

EDI BC

2016 PROVINCIAL REPORT



HUMAN
EARLY LEARNING
PARTNERSHIP



EDI BC : 2016 PROVINCIAL REPORT

DEDICATION

This report is dedicated to Dr. Clyde Hertzman. He was a colleague, a mentor and a friend to so many and left us far too early. Everything you see in this report is a product of his vision to create the world's best system of child development statistics that would stimulate and act as a foundation for, action. He was passionate about using data to shine a light on issues as a way to guide collaborative action toward improved child development outcomes. As he was fond of saying, "it does not have to be this way".

LETTER TO THE READER

This report highlights important child development data and trends across BC. These data provide an opportunity to start new and deepen existing conversations at every level. They form a common place to start as we work together to improve child outcomes across the province.

In some cases, you will see that the trends outlined in this report are of concern, particularly in the areas of emotional maturity and social competence. These are topics around which communities and organizations can come together to engage in inquiry, generative conversations and collaborative action. Additionally, EDI data show that there are positive things occurring across the province from which lessons can be drawn. In both cases, it is clear that the data provide us with the impetus, whatever our role, toward a shared commitment of identifying and creating the conditions that foster and promote child well-being.

For more than a decade, there has been tremendous energy and commitment, across all sectors in BC, dedicated toward improving child outcomes. Although at times it may feel as if the efforts have not been successful, it is important to note that from a systems perspective, there is often a lag between focused attention to a problem and positive results. At HELP, we have a great deal of optimism about the future as we look at the number and range of more systemic approaches to improving child well-being unfolding across the province. We respect and value all those with whom we have worked collaboratively over the past years, and we look forward to being a part of this on-going work.

Sincerely, Dr. Kimberly Schonert-Reichl, Director and Pippa Rowcliffe, Deputy Director

ACKNOWLEDGEMENT

The Human Early Learning Partnership (HELP) 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 supported the development of a unique child development monitoring system that provides a foundation for high quality, evidence-informed decisions on behalf of children and their families.

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“There can be no keener revelation of a society’s soul than the way in which it treats its children.” - Nelson Mandela

“The quality of early childhood affects the quality of the future population and the prosperity of the society in which these children are raised.” - Dr. Fraser Mustard



INTRODUCTION TO THE 2016 REPORT

The Human Early Learning Partnership (HELP) uses the Early Development Instrument (EDI) to measure the developmental health of kindergarten children in the province. EDI data are used to report childhood vulnerability rates, which reflect how children’s experiences and environments in the first five years of their lives have affected their development as a whole. Children’s development is impacted by the broad policy environment, socio-economic conditions, family and neighbourhood characteristics, play and peers, language and literacy, early learning and care, and their overall health.

Wave 6 of EDI data collection is complete. This report provides an update on child development in British Columbia from Wave 2 (2004-2007) to Wave 6 (2013-2016). With five waves of EDI data, it is possible to identify and highlight important trends that are critical to guiding policy and program decisions.

This year is HELP’s first opportunity to report subscale information for the EDI in BC. Subscale data provide insight into some of the deeper child development issues in the province. At the same time, it is important to remember that singular solutions that address one subscale (a particular area of development) or another will not be effective. Each subscale needs to be seen in the context of the whole child and the interconnectedness of all areas of development.

Finally, the report highlights important and pressing differences in child development between neighbourhoods and school districts. These differences are an entry point into important conversations about the causes of differential child development patterns and how to improve child outcomes in every neighbourhood across BC.

EDI DATA ARE INTEGRAL TO THE STORY OF EARLY CHILD DEVELOPMENT IN BC. THEY CONTRIBUTE IMPORTANT EVIDENCE FOR GUIDING INFORMED RESPONSES AND INVESTMENTS IN CHILDREN AND FAMILIES AND FURTHER AN UNDERSTANDING OF THE EFFECTIVENESS OF THESE RESPONSES.

THE HUMAN EARLY LEARNING PARTNERSHIP (HELP)

The Human Early Learning Partnership (HELP) is a 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.

Clyde pioneered a human development research program that focused on exploring children's early development using a cell-to-society, ecological approach. He envisioned a unique monitoring system that follows populations of children across their early years, a system that would provide a foundation for evidence-based decision-making. Over fifteen years later, HELP is closer than ever to realizing this goal.



VISION

All children thriving in healthy societies.

MISSION

We are dedicated to improving the health and well-being of children through interdisciplinary research and mobilizing knowledge.

CORE STRATEGIC PRIORITIES

HELP is committed to being a healthy, learning organization and has three strategic priorities:

1. Lead a comprehensive interdisciplinary Human Development Program of Research;
2. Expand our population level child development monitoring system; and,
3. Build comprehensive and integrated knowledge mobilization approaches.

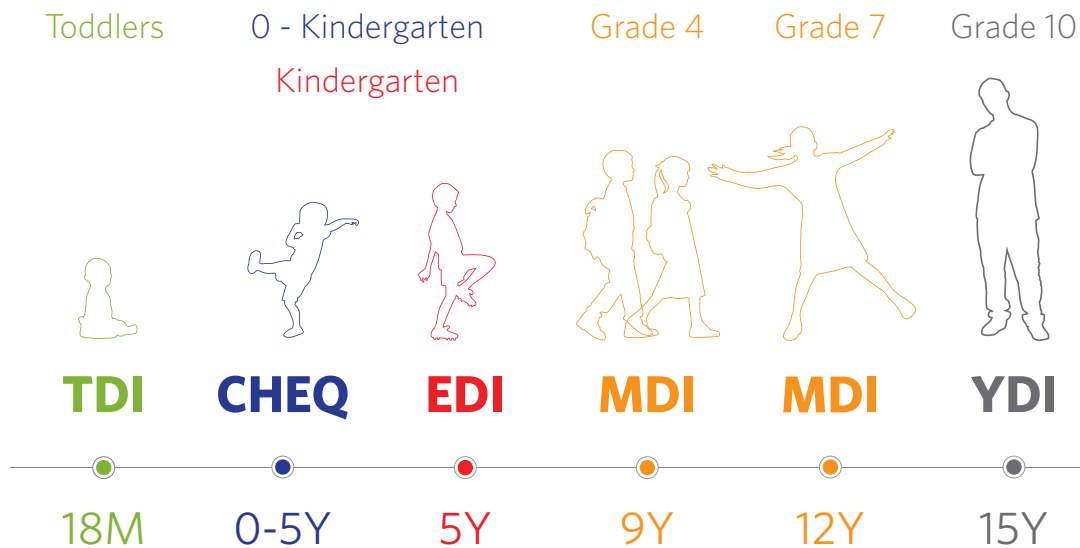


At the centre of our new strategy is the priority of contributing to the establishment of a comprehensive child development monitoring system in BC. A central component of this system is the Early Development Instrument (EDI) - a questionnaire that has been used across BC and Canada since 2001 to gather data about children's developmental characteristics at age five and how ready they are to start school (Janus and Reid-Westoby, 2016). EDI data provide essential insights into how the health and well-being of our children is changing over time so that evidence-based decision making can improve investment in children (Davies et al, 2016; Raos and Janus, 2011).

HELP is also developing additional population health tools as part of a comprehensive, child development monitoring system described in Figure 1.

This system as a whole is essential in understanding children's developmental outcomes and acts as a support to governments, institutions and communities as they base decisions on evidence. It also reflects our understanding of how both risk and resiliency influence development at every stage across the early life course.

Figure 1. HELP's child development monitoring system



Toddler Development Instrument (TDI)

Completed by parents of 18-month-old toddlers, the TDI questionnaire will gather data about toddlers' early experiences, access to resources and social support in the home and in the community. 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 partnership with BC Health Authorities in several communities in BC.

Childhood Experiences Questionnaire (CHEQ)

Completed by parents during the kindergarten registration process, the CHEQ questionnaire gathers data about children's experiences in the home and in the community before they enter school, from ages 0-5. The CHEQ is completed for children in the same school year as their teachers complete the EDI (six months later). As a companion document to the EDI, the CHEQ helps broaden and enrich our understanding of children's development. It can support the early years' service sector, bridging this sector with the health and education systems. An electronic version has been piloted in two BC school districts and a roll-out to additional communities is planned for 2017.

Middle Years Development Instrument (MDI)

Completed by children in Grades 4 and 7, the MDI questionnaire gathers data about children's social and emotional well-being, social relationships, time use and general health. Linkable data includes MDI Grade 4 to 7 data, EDI data and Ministry of Education's Foundational Skills Assessments (also completed in Grades 4 and 7). Since 2009 the MDI has been administered in almost 30 BC school districts and is also being used nationally and internationally.

Youth Development Instrument (YDI)

This survey is in the early planning stages. The goal is to develop a population-level questionnaire, completed by Grade 10 students, that explores the perspectives, environments and experiences of BC's youth.

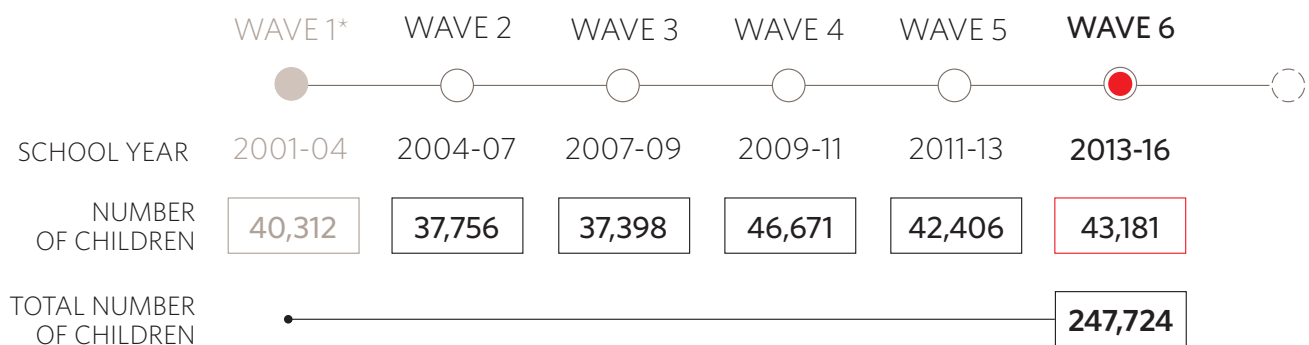
Linking EDI Data

Our understanding of child development can be improved by linking EDI data to additional, administrative population-level data, including data from education and health sectors.

AN INTRODUCTION TO THE EARLY DEVELOPMENT INSTRUMENT

The EDI is a questionnaire used province-wide to measure patterns and trends in children’s developmental health. HELP has been collecting EDI data since 2001 and over this period has collected data for over 245,000 kindergarten children in BC. This has created an important foundation for a population health monitoring system that supports an increased understanding of children’s early developmental outcomes over time and across geographies.

EDI COLLECTION HISTORY



Please note: A ‘Wave’ is a 2-3 year data collection period, based on the annual school calendar (September - June). 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.

The EDI was developed by Drs. Dan Offord and Magdalena Janus at the Offord Centre for Child Studies at McMaster University (Janus et al, 2007) and has been used in provinces and territories across Canada, and internationally, to better understand the developmental trends of kindergarten children (Guhn et al, 2016; Janus et al, 2016). Increasingly, Canadian EDI data are providing a basis for assessing developmental differences and trends in different parts of the country (Canadian Institute for Health Information, 2016).

The EDI was designed as an epidemiological tool to assess population trends and not as an individual diagnostic tool. The questionnaire includes 104 questions arranged in five scales that measure core areas of child development. These areas are strong predictors of health, education and social outcomes in adolescence and adulthood. Kindergarten teachers complete EDI questionnaires for students in their classroom in February of the school year once they have known their children for a while. Teachers participate in a standardized EDI training session prior to completing the questionnaire.

The five scales of the EDI are:



PHYSICAL HEALTH & WELL-BEING

Assesses 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

Assesses 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

Assesses 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 help clean up a mess?*



LANGUAGE & COGNITIVE DEVELOPMENT

Assesses 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

Assesses 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?*

HOW DOES THE EDI MEASURE CHILDHOOD VULNERABILITY?

Data gathered from the EDI are used to report on childhood vulnerability rates. The data illustrate trends in vulnerability over time. Through data analysis and mapping, it also becomes possible to examine regional differences in child vulnerability at multiple geographical levels from a broad provincial snapshot, to community and neighbourhood analyses.

Vulnerable children are those who, without additional support and care, are more likely to experience challenges in their school years and beyond. Vulnerability is assessed for each of the five EDI scales. Children whose scores fall below the vulnerability cut-off on a particular EDI scale are said to be vulnerable in that area of development.

REPORTING ON EDI VULNERABILITY

Vulnerability on the Five EDI Scales

The proportion of children vulnerable on each of the five scales of the EDI, measured and 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.



For more information about vulnerability on the EDI and how it is calculated please see our Fact Sheet: earlylearning.ubc.ca/documents/68



EARLY DEVELOPMENT AS A FACTOR IN INDIVIDUAL AND SOCIETAL HEALTH

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

First, children's early experiences, including those before birth, can have lasting effects on their lifelong mental and physical health (Park and Kobor, 2016). The advances in the science of human development suggest that children's earliest experiences 'get under the skin' and can influence their gene expression (Hertzman and Boyce, 2010). This process, called biological embedding, explains how children's early experiences influence health and behavior across their lifespan (Wiens and Hertzman, 1996). This reinforces the importance of focusing on the quality of our children's environments and experiences in their earliest years – there are substantial social and economic justifications for doing so (Braveman et al, 2014; Conti and Heckman, 2014).

Second, the quality of the multiple environments where children live, learn and play is critical for their health and well-being. Nurturing 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. Young children also need to spend their time in socially responsive, language-rich environments that are supported by caring adults. Young children need 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 communities that are responsive to children and their families. Children's healthy development is also affected by larger social and economic conditions that increase risk or encourage resilience by providing critical support to children and their families. Research shows that to improve outcomes for children in BC, a focus on supporting families by improving their access to resources is necessary (Human Early Learning Partnership, 2012).



Third, there are many risk factors that exist in children's lives that can negatively impact healthy development. Despite the presence of numerous risk factors, many children are still able to develop in healthy ways. Emerging research shows 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 resilience (Zolkoski and Bullock, 2012), and that these factors do not operate in isolation but instead interact with one another to help children and adolescents avoid negative consequences (Center on the Developing Child, 2016). The key to prevention and intervention efforts lies in the identification of the factors that lead to success, rather than a narrow focus on the factors that only prevent risk. Focusing on resilience and positive development broadens our reach to all children and youth, instead of only those children experiencing risk factors (Schonert-Reichl, 2000; Schonert-Reichl and LeRose, 2008)

Fourth, EDI data show that avoidable inequalities in children's 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." (Marmot, 2010). The link between social and economic factors - poverty, social exclusion, discrimination - and healthy development is clear from decades of research (Marmot, 2010; Brookings Institution, 2015). HELP, in particular, has focused on promoting the importance of early development as a major social determinant of lifelong health and well-being (Siddiqi, Irwin and Hertzman, 2007).

"Health inequities refer to those systematic inequalities in health between social groups that are judged to be avoidable by reasonable means. Addressing inequities is a matter of social justice."

-Marmot, 2015

2016 PROVINCIAL EDI RESULTS

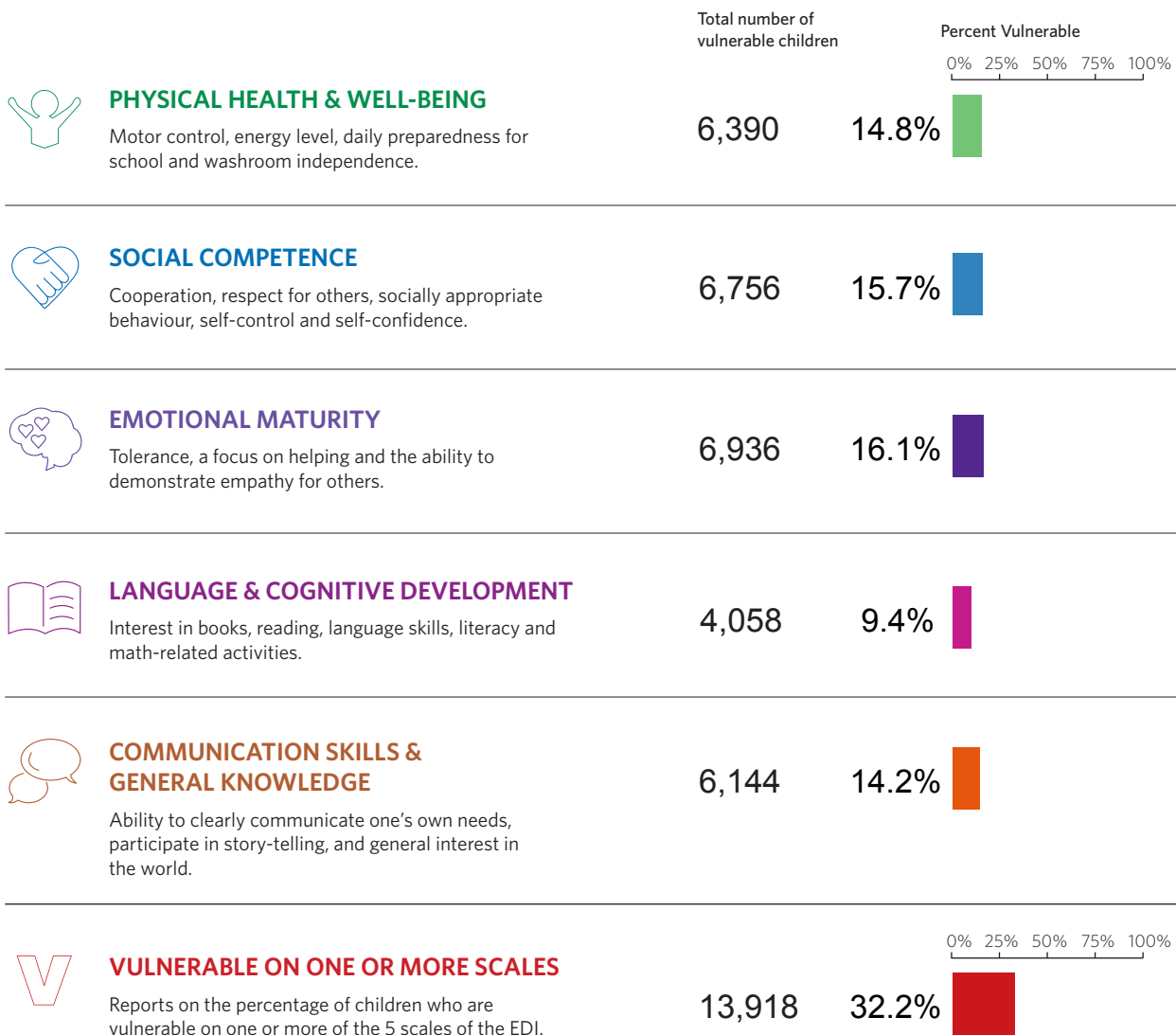
1 IN 3 CHILDREN VULNERABLE IN BC

The current provincial vulnerability rate (Wave 6) for children Vulnerable on One or More Scales of the EDI is 32.2%. **This means about 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.** This is a meaningful increase (i.e. worthy of attention) from the Wave 2 rate of 29.9% and a small shift from Wave 5 rate of 32.5%. **Child vulnerability in the province has meaningfully increased over the last decade.** This level of vulnerability has significant social and economic cost, not simply as children start school but throughout their lives.

PROVINCIAL WAVE 6 DATA

Further insights into child development emerge when examining vulnerability rates for each of the five EDI scales, especially longer-term trends, from Wave 2 to Wave 6. These data provide more insight into which areas of development, in particular, are of concern.

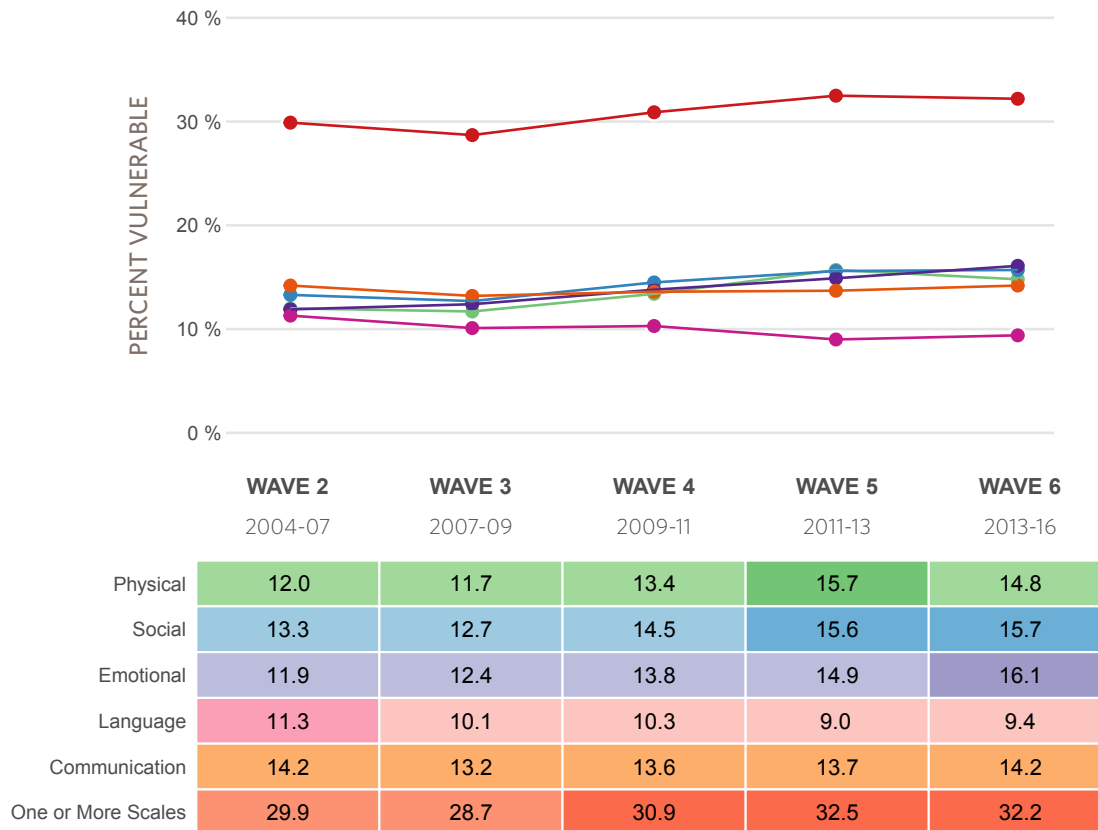
Figure 2. Wave 6 Provincial EDI vulnerability rates for the five scales



PROVINCIAL TRENDS

An examination of change over time can be applied in two ways. First, the report examines changes from Wave 2 to Wave 6, to assess whether there has been a change over the past 10 years. Second, the report looks at changes from Wave 5 to Wave 6, to assess whether there has been a recent change.

Figure 3. Provincial EDI trends for all five scales and Vulnerable on One or More Scales: Wave 2 (2004-2007) to Wave 6 (2013-2016)



Meaningful Change

A meaningful change is one that HELP considers worthwhile paying attention to. According to HELP's protocol for identifying 'Meaningful Change' across waves, the minimum difference required at a scale level for a change to be meaningful is 2 percentage points for larger populations of children (such as school districts, health authorities and the province as a whole). Therefore, for this provincial report, change over time in vulnerability for any of the scales must be 2% or higher to be considered meaningful.

EDI SCALE TRENDS



PHYSICAL HEALTH & WELL-BEING

The vulnerability rate for Physical Health and Well-Being was significantly higher in Wave 6 (14.8%) than in Wave 2 (12.0%). More recently, there was a small decrease in vulnerability related to children's physical health and well-being from Wave 5 (15.7%) to Wave 6 (14.8%) - this change cannot be considered meaningful.

Profile: Children with vulnerability on the Physical Health and Well-being scale experience a number of challenges that affect their ability to physically cope during the day. This may include being dressed inappropriately, frequently late, hungry or tired. Children may have fading energy levels. These children may also experience challenges in tasks that require developed fine and gross motor skills.



SOCIAL COMPETENCE

The vulnerability rate on the Social Competence scale increased significantly from Wave 2 (13.3%) to Wave 6 (15.7%). Wave 5 and 6 vulnerability rates were essentially the same.

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



EMOTIONAL MATURITY

There has been a significant and steady increase in the vulnerability rate for Emotional Maturity, from 11.9% in Wave 2 to 16.1% in Wave 6. The increase in vulnerability on this scale is the largest among all the EDI scales (4.2%). There's also been a small 1.2% increase between Wave 5 (14.9%) and Wave 6.

Profile: Children who are emotionally vulnerable experience a number of challenges related to emotion regulation. They are likely to have problems managing aggressive behavior and might be prone to disobedience, or be inattentive and impulsive. Often these children will not naturally help their peers or adults.



The Emotional Maturity and Social Competence scales are associated. Wave 6 data show that in the province, 7.7% of children were vulnerable on two EDI scales, and of these, 50% were vulnerable on the Emotional Maturity and Social Competence scales combined.

The developmental aspects assessed on the Emotional Maturity scale of the EDI – anxious, aggressive, hyperactive behaviours – represent indicators of children's mental health. The observed EDI trends reflect the emerging issues in child and youth mental health in BC, and Canada more broadly where there is a demonstrated increase in diagnosed mental health disorders in young children (PHAC, 2015). Up to 70 percent of young adults living with mental health problems report that the symptoms started in childhood (PHAC, 2006).

In the past, social emotional well-being has received less attention and less investment than other areas of children's early development, such as early language development and literacy and numeracy skills. 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. Early social and emotional health has been shown to protect against adult mental health disorders, poor sexual health outcomes and adolescent involvement in the justice system (Center for the Study of Social Policy, 2012). Creating the environments and experiences where children can learn and strengthen their social and emotional competencies is therefore an essential task for our society.

EDI SCALE TRENDS



LANGUAGE & COGNITIVE DEVELOPMENT

Language and Cognitive Development is the only scale with a declining vulnerability rate. From Wave 2 to Wave 6, the vulnerability rate decreased from 11.3% to 9.4%, almost meeting the 2% criterion. It is instructive to explore the story behind this trend – that is, to understand which initiatives in our society may have led to this improving trend – and to attempt to replicate this success story in the other areas of children’s development.

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



COMMUNICATION SKILLS & GENERAL KNOWLEDGE

The Communication Skills & General Knowledge vulnerability rate in Wave 6 (14.2%) remains unchanged from Wave 2, and the trend over time for Communication Skills & General Knowledge vulnerability has been the only one among the 5 EDI scales that has remained relatively stable.

Profile: Vulnerable children will 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.

SUMMARY

A review of EDI scale-level data suggests that increasing long-term trends in vulnerability on the Physical Health and Well-Being, Social Competence, and Emotional Maturity scales present a significant challenge in this province. This is especially true of vulnerability related to children’s emotional maturity where there has been a steady and significant increase. Understanding which societal factors have been contributing to this trend is essential to creating environments that allow children to thrive socially and emotionally. Unpacking the subscales associated with each scale (see below) is a valuable approach to interpreting long-term trends observed between Wave 2 and Wave 6 on the EDI scales, and more recent changes, from Wave 5 to Wave 6.



The EDI vulnerability profiles in this report are drawn from profiles developed by the Australian Early Development Census (AEDC, 2015). More information can be found at aedc.gov.au.

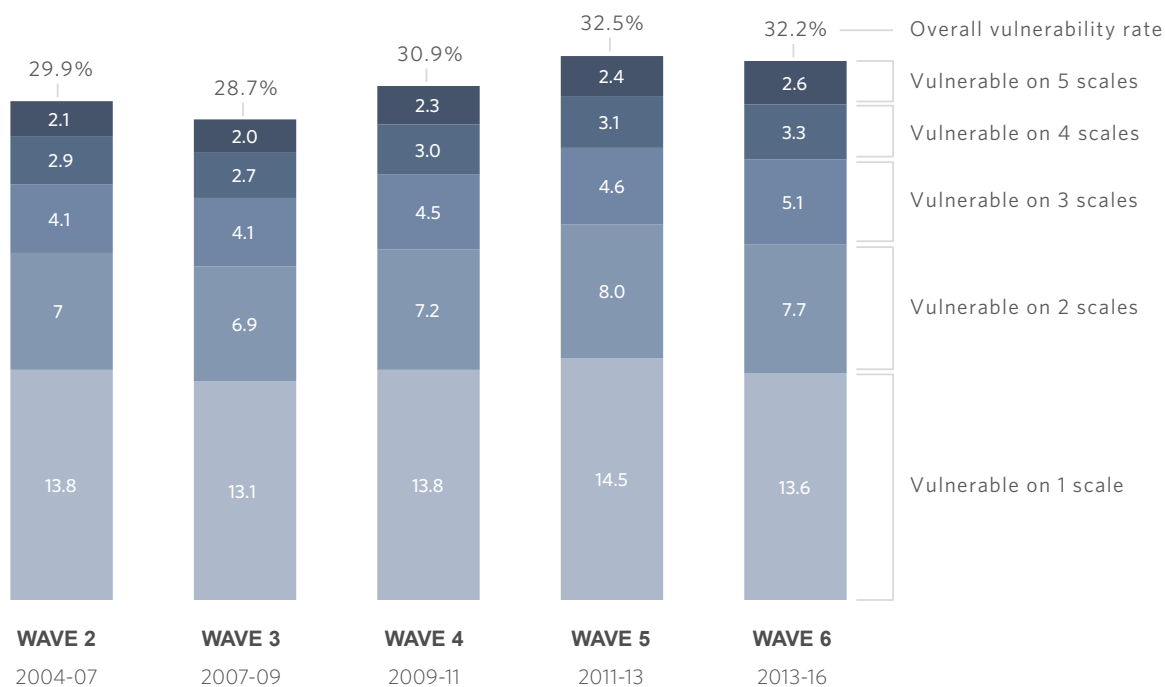
VULNERABILITY IS BECOMING MORE COMPLEX

THE COMPLEXITY OF VULNERABILITY PATTERNS IS ALSO INCREASING

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 vulnerable children experience challenges in a single area of development, some demonstrate multiple vulnerabilities, on two, three, four or all five scales of the EDI. Assessing the proportion of children experiencing multiple vulnerabilities, especially over time, provides an in-depth perspective on the scope of vulnerability in the province.

EDI data show that from Wave 2 to Wave 6, based on the proportion of children with at least one vulnerability, there has been a small and consistent increase in the number of children with multiple vulnerabilities, or experiencing vulnerability on multiple scales. The proportion of children experiencing 2 vulnerabilities went from 7% to almost 8%; children with 3 vulnerabilities went from 4.1% to 5.1%; and children with 4 or 5 vulnerabilities went from 5% to close to 6%. Combined, the proportion of children experiencing vulnerability on 2 or more scales increased from 16.1% to 18.7%. Based on our critical difference methodology, this increase of 2.6% represents a meaningful increase over time.

Figure 4. Distribution of vulnerability across 1-5 scales for children vulnerable on the EDI



Please note: Due to rounding, percentages may not add up to the overall vulnerability rate.

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 several areas of their lives.



EXPLORING BELOW THE SURFACE: EDI SUBSCALES

This year HELP is expanding analysis of EDI data to examine 15 EDI subscales and their contributions to vulnerability rates on each of the EDI scales. By providing increasingly specific information on 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. Subscales, just as with EDI scales, are interdependent.

Each of the EDI scales is made up of three or four subscales (except for the Communication Skills scale, which is both a scale and subscale). Subscale data can provide an in-depth look at more specific areas of child development. See Figure 5 for a detailed overview of the relationship between EDI scales, subscales and items.

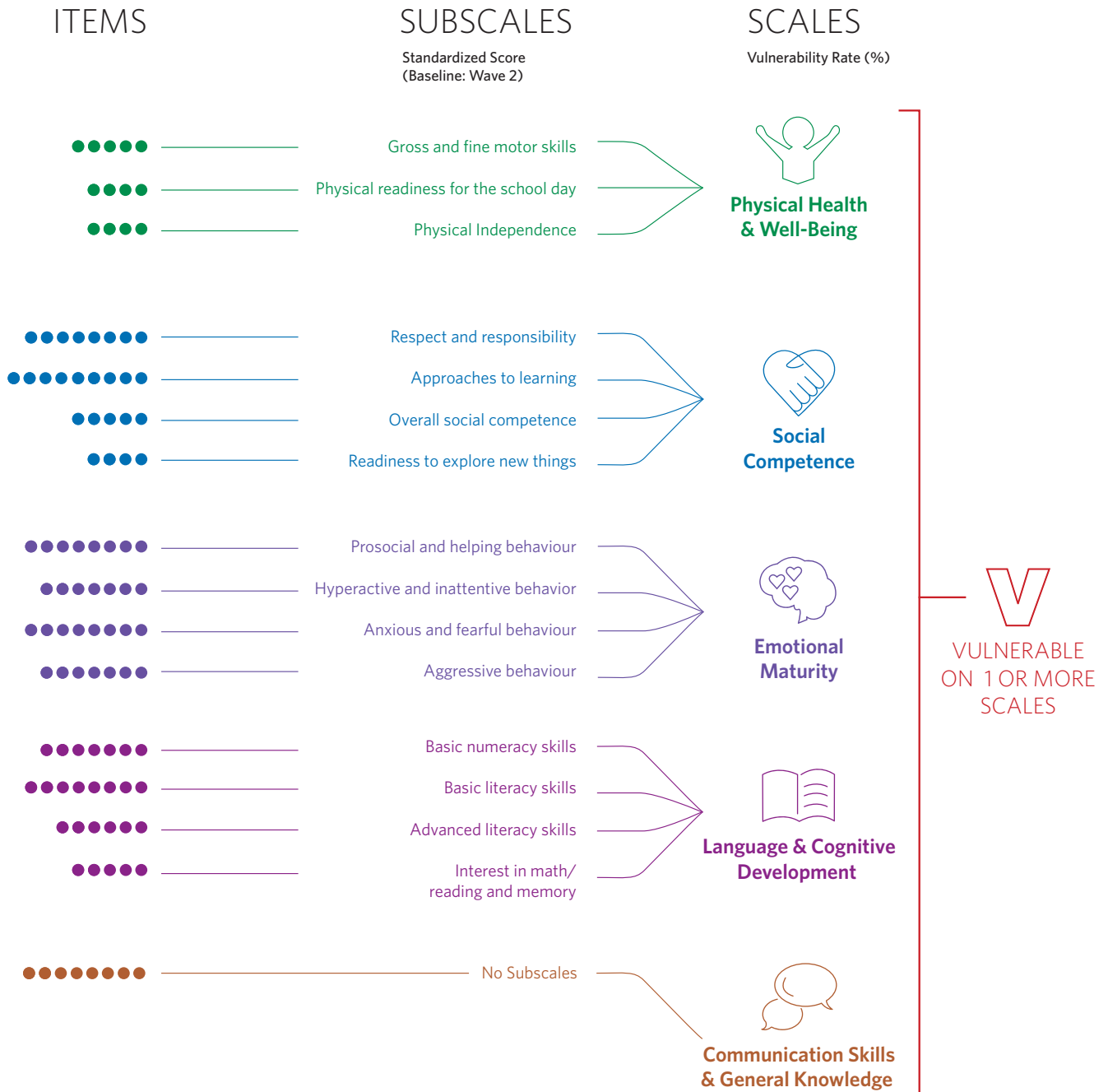
Individual subscales DO NOT measure vulnerability. Using Wave 2 as a benchmark, the subscale trend lines (calculated using standardized scores) show whether children are doing better or worse over time compared to children across the province for Wave 2. Subscale data provide insight into the specific areas of development, as well as how each subscale contributes to the overall pattern of vulnerability on each scale.

Important note for interpreting change over time for subscales:

- An upward subscale trend line suggests there is a negative influence on the overall scale, contributing to an increase in the vulnerability rate.
- A downward subscale trend line suggests there is a positive influence on the overall scale, potentially contributing to a decrease in the vulnerability rate.
- This adaptation has been applied so that subscale trends are in the same direction as trends in vulnerability for the scales.

Learn more by visiting HELP’s Critical Difference resource. earlylearning.ubc.ca/supporting-research/critical-difference/
In the sections that follow, subscale trends for each of the EDI scales are presented.

Figure 5. Relationship between EDI scales and subscales



5 SCALES OF THE EDI



Physical Health & Well-Being



Social Competence



Emotional Maturity



Language & Cognitive

SUBSCALES & ITEMS

Physical readiness for the school day

- over or underdressed for school
- too tired/sick
- late
- hungry

Physical Independence

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

Gross and fine motor skills

- level of energy during school day
- holds small objects like pens
- manipulates objects
- climbs stairs
- overall physical development

Overall Social Competence

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

Respect and 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

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 a new book

Prosocial and 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

Hyperactive and Inattentive Behaviour

- is restless
- is distractible
- fidgets
- is impulsive
- has difficulty taking turns
- has difficulty settling down
- is inattentive

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 and 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

Basic Literacy Skills

- 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

Interest in Math/Reading and Memory

- interested in books
- interested in reading
- remembers things easily
- interested in mathematics
- interested in number games

Advanced Literacy Skills

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

Basic Numeracy Skills

- 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



PHYSICAL HEALTH & WELL-BEING SUBSCALES

The three subscales of the Physical Health and Well-Being measure quite different aspects of children's physical health and show quite different trends.

The Physical Independence subscale reflects most closely the vulnerability pattern for the overall scale and the trend shows a negative influence on the vulnerability rate from Wave 2 to Wave 6.

The trend for the Physical Readiness subscale from Wave 2 to Wave 6 also shows a negative influence on the vulnerability rate for the scale overall, but interestingly shows a meaningful improvement in the most recent wave.

The third subscale, Gross and Fine Motor Skills, shows no linear long-term trend, though it is the only subscale where scores did not get worse over time.

SUBSCALES & ITEMS

PHYSICAL READINESS FOR THE SCHOOL DAY

- over or underdressed for school
- too tired/sick
- late
- hungry

PHYSICAL INDEPENDENCE

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

GROSS AND FINE MOTOR SKILLS

- level of energy during school day
- holds small objects like pens
- manipulates objects
- climbs stairs
- overall physical development

INTERPRETATION

Provincially, the social and economic influences on families with children are showing up in EDI vulnerability rates. Physical Readiness (whether they 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. At the same time, there has been a strong interest in and commitment to physical activity programming in many communities, which may be reflected in the relatively positive picture for the Gross and Fine Motor subscale.



PHYSICAL HEALTH & WELL-BEING SUBSCALES

Figure 6. Provincial vulnerability rates on Physical Health and Well-Being: Wave 2 (2004-2007) to Wave 6 (2013-2016)

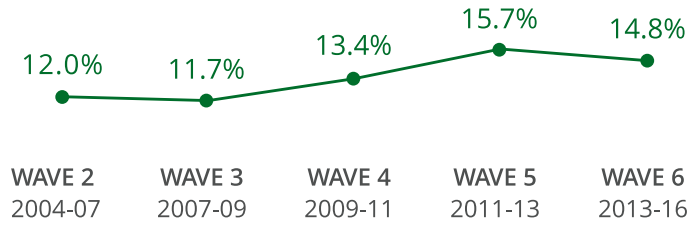
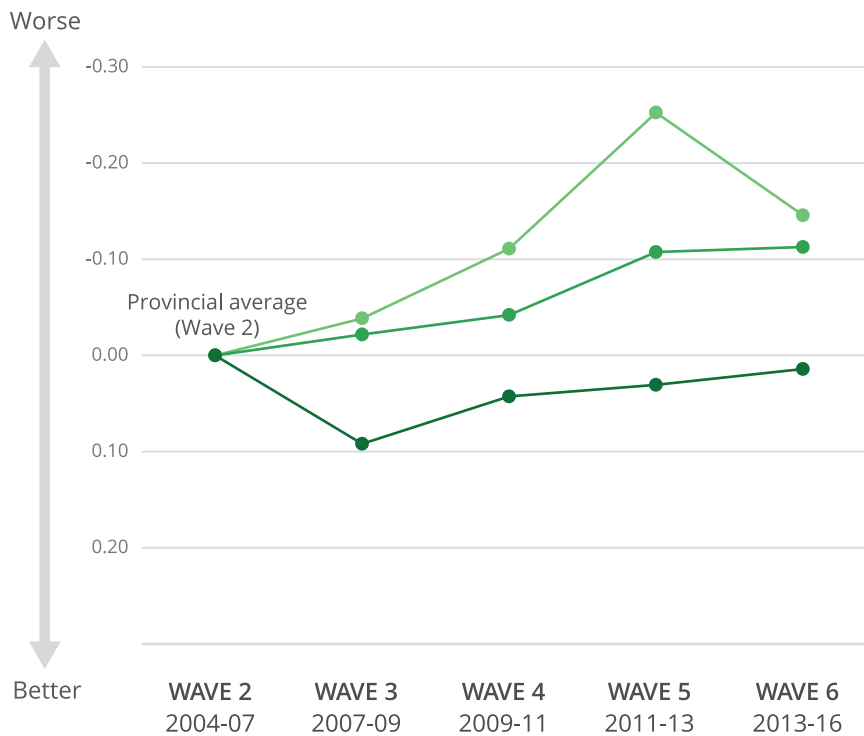


Figure 7. Provincial subscale scores on Physical Health and Well-Being: Wave 2 (2004-2007) to Wave 6 (2013-2016)

- Physical readiness for the school day
- Physical independence
- Gross and fine motor skills





SOCIAL COMPETENCE SUBSCALES

Three of the four subscales in the Social Competence scale (Respect and Responsibility, Overall Social Competence, and Approaches to Learning) mirror the overall trend of worsening vulnerability rates from Wave 2 to Wave 6. Given these changes appear to reflect a long-term trend, understanding which factors have contributed to this trend and which initiatives may be effective in reversing it is critical.

One of Social Competence subscales, Readiness to Explore New Things, shows a different pattern that is a relatively stable trend from Wave 2 to Wave 6.

INTERPRETATION

When stress exists in children's lives, this can be expressed in externalizing behaviours that influence a child's ability to interact with both peers and adults. These behaviours are captured on the Social Competence subscales. Stressors can be present in both the home and community, unsurprising given the clear evidence on an increasing squeeze on families with young children (Kershaw and Anderson, 2015). In addition, there is emerging evidence of 'stress contagion' a process by which parent, caregiver and educator stress are transferred to children. These EDI outcomes are likely related to stress contagion (Oberle and Schonert-Reichl, 2015).

There is also increasing evidence that the significant upward trend in technology use is influencing social competence. The topic of technology use is a very broad and complex one. While the interactive use of technology can have positive effects on children's development, particularly in the area of language and cognitive development, passive and solitary use is often sedentary and lacking in social interaction. There is some evidence that it is disrupting toddlers' attachment to caregivers and that children are less able now to self-occupy and play (Swingle, 2016).

SUBSCALES & ITEMS

RESPECT AND 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

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 a new book



SOCIAL COMPETENCE SUBSCALES

Figure 8. Provincial vulnerability rates for Social Competence: Wave 2 (2004-2007) to Wave 6 (2013-2016)

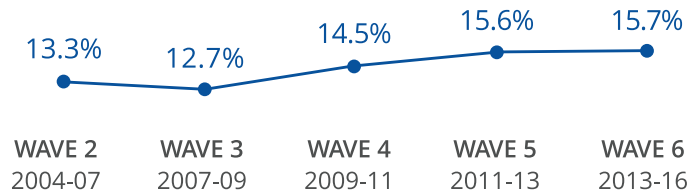
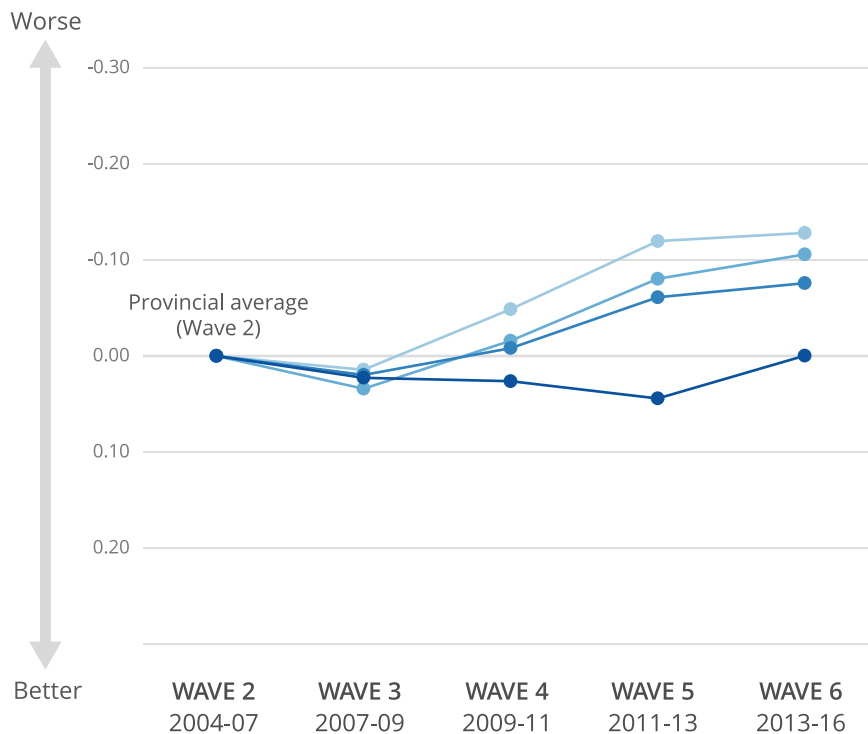


Figure 9. Provincial subscale scores for Social Competence: Wave 2 (2004-2007) to Wave 6 (2013-2016)

- Respect and responsibility
- Overall social competence
- Approaches to learning
- Readiness to explore new things





EMOTIONAL MATURITY SUBSCALES

Similar to the Social Competence subscales, three of the four subscales in the Emotional Maturity scale show worsening trends over time. The negative trends in Aggressive Behaviour and in Anxious and Fearful Behaviour are particularly pronounced, and the trend for Hyperactivity and Inattention can also be considered meaningful. Importantly, the behaviours assessed on these subscales directly correspond to the behaviours that represent the most common childhood mental health disorders – conduct disorders, attention deficit and hyperactivity disorders, and anxiety disorders. Given the personal and societal implications of mental health disorders, this trend may be considered especially worrisome, as it suggests an increasing burden of mental health disorders in the child and youth population.

The only Emotional Maturity subscale that does not show a contribution to increasing vulnerability on the scale overall is Prosocial and Helping Behavior. From Wave 2 to Wave 6 there has been little change in this subscale. HELP's research indicates that scores on the Prosocial and Helping Behavior subscale are difficult to interpret in culturally diverse neighborhood and districts. Further, it remains to be seen to what extent the continuously changing cultural diversity in BC is associated with children's prosocial and helping behavior in settings in which social norms are being newly formed and refined (Guhn, Milbrath and Hertzman, 2016).

INTERPRETATION

The contribution to Emotional Maturity vulnerability from the three subscales suggests that increasingly, children are exhibiting negative, so-called externalizing and internalized behaviours. Previous research has shown that such behaviours are associated with context factors such as poverty, economic pressures, social stressors, and a lack of social connectedness and support. It is therefore important to understand which of these mechanisms may be associated with the worsening trend in children's internalizing and externalizing behaviours in BC (McLeod and Shanahan, 1996; Cohen and Willis, 1985).

SUBSCALES & ITEMS

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 attentive

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



EMOTIONAL MATURITY SUBSCALES

Figure 10. Provincial vulnerability rates for Emotional Maturity: Wave 2 (2004-2007) to Wave 6 (2013-2016)

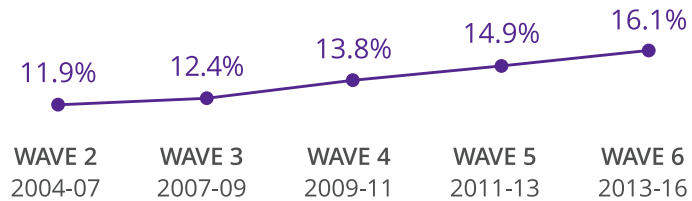
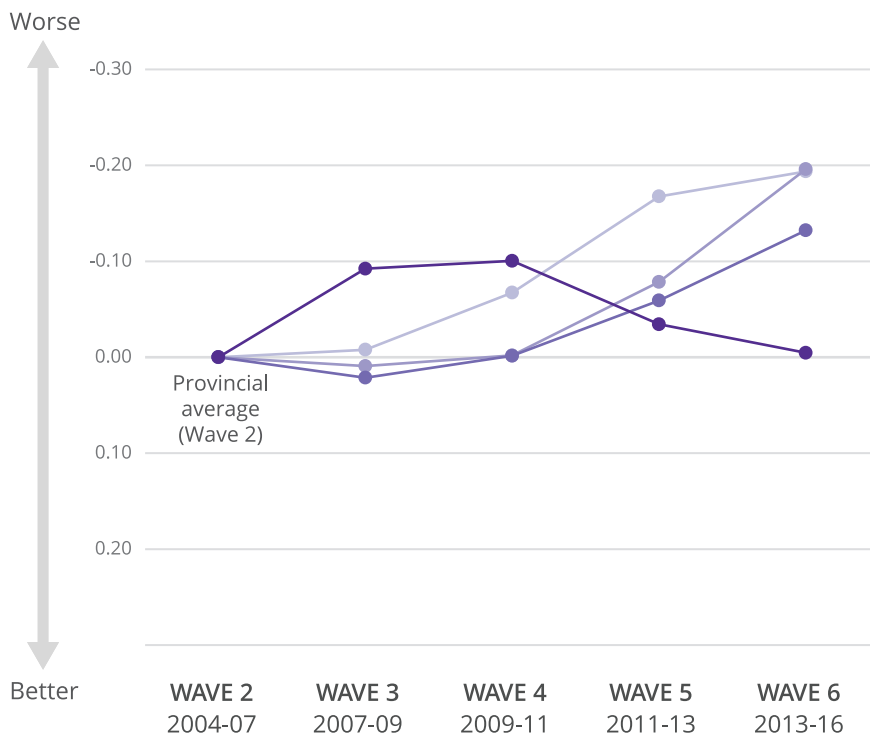


Figure 11. Provincial subscale scores for Emotional Maturity: Wave 2 (2004-2007) to Wave 6 (2013-2016)

- Aggressive behaviour
- Anxious and fearful behaviour
- Hyperactive and inattentive behaviour
- Prosocial and helping behaviour





LANGUAGE & COGNITIVE DEVELOPMENT SUBSCALES

The four subscales of the Language and Cognitive Development scale are all similar to each other and similar to the overall pattern for the scale, illustrating a slow but steady improvement over the 10 years, from Wave 2 to Wave 6.

INTERPRETATION

In general, in BC communities, the area of language and cognitive development is one that has received a great deal of attention through a variety of early literacy and numeracy initiatives and programs. It is an area of development where there are known and proven methods to improve children's outcomes. The subscale trends for this scale suggest that, when society intentionally invests in a developmental area, the result is huge potential to improve outcomes. At the same time, a singular focus on the area of language and cognitive development could be having a more detrimental effect on children's development as they experience higher levels of stress.

SUBSCALES & ITEMS

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 MATH/READING & MEMORY

- interested in books
- interested in reading
- remembers things easily
- interested in mathematics
- interested in number games

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



LANGUAGE & COGNITIVE DEVELOPMENT SUBSCALES

Figure 12. Provincial vulnerability rates for Language and Cognitive Development: Wave 2 (2004-2007) to Wave 6 (2013-2016)

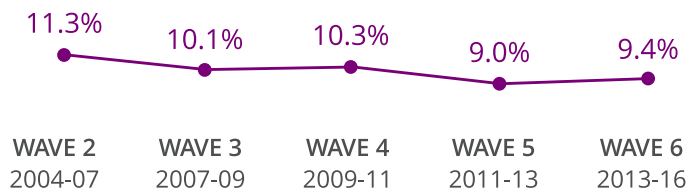
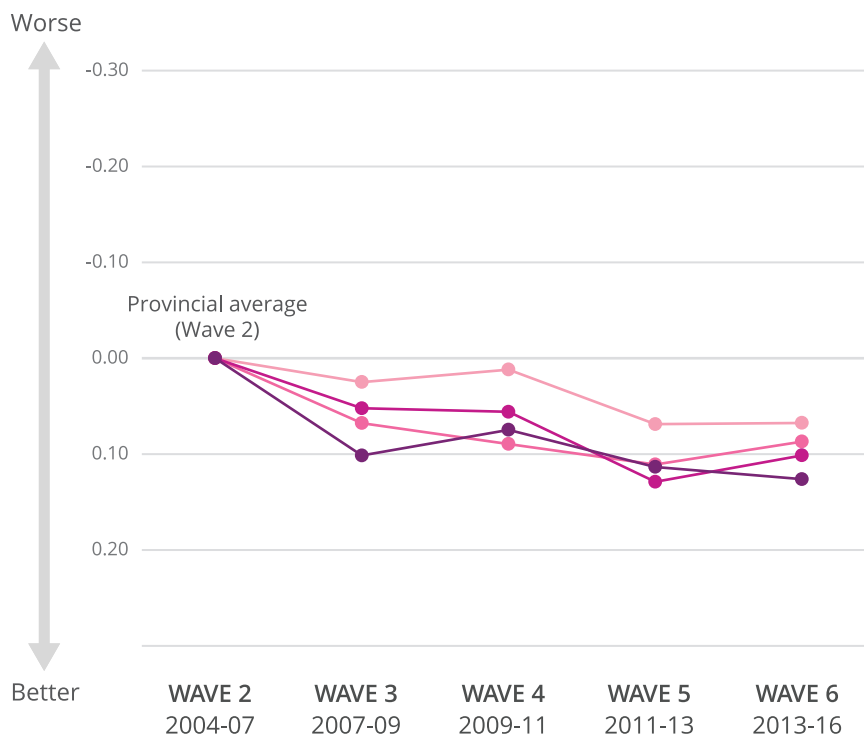


Figure 13. Provincial subscale scores for Language and Cognitive Development: Wave 2 (2004-2007) to Wave 6 (2013-2016)

- Basic numeracy skills
- Interest in math / reading and memory
- Basic literacy skills
- Advanced literacy skills





DEVELOPMENTAL DIFFERENCES ACROSS NEIGHBOURHOODS

There continues to be a significant disparity in vulnerability across neighbourhoods in the province.

VULNERABLE CHILDREN LIVE IN EVERY NEIGHBOURHOOD IN BC

The wide range of neighbourhood vulnerability: EDI data reveal large disparities in vulnerability rates between health authorities, school districts and neighbourhoods. In BC, this is especially pronounced at the neighbourhood-level. EDI data show that while some neighbourhoods are doing very well and sustain low vulnerability rates over time, others have seen high and sustained rates. In Wave 6, the lowest rate of neighbourhood vulnerability was 9% and the highest rate was 60%. This difference in neighbourhood-level outcomes represents a range of 51%.

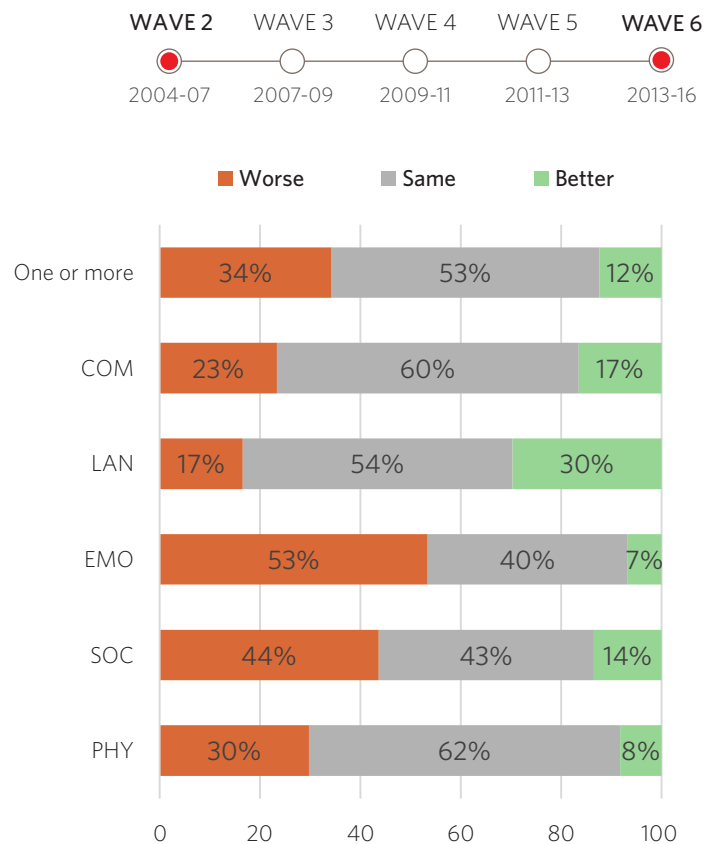
This variation in vulnerability is largely associated with differences in socioeconomic resources and context factors (e.g., poverty, income, wealth, education, employment). However, it also appears to be related to inequities in other areas, for example, social capital or access to support systems (Sampson, Morenoff and Earls, 1999; Raudenbush and Earls, 1997). By conducting community-based research and by linking EDI trend data to other sources of information, such as the Canadian Census and income tax data, HELP is continuing to build our understanding of the ways in which social and economic factors contribute to observed differences in children's developmental health.

HOW NEIGHBOURHOOD VULNERABILITIES ARE CHANGING

From Wave 2 to 6 many of BC's 298 neighbourhoods experienced meaningful changes in vulnerability. On four of the five EDI scales, a larger proportion of neighbourhoods experienced increases in vulnerability, with a smaller proportion seeing decreases (see figure 14 below).

For the **Emotional Maturity** scale, the majority of neighbourhoods experienced change, with 53% of neighbourhoods seeing an increase in vulnerability between Wave 2 and Wave 6. A significant number of neighbourhoods (44%) also saw an increase in **Social Competence** vulnerability from Wave 2 to Wave 6. For both of these scales, the percentage of neighbourhoods experiencing increasing vulnerability was significantly above the provincial rate for vulnerability on one or more scales, at 34%.

Figure 14. Percentage of neighbourhood EDI vulnerability rates that have worsened, stayed the same, or improved: Wave 2 (2004-2007) to Wave 6 (2013-2016)



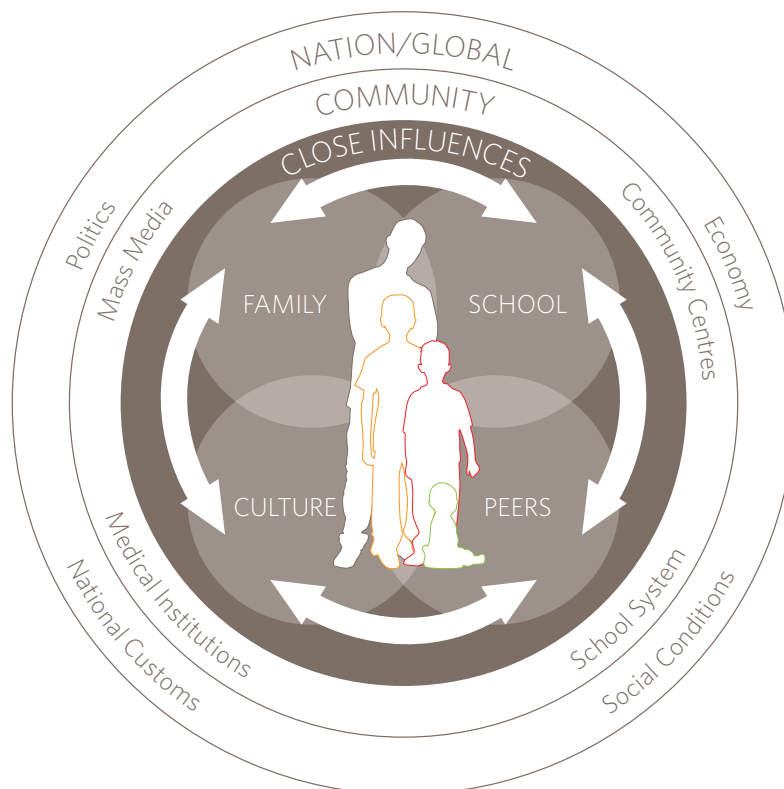
This variation in vulnerability rates demonstrates clear and avoidable inequality in children's developmental outcomes depending on where they live in the province. These differences highlight the continued need for further investigation into their causes and to build on our knowledge to support collective action toward improving developmental outcomes for children.

SUMMARY AND CONCLUSIONS

This report summarizes provincial level EDI trends and insights. In particular it emphasizes that:

1. Child vulnerability in BC remains over 30% and there has been no significant change in the overall rate of vulnerability over the last three years;
2. Provincial vulnerability rate for Physical Health and Well-being has worsened over time from Wave 2 to Wave 6;
3. There is still a worsening trend in vulnerability on the Emotional Maturity and Social Competence scales. This trend can also be observed in the large percentage of neighbourhoods experiencing a worsening vulnerability rate on these scales;
4. Provincially, the vulnerability rate for Language and Cognitive Development has improved since 2007 and it remains the lowest of all the EDI scales;
5. Vulnerability in the province is becoming increasingly complex. The proportion of children who are vulnerable on two or more scales has increased. This is concerning because evidence suggests that children who experience adversity or vulnerabilities in multiple domains are more likely to experience challenges later in life (e.g., fail academic assessments; report symptoms of anxiety and depression) whereas children with assets and protective factors across domains are more likely to experience high social and emotional well-being (Boivin and Hertzman, 2012).
6. Neighbourhoods matter. The variation of vulnerability rates across neighbourhoods is large. This demonstrates that the early experiences of children vary greatly from one neighbourhood to the next and these variations have profound implications for child outcomes.

Figure 15. HELP's Total Environment Assessment Model





As reflected in the scales of the EDI, child development itself is multidimensional – including physical, social, emotional and cognitive domains – and these are interdependent. The world into which children are born and are being raised is also complex and a wide range of social and economic factors influence children’s development. HELP uses a Total Environment Assessment Model (TEAM) (see Figure 15) for Early Childhood (Siddiqi, Irwin and Hertzman, 2007) to assist in understanding the interplay of these factors. This model suggests that development in the early years is the result of complex interactions among multiple domains that affect a child’s development at the individual, familial, community, and larger societal levels. While there is a strong tendency to focus on creating programs to address home, community and service environments, these proximal factors are profoundly affected by distal influences such as provincial and federal social and economic policy factors. A multi-layered and multi-sectoral approach is necessary to improve child development across the province.

Child development is complex. Each child develops in their own way. Although there are important milestones of child development, the sequencing and timing of each child’s development is unique. And so, understanding and making a difference to childhood vulnerability is also complex.

While there is no singular cause of vulnerability and no easy solutions, there are approaches that can make a difference. Communities in some parts of BC have made a substantial difference in their vulnerability rate, bringing it below 10%, by using systematic approaches to serving the needs of children and their families. There have been sustained improvements in the area of language and cognitive development. More comprehensive early years solutions are also emerging through government investment and cross-ministry planning and policy. In the future, to be successful in reducing childhood vulnerability, it will be important to build early years strategies around the following principles:

- Building universal platforms to support child development in the early years, while also ensuring that particular areas of vulnerability and needs are addressed through additional investment – a universally proportionate approach (HELP, 2015);
- Developing systemic solutions that simultaneously address the many factors influencing child development. This will require creative solutions that go beyond our past approaches and that bring government, institutions and communities together; and
- Engagement by government and institutions with families and communities to address cultural, social, economic and institutional barriers to access and to develop policies, programs and services that are culturally appropriate and accessible.

Above all, reducing childhood vulnerability requires leadership across all systems and a commitment to collectively improving the life chances of BC’s children. The support of current and emerging leaders who will be champions for children at all levels and who are prepared to think differently, create innovations and foster a system-wide approach to change is essential.

KEY RESOURCES

The Offord Centre for Child Studies – Early Development Instrument: edi.offordcentre.com

HELP's EDI Resources: earlylearning.ubc.ca

Interactive EDI Maps: earlylearning.ubc.ca/interactive/map

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BRITISH COLUMBIA WAVE 6



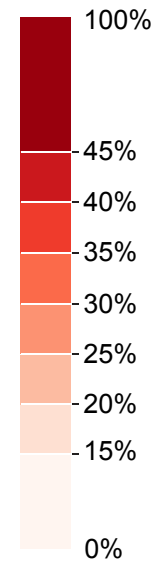
EDI

VULNERABLE ON ONE OR MORE SCALES

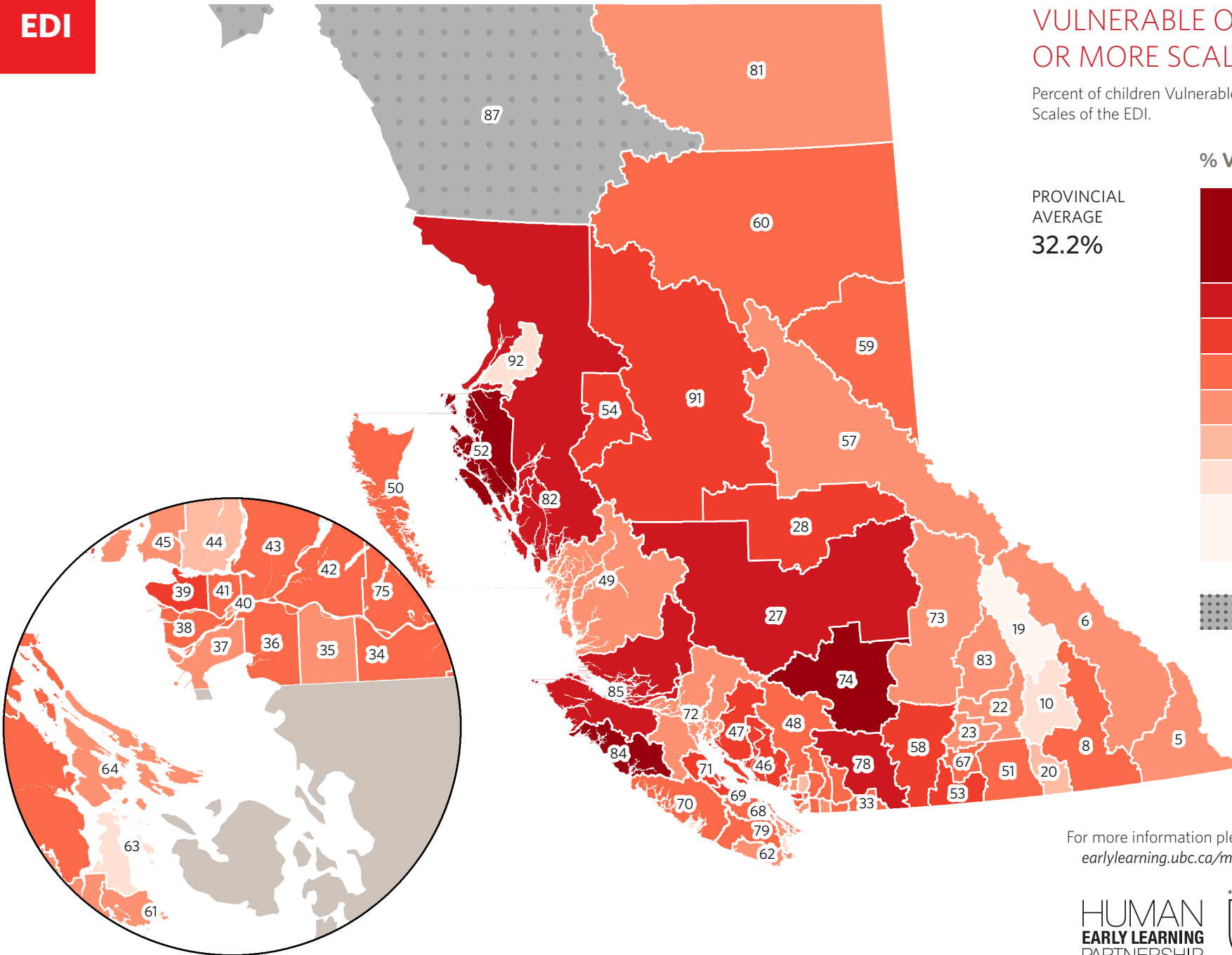
Percent of children Vulnerable on One or More Scales of the EDI.

PROVINCIAL AVERAGE
32.2%

% VULNERABLE



No Data/
Suppressed



For more information please visit:
earlylearning.ubc.ca/maps/edi

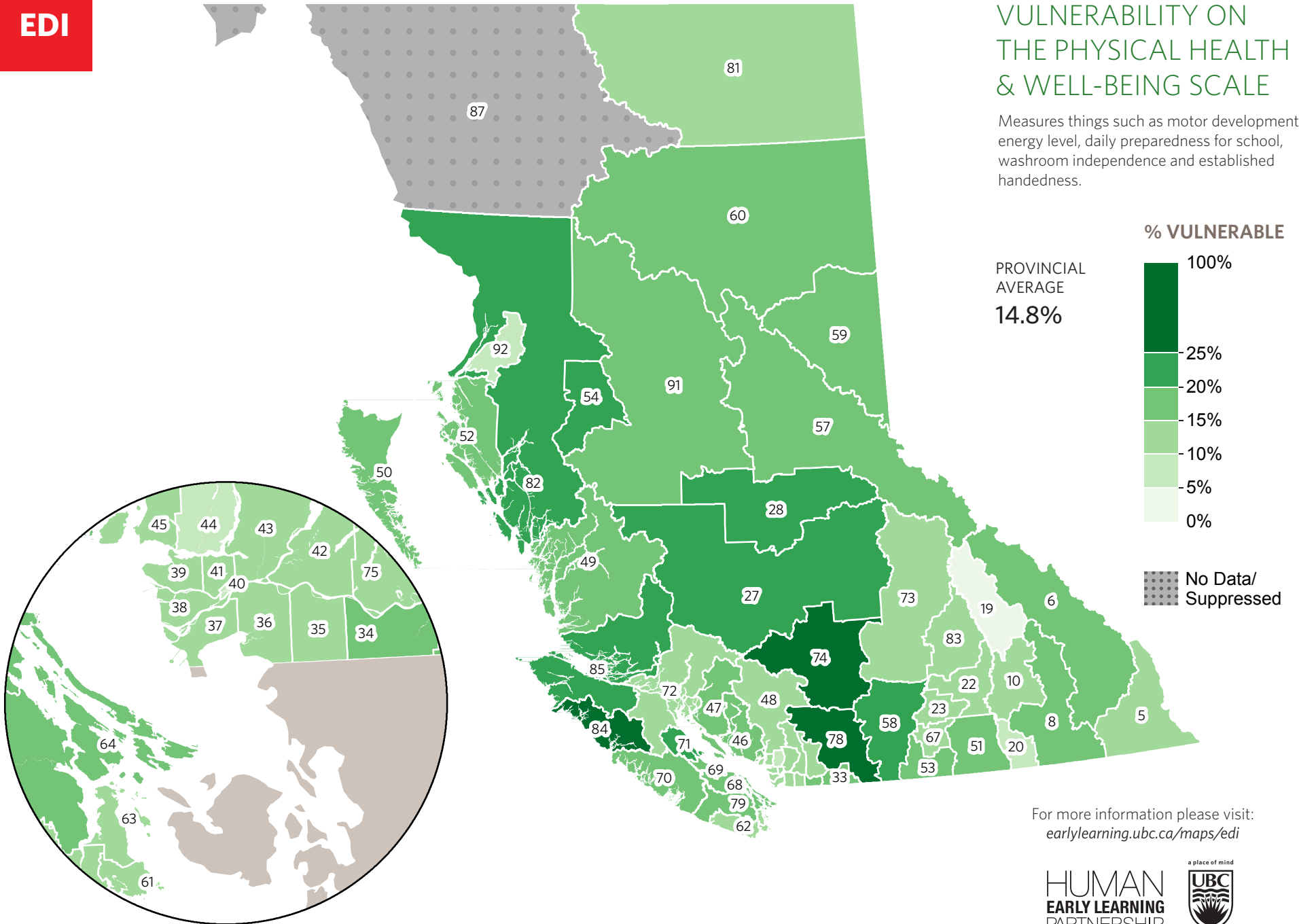
HUMAN
EARLY LEARNING
PARTNERSHIP





VULNERABILITY ON THE PHYSICAL HEALTH & WELL-BEING SCALE

Measures things such as motor development, energy level, daily preparedness for school, washroom independence and established handedness.



For more information please visit:
earlylearning.ubc.ca/maps/edi

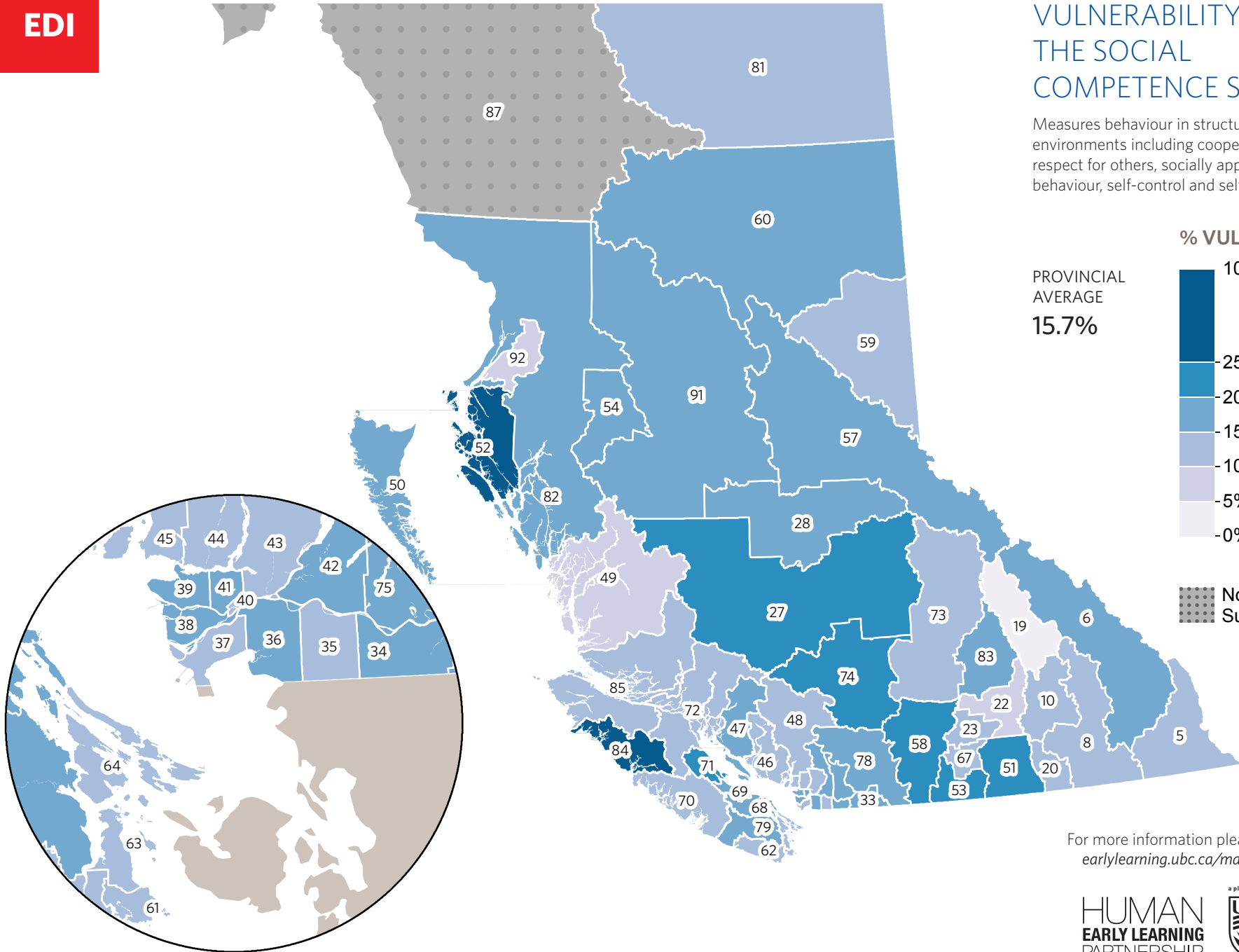
BRITISH COLUMBIA WAVE 6



EDI

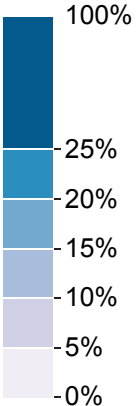
VULNERABILITY ON THE SOCIAL COMPETENCE SCALE

Measures behaviour in structured environments including cooperation and respect for others, socially appropriate behaviour, self-control and self-confidence.



% VULNERABLE

PROVINCIAL AVERAGE
15.7%



No Data/Suppressed

For more information please visit:
earlylearning.ubc.ca/maps/edi

HUMAN
EARLY LEARNING
PARTNERSHIP

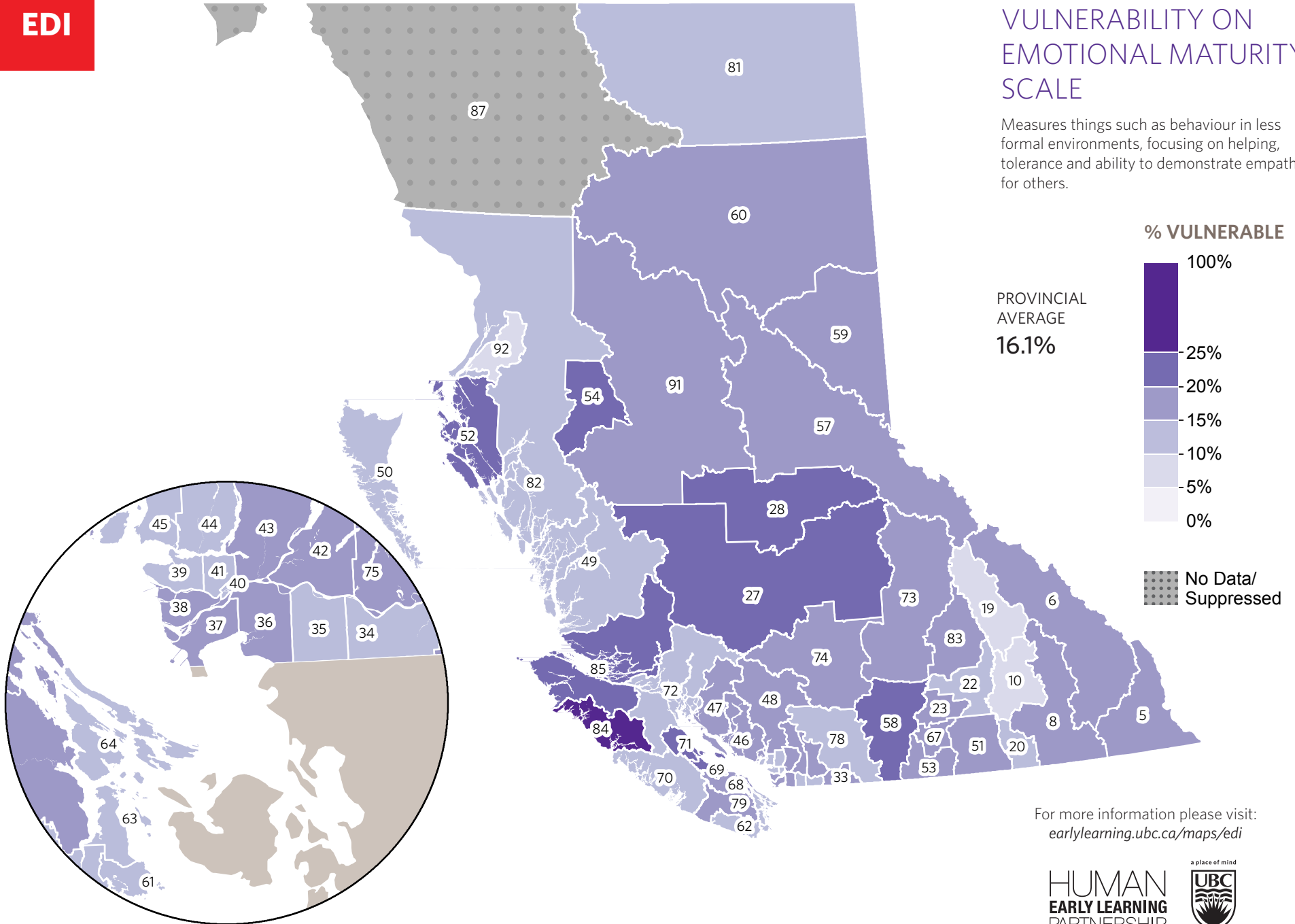


BRITISH COLUMBIA WAVE 6



VULNERABILITY ON EMOTIONAL MATURITY SCALE

Measures things such as behaviour in less formal environments, focusing on helping, tolerance and ability to demonstrate empathy for others.



For more information please visit:
earlylearning.ubc.ca/maps/edi

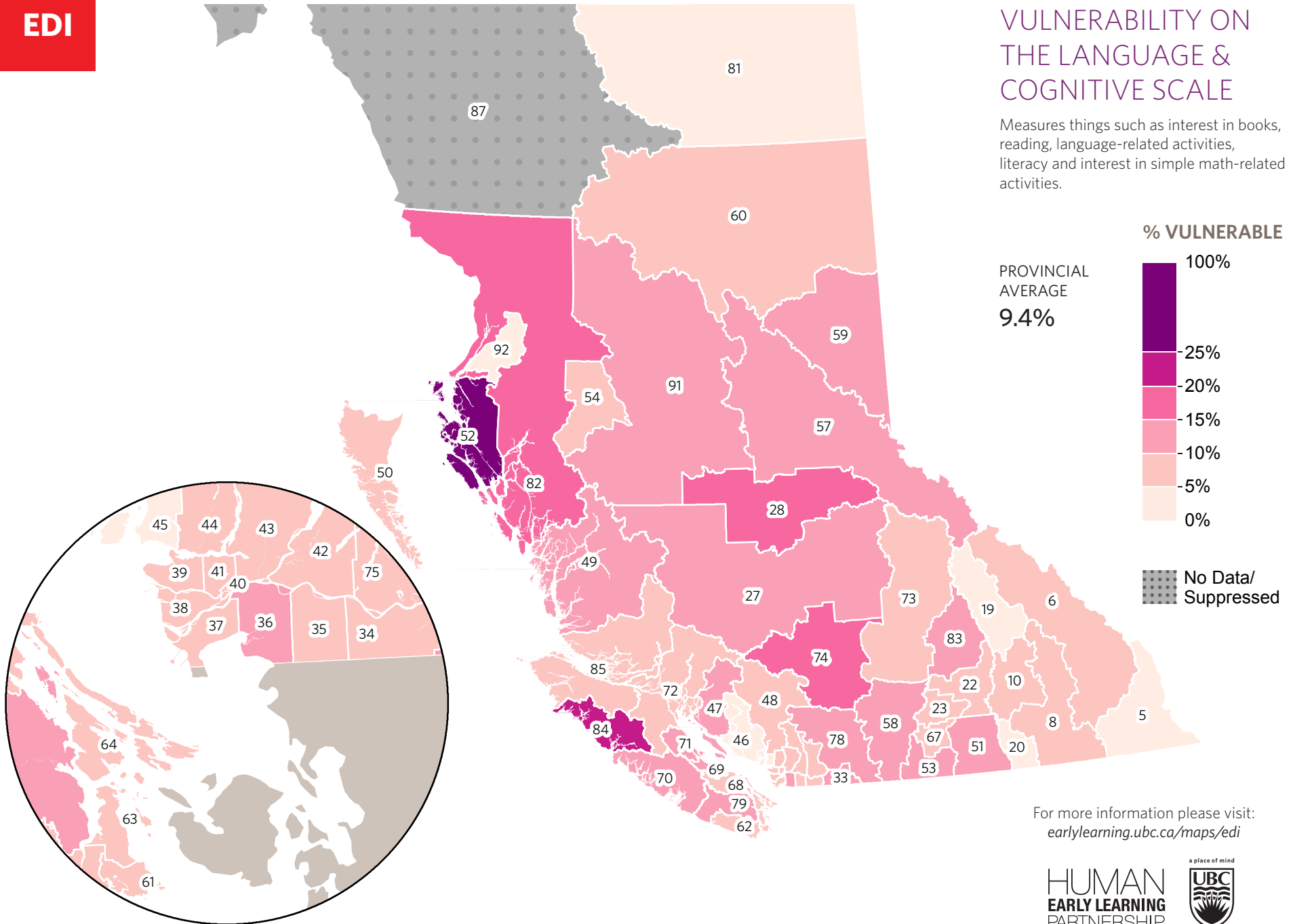
BRITISH COLUMBIA WAVE 6



EDI

VULNERABILITY ON THE LANGUAGE & COGNITIVE SCALE

Measures things such as interest in books, reading, language-related activities, literacy and interest in simple math-related activities.



For more information please visit:
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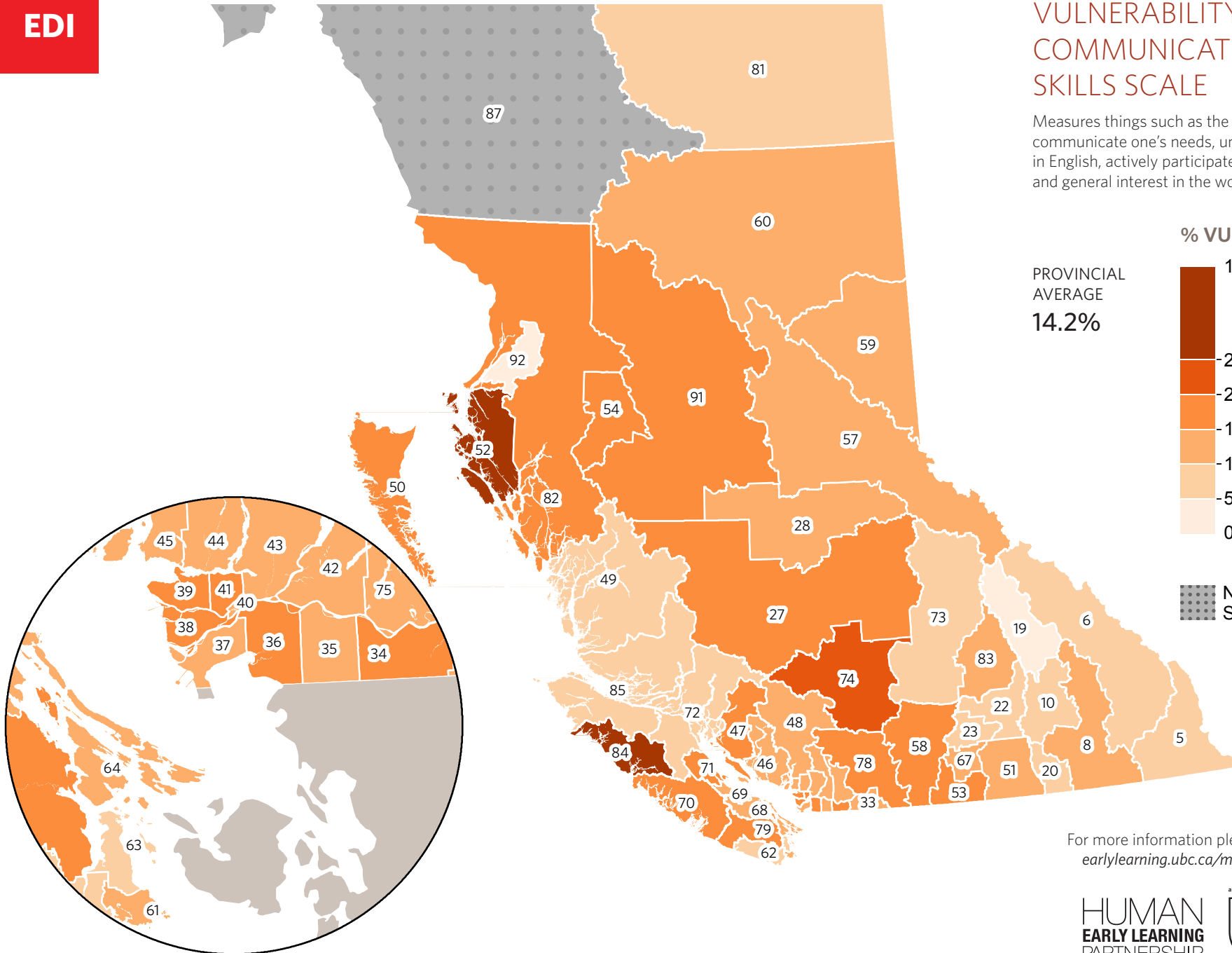


BRITISH COLUMBIA WAVE 6



VULNERABILITY ON COMMUNICATION SKILLS SCALE

Measures things such as the ability to communicate one's needs, understand others in English, actively participate in storytelling and general interest in the world.

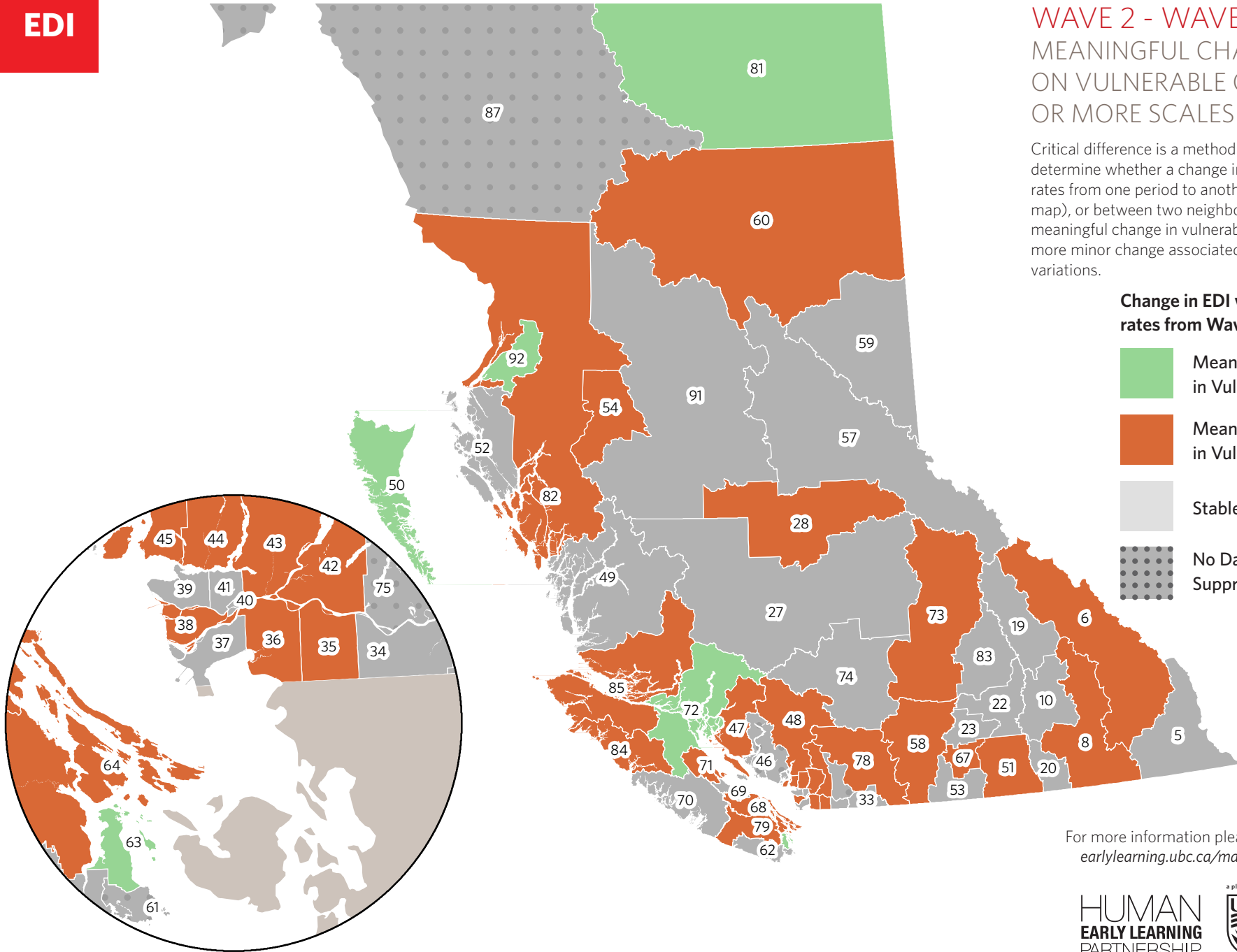


For more information please visit:
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BRITISH COLUMBIA WAVE 2- 6

EDI



WAVE 2 - WAVE 6 MEANINGFUL CHANGE ON VULNERABLE ON ONE OR MORE SCALES

Critical difference is a method that we use to determine whether a change in EDI vulnerability rates from one period to another (shown on this map), or between two neighbourhoods reflects a meaningful change in vulnerability, rather than a more minor change associated with measurement variations.

Change in EDI vulnerability rates from Wave 2 to Wave 6

- Meaningful Decrease in Vulnerability
- Meaningful Increase in Vulnerability
- Stable
- No Data/Suppressed

For more information please visit:
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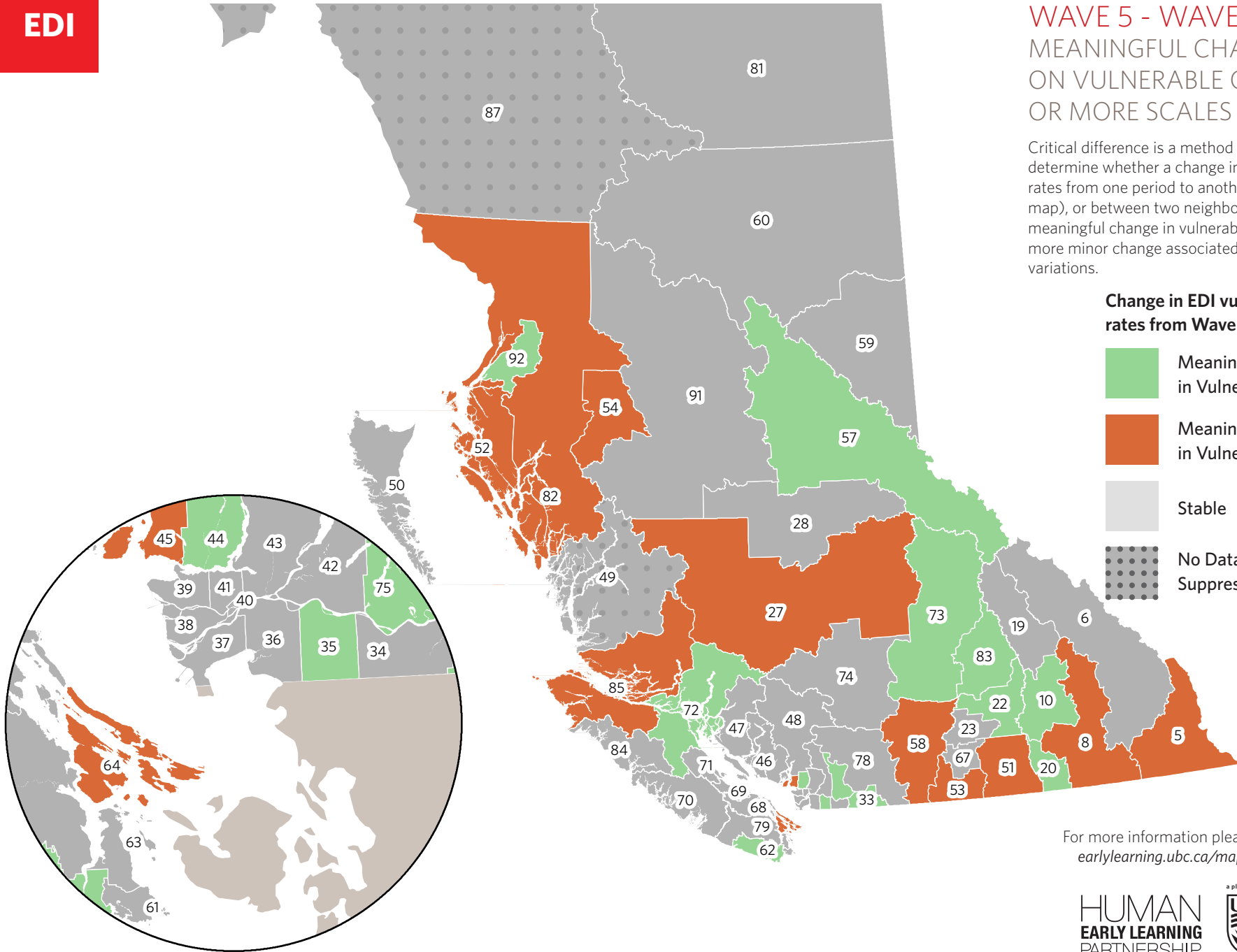
HUMAN
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PARTNERSHIP





BRITISH COLUMBIA WAVE 5- 6

EDI



WAVE 5 - WAVE 6 MEANINGFUL CHANGE ON VULNERABLE ON ONE OR MORE SCALES

Critical difference is a method that we use to determine whether a change in EDI vulnerability rates from one period to another (shown on this map), or between two neighbourhoods reflects a meaningful change in vulnerability, rather than a more minor change associated with measurement variations.

- Change in EDI vulnerability rates from Wave 2 to Wave 6**
- Meaningful Decrease in Vulnerability
 - Meaningful Increase in Vulnerability
 - Stable
 - No Data/Suppressed

For more information please visit:
earlylearning.ubc.ca/maps/edi