

Focus on Virtual Assessment and Treatment for Depressed and Suicidal Youth



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University of Pittsburgh		X	

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Agenda

1. Overview of Virtual Approaches
2. Evidence for Virtual Approaches
3. Clinical Considerations
4. Measurement-Based Care in Virtual Practice

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All Things Virtual: On Fast Forward

Are you providing any services virtually?
(i.e., using technology)

- Drastic changes in a short period of time
- Providers and patients who were not engaging in virtual assessment and treatment before are now
- Long-term impact of pandemic on youth services unclear

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The Problem



< 20% of depressed and suicidal youth receive treatment

- Long gap between first symptoms and receiving treatment

Martin et al 2020; Foragy et al 2017; Flaum 2013

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What Do Youth Want in Virtual Mental Healthcare?

- Credibility ("it looks legitimate")
- Real-person support



- Appealing esthetics
- Streamlined
- Self-monitoring

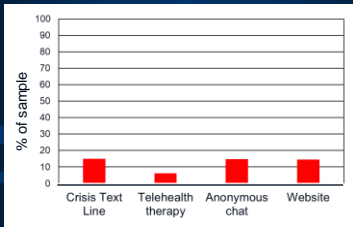
Results in:

- engagement
- adherence
- satisfaction
- symptom improvement

Wozney et al 2017

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Which Virtual Mental Health Options Are Youth Using?



16% of ~3,000 high school students used at least 1

- Low use rate
- Low awareness of options
- Increased use with increased awareness

Toscos et al 2019

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The Problem

- \$ billions invested in studying evidence-based treatment
- Treatment works
- Yet MOST are not in standard clinical practice
- Demand > Supply



Martin et al 2020; Fornagy et al 2017; Flaum 2013

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The Problem

Reach is as important as effectiveness...

Why Aren't Youth Receiving Treatment?

Barriers:

- Stigma
- Geography
- Access
- Transportation
- Finances
- Low perceived need

Martin et al 2020
Roth et al 2019


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The Solution: Virtual Mental Healthcare for Depressed and Suicidal Youth?

Youth are early adopters and regular users

Of 12-17 year-olds in the US:

- 95% have access to a computer
- 89% have their own smartphone
- 75% have internet access



Most youth look online first for information on mental health:

- symptoms
- conditions
- treatment

Martin et al 2020
Gist et al 2019
Mitchell et al 2017

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Technology is the dominant way teens communicate

More Than Half of Teens Text With Friends Daily

% of all teens who spend time with friends...

	EVERY DAY	EVERY FEW DAYS	LESS OFTEN
In person	25%	39%	32%
Text messaging	55	20	13
Talking on the phone	19	24	41
Instant messaging	27	26	25
On social media sites	23	26	21
Emailing	6	14	43
Video chatting	7	14	37
Video gaming	13	16	24
On messaging apps	14	11	17

Source: Pew Research Center/Teens Relationships Survey, Sept. 25-Oct. 9, 2014, and Feb. 10-March 16, 2015. (n=1060 teens ages 13 to 17.)

PEW RESEARCH CENTER

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Virtual Healthcare Definitions

Term	Definition	Examples / Modality
Digital health intervention (DHI)	Interventions that provide information, support & therapy for health problems via a technological platform	<ul style="list-style-type: none"> • Website • App • Text/SMS • Videoconference • Wearable device • Email
Electronic health (eHealth)	Any internet-based healthcare delivery	• Website
Online interventions	A computerized treatment program delivered by Internet. Can have varying levels of user support.	<ul style="list-style-type: none"> • Psychoeducation • Psychotherapy • 'Serious' games • 'Brain training' interventions
Mobile delivered health (mHealth)	Healthcare information, monitoring and/or treatment delivered through portable electronic/mobile devices	<ul style="list-style-type: none"> • Smartphone • Tablet • Text/SMS • App • Wearable device
Telehealth Telepsychiatry & Telemedicine	Healthcare service delivered via telecommunication technology. Communication may be synchronous or asynchronous	<ul style="list-style-type: none"> • Videoconference (online therapy) • Text/SMS • Email

Adapted from Hollis et al 2017

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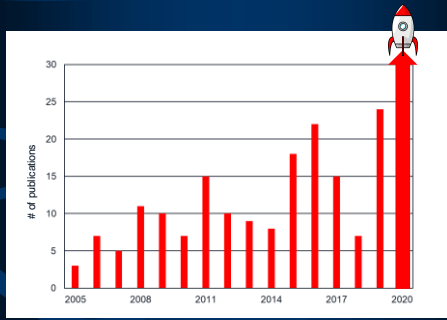
Telehealth for Depressed and Suicidal Youth

<p>Feasible & Acceptable</p> <ul style="list-style-type: none"> • high provider & patient satisfaction • greater sense of security and control • prefer comfort of their personal space <p>Increased access to care</p> <ul style="list-style-type: none"> • convenient • miss less school for appointments • lower cost <p>Ecological validity</p> <ul style="list-style-type: none"> • home • school 	
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Roth et al 2019
 Comer & Myers 2016
 Martin et al 2020
 Grist et al 2019
 Mitchell et al 2017
 Penny et al 2015

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Studies on Telemental Health with Youth are Increasing



Updated from
Comer & Myers, 2016

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Telehealth for Youth: What Do We Know?

- Yields valid and reliable diagnoses
- Feasible for a range of childhood disorders
(autism, PTSD, ADHD, psychosis, eating disorders, depression...)
- As effective as the same care delivered in person
(with lower cost and higher satisfaction)
- Virtual CBT (clinician-delivered) has biggest effect size



Based on limited research

Grist et al 2019
Hollis et al 2017
Beryhill et al 2019
Tuerk et al 2019

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Online Interventions for Youth Depression

Features of online treatment that matter:

- Tailoring
- Personalization
- Rewards
- Reminders
- Expertise
- Authority/System credibility



Radomski et al 2019

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Online Interventions for Youth Depression: What Do We know?

Meta-analyses of online treatments for youth depression and anxiety

- 34 controlled studies (20 anxiety; 10 depression; 4 both)
- <50% had any clinician contact
- ~60% program completion rate overall



Findings:

- Small overall treatment effect ($g=0.45$; > waitlist and attention control)
- CBT > Cognitive Bias Modification, Attention Bias Modification & Other
- Equally effective for clinical depression and anxiety
- Less effective for subclinical symptoms
- Mixed findings on age differences

- Enhanced outcomes with *parental* involvement
- Enhanced outcomes with *therapist* support
- More effective ($g=0.66$ vs face to face $g=0.72$)
- Better adherence

Grist et al 2019
Stasiak et al 2016

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Online Interventions for Youth Depression: What Do We know?

Online CBT programs for youth depression and anxiety:

- CATCH-IT (Ip et al 2016)
- SPARX (Merry et al 2012)
- Stressbusters (Wright et al 2017)
- The Journey (Stasiak et al 2014)
- BRAVE-ONLINE (Gonaughton et al 2017)
- Bjp-OCB (Lenhard et al 2017)
- Cool Teens (Wetrich et al 2012)
- Think Feel Do (Stallard et al 2011)
- MoodGym (Twomey & O'Reilly 2016)



Other online programs:

- BiteBack (Positive psychology; Maricavasagar et al 2014)
- PratenOnline (Solution-Focused Brief Treatment; Kramer et al 2014)

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School-Based Virtual Assessment & Intervention

- Universal mental health screening in schools recommended
Online technology to identify at-risk youth (Goodman-Scott et al 2019)
- School-based telehealth on the rise in the US (Love et al 2019)
~1 million students in >1800 public schools (mostly rural)
- MEMO study (Whittaker et al 2012)
15 high schools in New Zealand
mhealth CBT intervention for prevention of depression
Controlled trial showed no benefit
- Online gatekeeper trainings for school professionals (eg Ghoncheh et al 2014)
enhance knowledge and confidence with suicidal youth



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Virtual Intervention for Suicidal Youth: What Do We Know?

- Very little! Concerns re: risk
Suicidal youth often excluded from trials
- E-DASH (Sayal et al 2019)
phone or video problem solving /CBT
Small controlled trial (age 16-30) who recently self-harmed
Low retention in treatment and follow-up
Stopped trial early
- EMPATHY open trial in schools (Silverstone et al 2015)
Guided-internet based CBT
7th & 8th graders
Pre-post improvement in depression and suicidal ideation

Perry et al 2019


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Virtual Intervention for Suicidal Youth: What Do We Know?


- me-IT (Robinson et al 2014, 2017)
CBT delivered via "host character" online (overseen by school staff)
High school students
Acceptable in pilot study
Larger controlled study couldn't recruit
High dropout rate
- Additional small studies of e-interventions for suicidal youth showed NO effects (eg iBobbly self-help online)

Perry et al 2019

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Proceed with Caution



Limitations of current studies

- small samples
- not yet replicated
- cost effectiveness unknown
- most apps have never been tested

Still a lot we don't know!

- general acceptability (post-COVID)
- Many available online...little to guide choice

Tuesik et al 2019

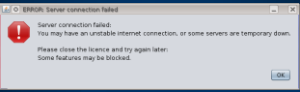
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Telehealth Challenges




- Internet connectivity
- Privacy / data protections
- High attrition
- Access to phone / computer for adolescents
- How to integrate into healthcare system?
- Payer issues / reimbursement
- Awareness of resources

Grist et al 2019
Hollis et al 2017

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“Webside Manners”



- Open body posture
- Managing pauses and turn-taking
- Nodding!
- Distance from camera approximates personal space
- Hand gestures (small; thumbs up, waving) replace physical and verbal gestures (i.e., less “yes, uh-huh”)
- Consider your physical space (privacy, professionalism, light)
- Eye contact is critical
- Monitor your own image (picture in picture)

Roth et al 2019

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Telehealth Considerations: Privacy and Security

- Password protect your device
- Limit use of devices to professional activities
- Safe storage of devices when not in use
- Disposal of "records"
- HIPAA-compliant platform



Martin et al 2020
McGinn et al 2019
Adamas et al 2018

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Telehealth Considerations: Appropriateness

Is telehealth appropriate for this youth?

Practical considerations:

- Jurisdiction across state lines
- Insurance reimbursement / coverage
billing / copays
- Documentation / Record Keeping
(e.g., informed consent, release of information)

Martin et al 2020
Adamas et al 2018

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Telehealth Considerations: Appropriateness

Is telehealth appropriate for this youth?

Clinical considerations:

- Patient's privacy / confidentiality
- Distractions
- Severity
- Evidence for telehealth for the youth's condition
- Technology competence / comfort



Martin et al 2020
Adamas et al 2018

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Telehealth Risk Management

Risk management guidelines:

- Discuss at informed consent
- Obtain contact # and physical location at start of *each* contact
- Review and confirm safety plan
- Create emergency plan if disconnected / safety concerns
protocol for contacting collaterals (secondary, tertiary contacts)
emergencyservices
- Incorporate parents/guardians as appropriate
- Timeframe for asynchronous communications



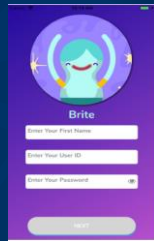
Martin et al 2020
McGinn et al 2019
Luxton et al 2010

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Telehealth Risk Management

How to manage suicidal youth virtually?

Consider the BRITE app!



Kennard et al 2018
App developed by:
David Brent, Betsy Kennard, Candice Biernesser, Jamie Zelazny & Tina Goldstein in partnership with NuReim

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Safety Planning

Safety plan is standard of care for at-risk youth

- A structured sequential plan for coping with suicidal thoughts / urges
- Tailor made for the youth; collaboratively created
- An agreement to defer acting on suicidal thoughts / urges for a specified period in order to try other potential solutions

Stanley et al 2009
Brent et al 2011
Sarna and Blisker 2007

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Why a Safety Planning App?

- Safety plan is readily available in real time
- Could be used across levels of care
- App serves as guide for clinician in building an effective safety plan

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Safety Planning / Suicide Prevention Apps

>15 apps (and counting!)
Varying levels of evidence-informed content

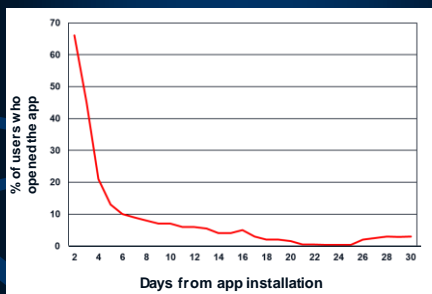


- Most not studied—limited evidence of effectiveness
- Generally acceptable
- App usage an issue

Larsen et al 2016
Grist et al 2017
Arshad et al 2019

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Mental Health App Usage Over 30 Days



Baumel et al 2019

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What Do Suicidal Teens Want In An App?

- Security and discretion
- Personalization
- Suggestions for useful interventions
- Multiple methods for coping
- Daily reminders to use the app so that when a crisis comes, they are used to using it

Brite is the only app for suicidal teens that is personalized, multi-faceted, has a safety plan, and has been tested in a controlled trial to examine suicide attempts

Kennard et al 2015, 2019

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BRITE Features

Personalized Safety Plan

Routes adolescent to possible interventions (all customizable):

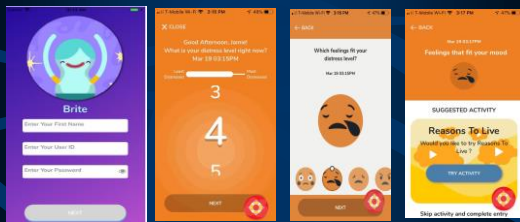
- Savor
- Distract
- Self-Soothe
- Reasons for living
- Reaching out to contacts

Highlights:

- Badges as rewards
- Substantial user-generated content
- Clinician Dashboard

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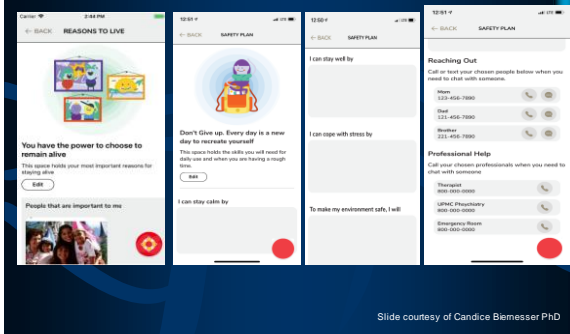
The BRITE App



Slide courtesy of Candice Blemesser PhD

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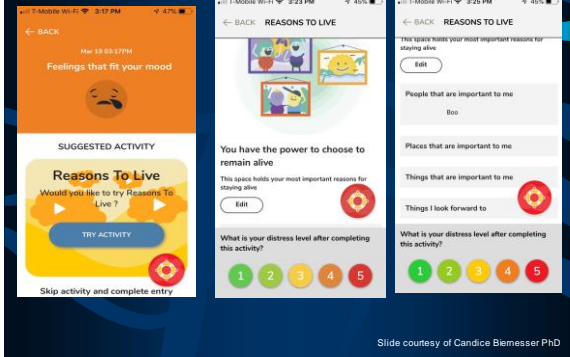
Creation of Safety Plan in BRITE



Slide courtesy of Candice Bemesser PhD

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Reasons for Living in BRITE



Slide courtesy of Candice Bemesser PhD

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As Safe as Possible (ASAP): An intervention for Hospitalized Suicidal Adolescents

- Period post-discharge from hospital is the highest risk for repeat attempts and death by suicide
- Gap between discharge and first outpatient session
- Suicidal events occur early in outpatient care (before youth can learn skills in treatment)



A brief intervention on the inpatient unit
PRIOR to discharge + BRITE app to bridge transition to outpatient

Kennard et al 2015
Kennard et al 2018

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The Interventions: Treatment as Usual (TAU) and ASAP

TAU

ASAP

Motivational Interviewing (MI) Framework

Inpatient Hospitalization Core Content		
<ul style="list-style-type: none"> Inpatient programming Standard safety plan Standard aftercare 		
+		
Module	Title	Core Content
1	Adherence & Safety	<ul style="list-style-type: none"> Adherence (MI) Psychoeducation Safety planning informed by chain analysis
2	Affect Protection: Reasons for Living	<ul style="list-style-type: none"> Reasons for living Mood monitoring Pleasant activities Populate BRITE app
3	Affect Protection: Savoring	<ul style="list-style-type: none"> Savoring & switching Distress tolerance
4	Consolidation (pre-/post discharge)	<ul style="list-style-type: none"> Review skills Plan/troubleshoot BRITE app use Bridging calls Case management Liaison with aftercare

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Suicide Outcomes: 6 months* since intervention

	TAU	ASAP	P
Any suicidality	79.3%	67.7%	0.49
Suicidal ideation	75.9%	67.7%	0.49
Suicide related behavior	10.3%	12.9%	>.99
Suicide attempt**	28.6%	10.3%	0.08

*Data Aggregated from Week 4, 12, and 24 Interviews
 ** This excludes the 3 participants who were still in the hospital at the time of attempt

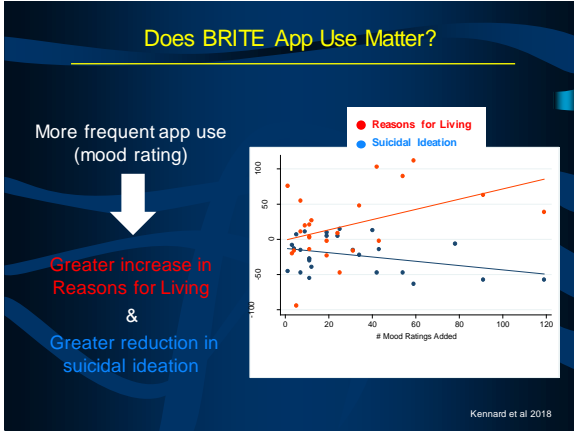
Kennard et al 2018

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Adolescents Receiving ASAP vs TAU Had Longer Time to Suicide Attempt

Kennard et al 2018

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- ### Future Directions for ASAP and BRITE
- Currently conducting a large clinical trial
2 sites, N=240
 - We aim to identify which aspects of the intervention (ASAP, Brite, or the combination) is most associated with prevention of future suicide attempts

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Exciting Additions to BRITE

- Guide2Brite
an onboarding adaptation of the app for primary care physicians and community clinicians
- BriteBoard
clinician dashboard to guide measurement-based care

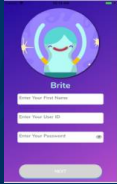



Stepp, Brent - AFSP, NIMH

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Interested in Using BRITE with At-Risk Youth?

- Website: etudes.pitt.edu to learn more
- Email: etudes@upmc.edu
- Call: Brandie George (412) 246-5629



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Text Messaging Intervention to Enhance Treatment Engagement: Text to Connect (T2C)



~20% of youth referred access mental healthcare in 6 mos (Chisolm et al 2009)

How to help youth and families follow up with treatment recommendations?

- T2C: Automated text messaging system for parent and youth
- targets motivational barriers
 - prompts awareness of treatment targets in daily life
 - delivers tailored information
 - provides appointment reminders

Goldstein, Suffoletto - NIMH

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What is Measurement-Based Care (MBC)?

Systematic administration of symptom rating scales
+
Use of the results over time
=
To inform clinical decision-making

Expert recommendations for management of suicidal youth via telehealth include MBC at each visit

Harding et al 2011
Fortney et al 2017
McGinn et al 2019

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Why Use Measurement-Based Care? Effectiveness

Research supports effectiveness of MBC in behavioral healthcare:

- Enhanced treatment outcomes
Medication and therapy have faster and more robust effects
Across patient age, disorder type, and provider type
- Meta-analysis of over 50 controlled studies
g = 0.5 for patients adhering to treatment
g = 0.3 for all patients
***Largest effect size for studies including: Outpatient, patient self-rated symptoms, & feedback to provider over time in a structured manner

Harding et al 2011
Fortney et al 2017
Kennedy Forum Brief, 2015

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Why Use Measurement-Based Care? Acceptability & Feasibility

For PATIENTS, MBC:

- Promotes illness knowledge and symptom self-management
- Improves adherence to tx plan
- Empowers patients to be more involved with clinical decision-making
- Provides evidence that provider is taking their concerns seriously
- Enhances collaboration and coordination across providers
- Enables evaluation of programming



For PROVIDERS, MBC:

- Enhances communication with patients
- Promotes focus on symptoms identified by patient as most severe
- Complements clinical judgment (clinical judgment alone detects deterioration for ~20% of patients)
- Prompts providers to change course of tx when patients are not improving

Harding et al 2011
Fortney et al 2017
Kennedy Forum Brief, 2015

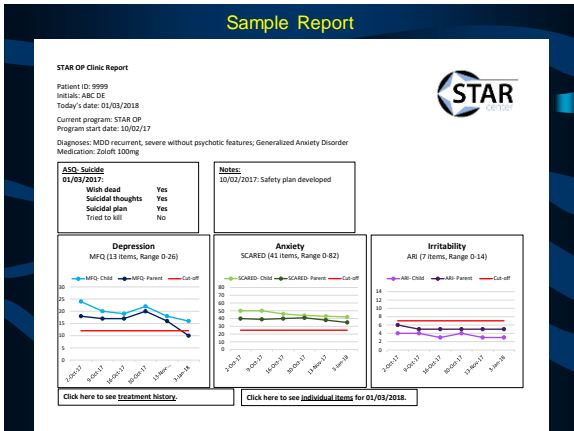
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What Does MBC Look Like at STAR?



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Sample Report



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Measurement-Based Care: How To

- Paper and pencil
- Text messaging
- Phone apps
- Commercial systems
- Embedded in electronic medical record

Choosing scales:
Free, brief and validated: Standardized instruments for low-resource mental health settings. Beidas et al 2015

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What Is Needed for MBC to be Effective?

Measurement

- Reliable and valid
- Sensitive to change
- Diagnostic / symptom-specificity

Implementation

- Frequent measurement and feedback to provider; screening alone insufficient to improve outcomes
- Timely measurement and feedback to provider (concurrent with clinical encounter)
- Clinically actionable feedback

Fortney et al 2017
Kennedy Forum Brief, 2015

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Conclusions

Virtual assessment and treatment:

- Valid & reliable assessment
- High provider and patient satisfaction
- Feasible
- As effective as same care delivered in person
- However, research remains limited:

Need to know for whom & under which conditions



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Future Directions

- Development / testing of hybrid models
- Gaming
- Virtual reality
- Wearables / real-time monitoring
- Passive sensing



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Resources

- American Psychological Association
- American Psychiatric Association
- American Telemedicine Association
- National Association of Social Workers and Association of Social Work Boards
- National Board for Certified Counselors

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