



# Is it cost-effective to prevent mental disorders & suicide?

## *Should Australia invest in mental disorder prevention?*

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# Yes

Emerging literature - now supported by cost-effectiveness credentials - showing that interventions designed to prevent mental disorders and suicide are a worthwhile use of health care \$\$.

A decorative graphic in the top-left corner consisting of a wireframe sphere, a gear, and a colorful flower-like shape.

# The current study

- Larger study context: **ACE-Prevention**
- 5 year project which assessed the CE of over 100 preventive interventions for non-communicable disease
  - Study aim is to provide advice primarily to policy makers
  - Priority setting approach - balance between technical rigour and due process
- Common methodology (as far as is practical)
- Interventions selected according to:
  - whether there is evidence that they work;
  - they are feasible within an Australian context; and,
  - Mental disorder study outcomes measured using diagnostic criteria & suicide study outcomes measured using episodes of deliberate self-harm



# Key methods

- **Comprehensive study protocol available at:**  
<http://www.sph.uq.edu.au/bodce-ace-prevention>
- **Economic Perspective**
  - Health Sector with important “other” effects flagged
- **Comparator**
  - Current Practice
- **Target Population**
  - Australian 2003 population cohort with condition/risk factors of interest
- **Modelling Time Horizon**
  - “Steady state” – duration in real life practice
- **Costs**
  - \$AUD2003 Real costs
- **Outcomes**
  - Cost per Disability Adjusted Life Year (DALY) averted
- **Uncertainty & Sensitivity Analysis**
  - Probabilistic Monte Carlo Simulations
  - Tested scenarios around key design features
- **Second stage filter analysis**
  - All interventions discussed and judged according to: quality of evidence; impact on equity; feasibility of implementation; acceptability to all important stakeholders



# Assessed interventions for mental disorder & suicide prevention

- **Adult depression – 3 interventions**
  - Screening in general practice and then either brief bibliotherapy or group based psychological therapy
  - Screening and psychological care for “at risk” pregnant women
- **Psychosis**
  - pharmacological and psychological care for youth at ultra high risk
- **Suicide**
  - Problem solving-therapy for individuals who deliberately self-harm
  - Emergency contact cards for people who deliberately self-harm
  - Reduced access to means: Gun legislation and buy-back
  - Appropriate media portrayal of suicide
- **Childhood depression**
  - Screening children/adolescents and then provision of group based psychological care
- **Childhood anxiety**
  - Screening preschool children for inhibited temperament & provision of parenting intervention to parents/carers

*Other disorders did not have sufficient evidence of intervention effectiveness*



# Summary ~ Triage Categories

**Dominant interventions**

**< \$10,000/DALY**

**\$10,000 - \$50,000/DALY**

**>\$50,000/DALY**

**Excellent**

**Very Good**

**Good**

**Not C/E**

Key to results				
Health impact	>10,000	1,000-10,000	<1,000	DALYs
Intervention costs	<10M	10-100M	>100M	\$/year



# Dominant interventions

**Excellent value-for-money**

**Gain health and save costs**

**Need very good reason to reject**

Topic area	Intervention	Lifetime health impact	Annual intervention cost
Hepatitis B	HBV vaccine + immunoglobulin to infants born to carrier or high risk mothers	+	+
	Selective HBV vaccination of infants with mothers from highly endemic countries	+	+
Kidney disease	Proteinuria screen & ACE-inhibitor for diabetics	++	+
Mental disorders	Problem solving post-suicide attempt (100%)	+	+
	Treatment for individuals at ultra-high risk for psychosis (64%-96.4% )	+	+
Oral health	Fluoridation drinking water non-remote areas	+	+



# Interventions

< \$10,000/DALY  
Very good buys

Topic area	Intervention	Lifetime health impact	Annual intervention cost
BP & chol	Low dose diuretics >5% CVD risk	+++	+++
	Polypill \$200 to over 55s	+++	+++
	Calcium channel blockers >10% CVD risk		
	ACE-inhibitors >15% CVD risk		
Mental disorders, drugs, suicide	Screen & bibliotherapy minor depression adults (82%)	+	++
	Screening and psychologist to prevent childhood/adolescent depression (98%)	+	++
	Screening and bibliotherapy to prevent childhood/adolescent depression	+	+
	Responsible media reporting on suicide (threshold ratios)	+	+
	Parenting intervention for prevention of childhood anxiety disorders (99.9%)	+	+
Other	Universal infant HBV vaccination	+	++



# Interventions

\$10,000 - \$50,000/DALY

Good buys

Topic area	Intervention	Lifetime health impact	Annual intervention cost
Cancer	Pap screen (current practice)	+	++
	HPV DNA test screening 3-yearly from 18	+	+
	HPV vaccination + Pap screen	+	++
	SunSmart	+++	+++
Pre-diabetes	Screen + dietary advice	+	++
	Screen + exercise physiologist	++	++
	Screen + dietary advice & exercise physiologist	++	++
	Screen + metformin	++	++
	Screen + acarbose	++	++
Kidney disease	Proteinuria screen & ACE-inhibitor for non-diabetics >25 yrs	++	++
Mental disorders	Screening & group CBT pre-depression (96%)	+	++
	Screening & CBT post-partum depression (76-87%)	+	+



# Interventions

**>\$50,000/DALY**

**Not cost-effective**

**Other reasons to select?**



Topic area	Interventions	Comment
<b>Diet</b>	F&V interventions targeting individuals and at workplace	Poor effectiveness
	Dietary advice on salt	Poor effectiveness
	Weight watchers	Poor maintenance of weight loss
	Multi-component diet/physical activity/weight intervention	Poor effectiveness
	Orlistat, sibutramine	Too expensive
<b>Osteoporosis</b>	Raloxifene	Too expensive
<b>Mental health / suicide</b>	Gun buy- back scheme (40%)	Poor evidence; high cost
	Emergency contact cards suicide attempt	Poor effectiveness
<b>Pre-diabetes</b>	Orlistat and rosiglitazone	Too expensive



# Conclusions

- Work to date suggests prevention of mental disorders & suicide is on the whole very CE (most interventions either dominant or very cost-effective)
- Overall avertable burden not as large as some areas since interventions tend to be more “indicated” in nature rather than universal
- Acceptability & feasibility issues particularly around workforce need to be sorted
  - Availability & financing of psychologists
  - Public financing (Medicare) of indicated interventions where a full blown disorder is not present



# Conclusions contd.

- Assumptions around modeling require further validation, e.g.
  - Suicide probabilities based on an international review of cohort studies of people who deliberately self-harm
  - Long-term epidemiology of depression and childhood anxiety not well studied in community samples
    - E.g. symptomatic duration of anxiety disorders not well investigated
  - Epidemiology of youth at UHR also not well investigated
- Conservative approach
  - Many positive spill-overs not included
    - Prevention of anxiety in adults, Rx of depression, effect on carers etc.



# Due process

- Difficult to ensure all stakeholders views expressed in such a broad “horizontal” priority setting exercise
- Second stage filter criteria
  - Are they all equally important?
  - Are they adequate for the mental health context?
    - Watch this space



# Papers

- **Mihalopoulos, C., Vos, T., Pirkis, J., Smit, F., Carter, R. (2011),** Do indicated preventive interventions for depression represent good value for money? *Australian and New Zealand Journal of Psychiatry*, Vol 45(1), 36-44.
- **Mihalopoulos, C., Vos, T., Pirkis, J., Carter, R., (2011)** The Economic Analysis of Prevention in Mental Health Programs, *Annual Review in Clinical Psychology*, 7, 169-201.
- Plus main ACE-Prevention report and pamphlets:  
<http://www.sph.uq.edu.au/bodce-ace-prevention>