Right care, First Time: Mood and Psychotic disorders in young people

AProf Liz Scott
Notre Dame Medical School and Brain and Mind Centre, University of Sydney
New models of care

Right care, first time: a highly personalised and measurement-based care model to manage youth mental health

Ian B Hickie¹, Elizabeth M Scott¹², Shane P Cross¹, Frank Iorfino¹, Tracey A Davenport¹, Adam J Guastella¹, Sharon L Naismith¹, Joanne S Carpenter¹, Cathrin Rohleder¹, Jacob J Crouse¹, Daniel F Hermens¹³
Real Challenges in Youth Mental Health Services

- ACCESS AND QUALITY
  - Clinically-Staged not stepped care
  - Specialist Expertise at entry to systems (A very big challenge for traditional primary-care and mental health systems)
  - Person-Centred & Inclusive of others (families, communities)
  - ‘Sub-syndromal’ does NOT equal absence of impairment
Key Issues for early intervention with adolescents and young adults

1. Improving the range of key outcomes
   
   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 for the future

2. Developing more personalised care regimes

Major conceptually, biological and psychological challenge
Role of TRAJECTORIES AND STAGES of illness
Models of key pathophysiological pathways – NOT DX
Potential role of personalised technologies in improved assessment and measurement of individual treatment response

3. Delivering evidence-based and personalised care at scale

Designated services (Headspace +)
E-health developments (full range, not just existing services online)
Hypothetical Trajectories/Pathways to Adolescent-Onset Depressive Disorders

- 1. Highlighting Circadian-based Pathways to Adult Mood Disorders
- 2. Enhancing anxiety-driven and developmental pathways
A circadian-dysfunction model of age-dependent phenotypes leading to adolescent-onset mood disorders:

Brain clock(s) - SCN develops with age

Probable continuity of underlying genetic vulnerabilities

Genetic Effects: Chronotype stability, switch sensitivity

Environmental effects: Varying with age & periods of activity & light exposure

Multiple phenotypic expressions that also vary with age and development

1. Infancy: difficulty developing regular sleep or feeding patterns
2. Primary: difficulty with regularising sleep patterns, attentional issues, chaotic activity patterns
3. Early Adolescent: Emergence of persistent fatigue-oversleep, atypical mood disturbance, irritability, overeat-weight gain, periods of (nighttime) hyperactivity, insomnia, musculoskeletal pain, cognitive effects
4. Late Adolescent / Early Adult: Persistent fatigue / hypersomnia, atypical depression, hypomania / mania, weight gain / insulin resistance, chronic insomnia, cognitive deficits
Environmental processes associated with regulation of Circadian system
Age-dependent mood disorder phenotypes in the context of developmental and environmental influences
Clinical Stage and Pathophysiologal Paths

Tripartite Model for ‘Depressive’ Presentations (BMC Hickie et al 2013)
Model of illness trajectories and clinical stage (2019 version)

Disease Progression and Extension for the adolescent-onset of major mental disorders.

Clinical stage

- **Stage 1a**: Non-specific symptoms
  - Neurodevelopmental
- **Stage 1b**: Attenuated syndrome
  - Hyperarousal
- **Stage 2**: Full-threshold, major and discrete syndrome
  - Circadian
- **Stage 3**: Recurrent or persistent illness
- **Stage 4**: Severe, persistent and unremitting illness
  - Psychotic
  - Anxious depression
  - Bipolar spectrum

Extension

- Comorbidity (e.g., alcohol misuse)
- Neurobiological (e.g., impaired cognition)
- Social and occupational functioning
Earlier Intervention Strategies

Intervene earlier and more effectively or just wait for poor outcomes?

EDITORIAL

Pre-emptive psychiatric treatments: pipe dream or a realistic outcome of clinical staging models?

“...clinical staging should represent a substantial improvement over classical diagnosis by improving treatment selection and by linking the observed clinical phenotype with the extent of progression of the disease to guide therapy.”
Brain and Mind Centre: Recruiting young people: measuring clinical phenotypes, neurobiology, and providing expert care over time (Director: Assoc Prof Liz Scott)
Brain and Mind Youth Cohort

The setting: An integrated mix of primary care-level services (i.e. headspace) as well as more specialised services, including psychiatry.

The cohort: Young people (12 – 30 years) with a range of mental health problems, including those with sub-threshold and full threshold mental disorders.

Case register from 2007:
N = 6743
57.3% female
Mean age 18.4 ± 3.8
BMC Youth Mental Health Longitudinal Cohort

- Diagnoses classified according to DSM 5
  - Full- and Sub-threshold

- Mania-like Experiences
  - the presence of any manic/hypompanic symptoms including: abnormally elevated mood or irritability; increased motor activity, speech, or sexual interest; mania-like disruptive or aggressive behaviour; mania-like unusual language or thought content; increased goal directed behaviour; or decreased need for sleep

- Psychosis-like Experiences
  - The presence of any psychotic symptoms including: perceptual abnormalities, bizarre ideas, disorganised speech, psychosis-like unusual language or thought content, or psychosis-like disruptive or aggressive behaviour

- Circadian Disturbance
  - the presence of significant disruption in sleep-wake or circadian cycles including the presence of a severe sleep-wake disorder or chronic fatigue
Presenting syndromes in the cohort at entry into care

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Primary Diagnosis</th>
<th>Any Diagnosis</th>
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</thead>
<tbody>
<tr>
<td>Depression</td>
<td>43.80%</td>
<td>65.80%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>21.10%</td>
<td>59.30%</td>
</tr>
<tr>
<td>Bipolar-Spectrum</td>
<td>8.90%</td>
<td>10.90%</td>
</tr>
<tr>
<td>Psychotic-spectrum</td>
<td>6.80%</td>
<td>8.30%</td>
</tr>
<tr>
<td>Neurodevelopmental Disorder</td>
<td>5.60%</td>
<td>13.60%</td>
</tr>
<tr>
<td>Trauma- or Stressor-Related Disorder</td>
<td>3.60%</td>
<td>6.80%</td>
</tr>
<tr>
<td>Disruptive, Impulse-Control, or Conduct Disorder</td>
<td>2.80%</td>
<td>6.90%</td>
</tr>
<tr>
<td>Substance-Related or Addictive Disorder</td>
<td>2.00%</td>
<td>9.40%</td>
</tr>
<tr>
<td>Other Diagnosis</td>
<td>2.00%</td>
<td>4.10%</td>
</tr>
<tr>
<td>Obsessive Compulsive Disorder</td>
<td>1.50%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Eating Disorder</td>
<td>0.90%</td>
<td>4.60%</td>
</tr>
<tr>
<td>Personality Disorder</td>
<td>0.90%</td>
<td>3.40%</td>
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</table>
Baseline Characteristics (n = 2767):

**Self-harm and Suicidal Thoughts and Behaviour:**

<table>
<thead>
<tr>
<th>% of sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberate Self-harm</td>
<td>36.6 %</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>44.8 %</td>
</tr>
<tr>
<td>Suicide Planning</td>
<td>17.7 %</td>
</tr>
<tr>
<td>Suicide Attempt</td>
<td>13.7 %</td>
</tr>
<tr>
<td>Hospitalised for Attempt</td>
<td>7.9 %</td>
</tr>
</tbody>
</table>

**Alcohol and Substance Use:**

<table>
<thead>
<tr>
<th>% of sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Alcohol or Substance Use</td>
<td>67.0 %</td>
</tr>
<tr>
<td>Tobacco Use</td>
<td>37.9 %</td>
</tr>
<tr>
<td>Alcohol Use</td>
<td>62.3 %</td>
</tr>
<tr>
<td>Cannabis Use</td>
<td>39.1 %</td>
</tr>
<tr>
<td>Stimulant Use</td>
<td>20.6 %</td>
</tr>
<tr>
<td>Other Substance Use</td>
<td>15.6 %</td>
</tr>
</tbody>
</table>

**Physical Health Comorbidities:**

<table>
<thead>
<tr>
<th>% of sample</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Physical Health Comorbidity</td>
<td>16.2 %</td>
</tr>
<tr>
<td>Respiratory Illness</td>
<td>4.7 %</td>
</tr>
<tr>
<td>Neurological Illness</td>
<td>3.1 %</td>
</tr>
<tr>
<td>Endocrine Illness</td>
<td>2.8 %</td>
</tr>
<tr>
<td>Metabolic Illness</td>
<td>1.8 %</td>
</tr>
<tr>
<td>Infective Illness</td>
<td>1.0 %</td>
</tr>
<tr>
<td>Immune Illness</td>
<td>0.9 %</td>
</tr>
<tr>
<td>Gastrointestinal Illness</td>
<td>0.9 %</td>
</tr>
<tr>
<td>Other Physical Illness</td>
<td>3.9 %</td>
</tr>
</tbody>
</table>
**BMC Youth Mental Health Longitudinal Cohort**

**Baseline Characteristics (n = 2767):**

**Demographics**
Mean age 18.8 ± 3.8 years (range 12-30)
58.2% Female

**Social and Occupational Functioning:**
- SOFAS scores at baseline ranged from 30 to 90 (mean 62.1 ± 9.4, median 61)
- 69% present with impaired functioning at baseline

**Education and Employment Status:**

<table>
<thead>
<tr>
<th></th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time Education or Employment</td>
<td>63.7%</td>
</tr>
<tr>
<td>Part-time Education or Employment</td>
<td>14.3%</td>
</tr>
<tr>
<td>NEET</td>
<td>17.4%</td>
</tr>
<tr>
<td>Receipt of Government Benefits</td>
<td>13.5%</td>
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</tbody>
</table>
BMC Youth Mental Health Longitudinal Cohort

Baseline Characteristics (n = 2767):

Clinical Stage:

<table>
<thead>
<tr>
<th>Stage</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1a</td>
<td>29.1 %</td>
</tr>
<tr>
<td>Stage 1b</td>
<td>58.7 %</td>
</tr>
<tr>
<td>Stage 2+</td>
<td>12.2 %</td>
</tr>
</tbody>
</table>

Illness Trajectory:

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety-Depression</td>
<td>73.2 %</td>
</tr>
<tr>
<td>Developmental-Psychosis</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Mania-Fatigue</td>
<td>11.0 %</td>
</tr>
<tr>
<td>No Mood Syndrome</td>
<td>3.4 %</td>
</tr>
</tbody>
</table>

At-Risk Mental States:

<table>
<thead>
<tr>
<th>Experience</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychotic-like Experiences</td>
<td>21.7 %</td>
</tr>
<tr>
<td>Mania-like Experiences</td>
<td>16.6 %</td>
</tr>
<tr>
<td>Circadian Disturbance</td>
<td>14.8 %</td>
</tr>
</tbody>
</table>
Prevalence and patterns of comorbidity between at-risk mental states

BMC's Optymise Youth Cohort (N=2767) at entry to care.

Manic-like experiences
n=460 (16.6%)

Psychotic-like experiences
n=599 (21.7%)

Circadian disruption
n=410 (14.8%)

Mood symptoms with no at-risk mental states:
n=1668 (60.3%)

The presence of any psychotic symptoms including: perceptual abnormalities, bizarre ideas, disorganised speech, etc

The presence of any manic/hypomaniac symptoms including: abnormally elevated mood or irritability; increased motor activity, speech, or sexual interest, etc

The presence of significant disruption in sleep-wake or circadian cycles including the presence of a severe sleep-wake disorder or chronic fatigue

The threshold for mania like experiences and psychotic like experiences in this study is low. Conversely, the threshold for circadian disturbance in this study is high.
BMC Youth Mental Health Longitudinal Cohort

Baseline Characteristics (n = 2673 with mood syndromes)

<table>
<thead>
<tr>
<th>Tripartite Category and Clinical Stage:</th>
<th>Pathophysiological Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Descriptor</td>
</tr>
<tr>
<td>1a HELP-SEEKING SUBJECTS WITH SYMPTOMS</td>
<td>1.2%</td>
</tr>
<tr>
<td>1b ATTENUATED SYNDROMES</td>
<td>6.4%</td>
</tr>
<tr>
<td>2 DISCRETE DISORDERS</td>
<td>5.3%</td>
</tr>
<tr>
<td>3 RECURRENT OR PERSISTENT DISORDER</td>
<td></td>
</tr>
<tr>
<td>4 SEVERE, PERSISTENT AND UNREMITTING ILLNESS</td>
<td></td>
</tr>
</tbody>
</table>

The University of Sydney
Early intervention may offer the best hope of better outcomes in the future, and the developing child and adolescent brain is the most plastic organ any of us will ever work with. An article by Iorfino et al\(^8\) highlights these issues in a longitudinal observational study of more than 2200 young people presenting to early intervention mental health programs in Australia. The results provide a method for transdiagnostic staging of these individuals and highlight specific psychosocial factors associated with transition to illnesses, factors that can be targets for early intervention and possible prevention. Continued work in this area is of great importance to the field.
Transition to major mental disorders

N=2254; mean age = 18.18 (3.33); 59% female

Key predictors

Older age 1.27* (1.11-1.46)
Lower SOFAS score 0.78* (0.67-0.90)
Manic-like experiences 2.06* (1.16-3.65)
Psychotic-like experiences 2.15* (1.40-3.31)
Circadian disturbance 1.60* (1.02-2.52)
No ADHD 0.44* (0.24-0.79)
Self-harm 1.42* (1.01-2.00)

Older age 1.27* (1.11-1.46)
Psychotic-like experiences 2.31* (1.65-3.23)
Circadian disturbance 1.65* (1.17-2.35)
Any childhood disorder 1.62* (1.04-2.55)
Any psychiatric medication 1.43* (1.04-1.99)
Short-term functional trajectories: two-year outcomes

The diagram illustrates the trajectory of functional outcomes over a two-year period. The SOFAS (Societal and Occupational Functioning Scale) is plotted on the y-axis, and the months are on the x-axis. Five latent classes are identified:

- **Stable good functioning (33%)**
- **Persistent poor functioning (56%)**
- **Delayed deterioration (2%)**
- **Immediate deterioration (3%)**
- **Improvement (6%)**

Each class is represented by a different line, with the shaded area indicating the range of variation for each class.
Cascading impacts of interventions on outcomes

A multidimensional approach helps to unravel the complex relationship between these different outcomes, and plan appropriate interventions.

Interventions which target individual domains are likely to have specific and direct impacts, as well as indirect impacts on other domains, which cascade over time.
Translating new care models into practice

Right care, first time: a highly personalised and measurement-based care model to manage youth mental health

Ian B Hickie¹, Elizabeth M Scott¹, Shane P Cross¹, Frank Iorfino¹, Tracey A Davenport¹, Adam J Guastella¹, Sharon L Naismith¹, Joanne S Carpenter¹, Cathrin Rohleder¹, Jacob J Crouse¹, Daniel F Hermens¹,³

Multidimensional framework

Clinical staging

Pathophysiological pathways

Social and biological development

Real-time monitoring

Technology enabled

Measurement-based outcomes

Multidimensional outcomes

Personalised assessments

Personalised and measurement-based care and interventions for young people
Trajectory of mental disorders and sequence of interventions

**Primary Prevention Strategies (broad and non-specific)**
- Universal interventions targeting the whole population
- Selective interventions targeting high-risk individuals or groups

**Indicated and more specific Secondary Prevention Strategies**
- Fish oils
- Individual Placement and Support (IPS), vocational and educational support
- Behavioural regulation of sleep-wake timing
- Reduction of alcohol and drugs
- Social Skills Training and Social Recovery Therapy
- Physical Activity

**Mentally Healthy**

Stage 0

Stage 1a Disorders

Stage 1b Disorders

Stage 2+ Disorders

**Early Intervention**
- Problem solving
- Cognitive Behavioural Therapy (CBT)
- Meta-Cognitive Therapy (MCT)
- E-health based anxiety management
- Social anxiety or panic interventions
- Circadian behavioural interventions
- Medications

**More specific Interventions and Treatments (see Table 2):**
- 1st and 2nd line psychological and social interventions
- 1st and 2nd line medical/pharmacological interventions
Personalised and measurement-based care

**Personalised**
The notion that the assessment of, and the sequence of interventions and services are tailored to the individual, and their needs.

**Measurement-based**
The use of systematic and continued assessment of outcomes to guide clinical decision-making (i.e. data driven approach)

**Right care, right time!**
Technology-based enhancements of Personalized and Measurement-based care – Which Technology should we choose to help us face these 21st C challenges??
Digital Disruption of Health Systems and Mental Health Care?
Recommendations

Contributing lives, thriving communities

Report of the National Review of Mental Health Programmes and Services

Summary

30 November 2014

Australian Government
National Mental Health Commission

Improve access to services and support through innovative technologies

Improve emergency access to telephone and internet-based forms of crisis support and link crisis support services to ongoing online and offline forms of information/education, monitoring and clinical intervention.

Implement cost-effective e-mental health solutions that build sustained self-help, link to biometric monitoring and provide direct clinical support strategies or enhance the effectiveness of local services.
Project Synergy

The “uberisation” of mental health care: a welcome global phenomenon?

Ian B Hickie

New health information technologies have the potential to transform the delivery of mental health care.

Although the risks for consumers of mental health services in accessing online health care are similar to those for general health care (ie, ac-
Enhanced assessment and personalised care (InnoWell Platform)

- Customisable digital platform designed to assist the assessment, monitoring and management of mental ill-health (including matching care/services to young person needs).

- Young person health information (data) entered into the platform is processed, analysed and reported back to them real-time as well as their clinician.

- Data is young person managed, which means that if they move between mental health services (that use different medical software systems), their data (and story) stays in one place that is accessible anytime from a highly secure ‘Cloud Datastore’.
Technology solution

A Digital Platform Designed for Youth Mental Health Services to Deliver Personalized and Measurement-Based Care

Frank Iortino, Shane P. Cross, Tracey Davenport, Joanne S. Carpenter, Elizabeth Scott, Sajith Shiran and Ian B. Hicklo

Textbox 2. InnoWell Platform functionality.

- Multidimensional assessment across a range of domains (e.g., sleep, anxiety, mood, physical health)
- Suicidal thoughts and/or behaviors and at-risk mental state identification and subsequent escalation to required intervention
- Dashboard of results across the range of biopsychosocial domains
- Algorithms to determine severity of needs across these biopsychosocial domains
- Algorithms to allocate clinical stage and suggested levels of care
- Real-time data tracking and interactive progress report
- Shared care planning between treating health professional and consumer
- Video-visit with a health professional
- Support person input and health information sharing
- Coordination of care across multi-disciplinary services
- Aggregate service performance indicator dashboard

The InnoWell platform puts the individual at the centre, making the individual and the clinician equal partners
Individual - user journey

1. Individuals receive email invitation to the platform
2. Complete online self assessment
3. View dashboard of results
4. Explore detailed results and recommended care option
5. Develop shared care plan and track progress

The initial summary view provides a snapshot representing a smaller number of questions which can be completed more regularly to monitor overall health.

Formulas to determine individual function and health domain specific clinical needs are used to create a dashboard view of results based on question set responses.
Illustrative example of personalised and measurement-based care in practice, using technology

2. Initial assessment
The Platform notifies the health professional that a young person has a higher need for care. Instead of waiting the usual amount of time, an earlier first appointment is organized.

1. Presents for care
A young person who presents to a health service is sent an invitation email to access the Platform.

3. First appointment
The health professional might discuss specific results to gain more detailed insights, discuss any online care options the young person has already started to use (e.g. a meditation app), or discuss another clinically supported care option which might be available or useful (e.g. group therapy for anxiety).

4. Ongoing measurement-based care
The Platform facilitates ongoing data collection over the course of the active care period to track the course of illness and multidimensional outcomes so the young person and their health professional can make real-time, new (personalized) clinical decisions at key points along the journey.

- Activity tracker connected to track sleep and activity
- New online care option identified and started
- Specialist health professional is engaged to assist with care (e.g. psychiatrist, drug and alcohol worker)
- New clinical care option started

**Legend**

- Clinical contacts with the health service
- The use of the Platform to track a young person’s progress
  - Green=improvement, red=deterioration, 🔔 =notification
- The use of the Platform in shared-decision making
Technology evaluation - early detection of severity and need

Fair agreement ($\kappa=0.39$; $P<0.001$) concordance in a total of 68% of participants

<table>
<thead>
<tr>
<th></th>
<th>Online assessment</th>
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<tbody>
<tr>
<td></td>
<td>Stage 1a</td>
<td>Stage 1b+</td>
</tr>
<tr>
<td><strong>Face-to-face assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1a</td>
<td>23 (32%)</td>
<td>19 (26%)</td>
</tr>
<tr>
<td>Stage 1b+</td>
<td>4 (6%)</td>
<td>26 (36%)</td>
</tr>
</tbody>
</table>

Lessons learned

1. The face-to-face assessment places **greater emphasis on current symptomatology** than previous difficulties/history

2. The online assessment made use of **more extensive data collection about past and current symptoms** that was collected prior to the clinical assessment.
Suicidality escalation protocol

Facilitate the **early detection and rapid response** to suicidality among young people presenting to services

Proof of concept - **15** identified as ‘high’, **7** had their entry into clinical care escalated

**Reasons include:** specific ideation attributes, presence of at-risk mental states, recent plans to make an attempts, few protective factors, recent self-harm
Stage-based stepped care

1. Multidimensional assessment
2. Service level review and treatment planning
3. Interventions, duration of care and multidisciplinary approaches
4. Continuous and ongoing outcome monitoring
5. Planned exit, promoting full recovery and ongoing secondary prevention

1. CURRENT CLINICAL STAGE

- **Stage 1a**: Minimum 3 monthly review and length of care
- **Stage 1b**: Minimum monthly review and 12 months of care
- **Stage 2**: Three monthly review and 2-5 years of care
- **Stage 3 and 4**: Six monthly review and ongoing care

2. CURRENT CLINICAL NEED (symptoms, functional impairment, risk severity)

- Very mild: Self- and carer-directed monitoring and management
- Mild: Low intensity services
- Moderate: Moderate intensity services
- Severe: High intensity services
- Very severe: Acute and specialist community services

- Provide broad and holistic initial screening, followed by more targeted mental health assessment for those who endorse screening questions
- The intensity of the intervention should be matched to the consumer’s level of need as determined by clinical stage
- Provide parallel interventions for risk factors associated with poor outcomes (eg, unemployment, alcohol, and/or other substance misuse)
- Employ proactive monitoring of treatment progress and outcomes
Tracking clinician and person engagement in care

How many individuals have used one or more care options? 223

Care option engagement over time

1 Jan 2019 - 23 Oct 2019

Data source: Big query (complete platform data)

How many times has a clinician started a clinical care option first? ("not started" to "supported") 217

<table>
<thead>
<tr>
<th>Label</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a shared safety plan</td>
<td>95</td>
</tr>
<tr>
<td>Psychological therapy for depressed mood</td>
<td>20</td>
</tr>
<tr>
<td>Psychological therapy for anxiety</td>
<td>19</td>
</tr>
<tr>
<td>Safety Check</td>
<td>17</td>
</tr>
<tr>
<td>Individual counselling for suicidal thoughts and behaviours</td>
<td>12</td>
</tr>
<tr>
<td>Cognitive Behavioural Therapy (CBT) for functioning</td>
<td>7</td>
</tr>
<tr>
<td>Individual counselling for psychological distress</td>
<td>5</td>
</tr>
<tr>
<td>Individual counselling for self-harm</td>
<td>4</td>
</tr>
<tr>
<td>Cognitive Behavioural Therapy (CBT) for suicide prevention</td>
<td>4</td>
</tr>
</tbody>
</table>

How many times has an individual requested a clinical care option? ("not started" to "support requested") 76

<table>
<thead>
<tr>
<th>Label</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological therapy for anxiety</td>
<td>8</td>
</tr>
<tr>
<td>Psychological therapy for depressed mood</td>
<td>8</td>
</tr>
<tr>
<td>Cognitive Behavioural Therapy (CBT) for functioning</td>
<td>6</td>
</tr>
<tr>
<td>Cognitive Behavioural Therapy (CBT) for Sleep-wake</td>
<td>5</td>
</tr>
<tr>
<td>Cognitive Behavioural Therapy (CBT) for post-traumatic stress</td>
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<tr>
<td>Cognitive Behavioural Therapy (CBT) for suicide prevention</td>
<td>4</td>
</tr>
<tr>
<td>Medical treatments for sleep management</td>
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</tr>
<tr>
<td>Medical treatment for anxiety</td>
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<tr>
<td>Medical treatment for depression</td>
<td>4</td>
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<tr>
<td>1 - 26 / 26</td>
<td></td>
</tr>
</tbody>
</table>

How many times has a clinician responded to a request? ("support requested" to "supported") 17

How many times has an individual requested started a non-clinical care option? ("not started" to "in progress") 153

<table>
<thead>
<tr>
<th>Label</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiling Mind</td>
<td>16</td>
</tr>
<tr>
<td>SuperBetter</td>
<td>15</td>
</tr>
<tr>
<td>Recovery Record</td>
<td>13</td>
</tr>
<tr>
<td>Rise Up + Recover</td>
<td>10</td>
</tr>
<tr>
<td>Daylio</td>
<td>10</td>
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<tr>
<td>BeyondNow suicide safety plan</td>
<td>9</td>
</tr>
<tr>
<td>MindShift</td>
<td>7</td>
</tr>
<tr>
<td>Centre for Clinical Interventions - Disordered Eating</td>
<td>6</td>
</tr>
<tr>
<td>myCompass</td>
<td>6</td>
</tr>
<tr>
<td>1 - 33 / 33</td>
<td></td>
</tr>
</tbody>
</table>

How many times has a clinician supported an individual on a non-clinical care option? ("in progress" to "supported") 7
Headspace staff and the InnoWell platform

73%

See the benefit of using the InnoWell Platform as part of their work

64%

Believe the InnoWell Platform is appropriate for the clients at headspace centres

50%

Are willing to implement the Innowell Platform for its intended purpose

Willingness to implement the platform by primary health network

<table>
<thead>
<tr>
<th></th>
<th>CESPHN</th>
<th>NCPHN</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONGLY DISAGREE</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>DISAGREE TO SOME EXTENT</td>
<td>33%</td>
<td>11%</td>
</tr>
<tr>
<td>NEITHER AGREE NOR DISAGREE</td>
<td>0%</td>
<td>37%</td>
</tr>
<tr>
<td>AGREE TO SOME EXTENT</td>
<td>67%</td>
<td>47%</td>
</tr>
<tr>
<td>STRONGLY AGREE</td>
<td>0%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Staff, technology and mental health

12
Out of 22

Believe it is part of their role to actively recommend technologies for mental health care and provide assistance to clients

14
Out of 22

Believe headspace has a work culture that actively encourages the integration of technology
E-health Systems not EHR’s

https://youtu.be/xB_tSFJsjsw