

Welcome!

Suicide Risk Assessment & Intervention: Digital Opportunities

Kelly Koerner, PhD

1. Please make sure your video & microphone remain turned off
2. Closed Captions will be provided
3. You may type questions for the presenter into the Chat area at any time

Time has been reserved at the end of the presentation to answer questions.





Suicide Risk Assessment & Intervention: Digital Opportunities

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Disclosures

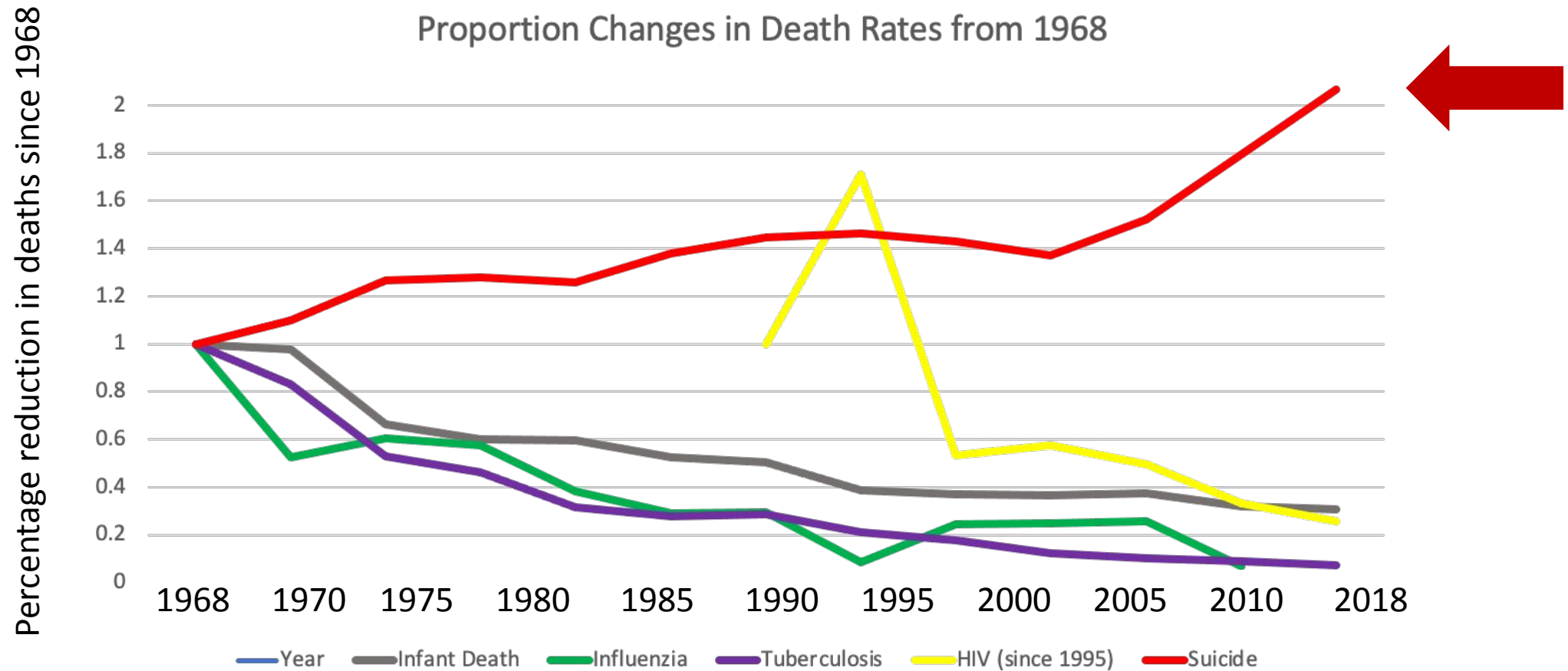
- NIMH-funded SBIR grants (R43MH108222 & R44MH108222)
- Book Royalties: *Dialectical Behavior Therapy in Clinical Practice* and *Doing Dialectical Behavior Therapy: A Practical Guide* (Guilford Press)
- Co-founder Evidence-Based Practice Institute, Inc. (employment, stock options)

The views expressed in this presentation are those of the author and do not necessarily reflect the official policy of Evidence-Based Practice Institute, Inc.

Objectives

- How safe highly reliable care translates to digital formats
- Advantages of technology-assisted care for suicidal individuals, providers, and healthcare systems
- Prediction science and adoption challenges faced by AI/ML-based decision-support
- Evidence-based practices that are ready for dissemination and implementation

Why no reduction in US deaths from suicide compared to other causes?



**Systemic evidence-based
protocols prevent death. The
same is true for death by suicide.**

Takeaway 1: Zero Suicide is possible with reliable access to safer care.

“You can’t help suicidal people with technology. They need and want care from people.”

Takeaway 2: Suicidal individuals express high satisfaction with tech-assisted care.

Reliable, Safer Suicide Care Enabled by Tech Can:

- Increase access
- Better standardization
- Reach reluctant
- Convenience
- Personalization
- No stigma
- Lower cost for consumer, provider, system
- Empower self-management
 - Enhance skill acquisition
 - Reminders and other adherence support
 - Support skill use in life
- Support providers, increase efficiency, task shifting
- Offset staff shortages

Treat suicidal behavior directly for better outcomes. Suicidality is not just a symptom of another disorder.

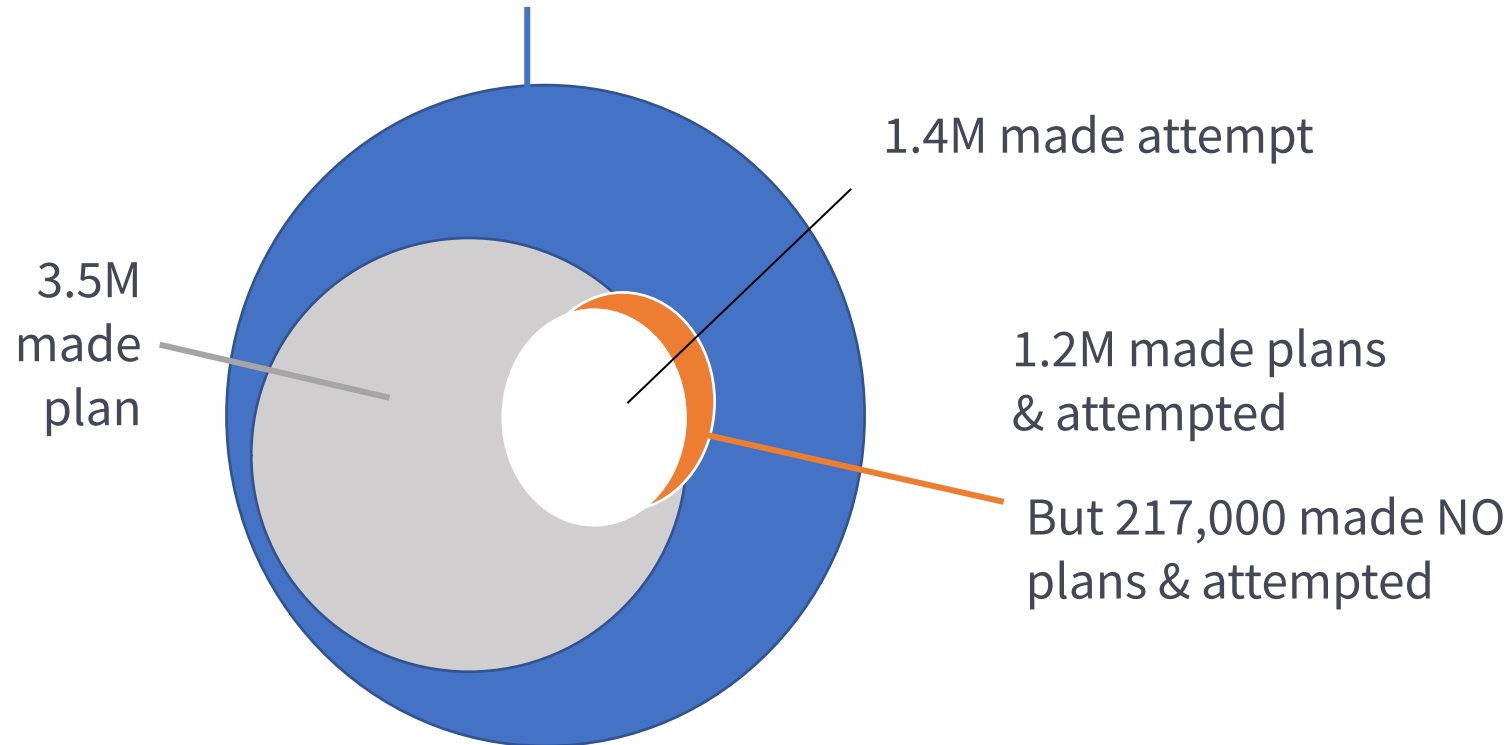
Takeaway 3: Use Suicide-Specific Treatment

CITATIONS

Treat Suicide-Specific Targets

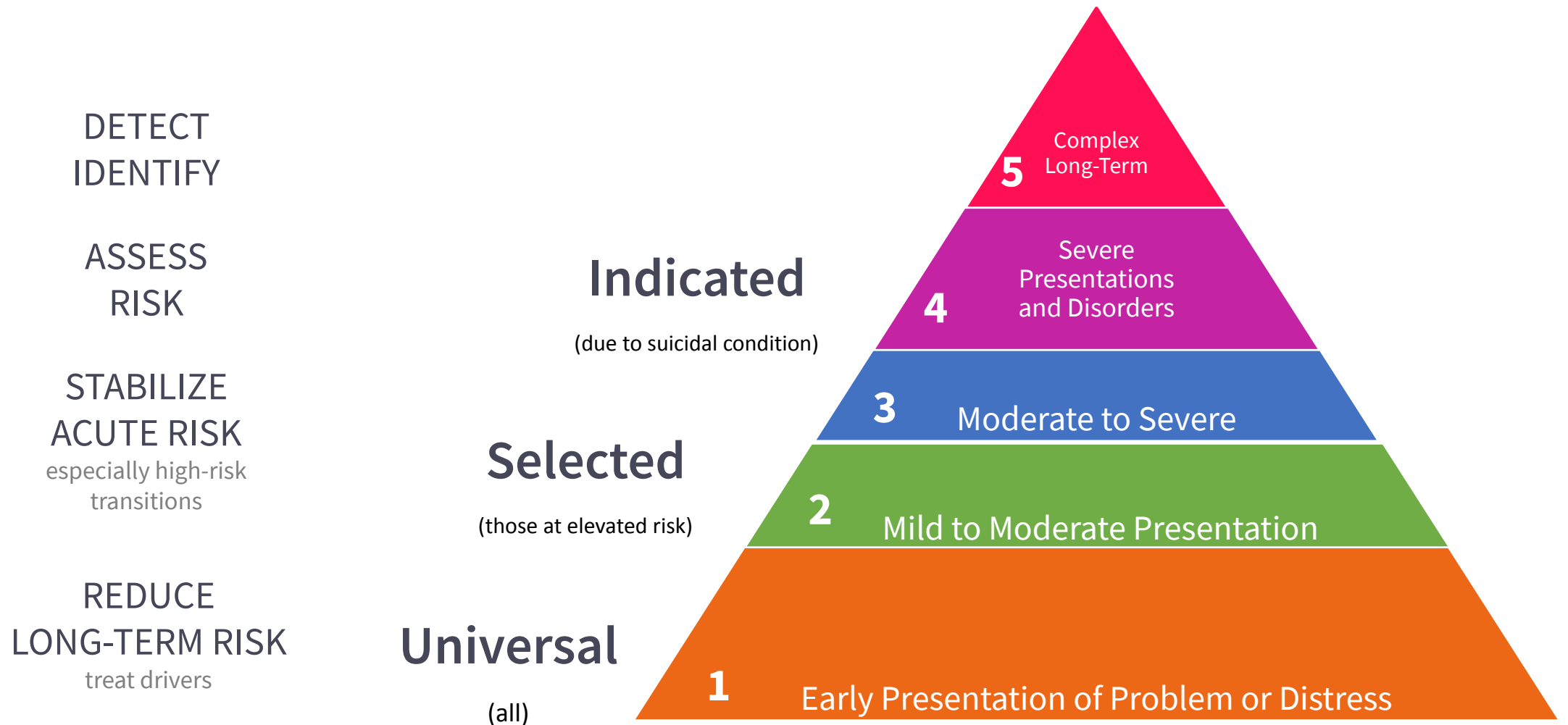
Detect, identify, assess, stabilize acute risk, treat long-term risk

In 2019, 12M Adults 18+ had serious thoughts of suicide



CDC 2019

Similar suicide-specific care tasks should be performed across service level



**Identifying at-risk groups can be done.
Predicting transition from suicide
ideation to attempt in individuals is poor.
Those we identify need appropriate care.**

Takeaway 4: No magic bullet in prediction science.

Tech-Assisted Detection of Suicide Risk

Examples

- Universal: public health campaigns
 - Selected: EHR culling, computer adaptive testing
 - Indicated: LEMURS
-
- **Caveat:** Must treat those identified at risk

Prediction: factors that should influence our adoption and implementation

1. Franklin et al 2017 – 50 yrs & no progress in prediction using risk and protective factors

yet our current human assessment methods mostly use these risk & protective factors ...

2. Algorithms predict well, but challenge of provider adoption

Releasing autonomy is hard despite reliably better outcomes



Self-driving Uber vehicles in a lot in Pittsburgh. One vision of the future sees fleets of cars hailed as people need a lift and less private vehicle ownership. Gene J. Puskar/Associated Press

Adoption of AI algorithms starts with driver assistance

“It’s not good enough yet.”



Prediction: Factors that should influence our adoption and implementation

3. Passive monitoring is promising, but ethics are emerging

example LEMURS

- **Caveat:** Must treat those identified at risk

Highly variable individual paths from ideation to action make individual prediction difficult

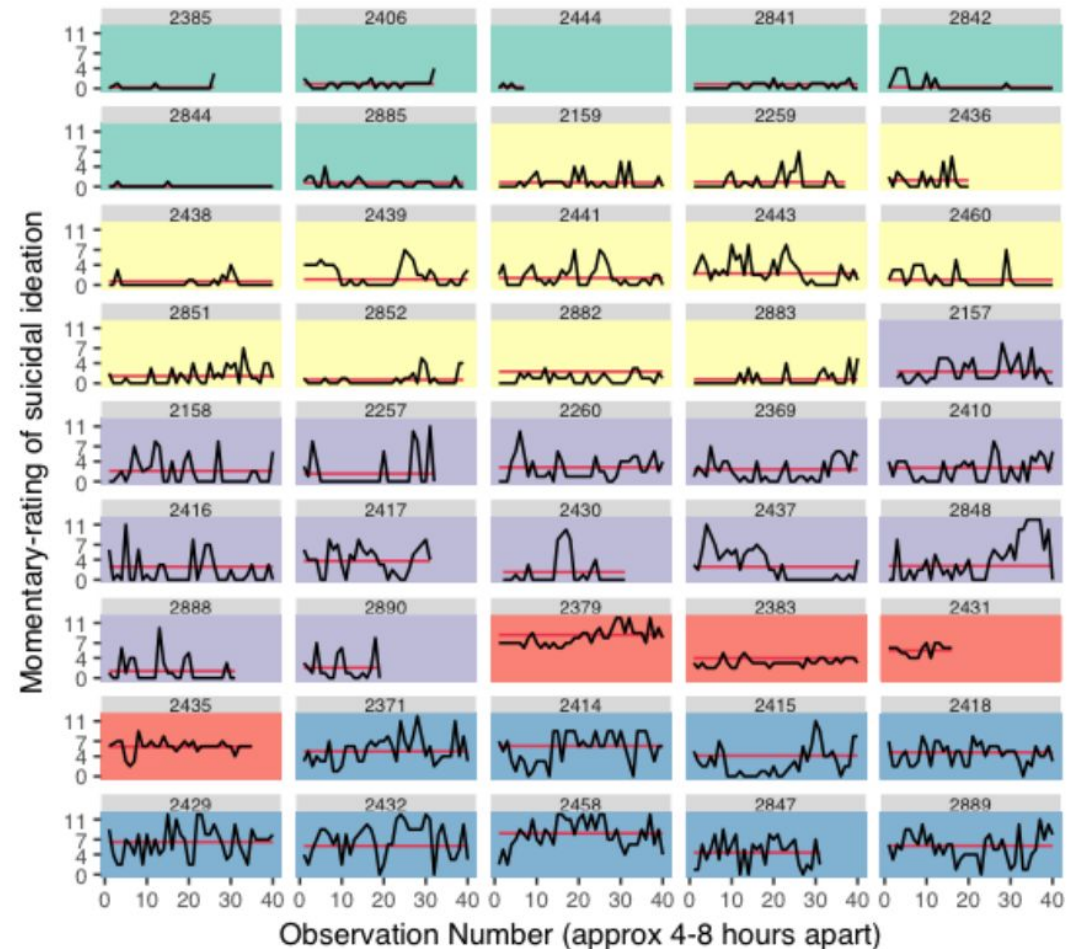
- Daily fluctuations in ideation
- Ideation to decision, method access, and place is highly individualistic

“Suicide is an outcome that results from a complex, nonlinear, and time-varying combination of a wide range of factors, and we need to seriously start treating it in that way”

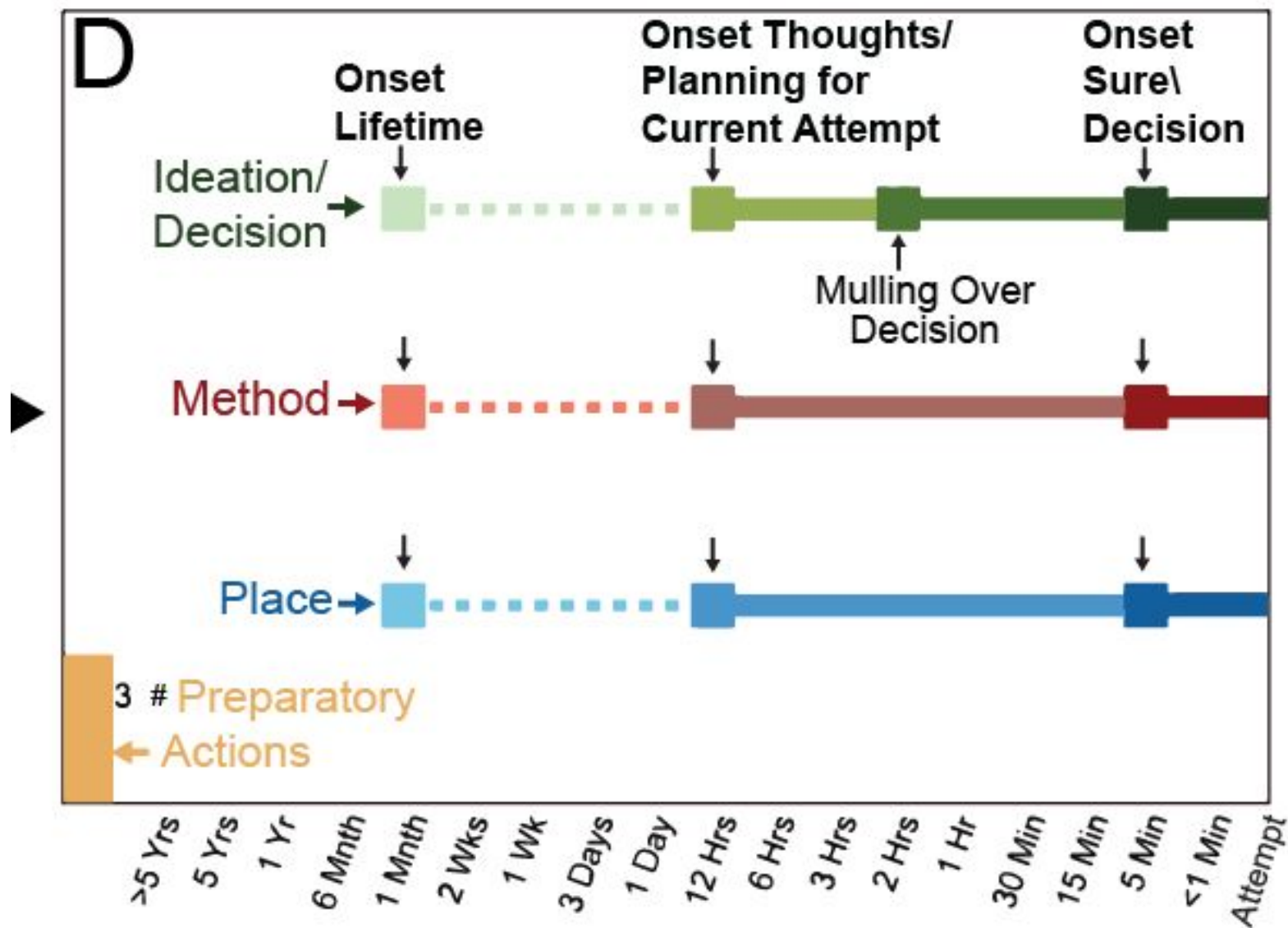
Nock, Kessler, & Franklin (2016)

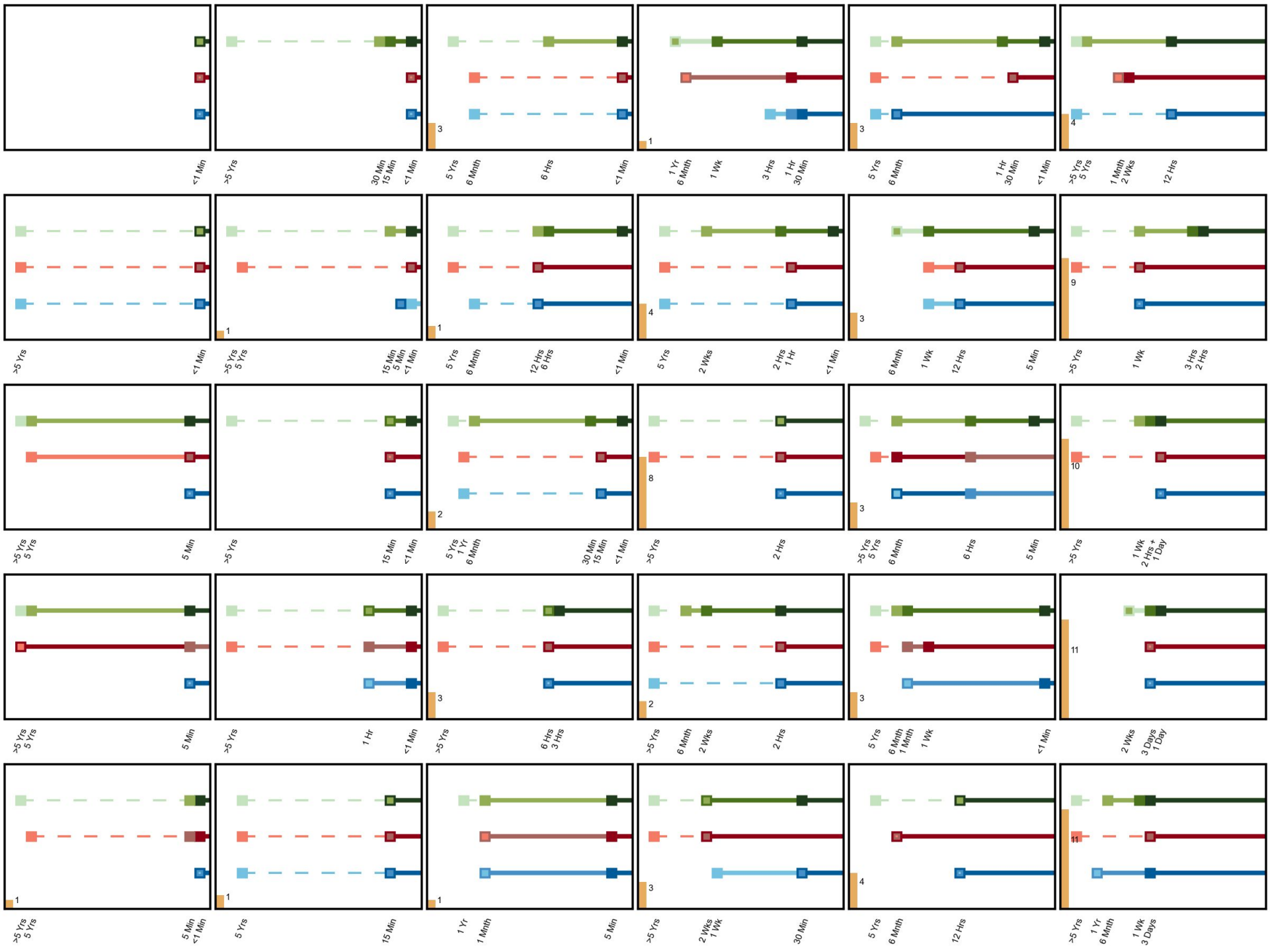
Intense suicidal ideation

1. Varies dramatically throughout the day
2. Has relatively rapid onset

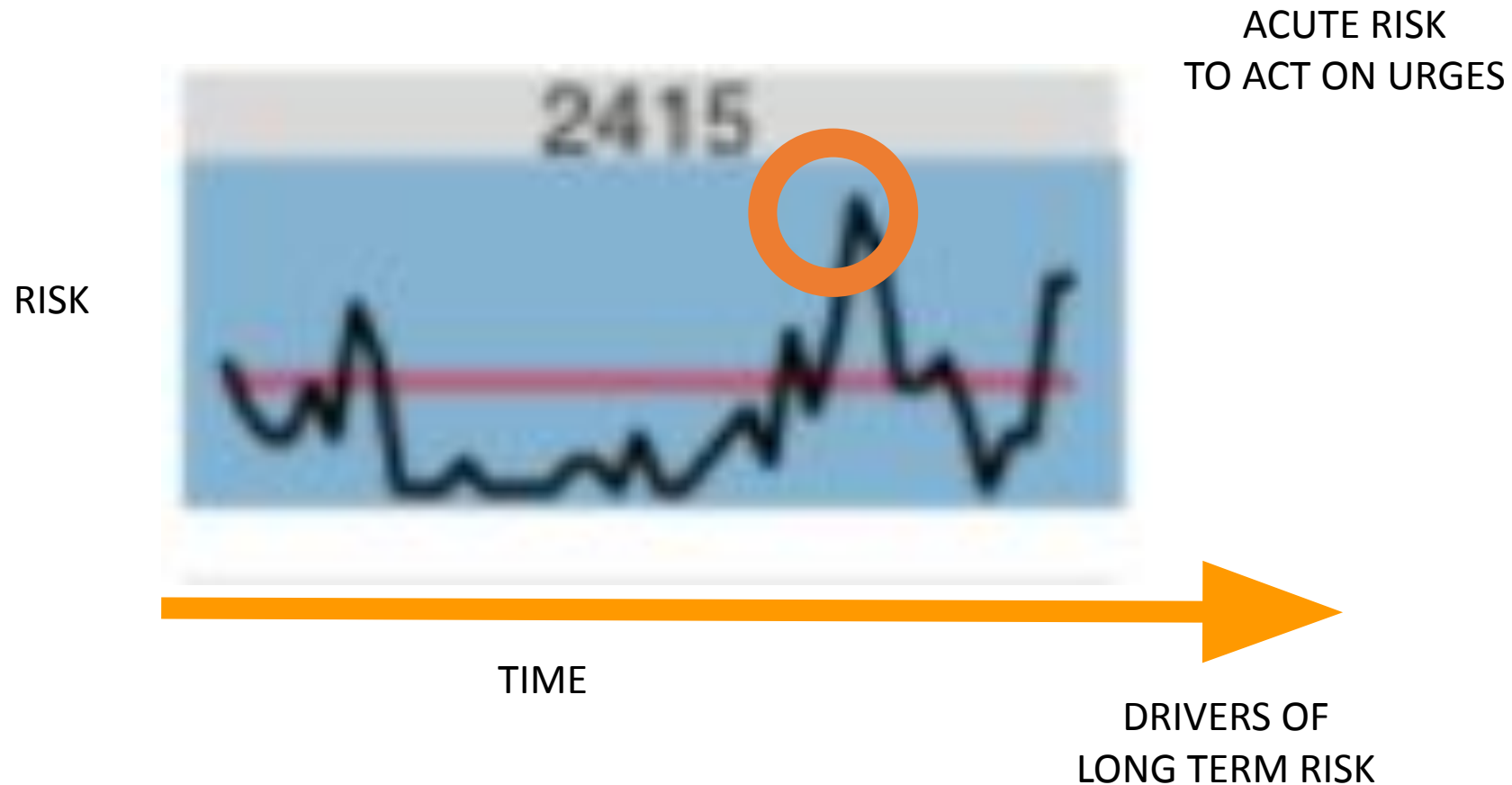


3.
Transition
from
ideation
to action is
highly
variable





Indiv: Assess — Manage Acute Risk –Treat Drivers



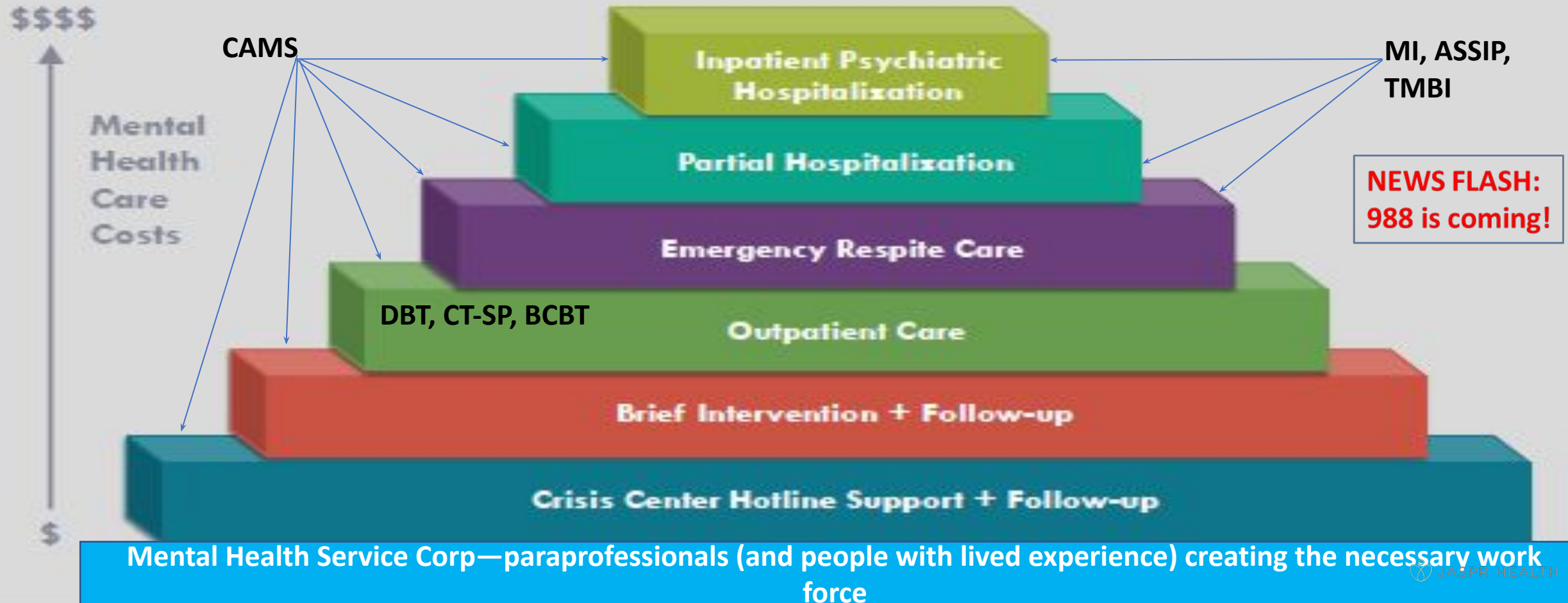
Population: Stepped Suicide-Specific Care

Stabilization Planning +
Lethal Means Safety +
caring follow-up used
throughout the model

Suicide-specific Care at Each Step From Least to Most Restrictive Intervention

Suicide-focused care that is:

- evidence-based
- least-restrictive
- cost-effective



Science lags behind the explosion of BH apps. Look for fidelity, good UX, science first business models.

Takeaway 5: It's a long game ahead of us

- Science-Backed
- Commercial Ready
- Emerging

Koerner's POV Given State of the Science

Consider

1. Fidelity <- -> Credibility
2. User Experience
3. Science-first business model

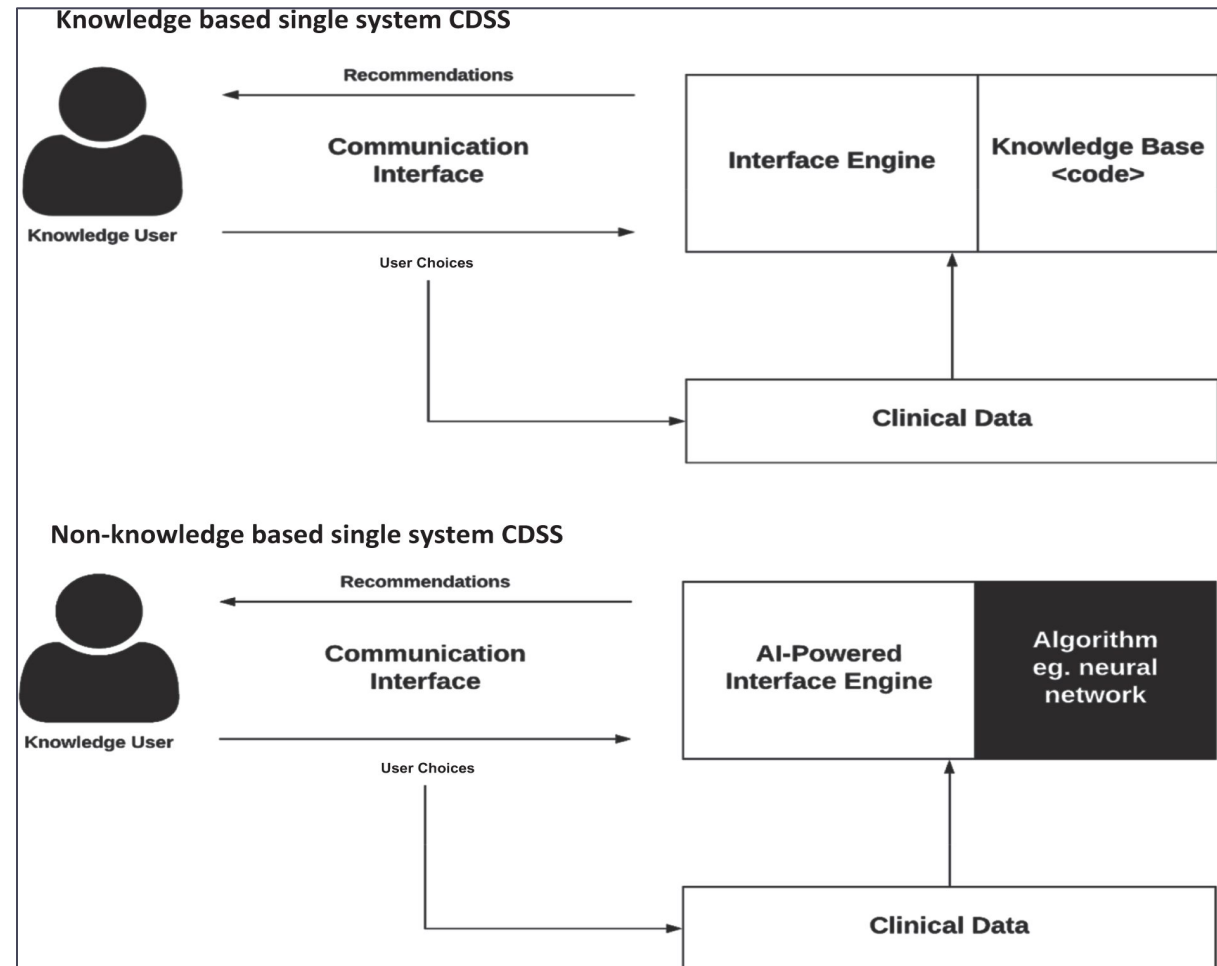
Not a replacement, but an adjunct to treatment

<https://onemindpsyberguide.org/apps/>

The paradigm shift to Computerized Clinical Decision Support is underway

IF-THEN: alerts, reminders, guidelines, condition specific order sets

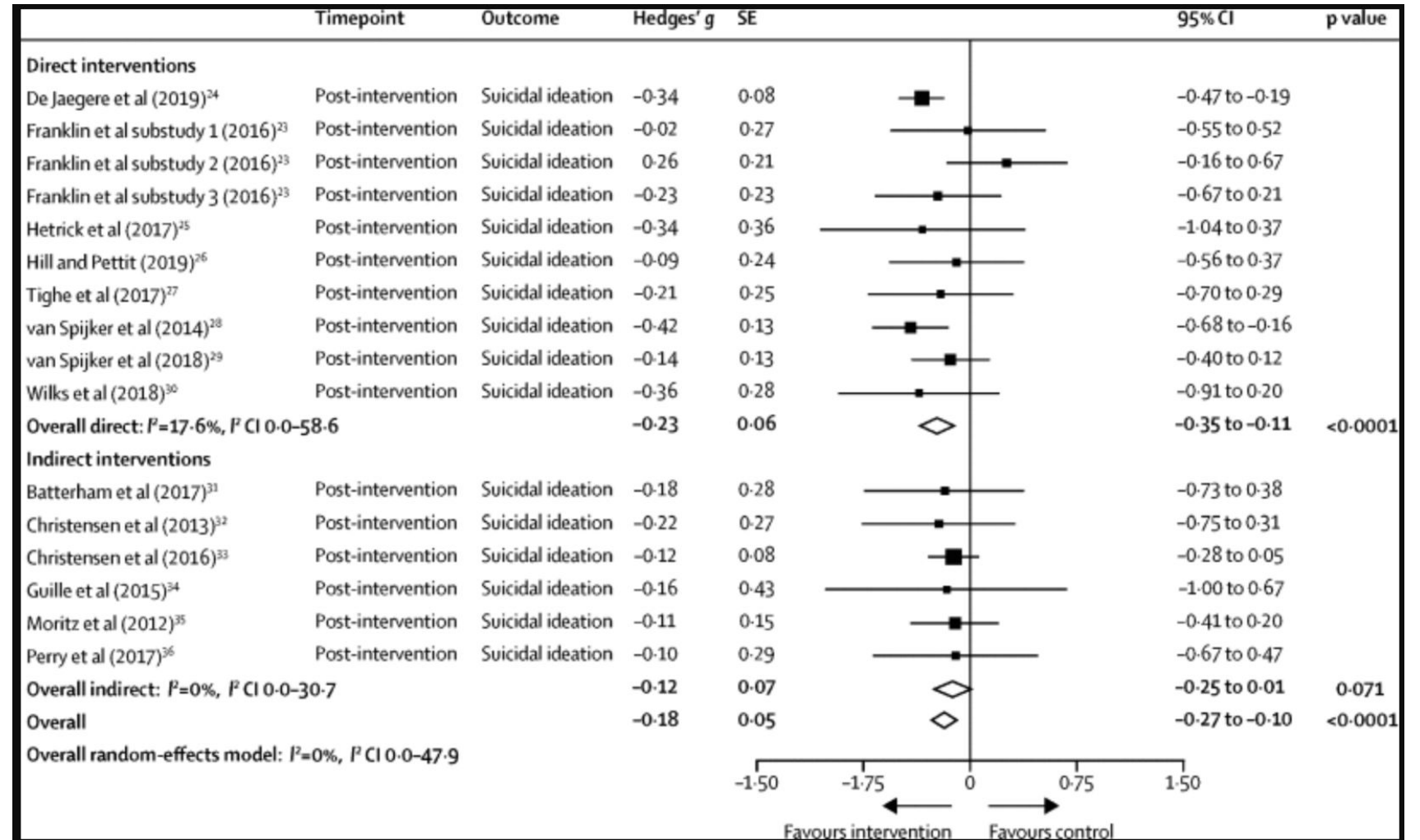
AI/ML: patterns in clinical data



Self-Administered Digital Therapy

Torok et al,
2020

*Beneficial if
used, but high
dropout rates.*



Exemplars & Emerging Work

No science,
Commercialized

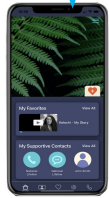
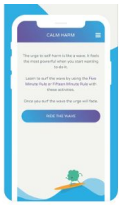
Science-backed,
Commercial Ready

TECH-
ENABLED
CARE

PROVIDER
ASSISTED

SELF-HELP

 JASPR HEALTH



Krause, Calm Harm

- Over 1.75 million downloads of the Calm Harm app to date; clinical study pending

WHO

Adult

Teen Parent

Provider

WHERE/WHEN

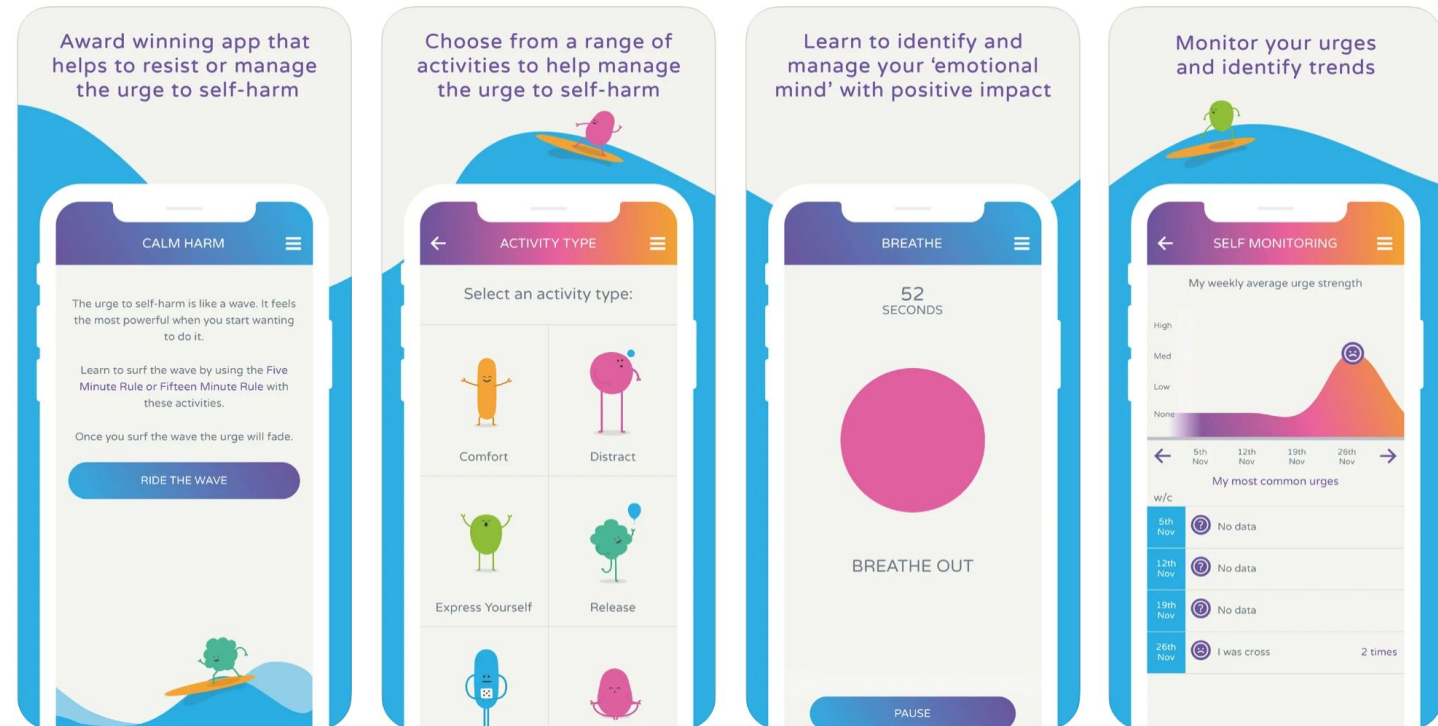
Outpatient

Inpatient

Transition

At Home

Screenshots iPad iPhone



Science-Backed, Commercial Ready

Bush et al, (2017) Virtual HopeBox

- Supplement or accessory to ongoing treatment while away from the clinic

WHO

Adult

Teen Parent
Provider

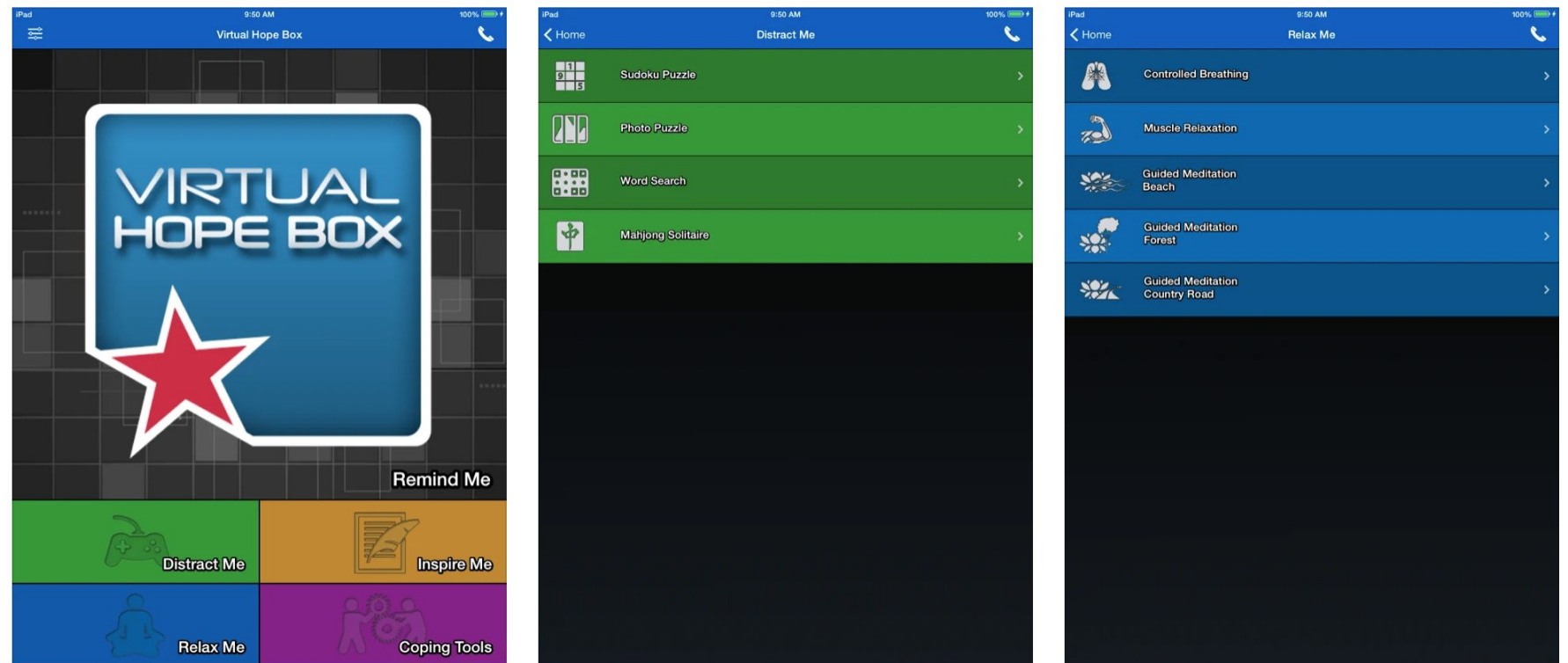
WHERE/WHEN

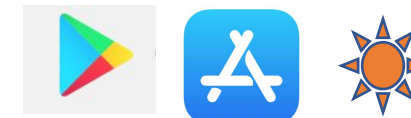
Outpatient

Inpatient

Transition

At Home





NYS-OMH, Safety Net/Stanley-Brown Safety Plan

WHO

Adult

Teen Parent

Provider

WHERE/WHEN

Outpatient

Inpatient

Transition

At Home



Stanley-Brown Safety Plan

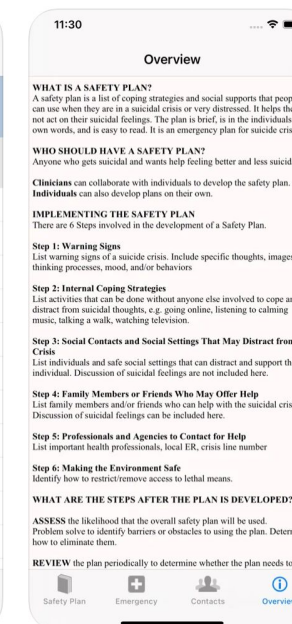
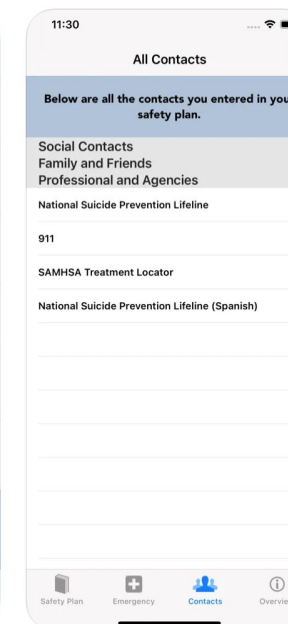
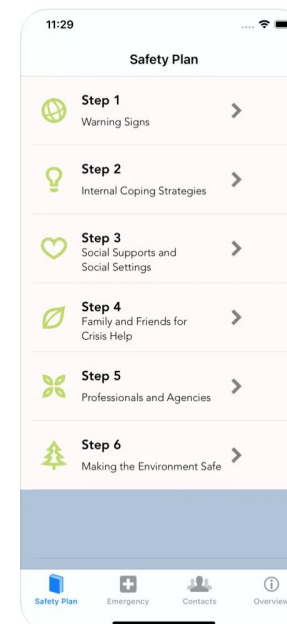
Two Penguins Studios LLC

Designed for iPad

★★★★★ 3.2 • 6 Ratings

Free

[View in Mac App Store](#)



Dimeff et al, (2020) Jaspr Health



EVIDENCE

WHO

Adult

Teen Parent

Provider

WHERE/WHEN

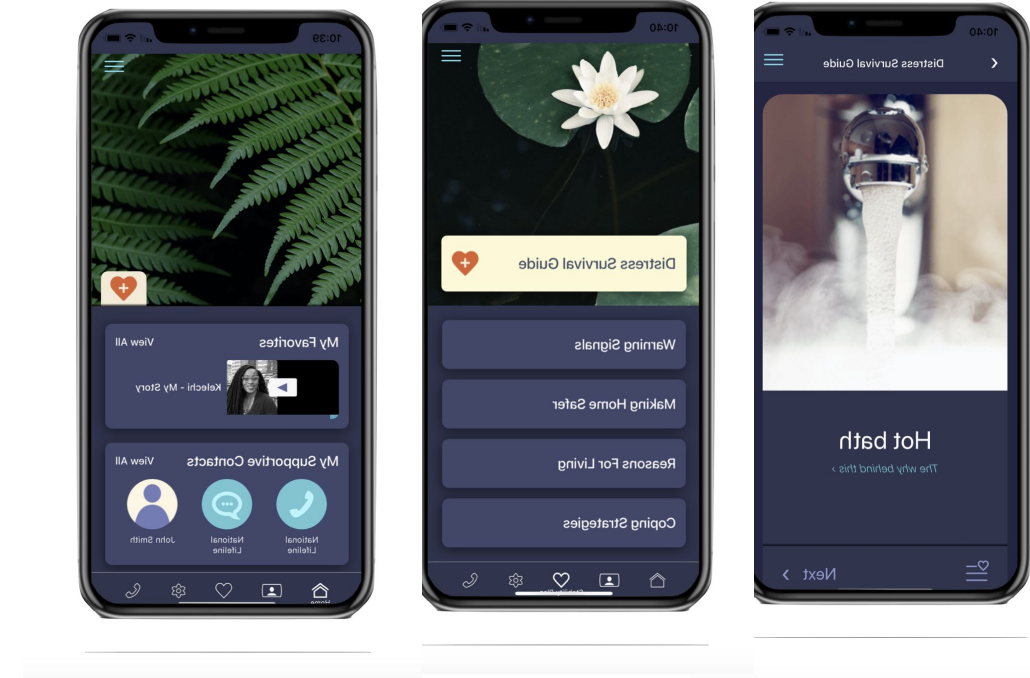
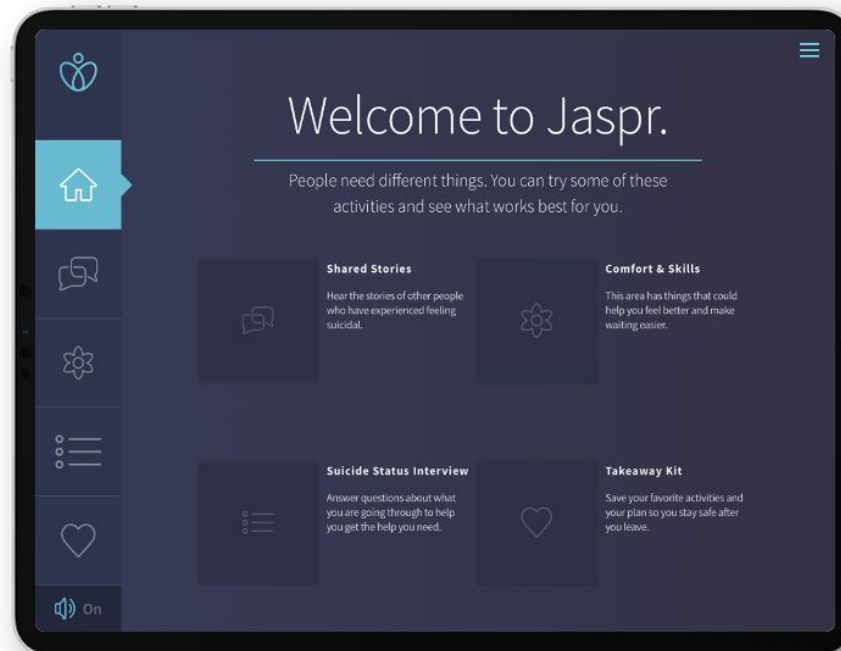
ED

Inpatient

Transition

Outpatient

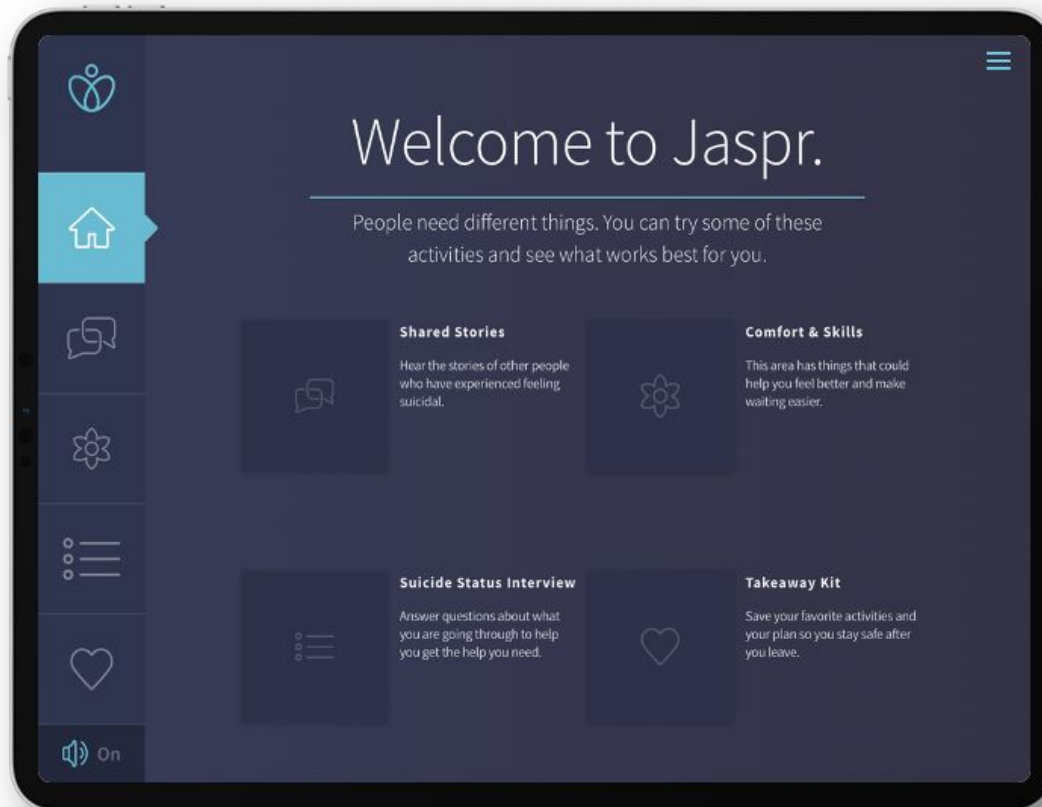
At Home



Jaspr Health

SCALABLE STANDARDIZED CARE TO REDUCE COST, COMPLIANCE, AND LIABILITY

USUAL WAIT TIMES TRANSFORMED TO EMPOWER PATIENTS AND ADVANCE CARE



Patient - Stabilizes Crisis

- Comfort & Coping Skills
- Shared Stories from People with Lived Experience
- Takeaway Kit & at home companion app

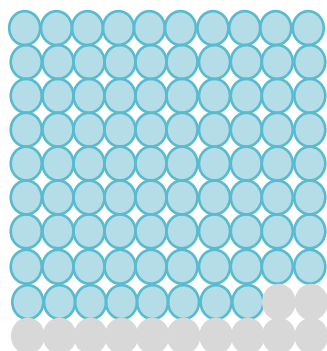
Provider - Efficient Workflow

- Suicide Risk Assessment
- Decision Support
- Evidence-Based Interventions for Compliance with Joint Commissions

Jaspr Health vs. Care-as-Usual Trial

100% OF PATIENT USERS RECOMMENDED JASPR FOR OTHER SUICIDAL PATIENTS

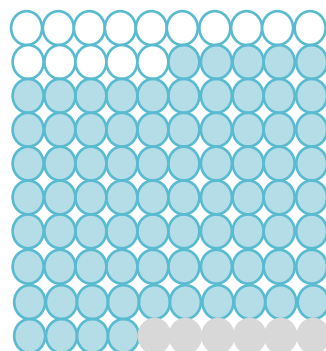
 100%



Crisis Response Planning

100% of Jaspr Health reported creating a Crisis Response Plan vs **12%** of CAU

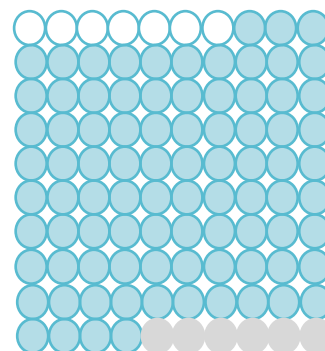
 85%



Lethal Means Counseling

85% of Jaspr Health developed a Lethal Means Safety Plan vs **6%** of CAU

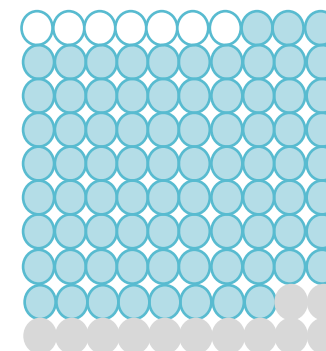
 93%



People with Lived Experience

93% of Jaspr Health received messages of hope and coping from PLEs vs **6%** of CAU

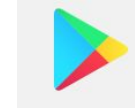
 93%



Coping Skills

93% of Jaspr Health learned skills to cope with future suicide urges vs **12%** of CAU

Tighe, iBobbly



EVIDENCE

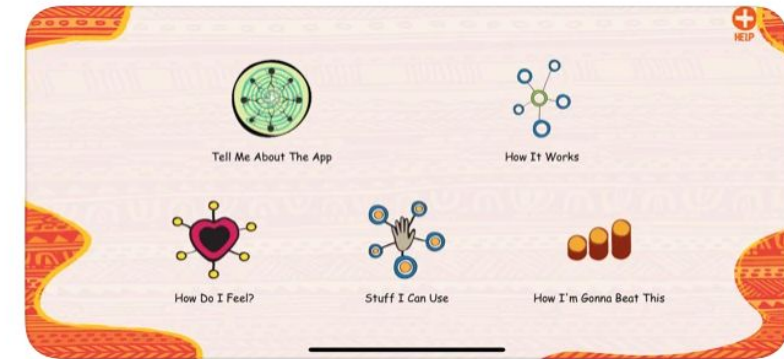
WHO

Adult

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Provider

Social and Emotional Wellbeing self-help app for young Aboriginal and Torres Strait Islander Australians aged 15 years and over



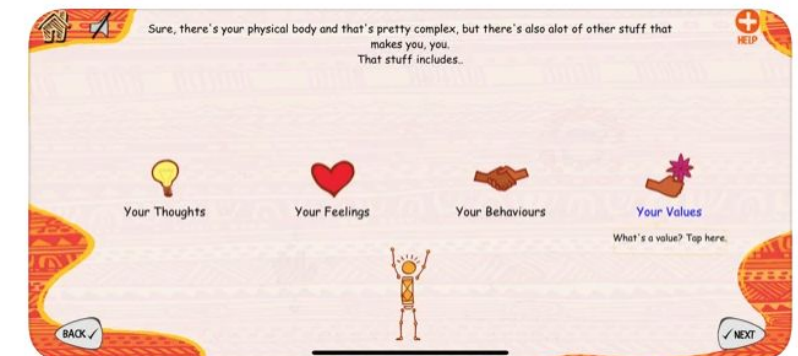
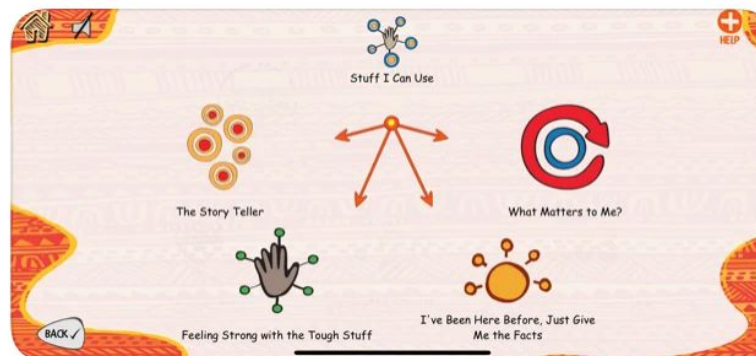
WHERE/WHEN

Outpatient

Inpatient

Transition

At Home



Exemplars & Emerging Work

No science,
Commercialized

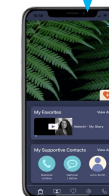
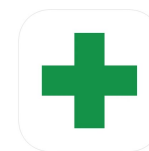
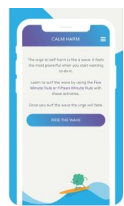
Science-backed,
Commercial Ready

TECH-
ENABLED
CARE

PROVIDER
ASSISTED

SELF-HELP

 JASPR HEALTH



Emerging Science-backed

Brent, BRITE

Franklin, TECTEC

Self-administered therapy

Czyz, Text msgs
for parents

Kleiman, EMI +UP

Larkin, TASCs

Oui, Aviva

Schatten, MAPS

Sels, SIMON

 JASPR HEALTH



Webinar recording available on
JasprHealth.com & ZSI websites

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RECAP: What Should Be Scaled?

- Prediction Science
- Recommended Brief Intervention for Suicide Crises
- Evidence-Based Treatment for Suicidal Behavior
- Caveat

Commercial Ready

Emerging

Science-backed in development or developed but not sustained

CITATIONS

Franklin, TECTEC

WHO

Adult

Teen Parent

Provider

Therapeutic Evaluative Conditioning

- Condition images of self-harm with disgust

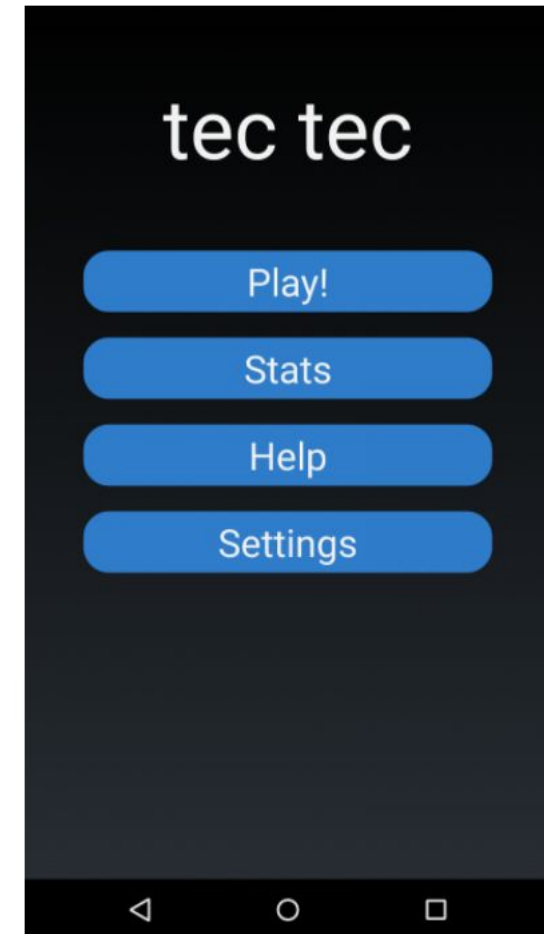
WHERE/WHEN

Outpatient

~~Inpatient~~

~~Transition~~

At Home



Brent, BRITE

- Key facts: Research only

WHO

Adult

Teen Parent

Provider

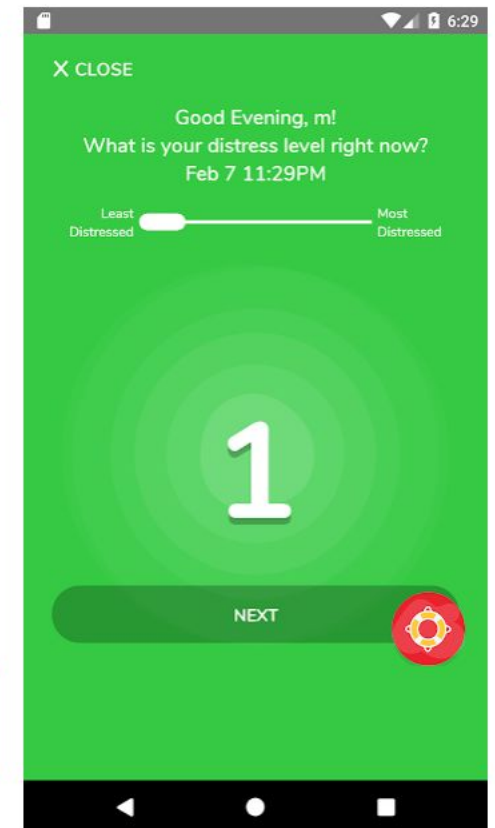
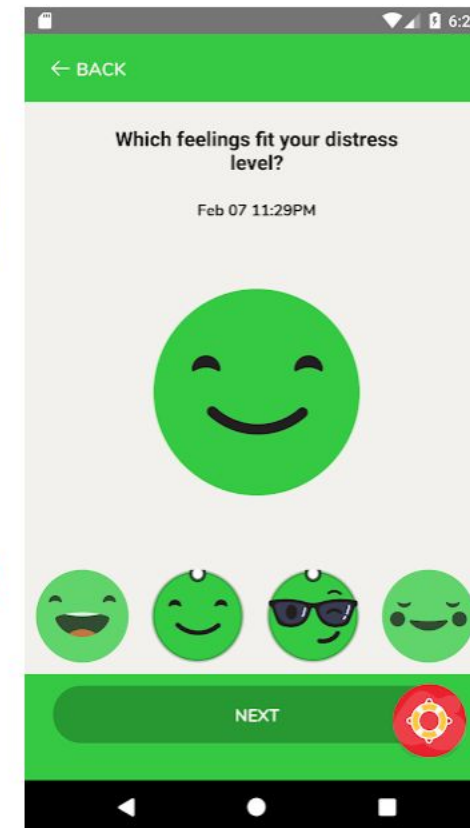
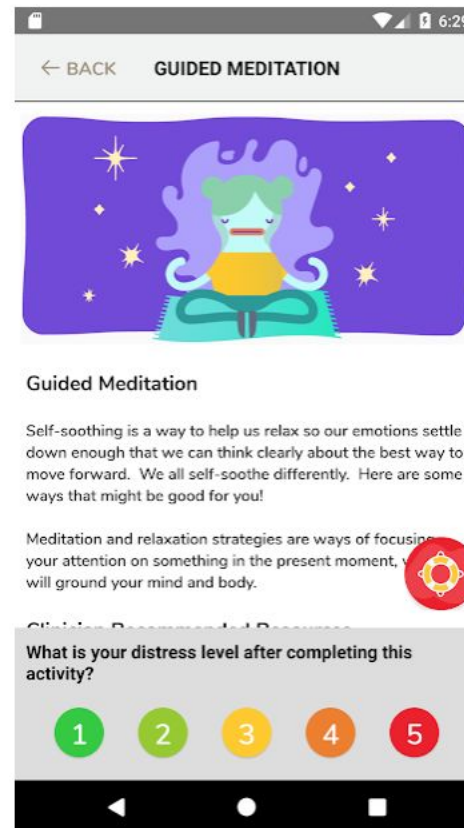
WHERE/WHEN

Outpatient

Inpatient

Transition

At Home



Clarigent Health (Decision Support)

WHO

Adult

Teen Parent

Provider

WHERE/WHEN

Outpatient

Inpatient ?

Transition

At Home

