (2008) meta-analysis of the early learning and care research literature reveals that cost savings from crime alone are often the most significant benefit reported in regions of the United States that suffer a high incidence of criminal activity, outpacing total program expenditures by between five and 11 times. While BC may not have the crime rates typical of many US regions, daily reports of gun violence and gang murders are becoming altogether too common in the lower mainland. The costs of crime are substantial. Statistics Canada (Statistics Canada 2006b) reports \$12.7 billion in justice spending per year, while Leung (2005) estimates for the Department of Justice that the annual cost of pain and suffering from crime in Canada is \$35.8 billion. The pan-Canadian total cost of crime is thus estimated at \$48.5 billion annually.

By examining transitions from kindergarten to grade four, from grade four to grade seven, and from grade seven through school exit, we find that a reduction in early vulnerability from 29% to 10% is associated with a 31% reduction in crime. We simulate the impact of this 31% reduction for British Columbia in the light of the age distribution of individuals accused of crimes in Canada (see FIGURE 8), pro-rating the national estimate of the cost of crime to reflect that BC is home to 13% of the national population. Specifically, we apply the 31% reduction to the crime rate of seven year olds in Year 3 (when the first cohort of children benefitting from *15 by 15* policies reach this age), to seven and eight year olds in Year 4, and so on. Because crimes are disproportionately committed by young people (half the accused are age 23 or younger), the reduction in early vulnerability would generate more than \$400 million in cumulative savings to individuals, businesses and society within the first 10 years of implementing *15 by 15* reforms. One quarter of this savings would accrue directly to governments. Thereafter, crime savings accelerate in value, reaching half a billion dollars annually in Year 12, \$1 billion annually by Year 18, and eventually \$2 billion annually by Year 60 (before discounting). Again, one quarter of these annual savings are enjoyed by governments.

FIGURE 8: *Distribution of Canadians Accused of Crime, by Age*



Adapted from Gannon et al. (2005, Figure C1.1, “Rate of property and violent crime highest among young people, 2003”).

Stimulus Now

In the current economic downturn, economic warnings suggest that effective stimulus matters now for preventing the economy from slowing to rates unseen since the Depression of the 1930s. To this end, our income-support and child care service policy recommendations would put more resources in the hands of families at a life course stage when they are especially cash-strapped, and who are thus especially likely to spend promptly and locally.

Just as important, building a province-wide ECEC system will require purpose-built and school-related construction in every school district in the province. The model system for which we provide a cost estimate assumes maximum use of existing public spaces (schools, community centres, etc) and that a separate, publicly-funded capital budget is developed for modifications or new centres as required. This approach allows for reasonably low space costs to be passed on to ECEC programs, so that their operating budgets can focus on the staffing and programming elements of quality. Many of the necessary capital projects can be “shovel ready” in short order. ECEC capital investments thus represent ideal targets for federal infrastructure transfers, which can be allocated equitably across the province, including regions beyond the lower mainland which do not benefit as directly from the mega transportation projects that are currently proposed, like the twinning of the Port Mann Bridge and enhancing transportation routes to the Delta Port.

Finally, US studies show that early childhood education and care is an especially strong local economic development tool that creates and sustains jobs, and boosts overall

TABLE 5: *Selected Benefits of \$3 Billion Annual Investment in Modernized Family Policy: Years 1–13*

	Government Benefits	Social Benefits (Individual, Business, Government)
1. Immediate Benefits – Economic Stimulus generated by Public Investment in ECEC System Implementation		
Local and Regional Economic Development (Estimated effects for 1-3 years)	tbd	\$0.9 billion
Total	tbd	\$0.9 billion
2. Ongoing Annual Benefits – Years 1 to 4		
Reallocated Spousal Tax Credit	\$0.22 billion	n/a
Reallocation of some Medical Care Expenditure	tbd	tbd
Taxes & Productivity (Earnings) due to increased employment of mothers	\$0.21 billion – \$0.24 billion	\$0.45 billion – \$0.50 billion
Reduced Costs (Health, Absenteeism) associated with Work/Life imbalance	\$0.3 billion	\$0.5 billion
Total	\$0.73 billion – \$0.76 billion	\$0.95 – \$1.0 billion
3. Ongoing Annual Benefits – Years 5 to 13		
Reallocated Spousal Tax Credit	\$0.22 billion	n/a
Reallocation of some Medical Care Expenditure	tbd	tbd
Taxes & Productivity (Earnings) due to increased employment of mothers	\$0.24 billion – \$0.31 billion	\$0.52 billion – \$0.66 billion
Reduced Costs (Health, Absenteeism) associated with Work/Life imbalance	\$0.3 billion	\$0.5 billion
Reduced Crime	0 – \$0.15 billion	\$0.01 billion – \$0.56 billion
Total	\$0.76 billion – \$0.98 billion	\$1.03 billion – \$1.72 billion

economic growth (Warner and Liu 2006). The US Committee for Economic Development reports that “from a national perspective, preschool programs create more new jobs and generate earnings returns that are five times as great as traditional economic development programs.” The US National Institute of Early Education Research adds that “new facilities and expanded services will provide short-term economic stimulus and increase economic growth at no long-term cost to the taxpayer. Multipliers for child care are 1.91 for total output (91 cents in additional economic activity on top of each dollar of federal investment) and 1.50 for employment (1 additional job created for every two new jobs created by federal investments in child care) (Barnett and Frede 2009).”

Similar economic studies in the province of Manitoba support the US findings. Even in this small open economy, in both rural and urban regions, multipliers for child care are 1.58 for total output and 1.49 for employment (Manitoba Child Care Coalition 2009). Applying these more conservative results to BC suggests that \$0.9 billion or almost two-thirds of the

proposed \$1.5 billion annual investment in ECEC alone would be returned promptly through local or regional economic development if we invest while the economy is in, or recovering from, recession. Accordingly, Heckman states in a recent interview with the Bernard van Leer Foundation (2009) that “Investing in young children gives you double benefits — stimulus from the extra spending now, and the increase in human capital in years to come. So, yes, there’s an extremely good case for governments to include it in stimulus packages.”

TABLE 5 summarizes the short- and medium-term benefits that the *15 by 15* policy investment will generate during the first 13 years for which human capital returns are not available as children work their way through school. If we start the benefits during the economic recession and recovery, the annual returns in the first year will cover 62% of the expenditure. If by Year 3 of the investment, the economy is no longer recovering from the slowdown, the return will drop to closer to 33%. Thereafter, the rate of return will slowly climb back to 57% by Year 13, after which accelerated GDP growth will begin as a result of the improved stock of human capital achieved by reducing vulnerability at kindergarten. The bottom line is that no less than 39% to 47% of the cumulative (and discounted) *15 by 15* investment can be recouped by society over the first three electoral cycles so long as we organize the policy reforms to support parents optimally, and implement them soon in order to benefit from the multiplier effects available from stimulating the economy during a recession.

It is not always the case that economic efficiency and equality considerations converge. But they do when it comes to investing in a new social policy framework for families with young children.

A Smart Economic Investment.

A Necessary Social Investment.

The Government of BC’s stated goal of reducing early childhood vulnerability to 15% by 2015 is a reasonable goal on the path toward lowering vulnerability to 10% by 2020. But it requires a policy response immediately.

The requisite policy response is a bold one. There is little to be gained by thinking small scale. Our *15 by 15* Policy Framework for Optimal Human Development proposes a fundamental shift in how we think about health care and human capital. We recommend shifting from treating illness after the fact, to promoting health from the outset of the human life course. The research evidence we document throughout this article makes clear that the human capital gains are enormous in the long-term, and that the economic case for the framework is solid even in the near- and medium-term.

While the economic arguments may be sufficient for making the case for our six policy recommendations, economics should not overshadow the broader issue of equality. BC has a six year opportunity to help children thrive, or risk a generation who will pay the price of unnecessary early vulnerability — vulnerability that risks nearly one third of the next generation living with the consequences of sub-optimal genetic responses to their early environments. The solutions we sketch out will redress child vulnerability, gender inequality and income inequality simultaneously.

It is not always the case that economic efficiency and equality considerations converge. But they do when it comes to investing in a new social policy framework for families with young children. There is thus strong reason for British Columbians' to re-evaluate our priorities for new and re-allocated public investment so that well-designed family policy that will support parents now and enrich future human capital rises toward the top of our "To Do" list.

Evidence-Based. Not ideology.

Research evidence makes clear that the *15 by 15* policy goal is attainable. Its value as a provincial objective does not rest with partisan politics, and does not depend on the political party that proposed it. British Columbians should demand that our elected officials pursue this commitment no matter what their political stripes.

The same must be said for the *15 by 15* Policy Framework for Optimal Early Human Development that we describe in this article. The Framework is evidence based, not ideological. It paints a policy blueprint that merits attention regardless of which political party holds power in the Legislative Assembly.

Although the policy changes we propose in this article are well supported by existing research, a commitment to evidence-based policy means that our recommendations leave room for future policy refinement in the light of the best available data at some later point. Given the scale of the proposed public investment, and the importance of the outcomes to be achieved, attention to future data only grows in importance. It is therefore essential to develop a monitoring and accountability framework in order to track our province's progress toward the *15 by 15*, and eventually 10 by 20, policy goals. As governments move toward implementing all six components of the *15 by 15* Policy Framework, a system for monitoring and ensuring accountability will better position legislators to coordinate programs across government ministries and across communities. The same system will be essential for ensuring that service design and adaptations are informed by an ongoing program of research and evaluation.

Any adequate monitoring framework must have two key elements:

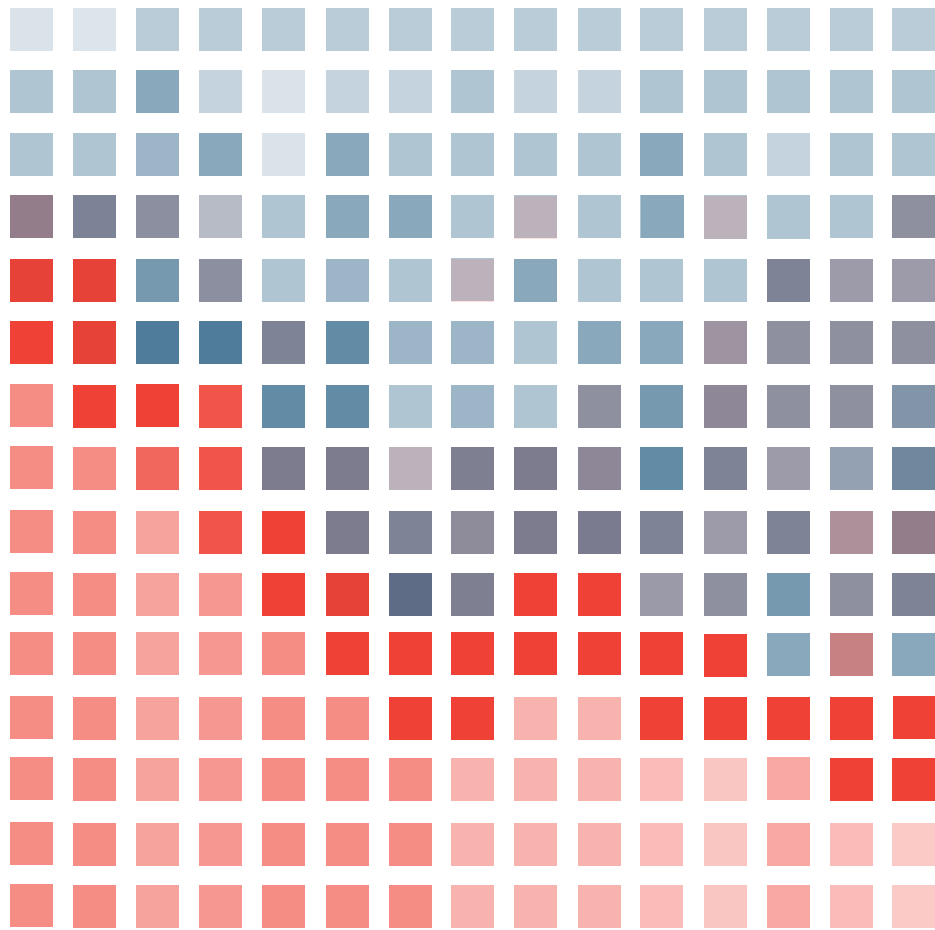
1. A *15 by 15* policy implementation plan, with measurable targets and timelines that are clearly linked to resource allocations and with key indicators of success.
2. A monitoring agency that assesses the effectiveness of the system as it unfolds and provides cross-ministry advice to government and stakeholders.

As discussed in the beginning of the paper, the EDI data system is already well-established in BC, utilized by numerous ministries for planning and evaluation, and is currently being enhanced for research purposes through linkages with other data systems (education, health, etc.). Population-based EDI data will thus continue to be available to serve as a cornerstone for monitoring the state of early human development in BC. This monitoring will enable evaluation of the implementation of the *15 by 15* policy framework, and the eventual target efficiency of each of the proposed policy reforms. HELP currently studies the transitions that children make from kindergarten through grade four across the entire

province. As children age, we will study their transitions through grades seven, ten and twelve, and eventually into the labour market. These developmental trajectory data will uniquely position BC to evaluate its early life course human capital investments in a way that few other jurisdictions in the world can. Our ongoing research will thus permit timely assessments of policy reforms, which speak to the impact of policy change across the entire social gradient of vulnerability at birth, school entry, throughout school, and into the labour market, with due attention to causation and not just association. Attention to causation will be enhanced the more that all Government of BC Ministries collaborate with HELP to provide available administrative data to explore the implications of early investments for finance, health, education, child protection, welfare and gender equality. As a network of researchers from across BC's major universities and teaching hospitals, and coordinated at the University of British Columbia, HELP enjoys the intellectual independence and the international recognition needed to ensure that evaluation of the *15 by 15* implementation of policy reforms occurs with the requisite distance from political processes.

In sum, the Government of BC's *15 by 15* goal demands evidence-informed action now. The Framework we describe in this chapter provides a detailed policy blueprint for this action, and offers HELPs world-renowned monitoring capabilities to guide the way.

The private sector, including business, stands to capitalize the most from the economic gains available from well-designed family policy that enriches the future stock of human capital. It is therefore time for the BC business community to lead the call for evidence-based human capital reform which targets the life course stage where we can realize the greatest eventual dividend for our investment: when parents and communities care for citizens in their early years. 🇨🇦



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