EDI BC

2019 PROVINCIAL REPORT

2016-2019
WAVE 7

HUMAN
EARLY LEARNING
PARTNERSHIP

UBC

Reconciliation Pole, designed and carved under the direction of Haida master carver 7idansuu (Edenshaw) James Hart. The pole is situated, with permission, at the UBC Point Grey Campus, on the unceded ancestral and traditional territory of the Musqueam people. For more information, please see **https://students.ubc.ca/ubclife/what-reconciliation-pole**

Photo: Paul H. Joseph, UBC Brand & Marketing

We express our deep gratitude to the xʷməθkʷəy̓əm (Musqueam) Nation for the privilege of working on their traditional ancestral and unceded territory at the Point Grey Campus of the University of British Columbia.

HELP is committed to implementing the Calls to Action of the Truth and Reconciliation Commission. In this regard, we would like to acknowledge and thank the members of HELP's Aboriginal Steering Committee. They guide us in all that we do from developing culturally safe research practices and data collection protocols, to implementing culturally appropriate workplace practices, and to the practice of cultural humility as we work to build reciprocal relationships with First Nations, Inuit and Metis communities and organizations in BC. We are grateful for their friendship and professionalism in guiding us along this path.

In this report, we discuss the variability of child vulnerability rates as measured using the Early Development Instrument (EDI) across geographic jurisdictions in BC. We have not yet identified or explored differences in vulnerability between populations of children based on demographic characteristics. We recognize that systemic inequities affect the health and well-being of some populations of children more than others. We acknowledge the profound intergenerational impact of colonization, residential schools and systematic institutional discrimination on the health and well-being of Indigenous children, families and communities. With the guidance and support of our Aboriginal Steering Committee, we work directly with First Nations and Metis partners in supporting children and families in their communities to use our data and research.

HUMAN EARLY LEARNING PARTNERSHIP

UBC

Suggested citation

Human Early Learning Partnership. EDI BC. Early Development Instrument British Columbia, 2016-2019 Wave 7 provincial report. Vancouver, BC: University of British Columbia, Faculty of Medicine, School of Population and Public Health; 2019 Nov. Available from: **http://earlylearning.ubc.ca/media/edibc_wave7_2019_provincialreport.pdf**

ACKNOWLEDGEMENTS

The Human Early Learning Partnership (HELP) considers it a privilege to be able to gather and share important insights into the health and development of children in BC. We share a vision of "All Children Thriving in Healthy Societies" with many individuals, institutions and organizations across the province, and nationally. Our role in gathering valid and reliable data, reporting data in accessible and relevant ways, and working closely with partners to use the evidence toward this vision, is integral to the process of improving outcomes for all children and families in BC.

We would like to acknowledge the exceptional support we have received since 2001 from the Ministries of Children and Family Development, Education, and Health. This investment has enabled the creation of HELP's unique child development monitoring system that supports high quality, evidence-informed decisions on behalf of children and their families.

We are grateful to the teachers and education administrators who work directly with us to gather data and use our reports. This includes a commitment to training and completing questionnaires, engaging with parents and caregivers, and using HELP data and research in schools, districts and communities.

Our thanks also to early childhood and health professionals across the province who have played a substantial role in ensuring that our reports are circulated and used. They have raised awareness of the importance of the early years.

REMEMBERING DR. CLYDE HERTZMAN

This report, and the work of HELP over two decades, would not have been possible without the vision and passion of our Founding Director, Dr. Clyde Hertzman. We honour and remember a pioneer for children and families in BC and across Canada. We miss him!

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Children's early development is profoundly important. The quality of children's experiences and environments across every aspect of their lives influences their lifelong health and well-being. Decades of research reinforces the importance of investing more robustly in early development. Ensuring that we, as a society, provide the best possible start for all children is an issue of social justice and health equity.

This report provides a provincial overview of data from the Early Development Instrument (EDI) collected during Wave 7 (2016-2019). The report highlights both trends in children's development since Wave 2 (2004-2007) and also regional patterns of development over that period.

EDI data are an essential guidepost as to how we are doing as a society. These data highlight the larger trends in children's development as a foundation for guiding local, regional and provincial investment, policy and programs. These data provide us with important insight into the many factors that influence children's development: from proximal family factors to the larger social, economic, and policy contexts in which families are living in BC. These factors define the quality of the environments in which children are living and growing, influencing their development and readiness to learn as they enter school for the first time.

In this Provincial Report we see that more children are vulnerable on each of the five scales of the EDI and on the summary measure of 'Vulnerable on One or More Scales' than was recorded in our Wave 6 data (collected between 2013-2016). Overall, EDI vulnerability on one or more scales in BC has increased to 33.4% – up from 32.2% just three years ago. Childhood vulnerability has also increased across the long-term, climbing from 29.9% in Wave 2 (2004-2007). **This increase from Wave 6 to Wave 7 represents about 1,500 additional children who are vulnerable on the EDI across the province.**

This means only 66.6% of BC children arrive at Kindergarten meeting all of the developmental benchmarks that they need to thrive both now and in their school years. Fully one third are entering Kindergarten behind where we would want them to be in at least one aspect of their development: social, emotional, language, cognitive development, communications skills, or physical health and well-being.

The Early Development Instrument (EDI) is a questionnaire with 103 questions measuring five core domains of early child development that are known to be good predictors of later health, education, and social outcomes: Physical Heath & Well-Being, Language & Cognitive Development, Social Competence, Emotional Maturity, and Communication Skills & General Knowledge.[1] The EDI is completed by Kindergarten teachers across BC for all children in their classes. Data from the EDI are used to track developmental change or trends in vulnerability for populations of children. For more information on the EDI, please see page 12.

INCREASED TO

33.4%

OVERALL
BC VULNERABILITY
ONE OR MORE SCALES

Furthermore, EDI data continue to reveal large and consistent differences in developmental vulnerability rates across all regions of BC. There is a range of 55 percentage points between the province's 289 neighbourhoods, with the lowest overall neighbourhood vulnerability at 13% to the highest overall neighbourhood vulnerability at 68%.

Reducing child vulnerability is no small task. EDI data have been used for guiding policy and program development for children and families at both provincial and local levels from the first wave of data collection, starting in 2001. In these 18 years, there have been hundreds of programs put in place to improve children's health and well-being in BC. Significant effort has been made across the province by policy-makers and early years, educational and health professionals to improve outcomes. We applaud these efforts as, without them, there is no doubt that EDI vulnerability rates would be even higher.

In 2009, HELP authored the report *15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in BC* that recommended some significant shifts in child and family policy with the goal of decreasing the provincial EDI vulnerability rate from 29% (the vunerability rate in 2009) to 15% by 2015 (with the ultimate goal of 10% by 2020).[2] Based on extensive child development, policy and economic research from a range of experts, the policy changes recommended included: extending maternity/parental leave to 18 months; increasing child care availability, affordability and quality; increasing child benefit rates and family income assistance levels (addressing child and family poverty); and amendments to employment standards around average full-time hours per week.[2] Recent policy changes at both the provincial and federal government levels are starting to address the issues and recommendations outlined in the *15 by 15 report* (see list on next page).

It is important to note that the Wave 7 data reported here were gathered between 2016 to 2019 during which time some significant shifts in government and policy (detailed below) occurred. We do not believe that these changes have had sufficient time to impact the EDI data that we are reporting for this period. We are interested to see if these policy changes and investments have an effect on childhood vulnerability over time.

As we look forward, HELP is cautiously optimistic that some of the new investments and policy changes currently underway at the provincial and federal levels could have the potential to reverse the current worsening trends in child vulnerability and make positive shifts in family well-being.

Some of the relevant government policy changes since HELP's last EDI provincial report in 2016 that aim to support children and family include:

PROVINCIAL LEVEL:

• *ChildCare B.C. Caring for Kids, Lifting Up Families* (2018)[8]: a 10-year plan to move toward a universal child care system that included immediate child care fee reductions, investments in more child care spaces, and increases to Early Childhood Educator wages (among other initiatives);

• BC's first poverty reduction plan – *Together BC Poverty Reduction Strategy* (2019)[9] : a 5-year plan that includes increases to the BC Child Opportunity Benefit, increasing minimum wage, increases to income assistance and disability rates, among other changes;

• Homes for B.C., *A 30-Point Plan for Housing Affordability in British Columbia* (2018)[10]: includes commitments such as building affordable housing, a focus on renter security, and stabilizing the housing market;

• Creation of a new Ministry of Mental Health and Addictions and the release of *A Pathway to Hope* (2019)[11]: a report that outlines a priority focus on children and youth including promoting early social and emotional development, expanding parenting support, mental health in schools and integrated mental health teams;

• The revised Ministry of Education's *Early Learning Framework* (2019)[12]: expands the definition of early years from 0-6 to 0-8, overlapping with the early elementary years, supporting alignment across early learning environments towards smoother transitions for children moving from early years programs to elementary school;

• The Ministry of Children and Family Development Strategic Plan (2019)[89];

• 2018 expansion and increased funding towards Aboriginal Head Start programs throughout the province;[13]

• New health investments in programs supporting Indigenous families and parents with complex challenges (such as poverty, homelessness, mental health and addictions); and,

• The Government of BC's 2019 adoption of the Truth and Reconciliation Commission Report's (2015) Calls to Action[7] and the *BC Declaration on the Rights of Indigenous Peoples Act*[90].

FEDERAL LEVEL:

• 2019 increases to the Canada Child Benefit[3];

• 2019 extension of parental leave to 18 months and an acknowledgement of the importance of paternal leave[4];

• Starting in 2017 Increased investments to support and create more high-quality, affordable child care across the country through the Multilateral Early Learning and Child Care Framework (2017) and Indigenous Early Learning and Child Care Framework agreements (2018)[5,6];

• The acceptance of the Truth and Reconciliation Commission Report (2015) and a start at addressing the Report's 94 Calls to Action.[7]

IN SUMMARY

Early childhood vulnerability in BC, as reflected by EDI data, is a critical issue. **The social and economic costs of not addressing vulnerability in the early years is immense in every sector from health, to education, to child welfare and employment, and later the criminal justice system.** EDI and other data collected by HELP reflect decades of under-investment in, and lack of comprehensive attention to, children and families; we have simply not mounted a sufficient collective response.

However, we are in the midst of some significant shifts in how the Province of British Columbia addresses the needs of children and families. The impact of these shifts on the children's development will take time, but we at HELP are encouraged by these changes.

Through generative dialogue and an approach that is truly systemic, there is the potential to see lower EDI vulnerability rates when EDI data are next reported for Wave 8 in 2022.

1. THE HUMAN EARLY LEARNING PARTNERSHIP (HELP)

The Human Early Learning Partnership (HELP) is an interdisciplinary research institute, based at the School of Population and Public Health, Faculty of Medicine, at the University of British Columbia. HELP was founded by Dr. Clyde Hertzman and Dr. Hillel Goelman in 1999. HELP's purpose is to focus attention on the profound importance of children's development for the life-long health and well-being of every individual and society as a whole.

Dr. Clyde Hertzman pioneered a Human Development Program of Research that explores "the differences that make a difference" in children's early development using a cell-to-society, bio-ecological approach.[14-16] He also envisioned a unique child development monitoring system that follows populations of children across their development, one that would provide a foundation for evidence-based decision-making and increased impact.[17,18] He believed strongly that without high-quality data and research, problems would remain unseen and action would not be taken.

Through an extended process of consultation, HELP has recently reinvigorated its strategic plan. **http://earlylearning.ubc.ca/media/helpstrategicplan-2019-2025.pdf**

VISION

All children thriving in healthy societies

MISSION

HELP is dedicated to improving the health and well-being of children through interdisciplinary research and mobilizing knowledge

HELP'S FOUR STRATEGIC PRIORITIES

Our new strategic plan outlines four key priorities for the coming five years. The first three of these priorities guide our active research, reporting and engagement, and are deeply interconnected and interdependent. The fourth is the essential foundation in which to achieve them:

1 **Expand a child development monitoring system**

2 **Lead a comprehensive Human Development Program of Research**

3 **Increase the impact of our data and research through an ongoing knowledge-to-action (K2A) strategy**

4 **Create a healthy work environment that preferences learning and respect**

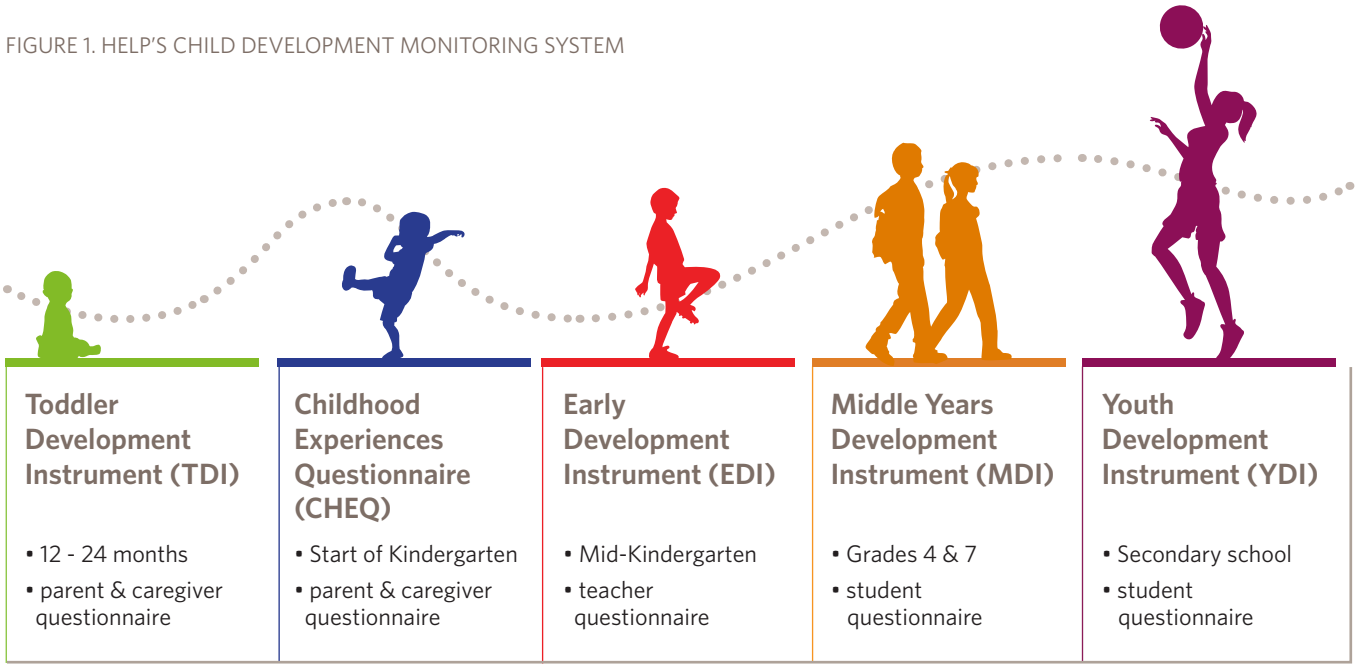
1A. A CHILD DEVELOPMENT MONITORING SYSTEM

HELP has long envisioned a series of population-level tools that can be used to collect longitudinal data about child development and the contextual factors that influence development, capturing information at critical transitional points in the early lifespan. We are now closer to realizing this vision of a comprehensive child development monitoring system than ever before.

HELP's Strategic Priority 1 focuses on the expansion of this monitoring system. The foundation for this system has been the Early Development Instrument (EDI).[19] Used across BC since 2001 to gather data about children's development as they enter school in Kindergarten, EDI data show patterns and trends in children's developmental health. This information enhances our understanding of how ready children are to enter school. Readiness for school is a reflection of the quality of children's experiences and development in the five years before they enter the school system.[20]

Additional questionnaires, including the Toddler Development Instrument (TDI), the Childhood Experiences Questionnaire (CHEQ), and the Middle Childhood Questionnaire (MDI), are part of HELP's comprehensive child development monitoring system (Figure 1). Each and all of these questionnaires provide a deeper understanding of the contexts in which children are living, growing and learning in their early years and beyond.

FIGURE 1. HELP'S CHILD DEVELOPMENT MONITORING SYSTEM



Toddler Development Instrument (TDI)	Childhood Experiences Questionnaire (CHEQ)	Early Development Instrument (EDI)	Middle Years Development Instrument (MDI)	Youth Development Instrument (YDI)
• 12 - 24 months • parent & caregiver questionnaire	• Start of Kindergarten • parent & caregiver questionnaire	• Mid-Kindergarten • teacher questionnaire	• Grades 4 & 7 • student questionnaire	• Secondary school • student questionnaire

Toddler Development Instrument (TDI)
Completed by parents/caregivers of toddlers 12-24 months of age, the TDI questionnaire gathers data about family- and community-level social context factors such as children's early interactions, families' to access to, and use of, community resources, parent/caregiver support and well-being and socioeconomic factors. The questionnaire is designed to be used alongside existing health screening tools and focuses on the context in which children are developing. The TDI is currently being piloted in several communities in BC in partnership with BC Health Authorities as well as in Australia.

Childhood Experiences Questionnaire (CHEQ)
Completed by parents/caregivers at the beginning of Kindergarten, the CHEQ questionnaire gathers data about children's early experiences in specific areas of development that are strongly linked to children's health and well-being, education and social outcomes. The CHEQ can be used together with the EDI to broaden and enrich our understanding of children's early development. The CHEQ was recently used in 15 BC school districts, and a roll-out to additional communities across BC is planned for 2020.

Early Development Instrument (EDI)
Completed by Kindergarten teachers for students in their classes in February, the EDI questionnaire gathers data about children's age appropriate skills and competencies in five important domains: physical health and well-being, language and cognitive development, emotional maturity, social competence and communication skills and general knowledge. The EDI questionnaire has been used province-wide since 2001. Please see page 12 for more information.

Middle Years Development Instrument (MDI)
Completed by children in Grades 4 and 7, the MDI questionnaire gathers data about children's social and emotional development and well-being, connectedness with adults at home, school, and the neighbourhood, peer relationships, nutrition and sleep, school experiences, and time use during the after school hours. It asks them how they think and feel about their experiences both inside and outside of school. Since the 2009-2010 school year, the MDI has been administered in over 40 BC school districts and is also being used nationally and internationally.

Youth Development Instrument (YDI)
This questionnaire is in the early planning stages. The goal is to develop a population-level questionnaire, completed by students in secondary school, that explores the perspectives, environments and experiences of BC's youth.

The continuous increase in child vulnerability documented by EDI data in this report underscores the need for more information about the early experiences and contexts in which young children in BC are growing. Alongside the EDI, the TDI and CHEQ were developed to help us learn more about these early environments and experiences. This is essential information for a range of decision-makers and service providers as it provides more detailed insight into the actions that could be taken toward improved outcomes.

While the EDI, completed by Kindergarten teachers, gathers data about children's competencies in five important developmental domains, the TDI and CHEQ, completed by parents and caregivers, collect information on contextual factors such as:

- Early social and emotional experiences;
- Daily physical activity, nutrition, screen time and sleep habits;
- Contact with the health care system;
- Child care arrangements, access and use of early learning and care programs; and
- Family demographics and supports.

As HELP expands the reach of the CHEQ and the pilot of the TDI, we look forward to exploring these areas further in the future. For more information, please visit the HELP **website**:

TDI: **http://earlylearning.ubc.ca/blog/2019/jun/26/what-toddler-development-instrument-tdi/**

CHEQ: **http://earlylearning.ubc.ca/cheq/**

IN SUMMARY

HELP's data provide insights into how the social, emotional, physical health and well-being, communication, language and cognitive development of children in BC is changing over time to enable evidence-based decision-making to improve our investment in children and therefore improve early child development outcomes. This is necessary for improving the overall health and well-being of our society.

2. THE EARLY DEVELOPMENT INSTRUMENT (EDI)

We begin this section with an overview of the EDI. It is important to understand the questionnaire in order to interpret data, patterns and trends. EDI data serve as a catalyst to enable us to reflect on complex issues that influence development and well-being. We also provide an overview of HELP's research approach and core concepts that guide our understanding of child development.

2A. AN INTRODUCTION TO THE EARLY DEVELOPMENT INSTRUMENT

The EDI is a questionnaire that was developed by Dr. Dan Offord and Dr. Magdalena Janus at the Offord Centre for Child Studies at McMaster University in Hamilton, Ontario. Data gathered using the EDI have been used in provinces and territories across Canada, and internationally, to better understand the developmental trends of Kindergarten children. As of the writing of this report, there are over 1.3 million EDI records for children in Canada.[21] Increasingly, Canadian EDI data are providing a basis for assessing developmental differences and trends in different parts of the country.[22-24]

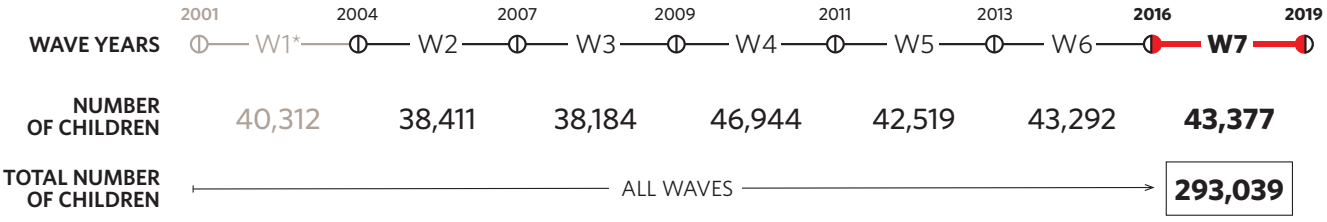
In BC, the EDI questionnaire is used province-wide. HELP has been collecting EDI data since 2001 and over the course of this period we have collected data for 293,039 Kindergarten children in BC (Figure 2). This has created a unique and world-class data set that is not available in most other provinces or countries.

There is significant literature on the validity and reliability of the EDI: a detailed list of publications and studies can be found on the HELP website: **http://earlylearning.ubc.ca/media/2019_09_edi_citations_help.pdf**

The EDI is:

- A questionnaire designed to gather data about the trends and patterns of child development for populations of children. It is not an individual assessment or diagnostic tool. EDI questions rely on Kindergarten teachers' observations and knowledge of the developmental competencies of the children in their classroom;
- A "whole child" questionnaire that includes 103 questions that measure five developmental domains, which individually and together, are strong predictors of health, education and social outcomes in adolescence and adulthood;[25,26]
- Completed by Kindergarten teachers across the province in February of the school year once they have known the children in their classroom for several months;
- Collected on a three-year schedule called a "Wave" to capture sufficient data in all school districts in the province.

FIGURE 2. EDI COLLECTION HISTORY



** Due to changes in the EDI questionnaire after Wave 1 data collection, Wave 2 is HELP's baseline and Wave 1 data are not publicly reported.*

2B. THE FIVE SCALES OF THE EDI

The EDI questionnaire gathers data in five developmental domains (Figure 3).

PHYSICAL HEALTH & WELL-BEING

Children's gross and fine motor skills, physical independence and readiness for the school day. E.g. *Can the child hold a pencil? Is the child able to manipulate objects? Is the child on time for school?*

SOCIAL COMPETENCE

Children's overall social competencies, capacity for respect and responsibility, approaches to learning, and readiness to explore new things. E.g. *Is the child able to follow class routines? Is the child self-confident? Is the child eager to read a new book?*

EMOTIONAL MATURITY

Children's prosocial and helping behaviours, as well as hyperactivity and inattention, and aggressive, anxious and fearful behaviours. E.g. *Does the child comfort a child who is crying or upset? Does the child appear fearful or anxious? Is the child impulsive, acts without thinking?*

LANGUAGE & COGNITIVE DEVELOPMENT

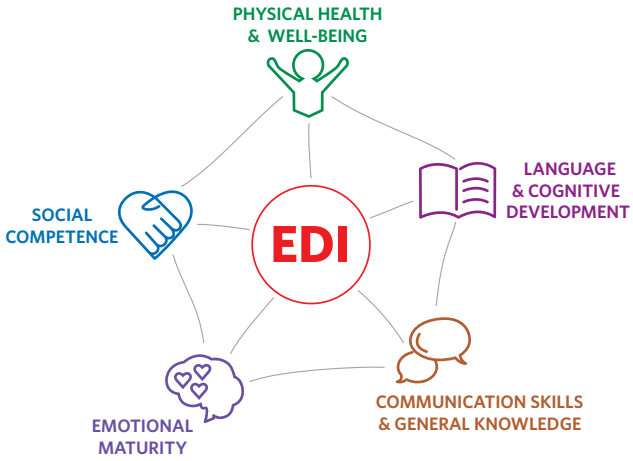
Children's basic and advanced literacy skills, numeracy skills, interest in math and reading, and memory. E.g. *Is the child interested in reading and writing? Can the child count and recognize numbers? Is the child able to read simple sentences?*

COMMUNICATION SKILLS & GENERAL KNOWLEDGE

Children's English language skills and general knowledge. E.g. *Can the child tell a story? Can the child communicate with adults and children? Can the child take part in imaginative play?*

More details for these scales can be found on the HELP website: **http://earlylearning.ubc.ca/edi/**. *The EDI questionnaire is also available for download here:* **http://earlylearning.ubc.ca/media/edi_offord_2018_2019.pdf**

FIGURE 3. THE FIVE SCALES OF THE EDI



REPORTING ON EDI VULNERABILITY

Vulnerability on the Five EDI Scales
For each of the five scales of the EDI, the proportion of children vulnerable are reported as vulnerability rates.

Vulnerable on One or More Scales
Vulnerable on One or More Scales is a summary measure that reports the percentage of children who are vulnerable on at least one of the five scales of the EDI. Children represented by this measure may be vulnerable on only one scale or may be experiencing vulnerabilities on two, three, four or all five scales of the EDI.

Subscales
This year's report explores EDI subscales scores and how these contribute to scale-level vulnerability. See the 'Subscales' section for more information.

2C. WHAT IS EDI CHILDHOOD VULNERABILITY?

Vulnerable children are those who, without additional support and care, are more likely to experience future challenges in their school years and beyond. Vulnerability is determined using a cut-off for each EDI scale.[93]

Over a decade of research, conducted here in BC as well as across Canada and internationally, has demonstrated the predictive capability of EDI vulnerability on each of the scales.[26-29] Being below the EDI cut-off in Kindergarten has direct implications for children later in school and into adolescence. [60,94,95]

When considering vulnerability rates, it is important to note that some developmental vulnerability is to be expected in all populations of children. At birth, approximately 3-4% of children have congenital or diagnosable conditions that may limit their development.[91,92] In addition, in BC, 6.5% of babies are born with low birth weights which is a risk-factor for later developmental vulnerabilities.[96,97]

At HELP, we consider a rate of 10% to be a "reasonable" benchmark for child vulnerability.[2] This rate is based on the data mentioned above, along with vulnerability rates reported in the least vulnerable communities in BC and other jurisdictions over almost two decades of research. With this in mind, the current vulnerability rate of 33.4% is over three times higher than we would consider acceptable.

EDI data show **trends in vulnerability over time**. Through data analysis and mapping, we are also able to examine **regional differences in child vulnerability** at multiple geographical levels from a broad provincial snapshot, to community and neighbourhood analyses.

For more information about vulnerability on the EDI please see our Fact Sheet: **http://earlylearning.ubc.ca/media/factsheet_edi_vulnerability_20191028-web.pdf**

2D. IMPORTANT CONCEPTS IN UNDERSTANDING EDI DATA AND TRENDS

EDI data can best be understood in the context of a number of broad concepts.

BIOLOGICAL EMBEDDING

Children's early experiences, including those before birth, have lasting effects on their lifelong social, emotional and physical health and academic success.[30,31,35] The advances in the science of human development suggest that children's earliest experiences 'get under the skin' and can influence their gene expression.[15] This process, called biological embedding, describes the process by which children's early experiences influence health and behavior across their lifespan.[32] Increasingly, the study of this process, called social epigenetics, is helping us understand the mechanisms by which experience is embedded and the intricate interplay between experience and biological sensitivity.[33,34]

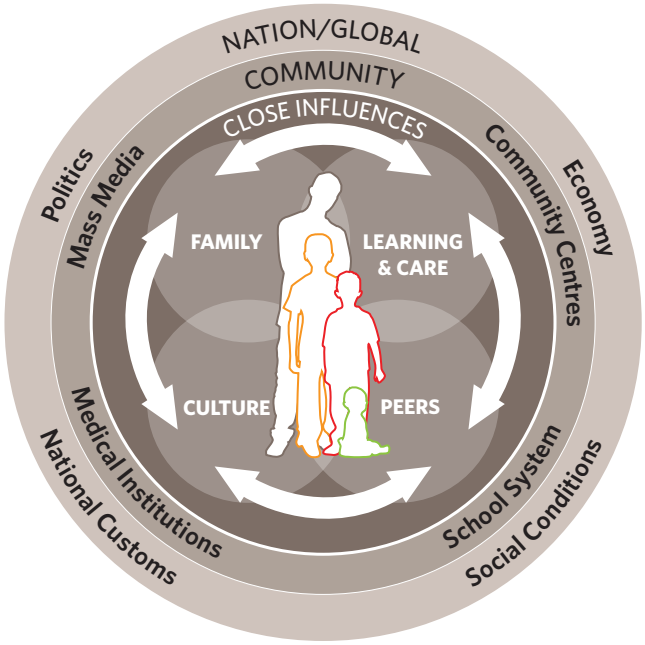
Social epigenetics is the process by which early life experiences influence chemical reactions that in turn alter the ways our genes function or are expressed.[36] Research now shows how diverse social and environmental factors (social determinants of health) such as maternal health and education, nutrition, environmental toxins, social conditions such as housing and poverty, and child rearing practices affect how our genetic building blocks (DNA) are expressed.[37,38] The differences in gene expression contribute to individual health differences in health, development and behaviour. The social epigenetics work at HELP is being led by Dr. Michael Kobor.

A BIO-ECOLOGICAL APPROACH

The quality of the multiple environments in which children live, learn and play is critical for their health and well-being (see Figure 4). Nurturant environments promote healthy child development: good nutrition for physical growth; loving attachment with primary caregivers; safe and secure shelter; and protection from harm are some of the essential ingredients for promoting human flourishing.[39] Young children also need to spend their time in socially responsive, language-rich environments that are supported by caring adults. Early on, they need to learn how to regulate their emotions and develop social and emotional competence through opportunities to explore their world, play, solve problems, and learn to speak and listen to others.

Generally, our society expects parents and caregivers to create these kinds of environments, but it is not their responsibility alone. Parents' and caregivers' ability to do so is affected by the access they have to social networks, high quality, supportive programs and services, and communities that are responsive to children and their families.[39] Children's development is also affected by larger social and economic conditions created through a system of regional, provincial and federal policy, that can increase risks or encourage resilience by providing a larger network of support to children and their families.[40,41]

FIGURE 4*



** Adapted from HELP's Total Environment Assessment Model (TEAM ECD) Model.*[41]

RISK AND RESILIENCE

There are many risk factors that can exist in children's lives that may negatively impact healthy development. Despite the presence of numerous risk factors, many children are still able to develop in healthy ways. Emerging research tells us that there are factors both internal to the individual (e.g., self-confidence, intelligence, hope and optimism) and to the external environment (e.g., one significant adult, involvement in extracurricular activities, school and community support) that promote resiliency, and that these factors do not operate in isolation but instead interact with one another to help children and adolescents avoid negative consequences.[42-44] The key to prevention and intervention efforts lies in the identification of the factors that lead to resilience, rather than a narrow focus on the factors that only prevent risk.[45,46]

EARLY CHILD DEVELOPMENT AS A SOCIAL DETERMINANT OF HEALTH

EDI data show that avoidable and persistent inequalities in children's developmental health and well-being exist in BC and have been sustained over time. Inequalities in children's well-being arise because of social inequity "... in the conditions in which people are born, grow, live, work and age".[47] The link between social and economic factors – poverty, social exclusion, discrimination – and healthy development is clear from decades of research.[48-51] HELP, in particular, has focused on promoting the importance of early development as a major determinant of lifelong health and well-being.[52,53]

UNDERSTANDING COMPLEXITY AND SYSTEMS

Improving the development, health, and well-being of our children is a multi-layered and multi-sectoral responsibility. Many of our children are falling behind in their earliest and most formative years. There is no singular solution that can unilaterally reverse the trend. Our approach must be a multi-sectoral and cross-ministry response that recognizes the complex challenges, reflects the diversity of languages and cultures that exist within this province and focuses on building from the many existing strengths.

BALANCING UNIVERSAL AND TARGETED SOLUTIONS

In building multi-layered and multi-sectoral approaches to support children and families, it is critical to balance the creation and maintenance of universal programs and services with more intense targeted programs and services for children and families that need them most. This is the principle of proportionate universality.[55,56] Proportionate universality addresses the fact that while vulnerability may be particularly intense in regions with lower socio-economic status, the largest number of children who are vulnerable will be found across populations and regions that would not be considered low socio-economic status based on standard measures. The key to reducing vulnerability in the early years, then, is a universal platform of supports and services available to all children, accompanied by targeted services for highly vulnerable children and those in low socio-economic ranges.

■ The 2018 BC Child Poverty Report Card reported that BC's child poverty rate is 20.3% - or 1 in 5 children.[54] This percentage is above the Canadian average of 19.6%, and represents 172,550 children 0-17 years in BC. Notably, the rate in BC has decreased incrementally from 22% since 2015.[54] (p.7)

More information about *proportionate universality* is available here: **http://earlylearning.ubc.ca/media/publications/proportionate_universality_web_november_2015.pdf**

3. **EDI WAVE 7** (2016-2019) PROVINCIAL VULNERABILITY

PARTICIPATION & DEMOGRAPHICS

3A. EDI PARTICIPATION BY SCHOOL YEAR

	SCHOOL YEAR	# OF TOTAL EDI
WAVE 2	2004/05	6,830
	2005/06	21,847
	2006/07	9,734
WAVE 3	2007/08	3,164
	2008/09	35,020
WAVE 4	2009/10	25,033
	2010/11	21,911
WAVE 5	2011/12	12,485
	2012/13	30,034
WAVE 6	2013/14	1,289
	2014/15	22,733
	2015/16	19,270
WAVE 7	**2016/17**	18,317
	2017/18	10,065
	2018/19	14,995
Wave 7 Total BC Participation		**43,377**

WAVE 7 DEMOGRAPHIC SUMMARY

TOTAL EDI	43,377
STUDENT MEAN AGE	5.67
# MALES	22,260 (51%)
# FEMALES	21,117 (49%)
# OF ELL*	8,356 (19%)
# OF SPECIAL NEEDS**	1,680 (4%)

The **English Language Learner (ELL)** and **Special Needs** designations are provided to HELP by the BC Ministry of Education based on school registration data.

***English Language Learners** – "Are those whose primary language(s) of the home is/are other than English and who may therefore require additional services in order to develop their individual potential within BC's school system. Some students speak variations of English that differ significantly from the English used in broader Canadian society and in school; they may require ELL support."[57]

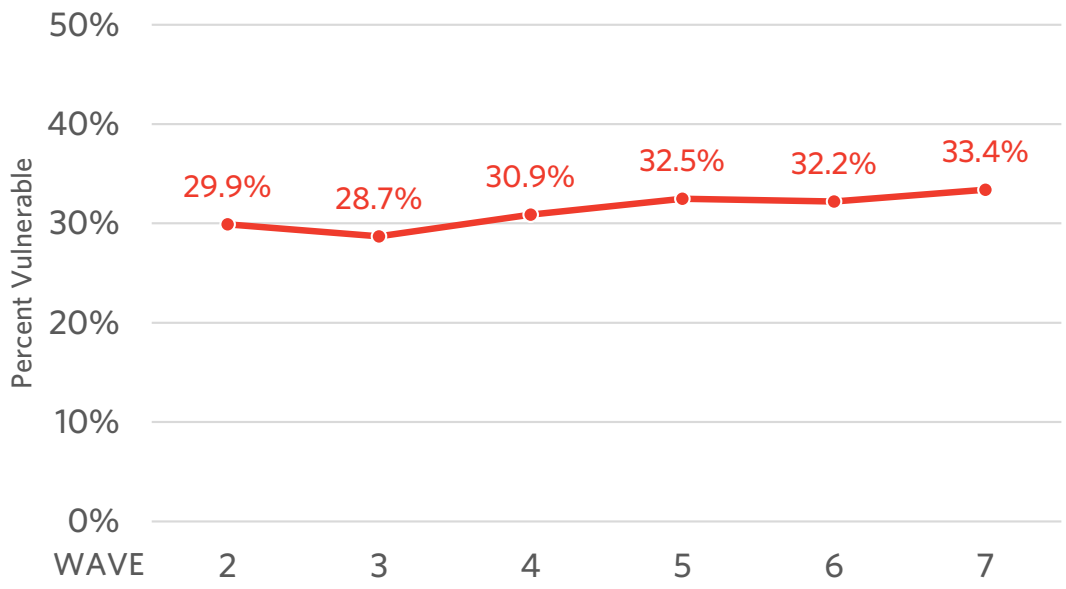
****Special Needs Designation** – "Students who have a disability of an intellectual, physical, sensory, emotional or behavioural nature, have a learning disability, or have exceptional gifts or talents."[57]

3B. VULNERABLE ON ONE OR MORE SCALES (V+1)

The provincial vulnerability rate for Wave 7 EDI (gathered 2016-2019) for children 'Vulnerable on One or More Scales' of the EDI is 33.4%. This means **1 in 3 children, or about 14,000 Kindergarten students in BC, are starting school with vulnerabilities in one or more areas that are critical to their healthy development**.

Figure 5 shows the trend line for 'Vulnerable on One or More Scales' from Wave 2 (2004-2007) to Wave 7 (2016-2019). **The percentage increase in vulnerability from 29.9% to 33.4%, represents about 1,500 additional children** entering Kindergarten vulnerable in one or more domains of their development.

FIGURE 5. WAVE 7 PROVINCIAL EDI V+1 DATA AND TREND LINE



Children's vulnerability in the province has meaningfully increased over the last decade. **This level of vulnerability has significant social and economic cost to BC, not simply as children start school but throughout their lives**.

Meaningful Change

HELP's definition of meaningful change is a combination of statistical significance and practical significance, and in all cases should be interpreted as a change that is "worth talking about." We use a method called Critical Difference which is the amount of change over two time points in an area's EDI vulnerability rate that is large enough to be considered meaningful in the statistical sense. A meaningful change means that we are reasonably confident that the change in the vulnerability rate is meaningful, rather than a result of uncertainty due to measurement issues.

For more information about critical difference, go to the HELP website "Understanding Critical Difference in EDI Results" **http://earlylearning.ubc.ca/media/publications/critical_difference_web_november_2015.pdf**

3C. VULNERABILITY ON EACH OF THE EDI SCALES AND SUBSCALES

Further insights into child development emerge when we look at EDI data on each of the five scales of the EDI and their associated subscales, especially longer-term trends, from Wave 2 (2004-2007) to Wave 7 (2016-2019). These data provide more insight into which areas of development, in particular, are of concern.

An examination of change over time can be applied in two ways.

Long-Term Trend: the report examines changes from **Wave 2 (2004-2007) to Wave 7, (2016-2019)** to assess whether there has been a change over the past 15 years.

Short-Term Trend: the report looks at changes from **Wave 6 (2013-2016) to Wave 7 (2016-2019)**, to assess whether there has been a recent change.

EXPLORING BELOW THE SURFACE: EDI SUBSCALES

By providing more fine-grained information on particular aspects children's developmental health, EDI subscale data can strengthen our understanding of the influences contributing to children's developmental vulnerabilities. When used alongside additional forms of data and information, including the expertise of those working directly with children and families, subscale data are valuable. However, like the EDI scales, using EDI subscale data without contextual information may be ineffective or insufficient for developing initiatives or even targeted services.

INTERPRETING CHANGE OVER TIME FOR SUBSCALES

When interpreting subscale data charts in this report, it is important to remember the following:

An **upward** EDI subscale trend line suggests there is a **negative influence** on the overall scale, contributing to an increase in the vulnerability rate.

A **downward** EDI subscale trend line suggests there is a **positive influence** on the overall scale, potentially contributing to a decrease in the vulnerability rate.

- Each of the EDI scales is made up of three or four subscales (except for the Communication Skills scale, which has no subscale). Subscale data can provide an in-depth look at more specific areas of child development. See Figures 6 and 7 for a detailed overview of the relationship between EDI scales, subscales and items.
- Interpreting the data: There is an important distinction between how EDI scale data and subscale data are reported. The five EDI scales report vulnerability on each developmental domain.

Individual subscales DO NOT measure vulnerability. Using Wave 2 as a benchmark, the subscale trend lines (calculated using standardized scores) show the influence of specific areas of development on scale level vulnerability. Subscale data provide insight into the specific areas of development that are contributing meaningfully to the overall pattern of vulnerability on each scale.

FIGURE 6. EDI SCALES, SUBSCALES AND ITEMS

FIGURE 7. A COMPREHENSIVE LIST OF ITEMS THAT MAKE UP EACH SCALE AND SUBSCALE

Physical Health & Well-Being

Gross & Fine Motor Skills
- level of energy during school day
- holds small objects like pens
- manipulates objects climbs stairs
- overall physical development

Physical Independence
- independent in washroom habits
- has an established hand preference
- well coordinated
- sucks a thumb/finger

Physical Readiness for the School Day
- over or underdressed for school
- too tired/sick
- late
- hungry

Social Competence

Overall Social Competence
- overall social/emotional development
- gets along with peers
- cooperates with other children
- plays with various children
- shows self-confidence

Approaches to Learning
- listens attentively
- follows directions
- completes work on time
- works independently
- works neatly and carefully
- solves own day-to-day problems
- follows one-step instructions
- follows class routines
- adjusts to changes in routines

Readiness to Explore New Things
- curious about the world
- eager to play with a new toy
- eager to play a new game
- eager to engage with new book

Respect & Responsibility
- respects others' property
- follows rules and instructions
- demonstrates self-control
- demonstrates respect for adults
- demonstrates respect for children
- accepts responsibility for actions
- takes care of school materials
- tolerates other children's mistakes

Emotional Maturity

Aggressive Behaviour
- gets into physical fights
- bullies or is mean
- kicks, bites, or hits others
- takes others' things
- laughs at others' discomfort
- is disobedient
- has temper tantrums

Anxious & Fearful Behaviour
- is upset when left by parent
- seems unhappy or depressed
- appears fearful or anxious
- appears worried
- cries a lot
- is nervous, high-strung, or tense
- is incapable of making decisions
- is shy

Hyperactive & Inattentive Behaviour
- is restless
- is distractible
- fidgets
- is impulsive
- has difficulty taking turns
- has difficulty settling down
- is inattentive

Prosocial & Helping Behaviour
- helps someone who is hurt
- volunteers to help with others' mess
- tries to stop a quarrel
- helps other children with hard task
- comforts a child who is crying/upset
- helps others with dropped objects
- invites bystanders to join in a game
- helps children who are sick

Language & Cognitive Development

Basic Literacy
- handles a book
- identifies 10 or more letters
- attaches sounds to letters
- shows awareness of rhyming words
- takes part in group reading
- experiments with writing tools
- aware of writing directions in English
- writes own name in English

Advanced Literacy
- reads simple words
- reads complex words
- reads simple sentences
- writes simple words
- writes simple sentences
- writes voluntarily

Basic Numeracy
- sorts and classifies objects
- uses one-to-one correspondence
- counts to 20
- recognizes numbers from 1 to 10
- says which of two numbers is bigger
- recognizes geometric shapes
- understands simple time concepts

Interest in Literacy, Numeracy & Memory
- interested in books
- interested in reading
- remembers things easily
- interested in mathematics
- interested in number games

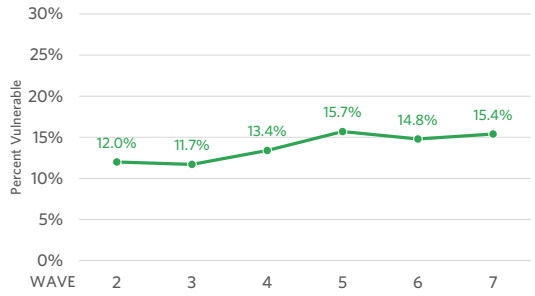
Communication Skills & General Knowledge

No Subscales
- ability to listen in English
- ability to tell a story
- ability to take part in imaginative play
- ability to communicate needs to adults and peers
- ability to understand what is being said to him/her
- ability to articulate clearly, without sound substitutions
- ability to use language effectively in English
- answers questions showing knowledge about the world

PHYSICAL HEALTH & WELL-BEING

SCALE

FIGURE 8. PROVINCIAL VULNERABILITY RATES ON PHYSICAL HEALTH AND WELL-BEING: WAVE 2 (2004-2007) TO WAVE 7 (2016-2019)

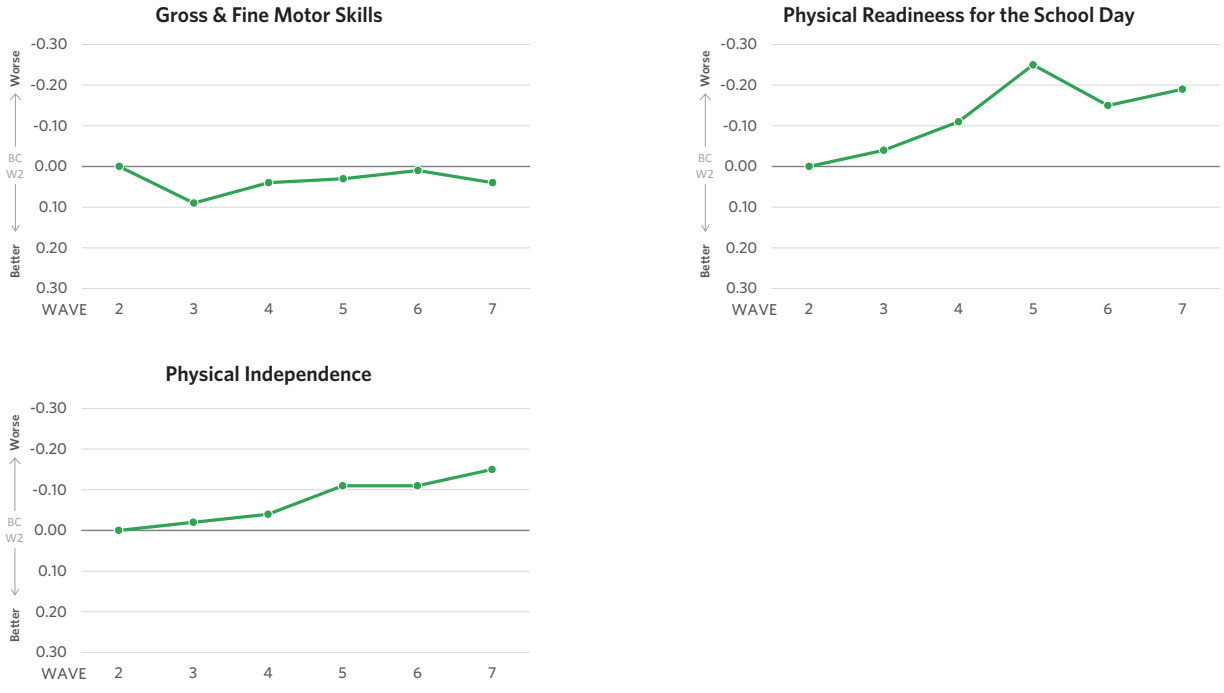


The vulnerability rate for Physical Health and Well-Being was significantly higher in Wave 7 (15.4%) than in Wave 2 (12.0%). More recently, there was a small increase in vulnerability for children's physical health and well-being from Wave 6 (14.8%) to Wave 7 (15.4%).

Profile: *Children with vulnerability on this scale may experience challenges that affect their ability to physically cope during the day. This may include not being dressed well for the school day, frequently late, hungry or tired. These children may also experience challenges in tasks that require an age-appropriate level of fine and gross motor capability.*

SUBSCALES

FIGURE 9. PROVINCIAL SUBSCALE SCORES ON PHYSICAL HEALTH AND WELL-BEING, WAVE 2 TO WAVE 7



As seen in Figure 9, three subscales of the Physical Health and Well-Being measure quite different aspects of children's physical health and well-being and as such, show quite different trends across time.

The *Physical Independence* subscale reflects most closely the vulnerability pattern for the overall scale – a worsening trend over time from Wave 2 to Wave 7 and has had an influence on the overall scale level vulnerability rate.

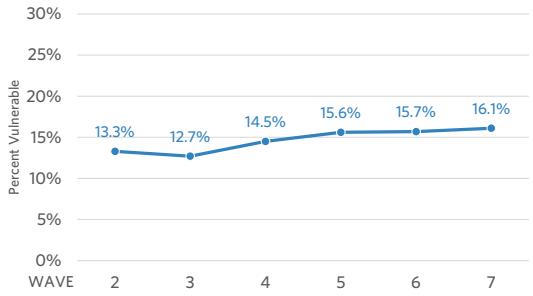
The trend for the *Physical Readiness* subscale from Wave 2 to Wave 7 also resembles the overall worsening trend for the scale overall. And, despite a slight decreasing trend from Wave 5 to Wave 6, Wave 7 shows a worsening trend again. This has contributed to overall vulnerability on this scale.

The *Gross and Fine Motor Skills* subscale shows a stable trend over time and has not contributed to increases in scale level vulnerability.

SOCIAL COMPETENCE

SCALE

FIGURE 10. PROVINCIAL VULNERABILITY RATES ON SOCIAL COMPETENCE, WAVE 2 (2004-2007) TO WAVE 7 (2016-2019)

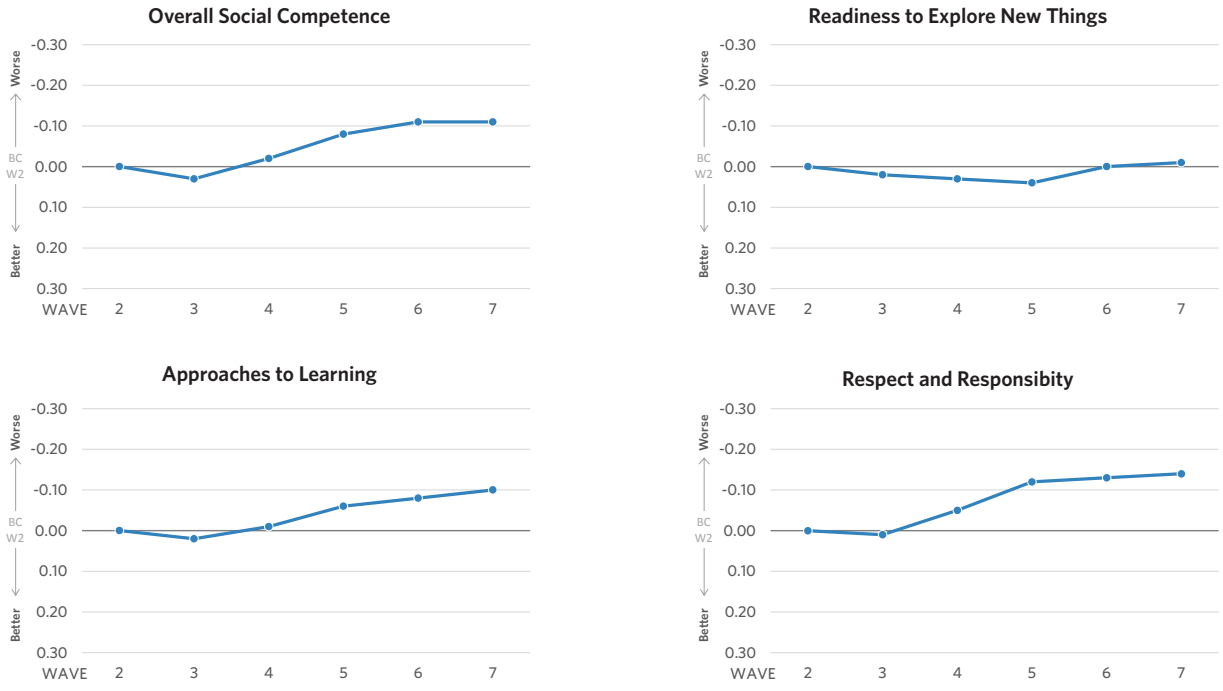


The vulnerability rate on the Social Competence scale increased significantly from Wave 2 (13.3%) to Wave 6 (15.7%), with a minimal increase in Wave 7 (16.1%).

Profile: *Children who are identified as vulnerable on this scale are more likely to have problems getting along with other children on a regular basis and/or have difficulty following rules and class routines.*

SUBSCALES

FIGURE 11. PROVINCIAL SUBSCALE SCORES FOR SOCIAL COMPETENCE, WAVE 2 TO WAVE 7



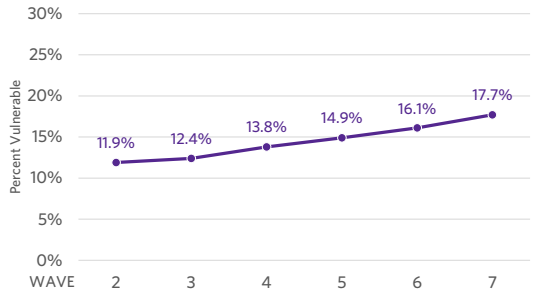
As seen in Figure 11, three of the four subscales in the Social Competence scale (*Respect and Responsibity, Overall Social Competence, and Approaches to Learning*) reflect the overall scale level trend of worsening vulnerability rates from Wave 2 to Wave 7.

The *Readiness to Explore New Things* subscale shows a different pattern, one that is a relatively stable long-term trend from Wave 2 to Wave 7.

EMOTIONAL MATURITY

SCALE

FIGURE 12. PROVINCIAL VULNERABILITY RATES ON EMOTIONAL MATURITY, WAVE 2 (2004-2007) TO WAVE 7 (2016-2019)

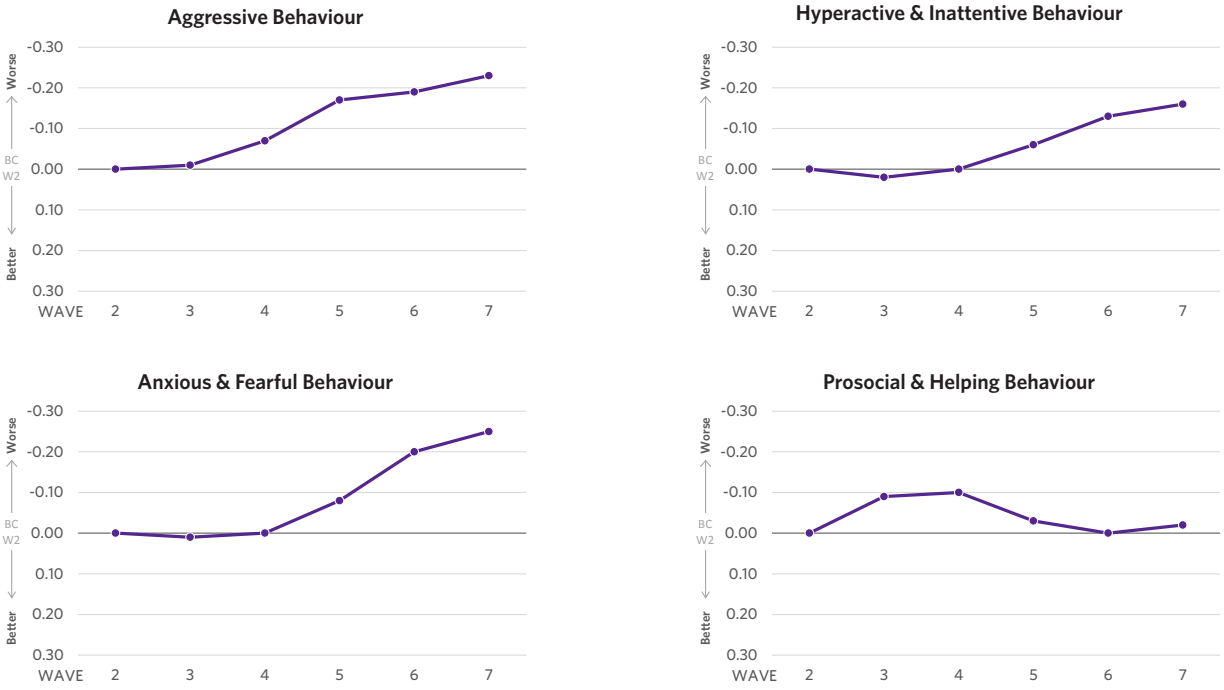


There has been a significant and steady increase in the vulnerability rate for Emotional Maturity, from 11.9% in Wave 2 to 17.7% in Wave 7. The increase in vulnerability on this scale is the largest among all the EDI scales and constitutes a 49% increase since Wave 2. There's also been an increase from Wave 6 (16.1%) to Wave 7 (17.7%).

Profile: *Children who are vulnerable on this scale may experience challenges related to emotion regulation. They may have problems managing aggressive behaviour, be inattentive and impulsive, and/or be worried or anxious.*

SUBSCALES

FIGURE 13. PROVINCIAL SUBSCALE SCORES FOR EMOTIONAL MATURITY, WAVE 2 TO WAVE 7



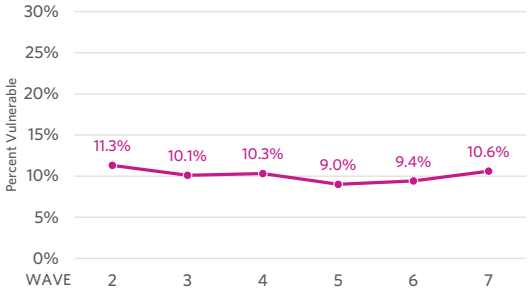
As seen in Figure 13, three of the four subscales in the Emotional Maturity scale have had a negative influence on scale level vulnerability over time. The negative trends in *Aggressive Behaviour* and in *Anxious and Fearful Behaviour* are particularly pronounced, and the trend for *Hyperactivity and Inattention* is something to consider. Importantly, the behaviours observed on these subscales are correlated with the behaviours that represent the most common childhood mental health issues – anxiety disorders, attention deficit and hyperactivity disorder (ADHD), and conduct disorders.[58]

The only Emotional Maturity subscale that does not show a similar pattern to the increasing vulnerability on the scale overall is *Prosocial and Helping Behaviour***.** This is reassuring given recent research that has found positive long-term associations between the prosocial behaviours of Kindergarten children and key educational, employment, mental health and substance use outcomes in young adults.[43]

LANGUAGE & COGNITIVE DEVELOPMENT

SCALE

FIGURE 14. PROVINCIAL VULNERABILITY RATES ON LANGUAGE & COGNITIVE DEVELOPMENT, WAVE 2 (2004-2007) TO WAVE 7 (2016-2019)

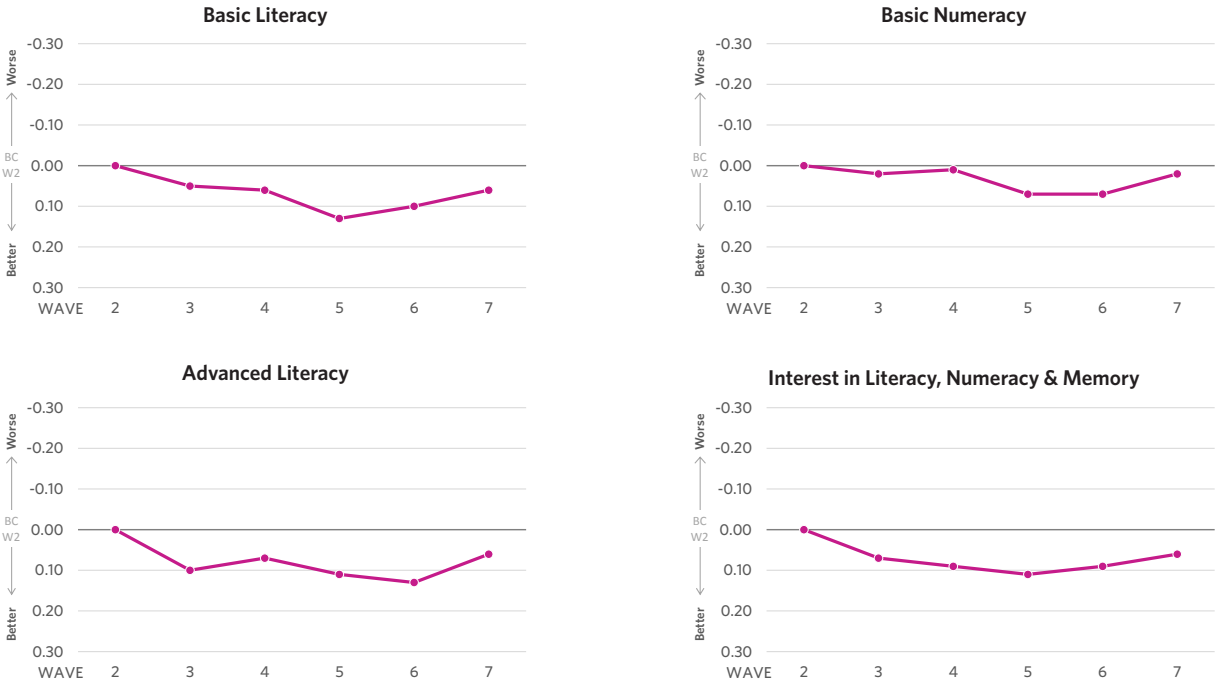


Language and Cognitive Development is the only scale with a declining vulnerability rate – from 11.3% in Wave 2 to 10.6% in Wave 7. Though there was a small increase between Wave 6 (9.4%) and Wave 7 (10.6%), the Language and Cognitive Development scale has been relatively stable and low over time.

Profile: *Children who are vulnerable on this scale may experience challenges in reading, writing and with numbers. They may be unable to read or write simple words, they may be uninterested in trying, and often unable to attach sounds to letters. These children may also have difficulty remembering things, counting to 20, and recognizing and comparing numbers.*

SUBSCALES

FIGURE 15. PROVINCIAL SUBSCALE SCORES FOR LANGUAGE & COGNITIVE DEVELOPMENT, WAVE 2 TO WAVE 7

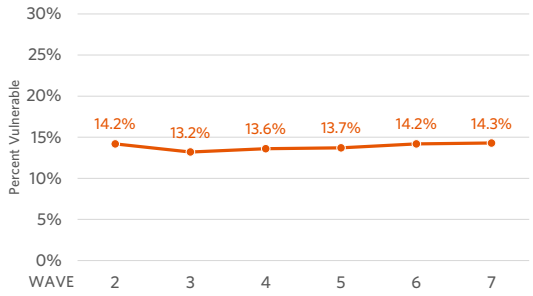


The influence of the four subscales of the Language and Cognitive Development scale (Figure 15) are all similar to each other and have a similar pattern to the scale level vulnerability trend.

COMMUNICATION SKILLS & GENERAL KNOWLEDGE

SCALE

FIGURE 16. PROVINCIAL VULNERABILITY RATES ON COMMUNICATION SKILLS & GENERAL KNOWLEDGE, WAVE 2 (2004-2007) TO WAVE 7 (2016-2019)



SUBSCALES

The Communication Skills scale is both a scale and a subscale.

The Communication Skills vulnerability rate in Wave 7 (14.3%) is almost exactly the same as Wave 2 (14.2%), and the trend over time for Communication Skills vulnerability has been the only one among the five EDI scales that has remained relatively stable. Our data show that there is a clear link between vulnerability on the Communication Skills scale and the proportion of a population who are newcomers to Canada, and are English language learners (ELL designation). Evidence also suggests that this vulnerability resolves itself for many children as they progress through the school system and develop competence in the language of instruction.

Profile: *Children vulnerable on this scale may have poor communication skills and articulation. They may have limited command of English (the language of instruction), have difficulties making themselves understood to others and/or in understanding what others say.*

IN SUMMARY

A review of EDI scale-level and subscale data suggest that increasing trends in vulnerability on the Physical Health and Well-Being, Social Competence, and Emotional Maturity scales present a significant challenge in the province. Understanding which societal factors have been contributing to these trends is essential to any initiative that aims to improve the environment in which children spend their time, and therefore the quality of their experiences.

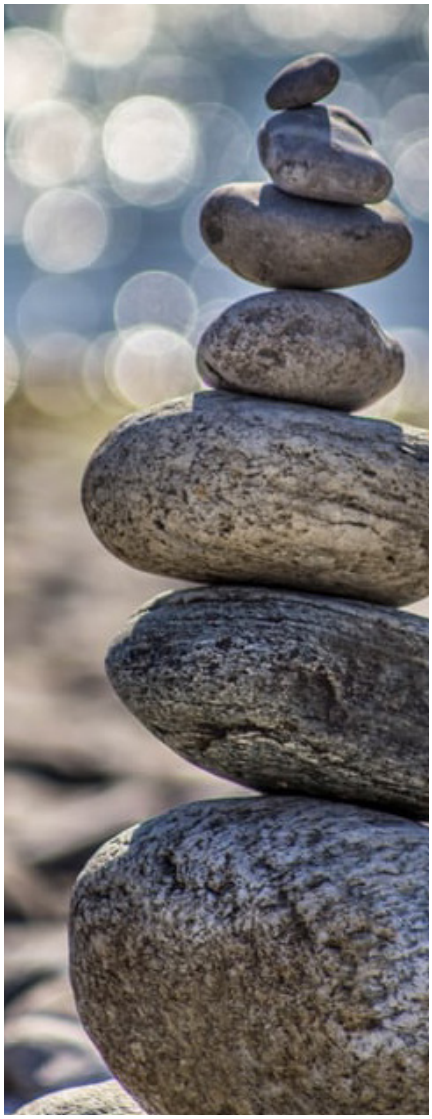
Provincially, the social and economic influences on families with children are showing up in Physical Health and Well-being vulnerability rates. The *Physical Readiness* subscale (which measures whether children come to school dressed appropriately, well-rested and well-fed) is connected to their home environments that, in turn, are influenced by both social and economic factors. Many of these factors are not amenable to simple program solutions but rather to more systemic policy approaches.

The Emotional Maturity and Social Competence scales are associated: Wave 7 data show that in the province, 8.1% of children are vulnerable on two EDI scales, and of these, 39.9% were vulnerable on the Emotional Maturity and Social Competence scales combined.

The developmental aspects assessed on the Social Competence and Emotional Maturity scales of the EDI represent indicators of children's early mental health. The observed EDI trends reflect the documented challenges in child and youth mental health in BC, and Canada more broadly, where there is a demonstrated increase in diagnosed mental health disorders in children and youth.[59] Research suggests that between 50-70% of mental illnesses begin before the age of 18.[58] A recent study using EDI data found that more than 40% of children enter the school system with relative vulnerabilities in social and emotional functioning that are associated with early-onset mental health conditions (including depression, conduct disorders, anxiety, ADHD and multiple conditions).[60]

Infant social emotional well-being has received less attention and investment than other areas of children's early development such as language development or literacy and numeracy skills, however, more recently this has started to shift. With recent research in the field of social and emotional learning (SEL) showing that young children's social and emotional development is better than IQ in predicting a wide range of outcomes in adulthood, including employment, substance use, financial stability, and mental health, there is burgeoning attention and investment in promoting infant and young children's SEL.

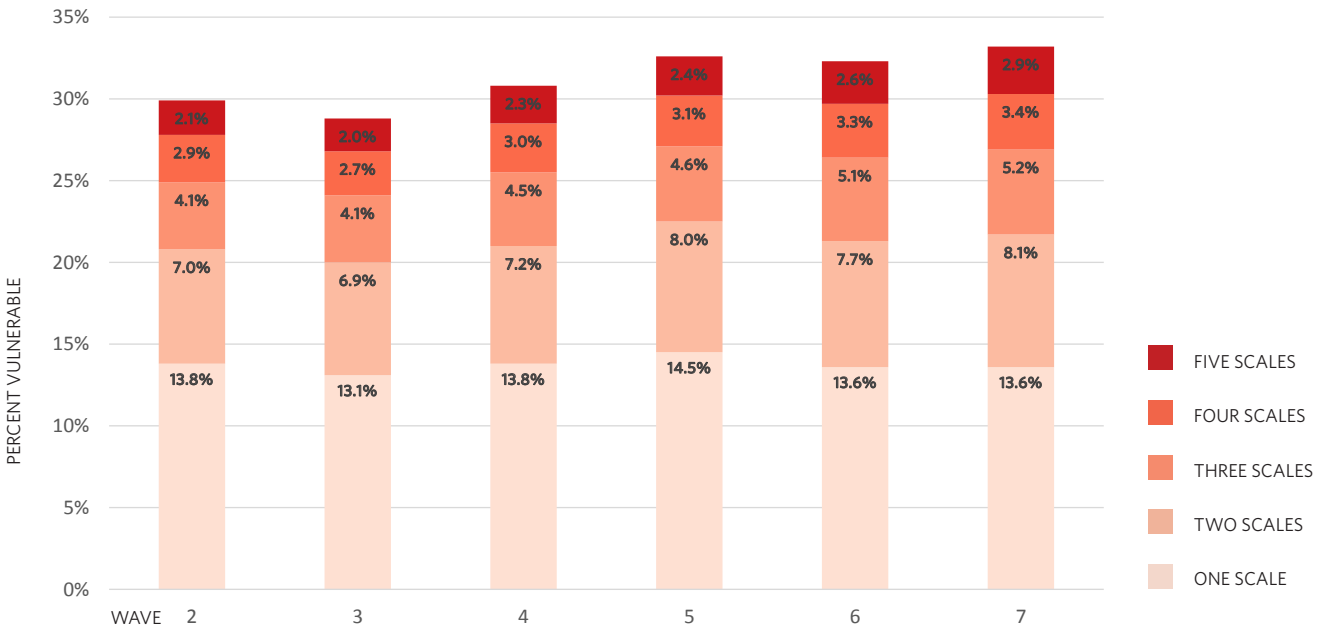
The development of children's early social and emotional health is foundational for building positive relationships, successful academic outcomes and career success later in life. They have been shown to protect against adult mental health disorders, poor sexual health outcomes and adolescent involvement in the justice system.[61] Focusing on creating the environments and experiences where children can learn and strengthen their social and emotional competencies is therefore an essential task for our society.[62]



3D. VULNERABILITY IS BECOMING MORE COMPLEX

The provincial vulnerability rate for 'Vulnerable on One or More Scales' of the EDI provides a perspective on the overall vulnerability of children in BC. While many of the province's children are vulnerable in a single area of development, some are vulnerable on two, three, four or all five scales of the EDI. Assessing the proportion of children who are vulnerable in multiple areas, especially over time, provides us with an in-depth perspective on the scope of vulnerability in the province.

FIGURE 17. THE DISTRIBUTION OF VULNERABILITY ACROSS ONE OR MORE SCALES FOR CHILDREN VULNERABLE ON THE EDI



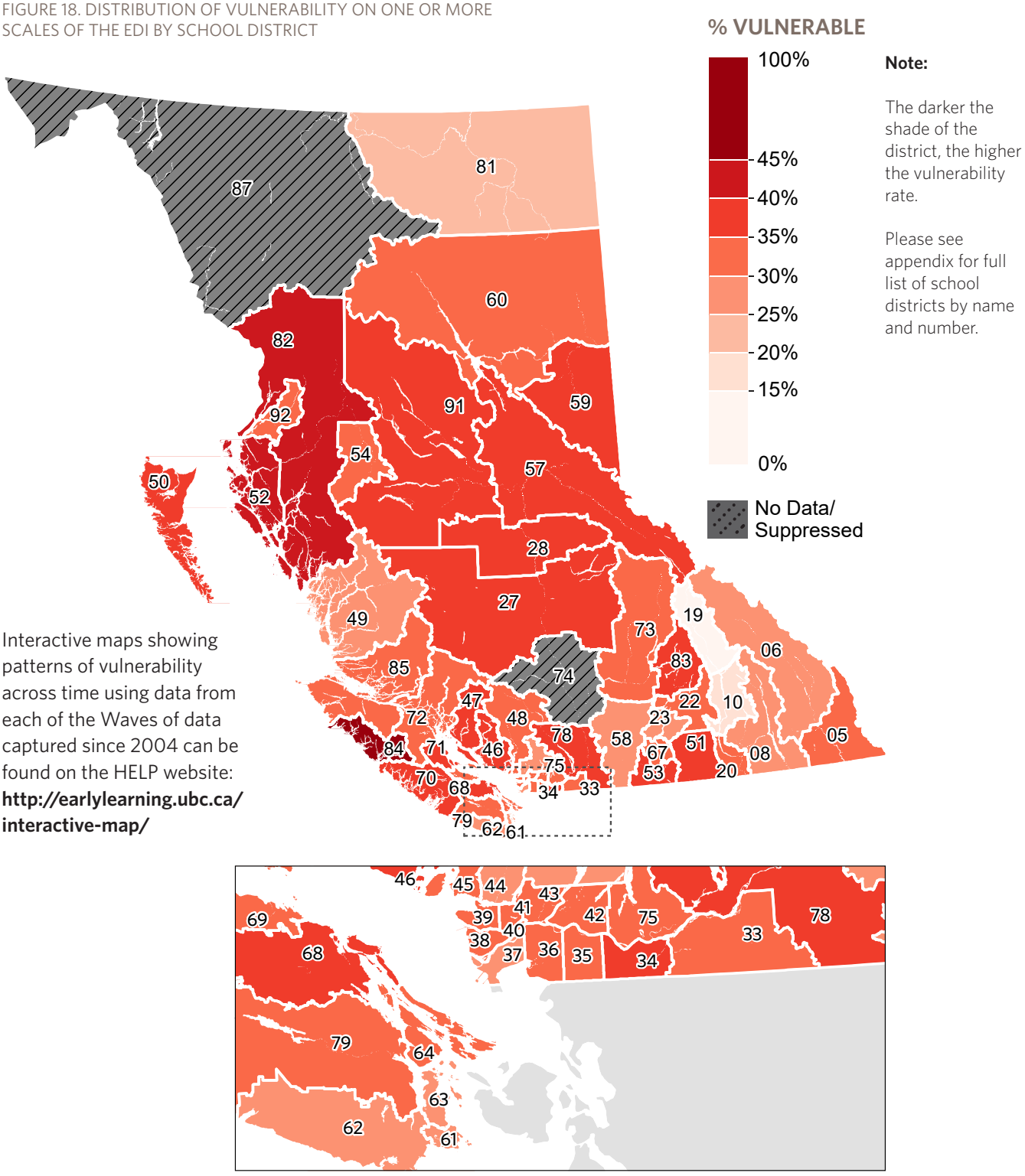
In Figure 17 above, EDI data from Wave 2 (2004-2007) to Wave 7 (2016-2019) record a small and consistent increase in the number of children who are vulnerable on multiple scales. The proportion of children with two vulnerabilities went from 7% to 8.1%; children with three vulnerabilities went from 4.1% to 5.2%; and children with four or five vulnerabilities went from 5% to 6.3%. Combined, the proportion of children experiencing vulnerability on two or more scales increased from 16.1% to 19.6%. This represents an increase of about 2,500 children across five waves.

This suggests that **in addition to the increasing rates of vulnerability in the province, the complexity of vulnerability patterns is also increasing**. It appears that children and families are experiencing more complex challenges and vulnerable children are experiencing increased struggles across more areas of their lives.

3E. DIFFERENCES IN VULNERABILITY RATES ACROSS SCHOOL DISTRICTS AND NEIGHBOURHOODS

There continues to be disparity in vulnerability rates across regions, school districts and neighbourhoods in the province. The map of School District level vulnerability, Figure 18, depicts the disparities by school district across the Province.

FIGURE 18. DISTRIBUTION OF VULNERABILITY ON ONE OR MORE SCALES OF THE EDI BY SCHOOL DISTRICT



Note:

The darker the shade of the district, the higher the vulnerability rate.

Please see appendix for full list of school districts by name and number.

Interactive maps showing patterns of vulnerability across time using data from each of the Waves of data captured since 2004 can be found on the HELP website: **http://earlylearning.ubc.ca/interactive-map/**

THE WIDE-RANGE OF NEIGHBOURHOOD VULNERABILITY RATES

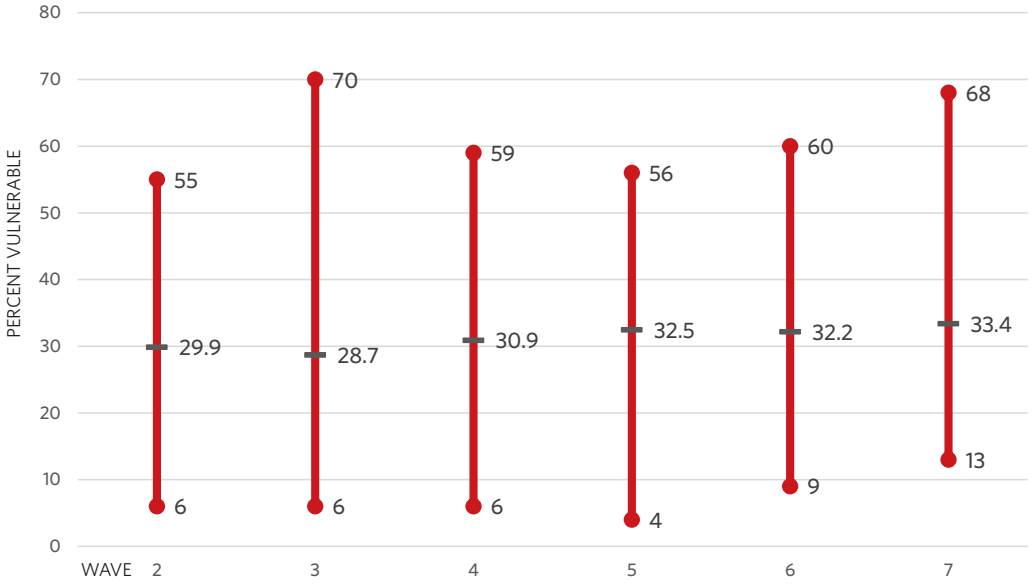


FIGURE 19. THE RANGE OF OVERALL NEIGHBOURHOOD VULNERABILITY, WAVE 2 TO WAVE 7, VULNERABLE ON ONE OR MORE SCALES

— INDICATES THE PROVINCIAL VULNERABILITY RATE FOR EACH WAVE

In BC, disparities in vulnerability are especially pronounced at the neighbourhood level. In Wave 7, for the summary measure Vulnerable on One or More scales, the lowest rate of neighbourhood vulnerability was 13% and the highest rate was 68%. **This means that there is a five-fold difference between the highest vulnerability neighbourhoods compared with the lowest**. This difference in neighbourhood level outcomes represents a range of 55 percentage points and is an issue of ethical and moral urgency.

EDI data reveal many patterns in vulnerability overtime. While some neighbourhoods are doing better and sustain lower vulnerability rates over time, others have seen high and sustained rates. We also see a number of neighbourhoods with inconsistent patterns of vulnerability over time. Understanding these patterns is critical to supporting evidence-based policy and program development.

Figure 19 above, shows the range of difference between the highest and lowest neighbourhoods has increased from Wave 6 (51%) to Wave 7 (55%). Moreover, the lowest neighbourhood rate has increased from Wave 6 (9%) to Wave 7 (13%). This means that in every neighbourhood in BC, there is vulnerability that exceeds what could reasonably be expected (10%). This vulnerability reflects social and economic decisions about the distribution of resources in BC and their redistribution (or not) via public policy.

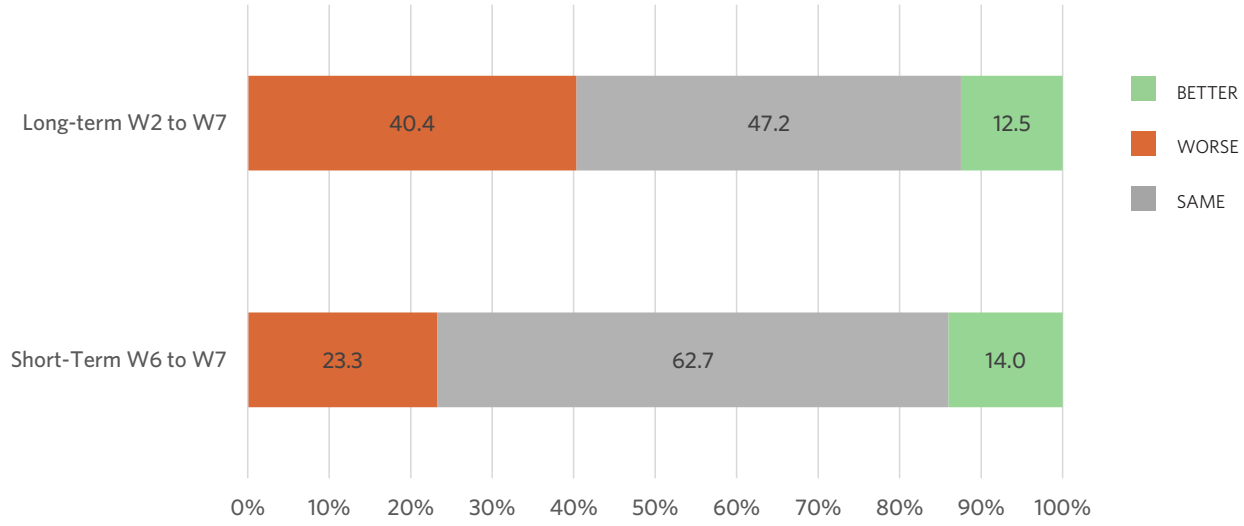
Figure 20 below, also shows that the number of neighbourhoods experiencing lower levels of vulnerability (less than 15%) has decreased from 22 to 5. This is a cause for great concern. At the same time, the number of neighbourhoods experiencing high levels of vulnerability (over 45%) was higher than in any previous wave, but relatively stable compared to the lower vulnerability trend.

FIGURE 20. OVERALL LEVELS OF VULNERABILITY BY NEIGHBOURHOOD, WAVE 2 TO WAVE 7 , VULNERABLE ON ONE OR MORE SCALES

	# of Neighbourhoods With Overall Vulnerability <=15%	# of Neighbourhoods With Overall Vulnerability >=45%
Wave 2	22	28
Wave 3	27	21
Wave 4	11	26
Wave 5	7	25
Wave 6	6	28
Wave 7	5	35

Figure 21 shows the total percent of neighbourhoods with vulnerability rates based on whether they are getting better, or worse, or staying the same. Over the long-term, from 2004 to 2019, while the majority of neighbourhoods experienced stable vulnerability rates, 40.4% saw a meaningful increase in vulnerability. In the short-term, from Wave 6 (2013-2019) to Wave 7 (2016-2019), a smaller proportion, 23.3% experienced increasing vulnerability.

FIGURE 21. PERCENT OF NEIGHBOURHOODS BY CHANGE OVER TIME CATEGORY, VULNERABLE ON ONE OR MORE SCALES



This variation in vulnerability highlights that there is avoidable inequality in children's development outcomes depending on where children live in the province. Understanding these differences underscores the continuing need for further investigation into collective action toward improving child development outcomes.

By conducting community-based research and by linking EDI trend data to other sources of information and knowledge, HELP is continuing to build an understanding of the ways in which social factors contribute to observed differences in children's developmental health.

3F. HELP'S SOCIO-ECONOMIC INDEX

In an effort to understand one aspect of the "differences that make a difference" to community-level patterns of child development, HELP has developed a **Socio-Economic Index (SES Index)**. The SES Index explores the relationship between various socio-economic and demographic characteristics and child development outcomes as reflected by EDI data. To create the SES Index, HELP used two Government of Canada data sources: the Canadian Census and data from income tax forms (which we call Taxfiler). The HELP SES Index is calculated at three different time points – 2006, 2011, and 2016 that align with the release of Canadian Census data – to show changes over time in the socio-economic status of BC's neighbourhoods, school districts and the province as a whole.

The HELP SES Index reports a single score that summarizes seven key socio-economic and demographic variables from these two sources. The seven components of the SES Index are:

1. Education, represented by the proportion adults without a high school diploma,
2. Multicultural composition, represented by the proportion of the population not speaking either official language (English or French) at home,
3. Family composition, represented by the proportion of lone parents,
4. Poverty, represented by the proportion of low-income families with children under 6,
5. Poverty, represented by the proportion of low-income lone-parent families with children under 6,
6. Wealth, represented by the proportion of families with children under 18 who report investment income on their tax returns,
7. High income, represented by the proportion of families with children under 18 with incomes twice or higher than the provincial median family income.

These seven were chosen because collectively, they are each strongly and uniquely associated with children's developmental health (as measured by the EDI) despite being just a handful of the thousands of available variables. **The SES Index is reported based on a provincial benchmark of 100 that was established using 2006 Census/Taxfiler data.** Based on this benchmark, HELP considers neighbourhoods with Index scores under 85 to be the most disadvantaged, and those with scores above 115 the most advantaged in terms of SES characteristics.

■ Population health is determined by people's living conditions; these conditions are called social determinants. In the publication ***Social Determinants of Health: The Canadian Facts***, 14 social determinants are named, including: income, education, employment and unemployment, early childhood development, housing, social supports, and health services. Information collected from Canadians through the Census and income tax filings cover many of the 14 social determinants.

■ The **Canadian Census** is conducted every five years and collects information on a wide range of variables including age and sex demographics, income, employment, immigration, language, education, residential mobility, housing and more.

■ **Taxfiler** data are available for every year and focus mainly on various aspects of income, poverty, and wealth.

SES AND EDI OVERALL VULNERABILITY

The HELP SES Index can account for around 45%, on average, of the overall EDI vulnerability rate at a provincial level (Vulnerable on One or More Scales of the EDI) and across the three SES Index time points. This means that almost half of childhood vulnerability as reflected by EDI data can be explained by socio-economic characteristics (e.g., income, wealth, education, employment).

Though this is a significant proportion, it is also important to note that just over 50% of the overall vulnerability rate is not accounted for by the SES Index and this figure is higher for some of the individual scales. The variation could also be related to other regional or community qualities such as social capital or access to support systems.[63]

RANGE OF SES BY SCHOOL DISTRICT AND NEIGHBOURHOOD

Similar to the range of variability in EDI vulnerability across difference geographic areas, the HELP SES Index shows significant differences in SES across the province. According to our most recent SES Index data (2016), school district SES ranged from a low of 68 to a high of 128.

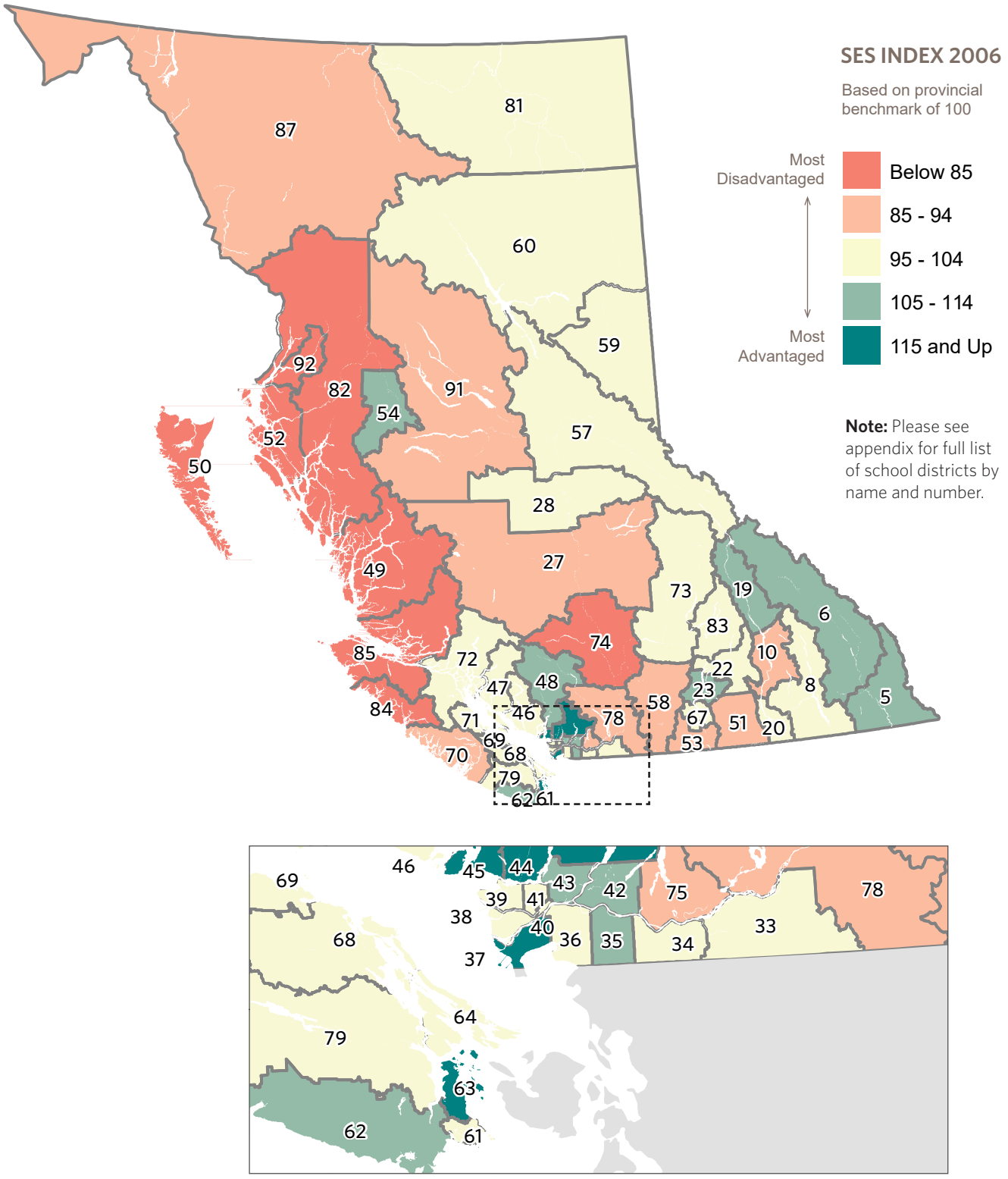
Neighbourhood SES Index scores ranged from a low of 54 to a high of 140 highlighting a significant difference in socio-economic status across the province at the neighbourhood level as well.

The following maps show the SES Index data by school district for three time periods that correspond to the Canadian Census data years – 2006, 2011, 2016. These maps point to significant inequality across the province.

3G. **HELP SES INDEX** BRITISH COLUMBIA 2006

SES INDEX BY SCHOOL DISTRICT (2006)

The map below show the SES Index data by school district corresponding to the Canadian Census data year 2006.

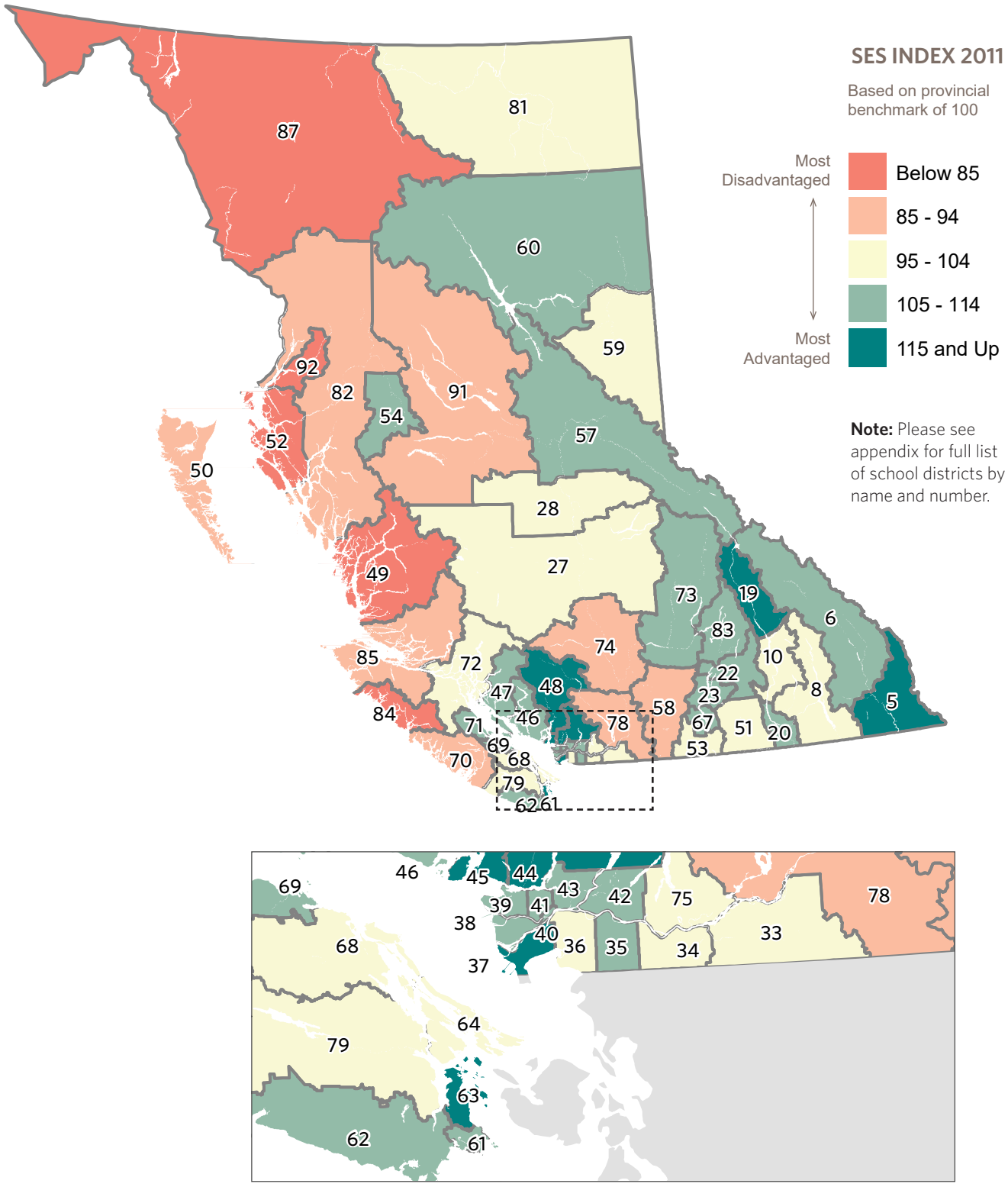


HUMAN EARLY LEARNING PARTNERSHIP

3G. **HELP SES INDEX** BRITISH COLUMBIA 2011

SES INDEX BY SCHOOL DISTRICT (2011)

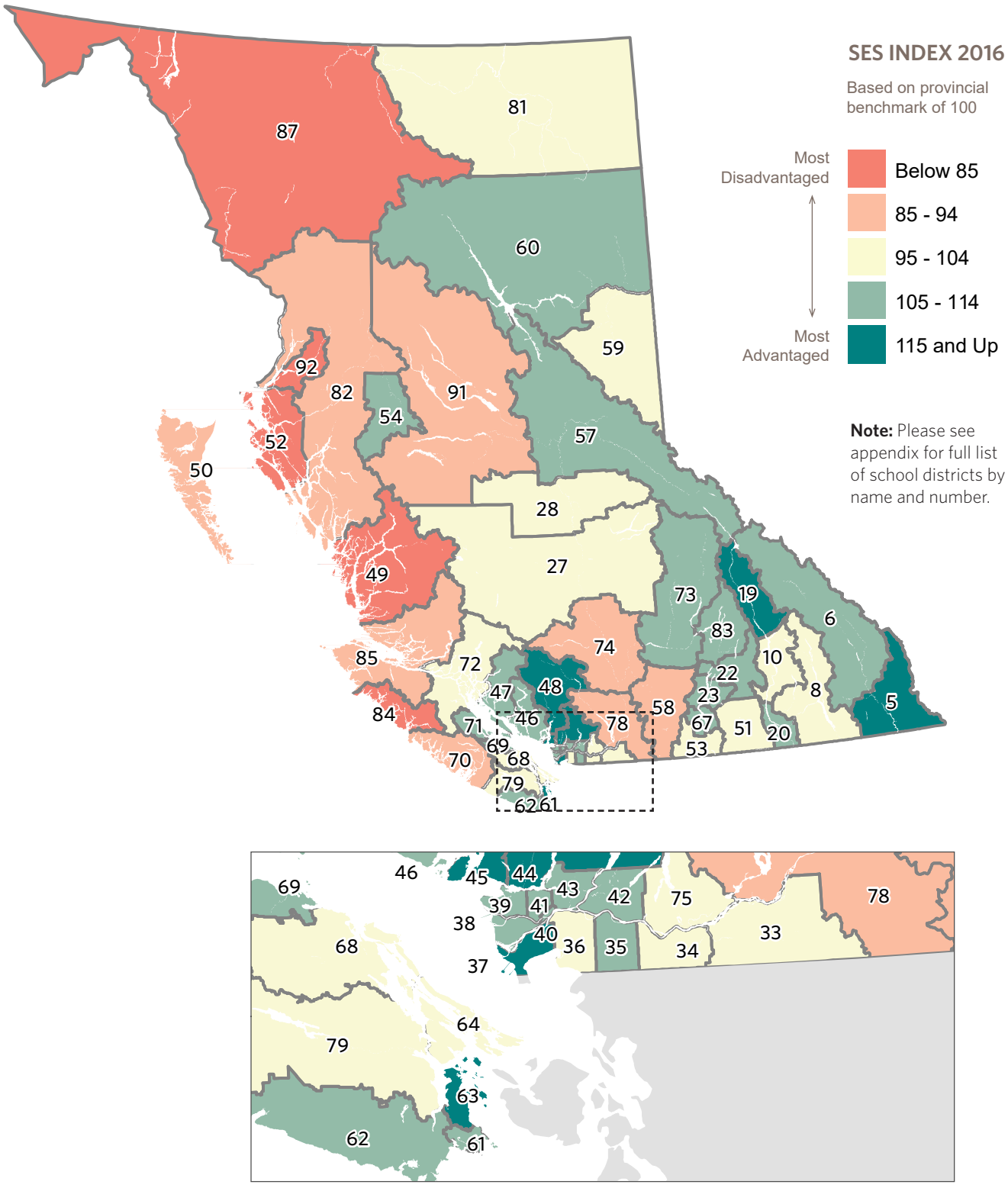
The map below show the SES Index data by school district corresponding to the Canadian Census data year 2011.



3G. **HELP SES INDEX** BRITISH COLUMBIA 2016

SES INDEX BY SCHOOL DISTRICT (2016)

The map below show the SES Index data by school district corresponding to the Canadian Census data year 2016.



HUMAN EARLY LEARNING PARTNERSHIP

3H. A SUMMARY OF HELP SES INDEX ISSUES FOR FURTHER STUDY

The following issues will be explored more thoroughly in a separate SES Index report to be released in 2020.

HELP'S SES INDEX PROVINCIAL TRENDS OVER TIME

The HELP SES Index is scaled so that the provincial average is exactly 100 for 2006 (our earliest Census/Taxfiler time point). The provincial average for the SES Index increased to 104 in 2011 and 107 in 2016. This suggests that, at a provincial level, socio-economic status has improved.

We are curious that, given the strong association between socio-economic status and vulnerability, we have seen both the SES Index and EDI vulnerability increase over time at a provincial level. This is not what we would have predicted given the inverse association between vulnerability and SES. It is important to learn more about the factors that account for this provincial trend over time, despite the strength of the Index across BC's 298 neighbourhoods.

SES AND OFF-DIAGONAL COMMUNITIES

Given the relationship between the HELP SES Index and EDI vulnerability rates across the province, predictions of community-level vulnerability can be made based on the SES characteristics of a community. This application of the SES Index allows for the identification of off-diagonal communities – those communities that have a relatively large discrepancy, consistent over time, between their actual EDI vulnerability rates and the vulnerability rates accounted for by the SES Index. This is an important area of research that HELP will be pursuing over the coming year. Through identifying these off-diagonal communities, it is possible to explore the unique community characteristics – the "differences that make a difference" – that might explain their patterns of EDI vulnerability.

SES AND VULNERABILITY ON THE FIVE SCALES OF THE EDI

The HELP SES Index, on its own, accounts for almost half of the variability in overall EDI vulnerability. However, it is more strongly associated with vulnerability for some scales than for others.

The table below (Figure 22) shows that the SES Index has a stronger association with vulnerability on the Physical Health and Well-Being, Communication Skills and Language and Cognitive Development scales and a weaker association with Social Competence and Emotional Maturity scales.

FIGURE 22. PERCENT OF VARIANCE IN EDI SCALE SCORES ACCOUNTED FOR BY THE HELP SES INDEX

EDI Scales	2016 Census EDI Waves 6 and 7
Physical Health & Well-Being	38.8%
Social Competence*	26.5%
Emotional Maturity*	19.3%
Language & Cognitive Development	46.9%
Communication Skills & General Knowledge	38.7%
One or More Scales	47.6%

4. OBSERVATIONS

■ Imagine if only 10% of BC children were vulnerable when entering Kindergarten. This would result in 4,337 young children identified as vulnerable on the EDI as they enter school – in contrast to the more than 14,000 children. Imagine how we could use school, community, and provincial resources differently, and prevent a multitude of problems associated with early childhood vulnerability, such as mental illness, school failure, crime, violence, and lack of job readiness. Simply stated, promoting the social, emotional, cognitive, and physical health and well-being of children early on is a better strategy than waiting for problems to occur.[64] Such a preventative approach would not only reduce large societal costs and save taxpayers money, it would also promote both individual and societal well-being.

The near continuous rise in early childhood vulnerability rates on the EDI in BC over 18 years documented in this Provincial EDI Wave 7 report is highly concerning. Just over one third of children start school with a vulnerability in an area of their development that is important to their future success and well-being. The call for BC to do better for children and families has been echoed by many organizations over many years. This report can be added to a list of other recent reports about children and families that have highlighted concerning trends and deepening inequities. A list of some of these reports is included in Appendix A on page 53 for reference.

At the same time, the recent federal and provincial policy changes introduced for children and families since 2016 (see page 7) suggest that we are in a transitional time in BC. Policy changes in the areas of child care, poverty reduction, family policy and affordable housing - that are in-line with the evidence that social spending on early childhood may be one of the best returns-on-investment for societal well-being - are certainly steps in the right direction.[98] Through HELP's EDI data and other child development monitoring system questionnaires such as the Toddler Development Instrument (TDI), Childhood Experiences Questionnaire (CHEQ), and Middle Years Development Instrument (MDI), we will be able to track the impact of this more robust approach to investment in children and families on child development over time.

The EDI trends and the variability across school districts and neighborhoods raise several important research questions. Below we mention a range of issues that may be playing a part in the trends that we see and suggest that HELP, government ministries and stakeholders jointly establish some priorities and design a plan for systematically answering these questions, to inform system-wide, multi-sectoral and cross-ministerial initiatives and future decision-making.

WHAT ARE WE PAYING ATTENTION TO—SOCIETY, ECONOMY AND ENVIRONMENT

Making substantive inroads into changing our EDI trends will require more intentional public investment earlier in the life-course. For example, between 1976 and today, government social spending increased four times faster per person age 65+ by comparison with the spending increase on Canadians under age 45 – the generation raising children. Are we finding the right balance when making public investments across the life course if our goal is to have a province and country that works for all generations? [65]

As has been discussed in this report, issues related to socio-economic status and social determinants of health may be driving a significant portion of the differences in vulnerability rates in many neighbourhoods.[66-68] The nature of BC communities and the degree to which they foster health and well-being, particularly for children and families, is an issue that cuts across all ministries and organizational silos. It is also one that requires a new approach to the balance between a "health in all policies" approach and investment in health care.[65]

Family and Social Stress

The Social Competence and Emotional Maturity scales of the EDI, provide an insight into the stress that may exist in children's and families' lives. Stressors can be present in the multiple contexts children experience – home, community and early learning and child care settings. There are many factors that could be contributing to this stress including, as explored below: family socio-economic factors, housing affordability, environmental concerns, growing inequity, to name a few. HELP is interested in digging more deeply into the associations between family stress and children's social and emotional development.

Stressors can be present in the multiple contexts children experience – home, community and early learning and child care settings.

We are curious to understand more about the forces that are simultaneously increasing vulnerability rates and SES scores as measured by the HELP SES Index.

Socio-Economic Status

In this report, we have introduced HELP's SES Index and its association with EDI vulnerability rates. HELP will explore these associations further between SES and EDI data further in a detailed report to be released in 2020. We are curious to understand more about the forces that are simultaneously increasing vulnerability rates and SES rates as measured by the HELP SES Index. We are also interested in further exploring recent research that has demonstrated the clear evidence of increasing economic pressures on families with young children.[51,69]

The Environment

Over the past three years in particular, we have seen significant impacts in some communities from fires and floods. Many communities have been disrupted and children have been dislocated from their homes in very stressful circumstances. What impacts, if any, do these environmental events have on the developmental trajectories of children? Are there higher fear and anxiety trends related to environmental anxiety more broadly, for children in BC communities? We are interested in the potential that EDI data may capture heightened levels of climate change fear, which may give rise to anxiety in parents and their children.

WHAT ARE WE PAYING ATTENTION TO—CHILDREN'S EARLY EXPERIENCES

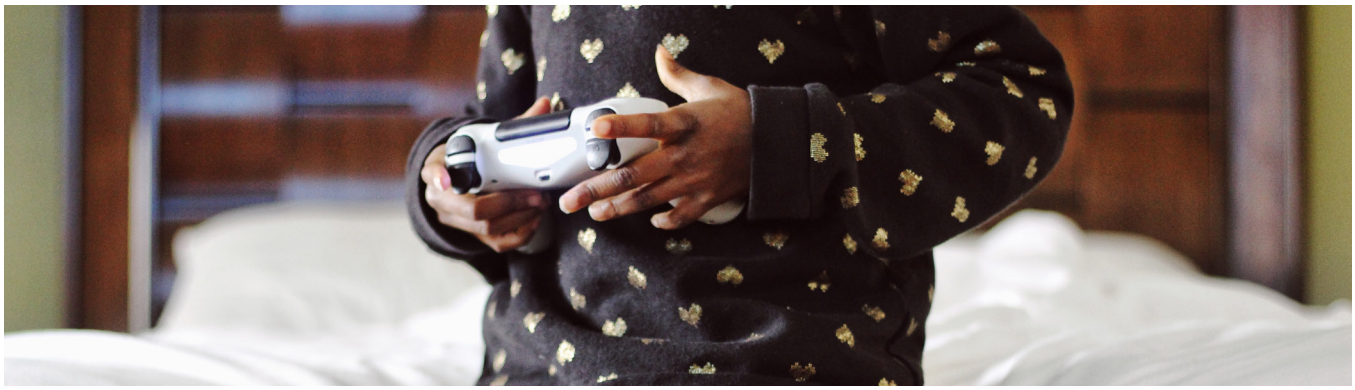
At HELP, we are dedicated to exploring the contextual and individual factors that reduce childhood risk and promote resilience through our wide-ranging Human Development Program of Research. With these EDI data, we are particularly curious to learn more about the early experiences of BC children and the environments in which they spend their time. To this end, we are focused on expanding use of our TDI and CHEQ questionnaires to a larger population of children in BC. Some examples of the kinds of topics covered by the TDI and CHEQ that are of particular interest to us are detailed below.

Early Learning and Care

The quality of the environments in which children spend their time is critical to their development. There is significant research evidence that high quality early learning and care has a positive influence on children's development.[70-72] The current focus in BC on Universal Child Care is important in this regard. Understanding the year-on-year improvements in quality and access will be valuable, alongside a long-term assessment of the population-level impact on EDI vulnerability rates and long-term outcomes in children's well-being.

Technology

While increased technology use from a early age requires substantially more study, it is clear that it is having a range of effects. The use of age appropriate, educational, interactive media can have positive effects on children's development, particularly on cognitive development.[73] At the same time, passive use is often sedentary and can be playing a role in reducing physical play, and on children's social and emotional competence and well-being.[73,74] High levels of technology use can reduce social interaction and there is evidence that it can disrupt young children's attachment to caregivers.[74,75]



Physical Play

According to the Canadian Public Health Association (CPHA), children are "moving less and sitting more".[76] The CPHA identifies a number of compounding societal influences that are encouraging this trend, including: increased parenting practices and attitudes toward supervision and risk-aversion; a culture of achievement that values and prioritizes structured, scheduled extra-curricular activity over unstructured play; limited access to safe play spaces due to geography and socio-economic factors; and, media attention that highlights danger and risk and can provoke parental fear.[76] Along with concerns about the physical health implications of the increased sedentary behaviours of children, these trends may have a negative impact on children's mental health and well-being.

Sleep

There has been considerable research on the importance of sleep across the lifespan. Recent systematic literature reviews of the research regarding the influence of sleep on a range of health issues, cognitive and brain development and behaviour outcomes of children concluded that there was enough evidence to suggest that healthy sleep practices and adequate time for sleep are priority issues for early childhood development.[77-79]

Mental Health Trends

As discussed earlier in this report and as noted by many others recently, the increasing rates of diagnosed and self-reported mental illness in children and youth is a critical issue. Learning more about: the relationship between infant and child social and emotional development and later mental health and illness, exploring the factors that support resilience and prosocial behaviour, highlighting the link between the social determinants of health and mental health and well-being, and understanding whole-of-system approaches to improving mental health for children and youth, are all topic areas of research interest at HELP.

At HELP, we will continue to explore these issues through our wide-ranging Human Development Program of Research. Our intention is work closely with ministry, research and institutional partners to focus on issues of both policy and research relevance.

5. CONCLUSION: ENGAGED DIALOGUE AS A FOUNDATION FOR A MORE SYSTEMIC APPROACH

Our collective challenge now is to mount a sufficient system-wide response to supporting children and families. Over the past 20 years, we have tried to address the issue of worsening childhood vulnerability rates through adaptations in program funding. It is clear now that a more fundamental restructure of investment in children and families is also necessary.

We offer encouragement to those reading this report to consider these most recent EDI data as an opportunity for **curiosity, engaged conversation, enhanced dialogue, and deepened cross-ministerial and multi-sectoral work**. We offer the EDI data and associated research as an entry point into asking better questions and learning from each other. EDI data are not about making judgements. They offer us a chance to focus on new and innovative ways to improve support for children and families and so improve outcomes. Children and their families cannot be compartmentalised into the silos that we have created to provide service: they sit between these silos. Taking a family and child-centred approach is essential at every level from the neighbourhood up to provincial and federal policy.

We all have work to do, wherever we live or work, because all neighbourhoods in the province have vulnerability rates above 10% and many have vulnerability rates that are significantly higher.[2]

EDI data shine a light on a complex issue. The solutions are therefore multifaceted and emergent. The use of evidence such as EDI data are only one part of the solution: the data provide insight into a large number of interconnected and constantly adapting structures and processes that have contributed to the EDI vulnerability rates that we see. We need to use data as a mechanism for delving deeper into the political, social and economic structures and processes that are delivering these developmental outcomes and which, through engaged strategies, we can start to adapt. Applying systems thinking approaches to improving child outcomes is an essential consideration, as is bringing our own personal passion and commitment to the work.

KEY RESOURCES

1. The Offord Centre for Child Studies:

Early Development Instrument (EDI): **https://edi.offordcentre.com/**

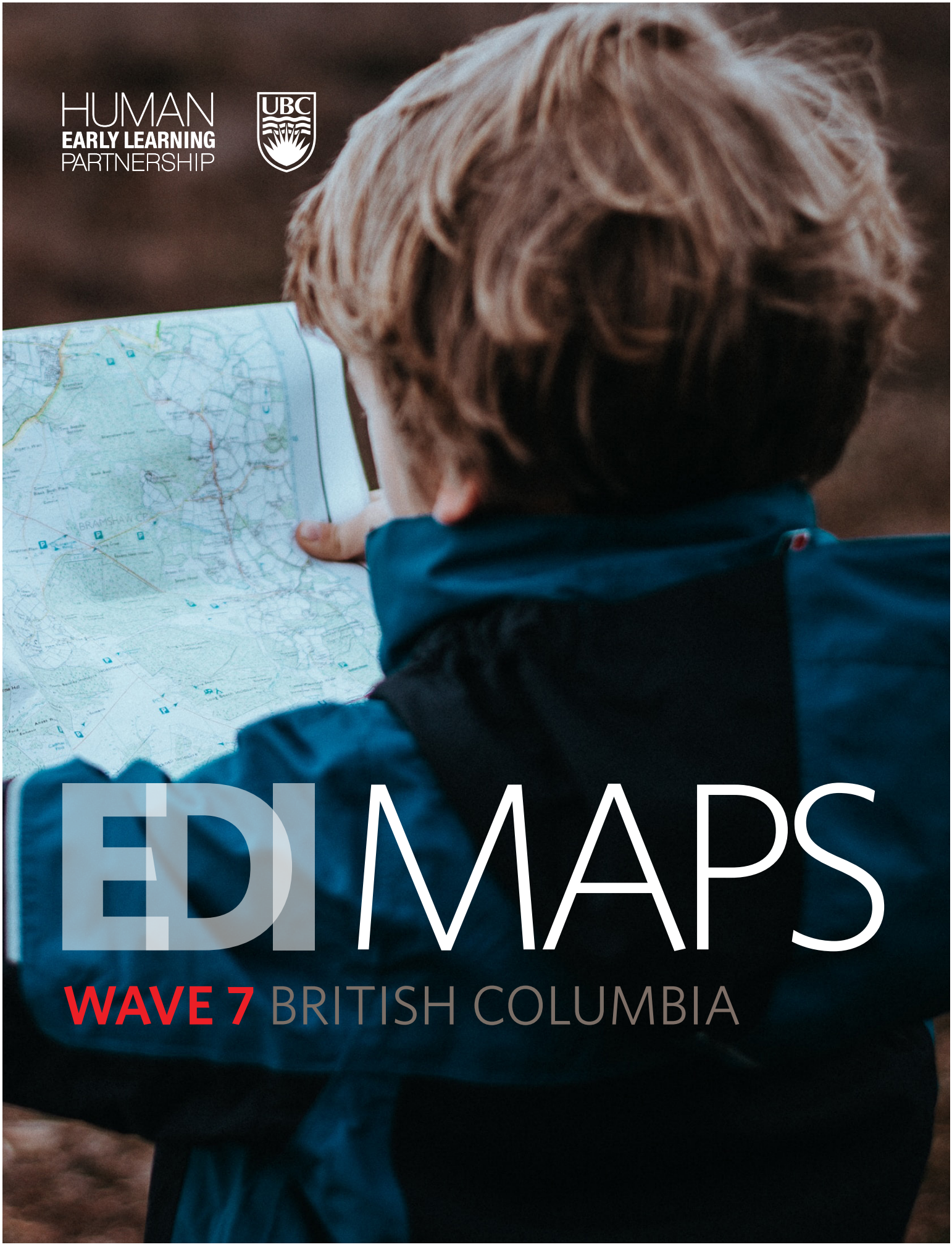
EDI bibliography: **https://edi.offordcentre.com/resources/bibliography-of-the-edi/**

EDI provincial reports from across Canada: **https://edi.offordcentre.com/partners/canada/**

2. Human Early Learning Partnership:

BC EDI Information: **http://earlylearning.ubc.ca/edi/**

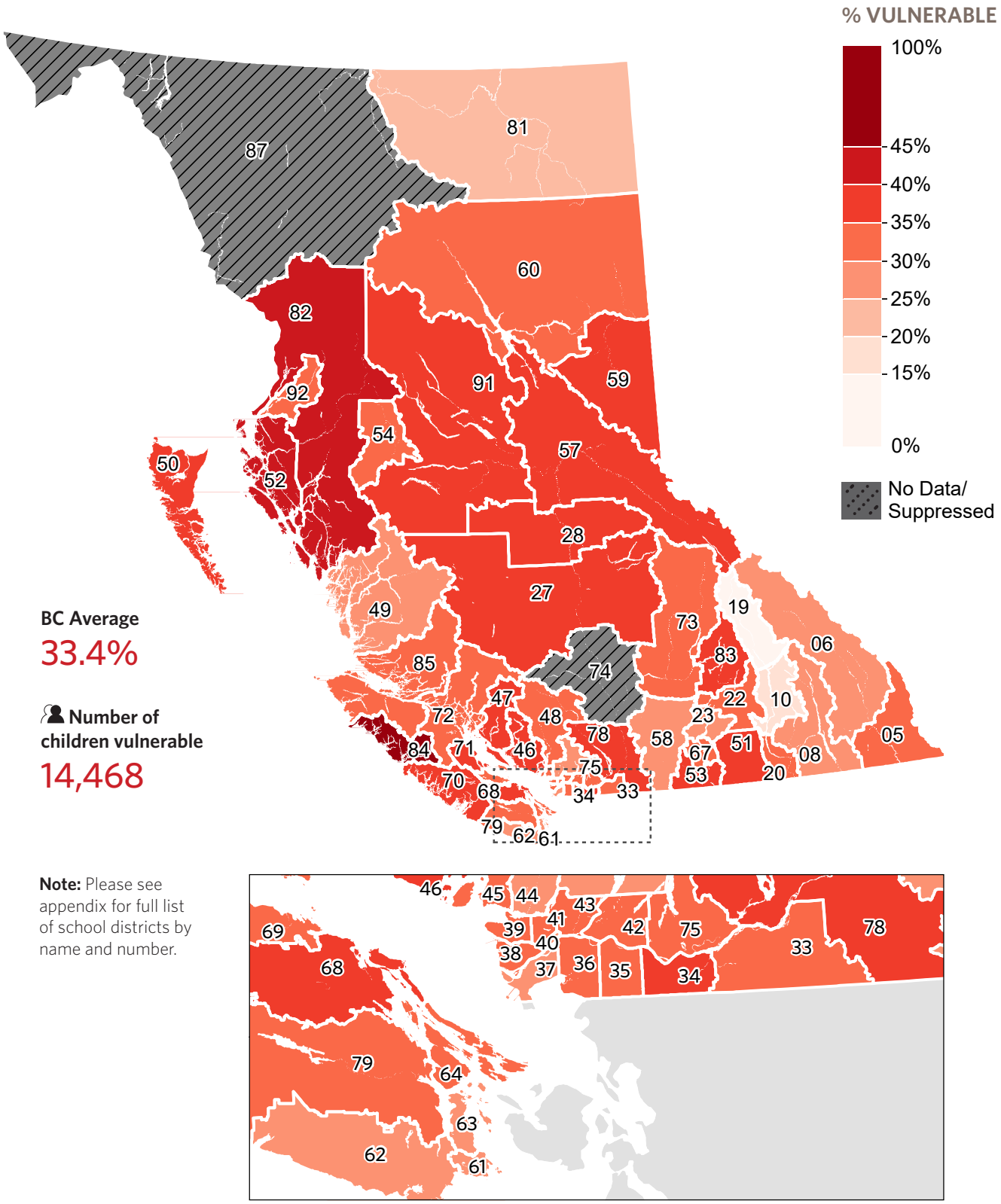
BC EDI Interactive Mapping: **http://earlylearning.ubc.ca/interactive-map/**


HUMAN
EARLY LEARNING
PARTNERSHIP
UBC
EDI MAPS
WAVE 7 BRITISH COLUMBIA

EDI WAVE 7 BRITISH COLUMBIA

VULNERABLE ON ONE OR MORE SCALES

Percent of children Vulnerable on One or More Scales of the EDI by BC School District.



BC Average

33.4%

Number of children vulnerable

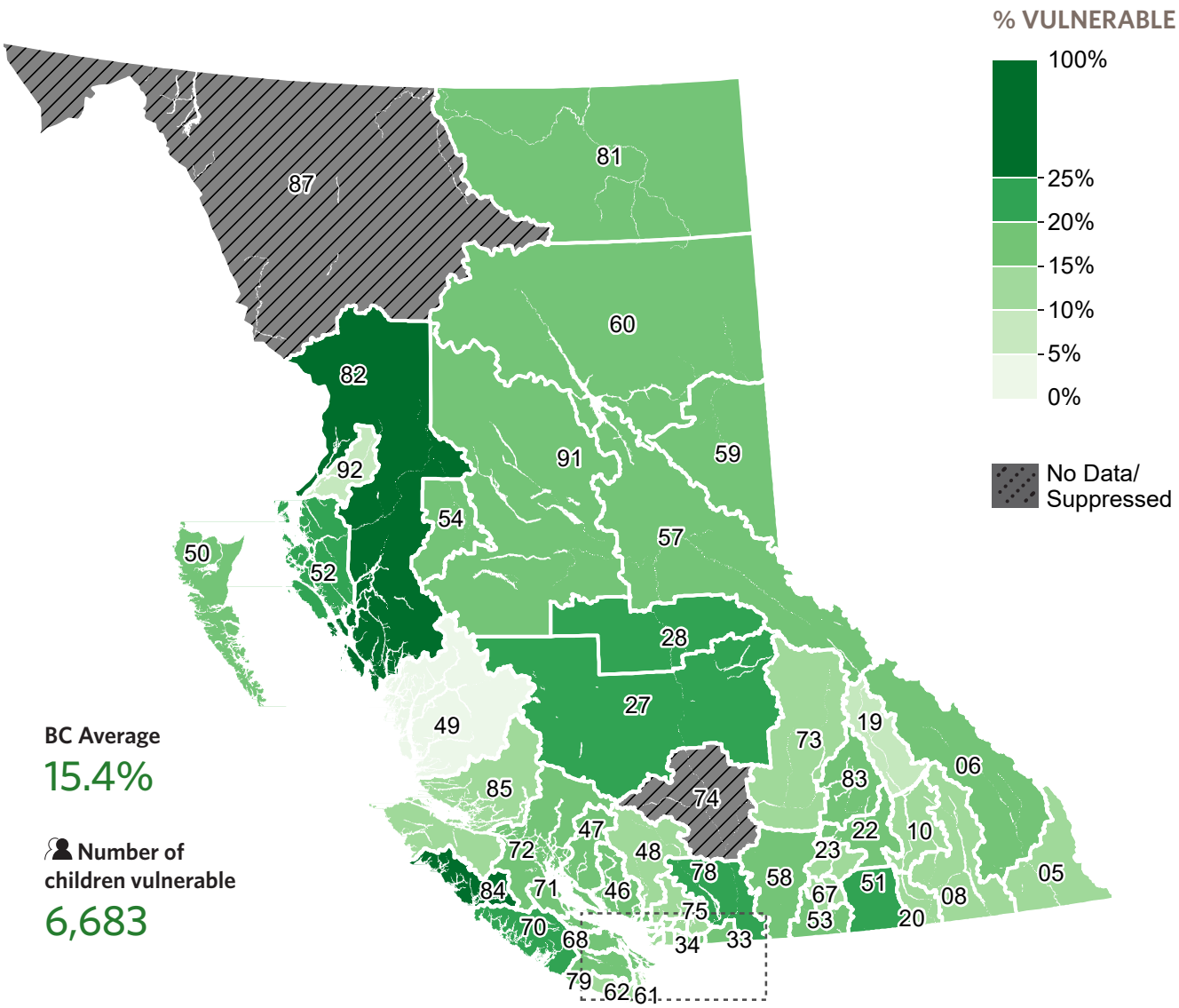
14,468

Note: Please see appendix for full list of school districts by name and number.

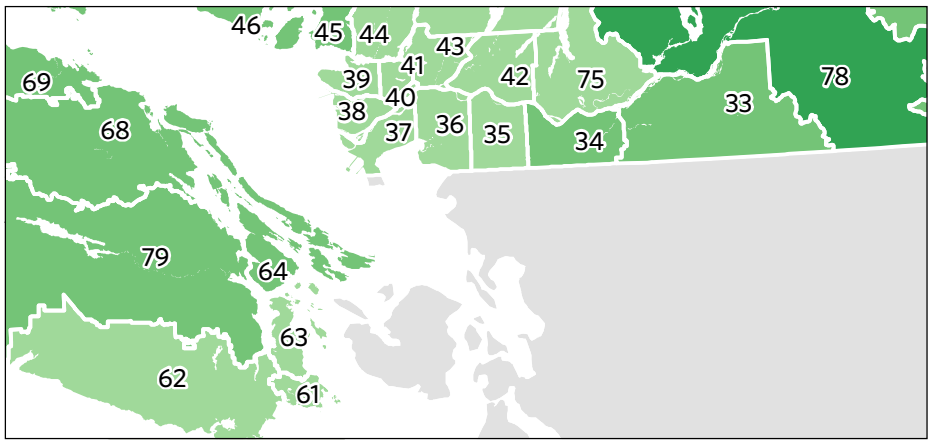
EDI WAVE 7 BRITISH COLUMBIA

VULNERABILITY ON THE PHYSICAL HEALTH & WELL-BEING SCALE

Percent of children Vulnerable on the Physical Health and Well-Being Scale by School District.



Note: Please see appendix for full list of school districts by name and number.

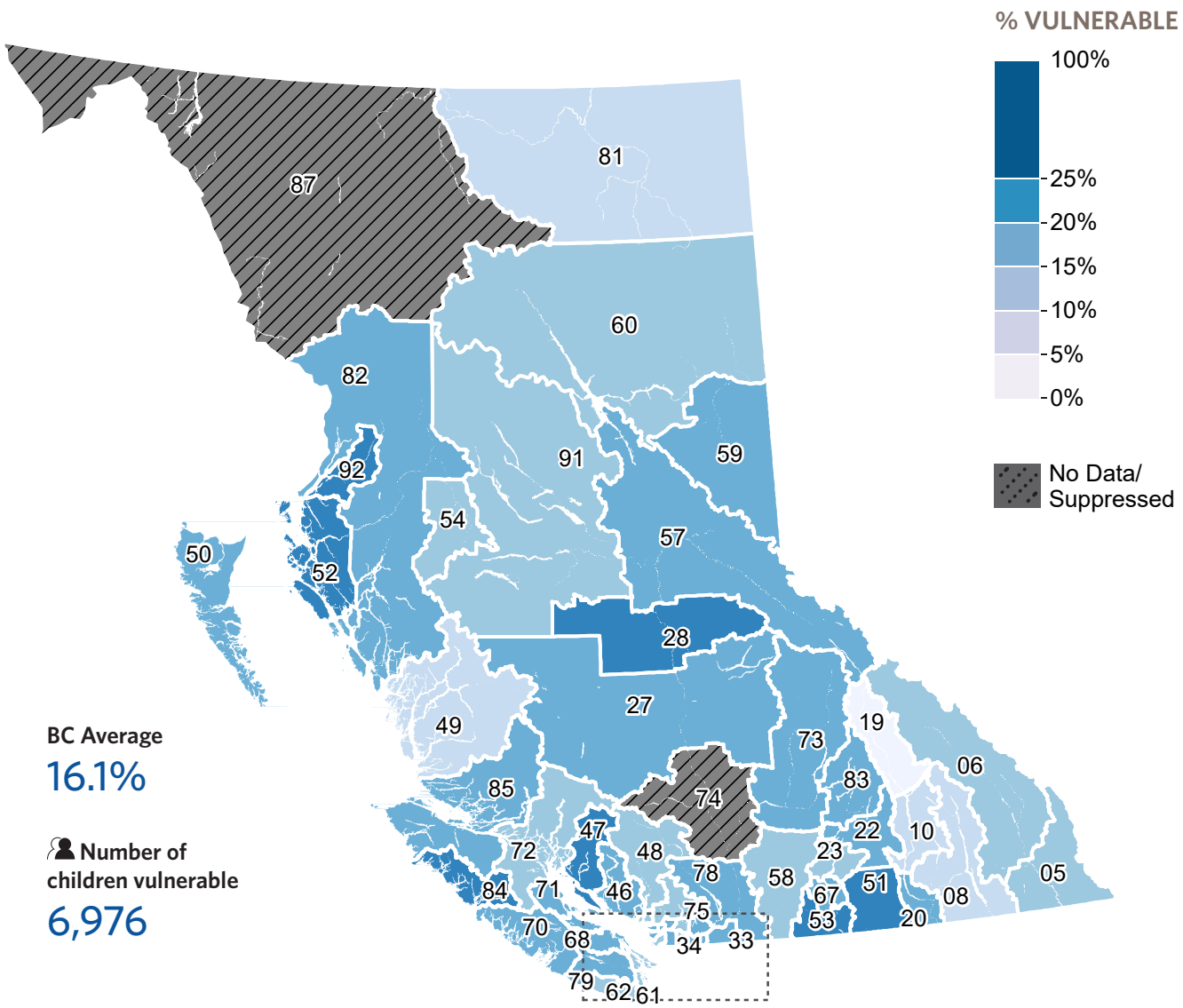


HUMAN EARLY LEARNING PARTNERSHIP

EDI WAVE 7 BRITISH COLUMBIA

VULNERABILITY ON THE SOCIAL COMPETENCE SCALE

Percent of children Vulnerable on the Social Competence Scale by School District.



BC Average

16.1%

Number of children vulnerable

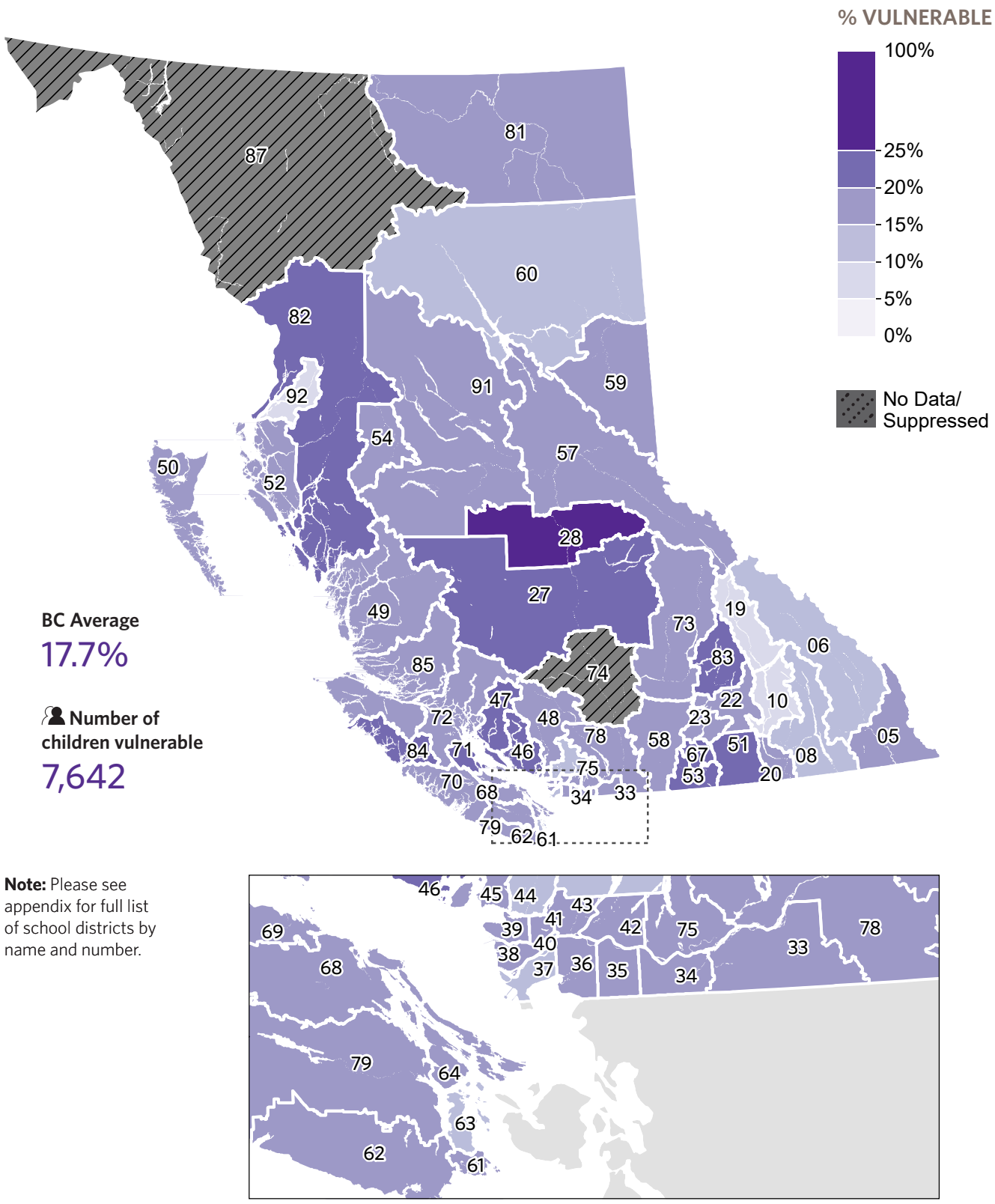
6,976

Note: Please see appendix for full list of school districts by name and number.

EDI WAVE 7 BRITISH COLUMBIA

VULNERABILITY ON EMOTIONAL MATURITY SCALE

Percent of children Vulnerable on the Emotional Maturity Scale by School District.



BC Average

17.7%

Number of children vulnerable

7,642

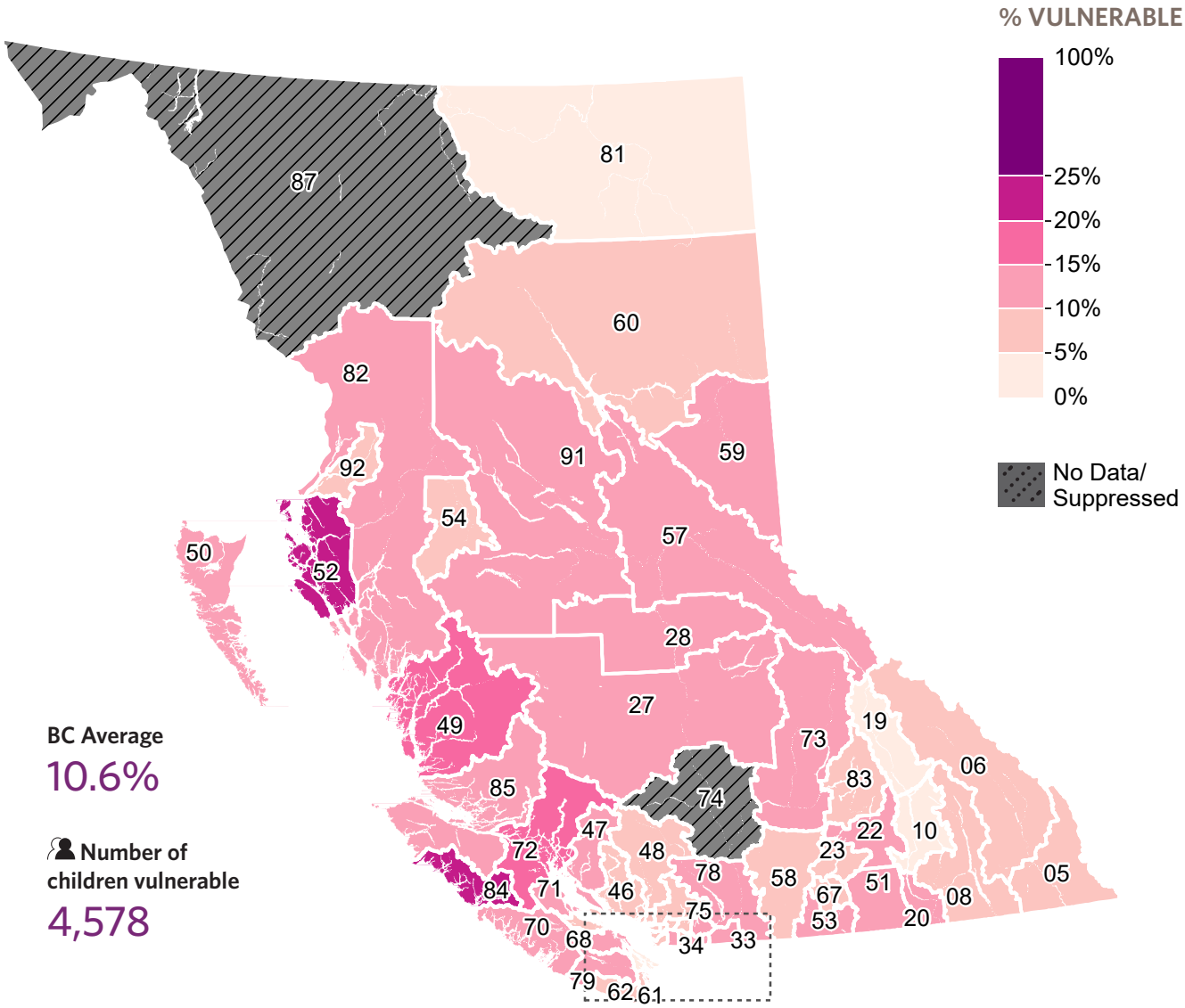
Note: Please see appendix for full list of school districts by name and number.

HUMAN EARLY LEARNING PARTNERSHIP

EDI WAVE 7 BRITISH COLUMBIA

VULNERABILITY ON LANGUAGE AND COGNITIVE DEVELOPMENT SCALE

Percent of children Vulnerable on the Language and Cognitive Scale by School District.



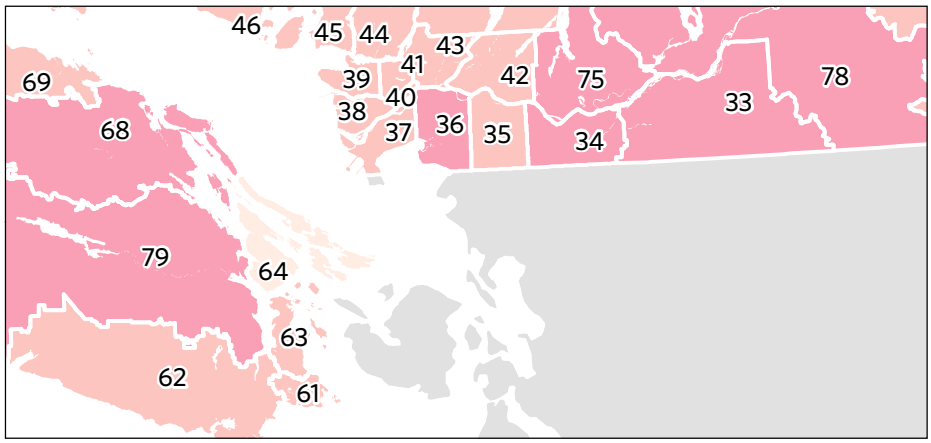
BC Average

10.6%

Number of children vulnerable

4,578

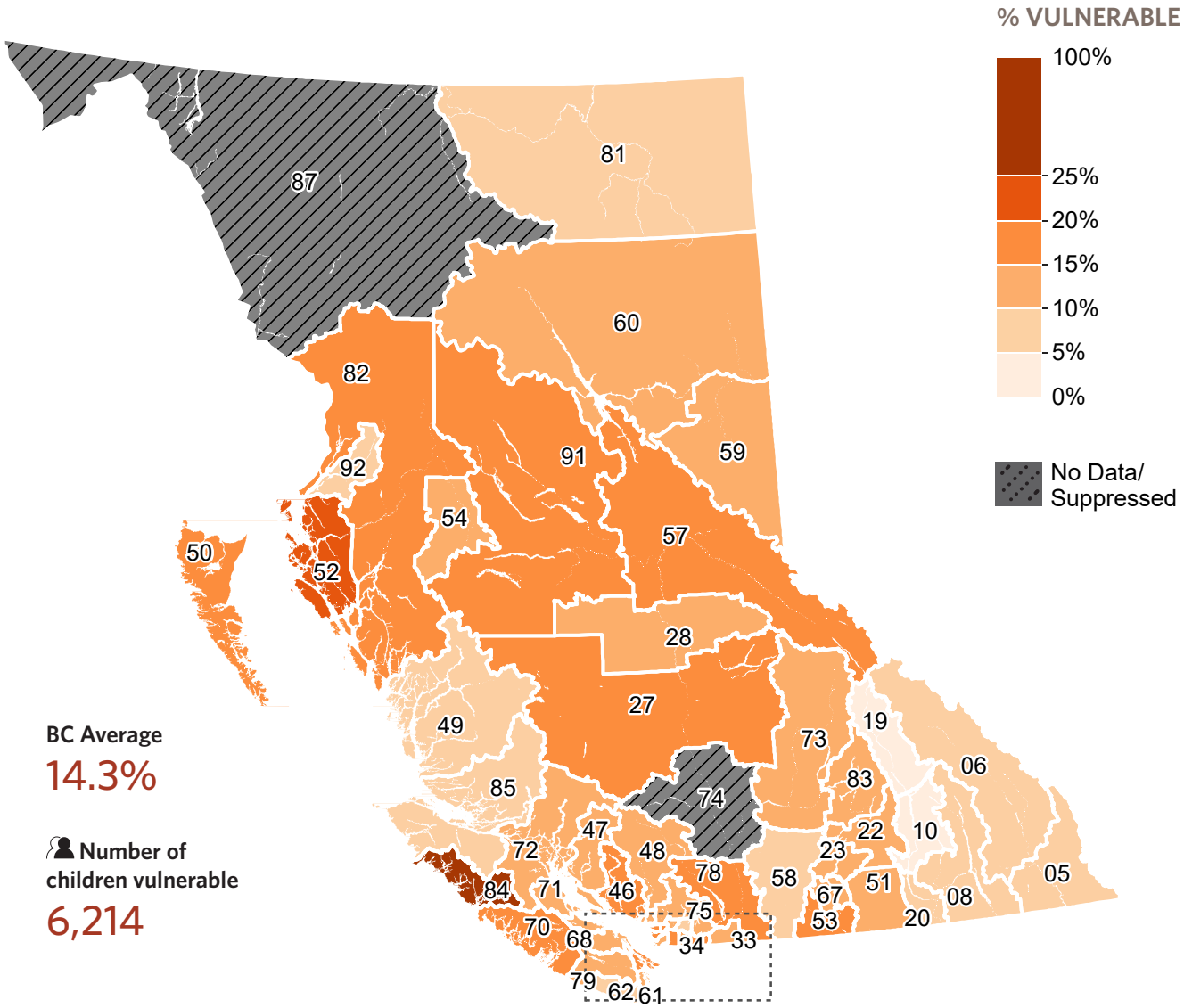
Note: Please see appendix for full list of school districts by name and number.



EDI WAVE 7 BRITISH COLUMBIA

VULNERABILITY ON COMMUNICATION SKILLS AND GENERAL KNOWLEDGE SCALE

Percent of children Vulnerable on the Communication Skills and General Knowledge Scale by School District.



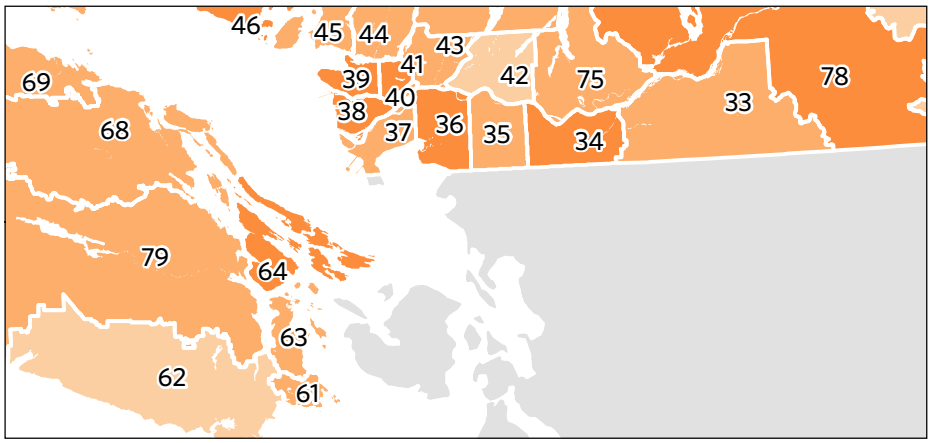
BC Average

14.3%

Number of children vulnerable

6,214

Note: Please see appendix for full list of school districts by name and number.

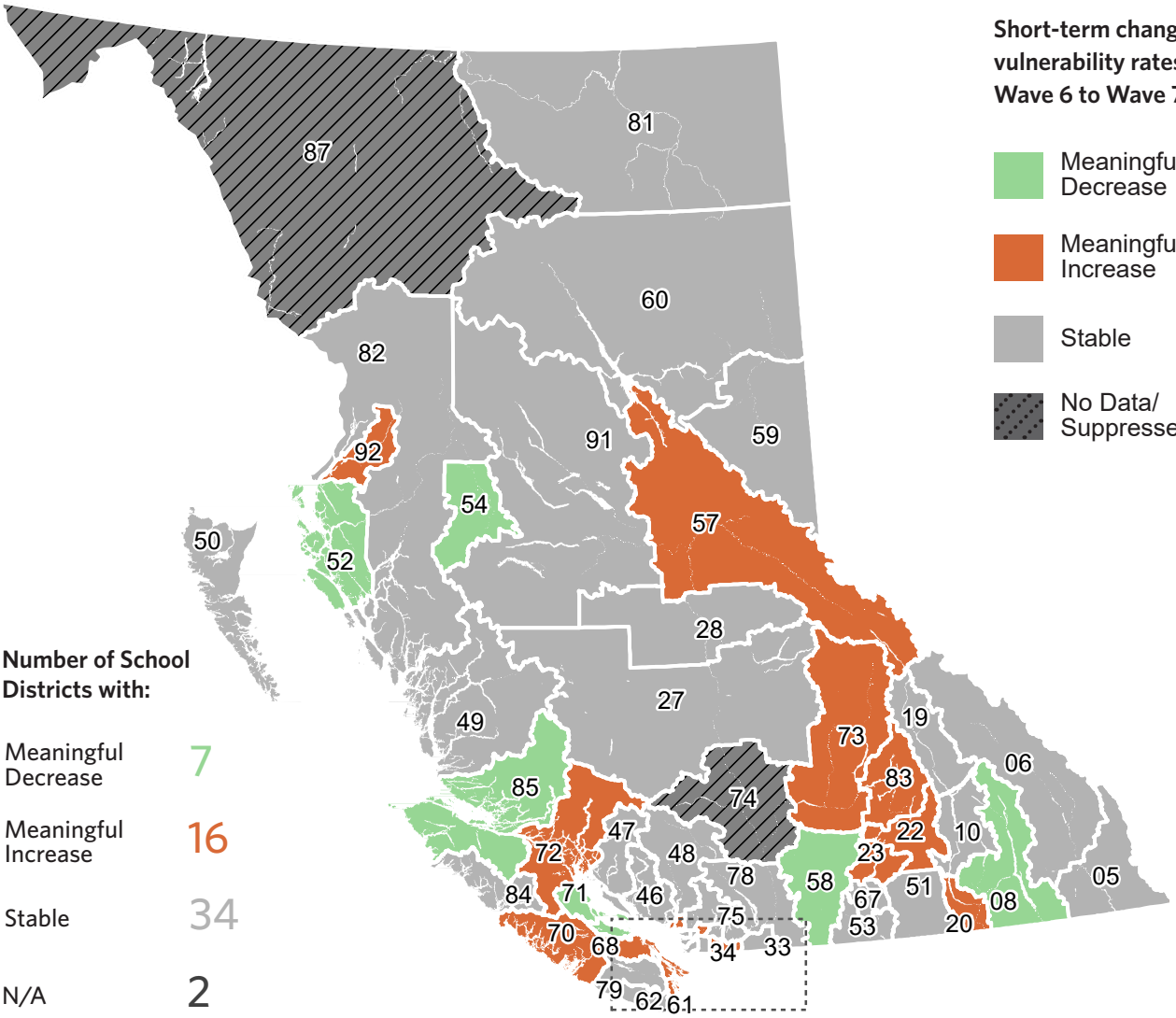


HUMAN EARLY LEARNING PARTNERSHIP

EDI WAVE 7 BRITISH COLUMBIA

MEANINGFUL CHANGE ON VULNERABLE ON ONE OR MORE SCALES - WAVE 6 TO WAVE 7

Critical Difference is a method that HELP uses to determine whether a change in EDI vulnerability rates from one period to another (shown on this map) reflects a meaningful change in vulnerability, rather than a more minor change associated with measurement variations (see page 18 for more information).



Number of School Districts with:

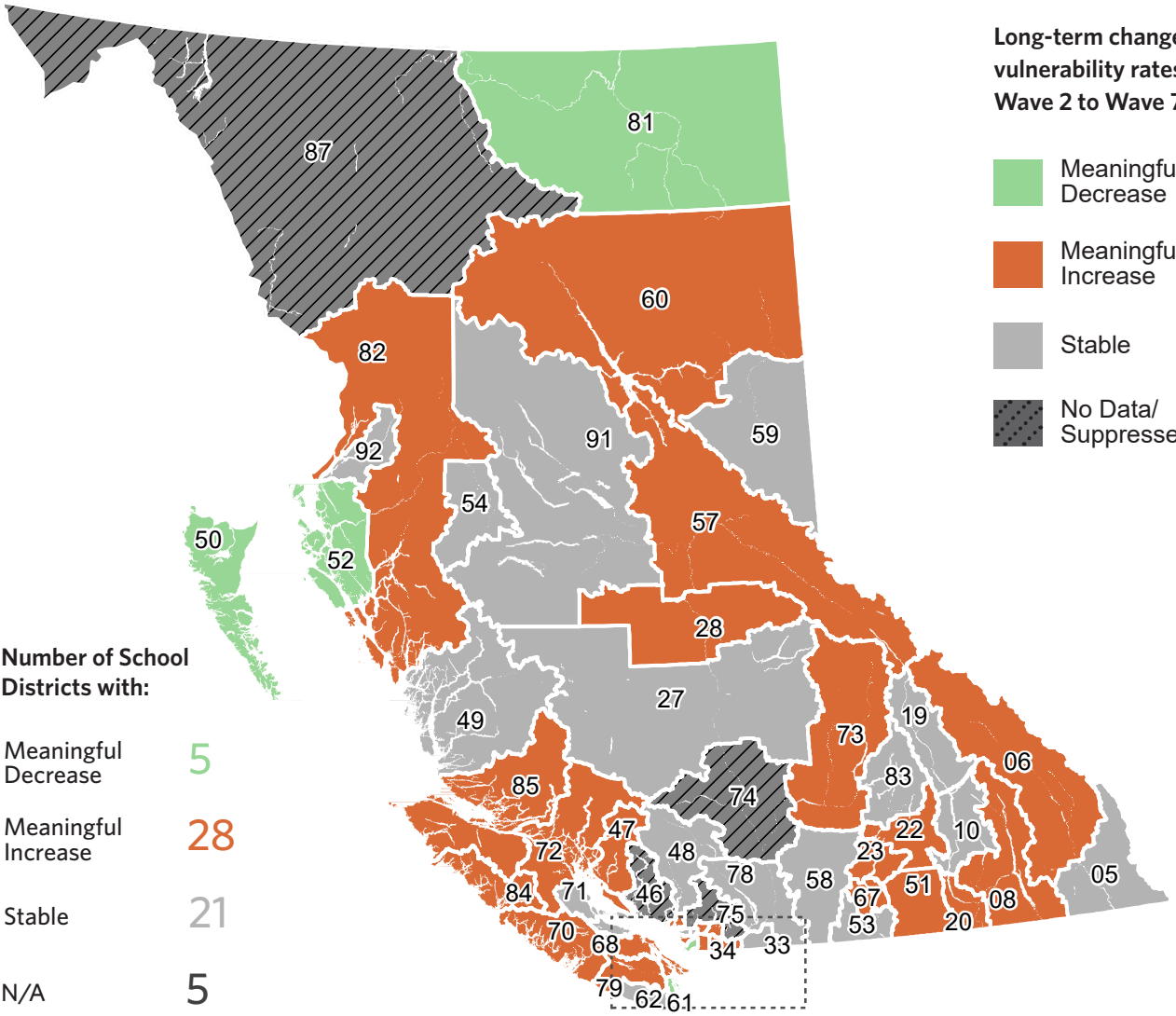
Meaningful Decrease	7
Meaningful Increase	16
Stable	34
N/A	2

Note: Please see appendix for full list of school districts by name and number.

EDI WAVE 7 BRITISH COLUMBIA

MEANINGFUL CHANGE ON VULNERABLE ON ONE OR MORE SCALES - WAVE 2 TO WAVE 7

Critical Difference is a method that HELP uses to determine whether a change in EDI vulnerability rates from one period to another (shown on this map) reflects a meaningful change in vulnerability, rather than a more minor change associated with measurement variations (see page 18 for more information).



Number of School Districts with:

Meaningful Decrease	5
Meaningful Increase	28
Stable	21
N/A	5

Note: Please see appendix for full list of school districts by name and number.

HUMAN EARLY LEARNING PARTNERSHIP

APPENDIX A: RECENT REPORTS

BC Representative for Children and Youth

Several reports from BC Representative's office have documented examples of inequities in the health and well-being of certain populations of children and families in BC. Some examples include: the over-representation of Indigenous children in care, the link between poverty and contact with child welfare and Youth Justice systems, and the lack of integration and gaps in services that disproportionately impact children in care and those with special needs and mental health challenges.[80-83]

Canadian Coalition for the Rights of Children: 2019 Review

The Coalition has highlighted the multiple short and long-term effects of poverty on child well-being and the disproportionate poor health outcomes for refugee, "visible minority," and Indigenous children and for children with disabilities and special health care needs.[84]

Generation Squeeze and the Coalition of Child Care Advocates of BC: The $10aDay Child Care Plan

Generation Squeeze and the Coalition have made a compelling case for universal, quality and affordable child care in BC for many years.[85] Their rationale highlights that the patchwork of early learning programs and services available are not meeting the needs of BC families and are influencing child development outcomes.

First Call: 2018 Poverty Report Card

First Call continues to report that child poverty is a pressing issue affecting 1 in 5, or 172,550 children (20.3% of children in the province).[54] And, BC continues to have a higher child poverty rate than the Canadian average for children 0-17 at 19.6%.

McCreary Centre Society: 2018 Adolescent Health Survey

The McCreary Centre has consistently highlighted some worsening trends for BC youth over time.[86] These trends include an increase in reported mental health conditions and decreases in the percentage of youth who: rated their mental health as good or excellent, reported feeling happy all or most of the time and reported that they had an adult inside or outside their family that they could talk to about their problems.

UNICEF: 2017 Report Card

Canada ranked 25th overall out of 41 countries based on 16 child well-being measures, ranking even lower on measures of social inclusion, hunger and food security, poverty and promoting well-being.[87]

Provincial Health Officer: Annual Report 2016: Is Good Good Enough? The Health & Well-being of Children & Youth in BC

Based on the 51 indicators selected, this report concludes that while the overall the health and well-being of youth and children in BC is "reasonably good," there were causes for concern. In particular, some important health indicators (low birth weights, asthma rates, reported bullying, binge drinking, among several others) had stabilized overtime, showing no signs of improvement. Substantial disparities based on sex/gender and geography were also noted. This suggests that a portion of children and youth are continually left behind in health and well-being.[88]

APPENDIX B: SCHOOL DISTRICTS BY NAME AND NUMBER

SD #	SD NAME
5	Southeast Kootenay
6	Rocky Mountain
8	Kootenay Lake
10	Arrow Lakes
19	Revelstoke
20	Kootenay - Columbia
22	Vernon
23	Central Okanagan
27	Cariboo - Chilcotin
28	Quesnel
33	Chilliwack
34	Abbotsford
35	Langley
36	Surrey
37	Delta
38	Richmond
39	Vancouver
40	New Westminster
41	Burnaby
42	Maple Ridge - Pitt Meadows
43	Coquitlam
44	North Vancouver
45	West Vancouver
46	Sunshine Coast
47	Powell River
48	Sea to Sky
49	Central Coast
50	Haida Gwaii
51	Boundary

SD #	SD NAME
52	Prince Rupert
53	Okanagan Similkameen
54	Bulkley Valley
57	Prince George
58	Nicola - Similkameen
59	Peace River South
60	Peace River North
61	Greater Victoria
62	Sooke
63	Saanich
64	Gulf Islands
67	Okanagan Skaha
68	Nanaimo - Ladysmith
69	Qualicum
70	Alberni
71	Comox Valley
72	Campbell River
73	Kamloops - Thompson
74	Gold Trail
75	Mission
78	Fraser - Cascade
79	Cowichan Valley
81	Fort Nelson
82	Coast Mountains
83	North Okanagan - Shuswap
84	Vancouver Island West
85	Vancouver Island North
87	Stikine
91	Nechako Lakes
92	Nisga'a

REFERENCES

1. Offord Centre for Child Studies. Hamilton, ON: McMaster University; 2019. Available from: **https://edi.offordcentre.com**.
2. Kershaw P, Anderson L, Warburton B, Hertzman C. 15 by 15: A comprehensive policy framework for early human capital investment in BC. Vancouver, BC: Business Council of British Columbia and the Human Early Learning Partnership, University of British Columbia; 2009. Available from: **http://earlylearning.ubc.ca/documents/27/**.
3. Revenue Canada. Child care benefit. Ottawa, ON: Government of Canada; [cited 2019 Oct 2]; Available from: **https://www.canada.ca/en/revenue-agency/programs/about-canada-revenue-agency-cra/federal-government-budgets/budget-2016-growing-middle-class/canada-child-benefit.html**.
4. Employment and Social Development Canada. EI maternity and parental benefits: what these benefits offer. Ottawa, ON: Government of Canada; [updated 2019 Jun 11; cited 2019 Oct 2]; Available from: **https://www.canada.ca/en/services/benefits/ei/ei-maternity-parental.html**.
5. Employment and Social Development Canada. Indigenous early learning and child care framework. Ottawa, ON: Government of Canada; 2018. Available from: **https://www.canada.ca/en/employment-social-development/programs/indigenous-early-learning/2018-framework.html**.
6. Employment and Social Development Canada. Multilateral early learning and child care framework. Ottawa, ON: Government of Canada; 2017. Available from: **https://www.canada.ca/en/employment-social-development/programs/early-learning-child-care/reports/2017-multilateral-framework.html**.
7. Truth and Reconciliation Commission of Canada. Honouring the truth, reconciling for the future. Summary of the final report of the Truth and Reconciliation Commission of Canada. Winnipeg, MB: TRC; 2015 June. Available from: **http://www.trc.ca/assets/pdf/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf**.
8. Government of British Columbia. Child care B.C. Caring for kids, lifting up families: the path to universal child care. Victoria, BC: Government of British Columbia; 2018 Feb. Available from: **https://www.bcbudget.gov.bc.ca/2018/childcare/2018_Child_Care_BC.pdf**.
9. Government of British Columbia. TogetherBC. British Columbia's poverty reduction strategy. Victoria, BC: Government of British Columbia; 2019. Available from: **https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/poverty-reduction-strategy/togetherbc.pdf**.
10. Government of British Columbia. Homes for B.C. A 30-point plan for housing affordability in British Columbia. Victoria, BC: Government of British Columbia; 2018 Feb. Available from: **https://www.bcbudget.gov.bc.ca/2018/homesbc/2018_homes_for_bc.pdf**.
11. Government of British Columbia. A pathway to hope: a roadmap for making mental health and addictions care better for people in British Columbia. Victoria, BC: Government of British Columbia; 2019. Available from: **https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/mental-health-and-addictions-strategy/bcmentalhealthroadmap_2019web-5.pdf**.
12. British Columbia Ministry of Education, Ministry of Health, Ministry of Children and Family Development, Early Learning Advisory Group. British Columbia early learning framework. Victoria, BC: Government of British Columbia; 2019 Aug. Available from: **https://www2.gov.bc.ca/gov/content/education-training/early-learning/teach/early-learning-framework**.
13. Government of British Columbia. Expansion of programs aid Indigenous children under six and their families. Victoria, BC: Government of British Columbia; 2018 May. Available from: **https://news.gov.bc.ca/releases/2018CFD0036-001007**.
14. Boyce WT, Hertzman C. Early childhood health and the life course: the state of the science and proposed research priorities. In: Halfon N, Forrest CB, Lerner RM, Faustman EM, editors. New York: Springer; 2018. p. 61-93. Available from: **https://www.springer.com/gp/book/9783319471419**.
15. Hertzman C, Boyce T. How experience gets under the skin to create gradients in developmental health. Ann Rev Public Health. 2010;31:329. Available from: **https://doi.org/10.1146/annurev.publhealth.012809.103538**.
16. Guhn M, Goelman H. Bioecological theory, early child development and the validation of the population-level Early Development Instrument. Soc Indicators Res. 2011;103:193-217. Available from: **http://dx.doi.org/10.1007/s11205-011-9842-5**.
17. Hertzman C. The role of administrative record linkage in creating trajectories of early human development. Healthcare Policy. 2011;6(Special Issue):55-62. Available from: **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5319573/**.

18. Hertzman C, Vaghri Z, Arkadas A. Monitoring progress towards the fulfillment of rights in early childhood under the Convention on the Rights of the Child to improve outcomes for children and families. In: Britto PR, Engle PL, Super CM, editors. Handbook of early childhood development research and its impact on global policy. New York, NY: Oxford University Press; 2013. Available from: **https://global.oup.com/academic/product/handbook-of-early-childhood-development-research-and-its-impact-on-global-policy-9780199922994?cc=ca&lang=en&**.

19. Human Early Learning Partnership. Early Development Instrument. Vancouver, BC: University of British Columbia, School of Population and Public Health; Available from: **http://earlylearning.ubc.ca/edi/**.

20. Janus M. The Early Development Instrument: a tool for monitoring children's development and readiness for school. In: Young ME, Richardson LM, editors. Early child development: from measurement to action: a priority for growth and equity. Washington, DC: World Bank; 2007. p.183-201. Available from **https://elibrary.worldbank.org/doi/pdf/10.1596/978-0-8213-7086-5**. Available from: **http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.565.2063&rep=rep1&type=pdf**.

21. Offord Centre for Child Studies. Early Development Instrument. McMaster, Hamilton, ON: Offord Centre for Child Studies, McMaster University; Available from: **https://edi.offordcentre.com/**.

22. Canadian Institute for Health Information. Children vulnerable in areas of early development: a determinant of child health. Ottawa, ON: CIHI; 2014. Available from: **https://secure.cihi.ca/free_products/Children_Vulnerable_in_Areas_of_Early_Development_EN.pdf**.

23. Guhn M, Janus M, Enns J, Brownell M, Forer B, Duku E, et al. Examining the social determinants of children's developmental health: protocol for building a pan-Canadian population-based monitoring system for early childhood development. BMJ Open. 2016 April 1, 2016;6(4). Available from: **http://bmjopen.bmj.com/content/6/4/e012020.abstract**.

24. Janus M, Brownell M, Reid-Westoby C, Bennett T, Birken C, Coplan R, et al. Establishing a protocol for building a pan-Canadian population-based monitoring system for early childhood development for children with health disorders: Canadian Children's Health in Context Study (CCHICS). BMJ Open. 2018;8(5). Available from: **http://bmjopen.bmj.com/content/bmjopen/8/5/e023688.full.pdf**.

25. Janus M, Offord DR. Development and psychometric properties of the Early Development Instrument (EDI): a measure of children's school readiness. Can J Behav Sci. 2007;39(1):1-22. Available from: **https://psycnet.apa.org/record/2007-04967-001**.

26. Janus M, Brinkman S, Duku E. Validity and psychometric properties of the Early Development Instrument in Canada, Australia, United States, and Jamaica. Soc Indicators Res. 2011;103:283-297. Available from: **http://dx.doi.org/10.1007/s11205-011-9846-1**.

27. Forget-Dubois N, Lemelin J-P, Boivin M, Dionne G, Seguin JR, Vitaro F, et al. Predicting early school achievement with the EDI: a longitudinal population-based study. Early Educ Dev. 2007;18(3):405-26. Available from: **https://doi.org/10.1080/10409280701610796**.

28. Australian Early Development Instrument Census. The predictive validity of the AEDC: predicting later cognitive and behavioural outcomes. Melbourne, VIC: Centre for Community Child Health, Royal Children's Hospital, Melbourne, and the Telethon Kids Institute, Perth; 2014 Oct. Available from: **https://www.aedc.gov.au/resources/detail/the-predictive-validity-of-the-aedc-predicting-later-cognitive-and-behavioural-outcomes**.

29. Brinkman SA, Kinnell A, Maika A, Hasan A, Jung H, Pradhan M. Validity and reliability of the Early Development Instrument in Indonesia. Child Indicators Res. 2017 June;10(2):331-352. Available from: **http://dx.doi.org/10.1007/s12187-016-9372-4**.

30. Glover V. The effects of prenatal stress on child behavioural and cognitive outcomes start at the beginning. Montreal, QC: Encyclopedia on Early Child Development; 2019 Apr. Available from: **http://www.child-encyclopedia.com/stress-and-pregnancy-prenatal-and-perinatal/according-experts/effects-prenatal-stress-child**.

31. Moore T, Arefadib N, Leone V, West S. The first thousand days - our greatest opportunity [policy brief]. Melbourne, Australia: Royal Children's Hospital, Murdoch Children's Research Institute, Centre for Community Child Health; 2018 Mar. Available from: **https://www.rch.org.au/uploadedFiles/Main/Content/ccchdev/1803-CCCH-Policy-Brief-28.pdf**.

32. Hertzman C. Commentary on the symposium: biological embedding, life course development, and the emergence of a new science. Ann Rev Public Health. 2013 Jan 4;34:1-5. Available from: **http://www.ncbi.nlm.nih.gov/pubmed/23297665**.

33. Boyce WT, Kobor MS. Development and the epigenome: the 'synapse' of gene–environment interplay. Dev Sci. 2015;18(1):1-23. Available from: **http://dx.doi.org/10.1111/desc.12282**.

34. Park M, Kobor MS. The potential of social epigenetics for child health policy. Canadian Public Policy. 2015;41(Supplement 2):S89-S96. Available from: **http://www.utpjournals.press/doi/abs/10.3138/cpp.2014-081**.

35. Shonkoff J, Boyce WT, McEwen BC. Neuroscience, molecular biology, and they childhood roots of health disparities: building a new framework for health promotion and disease prevention. JAMA. 2009; 301(21):2252-9. Available from: **https://www.ncbi.nlm.nih.gov/pubmed/19491187**.

36. Lussier AA, Islam SA, Kobor MS. Epigenetics and genetics of development. Gibb R, Kolb B, editors. The neurobiology of brain and behavioral development. New York, NY: Elsevier; 2018. p. 153-210. Available from: **https://www.sciencedirect.com/science/article/pii/B9780128040362000078**.

37. Conradt E, Adkins DE, Crowell SE, Monk C, Kobor MS. An epigenetic pathway approach to investigating associations between prenatal exposure to maternal mood disorder and newborn neurobehavior. Dev Psychopathol. 2018;30(3):881-90. Available from: **https://doi.org/10.1017/S0954579418000688**.

38. Alvarez HAO, Kubzansky LD, Campen MJ, Slavich GM. Early life stress, air pollution, inflammation, and disease: an integrative review and immunologic model of social-environmental adversity and lifespan health. Neurosci Biobehav Rev. 2018;92:226-242.. Available from: **https://doi.org/10.1016/j.neubiorev.2018.06.002**.

39. UNICEF. Nurturing care for early childhood development: a framework for helping children survive and thrive to transform health and human potential.. New York, NY: UNICEF; 2018. Available from: **http://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf**.

40. Goldfeld S, O'Connor M, Cloney D, Gray S, Redmond G, Badland H, et al. Understanding child disadvantage from a social determinants perspective. J Epid Com Health. 2018;72(3):223-9. Available from: **https://jech.bmj.com/content/jech/72/3/223.full.pdf**.

41. Human Early Learning Partnership. What makes a difference for early child development? Team Environment Assessment Model for early child development (TEAM-ECD). Vancouver, BC: School of Population and Public Health, University of British Columbia; 2012 Nov. Available from: **http://earlylearning.ubc.ca/documents/304/**.

42. Ungar M. Resilience, trauma, context, and culture. Trauma, Violence & Abuse. 2013. Jul;14(3):255-66.. Available from: **http://www.ncbi.nlm.nih.gov/pubmed/23645297**.

43. Jones DE, Greenberg M, Crowley M. Early social-emotional functioning and public health: the relationship between kindergarten social competence and future wellness. Am J Public Health. 2015:e1-e8. Available from: **http://dx.doi.org/10.2105/AJPH.2015.302630**.

44. Ungar M, Hadfield K. The differential impact of environment and resilience on youth outcomes. Can J Behav Sci. 2019;51(2):135-46. Available from: **http://dx.doi.org/10.1037/cbs0000128**.

45. Schonert-Reichl KA. Children and youth at risk: some conceptual considerations. Pan-Canadian Education Research Agenda Symposium, "Children and youth at risk," April 6-7; Ottawa, ON: Canadian Education Statistics Council with the assistance of Human Resources Development Canada; 2000. Available from: **http://www.cesc.ca/pceradocs/2000/00Schonert-Reichl_e.pdf**.

46. Schonert-Reichl KA, LeRose M. Resiliency in children and adolescents: recent research findings and implications for policy and practice in Canada. Working paper: The Learning Partnership's Resiliency in Canadian Children Project; 2008.

47. Marmot M, Bell R. Fair society, healthy lives. London: The Marmot Review; 2010. Available from: **http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review**.

48. Brookings Working Group on Poverty and Opportunity. Opportunity, responsibility, and security. A consensus plan for reducing poverty and restoring the American dream. Brookings, NY: American Enterprise Institute for Public Policy Research and the Brookings Institution; 2015. Available from: **https://www.brookings.edu/wp-content/uploads/2016/07/Full-Report.pdf**.

49. Marmot M. The health gap: the challenge of an unequal world. The Lancet. 2015 Sep;386(10011):12-18. Available from: **http://www.sciencedirect.com/science/article/pii/S0140673615001506**.

50. Wei L, Feeny D. The dynamics of the gradient between child's health and family income: evidence from Canada. Soc Sci Med. 2019 ;226:182-189. 226:182-9. Available from: **http://www.sciencedirect.com/science/article/pii/S0277953619301005**.

51. Guhn M, Emerson SD, Mahdaviani D, Gadermann AM. Associations of birth factors and socio-economic status with indicators of early emotional development and mental health in childhood: a population-based linkage study. Child Psychiatry Hum Dev. 2019 Jul 23. Available from: **https://www.ncbi.nlm.nih.gov/pubmed/31338644**.

52. Moore TG, McDonald M, Carlon L, O'Rourke K. Early childhood development and the social determinants of health inequities. Health Prom Int. 2015;30(suppl_2):ii102-ii15. Available from: **http://dx.doi.org/10.1093/heapro/dav031**.

53. Irwin L, Siddiqi A, Hertzman C. Early childhood development: a powerful equalizer. Final report. World Health Organization, Commission on the Social Determinants of Health. 2018 June. Available from **https://www.who.int/social_determinants/resources/ecd_kn_report_07_2007.pdf**.

54. First Call: BC Child and Youth Advocacy Coalition. British Columbia 2018 child poverty report card. Vancouver, BC: First Call; 2018 Nov. Available from: **http://still1in5.ca/**.

55. Marmot M, Bell R. Fair society, healthy lives. Public Health (Elsevier). 2012;126:S4-10. Available from: **http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review**.

56. Carey G, Crammond B, De Leeuw E. Towards health equity: a framework for the application of proportionate universalism. Int J Equity Health. 2015;14(1):81. Available from: **https://doi.org/10.1186/s12939-015-0207-6**.

57. British Columbia Ministry of Education. Legislation and policy glossary. Victoria, BC: Government of British Columbia; [cited 2019 Oct 8]; Available from: **https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/legislation-policy/glossary#english_language_learners_ell_students**.

58. Canadian Mental Health Association - British Columbia Division. Mental illness in children and youth. Vancouver, BC: CMHA; 2019. Available from: **https://cmha.bc.ca/documents/mental-illnesses-in-children-and-youth-2/**.

59. Public Health Agency of Canada. Report from the Canadian Chronic Disease Surveillance System: mental illness in Canada, 2015. Ottawa, ON: PHAC; 2015. Available from: **https://www.canada.ca/en/public-health/services/publications/diseases-conditions/report-canadian-chronic-disease-surveillance-system-mental-illness-canada-2015.html**.

60. Thomson KC, Richardson CG, Gadermann AM, Emerson SD, Shoveller J, Guhn M. Association of childhood social-emotional functioning profiles at school entry with early-onset mental health conditions. JAMA Network Open. 2019;2(1):e186694. Available from: **http://dx.doi.org/10.1001/jamanetworkopen.2018.6694**.

61. Center for the Study of Social Policy. Results-based public policy strategies for promoting children's social, emotional and behavioral health. Washington, DC: Center for the Study of Social Policy,; 2012 Mar. Available from: **http://www.cssp.org/policy/papers/Promote-Childrens-Social-Emotional-and-Behavioral-Health.pdf**.

62. Vergunst F, Tremblay RE, Nagin D, Algan Y, Beasley E, Park J, et al. Association between childhood behaviors and adult employment earnings in Canada. JAMA Pyschiatr. 2019;76(10):1044-51. Available from: **https://doi.org/10.1001/jamapsychiatry.2019.1326**.

63. Alvarez EC, Kawachi I, Romani JR. Family social capital and health – a systematic review and redirection. Sociol Health Ill. 2017;39(1):5-29. Available from: **http://dx.doi.org/10.1111/1467-9566.12506**.

64. Kautz T, Heckman J, Diris R, ter Weel B, Borghans L. Fostering and measuring skills: improving cognitive and non-cognitive skills to promote lifetime success. National Bureau of Economic Research Working Paper No. 20749 (issued 2014, revised 2017). Cambridge, MA: National Bureau of Economic Research; 2017 Sep. Available from: **https://www.nber.org/papers/w20749**.

65. Kershaw P. Intergenerational justice in public finance: A Canadian case study. Vancouver, BC: Generation Squeeze; 2018 May. Available from: **https://www.gensqueeze.ca/intergenerational_injustice_in_canadian_public_finance**.

66. Kershaw P. The need for health in all policies in Canada. Can Med Assoc J. 2018;190(3):E64-E5. Available from: **http://www.cmaj.ca/content/190/3/E64**.

67. Mercer R, Hertzman C, Molina H, Vaghri Z. Chapter 6: Promoting equity from the start through early child development and Health in All Policies (ECD-HiAP). In: Leppo K, Ollila E, Pena S, Wismar M, Cook S, editors. Health in all policies: seizing opportunities, implementing policies. Finland: Ministry of Social Affairs and Health; 2013. p. 105-24. Available from: **http://www.euro.who.int/__data/assets/pdf_file/0007/188809/Health-in-All-Policies-final.pdf**.

68. World Health Organisation, Finland Ministry of Social Affairs and Health. Health in all policies. Helsinki Statement framework for country action. Helsinki, Finland: WHO; 2014. Available from: **https://apps.who.int/iris/bitstream/handle/10665/112636/9789241506908_eng.pdf;jsessionid=A251AA048F8A85CA07AEF31B789134F0?sequence=1**.

69. Kershaw P, Anderson L. Measuring the age gap in Canadian social spending. Vancouver, BC: Generation Squeeze; 2015. Available from: **https://d3n8a8pro7vhmx.cloudfront.net/gensqueeze/pages/107/attachments/original/1423624191/Measuring_the_Age_Gap_in_Social_Spending_Final_6Feb2015.pdf?1423624191**.

70. García JL, Heckman JJ, Leaf DE, Prados MJ. Quantifying the life-cycle benefits of a prototypical early childhood program. Cambridge, MA: National Bureau of Economic Research; Working Paper No.23479 (issued 2017, revised 2019). Available from: **https://www.nber.org/papers/w23479**.

71. Braveman P, Egerter S, Arena K, Aslam R. Early childhood experiences shape health and well-being throughout life. Princeton, NJ: Robert Wood Johnson Foundation; 2014 Aug. Available from: **http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2014/rwjf414926**.

72. Conti G, Heckman JJ. Economics of child well-being. In: Ben-Arieh A, Casas F, Frønes I, Korbin EJ, editors. Handbook of child well-being: theories, methods and policies in global perspective. Dordrecht: Springer Netherlands; 2014. p. 363-401. Available from: **http://dx.doi.org/10.1007/978-90-481-9063-8_21**.

73. Canadian Paediatric Society, Digital Health Task Force. Screen time and young children: promoting health and development in a digital world. Paediatr Child Health. 2017;22(8):461-8. Available from: **http://dx.doi.org/10.1093/pch/pxx123**.

74. Swingle M. i-minds: How cell phones, computers, gaming and social media are changing our brains, our behaviour and the evolution of our species. Gabriola Island, BC: New Society Publishers; 2016.

75. Beamish N, Fisher J, Rowe H. Parents' use of mobile computing devices, caregiving and the social and emotional development of children: a systematic review of the evidence. Australas Psychiatr. 2018 Sep 20. Available from: **https://doi.org/10.1177/1039856218789764**.

76. Canadian Public Health Association. Children's unstructured play. Ottawa, ON: CPHA; 2019 Mar. Available from: **https://www.cpha.ca/childrens-unstructured-play**.

77. Dutil C, Walsh JJ, Featherstone RB, Gunnell KE, Tremblay MS, Gruber R, et al. Influence of sleep on developing brain functions and structures in children and adolescents: a systematic review. Sleep Med Rev. 2018 Dec;42:184-201. Available from: **https://doi.org/10.1016/j.smrv.2018.08.003**.

78. Spruyt K. A review of developmental consequences of poor sleep in childhood. Sleep Med. 2019;60:3-12. Dec 15. Available from: **https://doi.org/10.1016/j.sleep.2018.11.021**.

79. Paruthi S, Brooks LJ, D'Ambrosio C, Hall WA, Kotagal S, Lloyd RM, et al. Recommended amount of sleep for pediatric populations: a consensus statement of the american academy of sleep medicine. J Clin Sleep Med. 2016 Jun 15;12(6):785-6. Available from: **http://dx.doi.org/10.5664/jcsm.5866**.

80. British Columbia Representative for Children and Youth. A tragedy in waiting: how B.C.'s mental health system failed one First Nations youth. Victoria, BC: Office of the Representative for Children and Youth; 2016 Sep. Available from: **http://www.rcybc.ca/tragedyinwaiting**.

81. British Columbia Representative for Children and Youth, Office of the Provincial Health Officer of British Columbia. Growing up in BC - 2015. Victoria, BC: Ministry of Health; 2015 Jun. Available from: **http://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/special-reports/guibc-2015.pdf**.

82. British Columbia Representative for Children and Youth [Bernard Richard]. Missing pieces: Joshua's story. Victoria, BC: RCYBC; 2017 Oct. Available from: **https://www.rcybc.ca/joshua**.

83. British Columbia Representative for Children and Youth of British Columbia. Alone and afraid: lessons learned from the ordeal of a child with special needs and his family. Victoria, BC: RCYBC; 2018 Dec. Available from: **https://rcybc.ca/aloneafraid**.

84. Vandergrift K. Closing gaps: systemic change is essential to implement children's rights in Canada: Canadian Coalition for the Rights of Children; 2019 May. Available from: **http://rightsofchildren.ca/wp-content/uploads/2019/05/CCRC-Working-Paper-on-Systemic-Recommendations.pdf**.

85. Coalition of Child Care Advocates of BC. $10aday child care plan. Burnaby, BC: Coalition of Child Care Advocates of BC; [cited 2019 Oct 3]; Available from: **http://www.10aday.ca/**.

86. Smith A, Forsyth K, Poon C, Peled M, Saewyc E. Results of the 2018 BC Adolescent Health Survey. Balance and connection in BC: the health and well-being of our youth. Vancouver, BC: McCreary Centre Society; 2018. Available from: **https://www.mcs.bc.ca/bcahs_reports**.

87. UNICEF. Building the future: children and the sustainable development goals in rich countries, Innocenti Report Card no. 14. Florence, Italy: UNICEF Office of Research - Innocenti, Florence; 2017. Available from: **https://www.unicef-irc.org/publications/890-building-the-future-children-and-the-sustainable-development-goals-in-rich-countries.html**.

88. British Columbia Office of the Provincial Health Officer. Is "good", good enough? The health and well-being of children and youth in BC. Victoria, BC: British Columbia Ministry of Health; 2016 Nov. Available from: **https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/annual-reports/pho-annual-report-2016.pdf**.

89. BC Ministry of Children and Family Development. Ministry of Children and Family Development 2019/20-2021/22 service plan. Victoria, BC: Government of British Columbia; 2019. Available from **https://www.bcbudget.gov.bc.ca/2019/sp/pdf/ministry/cfd.pdf**.

90. Government of British Columbia. B.C. Declaration on the Rights of Indigenous Peoples Act. Victoria, BC: Government of British Columbia; 2019. Available from **https://www2.gov.bc.ca/gov/content/governments/indigenous-people/new-relationship/united-nations-declaration-on-the-rights-of-indigenous-peoples**.

91. Statistics Canada. Deaths from congential anomalies in Canada, 1974-2012. Ottawa, ON: Government of Canada; 2016. Available from **https://www150.statcan.gc.ca/n1/en/daily-quotidien/160929/dq160929d-eng.pdf?st=M7tdedAy**.

92. Centres for Disease Control and Prevention. Data and statistics on birth defects. U.S. Department of Health and Human Services; 2018. Available from **https://www.cdc.gov/ncbddd/birthdefects/data.html**.

93. Janus M, Brinkman S, Duku E, Hertzman C, Santos R, Sayers M, Schroeder J, Walsh C. The Early Development Instrument: a population-based measure for communities: a handbook on development, properties, and use. Hamilton, ON: Offord Centre for Child Studies, McMaster University; 2007. Available from **https://www.gov.mb.ca/healthychild/edi/edi_handbook_2007.pdf**.

94. Gagne M, Janus M, Milbrath C, Gadermann A, Guhn M. Early emotional and communication functioning predicting the academic trajectories of refugee children in Canada. Journal of Educational Psychology. 2018; 38(8): 1050-1067. doi: 10.1080/01443410.2018.1475627. Available from: **https://www.tandfonline.com/doi/full/10.1080/01443410.2018.1475627**.

95. Green MJ, Tzoumakis S, Laurens KR, Dean K, Kariuki M, Harris F, Brinkman SA, Carr VJ. Early developmental risk for subsequent childhood mental health disorders in an Australian population cohort. Australian & New Zealand Journal of Psychiatry. 2018 Dec 2; 53(4): 304–315. doi: 10.1177/0004867418814943. Retreived from: **https://journals.sagepub.com/doi/full/10.1177/0004867418814943**.

96. Statistics Canada. Low birth weight babies, by province and territory. Ottawa, ON: Government of Canada; 2019 Nov. Available from: **https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310040401**.

97. Canadian Institute of Child Health. The health of Canada's children and youth: rates of low birth weight babies, implications; 2019 Nov. Available from: **https://cichprofile.ca/module/8/section/7/page/rate-of-low-birth-weight-babies-canada-and-the-provincesterritories-20102012/**.

98. Early childhood investments substantially boost adult health. Campbell F, Conti G, Heckman JJ, Moon SH, Pinto R, Pungello E, Pan Y. Science. 2014 Mar 28;343(6178):1478-85. doi: 10.1126/science.1248429. Available from: **https://www.ncbi.nlm.nih.gov/pubmed/24675955**.