

EVIDENCE CENTRE
TE POKAPŪ TAUNAKITANGA

Susan Morton (GUiNZ) – *Longitudinal Studies: Transforming Ordinary into Extraordinary*

Longitudinal studies: Transforming ordinary into extraordinary

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Growing Up in New Zealand

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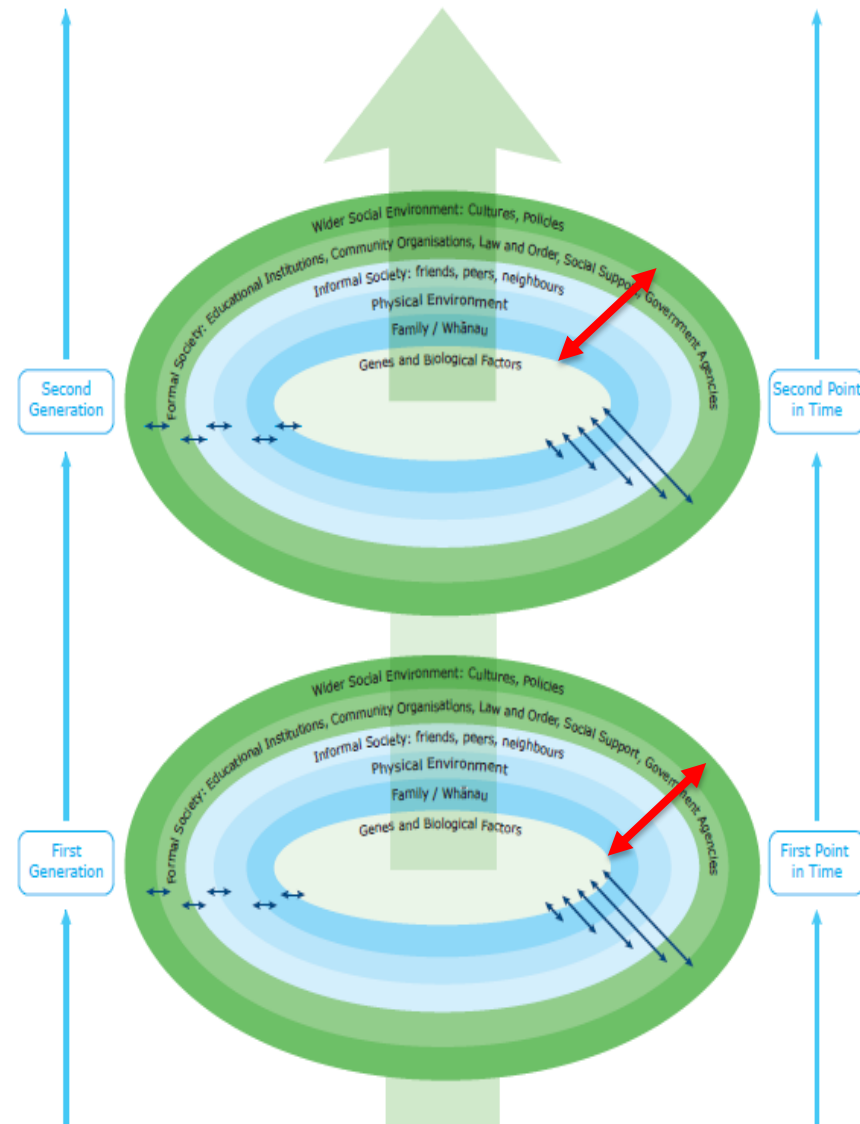
Objective of *Growing Up in New Zealand*

To provide contemporary **population relevant evidence** about the determinants of developmental trajectories for 21st century New Zealand children in the context of their families (*explicitly to provide evidence to inform policy*).

























Growing Up in New Zealand – cohort

- **6853** children recruited before their birth - via pregnant mothers in 2009 and 2010
- Partners recruited during pregnancy (**4401**)
- Cohort **size and diversity** ensure adequate explanatory power to consider trajectories for Māori (1 in 4), Pacific (1 in 5) and Asian (1 in 6) children, and multiple ethnicities (50%)
- Cohort **broadly generalisable** to current NZ births (diversity of ethnicity and family SES)
- **Retention rates** to 4.5 years have been very high (over 92% with minimal attrition bias)
- **Focus on understanding gap between policy (e.g. universal services) and meeting real need (child wellbeing)**



Longitudinal Information collected

Child age	Ante-natal	Peri-natal	6W	35W	9M	12M	16 M	23 M	2Y	31 M	45 M	54 M	72M	8Y
Mother CAPI*														
Father CAPI*														
Child CAPI*														
Mother CATI†														
Mother Electronic														
Father Electronic														
Child‡														
Child Samples [◊]														
Data Linkage**														

* CAPI computer assisted personal interview

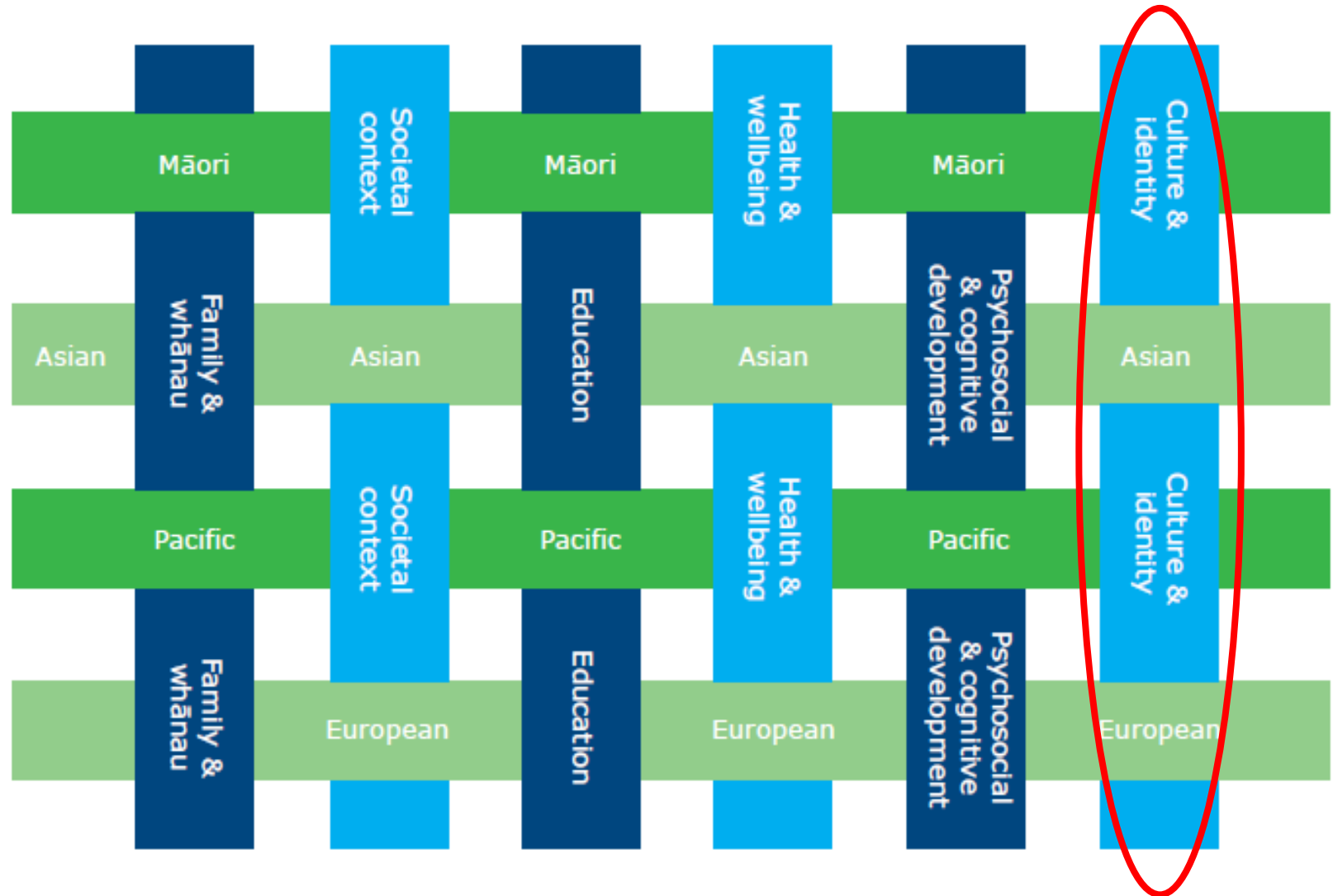
† CATI computer assisted telephone interview

‡ Child measurements

◊ Child biological samples - throat, nose and elbow swab and saliva

** Consent for linkage to routine admin records

Child centered and multi-disciplinary



Culture and Identity Domain

- Ethnic identity (mother, partner, intended for child) and development over time
- Multiple levels of ethnicity collected – self-prioritised and able to be externally prioritised

ALSO:

- Cultural values, beliefs and expectations
- Cultural practices
- Cultural capital
- National identity
- Sense of self
- Influence of other cultures on the individual
- Attitudes about others
- Discrimination – perceived and context
- Religiosity/Spirituality
- Community capital



Complexity of ethnicity for this generation

Of the **Māori cohort's mothers:**

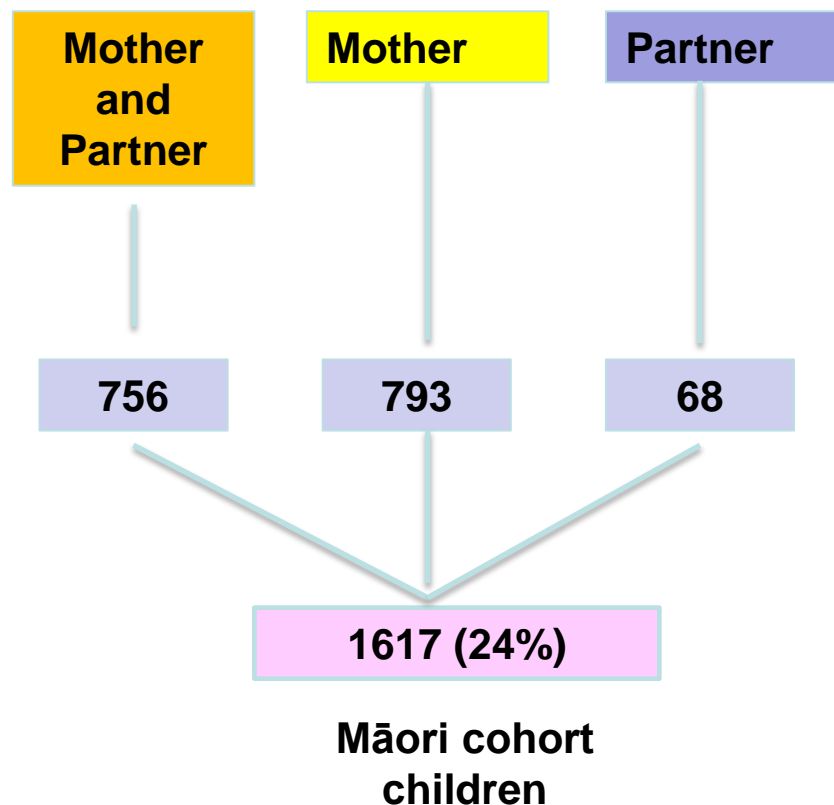
- 69% reported being of Māori descent
- 88% identified as Māori

Of the **Māori cohort's fathers:**

- 69% reported being of Māori descent
- 83% identified as Māori

For the **Māori cohort children (n=1617):**

- 96% of mothers and 51% of partners indicated the child had Māori as one of their ethnicities
- for 47% both mother and partner gave Māori as an ethnicity for their child.



Snapshots from the pre-school years



Families (and children) are mobile

Tenure type	Antenatal	9 months	2 years	54 months
Family Home	55.2	56.2	56.2	57.8
Private rental	38.3	37.8	38.1	35.8
Public rental	6.5	6.0	5.7	6.4



Growing Up in New Zealand Policy Brief 2

Keeping our children injury-free: household safety evidence from Growing Up in New Zealand



Unintentional injury is a leading cause of death for New Zealand children, and an important public health concern. In 2007, New Zealand was ranked worst out of 24 OECD nations for rates of death from injury for those under 20 years of age. In addition, a great many more non-fatal injuries occur which require costly hospitalisation or other forms of medical attention, and which cause an important (and sometimes long-lasting) burden on children and their families. This burden is also known to be greatest amongst the most deprived, and therefore injuries contribute to the inequitable outcomes experienced by some children.¹

Previous work has suggested that the proper implementation of evidence-based safety measures in New Zealand could prevent a majority of injuries where young children are particularly susceptible to harm. However, a recent systematic analysis of child and adolescent safety within New Zealand



At 4 years daily screen time greater than 2 hrs/day

Child obesity and parental perception

- 1 in 3 NZ children (aged 2-14) are overweight or obese
- 14% of the cohort are overweight or obese by 4 years of age (9% at 2 years)



Underweight

Normal weight

Overweight

10%

85%

5%

Perception

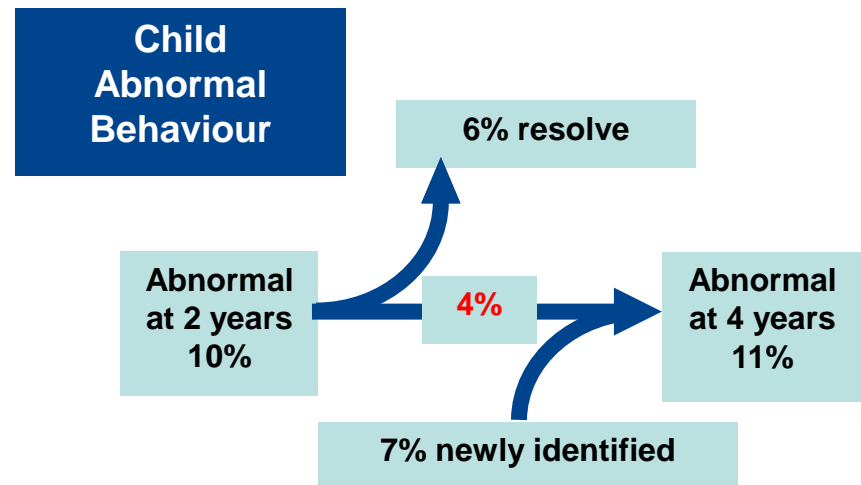
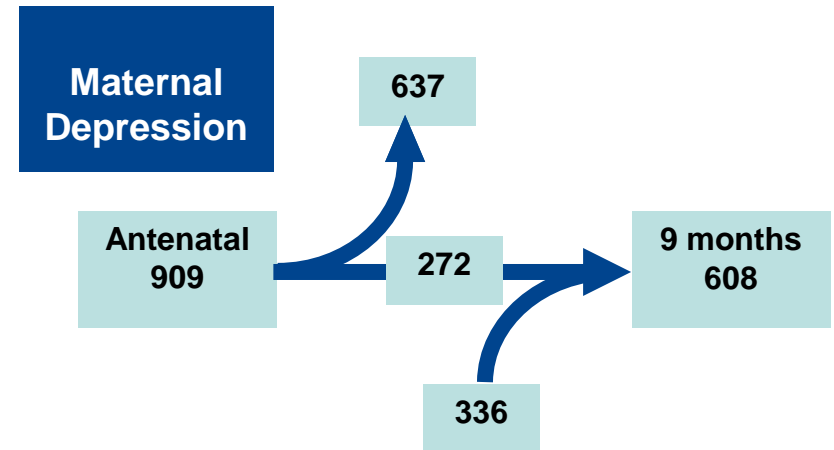
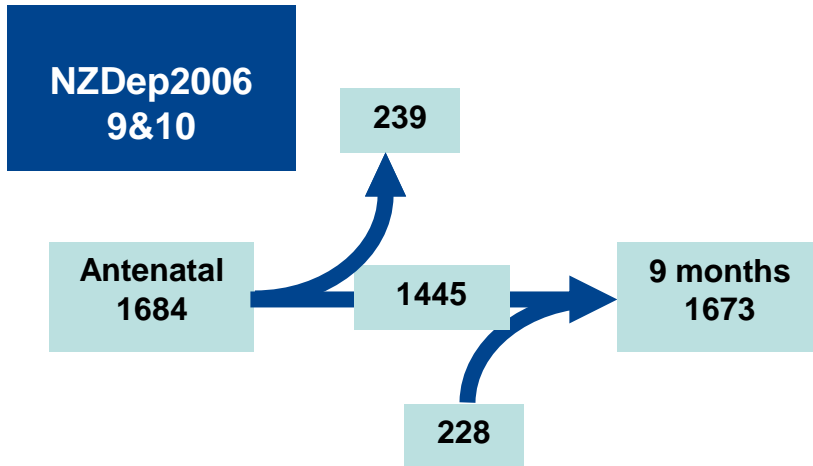
0%

86%

14%

Reality

Churn in risks and outcomes is rapid



Measuring and monitoring child “poverty”



Economic capital



Labour force status
Household income
Sources of income
Paid parental leave
Economic hardship

Physical capital



Housing tenure
Residential mobility
Household safety
Health status
Health service access

Social capital



Parent-parent relationships
Parent-child relationships
Relationship status
Household structure

Human capital



Early childhood education
Home educational environment
Cultural identity and belonging
Equity

Proximal Family Variables

- Maternal depression (antenatal using EPDS>12)
- Maternal physical wellbeing (poor or fair)
- Maternal smoking in pregnancy (after first trimester)
- Maternal age (teenage pregnancy)

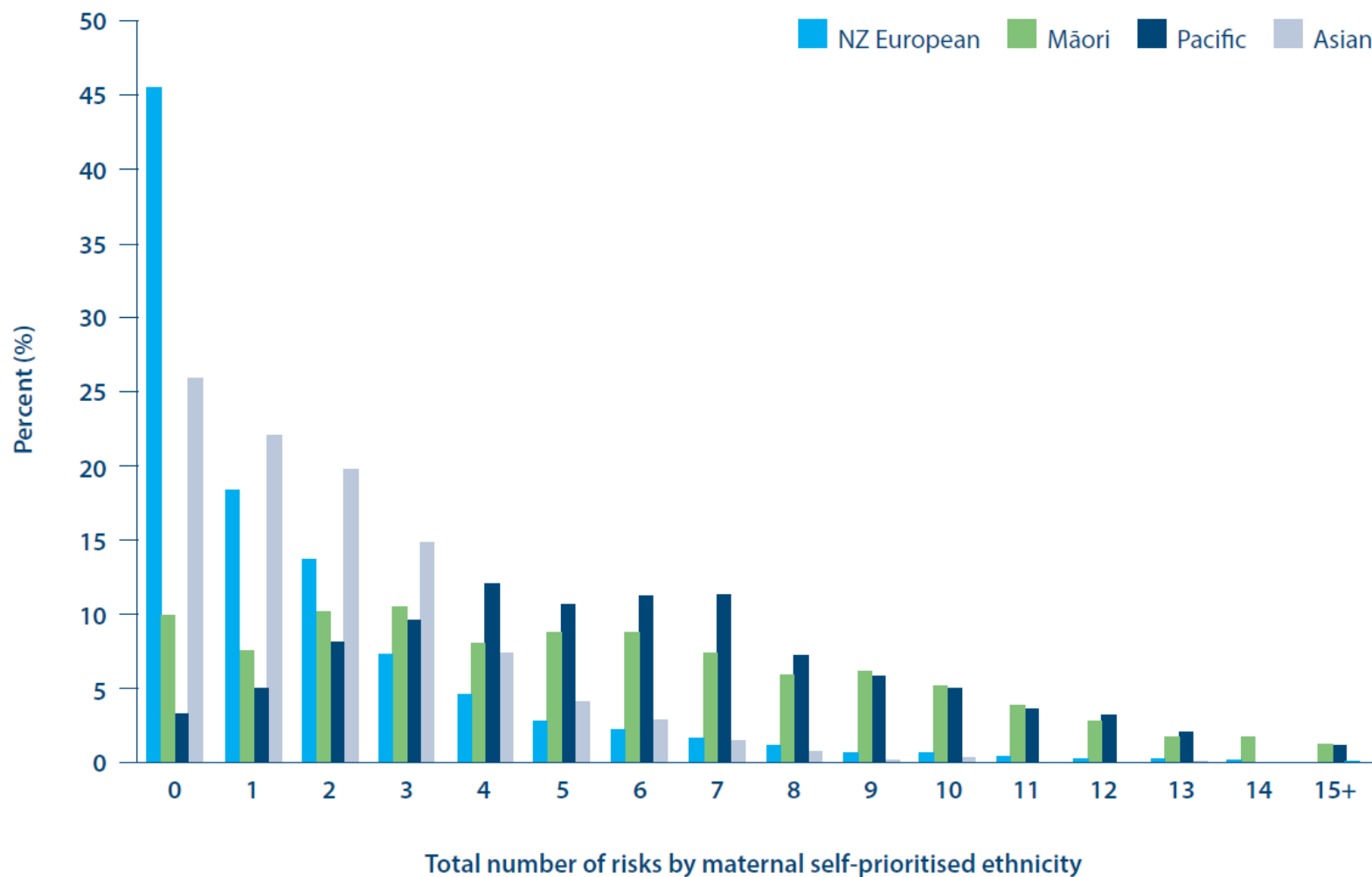
Distal Family Variables

- Relationship status (no partner/single)
- Maternal education (no secondary school qualification)
- Financial stress (regular money worries)

Home environment

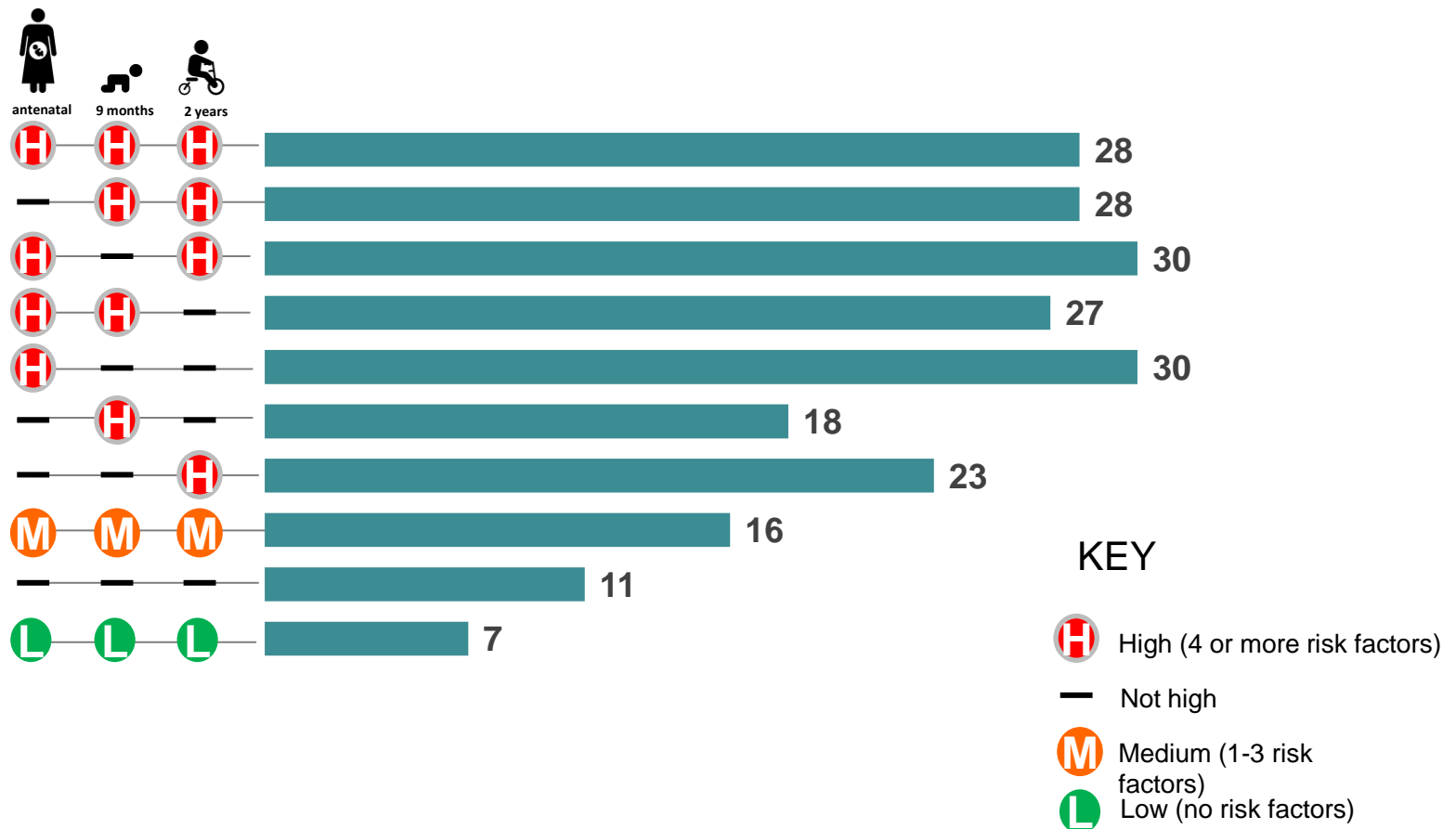
- Deprivation area (NZDep2006 decile 9 or 10)
- Unemployment (mother not in work or on parental leave)
- Tenure (public rental)
- Income tested benefit (yes/no)
- Overcrowding (≥ 2 per bedroom)

Cumulative exposure to indicators - maternal ethnicity



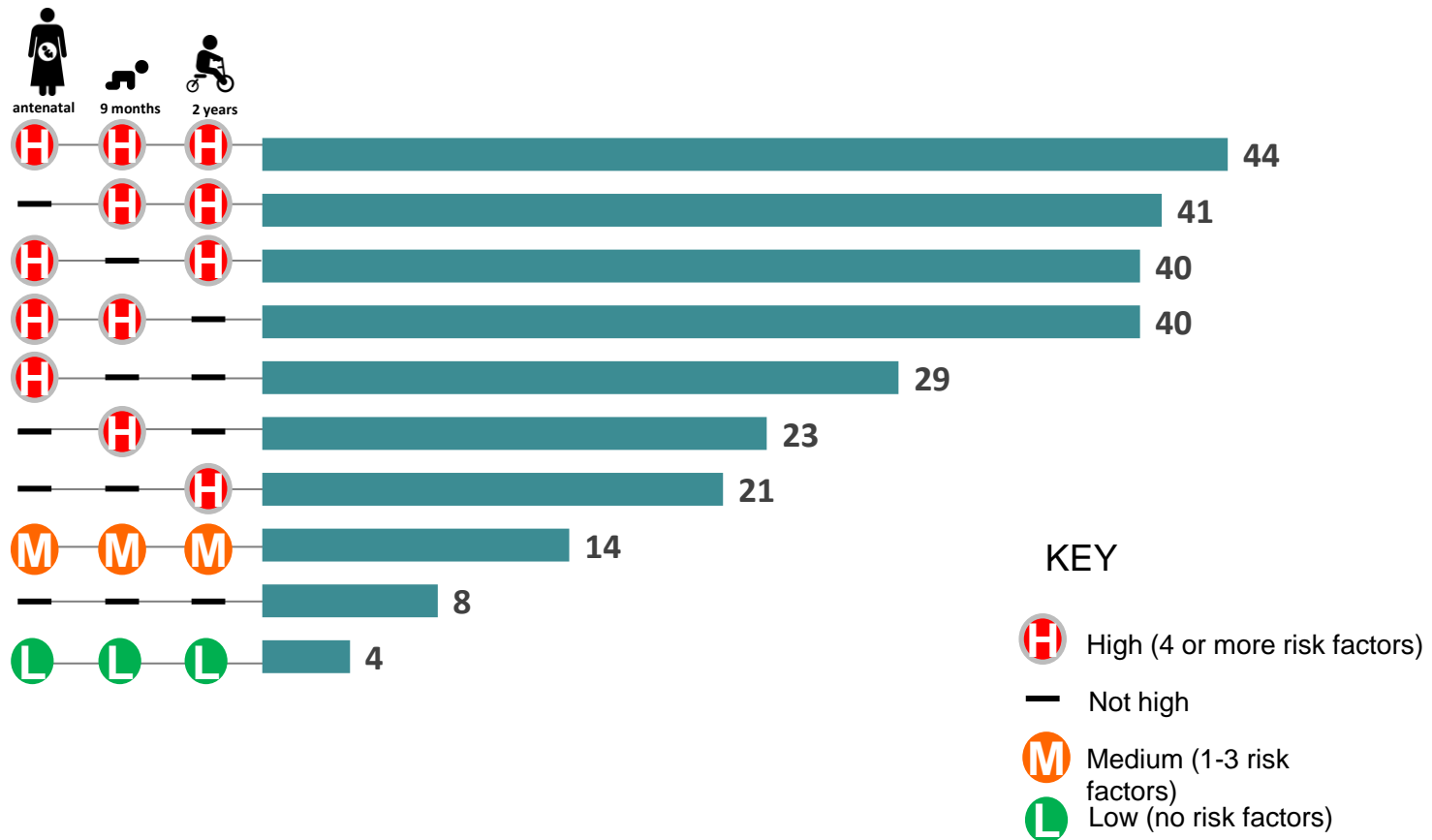
Persistent “poverty” impacts overweight/obesity

Obesity (WHO reference) at 4.5 years (%)



Persistent “poverty” impacts behaviour

SDQ score in Abnormal range at 4.5 years (%)

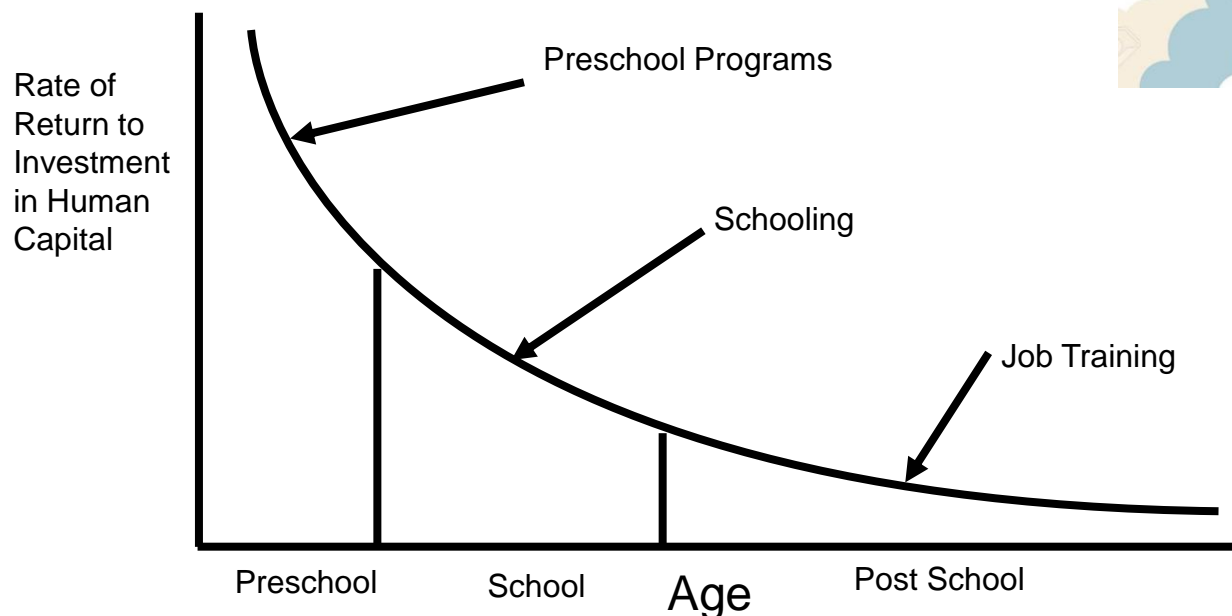


Intervening early to maximize wellbeing

“Some have compared a child’s evolving health status in the early years to the launching of a rocket, as small disruptions that occur shortly after take-off can have very large effects on its ultimate trajectory.”

(Center on the Developing Child at Harvard University, 2010)

Intervening early in life has best chance to improve outcomes and is most cost-efficient *(Heckman, 2007)*



Challenges for providing evidence for change

- Strong associations are not sufficient to inform action
- Needed to move beyond “risk factorology”
- Causation usually multifactorial, accumulating and interacting over time, acting at multiple levels of influence – and resulting in co-morbidities

SCIENCE vs. THE PEOPLE!

correlation is
not causation!



i dunno what
those are but
i disagree
and i vote!



Growing Up in South Auckland

Children growing up in South Auckland can be hidden in the NZ statistics, and within the overall *Growing Up* analyses

GUINZ collaborated with TSI to look specifically at the **lived realities** of the 1252 children and their families “*Growing up*” in South Auckland

- 9% born to a **teenage mother** (4.8% *Growing Up*)
- 25% mothers **no formal school qualifications** (7% *GU*)
- 68% live in **most deprived** NZDep2006 quintile (27% *GU*)
- 60% in **rental accommodation** (45% *Growing Up*)
- 50% in a **crowded household** (21% *Growing Up*)



78% identify as Maori or Pasifika (45% *Growing Up*)

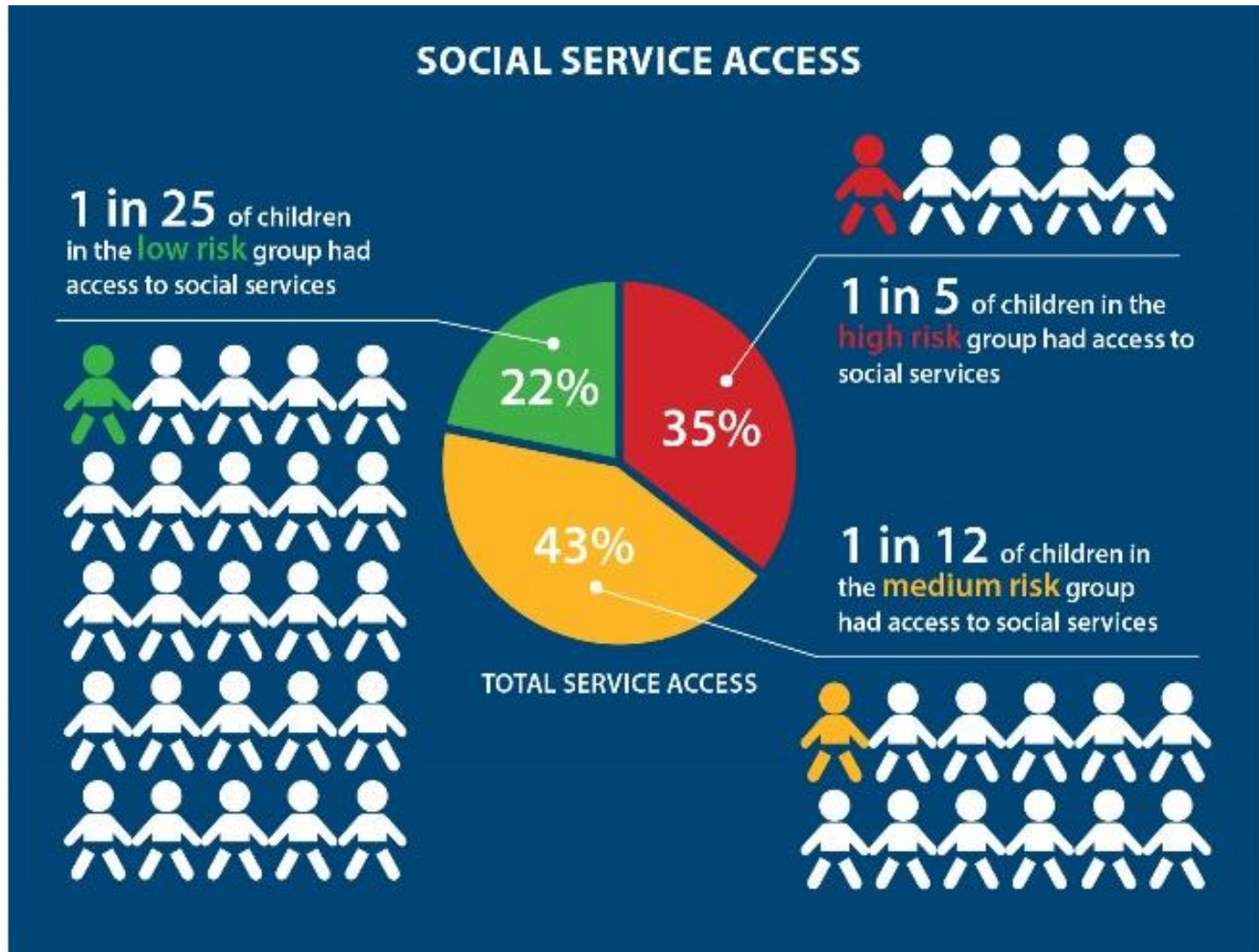
Overall **1 in 5 children in South Auckland experience high vulnerability** during their first 1000 days (1 in 10 of all *Growing Up* cohort)

Capturing resilience - “what works”



Collaborative partnership between *Growing Up in New Zealand* and the Southern Initiative (South Auckland) to facilitate the development of a community intervention programme to promote story-reading and “talking” to the under-2’s – used a co-design process.

Measuring, managing, meeting need



B4SC – Well Child Check for NZ preschoolers



- Final universal free Well child check at 4 years of age
- Delivered in community/primary health by multiple providers (standard protocols)
- Designed to identify health and development issues that require attention (behaviour, overweight, vision, hearing) prior to school entry
- Assessed cohort children who participated from maternal report and linkage to administrative health data

Maternal characteristic	B4SC participation*
Education	
• No secondary	92%
• Secondary only	95%
• Bachelor or Higher degree	98%
Deprivation decile	
• Low (1-3)	97%
• Medium (4-7)	97%
• High (8-10)	94%
Ethnicity	
• NZ European	98%
• Maori	93%
• Pasifika	90%
• Asian	97%

* Overestimate - consent for linkage required

Well child checks - meeting need?

"We manage what we measure"

- Overall approx. 10% of cohort children do not participate
- Group who miss out are the most vulnerable (lowest SES, Maori and Pasifika)
- Utilising outputs from B4SC administrative metrics to plan/evaluate universal service and impact delivery may exacerbate existing health and wellbeing inequalities
- Referral rates do not always align well with measured status (e.g. obesity)



Transition to school



School changes and (early) transience

		n	%	Odds ratio (95% CI)	p-value
Gender	Male (reference)	325	11	1	
	Female	334	12	1.06 (0.89-1.28)	0.495
Ethnicity	European (reference)	263	9	1	
	Māori	113	17	1.55 (1.18-2.02)	0.002
	Pacific	94	15	1.40 (1.04-1.87)	0.026
	Asian	81	13	1.39 (1.04-1.85)	0.025
	New Zealander	56	10	1.08 (0.75-1.50)	0.677
NZDep2013	Low, decile 1-3(reference)	146	8	1	
	Medium, decile 4-7	208	11	1.17 (0.93-1.48)	0.187
	High, decile 8-10	229	16	1.25 (0.96-1.62)	0.096
Age group	Under 20 years	48	24	3.09 (2.05-4.60)	<0.001
	20-24 years	131	19	2.38 (1.80-3.16)	<0.001
	25-29 years	158	12	1.43 (1.11-1.85)	0.006
	30-34 years (reference)	168	9	1	
	34-39 years	125	10	1.21 (0.92-1.59)	0.17
	Over 40 years	22	9	1.16 (0.69-1.85)	0.567



“Extraordinary things emerge from following ordinary people’s lives”
Helen Pearson (Nature, 2015)



CHURN

That they feel like that they are part of a ethnically diverse country and part of a community, e.g. school, neighbourhood, friends. Freedom to comfortably come and go as they please

We want our child to be happy and healthy, and to finish school. Education is extremely important – as long as she gets an education she can make her own decisions

Voice

I hope my child will grow up in a safe neighbourhood, with people who care about them

Children's own voices at 8 years



Acknowledgements

- **Children and their families**
- *UoA Growing Up* team
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Dame Whina Cooper