Healing: Our Path from Mental Illness to Mental Health

June 8, 2022
12:00pm PT / 1:00pm MT / 2:00pm CT / 3:00pm ET

Welcome! We will get started momentarily.

Please let us know who you are and where you are from in the chat box (click the chat icon at the bottom of your screen).
Housekeeping

• We want to hear from you! Share your questions, comments and “ah-ha’s” via the chat box.

• A recording and slides will be available within 24 hours - We’ll email you.
Welcome
• Focus on youth
• Three components
  • Virtual Matches: October 3-20
  • In-Person Network Meeting (Washington DC): October 26-27
  • Virtual viewing
• Register now!
  • https://iimhl.com/2022-leadership-exchange-menu-iimhl
Dr. Tom Insel

• Author: *Healing: Our Path from Mental Illness to Mental Health*

• Co-Founder of Mindstrong Health, Humanest Care, and Vanna Health

• Former Director of the National Institute of Mental Health (NIMH) (2002-2015)
Healing: Our Path from Mental Illness to Mental Health

Tom Insel, MD
Former Director, National Institute of Mental Health (2002-2015)
Former Chair, Steinberg Institute (2019-2022)
Co-Founder: Mindstrong Health, Humanest Care, MindSite News, Vanna Health
Adj Prof, Stanford University
June 8, 2022
Disclosures

Board of Director roles
For profit: NeuraWell Therapeutics, Valera Health
Non-profit: Foundation for NIH, Fountain House, MindSite News, Schaeffer Center for Health Policy, Steinberg Institute

Advisory Board roles
For profit: Alto Neuroscience, Cerebral, Compass Pathways, Embodied, Koa Health, Owl Insight, PsychHub, Uplift Health
Non-profit: Koko

Financial Investor roles
Alto Neuroscience, Compass Pathways, Humanest Care, Karuna Therapeutics, Mindstrong Health, NeuraWell Therapeutics, Owl Insight, Valera Health
The Conundrum of Mental Health in America

- We have unprecedented progress in neuroscience, behavioral science, and technology
- We have effective interventions (medical, psychological, neural, and rehabilitative) for virtually every mental illness.
- More people are getting more treatment than ever.

Yet, outcomes are no better.
The Problem: A Crisis in Behavioral Health

No reduction in morbidity or mortality

Morbidity:
Prevalence
Employment/Education
Housing
Incarceration
Life Expectancy
Poverty

Data from Institute for Health Metrics and Evaluation
The Problem: A Crisis in Behavioral Health

No reduction in morbidity or mortality

Percent change in mortality

Peak
(1965 - 1995)

Current
(2010 - 2020)

1. Neuropsychiatric Disorders
2. Cardiovascular and Circulatory Diseases
3. Neoplasms
4. Musculoskeletal Disorders
5. Diabetes, Urogenital, Blood, and Endocrine Diseases
6. Chronic Respiratory Diseases
7. Other Non-communicable Diseases

Percent of Total U.S. DALYs

Data from Institute for Health Metrics and Evaluation

Data from CDC
Deaths of Despair – Lowering Life Expectancy in America (before Covid-19)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2019</th>
<th>2021*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide:</td>
<td>29,350</td>
<td>47,511</td>
<td>45,855</td>
</tr>
<tr>
<td>Drug OD:</td>
<td>17,415</td>
<td>71,130</td>
<td>103,598</td>
</tr>
<tr>
<td>Alcohol:</td>
<td>19,627</td>
<td>39,000</td>
<td>95,000**</td>
</tr>
<tr>
<td>TOTAL</td>
<td>66,392</td>
<td>157,141</td>
<td>244,453</td>
</tr>
</tbody>
</table>

Data from CDC NVSS. *estimates up to May 2021, **data not comparable
Deaths of Despair vs Deaths from Covid in Youth

Data as of May 25, 2022

- Suicide deaths 2020: 15,094 (< 34 y.o.)
- OD deaths 2020: 28,879 (< 34 y.o.)
- Deaths of Despair 2020-2022: > 90,000

https://www.cdc.gov/nchs_nvss_vsrr/covid_weekly/index.htm
https://www.cdc.gov/nchs/data/databriefs/db428-tables.pdf#2
‘It’s Life or Death’: The Mental Health Crisis Among U.S. Teens

Depression, self-harm and suicide are rising among American adolescents. For one 13-year-old, the despair was almost too much to take.

My College Students Are Not OK

May 13, 2022

362 School Counselors on the Pandemic’s Effect on Children: ‘Anxiety Is Filling Our Kids’

In a Times survey, counselors said students are behind in their abilities to learn, cope and relate.

By Claire Cain Miller and Bianca Pallaro  Produced by Alice Fang

Jumping Pediatricians

Mental health care facility, the next
A survey released Tuesday documents the toll the pandemic has taken on students’ mental health, with 7 in 10 public schools seeing a rise in the number of children seeking services. Even more, 76 percent, said faculty and staff members have expressed concerns about depression, anxiety and trauma in students since the start of the pandemic. Yet only about half of all schools said they were able to effectively provide needed services.
Why do we have this crisis?

We don’t know enough
We don’t have enough therapists
We don’t have effective treatments
We don’t spend enough
Stigma
Why do we have this crisis?

We don’t know enough

We don’t have enough therapists

We don’t have effective treatments

We don’t spend enough

Stigma
Why do we have this crisis?
It’s a care crisis.

Lack of Capacity
Beds, workforce, safety net

Lack of Engagement
60% not receiving care

Lack of Quality
Fragmented, episodic, reactive

Lack of Accountability
We don’t measure outcomes

Lack of Equity
People w SMI = untouchables
Problem: Underinvestment in health facilities for people with SMI

Trans-institutionalization 1965-2016

- State Hospital Beds x 1000
- Incarceration in Jails and Prisons

Insel, Healing, 2022
The 40-40-33 Rule

~52.9 million people in the U.S. with any disorder; ~14.2 million “serious” (NSDUH - 2021)

Sources: NSDUH (2021); Kessler, Chiu, Demler, & Walters (2005); Wang, Lane, Olfson, Pincus, Wells, Kessler (2005); Merikangas, He, Burstein, Swendsen, Avenevoli, Case, Georgiades, Heaton, Swanson, Olfson (2011); SSA Publication 13-11827 (2014)
Figure 4-3. Mental health vs cardiovascular quality scores 2005-2016. Data show percentage of population meeting quality standard for a mental health measure (outpatient follow-up within seven days of hospital discharge) compared to a cardiovascular measure (persistence of beta-blocker treatment for six months after hospitalization for a heart attack) in patients with private insurance, Medicaid, or Medicare. Improvements across time are evident in cardiovascular care but not psychiatric care.
However, it is underused; less than 20% of practitioners (17.9% of psychiatrists, 11.1% of psychologists, and 13.9% of masters-level practitioners) engage in MBC, and as little as 5% use it according to its empirically informed schedule (ie, every session). These rates reflect the status quo in the United States, the United Kingdom, and Australia despite policies recommending PRO use.
People with SMI Are America’s Untouchables

**Life Expectancy**
- SMI
- Black
- Latinx
- White

**Employment - 2019**
- SMI
- Black
- Latinx
- White

**RR Police Use of Force**
- SMI
- Black
- Latinx
- White

**Incarceration (Prison)**
- SMI
- Black
- Latinx
- White


Laniyonu and Goff BMC Psychiatry (2021) 21:500

![Graphs showing various metrics for different groups](https://www.cdc.gov/nchs/data/vsrr/vsrr015-508.pdf)
Solutions –Tech, Policy, Recovery
Problems

- Lack of Capacity
- Lack of Engagement
- Lack of Quality
- Lack of Accountability
- Lack of Equity

Tech “Solutions”

- Investment
- Person-centered online care
- Training, Coordinated Care
- Measurement/Value Based Care
- Recovery Based Care
Investment

U.S. DIGITAL HEALTH FUNDING AND DEAL SIZE
2011-2021

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$1.2B</td>
</tr>
<tr>
<td>2012</td>
<td>$1.6B</td>
</tr>
<tr>
<td>2013</td>
<td>$2.1B</td>
</tr>
<tr>
<td>2014</td>
<td>$4.5B</td>
</tr>
</tbody>
</table>

TOTAL VENTURE FUNDING

- $30B
- $20B
- $10B
- $0B

AVERAGE DEAL SIZE

- $12.3M
- $10.8M
- $10.7M
- $15.2M

2021 TOP FUNDED CLINICAL INDICATIONS
2017-2021; numbers equate to funding rank

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>MENTAL HEALTH</td>
<td>$0.5B</td>
<td>$1.4B</td>
<td>$1.0B</td>
<td>$2.7B</td>
<td>$5.1B</td>
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<tr>
<td>DIABETES</td>
<td>$0.3B</td>
<td>$0.4B</td>
<td>$0.5B</td>
<td>$0.8B</td>
<td>$1.8B</td>
</tr>
<tr>
<td>CARDIO-VASCULAR</td>
<td>$0.5B</td>
<td>$0.6B</td>
<td>$0.6B</td>
<td>$1.1B</td>
<td>$1.8B</td>
</tr>
<tr>
<td>PRIMARY CARE</td>
<td>$0.1B</td>
<td>$1.0B</td>
<td>$0.5B</td>
<td>$1.7B</td>
<td>$1.6B</td>
</tr>
<tr>
<td>MUSCULO-SKELETAL</td>
<td>$0.5B</td>
<td>$0.2B</td>
<td>$0.2B</td>
<td>$0.2B</td>
<td>$1.4B</td>
</tr>
<tr>
<td>ONCOLOGY</td>
<td>$0.3B</td>
<td>$0.4B</td>
<td>$0.6B</td>
<td>$1.3B</td>
<td>$1.4B</td>
</tr>
</tbody>
</table>

Note: Includes U.S. deals >$2M; data through December 31, 2021
Source: Rock Health Digital Health Venture Funding Database
Person-centered online care

Minute Clinic Meets Peloton

Mental Health Consults -- on demand, online intervention at time of need

- In the moment evidence-based care
- Empowering, strengths-based, solution-focused
- Behavior change goals set and sustained through community

Community -- 24/7, subscription-based, scaled workforce, goal-driven

- Membership; decreased social isolation
- Shared accountability; Sense of purpose
- Crowd sourced skills and resilience building
Predictors of treatment response: therapist language

Using deep learning to decode the effective content of therapy

Therapy Dataset
- >30K patients
- >200K sessions
- Full text
- Patient demographics
- Symptom measurements
- Asynchronous messages

Clinical Analysis
Clinical scientist tags 24 utterance types including:
- Agenda setting
- Change mechanisms
- Homework
- Therapeutic alliance

NLP Analysis

Train Model
- Hierarchical LSTM recurrent neural network
- Ieso proprietary network architecture

Tagged Data
00s of sessions with manual tags

Therapy Dataset + Clinical Insights
- >100K sessions
- With clinical tags
- Unique
- Comprehensive: presentation x intervention x outcome

Learn which utterances predict recovery and engagement

Ieso Health
Using real-world data to improve patient care

Ieso clinical outcomes consistently surpass all national targets

Clinical Recovery Rates 2013-2020 (IESO Benchmark Cohort Depressive Episode and Generalised Anxiety Disorder)

Recovery rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Recovery Rate</th>
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<tbody>
<tr>
<td>2013</td>
<td>46%</td>
</tr>
<tr>
<td>2014</td>
<td>49%</td>
</tr>
<tr>
<td>2015</td>
<td>51%</td>
</tr>
<tr>
<td>2016</td>
<td>52%</td>
</tr>
<tr>
<td>2017</td>
<td>56%</td>
</tr>
<tr>
<td>2018</td>
<td>58%</td>
</tr>
<tr>
<td>2019</td>
<td>62%</td>
</tr>
<tr>
<td>2020</td>
<td>67%</td>
</tr>
</tbody>
</table>

Depressive Episode: Serial Cohort Analysis
Cohort size = 300

Total N = 3000 patients with depression who completed a course of treatment
Telehealth 1.0

Telehealth 2.0

Measurement

SENSORS
Activity
Location
Sociality

Face processing
Emotion
Arousal
Dyskinesia

VOICE/SPEECH
Prosody
Sentiment
Coherence
The Digital Mental Health Landscape

Tech Culture
UX Design
Data-Driven Feedback

CBT, DBT, IPT; Coaching; Peer Support; Crisis Intervention

Mobile Interventions

Learning Engine

Coordination
Data Capture
Quality Metrics
Feedback

Sensors
HCI
Voice
Sociality

Digital Phenotyping

Care Management
Solutions – Beyond Tech

Policy, Payment, Prevention, Recovery
Solutions – Federal

Unity Agenda: “Let’s take on mental health”

White House Fact Sheet: Build capacity
- Workforce
- Crisis – 988
- CCBHC

Connect to Care
- Parity
- Integration
- Telehealth
- Schools, libraries, comm centers

Better environments
- Privacy protection online
- Student services
- Justice-involved
Policies: 988

Problem: Current Crisis Response via 911 brings police, high rates of incarceration, ER boarding, and tragedies for people with SMI

Solution: Build out a crisis continuum

988 replaces 911 by 7/16/22

Someone to Call – Someone to Come – Some Place to Go
The Arizona Crisis System

- **Person in Crisis**
  - **80% resolved** on the phone
  - **71% resolved** in the field
  - **68% discharged** to the community
  - **85% remain stable** in community-based care

- **Crisis Line**
- **Mobile Crisis Teams**
- **Crisis Facility**
- **Post-Crisis Wraparound**

Close Collaboration with Law Enforcement = Pre-Arrest Diversion

**Least Restrictive = Least Costly**

United in Empathy

2021 REPORT
bothersome thoughts?

2021: 1.3M conversations, 70% < age 25

Sexual Identity among Crisis Text Line Texters

- LGBTQ+
- Heterosexual

- 2016: 48% LGBTQ+, 52% Heterosexual
- 2017: 53% LGBTQ+, 47% Heterosexual
- 2018: 57% LGBTQ+, 43% Heterosexual
- 2019: 54% LGBTQ+, 46% Heterosexual
- 2020: 50% LGBTQ+, 50% Heterosexual
- 2021: 51% LGBTQ+, 49% Heterosexual

Concerns: Connection to local resources, follow-up, lots of data but little research

2021: 1.3M conversations, 70% < age 25

Volunteers:
- 5500 volunteers (40hr training – 200hr commitment)
- 7,242,449 conversations since 2013

Follow-up

Help you move

Commitment

Crisis Text Line
Payment: Alternative Payment Models

Problem: Fragmented, under-resourced care for people with SMI. Providers paid for medical services but not for rehabilitative services.

Solution: Create models for value-based payment
Certified Community Behavioral Health Centers

430 Centers across 40 states
Whole Person Care (includes rehab services)
No Wrong Door (includes crisis services)
Prospective Payment (going at risk)
Prevention: Moving Upstream

Problem: Crisis-driven care, precludes reimbursement without a diagnosis and engages people when they are most difficult to help.

Solution: California Child and Youth Behavioral Health Initiative

$4.4B over 5 years for youth < 26
Dyadic care for new parents
Schools become center of gravity for MH
Telehealth integration of pediatrics and specialty care
Portal for navigation, access, and integration
Health ≠ Healthcare

From central DC:
17 mile journey
20 year incr in longevity
M. Marmot, The Health Gap

Treatment w statins
12.6 day incr in longevity
Hansen et al, J Gen Intern Med, 2019
Health ≠ Healthcare

70% related to social factors and health behaviors

10% related to care

US annual = $4T

US annual = ?

Source: WHO
The Road to Equity: Recovery

The 3 P’s: People, Place, Purpose

Covid Pandemic Attacks All of the P’s
People: Loneliness is a Public Health Crisis

US Census Data

- more than a quarter of the US population (27%) lives alone
- over half the U.S. adult population is unmarried
- 1 in 5 have never married
- divorce rate in the US around 40% of first marriages

Loneliness drives hospitalization and medical complications for people with SMI.
Place: Poverty is a Public Health Crisis

Adverse Childhood Experience

Food insecurity/Poor nutrition

Homelessness/Unsafe housing

Lack of education/opportunity

Racism/Exclusion

Adverse Environments

Children growing up in poverty are 2-3X more likely to have mental health issues.

SG Advisory 12/11/21
Purpose: Finding a mission

“He (she) who has a why can live with almost any how.”
Nietzsche

“If you want to reduce suicide give people something to live for.”
Marsha Linehan

People with mental illness can use their lived experience to help others recover.
We know how to deliver the 3 P’s

People

Place

Purpose

ACT Teams

Healthcare at Home

Clubhouse

Supportive Housing

Supportive Employment
Recovery

The problems can be defined as medical
The solutions need to be defined as social, environmental, and political

Recovery Requires Us to Think Beyond Symptoms
Recovery Invites Us to Redefine Care
The Conundrum of Mental Health in America

- We have unprecedented progress in neuroscience, behavioral science, and technology
- We have effective interventions (medical, psychological, neural, and rehabilitative) for virtually every mental illness.
- More people are getting more treatment than ever.
- Yet, outcomes are no better.

It’s not just healthcare…. It’s the 3 P’s. The problem is medical but the solutions are....
Starting a Social Movement for Mental Health
tinsel0@gmail.com

Thank You!

MindSite News
SHINING A LIGHT ON MENTAL HEALTH
Non-Profit – Independent - Resolute
Q&A

Please use the chat box or the “raise hand” feature to ask questions.
Contact

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www.leaders4health.org