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Healthy Development Adelaide
A Research and Innovation Cluster in South Australia

Women's and Children's Health Network

GRAND ROUND

This grand round is in conjunction with Healthy Development Adelaide

Chaired by Dr Jenny Fereday
Executive Director, Nursing & Midwifery, Women's and Children's Health Network

Prevention and management of child obesity: *starting early with parenting our infants and children*

Dr Rebecca Golley

BSc(Hons) BND PhD APD

Associate Professor Research Nutrition & Dietetics

Better Lives Theme Lead

https://www.flinders.edu.au/caring-futures-institute

June 2019

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A team effort!

Children and Families

Systematic literature reviews

Epidemiology. Simulation modelling

Intervention testing and evaluation. Diet assessment

Qualitative research

Discrete choice experiments

Implementation and Scale up

Intervention mapping framework

A/Prof Rebecca Golley
(Research Lead)
@AProfGolley

Dr Dorota Zarnowiecki

Development and validation of a short dietary assessment tool for obesity risk

Dr Lucy Bell & Louisa Matwiejczyk

Intergenerational obesity prevention and early care and education nutrition promotion

Brittany Johnson

Intervention design using Behaviour Change Wheel

Simulation modelling

Discrete choice experiments

Chelsea Mauch

Improving evening meals via digital health interventions

Joyce Haddad

Dietary Guideline Index as a brief intervention

Dr Carly Moores

Digital obesity prevention, large scale evaluation, implementation science

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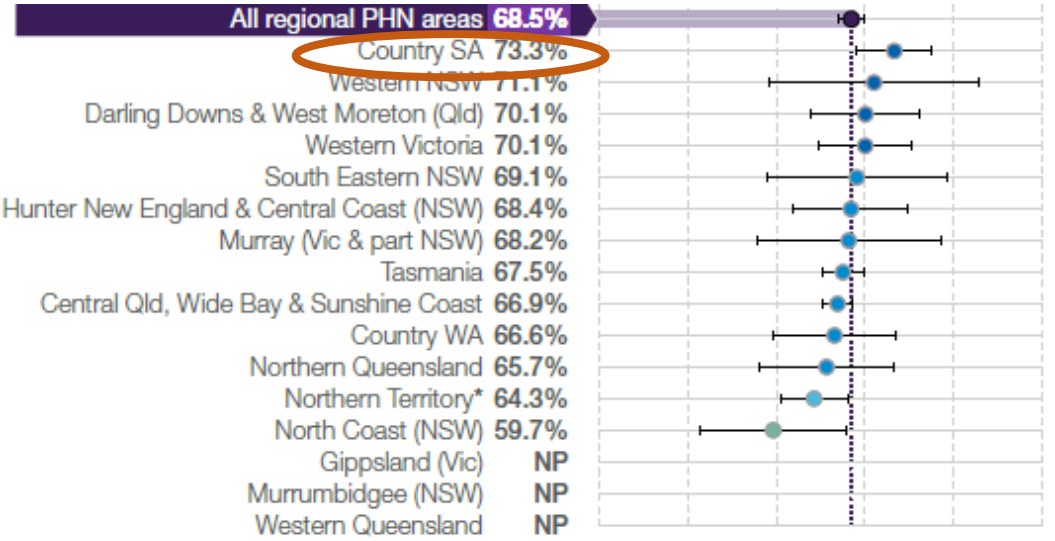
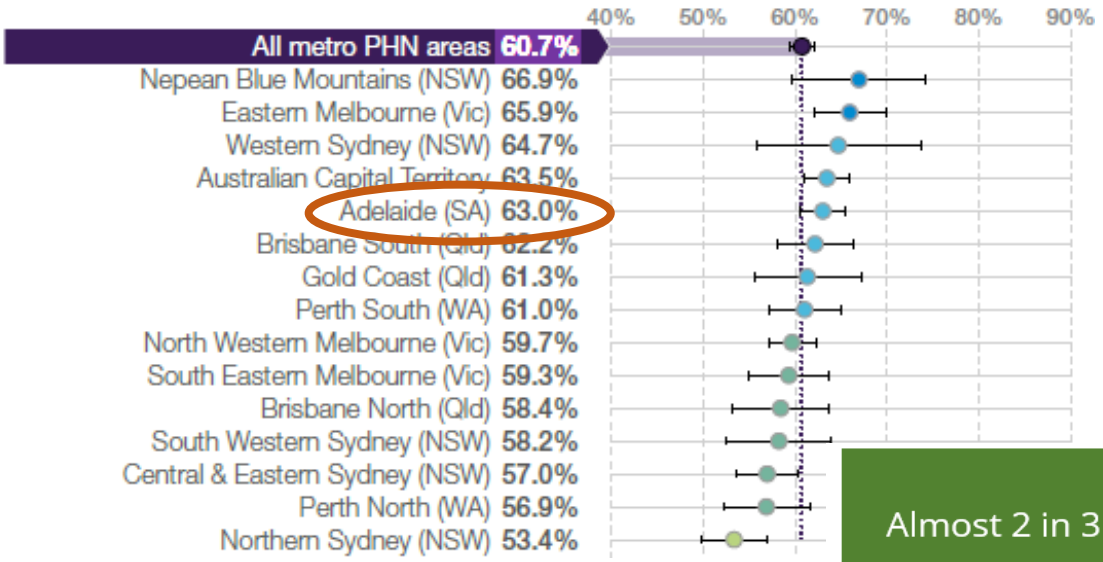
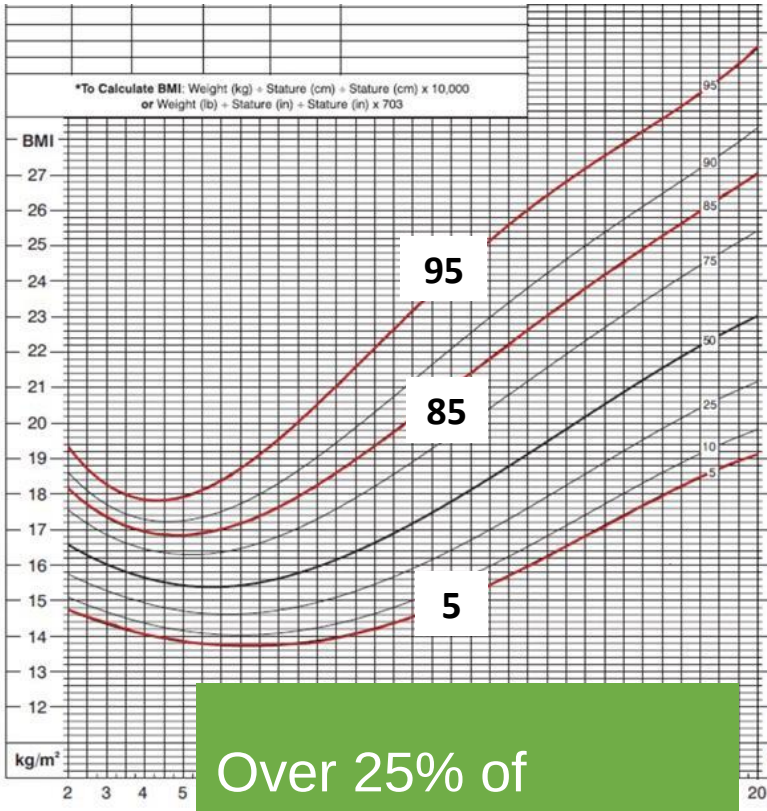
epoch
Early Prevention Of Obesity In Childhood
www.earlychildhoodobesity.com

VegKIT CSIRO







Over 25% of Australian children are overweight or obese (8% obese)

= >1 million Australian children.

Almost 2 in 3 Australian adults (63%) were overweight or obese in 2014–15, similar to 2011–12

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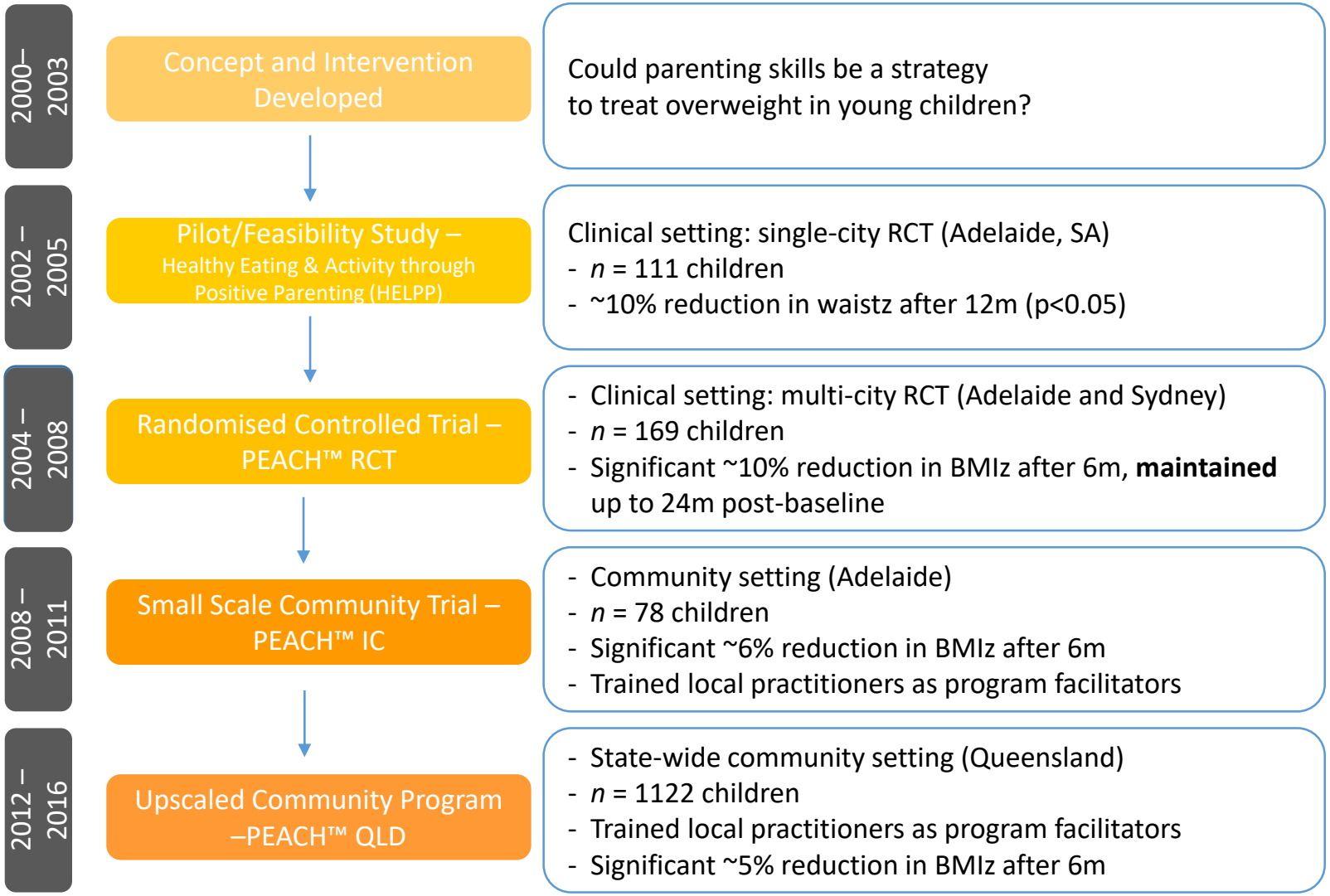
http://www.cdc.gov/growthcharts/cdc_charts.htm

https://www.aihw.gov.au/reports/biomedical-risk-factors/risk-factors-to-health/contents/overweight-and-obesity/who-is-overweight

PEACH™ Program: To enable parents to support healthy growth in their children via a whole-of-family lifestyle, parenting, problem-solving approach



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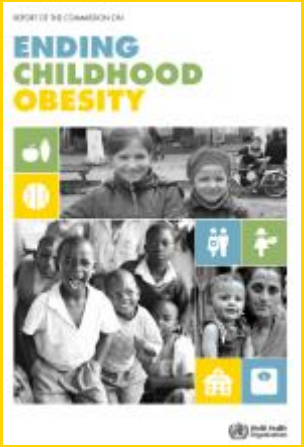
Moores et al BMC Public Health 2017

The PEACH™ approach aligns with WHO recommendation 6



Provide family-based, multicomponent, lifestyle weight management services for children and young people who are obese

Next generation research questions

- How can programs be integrated into existing service delivery opportunities?
- How can the program impact be enhanced, including at scale?
- How can the program be tailored for specific populations?

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Public Health
Volume 153, December 2017, Pages 154-162

Original Research

The adaptation and translation of the PEACH™ RCT intervention: the process and outcomes of the PEACH™ in the community trial

R.A. Perry [a], R.K. Golley [b], J. Hartley [a], A.M. Magarey [a]

Show more

https://doi.org/10.1016/j.puhe.2017.08.009

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Highlights

- Translation of a child weight management intervention to practice is described.
- Organisational and political changes prevented maximum reach and adoption.

Croyden et al. BMC Public Health (2018) 18:347
https://doi.org/10.1186/s12889-018-5237-8

BMC Public Health

RESEARCH ARTICLE Open Access

A narrative account of implementation lessons learnt from the dissemination of an up-scaled state-wide child obesity management program in Australia: PEACH™ (Parenting, Eating and Activity for Child Health) Queensland

Williams et al. BMC Public Health (2017) 17:559
DOI 10.1186/s12889-017-4466-6

BMC Public Health

RESEARCH ARTICLE Open Access

Parent engagement and attendance in PEACH™ QLD – an up-scaled parent-led childhood obesity program

Susan L. Williams[1*], Wendy Van Lippevelde[2], Anthea Magarey[3], Carly J. Moores[3], Debbie Croyden[4], Emma Esdaile[4] and Lynne Daniels[4]

Journal of Paediatrics and Child Health

Original Article

Weight status and diets of children aged 1–12 years attending a tertiary public paediatric outpatient clinic

Suja M Mathew, Lucinda K Bell, Chelsea Mauch, Anthea M Magarey

First published: 11 May 2019 | https://doi.org/10.1111/jpc.14489

Conflict of interest: None declared.

BMC Public Health. 2019 Jun 14;19(1):756. doi: 10.1186/s12889-019-6894-y.

Enrolment of families with overweight children into a program aimed at reducing childhood obesity with and without a weight criterion: a natural experiment.

Esdaile E[1], Hernandez E[2], Moores CJ[3], Vidgen HA[2].

Feasibility of a group-based, facilitator-directed online family lifestyle program

Lucinda K Bell, Rebecca Golley, Carly J Moores, Rebecca Perry, Jo Hartley, Michelle Miller, Louisa Matwiejczyk, Jacqueline Miller, Anthea M Magarey

Channel 7 Children's Research Foundation

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Methods

Objectives:

To deliver PEACH™ Lifestyle as a facilitated group-based online program

Design and sample:

Pre-post feasibility study with parents (n=79) of children aged 7.9±2.9 years (25% healthy weight, 23% obese).

Online program:

Website with self directed learning modules (n=10) and facilitated group-based video conferencing sessions (n=6)

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Results

- All parents would recommend program to others
  - 90% families reported household lifestyle changes BUT
- Engagement with web content and video conferencing sessions was low
  - Only half of parents attended at least one video conferencing session (n=1 all six)
  - Only 33% of parents completed all 10 online modules
- Lack of time was a barriers to engagement.
- PEACH™ Lifestyle may promote healthy lifestyles.
- The potential for digital health technologies to address barriers to engagement were not realised.

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“Thinking outside the box”: novel touchpoints for obesity prevention

- How to support health professionals to support parents/caregivers?
- What should the messaging to caregivers be around child obesity to increase awareness and motivation?
- How to integrate child obesity prevention into existing service structures?

- Nominal group technique process
- Stakeholder group workshops
- Idea generation, collate, clarify, collapse, consensus
- Second half of 2019

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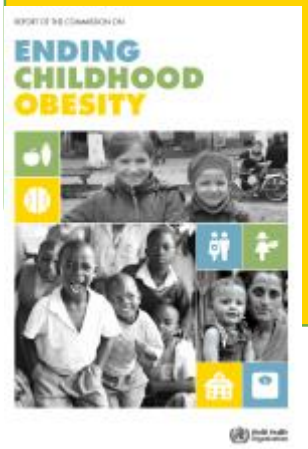
whole-of-community obesity prevention

Reach the multitude of settings where children and families live, eat, work or learn. Empower families to eat appropriately and be active



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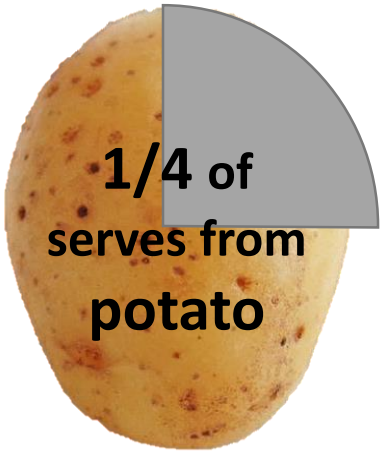
Australian children's diet quality

meet recommended serves of **fruit**



meet recommended serves of **vegetables**

- Meta-analysis of 21 schools programs n=26,361
  - fruit intake (excluding juice) +0.24 portions (95%CI 0.05, 0.43)
  - vegetable intake +0.07 portions (95%CI: 20.03, 0.16)

- Overall diet quality
  - DGI-CA is a measure of compliance with dietary guidelines including recommended serves, healthier choices and diet variety
  - Median **DGI-CA total score 48.3 out of 100** (IQR 47.5, 48.9) of 2-16yo children national survey

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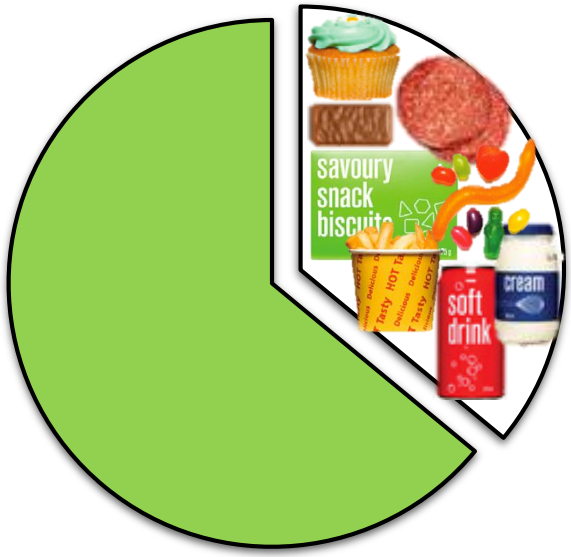
(Australian Bureau of Statistics 2014, 2015; Evans et al. 2012; Golley et al. 2011, 2014)

Australian children's intake of discretionary choice

99%

exceed recommendations for unhealthy foods *(ABS 2014)*



Discretionary choices contribute >25% to ~40% of children's energy intake *(ABS 2014)*

Increase risk of chronic disease *(NHMRC 2013, Ogata & Hayes 2014)*

Displace core foods from the diet *(Hess & Slavin 2014)*

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How can we support parents?

First, need to understand:

Children's current intake

Dietary approaches to reduce unhealthy foods

moderation

substitution

reformulation

What skills and supports parents already have and where additional supports are needed

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What supports are needed

- Simply knowing unhealthy foods should be limited and wanting to limit provision is not enough to see action
  - ~80% know the dietary guidelines
  - High concern for excessive unhealthy food intake, in general and for their child
  - 50% intended to change provision
  - Children exceeded recommended limits of unhealthy foods

- But what is needed?
  - Range of qualitative literature relating to current eating patterns highlighting the barriers and enablers to healthy (and unhealthy) eating patterns.

convenience

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@brittanyjayne8

The influence of cost, time, food availability, child resistance, support from co-parents and friends on parents' provision of snacks to their children: **A discrete choice experiment**

B Johnson, Dorota Zarnowiecki, Gilly Hendrie, Elisabeth Huynh, Rebecca Golley

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KING & AMY O'MALLEY TRUST

Background

Current gaps in research examining barriers / influences**:**

- to reducing unhealthy food provision, relative importance
- in social and non-social occasions.

(Petrunoff et al. 2012; Pettigrew et al. 2017)

Aim to **compare the relative importance** of *physical resources* and *social supports* when **parents are choosing snacks** to provide to their 3-7 year old child in **social** and **non-social occasions**.

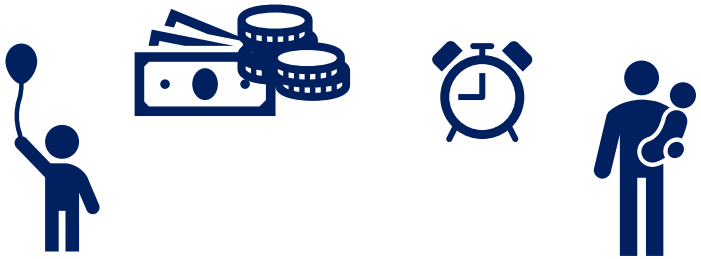
Methods – discrete choice experiments

Common approaches:
Self-reported barriers
Check boxes
Ranking

Methods – discrete choice experiments

Common approaches:
Self-reported barriers
Check boxes
Ranking

Factors



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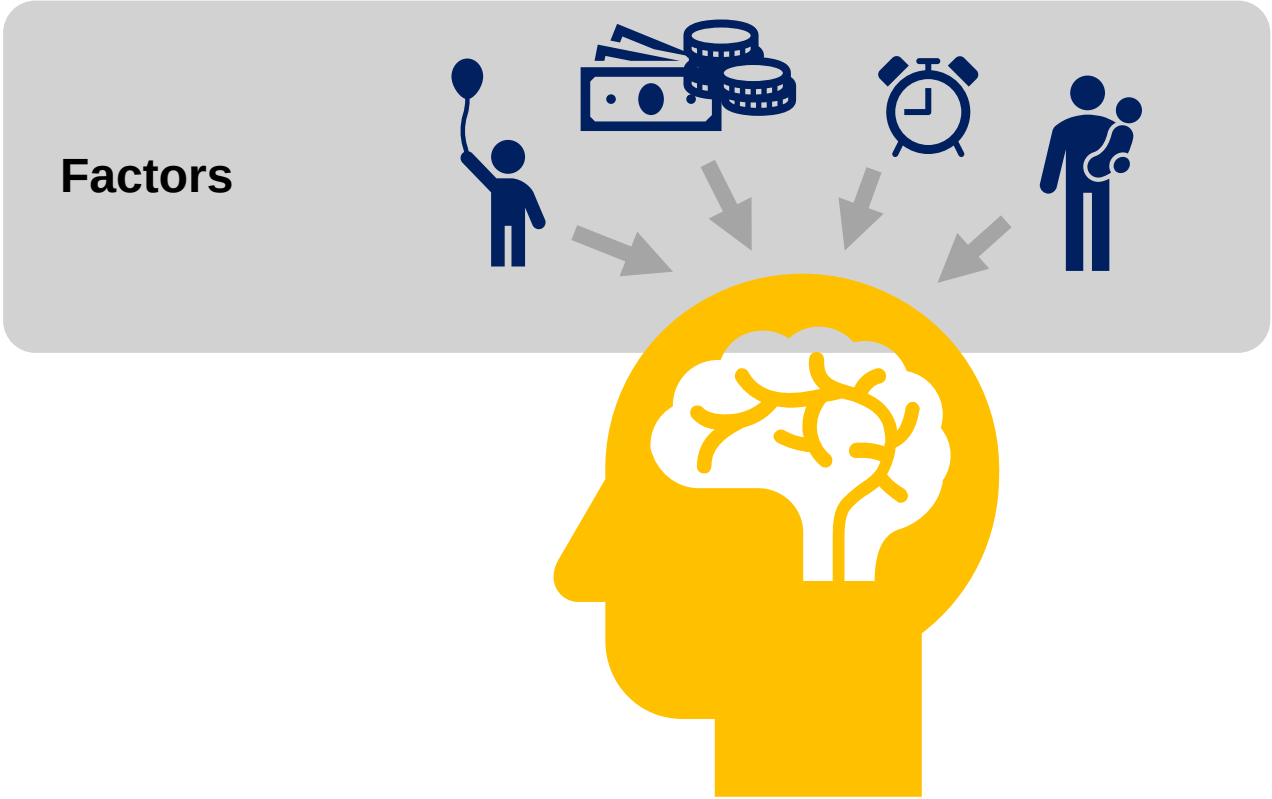
Methods – discrete choice experiments

Common approaches:
Self-reported barriers
Check boxes
Ranking



(Louviere, Hensher & Swait 2000)

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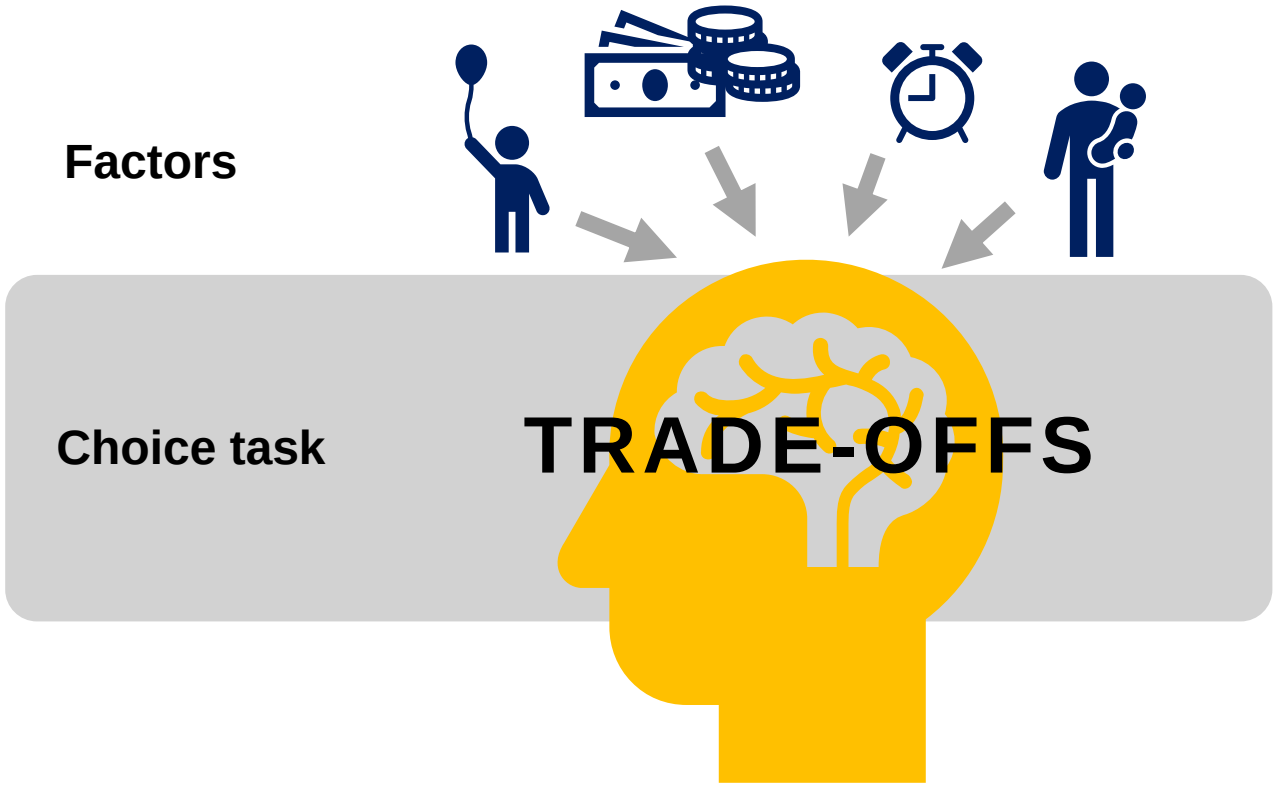
Methods – discrete choice experiments

Common approaches:
Self-reported barriers
Check boxes
Ranking



(Louviere, Hensher & Swait 2000)

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Methods – discrete choice experiments

Common approaches:
Self-reported barriers
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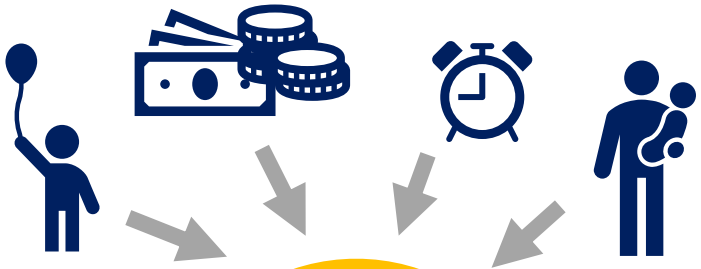
Factors



Choice task

TRADE-OFFS

Relative importance of factors

(Louviere, Hensher & Swait 2000)

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Methods

Online discrete choice experiment (5 choice tasks per social context per parent)

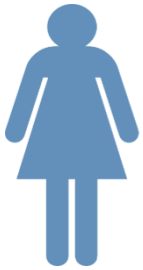
Scenarios: snack provision on a Saturday with or without family friends present

	Snack A	Snack B	Neither
Cost of snack	Cheaper	More expensive	
Time to prepare	Quick	Quick	
Your child's likely response	Resistant	Accepting	
Significant family members (e.g. co-parent)	Supportive	Unsupportive	
Family friends	Unsupportive	Supportive	
Type of food	Everyday foods	Sometimes foods	
Which would you choose?	❑	❑	❑

225
parents completed the study

1125
choice decisions per social context

Parents:

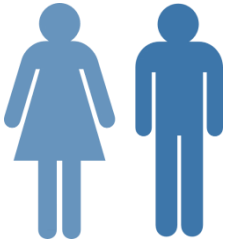


99.6 %
mothers

94.7% living with partner

51.6%
of parents were employed part-time

Results



Child mean age
5.2y (SD 1.3)

Children:
56% healthy wt
15% overweight
15% with obesity

72.5% of parents had tertiary degree or higher

Socio-economic status
Lower 14.7%
14.7%
23.7%
25.9%
Higher 21.0%

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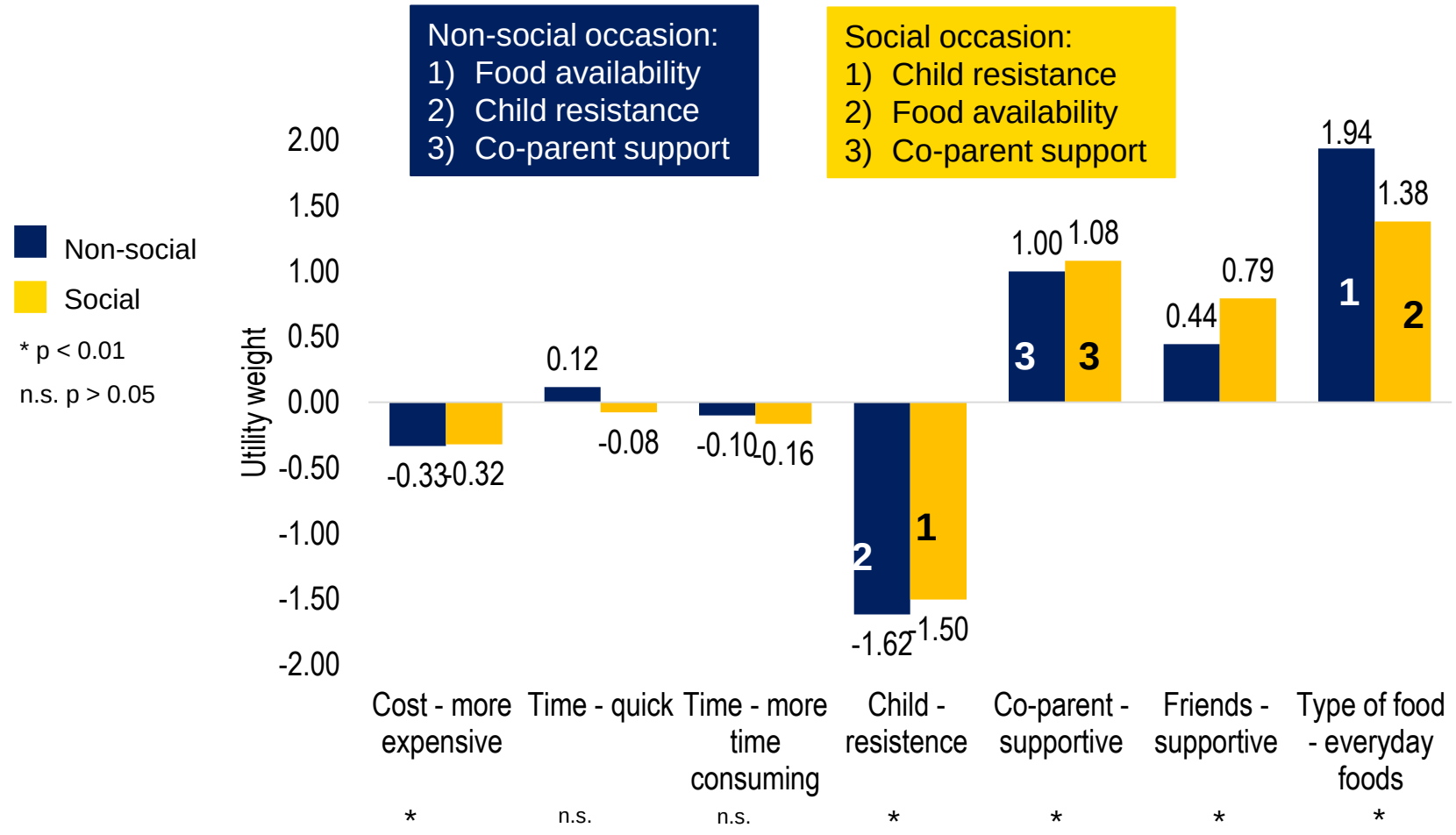
Results



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Take home message

Our study highlights the *relative importance* of **home food availability**, the **influence of children** and **co-parent support** in parent snack provision decision making, regardless of social context.

@brittanyjayne8

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Family resource drivers of unhealthy food intake in Australian toddlers

Mrs Chelsea Mauch, APD, BNutrDiet, BSc (Hons), PhD candidate

Co-authors:
Dr Tom Wycherley, University of South Australia
Dr Rachel Laws, Deakin University
Dr Rebecca Byrne, Queensland University of Technology
Dr Lucinda Bell, Flinders University
Associate Professor Rebecca Golley, Flinders University

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Chelsea Mauch @ChelseaMauch

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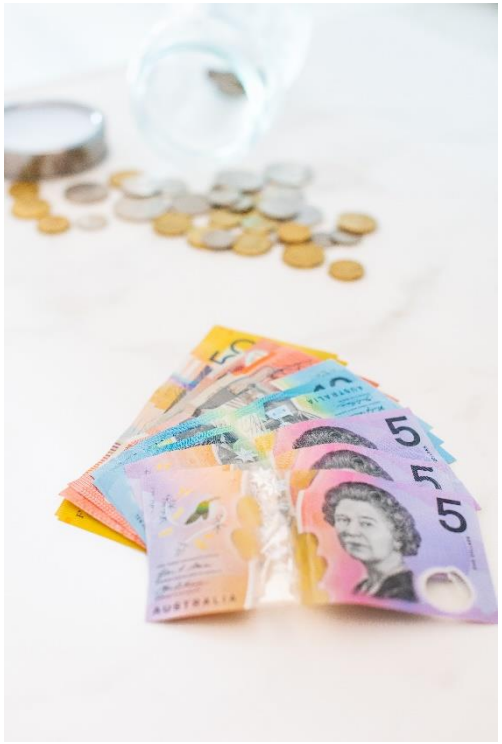
Aim

To explore sociodemographic characteristics as resource-related drivers of unhealthy food intake in toddlers



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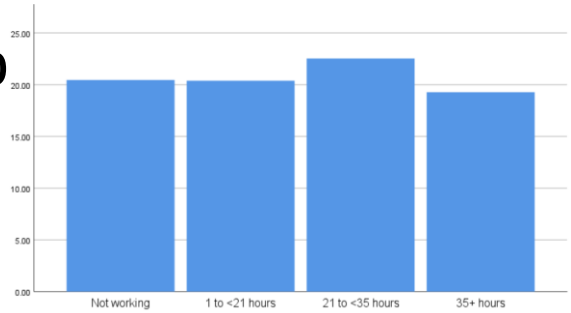
Methods

- 2yo Australian children - 2008 to 2014 (Daniels et al, 2009; Byrne et al, 2014)
  - Demographic data - birth, 4-7mo and 2 yrs
  - 2-3 days of dietary intake data – 2 yrs
- *Outcome:* proportion daily energy intake from unhealthy foods
- *Predictors:*
  - Maternal working hours: Not working, 1 to <21hrs/wk, 21 to <35hrs/wk, 35+ hrs/wk
  - Paternal working hours: Not working, 1 to <35hrs/wk, 35 to 40hrs/wk, >40hrs/wk
  - Household income: ≥ and < 50k (AUD) per annum
- *Covariates:* family, parental and child facto



Results

Median age 2 yrs

55% only child in household

54% female

40% mothers not yet returned to work
57% fathers working 35 to 40 hours / wk

85% of families income ≥ 50k

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Results – Multiple regression

Predictors	B (95% CI)	SE B	β	p
Maternal working hours (21 to <35hrs/wk vs not working)	2.81 (0.27, 5.35)	1.29	0.11	0.030*
Paternal working hours (more than 40 hrs vs 35 to 40 hrs)	-1.96 (-4.06, 0.14)	1.07	-0.08	0.068
Household income	-4.60 (-7.48, -1.72)	1.47	-0.15	0.002**
Adjusted R^2	**0.117 (p<0.001)****			

- Controlling for family structure, parental factors and child factors
- Covert restriction, child satiety responsiveness & slowness in eating and rewarding for eating also contributed significantly to the model

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0.5 serves fruit

1 small mandarin (75g)

1.5 serves vegetables

120g peas, corn, carrot

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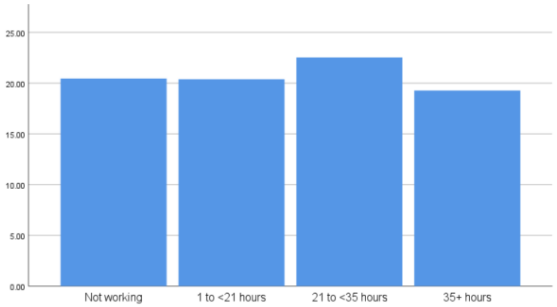
What we know:

- Prior research suggests a non-linear relationship between maternal work hrs & weight / weight-related behaviours (Li et al, 2017; Brown et al, 2014)
- Research in older children, with maternal (not paternal) work hours & weight as outcome
- Low income assoc with diet quality in adult & child/adolescent samples (Darmon et al, 2008)

What this study adds:

- Non-linear relationship between maternal time & toddlers diet quality
- Independent of fathers work hours & other covariates
- Interplay between resources / how we 'flex' or use resources may be important



Where to from here:

- Investigate weight outcomes
- Repeat model for main meals / snacks
- Consider measurement of time use to better understand time scarcity
- Perception of time scarcity

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Mobile Apps to Support Healthy Family Food Provision: Systematic Assessment of Popular, Commercially Available Apps

Chelsea E Mauch[1,2], BNutrDiet, BSc (Hons); Thomas P Wycherley[3], BEd, BApSc, BSc (Hons), MEp, PhD; Rachel A Laws[4], BSc, MSc (NutrDiet), PhD; Brittany J Johnson[1,2], BNutrDiet, BHSc (Hons); Lucinda K Bell[1], BNutrDiet (Hons), PhD; Rebecca K Golley[1,2], BSc (Hons), BNutrDiet, PhD

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[2]School of Pharmacy and Medical Sciences, Division of Health Sciences, University of South Australia, Adelaide, Australia
[3]School of Health Sciences, Division of Health Sciences, University of South Australia, Adelaide, Australia
[4]Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Science, Deakin University, Geelong, Australia

(JMIR Mhealth Uhealth 2018;6(12):e11867) doi:10.2196/11867

- Recipe / recipe managers, meal planners, family organisers, with integrated meal planning and shopping list generation
  - Scored well for functionality, and incorporated a range of behavioural support features for addressing food provision
- Apps biased toward ‘planning’ behaviours
- Features mapped to relatively few Behaviour Change Techniques
- Failure to capitalise on Ecological Momentary Intervention
- Low engagement rating a concern
- **Future apps** – focus on engagement & incorporation of BCT’s, features that reduce burden of food provision

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  - Associate Investigators
  - Research Staff and Students
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https://www.earlychildhoodobesity.com/

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VegKIT: developing tools and interventions to increase vegetable intake by Australian kids

Australia's leading experts in nutrition have come together to increase children's vegetable consumption.

1 Setting the scene

- We value the health of children and their future.
- It's estimated that only five percent of Australian children are consuming the recommended serves of vegetables.
- Australia's leading nutrition experts have come together for a new five year project to help address the significant under consumption of vegetables by Australian children.
- Hort Innovation has funded researchers from CSIRO, Flinders University and Nutrition Australia to deliver a national integrated approach to improving vegetable consumption, through education of children, training for educators and engagement with industry.

2 Translating the research

- We'll review the latest evidence and findings to develop best-practice guidelines for a range of stakeholders including educators, health practitioners and researchers to increase vegetable intake.

3 Foundation for policy

- Updated dietary advice for maternal, infant and early years, using evidence based knowledge of flavour exposure and food preference development, to facilitate vegetable acceptance.

4 Increase knowledge, co-ordinate efforts and influence policy

- A national online register of initiatives for the community to increase children's vegetable intake.
- Development and coordination of a Vegetable Intake Strategic Alliance (VISA) made up of cross-sector stakeholders.

5 Interventions

- Initiatives in the community (for long day-care settings) to increase children's vegetable intake.
- Supply chain initiatives (industry innovations and early Primary school settings) to increase children's vegetable intake.

HEALTH AND BIOSECURITY
www.csiro.au

CSIRO

Flinders UNIVERSITY · Nutrition Australia · Hort Innovation · healthy kids Association · Perfection Fresh · Thomas Farms Kitchen

This project has been funded by Hort Innovation, using the vegetable research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

B&M | 19-00[illegible]

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CARING FUTURES INSTITUTE

For research into better care and health outcomes

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https://www.flinders.edu.au/caring-futures-institute

The Caring Futures Institute, to be officially launched in August 2019, will be Australia's first ever fully dedicated research centre for the study of self-care and caring solutions leading to better lives, better communities and better health systems.

Vision

To redefine how self-care and caring inform and positively impact health outcomes, quality of life and social and economic prosperity for all across the lifespan.

Mission

Our mission is to co-design innovative and self-care and caring solutions with consumers, carers, industry, government and health services that lead to better lives, better communities and better health systems.

Engaging strongly with leading care industry and healthcare professionals, this expert body will pioneer outcome-driven applied research, redefining how caring informs and impacts health outcomes, quality of life and social and economic prosperity, bringing together multiple academic and clinical disciplines.