Royal Commission into Victoria's Mental Health System

WITNESS STATEMENT OF DR HILA HASKELBERG

I, Dr Hila Haskelberg, Program Manager of THIS WAY UP, Level 4, The Clinical Research Unit for Anxiety and Depression (CRUfAD), The O'Brien Centre, St Vincent's Public Hospital Sydney, 394-404 Victoria Street, Darlinghust NSW 2010 say as follows:

1 I make this statement in my personal capacity but with authorisation from St Vincent's Health Australia (**SVHA**).

2 I make this statement on the basis of my own knowledge, save where otherwise stated. Where I make statements based on information provided by others, I believe such information to be true.

BACKGROUND

Qualifications and experience

3 I have the following qualifications:

(a) Bachelor of Science (Neuroscience Interdisciplinary Program, Double Major Psychology and Biology); and

(b) Doctor of Philosophy (HIV clinical research).

4 My professional experience is in:

(a) health service program development, research and management, with a focus on equity and ensuring access to evidence-based care to vulnerable populations;

(b) clinical research in healthcare and academia;

(c) establishing and maintaining partnerships between public healthcare services, academic research, government and industry; and

(d) continuous improvement and quality assurance.

5 Attached to this statement and marked 'HH-1' is a copy of my Curriculum Vitae.

Current role and responsibilities

6 I am currently the Program Manager at the Clinical Research Unit for Anxiety and Depression (**CRUfAD**), which is a joint facility of St Vincent's Hospital Sydney (**SVHS**) and the University of New South Wales (**UNSW**).

7 My responsibilities in this role include:

(a) managing the operations, maintenance, and continuous improvements of THIS WAY UP™ (**TWU**);[1]

(b) liaising with stakeholders to manage national and international research collaborations and commercial licence agreements; and

(c) analysing, preparing and communicating data reports to executives of SVHA, the Federal Department of Health, and other peak bodies.

THIS WAY UP

TWU's services for people living with mental illness

8 TWU is a joint initiative between SVHS and UNSW. Established over a decade ago, our key service is the provision of evidence-based, internet-delivered Cognitive Behavioural Therapy (**iCBT**) programs to people living with anxiety and depressive disorders. These programs are either disorder-specific or transdiagnostic across multiple co-existing disorders. We also offer short wellbeing online programs (i.e. Coping with Stress, Intro to Mindfulness, Student Wellbeing, and Managing Insomnia). In total, we have 18 programs which are all developed by a team of academic and clinical staff (including psychiatrists and clinical psychologists) at CRUfAD.

Key characteristics of TWU

9 The CRUfAD team have taken the evidence-based tools and strategies used in face-to-face CBT treatment and created the TWU online programs, making use of comic-based images, action plans, videos, and extra resources. When a person starts a program, they are introduced to a character that learns about their anxiety and/or depression, and over a number of weeks, they learn how to use new skills to address their symptoms and improve how they are feeling. The iCBT programs are:

(a) effective for consumers across all symptom levels (mild, moderate and severe),[2] noting that the majority of our consumers present with comorbid disorders;[3]

(b) practical, as they teach core cognitive-behavioural coping skills (these help consumers to manage their thoughts, feelings and behaviours);

(c) convenient, thus enabling continuity of therapeutic learning, as they:

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1 This Way Up, <https://thiswayup.org.au/> [accessed 2 July 2020].

2 Bower, P., Kontopantelis, E., Sutton, A., Kendrick, T., Richards, D. A., Gilbody, S., Liu, E. T. (2013). Influence of initial severity of depression on effectiveness of low intensity interventions: meta-analysis of individual patient data. *BMJ, 346*, f540. doi:10.1136/bmj.f540.

3 Hobbs, M. J., Mahoney, A. E. J., & Andrews, G. (2017). Integrating iCBT for generalized anxiety disorder into routine clinical care: Treatment effects across the adult lifespan. J Anxiety Disord, 51, 47-54. doi:10.1016/j.janxdis.2017.09.003; Newby, J. M., Mewton, L., & Andrews, G. (2017). Transdiagnostic versus disorder-specific internet cognitive behaviour therapy for depression and anxiety in primary care. Journal of Anxiety Disorders, 46, 23-34.

(i) offer flexible and self-paced online access;

(ii) can be assessed outside normal business hours (9 am to 5 pm) (more than 47% of users access the courses outside these hours); and

(iii) do not require travel time, as compared to face-to-face treatment;

(d) comprehensive, as they contain a full dose of evidence-based, step-by-step CBT treatment;

(e) accessible, as they:

(i) do not require a referral or an assessment and are available as self-help; and

(ii) are fully automated and can be completed with minimal or no clinician involvement to achieve similar outcomes to a clinician-delivered modality (although our research shows that regular clinician contact improves course adherence); and

(f) cost-effective to consumers,[4] clinicians and health care services.

10 An example of a TWU course is the Mixed Depression and Anxiety course.[5] The course includes six lessons that follow the illustrated stories of two characters as they learn to manage their symptoms of anxiety and depression using cognitive behavioural strategies. Each lesson includes evidence-based and practical skills such as controlled breathing, progressive muscle relaxation, thought monitoring, structured problem solving, assertive communication, relapse prevention and more. The program also includes action plans, downloadable resources, progress tracking and reminders. It can be accessed at anytime from anywhere via the Internet using a computer or a smartphone.

Target groups of TWU

11 TWU courses are designed and evaluated for consumers aged 18 years and above, with the exception of our TeenStrong course that is designed for 12-17 years old and their parents and carers.

12 We started TWU as a way of offering clinicians in the community (for example, general practitioners (**GPs**), psychologists, psychiatrists, and other health professionals) better access to evidence-based interventions for use with their clients. Our iCBT courses were originally designed to be used alongside face-to-face treatment to facilitate self-

4 Anderson, R., Wong, N., Newby, J. M., & Andrews, G. (2015). The non-medical out-of-pocket costs to attend a free anxiety disorders treatment clinic in Australia. Australasian Psychiatry. doi:10.1177/1039856215613004.

5 This Way Up, 'Mixed Depression and Anxiety Course' <https://thiswayup.org.au/how-we-can-help/courses/mixed-depression-and-anxiety/> [accessed 2 July 2020]; Newby, J. M., Mackenzie, A., Williams, A. D., McIntyre, K., Watts, S., Wong, N., & Andrews, G. (2013) Internet cognitive behavioural therapy for mixed anxiety and depression: a randomized controlled trial and evidence of effectiveness in primary care. Psychol Med. doi:10.1017/S0033291713000111.

management by consumers, thereby reducing the demands on clinician time, increasing capacity of clinicians in the community, and reducing waiting lists. In 2015, we made our courses available directly to users without the requirement of clinical supervision. We then tailored the courses accordingly in terms of emails, messages, and notifications.

13 Accordingly, TWU's iCBT courses are now available to the public as well as to clinicians who would like to use them in their practice. We equip not only clinicians to work together with their clients to complete the courses, but also consumers from the general public who wish to learn evidence-based skills to manage their mental health by themselves. Anyone (over 18 years old) from the general public in Australia can sign up and complete a course by themselves. People overseas can access the courses only under the supervision of clinicians under our legal Terms of Use.

14 Our data show that the preference for the self-help option is increasing and the majority of current users access the courses as self-help. People, however, are more likely to adhere to and complete a course if it is recommended and supported by their clinician (for example, their GP). Clinicians in the community may supervise their clients, with whom they have already established relationships, in undertaking the courses. Alternatively, clinicians may recommend their clients to undertake the courses by themselves. There should be greater awareness of digital self-help interventions, as well as which interventions are evidence-based (and proven to improve clinical outcomes), within both the mental health workforce and the general public.

Success of TWU in helping people to improve their mental health and wellbeing

15 Using evidence-based practice is crucial. As CRUfAD is a clinical research unit within a healthcare facility, we are in a unique position to measure the success of TWU in both randomised controlled trials (**RCTs**) and in real-world, routine care settings. Our research results have been published internationally.[6]

16 We measure the success of the courses by analysing their efficacy and effectiveness in the treatment of anxiety and depressive disorders and related conditions. This involves analysing the changes in the symptoms of each consumer's distress, depression and anxiety severity, and functional impairment at the start, middle and end of a course (i.e. the effect size).[7]

17 Outcomes are measured with a combination of self-report measures (administered digitally) and structured clinical interviews during the development and research evaluation of our courses. Once the course becomes available to the general public, the measures are primarily via consumers' self-reporting in response to validated psychometric questionnaires. Results on these measures are made available to the

[6] CRUfAD, 'Our Research' <https://crufad.org/our-research/> [accessed 2 July 2020].
[7] Cohen, J. (1988). Statistical power analysis for behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

consumer to help them gain further insight into their progress, as well as to their clinician if they are completing a course as clinician-supervised.

18 Each course has questionnaires that are specific to the relevant disorder (for example, the course for Obsessive Compulsive Disorder (**OCD**) has validated measures relevant to OCD). The questionnaire also includes questions on whether the consumers found the course useful, what was challenging for them and what can be improved on. We therefore receive continuous feedback and maintain a large database for quality assurance analysis to ensure that our courses are consistently successful in helping people to improve their mental health and wellbeing.

19 Overall in our RCTs, the programs were found to be more effective than control groups and resulted in large effect sizes (between 0.8 to 1.5)[8] with a Number Needed to Treat (**NNT**) of 2 (that is, for every 2 people treated with our courses, 1 recovers); in comparison, selective serotonin reuptake inhibitors (a type of antidepressant medication) has a NNT of 7.[9]

20 Our research has also found that:

(a) while the improvement in outcomes is similar under controlled settings in RCTs versus uncontrolled settings in routine care, attrition rates are lower in RCTs than in the real world[10] which is one of the main issues in using iCBT in routine care; and

(b) while there is variation attributable to individual circumstances, the nature of the target disorder of a program has differential effect sizes (for example, disorders such as panic disorder and social anxiety respond better to CBT,[11] while disorders such as OCD correlate with smaller effect sizes).[12]

Role of people with lived experience in the design and evaluation of TWU

21 People with lived experience are involved in the development and evaluation of TWU courses at different time points.

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8 Andrews, G., Cuijpers, P., Craske, M. G., McEvoy, P., & Titov, N. (2010). Computer therapy for the anxiety and depressive disorders is effective, acceptable and practical health care: a meta-analysis. PLoS ONE, 5(10), e13196. doi:10.1371/journal.pone.0013196; Newby, J. M., Twomey, C., Yuan Li, S. S., & Andrews, G. (2016). Transdiagnostic computerised cognitive behavioural therapy for depression and anxiety: A systematic review and meta-analysis. Journal of Affective Disorders, 199, 30-41. doi:10.1016/j.jad.2016.03.018.

9 Arroll, B., Elley, C. R., Fishman, T., Goodyear-Smith, F. A., Kenealy, T., Blashki, G., . . . MacGillivray, S. (2009). Antidepressants versus placebo for depression in primary care. Cochrane Database of Systematic Reviews(3).

10 Newby, J. M., Haskelberg, H., Hobbs, M. J., Mahoney, A. E. J., Mason, E., & Andrews, G. (2020). The effectiveness of internet-delivered cognitive behavioural therapy for health anxiety in routine care. J Affect Disord, 264, 535-542. doi:https://doi.org/10.1016/j.jad.2019.11.087; Hobbs, M. J., Mahoney, A. E. J., & Andrews, G. (2017). Integrating iCBT for generalized anxiety disorder into routine clinical care: Treatment effects across the adult lifespan. J Anxiety Disord, 51, 47-54. doi:10.1016/j.janxdis.(2017).; Newby J et al, Effectiveness of transdiagnostic internet cognitive behavioural treatment for mixed anxiety and depression in primary care, Journal of Affective Disorders, (2014).

11 Williams AD, O'Moore K, Mason E, Andrews G. The effectiveness of internet cognitive behaviour therapy (iCBT) for social anxiety disorder across two routine practice pathways. Internet Interventions. (2014); 1: 225-229.

12 Mahoney AE, Mackenzie A, Williams AD, Smith J, Andrews G. Internet cognitive behavioural treatment for obsessive compulsive disorder: A randomised controlled trial. Behav Res Ther. (2014);63:99-106. doi:10.1016/j.brat.2014.09.012.

22 When the courses are first developed, they are evaluated by focus groups of consumers for their acceptability, usability and suitability. The groups are usually a mix of people from different demographics that are reflective of the target users. The feedback of consumers is taken into account before the courses are tested in pilot trials (with a different set of consumers) to determine their feasibility and acceptability. Consumers' feedback from the pilot trials is again taken into account before we carry out RCTs (with a different and larger set of consumers) to determine the courses' efficacy. RCT evaluations include a qualitative assessment of user experience. Once we know that a course is clinically effective, we launch it on TWU and continuously collect feedback from users after their first lesson, mid-way through the course, and at the end of the course.

23 Please also see paragraphs 17, 18 and 86 in relation to the qualitative assessment of user experience and collection of feedback.

Suitability and effectiveness of TWU courses

Circumstances where TWU courses are suitable

24 Initially, our target group for TWU courses are consumers living with mild to moderate anxiety and depression; further research has shown that iCBT courses are also effective for the severe range of these disorders (please see paragraph 9(a) above).

25 Nevertheless, those living with severe mental illness may need to have their clinicians supporting them as they undertake a TWU course, and are likely to require more complex treatment.

26 TWU's courses are suitable and effective:

(a) as a standalone treatment;

(b) as preparatory treatment, and to help manage realistic expectations regarding psychological treatment, while people are on waiting lists to access face-to-face treatment (noting that CRUfAD's experience with the Anxiety Disorders Clinic is that some people found that they did not require face-to-face treatment after completing one of TWU's courses);

(c) as adjunct therapy, in conjunction with treatments (for example, pharmacotherapy), or for other co-morbidities (for example, a consumer may be receiving face-to-face addiction treatment while completing a TWU course for anxiety). In a recent pilot study, 56% of users accessing TWU courses reported that they were concurrently receiving face-to-face therapy and 44% of such users are concurrently taking medication for their condition; or

(d) as a refresher to prevent relapse after face-to-face treatment.

27 Our research suggests that our courses are suitable for those who are looking for convenient and accessible treatment, and are self-motivated to learn skills and strategies to help manage their difficulties. The convenience and accessibility of our courses enable consumers to access the full dose of treatment at their own pace, such that there is continuity of therapeutic learning. Also, I believe that the courses are suitable for those who wish to maintain privacy and anonymity, as we do not require users to provide their full name. We only ask that they provide their first name, email address, country of residence, age and gender; the provision of other details is optional.

28 Relevantly, the patterns of users seeking digital mental health services reflect the patterns of people seeking face-to-face treatment. For example, our data indicates that we have more female users (with an average age of 38-39) who are from major cities. Close to 30% of course registrations are by users from regional or remote areas (from the ones who provided their postcode at registration).

Circumstances where TWU courses may not be suitable

29 Importantly, iCBT is not a magic solution to all mental health needs of all consumers. Our research found that TWU courses may not be suitable for individuals who:

(a) are experiencing schizophrenia, psychosis, bipolar disorder, or a substance use disorder as TWU courses have not been evaluated in these populations;

(b) are in severe distress and are experiencing significant suicidal thoughts and intentions – these consumers are likely to require urgent assistance from a clinician;

(c) are taking sedative medications such as benzodiazepines or atypical antipsychotics to manage their anxiety; or

(d) are facing barriers when trying to access digital self-help interventions (discussed in paragraph 32 below).

30 Nevertheless, it is possible for such consumers to be successful in completing TWU courses with additional support or alongside other interventions.

Other considerations

31 Different people have different needs, learning styles, and priorities. Not all users will complete a TWU course after starting it due to different reasons – some may not benefit from iCBT and will require other types of interventions, their life circumstances and motivation may change throughout the program (for example, they may not have time ('life got in the way'), or they may get better and feel that they got what they needed from the online program.

Barriers faced by people living with mental illness when accessing digital self-help interventions

32 Based on our experience, the barriers people living with mental illness face when trying to access digital self-help interventions (beyond the usual barriers to accessing mental health treatment) include the following:

(a) **Access to technology**: Different factors contribute to the 'digital divide' in Australia,[13] including age, geography, education and affordability. People may not have access to the requisite technology such as a smartphone, computer or Internet. Additional investment is required to address the technology gaps. Furthermore, people may not feel comfortable using technology. Community outreach is needed so that these people receive help with the set up and registration process and have access to Internet. Relevantly, in our face-to-face Anxiety Disorders Clinic at SVHS we have computers and portable tablets available for patients to access the TWU courses when they visit the hospital for routine check-ups. CRUfAD also works with the SVHS Homeless Health service to assist people experiencing homelessness to complete TWU courses with support from their case managers, as part of the service's holistic multidisciplinary care coordination.

(b) **Severe mental illness**: People living with severe mental illness may find it challenging to consume, process, or act on substantial amounts of detailed written information. For this cohort, the treatments require multidisciplinary teams providing medical, psychological and social interventions. Technology is a tool to assist these teams (which may comprise of clinicians, social workers, community outreach workers etc.) to support clients, but any digital intervention should be part of a more comprehensive set of interventions. For example, clinicians in SVHS' inpatient services help patients to set up an account with TWU while they are still in hospital, so that the patients can continue with TWU's online courses post-discharge and are supported by their clinician.

(c) **Multiple options of digital programs**: People may be overwhelmed by the multiple options of digital self-help interventions that are available. Health professionals and peak bodies retain a key role in directing consumers to appropriate interventions for their needs (please also see paragraph 54 below regarding the Head to Health website).

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13 Australian Bureau of Statistics, 'Household Use of Information Technology, Australia, 2016-17' <https://www.abs.gov.au/ausstats/abs@.nsf/mf/8146.0?OpenDocument> [accessed 2 July 2020].

(d) **Learning difficulties or language barriers**: People may have learning difficulties or language barriers that affect their ability to process written information or may be unable to read English. While TWU courses are based on comic images, there is still a level of literacy needed to register and complete the lessons and activities.

(e) **Unreceptive to online treatment**: People are more likely to seek treatment when they experience a crisis and/or an extreme change in their life circumstances. Those who are experiencing a major life crisis may prefer receiving empathy and support from a clinician to address their strong immediate needs. In addition, they may not have the time (6-12 weeks) or the headspace to engage with an online program, and will require the flexibility that a clinician can provide to help them apply the therapeutic concepts to their symptoms. As such, they may resist using digital options and will need to receive face-to-face treatment first. Once their condition has stabilised (and if there is interest), the clinician can then seek to use digital tools to equip and enable them to cope with any future crises.

(f) **Challenges in self-directed learning**: People who experience challenges in self-directed learning may experience difficulty in adhering to digital self-help interventions. As such, routine clinician check-ins will be important to help them to do so.

33 In relation to the challenges in self-directed learning, TWU seeks to overcome this barrier as far as possible by providing:

(a) encouragement through emails, messages and videos;

(b) feedback on progress via regular assessments;

(c) additional resources such as recovery stories from prior users and videos of SVHS clinicians giving advice (such that they are able to experience care from a clinician);

(d) frequent validation and supportive messaging about the many ups and downs that occur through treatment and recovery; and

(e) self-help tools such as activities to help with time management and scheduling calendar.

Collaborations to improve access to mental health courses

34 TWU has recently collaborated with Bupa Australia (**Bupa**) to improve access to mental health courses. Bupa members are currently provided a full rebate when they complete TWU courses (subject to conditions).

35 This type of partnership requires:

(a) **Transparency**: Partners need to be transparent and upfront as to their respective long-term goals, to ensure that both sides understand each other and are able to align the vision of the partnership with their shared goals. Bupa (being a private health insurer) may have different business objectives from SVHS (being a public hospital), but we both sought to increase access to evidence-based mental health care. We respected each other's objectives and wanted to create greater value for consumers by collaborating.

(b) **Passion and commitment**: The people involved from both sides need to be passionate about, and committed to achieving, the shared goals of the partnership, with support from executives for innovation.

(c) **Communication and trust**: Regular and direct communication, together with mutual trust, are crucial, especially when challenges emerge. In addition, flexibility and creativity are required to solve issues (technical, legal, etc.) together. Bupa and TWU had regular communication with each other; there were days where I was liaising with the contact person from Bupa almost every hour close to the launch of our pilot project.

(d) **Pilot project**: Small-scale pilot projects of the proposed collaboration model should be carried out before partnerships commit to implementing projects on a larger scale, so that there is an opportunity to iron out any issues and partners are content that the collaboration is working before taking the next step. TWU and Bupa had carried out a pilot project to test how Bupa members would respond, understand the demand for TWU courses, evaluate the outcomes, and gather feedback to improve the project. The success of the pilot project led to the expansion of the offering to all eligible Bupa members.

36 Relevantly, having the same team members from both sides throughout the project, together with long-term objectives and strategies, can help ensure that pilot projects evaluated to be effective are then developed to a greater scale. Executive support to provide broader strategic direction is also helpful in ensuring this.

IMPACT OF THE DIGITAL REVOLUTION

37 We have not conducted research in relation to the impact of the digital revolution. I have, however, set out in paragraphs 38 to 45 below my personal views on this topic.

Impact of the digital revolution on people's expectations of how they find and access services

38 Nowadays, people expect all services to have a digital presence and digital offerings, whether these services are in relation to banking, shopping, travel, education, or healthcare. We expect a service that is easily accessible at any time, from anywhere, and on any device we choose.

39 In the context of TWU, the change to make our courses available to the general public (as a self-help pathway) was driven by the demand from consumers (please see paragraph 12 above). We need to ensure that our courses are mobile device-friendly, given that most people now use mobile devices instead of desktop computers. People may be on the sofa after having a bad week and may search online for ways to, for example, cope with anxiety (we are aware of the questions that people search online before accessing TWU's website). These people may look for a service that they can start using immediately on their mobile devices.

40 Engagement is an important consideration in using digital tools. We are all used to the Apple or Google seamless experience (that is, Google immediately provides us with what we want) and have high expectations of digital services. We expect a personalised experience that is highly targeted to our needs and that is a part of an ecosystem of services – that is, if we provide information to one service, we do not want to start over and provide the same information to another service.

41 There are also changes in the way we consume content. The shift in recent years to having bite-sized content and immediate gratification or bingeing (the Netflix effect) can create a further challenge for engagement in mental health treatment such as CBT, which requires work over a period of time. Mental health treatment requires persistence and perseverance to initiate and consolidate behavioural change; CBT requires time to learn, practice and develop skills. Therefore, consumers' expectations need to be managed to understand that, unfortunately, there is no quick fix in mental health treatment – it can't be completed overnight.

Impact of the digital revolution on people's mental health

Positive effects

42 The positive effects of the digital revolution on the mental health of individuals include:

(a) reduced barriers to allow greater access to up-to-date information – consumers and clinicians are empowered by having access to knowledge at any time and from anywhere;

(b) an increase in mental health literacy and greater access to psychoeducation, support and evidence-based treatment;

(c) the facilitation of supportive communications between consumers and family, carers or treatment providers – for example, TWU has resources on how consumers can discuss their conditions with family and carers;

(d) people can take an active part in their mental health care (in particular, by using self-help programs) – this leads to an increased personal sense of agency and ability, and allows people to have greater insights on their feelings, thoughts and actions;

(e) accessing treatment discreetly and anonymously is possible online; and

(f) greater availability of evidence-based clinical tools that may be used for upskilling clinicians.

Negative effects

43 The negative effects of the digital revolution on the mental health of individuals include the presence of a multitude of unregulated digital products that promise to, for example, 'boost your mood' with no evidence base. A recent paper by Harvard notes that are more than 10,000 applications in the application store of mobile devices that are mental-health related and most do not conform to clinical guidelines.[14] Just as treatment for diabetes or cancer would not be recommended unless it is evidence-based, digital interventions for mental disorders (such as depression or anxiety) that are not evidence-based should not be recommended.

44 Information is made available online at a great speed, but with no gatekeepers (for example, a government accreditation body) to properly evaluate and filter such information so that people are aware whether they accessing an evidence-based product. Technology is a tool; as with any tool, it needs to be used properly.

45 Relevantly, the Australian Commission on Safety and Quality in Health Care (a government agency) is developing the National Safety and Quality Digital Mental Health Standards (**Proposed Standards**), and has released a consultation draft of the Proposed Standards.[15] These standards can help to address the issue of having no gatekeepers in relation to digital interventions for mental health, as consumers and clinicians can be

[14] Torous, J., & Roberts, L. W. (2017). Needed innovation in digital health and smartphone applications for mental health: transparency and trust. JAMA Psychiatry, 74(5), 437–438.

[15] Australian Commission on Safety and Quality in Health Care, 'National Safety and Quality Digital Mental Health Standards' <https://www.safetyandquality.gov.au/standards/national-safety-and-quality-digital-mental-health-standards> [accessed 2 July 2020].

confident in choosing to use digital interventions that meet the Proposed Standards. Please also see paragraphs 87 and 88 below.

EMERGING DIGITAL TRENDS AND OPPORTUNITIES IN MENTAL HEALTH

Opportunities and challenges for a mental health system in a digital world

46 From my experience, the opportunities for the mental health system in relation to digital therapeutic services are at different levels.

Opportunities for patients

47 Digital technologies can overcome some of the barriers to access face-to-face and 'traditional' mental health assessment and treatment by:

(a) improving the convenience and allowing quicker access for people who wouldn't otherwise have access to mental health care because, for example, they would need to travel a great distance;

(b) reducing the impact of stigma, particularly self-stigma, that people may experience when in need of treatment (for example in small communities where everyone knows one another and dual relationships may be at play), as online and self-help services can allow anonymity, privacy and confidentiality;

(c) increasing patients' mental health literacy and personal sense of agency to maintain positive mental health;

(d) preparing patients for face-to-face treatment with realistic expectations; and

(e) equipping patients with tools to reduce the potential of relapsing.

Opportunities for clinicians

48 If digital therapeutic services are integrated within the mental health system, and clinicians are able to access up-to-date best practice and evidence-based digital tools, this would empower clinicians to better support consumers. This also helps redirect limited clinician time towards more complex cases and to better monitor patients' symptoms.

Opportunities for the healthcare system

49 Digital therapeutic services:

(a) have greater scalability, as well as increased efficiency and consistency;

(b) support better integration between health services and improve communication between siloed and fragmented services through a digital platform;

(c) are cost-effective and help reduce utilisation of healthcare services or services' overlap;

(d) enable the generation of more accurate outcomes data to ensure service quality (for example, a validated baseline mental health measure can be administered digitally when a consumer starts treatment, and comparisons to this score can help show how much the consumer has improved); and

(e) can be adapted quickly and continuously improved.

50 For example, when TWU had a large increase in users accessing courses during the COVID-19 pandemic (please see paragraph 101 below), TWU was able to rapidly scale up the platform's capacity to handle the significantly increased traffic and number of users.

Challenges

51 The challenges that the mental health system faces in relation to digital therapeutic services include:

(a) embedding the services as part of the healthcare system such that they are helpful to clinicians and consumers – the services should help to reduce, and not increase, clinicians' workload and burden;

(b) keeping up with technology, as the pace of technology changes tends to move faster than the pace of change at public health services and in government; and

(c) increasing users' engagement (please see paragraph 41 above).

52 In the context where technology, consumer preferences and experiences are rapidly changing, it is crucial that the content in digital therapeutic services is evidence-based and evaluated. Having evidence-based and engaging content is what we pride ourselves on at TWU.

Existing digital self-help or supported mental health care

53 There are various examples of digital technologies used in mental health locally and abroad, ranging from prevention to screening and treatment. Most are still being evaluated in research settings. Examples include personalised and adapted assessments; digital phenotyping using mobile devices; collection of real-time behavioural data from wearables and sensors; webchats using artificial intelligence and

natural language processing (NLP), online treatment programs and mobile applications (please also see paragraph 95 below).

54 The Federal Department of Health's 'Head to Health' website provides links to Australian digital mental health resources that are publicly funded and nationally available.[16]

Use of digital mental health to reach people who may not seek mental health support through traditional pathways

55 Overcoming the inequalities of access to mental health is a very broad topic – this is still a challenge for digital mental health service providers as it is for the rest of the healthcare system. Nevertheless, digital tools can help to reach people who may not access support through traditional pathways, but it requires focus on the people, not on the technology.

56 There should firstly be greater investment in improving the existing digital interventions that have already been evaluated to be effective, and promoting these services to demographics that underutilise the services. We have good services that we know work and are supported by robust clinical evidence. The 'digital divide' (see paragraph 32(a) above) is clearly a barrier for using digital mental health services, and there should be investment in those people to overcome this barrier. For example, greater access to mobile devices or computers should be provided to those who do not have access to Internet. Also, local champions, role models and advocates in the community and the mental health workforce can promote the digital interventions and increase digital health confidence by affirming that they have used them and they work. For example, a clinician in a rural community contacted us for the purpose of offering TWU courses to their clients – as there was a local champion, we saw a big increase in users from that area.

57 If existing digital interventions are inappropriate for certain demographics, there should be investment in new digital interventions that are tailored for these demographics. These services should be co-designed, implemented via a phased approach (that is, an initial phase should be implemented before more resources are invested in subsequent phases), and take into account cultural adaption. Alternatively, where digital interventions are wholly inappropriate for specific cohorts (for example, those who are not suited to use digital services), there should be investment in alternative treatment modalities that are more suited to their needs and are more attractive to them.

58 Mental health difficulties are multidimensional. Digital interventions are not a magic solution and certain demographics will require an ecosystem of treatments or a combination of tools. They may also be facing other issues such as unemployment or

[16] Department of Health, 'Head to Health' <https://headtohealth.gov.au/> [accessed 2 July 2020].

housing issues, and would need outreach support to resolve those issues before the digital interventions may be of assistance.

Blended care

59 Blended care (combined digital and face-to-face therapy) is part of the stepped care approach and can be implemented at a system-wide level (for example, the Improving Access to Psychological Therapies approach in the United Kingdom). Using digital tools as adjunct therapy allows clinicians in the community to focus on complex clinical tasks, address specific client concerns and prioritise advanced clinical interventions during sessions, rather than expending time on standard psychoeducation and fundamental CBT skills. A population-based, stepped care model needs to include a range of evidence-based tools and treatments and should incorporate planning for symptom deterioration.

60 The Anxiety Disorders Clinic at SVHS has been using blended care for years, and it is built into the model of care – clinicians use TWU courses as an adjunct therapy to support individuals' needs. Furthermore, given that the clinic offers bulk-billed services in a public hospital, it has a waitlist (about a few weeks from initial contact) for consumers to access face-to-face care. To manage this, the clinic asks that consumers take a TWU course while they are on the waitlist either before or after an initial assessment. Some consumers no longer required face-to-face care after completing a TWU course.

61 Blended care may also help to reduce clinicians' initial scepticism about using internet-based treatment.[17] When TWU courses are used as part of a blended model of care, we advise users and clinicians to determine mutually appropriate levels of contact between them during course completion to suit each user's unique circumstances and preferences.

Current structural arrangements that impede the use of digital mental health care

62 The following current arrangements impede the use of digital mental health interventions:

(a) iCBT is not covered by Medicare, noting that the Better Access initiative (which allows people to receive up to ten individual mental health services per calendar year) was introduced in 2006 when digital interventions were not commonly used;

[17] Newby et al (2020) Integrating internet CBT into clinical practice: a practical guide for clinicians (submitted, under journal's review).

(b) there is no financial incentive for a clinician in the community to use digital interventions (other than the incentives to provide evidence-based interventions or to free up time);

(c) there is currently no official guidance from the government surrounding safe and secure online systems to provide digital interventions (which can help clinicians to feel comfortable with using such interventions), noting that the Proposed Standards discussed in paragraphs 87 and 88 below should address this issue when they are finalised; and

(d) IT systems in public health services are not seamlessly integrated with digital interventions.

WORKFORCE

Impact of increasing digital opportunities impact on:

a. 'traditional' workforce roles and identity

63 The traditional workforce model in the mental health system is based on having an expert and a recipient of treatment from the expert, using a one-to-one model. With technology, there is a shift to more enabled consumers – in general, the focus is now on consumers having greater knowledge. There is also a scalability challenge for traditional models.

64 Historically, CRUfAD manualised the treatments provided by the Anxiety Disorders Clinic to expand delivery of care beyond SVHS. TWU courses are now available online for the same reasons. We aim to upskill and better support the mental health workforce in the community. We need a sustainable way to support the workforce that is facing the increased demand for affordable mental health treatments and to allow one clinician to support many more individuals. We also need secure and interoperable online systems for the delivery of digital interventions.

65 There continues to be a huge need for mental health services and people will still seek clinicians for empathy, support and treatment. Digital interventions will not reduce the workforce but will likely require the workforce to learn different skills and use them in their practice. These skills include those in relation to communication, data security and safety, quality appraisal of tools and ascertaining what might be right for their patient (as the gatekeepers). It is important for the workforce to have increased technical confidence and knowledge to be able to explain the different issues to their patients.

66 Relevantly, Health Education England published a report on the digital future of mental healthcare and its workforce in February 2019 as part of the Topol review (**Digital Future**

Report).[18] This report states that while engaging with services through digital technology will be something that patients can choose to do, it will not be optional for the mental health workforce of the future.[19]

67 CRUfAD has not conducted research on how increasing digital opportunities impacts on traditional workforce roles and identity. I believe, however, that some of the clinicians' concerns may be around disproportionate funding of digital technologies that takes resources away from in-person treatment, but they understand the complementary nature of digital intervention and its unique strengths in supporting the mental health sector (i.e. scalability).

b. the quality of therapeutic alliance between consumer and service provider

68 There is currently very limited research evidence[20] regarding the impact of increasing digital opportunities on the quality of therapeutic connection or alliance between a consumer and a service provider.

Factors influencing the use of digital technology by clinicians in service provision

69 There are both technical and human factors that may encourage or discourage clinicians from using digital technology in service provision.

70 Factors that encourage clinicians to use digital technology in service provision include:

(a) increased public awareness of digital technology – innovations only work if people know about them;

(b) clinicians having:

(i) digital confidence and familiarity with technology that is matched to the clinician's therapeutic expertise;

(ii) adequate support, resources and time;

(iii) access to appropriate training; and

(iv) choice and ownership of the decision on which digital tools to use.

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18 Dr Tom Foley and Dr James Woollard, *The digital future of mental healthcare and its workforce: a report on a mental health stakeholder engagement to inform the Topol Review* (Report, February 2019) <https://topol.hee.nhs.uk/wp-content/uploads/HEE-Topol-Review-Mental-health-paper.pdf> (**Digital Future Report**).

19 Ibid 4.

20 Thomas Berger, 'The Therapeutic Alliance in Internet Interventions: A Narrative Review and Suggestions for Future Research' (2017) 27(5) *Psychotherapy Research* 511; Philip Henson et al, 'Digital mental health apps and the therapeutic alliance: initial review' (2019) 5(1) *BJPsych Open* e15.

(c) digital services that are easy to use and can be integrated with other health service information systems easily, so as to free up time for clinicians instead of adding to their burden;

(d) use of digital technology being part of health services' strategic direction with adequate budget allocation;

(e) allowing consumers and clinicians to experience the benefits of digital services first-hand through, for example, pilot projects and soft launches; and

(f) having local champions or brand ambassadors to promote digital services.

71 There are a few initiatives funded by the Federal Government to increase clinicians' awareness of digital mental health tools (for example, E-Mental Health in Practice (**eMHPrac**))[21].

72 As for factors that discourage clinicians to use digital technology in service provision (noting that clinicians work in environments with a risk-focussed culture), there are perceived risks or concerns about:[22]

(a) incorrectly assessing a client's mental state and/or containing dysregulated and at risk-consumers;

(b) requirement for increased responsivity may lead to increased workload;

(c) limited ability to use digital tools due to low digital confidence, technological literacy, or unreliable internet connection;

(d) negative impacts of referral to online mental health resources on the therapeutic relationship (for example, a consumer may lose trust in the clinician or may feel neglected);[23]

(e) consumers' confidentiality and data security;

(f) impact of increased exposure to screen time for clinicians (for example, fatigue); and

(g) limitations on some interventions (for example, real-world (in-vivo) exposure).

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21 E-Mental in Health Practice, <https://www.emhprac.org.au/> [accessed 2 July 2020].

22 Simone Orlowski et al, 'The promise and the reality: a mental health workforce perspective on technology-enhanced youth mental health service delivery' (2016) 16 *BMC Health Services Research* 562.

23 Craig Sinclair et al, 'Online Mental Health Resources in Rural Australia: Clinician Perceptions of Acceptability' (2013) 15(9) *Journal of Medical Internet Research* e 193.

73 The capabilities and skills that clinicians require to take up and implement digital services are discussed in paragraph 65 above.

Helping individual professionals or workforce groups to adapt their practice to incorporate technology

74 CRUfAD has taken the following steps to help individual professionals or workforce groups adapt their practice to incorporate TWU digital tools into their practice:

(a) co-designing the TWU clinician's platform with its target users (clinicians);

(b) using a very simple interface in TWU courses so that there is minimal administrative burden;

(c) managing users' expectations and undertaking continuous evaluation and improvement based on feedback from clinicians and satisfaction surveys from users;

(d) conducting lectures at universities to medical and psychology students;

(e) conducting in-service programs or webinars for clinicians in collaboration with eMHPrac;

(f) conducting education programs on anxiety and depression to GPs in collaboration with the National Prescribing Service, which provides programs that educate GPs on best practice prescribing; and

(g) conducting research presentations and hosting booths at national and international conferences.

INNOVATION

Enabling innovative service models in mental health care

75 Innovation means different things to different parts of the mental health system. It does not have to be technology-based; it can also mean small, simple improvements and is not necessarily radical or disruptive.

76 I believe real innovation comes from people who are part of the system and/or using the services, and who have the drive and passion to make things better. It needs to be built from the ground up and cannot be imposed by external business consultants.

77 The main issue in enabling the use of innovative health service models is that the healthcare system is very risk-averse and does not reward risk-taking. That's understandable, as changing existing workflows may affect patients' safety and involve

issues relating to duty of care and legislative requirements. On the other hand, academia embraces innovation as part of its culture. I come from a research background where I was trained to explore open-ended questions and challenge traditional concepts. As such, it is the strong link between healthcare and research (incorporating strong partnerships and different skillsets) that can lead to innovation. Indeed, TWU is a joint initiative between healthcare and academia, and I believe this link is one of its main strengths.

78 To best enable innovative service models, the system needs to be able to see the benefits such models bring to the system (including consumers). When collaborating with other groups, CRUfAD always suggests starting with a pilot project of the collaboration model, so that an innovative model of care can be tested on a small scale with minimal risk. This also allows the system to understand the data and refine processes if needed, based on feedback from consumers (please see paragraph 35(d) regarding the collaboration of TWU with Bupa).

79 In addition, the system needs to have greater workforce capacity to enable changes to be made. The administrative and management burden on frontline clinicians should be reduced so that they have capacity to think about the 'big picture'. They should also be provided incentives for research and development.

Role of collaborative governance in supporting innovation in the digital space

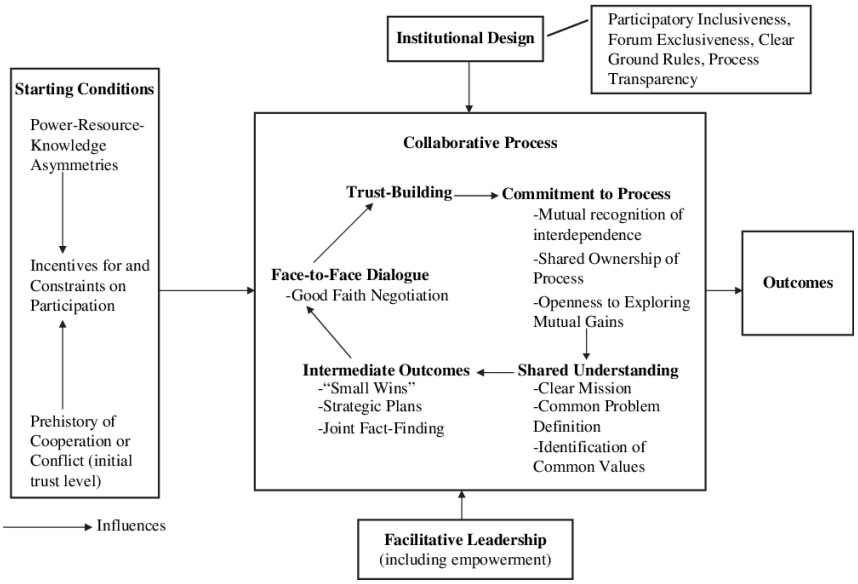
80 Please see paragraphs 35 and 36 in relation to what is needed to create partnerships (which may involve government, technology partners, service providers and consumers) to develop innovative new service offerings.

81 The establishment of relationships built on trust, supported by technology and promoted by leaders who are committed to well-defined goals, is a characteristic of governance that has a positive influence on collaborative innovation processes.

82 These kind of collaborations have been explored by economists for the last two decades. One of the most cited research papers on collaborative governance is by Christopher Ansell and Alison Gash from the University of California, Berkeley.[24] The figure below (extracted from this paper, which is publicly available online) is a visual representation of the authors' findings in relation to a collaborative governance model:[25]

[24] Christopher K Ansell and Allison L Gash, 'Collaborative Governance in Theory and Practice' (2007) 18(4) *Journal of Public Administration Research and Theory* 543 <https://sites.duke.edu/niou/files/2011/05/Ansell-and-Gash-Collaborative-Governance-in-Theory-and-Practice.pdf>.

[25] Ibid 550.



83 The concepts discussed in this paper apply to the digital health world, but at a much faster pace due to the nature of technology. Technology companies have scale and speed, but they can move fast and break things. As such, collaborating in the digital health world requires having different skills and specialisations from different organisations. The value of being evidence-based in the decision-making process cannot be underestimated.

84 The COVID-19 pandemic has showed that some of the processes involved in collaborative governance can be fast-tracked if needed and many of the barriers can be removed.

Role of people with lived experience in the future digital agenda for mental health

85 The role of people with lived experience can be strengthened in the co-design and co-production of the future digital agenda for mental health if service providers:

(a) work closely with consumers from the start, include consumers in the design and development process (noting that they need to be reimbursed for their time), and apply and embed insights;

(b) conduct collaborative workshops, surveys and focus groups that involve people with lived experience;

(c) conduct regular evaluation after launching any services – consumers need to be able to give continuous feedback; and

(d) have a digital presence (for example, through social media channels), so that people with lived experience can better understand the service and trust in the service providers can be fostered.

86 It has not been an issue for CRUfAD to find people with lived experience to participate in the design and development process of TWU courses. As our courses are focussed on high-prevalence mental disorders such as anxiety and depression, there is generally open conversation on relevant issues and we often receive many responses when we send out emails to seek participation. The situation might be different in relation to low-prevalence mental disorders.

EFFICACY AND QUALITY IN DIGITAL MENTAL HEALTH

Effective standards for driving quality and safety in digital mental health

87 Standards for driving quality and safety in digital mental health should be similar to the standards applicable to other therapies in healthcare. The guiding principle should be transparency. At a minimum, there should be standards on effectiveness and safety (based on robust evidence from RCTs), data security and privacy, and risk management – these and more are included in the Proposed Standards.

88 I am not aware of when the Proposed Standards will be published, but the consultation process closed on 29 May 2020. Pending the finalisation of the Proposed Standards, the Australian Commission on Safety and Quality in Health Care has developed a checklist that consumers and carers can use to consider when choosing a digital mental health service.[26] GPs can also use this checklist when assisting their patients.

Building consumer and workforce trust and engagement with digital services

89 In order for consumers in the mental health system to build trust in digital services, digital services should:

(a) be transparent, easily understood, and their role in the overall mental health service ecosystem should be communicated clearly to consumers;

(b) rely on evidence-based research and work with credible organisations (for example, CRUfAD is a joint department by UNSW and SVHS) – consumers need to understand the importance of this; and

(c) enable consumers to feel that they are being listened to, as they may feel highly anxious and may not be able to experience face-to-face empathy and support;

(d) provide practical and helpful information;

(e) have clear and helpful communication with consumers;

[26] Australian Commission on Safety and Quality in Health Care, 'Checklist for choosing a digital mental health service – Information for consumers and carers' <https://www.safetyandquality.gov.au/publications-and-resources/resource-library/checklist-choosing-digital-mental-health-service-information-consumers-and-carers> [accessed 6 July 2020].

(f) allow consumers to see the people who developed the technology (for example TWU's website provides brief information on who is behind TWU and has a picture of Emeritus Professor Gavin Andrews who established TWU).

90 Consumers can also build trust in digital services if the services are recommended by their clinicians.

91 As for ways in which the system can build workforce trust and engagement with digital services, please see paragraph 70 above.

92 In particular, the system can help both consumers and the workforce to build trust and engagement with digital services by:

(a) creating more opportunities for blended care – a first-hand experience by consumers and the workforce is likely to result in greater acceptance of digital mental health tools; and

(b) having greater advocacy of digital services.

Providing guidance to consumers and service providers about digital mental health

93 Processes and mechanisms required to provide guidance to consumers and service providers about digital mental health include:

(a) websites such as 'Head to Health' that provide links to digital mental health resources that are publicly funded and evaluated;

(b) the Proposed Standards to guide consumers and clinicians; and

(c) the use of digital services by clinicians in practice.

FUTURE TRENDS

Trends that are likely to drive change in the delivery of mental health services

94 In my opinion, the combination and integration of technologies into routine care could be the biggest driver of change in the delivery of mental health services. There is an increased demand for technologies that are more targeted, personalised and better integrated with one another, and that can be accessed immediately. As the evidence base for these technologies grows, the use of them in mental health care will grow. Assessment and treatment of mental disorders will become more personalised as genetics, physiology and behaviour are considered together in each individual's context.

95 The Digital Future Report sets out the key technologies that are being developed or already in use in the mental health space globally, including:

(a) **smartphones**: video calls which help overcome the resistance to telehealth, social media platforms, access to information and treatment programs and tracking tools that can track a person's mood for a more reliable self-report of symptoms;

(b) **wearables/sensors**: digital biomarkers for mental states (for example, heart rate for physiology, screen use for cognition, global positioning system for behaviour and social interaction with other users for social) that allow real-time monitoring of a person;

(c) **digital therapeutics**: either standalone or blended (for example, TWU);

(d) **chatbots**: artificial intelligence and natural language processing (NLP)-enabled chatbots;

(e) **social media**: research on phenotypic information extracted from social media or smartphone use for prediction and monitoring;

(f) **genomics and neuroimaging**: genomics and neuroimaging which help personalise treatment;

(g) **integration**: integration and interoperability between systems and services, and the use of big data sets for more accurate decision support tools for consumers, clinicians, government and researchers; and

(h) **virtual reality**: virtual reality tools are already available for the management of some phobias and other disorders.[27]

96 It is important that the funding model in the mental health system allows for an ecosystem of services that are scalable and integrated. All parts of the system should be supported and assisted to be able to use digital services. Consumers should be encouraged to use evidence-based, self-help digital services, and clinicians should be able to incorporate digital services in their practice in a complimentary manner. Please also see paragraph 62 above.

Developing a future-proofed system

97 In developing a future-proofed mental health system, the main issue is that technology moves much faster than healthcare and government. The latter will need to constantly catch up with the digital world.

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[27] Digital Future Report 5-6.

98 The system can be better future-proofed by:

(a) greater investment in in-house digital health literacy within mental health services – clinicians should receive adequate training, guidance and support so that they have digital confidence and are comfortable using digital mental health tools;

(b) having multiple stakeholders (consumers, clinicians, research, information technology, public and private health services, health policy-makers, Federal and State Governments, entrepreneurs and technology partners) involved in design, production, and ongoing evaluation of the mental health system, but they should have clear roles and accountabilities with solid and consistent measures of outcomes;

(c) having multidisciplinary clinical teams that include new roles in the ecosystem of treatment, such as staff who can effectively support consumers and clinicians in navigating and using digital therapeutics (noting that the Digital Future Report stated that clinical technologists may have a similar role to pharmacists supporting clinicians and patients with safe and effective use of medicines);[28] and

(d) having inherent simplicity in the design of the mental health system to enable it to adapt to change quickly.

IMPACT OF COVID-19

99 There has always been a mismatch in mental healthcare between supply and demand. Even before the COVID-19 pandemic, there were limited clinical resources for face-to-face care.

100 Telehealth should not be considered innovative digital mental health; the model of care is largely the same as face-to-face care and telehealth platforms have been available for years. It is the uptake of telehealth that has accelerated during the COVID-19 pandemic (noting that it still requires one clinician per patient) – this shows that it is possible for the Government to have a speedy response to allow Medicare rebates for telehealth (which has been discussed for years).

101 There has been a great demand for digital mental health services as a response to the COVID-19 pandemic. During the period from mid-March to the end of June this year, there was a substantial increase (about 600%) in clinicians registering to support their clients in accessing TWU courses, and a large increase (about 700%) in individuals accessing our courses. However, there has not been a substantial change in the demographics of such users (please see paragraph 28 above). In total, we had close to

[28] Digital Future Report 25.

24,000 people access TWU courses during this period compared to a monthly average of about 1,100 course registrations across all our courses in 2019). This increase is likely to be because:

(a) people were focussing on finding mental health resources online during the pandemic and we received greater media coverage;

(b) Bupa has been promoting the courses through our collaboration; and

(c) with support from SVHS, we have been offering free access to all of our courses from March till 30th June this year (the usual cost of some of the TWU courses is about $59).

102 Technology has been brought to the centre of the Federal Government's response to the COVID-19 pandemic (i.e. the COVIDSafe application for tracing). The discussions in the media about the COVIDSafe application have increased public awareness of data security and privacy.

103 Digital systems must now be viewed as essential health infrastructure. Enabling consumers and clinicians to have a first-hand experience of using new technologies is key to the adoption of such technologies. I believe that following the experience during the COVID-19 pandemic, consumers, clinicians, government, and insurers will see the need for evidence-based and accessible digital therapeutics, and there will be more confidence by the mental health system to integrate technologies as part of the standard model of care.

sign here ► 

print name HILA HASKELBERG

date 13-July-2020

Royal Commission into
Victoria's Mental Health System

ATTACHMENT HH-1

This is the attachment marked 'HH-1' referred to in the witness statement of Dr Hila Haskelberg dated 13-July-2020.

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EDUCATION

Statistical Foundations for Health Data Science — 2018

Centre for Big Data Research in Health, UNSW

Doctor of Philosophy (PhD) — Graduated 2014

The Kirby Institute, UNSW

- Bone disease in HIV-infected individuals and the effects of antiretroviral therapy

Bachelor of Science (BSc) — Graduated 2006

Tel-Aviv University, Israel

- Neuroscience Interdisciplinary Program (Double Major Psychology and Biology)

Clinical Research Associates (CRA) — 2006

BioForum Applied Knowledge Centre Medicines and Medical Device, Israel

PROFESSIONAL EXPERIENCE

Program Manager at the Clinical Research Unit for Anxiety and Depression — Jun 2017 -

St. Vincent's Hospital Sydney

- Managing the operations, maintenance, and continuous improvements of THIS WAY UP™ Digital Health Programs.
- Liaising with stakeholders to establish and manage national and international research collaborations and commercial license agreements.
- Analysing, preparing, and communicating data reports to executives of SVHA, the Federal Department of Health, and other peak bodies Liaise with stakeholders to manage research collaborations and commercial license agreements

Project Manager at the Clinical Research Unit for Anxiety and Depression — Jun 2015 – May 2017

St. Vincent's Hospital Sydney

- Coordinate THIS WAY UP™ project progress within time, scope, and budget to ensure agreed deliverables and quality standards are achieved
- Make day-to-day decisions on priorities and content in line with the project plan's objectives
- Manage continuous program improvement in response to stakeholder needs
- Team management, providing mentoring and support for junior staff and students within the unit

Research Fellow at the Food Policy Division — Jan 2015 – Jun 2015

The George Institute

- Lead and support research projects aimed to improve the food supply in collaboration with national peak bodies and food industry

- Design statistical analysis plans, ensuring high quality of data used and conducting data analysis using large-scale databases
- Draft manuscripts and scientific reports that are key deliverables to government and industry partners

Clinical Research Project Coordinator at the Therapeutic and Vaccine Research Program — **Nov 2007 – Dec 2014**

The Kirby Institute, UNSW

- Coordination of Australian and international multi-centre HIV randomised clinical trials in low and middle income countries
- Site Staff training, regular guidance and support to colleagues
- Manage compliance with ICH-Good Clinical Practice, research protocols, and international regulatory requirements
- Draft and review of study protocols, regulatory and ethics submissions, and study budgets
- Develop statistical analysis plans and presentation at meetings and conferences

Clinical Research Coordinator at the Institute for Eye Research clinic — **Nov 2006 – July 2007**

Brien Holden Vision Institute, UNSW

- Set up and manage clinical trials in Australia
- Ensure ICH-GCP compliance, study protocol, regulations and SOPs
- Assist the Principal Investigators in all aspects and phases of clinical studies, including patients' interaction and participants' recruitment

Research Assistant at Psychoneuroimmunology lab — **Nov 2005 – Aug 2006**

Tel Aviv University, Israel

- Study the impacts of surgery and stress on cell-mediated immunity and on resistance to tumor metastasis and tumor progression
- Routine preparation of drugs, monitor animals, and supervise surgical procedures
- Statistical analysis of results and compilation of reports

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