

The choices our society has to make to improve children's health

Associate Professor Victor Nossar
Senior Paediatric Consultant
Child and Youth Health
Children, Youth and Women's Health Service



Children in Australia are healthier than they ever have been:

- Less likely to die in childhood.
- More likely to be protected by immunisations against serious infectious diseases.
- Rates of death from injuries and exposures to some environmental hazards have decreased.
- Infant mortality rates have declined.

But there are warning signs that all is not well:

- Socioeconomic inequities in health persist and are even increasing.
- Obesity rates in children are steadily increasing.
- Rates of behavioural and mental health problems in children continue to be high.
- Indigenous children continue to have significantly higher rates of mortality and morbidity.

The early years are important.



Evidence from human and animal studies reveals that nutrition and experience in the early years of a child's life influence the infant's brain development.

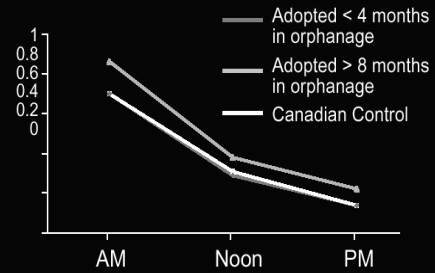
Body functions (such as competence, coping skills, behaviour, and health later in life) are then affected through pathways that involve the endocrine systems, the immune system, and mental processes.

Early Child Development:

- Early brain development is interactive, rapid and dramatic.
- During critical periods, particular parts of the brain need positive stimulation to develop properly.
- The quality of early sensory stimulation influences the brain's ability to think and regulate bodily functions.
- Negative experiences in the early years have long-lasting effects that can be difficult to overcome later.

Ref. McCain MN, Mustard JF. Reversing the real brain drain: Early Years Study- Final Report. Ontario Children's Secretariat 1999. pp25-26

Cortisol Levels in Romanian Adopted Children 6 Years Post Adoption



Kauai Longitudinal Study

Predicting Resilience – Protective Factors

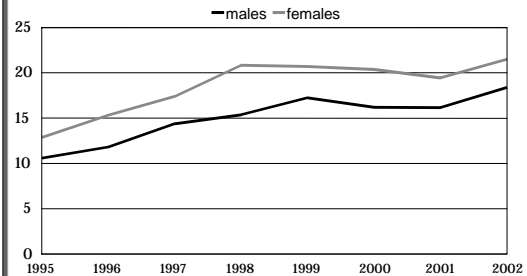
- Individual independent, sociable, affectionate, adept at recruiting adult carers
- Family four or less children, > 2 years apart, no prolonged separations in the first year
- Community informal support at home/work/church, substitute carers

Ref: Emmy E. Werner, Jessie M. Bierman, Fern E. French, Ruth S. Smith

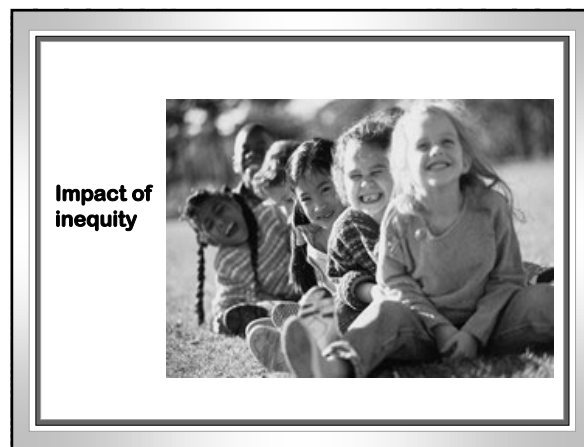
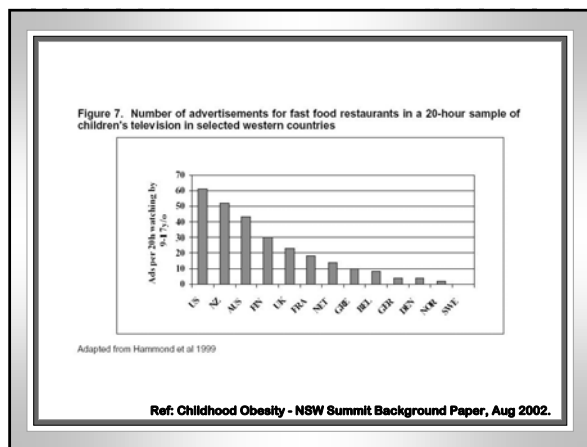
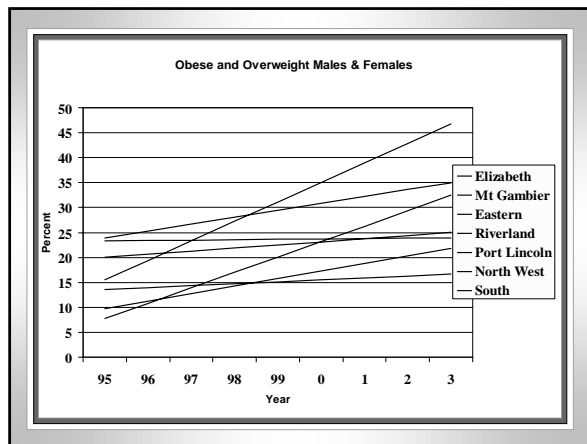
Growing concerns for children



Overweight and obese four year old children by sex, South Australia, 1995 to 2002



Vaska VL & Volkmer R. Increasing prevalence of obesity in South Australian 4-year-olds: 1995 – 2002. J Paediatr Child Health 2004; 40: 353-55.



Social and environmental factors continue to account for a significant proportion of health inequalities between and within countries.

Vega J & Irwin A. Tackling health inequalities: new approaches in public policy. Bulletin of the World Health Organisation 2004; 82:482.

Child poverty rates in Australia have been estimated to be between 16% and 19% for dependent children under 15 years in 1997 - 98, using the international measure of half median family income.

Abello & Harding. The dynamics of child poverty in Australia, 2004.
Harding & Szukalska. Making a difference: The impact of Government policy on child poverty in Australia, 1982 to 1997-98, 2000.

Children living in social or economic adversity have much greater chance of significant health and developmental problems, and these problems can extend into their adult lives.

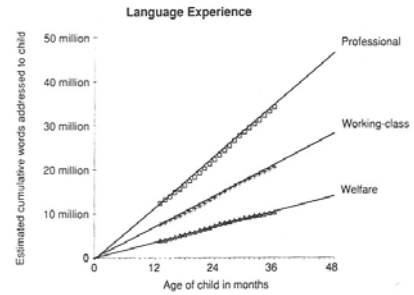
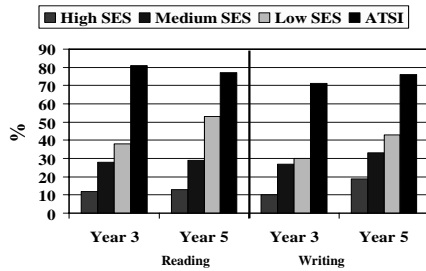


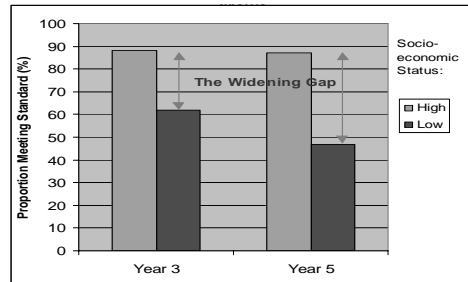
Figure 19. Estimated cumulative differences in language experience by 4 years of age. (See Appendix B for a detailed explanation of this figure.)

Percentage of students not meeting reading and writing standards for Years 3 & 5 in Australia



National School English Literacy Survey. Australian Council of Educational Research. p15, 1997

Continuing Disparity - As children move from year 3 to year 5, the disparity among those meeting literacy standards



National School English Literacy Survey. Australian Council of Educational Research. 1997

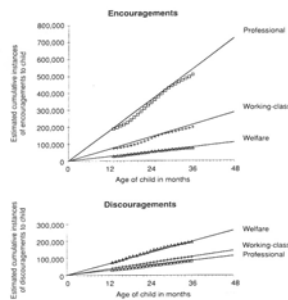
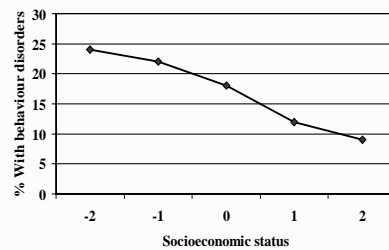
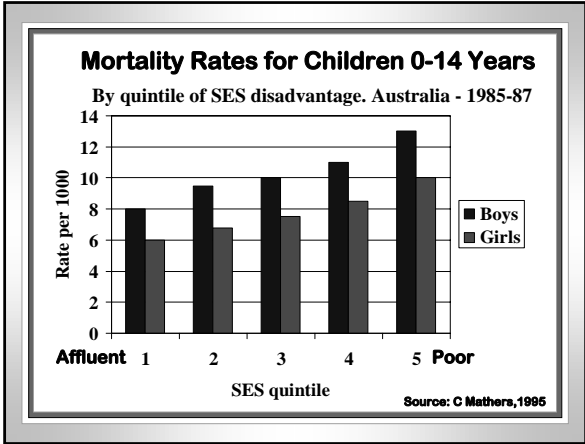


Figure 20. Estimated cumulative differences in confidence-producing experience by 4 years of age. Note the reversal of the lines in the bottom graph, reflecting the prevailing negative feedback tone in the welfare homes. (See Appendix B for a detailed explanation of this figure.)

Socioeconomic gradients for behaviour problems in children 4 & 5 years of age



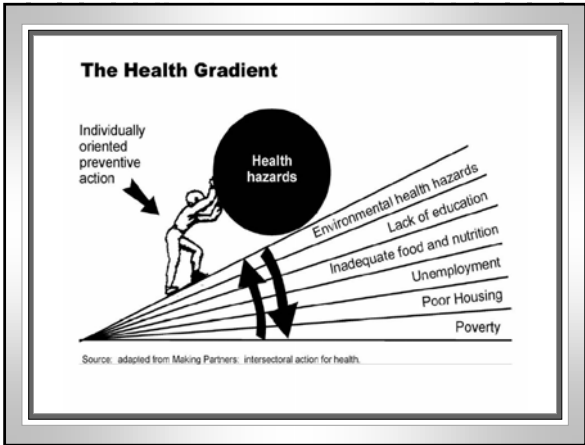
National longitudinal survey of children & youth - Canada 1994. Willms, 1996.



The inverse association between parents' education level and risk of infant death has persisted in Norway from 1967 until 1998.

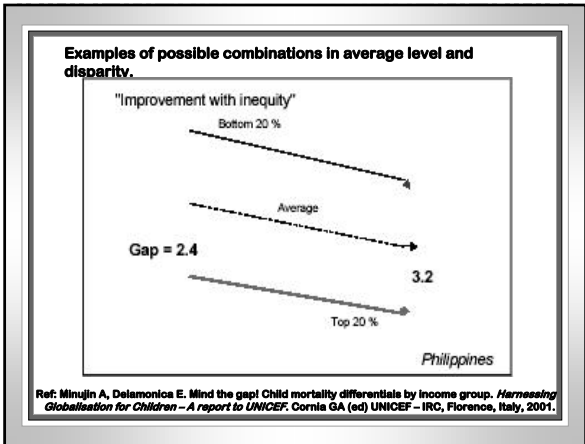
While the proportion of neonatal deaths that could be attributed to the differences in education level decreased, the proportion of postneonatal deaths increased.

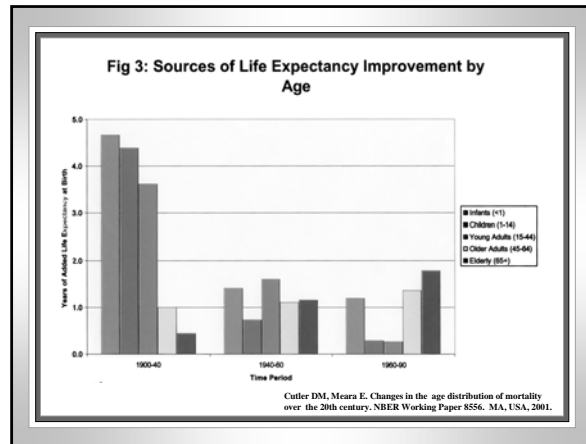
Arntzen A et al. Socioeconomic status and risk of infant death. A population-based study of trends in Norway, 1967-1998. *Int. J Epidemiology* 2004;33:279-288.



Inequality of outcomes:

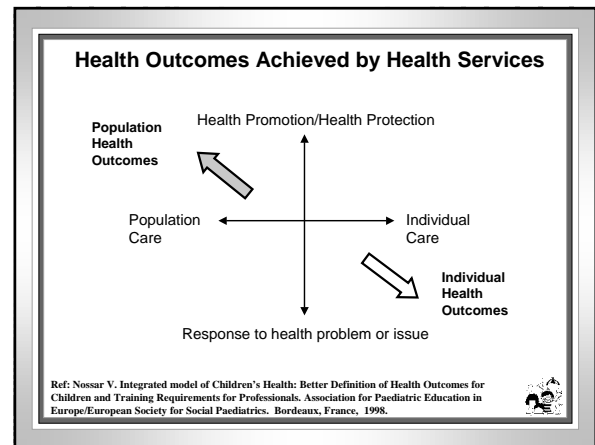
- Families, whose children are most likely to have health problems or illnesses, are often those least likely to be accessed by (or to access) healthcare services.
- Services can make the inequalities greater.





Programs to improve health outcomes for populations differ markedly from those designed to assist with the health problems of individuals.

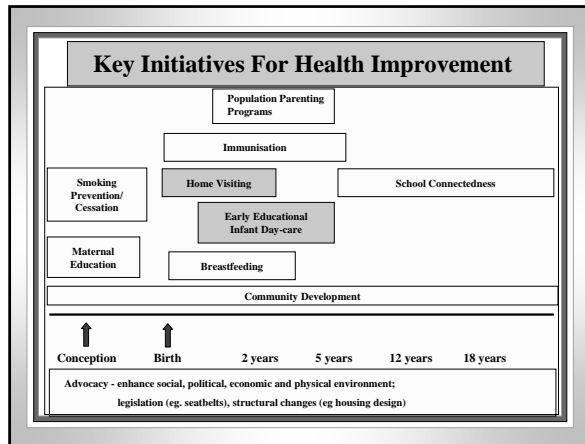
- Population Health Outcomes**
- Measures include:**
- **Mortality rates**
 - **Rates of low birth weight**
 - **Immunisation rates**
 - **Breastfeeding rates**
 - **Rates of substance abuse (licit or illicit)**
 - **Injury rates**
 - **Child abuse rates**



- Population Health Outcomes:**
- **Utilise more proactive strategies, which focus on whole populations.**
 - **Utilise systems approaches to address the determinants of health of the population of interest.**
 - **Focus on programs being available, appropriate, effective and reaching high coverage.**

Inappropriately focussing on individual level determinants of health while ignoring more important macrolevel determinants is tantamount to obtaining the right answer to the wrong question.

(Schwartz & Carpenter. Am J Public Health 1999; 89: 1175 - 80.)



Nurse Home Visiting Programs

Nurse Home Visiting Programs have been shown to have multiple benefits including:

Early Childhood

- Decreased behaviour problems
- Decreased rates of child abuse

Adolescence

- Increased rates of graduation from high school
- Decreased delinquency
- Decreased rates of running away from home
- Decreased substance abuse

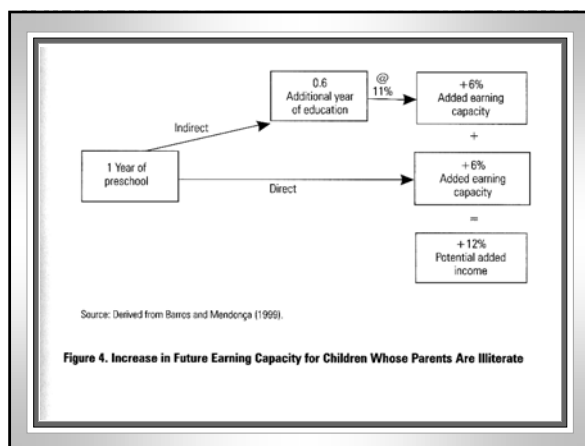
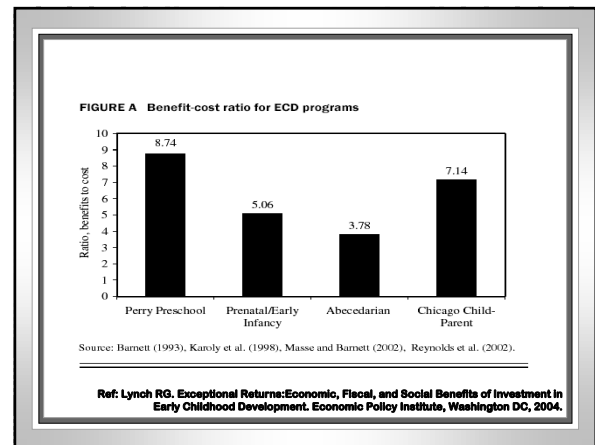
Mothers

- Decreased reliance on welfare
- More likely to be employed
- Decreased substance abuse

Early Infant Educational Child Care Summary of Outcomes

- Increased school readiness.
- Decreased teenage pregnancy rates.
- Increased high school graduation rates.
- Decreased arrests and encounters with the law.
- Greater likelihood of being employed.
- Increased earnings.
- Greater likelihood of stable relationship.

High/Scope Perry Preschool and Headstart programs

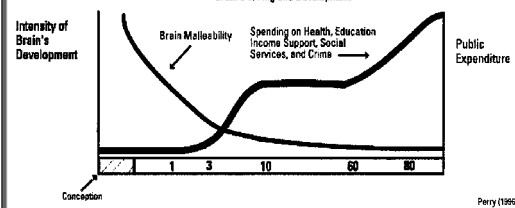


Lessons learnt about implementation of population-level ECD programs.

We need to keep asking:

- Why effective interventions remain limited in application?
- Why effort and resources continue to be focused on clinical interventions addressing problems when they arise?

FIGURE 4.2 BRAIN DEVELOPMENT - OPPORTUNITY AND INVESTMENT
Brain's Wiring and Development



Perry (1996)

Implementation requirements:

- **Selection of effective programs**
(evidence base)
- **Allocation of sufficient resources**
(healthcare funding mainly for clinical care)
- **Ensuring relevant training**
(changing the nature of the interaction)
- **Building of systems *not* just projects**
(for equity, sustainability, population health gain)
- **Monitoring and evaluation**
(need for "realtime" data to support implementation)

Issues for Healthcare service providers:

- Challenges of "new" evidence of efficacy and of population health approach.
- Most academic expertise is focused on acquiring new knowledge, but is limited in regard to application issues.
- Need to develop systems approaches as compared to multiplicity of local "pilots".
- Culture of "targeting" services to "high risk" families is at odds with population health approaches and with evidence of efficacy.
- Failure to accept limits of clinical / individual care.

Key lessons:

- Recognition of importance of early years.
- Recognition of limits of treatment approaches for achieving population-level health gain.
- Recognition of existence of effective ECD strategies / interventions.
- Recognition of need to build systems to deliver these effective interventions rather than continuing to rely on a plethora of small scale projects.

Are services for children only in the business of delivering better care, or are they also responsible for achieving better overall outcomes for children.



These are the choices that our society has to make if we are to improve the health of children in Australia

and these choices will be critical to future health gain for children and for our society.

