



**Australian Government**  
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Australia and New Zealand Horizon Scanning Network

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AN INITIATIVE OF THE NATIONAL, STATE AND  
TERRITORY GOVERNMENTS OF AUSTRALIA  
AND THE GOVERNMENT OF NEW ZEALAND

# **Horizon Scanning Technology Prioritising Summary**

## **Internet delivered cognitive behavioural therapy for patients with depression**

**November 2009**



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# PRIORITISING SUMMARY

**REGISTER ID:** 000430

**NAME OF TECHNOLOGY:** INTERNET DELIVERED COGNITIVE BEHAVIOURAL THERAPY

**PURPOSE AND TARGET GROUP:** FOR PATIENTS WITH DEPRESSION

## STAGE OF DEVELOPMENT (IN AUSTRALIA):

- |  |   |
|--|---|
| <input type="checkbox"/> Yet to emerge                 | <input type="checkbox"/> Established  |
| <input type="checkbox"/> Experimental                  | <input type="checkbox"/> Established <i>but</i> changed indication or modification of technique |
| <input type="checkbox"/> Investigational               | <input type="checkbox"/> Should be taken out of use   |
| <input checked="" type="checkbox"/> Nearly established |   |

## AUSTRALIAN THERAPEUTIC GOODS ADMINISTRATION APPROVAL

- |  |             |
|--|-------------|
| <input type="checkbox"/> Yes                       | ARTG number |
| <input type="checkbox"/> No                        |             |
| <input checked="" type="checkbox"/> Not applicable |             |

## INTERNATIONAL UTILISATION:

| COUNTRY        | LEVEL OF USE                 |             |                 |
|----------------|------------------------------|-------------|-----------------|
|                | Trials Underway or Completed | Limited Use | Widely Diffused |
| Australia      | ✓                            |             |                 |
| United Kingdom | ✓                            |             |                 |
| Netherlands    | ✓                            |             |                 |

## IMPACT SUMMARY:

Mental health professionals would provide internet-based cognitive behavioural therapy with the aim of providing treatment for patients suffering from depression. The computer programmes are usually developed by mental health or academic institutions, rather than commercial companies.

## BACKGROUND

Although depression is a common disorder it is poorly diagnosed by general practitioners (GPs) and the number of people who receive appropriate treatment or actively seek treatment is low (Kaltenthaler et al 2008). Many patients receive pharmacotherapy in the form of anti-depressants as their first and only treatment option, however patient compliance is poor for pharmacotherapy due to side-effects and it is often only effective in cases of severe depression (de Graaf et al 2008). One of the main barriers to patients receiving appropriate psychotherapy, such as

cognitive-behavioural therapy (CBT), is the lack of clinicians (psychologists, psychiatrists and counsellors) able to provide this service, especially in rural and remote areas. It has been estimated that only 35 per cent of people with depressive disorders see a clinician or GP and of these, only 50 per cent get appropriate treatment (personal communication, CRUfAD).

CBT is defined as any specific psychological or psychosocial intervention that is short-term and goal-orientated. CBT is based on learning the principles of behaviour change and is directed at effecting change in a particular clinical outcome (Fulcher et al 2008). CBT assists the patient to understand, manage and change their thoughts (cognitions) and actions (behaviour). Depression strongly affects the way people think and patients often feel hopeless, anxious and lack of energy, making it difficult to think positively about self, relationships with other people and life in general. In a given situation where an outcome could be positive or negative, depressed patients will be more likely to think of the negative outcome. CBT is designed to replace negative thoughts for positive ones and to reinforce positive actions (ReachOut Australia 2009).

Internet based CBT, such as the [Sadness Programme](#) in Australia, is a virtual clinic which uses the same techniques as face-to-face therapy but delivers it via a web site. On initial contact with the web site, patients fill in a basic questionnaire. A clinician then contacts the patient via telephone and an in-depth diagnostic interview is conducted to determine whether or not the patient is suffering from depression. The CBT programme is not designed for patients diagnosed with a bi-polar disorder or schizophrenia and is not recommended for patients with severe depression or for those who are suicidal. The programme takes 8-10 weeks to complete and participants can interact with each other via forums but are de-identified. Approximately 10-50 people can enrol in the programme at any one time. The programme is self-guided and includes six online educational lessons which tells a story about a person with that condition, who then learns to manage their symptoms. Homework assignments are given which summarise the information in each lesson and provide advice on new skills on managing symptoms. The programme may include regular contact with a clinician via email or telephone (Titov 2009). Due to the nature of the programme's delivery, there is no "therapist drift" and the fidelity of the therapy is assured (personal communication, CRUfAD).

The Clinical Research Unit for Anxiety Disorders at St Vincent's Hospital in Sydney run programmes for people with depression, social phobia, panic disorders and generalised anxiety disorders offered via the [CRUfAD Clinic](#) web site. The programmes run by CRUfAD are run on a not-for-profit basis (personal communication, CRUfAD).

## CLINICAL NEED AND BURDEN OF DISEASE

Mental illness, including anxiety, depression, bipolar disorders and schizophrenia is a major public health issue and is responsible for a high level of disability in Australian society. Although mental illness is a major health concern in Australia, information on the prevalence of depression is scarce. Self-reported prevalence data in 2004-05, estimated an increase for all mental health problems from 5.9 per cent of those surveyed in 1995 to 11.0 per cent in 2004. This increase may be seen as a real increase or may be a result of an increased willingness to report disorders. In 2003, mental illness was estimated to be responsible for 13 per cent of the total burden of disease, third behind cancer and cardiovascular disease. Anxiety and depression accounted for 10 per cent of the overall burden of disease in females and five per cent in males (AIHW 2008). It has been estimated that depression affects more than 1.5 million Australian adults each year. Over a lifetime, depression will affect 30 and 40 per cent of men and women, respectively (Titov 2009). General practitioners are often the first contact point for mental health concerns and in 2007-08, the BEACH survey estimated that over 11.9 million GP-patient encounters involved the management of a mental health issue, an annual average increase of 4.4 per cent from 2003-04 to 2007-08. The BEACH survey also reported that depression accounted for 34.7 per cent of all mental health problems managed by GPs and 2.6 per cent of all health problems (AIHW 2009).

The New Zealand Mental Health Survey predicts that over a lifetime, 46.6 per cent of the population will meet the criteria for a mental disorder, with 20.7 per cent having had a disorder in the past 12 months. Between 50 and 70 per cent of all mental health conditions are initially managed by GPs. The Mental Health and General Practice Investigation (MaGPIe) study assessed the prevalence of common disorders presenting to general practice and found that 36 per cent of patients attending their GP had one or more of the three most commonly presenting disorders: anxiety, depression or substance-use disorder (Dowell et al 2009). The 2006 New Zealand Mental Health Survey found that females have a higher prevalence of anxiety disorders, major depression and eating disorders than males. Prevalence of these disorders is higher for people who are socioeconomically disadvantaged and for Māori people. After adjusting for sociodemographic status, Māori and Others<sup>1</sup> have very similar prevalence (5.7%, 5.8%) for major depression, compared to a lower prevalence (3.5%) for Pacific people (Oakley Browne et al 2006). Despite the relatively high prevalence of mental disorders in the population, only a small proportion of patients present to their GP with mental health problems as the main reason for their consultation. Four New Zealand studies have found that between 3-8 per cent of patients presenting to their GP had a mental health problem as the main reason for consultation (Dowell et al 2009).

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<sup>1</sup> Population of New Zealand is described as Māori, Pacific islanders and Others

## **DIFFUSION**

The CRUfAD Clinic is currently contracted by the Commonwealth Department of Health and Ageing to roll out internet-based CBT to rural clinicians under the Access to Allied Psychological Services (ATAPS) programme. Currently 400 general practitioners are registered to provide the programme, however the number of GPs actually using the programme is unknown. CRUfAD hope to recruit 5-10 GPs per week and that by 2010, 20 per cent of rural GPs will be using the programme. In 2010 CRUfAD hope to target recruitment from State rural divisions of GPs in New South Wales and Victoria (personal communication, CRUfAD).

Two internet-based CBT programmes are available in the United Kingdom: [Fearfighter](#) a commercially available programme to treat people with phobias; and [Beating the Blues](#) a commercially available programme designed to treat people with anxiety and depressive disorders. Both of these programmes can be accessed by people in Australia in addition to [Anxiety Online](#) offered by Swinburne University and the CRUfAD programmes (personal communication, CRUfAD).

## **COMPARATORS**

Clinician-delivered, face-to-face CBT would be the gold standard treatment for depression, along with pharmaco-therapeutic options. The BEACH survey of 2007-08 reported that two-thirds of mental health-related problems were managed by GPs through the prescription of medication. Antidepressants were the most commonly prescribed or supplied medication (26.7 per 100), followed by anxiolytics (13.1) and hypnotics and sedatives (11.9). Counselling or advice was the second most common form of management by GPs (47.5 per 100 mental health-related problems managed) including psychological counselling (26.8 per 100 mental health-related problems managed) (AIHW 2009).

## **SAFETY AND EFFECTIVENESS ISSUES**

A recent Australian RCT enrolled depressed people via the Sadness programme. Forty-eight people satisfied the eligibility criteria and were randomised to the Sadness programme (n=29) or to a wait-list control group (n=19), however three participants withdrew from before study commencement (level II intervention evidence). Mean age of participants was 49.29 ( $\pm$  12.06) years, 71 per cent had previously discussed their depression with a health professional and 51 per cent were on medication for depression. The majority of participants were female (85% and 67% in the treatment and control groups, respectively). The Sadness programme consisted of six online lessons, homework, online discussion forums and email contact with a mental health clinician, conducted over an 8-week period. Primary outcome measures were changes

in Beck Depression Inventory (BDI)<sup>2</sup> and Patient Health Questionnaire Nine Item (PHQ-9)<sup>3</sup> scores. Secondary outcome measures were changes in the Positive and Negative Affect Scales (PANAS), the Kessler 10 (K-10) and the Sheehan Disability Scales (SDS).

Although post-treatment data were only collected from 35/45 (77.8%) of participants, data were analysed on an intention-to-treat basis. For those patients not completing follow-up, their pre-treatment scores were replicated as their post-treatment scores. Post-treatment scores for both BDI and PHQ-9 in the treatment group were significantly lower than baseline scores ( $p < 0.02$  and  $p < 0.01$ , respectively) than the control group. It should also be noted that post-treatment scores within the treatment group and control groups was significantly lower than pre-treatment scores for both BDI and PHQ-9 scores (Table 1).

Table 1 Results of outcome measures on an intention to treat basis

| Assessment             | Before treatment<br>Mean $\pm$ SD | After treatment<br>Mean $\pm$ SD | Effect sizes |               |
|------------------------|-----------------------------------|----------------------------------|--------------|---------------|
|                        |                                   |                                  | Within group | Between group |
| <b>PHQ-9</b>           |                                   |                                  |              |               |
| Treatment group        | 13.78 $\pm$ 4.53                  | 9.59 $\pm$ 5.82, $p < 0.01$      | 0.80         | 0.89          |
| Control                | 14.72 $\pm$ 3.91                  | 14.11 $\pm$ 4.21, $p < 0.01$     | 0.15         |               |
| <b>BDI</b>             |                                   |                                  |              |               |
| Treatment group        | 27.30 $\pm$ 7.30                  | 17.30 $\pm$ 9.86, $p < 0.05$     | 1.15         | 0.63          |
| Control                | 27.24 $\pm$ 6.18                  | 23.33 $\pm$ 9.29, $p < 0.05$     | 0.50         |               |
| <b>PNAS - Positive</b> |                                   |                                  |              |               |
| Treatment group        | 21.07 $\pm$ 5.6                   | 23.93 $\pm$ 6.92                 | 0.45         | 0.41          |
| Control                | 19.59 $\pm$ 3.62                  | 21.47 $\pm$ 5.0                  | 0.43         |               |
| <b>PNAS - Negative</b> |                                   |                                  |              |               |
| Treatment group        | 25.78 $\pm$ 8.25                  | 22.19 $\pm$ 8.25                 | 0.44         | 0.22          |
| Control                | 26.53 $\pm$ 5.19                  | 23.94 $\pm$ 7.39                 | 0.41         |               |
| <b>K-10</b>            |                                   |                                  |              |               |
| Treatment group        | 28.15 $\pm$ 4.7                   | 23.7 $\pm$ 7.29                  | 0.73         | 0.23          |
| Control                | 28.18 $\pm$ 4.77                  | 25.24 $\pm$ 5.91                 | 0.55         |               |
| <b>SDS</b>             |                                   |                                  |              |               |
| Treatment group        | 19.0 $\pm$ 5.66                   | 14.37 $\pm$ 8.39                 | 0.65         | 0.16          |
| Control                | 18.29 $\pm$ 5.35                  | 15.53 $\pm$ 5.35                 | 0.52         |               |

There was no significant difference between the treatment and control groups for post-treatment scores of the secondary outcome measures (PNAS, K-10 and SDS). Prior to treatment 22/27 (81%) of the treatment group and 17/18 (94%) of the control group had a PHQ-9 score  $> 10$  indicating a diagnosis of depression. After treatment,

<sup>2</sup> BDI score: 0-9 represents minimal depressive symptoms, scores of 10-16 indicate mild depression, scores of 17-29 indicate moderate depression, and scores of 30-63 indicate severe depression.

<sup>3</sup> PHQ-9 scores: Minimal symptoms, give support; 10-14 Minor depression, consider treatment if symptoms persist  $> 1$  month or Major depression – *mild*, antidepressant medication or psychotherapy recommended; 15-19 Major depression, *moderately severe*, antidepressant medication or psychotherapy recommended;  $\geq 20$  Major depression, *severe*, antidepressant medication and psychotherapy recommended (MacArthur Foundation 2009).

the number of patients with a PHQ-9 score >10 in the treatment group was significantly reduced (15/27, 44%) with little change in the control group (16/18, 89%). Although other study groups have stated that a BDI <10 is a “recovery from depression” score, the BDI in this study was much higher than 10 post-treatment (mean 17.30). It is unclear how many patients achieved a score less than 10.

The mean therapist time per participant was 111 minutes which included monitoring of the discussion forum and feedback. A mean of 8.33 emails were sent to each participant in the treatment group. The initial diagnostic interview and other administrative tasks required a further 30 minutes per patient (Perini et al 2009). This study indicates that internet delivered CBT appears to be effective in reducing symptoms of depression, however long-term follow-up of these patients is required.

An RCT conducted in the United Kingdom recruited patients with a diagnosis of depression (BDI score >14) from 55 general practices. Of the 512 people invited to participate, 297 satisfied the selection criteria. Patients were randomised to either the treatment group (n=149) or the control group (n=148) (level II intervention evidence). The intervention consisted of 10 sessions of internet delivered CBT of 55 minutes duration, to be completed within 16 weeks after randomisation. Each participant was assigned a therapist for the duration of the study. The mean age of participants was  $34.9 \pm 11.6$  years and two thirds of participants were female. Primary outcome data were obtained at 4- and 8-month follow-up for 210/297 (71%) of participants and data were analysed on an intention-to-treat basis (Table 2).

At 4-months follow-up, a greater proportion of participants in the intervention group had achieved BDI scores indicating a recovery from depression than those in the control group (38% vs 24%,  $p=0.011$ ). This recovery persisted and was maintained at 8-months (42% vs 26%,  $p=0.023$ ). This was also confirmed by the secondary outcome measures SF-12 and EQ-5D at 4- and 8-months. However it should be noted that the standard deviations for all outcomes, but especially the BDI scores, were large (Kessler et al 2009).

Table 2 Primary and secondary outcome measures on an intention-to-treat basis

|                                   | Intervention | Control      | Adjusted OR/<br>adjusted difference<br>in means [95% CI] | p value |
|-----------------------------------|--------------|--------------|--|---------|
| <b>Primary outcome measure</b>    |              |              |  |         |
| <b>Baseline BDI</b>               | 32.8 ± 8.3   | 33.5 ± 9.3   |  |         |
| Mild: 14-19                       | 8 (5.4%)     | 7 (4.7%)     |  |         |
| Moderate: 20-28                   | 40 (26.8%)   | 38 (25.7%)   |  |         |
| Severe: >28                       | 101 (67.8%)  | 103 (69.6%)  |  |         |
| <b>Post-treatment</b>             |              |              |  |         |
| <b>Recovery BDI &lt;10</b>        |              |              |  |         |
| 4-months                          | 43/113 (38%) | 23/97 (24%)  | 2.39 [1.23, 4.67]  | 0.011   |
| 8-months                          | 46/109 (42%) | 26/101 (26%) | 2.07 [1.11, 3.87]  | 0.023   |
| <b>Mean BDI score</b>             |              |              |  |         |
| 4-months                          | 14.5 ± 11.2  | 22.0 ± 13.5  | -7.1 [-10.0, -4.2]                                       | <0.0001 |
| 8-months                          | 14.7 ± 11.6  | 22.2 ± 15.2  | -6.2 [-9.3, -3.0]  | 0.0002  |
| <b>Secondary outcome measures</b> |              |              |  |         |
| <b>Baseline SF-12*</b>            | 23.8 ± 7.6   | 23.9 ± 8.2   |  |         |
| 4-months                          | 41.5 ± 12.6  | 35.4 ± 12.5  | 6.0 [2.5, 9.5]   | 0.001   |
| 8-months                          | 41.0 ± 13.4  | 37.1 ± 14.2  | 3.2 [-0.6, 7.0]  | 0.10    |
| <b>Baseline EQ-5D</b>             | 0.66 ± 0.23  | 0.63 ± 0.23  |  |         |
| 4-months                          | 0.82 ± 0.19  | 0.75 ± 0.23  | 0.06 [0.01, 0.12]  | 0.028   |
| 8-months                          | 0.83 ± 0.19  | 0.75 ± 0.26  | 0.07 [0.01, 0.13]  | 0.024   |

\* = SF-12 mental score

An RCT conducted in the Netherlands recruited patients with depression (Edinburgh Depression Score  $\geq 12$ ) aged over 50 years (mean age  $55 \pm 4.6$  years). Eligible patients (63% female) were randomised into three groups: internet CBT (n=102) consisting of eight modules with no therapist support, group CBT (n=99) consisting of 10-weekly group sessions, and controls on a waiting list for CBT (n=100) (level II intervention evidence). The primary outcome measure was BDI scores (Table 3). Although follow-up was only completed by 57 per cent in the internet group, 67 per cent in the group course and 66 per cent in the control group, data were analysed on an intention-to-treat basis. The internet course was only completed by 48.3 per cent of participants compared to 94.5 per cent of participants completing the group sessions. There was a significant difference between controls and the internet CBT group ( $p=0.03$ ), however there was no difference between the two treatment groups ( $p=0.08$ ). From pre-treatment to 12-month follow-up, there was a similar improvement in effect size in the control (0.69) and CBT session groups (0.62). However a larger improvement effect size of 1.22 was reported for the internet CBT group. The authors used a BDI cut-off value of 13 to indicate an improvement in depression symptoms. In the internet CBT group, 62 per cent of participants scored  $<13$  compared to 45 and 38 per cent in the group CBT and control groups, respectively. The risk difference of 0.26, between the internet and control groups, was used to calculate the number needed to treat. To avert one case of depression, 3.85 people need to be treated with internet CBT. The number

needed to treat with group CBT to avert one depression case was 14.29 (Spek et al 2008).

Table 3 Mean BDI scores

|              | Pre-treatment BDI score | 12-month BDI score |
|--------------|-------------------------|--------------------|
| Internet CBT | 19.07 ± 7.04            | 10.45 ± 8.05       |
| Group CBT    | 17.99 ± 9.39            | 12.14 ± 8.76       |
| Control      | 18.31 ± 7.88            | 12.88 ± 10.1       |

A 2008 systematic review on the effectiveness of internet delivered CBT identified four randomised controlled trials (RCTs) which satisfied the inclusion criteria (level I intervention evidence). One RCT compared the “Beating the Blues” programme to usual care (n=406), one RCT compared “MoodGYM” to two comparators and placebo (n=525) and the remaining two RCTs compared the use of the “Overcoming Depression on the Internet (ODIN)” programme to usual care (n=299 and n=255). Weaknesses identified in these studies included a predominantly female study population (figures not reported), self-selected participants and a lack of blinding for assessment of outcomes. In addition, high loss to follow-up rates were recorded in all studies ranging from 10 to 41 per cent, although this was stated to be comparable to drop-out rates for other psychological therapies for depression. A combined analysis of outcome measures of all four studies was not possible due to differences in measurements and reporting. The Beating the Blues study reported internet delivered CBT to be more effective than usual care, with the effects still evident at 8-months. Baseline BDI measures were 24.9 (± 10.8) and 24.7 (± 9.2) for those randomised to the programme and usual care, respectively. Post-treatment (8 interactive one hour sessions) BDI scores were 12.1 (± 9.3) for the intervention group compared to 18.4 (± 10.9) for the controls (p value not stated). At 8-months follow-up BDI scores for the intervention group were 9.3 (± 8.5) compared to 14.9 (± 11.3) in the control group (p value not stated). Summary measure results for the intervention group were a Beck score of 11.6 (± 9.6) and 16.2 (± 10.1) in the control group (p=0.0006). MoodGYM was also reported to be effective in reducing symptoms of depression. After a 6-week intervention the pre-post effect size for MoodGym was 0.4 compared to 0.1 in the control group. Of the two ODIN studies, one reported no treatment effect with the intervention and the other reported some reduction in depression scores. The Beat the Blues programme has therapist involvement, MoodGYM had no therapist involvement but did have weekly interaction with researchers to encourage programme participation, however the ODIN studies were unattended with no therapist interaction or reminders given for involvement. The authors concluded that more research was required to evaluate the effectiveness of internet delivered CBT, however the four included studies were quite old(2002, 2004, 2004 and 2005) and more studies have since been conducted (Kaltenthaler et al 2008).

Several other published studies reported on the use of internet cognitive therapy but are not summarised here (Mackinnon et al 2008; van Straten et al 2008; Warmerdam et al 2008). Mackinnon et al (2008) reported a significant reduction in symptoms of depression at 6- and 12-month outcomes in patients randomised (n=525) to CBT (MoodGYM) compared to controls. The two RCTs conducted in the Netherlands also noted significant improvements.

### **COST IMPACT**

CRUfAD currently operates on a not-for-profit basis. To prevent making a loss for their service provision, they currently sell a prescription pad, containing 20 scripts, to registered GPs for \$100 (\$5 per prescription). GPs can then on-sell these prescriptions to their patients, which enables them to log in to the web site and access the CBT programme. GPs can now access an MBS rebate via Mental Health Treatment Plan, Review and Consultation item numbers (2710-2713) for the provision of a patient assessment and the preparation of treatment plan. Other online programmes cost approximately \$120 (Anxiety Online) to \$800 (Fearfighter). It has been estimated that internet-based CBT would be 20-50 times more cost-effective than pharmacotherapeutics (personal communication, CRUfAD).

Only one cost-effectiveness study was identified for inclusion in this summary. Three UK programmes were identified for use in the treatment of depression with each intervention costing considerably more than the Australian programme at £219.30, £195.86 and £72.64 per patient. Results in terms of incremental cost per QALY compared with usual treatment and the chance of being cost-effective at £30,000 were £1,801 and 86.8 per cent; £7,139 and 62.6 per cent; and £5,391 and 54.4 per cent for the three identified programmes (Kaltenthaler et al 2006).

A randomised controlled trial, recruiting 300 patients, of internet CBT is currently underway in The Netherlands, including a cost-effectiveness analysis (de Graaf et al 2008).

### **ETHICAL, CULTURAL OR RELIGIOUS CONSIDERATIONS**

A barrier to effective access to psychotherapy is the stigma some patients experience when attending a mental health professional. In addition, some patients may feel uncomfortable informing their workplace that they have mental health issues. The provision of internet based therapy would allow patients to access mental health care in their own homes out of working hours (Perini et al 2009). Internet based therapy would also enable patients in rural and remote locations, where levels of depression are high, to access treatment that they otherwise may be denied.

### **OTHER ISSUES**

No issues were identified/raised in the sources examined.

## SUMMARY OF FINDINGS

All studies included for assessment in this summary reported significant improvements in the symptoms of depression after using internet delivered CBT when compared to control patients. In addition, some studies reported an improvement in symptoms when compared to CBT delivered in a group session. The improvement in symptoms appeared to be maintained over time (4, 8 and 12-months). Internet based CBT can reach a higher number of patients than conventional CBT and may be especially useful in rural and remote settings where access to appropriate clinicians may be limited. The programme, as offered in Australia, is inexpensive.

## HEALTHPACT ACTION:

The good quality evidence indicates a potential for the uptake of this technology in rural and remote areas, and the possible ability to overcome barriers to increase the treatment options especially in males. HealthPACT have recommended that this summary be disseminated in the jurisdictions and to Beyond Blue, and to approach beyond blue regarding the possibility of writing a more in-depth horizon scanning report.

## NUMBER OF INCLUDED STUDIES

|                                |   |
|--------------------------------|---|
| Total number of studies        | 5 |
| Level II intervention evidence | 4 |
| Level I intervention evidence  | 1 |

## REFERENCES:

- AIHW (2008). *Australia's health 2008*, Australian Institute of Health and Welfare, Canberra. Available from: <http://www.aihw.gov.au/publications/aus/ah08/ah08.pdf>
- AIHW (2009). *Mental health services in Australia 2006–07*, Australian Institute of Health and Welfare, Canberra. Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10686>
- de Graaf, L. E., Gerhards, S. A. et al (2008). 'Clinical and cost-effectiveness of computerised cognitive behavioural therapy for depression in primary care: design of a randomised trial', *BMC Public Health*, 8, 224.
- Dowell, A. C., Garrett, S. et al (2009). *Evaluation of the Primary Mental Health Initiatives: Summary report 2008*, University of Otago and Ministry of Health, Wellington. Available from:
- Fulcher, C. D., Badger, T. et al (2008). 'Putting evidence into practice: interventions for depression', *Clin J Oncol Nurs*, 12 (1), 131-140.
- Kaltenthaler, E., Brazier, J. et al (2006). 'Computerised cognitive behaviour therapy for depression and anxiety update: a systematic review and economic evaluation', *Health Technol Assess*, 10 (33), iii, xi-xiv, 1-168.
- Kaltenthaler, E., Parry, G. et al (2008). 'Computerised cognitive-behavioural therapy for depression: systematic review', *Br J Psychiatry*, 193 (3), 181-184.

- Kessler, D., Lewis, G. et al (2009). 'Therapist-delivered Internet psychotherapy for depression in primary care: a randomised controlled trial', *Lancet*, 374 (9690), 628-634.
- MacArthur Foundation (2009). *Using PHQ-9 Diagnosis and Score for Initial Treatment Selection* [Internet]. MacArthur Initiative on Depression and Primary Care. Available from: [http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/score\\_table/](http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/score_table/) [Accessed 15th October].
- Mackinnon, A., Griffiths, K. M. & Christensen, H. (2008). 'Comparative randomised trial of online cognitive-behavioural therapy and an information website for depression: 12-month outcomes', *Br J Psychiatry*, 192 (2), 130-134.
- Oakley Browne, M. A., Wells, J. E. & Scott, K. M. (2006). *Te Rau Hinengaro: The New Zealand Mental Health Survey*, Ministry of Health, Wellington. Available from: [http://www.moh.govt.nz/moh.nsf/pagesmh/5223/\\$File/mental-health-survey.pdf](http://www.moh.govt.nz/moh.nsf/pagesmh/5223/$File/mental-health-survey.pdf)
- Perini, S., Titov, N. & Andrews, G. (2009). 'Clinician-assisted Internet-based treatment is effective for depression: randomized controlled trial', *Aust N Z J Psychiatry*, 43 (6), 571-578.
- ReachOut Australia (2009). *Cognitive behavioural therapy (CBT)* [Internet]. Available from: <http://au.reachout.com/find/articles/cognitive-behavioural-therapy-cbt> [Accessed 14th October].
- Spek, V., Cuijpers, P. et al (2007). 'Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis', *Psychol Med*, 37 (3), 319-328.
- Spek, V., Cuijpers, P. et al (2008). 'One-year follow-up results of a randomized controlled clinical trial on internet-based cognitive behavioural therapy for subthreshold depression in people over 50 years', *Psychol Med*, 38 (5), 635-639.
- Titov, N. (2009). *Depression (the Sadness Program)* [Internet]. Available from: <http://www.virtualclinic.org.au/index.php/conditions-we-treat/36-conditions-we-treat/48-depression> [Accessed 14th October].
- van Straten, A., Cuijpers, P. & Smits, N. (2008). 'Effectiveness of a web-based self-help intervention for symptoms of depression, anxiety, and stress: randomized controlled trial', *J Med Internet Res*, 10 (1), e7.
- Warmerdam, L., van Straten, A. et al (2008). 'Internet-based treatment for adults with depressive symptoms: randomized controlled trial', *J Med Internet Res*, 10 (4), e44.

#### **SEARCH CRITERIA TO BE USED:**

Cognitive Therapy  
 Depressive Disorder/diagnosis/psychology/\*therapy  
 Internet  
 Outcome and Process Assessment (Health Care)  
 Therapy, Computer-Assisted