BMC Youth Model Seminar #5: A youth mental health service delivery model to support highly personalised and measurement-based care

Presented by

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Acknowledgements

- Of country
- Of lived experience

BMC Youth Model of Care – Seminar Series

1. A highly personalised and measurement-based model of care to manage youth mental health
2. Combining clinical stage and pathophysiological mechanisms to understand illness trajectories in young people
3. A comprehensive assessment framework for youth mental health care
4. Using the BMC Youth Model to personalise care options – best care, first time!
5. A youth mental health service delivery model to support highly personalised and measurement-based care
6. Maximising the use of digiHealth solutions in youth mental health care

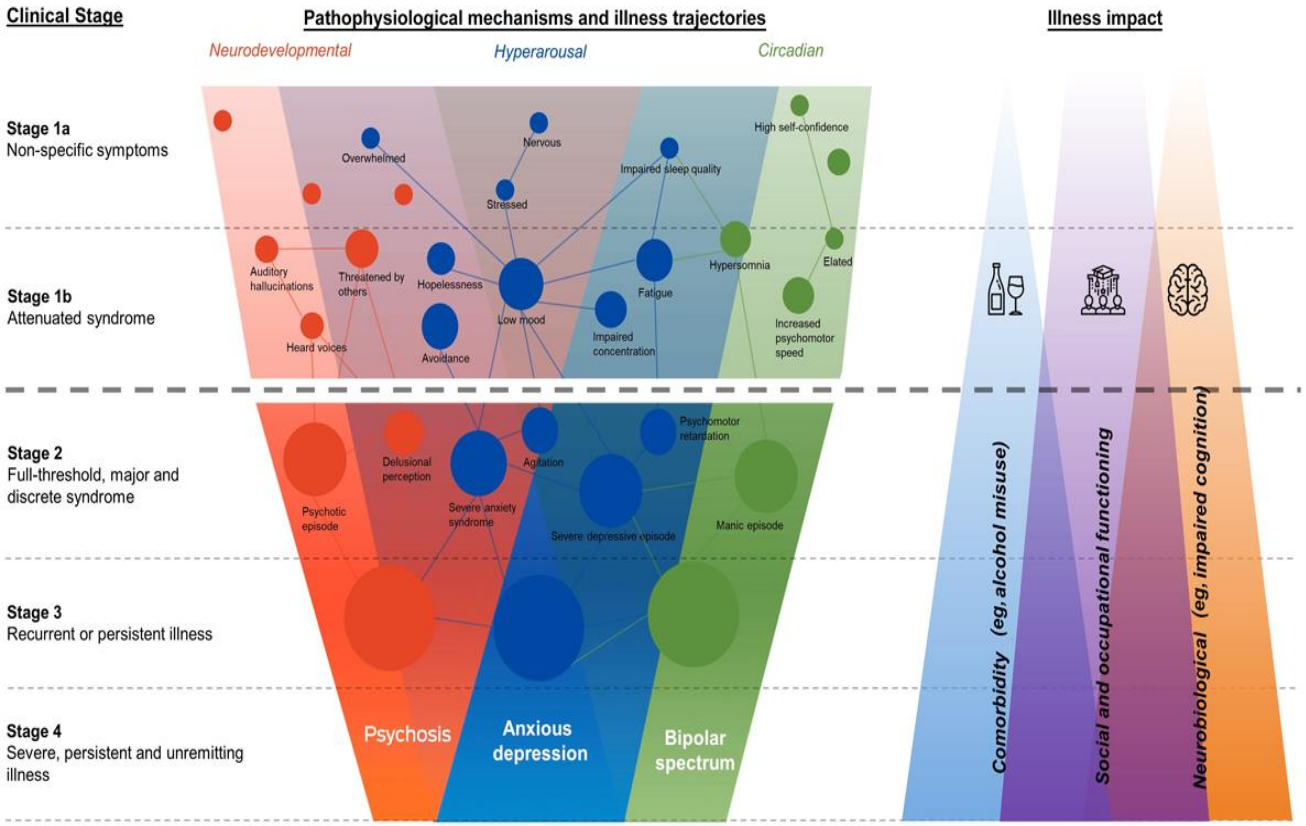
Recap of Seminar #1

- BMC Youth Model aims to **prevent progression to more complex and severe forms of illness**

- First core concept is a **multidimensional assessment and outcomes framework** to address the holistic needs of young people presenting for care

Recap of Seminar #2

- BMC Youth Model's **transdiagnostic framework** is supported by clinical, neuropsychological, neuroimaging, sleep-wake behavior and circadian rhythm evidence
- **Pathophysiological mechanisms and illness trajectories** attempt to describe the processes underlying development of common adolescent-onset mood and psychotic syndromes



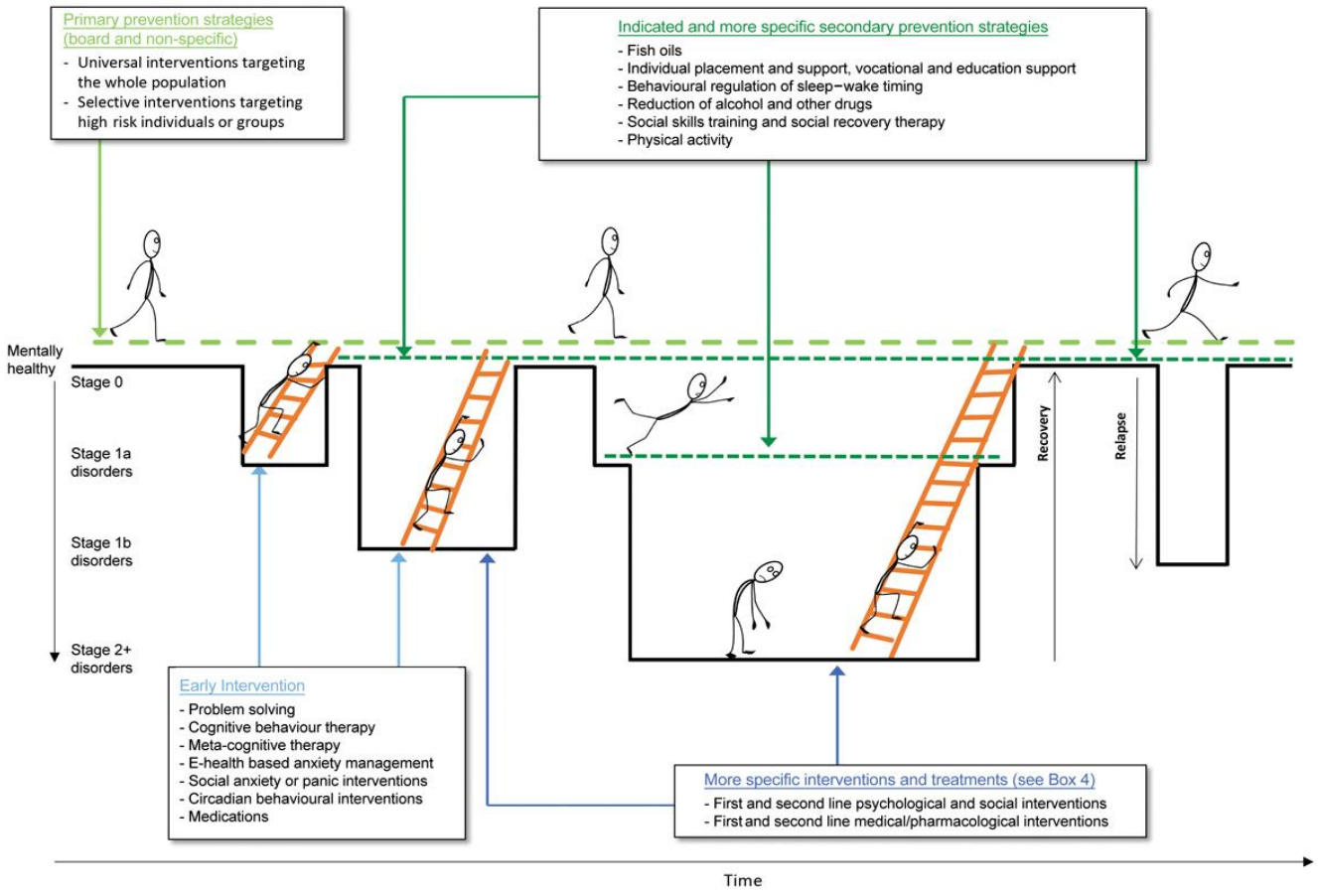
Recap of Seminar #3

- Use of **self-report, clinical and objective measures** allows unprecedented opportunity to refine our understanding of important clinical features in youth mental health care
- Once validated, it will be a major step towards **enabling highly personalised and measurement-based care**

	Standard assessments	Further assessments
Neuropsychological function	• Online neuropsychological testing (eg, Cambridge Neuropsychological Test Automated Battery): ▸ attention ▸ psychomotor speed ▸ memory ▸ executive function ▸ emotion and social cognition	• Comprehensive neuropsychological and social cognitive testing: ▸ immediate and delayed visual and verbal memory ▸ verbal fluency ▸ working memory ▸ attentional switching ▸ impulsivity ▸ theory of mind ▸ facial emotion recognition
Sleep–wake behaviours and circadian rhythms	• Sleep diary • Timing of sleep onset, sleep offset, time in bed (eg, Pittsburgh Sleep Quality Index) • 24-hour actigraphy measurements with standard devices (over at least a 2-week period)	• Overnight melatonin and cortisol assays • Nocturnal core body temperature
Metabolic and immune markers	• Anthropometric measurement: ▸ height, weight, waist circumference, body mass index • Blood pathology analysis: ▸ full blood count ▸ urea, electrolytes and creatinine ▸ thyroid function ▸ non-specific inflammatory markers: C-reactive protein ▸ fasting blood glucose ▸ insulin resistance (eg, homeostasis model assessment)	• Autoantibody screening (eg, N-methyl-D-aspartate receptor, glycine receptor, metabotropic glutamate receptor 5) • More extensive inflammatory marker screening (eg, tumour necrosis factor, interleukin)
Brain structure and function	*Recommended for all stage 2+ patients and stage 1b patients with a psychotic or circadian–bipolar spectrum phenotype* • Magnetic resonance imaging: ▸ cortical and subcortical grey matter volume ▸ cortical thickness	• Diffusion magnetic resonance imaging: ▸ white matter tractography • In vivo magnetic resonance spectroscopy: ▸ metabolite concentrations (eg, glutathione, creatine, N-acetyl-aspartate)

Recap of Seminar #4

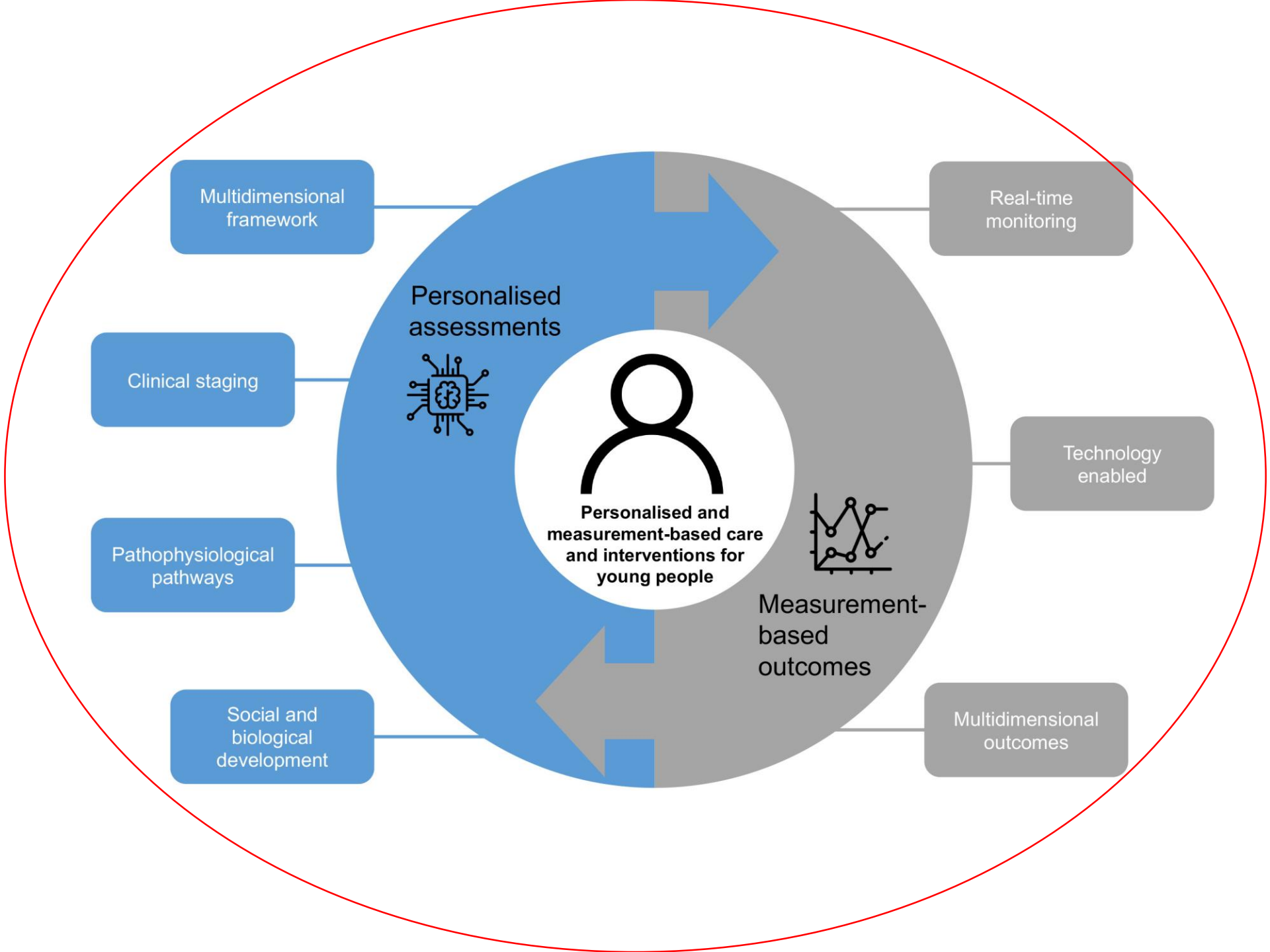
- BMC Youth Model outlines a **treatment selection guide for early intervention** incorporating three core concepts:
    1. Multidimensional assessment and outcomes framework
    2. Clinical staging
    3. Three common illness subtypes (psychosis, anxious depression, bipolar spectrum) based on three underlying pathophysiological mechanisms (neurodevelopmental, hyperarousal, circadian)



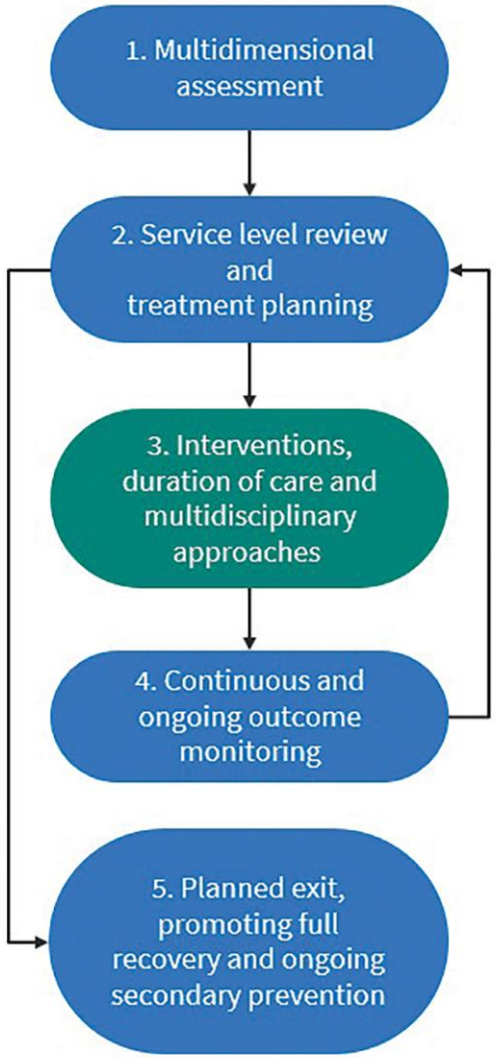
Outline for Seminar #5

- **BMC Youth Model** (highly personalised and measurement-based care) explicitly aims to **prevent progression to more complex and severe forms of illness** - made possible through appropriate health service structures
- BMC Youth Model **incorporates** other **evidence-based processes,** including:
    1. Real-time measurement-based care
    2. Use of multidisciplinary teams of health professionals
- Data-driven local **simulation modelling** and personalised **health information technologies** provide crucial infrastructure support to these processes for better access to, and higher quality, mental health care!

Med J Aust 2019; 211 (9): S1-S46. || doi: 10.5694/mja2.50383



Example of BMC Youth Model for youth mental health service delivery



"FLIP THE CLINIC FOR NO MORE WAITLISTS"

INTAKE
- Young person/ supportive other contacts service (eg. phone, online, email, walk-in).
- Service conducts an intake screen and sends them an email invitation to the InnoWell Platform.
- Young person accepts invite and sets up an InnoWell account.

ASSESS
- Young person completes InnoWell's multidimensional assessment online (20-40 minutes) within 72 hours.
- Young person invites supportive other(s) to also contribute data to their InnoWell dashboard (5 minutes).

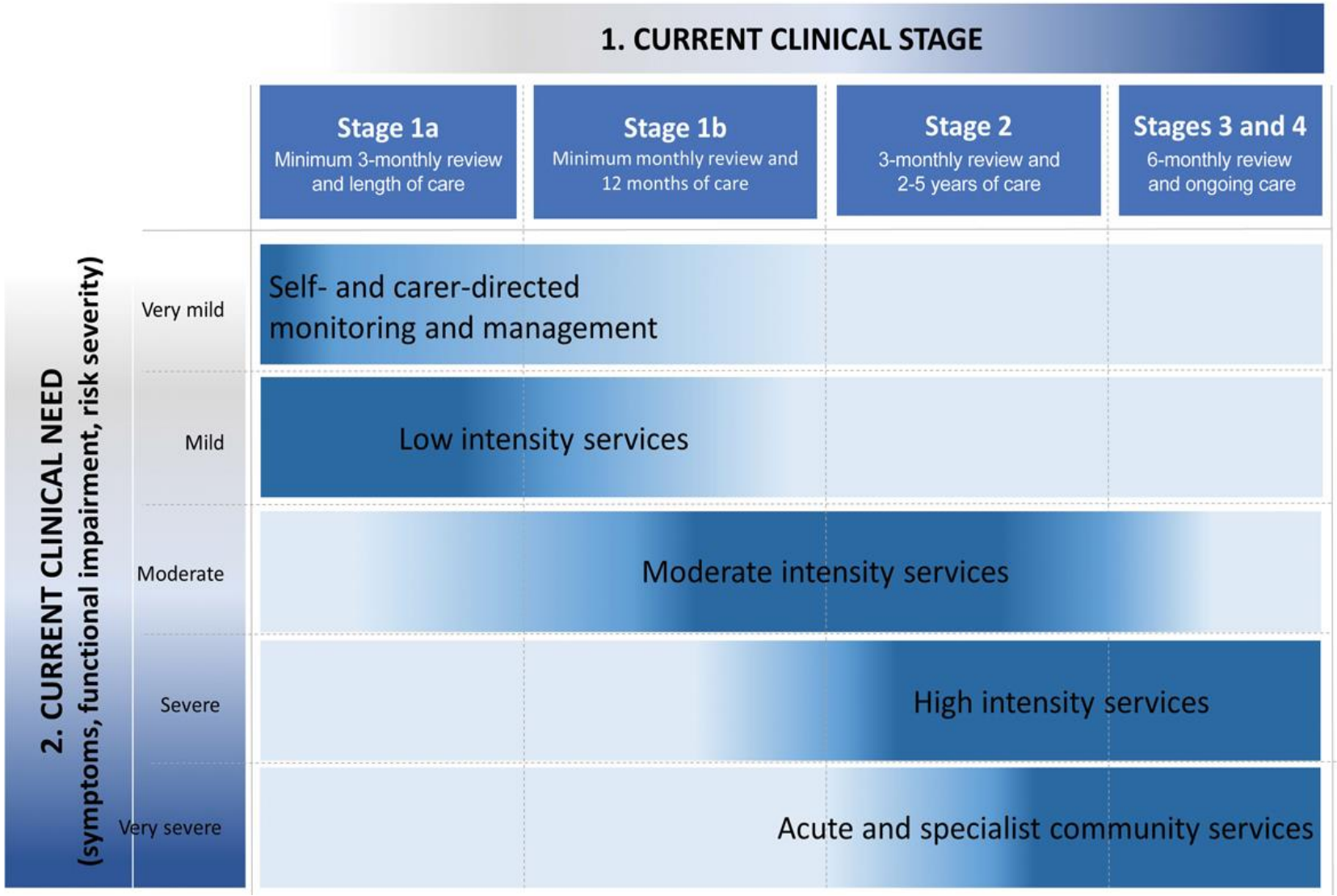
TRIAGE
- Triage conducted by in-service psychiatrists (and registrars), clinical psychologists, mental health nurses.
- Triage determined by InnoWell escalations (including suicidal thoughts/ behaviours and abnormal mental states [i.e. mania and psychosis]), clinical staging and current level of need.
- Triage completed within 24 hours of young person finishing InnoWell's multidimensional assessment.
- Urgent cases (suicidal thoughts/ behaviours, mania, psychosis) prioritised to be seen immediately using video-visit functionality (~22 minutes) of which a small proportion directed straight to acute care services.

CARE
- Ongoing care pathways matched to appropriate type, intensity and duration of intervention (80% digital, 20% face-to-face).
- Stage 1a cases (50%) directed to use online care tools for a minimum of three months.
- Stage 1b cases (30%) reviewed with video-visit functionality (~12 minutes) and directed to use care options in partnership with their care team for a minimum of 12 months.
- Stage 2+ cases (20%) receive more specialist care in face-to-face settings (where 'safety screening' and 'physical distancing' protocols are observed) for a minimum of two years.

MONITOR
- Active tracking of outcomes by encouraging young people (and invited supportive others) to ongoingly complete InnoWell's 'check in assessment' at least every 21 days.
- Consider innovative use of InnoWell, where service could use the video visit functionality to monitor young people in real time (eg. up to three sessions per week for 10 minutes).

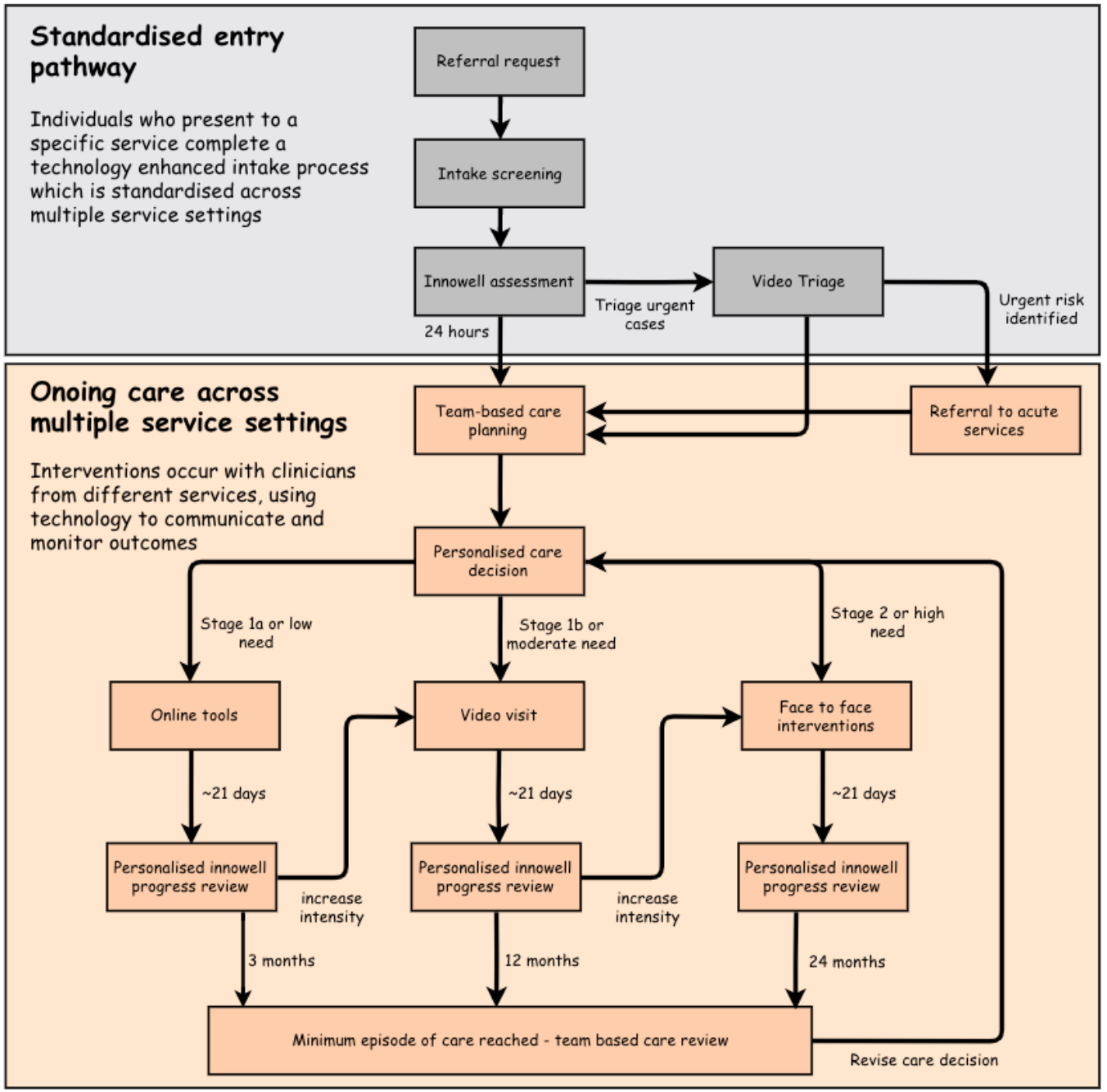
REVIEW
- In traditional mental health services: only 20-30% of cases show reliable improvement; 10-25% of cases will deteriorate significantly over about six months; and, the majority of cases are left with persistent distress and/or impairment (i.e. no change) (Cross et al. 2019).
- InnoWell allows for the ongoing review of deteriorating or non-changing cases through real-time outcomes monitoring functionality that encourages care plans to change in response to data including type, intensity and/ or duration of intervention.

Creating locally connected systems of care



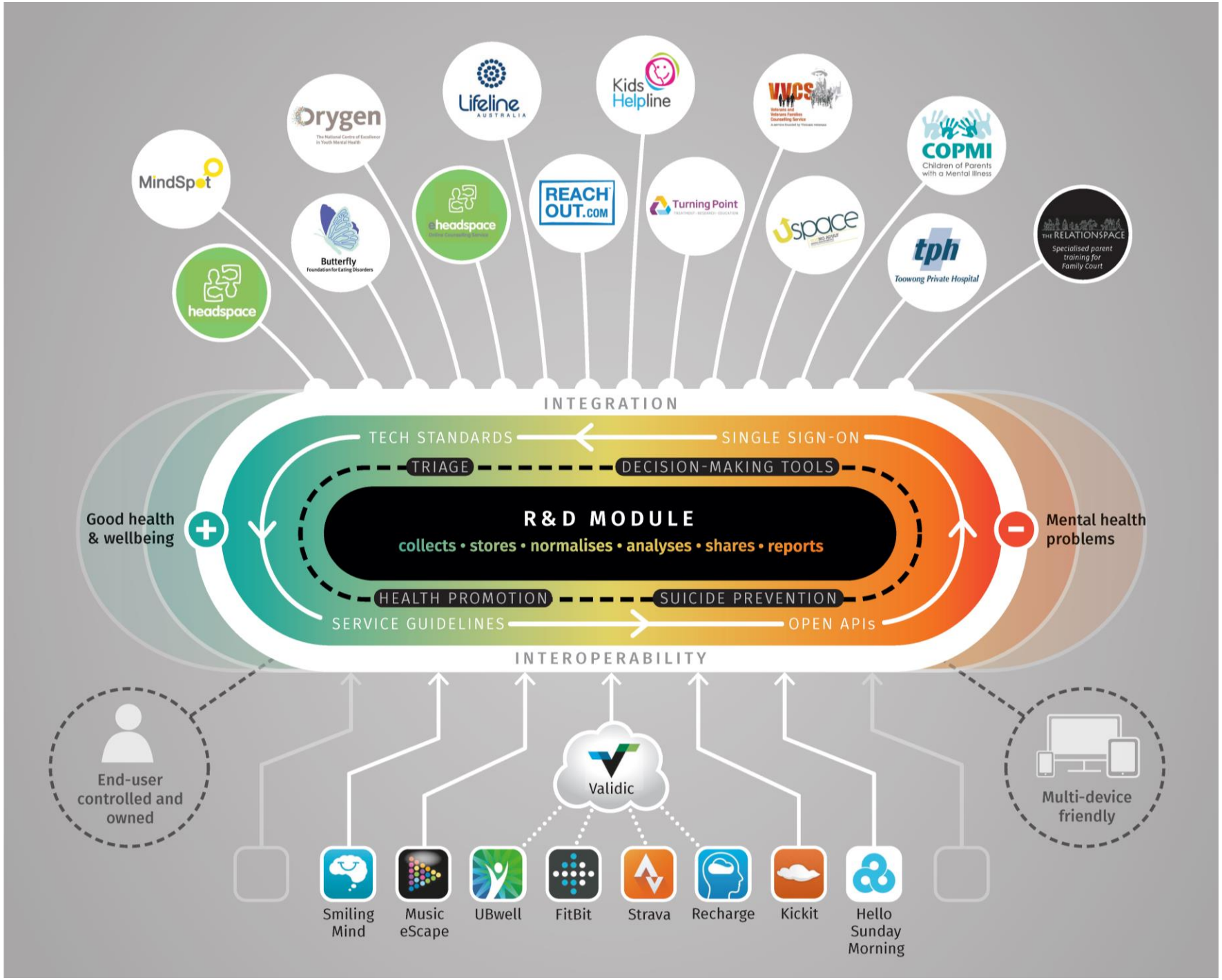
Colour gradients across each row represent lower (light blue) and higher (dark blue) numbers of young people requiring the specified levels of intervention

Technology-enhanced circle of care



Role of technology in BMC Youth Model

- Integrated health information technologies (HITs) can significantly improve quality of mental health service delivery, and will provide the practical tool to adopt the BMC Youth Model into practice
- The InnoWell Platform is an Australian example of a HIT that has been co-design to be integrated within locally connected systems of care (**Seminar #6, 28 May**)
- HITs improve access, efficiency, outcomes and care continuity by enabling real-time and comprehensive online assessment, self-monitoring and routine outcoming monitoring, facilitation of immediate access to high quality online psychological interventions


MindSpot
Orygen
Lifeline
Kids Helpline
VVCS
COPMI
Children of Parents with a Mental Illness
headspace
Butterfly
Foundation for Eating Disorders
eheadspace
REACH OUT.COM
Turning Point
Jspace
tph
Toowong Private Hospital
THE RELATIONSPACE
Specialised parent training for Family Court
INTEGRATION
TECH STANDARDS
SINGLE SIGN-ON
TRIAGE
DECISION-MAKING TOOLS
Good health & wellbeing
R&D MODULE
collects • stores • normalises • analyses • shares • reports
Mental health problems
HEALTH PROMOTION
SUICIDE PREVENTION
SERVICE GUIDELINES
OPEN APIs
INTEROPERABILITY
End-user controlled and owned
Validic
Multi-device friendly
Smiling Mind
Music eScape
UBwell
FitBit
Strava
Recharge
Kickit
Hello Sunday Morning

Summary…

- BMC Youth Model proposes that current stepped-care models can be significantly enhanced by a highly personalised and measurement-based care approach to service delivery
- Creating locally connected systems of care will reduce service fragmentation, and better integrate previously siloed services to achieve person-centered and continuous care
- HITs (or digiHealth solutions) provide enhanced mental health care by leading consumers through a rapid and more effective system experience of service entry, skilled assessment, multidisciplinary care and ongoing outcomes-based monitoring

BMC Youth Model of Care – Seminar Series

What	When	Video Recording/ Zoom details
1. A highly personalised and measurement-based model of care to manage youth mental health	Wed, 6 May (2-3pm)	https://www.youtube.com/watch?v=OP0XRBBrlNc&t=18s
2. Combining clinical stage and pathophysiological mechanisms to understand illness trajectories in young people	Tues, 12 May (2-3pm)	https://www.youtube.com/watch?v=-75UCBWSY88
3. A comprehensive assessment framework for youth mental health care	Thurs, 14 May (2-3pm)	https://www.youtube.com/watch?v=gEhwA2-Ze0o&t=326s
4. Using the BMC Youth Model to personalise care options – best care, first time!	Tues, 19 May (2-3pm)	https://www.youtube.com/watch?v=9cvgGEZjEXg
5. A youth mental health service delivery model to support highly personalised and measurement-based care	Thurs, 21 May (2-3pm)	https://uni-sydney.zoom.us/j/99292797315
6. Maximising the use of digiHealth solutions in youth mental health care	**Thurs, 28 May (2-3pm)**	**https://uni-sydney.zoom.us/j/99899983293**

Thank you!

CPD points can be claimed for psychologists, psychiatrists, social workers, occupational therapists, and mental health nurses.
Please contact ***tanya.jackson@sydney.edu.au*** *for more information.*

The Brain and Mind Centre would like to thank our research partners, such as

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