Promoting young people’s mental health in the digital age.

(Are we ready for the uberisation of mental health services?)

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Disclosures

– 5% Equity share in Innowell – the joint venture between University of Sydney and PwC
  – Responsibility for delivery of R&D through independent University Trials and not commercialisation
– National Mental Health Commissioner 2012-2018
  – Views Expressed are my own and not those of the Commission
The proposition

— “In five years from now every (person) thinking of suicide, will be able to access high quality, personalised care and social support, facilitated by innovative technologies”

— (the reality: it will require sustainable investment, community and setting based engagement, smart effective tech systems operating at scale, well-informed and tech-competent clinicians)
The mental wealth of nations

Countries must learn how to capitalize on their citizens' cognitive resources if they are to prosper, both economically and socially. Early interventions will be key.

John Beddington, Cary L. Cooper, John Field, Usha Goswami, Felicia A. Huppert, Rachel Jenkins, Hannah S. Jones, Tom B. L. Kirkwood, Barbara J. Sahakian and Sandy M. Thomas
Percentage distribution of YLD by mental disorders and nervous system disorders, Australia 1996
Digital Transformation (Uberization) of (Mental) Health Care!!

- **Access:** Demand is driven by the user with their own personal technology, in their own time frame, at their convenience
- **Empowering:** Consumer has choice – often use both and go on comparing
- **Availability of Service:** Particularly attractive in areas where current demand is not met by highly-regulated systems and where current services focus on high-profit areas
- **Cost:** Reduces upfront direct and indirect costs compared with traditional services
- **Quality of Service:** comparable or exceeds current offerings
- **Accountable:** Each interaction is rated by the USER for quality: the system removes underperforming operators
- **NOTE:** Doesn’t require any more ‘enquiries’ into the regulated industry – the existing industry either adapts or ends (by improving quality and/or reducing costs)
HOW READY ARE YOU FOR CHANGE???

– USERS: Already have the technology in their pockets.
  – Those with the financial capacity are already headed to alternatives
  – Very keen to exercise the evaluation options
  – Keen supporters of integration into practice
  – Serious roles in co-design, deployment and evaluation

– Providers: Highly ambivalent.
  – Some distinctly hostile: “An add-on at best”

– Investors:
  – Ready to go!!
  – Need the right technology-user-provider relationships

– Govts: High level officials already headed there!
  – NZ and Aus examples.
Economics: Planning economies (population health) vs Smart Regulations and continuous measurement of outcomes

– Health Care is part of the real economy!!
  – In Australia: mixed economy, chaotic, live and changing!!
– Traditional Role of Govt: More plans, initiatives
– Alternative view:
  – 1. Regular Reporting: independent, annual, meaningful
  – 2. Smart Regulation:
    – Anti-competitive practices, quality controls, user-focused
  – 3. Continuous, real-time and targeted outcome data collection
    – Big new systems: New personal technologies
    – Input: Needs Driven into every system
    – Outputs: Experiences of care and functional outcomes
Politics of Change

- Community:
  - Awareness
  - Demand for all services

- Political:
  - Economic and Social ROI
  - Access vs Quality

- Professional:
  - Role of leadership, Data and continuous improvement

- New Monies and Opportunities:
  - Do we actually leverage significant change when the opportunity arises??
Aus Example: Key Issues for early intervention

- A. Maximising economic, educational and social participation
  - OECD focus on ‘NEETs’ in the 18-25 (30) year old age group

- B. Reducing self-harm, accidents and suicidal behaviours
  - Requiring much more specific focus

- C. Preventing development of alcohol/substance misuse
  - Major community and personal issue

- D. Improving physical health outcomes
  - Cardiovascular (smoking) and metabolic risks

- E. Prevention of syndrome progression
  - The most contentious but perhaps the least important
Key Issues in the 21st century

2. Developing more personalised care regimes
Major conceptual, biological and psychological challenge
Role of **TRAJECTORIES AND STAGES** of illness
Models of key pathophysiological pathways – NOT DX
(e.g. anxious, circadian, impaired development)

3. Delivering evidence-based and personalised care at scale
E-health developments (full range, not just existing services online)
Other new clinical developments – e.g. 100 Headspaces centres
New Regional partnerships in mental health care – **Primary Health Networks**
NATIONAL MENTAL HEALTH COMMISSION
RECOMMENDATIONS ON TECHNOLOGY

A SYSTEM REIMAGINED
// MENTAL HEALTH REFORM
THROUGH INNOVATIVE TECHNOLOGIES #NMHCReport

// INTEGRATION
Align, consolidate and integrate the use of e-mental health technologies with the existing mental health system.

// RE-ORIENT THE SYSTEM
Technologies allow for a tailored approach on a mass scale, placing the individual at the centre of their own care.

// LEADERSHIP
The sector is in need of strategic and transformational leadership in order to move into the 21st century.

// FUTURE-PROOFING THROUGH RESEARCH AND DEVELOPMENT
Leverage new and emerging technologies to develop integrated digital products and services that deliver effective services and augment face-to-face care.

// SUSTAINABLE FUNDING
Transform how the sector is funded through innovative business and funding models for sustainability (such as Public Private Partnerships; social impact bonds, etc)
$40m Co-operative Research Centre for Young People, Technology and Wellbeing
Project Synergy Moves to USYD Innovation Hub

1. Turnbull Govt commitment to $30m over three years to implement Project Synergy:
   1. USYD-PwC partnership for sustainable company
   2. National partnerships Model with health services agencies
   3. Operating across the life span

2. Key opportunity to bring together major centres with content knowledge, tech skills, data and analytic capacity at USYD and health system partners – extensions into early child development and community-based ageing studies

3. Potential for international partnerships
   1. Developing countries as a priority
   2. Potential for other populations – Defence-Veterans
Developing a sustainable and generalisable framework that includes Lived Experience, R&D and technology.
The R&D cycle

Participatory design workshops
To co-create/co-design with and for:
1. Representative end-users for front end
2. Health professionals and administrators to guide implementation and service reform

Rapid prototyping and user testing (α build)

Real world study (δ build)

Rapid prototyping and user acceptance testing (β build)

End users
(eg. Young people, Health professionals, Supportive others)

Knowledge translation
1. Development of wireframes by representative end-users
2. Implementation and service reform by clinical team (including back-end configuration, digital education/training, review)
Building the Synergy Online System to deliver the right care, right time, first time, every time!?
Four streams of work and ~10 research trials

- SROI/EROI
- Independent Evaluation and Monitoring Framework
- Medico-Legal and Ethics

Veterans and their families
Young people
Adults through to healthy ageing
Young children

Indigenous
Disability
Suicide prevention
Comorbidity
Complexity/ personalisation
Education/ workforce
Clinical Trial Protocol = implementation plan!
• 12-month active implementation health science.
• Clinical & Service Implementation Officers provide on-the-ground support (technology, change management), informal qualitative data collection (eg. implementation barriers, facilitators).
• Workforce education and training program (digital, clinical, service, suicide prevention).
• Tracking real-time service indicators and metrics to continuously guide implementation.
• Quarterly face-to-face feedback sessions to share learnings.

Then, ongoing passive sustainability of the technology-enhanced mental health service offering using an industry-grade solution and service manual (i.e. outputs of Project Synergy).
Outputs for a sustainable and generalisable framework
Original Paper

Developing a Mental Health eClinic to Improve Access to and Quality of Mental Health Care for Young People: Using Participatory Design as Research Methodologies

Laura Ospina-Pinillos¹, MD; Tracey A Davenport¹, BA (Hons), eMBA; Cristina S Ricci¹, BSc (Hons), LLB, BEd, MEd; Alyssa C Milton¹, BSc (Psych), MAppSc (Health Psychology), PhD; Elizabeth M Scott², MD, FRANZCP; Ian B Hickie¹, AM, MD, FRANZCP, FASSA

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Mental Health eClinic: example dashboard of results
Share plan (decision tool) wireframe - clinical support
Configuring the MHeC for an inpatient unit

The University of Sydney

Developing and assessing the effectiveness of personalised interventions for youth with mood disorders in an inpatient facility
Ashleigh Tickell, Elizabeth Scott, Daniel Hermens & Ian Hickie
Clinical Research Unit: Brain and Mind Centre, University of Sydney
Young Adult Mental Health Unit, Uspace, St Vincent’s Private Hospital

Email: ashleigh.tickell@sydney.edu.au

METHODS
- Pilot/feasibility study (N = 50) with longitudinal tracking; followed by, full trial and implementation as standard clinical care at Uspace
- Inclusion: Patients admitted to Uspace (16-30 yrs); Exclusion: inability to consent (eg. current psychosis)
- Two computerised assessments: self-report (SR) questionnaire, and cognitive and psychometric testing (CANTAB)
- Participants and clinicians receive feedback of results as part of personalised intervention and routine clinical care

Figure 1. CANTAB system – memory, attention, executive function tests

Self-report questionnaire modules

1. Demographics
2. General health, medical and mental health history
3. Lifeline symptom screen
4. Current mental health symptoms and impact on functioning
5. Alcohol and other substance misuse
6. Self-harm, emotional and sexual behaviours
7. Physical health and activity schedule
8. Sleep/wake and circadian rhythms
9. Eating behaviours and body image
10. Social networking and relationships

Table 1: Content assessed by the self-report questionnaire.

Cognitive Skill | Significant Performance | Less than Reported | An Reported
---|---|---|---
Processing Speed | ✓ | | |
Sustained Attention | ✓ | | |
Visual Learning | ✓ | | |
Visual Scanning | ✓ | | |
Mental Flexibility | ✓ | | |
Problem Solving | ✓ | | |

Table 2: Cognitive screen based on performance, age, education background and language abilities from CANTAB tests

DISCUSSION AND FUTURE DIRECTION
- Developing and comparing various models of service for young people in terms of quality care, multi-disciplinary and targeted approach to patient care
- Patient focused research assessing clinical services and showing the effectiveness of using computerised technology at inpatient facilities
- Promoting engagement between clinicians and patients, monitoring progress and treatment paths

PILOT STUDY COMPLETED – RECRUITMENT FLOW CHART

68 patients at Uspace contacted with study information (PCF)

- 53 consented
- 9 declined (“too much effort”, “bad headspace”)
- 6 unable to be followed up prior to discharge

47 full completion

- 2 CANTAB only (no SR); 2 technical problems with SR; 1 unable to complete SR due to high distress, discharged early

Consented day before discharge (time constraints)

Figure 5: Flow chart of recruitment for recently completed baseline pilot/feasibility study
Trial 4: Mental Health eClinic (N= up to 500)
Embedded in Primary Health Care Services PD/UT/UAT N = 32; TRIAL (PROJECTION) N = 500

**Young people**
- Instant access to dashboard of results and integrated Apps and tools
- Reduction in waiting times for young people with high levels of suicidality
- Increased self management through access to integrated Apps and tools

**Health professionals**
- Earlier access to assessment data supports management/ treatment planning
- Increased staff engagement through the use of the MHeC within clinical meetings
- On-the-ground researchers worked collaboratively with health professionals to increase engagement

**Service Reform**
- Embedding technology within existing service structures
- Video Visit function supporting online engagement and case management
- Comprehensive Clinical, service and digital training
Original Paper

Using New and Emerging Technologies to Identify and Respond to Suicidality Among Help-Seeking Young People: A Cross-Sectional Study

Frank Iorfino, BSc (Psych), MBMSc; Tracey A Davenport, BA (Hons), eMBA; Laura Ospina-Pinillos, MD; Daniel F Hermens, PhD; Shane Cross, BPsy (Hons), MPsych (Clinical), PhD; Jane Burns, PhD; Ian B Hickie, AM, MD, FRANZCP, FASSA

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Priority case and suicidal escalation I

The process used within the validation study to prioritise cases and determine appropriate suicidal escalation for those at significant risk.

Young person seeks help at headspace
(i.e. makes a booking for an initial clinical assessment)

Technology components

Online questionnaire

Non-priority case

Algorithms

Priority care case

Occurs during wait time

Human components

Non-escalation case

Clinician review

Young person attends clinical assessment
(timing dependent on service wait-list)

Young persons entry into clinical services escalated
Original Paper

Using New and Innovative Technologies to Assess Clinical Stage in Early Intervention Youth Mental Health Services: Evaluation Study

Laura Ospina-Pinillos¹, MD; Tracey Davenport¹, BA (Hons), EMBA; Frank Iorfino¹, BSc (Psych), MBMSc; Ashleigh Tickell¹, BSc (Psych); Shane Cross¹, BPsych (Hons), MPsyCh (Clin), PhD; Elizabeth M Scott², MBBS, FRANZCP; Ian B Hickie¹, MD, FRANZCP

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Comparisons of assigning to Stage 1b+ (attenuated and actual syndromes), n=73

<table>
<thead>
<tr>
<th>Headspace appointment</th>
<th>Online assessment (survey and ‘video visit’)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stage 1a (help-seeking subjects with mild-moderate severity of symptoms)</td>
</tr>
<tr>
<td>Stage 1a</td>
<td>24</td>
</tr>
<tr>
<td>Stage 1b+ (attenuated syndromes)</td>
<td>4</td>
</tr>
</tbody>
</table>

Cells representing concordance are highlighted in bold red font

Actual agreement 50/73 – unweighted observed kappa = 0.40

Note: maximum possible unweighted kappa (given observed marginal frequencies) = 0.61
Clinician Interfaces: taking expertise to settings where it is not available!
Efficiency of online assessment: survey and ‘video visit’

Young person time

– Median survey completion = 49 minutes (and 36 seconds…)

Clinician time (via ‘video visit’)

– Median = 12 minutes to clinically stage (informed by prototype ‘dash board of results’)

If suicidal assessment required

– Median ‘video visit’ = 22 minutes
– Includes safety plan and emergency contacts
Mental Health Literacy and promotion

– Web-based and digital tools
  – Wealth in Australia
  – Self-tracking and international apps
    • sleep-wake
    • Alcohol and drug
    • Mood
    • Physical activity
    • Mindfulness

– Goal-setting targets
  – Sleep-wake
  – Social Connection
  – E.g. FituniLife to Thrive
3 million Australians are living with anxiety or depression

*beyondblue* provides information and support to help everyone in Australia achieve their best possible mental health, whatever their age and wherever they live.
Exercise Your Mood

Research shows that physical activity can be used to boost mental fitness. We're encouraging Australians everywhere to get active this May!

View facts, tools and tips

News
The latest news in mental health research

How to exercise when you feel like you can't

We all know about the benefits of exercise, but what about those who can't find the motivation to do it? Here are some tips on how you can take on exercise when you aren't at your best.

Read more

World Bipolar Day: what we know in 2018

Why being present can help this long weekend

Australian-first 'burnout' study seeks participants...
Head to health

6 ways Head to Health can help you

Find the right Australian digital mental health resources.

Find Australian mental health resources

Australia has great mental health services and resources, but it can be tough finding the ones that suit you best. We've made your search easier by hand-picking resources from publicly funded providers.
self-directed or therapist-guided

Made4Me - Mental Health Self Management

Made-4-Me (M4M) is an interactive 11-week cognitive behavioural program (choose self-directed or therapist-guided) developed by Swinburne University of Technology for self-managing symptoms of anxiety, depression, and panic disorders. The program tailors content to the symptoms you experience.

Anytime, Anywhere  Free  Therapist-guided
Moodgym – CBT online

Welcome to moodgym

moodgym is like an interactive self-help book which helps you to learn and practise skills which can help to prevent and manage symptoms of depression and anxiety.

- Over 1 million users worldwide
- Anonymous, confidential
- Secure handling of your data
- Access anytime, at your own pace
- Scientifically evaluated

New users register here

Frequently Asked Questions

See Emergency help if you are in crisis or need immediate help.

Looking for other languages?
- German available at moodgym.de
- Norwegian, Dutch, Chinese and Finnish no longer available - see FAQ
Mindspot clinical service

About Us

The Mindspot Clinic is a free telephone and online service for Australian adults troubled by symptoms of anxiety or depression. We provide free Online Screening Assessments to help you learn about your symptoms, free Treatment Courses to help you to recover, or we can help you find local services that can help.

Learn more about the MindSpot Clinic

How MindSpot Works In 3 Easy Steps

1. Learn
   Read the information on this website and try taking the Depression or Anxiety Quiz.

2. Get Assessed
   Complete a telephone or Online Screening Assessment. We will provide information about your symptoms and provide recommendations.

3. Treatment
   Based on the results of your assessment we may recommend one of our free 8 week Treatment Courses, or provide referrals to other services.

Our Partners

Head to Health

A program supported by MACQUARIE University
Reachout- next step
Headspace centres

Welcome to headscape
We're the national youth mental health foundation dedicated to improving the wellbeing of young Australians.

Get to know us  Find a centre  Talk to eheadspace

For help or info, tell us who you are...

Teen or young person

Friend or family member
Orygen youth health

Orygen’s vision is for all young people to enjoy optimal mental health as they grow into adulthood.

Mental ill-health is the number one health issue facing young people worldwide. At the leading cause of disability in those aged between 10 and 24 years, it contributes 41% of the overall burden of disease. There is a powerful time for transformational reform of our current mental health services. We are proud to be leading this reform in Australia and across the globe.

Professor Patrick McGorry AO
Executive Director

Guidelines needed for use of therapy animals in mental health treatment
Conclusions

1. Digital Technologies for rapid transformation of services are available:
   1. Deployment will proceed – to users directly or indirectly through services
   2. Only some will be subject to systematic evaluation

2. Many traditional services lack the capacity or experience with using new technologies as a regular part of enhanced care

3. Opportunities can be incorporated now, but longer-term commitments are required:
   1. Change to genuine partnership models
   2. Services working in coordinated pathways of care
   3. Putting the users need at the centre of services