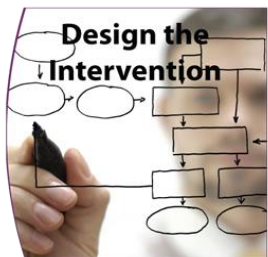
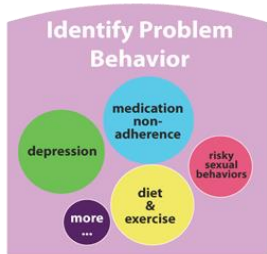


# Digital Mental Health

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Northwestern University  
Feinberg School of Medicine



cbits center for behavioral intervention technologies

[www.cbits.northwestern.edu](http://www.cbits.northwestern.edu)

The logo for the Center for Behavioral Intervention Technologies (cbits) features a stylized globe icon above the text 'cbits center for behavioral intervention technologies'. Below the logo is the website address 'www.cbits.northwestern.edu'.

# Disclosures

## Honoraria/Consulting fees

Otsuka Pharmaceuticals  
Optum Behavioral Health

## Ownership Interest

Actualize Health

## Funding

National Institute of Mental Health

P20 MH090318

R01 MH100482

R01 MH095753

R01 MH109496

R34 MH095907

Verizon Foundation

# Mental Health

## 12 Month Prevalence:

- >61 million (20-25%) American adults will meet criteria for a mental health disorder in any given year.
  - 24 million (9.5%) Mood Disorders
  - 44 million (18%) Anxiety Disorders

## Workforce is Inadequate:

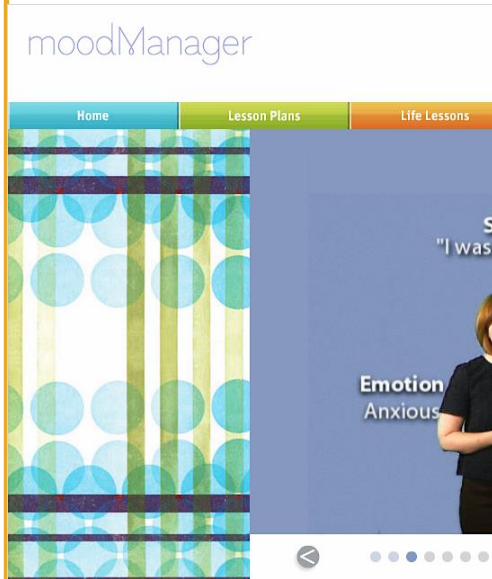
- 21% receive “minimally adequate” care in any given year.
- 350,000+ mental health professionals needed (>twice what we have).

## Geography:

- 90 million Americans live in federally-designated Mental Health Professional Shortage Areas (55 million for primary care, 45 million for dentistry)

# What is Digital Mental Health:

## CBT delivered via different platforms



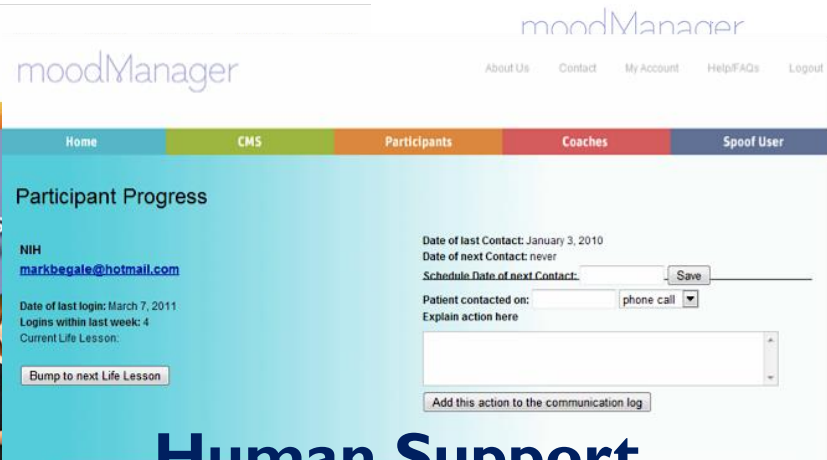
moodManager

Home Lesson Plans Life Lessons

Emotion Anxious

"I was

Didactic Content



moodManager

About Us Contact My Account Help/FAQs Logout

Home CMS Participants Coaches Spoof User

### Participant Progress

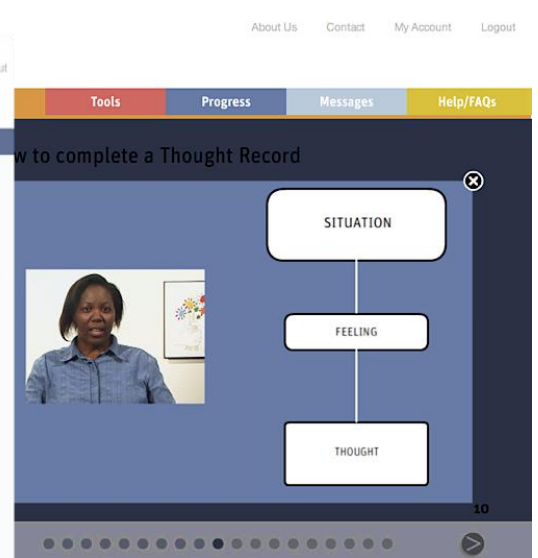
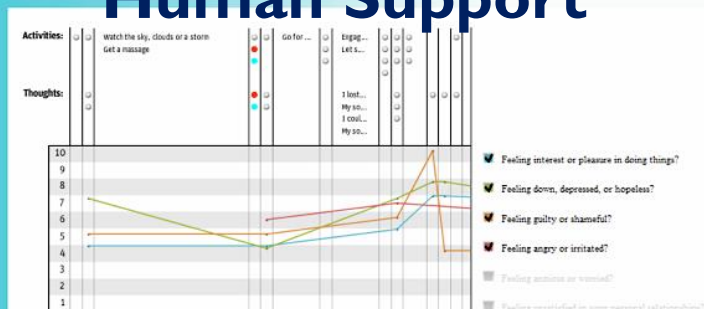
NIH  
[markbegale@hotmail.com](mailto:markbegale@hotmail.com)

Date of last Contact: January 3, 2010  
Date of next Contact: never  
Schedule Date of next Contact:  Save

Patient contacted on:  phone call

Explain action here

## Human Support



moodManager

About Us Contact My Account Help/FAQs Logout

Tools Progress Messages Help/FAQs

### How to complete a Thought Record

SITUATION

FEELING

THOUGHT

10

Network Exercises

# Research and Practice

## Lots of Validation

~100 RCTs show that

- Self-directed digital treatment are at best minimally helpful.
- Coach-supported web-based interventions
- Appear to be as effective as standard treatments ( $d_s = .56 - 1.08$ )
- Coaches do not have to be mental health professionals

Richards D, et al. *Clin Psychol Rev* 2012;32:329-342.

Alvarez-Jimenez M, et al. *Schizophr Res*. 2014;156:96-106.

# Real World Implementation



Mohr, et al., *Psychiatric Services*, in press.

# Research-to-Practice Gap

Digital mental health technologies are poorly designed



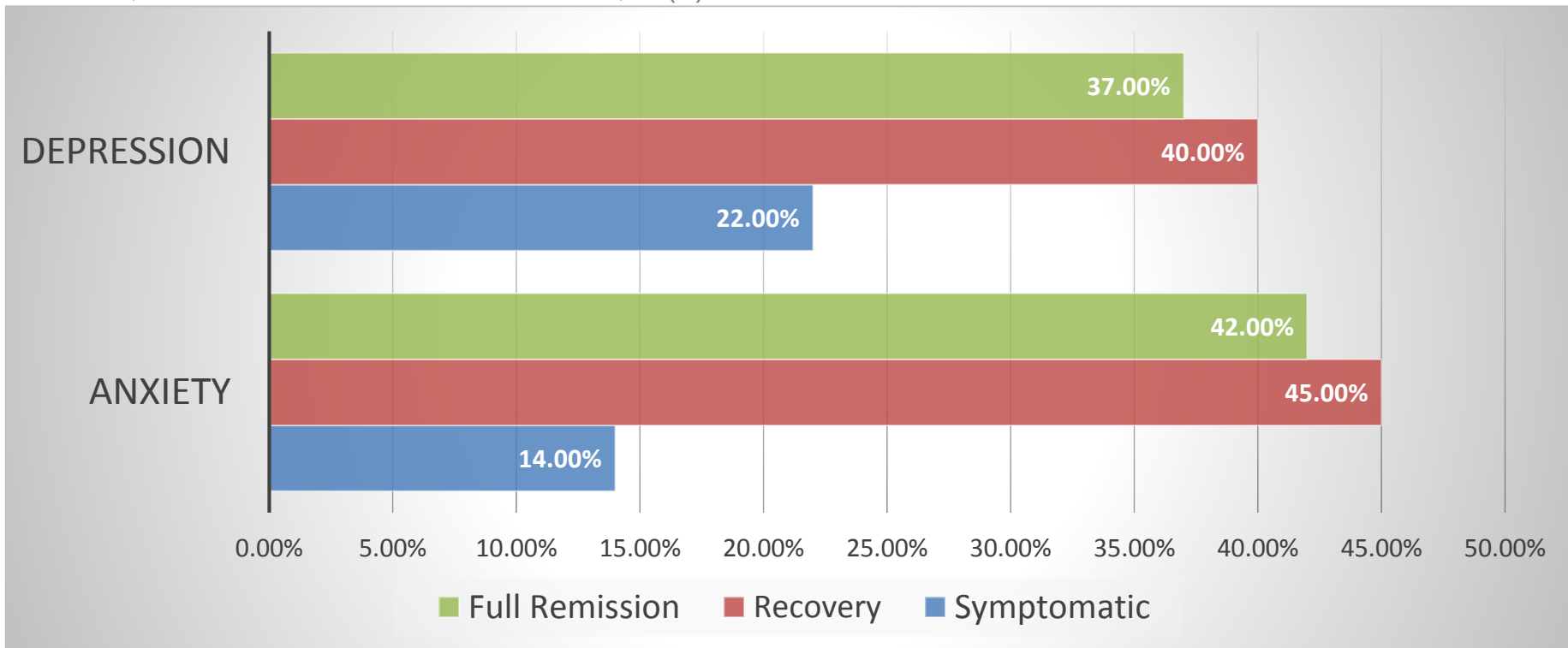






# Diagnostic Status at End of Treatment

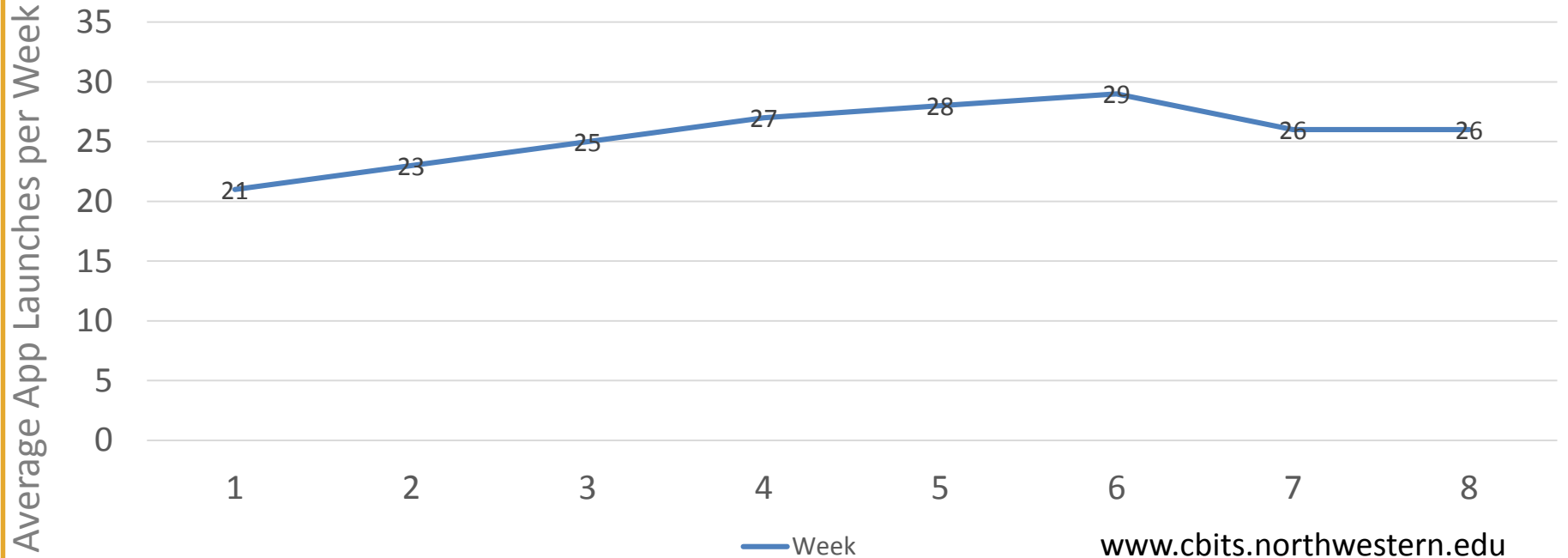
Mohr, et al. *J Med Internet Res.* 2017;19(1):e10.



# Average App Launches over 8 weeks: 195

## Average time: 1.1 min (Median = 17 seconds)

### Average # of App Launches Per Week



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# New Directions in Digital Mental Health

## Value-Burden Ratio



# Personal Sensing

Review: Mohr, et al.. *Annu Rev Clin Psychol.* 2017;13:23-47.

## Sleep

Abdullah, Choudhury. *UbiComp*; 2014

Saeb... Mohr. *J Med Internet Res.* 2017 Apr 18;19(4):e118

## Social

Min, J-M... Zimmeramn, J. *CSCW*, 2013

Murnane... Choudhury. *UbiComp*; 2015

## GPS & depression

Saeb... Mohr. *J Med Internet Res* 2015;17(7):e175

Saeb... Mohr.. *PeerJ.* 2016;4(e2537)

## Challenges

- Lack of reproducibility
- Variability

# Thanks to our funders and team!

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P20 MH090318  
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R01 MH109496  
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