



# The Mental Health Research Network: An NIMH Prototype of Learning Healthcare

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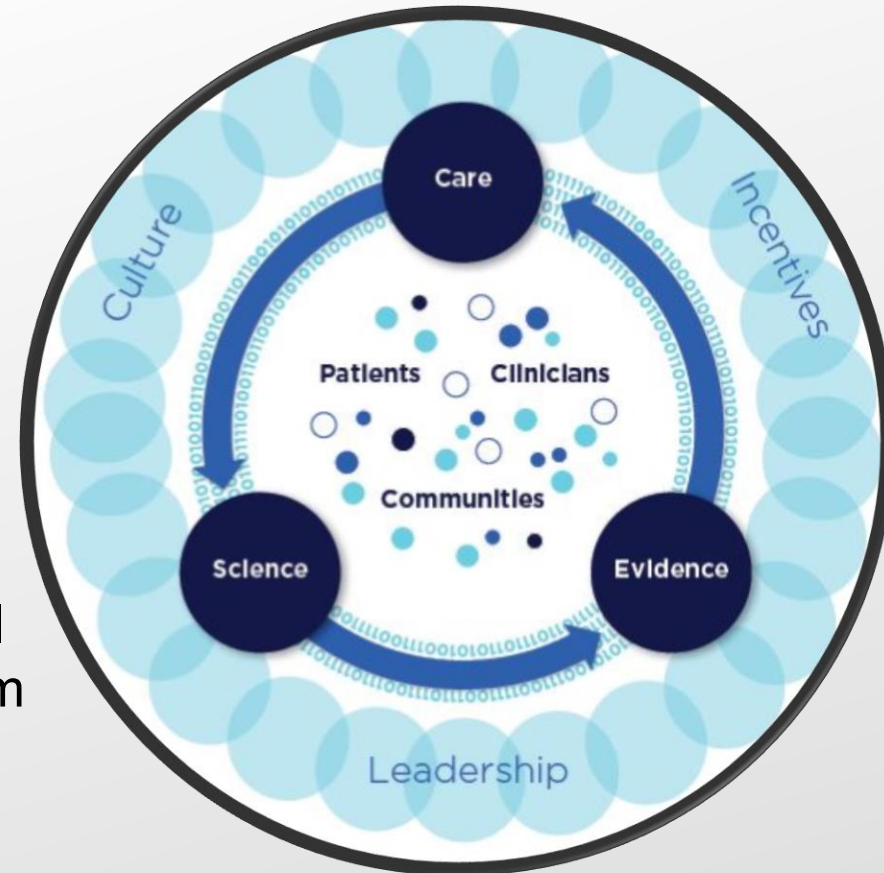


National Institute  
of Mental Health

# A Learning Healthcare System: At the Intersection of Research and Practice



“...a continuous cycle or feedback loop in which scientific evidence informs clinical practice, while data gathered from clinical practice and administrative sources inform scientific investigation.”



IOM, 2012. Best Care at Lower Cost: The Path to Continually Learning Health Care in America

# At the Intersection of Research and Practice: A Practice-Based Research Network

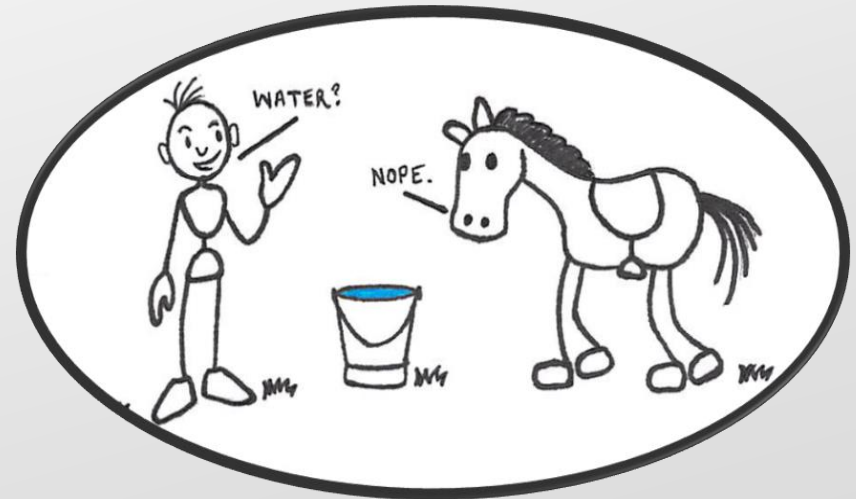
## Supports

### Research Infrastructure



## Supports

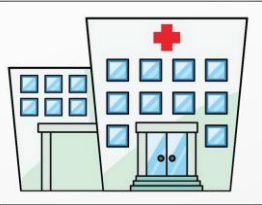
### Practice Based Research



# Mental Health Research Network: Generation 1

1U19MH092201-01; PI: Simon; 2010-2013

## The Infrastructure



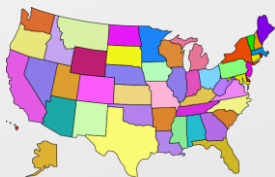
X

9 integrated health systems



X

10 million beneficiaries



in

11 states

Shared rich and compatible data resources to support a range of effectiveness research

## The Projects

**Practice Variation in High- and Low-Value Care for Mood Disorders**

PI: Simon

**Feasibility of Behavioral Activation Therapy for Perinatal Depression**

PI: Beck

**A Geographically and Ethnically Diverse Autism Registry for Effectiveness Studies**

PI: Croen

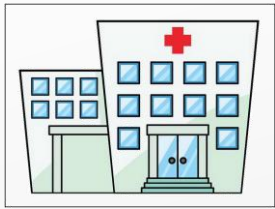
**Longitudinal Analysis of SSRI Warnings and Suicidality in Youth**

PI: Soumerai

# Mental Health Research Network II

1U19MH092201-04; PI: Simon; 2014-2019

## The Infrastructure



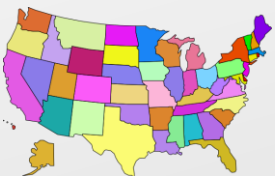
X

13 integrated health systems



X

12.5 million beneficiaries



in

15 states

Shared rich and compatible data resources to support a range of effectiveness research

## The Projects

**Signature Project: Reducing Cardiovascular Risk in Adults with SMI using EMR-Based Clinical Decision Support**

PI: Rossom

**Next-Generation Clinical Assessment Using Mobile Devices**

PI: Clarke & Arean

**Maximizing Biospecimen Collection from Children with Mental Health Conditions**

PI: Croen

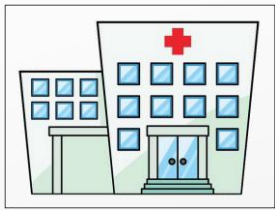
**Automated Virtual Follow-up to Reduce Premature Treatment Discontinuation**

PI: Penfold

# Mental Health Research Network III

1U19MH121738-01; PI: Simon; 2019-2024

## The Infrastructure



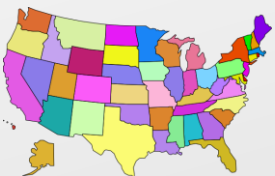
X

**14** integrated health systems



X

**25** million beneficiaries



in

**16** states

Shared rich and compatible data resources to support a range of effectiveness research

## The Projects

**Signature Project 1: Digital Mindfulness Based Cognitive Therapy for Perinatal Depression**

PI: Beck

**Signature Project 2: Real-Time Evaluation of Emerging Treatments for Suicide Risk**

PI: Simon

**Outreach to Reduce Disparities in Depression Treatment Initiation**

PI: Waitzfelder

**Stakeholder Perspectives on Implementing Suicide Risk Prediction Models**

PI: Yarborough

# Changing the Narrative for Practice Relevant Evidence



# Reducing Cardiovascular Risk in Adults with SMI using EMR-Based Clinical Decision Support

## Background

- Cardiovascular (CV) disease is the leading cause of death in people with serious mental illness (SMI), including those with bipolar disorder, schizophrenia or schizoaffective disorder.
- Patients with SMI die at 2.3 times the rate of the general population and 10–20 years earlier than their age- and gender-matched peers.



## Methods

- Cluster randomized trial: 78 primary care clinics randomized to receive or not receive access to a clinical decision support (CDS) tool.
- PC clinicians received CDS alerts during visits with adult patients with SMI who met minimal inclusion criteria and had at least one CV risk factor not at goal.

## Changing the Narrative

- PI anticipated 2250 patients; actually enrolled 10,347
- Providers expressed high demand for the tool, even without evidence of effectiveness



# Development and Implementation of a Suicide Risk Calculator

## Suicide Supplement: Development of a Population-Based Risk Calculator for Suicidal Behavior

- Prediction models incorporating both health record data and responses to self-report questionnaires substantially outperform existing suicide risk prediction tools.
- Predictive values are similar or superior to widely accepted tools for prediction of major medical outcomes such as stroke in atrial fibrillation and cardiovascular events.

## Stakeholder Perspectives on Implementing Suicide Risk Prediction Models

- Several MHRN-affiliated health systems are planning to deploy these models as part of ongoing suicide prevention initiatives.
- But how?
  - Used to prompt stand-alone outreach independent of any healthcare visit?
  - Create point-of-care tools, such as automated best practice alerts, that notify a clinician of a high-risk patient during a health care visit?



# An Evaluation of the National Zero Suicide Model (NZSM) Across Learning Healthcare Systems

## Background

- The NZSM is promoted internationally as a program for suicide prevention, despite limited evidence.
- Rigorous study is needed to understand suicide outcomes within various health systems, service settings, and patient populations.
- It is unclear which specific intervention components, or bundle of components, are most effective.
- Each of 6 healthcare systems (serving ~9 million beneficiaries) is implementing different components of the model.

## Goal

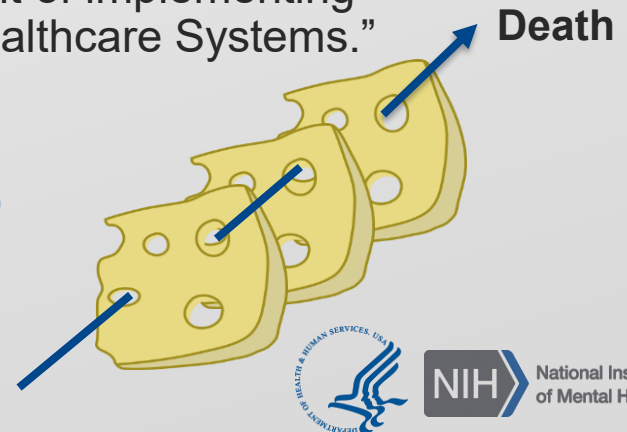
- Evaluate the NZSM and determine the cumulative benefit of implementing multiple components of service delivery” in “Learning Healthcare Systems.”

PI: Ahmedani

[https://projectreporter.nih.gov/project\\_info\\_description.cfm?aid=9692061&icde=49611419](https://projectreporter.nih.gov/project_info_description.cfm?aid=9692061&icde=49611419)

<http://zerosuicide.sprc.org/toolkit>;  
<http://actionallianceforsuicideprevention.org/home>;  
Reason J. Human Error. Cambridge: CambridgeUniversityPress;1990;  
Stein & Heiss 2015. Seminars in Pediatric Surgery, 24, 278–282.

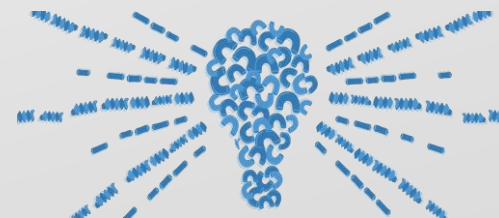
Person at risk  
for suicide



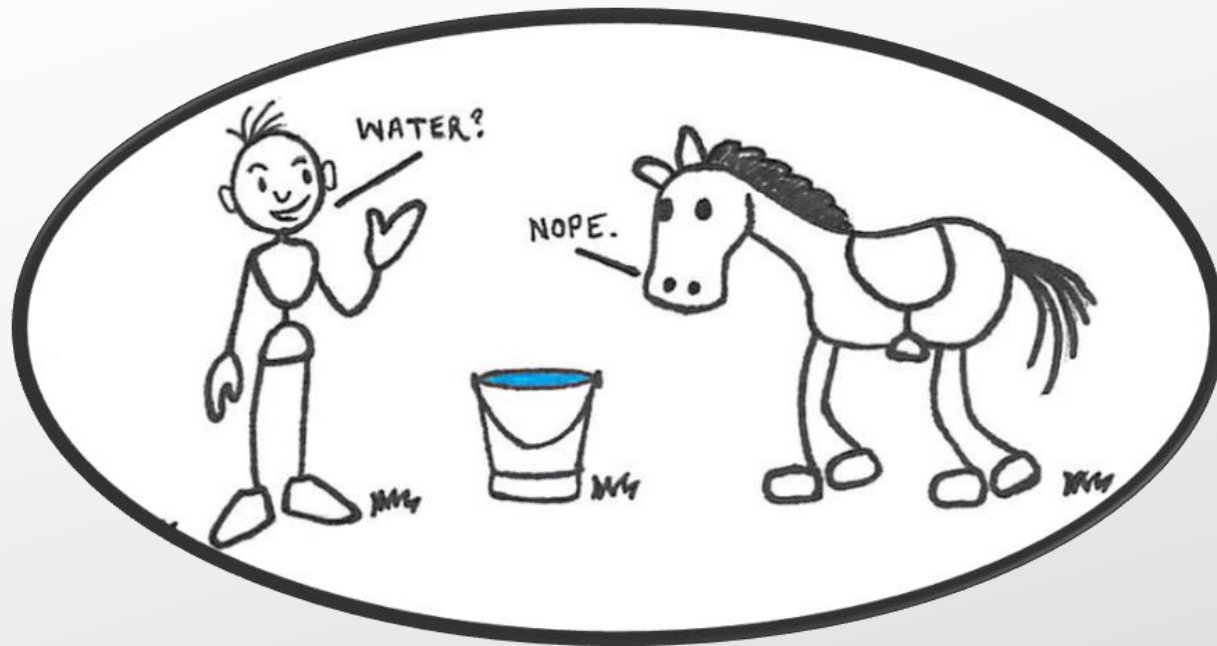
# Other Innovations and Accomplishments

<http://hcsrn.org/mhrn/en/>

- Funding for ~41 projects in various stages of completion that are high priority to NIMH and other funding organizations
  - 12 core projects funded through the U19
  - 3 supplements
  - 26 affiliated studies that leverage the MHRN
- 16 publications since 2018 linked to the U19 award
- Waivers of consent to improve external validity
- Emerging Issues Unit
  - Rapid response to practice-relevant inquiries
  - Plan to prioritize, process, and respond



# Questions



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