ACE–PREVENTION PAMPHLETS

GENERAL POPULATION RESULTS PAMPHLET 2
COST-EFFECTIVENESS OF ALCOHOL INTERVENTIONS

1.   MAIN MESSAGES

•   Intervention to prevent alcohol-related disease and injury is highly cost-effective: a package of seven preventive interventions could achieve a 31% reduction in the harmful and hazardous health effects of alcohol.

•   Although the current practice of random breath testing in Australia is cost-effective, if the $71 million that is currently spent on random breath testing could be invested in more cost-effective interventions, over ten times the amount of health gain could be achieved.

2.   BACKGROUND

Drinking alcohol is a popular past-time in Australia: in a survey of Australians aged 14 years and over, 83% reported consumption of alcohol in the past year. While most Australians drink responsibly, one in five risks short-term alcohol-related harm and one in ten risks long-term alcohol-related harm by drinking to excess. Overall, consumption of alcohol was estimated to cost the Australian economy $10.8 billion in 2004-05, due to lost productivity, health care costs, and costs related to road traffic accidents and crime.

3.   INTERVENTIONS

A technical advisory panel was established to assist in selecting alcohol interventions for cost-effectiveness analysis. From a list of over 50 interventions, the panel selected 13 interventions of high priority, based on intervention efficacy and political feasibility in Australia. This list was further narrowed to the following interventions, which focus on the adult population and have sufficient evidence to support a cost-effectiveness analysis:

1. *Volumetric taxation:* Equalise the alcohol excise rate, charged per litre of alcohol, across all alcoholic beverage categories.

2. *General taxation increase to 15%:* Increase current rate of taxation to 15%.

3. *General taxation increase to 30%:* Increase current rate of taxation to 30%.

4. *Advertising bans:* Restrict alcohol promotion and advertising, such as advertising on billboards and sponsorship of community events.

5. *Licensing controls to restrict operating hours:* Restrict the purchase of alcohol, by limiting the number of hours and/or days of sale through legislation and enforcement.

6. *Brief intervention by a general practitioner (GP):* Train GPs to screen patients using the Alcohol Use Disorders Identification Test, counsel those patients consuming alcohol at hazardous or harmful levels, provide supportive written materials, and provide follow-up consultation with further advice, if necessary.

7. *Brief intervention by a GP + telemarketing and GP support:* Combine brief intervention with additional telemarketing, to boost GP recruitment, and follow-up support of GPs, to encourage intervention delivery.

8. **Residential treatment:** Extend current coverage of home, outpatient, rural, community residential and youth residential programs for detoxification from alcohol dependence (programs lasting up to three weeks).

9. **Residential treatment + naltrexone:** Combine extension of residential treatment with naltrexone pharmacotherapy, to reduce relapse in those who remit, and a 12-week comprehensive support program.

10. **Random breath testing:** Provide random breath testing stations (e.g. 'booze buses') to detect and prevent driving with a blood alcohol concentration of more than 0.05g per 100mL, with coverage to achieve an average of one test per driver per year in Australia.

11. **Increase in minimum legal drinking age:** Increase the minimum age for purchasing or consuming alcohol in public from 18 years to 21 years, through legislation and enforcement.

12. **Mass media 'drink driving' campaigns:** Run a mass media campaign (television, radio, newspapers, billboards, etc.) to encourage responsible alcohol consumption when driving.

4. INTERVENTION COST-EFFECTIVENESS

Three interventions are Dominant (i.e. cost-saving to the health sector): changes to taxation, advertising bans and increase in minimum legal drinking age to 21 years. A further five interventions are under a $50,000/DALY threshold: GP brief intervention (with or without telemarketing and support for GPs), licensing controls, drink driving mass media and the current practice of random breath testing. Only residential treatment (with or without naltrexone) is not cost-effective.

Table 1 Cost-effectiveness ratios and probability of being cost-saving or cost-effective

Intervention	Median ICER* ($/DALY)	Median expansion pathway ICER** ($/DALY)	Probability of being cost-saving	Probability of being < $50,000/DALY
Volumetric taxation	Dominant	Dominant	100%	100%
General taxation (15%)	Dominant	Dominant	100%	100%
General taxation (30%)	Dominant	Dominant	100%	100%
Advertising bans	Dominant	Dominant	85%	100%
Min. legal drink age to 21	Dominant	Dominant	59%	100%
Brief intervention	$3,800	$1,300	30%	100%
Brief int. + tele. & support	$7,500	——— *Less cost-effective alternative not included in pathway* ———		
Licensing controls	$3,200	$3,500	4%	100%
Drink driving mass media	$14,000	$14,000	0%	80%
Random breath testing	*Current practice*	$26,000	0%	88%
Residential treatment	$140,000	——— *Less cost-effective alternative not included in pathway* ———		
Res. treat. + naltrexone	$97,000	$84,000	0%	0%

* Incremental cost-effectiveness of intervention compared with current practice (random breath testing).
** Incremental cost-effectiveness of *adding* intervention to an optimal mix of interventions.
NB. A dominant intervention leads to health gain at a net cost saving to the health sector; a very favourable economic result.

Figure 1 Intervention pathway for the alcohol interventions
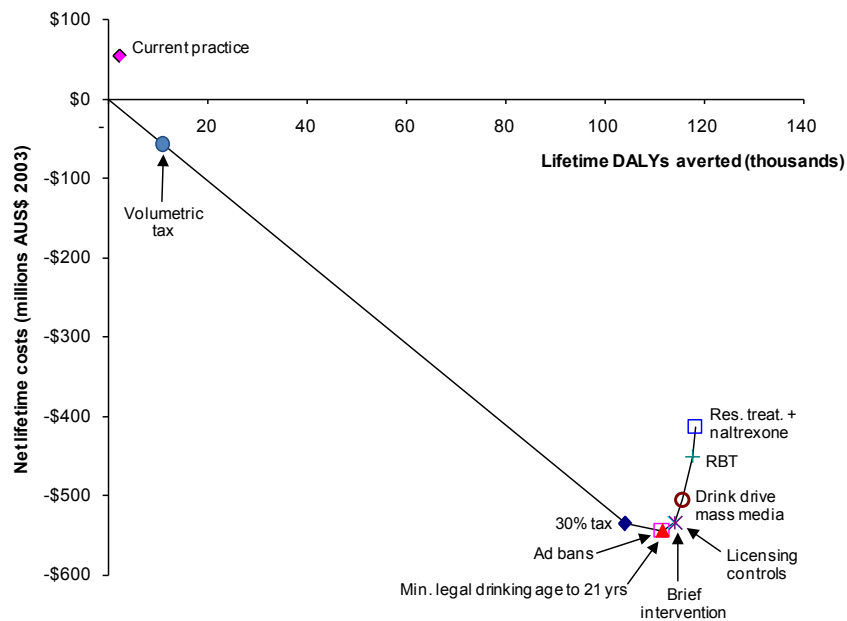
5.   CONCLUSIONS

Although the current practice of random breath testing in Australia is cost-effective, if the $71 million that is currently spent on random breath testing could be invested in more cost-effective interventions, over ten times the amount of health gain could be achieved. Taken as a package of interventions, all seven preventive interventions would be a cost-effective investment that could achieve 31% of the potential population health improvement from lower-level drinking. Only residential treatment is not cost-effective.

It is important to keep in mind, however, that the strength of evidence underlying the evaluation of alcohol interventions is relatively modest. There is substantial variability in the strength of evidence defining the effectiveness of each intervention, and there is substantial uncertainty around the sustainability of intervention effects on drinking behaviour over the long-term.

Publications with further information about the ACE analysis of alcohol interventions:

Cobiac LJ, Vos T, Doran C, Wallace A. (2009) Cost-effectiveness of interventions to prevent alcohol-related disease and injury in Australia. *Addiction* 104(10):1646-1655.

Byrnes JM, Cobiac LJ, Doran CM, Vos T, Shakeshaft A (In press) The cost effectiveness of volumetric alcohol taxation in Australia *MJA*.

Hall WD, Wallace AL, Cobiac LJ, Doran CM, Vos T, (In press) How can we reduce alcohol-related road crashes among young Australians? *MJA*.

Doran CM, Hall WD, Shakeshaft A, Vos T, Cobiac LJ (In press) Alcohol policy reform in Australia: can we learn from the evidence? *MJA*.

For more information on this topic area, please visit website **www.uq.edu.au/bodce-ace-prevention**

ACE–PREVENTION PAMPHLETS

6. ABOUT ACE-PREVENTION

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.

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

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

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

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