

Developing a roadmap for the translation of e-mental health services for depression

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Abstract

Objective: e-Mental health services have been shown to be effective and cost-effective for the treatment of depression. However, to have optimal impact in reducing the burden of depression, strategies for wider reach and uptake are needed.

Method: A review was conducted to assess the evidence supporting use of e-mental health programmes for treating depression. From the review, models of dissemination and gaps in translation were identified, with a specific focus on characterising barriers and facilitators to uptake within the Australian healthcare context. Finally, recommendations for promoting the translation of e-mental health services in Australia were developed.

Results: There are a number of effective and cost-effective e-health applications available for treating depression in community and clinical settings. Four primary models of dissemination were identified: unguided, health service-supported, private ownership and clinically guided. Barriers to translation include clinician reluctance, consumer awareness, structural barriers such as funding and gaps in the translational evidence base.

Conclusion: Key strategies for increasing use of e-mental health programmes include endorsement of e-mental health services by government entities, education for clinicians and consumers, adequate funding of e-mental health services, development of an accreditation system, development of translation-focused activities and support for further translational research. The impact of these implementation strategies is likely to include economic gains, reductions in disease burden and greater availability of more interventions for prevention and treatment of mental ill-health complementary to existing health and efficient evidence-based mental health services.

Keywords

depression, e-mental health programmes, Internet, research translation, mental health services

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Major depression accounts for 8% of the disability burden in Australia (Begg et al., 2007). More than 4% of Australian adults experience a major depressive episode each year, with nearly 12% experiencing depression over the lifespan (Australian Bureau of Statistics, 2008). The direct and indirect costs of depression exceed AUD3 billion annually (Hickie, 2004), while the personal toll on people with depression and their families is considerable. However, only one in three Australians with a mental health problem seeks help from a health professional (Burgess et al., 2009). In addition, mental disorders are under-diagnosed (Goldman et al., 1999; Kessler et al., 2002; Mann et al., 2005), and use of evidence-based treatments is inadequate (Burgess et al., 2009; Goldman et al., 1999; Gyani et al., 2012; Harvey and Gumport, 2015). Meanwhile, the costs of providing mental health services are increasing, as evidenced through expenditure rising from AUD3.4 billion to AUD4.2 billion between 2006–2007 and 2010–2011 (Australian Institute of Health and Welfare, 2012).

There is increasing momentum for more efficient delivery of mental health services so that specialists can focus on people with severe mental health problems. There is a parallel call for the health system to be more responsive in the prevention and treatment of suicidality and mental health crisis, through earlier detection and intervention, and proactively targeting known precipitants of these problems (Gaynes et al., 2004; Rosen, 1997). Given the high prevalence of depression, negative effects associated with mood disorders and increasing health costs, there is a pressing need for better and more cost-effective prevention, identification and treatment strategies.

There have been rapid developments in online platforms for the identification, prevention and treatment of mental health problems, with e-mental health services shown to be highly effective, efficient and cost-effective (Andersson and Cuijpers, 2009; Andrews et al., 2010; Griffiths et al., 2010; Hedman et al., 2012; Richards and Richardson, 2012). E-mental health services are defined here as the range of automated evidence-based Internet programmes that are used to provide therapeutic content directly to consumers,

either with or without involvement from a clinician. This definition excludes the use of the Internet for manual delivery of traditional services, such as the use of email- or chat-based therapy. Standard therapies such as cognitive behaviour therapy (CBT) can be effectively delivered online to large numbers of people for a fraction of the cost of face-to-face therapies (Andrews et al., 2010; Griffiths et al., 2010; Hedman et al., 2012; McCrone et al., 2004; Scott et al., 2003). Consequently, the per-person cost of providing this level of treatment has become very low. Likewise, preventive services can be targeted to people with few symptoms, or behaviours likely to increase the risk of depression (e.g. alcohol or other

substance use), who would not meet the clinical criteria for a mental disorder, but would benefit from help.

Given the substantial evidence for their effectiveness, e-mental health programmes are considered a key component in bridging the service gap. The use of Internet treatments diminishes many key barriers to service use, including lower costs to the consumer, less stigma through anonymity and greater accessibility. However, e-mental health services exist largely independently of traditional service settings, with healthcare providers underutilising e-mental health systems in their practice (Christensen et al., 2011; Spurgeon and Wright, 2010).

Due to the current nature of funding for research and provision of e-mental health services, the development, maintenance and promotion of existing e-mental health programmes are dependent on funding to individual University-based research groups, with little collective approach to the provision of programmes and funding. The implementation of Internet treatments outside of research trials has proven challenging. Researchers have faced resistance to the implementation of e-mental health services in traditional care settings, but have also placed insufficient emphasis on the need for integration of services. There has been little translational research to guide decisions about service models, interaction between traditional and Internet-based treatment services, intensity of supports required and methods for engaging and retaining people in optimal treatments.

This article reports on the development of an implementation plan for translating evidence into practice regarding e-mental health services for depression. This development process was initiated in response to the Mental Health Call for Action initiated by the Mental Health Steering Group of the National Health and Medical Research Council's (NHMRC) Research Translation Faculty. The aim of this implementation plan is to identify key translational activities that need to be implemented to optimise the use of e-mental health programmes for depression in Australia over the next decade. More specifically, we aimed to

1. Assess the evidence supporting use of e-mental health programmes for treating depression;
2. Identify models of dissemination that are currently used for e-mental health programmes;
3. Identify gaps in the literature on translation of e-mental health programmes.

Method

The implementation plan for translating evidence regarding e-mental health services into practice was developed in three stages. First, a narrative meta-review (or overview of reviews) was conducted. Systematic reviews of the effectiveness of e-mental health programmes were identified,

along with reviews assessing supplementary outcomes such as cost-effectiveness, reach, reduced resource demands and reduced stigma. Reviews were excluded if they were not systematic or did not report separately on outcomes for Internet-based mental health treatment programmes targeting depression. Searches for review articles were conducted using PsycINFO, Medline and Google Scholar databases, up to July 2014. Review conclusions regarding evidence supporting the use of e-mental health programmes for treating depression were synthesised and summarised. Models for dissemination and gaps in translation were identified.

Second, further barriers and facilitators for disseminating e-mental health services for depression were identified with reference to the Australian Government's e-mental health strategy (Australian Government Department of Health and Ageing, 2012), drawing on consensus from the members of the NHMRC Mental Health Steering Group. Specific focus was on characterising barriers and facilitators of these gaps within the Australian healthcare context.

Finally, recommendations for promoting the translation of e-mental health services in Australia were developed in direct response to the identified gaps and are detailed in the discussion.

Results

Nine systematic reviews focusing on the effectiveness of e-mental health programmes for depression were identified (Andersson and Cuijpers, 2009; Andrews et al., 2010; Andrews and Williams, 2014; Griffiths et al., 2010; Hedman et al., 2012; Johansson and Andersson, 2012; Lokkerbol et al., 2014; Richards and Richardson, 2012; Spek et al., 2007). The consensus outcome in each review was that there are a number of effective and cost-effective e-health applications available for use in community and clinical settings. Specifically, in the most recent reviews, Hedman et al. (2012) identified 20 randomised controlled trials (RCTs) of Internet-based CBT for treating depression, with within-group effect sizes ranging from 0.38 to 2.27 (mean: 0.94). Internet-based CBT was found to be significantly more cost-effective compared to no treatment, with an average probability of cost-effectiveness at 57% at a willingness to pay of zero. Similarly, Lokkerbol et al. (2014) reported that e-health interventions are likely to increase the overall cost-effectiveness of the healthcare system, with health gains worth €1.45–€1.77 for every euro invested. Richards and Richardson (2012) conducted a meta-analysis of 19 studies of e-mental health programmes for depression, with a pooled effect size of 0.56. Johansson and Andersson (2012) reported that among 25 trials of online depression programmes, effect sizes ranged from 0.21 to 0.76 depending on the degree of support provided. Other meta-analyses have reported pooled effect sizes ranging from 0.41 to 0.76, while limiting to studies that include participants who meet criteria for major depression increases

the pooled effect sizes to between 0.58 and 1.12 (Andrews and Williams, 2014).

Based on the programmes identified from these reviews, with a focus on programmes developed for Australians, potential models for disseminating e-mental health programmes were identified.

Models of dissemination

While previous reviews have focused on effectiveness of e-mental health programmes for depression, few have used the literature on existing programmes to identify models of dissemination. Four models of delivery for e-mental health services emerged, identified through the programmes included in the review and through consensus of the Mental Health Steering Group. Each of these models has been tested to some degree in Australia or overseas, with each model having a distinct set of advantages and disadvantages. However, there are also considerable overlaps between models of e-mental health services. Programmes generally use CBT but sometimes incorporate elements of interpersonal or mindfulness-based therapy. Most programmes provide weekly lessons that progressively build upon the previous lessons to encourage mastery of dysfunctional thoughts, emotions and behaviours, followed by homework to practice and consolidate the skills learned (Andrews and Williams, 2014). Programmes may provide support in the form of clinician input to encourage adherence and resolve difficulties, although this type of support may also be provided by lay staff or in the form of automated (email or SMS) motivational reminders. There is some divergence on the level of support required for effective outcomes (Andersson and Cuijpers, 2008), as unguided programmes can be effective without requiring support staff (Christensen et al., 2006; Mackinnon et al., 2008). However, the intensity and nature of support that might be offered alongside e-mental health services is significantly less than what is currently required from clinicians in traditional services.

The four identified models of e-mental health service delivery are detailed below, with description of the advantages and disadvantages of each approach. Other models exist, including programmes that use non-clinicians for support (Titov et al., 2010) or unguided programme offered within a clinical setting. However, the four models described here reflect approaches most commonly reported in the literature:

1. *Open access, unguided model*: There are a number of evidence-based online depression treatment programmes in Australia that are publicly available and generally offered free to the user without requirement for clinician involvement. These include MoodGYM (moodgym.anu.edu.au), BluePages (www.bluepages.anu.edu.au), MyCompass ([Australian & New Zealand Journal of Psychiatry, 49\(9\)](http://www.

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mycompass.org.au) and Thiswayup/self help (thiswayup.org.au/self-help). Maintenance and updating are supported by Government grants or grants from other funding bodies to research institutions or health organisations. In Australia, the Government has invested AUD70.4 million to date in developing and funding telephone crisis and e-mental health services and has previously pledged a further AUD110.4 million to build a mature online mental healthcare environment (Australian Government Department of Health and Ageing, 2012). This is in addition to funding allocated to specific mental health services. The unguided model is the focus of the E-Mental Health Strategy for Australia, and the resulting mindhealthconnect website, which provides a common access point to free and paid services. Advantages of the model include the ease of referrals, the centralised financing mechanism (no need for clinicians to administer payments) and the possibility for individual users to directly access programmes without requiring clinician input. Barriers to uptake of such programmes include the need for a system to certify evidence-based programmes, the need to educate both the public and professionals on the availability of programmes and the identification of pathways of clinical responsibility when users fail to respond or symptoms deteriorate.

2. *Health service-supported model:* This model only differs from an open access model in that programmes are offered directly through traditional health services. This approach of embedding e-mental health programmes within the existing framework of mental health services has gained less traction in Australia than overseas (e.g. Engel et al., 2014; Kenter et al., 2013). For example, the National Health Service (NHS) in the United Kingdom has trialled delivery of the unguided MoodGYM programme directly through the NHS Choices portal using direct-to-public advertising on the NHS website and in NHS-branded newsletters, emails and social media, finding significant increases in well-being and significant decreases in depression and anxiety symptoms (Powell et al., 2013). A recent dissemination initiative in the United States saw 15 evidence-based psychotherapies disseminated and implemented within the US Department of Veteran's Affairs (VA) healthcare system (Karlin and Cross, 2014). The strategy involved a multi-faceted approach at various levels, including the policy level, provider level, local systems level, patient level and accountability level. Although this dissemination effort was focused on face-to-face psychotherapy rather than e-mental health programmes, the project's success suggests uptake of e-mental health services can be facilitated by existing health services. The health service-supported model has the same advantages and barriers to the open access model, except that the method of making the service available may increase use for those who access traditional services, while decreasing use among those who have limited access to clinical services.
3. *Private ownership model:* Online mental health services may be owned by private, for-profit organisations, with users paying the company directly for use or with payments subsidised by health insurance programmes or organisations for their employees. This model may require referral from clinicians. For example, the Dutch Interapy programme (also accessible in Australia, www.interapy.nl) provides online therapy with a psychologist for 5–20 weeks (Lange et al., 2003). The funding for the programme is covered by Dutch health insurers, if the client is referred by a medical doctor. Otherwise, participants may enrol and be billed directly for treatment costs. Employers may also cover such programmes for their employees. The advantages of the private model include the possibility of directly reinvesting income into maintaining and updating programmes. Private programmes also have some flexibility in payment models, as there may be scope to offer programmes to consumers through Primary Health Networks (formerly Medicare Locals) or other government entities paying for access to services. This system has worked in the United Kingdom, where programmes like bigwhitewall.com are provided to patients through local NHS Trusts. However, many international privately owned programmes may not be relevant to the Australian context, as synchronous online therapist services may overlap with face-to-face services that are already provided through Medicare, with no advantage in terms of effectiveness or cost-effectiveness. Other barriers include the lack of successful privately owned programmes currently in Australia, the need for education of a large number of stakeholders (health insurers/employers, professionals, public) and the need for oversight and certification of programmes.
4. *Clinically guided referral model:* Guidance for patients doing online mental health programmes has generally been shown to result in larger symptom reductions than for unguided programmes, although the effects of guidance may be modest (Baumeister et al., 2014). In addition, guided programmes require greater resources than unguided programmes, particularly due to the costs of additional clinician time (Titov et al., 2010). There is evidence from multiple RCTs that guided programmes work effectively in clinical practice, with number-needed-to-treat of two, high adherence, high patient satisfaction and

considerably reduced clinician time (Andrews and Williams, 2014). Existing programmes that use a clinically guided model include the Thiswayup/clinic (thiswayup.org.au/clinic) and the MindSpot treatment courses (www.mindspot.org.au). Funding for the programmes may be provided by government, health insurers or users. In this model, programmes are generally offered through selected clinicians in the community, with each clinician providing direct support to the user as they undertake the programme. Alternatively, a centralised team of clinicians may remotely support the user, enabling self-referral. The primary advantage of the clinician referral model is the direct support by clinicians. However, this advantage may also be a barrier to uptake, particularly in regions with low availability of clinicians and for people who do not access services or have high levels of self-stigma. Because of such barriers, there is emerging research to explore alternative forms of guidance to increase programme completion and engagement, including peer-based guidance (Nelson et al., 2014) and group-based guidance (Schulz et al., 2014).

Barriers to implementation

Through the identification of the four models of dissemination above, several consistent barriers to implementation were observed. It may be noted that many of the barriers for e-mental health programmes apply equally to traditional services. A key barrier to uptake is resistance to the use of e-mental health services among clinicians and consumers. For consumers, reluctance to use these services may stem from the stigma of depression (Gulliver et al., 2010), stigma of seeking help (Schomerus and Angermeyer, 2008), low mental health literacy and poor symptom recognition (Jorm et al., 2006), lack of awareness of existing evidence-based e-mental health programmes as an effective treatment source, scepticism regarding the performance of e-mental health services over traditional approaches (Kay-Lambkin et al., 2011) and a lack of established pathways to using e-mental health services in the community. For clinicians, resistance to e-mental health services may instead arise (Christensen et al., 2011; Dever Fitzgerald et al., 2010; Spurgeon and Wright, 2010) from a lack of awareness of e-mental health services, lack of training, resistance to changes in practice, concerns around efficacy, confidentiality and safety (indemnity), lack of the financial incentives that are currently available for face-to-face services, viewing e-mental health as a threat to face-to-face services, viewing e-mental health technologies as damaging or impeding the patient–clinician therapeutic relationship and lack of established pathways to provision of e-mental health services.

There is also a range of health system barriers. These include the financial costs of providing online services, particularly supported programmes, and a lack of quality assurance processes to identify evidence-based programmes to clinicians and consumers. In addition, to further integrate e-mental health programmes into the system of care, there is a need to better identify the most appropriate model(s) for programme delivery, ideally through stakeholder input and translational research. The integration process also needs to ensure ethical provision of e-mental health programmes, accounting for duty of care, privacy and confidentiality.

Translation research gaps

Finally, there are some gaps in the evidence for effective translation of e-mental health programmes. Research gaps are evident (Musiat and Tarrrier, 2014) in the areas of cost-effectiveness (Andrews, 2006; Hedman et al., 2012; Lokkerbol et al., 2014) and other potential benefits of integration of online depression programmes, such as reduced demand on therapist time (Andrews and Williams, 2014), reduced stigma (Griffiths et al., 2014), reduced wait times and greater accessibility for people living in rural areas (Williams and Andrews, 2013) and for other vulnerable populations (Choi et al., 2012; Shand et al., 2013). Suboptimal adherence to openly accessible online programmes (Christensen et al., 2009, 2011) suggests additional knowledge gaps in engaging users. Furthermore, the gap between technological advancements and the development of new online programmes becomes magnified by the relatively slow progress of efficacy and effectiveness research trials (Glasgow et al., 2014).

Enablers of implementation

Partially offsetting these barriers to implementation is the vast amount of work conducted to develop, maintain and update existing e-mental health programmes. There are a number of research groups and collaborations focused on improving outcomes for depression through technology, including the Young and Well Cooperative Research Centre, NHMRC Centre of Research Excellence in Suicide Prevention, NHMRC Centre of Research Excellence in Mental Health and Substance Use, NHMRC Centre of Research Excellence for Evidence-based Mental Health Planning and the NHMRC Centre of Research Excellence for optimising early interventions for young people with emerging mood disorder, in addition to specific research groups at a number of Australian universities.

The Australian Government's e-mental health strategy (Australian Government Department of Health and Ageing, 2012) provides additional impetus for the broader implementation of e-mental health programmes to improve access to mental health services. This strategy is

developing four programmes that are primarily focused on promoting existing evidence-based programmes. First, the eMHPrac project (www.emhprac.org.au) is a training initiative that aims to promote the use of existing evidence-based e-mental health resources among primary care workers across Australia from 2014 to 2017. Second, the mindhealthconnect website (www.mindhealthconnect.org.au) has been developed as a public portal for direct referral of people in the community to existing evidence-based Australian e-mental health programmes that have received funding from the Australian Government. Third, eheadspace is developing the capability to provide an online counselling service for young people. Finally, the Australian Government is supporting further development of MindSpot as a virtual clinic for treating depression and anxiety.

The e-mental health steering group that assisted the Government in developing the e-mental health strategy was disbanded in 2013, so ongoing support of the e-mental health strategy is uncertain. The actions recommended in the e-mental health strategy are concordant with those recommended for inclusion in Action 1 below, although there is no additional Government funding for the e-mental health strategy at present. Therefore, there is a need for the Australian Government to overhaul and update e-mental health policy.

Finally, there are examples of evaluative frameworks that could be developed into a fully fledged accreditation system for e-mental health service. The Beacon website (beacon.anu.edu.au) was developed in 2010 as a tool to recommend international online programmes for mental and physical health conditions, based on the available evidence for each programme. The site received funding from the Australian Government for 2 years to provide the service, although this funding has lapsed. An international framework for accreditation is also provided by the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency of the US Department of Health and Human Services. Their National Registry of Evidence-based Programs and Practices (NREPP, www.nrepp.samhsa.gov) provides an online database of mental health and substance abuse interventions that have been independently assessed and rated for quality of research and readiness for dissemination.

Discussion

This review of the evidence for implementing e-mental health programmes more widely into the Australian health system indicates that greater adoption of e-mental health services is warranted, given the extensive evidence for the effectiveness of these programmes. However, the review has identified a number of important barriers to greater implementation of e-mental health services. Emerging directly from these barriers, a number of key activities should be implemented in Australia over the next decade to

optimise the use of evidence-based e-mental health programmes. The specific activities were selected as broad responses to the gaps identified, with consensus around core recommendations built within the Mental Health Steering Group.

An implementation plan for optimising use of e-mental health programmes

Endorsement, education and funding. To address the evidence–practice gap, there needs to be greater acknowledgement of the need for evidence-based psychosocial programmes to be made available to all Australians. Endorsement by Government entities such as NHMRC of current evidence-based e-mental health programmes as one of the preferred first-line treatments for subclinical, mild and moderate depression, and as an adjunct for severe depression, would assist in promoting the use of these programmes. Such endorsement would be consistent with guidelines developed by professional associations (Fuller et al., 2012) and National Institute for Health and Care Excellence (NICE) guidelines for the treatment of depression, which recommend computer-based CBT in treatment of subclinical, mild and moderate depression (National Collaborating Centre for Mental Health, 2010). However, there is also research supporting the use of e-mental health programmes in individuals with severe depression (Andrews and Williams, 2014) and evidence suggesting that blended therapy is not necessary for e-mental health programmes to be effective (Kenter et al., 2015).

Education, training and marketing of e-mental health programmes to clinicians and consumers is another vital step in ensuring optimal uptake. All implementation activities require funding, as do the programmes themselves, as it is not possible to maintain, update or optimise e-mental health programmes without ongoing investment. As noted in the findings, there are a number of models that may be used to inform the way in which funds are distributed to the providers of these programmes. Further discussion of policy and funding structures for e-mental health services is provided in a recent report to the National Mental Health Commission (Christensen et al., 2014), which endorses a stepped-care approach to integration of e-mental health services in Australia. The conclusions of this report are similar to those of the Mental Health Call for Action developed for the NHMRC Research Translation Faculty.

Accreditation of e-mental health programmes. Parallel to endorsement, education and funding is the need for a Government-supported accreditation process. Such a process of quality assurance must underpin the delivery and funding models used in providing e-mental health services. No existing accreditation scheme (e.g. Therapeutic Goods Administration, Pharmaceutical Benefits Scheme, Medicare Benefits Schedule) is appropriate for e-mental health

programmes, so alterations to the Medical Services Advisory Committee regulations may be required. A new accreditation scheme developed by a range of government, research, clinical and consumer stakeholders may feed directly into funding models and identification of service pathways. Such a scheme may require a nuanced approach to the recommendation of appropriate e-mental health programmes, to accommodate rapid adaptation to changing technologies, recommendations for additional support alongside the approved programmes and appropriate methods of integration of recommended programmes into a range of practice settings.

Developing the field of translational research. Further developments in the discipline of translational mental health are also warranted. Activities such as conferences and publications could provide a focal point for the promotion of translation of evidence-based mental health programmes into practice and healthcare systems. Furthermore, greater emphasis should be placed by funding bodies on translational research, encouraging additional T3 research (implementation of research into practice) and T4 research (evaluation of the effectiveness of the implementation on health system outcomes). The rapid and relevant research paradigm (Glasgow et al., 2014; Tomlinson et al., 2013) incorporates multiple small-scale experiments among diverse users and settings and studies to rapidly test and refine various components of e-health interventions and new technologies. Such approaches to research may progress translation more effectively than traditional large-scale trials. Specific areas of research may include additional cost-effectiveness research; testing other outcomes such as reach, adoption and maintenance of use; testing different delivery and referral models such as stepped-care and clinical staging; developing more rapid screening and monitoring; evaluating the tailoring of e-mental health programmes; research on engagement and adherence particularly in vulnerable and underserved populations; development of user-led translation of e-mental health services; developing better methods to account for comorbidity; testing new technological elements; research on education and marketing; and testing ways to blend self-help with therapist contact.

Evaluation and impact of implementation

Optimising e-mental health programmes to address multiple outcomes (reach, efficacy, adoption, implementation, maintenance) will require maximising adherence and engagement, identifying methods to promote utilisation and incorporating appropriate technological features, such as tailoring of assessment and programme content, use of social networks and integration of mobile technology (Bennett and Glasgow, 2009). Translational efforts also need to account for the rapid pace of technological change

(Glasgow et al., 2014). Evaluating whether these outcomes are being met will require ongoing research to assess whether the needs of consumers, clinicians and other stakeholders are being met. Nevertheless, a distinct advantage of online programmes is that large amounts of data on usage, user characteristics and outcomes can be routinely collected due to the technological platforms through which they operate, enabling continual quality assurance.

E-mental health programmes can be delivered to large numbers of individuals, with greater fidelity and anonymity than traditional services (Andrews et al., 2010; Griffiths et al., 2010). Optimal application of evidence-based treatments for depression could increase treatment rates and the proportion of disability burden that is averted from 15% to 34% (Andrews et al., 2004). This would reflect a decrease in the years lost to disability from 120,000 to 95,000, that is, a 21% decrease in the overall disability burden for depression (Andrews et al., 2004). These increases in treatment rates would also come at reduced incremental costs for providing treatment (Andrews et al., 2004), particularly through increased use of online programmes that have evidence of cost-effectiveness relative to traditional services (Hedman et al., 2012; Lokkerbol et al., 2014). Such improvements in depression burden may also lead to reductions in work loss, lower rates of suicidal ideation and lower prevalence of comorbid conditions such as anxiety and substance use disorders.

In addition to economic gains and reductions in disease burden, direct benefits of this translation process would extend to clinical services and to consumers. Increased provision of services through evidence-based e-mental health programmes may provide greater availability of clinical resources for those who are most at need, increasing the efficiency of health services. E-mental health programmes would also assist in guiding health professionals such as general practitioners (GPs) to better support patients experiencing depressive symptoms. Unguided and guided programmes would both play roles in increasing the efficiency and effectiveness of existing health systems. Through the processes outlined in this review, consumers may also be provided with greater direct access to evidence-based self-help treatments, enabling them to address their symptoms earlier. Unlike traditional services, e-mental health services are available at any time and in any place, enabling evidence-based services to be delivered to large numbers of individuals at low cost.

Central to the field, however, is the need for continued translational research into the value and effectiveness of these efforts. It cannot be assumed that an evidence-based e-mental health programme that has demonstrated efficacy in one population or one clinical setting will be equally efficacious in all settings for all people. Just as evaluation of a novel pharmacotherapy is far more than discovery of a molecule, so is the testing of an e-mental health treatment programme. There is a genuine opportunity for Australia to

lead the world in this space and to ensure that e-mental health delivers on its potential. With the implementation of this translational plan, the impact of e-mental health services may be optimised.

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Declaration of interest

H.C., M.T., F.K.-L. and G.A. have developed e-mental health programmes but derive no personal financial benefit from these programmes. The authors alone are responsible for the content and writing of the paper.

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