



What the research tells us

- The early years of a child's life are critical in impacting on a range of outcomes through the life course
- The environment experienced by a young child literally sculpts the brain and establishes the trajectory for long term cognitive and social-emotional outcomes
- If we want to improve outcomes in adult life we have to focus on the early years - this has profound implications for public policy
- Investing in early childhood is a sound economic investment ('the best investment society can make')

The neuroscience of brain development



- Brain architecture and skills are built in a hierarchical 'bottom-up' sequence
- Foundations important - higher level circuits are built on lower level circuits
- Skills beget skills - the development of higher order skills is much more difficult if the lower level circuits are not wired properly
- Plasticity of the brain decreases over time and brain circuits stabilise, so it is much harder to alter later
- It is biologically and economically more efficient to get things right the first time

'Toxic' stress

- Strong and prolonged activation of body's stress response in absence of buffering protection of adult support
- Precipitants include extreme poverty, physical or emotional abuse, chronic neglect, severe maternal depression, substance abuse, family violence
- Disrupts developing brain architecture and leads to lower threshold of activation of stress management systems - can lead to life long problems in learning, behaviour, and both physical and mental health

Social climate change



- Rapid social change - the world more challenging and complex - conditions under which families are raising children have changed
- Families who are relatively well-resourced are better able to meet these challenges. However, poorly-resourced families can be overwhelmed with challenges of daily life and parenting – increased stress
- Stresses in family functioning are cumulative: the more advantaged families are initially, the better they are able to capitalise and build on the enhanced opportunities available, so that the gap between them and those unable to do so progressively widens
- Increase in number of families with complex needs
- More intergenerational disadvantage, underachievement and poor health and developmental outcomes

Stressful early environments...



- Problems in childhood
- Beginning of pathways to problems later in life
- Evidence that many problems in adult life – including mental health problems - have their origins in pathways that begin in childhood



Worrying problems in childhood

- Child abuse and neglect
- School readiness - many children vulnerable
- Poor literacy and school achievement
- Mental health problems - ADHD, conduct disorders, aggressive and anti-social behaviour
- Obesity



Adult problems with roots in early childhood

- Mental health problems
- Family violence and anti-social behaviour
- Crime
- Poor literacy
- Chronic unemployment and welfare dependency
- Substance abuse
- Obesity
- Cardiovascular disease
- Diabetes

Early adversity

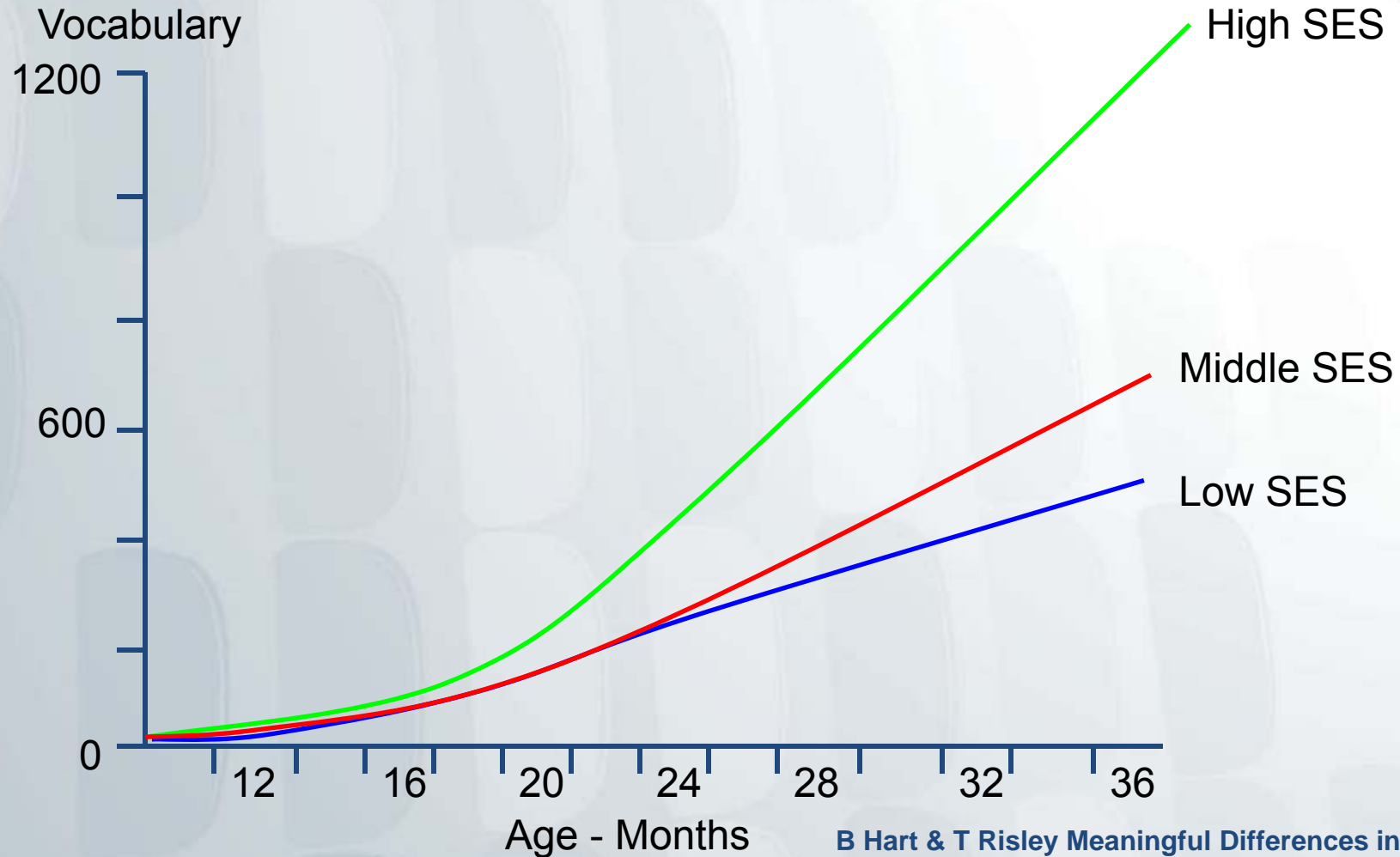
- Leads to changes in DNA (methylation)
- ‘Biological embedding of environmental events’
(*Hertzmann*)
- Affects the development of biological systems
 - Immune
 - Cardiovascular
 - Metabolic regulatory
- What appears to be a social situation is likely to be a neurochemical situation
- Helps to explain the intergenerational nature of disadvantage and social exclusion



The impact of social inequality

- Psychosocial factors impact on health because of association with frequent/recurrent stress
- Major impact in early years - affects developing brain and establishment of neural circuits
- Chronic stress affects the body's physiological systems - including the cardiovascular and immune systems - increasing vulnerability to wide range of diseases and health conditions
- 'Double jeopardy' - have the least access to supports such as consistent health care, quality childcare and preschool, good schools, and family supports

Vocabulary growth - first 3 years



B Hart & T Risley Meaningful Differences in Everyday Experiences of Young American Children 1995

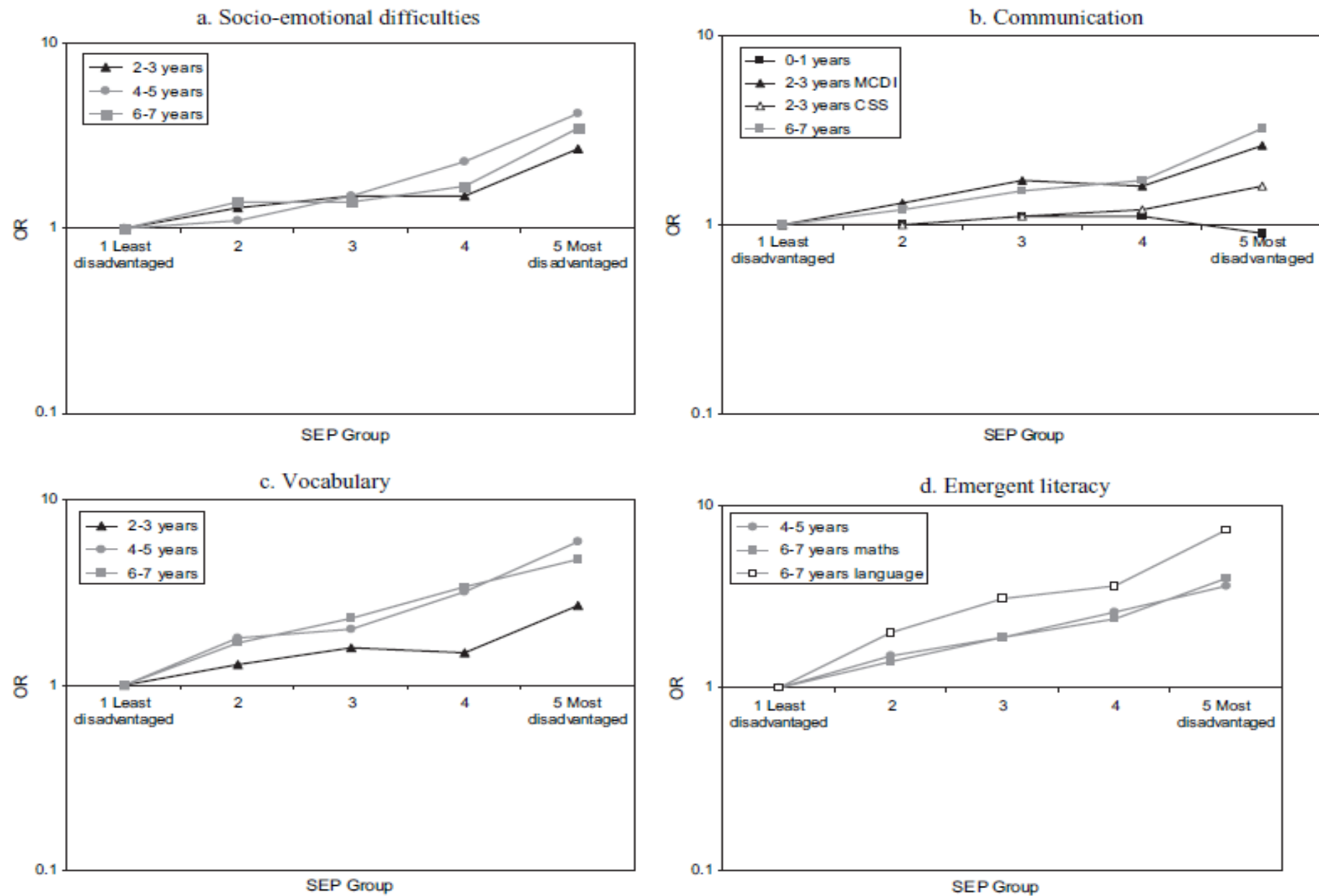


Figure 1 ORs (presented on a log scale) by socioeconomic position quintile for socio-emotional difficulties, and poor communication, vocabulary and emergent literacy skills.

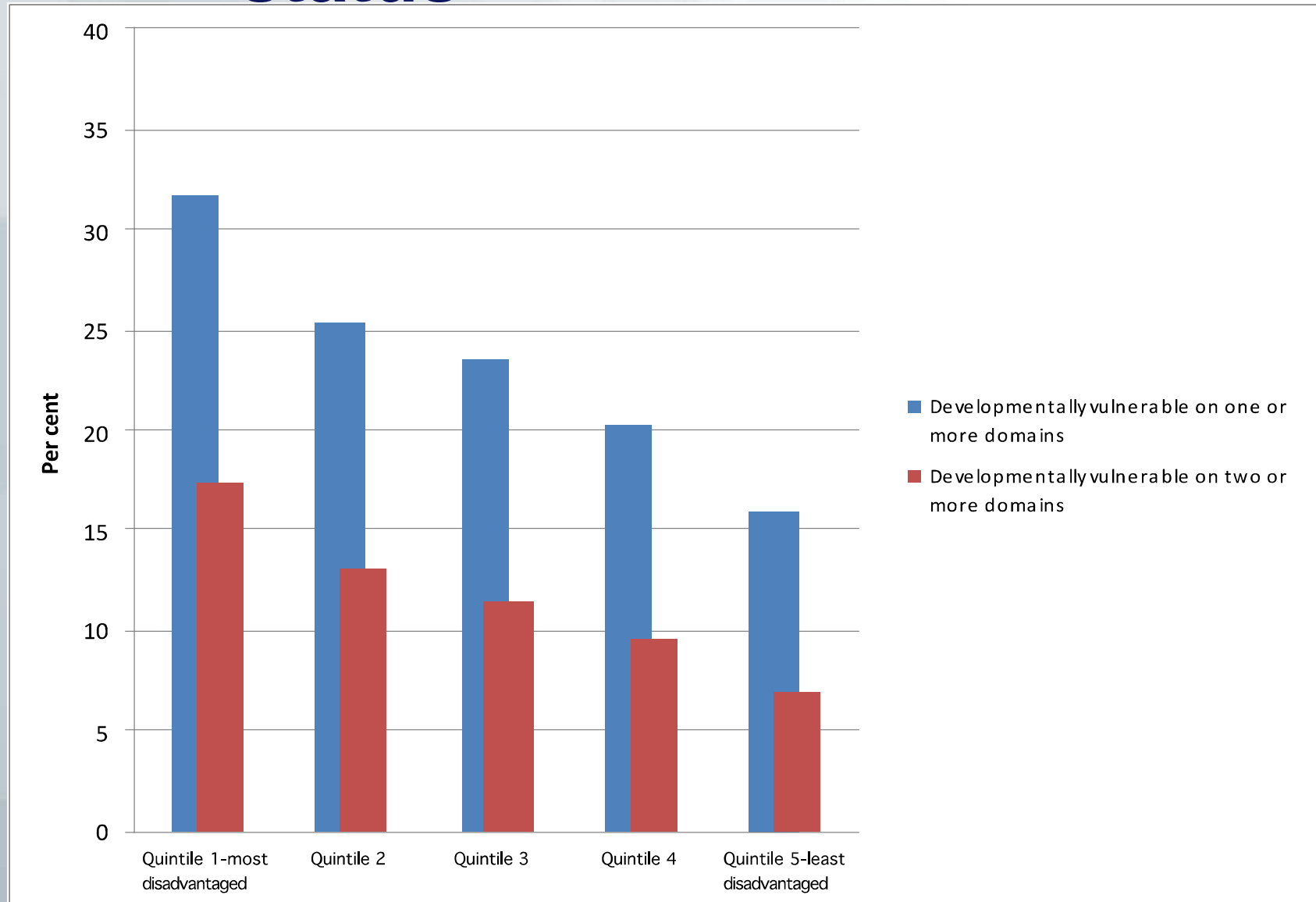
Key Findings - 2012



Percentage of children developmentally vulnerable (DV) across Australia by jurisdiction

	DV \geq 1 domains (%)	DV \geq 2 domains (%)
Australia	22.0	10.8
New South Wales	19.9	9.2
Victoria	19.5	9.5
Queensland	26.2	13.8
Western Australia	23.0	11.2
South Australia	23.7	12.2
Tasmania	21.5	10.1
Northern Territory	35.5	20.9
Australian Capital Territory	22.0	9.8

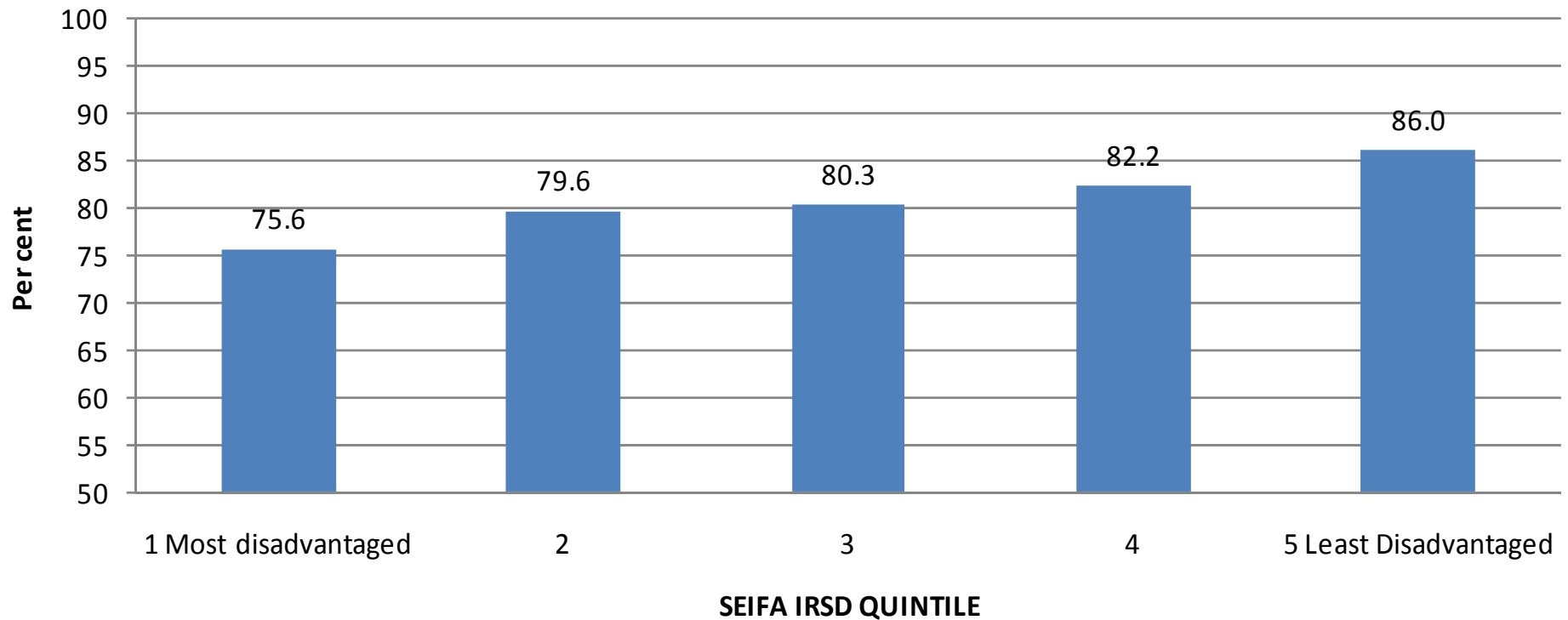
Results: Socio-economic status



Disadvantage and preschool participation (*'double jeopardy'*)



Preschool or kindergarten program (including in a day care centre)





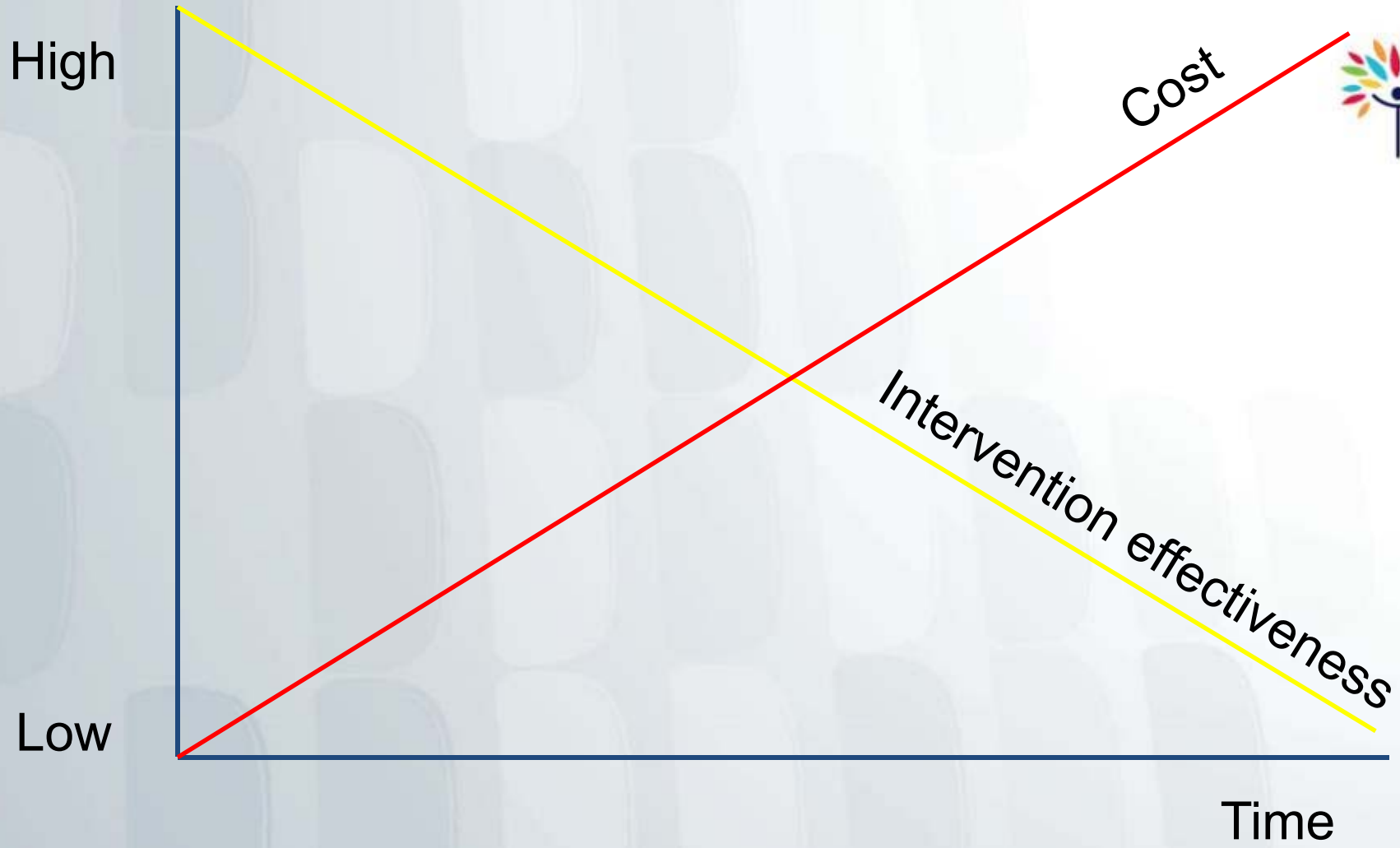
So what are the answers?

- 'Different, rather than more.'
- Need major shift in public policy, focusing not just on treatment but also on prevention and early intervention (fence on top of cliff rather than more ambulances at the bottom)
- There is evidence from successful demonstration programs that early intervention works - ie the research tells us how to build the fences



Making a difference

- Address risk factors and emerging difficulties *before* they become entrenched problems
- Goal is to diminish or remove risk factors and strengthen protective factors, so improving chances of good outcome
- The earlier the better - more leverage in younger years



Intervention effects and costs of social-emotional mental health problems over time (Bricker)

Infrastructure of existing services



- Child care
- Family day care
- GPs
- MCH nurses
- Preschool
- School
- Specialist services
- Parenting programs
- Neighbourhood houses
- Family support
- Telephone counselling
- Family violence
- Problem gambling
- Child protection
- Adoption/foster care
- Mental health services



Just because you have a service system in place does not mean that all families use it.

Fragmentation of services



Child health information

Family support

Childcare

School

Early intervention programs

Child protection agency

Parenting programs

Kindergarten

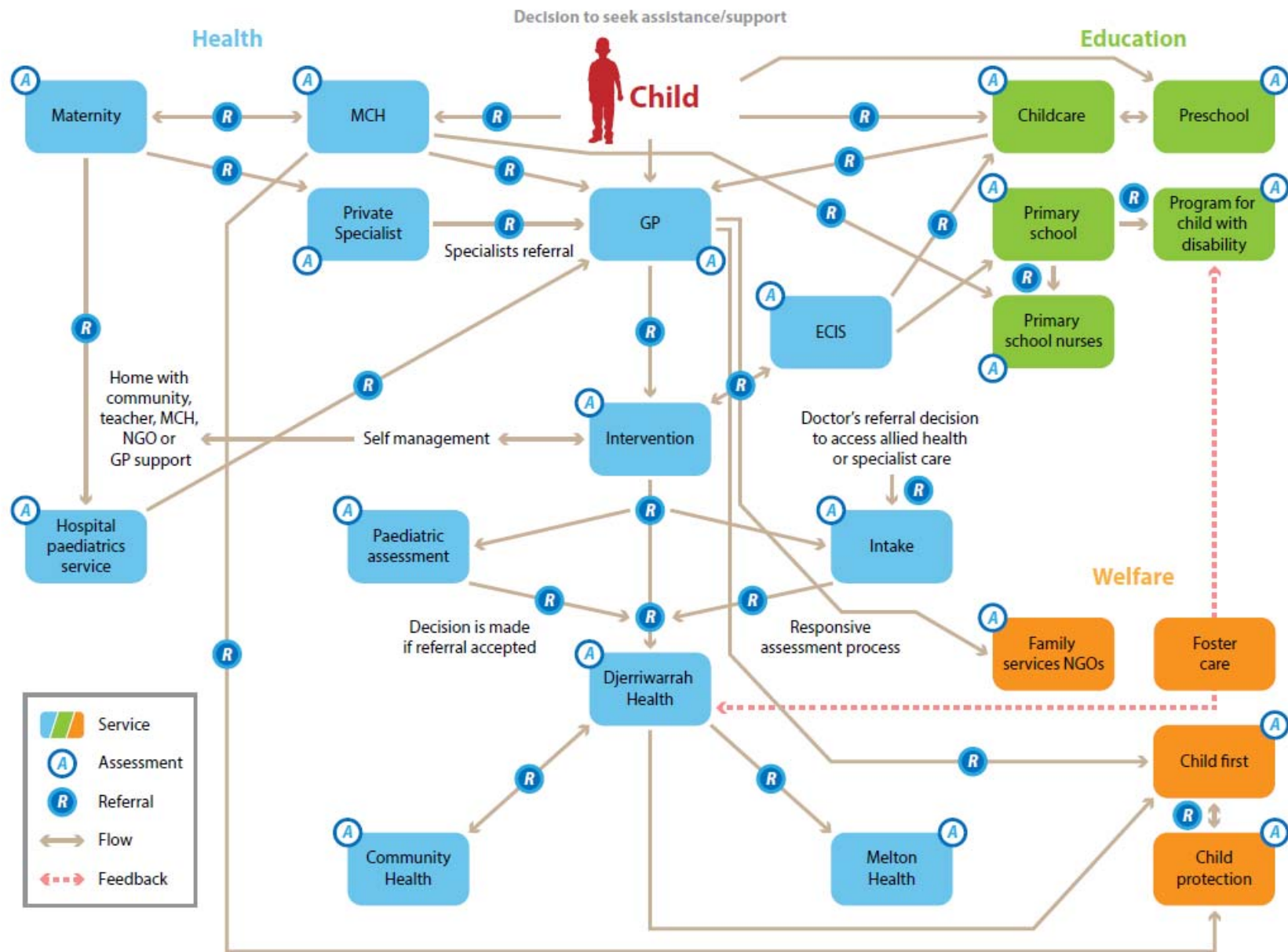
Preschool

Pediatrician

Disability services

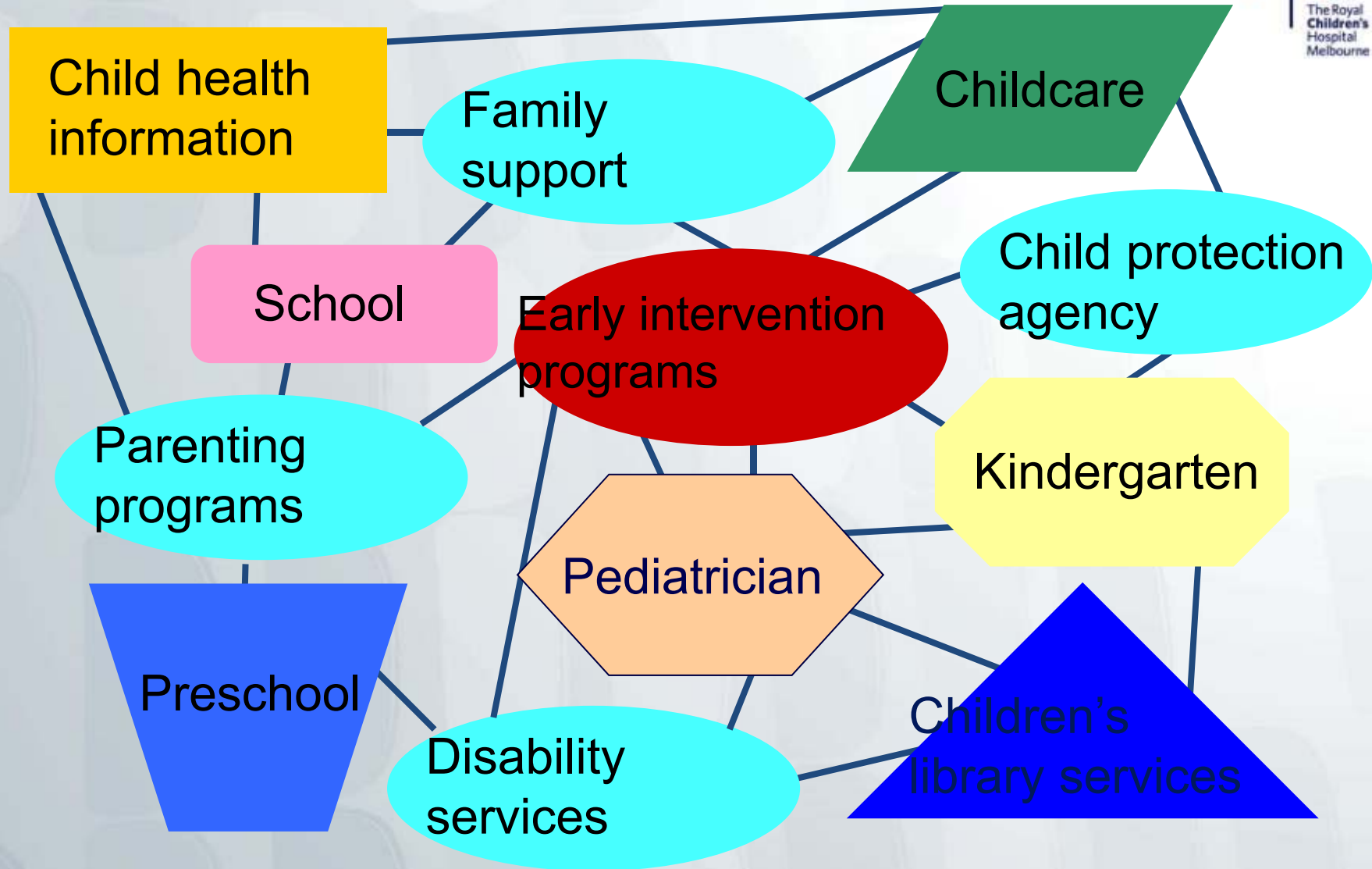
Children's library services

Blue Sky Project

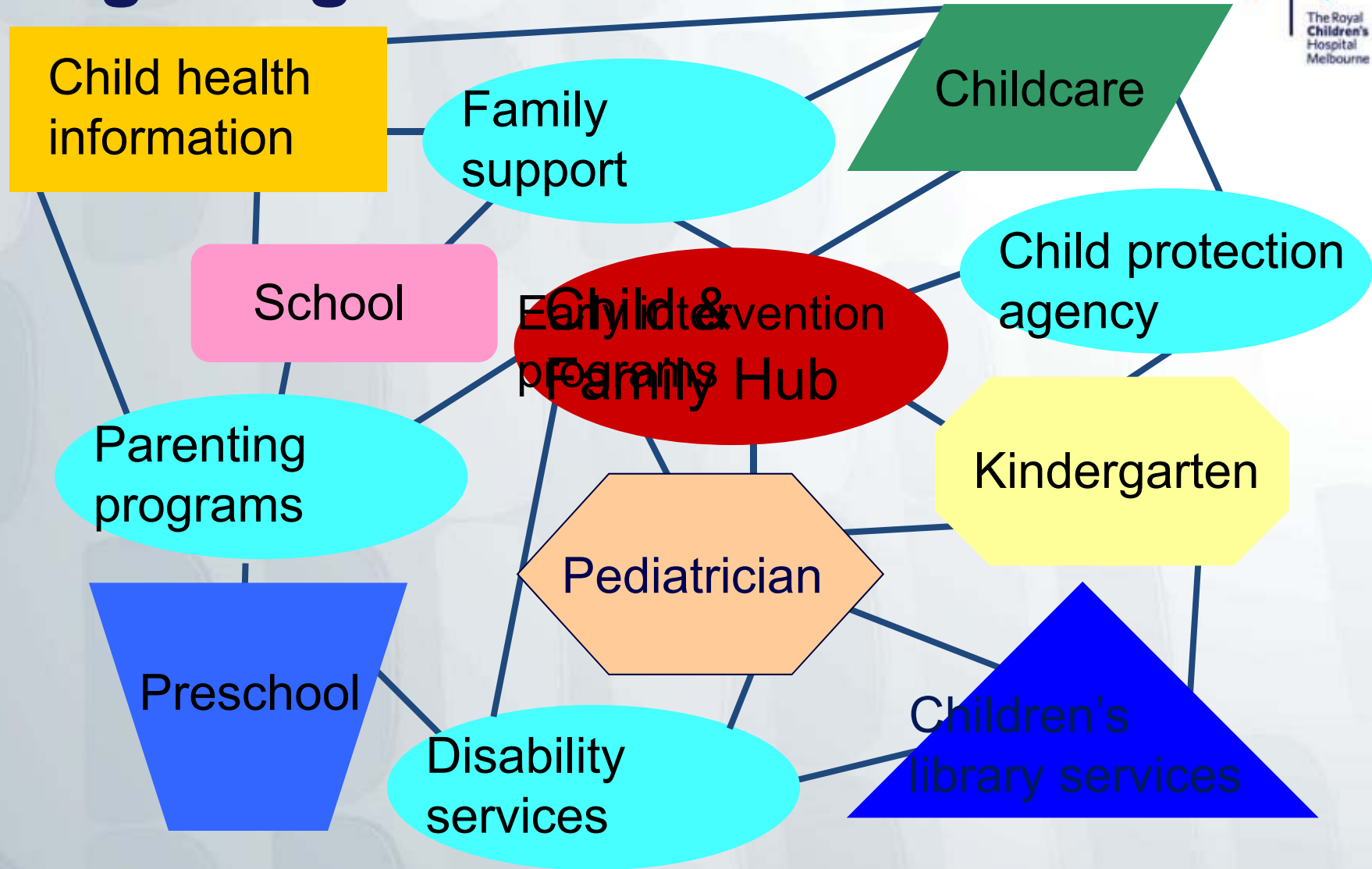


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Linking services



Integrating services

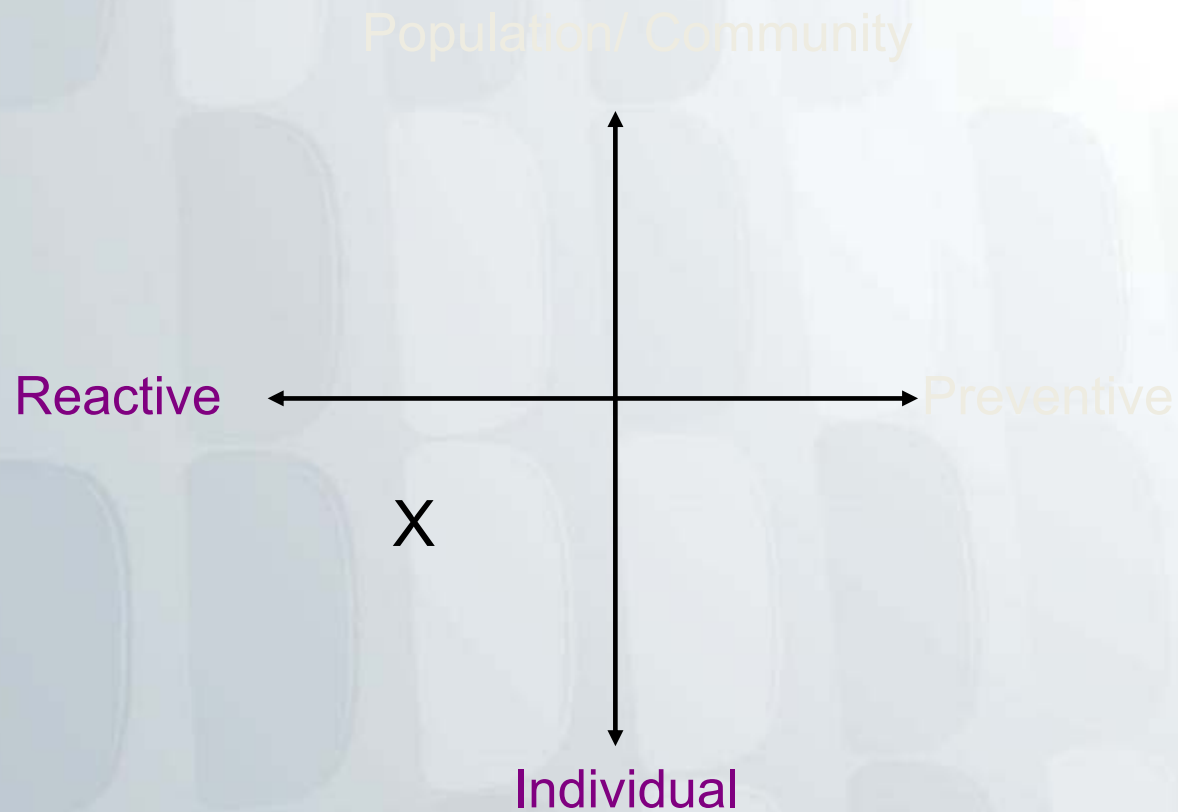




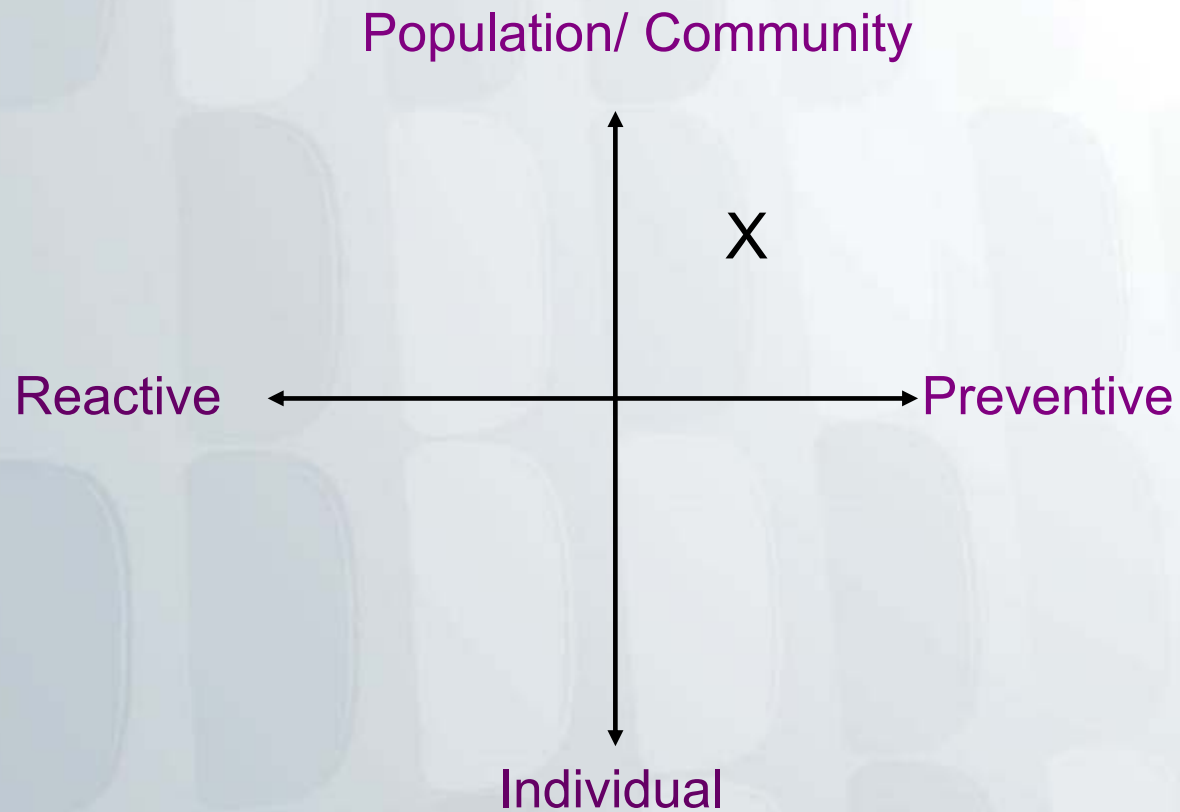
A different approach

- Population focus and place based approach
- Strengthen capacity of universal services
- Increased responsibility for communities
- Engaging the community
- Using data
- Working with communities to implement change

Where are our investments today?



Where our investments should be

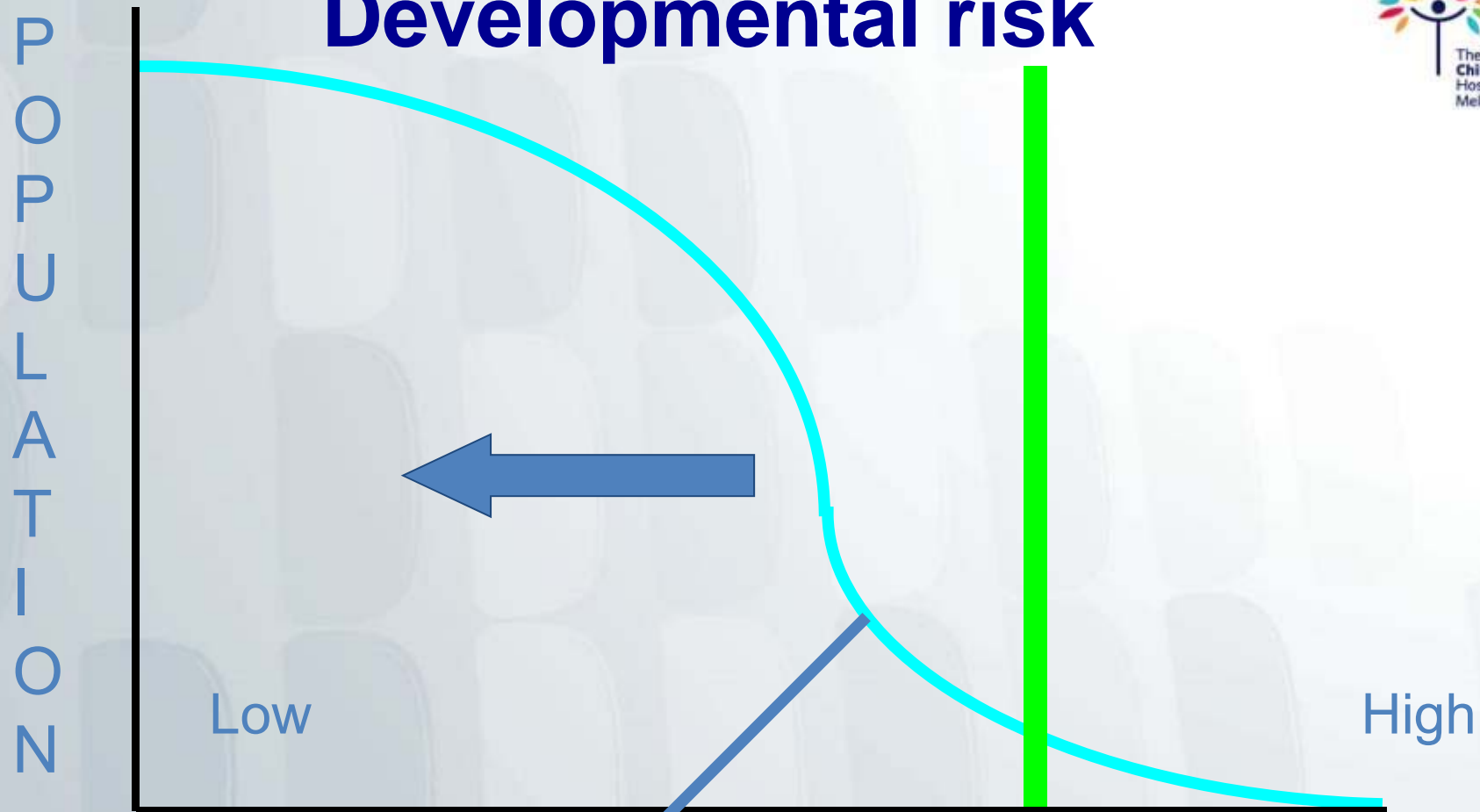


Developmental risk



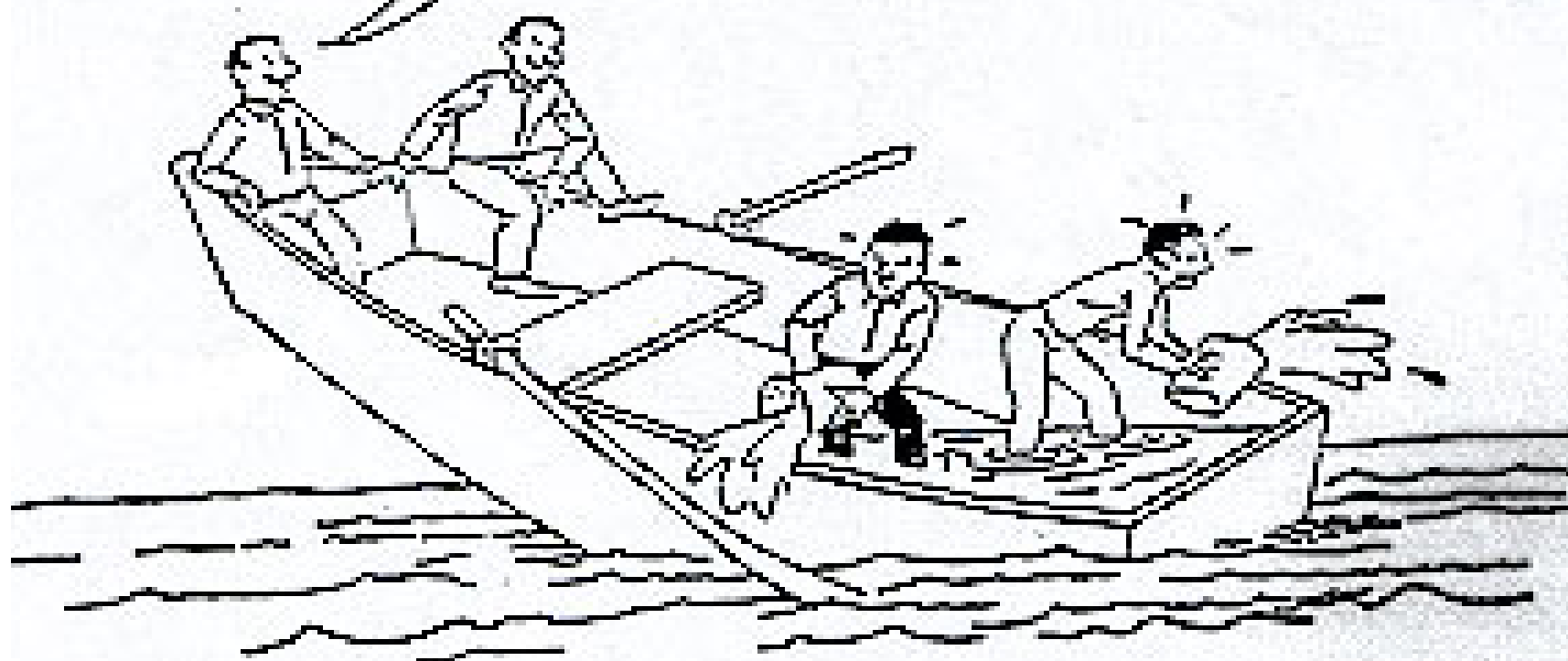
Effort is devoted to identifying and managing the high risk group

Developmental risk



Effort is devoted to reducing the risk amongst the entire population

*I'm sure glad the
hole isn't in our end...*

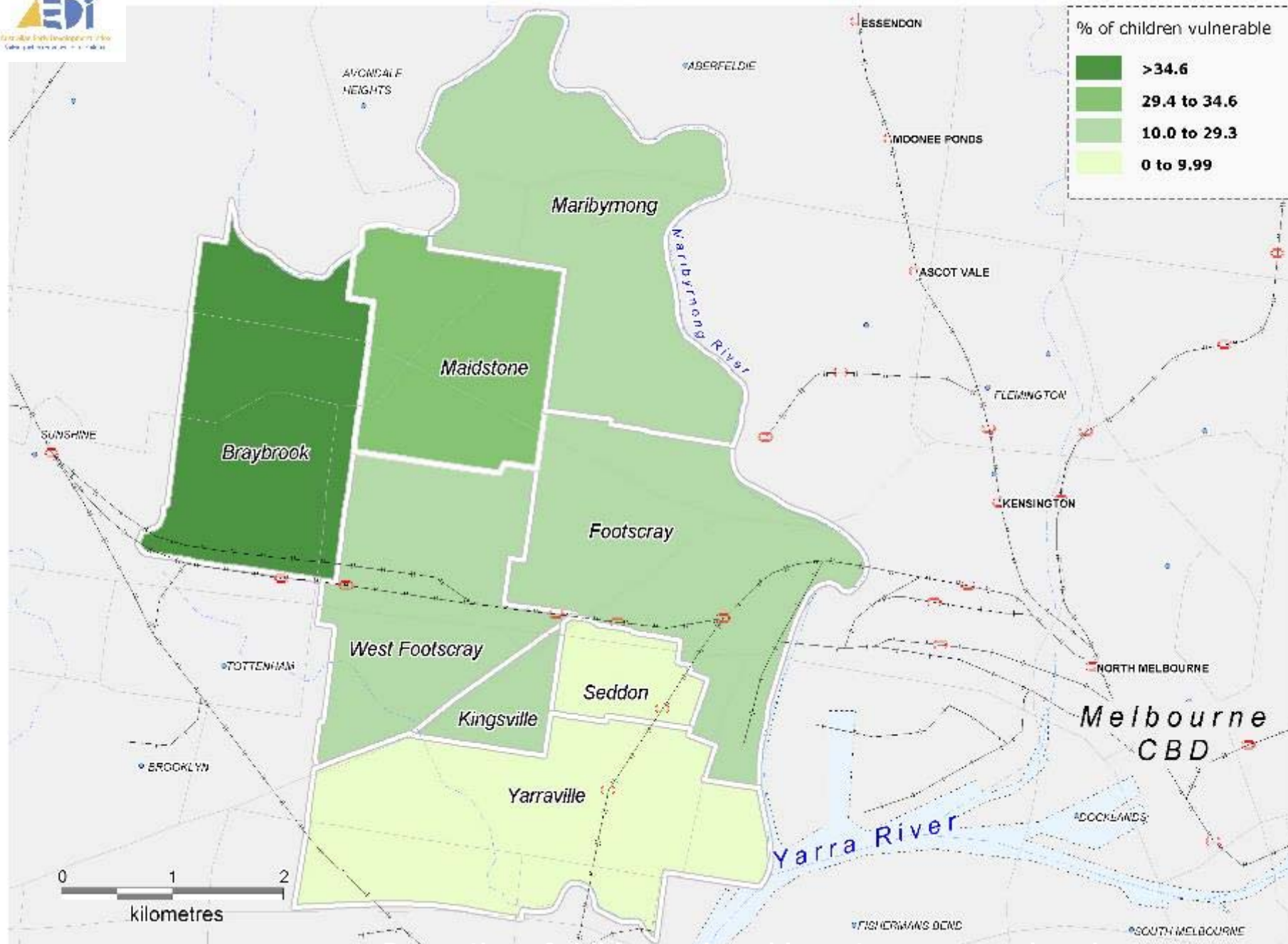


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Victoria

5 km West of Melbourne





AEDI Community Profile Summary

MARIBYRNONG Geographic Area, Victoria

5 km West of Melbourne CBD



Proportion of children developmentally Vulnerable (%)

Average Scores (0-10)

Suburb	No	Phys	Soc	Emo	Lang	Com	Vul 1	Vul 2	Phys	Soc	Emo	Lang	Com
Braybrook	103	21.1	18.9	18.9	23.2	41.1	52.6	34.7	8.00	7.08	7.12	8.46	5.63
Footscray	93	10.5	3.5	12.8	4.8	15.1	26.7	14.0	8.86	9.17	8.46	9.23	8.75
Footscray West	97	15.4	13.2	9.9	14.6	20.9	44.0	18.7	9.00	8.33	8.08	9.62	8.13
Kingsville	21	5.0	10.0	5.0	5.0	15.0	20.0	10.0	9.32	9.38	8.56	9.42	8.44
Maidstone	56	9.8	21.6	9.8	24.0	31.4	47.1	29.4	8.64	7.50	7.31	8.65	6.25
Maribyrnong	32	3.4	13.8	6.9	0.0	27.6	34.5	10.3	9.09	9.58	9.23	8.85	8.75
Seddon	39	2.6	5.1	2.6	10.3	5.1	15.4	5.1	10.00	9.79	9.42	10.00	10.00
Yarraville	139	2.9	8.1	3.7	4.5	11.8	19.1	5.9	9.55	9.17	8.82	10.00	9.38

Community Preparation and Implementation Phase

Communities mobilise and gather evidence

Community Evaluation and Monitoring Phase

AEDI Checklists completed for all children in the community

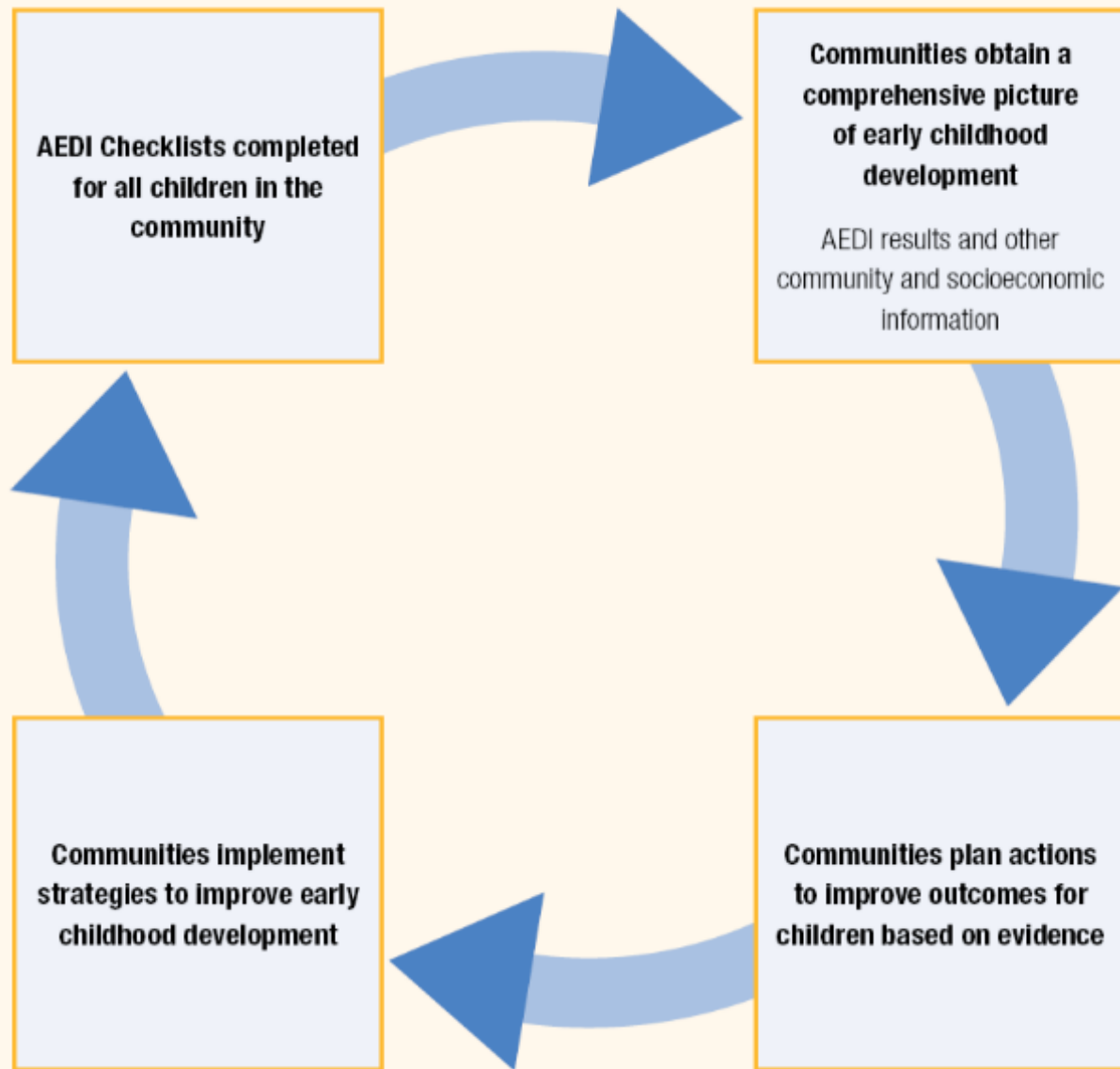
Communities obtain a comprehensive picture of early childhood development
AEDI results and other community and socioeconomic information

Community Dissemination Phase

Communities implement strategies to improve early childhood development

Communities plan actions to improve outcomes for children based on evidence

Community Action Phase



Prevention

- The idea of prevention is deeply ingrained in the way many people think about their own lives, and the way parents think about their children's lives - many examples - immunisation, children's car seats and seat belts, bicycle helmets.
- Proverbs
 - A stitch in time saves nine
 - An apple a day keeps the doctor away
 - Better safe than sorry

- after *Head BW, Redmond B. Aust Rev Pub Affairs 2011; 10: 5-22*



‘If the science and the economics of prevention are highly persuasive to policymakers, why have not all governments taken great steps towards adopting the new paradigm?’

- Head BW & Redmond G, 2011

Why indeed?

- Challenge of balancing treatment and prevention - the old squeaky door (recurrent crises) gets the attention
- Difficulty in framing the message
 - Complexity of message - causes and remedies
 - Long term benefits vs short term political cycles and culture
- Institutional complexity of comprehensive programs - require complex joined up approaches at multiple levels (policies, programs, services, professionals)



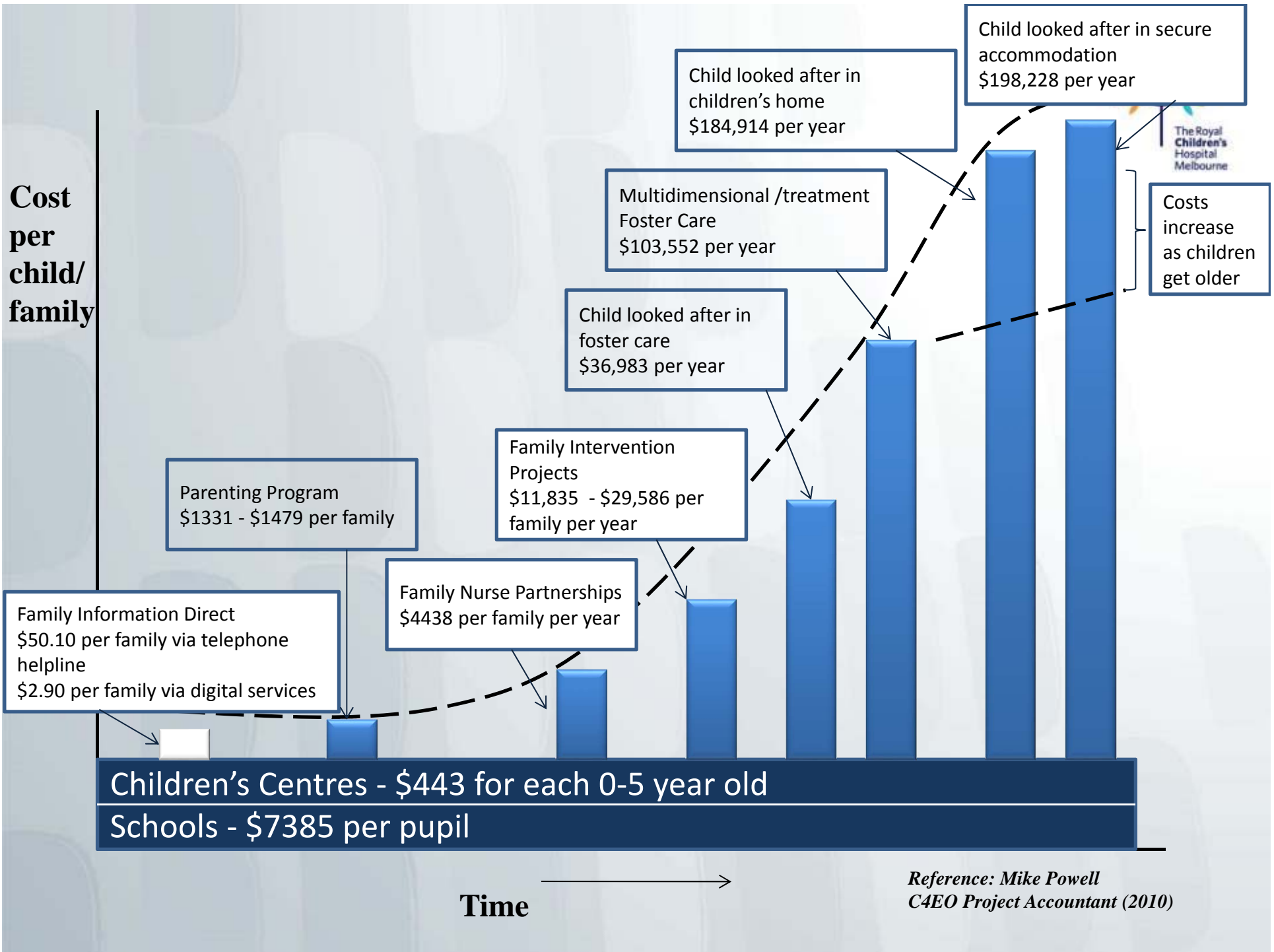
‘The challenges of applying these multidimensional models lie in their complexity...the numerous interactive influences on developmental outcomes underscores the futility of searching for simple solutions to complicated problems.’

- *Shonkoff, 2010*



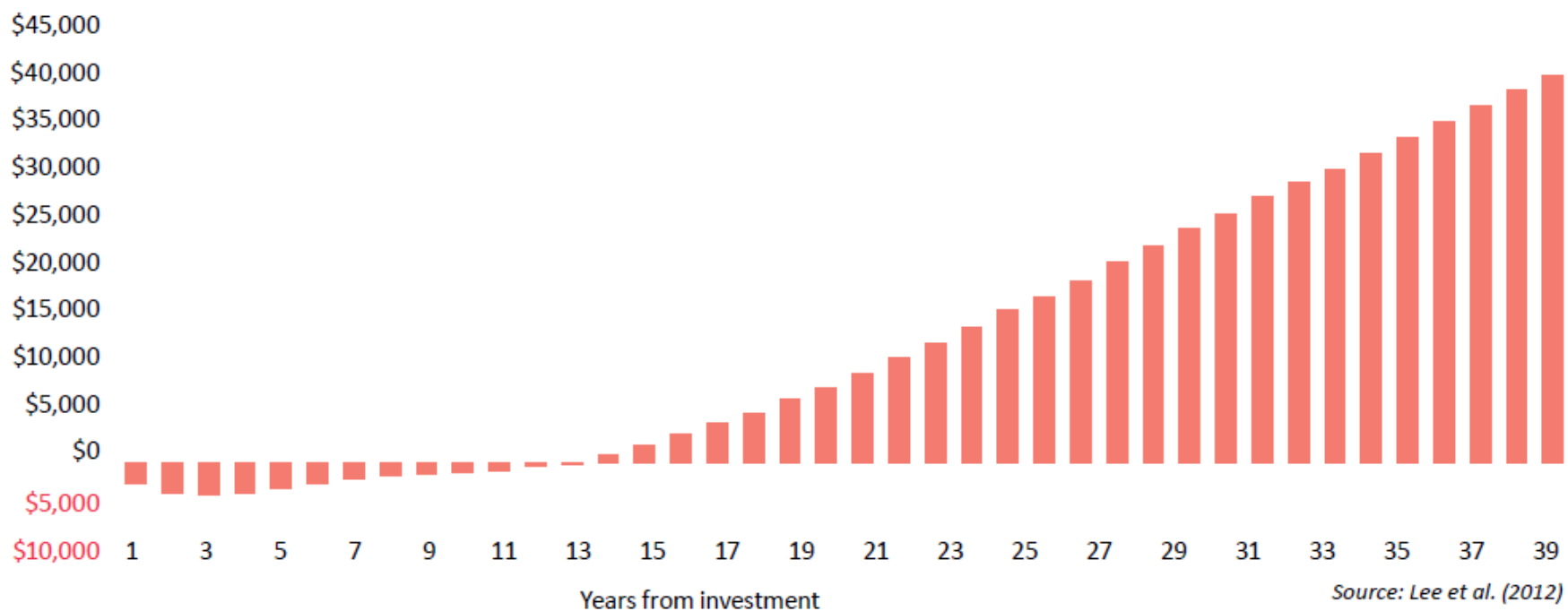
‘For every complex problem there is an answer that is clear, simple, and wrong’ .

- H.L Mencken

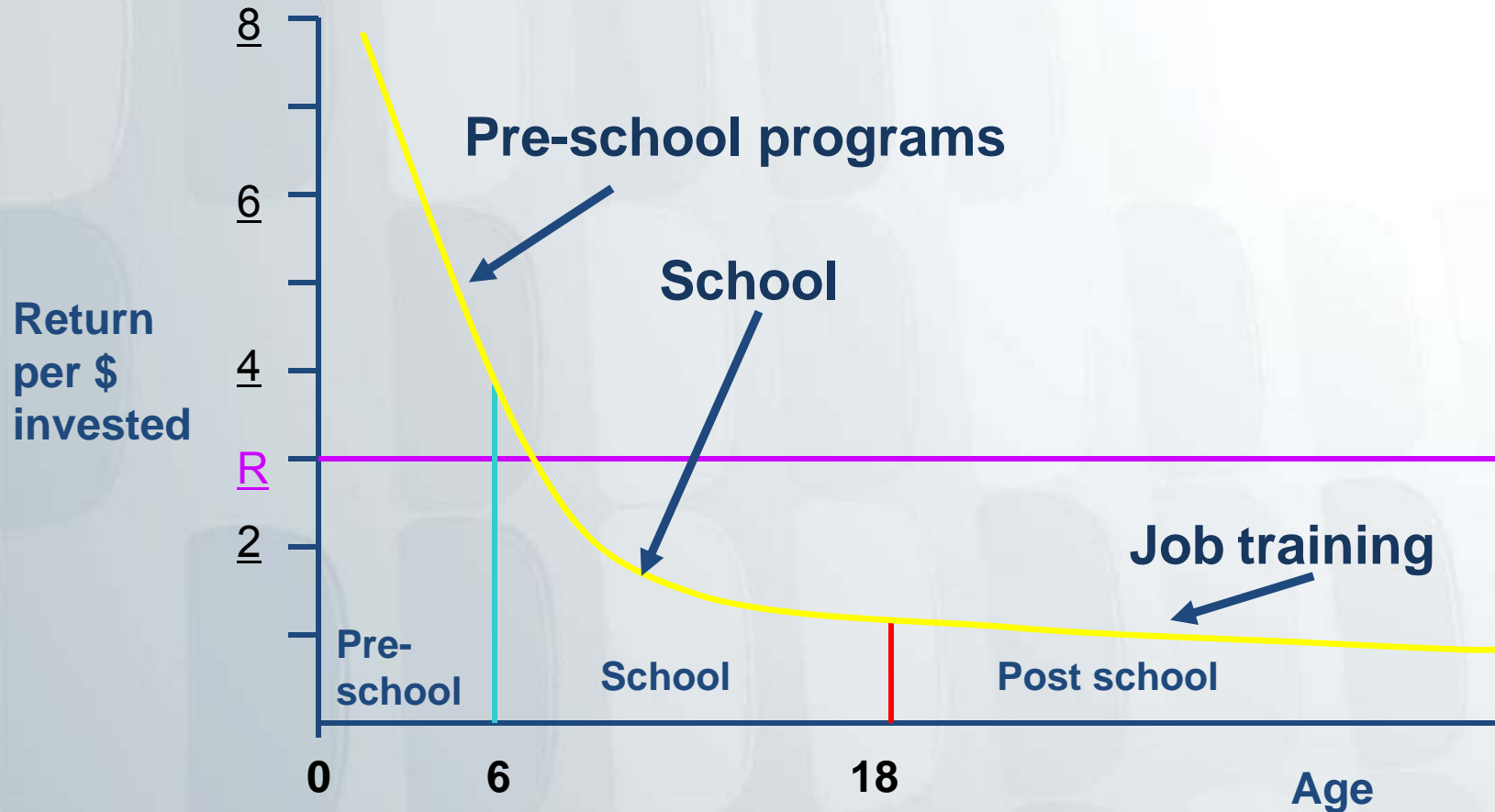


CUMULATIVE BENEFITS OF EARLY INTERVENTIONS

Figure 2: Cumulative economic benefits of early education programs

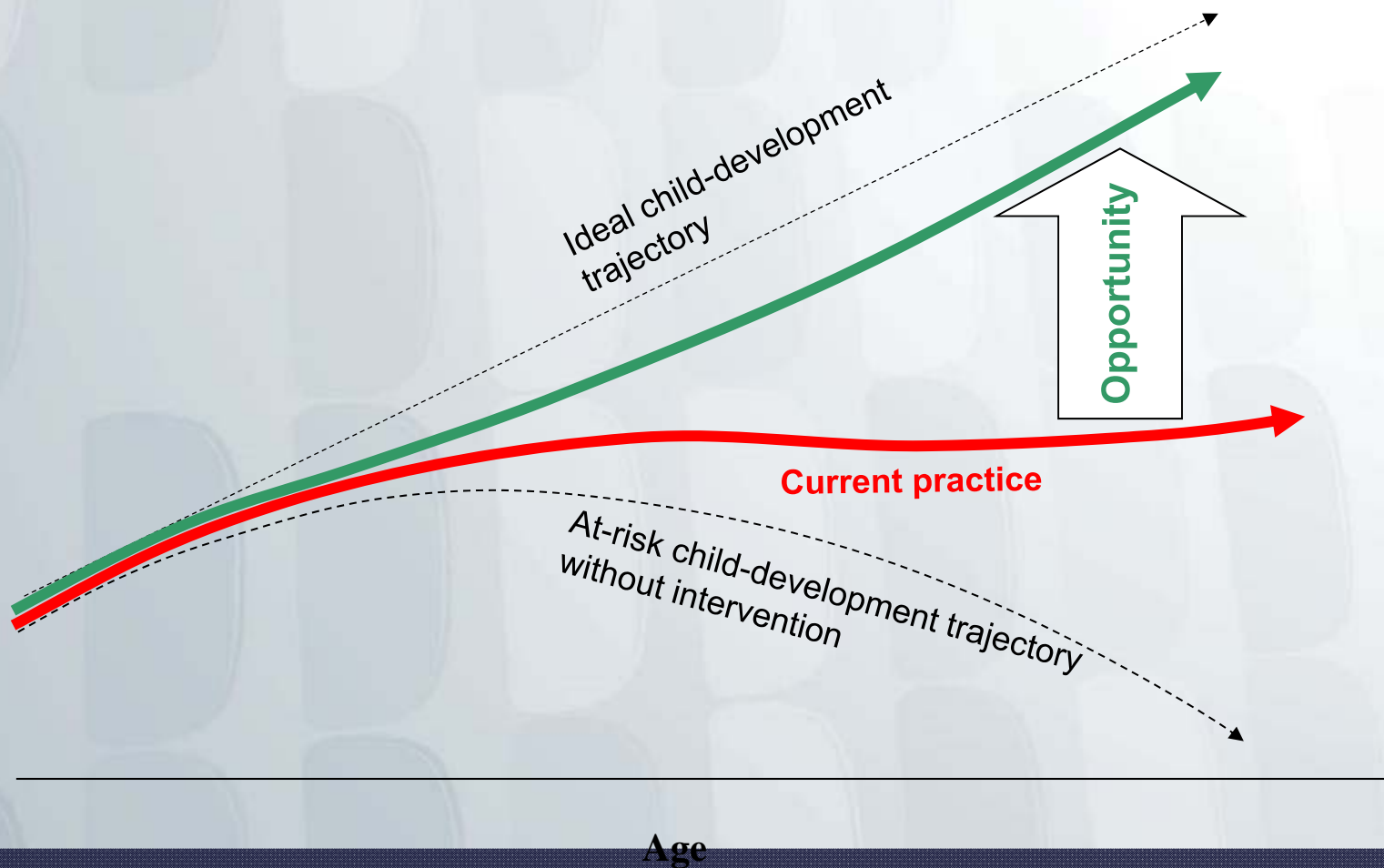


Rates of return to human development investment across all ages



Pedro Carneiro, James Heckman, Human Capital Policy, 2003

Developmental health - Aims





Conclusion

- Promoting the healthy development of children is both an ethical imperative and a critical economic and social investment
- Our agenda for the 21st century has to be the application of science to policy and practice - *to close the gap between what we know and what we do*



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