

ACE–PREVENTION PAMPHLETS

GENERAL POPULATION RESULTS PAMPHLET 16 COST-EFFECTIVENESS OF SUICIDE PREVENTION INTERVENTIONS

1. MAIN MESSAGES

- Problem-solving therapy for people who are hospitalised for episodes of deliberate self-harm saves more resources than what it costs and represents excellent value for money
- Responsible media reporting of suicide has the potential to be very cost-effective though the evidence base of effectiveness is weak
- Many of the interventions for reducing access to means which have good credentials of effectiveness have been implemented within an Australian context though reducing access to guns through legislation and a gun-buy-back scheme do not appear to represent good value for money from a suicide prevention perspective
- Emergency card interventions for suicide prevention do not appear to reduce subsequent episodes of deliberate self-harm.

2. BACKGROUND

Suicide is a devastating occurrence with substantial costs, both in terms of medical costs and lost economic productivity (often termed direct and indirect costs respectively), as well as broader consequences on families and friends. Even though the suicide rate in Australia has reduced over the last 10 years, it still ranks as the 10th leading cause of death in Australia, accounting for 1.9% of total deaths. In terms of years of life lost (YLL), a measure of premature death, it ranks 5th.

3. INTERVENTIONS

The choice of interventions was based on a review of the existing literature. These reviews found that there is good evidence associated with: psychological interventions for people who are hospitalised for deliberate self-harm; reduced access to means; raising awareness and screening for mental disorders; and specific interventions which have occurred in military settings – which have very limited generalisability to routine Australian health care settings. Given the current focus on more general suicide prevention interventions (as suicide reduction in terms of better treatment and prevention of mental disorders is captured in both the treatment and prevention of depression and psychosis interventions within the ACE-prevention project) it was decided to evaluate the following 4 interventions:

1. Problem solving therapy after hospitalisation for deliberate self-harm :consisting of referral from the hospital setting to a psychologist to undertake 6 sessions of problem-solving therapy
2. Emergency contact cards after deliberate self-harm; a simple intervention whereby an emergency contact card is given to people who are hospitalised after an episode of deliberate self-harm
3. Reduced access to means: consisting of gun ownership legislation with an associated gun-buy back scheme (based on what happened in Australia after the Port Arthur massacre in 1996)
4. Responsible media reporting of suicide via active dissemination of responsible media reporting guidelines and education of media professions (as per the Mindframe intervention in Australia [<http://www.mindframe-media.info/>]).

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Other interventions, such as multilevel programs in institutional military settings, whilst having solid evidence of effectiveness, are not amenable to routine health care implementation.

A full economic evaluation was only conducted on interventions 1 and 3. Intervention 2 was found to be ineffective based on a meta-analysis and a threshold analysis was conducted on intervention 4 as a quantitative measure of direct effectiveness was not available.

4. CHOICE OF COMPARATOR

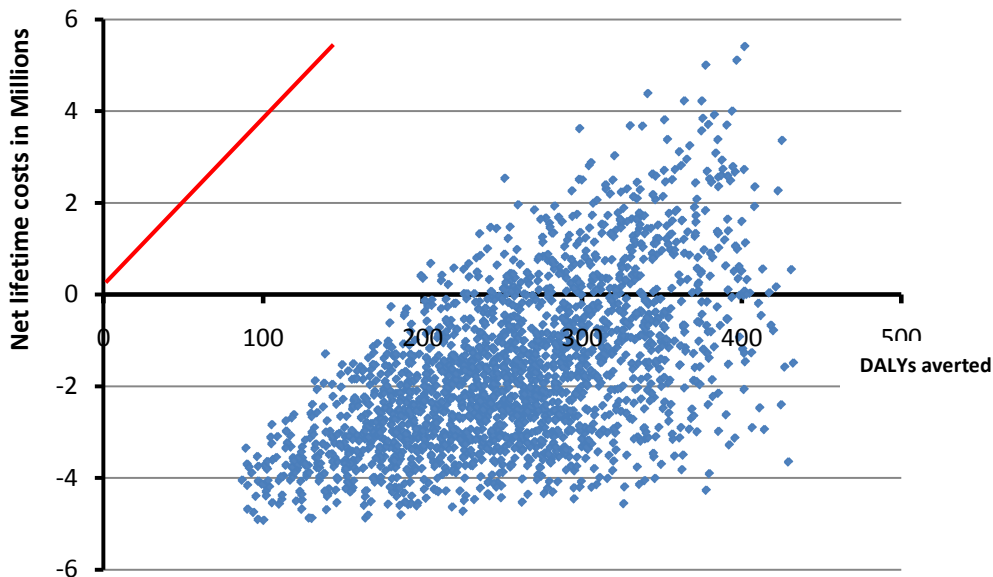
The comparator in all interventions is 'do-nothing'.

5. INTERVENTION COST-EFFECTIVENESS

5.1 PROBLEM-SOLVING THERAPY

The results for problem-solving therapy for people who are hospitalised for episodes of deliberate self harm, predominately fall in the south-east corner ('health gain at a cost-saving', i.e. a 'dominant' intervention) of the cost-effectiveness plane (Figure 1), with a high probability of being cost-saving when uncertainty simulations are taken into account.

Figure 1: Cost-effectiveness of problem-solving therapy for people who are hospitalised for deliberate self-harm designed to prevent suicide on a cost-effectiveness plane with \$50,000 per DALY threshold line



5.2 REDUCED ACCESS TO MEANS: GUN BUY-BACK SCHEME AND LEGISLATION

When 50% of the reduction in firearm deaths observed between 1997- 2003 is attributed to the intervention the median ICER is \$53,000/DALY averted (\$38K-68K). When 25% of benefit is attributed to the intervention, the ICER increases to \$106,000/DALY averted (\$76K-\$140K); with all iterations greater than the \$50,000 threshold.

5.3 RESPONSIBLE MEDIA REPORTING

The costs of the 7 projects constituting the Mindframe Australian National Media Initiative (excluding the media monitoring project) are nearly \$1M. The threshold analysis demonstrates that only two suicides need to be averted per annum for this project to be cost-effective (ICER: \$26,000/DALY averted with cost offsets included and \$27,000/DALY with cost-offsets excluded). Even if the costs were doubled, only 3 suicides would need to be averted to ensure the cost-effectiveness ratio remained below \$50,000/DALY. Based on the study by Pirkis et al (2006), if 3% of male suicides and 5% of female suicides were averted in 2003 due to responsible media reporting, then the ICER (based on Mindframe costs) is \$170/DALY averted (with cost offsets).

Table 1: Cost-effectiveness ratios and probability of being cost-effective for the two modelled suicide prevention interventions.

Intervention	Cost per DALY (95% uncertainty range)*	Probability of being under \$50,000/DALY
Problem Solving therapy for people hospitalised after deliberate self-harm	Dominant	100%
Gun legislation and buy-back scheme (50% of effect)	\$53,000 (38,000-68,000)	40%

6. CONCLUSIONS

Work to date suggests prevention of suicide can be very cost-effective. Problem-solving therapy for people who deliberately self harm has particular merit since it saves resources and improves health outcomes (dominant). Responsible media reporting of suicide also appears to provide good value-for-money whereby only 2 suicides per annum need to be averted for the intervention to fall well below the ACE threshold for cost-effectiveness, with limited Australian evidence suggesting that this is possible.

The reduced access to means intervention is more problematic in that the cost-effectiveness of the ICER depends on how much of the observed reduction in firearm deaths are attributed to the legislation and gun-buy-back scheme. Furthermore, there is considerable discussion in the literature regarding the effectiveness of the intervention in reducing firearm suicides, with prominent Australian researchers disagreeing on the effectiveness of such an intervention. Based on this we do not recommend the widespread implementation of such a scheme without much stronger evidence of effectiveness.

The impact of suicides is of course devastating for the family and friends of the deceased and can have many important and lasting health implications for these people. These effects have not been captured in the current analysis and therefore the current results only include a partial representation of the health benefits of prevented suicides.

Like all modeling studies, numerous assumptions were required which require further verification, though we endeavored to use the best available evidence and a conservative approach.

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

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7. 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

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

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