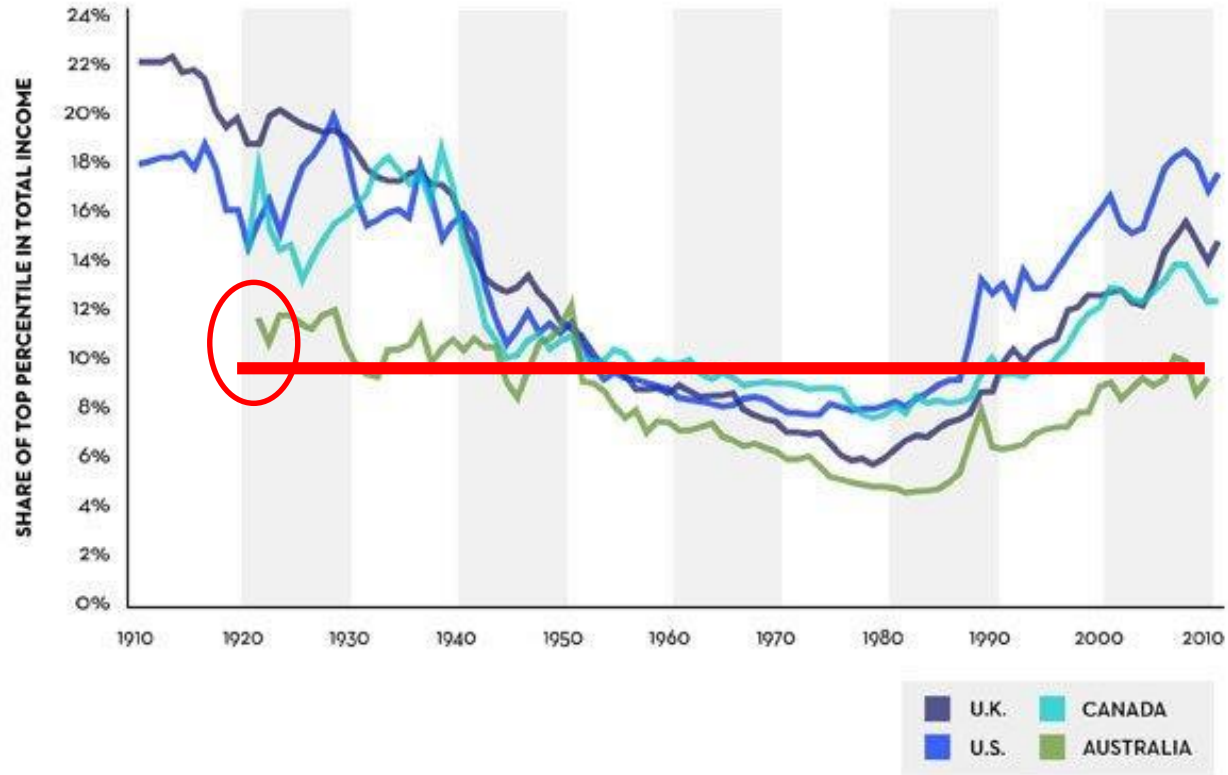


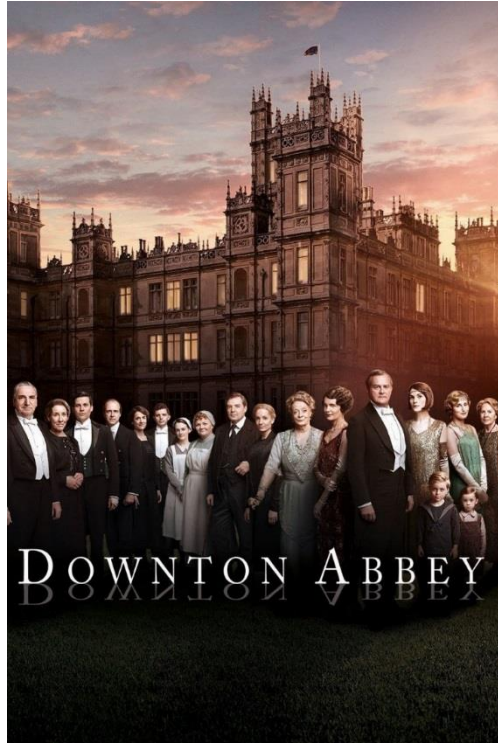
# Evaluating interventions to improve child health and reduce inequalities: experiences from Australia and the UK ...moving beyond the rhetoric (trying to...)

Prof Sharon Goldfeld  
Dep Director  
Centre for Community Child Health

## INCOME INEQUALITY IN ANGLO-SAXON COUNTRIES, 1910-2010



Thomas Piketty. Capital in the 21<sup>st</sup> Century. Harvard University press. 2014



League Table 1 Inequality in income

Rank	Country	Relative income gap	Child poverty rate (50% of the median)
1	Norway	37.00	4.5
2	Iceland	37.76	6.4
3	Finland	38.34	3.7
4	Denmark	39.54	4.8
5	Czech Republic	39.62	6.3
6	Switzerland	39.64	7
7	United Kingdom	39.94	9.3
8	Netherlands	40.64	5.7
9	Luxembourg	41.21	13
10	Ireland	41.49	6.9
11	Austria	41.87	9.6
12	Germany	43.11	7.2
13	France	43.95	9
14	Australia	44.75	9.3
15	Republic of Korea	45.74	8
16	Sweden	46.23	9.1
17	New Zealand	46.52	11
18	Cyprus	47.19	9.1
19	Slovenia	47.29	8.3
20	Malta	48.21	14.5
21	Hungary	48.34	15
22	Belgium	48.41	10.1
23	Poland	51.76	14.5
24	Canada	53.19	16.9
25	Slovakia	54.21	13.7
26	Croatia	54.59	14.8
27	Lithuania	54.81	17.8
28	Estonia	55.55	12.4
29	Turkey	57.07	22.8
30	United States	58.85	20
31	Chile	59.03	26.3
32	Latvia	59.66	16.3
33	Portugal	60.17	17.4
34	Japan	60.21	15.8
35	Italy	60.64	17.7
36	Spain	62.62	20.2
37	Israel	64.58	27.5
38	Greece	64.69	22.3
39	Mexico	65.00	24.6
40	Bulgaria	67.01	23.1
41	Romania	67.08	24.3

Fairness for Children: A league table of inequality of child well-being in rich countries.  
 UNICEF Innocenti Report Card 13  
 2016

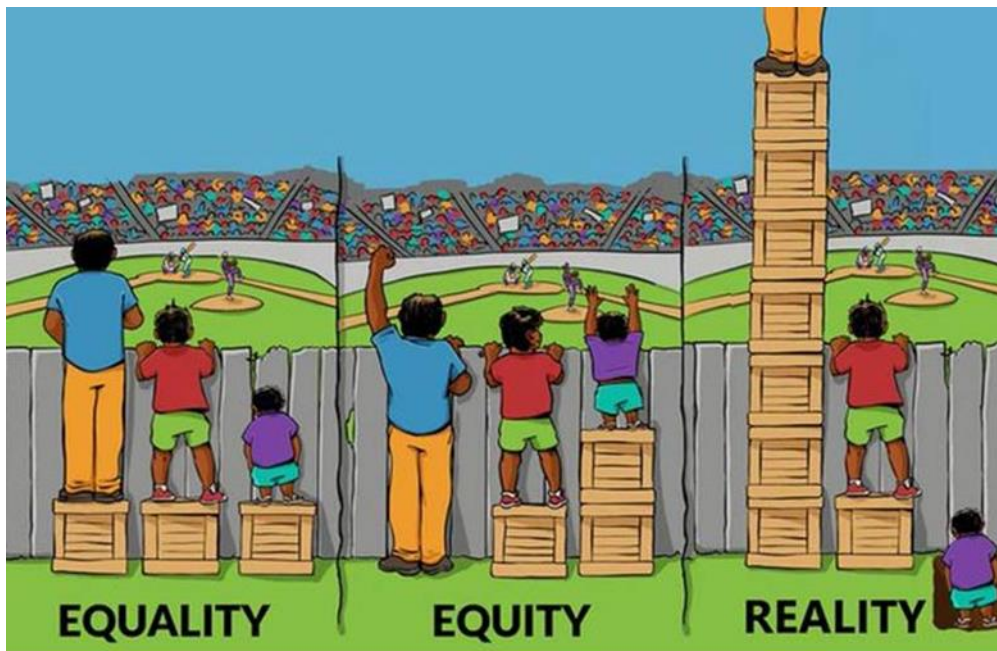
From infancy to age 14-15 years:

- $\geq 60\%$  of children  $\geq 2y$
- $\geq 70\%$  of children  $\geq 8y$

have at least one ongoing health or psychosocial problem at any given time

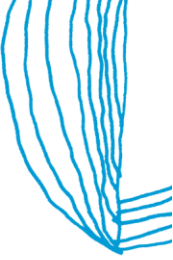


# Inequitable outcomes



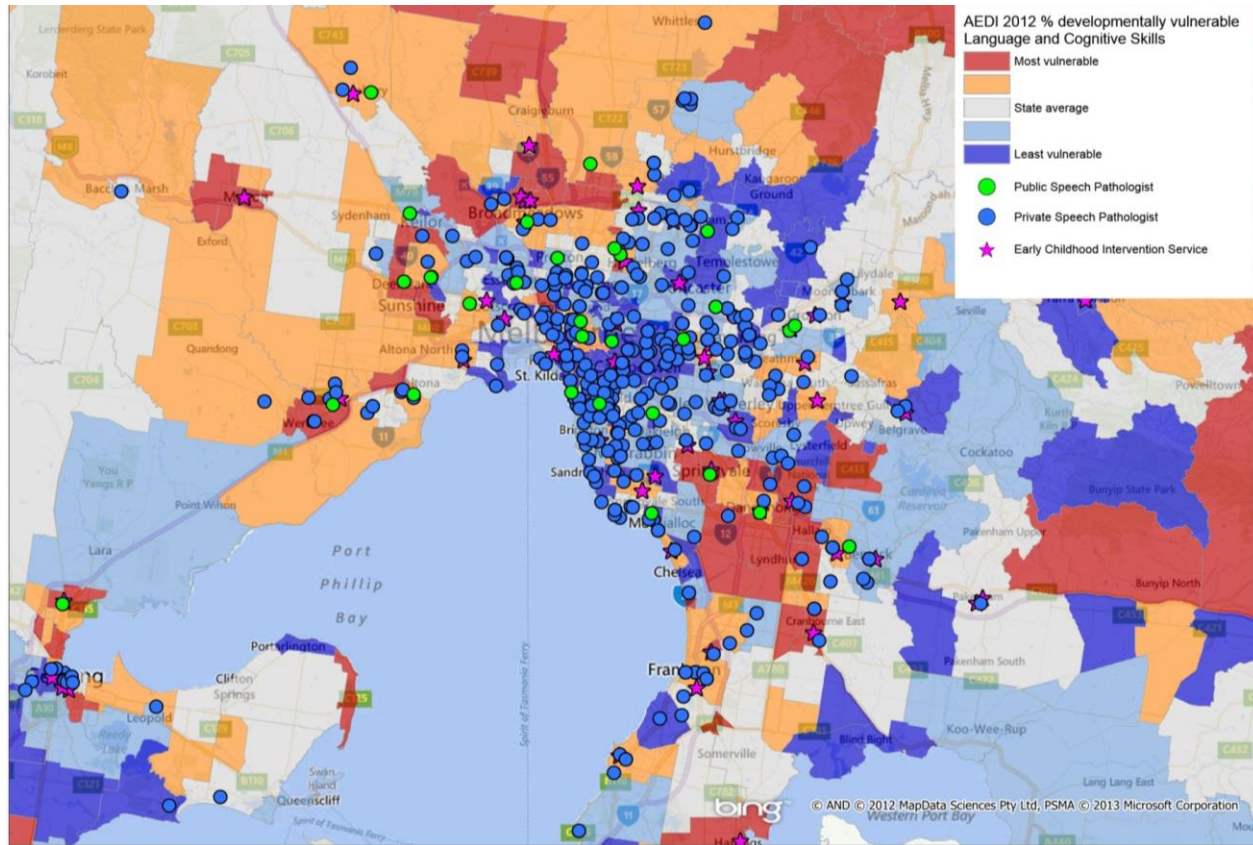
6.7%

18.4%



# Service inequities:

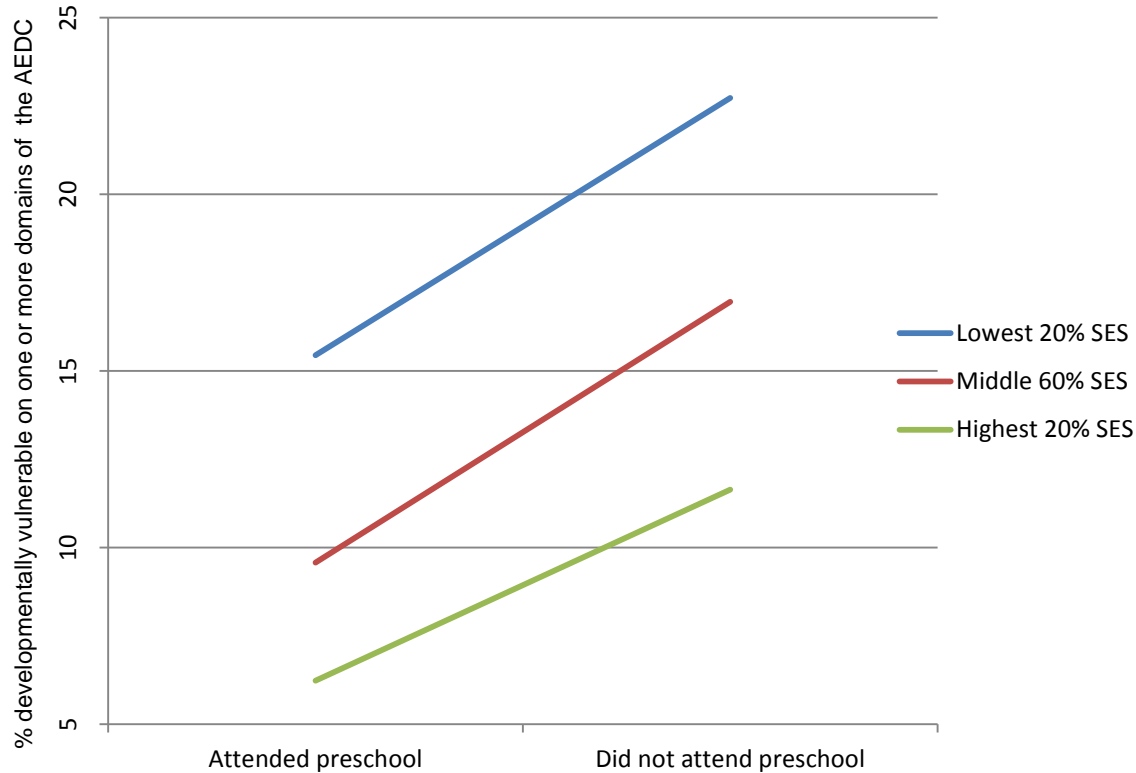
# Locations of speech pathologists



Reilly S, Harper M, Goldfeld S. The demand for speech pathology services for children: Do we need more or just different? *Journal of Paediatrics and Child Health*. 2016.

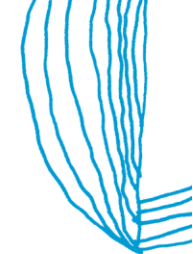


# Equity and ECEC



Percent of children living in the top 20% of advantaged SES communities, middle 60% of SES communities, and bottom 20% of disadvantaged communities who are developmentally vulnerable on two or more AEDC domains.

**Goldfeld, S.,** O'Connor, E., O'Connor, M., Sayers, M., Moore, T., Kvalsvig, A., & Brinkman, S. The Role of Preschool in Promoting Children's Healthy Development: Evidence from an Australian Population Cohort. *Early Childhood Research Quarterly*.2015. doi: 10.1016/j.ecresq.2015.11.001 (AEDI)



# Medicare spending

**Shares of the Medicare spending by income quintile, birth to 11 years of age**

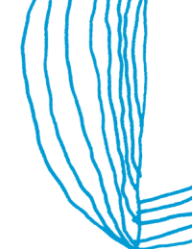
Income quintile	Total spending	GP	Specialist	Imaging & pathology
Lowest	18%	20%	15%	16%
Second	19%	19%	18%	18%
Third	20%	20%	19%	20%
Fourth	21%	21%	22%	22%
Highest	22%	20%	26%	24%

Data source: LSAC

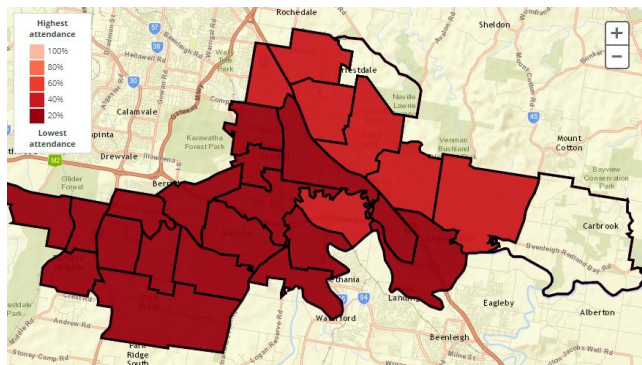
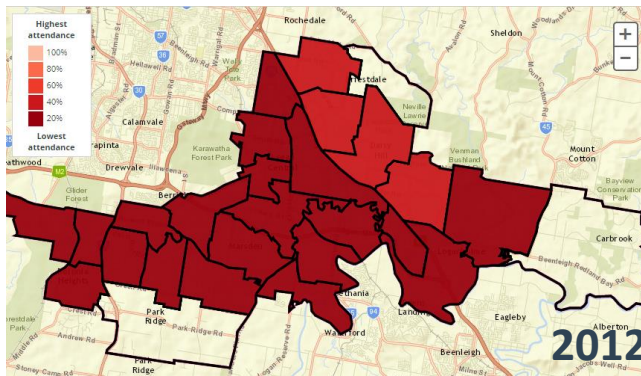
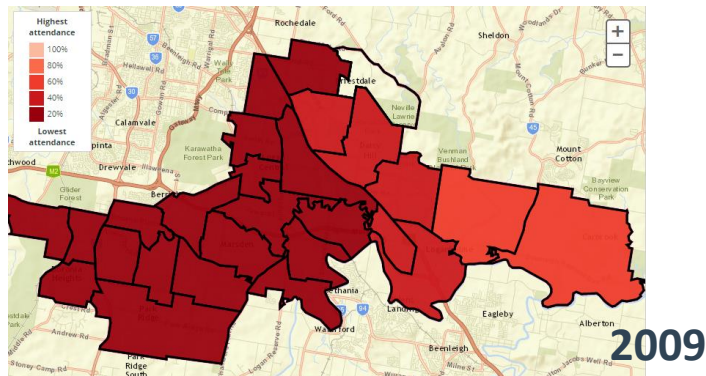
Dalziel et al, Soc Sci and Medicine, in press



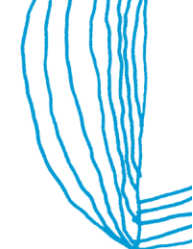
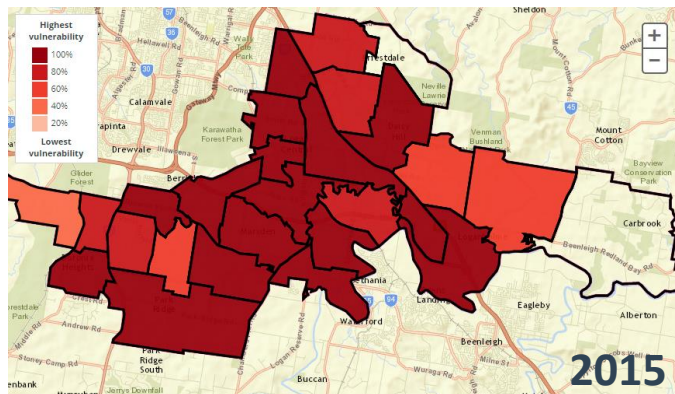
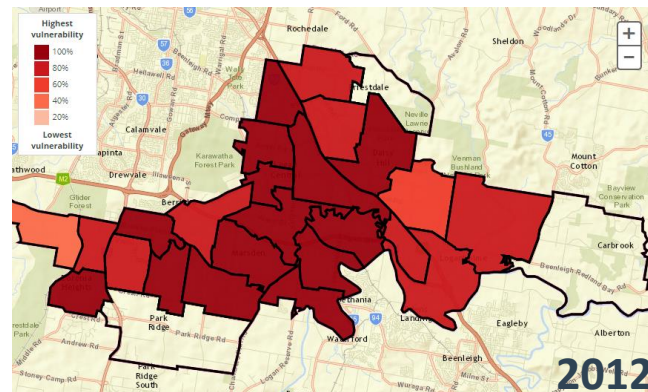
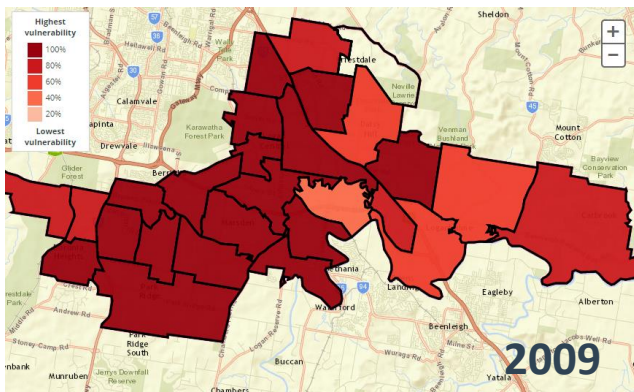
# Geographic inequities:

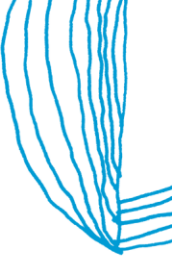


# Percentage of children who attended a preschool program



## Percentage of children developmentally vulnerable on one or more domains

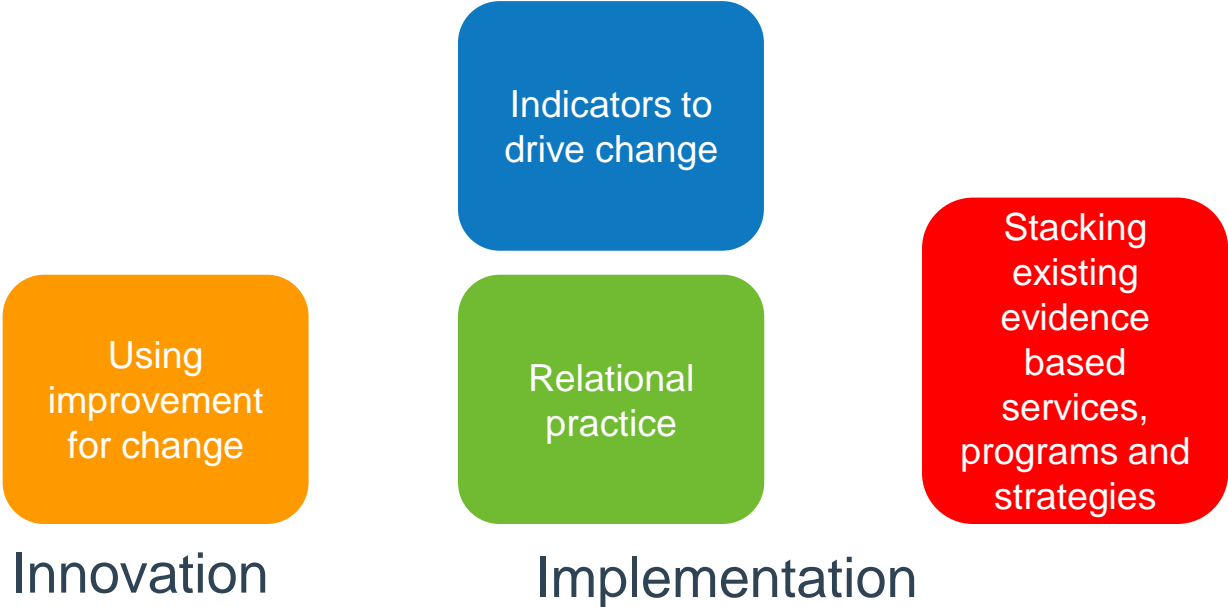


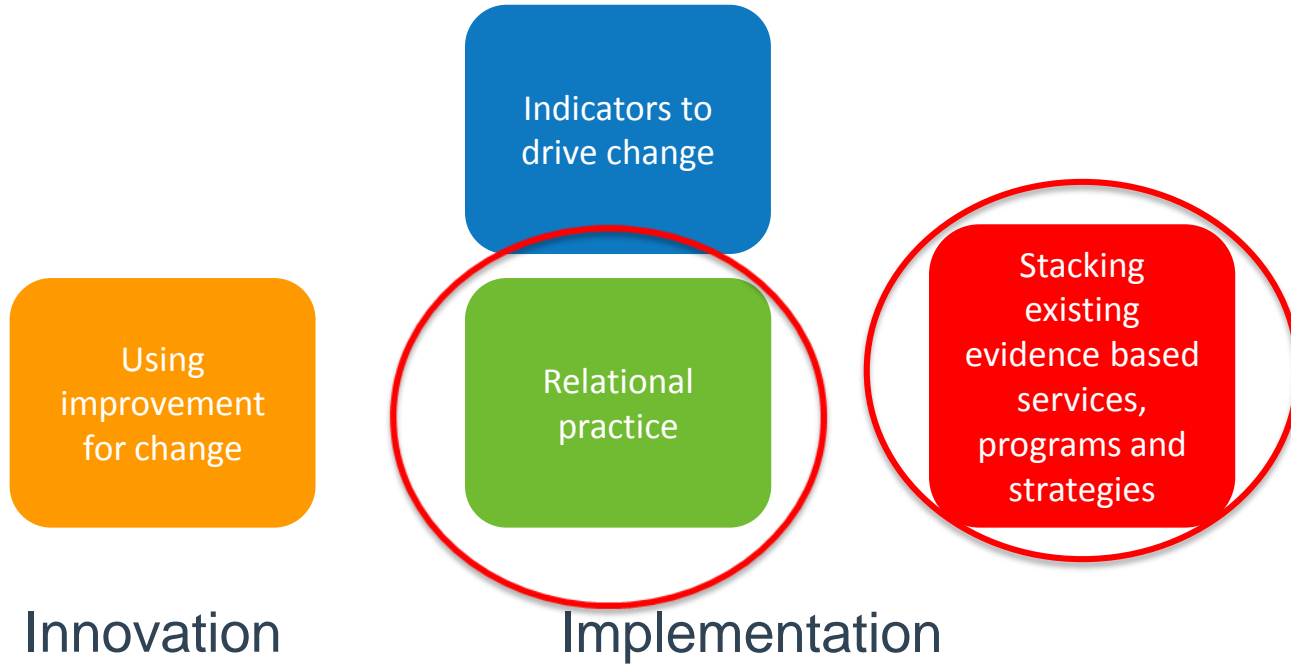
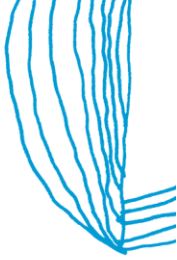


## 3 tricky issues:

- Trialling equity interventions at scale: the balance of fidelity, population fit and implementation support
- Embedding equity interventions into existing service systems: using evidence and data to drive change
- Achieving impact at scale

# A data driven and evidence based approach to understanding and addressing inequities: enabling community system reform









# Improving child development and family wellbeing through sustained nurse home visiting

right@home consortium  
29 May 2018

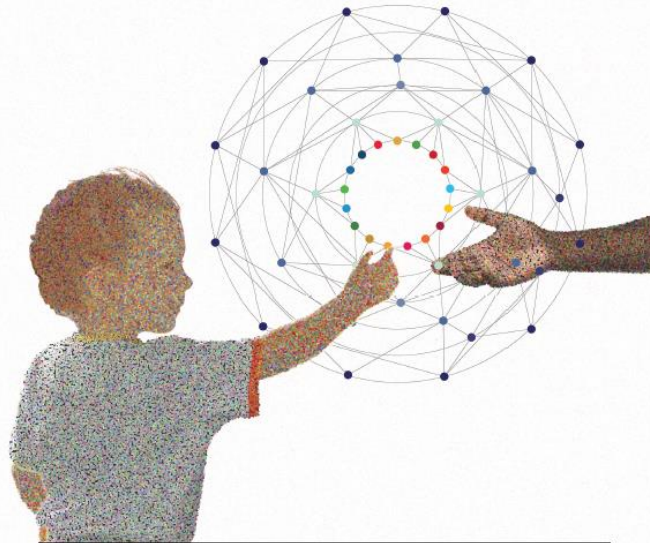
Professor Sharon Goldfeld, Deputy Director, Centre for Community Child Health, MCRI

Zoya Gill, ARACY

Professor Lynn Kemp, Director, Translational Research and Social Innovation, WSU

*Can an Australian model of sustained nurse home visiting make a difference to child development and family wellbeing?*

**ANNALS** *of* THE NEW YORK  
ACADEMY OF SCIENCES



VOLUME 1419, SPECIAL ISSUE

MAY 2018


Implementation Research and  
Practice for Early Childhood  
Development

# ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

Special Issue: *Implementation Research and Practice for Early Childhood Development*

ORIGINAL ARTICLE

## Designing, testing, and implementing a sustainable nurse home visiting program: right@home

Sharon Goldfeld, <sup>1,2,3</sup> Anna Price,<sup>1,2,3</sup> and Lynn Kemp<sup>4</sup>

<sup>1</sup>Centre for Community Child Health, Murdoch Children's Research Institute, The Royal Children's Hospital, Parkville, Victoria, Australia. <sup>2</sup>Population Health, Murdoch Children's Research Institute, Parkville, Victoria, Australia. <sup>3</sup>Department of Paediatrics, The University of Melbourne, Parkville, Victoria, Australia. <sup>4</sup>Ingham Institute, Western Sydney University, Sydney, Victoria, Australia

Address for correspondence: Professor Sharon Goldfeld, Centre for Community Child Health, Murdoch Children's Research Institute, The Royal Children's Hospital, Flemington Road, Parkville, VIC 3052, Australia. [sharon.goldfeld@rch.org.au](mailto:sharon.goldfeld@rch.org.au)

### 1. Focus/target (Population characteristics/ problem to address)

Pregnant women (<37 weeks gestation) attending antenatal clinics at participating Victorian and Tasmanian hospitals, who meet eligibility criteria and do not have any of the following:

- Enrolled in Tasmanian *C U @ Home* program
- Do not comprehend recruitment invitation
- Have no mechanism for contact (telephone/ email address)
- Experience a critical event, e.g. miscarriage, termination, stillbirth, or maternal or child death

### 2. Input (Resources needed to address population's needs)

- Commitment from funders, stakeholders and partners
- Appropriate funding (multiple sources), e.g. State governments, philanthropic, NHMRC
- Site-selection and commitment
- Literature review(s) for rationale and guiding principles behind focus modules
- Evidence-based intervention incorporating the focus modules to promote parenting, child development and learning
- Clear eligibility criteria for participants
- Links with maternity hospitals for recruitment
- Contracts with local government areas for staff hiring, training, and intervention delivery
- Staff including nurses, social practitioners, Tier 2 support, clinical supervisors, project manager(s) and research assistants
- Staff training
- Reliable and valid assessment measures
- Resources (infrastructure, space, equipment)

### 3. Output (Actual programs and activities provided)

- Structured but flexible parenting/child development intervention designed to promote parent care, parent responsiveness, and a supportive home learning environment
- Intervention manual and online training modules for nurses
- Well-trained nurses and social practitioners, with clinical supervision and Tier 2 established

### 4. Outcomes

#### *Immediate* (Direct results expected at 6 months)

- Parents and nurses build good working relationships and commit to trial.
- Parents have information and supports they need to address immediate concerns
- Parents begin to build supportive community links and informal and formal supports
- Nurses, clinical supervisors, Tier 2 staff and State governments understand and support the program, and are themselves supported

#### *Intermediate* (Changes in population expected at 2 years)

- Primary outcomes:
  1. Parents demonstrate greater regulation of child's environment and provide adequate care
  2. Parents are more responsive to their child
  3. Quality and quantity of stimulation and support available to a child in the home environment is improved
- Secondary outcomes (see protocol) are improved
- Parents are informed and able to make choices about transition to other services
- Parents have built supportive community links and developed informal and formal supports

#### *Long-term* (Changes in population expected at 5 years)

- Primary outcomes:  
Children have improved:
  - (a) Physical health
  - (b) Mental health, and
  - (c) Language; literacy; executive function
- Secondary outcomes (see protocol) are improved
- Parents are well-supported and confident in their abilities to support their children's learning and development
- Families independently seek and access health services
- Parents have built supportive community links and developed informal and formal supports
- Increased community awareness of positive impacts of preventive interventions for child development, wellbeing and social inclusion for families who may need more support.

# The right@home model

An anticipatory, aspirational, preventive, sustained and structured (flexibly) model of embedded service delivery

- 25-35 visits – from pregnancy until 2yrs
- Structured flexibility
- Grounded in a partnership approach
- Focus on building capacity
- Embedded in existing service systems (MCH Victoria; CHaPS Tasmania)

# Research hypothesis

Primary hypothesis: At child age 2 years, compared with usual care, women receiving the right@home sustained nurse home visiting intervention will demonstrate:

**1. Improved parent care;**

- Parent's ability to provide a consistent and regular environment for their child

**2. Improved parent responsiveness**

- Parent's ability to tune in to their child's needs and to respond appropriately

**3. A more supportive home learning environment**

- Building a strong home learning environment through structured developmental promotion activities focusing on language

# 3-5 year follow up aims

At child age 3-5 years, compared with usual care:

Intervention mothers will demonstrate improved

- Parenting
- Health
- Wellbeing

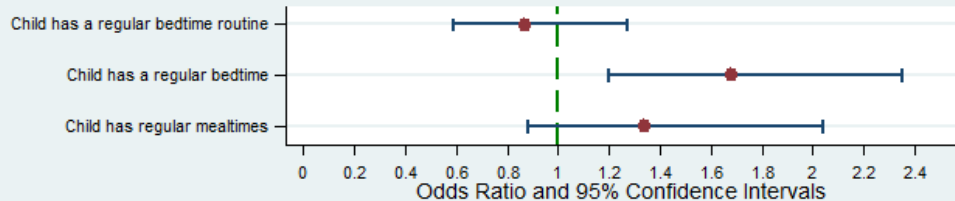
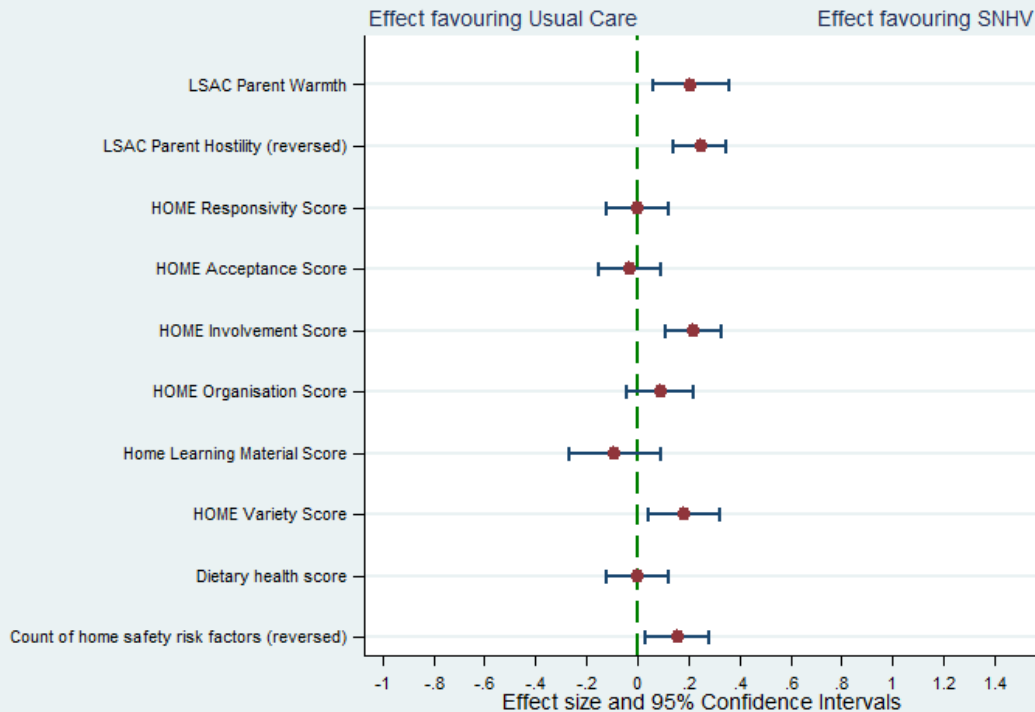
Intervention children will demonstrate improved

- Physical health
- Mental health
- Learning and language



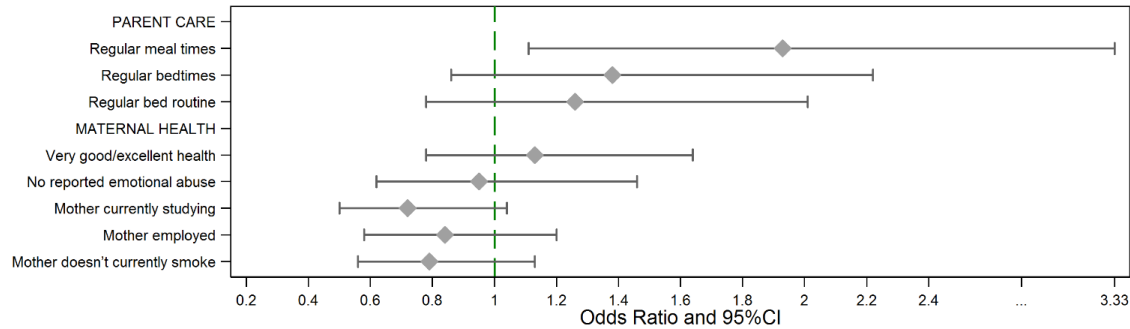
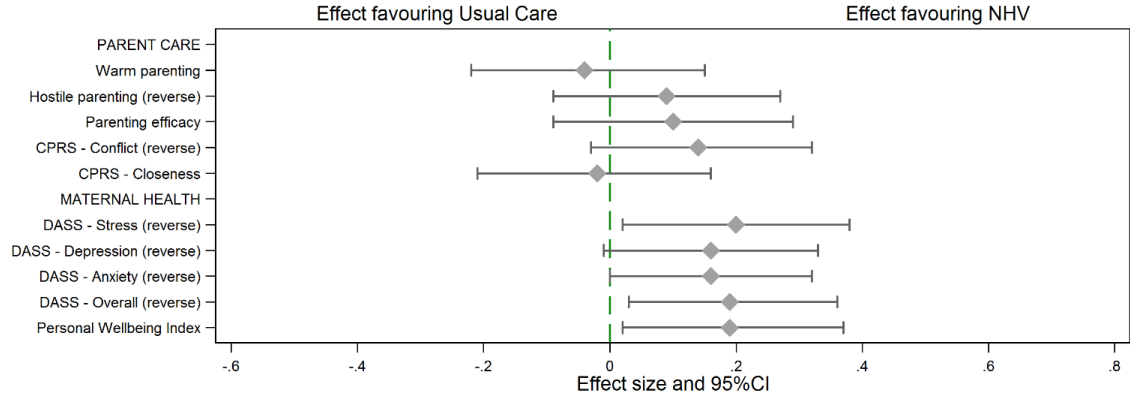
# Results

# Primary outcomes



# 3 Year Outcomes - Mother

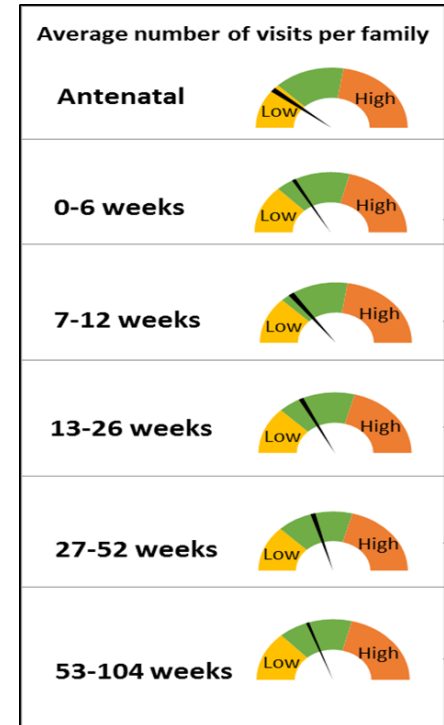
Adjusted\* Effect Sizes/Odds Ratios with 95%CI for maternal outcomes at 3 years  
(MULTIPLE IMPUTATION - ITT)

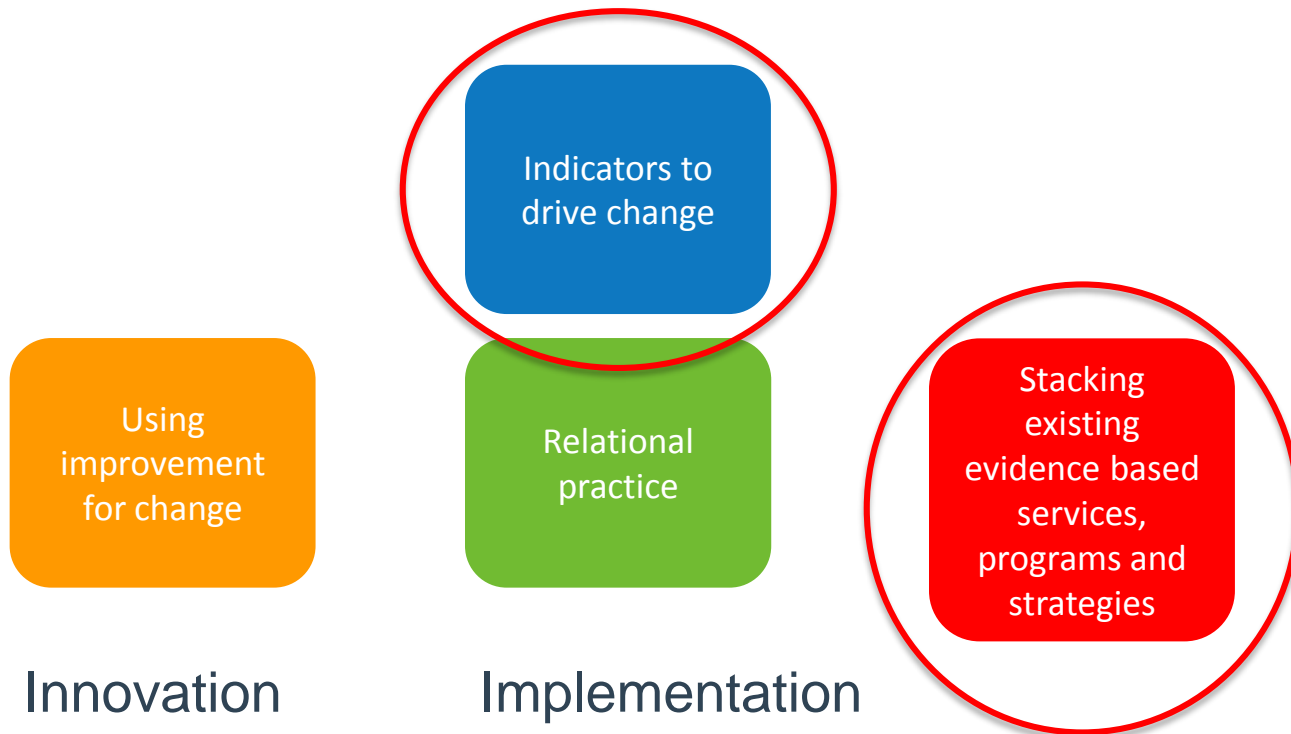


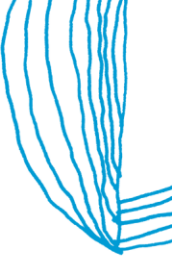
\*: Baby gender; Mother's age at Baseline; SEIFA Disadvantage score at Baseline; Maternal education at Baseline; Parity; Antenatal risk; Mental health; Self efficacy; Child age at 3 Year Ax.

# Process and impact outcomes

- 84% of women received >75% of the intervention (mean 23.5 )
- >80% of women were retained in the program for the full 2 years
- Parent satisfaction questionnaire (ES 0.9) and enablement index (ES 0.55) favour the intervention







For families living in adversity it may be that the mutual benefit of both continuity and complementarity of services will be necessary to promote human capital.

Heckman JJ, Mosso S. The economics of human development and social mobility. *Annual Review of Economics* 2014;6(1):689-733



# Restacking the Odds

Sharon Goldfeld  
Carly Molloy  
Chris Harrop  
Nick Perini

# Five fundamental strategies

FIVE FUNDAMENTAL STRATEGIES			
Antenatal	Early childhood		School years
	Birth to 2 years	2-5 years	
<p><b>1 Antenatal support</b></p> <ul style="list-style-type: none"> <li>Targeted at parents</li> <li>Centre-based</li> <li><i>Outcomes:</i> healthy baby weight, good brain health, appropriate care, "adequate parenting"</li> </ul>	<p><b>3 Early childhood education and care</b></p> <ul style="list-style-type: none"> <li>Targeted at all kids (in groups)</li> <li>High quality for all children</li> <li>Delivered out of home in a "pseudo-home-learning environment"</li> <li><i>Outcomes:</i> children on optimal developmental pathway (cognitive and social-emotional), with success at school</li> </ul>		<p><b>5 School-based early intervention</b></p> <ul style="list-style-type: none"> <li>Targeted at all kids</li> <li>School-based</li> <li><i>Outcomes:</i> children on optimal learning pathway by Year 3</li> </ul>
<p><b>2 Sustained nurse home visiting</b></p> <ul style="list-style-type: none"> <li>Targeted at disadvantaged parents</li> <li>Health and development support</li> <li>Home-based</li> <li><i>Outcomes:</i> parents develop parenting skills</li> </ul>		<p><b>4 Parenting programs</b></p> <ul style="list-style-type: none"> <li>Targeted at parents whose children have behavioural issues (higher prevalence in disadvantaged families)</li> <li>Centre-based, delivered in groups or 1:1</li> <li><i>Outcomes:</i> remedy of specific emerging behavioural issues</li> </ul>	



# Prioritisation matrix

## PRIORITISATION MATRIX

		Drivers of performance gaps in a given community		
		Quantity	Quality	Participation
5 fundamental strategies	Antenatal support	L	L	H
	Sustained nurse home visiting	M	H	M
	Early childhood education and care	L	M	M
	Parenting programs	M	M	L
	School-based early intervention	H	L	H

• Are the strategies **available locally** in sufficient quantity, relative to size of the target population?

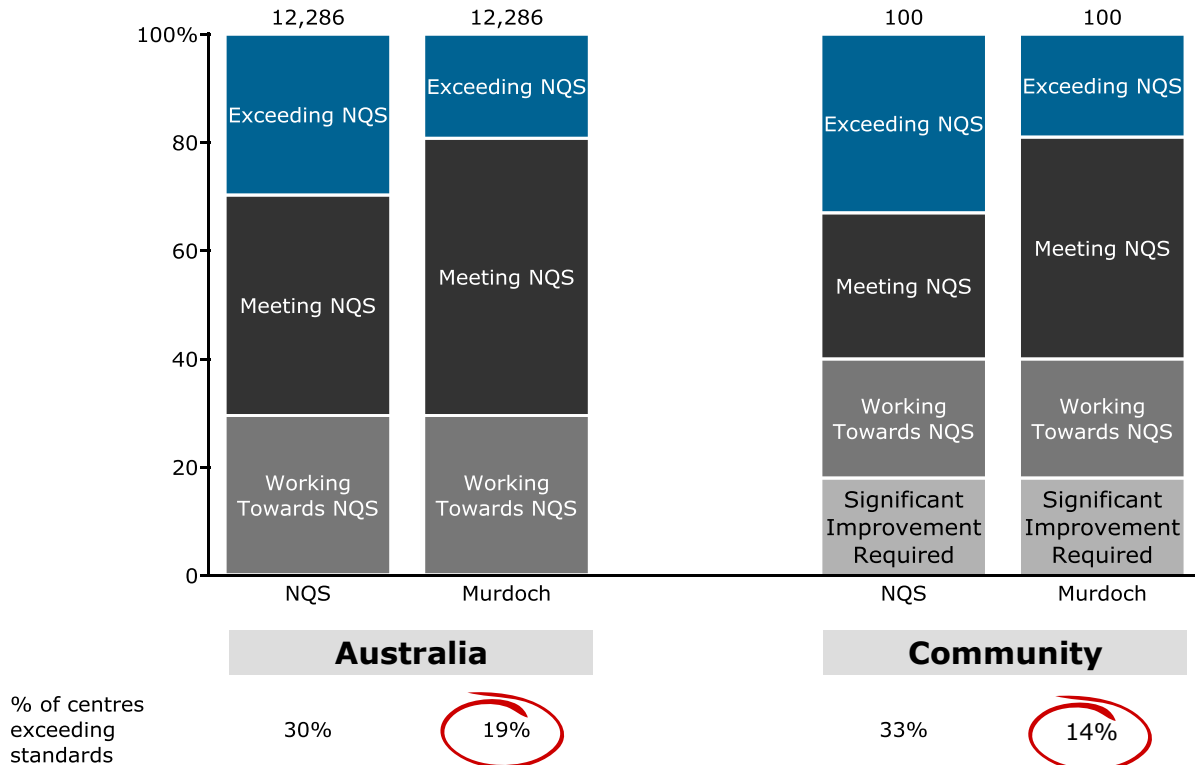
• Are the strategies **delivered effectively**, relative to evidence-based performance standards?

• Do the targeted children and families **participate**, at the right dosage levels?

# "RSO score" has stricter criteria than the NQS, resulting in fewer centres rated as exceeding standards

**PRELIMINARY**

Distribution of ratings of ECEC centres in Australia and Brimbank



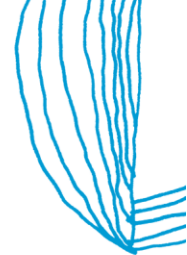
% of centres exceeding standards

# Participation in ECEC-of those enrolled

Proportion of children attending range of hours per week												
	Health care card			Disability			Non-English Speaking Background			Not in any target group		
	0-2 y.o.	3 y.o.	4-5 y.o.	0-2 y.o.	3 y.o.	4-5 y.o.	0-2 y.o.	3 y.o.	4-5 y.o.	0-2 y.o.	3 y.o.	4-5 y.o.
0-4.9 hrs	3%	2%	3%	13%	0%	2%	6%	1%	3%	0%	3%	4%
5-9.9 hrs	22%	18%	14%	25%	9%	24%	18%	18%	16%	29%	17%	15%
10-14.9 hrs	14%	34%	51%	25%	64%	51%	20%	34%	49%	10%	17%	35%
15+ hrs	<b>61%</b>	<b>46%</b>	<b>32%</b>	<b>38%</b>	<b>27%</b>	<b>23%</b>	<b>56%</b>	<b>47%</b>	<b>32%</b>	<b>62%</b>	<b>63%</b>	<b>46%</b>

# Precision policy making:

Precision policy can help us to be more targeted (and effective) in efforts to reduce child inequities, keep children healthy and better spend the public dollar (less waste)



# Generation Victoria - GenV

A world-leading opportunity for better lifelong health and learning

**Scientific Director: Melissa Wake**

**Dep Director Policy and Equity: Sharon Goldfeld**

**Dep Director Biobank: Richard Saffrey**

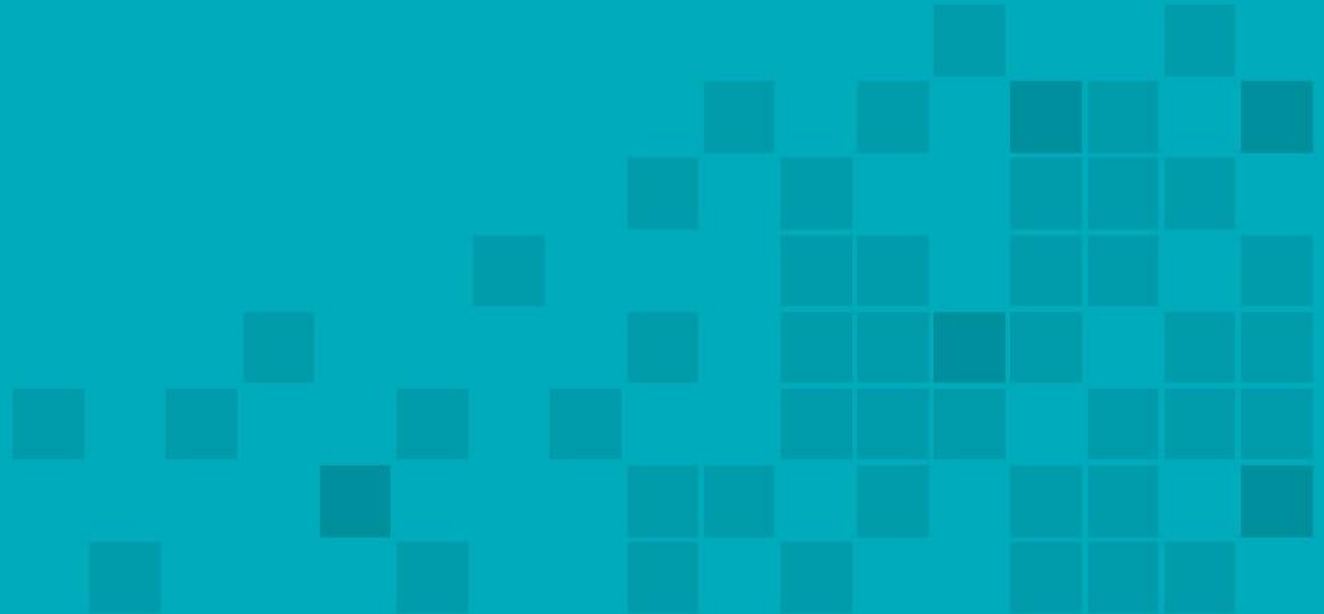


## Could we...

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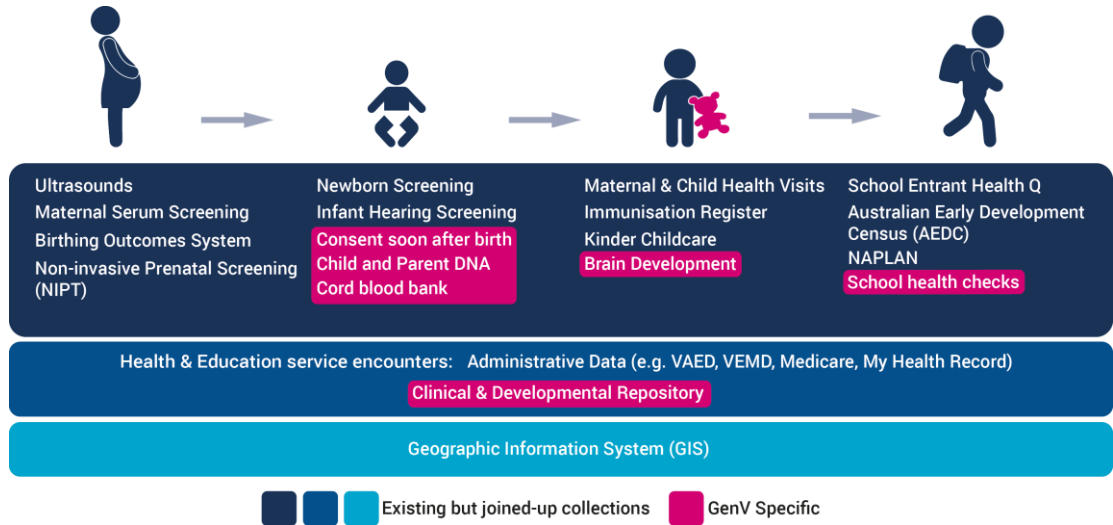
- Speed up the pace of discovery and translation?
- Reduce the burdens of modern childhood epidemics?
- Better prevent adult diseases?

# GenV: 2020 Cohort, Big Data & Solutions Hub



# GenV 2020 Cohort

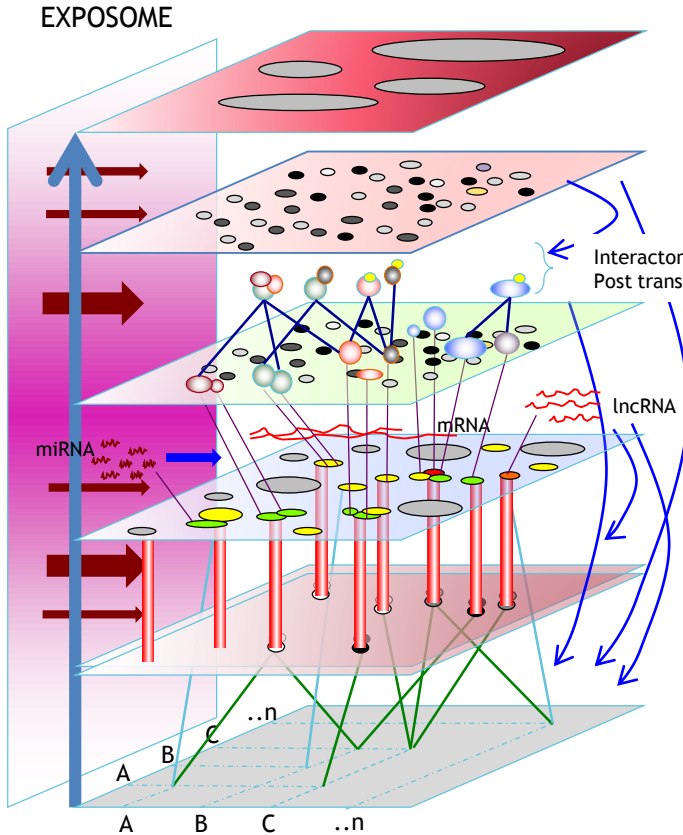
- 160,000 children over 2y
- Consent
- Use/join up existing data
- Retain biosamples
- Add to/enhance data sources
- Measure phenotype
- Build the social contract







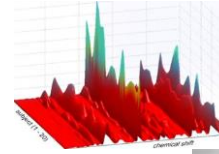
# From biology to society



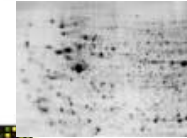
PHENOME



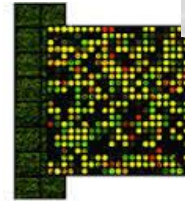
Metabolome  
( $>10^6$ )



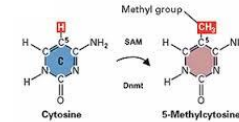
Proteome  
( $>10^6$ )



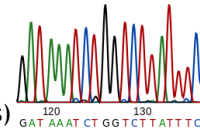
Transcriptome  
( $>10^5$ )



Epigenome  
( $>3 \times 10^7$  methylation)



Genome  
( $6 \times 10^8$  nucleotides)  
( $2 \times 10^4$  genes)  
( $2 \times > 5 \times 10^6$  genetic variants)





# Solutions Hub: Focus Areas

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Inequity and  
vulnerability



Wellbeing & mental health



Obesity (incl cardiovascular & metabolic)



Allergy (incl food allergy, asthma & auto-immune)



Infection (incl inflammation & antibiotics)

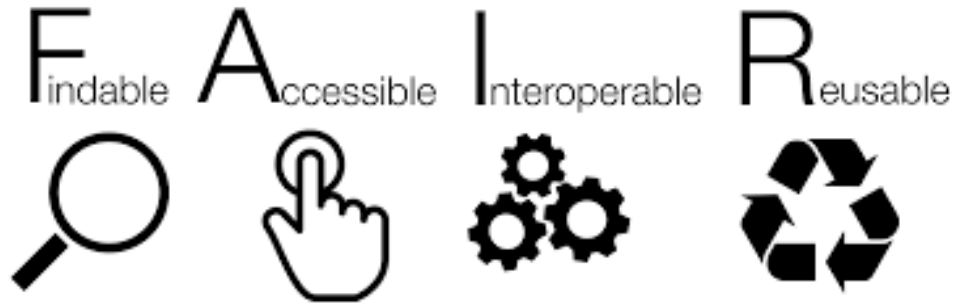


Brain (incl development, education & disability)

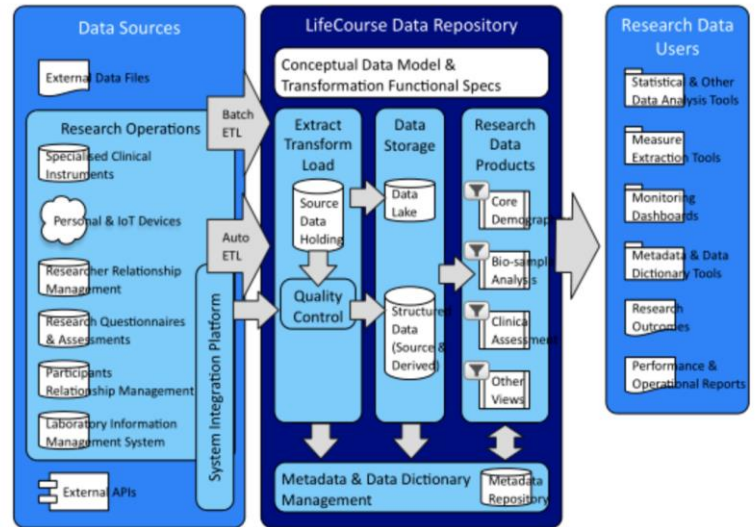


Mothers & Babies (incl pregnancy)

# GenV Big Data: Research Data Repository



- Consented information that grows over time
- Integrates with Victoria's data linkage capacity
- Advanced processing and analytics
- Laboratory Information Management System

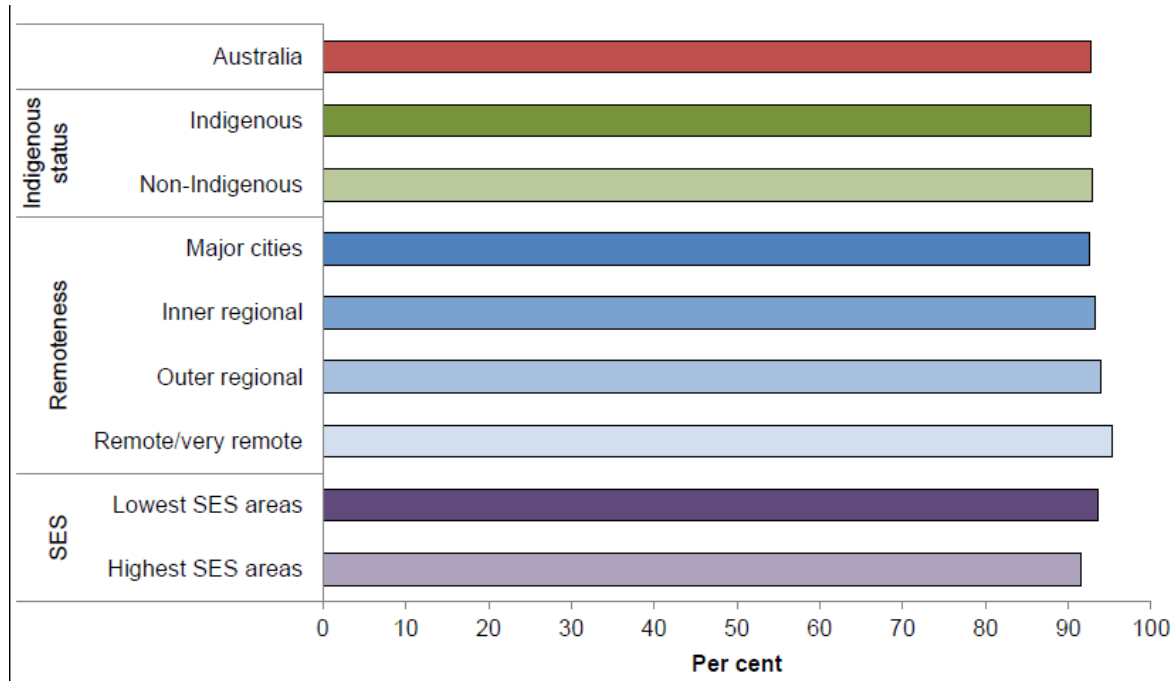


## By 2035, GenV's vision is to...

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- Have solved complex issues facing Victoria's children
- Be the first great interventional birth cohort in Australia
- Be a model for the rest of the world by its systematic process and embedded infrastructures
- Be a key influencer of policy and behaviours in the community
- Be a global collaborative cornerstone of child health, development and wellbeing research, policy and service delivery

## Two-year-old children on the ACIR who are fully immunised, by selected population groups, 2011



Source:

A Picture of Australia's Children 2012  
Australian Childhood Immunisation Register

Many things we need can wait, the child cannot.  
Now is the time his bones are being formed, his blood is being made, his mind is being developed.  
To him we cannot say tomorrow, his name is today.

Gabriela Mistral  
(1889-1957)

