ACE–PREVENTION PAMPHLETS

PAMPHLET A: THE ACE–PREVENTION PROJECT

1.   INTRODUCTION

Governments across the world are faced with rising health care costs due to the ageing of the population, greater demands for health services and, in particular, the introduction of new expensive technologies. As a consequence, governments, as the main providers of health services, are under increasing pressure to justify their resource allocation decisions. The current global economic recession makes careful and rational allocation of health resources an even greater imperative. In such an environment, reliable, objective evidence on the causes of and trends in disease burden and health expenditure, and on the costs and likely effectiveness of interventions to reduce these, is a key input into health policy decision-making. Without such evidence, policies and programs to improve health are unlikely to achieve their potential for maximising population health levels.

To aid priority setting in prevention, the Assessing Cost-Effectiveness in Prevention Project (ACE-Prevention) applies standardised evaluation methods to assess the cost-effectiveness of 100 to 150 preventive interventions, taking a health sector perspective. This information is intended to help decision-makers move resources from less efficient current practices to more efficient preventive action resulting in greater health gain for the same outlay.

This briefing paper is the first of several designed to communicate the methods and results of the ACE-Prevention project. In this paper, the disease burden in Australia, the associated health expenditure and the aims of the ACE-Prevention Project are briefly overviewed.

2.   AUSTRALIA'S HEALTH

Australia's health compares well with that of other countries. It has the second highest life expectancy, with males ranking fourth best and females ranking third best in the world. Also, when taking 'healthy life' and not just length of life into account, Australia ranked fifth highest in the world in 2004. While there are some differences in these indicators between states, between urban and rural areas, Indigenous Australians experience by far the worst health in the country. For 2003, the gap in life expectancy between Indigenous Australians and the total population was estimated to be 13 years, but ranging from 11 years for Indigenous Australians living in towns and cities, to 18 years for Indigenous Australians living in remote areas. The most recent estimate of the Australian Bureau of Statistics is a gap of 11 years in life expectancy. This is less than their previous estimate of a 17 year gap, but reflects improved methods rather than a real change.

The Australian Burden of Disease study provides a wealth of information on the diseases (Table 1) and risk factors (Figure 1) that contribute most to the total loss of health in the country.

Table 1.   Leading causes of burden by sex, Australia 2003

Rank	Males	DALYs	% of total	Females	DALYs	% of total
1	Ischaemic heart disease	151,107	11.0	Anxiety & depression	126,455	10.0
2	Type 2 diabetes	76,886	5.6	Ischaemic heart disease	112,385	8.9
3	Anxiety & depression	65,323	4.8	Stroke	65,166	5.2
4	Lung cancer	55,028	4.0	Dementia	60,734	4.8
5	Stroke	53,296	3.9	Breast cancer	60,517	4.8
6	Chronic obstructive pulmonary disease	49,201	3.6	Type 2 diabetes	55,737	4.4
7	Adult-onset hearing loss	42,653	3.1	Chronic obstructive pulmonary disease	37,548	3.0
8	Suicide	38,717	2.8	Lung cancer	33,876	2.7
9	Prostate cancer	36,547	2.7	Asthma	33,827	2.7
10	Colorectal cancer	34,643	2.5	Colorectal cancer	28,961	2.3

Figure 1.   Disease burden attributable to 14 risk factors by sex, Australia 2003
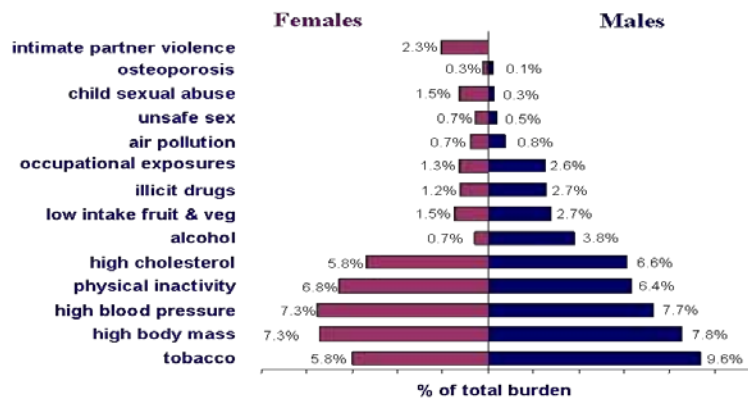
We also know what diseases and what risk factors contribute most to the Indigenous health gap (Figures 2 and 3).

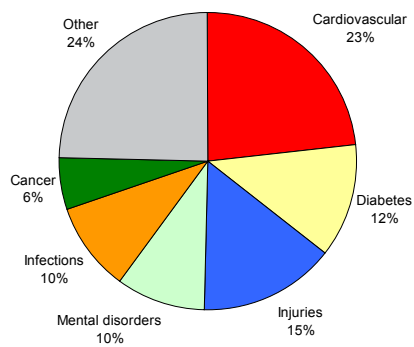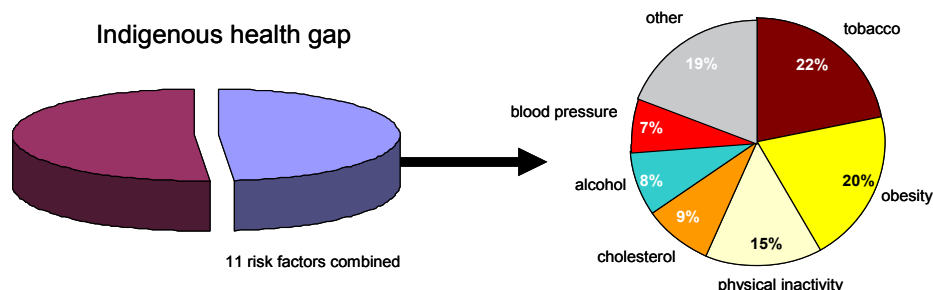Figure 2.   Indigenous health gap (DALYs) by broad cause groups, 2003

Figure 3. Indigenous health gap (DALYs) by selected risk factors, 2003

3. HEALTH EXPENDITURE

A projection of year 2002–03 disease burden and associated health expenditure to 2033 shows a large increase in health expenditure, particularly for diabetes and the chronic degenerative diseases in old age, for which there are inadequate prevention or treatment interventions (Table 2).

4. AIMS OF ACE-PREVENTION PROJECT

Information on the size of health problems and associated expenditure alone is not enough to set priorities. A health problem may be large, but if no means of prevention or alleviation of disability exists, it is not a health service priority but more a priority for health research. Conversely, a small size of burden for another health problem does not mean that health expenditure for that disease can be reduced. It may well be that the current investment is the reason for the small size of the remaining disease burden. Priority setting requires additional analyses on the costs and outcomes of current health service interventions and alternative approaches to reducing the health burden. Economics is the discipline that helps to guide such decision making.

Table 2. Projected total health expenditure (2002–03 dollars) by cause, Australia, 2002–03 to 2032–33

Cause	Expenditure by year ($billion)		Change 2003-2033
	2002–03	2032–33	Per cent
Cardiovascular	9.3	22.6	143%
Respiratory	7.2	22.0	206%
Injuries	6.7	14.4	115%
Dental	5.9	14.9	153%
Mental	5.2	12.1	133%
Digestive	4.9	16.5	237%
Neurological	4.7	21.5	357%
Musculoskeletal	4.4	14.2	223%
Genitourinary	3.7	10.9	195%
Cancer	3.5	10.1	189%
Diabetes	1.6	8.6	438%
Other [b]	28	78.3	180%
Total health expenditure	**85.1**	**246.1**	**189%**

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Over the last 10 years Rob Carter from Deakin University and Theo Vos from the University of Queensland have developed a systematic approach to economic evaluation of health interventions in Australia. This has included studies on cancer prevention, heart disease, mental disorders and obesity prevention in children and adolescents. All these studies have been labeled ACE – 'topic area' with ACE standing for Assessing Cost-Effectiveness. The largest ACE study is ACE-Prevention. It received NHMRC funding for the period 2005–2009. The study has a broad focus on prevention and non-communicable disease and evaluates the policy implications for the population as a whole and for Indigenous Australians separately. This is because the target disease burden, the prevalence and distribution of harmful exposures, the effectiveness of intervention strategies, and the cost of implementing effective interventions is likely to differ substantially between Indigenous and non-Indigenous Australians.

Each economic evaluation undertaken as part of ACE-Prevention complies with the standardised evaluation methods set out to ensure comparability of cost-effectiveness results. The final output of the study is a league table of the cost-effectiveness of these preventive interventions compared to a selected, smaller number of curative and infectious disease control interventions ranked in order of their economic merit. Within topic areas (e.g. diabetes prevention or reduction of the harm from alcohol) combinations of interventions are analysed to determine the most cost-effective package of interventions to address that particular health problem.

The ultimate goal of this information is to help decision-makers move resources towards more efficient options by new investments in proven cost-effective packages of interventions or by shifting funds from less efficient current practices to more efficient preventive action. Careful scrutiny of the available evidence for each intervention also allows us to make recommendations for key areas of research to improve the evidence base.

For more information, please visit: **www.sph.uq.edu.au/bodce-ace-prevention**

PAMPHLETS IN THIS SERIES

Methods:
A. The ACE-Prevention project
B. ACE approach to priority setting
C. Key assumptions underlying the economic analysis
D. Interpretation of ACE-Prevention cost-effectiveness results
E. Indigenous Health Service Delivery

Overall results
1. League table
2. Combined effects

Indigenous population results
1. Cardiovascular disease prevention
2. Diabetes prevention
3. Screening and early treatment of chronic kidney disease

General population results
1. Adult depression
2. Alcohol
3. Blood pressure and cholesterol lowering
4. Cannabis
5. Cervical cancer screening, Sunsmart and PSA screening
6. Childhood mental disorders
7. Fruit and vegetables
8. HIV
9. Obesity
10. Osteoporosis
11. Physical activity
12. Pre diabetes screening
13. Psychosis
14. Renal replacement therapy, screening and early treatment of chronic kidney disease
15. Salt
16. Suicide prevention
17. Tobacco

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