Overweight and obesity among Indigenous children: Individual and social determinants

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Outline

1. Overweight and obesity in Indigenous children
2. The social determinant approach
3. The Longitudinal Study of Indigenous Children
4. Case study: soft drink consumption
5. Conclusions and policy implications

[1] BACKGROUND

Background: health disparity

- Health disparity between Indigenous and non-Indigenous Australians
  - Gap in average life expectancy ~ a decade
  - 2x as likely to die from coronary heart disease[a]
  - 3x times as likely to have diabetes[b]

A) Australian Institute of Health and Welfare. 2014. **B)** Australian Bureau of Statistics. Updated Results, 2012-13.

Background: overweight and obesity

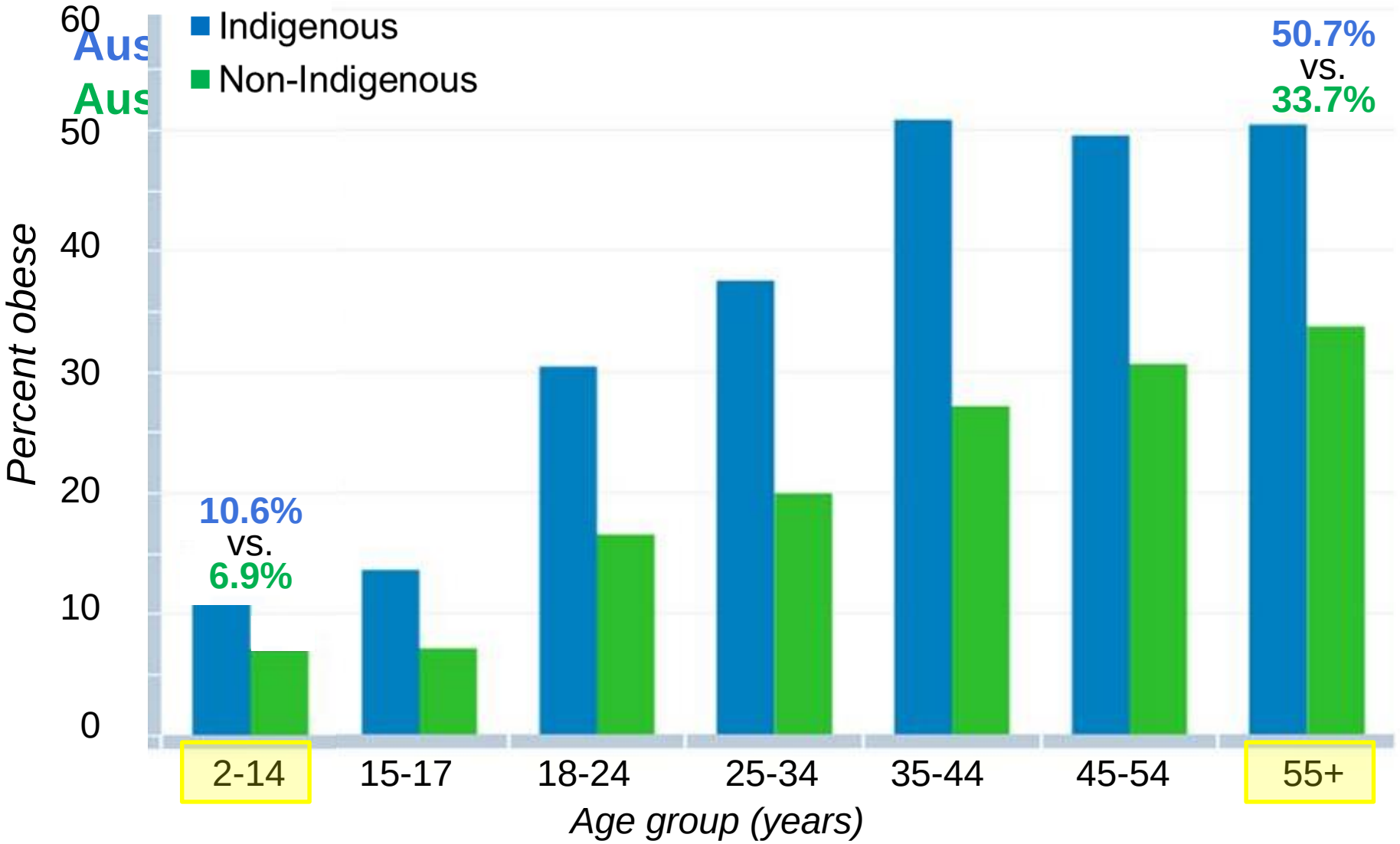
- Obesity is a major reason for this health disparity[a]
  - Linked to conditions such as diabetes and heart disease
  - Increased rates of overweight and obesity among Indigenous people[b]

Background: overweight and obesity

- Obesity is a major reason for this health disparity[a]
  - Linked to conditions such as diabetes and heart disease
  - Increased rates of overweight and obesity among Indigenous people[b]
  - The increased obesity rate is responsible for 1-3 years of the 10-year gap in life expectancy[a]

A) Vos DT. 2003. **B)** Australian Bureau of Statistics.

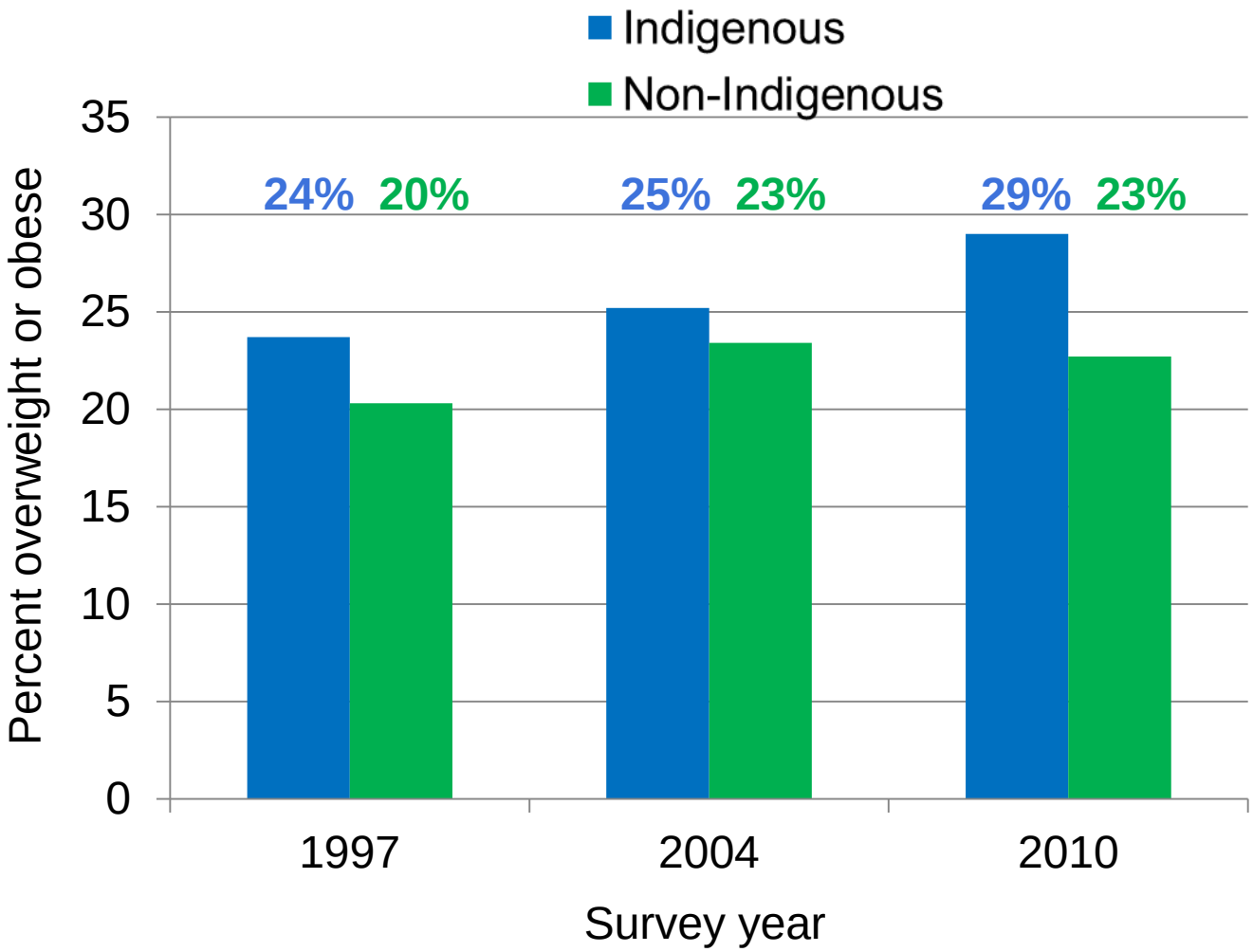
Obesity among Indigenous and non-Indigenous females in 2011-2013



Background: overweight and obesity

- Increased rates of obesity as early as 2-14 years
- Gap increases with age
- Childhood = critical period
  - Opportunity to prevent the widening of the gap in obesity rates
  - "Obese-years" – **duration** and severity of obesity both matter
  - Preventing obesity in childhood could reduce the burden of disease in adulthood and help 'Close the Gap'
- Rates of obesity in childhood might be increasing

Trends over time in childhood overweight and obesity in NSW



- Representative surveys of children aged 5-16 years in 1997, 2004, and 2010
- 18,983 children (507 Indigenous)
- Higher prevalence of overweight and obesity
- Faster increase in prevalence over time
- Serious implications for burden of disease in adulthood

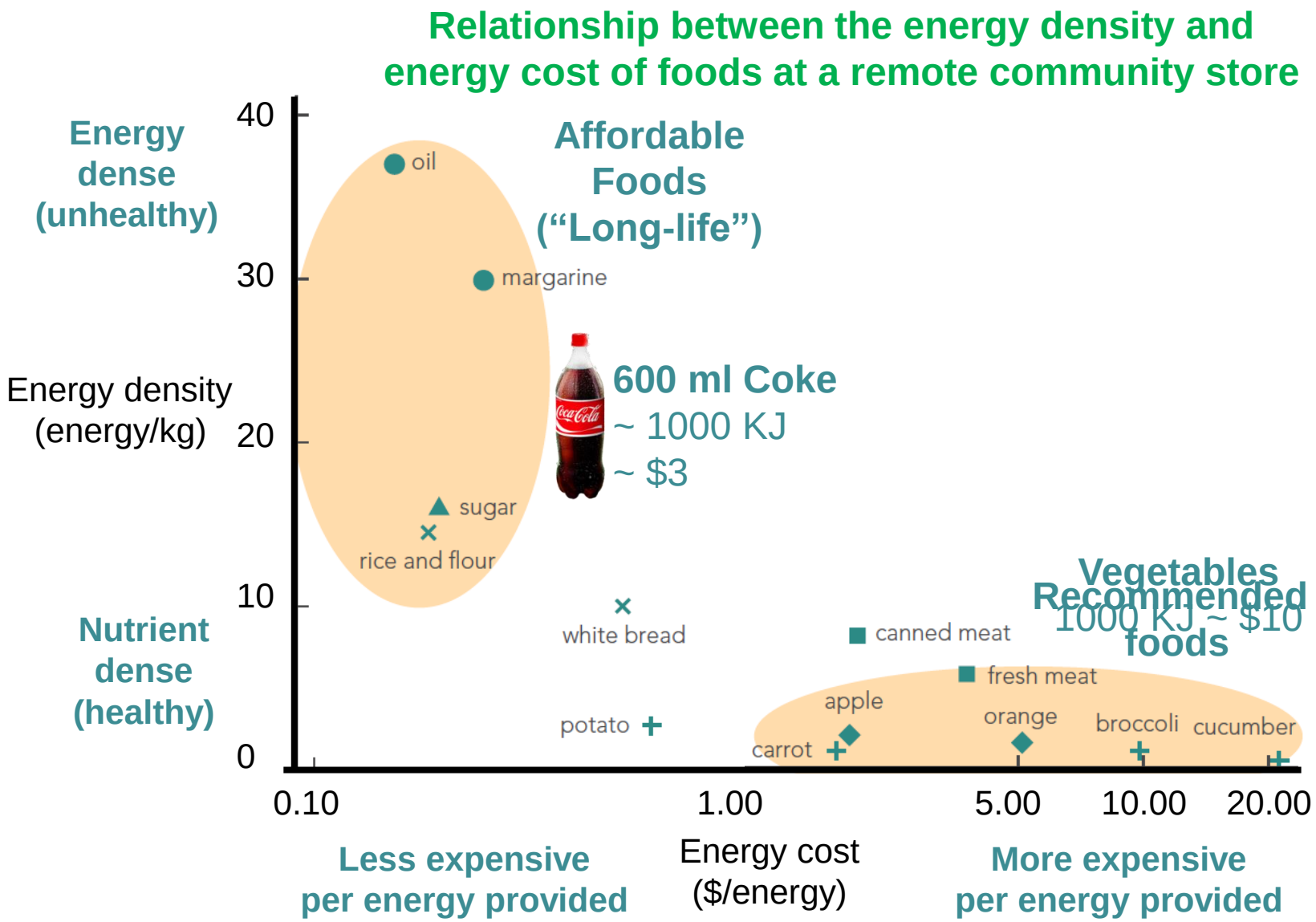
Hardy LL, O'Hara BJ, Hector D, Engelen L, Eades SJ. *Med J Aust* 2014.

Causes of obesity

- Complicated
  - Genetics, exposures during pregnancy
  - Individual traits and behaviours
  - Socioeconomic, cultural, and environmental factors
  - Historical and political context

- Direct cause: energy in > energy out
  - E.g. unhealthy diet
  - Shaped by the broader context

Example: economic factors influence diet



Example: economic factors influence diet

- Financial strain supports the consumption of "long-life" foods
  - Prevent hunger; stored without refrigeration
- Supported by qualitative evidence
- Other social, cultural, and environmental factors also influence food choice
  - Limited quantitative evidence
  - Qualitative evidence – e.g. education

Example: education influences diet

On buying Coke or lollies:

It's wasting money and is not good for them and there is too much sugar in them. I learned this at school.

-- Young mother

Mothers say 'yes' because they don't have the full information on good food ... If she knows the story she can close her heart to this bad food ... Children need an education background before they have children.

-- Grandmother

[2] THE SOCIAL DETERMINANT APPROACH

The need for a new approach

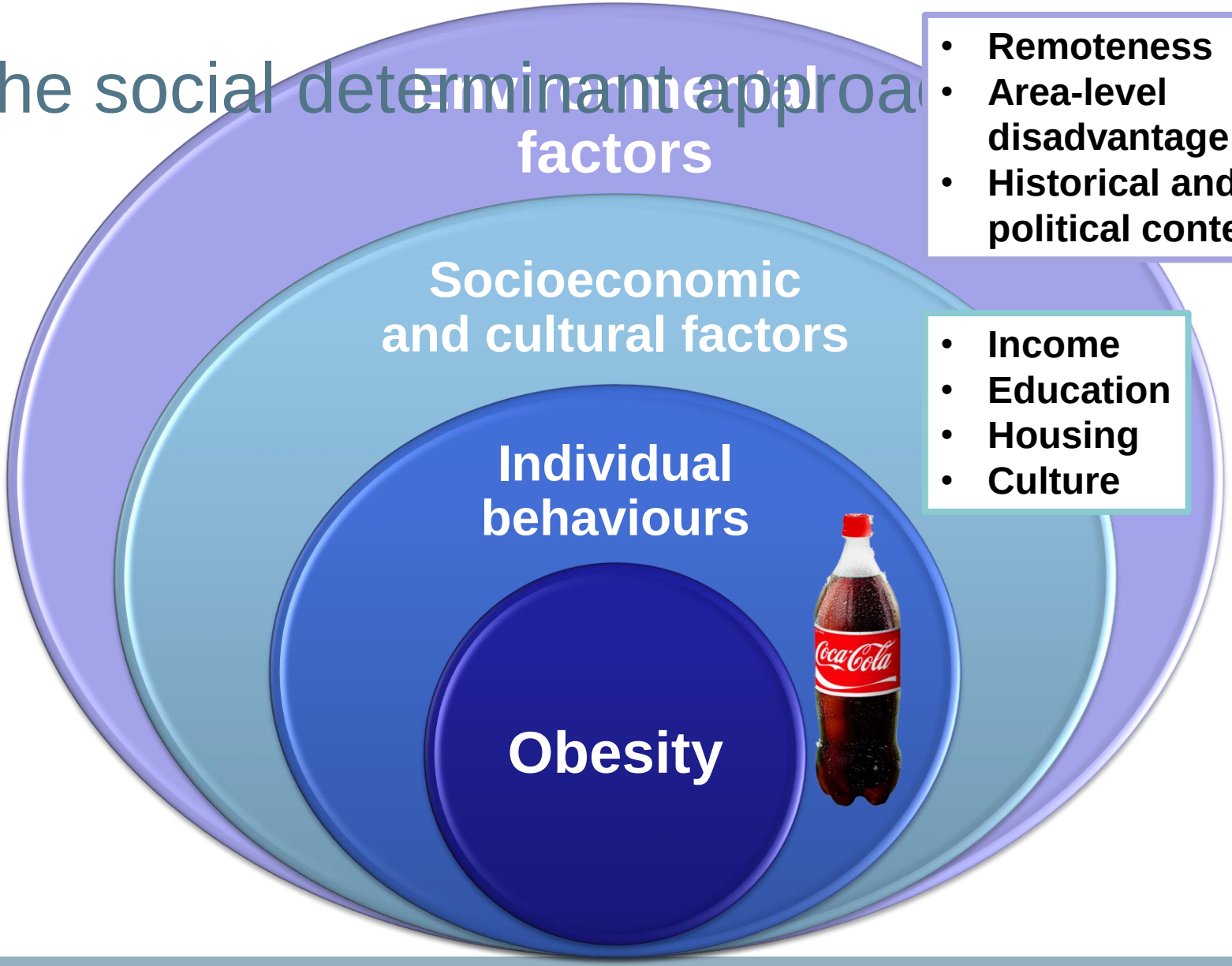
- Childhood obesity is an important issue
- Obesity is caused by a complex set of factors
- Programs/policies focus on individual behaviours
  - Lifestyle modification
  - Limited success

The individual approach (lifestyle modification)

- Put blames on the individual: "altering **'bad' behaviours** among **'bad' people**"
- Ignores the broader context and how it shapes/constrains individual behaviour

The social determinant approach

The social determinant approach



- Remoteness
- Area-level disadvantage
- Historical and political context

- Income
- Education
- Housing
- Culture

The social determinant approach

- Increasing attention to social determinants of health
  - 2008 World Health Organization Report
- As of 2013, Australia had not responded to the Report
- Parliamentary Inquiry – March 2013
  - Tri-partisan agreement to adopt social determinant approach (Labor Party, Liberal Party, Greens)
  - Little action since 2013

National Press Club (20 August 2014)

A Year of Nothing: Why Australian Governments need to respond to the social determinants of health

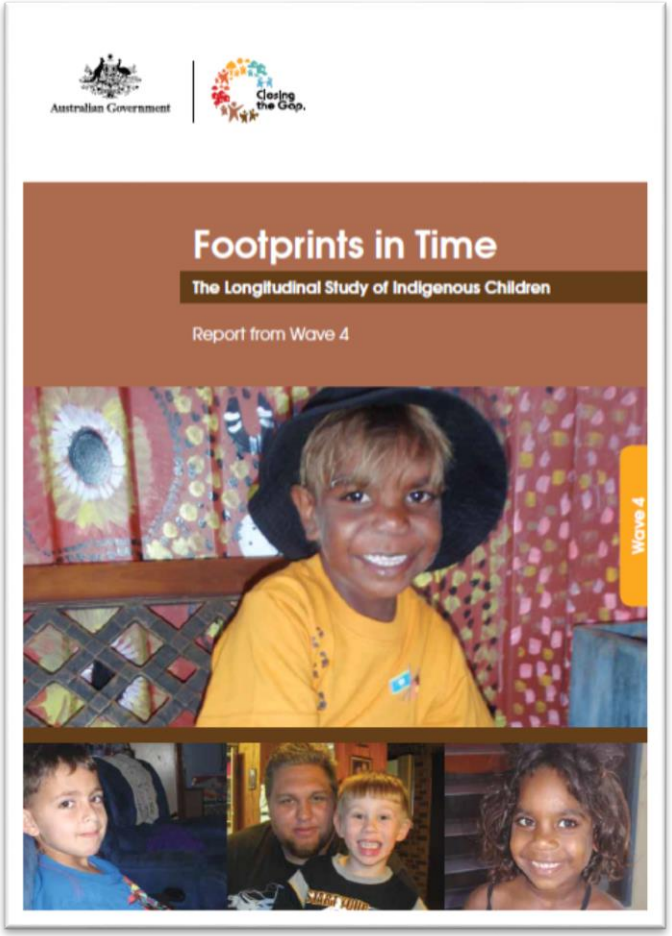
Why isn't action being taken?

Barrier	Solution
No data	**Longitudinal Study of Indigenous Children** • Publically available; data on individual and broader factors • Can investigate what factors lead to healthy behaviour and positive outcomes
No capacity to analyse the data • Complex relationships • Distant causal pathways	**Multilevel modelling** • Not yet common within Indigenous health research • Enables analysis of individual and area-level factors

[3] THE LONGITUDINAL STUDY OF INDIGENOUS CHILDREN

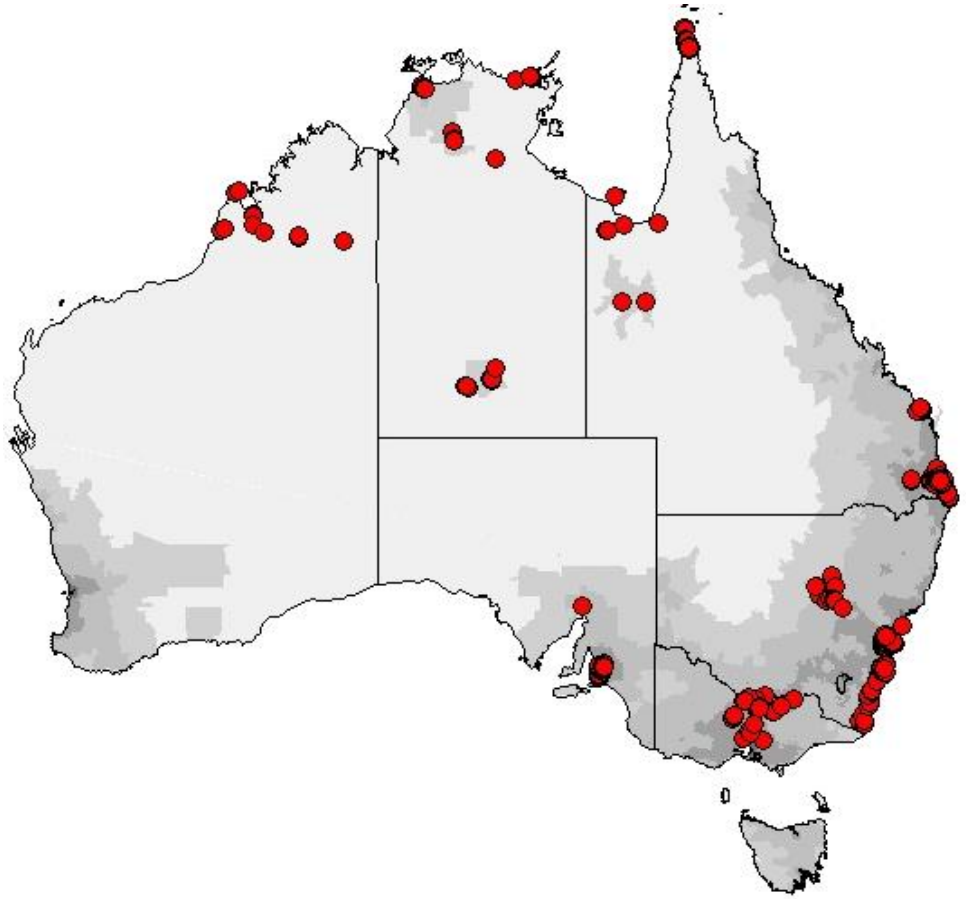
The Longitudinal Study of Indigenous Children

- First **national** longitudinal study of Aboriginal and Torres Strait Islander children
- Over 1,000 children followed over time
- Data on individual health behaviours and health outcomes, as well as socioeconomic, cultural, and environmental factors
- Based on strong community partnerships and governance



Aboriginal and Torres Strait Islander Research Administration Officers working on LSIC in 2012

The Longitudinal Study of Indigenous Children



- Not a representative study
- Provides a picture of life for children living in diverse environments

<u>2011 survey:</u>

- Interviews with 1,282 children
- Aged 3-9 years

[4] CASE STUDY

Case study

Purpose:

- To demonstrate that individual behaviours associated with obesity are shaped by the broader context
- Focusing on one behaviour: soft drink consumption
  - Many more relationships could be explored in LSIC

Question:

What is the association between the social determinants and the consumption of soft drink in LSIC?

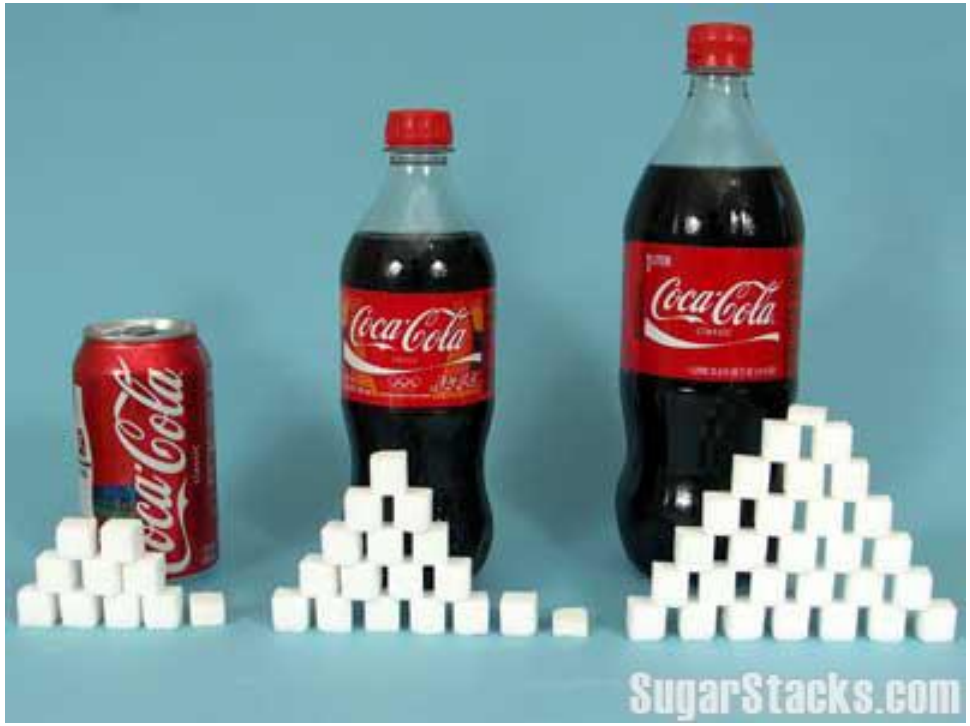
Case study

Why soft drinks?

(soft drinks, cordial, sports drinks)

- High in calories, nutrient poor
- Often cheap, highly advertised
- Linked to obesity in children (+ dental caries)
- Rates of soft drink consumption are perceived as a concern in some Indigenous communities
- Lack of research examining factors associated with soft drink consumption

Soft drinks



10 teaspoons sugar

16 teaspoons sugar

27 teaspoons sugar

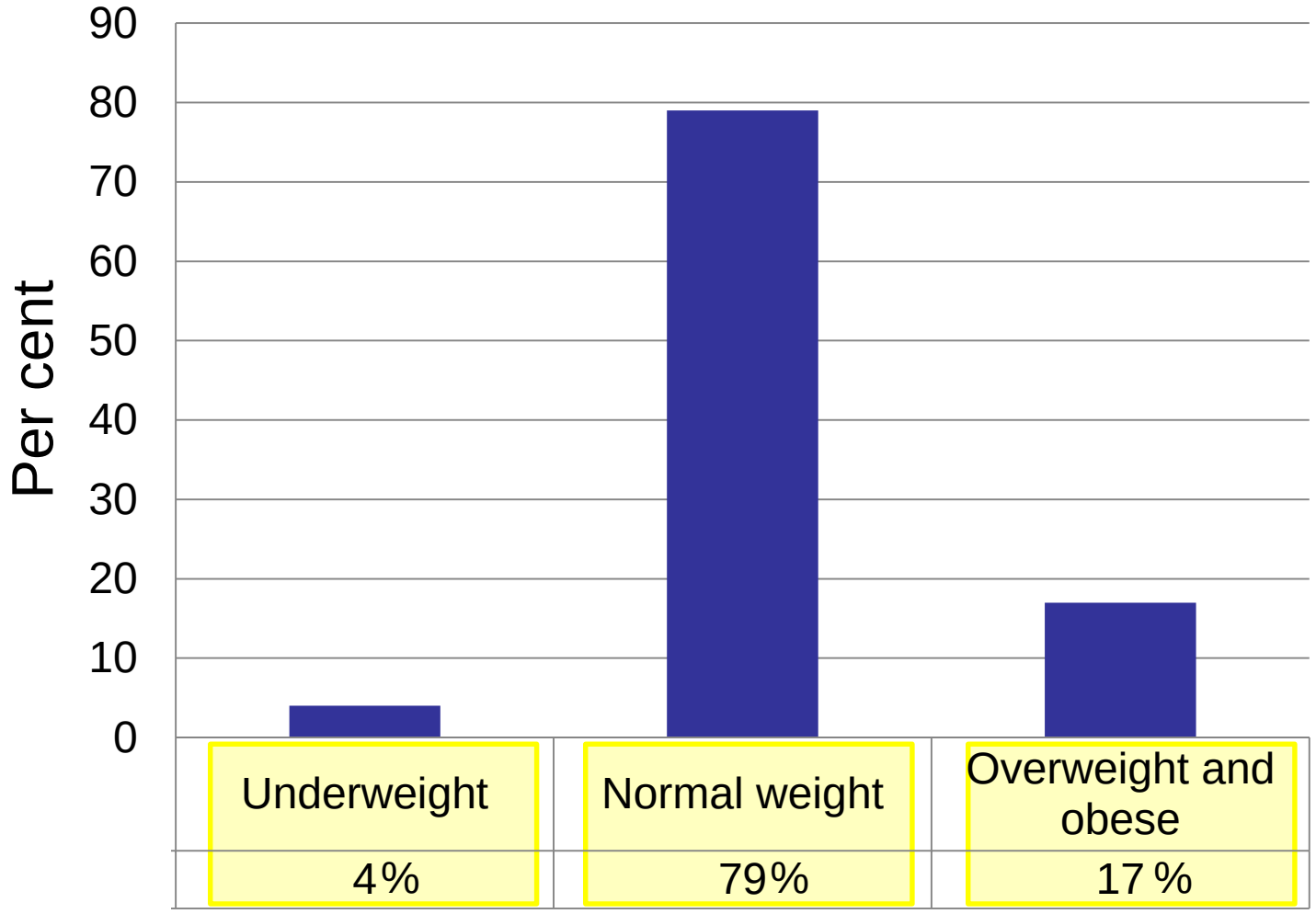
From a focus group with Aboriginal families in Victoria:

"I try and buy heaps of fruit but it's just that Coke always ends up at home. I'll get a can and it's... drunk by everyone else. It's the Coke that's a killer in our black kids."

Characteristics of LSIC children (2011)

- **51%** had consumed soft drink the previous day
  - *Children 3-9 years old*

Characteristics of LSIC children (2011)



Multilevel model: results

Low maternal education	*odds 34% higher (vs high maternal education)*
Unstable households	*odds 64% higher (than stable households)*
Urban areas	*odds 2-3 times as high as in regional and remote areas*
Disadvantaged neighbourhoods	*odds 2-3 times as high as in the most advantaged areas*

Discussion

- Soft drink consumption is influenced by social determinants
  - Education (e.g. nutrition awareness, or indicator of higher SES)
  - Housing stability (e.g. ability to store and cook food; stress)
  - Neighbourhood disadvantage (e.g. low access to healthy foods)
- Uncovers a problem of increased soft drink consumption in urban areas (e.g. prominence of fast food stores and 24-hour shops)

[5] CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

Case study:

- Quantitative evidence that the social determinants are associated with individual behaviours related to obesity
- It's not 'too complicated' to explore these issues
- One example
  - Potential for more research using LSIC to inform evidence-based policy

Policy implications

Childhood obesity:

- Programs and policies should not only focus on the individual
- Can't change behaviour without addressing the context
- Need to target broader factors – education, housing, disadvantage
  - Work with communities to learn what programs might work
- This approach would require action across sectors

INDIGENOUS HEALTH

Aboriginal health policy: is nutrition the 'gap' in 'Closing the Gap'?

Jennifer Browne,[1,2] Rick Hayes,[1] Deborah Gleeson[1]

- Searched all Aboriginal health policy documents 2000-2012
  - *National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan,* 2000–2010
  - First and only national Aboriginal nutrition strategy
  - Called for action on social determinants; action across multiple sectors
  - Evaluation not published
- **Conclusion**: we need a national policy that is cross-sectoral and uses a social determinant approach to improve nutrition and 'Close the Gap'

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Australian National University

deeble institute connecting HEALTH POLICYMAKERS, PRACTITIONERS AND RESEARCHERS ahha

Thank you!

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Reference slides

Study methods: multilevel modelling

Interview sites
1. Western Sydney
2. NSW South Coast
3. Dubbo
4. Greater Shepparton
5. South East Qld
6. Mount Isa and remote Western Queensland
7. Torres Strait Islands and Northern Peninsula Area
8. Kimberley region
9. Adelaide
10. Alice Springs
11. NT Top End

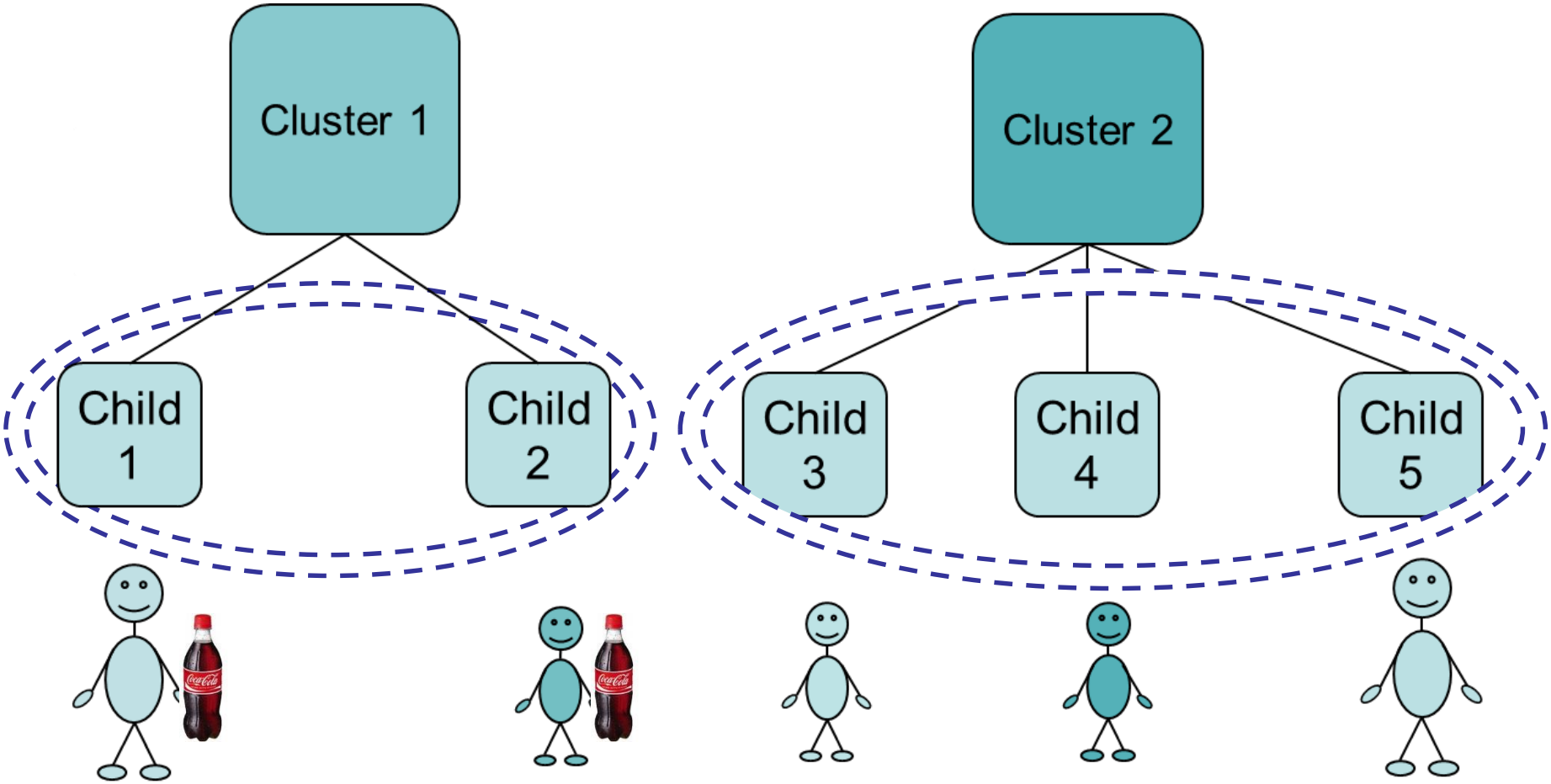
Defining the neighbourhood level: Indigenous Areas

- Randomised Indigenous Areas codes
  - Medium-sized geographic units
  - Coded randomly in LSIC (to protect privacy)
  - Not possible to link individuals to their physical geographic location
  - Enables grouping of individuals living in the same Indigenous Area
- 141 of the 429 Indigenous Areas are represented in LSIC
- Between 1 and 112 LSIC children in each Area

Methods: multilevel modelling

1. Can account for the clustered study design

Multilevel model

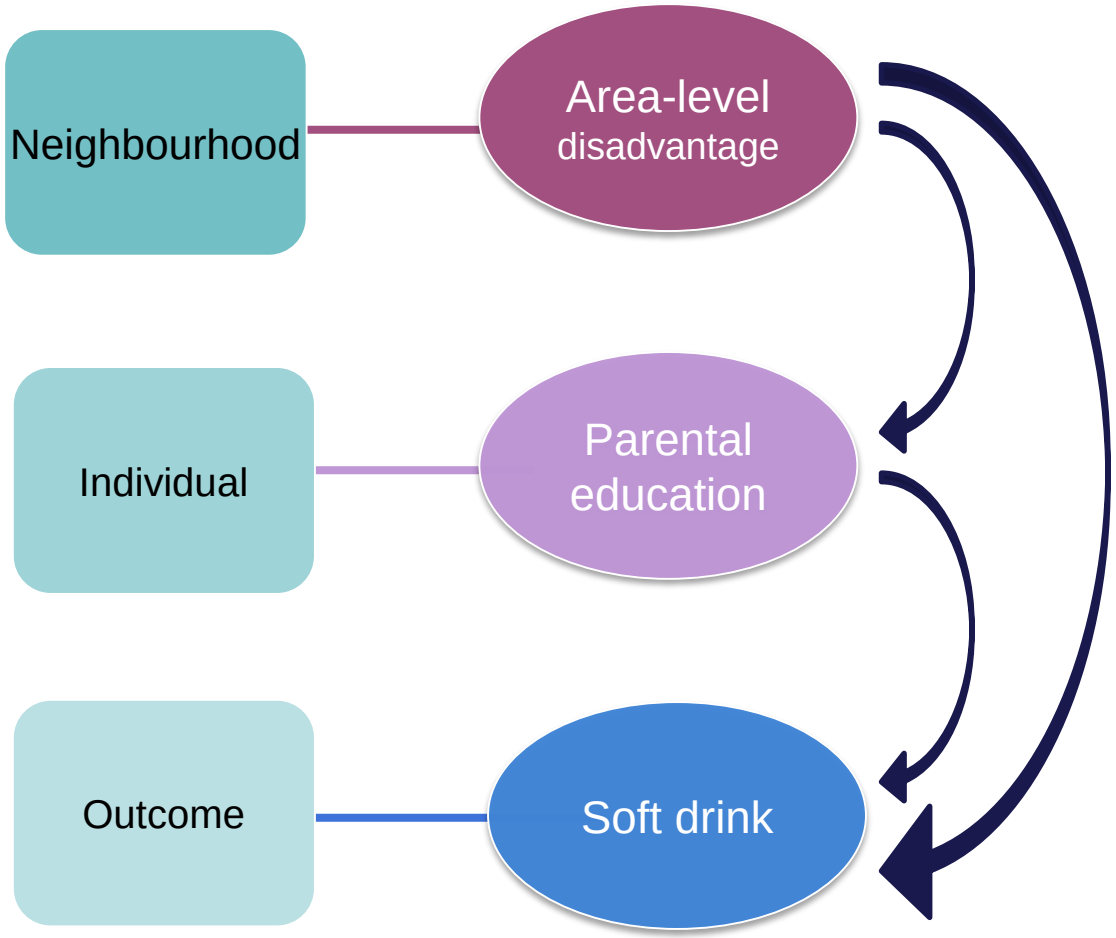


Multilevel model

1. Can account for the clustered study design

2. Can examine factors acting at multiple levels

Multilevel model



Index of Relative Indigenous Socioeconomic Outcomes decile

- Value of 1(lowest) to 10 (highest)
- Based on nine variables
  - 3 related to employment,
  - 3 related to education
  - 2 related to housing
  - 1 related to income.
- Calculated at the Indigenous Area level
- IRSEO is calculated specifically for Indigenous Australians

Policy context; Report on SDH

Policy context: promising?

Evidence is not sufficient for action without timely political support

1. 2013-2023 National Aboriginal and Torres Strait Islander Health Plan

   Advocates for a holistic, social determinants approach

2. Prime Minister Tony Abbott's *Closing the Gap* Report, February 2014

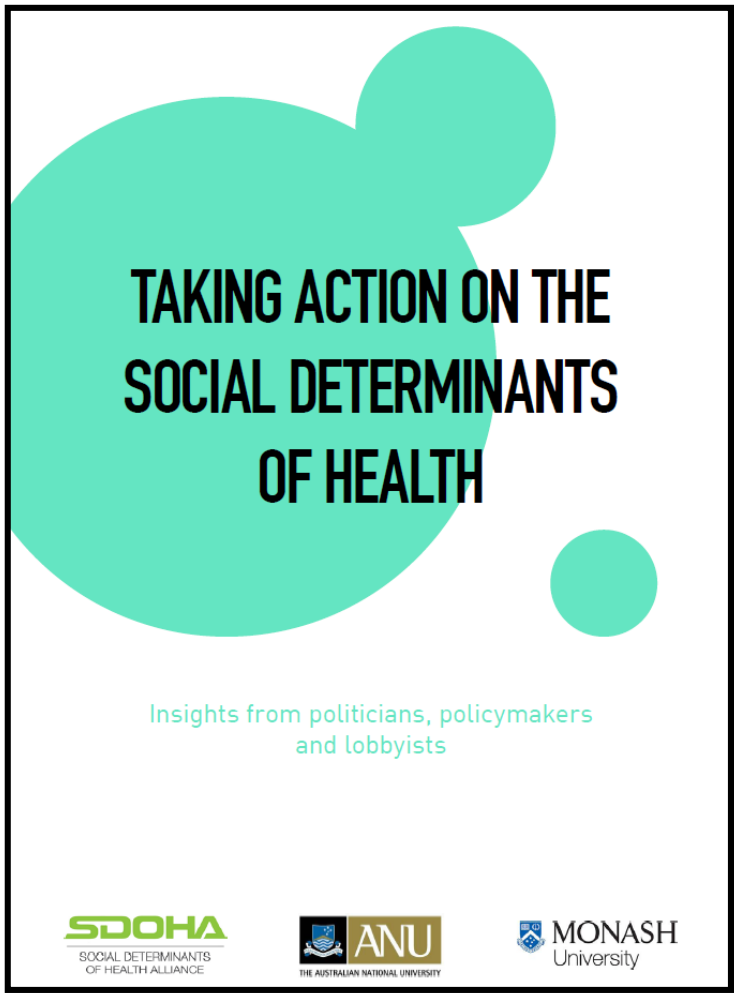
   Alluded to the importance of the social determinants of health

3. Senator Fiona Nash (Assistant Minister for Health), implementation plan, 24 June 2014

   'The Government is updating the Health Plan to reflect the Coalition's approach and priorities in Indigenous affairs. In particular, the updated Plan will recognise the links between health and the key social determinants of ***education****,* ***employment*** *and* ***community safety****.'*

4. **Action?**

Policy context: constraints



Interviews with:

- Former and current ministers
- Senior policy makers
- Lobbyists
- Senior Policy Advisors

Do efforts to address the social determinants suit the Australian political context?

What evidence on the social determinants is most relevant to policy?

Policy context: constraints

Objective	Policy constraint	Potential approach
Cross-sectoral policies	Government is siloed	Indigenous Affairs now together under PM&C
	Large-scale action perceived as exceeding government's capacity	Break down into (low-risk) pieces with identifiable solutions
Political will	Competing demands – not seen as a pressing issue	Use emotions and morals + evidence; build community demand for change
	Need political will and no major opposition	Currently in a policy window?

Report: Taking action on the SDH

Government departmentalism makes action difficult

"We run in silos, we're trying to get cross-departmental stuff happening, but this is walking, talking, chewing gum – walking and talking in five languages – and chewing gum."

-- Participant 1

Report: Taking action on the SDH

Evidence is not as important as winning votes

"[Just because] something might be printed in the New England Journal of Medicine, or the Lancet or the BMJ … it wouldn't get the time of day unless it was accompanied by market research that showed what the impact of that would be in marginal seats."

-- Participant 5

Report: Taking action on the SDH

Moral/ethical arguments are at the core of policy making

"… not to de-couple [evidence and advocacy] … I think the approach is to critique the notion of evidence-based policymaking and to get behind the notion that public policymaking is about ethics and reality. The philosophical cannot be ignored and it cannot be circumnavigated by data and analysis."

-- Participant 7

Previous Minsters' perceptions of SDH

"Indigenous health was clearly an area where social determinants were far more important than any service the Health Department might or might not deliver. In the absence of really substantial investment in housing and infrastructure in the remote areas in particular there wasn't going to be much improvement in the quality of peoples' lives."

-- Federal, ALP, 1990s

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