

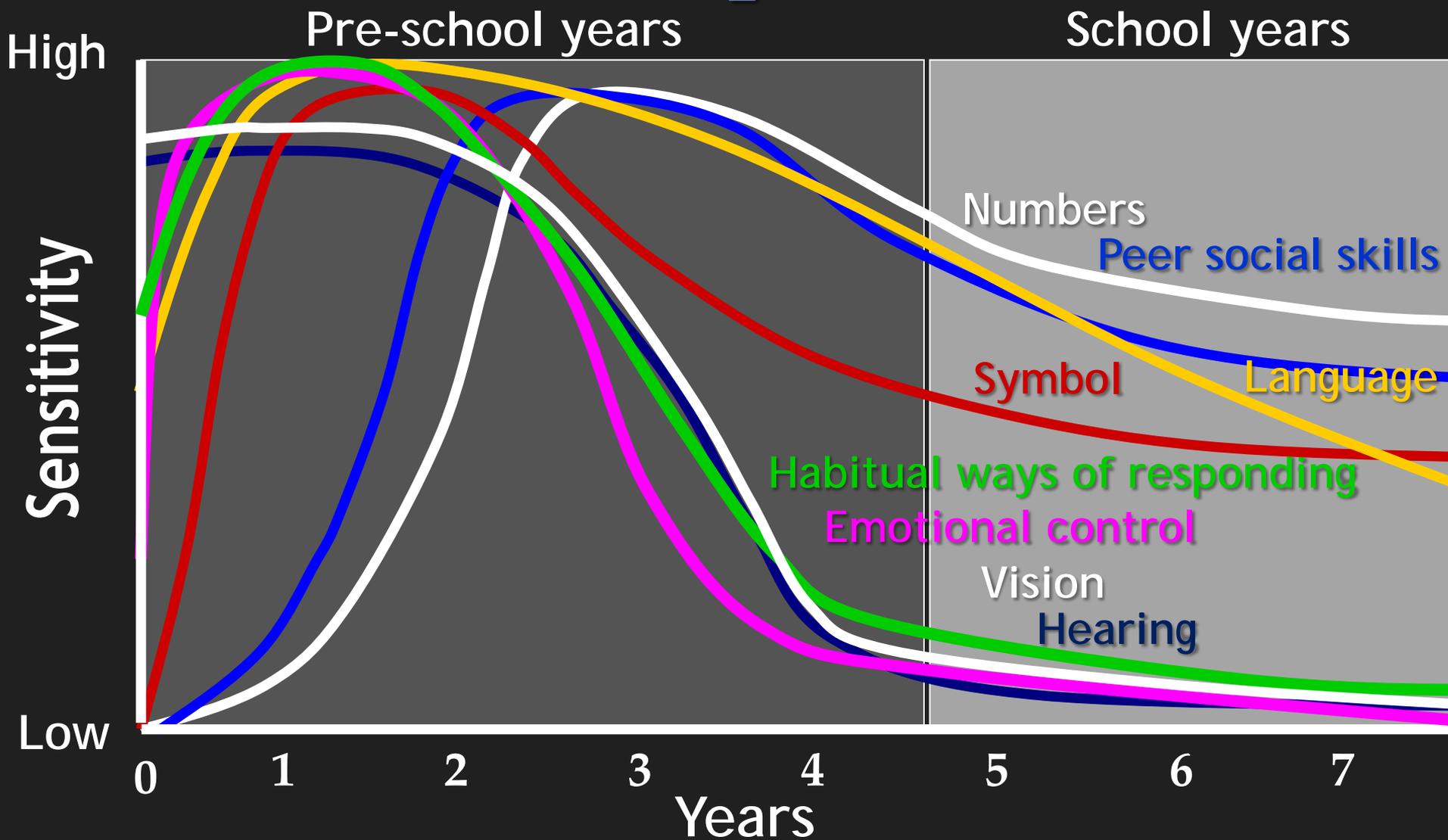
A black and white photograph of four young children playing in a public fountain. The children are in the foreground, splashing water. In the background, there are tables and chairs, suggesting an outdoor cafe or park setting. The overall scene is bright and active.

The case for investing in the early years: lessons from Canada

Clyde Hertzman, MD
Human Early Learning Partnership
University of British Columbia, Vancouver



Sensitive Periods in Early Brain Development





Closing the gap in a generation

Health equity through action on
the social determinants of health



What drives ECD?

The experiences
children have in
the environments
where they grow
up, live and
learn.



Biological Embedding

Biological embedding occurs when

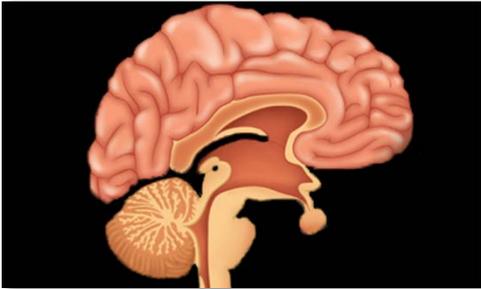
- experience gets under the skin and alters human biodevelopment;
- systematic differences in experience in different social environments lead to different biodevelopmental states;
- the differences are stable and long-term; they influence health, well-being, learning, and/or behaviour over the life course.



Archeology of Biological Embedding



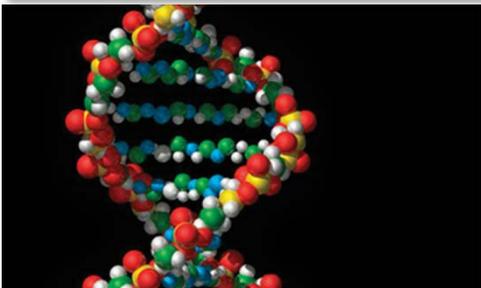
Experience/Behavior



Neural Circuitry

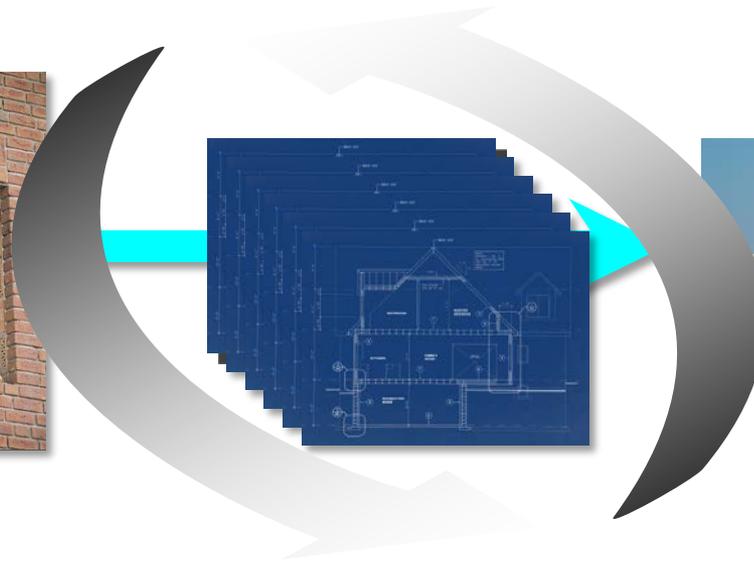
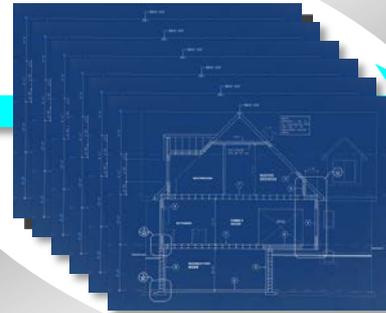
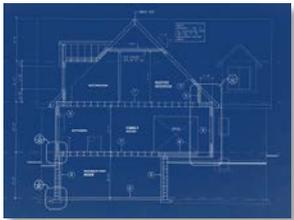
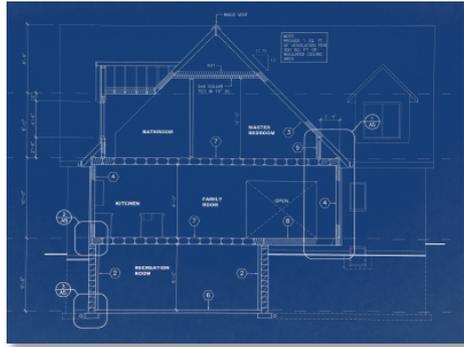
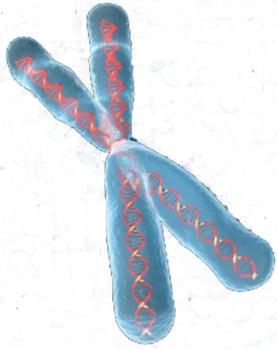


Cell/Synapse



Gene Function





Life Course Problems Related to Early Life

2nd
Decade

3rd/4th
Decade

5th/6th
Decade

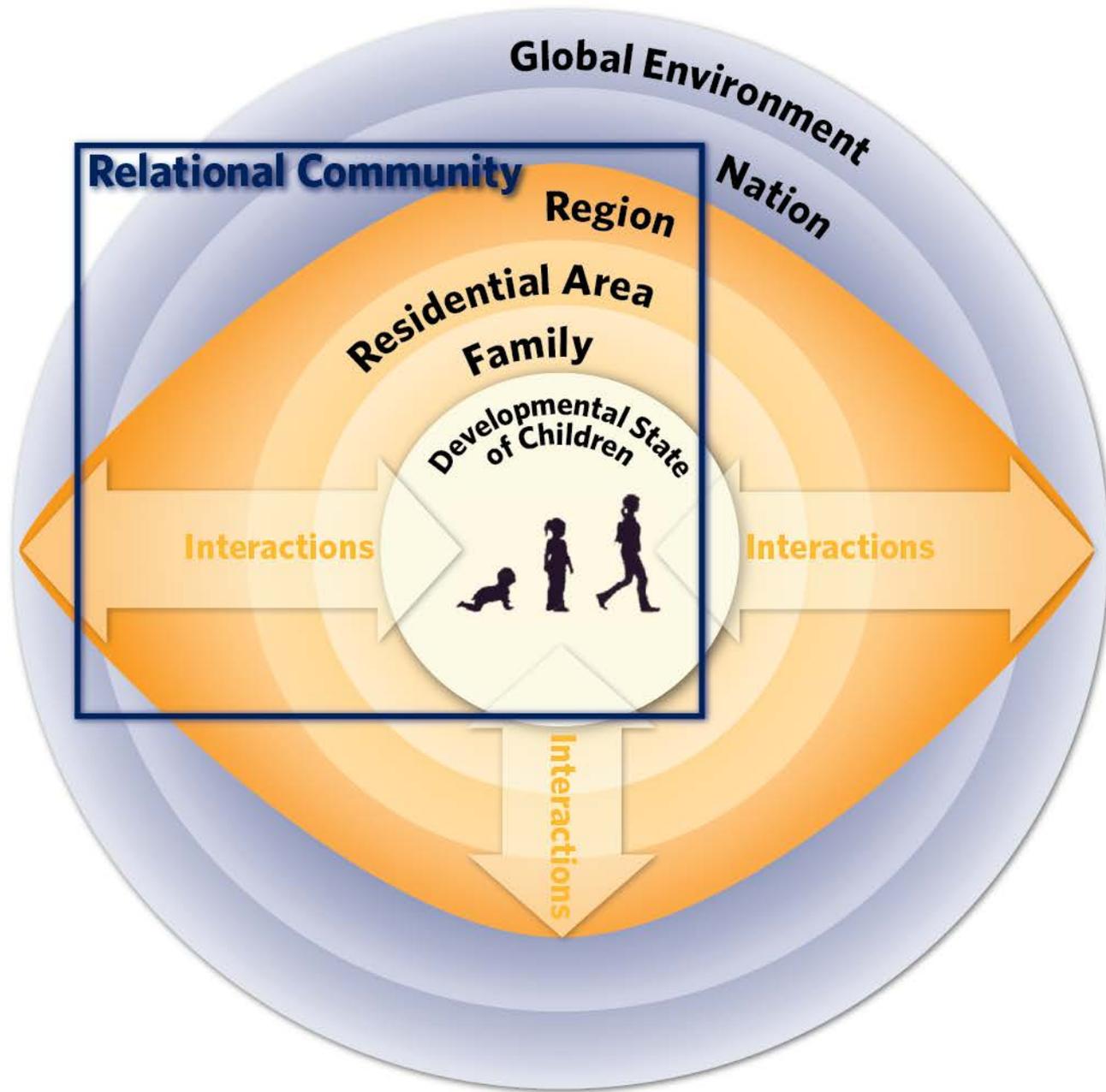
Old Age

- School Failure
- Teen Pregnancy
- Criminality

- Obesity
- Elevated Blood Pressure
- Depression

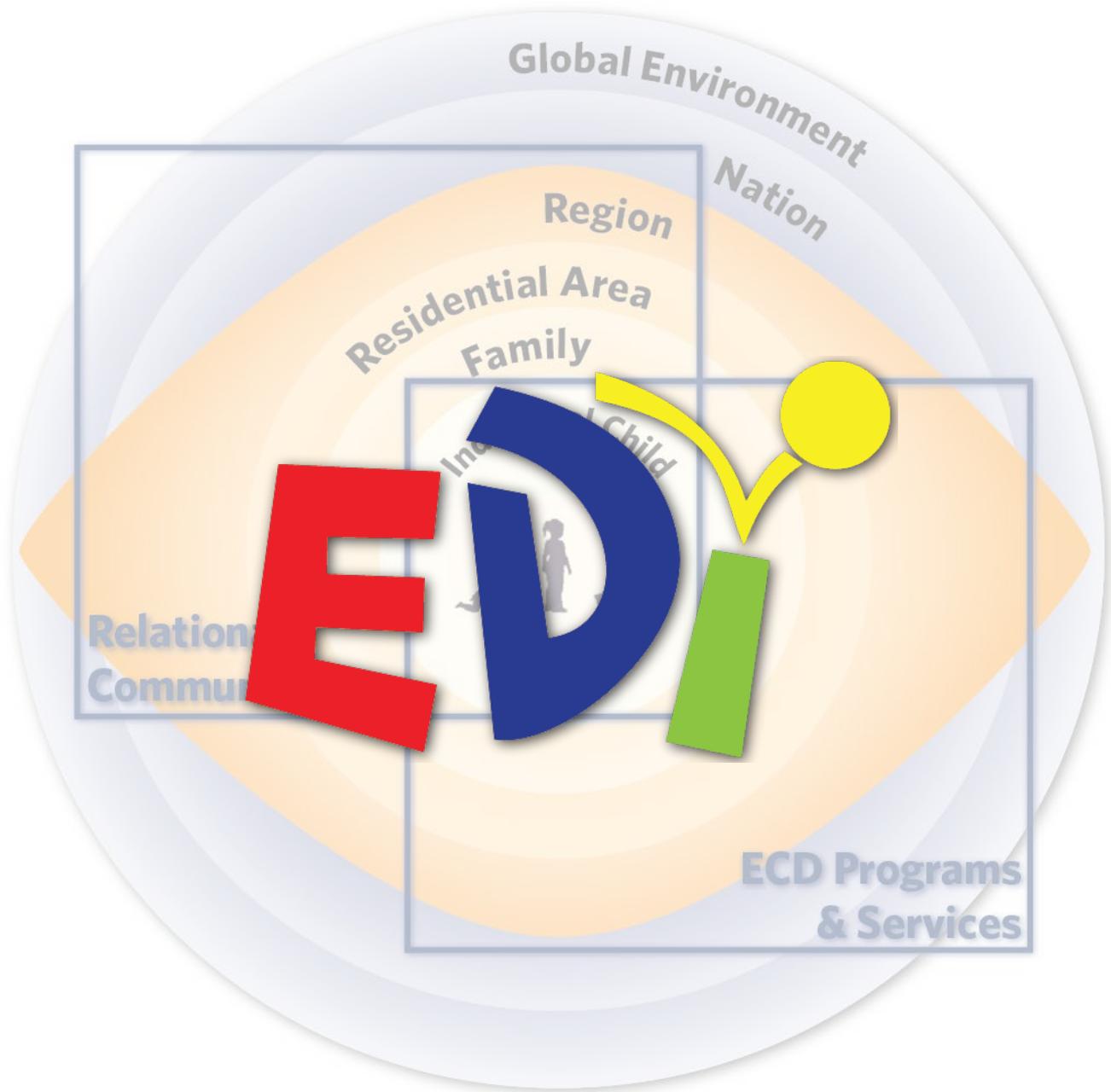
- Coronary Heart Disease
- Diabetes

- Premature Aging
- Memory Loss



Monitoring the state of development at the level of the population and how it changes over time





Global Environment

Nation

Region

Residential Area

Family

In Child

Relation
Commu

E **D** **i**

ECD Programs
& Services



The Early Development Instrument



A Population Based Measure

What Does the EDI Measure?

Social
Competence

Emotional
Maturity

Language
& Cognitive

Communication Skills

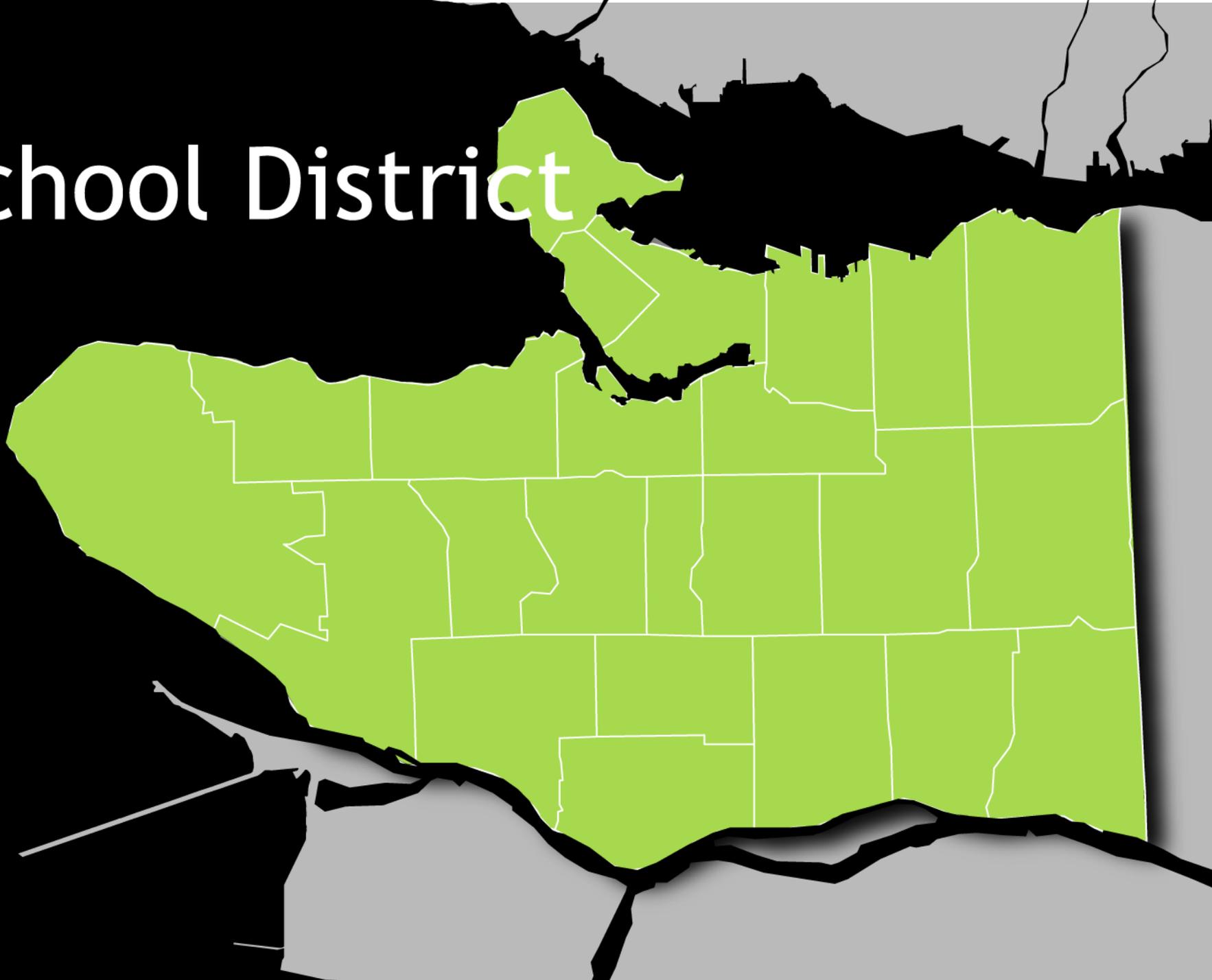
Physical Health
& Well-Being



Neighbourhood



School District



Province

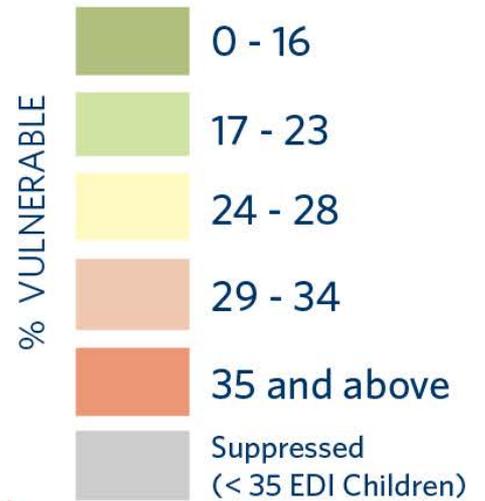




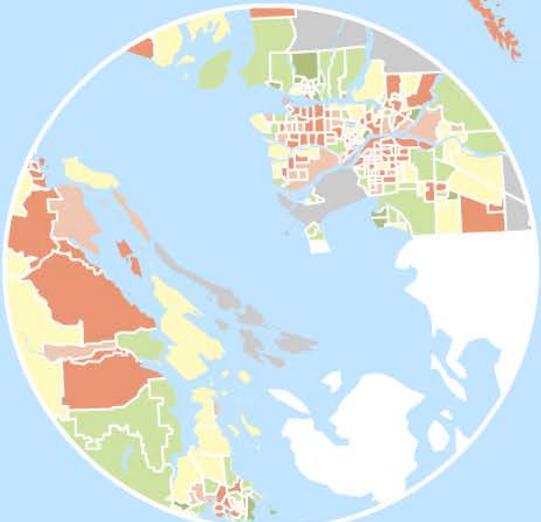
Wave 4 EDI

Vulnerable on One or More Scales

Percent of children vulnerable on one or more scales of the EDI



Range from
3% to 61%
Neighbourhoods



What the maps reveal...

- Large local area differences in the proportion of developmentally vulnerable children
- The high proportion of avoidable vulnerability
- The degree to which socioeconomic context explains and does not explain variations in early development
- Which communities are doing better or worse than predicted.....to set up the study of 'why'
- Trace change over time
- Rationale for programs and policies

On average, disadvantaged children have poorer outcomes,
poorer outcomes,
However, most vulnerable children are in
the middle class

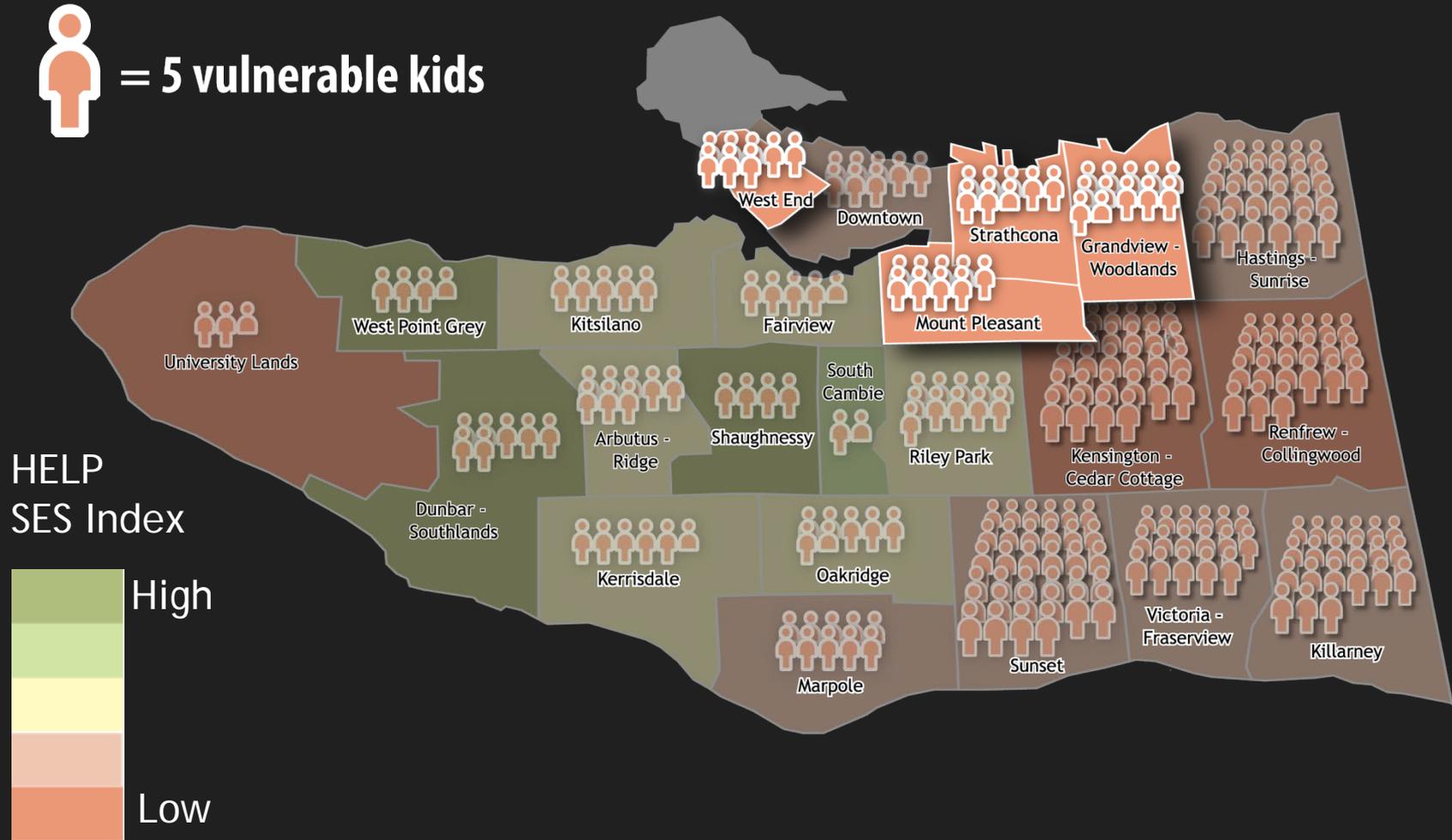


Socioeconomic
Disadvantage

Socioeconomic
Advantage

Targeting programs towards low SES leave many vulnerable children without access

 = 5 vulnerable kids



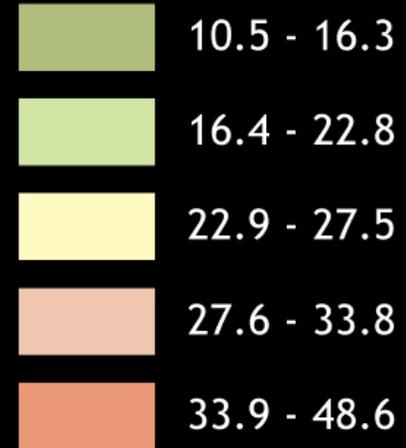
Lessons learned
after
a decade of
engagement

Nanaimo

School District 68

Wave 1

Percent Vulnerable



Lantzville - Dover



Pleasant Valley - Rutherford



Long Lake



Hammond Bay



Departure Bay



Diver Lake



Northfield



- Townsite Newcastle



Nan-Westwood



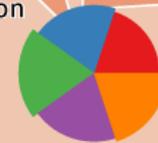
Nanaimo - Downtown



South Nanaimo



Cinnabar - Extension



Social

50



Emotional

30



Physical

5



20



Language

Communication

10

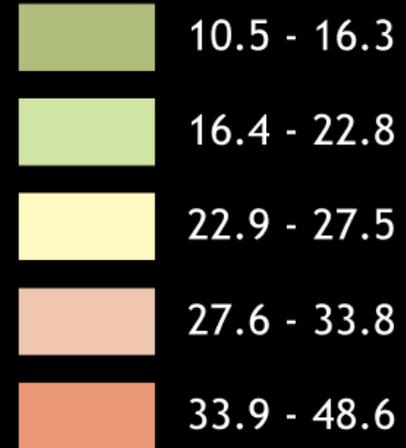


Nanaimo

School District 68

Wave 1

Percent Vulnerable



Lantzville - Dover



Pleasant Valley - Rutherford



Long Lake



Hammond Bay



Departure Bay



Diver Lake



Northfield



- Townsite
Newcastle

Nanaimo - Downtown

South Nanaimo

Cinnabar - Extension

Nan-Westwood



Social

50

Emotional

30

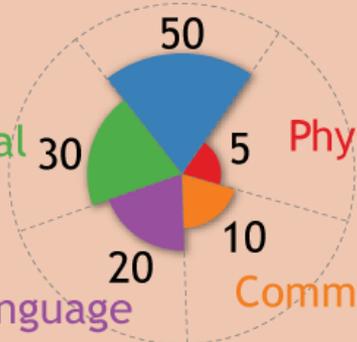
Physical

10

Language

20

Communication

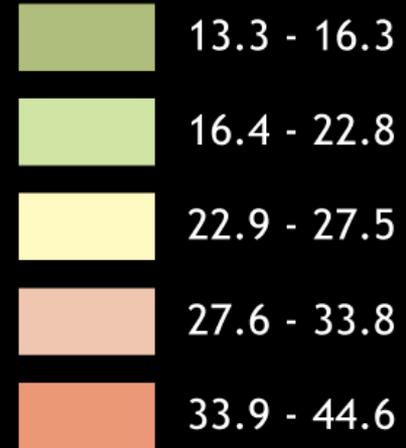


Nanaimo

School District 68

Wave 2

Percent Vulnerable



Lantzville - Dover



Pleasant Valley - Rutherford



Long Lake



Hammond Bay



Departure Bay



Diver Lake



Northfield



- Townsite
Newcastle



Nan-Westwood



Nanaimo - Downtown



South Nanaimo



Cinnabar - Extension



Social

50



Emotional

30



Physical

5



Language

20



Communication

10

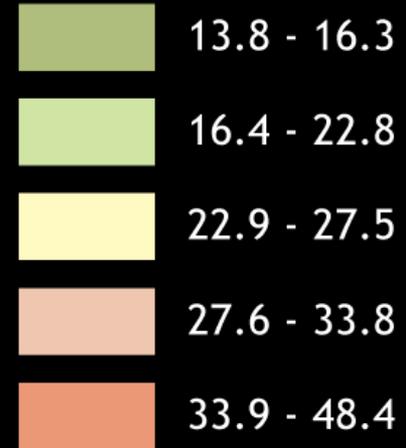


Nanaimo

School District 68

08/09

Percent Vulnerable



Lantzville - Dover

Pleasant Valley - Rutherford

Hammond Bay

Long Lake

Departure Bay

Diver Lake

Northfield

- Townsite Newcastle

Nan-Westwood

Nanaimo - Downtown

South Nanaimo

Cinnabar - Extension

Social

50

Emotional

30

Physical

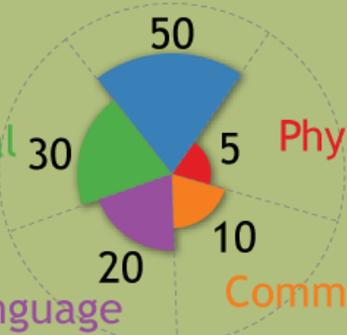
5

Language

20

Communication

10



Lessons Learned

Strong local inter-sectoral
leadership

Lessons Learned

Focus on EDI outcomes

Lessons Learned

A focus on barriers that prevent equitable access to high quality programming

Lessons Learned

Vertical coordination -
local, state, commonwealth

Lessons Learned

Alignment with school
system

Population-based Developmental Trajectories



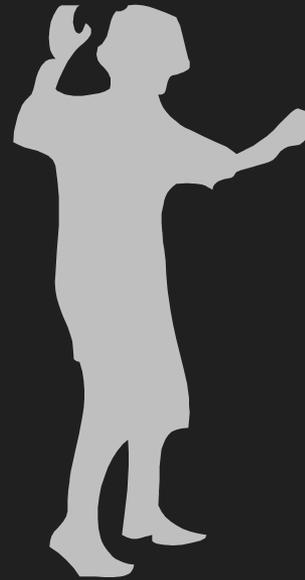
BC: Unique Population Laboratory



Kindergarten



Grade 4

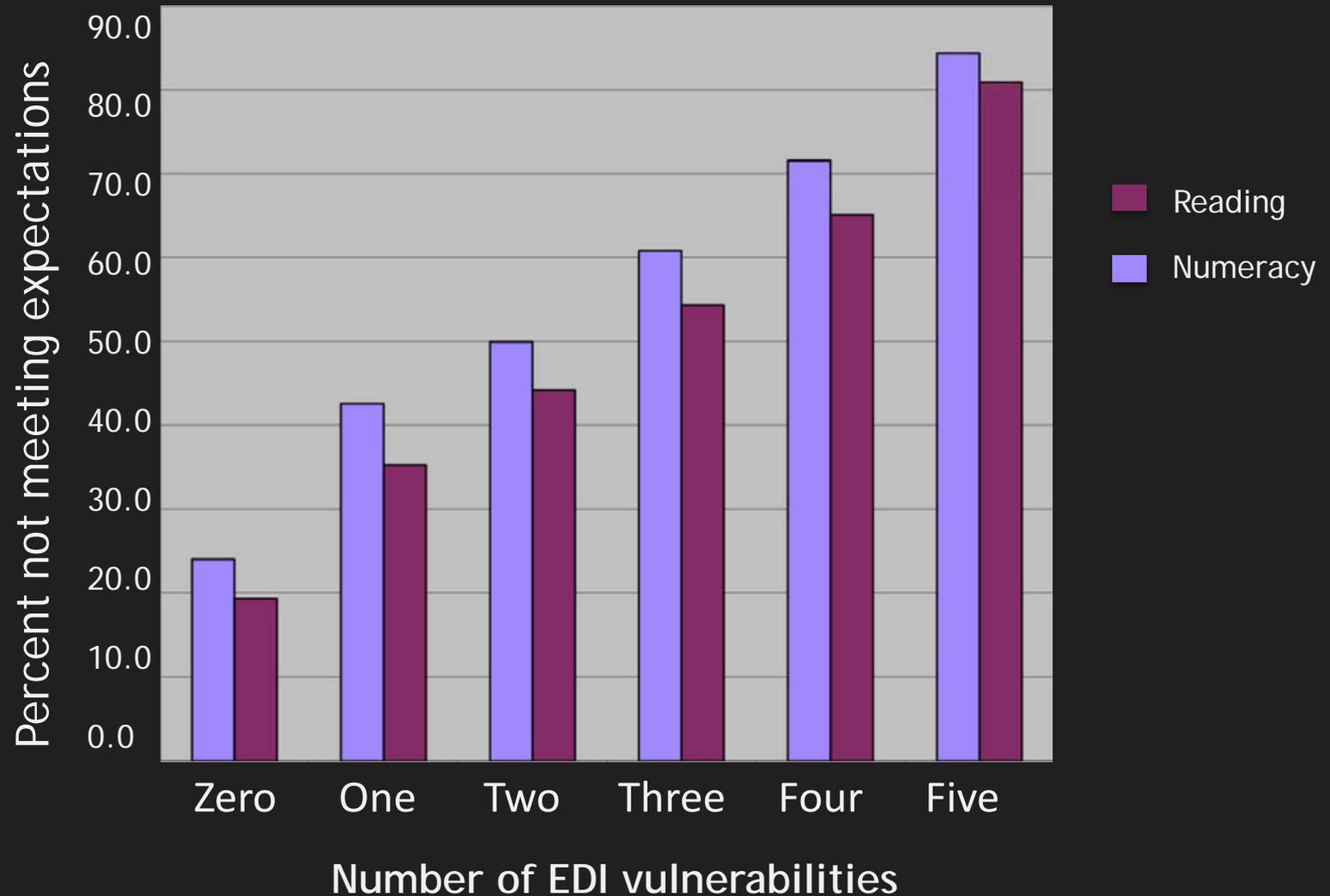


Grade 7



Grade 12

Linkage of EDI to Success in Grade 4



Observe Transitions from EDI to School Completion

Vulnerability
(EDI)

29%

15%

10%

University
Eligible Grades

41.5%

50.3%

55.6%



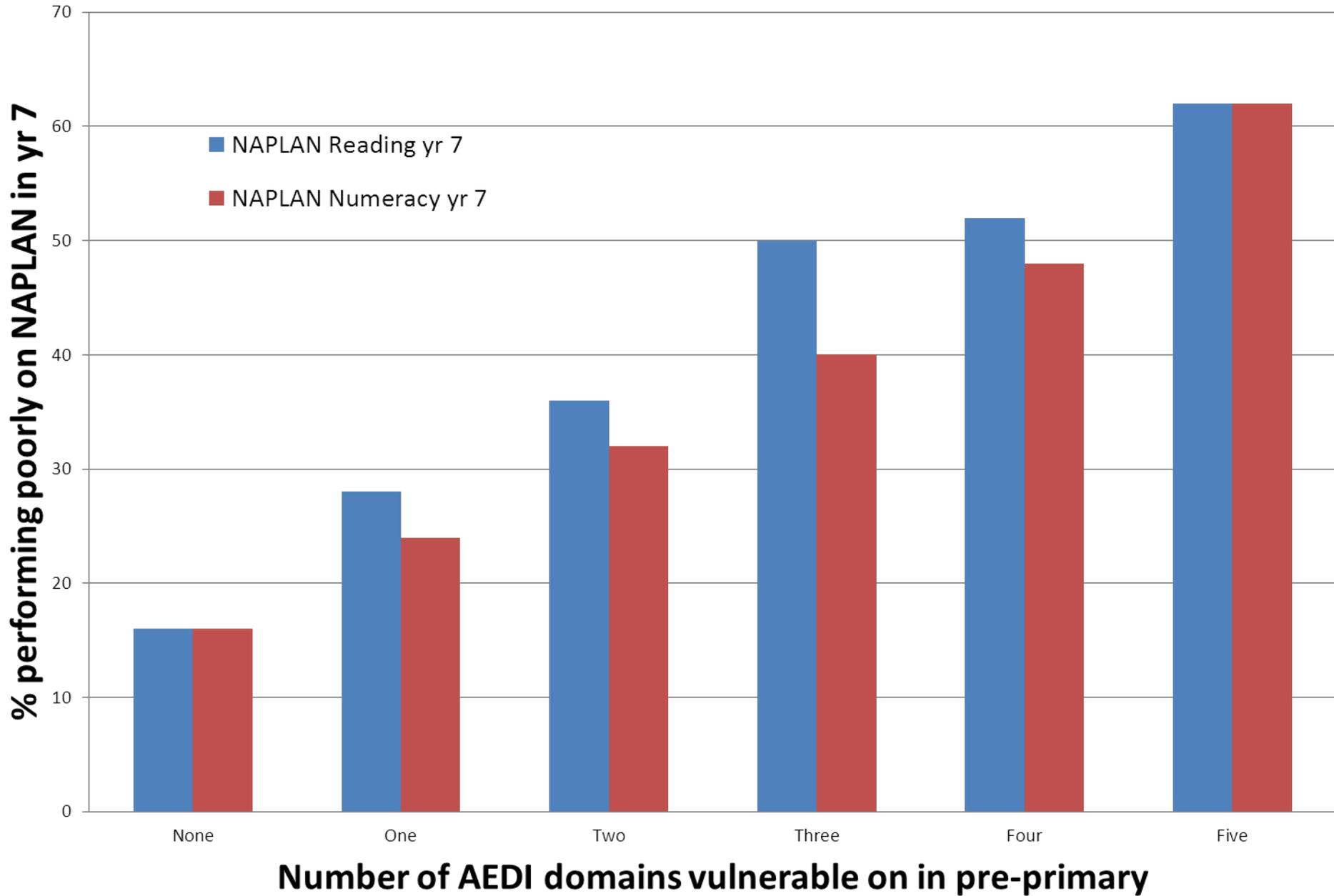
34%
increase



The Benefit:

**GDP growth of 1% for every 1%
reduction in EDI vulnerability**

Linkage of AEDI to Yr 7 NAPLAN





World Health Organization



Commission on Social Determinants of Health

Closing the gap in a generation

Health equity through action on the social determinants of health



“Equity from the Start”

Commit to and implement a comprehensive approach to early life building on existing child survival programs and extending interventions in early life to include social/emotional & language/cognitive development.

HUMAN
EARLY LEARNING
PARTNERSHIP

Thank You

www.earlylearning.ubc.ca

