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RESEARCH
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CASE FOR ACTION- PROPOSAL TO NHMRC

Translation of e-mental health services
for depression

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Steering Group (August 2014)**

MENTAL HEALTH

The National Health and Medical Research Council (NHMRC) Research Translation Faculty (the Faculty) was established as a key advisory forum in 2012. The primary work of the Faculty for the 2013-15 Triennium has been to help NHMRC accelerate the translation of research by identifying the most significant gaps between research evidence and health policy and practice in each of the major health areas in the NHMRC Strategic Plan, and to propose to NHMRC possible action it could consider taking to address that gap – these are called Cases for Action. In April and May 2013, fourteen Faculty steering groups were established as NHMRC working committees to each oversee the development of a Case for Action.

The Faculty's Mental Health Steering Group is comprised of a range of experts and includes primary (1°) and secondary (2°) representatives of NHMRC Health Care Committee (HCC), Prevention and Community Health Committee (PCHC) and Research Committee (RC). Further information is available at: www.nhmrc.gov.au/research/research-translation/research-translation-faculty/research-translation-faculty-steering-groups.

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Declaration of interests

The declarations of interests of Steering Group members, authors and contributors are available at Appendix 1.

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Mental Health ‘Case for Action’:

Translation of e-mental health services for depression

Submitted to NHMRC for consideration: August 2014

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PART 1: RATIONALE

1. Summary: The need for translation of e-mental health services

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 [1-10]. However, e-mental health services exist largely independently of traditional service settings, with health care providers underutilising e-mental health systems in their practice [11, 12]. 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 is increasing momentum for 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 [13, 14]. 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 [1, 2, 4, 15-17]. Consequently, the per-person cost of providing this level of treatment has become very low. Likewise, preventive services that promote mental wellbeing can be targeted to people with few symptoms who would not meet the clinical criteria for a mental disorder, but would benefit from help. While the focus of this Call for Action is on the treatment of depression, similar opportunities exist for the treatment and prevention of comorbid mental disorders, such as interventions that focus on anxiety disorders and alcohol and other drug use disorders [18, 19], which may also reduce depression symptoms. Treating major depression without consideration of comorbid conditions may be less effective, given that 47% of people with major depression also have an anxiety or substance use disorder [20].

Health technologies are leading to the development of new systems of care in the form of virtual clinics. There have also been recent developments in implementing efficient, precise screening for mental health problems using new technologies and methodologies that tailor items to the individual and facilitate ongoing monitoring [21]. By combining new screening methods with the assessment of core contextual variables, such as access to services, social support, and preferences for treatment, virtual clinics will be able to directly link individuals to appropriate services and empower individuals to identify services that meet their needs and preferences.

2. Why is this important?

2a) Burden

Mental disorders account for 13% of the burden of disease in Australia [22]. Depression is highly debilitating, carrying significant burden of disability, accounting for 8% of all years lived with disability [22]. More than 4% of Australian adults experience a major depressive episode each year, with nearly 12% experiencing depression over the life span [23]. The direct costs of depression exceed \$2.4 billion annually [23, 24], while indirect costs exceed \$12.4 billion annually [25], excluding the impact of subclinical depression. The personal toll on people with depression and their families is greater. However, only one in three Australians with a mental health problem seeks help from a health professional [26]. In addition, mental disorders are under-diagnosed [27-30], and use of evidence-based treatments is inadequate [27, 28, 31]. Given the high prevalence of depression and the negative effects associated with mood disorders, there is a pressing need for better

prevention, identification and treatment. Although this Case for Action focuses on the need to integrate e-mental health programs into treatment services, there is also a compelling case for greater implementation of e-mental health programs for prevention [2, 7]. Nevertheless, increased integration of e-mental health programs into treatment services may increase the availability and utilisation of such programs by people at risk for depression. By promoting mental health and functioning for people in vulnerable groups, the burden of depression may be further averted.

2b) Why has this particular gap been chosen?

Much work remains to improve treatment accessibility for depression and related problems, particularly in improving the interaction between people with depression and healthcare services.

There are many barriers to the identification and treatment of mental health problems, including poor symptom recognition, a lack of help-seeking behaviour, stigma of mental illness and inequitable access to traditional health services [32]. The costs of providing services are also increasing, as evidenced through expenditure in mental health services rising from \$3.4 billion to \$4.2 billion between 2006-07 and 2010-11 [33]. Internet treatments are 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. E-mental health programs also enable standardised and rapid assessment of individual needs for intervention, facilitating linkage to appropriate evidence-based services [34, 35].

Internet treatment can have an important role in broadening the delivery of evidence-based treatments across health and community settings, enabling evidence-based programs to be delivered to large numbers of people with high fidelity. Recent estimates indicate that 16% of the burden associated with depression is averted through conventional treatments [36]. If evidence-based treatments were to be applied optimally, the burden averted would increase to 34%, at significantly reduced cost [36]. In addition to reducing the disability burden of depression, such e-treatment gains may have resulted in work-loss days and suicidal ideation being halved. Furthermore, e-mental health services have great potential for bridging the gap in treating comorbid conditions, particularly anxiety and substance use disorders, where traditional services suffer from problems of integration [37].

Although there is substantial evidence for the effectiveness of internet programs in reducing depression symptoms, translation of internet treatments outside of research trials has proven more difficult. There has been little translational research to guide decisions about service models, intensity of supports required, and methods for engaging and retaining people in optimal treatments.

2c) Why is this gap relevant to health and health practice or policy in Australia?

Australia is a world leader in the development of evidence-based e-mental health services. Australian programs have been adopted into clinical settings [e.g., 6, 38], although we are yet to see a large-scale national strategy for the implementation of e-mental health services into existing face-to-face service structures. As a result of increasing costs of traditional mental health care in Australia, there is momentum for more efficient delivery of mental health services. Furthermore, potential inequities in access to care in rural settings and among specific at-risk groups limit the availability of traditional face-to-face services. E-mental health services have great potential in improving service gaps for vulnerable and underserved populations [15, 39-41], while reducing costs of care [3, 4, 10, 36].

3. Evidence–practice gap

Currently, there are a number of effective and cost-effective e-health applications available for use in the community and clinical settings [1, 2, 4-7, 10]. However, these programs are not utilised to their full potential in healthcare services. 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 programs is dependent on funding to individual University-based research groups, with little collective approach to the provision of programs and funding.

Given this disconnect between current evidence and practice, there is a need to formalise the use of e-health services within the community and clinical practice as an evidence-based first line treatment for subclinical and mild-moderate depression and as an adjunct treatment for severe depression [39]. This will increase the use of e-mental health programs in the community, thereby increasing access to evidence-based treatment. However, such take-up of e-mental health services requires: (a) including e-health applications in policy and best practice guidelines, (b) increasing practitioner and community awareness of e-health applications through targeted education for clinicians and public awareness campaigns, (c) developing an ongoing sustainable funding model for e-health programs, potentially based on usage, which would allow these programs to be continually updated in accordance with clinical evidence and technological advancements, and (d) upgrading and extending current portals such as mindhealthconnect.org.au to provide clearer pathways to services and to comprehensively manage standards.

4. Models of e-mental health service delivery

There are a number of potential models of integrating e-mental health services into traditional services, and each of these has been tested to some degree in Australia or overseas. Each model has a distinct set of advantages and disadvantages, with costs for differing stakeholders. However there are also considerable overlaps between models of e-mental health services. Programs generally use cognitive behavioural therapy, but sometimes incorporate elements of interpersonal or mindfulness-based therapy. Most programs 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 [6]. Programs 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 (e-mail or SMS) motivational reminders. There is some divergence on the level of support required for effective outcomes [42], as unguided programs can be effective without requiring support staff [43, 44]. There is consensus, however, that the intensity and nature of support that might be offered alongside e-mental health services will be significantly less than what is currently required from clinicians in traditional services.

A brief discussion of four potential models of e-mental health service delivery follows.

4a) Model 1: Open access, unguided model

There are a number of evidence-based online depression treatment programs in Australia that are publicly available and generally offered free to the user without requirement for clinician involvement. These include MoodGYM, BluePages, ecouch, MyCompass and Thiswayup/selfhelp. Maintenance and updating is supported by Government grants or grants from other funding bodies to research institutions or health organisations. In Australia, the Government has invested \$70.4 million to date in developing and funding telephone crisis and e-mental health services, and has previously pledged a further \$110.4 million to build a mature online mental health care environment [45]. This is in addition to funding allocated to specific mental health services. This funding is then

used by various organisations to develop websites or programs that provide evidence-based information, assessment, treatments or treatment options, which are free to the user and publicly available. There may be scope for alternative funding models, such as making accredited programs available through universal health insurance (see 4b), with a payment for each access to the programs being returned to the developing agency to maintain and support the program.

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. Such programs may facilitate the development of virtual clinics, providing a comprehensive service given there are evidence-based freely available programs for a broad range of mental health problems.

Additional 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 programs without requiring clinician input (particularly helpful in rural/remote or underserved populations). Barriers to uptake of such programs include the need for a system to certify evidence-based programs (government endorsement), the need to educate both the public and professionals on the availability of programs and the identification of pathways of clinical responsibility when users fail to respond or symptoms deteriorate. In addition, online programs requiring clinician support may require separate funding mechanisms, although systems of automated support are also in use. Models of peer review might be used for a certification process – the ANU Beacon site [46] summarises evidence from effectiveness and efficacy trials and may serve as an initial framework for program endorsement.

4b) Model 2: Health service-supported model

This model only differs from the open access model in that programs are offered directly through traditional health services. The National Health Service in the UK has trialled delivery of MoodGYM through the NHS Choices portal, finding significant increases in well-being and significant decreases in depression and anxiety symptoms [38]. A recent dissemination initiative in the US saw 15 evidence-based psychotherapies disseminated and implemented within the US Department of Veteran’s Affairs (VA) healthcare system [47]. The strategy involved a multi-faceted approach at various levels, including the policy level, provider level, local systems level, patient level, and accountability level. Several strategies were employed at each level that were facilitated and actively encouraged by the VA. Although this dissemination effort was focussed on face-to-face psychotherapy rather than e-mental health programs, such findings suggest 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 that access traditional services, while decreasing use among those that have limited access to clinical services.

4c) Model 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 programs or organisations for their employees. This model may require referral from clinicians. For example, the Dutch Interapy program (also accessible in Australia) provides online therapy with a psychologist for 5-20 weeks [48]. The funding for the program 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 programs for their employees. An Australian private e-Mental Health organisation, Sentiens, has recently ceased operation.

The advantages of the private model include the possibility of directly reinvesting income into maintaining and updating programs. Private programs also have some flexibility in payment models,

as there may be scope to offer programs to consumers through Medicare Locals or other government entities paying for access to services. This system has worked in the United Kingdom, where programs like bigwhitewall.com are provided to patients through local NHS Trusts. However, many international privately-owned programs 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 programs 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 programs.

4d) Model 4: Clinically-guided referral model

Guidance for patients doing online mental health programs has generally been shown to result in larger symptom reductions than for unguided programs. There is evidence from multiple randomised controlled trials that these programs work effectively in clinical practice, with number-needed-to-treat of 2, high adherence, high patient satisfaction, and considerably reduced clinician time [6]. However, programs requiring clinical guidance have greater resource constraints than unguided programs, particularly through the costs of additional clinician time. Existing programs that use the clinically-guided model include the Thiswayup/clinic and the MindSpot treatment courses. New funding mechanisms may be developed to enable direct prescriptions for such services covered by alterations to the MSAC regulations, as they would be not suitable for cover via the Pharmaceutical Benefits Scheme or Medicare Benefits Schedule. In this model, programs are generally offered through selected clinicians in the community, with each clinician providing direct support to the user as they undertake the program. Alternatively, a centralised team of clinicians may remotely support the user.

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 program completion and engagement, including peer-based guidance [49] and group-based guidance [50].

4e) Implementation and evaluation of different service models

In choosing how to deliver e-mental health programs, issues to consider include effectiveness, funding, monitoring, support, regulation, accessibility and reach, ethics and clinician attitudes. Any delivery model that is implemented will require ongoing evaluation using an appropriate dissemination framework. Different implementation models can be complementary, and there may be considerable benefits of providing programs that are based on multiple delivery models. For example, clinician-guided e-mental health programs may be most helpful for more severe depression, while self-guided programs may be more appropriate for less severe depression. All aspects of the implementation and evaluation of service delivery require significant capacity and funding, ensuring that resources and people are available to provide and monitor the service appropriately. Clearly defined mechanisms and structures are required to delineate the locus of accountability for the monitoring and provision (including fidelity and availability) of the service, and identify ownership of the service and data associated with the service. Furthermore, funding mechanisms need to reflect the need for ongoing, consistent evaluation, updating of services and maintenance of existing programs.

The role of clinicians in program delivery also has implications for the types of support that are required for the implementation of programs. Many models of delivery require platforms that facilitate continuity of care, with access from multiple stakeholders including the clinician, the user and the evaluating body. Accordingly, there are a number of ethical issues that play into the development of delivery model, including privacy and confidentiality and developing appropriate

structures to ensure duty of care [51]. Using clinicians as a gatekeeper to services may also impact on the accessibility of the services, as clinician groups may have differing perceptions on the role of e-mental health services as adjunctive and supportive, or as a replacement to the clinician [42]. Some clinician groups may have additional ambivalence towards online programs [11]. Similar barriers also exist for potential consumers of e-mental health services [11, 52]. Consequently, platforms need to be designed taking into account perspectives of multiple stakeholders. User-led development of services is likely to be critical in increasing uptake of services. Additional barriers to uptake are discussed in Section 5b.

Once an appropriate translational model is selected, it is important that ongoing evaluation is conducted to ensure the quality, speed, and public health impact of efforts to move from research into long-term effectiveness in real-world settings. Evaluation of e-mental health implementation, with reference to the actions proposed by this CFA, is further discussed in Section 7.

PART 2: PROPOSED ACTION

5. Enablers and barriers of implementation

In addition to the wealth of evidence for the effectiveness of e-mental health programs, there are policies and programs that further enable the integration of e-mental health into existing health services. There are also clear barriers for integration, which are addressed by the Actions detailed in Section 6.

5a) Primary enablers of implementation

The Australian Government's e-mental health strategy [45] provides additional impetus for the broader implementation of e-mental health programs to improve access to mental health services. This strategy is developing four programs of particular relevance to this CFA, which are primarily focused on promoting existing evidence-based programs.

Firstly, the eMHPrac project (www.emhprac.org.au) is an initiative that aims to promote the use of existing evidence-based e-mental health resources among primary care workers across Australia. The three-year project, which started in 2014, aims to provide education and training on the use of e-mental health services to general practitioners, allied health workers and indigenous health workers across Australia. The project brings together researchers from Queensland University of Technology, The Australian National University, The Black Dog Institute, Menzies School of Health Research and University Centre for Rural Health at The University of Sydney. Training will include face-to-face workshops, online training modules, online discussion groups and webinars, with ongoing evaluation.

Secondly, 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 programs. In addition to e-mental health programs, the site links to partnered content including fact sheets, audio and video and online communities. The website is operated by Healthdirect Australia, and includes linkage to programs focused on depression, anxiety and stress.

The third program is the provision of an online counselling service for young people through eheadspace (www.headspace.org.au). Finally, the Australian Government is supporting MindSpot (www.mindspot.org.au) 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.

Other facilitators for implementation include existing research groups and research collaborations that have a focus on improving outcomes for depression. These include the Young and Well Cooperative Research Centre (www.youngandwellcrc.org.au), NHMRC Centre of Research Excellence in Suicide Prevention (www.cresp.edu.au), NHMRC Centre of Research Excellence in Mental Health and Substance Use (www.comorbidity.edu.au), 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 (www.optymise.org.au), along with individual research groups throughout Australia. Specific existing evidence-based online programs receive funding from the Department of Health to support provision of services to the community, although this funding expires in June 2015 with no current indication of renewal. Funding for

research into new and existing online programs comes primarily from NHMRC competitive grants, while financial support for the development of new programs is often absent.

In terms of existing frameworks for accreditation, the Australian National University set up the Beacon website (beacon.anu.edu.au) in 2010 as a tool to recommend international online programs for mental and physical health conditions, based on the available evidence for each program. The site received funding from the Australian Government for two years to provide the service, although this funding has lapsed. This website could be used as a model for accreditation of e-mental health services.

A broader framework for accreditation is provided by the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency of the United States 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.

5b) Primary barriers to implementation

Many of the barriers for e-mental health also apply to traditional services. For example, the financial costs to the government and consumer for traditional services tend to be markedly greater than for online services. For traditional services there is also a lack of clinician availability in rural and remote areas, resistance among consumers to using the services, and dropout from face-to-face therapy.

The primary barriers to the integration of e-mental health programs into existing service models are listed below.

- The need for identification of the most appropriate model(s) for the integration of programs through stakeholder input and translational research
- The financial costs of providing online services, particularly supported programs
- Suboptimal adherence to openly accessible online programs [11, 53]
- A lack of quality assurance processes to identify evidence-based programs to clinicians and consumers
- Resistance to use of services among consumers due to stigma of depression [32], stigma of seeking help [54], low mental health literacy and poor symptom recognition [55], lack of awareness of existing evidence-based e-mental health programs as an effective treatment source, scepticism regarding the performance of e-mental health services over traditional approaches [52], and a lack of established pathways to using e-mental health services in the community
- Resistance to use among clinicians due to 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 financial incentives that currently available for face-to-face services [11, 12, 51], 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
- The need for further evidence [56] of cost effectiveness [3, 4, 10] and other potential benefits of integration of online depression programs, such as reduced demand on therapist time [6], reduced stigma [57], reduced wait times, and greater accessibility for people living in rural areas [39] and for other vulnerable populations [40, 41]
- The need for ethical provision of e-mental health programs, accounting for duty of care, privacy and confidentiality

- The relatively slow progress of efficacy and effectiveness research trials of e-mental health services in comparison to technological advancements in the mechanisms of content delivery [58]

6. Addressing the gap

Four key actions for NHMRC to assist in the translation and upscaling of e-mental health programs for depression are described below. The actions aim for a national effort in making evidence-based online programs available to all Australians, although effective integration of these services may require input from both federal and state-based organisations. Input from a range of stakeholders may be required to implement each action.

These stakeholders include:

- The Department of Health and other Australian Government agencies,
- State Government agencies,
- Researchers and research organisations (e.g., Australasian Society for Psychiatric Research, specific research groups),
- Health economists,
- Consumers, carers and organisations that support them,
- Clinicians and clinician bodies (e.g., Australian Medical Association, Australian Psychological Society, Royal Australian & New Zealand College of Psychiatrists, Royal Australian College of General Practitioners, Australian Clinical Psychology Association, Medicare Locals/Primary Health Networks),
- Aboriginal and Torres Strait Islander individuals and organisations,
- Relevant non-government organisations including service organisations,
- Professional bodies (e.g., Mental Health Council of Australia),
- Private enterprise including private health insurance,
- Information technology companies, and
- Telecommunications and marketing companies.

6a) Action 1: NHMRC Policy Statement

An NHMRC policy statement would provide a framework for the implementation of e-mental health services. Such a statement would be a short-term goal, with feasible completion within one year. Although most of the actions called for in the statement may be beyond the remit of NHMRC, the statement would constitute a formalised roadmap for scaling up e-mental health programs, promoting targeting of resources and encouraging stakeholder participation in these processes.

Specific actions called for within the policy statement include:

- 1) Call for evidence-based psychosocial programs to be made available to all Australians, particularly for vulnerable groups that do not currently receive equitable access to services,
- 2) Endorsement of current evidence-based e-mental health programs as one of the preferred first-line treatments for subclinical, mild and moderate depression, and as an adjunct for severe depression,
- 3) Call for governments to provide funding for the provision, maintenance and updating of e-mental health services and platforms for ongoing public use, which includes funding for platforms, maintenance, updating and optimising programs to the evolving evidence base, and updating programs (software, hardware, security) to meet evolving technological demands,

- 4) A call for development of accreditation processes to ensure the quality of all e-mental health programs provided,
- 5) Recognition of the need for additional translational research to test the components of e-mental health programs that are most suitable for encouraging scaling up,
- 6) A call for education and marketing of e-mental health programs directly to the community (aimed at consumers), and to clinicians to develop their competencies in providing and supporting e-mental health services,
- 7) Recognition of the need to ensure e-mental health services are consumer-centred,
- 8) Recognition of the need for input from consumers and clinicians to identify preferred models of e-mental health translation,
- 9) A call for stakeholder input to identify the most effective approaches of referring consumers to e-mental health services, based on consumer needs, available technology and clinician workflow, and,
- 10) A call for policy to require current government-funded mental health agencies (e.g., beyondblue, Mission Australia, Lifeline, ontheline) to provide access to demonstrated evidence-based, accredited online programs.

6b) Action 2: Development of a new accreditation system

E-mental health services would benefit considerably from an accreditation system to ensure the quality of the e-mental health programs provided. This development process would be a medium-term goal, with feasible completion within 3 years, allowing a careful and considered approach to defining minimum standards of evidence. The NHMRC would be one of several stakeholders to oversee the development of the accreditation system, with input from DOH, Medical Services Advisory Committee, researchers, clinician bodies, consumer organisations and professional bodies. No existing accreditation scheme (e.g., Therapeutic Goods Administration) is appropriate for e-mental health programs. The new accreditation scheme may feed directly into funding models, although alterations to the Medical Services Advisory Committee regulations may be required, as accredited e-mental health programs would not be suitable for cover via the Pharmaceutical Benefits Scheme or Medicare Benefits Schedule. The provision of accreditation would enable clearer service pathways, by identifying and promoting effective, evidence-based programs to clinicians, consumers and service agencies that may be mandated to provide accredited programs. The accreditation scheme would require funding for its development, funding for the scheme itself, and the development of appropriate decision-making processes and supportive policy. The accreditation scheme may also require a nuanced approach to the recommendation of appropriate e-mental health programs, to accommodate rapid adaptation to changing technologies.

6c) Action 3: Annual roundtable summits on e-mental health translation

Annual e-mental health translational roundtable summits hosted by NHMRC over the next five years would bring together stakeholders to more rapidly progress the translation and implementation of e-mental health programs. These summits would provide a focal point for discussion and action around several translational themes, including the development of the accreditation program, identification of appropriate models of provision and referral pathways, and identification of effective methods of dissemination (education and marketing). The roundtable would also enable the latest translational research relevant to e-mental health (see Action 4) to be disseminated.

6d) Action 4: Targeted call for translational e-mental health research

While e-mental health programs have been shown to be effective, additional translational research is required to test models of translation, identify optimal referral pathways, and test the

components of e-mental health programs that are most suitable for encouraging uptake. Such research would include T3 research (implementation of research into practice) and T4 research (evaluation of the effectiveness of the implementation on health system outcomes). It may also be advantageous to encourage the uptake of rapid and relevant research paradigms [58, 59], which include multiple small scale experiments amongst diverse users and settings and smaller pragmatic studies, to rapidly test and refine various components of e-health interventions and new technologies rather than conducting traditional large scale trials. The targeted call should commence in the short term to inform translational activities over the next 5-10 years.

Specific areas of research to be covered by the targeted call include:

- 1) Testing cost-effectiveness, reach, efficacy, adoption and ongoing usage (maintenance) of e-mental health programs as they are being scaled up,
- 2) Testing different delivery models to ascertain outcomes such as ease of referral, accessibility, program adherence and follow-up,
- 3) Economic modelling and ongoing evaluation to identify most effective models of implementation and funding,
- 4) Evaluating methods for rapid and effective screening/monitoring in the online context,
- 5) Identifying effective methods to link online assessment with appropriate treatment recommendations,
- 6) Evaluating tailoring of e-mental health programs to individual needs and characteristics,
- 7) Identifying effective ways to promote engagement and adherence to e-mental health programs particularly in vulnerable and underserved populations including those living in rural and remote areas, indigenous Australians, culturally and linguistically diverse Australians (including new migrants and refugees), LGBTI Australians, young people and older adults,
- 8) Examining stakeholder preferences / requirements and the development of user-led translation of e-mental health services,
- 9) Testing the effectiveness of different approaches to referral, such as stepped-care models and clinical staging,
- 10) Testing transdiagnostic methods to account for comorbidity and global health (including anxiety, substance use, trauma, physical disability, intellectual disability),
- 11) Testing the effectiveness of interfaces/portals and other technological elements including the development of mobile applications,
- 12) Testing the effectiveness of education and marketing in promoting uptake, and,
- 13) Testing how self-help interventions can be blended most effectively with therapist contact (e.g., role of adjunctive vs. primary interventions; combination with pharmacotherapy; role of e-mental health programs in assessment, case management, self management, education, peer support, CBT, etc.).

7. Evaluation of the CFA

Actions listed in this CFA require the support of evidence from ongoing, robust translational research. In particular, research support is required to ensure that uptake of services is optimised, appropriate referral pathways are identified and appropriate models of care are funded.

If fully implemented, success of the action will be assessed in terms of:

- Better **reach** of services, evidenced through decreasing disparity between service availability in rural and urban areas and across socio-economic status,
- **Efficaciousness** and effectiveness through the accreditation of programs that have shown efficacy and, subsequently, through reduction in depression symptoms across the community,

- Greater **adoption** of services, evidenced by increases in rates of evidence-based service use among people experiencing symptoms of depression and increases in the use of evidence-based e-mental health programs,
- **Implementation** of clear service pathways to increase use of e-mental health programs through clinicians and directly to consumers, and,
- **Maintenance** of benefits of integrating e-mental health services over the next decade with appropriate long-term support to ensure viability and continuously improve therapeutic content and update technological features.

Optimising e-mental health programs to address these outcomes will require maximising adherence and engagement, identifying methods to promote utilisation, and incorporating appropriate technological features, such as tailoring of assessment and program content, use of social networks and integration of mobile technology [60]. Translation efforts also need to account for the rapid pace of technological change, as traditional evaluation models tend to be too slow to adapt to the e-health field [58].

Evaluating outcomes of this CFA will require qualitative and quantitative research to scope consumer, clinician and other stakeholder needs to identify appropriate models of care and referral pathways. Evaluation of the success of the CFA will require periodic reviews of progress, which may be conducted in conjunction with the annual roundtable meeting of stakeholders detailed in Section 6c. Nevertheless, a distinct advantage of online programs 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. These data enable rapid and continuous evaluation of effectiveness and other outcomes.

It will also be important to support specific types of research to evaluate long-term outcomes, including:

- Studies to assess geographical variations in uptake of services and rates/symptoms of depression (reach),
- Longitudinal studies and community-based trials to assess changes in depression and service use on an individual level resulting from the implementation (effectiveness, adoption, implementation, maintenance),
- Data linkage studies to assess changes in service use on a community level (adoption, implementation, maintenance),
- Health services research to identify how changes to services and accreditation schemes impact on clinicians, consumers and the wider community (implementation, maintenance), and,
- Health economics research to assess whether implementation of the recommended actions is cost-effective (effectiveness, implementation, maintenance).

Within this program of translational research, consideration should be given to a number of outcomes beyond depression and rates of service use. These include, but are not limited to, symptoms of other mental health problems (particularly anxiety disorders), suicidal ideation and suicidal behaviours, substance use, stigma, mental health literacy, physical health, medication use, satisfaction with services and adherence to services.

PART 3: IMPACT

8. Potential impact

Online programs can be delivered to large numbers of individuals, with greater fidelity and anonymity than traditional services [1, 2]. Online programs have great potential for personalised treatment programs, better ongoing monitoring of outcomes, and services that are more responsive to consumer needs and preferences. As noted in Section 2, 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% [36]. 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 [36]. These increases in treatment rates would also come at reduced incremental costs for providing treatment [36], particularly through increased use of online programs that have evidence of cost-effectiveness relative to traditional services [4, 10].

Such improvements in depression burden would 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. Based on 2007 estimates, losses from work productivity, job turnover and employee replacement attributable to depression have been conservatively estimated to cost the Australian economy \$12.4 billion annually [25]. This may be an underestimate as it only accounts for costs associated with depressive disorder, omitting the considerable additional effects of depressive symptoms on lost productivity [61]. Given the potential 21% decrease in disability burden associated with optimal application of evidence-based treatments for depression, it may therefore be concluded that the annual savings to the economy of providing online programs in Australia may reach \$2.6 billion.

This estimate represents a maximum level of savings, with a number of complexities and underlying assumptions, such as the assumption that the level of burden from depression will remain constant and the assumption that the significant barriers of engaging the community in online programs can be overcome. Nevertheless, existing government funding for online mental health services is \$27.6 million annually [45]. While this figure does not account for the costs of required research to develop programs and the costs of accreditation, the scale of potential benefits suggests that significant additional investment is likely to be cost effective.

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 programs may provide greater availability of clinical resources for those who are most at need, increasing the efficiency of health services. E-mental health programs would also assist in guiding health professionals such as GPs to better support patients experiencing depressive symptoms. Unguided and guided programs would both play roles in increasing the efficiency and effectiveness of existing health systems.

Through these translational processes, consumers would 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. Increased access to e-mental health services may reduce consumers' need for traditional clinical services and empower individuals to take greater control of their healthcare needs. With the advent of tailored e-mental health programs, online services will be personalised to individual needs and preferences for treatment, with the promise of greater engagement and better outcomes. Impact may extend beyond the reduction of depression symptoms, to reductions in comorbid mental health problems,

including anxiety, suicide risk and substance use, along with potential for reductions in physical health problems and improvements in overall quality of life. The translation of e-mental health services may also serve as a model for other mental health and physical health conditions, providing a framework for the integration of evidence-based online programs.

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Mental Health Case for Action - Declarations of Interests

The declarations of interests of Steering Group members, authors and contributors to this Case for Action are listed below.

Name and Role(s)	Interest(s) declared
Dr Christopher Davey <ul style="list-style-type: none"> • Steering Group Chair • Author 	Grants <ul style="list-style-type: none"> • Currently holds and has applied for NHMRC grants during membership of the Steering Group.
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Prof Helen Christensen <ul style="list-style-type: none"> • Steering Group member • Author 	Grants <ul style="list-style-type: none"> • Holds NHMRC grants and will apply for further grants. Speeches/lectures <ul style="list-style-type: none"> • Advocacy for mental health research, advocacy for e-health. Relationships <ul style="list-style-type: none"> • Director, Black Dog Institute, Chief Investigator (CIA), Centre of Research Excellence in Suicide Prevention. Activities <ul style="list-style-type: none"> • Translational research.
Prof Phyllis Butow <ul style="list-style-type: none"> • Steering Group member • Contributor 	Grants <ul style="list-style-type: none"> • Holds an NHMRC grant and will apply for others in the future. Speeches/lectures <ul style="list-style-type: none"> • Has presented about the need to address depression in cancer groups, including immigrants to Australia with cancer.
Prof Philip Mitchell AM <ul style="list-style-type: none"> • Steering Group member • Research Committee contact • Author 	Grants <ul style="list-style-type: none"> • Current NHMRC funding as of Feb 2014 – Chief Investigator (CIA) on program grant; Chief Investigator (CIB) on project grant; Chief Investigator on Centre of Research Excellence (CRE), Chief Investigator on Partnership Grant • Discussions concerning NHMRC funded Dementia Collaborative Research Centres (DCRC): A member of the UNSW School of Psychiatry (which I head); Professor Henry Brodaty is one of the lead investigators of the DCRC. Consultancy fees/honorarium <ul style="list-style-type: none"> • I have not accepted remuneration from any pharmaceutical company for over 5 years, and have not been a member of a pharmaceutical company advisory board for over 5 years. Board membership <ul style="list-style-type: none"> • Pro bono board member of two organisations: Black Dog Institute; and Anika Foundation for Adolescent Depression and Suicide.

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<p>Prof Gavin Andrews</p> <ul style="list-style-type: none"> Author 	<p>Non-financial interests</p> <ul style="list-style-type: none"> Developer and advocate for an eHealth system. Has relinquished all rights to the intellectual property to University of NSW/St Vincent's Hospital.