

Why understanding the dynamics of population health is essential to health in all policies

Professor Fran Baum

Presentation to Health in All Policies
Conference 21st November 2007



inspiring achievement

Overview

- Whole of population strategies versus high risk intervention
- Population health does not just reflect level of economic development
- Equity and Population health
- Population health depends on the social and economic determinants of health

Population Strategy of Prevention

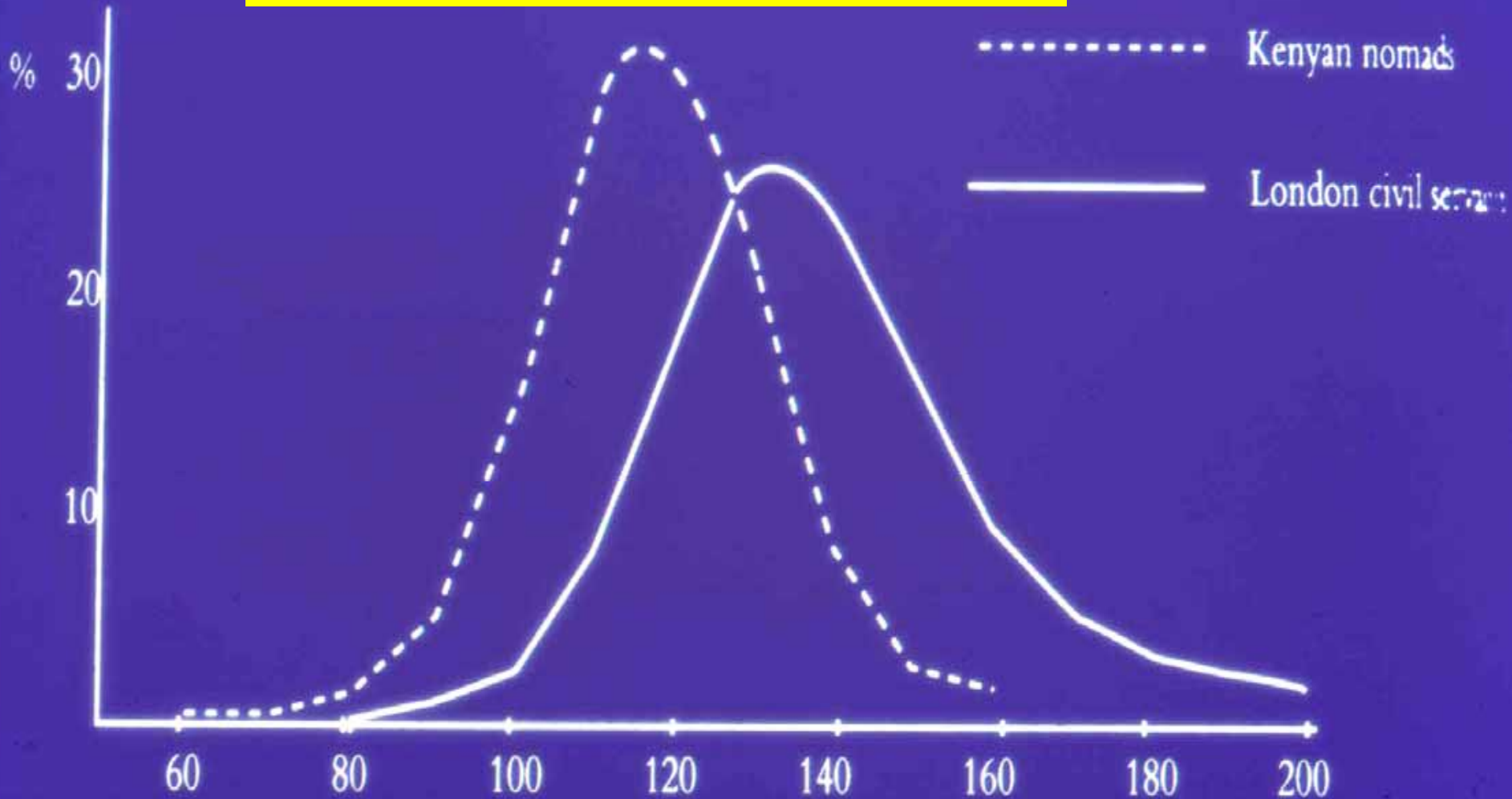


Figure 1: Distributions of systolic blood pressure in middle-aged men in two populations (After Rose, 1985).

Risk factors for hypertension

Within country differences

“why do some individuals have higher blood pressure than others?” = genetic variation, environmental and behavioural differences.

Between country differences

“ why is hypertension absent in Kenya and common in London?” then we need to consider determinants of the population mean

How about homicide?

Cronin H. *The Ant and the Peacock*, 1991.
Cambridge University Press

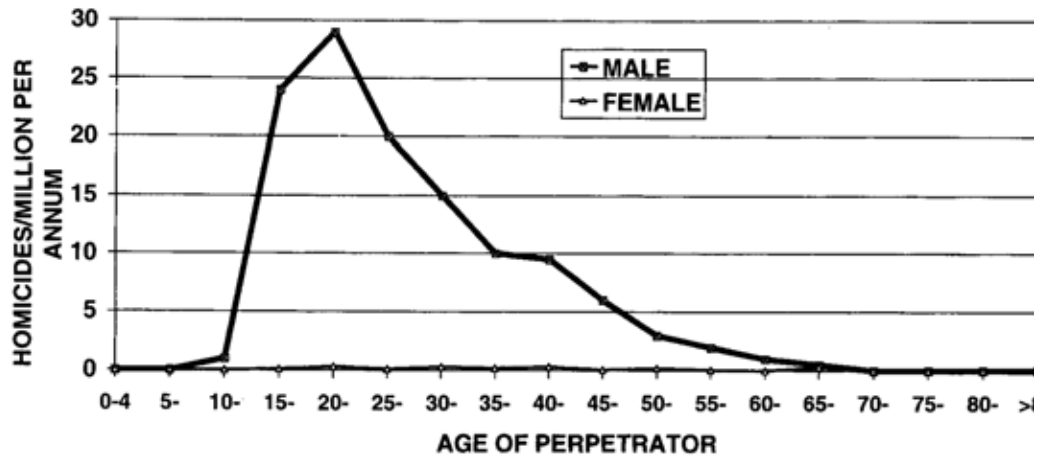
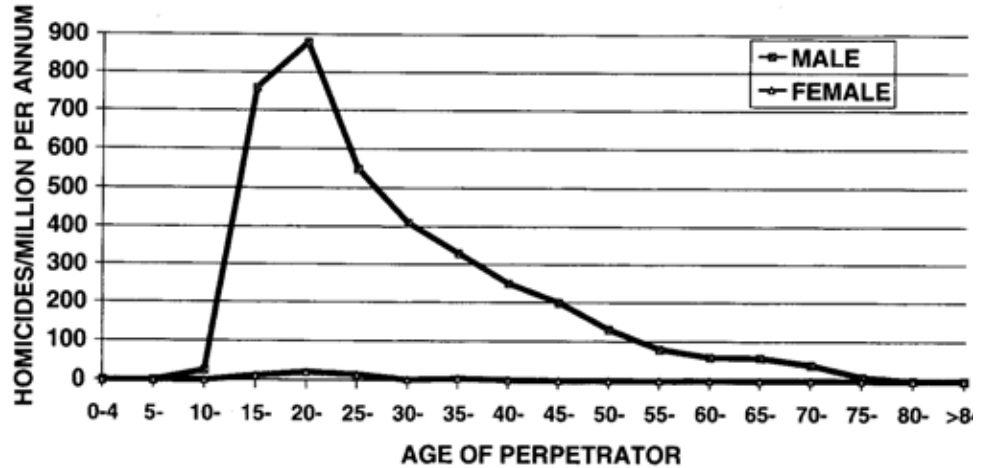


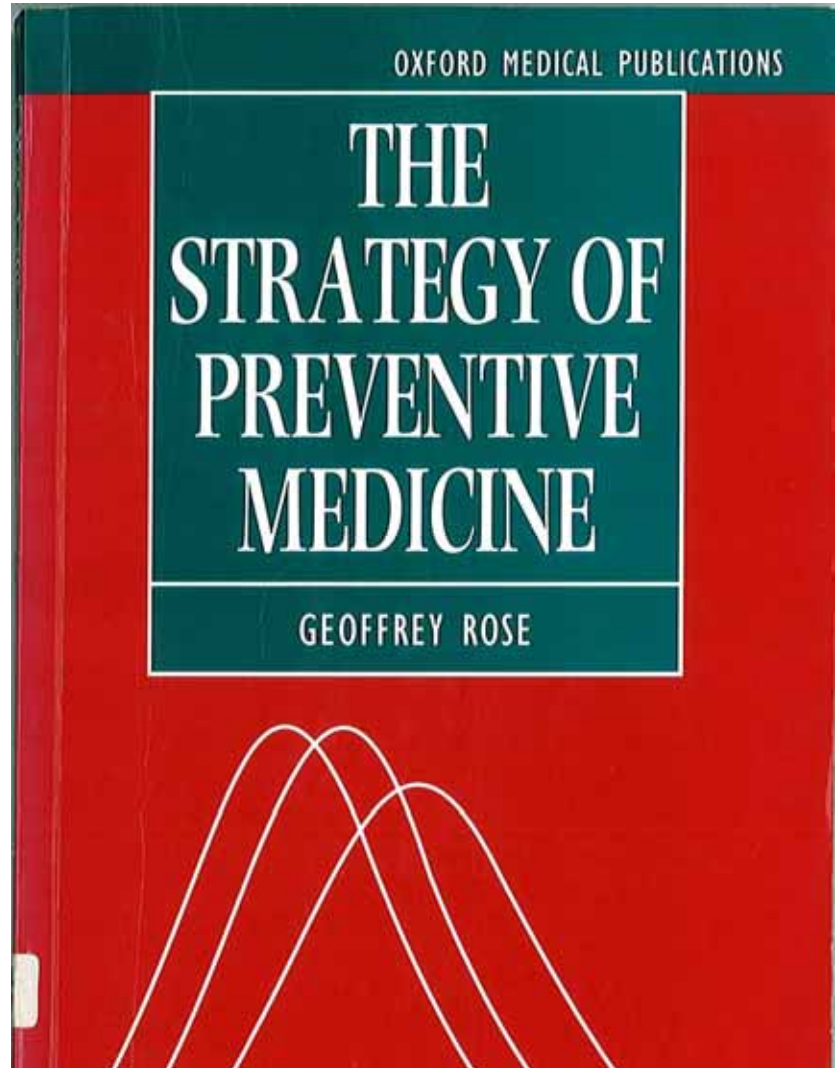
Figure 15-8. Perpetrators of homicide in Chicago (A), and England and Wales (B) (Cronin 1991).

Risk factors for homicide

- **Within countries:** age, sex, family history, genetic etc
- **Between countries:** legislation, guns, cultural norms etc

Rose, disease prevention & shifting distributions

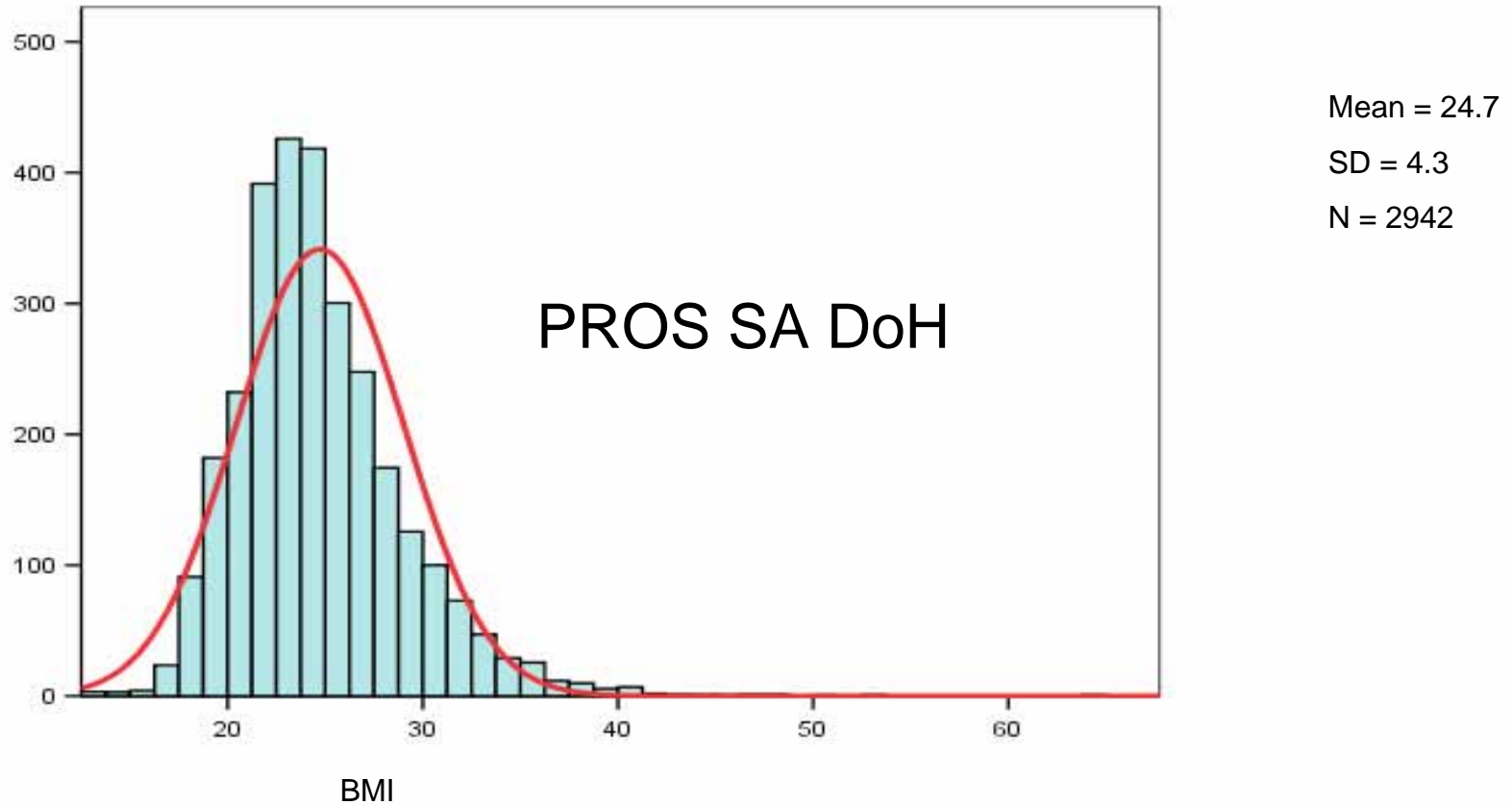
Rose notes that shifts in population distributions may greatly reduce the likelihood of poor health outcomes captured at the tail ends of the distributions **without** directing interventions to individuals.



Key point about prevention

- Instead of targeting prevention to the high risk tail of a distribution (i.e. targeting individuals), it is better to try shifting the underlying distribution of risk

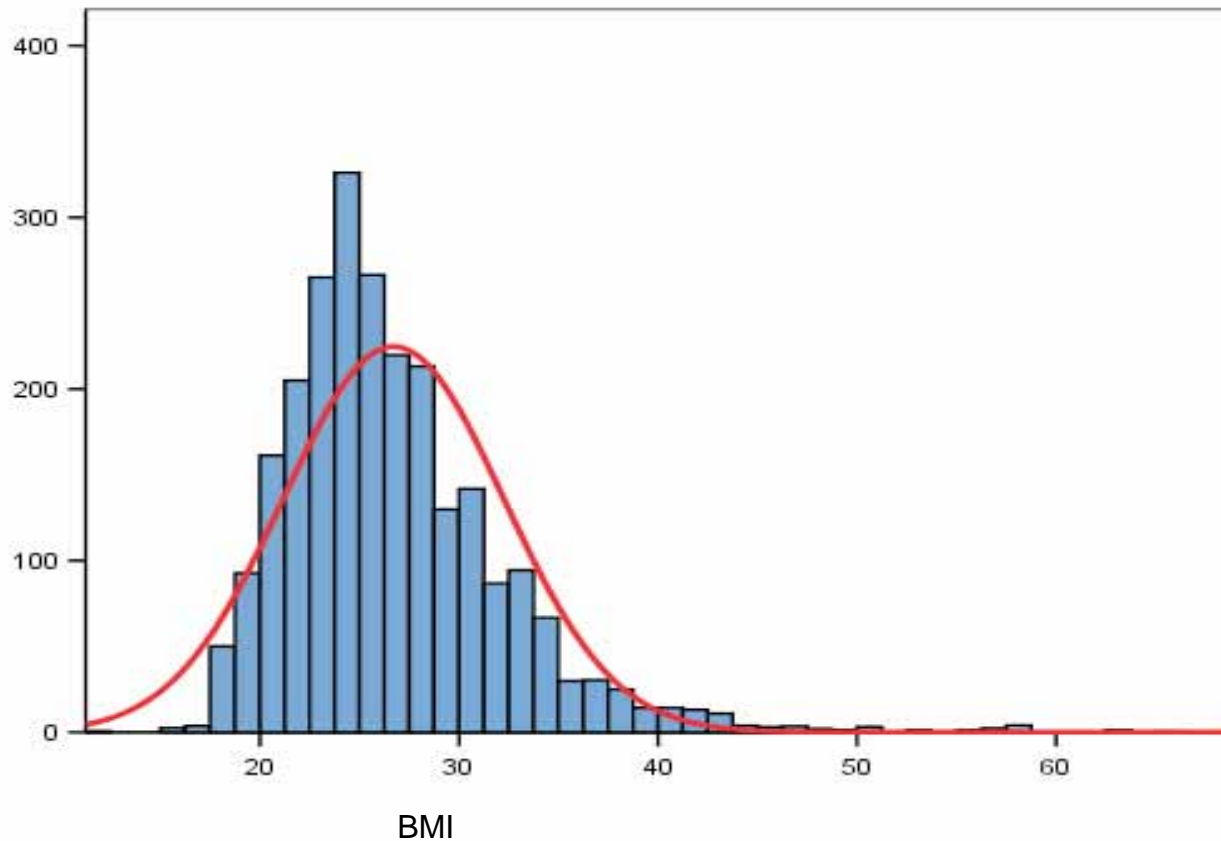
Distribution of Body Mass Index, South Australia 1991



Prepared by
PROS SA DoH

Source: Health Omnibus Survey, 1991, 15+
years

Distribution of Body Mass Index, South Australia 2006



Mean = 26.7
Std Dev = 5.5
N = 2492

Difference
in mean
1991-
2006 2.0
BMI

Source: Health Omnibus Survey 2006, 15+ years

Prepared by PROS SA
DoH

High risk versus population

- Why are some individuals obese?
- Why so some populations have higher levels of obesity and in others it is rare?



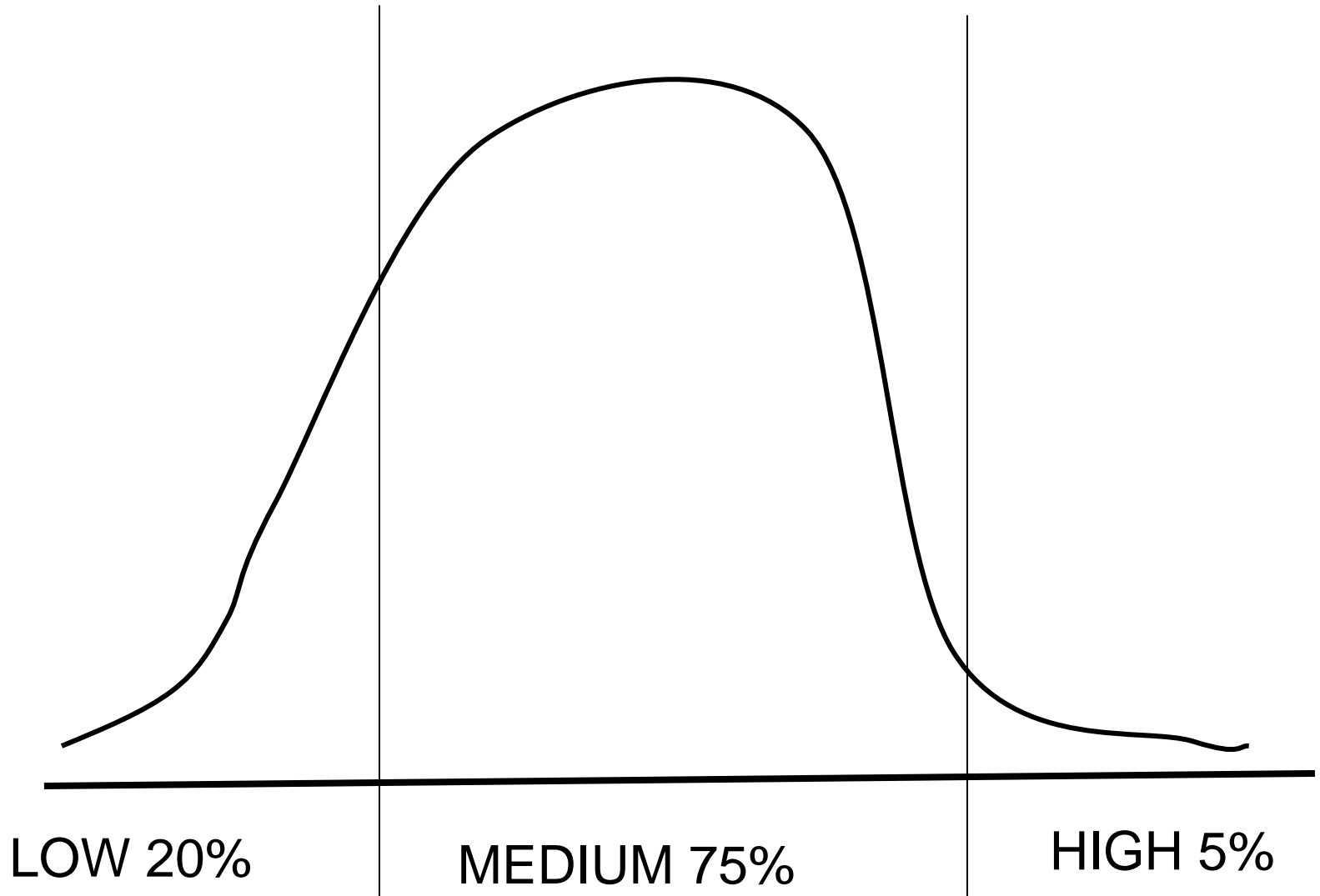
Focus on
clinical/individual
solutions



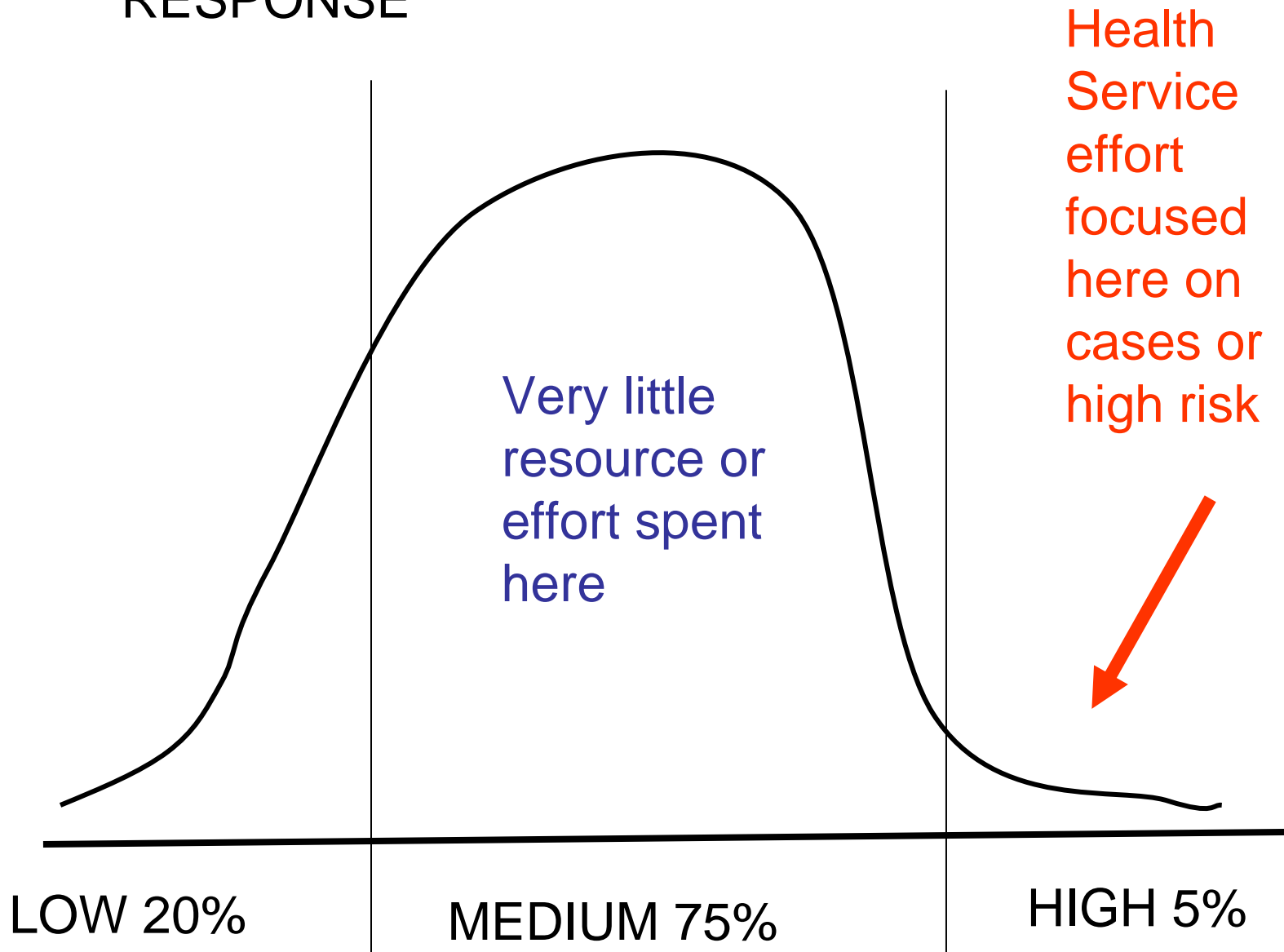
Focus on population wide
strategies

So if we want to return
South Australia to 1991
weight what strategies
would work?

DISEASE OR RISK FACTOR X

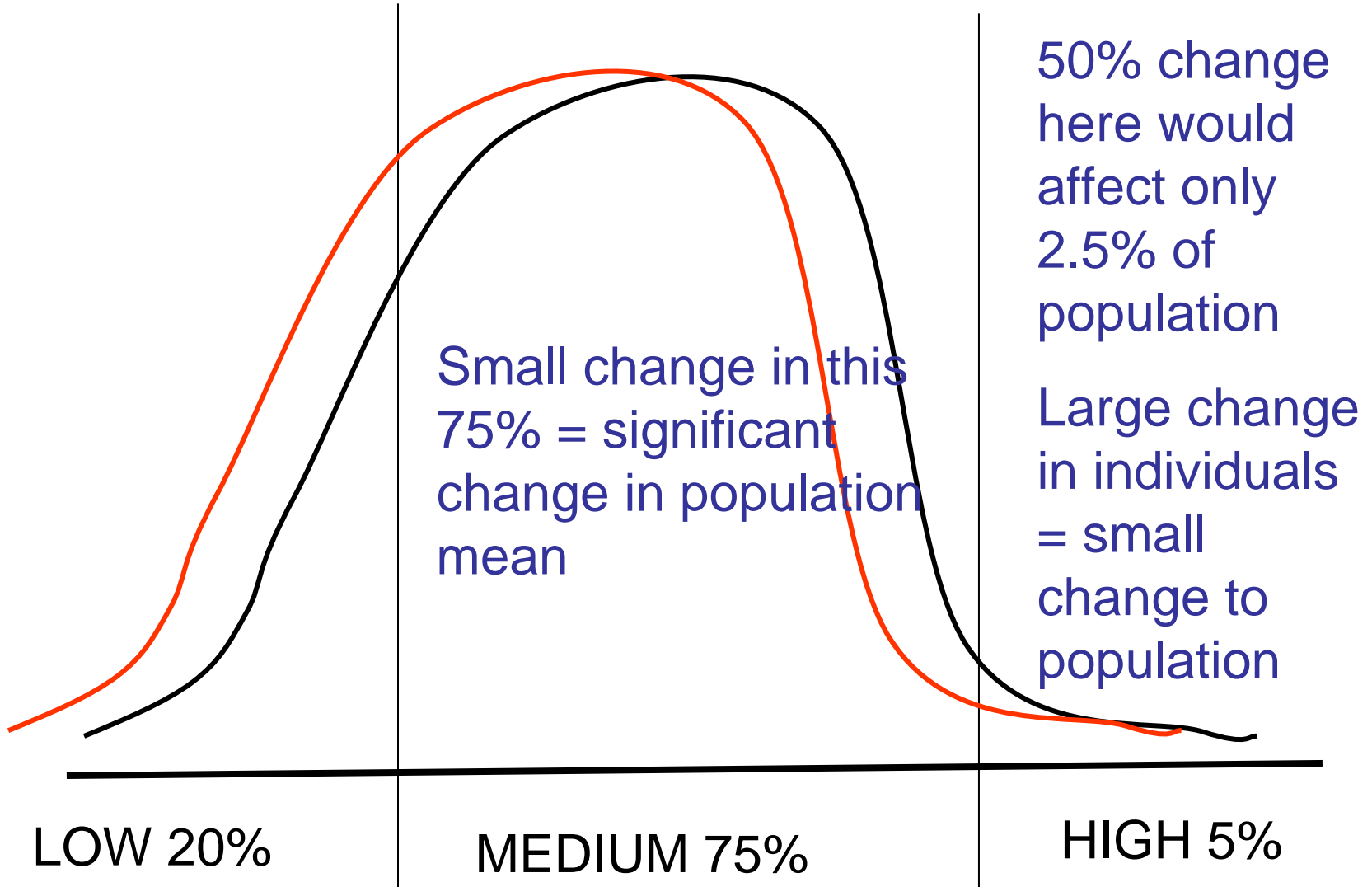


DISEASE OR RISK FACTOR X - RESPONSE





Shifting whole curve to left
will change the distribution



The hardest cause to identify is the one that is universally present for then it has no influence on the distribution of disease

Generally the further back in chain of causality then the hard to identify the cause of a disease but the more impact intervention would have



Individual focus is short term

High risk

- ❖ Clinical intervention highly valued
- ❖ Evaluation of impact on individuals not population
- ❖ Ineffective disease prevention (in terms of reducing pop risk)
- ❖ Values a life in present more than life in future
- ❖ Discounts the health of future generations

Whole of Population

- ❖ Values prevention across whole population
- ❖ Measure change across populations
- ❖ Places value on health of future generations – so considers promotion of health for the future
- ❖ Works out universally present risk and tries to influence this (e.g car use, food advertising)

Investment in low % with disease or risk factor in 2007 has little impact on population health



Discounting the health of future generations

Investment to make a population wide shift in risk factor in 2007 is an investment in the future

2007

2028



Rose Principles of Prevention

Treating diseased or high risk individuals does not have much impact on the population as a whole. But changing a risk factor across a whole population by just a small (and often clinically insignificant amount) can have a large impact on the incidence of a disease or problem in the community

Rose, Geoffrey (1992) *The Strategy of Preventive Medicine*, Oxford

The Prevention Paradox

“a preventive measure which brings much benefit to the population offers little to each participating individual”

(Geoffrey Rose (1985) Sick individuals and sick populations, IJE, 14,1, p. 38).

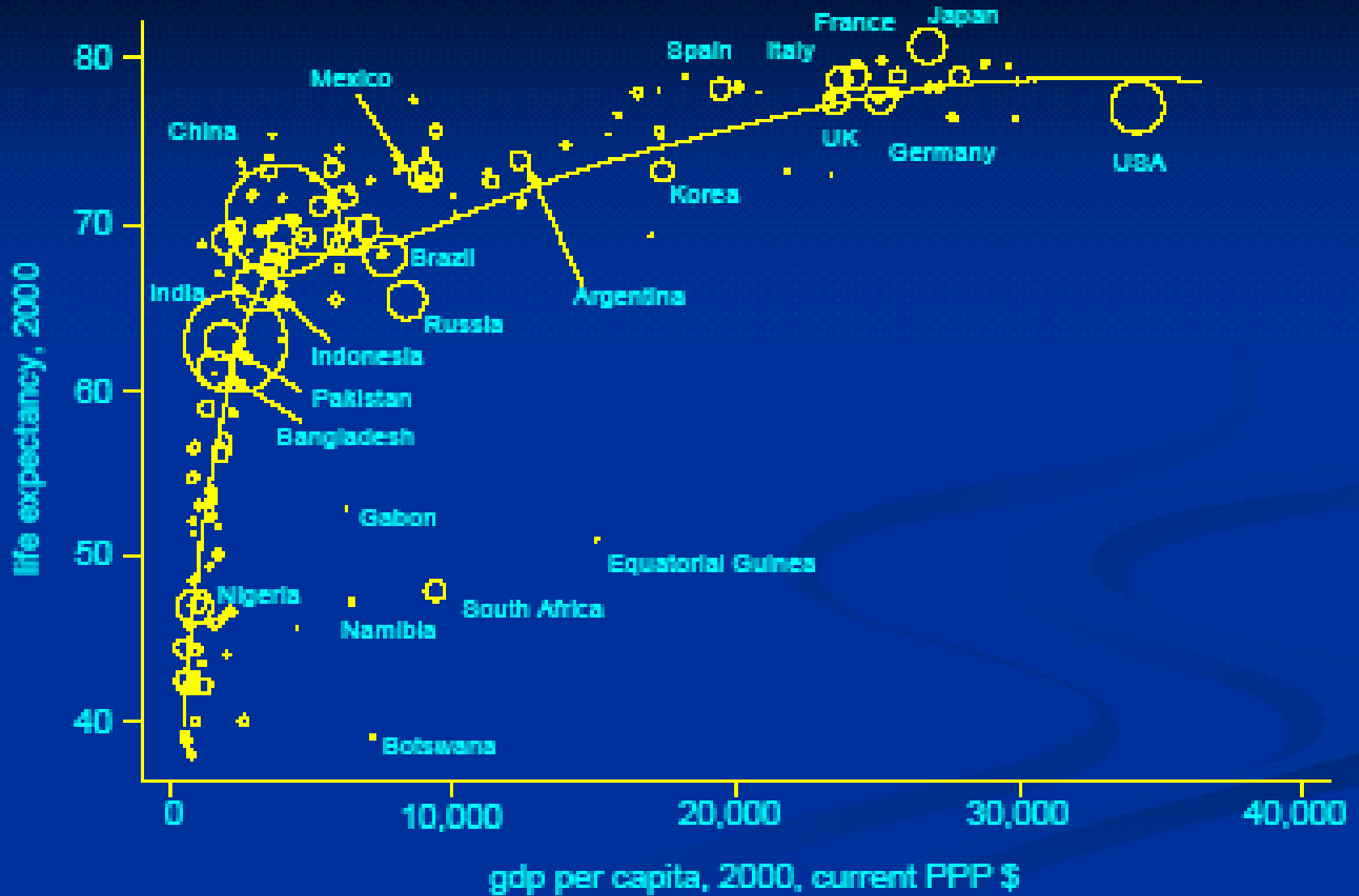
Prevention Paradox poses
considerable political
problems for the population
perspective

**Political question is “Do I
see a demand?”**

Answer is not for prevention and
investment in the future without strong
political leadership

Population health does not just
reflect level of economic
development

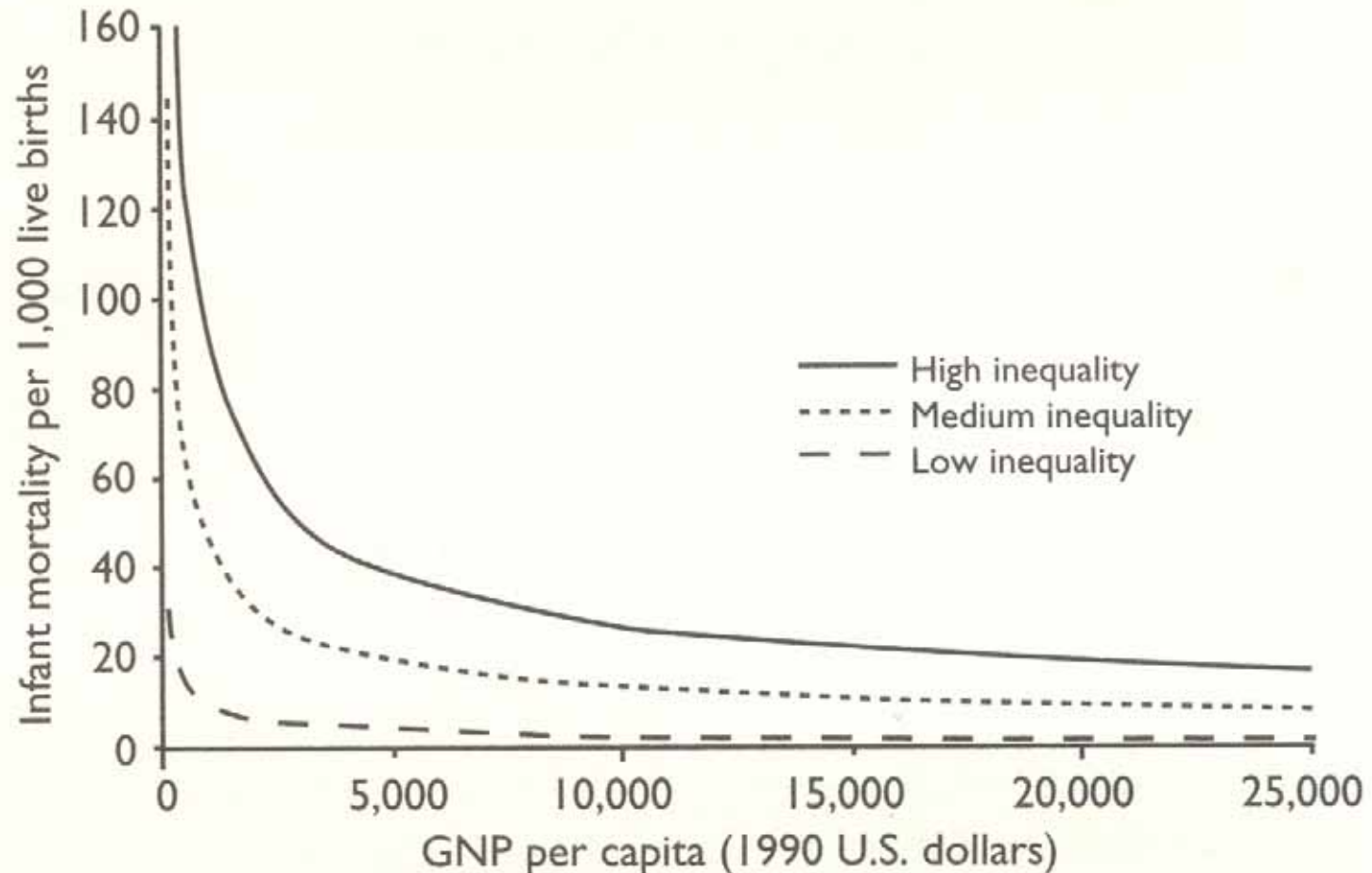
The Millennium Preston Curve



(Source: Angus Deaton)

Equity of income distribution

Figure 4.4: National infant mortality rates in relation to gross national product per head and income distribution



Source: Wilkinson (2005, p. 111) based on Hales et al (1999) The Lancet 354

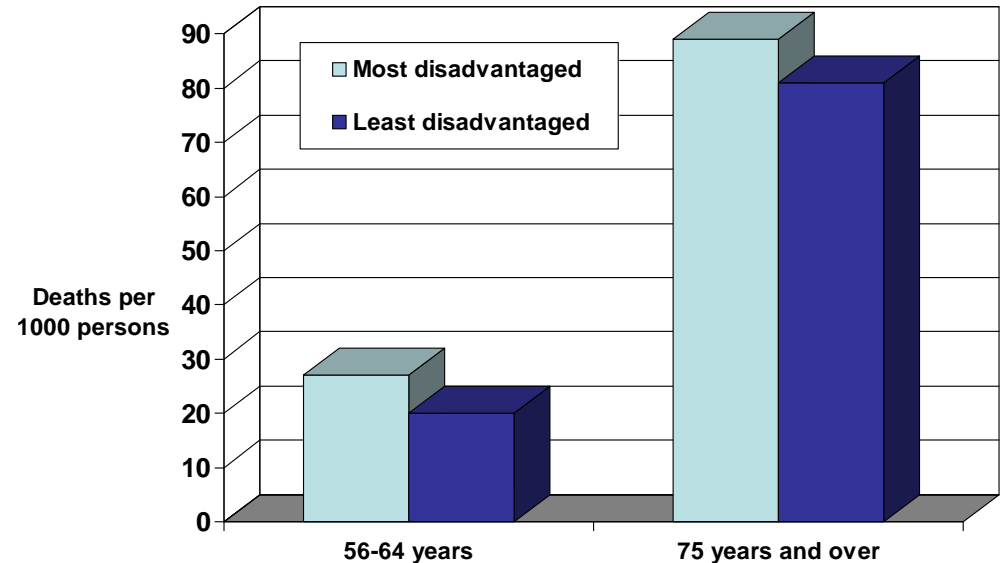
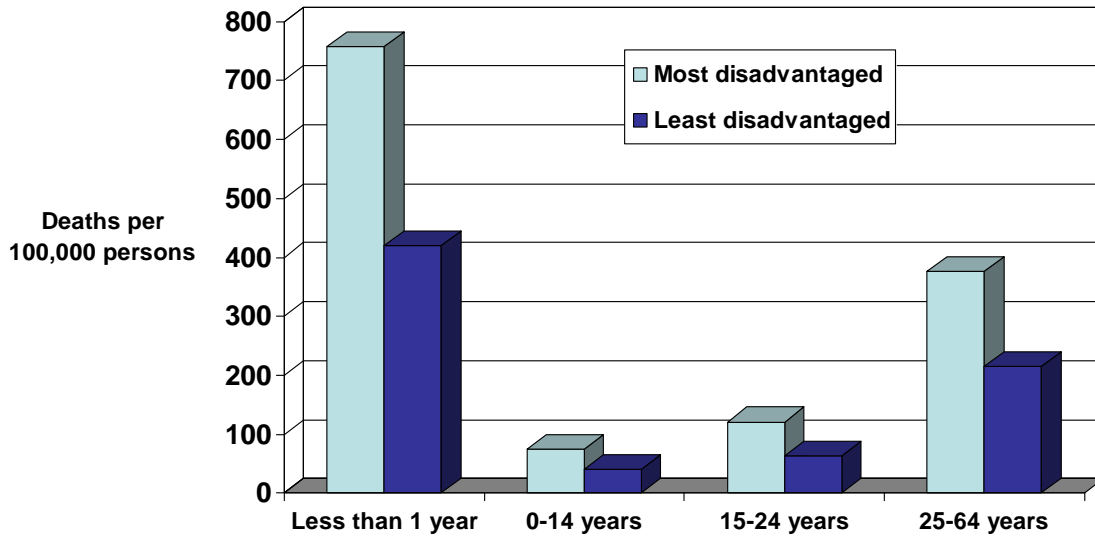
Equity and Population health

Indigenous Health

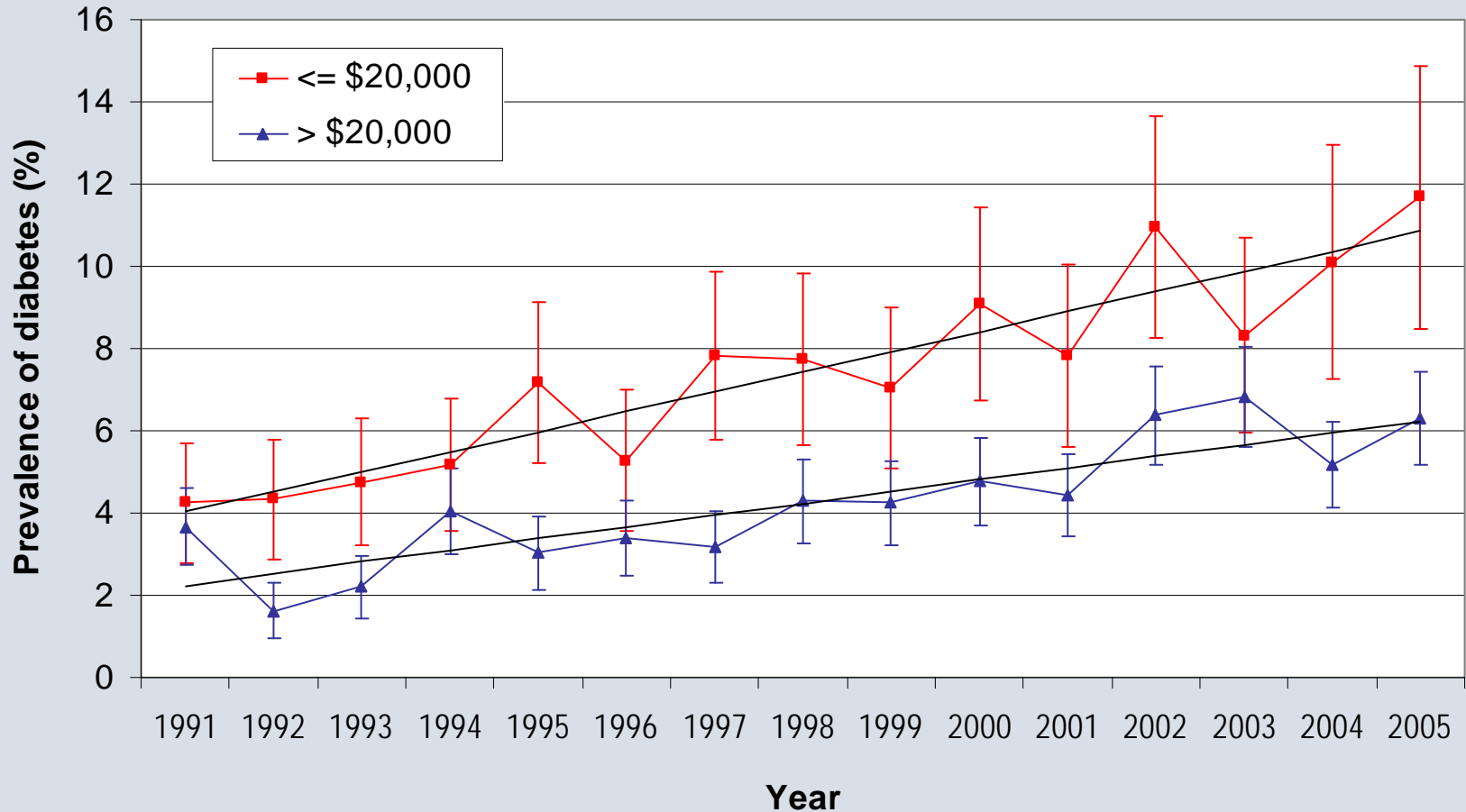


- Aboriginal Australians die, on average, 17 years before other Australians, IMR 2.5 times higher
- More likely to be sick from range of diseases including infectious, CVD, diabetes and suffer more injury including suicide
- More likely to be imprisoned about 20% of prison population is Indigenous, a rate 15x that of non-Indigenous Australians

Age-specific mortality rates by socioeconomic position – male (Draper et al 2004)



Diabetes by income, 1991-2005



Source: Health Omnibus Surveys, ages 15+, age standardised

PROS SA DoH

Population health
depends on the social
and economic
determinants of health



Commission on the Social Determinants of Health (WHO)

Health is a universal human aspiration and a basic human need. The development of society, rich or poor, can be judged by the quality of its population's health, how fairly health is distributed across the social spectrum, and the degree of protection provided from disadvantage as a result of ill- health.

CSDH, Interim Statement

http://whqlibdoc.who.int/publications/2007/interim_statement_eng.pdf accessed 10th November, 2007

Basic logic: what good does it do to
treat people's illnesses



then give them no choice but to go back to
the conditions that made them sick?

Commission on the Social Determinants of Health (WHO)

- Nine knowledge Networks
- Civil society engagement
- Global bodies engagement – World Bank, EU
- Country Examples



http://www.who.int/social_determinants/en/



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Canada's Response to WHO Commission on Social Determinants of Health

Country Action

The Commission is working closely with a group of countries where there is a commitment to advance action to address social determinants of health among political leaders, health officials, civil society groups and other stakeholders. The overall goal of country work is to facilitate and strengthen action across government to systematically tackle the socially determined causes of health inequities. Countries which are officially engaged as global partners include Canada, England, Sweden, Kenya, Chile, Brazil, Iran, Vietnam, Sri Lanka, Kyrgyzstan, Pakistan and Mozambique.

The country work, as a key component of the Commission's implementation strategy, will build understanding of how social determinants of health inequities can be tackled in practice, drawing on experiences across countries, with a view to

Canada's Response to WHO Commission on Social Determinants of Health

- + [WHO Commission on Social Determinants of Health](#)
- + [Some Recent Activities of Canada's Commissioner Monique Bégin](#)
- + [Canadian Reference Group \(CRG\)](#)
- + [Knowledge Networks](#)
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Strategies to improve population health equitably

- Policies whole of government – global and national
- Holistic – framework of action across a number of domains tackling the “causes of the causes”
- Empowering- working with not on people
- Making fairness a yardstick of policy
- Creating a movement for a social & equity perspective in health & well being - citizen involvement – creating demand





- Dr. Fiona Ashead (UK Deputy Chief Medical Officer) described the CSDH as a “*once in a professional life opportunity*” to advance policy and action on the social determinants of health and health equity

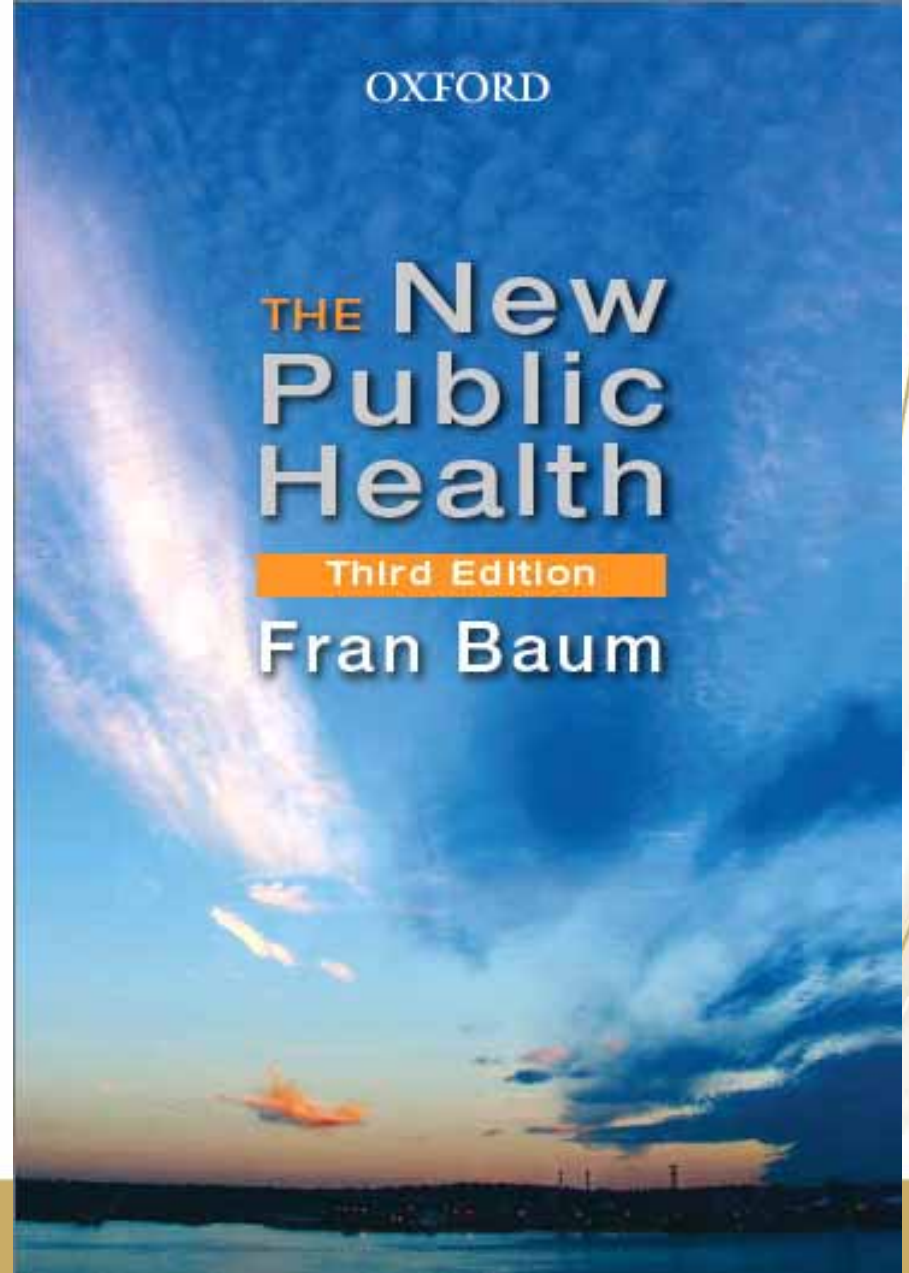
South Australia: world leader in social determinants in health?



- SASP ideal vehicle for health in all policies
- Much in common with CSDH
- Ideal vehicle to address population health and health equity

Thanks for listening
fran.baum@flinders.edu.au

**For further details on
population health see....**



inspiring achievement