

Human Early Learning Partnership

To create, advance and apply new knowledge through interdisciplinary research to help children thrive.

No 1: July 2007



research brief

It Takes A Child To Raise A Community: 'Population-based' Measurement of Early Child Development

By Dr. Clyde Hertzman and Dr. Lori G. Irwin

Summary

The early years are considered to be *the most important* developmental phase throughout the lifespan. These years are marked by extremely rapid development of the brain and other key biological systems. The nurturant qualities of the environments to which children are exposed in their earliest years literally “sculpt” the developing brain. The environments that are responsible for fostering nurturant conditions for children range from the intimate realm of the family to the broader socioeconomic context shaped by governments, international agencies, and civil society.

These environments and their characteristics are known as the “social determinants” of early child development (ECD). We know that many adult health problems: obesity, mental health (depression), heart disease, high blood pressure, non-insulin dependent diabetes, as well as literacy and numeracy skills, have their roots in the early years. Therefore, not only is ECD socially determined but ECD is also a determinant of health, well-being, and learning skills across the balance of a life time. As a result, and in order to improve the health of the population, it is critical for societies to understand trends in ECD at a population level. Community-based population-level outcome measures of early child development can help us to understand trends in ECD. The Early Development Instrument (EDI) provides us with such an

indicator because it reflects all the key domains of children’s early development. Notably, the EDI offers British Columbia an opportunity to assess differences in ECD between places and trends in ECD over time.

If we are to improve the health, well-being and competence of the population of British Columbia, we need an outcome measure that will inform communities about how the programs, policies and social environments that we provide for young children combine to support or undermine their development.

Background

Early environments: Research now shows that children’s early environments have a vital impact on the way their brains develop. Developing fetuses create new brain cells at a rate of tens of millions each week. A baby is born with billions of brain cells that represent lifelong potential. But, to develop fully, these brain cells need to connect with each other. The more stimulating and nurturing the early environment, the more positive connections are formed in the brain and the better the child thrives in all aspects of his or her life, in terms of physical development, emotional and social development, and the ability to express him or herself and acquire knowledge.

We know what kinds of environments promote healthy child development. While nutrition and physical growth are basic, young



children also need to spend their time in caring, responsive, language-rich environments that include support and 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. Parents and other caregivers strive to provide these opportunities for their children, but they need support from community and government at all levels.

Population-health perspective: Historically, early child development research has been oriented to the study of the individual, dominated by psychological and educational approaches and focused on curriculum and program implementation strategies. The work of the Human Early Learning Partnership (HELP) introduces a different perspective to the mix, the “population health” perspective. This perspective considers the health of the entire population and incorporates ECD as a social determinant of health, requiring that we come to understand, through practices of measurement, where systematic differences in the prospects for healthy child development are emerging among clearly defined populations of children (as in British Columbia). Once identified, these systematic differences become the basis for understanding the modifiable determinants of ECD, for measuring progress in ECD over time, and for measuring equity of access to the conditions that support healthy child development.

ECD as an outcome: Early child development (ECD) is an outcome or rather, a set of outcomes that reflect a key aspect of the successfulness of societies. ECD is also an indicator of the future success of a society, because it is associated with learning skills, health, and other measures of well-being throughout the lifecourse; as such, it can be considered a fundamental measure of the potential for societies to flourish in multiple domains. The extent to which British Columbia’s communities provide opportunities for healthy child development is the extent to which the well-being of its children is supported.

Monitoring ECD at a Population Level: British Columbia as a Model

British Columbia is the first jurisdiction in the world to have an established standardized tool for assessing ECD

BC is the first jurisdiction in the world to have an established standardized tool for assessing early child development at a population level over time.

at a population level over time. Between 2000 and 2004, British Columbia completed population-based assessments of early child development (ECD) in every School District in the province, using the Early Development Instrument (EDI). The EDI is collected every three years; and in 2007, the second wave of EDI data collection was completed.

The Early Development Instrument measures early child development according to five scales: physical well-being, social competence, emotional maturity, language and cognitive development, and communication and general knowledge—based upon domains of early child development that have life long impacts on health, well-being, behaviour, and learning skills. Province-wide collection of EDI data has been used to establish a baseline estimate of the state of early child development at school entry, against which future progress will be evaluated. But the EDI is more than *just* a measure of developmental readiness for school, because of the influences of early child development throughout the life course.

The EDI provides information that can be interpreted both backwards and forwards in time. The primary direction of interpretation for the purposes of ECD is backwards. That is, the results of the EDI are interpreted to represent the outcome of the cumulative early experience that children in a given geographic area have had from birth to kindergarten entry. Variations in EDI outcomes by area are taken to represent average differences in the qualities of stimulation, support and nurturance that children in those areas have experienced. The EDI can also be interpreted prospectively, in that the results frame the challenges that families, schools, communities and governments will face in supporting their children’s development from kindergarten onward.

The purpose of the EDI is to provide population-based data about early child development to

communities and government so that they can put into place programs and policies to support healthy child development for children in all families. The EDI is not used to label or identify individual children with specific problems, but instead provides information with respect to the number and proportion of vulnerable children in each neighbourhood and the types of vulnerability that are present. We make this group-level information freely available to individuals, communities and senior governments so that policies, programs and individual actions meant to support ECD can be taken on the basis of it.

In order to facilitate access to EDI information, the Human Early Learning Partnership (HELP) has created maps that display the developmental status of

kindergarten children in every neighbourhood of the province, as well as the socioeconomic conditions of those neighbourhoods. EDI data is also “grouped” at the community, regional and provincial levels, to facilitate the use of this data in program and policy planning. Maps offer the unique ability to see “in a glance” which communities struggle with challenging developmental trends, and which communities have rates of vulnerable children that are higher or lower than might be expected based on local socio-economic environments.

HELP has also connected this information with other data, which enables us to create a more comprehensive picture of groups of children’s long-term trajectories of development using birth, health,

Figure 1 - EDI across British Columbia

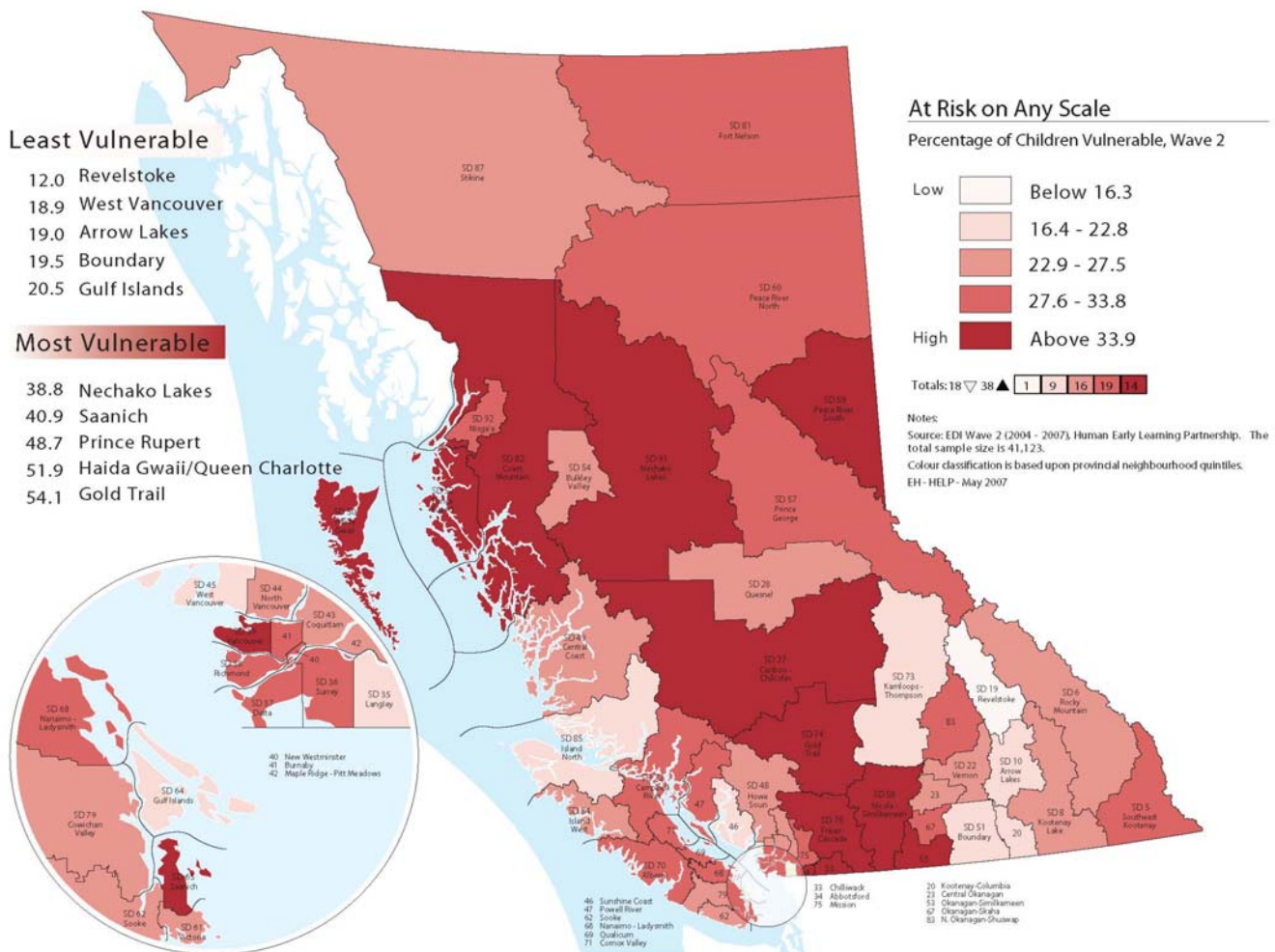


Figure 1 illustrates the percentage of children vulnerable on one or more scales of the EDI, by school district, across British Columbia. Colour classification is based on neighbourhood data quintiles. The map shows a range of vulnerability in the southern area of the province, and medium to high levels of vulnerability in the northern area.

EDI, census, and school performance information. This research can assist the ECD community, schools, health authorities, local government, and provincial policy makers to better understand child development and make better decisions on behalf of British Columbia children.

Policy and Program Considerations

Economists now assert that investment in early childhood is the most powerful investment a community, region or country can make, with returns over the life course many times the amount of the original investment. The title of this research brief is a play on the proverb “it takes a village to raise a child”. Although generally we interpret this to mean that the village *nurtures* children, longitudinal research in the area of early child development also demonstrates that the future success of society is rooted in the early years of children’s development; thus, “it takes a [investment in a] child to raise [the health and future success of] a community”.

Findings from British Columbia reveal that there are large and consistent differences in developmental vulnerability across neighbourhoods within communities, across districts and across regions in the province. While the highest risk of vulnerability is found in the poorest neighborhoods, the largest *number* of children with developmental vulnerabilities is spread across middle-class neighborhoods. Therefore, to make a meaningful improvement in the state of early child development in British Columbia, or in other jurisdictions, we must find ways to create universal access to the conditions for optimal development irrespective of where children and their caregivers live, or the social groups to which they belong. Population-based measurement of ECD is essential in monitoring our progress towards achieving this goal.

Key References

- Keating P, Hertzman C. (1999) *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics*. New York: Guilford Press.
- McCain MN, Mustard JF, Shanker S. (2007) *The Early Years 2: Putting Science into Action*. The Council for Early Child Development: Toronto.
- Janus M, Offord D. (2007) Development and Psychometric Properties of the Early Development Instrument (EDI): A Measure of Children’s School Readiness. *Canadian Journal of Behavioral Science* 39(1), 1-22.
- Kershaw P, Irwin L, Trafford K, Hertzman C. (2005) *The British Columbia Atlas of Child Development*. Human Early Learning Partnership and Western Geographical Press, Vol 40.

ECD Mapping Portal

HELP’s ECD Mapping Portal houses a wide collection of provincial and community maps, datasets, and other useful tools related to early child development. <http://ecdportal.help.ubc.ca/maps-profiles.htm>.

The **Human Early Learning Partnership** (HELP) is an interdisciplinary research network of faculty, researchers and graduate students from six universities in the province of British Columbia, Canada.

HELP’s mission is to make an international research contribution to understanding the biological, psychological and societal factors influencing children’s health and development. HELP partners with government and communities to translate research into policies and practice.

Director: Dr. Clyde Hertzman

HELP receives core funding from the BC Ministry of Children and Family Development.

The views presented in this brief are those of the author and do not represent the policy or views of the Province, partner Universities or individual HELP Affiliates.



Tel 604.822.1278
Email earlylearning@ubc.ca
Web www.earlylearning.ubc.ca
Portal <http://ecdportal.help.ubc.ca>

Human Early Learning Partnership
440 – 2206 East Mall
Vancouver BC V6T1Z4

University of British Columbia (UBC)
University of Victoria (UVic)
Simon Fraser University (SFU)
University of Northern BC (UNBC)
Thompson Rivers University (TRU)
UBC Okanagan (UBCO)

HELP’s academic home is within the College for Interdisciplinary Studies at UBC.



OKANAGAN