ACE–PREVENTION PAMPHLETS

GENERAL POPULATION RESULTS PAMPHLET 4
COST-EFFECTIVENESS OF CANNABIS USE PREVENTION

1. MAIN MESSAGES

- CBT is the most cost-effective intervention with small budgetary impact.
- The Gatehouse intervention might be cost-effective if the intervention realises its full effect in real life, and if potential cost savings to users from reduced drug consumption are included.
- The cost-effectiveness of the random drug testing program is critically dependent on the incremental level of deterrence it can attain, rather than on the number of drug drivers it can detect.

2. INTRODUCTION

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 predominantly 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 pamphlet focuses on the cost-effectiveness evidence and policy implications of three interventions relating to cannabis use prevention.

3. BACKGROUND

Cannabis is the most widely produced, trafficked and consumed illicit substance worldwide, with an estimated 166 million global users in 2006. In Australia, an estimated 1.36 million persons used cannabis in 2007, of whom 19.8% used it at least once weekly and a further 14.9% were daily users. The health and socio-economic consequences of cannabis use continue to be debated both in terms of the specific nature and magnitude of the relationships. Nevertheless, there is agreement amongst policy makers that widespread use of cannabis is an important public health issue.

4. INTERVENTIONS

A literature search was conducted to identify a range of interventions that aim to prevent cannabis use and/or its associated harms in Australia. From the review process, three intervention programs were selected for cost-effectiveness analysis. These interventions were selected according to a set of guiding criteria that ensured the economic evaluations were methodologically feasible, relevant to policy, and being adequately wide-ranging.

(I) School-based cannabis use prevention based on the 'Gatehouse' intervention: This 3-year multifaceted school-based intervention has 3 key components: (i) a school liaison team that assists with the professional development of teachers and provides ongoing support for participating schools; (ii) a whole-school strategy to address issues relating to three key themes: security, communication and positive regard; and (iii) the use of teaching resources that focus on the skills of managing difficult and conflicting emotions, without providing drug education.

(II) Cognitive behavioural therapy (CBT) for individuals with cannabis dependence: An intervention package comprising six, weekly 1-hour individual sessions of motivational interview and standard relapse prevention intervention delivered by clinical psychologists.

(III) Random roadside drug testing (RDT) program in Victoria: A program that randomly selects motorists for mandatory roadside drug tests in order to detect the presence of cannabis, methamphetamine or MDMA. This program is accompanied by media campaigns to alert the public to the existence of the program and the hazards of drug driving. It aims to reduce road trauma related to substance use.

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5. CHOICE OF COMPARATOR

The comparator to the interventions was 'current' practice in the reference year of 2003. Because none of the interventions were in place in 2003, the comparator became the same as 'do nothing'.

6. INTERVENTION COST-EFFECTIVENESS

The modelled cost-effectiveness of the Gatehouse intervention and CBT are illustrated respectively in Figures 1 and 2, with and without considering the anticipated economic costs that would have occurred in the absence of intervention (i.e. cost offsets or CO). CO1 includes only medical cost estimates that are linked to the modelled consequences of cannabis use, whereas CO2 includes CO1 and the costs of drug consumption. As indicated by the overlap of results for the CO and CO1 scenario, cost offsets make only a small difference to the estimates. For the Gatehouse intervention, the majority of results for both of these scenarios lies left to the threshold of $50,000 per DALY averted and therefore would not be considered as cost-effective (see Table 1). Only when the potential cost savings from reduced consumption of cannabis is taken into account there is a high probability that the intervention is cost-effective. CBT is likely to be cost-effective irrespective of the scenario (Figure 2).

Figure 1: Cost-effectiveness of the Gatehouse intervention

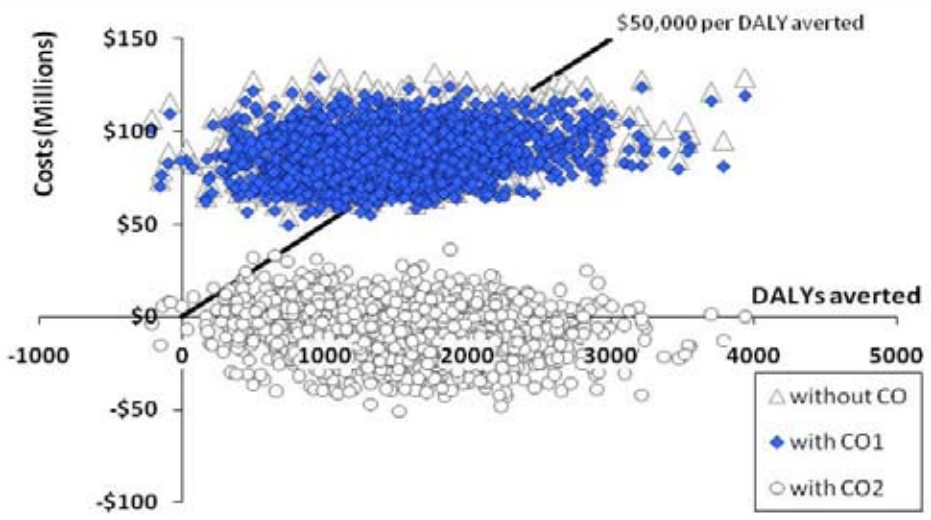
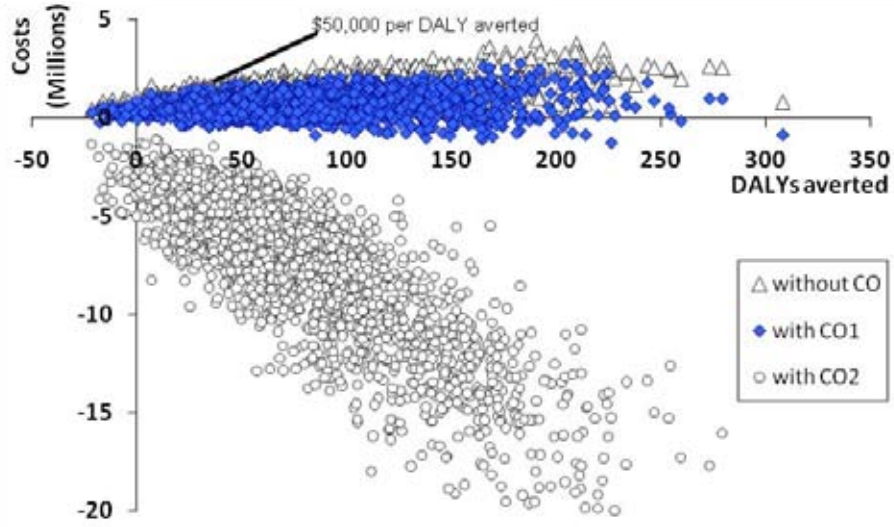


Figure 2: Cost-effectiveness of Cognitive Behavioural Therapy (CBT)



The cost-effectiveness of the random roadside drug testing program (RDT) is presented according to different hypothetical levels of deterrence achieved through program implementation (i.e. threshold analysis). Potential treatment cost-savings from averted road traffic accidents are incorporated. Based on a cost-effectiveness threshold of $50,000 per DALY averted, the RDT program is likely to be cost-effective, if it deters at least 10% of potential drug drivers in the Victorian population from driving while intoxicated.

Figure 3: Cost-effectiveness of the random roadside drug testing program in Victoria

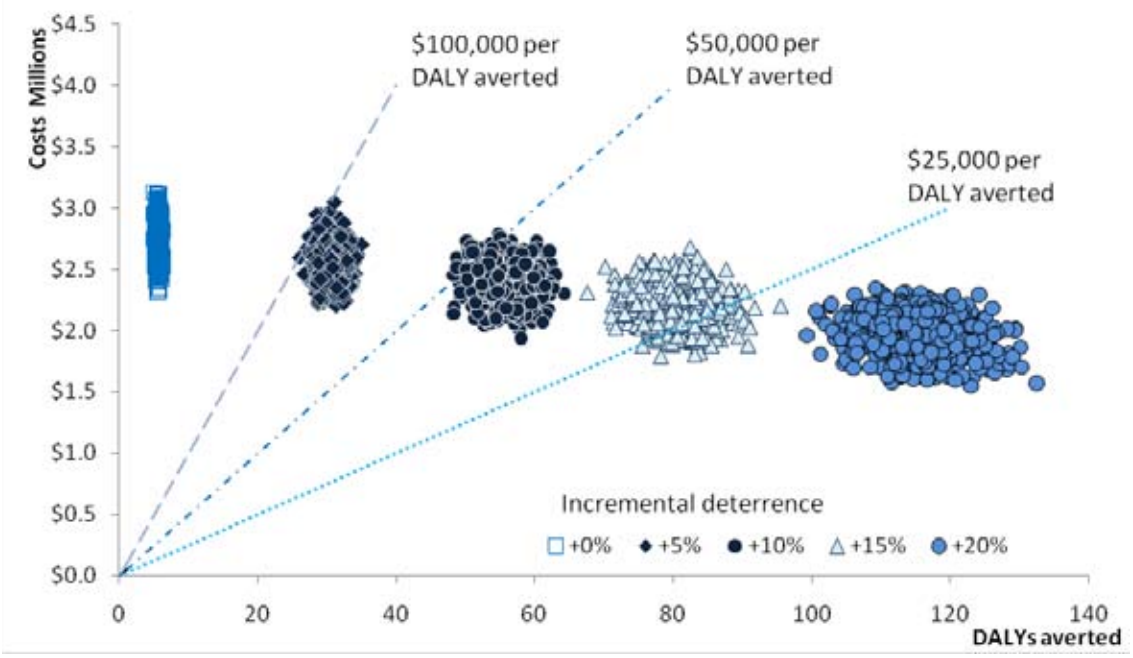


Table 1:Cost-effectiveness ratios and probability of being cost-saving or cost-effective for the three cannabis prevention interventions when compared to current practice

Intervention	Cost per DALY averted (95% uncertainty range)	Probability of being under $50,000/DALY averted
Gatehouse intervention		
Without cost offsets	$64,000 ($34,000 - $199,000)	24%
With CO1†	$60,000 ($32,000 - $195,000)	31%
With CO2‡	Dominant* (Dominant - $18,000)	99%
CBT Intervention		
Without cost offsets	$15,000 ($3,000 - $64,000)	94%
With CO1†	$9,000 (Dominant - $46,000)	96%
With CO2‡	Dominant	98%
RDT intervention#		
Baseline (no deterrence)	$492,000 ($431,000 - $557,000)	0%
+ 5% deterrence	$84,000 ($73,000 - $96,000)	0%
+ 10% deterrence	$43,000 ($38,000 - $50,000)	97%
+ 15% deterrence	$27,000 ($23,000 - $32,000)	100%
+ 20% deterrence	$17,000 ($14,000 - $20,000)	100%

†CO1 includes medical cost estimates for cases of schizophrenia, road traffic accident and heroin and poly-drug use;
‡CO2 includes CO1 plus consumption costs of cannabis and heroin;
*Dominant means more health benefits can be accrued at a lower cost (ie. health gain with cost saving)
#Results are presented with medical cost estimates for cases of road traffic accidents.

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7. CONCLUSION

CBT is the most cost-effective intervention with a small budgetary impact. However, policy makers should be mindful that CBT is unlikely to offer significant health gains from a population health perspective because a minority of persons with cannabis use disorders is likely to seek treatment.

The Gatehouse intervention might be cost-effective if the intervention realises its full efficacy potential as demonstrated in the cluster-randomised trial, and if potential cost savings to users from reduced drug consumption are included. However, this intervention would have a significant budgetary impact on government if adopted.

Finally, the cost-effectiveness of the random drug testing program is critically dependent on the incremental level of deterrence it can attain, rather than on the number of drug drivers it can detect. Decision makers should bear in mind the influence of deterrence on the program's cost-effectiveness, and should therefore consider the ascertainment of the deterrence level as a research priority. There are also constraints on the level of deterrence that can be achieved, given the current size and cost of the RDT program, and the police resource constraints.

For more information on this topic area, please visit website **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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