Reducing the burden of affective disorders: is evidence-based health care affordable

Sanderson K, Andrews G, Corry J, Lapsley H

Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Evidence-based health care for affective disorders was under evaluation. Current and optimal mental health treatment contacts were compared with the baseline "no treatment" alternative (i.e. the natural history of the disorder).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with depression, dysthymia, or bipolar disorder.

Setting
The setting was primary and secondary care. The economic analysis was carried out in Sydney, Australia.

Dates to which data relate
The effectiveness data were gathered from studies published between 1993 and 2003. The resource data were gathered from studies published between 1998 and 1999. Year 1997-98 prices were used.

Source of effectiveness data
The effectiveness data were derived from published studies.

Modelling
A decision analytic model was created to simulate the costs and the health outcomes assigned to each treatment strategy. The model represented one possible hypothetical scenario for the optimal management of affective disorders at the population level in the Australian health care setting. The study population had been restricted to those already seeking help for a mental health problem and was extrapolated from Australian epidemiological data on disorder prevalence and treatment contacts.

The four health states described were mild, moderate, severe without co-morbidity and severe with co-morbidity.

Three evidence-based interventions were defined. One was medication treatment only, including selective serotonin reuptake inhibitors and mood stabiliser. Another was psychological treatment only, including cognitive-behavioural therapy, brief behavioural and/or cognitive intervention, family therapy and general practitioner (GP)-referred self-help. The last was medication and psychological treatment.

Six types of health care services contacted by persons with affective disorders were described. These were GP,
psychiatrist, psychologist, medical specialist, mental health team and inpatient services. Medical specialists included radiologists, pathologists, physicians and surgical consultants. The mental health team included community mental health teams, social workers and nurses.

A one-year time horizon was used and justifications were provided.

Outcomes assessed in the review
The outcomes assessed in the review and used as model inputs were:

- the disorder prevalence;
- the proportion of patients who had sought help for a mental health problem in the past year;
- the treatment efficacy in the current treatment group (i.e. self-reported contact with potentially efficacious interventions) and in the optimal treatment group; and
- treatment resistance.

A potentially efficacious mental health contact was defined as receiving an evidence-based intervention and two or more contacts with the same type of health professional.

Study designs and other criteria for inclusion in the review
Epidemiological data on disorder prevalence and treatment contacts were obtained from the Australian National Survey of Mental Health and Wellbeing, a household survey (n=10,641) of mental disorders (Andrews et al., see Other Publications of Related Interest). A structured diagnostic interview was administered by trained lay interviewers to determine the 12-month ICD-10 diagnoses for each patient (the Composite International Diagnostic Interview; World Health Organisation, 1997). Depression severity was determined by ICD-10 criteria, while dysthymia severity was determined according to those who had and had not experienced a depressive episode in the past year.

The treatment efficacy for each disorder-intervention pair was obtained from published meta-analyses of randomised controlled trials in the first instance, or single trials where meta-analyses were unavailable.

Sources searched to identify primary studies
Not reported.

Criteria used to ensure the validity of primary studies
Not reported.

Methods used to judge relevance and validity, and for extracting data
Not reported.

Number of primary studies included
One survey was used to assess the prevalence and treatment contacts. Four meta-analyses and studies were included in the analysis of treatment efficacy for depression, three were included for dysthymia and eight for bipolar disorder. One study was used to estimate treatment resistance.

Methods of combining primary studies
Not reported.
Investigation of differences between primary studies
Not reported.

Results of the review
The disorder prevalence in the Australian population was not reported.

The help-seekers represented 66.1% of all persons with bipolar disorder (n=47,112) in the Australian population, 60.2% of all persons with depression (n=390,349), and 50.9% of all persons with dysthymia (n=39,821).

Around 53% of people with depression, 65% of people with dysthymia and 70% of people with bipolar disorder received a potentially efficacious intervention. A large majority of these persons received medication only (40%, 52% and 60%, respectively) with a small percentage reporting psychological therapy (5%, 2% and 0%, respectively).

Treatment resistance was estimated to be 10% of those in treatment under both current and optimal care.

Methods used to derive estimates of effectiveness
The optimal evidence-based contact was modelled from clinical practice guidelines and expert reviews.

Estimates of effectiveness and key assumptions
A modelled optimal evidence-based treatment regime for affective disorders was described in the original paper (Table 2).

Measure of benefits used in the economic analysis
The benefit measure used was the number of years lived with disability (YLDs). Disability weights were measured by a health state preference value on a scale of 0 to 1. Effect sizes from the meta-analyses were translated into changes in the disability weight scale. The benefits were not discounted as a 1-year time period was used.

Direct costs
The governmental perspective was adopted and only the direct costs were included. The unit costs were reported, but the quantities of resources used were presented separately. Each service contact was assigned a unit cost. The service costs were then aggregated to give an overall cost per treated group. However, the categories of costs included in each service contact were unclear. The unit costs were derived from published sources representing market prices, then converted to 1997-98 Australian dollars, using the Consumer Price Index health deflators. The number of consultations was estimated using actual data coming from the sample of patients involved in the effectiveness study. Current medications were costed against the medication type and dose most commonly recommended under optimal care, then varied in the sensitivity analysis for current care. The costs were not discounted as a 1-year time horizon was used.

Statistical analysis of costs
No statistical analysis of the costs was performed.

Indirect Costs
The indirect costs were not included.

Currency
Australian dollars (Aus$).
Sensitivity analysis
Multivariate and univariate sensitivity analyses were performed with the @RISK software, which uses a Monte Carlo simulation approach. The authors did not report which variables had been used in the sensitivity analyses. A multivariate stepwise linear regression was conducted to determine the strongest predictors in variance around the cost-effectiveness estimates.

Estimated benefits used in the economic analysis
For all disorders, optimal care was associated with a larger improvement in the disability weight on average than current care.

The number of YLDs averted was 22,559 with current care for depression and 32,583 with optimal care, an increase of nearly 50%.

For dysthymia, optimal care increased the number of YLDs averted by 49%.

Optimal care for bipolar disorder was associated with a doubling of the YLDs averted.

Cost results
The total cost was found to be Aus$615.4 million with current care for the year 1997-98. Nearly 80% of this current expenditure (Aus$483.7 million) was associated with depression, the most prevalent disorder.

When optimal evidence-based care was modelled, the total cost was found to be Aus$478 million.

The costs with optimal care were lower than the costs with current care for depression (Aus$341.3 versus Aus$483.7) and dysthymia (Aus$28.7 versus Aus$70.8), but nearly 80% higher for bipolar disorder (Aus$108.4 versus Aus$60.9).

Synthesis of costs and benefits
The incremental cost-effectiveness ratios (ICERs) were calculated for each treatment strategy (current and optimal care) using no treatment as the comparator. The ICERs between current and optimal care for each affective disorder were not calculated.

For depression, the ICER for current care was Aus$21,442 (95% confidence interval, CI: 11,434 - 40,433) versus Aus$10,475 (95% CI: 8,283 - 14,049) for optimal care.

For dysthymia, the ICER for current care was Aus$14,217 (95% CI: 6,157 - 36,536) versus Aus$3,858 (95% CI: 3,283 - 4,983) for optimal care.

For bipolar disorder, the ICER for current care was Aus$24,031 (95% CI: 11,079 - 93,844) versus Aus$23,934 (95% CI: 14,785 - 38,298) for optimal care.

The strongest predictors of the cost-effectiveness variance for current care included psychiatric inpatient costs, percentage in contact with evidence-based interventions, the intervention effect size used, and the value used to convert disorder severity improvement into changes in disability weight.

The strongest predictors for optimal care included those additional to pharmacological costs, and the epidemiological estimates of prevalence and rates of contact for a mental health problem.

The sensitivity analyses showed the robustness of the model to the assumptions made and the estimates used.

Authors’ conclusions
Optimal care for dysthymia was less costly and more effective than current treatment. Optimal care for depression and bipolar disorder increased population outcome by 50% and was likely to cost within the range of current expenditure.
CRD COMMENTARY - Selection of comparators
A justification was given for the comparators used (current care for affective disorders in Australia and no treatment). You should consider whether those practices are widely used in your own setting.

Validity of estimate of measure of effectiveness
The authors used meta-analyses and clinical trials to derive the effectiveness data. However, they did not report whether a systematic review of the literature was conducted. The validity of the studies was not reported. The authors acknowledged that the participants in the trial were not necessarily generalisable to all persons with the disorder. Thus, the benefits might have been overestimated. A potentially good feature of the effectiveness analysis was that the estimates were varied in the sensitivity analyses, in order to test the robustness of the results.

Validity of estimate of measure of benefit
The estimation of benefits was modelled. It is unclear whether the disability weights were derived from patient preferences or from experts' opinion, and this obscures the relevance of the YLD measurements. NB: since this abstract was written, the authors have pointed out that the previous point is fully answered in a paper that was cited as "under review" when the present paper was published (Sanderson et al 2004 - see "Other Publications of Related Interest" below for bibliographic details). The authors acknowledged that a longer time horizon (more than one year) would have been more appropriate for the study question. Ideally, long term outcome implications of the optimal care scenario would be a more relevant benefit measure for decision-makers.

Validity of estimate of costs
The authors reported that they adopted a governmental perspective, although they did not include the indirect costs. They also acknowledged that the exclusion of the indirect costs might have biased the results in favour of current care, by underestimating the wider community benefits of optimally treating affective disorders. The resource quantities and the costs were not reported separately. The categories of costs included in the analysis were not reported clearly and other costs, such as the cost of programme implementation, might have been omitted. The cost estimates are likely to be specific to Australia. A sensitivity analysis was performed on the costs. However, the ranges of variation and the results were not reported in detail. Discounting was not relevant and was not carried out.

Other issues
The authors did not compare their findings with those from other studies. The generalisability of the results was not addressed in detail. The authors stated that most of the outcome and cost estimates were specific to Australia, thus caution would be required when extrapolating the study results to other settings. A number of limitations to the study, which have been highlighted already, were reported. The authors underlined that, although only one model of guideline-concordant care was evaluated, others were possible.

Implications of the study
The authors recommended that evidence-based health care for affective disorders should be encouraged on both efficacy and efficiency grounds. However, this conclusion should be viewed in the light of the limitations of the present analysis.

Source of funding
Supported by the Australian National Health and Medical Research Council (project #13807).

Bibliographic details
Other publications of related interest


The present study was one of a series funded as a single project. Readers of this abstract may also find the following papers from the same series to be of interest. (For those for which an NHS EED abstract is available, the Accession Number is given in brackets after the reference).


Indexing Status
Subject indexing assigned by NLM

MeSH
Australia; Cost of Illness; Cost-Benefit Analysis; Disabled Persons /psychology; Evidence-Based Medicine; Health Expenditures /statistics & numerical data; Humans; Mental Health Services /economics /utilization; Mood Disorders /economics /therapy; Outcome Assessment (Health Care)

AccessionNumber
22003008530

Date bibliographic record published
28/02/2005

Date abstract record published
28/02/2005