

# The future of e-mental health

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Australian & New Zealand Journal of Psychiatry  
47(2) 104–106  
DOI: 10.1177/0004867412474076

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Although Australia has a small population, there are occasionally areas in which it punches well above its weight. One of these is the rapidly growing area of e-mental health. The term *e-mental health* refers to ‘*mental health services and information delivered or enhanced through the Internet and related technologies*’ (Christensen et al., 2002). Australian mental health researchers were amongst the first to realize the potential of this area. They have developed and evaluated a number of pioneering e-treatment programs and psychoeducation websites. Indeed, Australia has been responsible for around half of the world’s e-mental health programs and has produced more publications on the topic over the last decade than the rest of the world put together (Christensen and Petrie, 2013a). Fortunately, the Australian Government was quick to capitalize on the positive research findings and is providing on-going financial support for the provision of these services to the public (Australian Government, 2012).

In acknowledgment of Australia’s current leading position and the fast-moving pace of this area, the ANZJP invited four leading researchers to provide their perspectives on how they see this area evolving over the next 10–15 years. The result is the *Viewpoints* in this issue by Christensen and Petrie (2013b), Titov et al. (2013), Proudfoot (2013) and Griffiths (2013). The articles cover diverse aspects of e-mental health, but all indicate that e-mental health will grow in importance and have major implications for the whole mental health sector.

In order to synthesize the predictions, we conducted a thematic

analysis of the four contributions, and discuss some recurring themes below.

## Accelerating growth in technology development and adoption

All the *Viewpoints* noted that the speed of technology and program development is accelerating and that there will be technologies and devices available in the future that we cannot predict today. At times it can be surprising to realize the short lives of many technologies that are currently ubiquitous. Google was founded in 1998, Facebook became open to the public in 2006, and the first Apple iPhone became available in Australia in 2008. Rapid growth in the use of mobile phones, as well as their capabilities, has led to the birth of a fledgling health discipline, mHealth, only relatively recently. New devices, which until their development we did not realize we needed, will continue to be created. These technological developments will transform mental health care and present many opportunities for clinical practice, population mental health and research.

## Opportunities for clinical practice

We have already seen major developments in the availability of e-therapy. This trend is likely to continue, with greater tailoring of interventions to suit individual needs. Using mobile phone technology, it will be possible to monitor a person’s symptoms and functioning in real time, allowing personalized early intervention and

relapse prevention. It will also be possible to prompt users to do specific therapeutic tasks tailored to, and contingent on, their individual needs.

These advances may lead to changes in professional roles. Stepped care approaches will be much easier to implement, with e-health providing much of the support for people with milder problems, and skilled clinicians reserved for the more complex cases. Professional roles may need to change, with new types of mental health workers required, who will support the e-mental health interventions used in the early steps. This has already occurred in the United Kingdom, where as part of the Improving Access to Psychological Therapies program, ‘low intensity workers’ support clients with mild disorders as they work through self-help books or computer-based cognitive behavioural therapy (CBT) (Clark, 2011).

## Opportunities for consumer empowerment

Arguably the greatest change will be in the area of consumer empowerment. The Internet allows consumers to have direct access to information,

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self-help therapy and peer support. It will inevitably change the relationship between the consumer and the health practitioner, giving greater power to the consumer. Already, consumers are able to create and share information with their peers, including ratings of what treatments work (e.g. [www.whatworks4u.org](http://www.whatworks4u.org) and [www.patientslikeme.com](http://www.patientslikeme.com)) and which professionals provide the best service (e.g. [www.ratemds.com](http://www.ratemds.com)). Consumers will also have personal control of electronic health records. Information technology will allow consumers and carers to mobilize rapidly for advocacy at local, national and international levels. In the longer term, there may be a transition to more consumer-centred and run mental health services.

### Opportunities for population mental health

There are likely to be increasing applications for monitoring and improving mental health in the population. In the area of monitoring, it will be easier to map prevalence and service needs through automated surveys. This could be used, for example, to assess needs in regions that have been affected by disasters or to identify suicide clusters.

In the area of population intervention, social media will give new opportunities for mental health promotion. It will also be easier to disseminate promotion and prevention interventions in schools and workplaces.

### Opportunities for research

The Internet reduces the difficulty in collecting and processing data from geographically dispersed individuals, using online questionnaires or more advanced techniques such as wearable biosensors and implanted microchips (Griffiths, 2013). This makes it possible to conduct large trials, which will help answer the question of what treatments work best for which people, including the testing of cross-cultural portability. There may also be

opportunities for linking genome sequencing and electronic health records to allow better prediction and tailoring. It will also be possible to gain a greater understanding of the mechanisms by which treatments work, by using mobile technology to assess changes in real time. In the area of classification, it will be possible to test diagnostic criteria in samples large enough to study low prevalence disorders and minority groups. The growth of e-mental health will lead to large amounts of data becoming available. Inevitably, new approaches to analysis will be needed to mine these data.

### Integration with health systems

To date, e-mental health interventions have largely developed independently, although there have been recent moves towards greater integration, such as the mindhealthconnect portal ([www.mindhealthconnect.org.au](http://www.mindhealthconnect.org.au)) set up by the Australian Government. More broadly, e-mental health will have to be integrated both into a broader e-health system and into health care systems in general. Existing clinical services have the capacity to make greater use of e-mental health resources than they currently do. The development of electronic health records will also be a potentially unifying influence.

### Emerging issues that need to be dealt with

#### *The need for more evaluation*

While e-mental health has been a rapidly growing area of research, much of what is currently available has not been evaluated. As Christensen and Petrie (2013a) have pointed out, over half of the web interventions have never been evaluated in a trial and only one mobile phone application has been scientifically evaluated. Clearly, practice is moving well ahead

of the evidence and the opportunities for research in this area are not being fully realized. Others have noted that traditional research methods do not match the pace of technological development, and it may be appropriate to consider other more flexible, iterative methodologies often used in engineering research and development (Whittaker, 2012). One example is the multiphase optimization strategy, which includes steps that systematically and efficiently optimize interventions before a randomized controlled trial is conducted (Collins et al., 2007).

#### *The need for new funding models*

Health services are traditionally provided for within particular jurisdictions, such as nations and states, but e-mental health services are not confined by geographic boundaries. Any psychoeducation or therapy services are potentially available to anyone with electronic access. The main inhibitors of global spread are cultural rather than geographical. For e-mental health services in a widely understood language like English, the boundaries are well beyond any individual country. International coordination will be required to maximize the potential of e-mental health. This is particularly apparent in the area of funding, where services funded by a small nation like Australia might be more widely used in other countries than locally. International funding models are clearly needed.

Even at the national level, insurance schemes need to consider how e-mental health services fit in. Traditionally, reimbursement is based on standard face-to-face services. However, we may see more mixing of face-to-face and e-health services, such as when a mental health professional provides support for automated CBT delivered over the internet. Funding models should not be a barrier to adopting innovative forms of intervention.

### The need for ethical regulatory frameworks to keep pace

Regular updates to research and practice standards will be required to respond to ethical issues that arise from new developments in e-mental health technologies. New mental health workers, such as the virtual consumer consultant (Griffiths, 2013), will be required to meet new standards of practice. Standards for web and mobile applications will need to be developed to manage the large amount of personal data collected and to ensure its security and confidentiality. Professional bodies may need to collaborate in order to respond effectively to emerging ethical issues rather than wait for regulatory bodies to respond.

### Some concerns

While acknowledging the growing importance of e-mental health as presented in the accompanying four *Viewpoints*, we do have some concerns.

### Satisfying the need for human care

While there are many exciting opportunities afforded by the developments in e-mental health, there may be downsides as well. One is that the technological developments may overshadow the fundamental need of people with mental health problems for human care. Clinicians have long realized the importance of the therapeutic alliance in producing change, and social support is well known to be important to recovery. It is conceivable that future technologies will provide an experience that is on par with personal human contact. On the other hand, there is also a danger that people in need of personal care will be forced into a technological substitute that is second best. Despite the overwhelming acceptance of new information technology by society, particularly by young people, it is notable that in a recent study of

adolescents' help-seeking intentions for a mental health problem, face-to-face services were the strongest preference, with only 16% expressing a preference for online treatment (Bradford and Rickwood, 2013).

### Social inequality

A second topic of concern is in the area of social inequality. Some e-mental health proponents contend that the digital divide is narrowing, as most people in developed countries have access to the Internet and cheaper mobile devices will mean interventions can reach underserved populations in developing countries. Yet it is not clear whether advances in e-mental health will improve or worsen inequality, with some evidence suggesting that users of these programs typically being those who least need them (i.e. those who are well-educated with a high degree of health literacy, and who already have access to services) (Murray, 2012).

### Technology: a double-edged sword

In some instances, technology itself can be the problem. For instance, it is not uncommon for individuals with paranoid ideation to believe that mobile phones are being used to monitor their thoughts. The rapid changes in technology can also be daunting and even those who are tech-savvy confess to being overwhelmed by the constant evolution of both hardware and software. Therefore, for those who are psychologically compromised, interfacing with e-mental health is likely to remain a significant challenge. Finally, the Internet has made information easily accessible but identifying the correct information requires guidance and all too often individuals seeking advice about their psychological well-being are misdirected to rogue sites. Therefore, quality control is a significant problem.

### Conclusion

The Internet and related technologies are here to stay and have opened up a 'brave new world', which e-mental health has eagerly embraced – especially in Australia. The implications of this are unknown and most if not all aspects of this development remain untested. It would be interesting to travel 10 years into the future and look back over the preceding decade to see how the next chapter of this e-book unfolds.

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