

# Out of My Ivory Tower

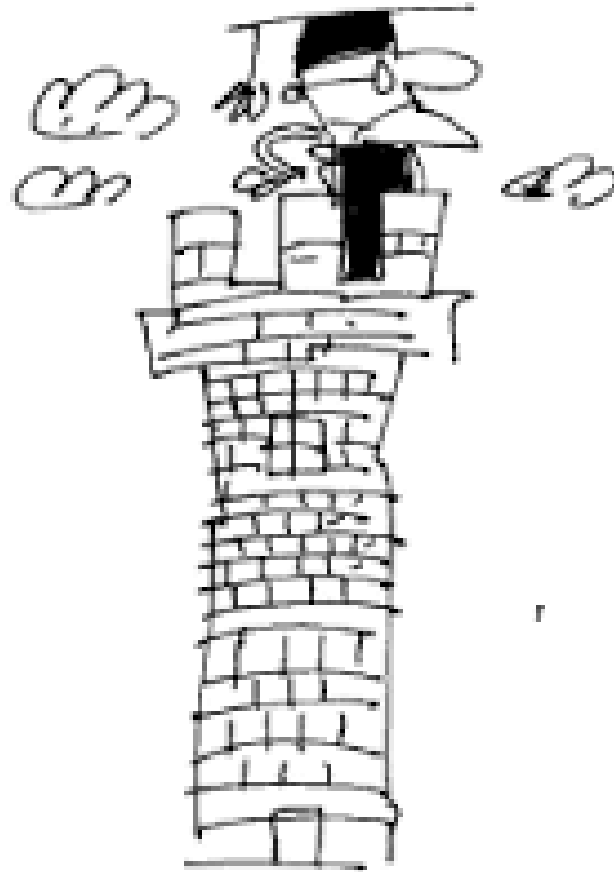
Perth Modernian Society

2019 Annual Oration

by

BRUCE ARMSTRONG AM FAA HonMD(UWA)

# Out of my Ivory Tower ...





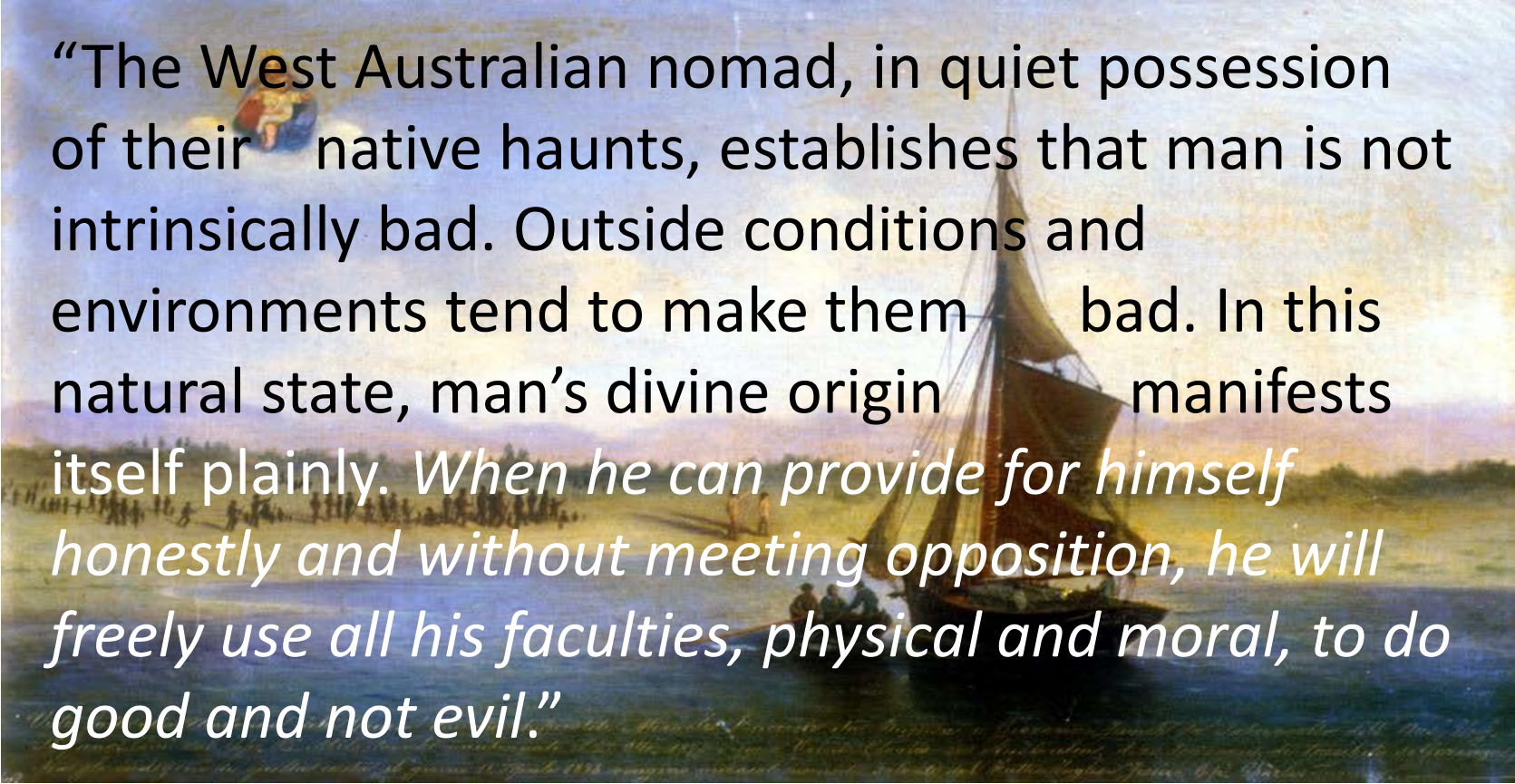
“To live or be in an ivory tower is not to know about or to want to avoid the ordinary and unpleasant things that happen in people's lives.”

# Human Nature



Painting by Ivankovic, Church of Our Lady of Mercy Museum, Dubrovnik, Croatia

# Human Nature

A painting of a ship at sea with a group of people on the shore in the background. The ship is a three-masted vessel with white sails, sailing on a blue sea. In the background, a group of people is gathered on a grassy shore. The sky is a mix of blue and yellow, suggesting a sunset or sunrise. The overall scene is peaceful and serene.

“The West Australian nomad, in quiet possession of their native haunts, establishes that man is not intrinsically bad. Outside conditions and environments tend to make them bad. In this natural state, man’s divine origin manifests itself plainly. *When he can provide for himself honestly and without meeting opposition, he will freely use all his faculties, physical and moral, to do good and not evil.*”



# Poverty

The state of being extremely poor.

The Cambridge Dictionary

A state of being unable to “*provide for oneself honestly and without meeting opposition*”.

# Poverty in Australia 2015-16









<b>All people <sup>(1)</sup></b>	<b>50% of median</b>
<b>All</b>	<b>13.2</b>
<b>By Age <sup>(1)</sup></b>	<b>50% of median</b>
Under 15 years	17.3
15 - 24 years	13.9
25 - 64 years	12.1
65 years and over	11.6
65 years and over, renting	43.4

# Socioeconomic disadvantage

- Disadvantage is about ‘impoverished lives’, not just ‘depleted wallets’.
- Disadvantage encompasses:
  - Poverty - low economic resources,
  - Material deprivation - inability to afford the ‘basic essentials of life’ and
  - Social exclusion - inability to fully participate in the ordinary activities of a community.





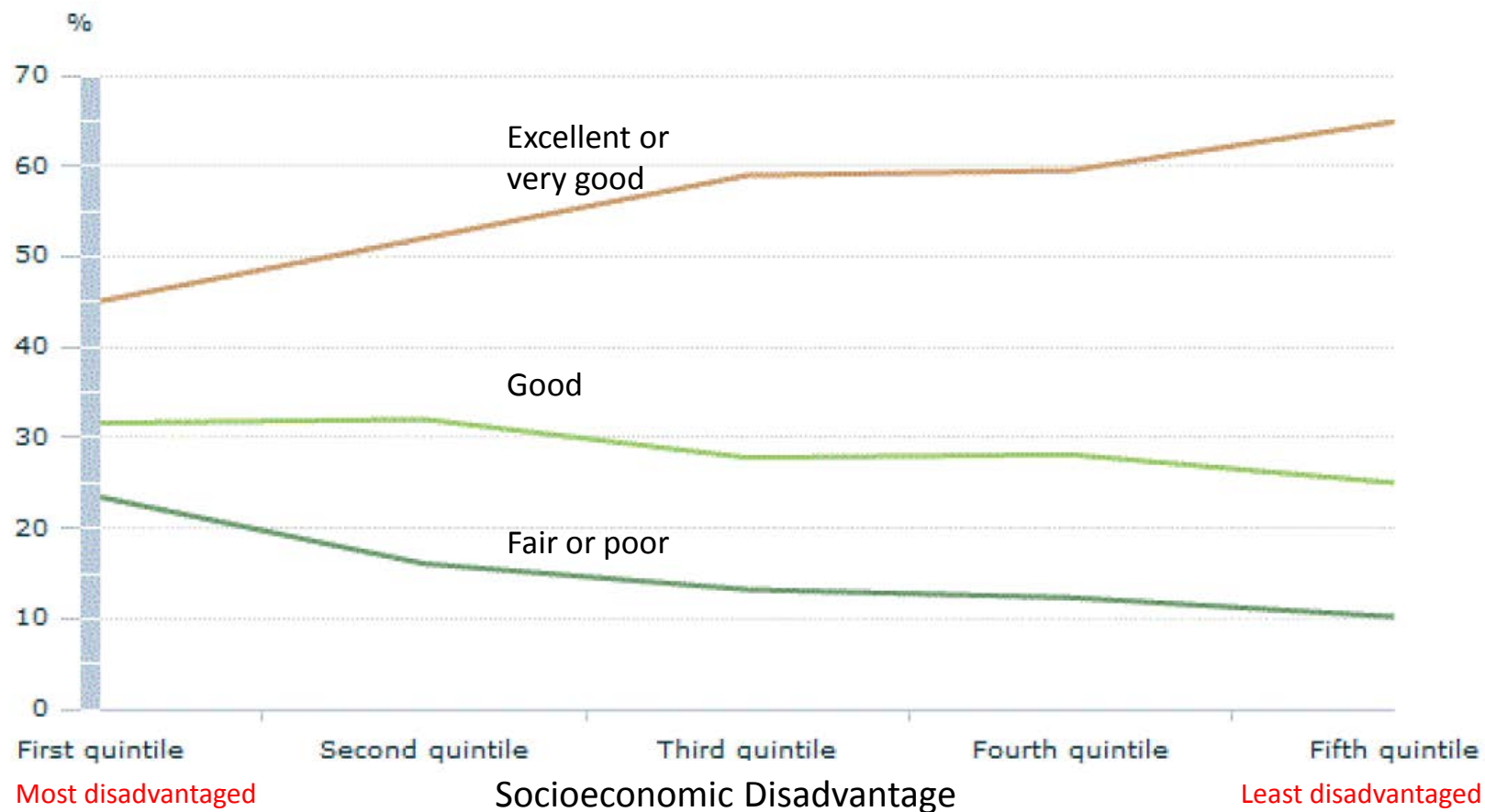
	Group	Facing deep and persistent disadvantage (%)
	Living in public housing	23.6
	Dependent on income support	15.3
	Unemployed	11.5
	Lone parents	11.3
	With a long-term health condition or disability	11.2
	Indigenous Australians	10.8
	Highest educational attainment Year 11 or below	9.3
	All Australians	4.4

Australians at greatest risk of deep and persistent disadvantage

Australian Institute of Health and Welfare. Australia's Welfare 2017. Australia's welfare series no. 13. AUS 214. Canberra: AIHW

Poverty and poor health go  
together

# Self-assessed health Australia 2017-18



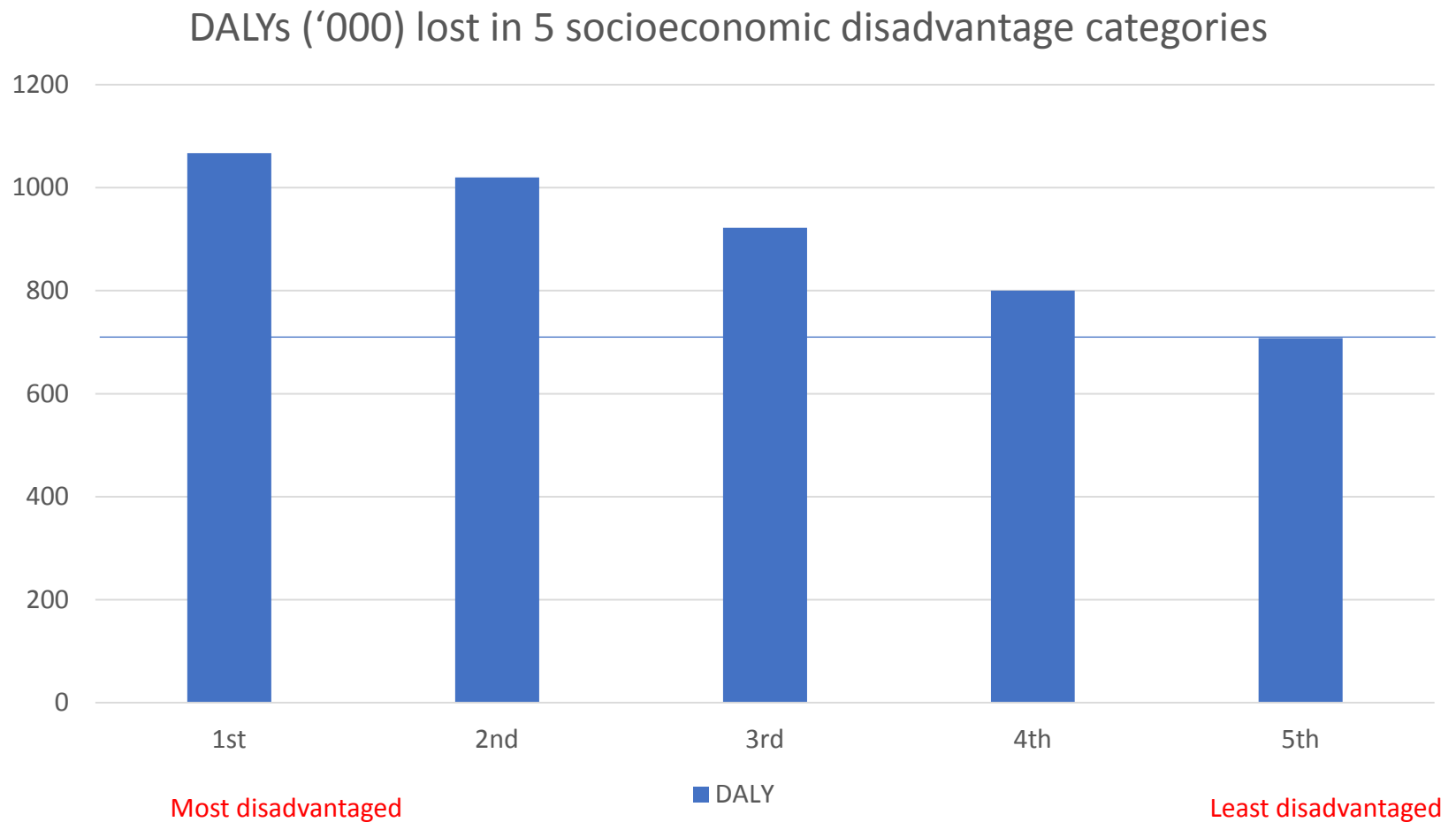
# Burden of Disease

Burden of Disease in a population is measured by the total *disability adjusted years of life (DALYs)* lost by that population in a year.

DALYs = (Years of healthy life lost to illness or injury)  
+ (Years of life lost to premature death)



# DALYs lost due to socioeconomic disadvantage Australia 2011



What are the drivers of disease and death from disadvantage?

# *Risk factors of disadvantage*

## Australia 2012-15, 2017-18

Risk factor	Most disadvantage	Least disadvantage
High or very high psychological distress	18.3%	9.0%
Current smoker	21.7%	6.8%
Overweight or obese	71.8%	62.6%
More than 2 standard drinks of alcohol a day	14.1%	17.8%
More than 4 standard drinks on a single occasion	34.8%	47.3%
Sugar sweetened drinks daily	13.8%	4.2%
Does not meet physical activity guidelines	89.8%	78.5%
High blood pressure	26%	21%
Low birthweight	7.5%	5.6%
Cervical screening participation	52%	64%

# *Diseases of disadvantage*

## Australia 2006-15

	Year	Lowest socioeconomic group (%)	Highest socioeconomic group (%)	Rate ratio: lowest/highest socioeconomic group
Arthritis	2014-15	19.7	12.1	1.6
Asthma	2014-15	12.8	9.8	1.3
Back problems	2014-15	18.9	15.9	1.2
Chronic kidney disease	2011-12	13.5	8.3	1.6
Coronary heart disease	2011-12	5.0	2.3	2.2
Diabetes	2014-15	8.2	3.1	2.6
Lung cancer incidence	2006-2009	52 per 100,000	33 per 100,000	1.6
Mental and behavioural problems	2014-15	21.5	15.0	1.4
Oral health rated as fair or poor <sup>(a)</sup>	2010	31.2	12.2	2.6
Stroke	2014-15	1.1	0.5	2.2



# What can we do about this disease and death inequality?

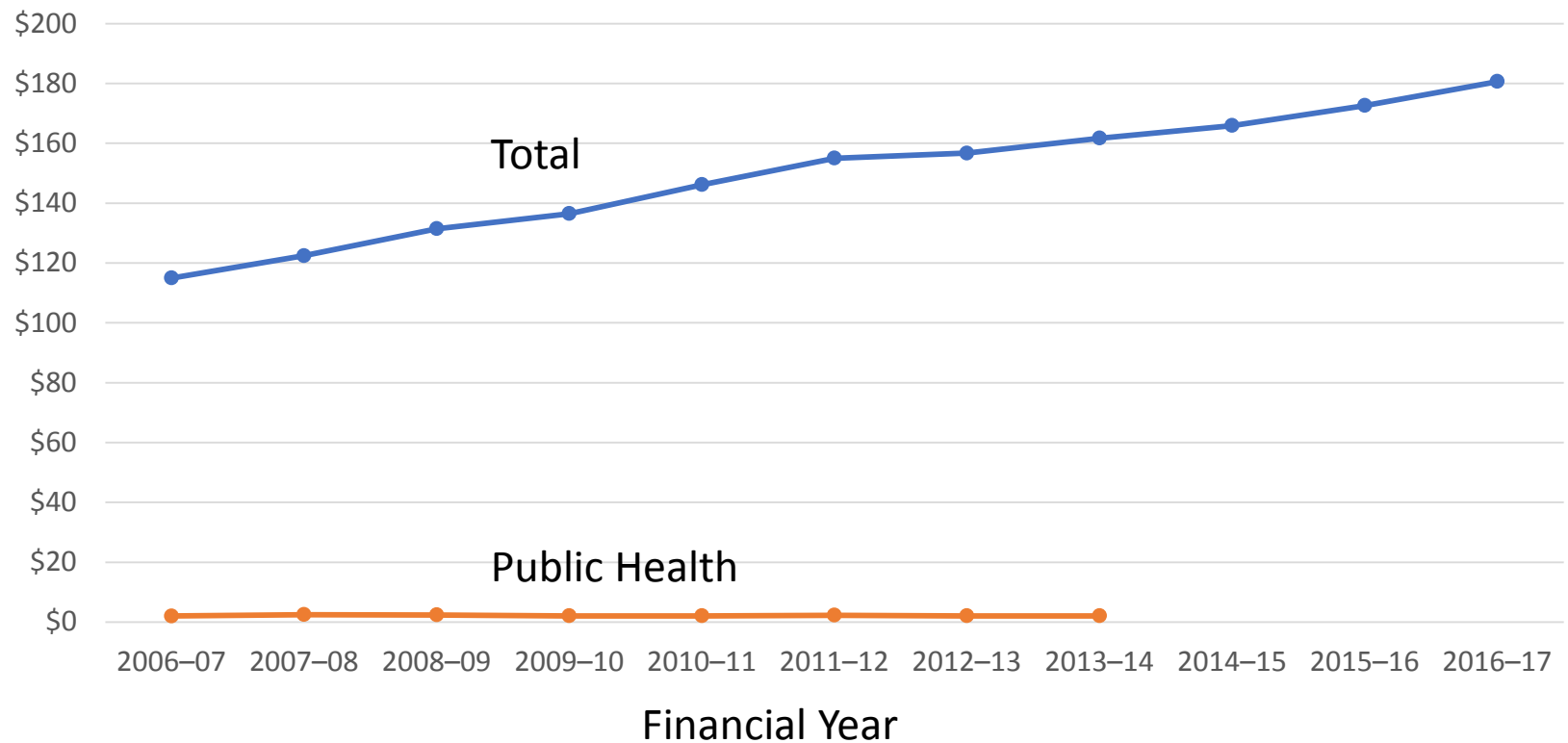
- Introduce a “sin tax” on sugar added to processed foods and increase the present “sin taxes” on cigarettes and alcohol.
  - These measures will **increase** the disadvantage of already disadvantaged people.

# What can we do about this disease and death disadvantage?

- Introduce a “sin tax” on sugar added to processed foods and increase the present “sin taxes” on cigarettes and alcohol.
  - They will **increase** the disadvantage
- **Massively increase spending on health education and health promotion.**
  - Neither works well (if at all) with disadvantaged people;
  - It increases the inequality; and is
  - “Pie in the sky.”

# Health expenditure Australia 2006-17

Annual expenditure (\$billions) at constant prices



Australian Institute of Health and Welfare 2018. Health expenditure Australia 2016-17. Health and welfare expenditure series no. 64. Cat. no. HWE 74. Canberra: AIHW.

Jackson H, Shiell A. (2017) Preventive health: How much does Australia spend and is it enough? Canberra: Foundation for Alcohol Research and Education.



# The Sydney Morning Herald

INDEPENDENT. ALWAYS.

## Rescues to continue, regardless of cost

By Andrew Darby in Hobart

December 22, 2008 — 11.00am

THE navy frigate HMAS Arunta was last night wrapping up its emergency mission in the Southern Ocean, leaving the controversial Vendee Globe yacht race behind.

A British competitor, Mike Golding, has been given extra fuel to reach Australia in his dismasted yacht by the frigate, whose crew had earlier rescued the severely injured Frenchman Yann Elies.

The rescue mission again raised questions about the cost of saving foreign yachtsmen who put themselves at risk in the Southern Ocean. But the Government strongly defended the work, and the French Government was reported to have expressed its gratitude at the highest level.

...

A Defence Department spokesman said the cost of sending the frigate and its 100 crew on the mission had not been calculated. "I've seen several figures, but none of them have come from us," he said. Some media reports put the cost at more than \$1 million.

But early health and educational interventions in infancy, childhood and young adult life might work.

Based on much evidence:

“It is now quite clear that many of the diseases threatening the sustainability of our health system have their origin in early childhood, during in-utero development or are secondary to adverse environmental influences in preceding generations.”

Professor David Forbes. Submission to *WA Sustainable Health Review* August 2017

# Hypothesis

- Early health and educational interventions
  - focused on disadvantaged families,
  - beginning at conception,
  - extending to young adult life,
  - based on evidence and
  - appropriately adapted to each life stage
- Have the potential to
  - radically reduce social and economic disadvantage,
  - greatly improve health
  - reduce many social “ills” and
- Create a fairer, healthier and gentler society.

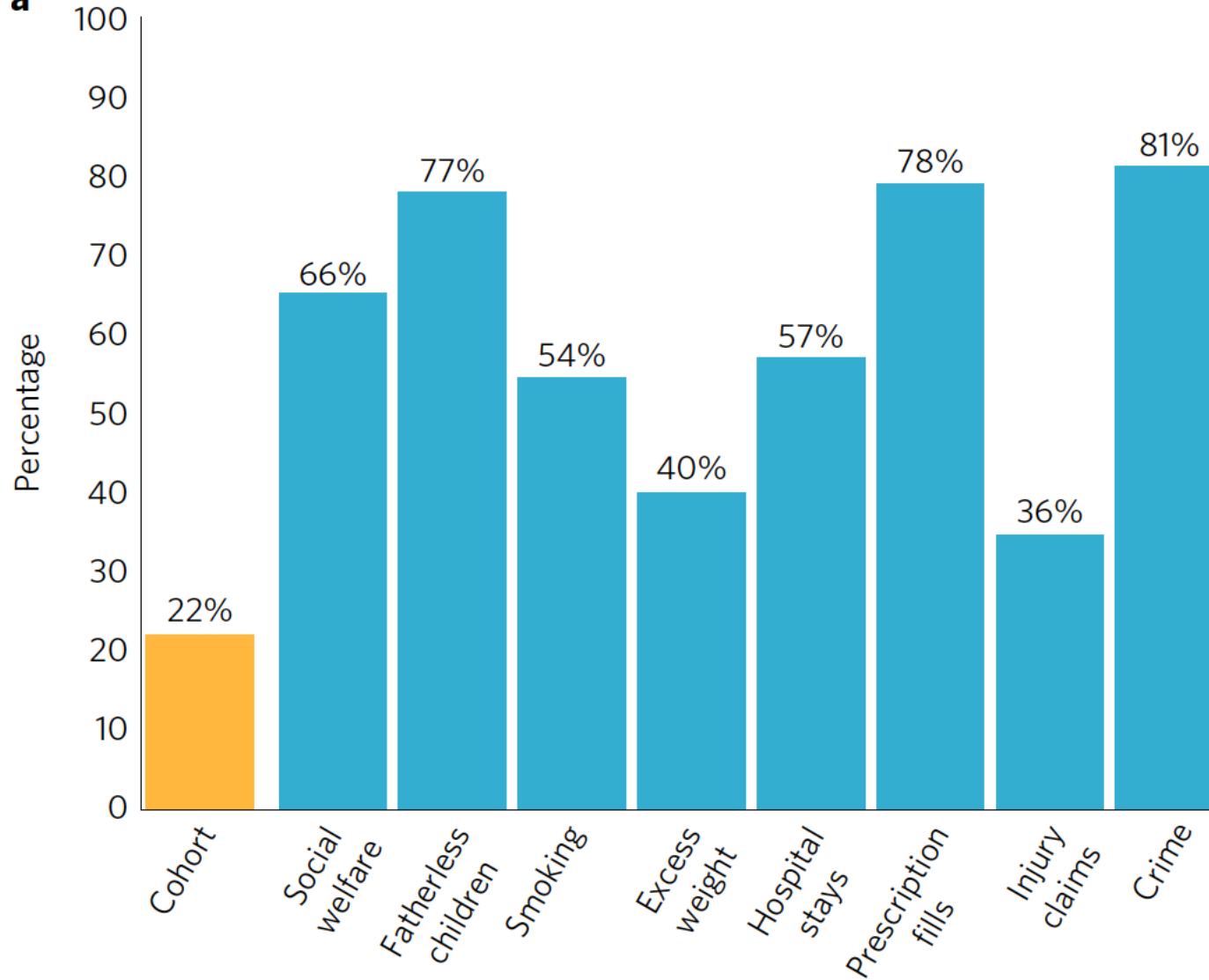
Evidence



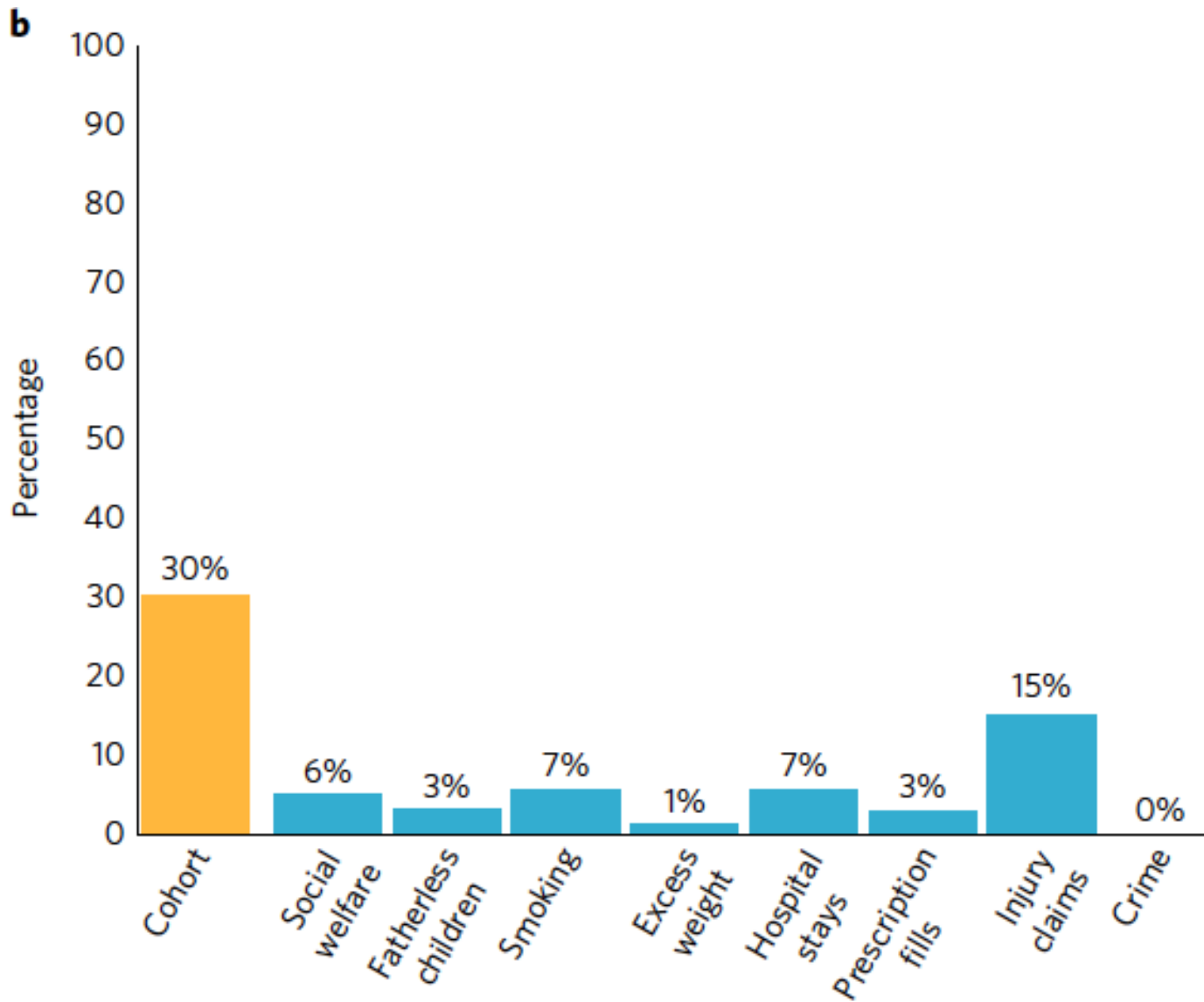
# Dunedin Multidisciplinary Health and Development Study

- 1,037 children born in Dunedin in 1972-73 and were assessed every two years from age 3 to 21 and at age 26, 32 and 38 years **with 95% retention**.
- Through the first 10 years of life, investigators measured risk factors that predict poor adult health and social outcomes:
  - growing up in a socioeconomically disadvantaged family,
  - maltreatment,
  - low IQ, and
  - poor self-control.
- Occurrence of poor adult health and social outcomes ascertained by linking to public records.

**a**



Dunedin  
Study:  
*Impacts  
on  
society of  
people  
with **all  
four** risk  
factors*



Dunedin Study:  
*Impacts on society of people with **none** of the four risk factors*

# Two intervention examples



# The “Nurse Family” partnership

- 1,138, mostly African American women with no previous birth enrolled before 29 weeks of pregnancy.
- At least two of:
  - Unmarried;
  - <12 years of education;
  - Unemployed.
- Each randomised to one of four interventions.



# Interventions

1. Free transport for prenatal care appointments
2. 1 + developmental screening and referral services for their child at ages 6, 12, and 24 months
3. 1 + nurse home visits during pregnancy plus 2 post-birth visits
4. 3 + plus home visits through first 24 months of child's life and developmental screening and referral services for their child

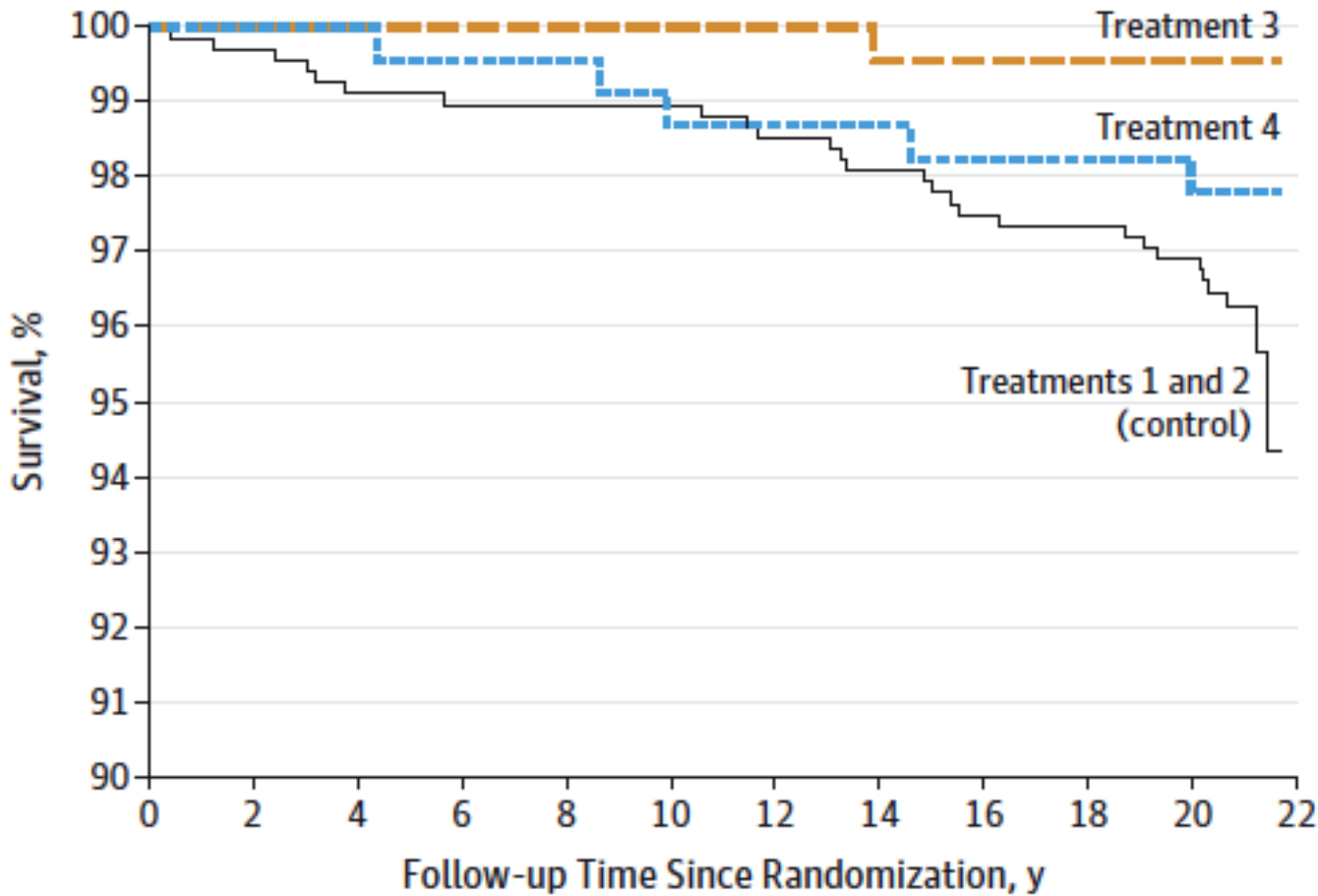


# Outcomes at 12 years of follow-up

- Nurse-visited mothers compared with control mothers reported:
  - less role impairment owing to alcohol and other drug use
  - longer partner relationships and
  - greater sense of mastery
- Government spent less on nurse-visited than control families for:
  - Food stamps
  - Medicaid and
  - Other aid to families
- This yielded \$12,300 in discounted savings compared with a program cost of \$11,511 expressed in 2006 USD.

Death rate of mothers out to 20 years of follow-up

**A** All causes of death

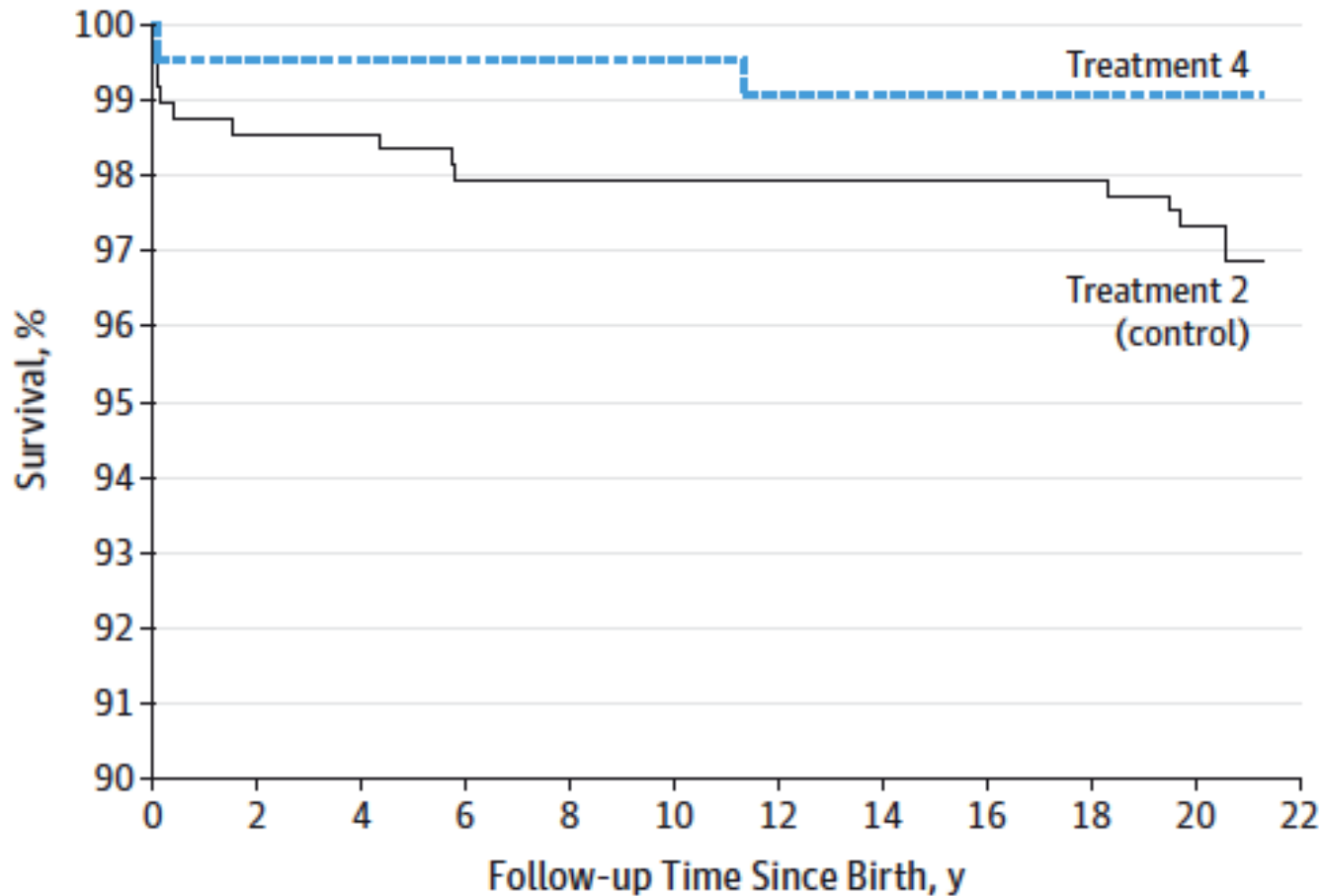


Olds et al. Effect of Home Visiting by Nurses on Maternal and Child Mortality. Results of a 2-Decade Follow-up of a Randomized Clinical Trial. JAMA Pediatr 2014; 168: 800-806.



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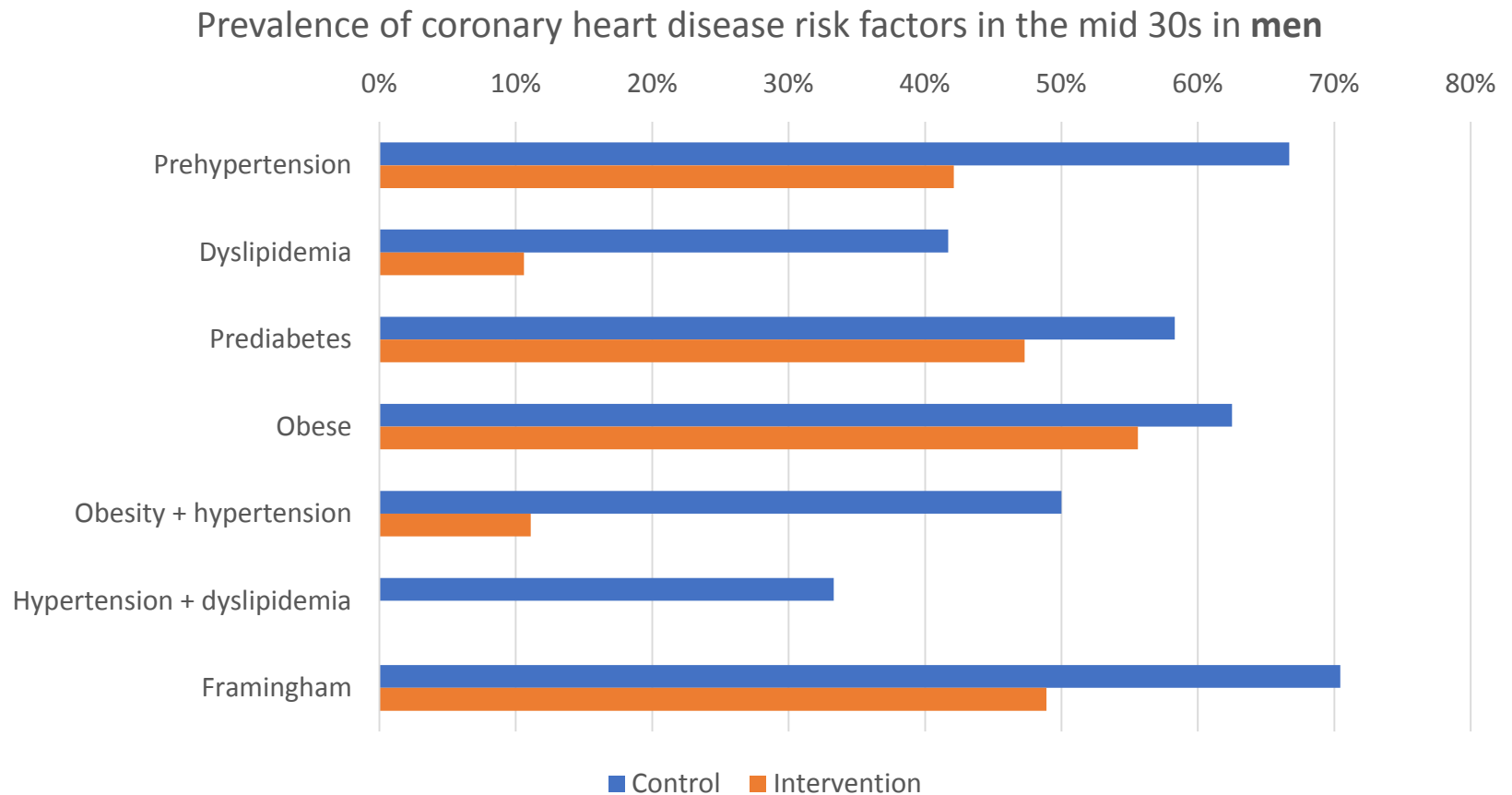
# Carolina Abecedarian Project (ABC)

- A two-stage intervention.
- Stage 1 - birth to age 5.
  - periods of cognitive and social stimulation interspersed with caregiving and
  - supervised play throughout a full eight-hour day for the first 5 years.
- Stage 2 - age 6 to 8.
  - To increase early math and reading skills a “home-school resource teacher” customised learning activities based on school materials and delivered these materials to parents to use at home.

# ABC Study - Follow-up

- There were 111 participating children; 72 were followed-up to their mid 30s.
- A biomedical survey of mainly cardiovascular and risk factors done at follow-up.

# ABC Study – coronary heart disease risk factors



Campbell et al. Early childhood investments substantially boost adult health. *Science* 2014; 343: 1478–1485.

# ABC Study – Other outcomes

- The intervention group has

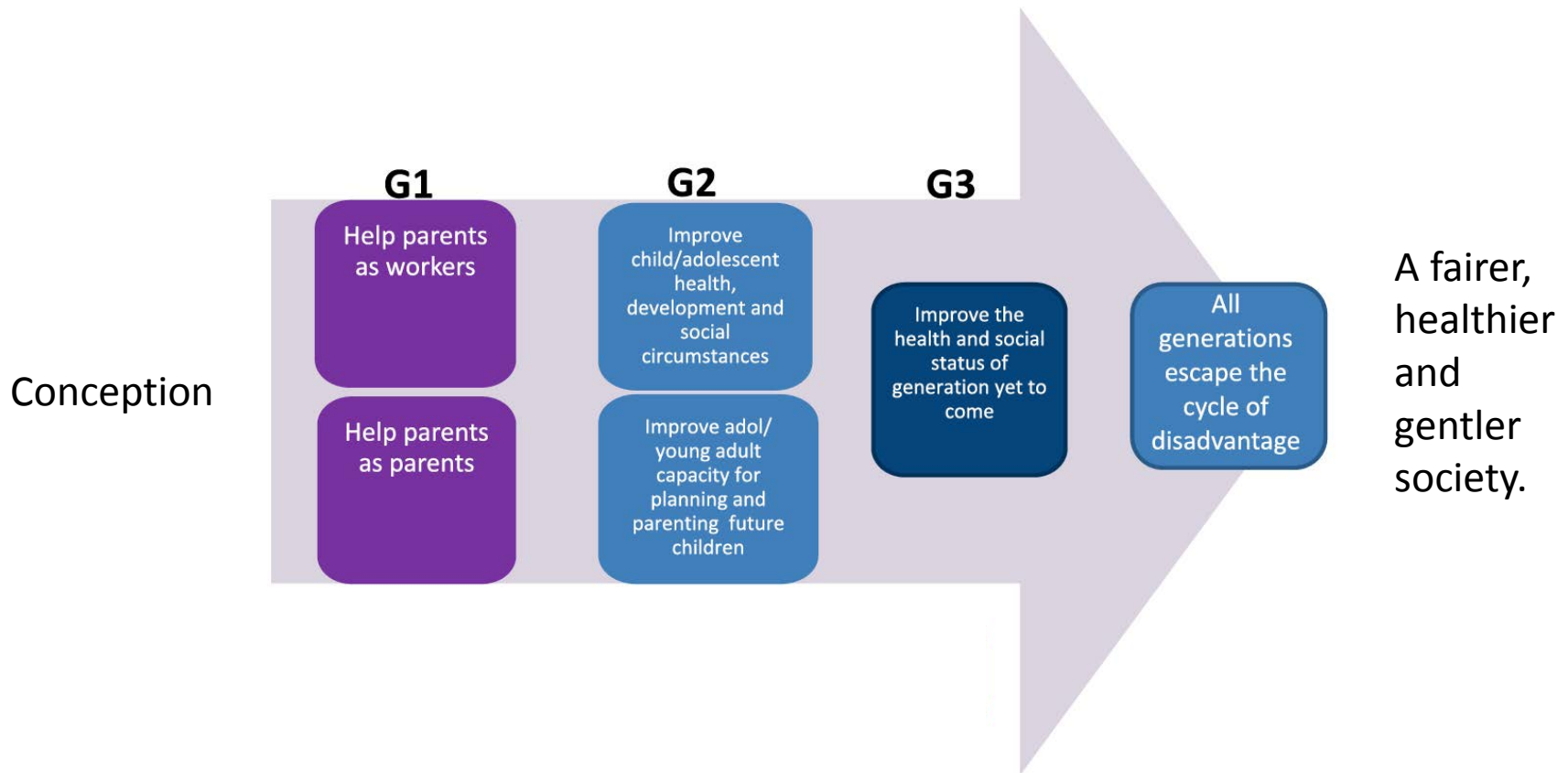
## LESS:

- Smoking
- Alcohol use
- Depression

## MORE:

- Completion of education
- Employment
- Income

# An intergenerational approach



# Early years in WA

- Purple book health checks at 0-14 days, 8 weeks, 4 and 12 months, 2 years, school entry + ad hoc.
- Kindergarten from 4 years of age.
- Sustainable Health Review Report 2019
  - Recommendation 8 “Health actively partner in a whole of government approach to supporting children and families in getting the best start in life...”
  - “Efforts during the first 1,000 days of life provide the best opportunity to address risks related to chronic disease, including obesity, passive smoking, alcohol consumption and mental health.”

“Unscripted wrap-up”

The End