## Building Population Health Systems of care for Psychotic Disorders

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DMHAS







## Population Based Early Intervention for Psychosis: The STEP Program

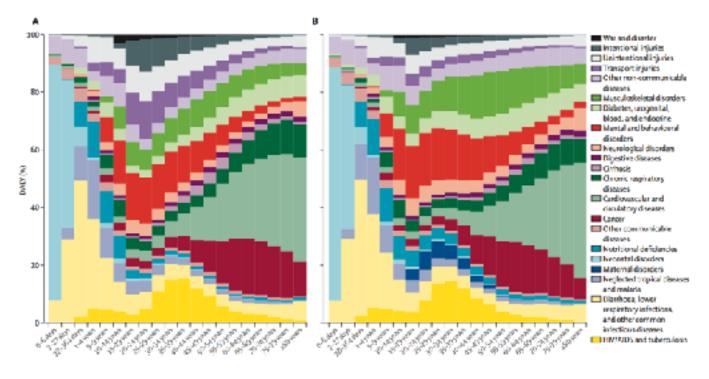
- I. The public health challenge
- II. Actionable Evidence for Early Intervention (EI) for Psychotic illnesses
- III. The Population Health framework
- IV. Implementing CSC: Embracing complexity
- V. STEP's goals

# I. Psychotic illnesses

## The Public Health challenge

## Burden of Neuropsychiatric Illness

## Percentage of global disability-adjusted life years by age, sex, and cause in 2010



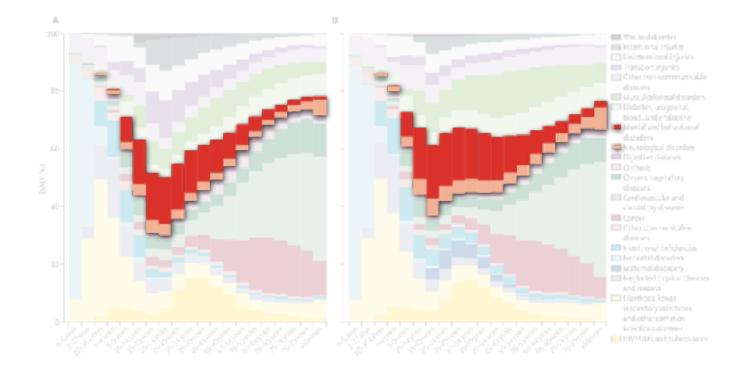
MALE

FEMALE

# DALLY Disability Adjusted Life Years is a measure of over all disease burden, expressed as the cumulative number of years lost due to likeash, disability or early death = YLD Vears Lived with Disability + YLL Vears of Life Lost Itheah, disability or early death Image: Comparison of the c

## Mental illnesses are "chronic diseases of the young"

### Percentage of global disability-adjusted life years by age, sex, and cause in 2010

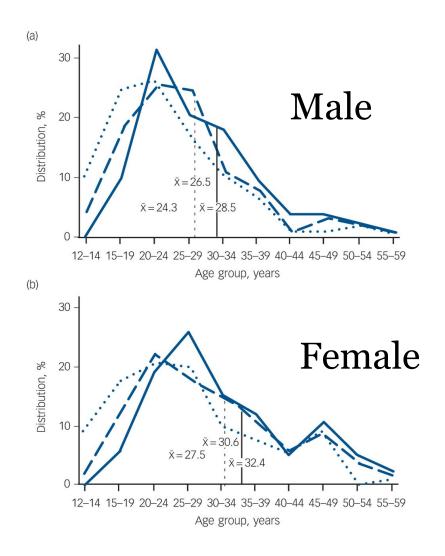


## Schizophrenia(s): chronic diseases of the young

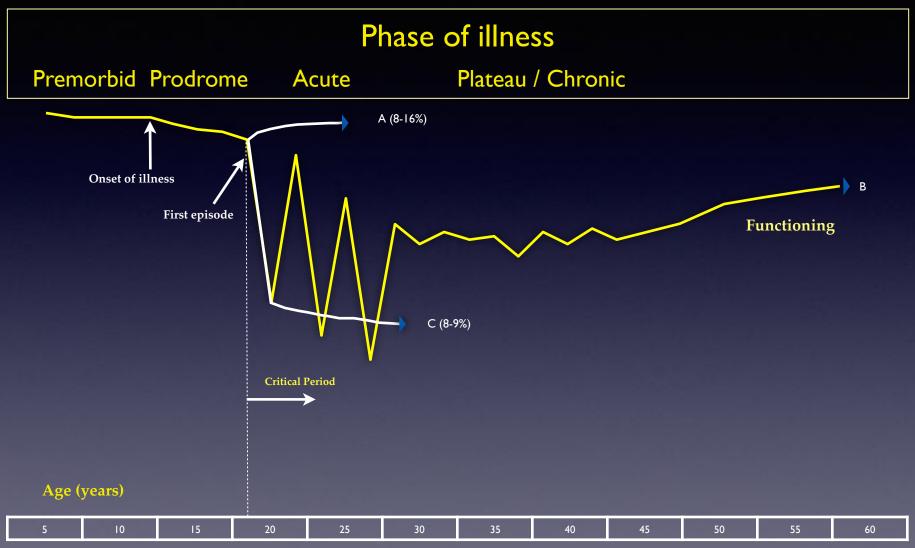
- Less than 1/3 'recover' > 5 years (Menezes, Psychol Medicine '06)
- Costs: ~\$156 billion.
  Direct\* (24%); indirect
  (76%) \*\* (Cloutier, J Clin
  Psychiatry '16)

# (Affective d/o: \$210.5 billion)

\*mostly unemployment, caregiving
\*\*mostly (re)hospitalizations



## Course of the Schizophrenia(s): Opportunities for Early Intervention



from Srihari et al. Psych Clin of N America, 2012

# I. Summary

- Psychotic illnesses are distressing, disabling and costly
- These are chronic illnesses of the young
- Early intervention models for psychotic illnesses have global relevance for other neuropsychiatric illnesses

# II. Early Intervention for Psychosis

What is the Evidence?

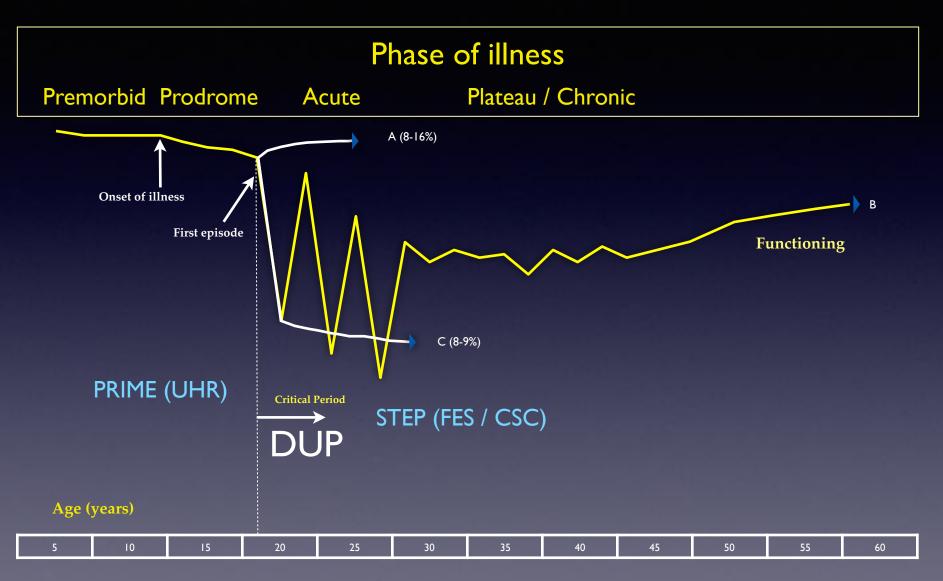
'Early Intervention' Services for Psychotic Disorders

## A. Early Detection (ED)

- Shortening the Duration of Untreated Psychosis (DUP)

- B. Intensive Treatment in first 2-5 years (First-Episode Services **FES** or Coordinated Speciality Care, **CSC**)
  - Focus on reducing relapse & maximizing functioning
  - Interventions adapted from chronic SMI to younger patients
  - Goal of 'phase-specific' intervention

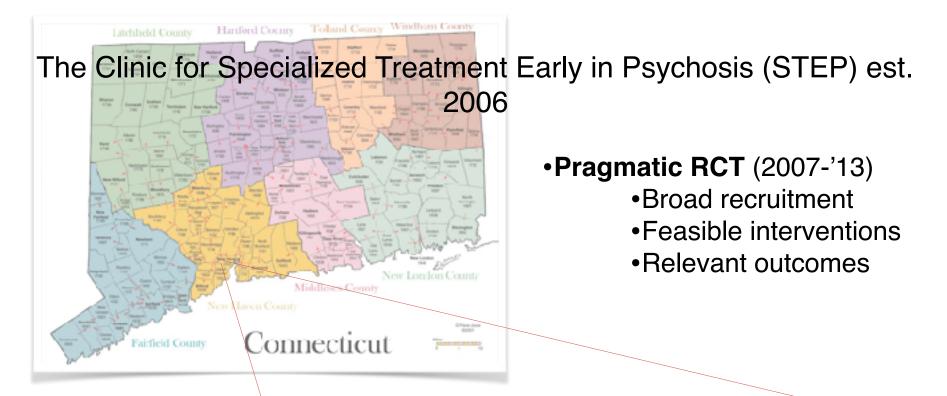
## Early Intervention (EI): current approaches in CT



from Srihari et al. Psych Clin of N America, 2012

## The Evidence for EI

- A. **ED:** Intervening <u>earlier</u> (even without enriching care) appears to have durable effects on outcome (Hegelstad et al, 2012)
- B. FES: Intervening <u>intensively</u> after the onset of psychosis improves outcomes over usual care (OPUS, Lambeth, STEP and RAISE studies) at 2+ years (reviewed in Srihari et al., 2012, Srihari et al., 2015, Kane et al., 2015)



## •Based in public sector

CMHC: DMHAS-Yale partnership

## Addressed barriers to access

- Insurance status
- •Catchment of residence
- Adolescent-Adult agencies



# The STEP Trial

## 2007-'13

ClinicalTrails.gov NCT00309452 NIH MH088971-01 REFERENCE POPULATION Individuals in early stages of psychotic illnesses in CT ~400-500/yr

### SOURCE POPULATION

**STUDY** 

POPULATION

Age: 16-45 yo Duration of illness: ≤12 wks lifetime antipsychotic Rx AND <5yrs illness Exclusion: sub-induced psychotic d/o Exclusion: DDS (DMR) eligibility Referrals from ~ -CMHC triage -Private Hospitals/ERs -Area Clinics/PRIME -Colleges

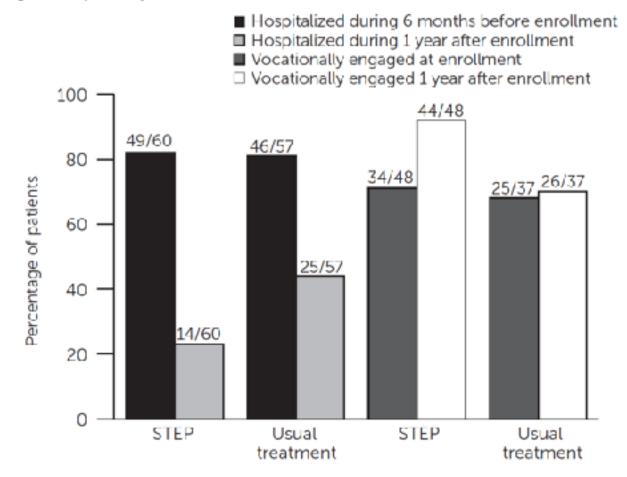
#### TAU

Referral to private or public-sector care

**STEP** Care

Based within CMHC ambulatory services

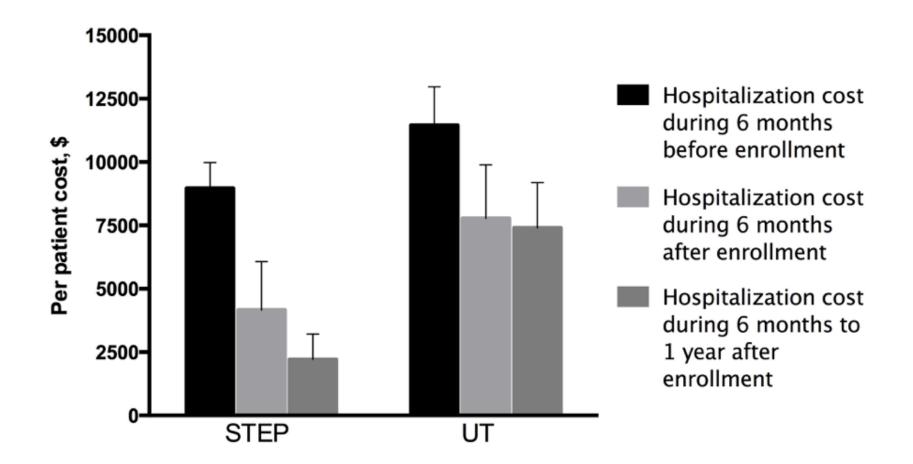
## FIGURE 1. One-year hospitalization and vocational engagement outcomes among STEP participants and those in usual treatment<sup>a</sup>



 NNT of 5 for Hospitalization over first year
 Fewer in STEP had 'dropped' out of labor force 8% (vs. 33% in Usual Treatment)

Srihari et al., Psych Services 2015

# STEP progressively reduced frequency, duration of acute hospitalizations



## State of the evidence for FES or Coordinated Specialty Care (CSC) in early psychosis

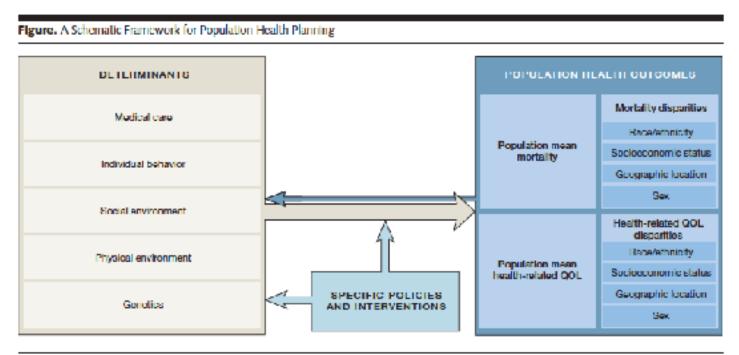
- Efficacy (can it work?) LEO (U.K.), OPUS (Denmark) (high intensity ACT level services)
- Effectiveness (does it work?) ✓ STEP, RAISE– Navigate
- Costs (is it worth it?) ✓ STEP, RAISE–Navigate
- Dissemination (is it portable?) ✓ (UK, Norway, Australia); ? U.S.

# II. Summary

- Early Detection has demonstrated long-term impact in Norway; STEP is leading first US attempt to replicate this. ('Mindmap' campaign)
- FES (implemented as CSC in US) is a 'best bet' per 2 US RCTs (STEP and RAISE)
- Dissemination is the next U.S. frontier

# **III.** Population Health Systems

# Population Health framework: thinking critically about medical care and outcomes



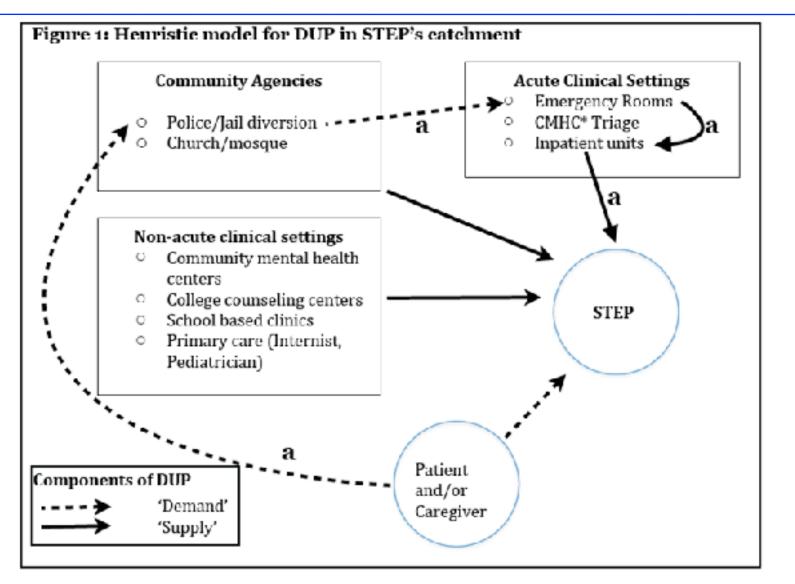
The right side conceptualizes broad population health outcomes. The left side represents the determinants of population health outcomes. The quadrants in the outcomes component are arbitrarily sized equality, as are both the disparity domains within outcomes and the determinant categories. QOL indicates quality of life.

2082 JAMA, May 7, 2008-Vol 299, No. 17 (Reprinted)

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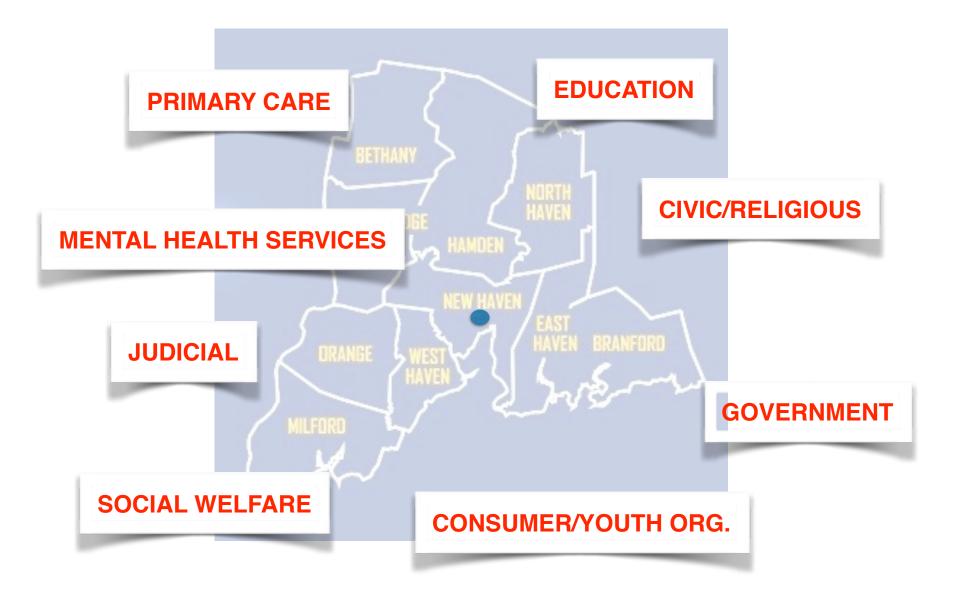
(David Kindig)

## Psychosis in the U.S.: tortuous pathways to care



Goldberg-Huxley model of the pathway to psychiatric care: Levels & Filters Huxley P. Nordic J of Psychiatry 1996;50(S37):47-53.

## Distributed Networks of care



Population-based systems of care

A <u>system of care</u> for complex health conditions is "A set of activities with a commons set of objectives…" e.g. <u>75% of FEP in southern CT will be vocationally</u> <u>engaged at one year f/u</u>

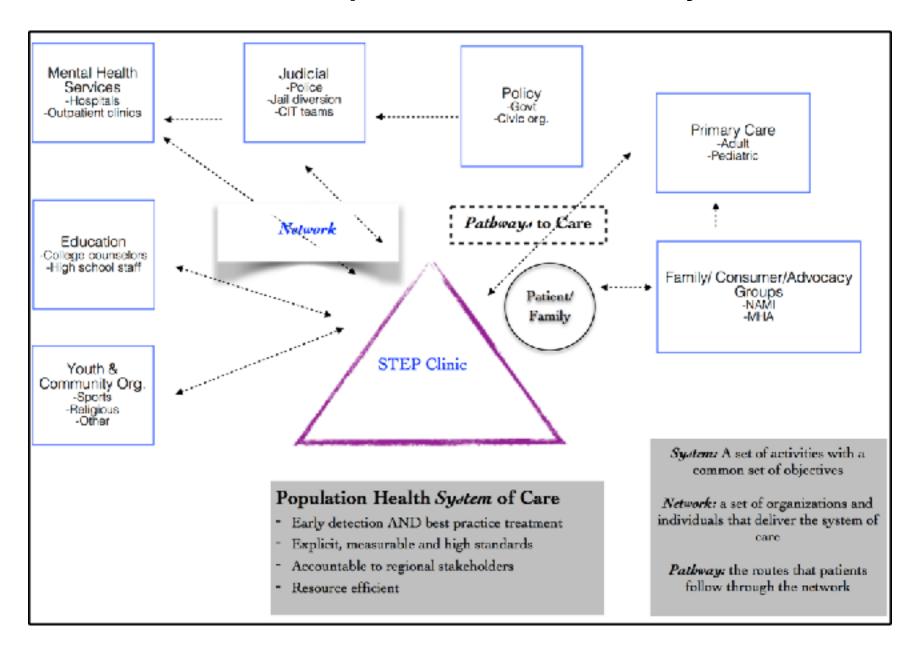
A <u>network</u> is a set of organizations and individuals that deliver the system of care

Pathways are the routes that patients follow through the network

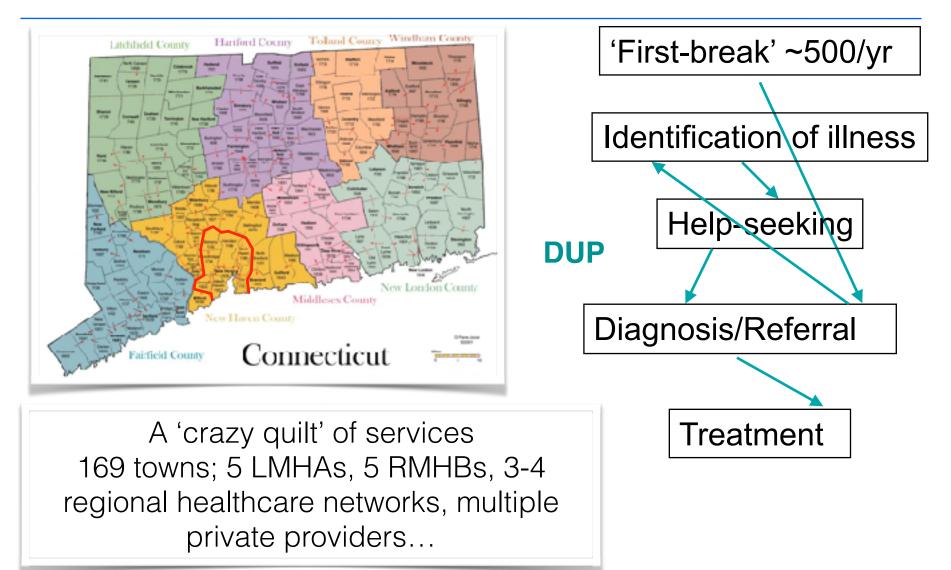
- Gray, Better Value Healthcare, 2013

*The* STEP program seeks to build a *system of care* for psychotic disorders by engaging the local *network* and transforming *pathways*. Srihari et al., JAMA Psychiatry 2016

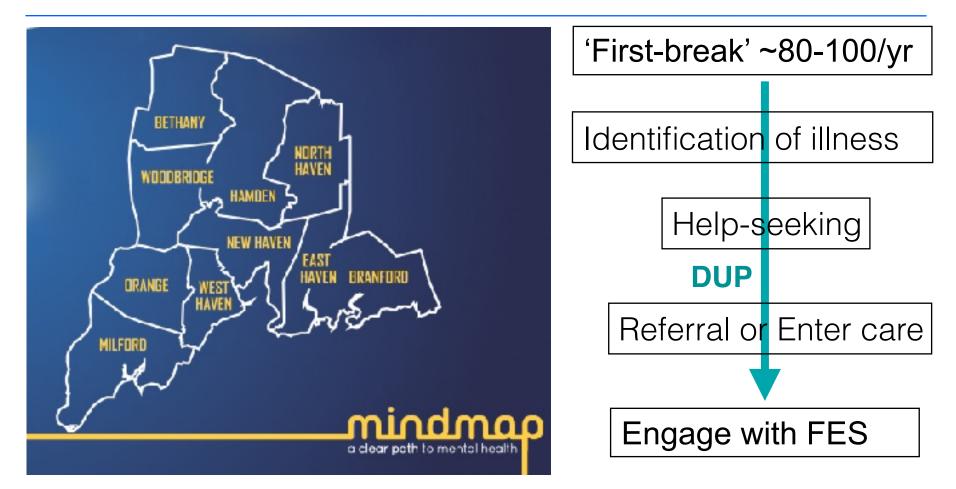
## STEP's vision for a Population Health Based System of Care



"What happens to individuals with psychosis in CT?" Disorganized *Networks* deliver suboptimal *Pathways* 



# STEP: Modeling a Population Health approach to Early Intervention for Psychosis



STEP FES as *integrator* of a *system of care* for psychotic disorders i.e. engaging local network to transform pathways. *Srihari et al., JAMA Psychiatry, 2016* 

# a clear path to mental health



By Jocelyn Maminta Medical/Health Reporter Historisted: January 4, 1916, 6149 pm

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mindmap



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PEOPLE WITH PSYCHOSIS **ARE 14 X MORE LIKELY** TO BE THE VICTIM OF VIOLENCE THAN TO COMMIT IT.

PSYCHOSIS IS NOT PSYCHO

EARLY DETECTION SAVES MINDS.



# III. Summary

- A Population Health framework can put into proper perspective the role of health care (vis a vis other actors) in achieving the goal (health outcomes)
- The Systems Network Pathways model provides a way to operationalize Population Health for new onset psychosis
- EIS for Psychosis need to implement strategies to modify local pathways to care. STEP is conducting the first U.S. test of a comprehensive early detection approach.

# IV. Implementing an EIS

Embracing complexity

# Building Early Intervention Services

<u>Complicated</u> - Linear, multi-step - 'Blueprint' -Standardized -'Problem-solving'



# Building Early Intervention Services

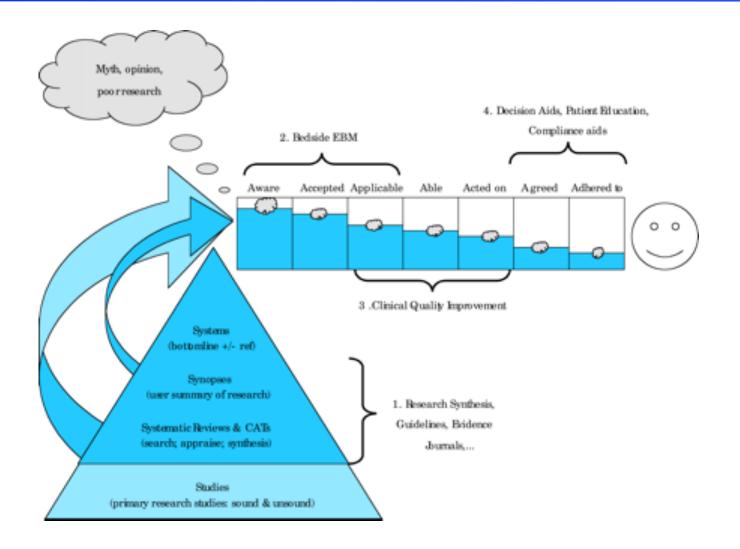
## LIKE RAISING A CHILD?

## **Complex**

Iterative
 Dynamic
 Personalized
 'Problem framing'



## Disseminating EIS in the U.S.



The Knowledge 'Pipeline': A defunct model

# What is STEP care? *Components*

- Evaluation: for rare secondary causes (e.g. epilepsy, fronto-temporal dementia) and more common taxonomic categories (acute intermittent psychoses, bipolar disorder, MDD with psychosis, borderline PD)
- Family Education / Support: individual and group
- Social cognition and skills: individual and group
- Individual Psychotherapy
- Pharmacologic Treatment
- Rehabilitation (Support for employment and/or education)

Integration within a team that seeks to phase and prioritize goals based on explicit principles of care

## What is STEP care? *Phase-specific*

1. ACUTE

Engage around 'interrupted' narratives: work, school, relationships

Safety: self-harm & impulsive aggression

Symptoms: remission of 'positive' symptoms, mood/anxiety

**Cognitive losses, stigma, substance use** 

2. STABILIZATION Maintain symptomatic remission Prevent relapse Support rehabilitation Work/school, relationships

3. RECOVERY Prevent relapse Maintain functioning Cardiovascular risk

## What is STEP care? *Principles*

(adapted from IOM Quality Chasm reports)

- 1. Safe: Focus on suicide/aggression, side effects (short term); <u>CV morbidity/mortality (longer term)</u>
- 2. Effective:
  - 1. Favor empirically supported treatments
  - 2. Measure and Benchmark: e.g. 80% remission
- 3. Patient Centered:
  - 1. Provide **menu** of services
  - 2. Anticipate variable insight: Flexibly (re-) engage, work on treatment alliance
  - 3. Anticipate stigma: Active inclusion & education of family, primary supports & community resources including other healthcare providers, educators, law enforcement
- 4. Timely: quick, flexible access with community liaison
- 5. Efficient: task share with existing services (e.g. housing)
- 6. Equitable: e.g. jail diversion, tracking minority/immigrant participation

## a clear path to mental health

### **PSYCHOSIS HAS MANY SYMPTOMS** – MINDMAP OFFERS ONE PATH TO CUSTOMIZED CARE – YOU CHOOSE YOUR STOPS

#### CONTACT MINDMAP

- Call Anytime or Text 'MINDMAP' to (203) 589-0388 -Calls Returned Within One Business Day

### SET UP APPOINTMENT

 Convenient Times Available in the STEP Program

PARTNER WITH A PROFESSIONAL - Create a Custom Treatment Plan to Suit Your Own Goals

#### PSYCHOTHERAPY

Talk with Your Clinician
 Learn to Manage Your Symptoms

MEDICATIONS -If Needed, Find The Right One At The Right Cose For You

#### FAMILY AND FRIENDS

You Can Choose Who to involve in Your Care
 75% of Families Participate in Our Treatment

#### SOCIAL SKILLS

 How to Build Strong and Healthy Relationships

#### WELLNESS COUNSELING

-Health & Fitness Support -Substance Abuse Counseling

#### INDEPENDENT LIVING

 Counseling on Finances, Insurance & Housing

#### EDUCATION - Practical Assistance to

Help You Balance School. Learning and Treatment

#### EMPLOYMENT

Our Employment
 Specialist Will Help You
 Eind a Job

### SUCCESS WITHIN 1 YEAR AT STEP



with Early  $2 \chi$ 

As Many Recover and are Employed Full-Time

No Hospitalization Required



STEP vs. Standard Treatment

LOCAL - EFFECTIVE - FREE CALL TODAY (203) 589-0388 www.mindmapct.org

# IV. Summary

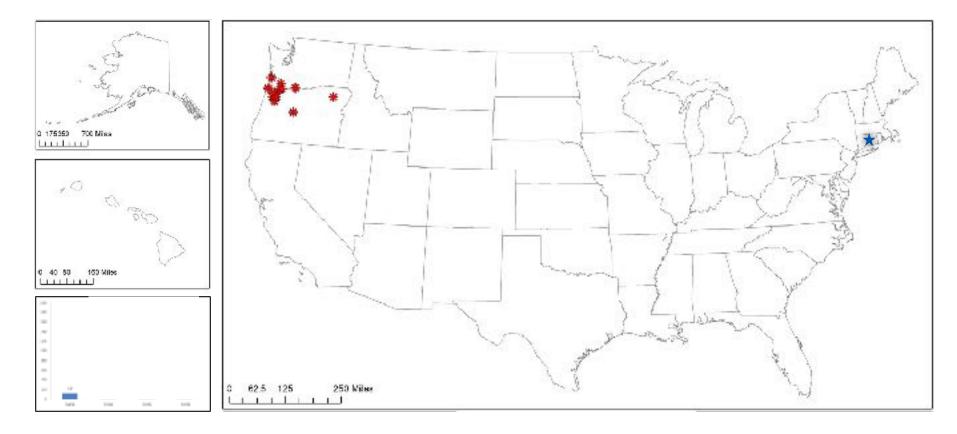
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- 1. EIS can deliver individualized, dynamic packages of care
- Treatment components can be selected based on emerging evidence, availability & feasibility
- Processes can be refined and disciplined by Population Outcomes: building an optimal Culture of practice.

## V. STEP 3.0

Where to next?

## Public FES clinics before 2008

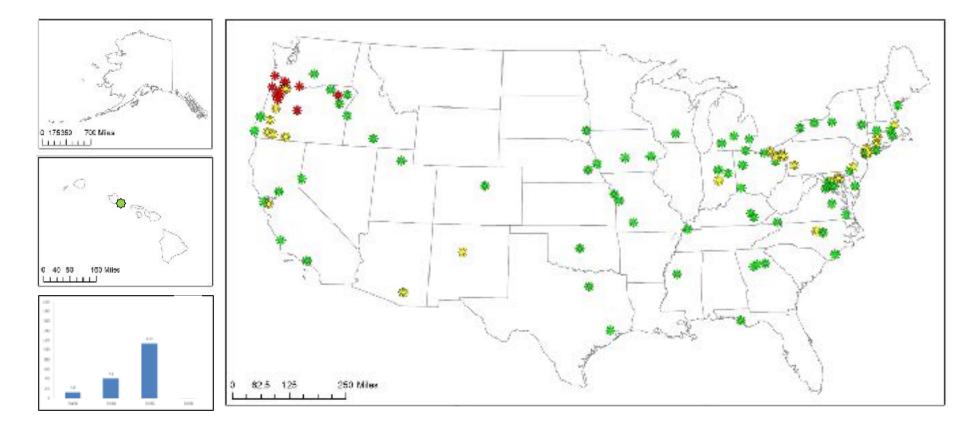


2008 • 2014 • 2016 • 2018

from Robert Heinssen, NIMH



## FES after SAMHSA set-aside

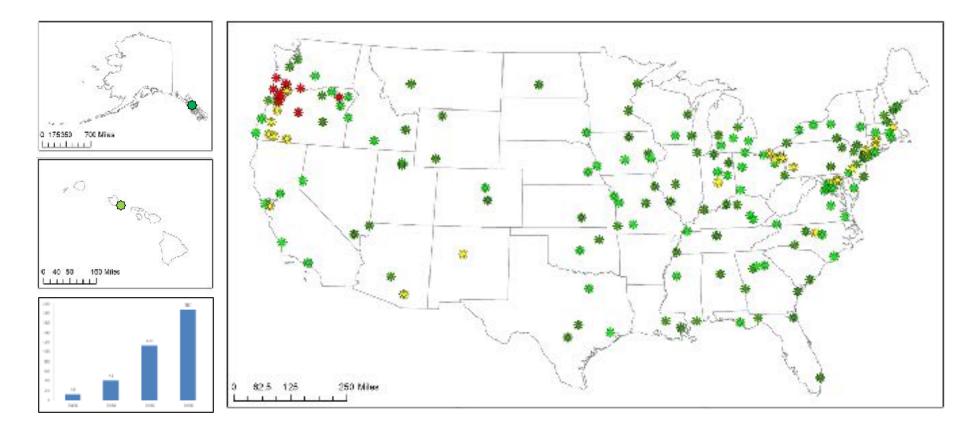


2008 • 2014 • 2016 • 2018

from Robert Heinssen, NIMH



## Looking ahead to 2018



2008 • 2014 • 2016 • 2018

### from Robert Heinssen, NIMH



Harmonizing Clinical Data Collection in Community-Based Treatment Programs for First Episode Psychosis National Institute of Mental Health September 7-8, 2017

HOW DO WE BUILD A NATIONWIDE EARLY PSYCHOSIS ECOSYSTEM THAT PROVIDES THE BEST AVAILABLE CARE TO AFFECTED INDIVIDUALS and their FAMILIES, WHILE ALSO DRIVING RELEVANT RESEARCH TO CONTINUOUSLY IMPROVE THE EFFECTIVENESS OF THIS CARE?

## Learning Health Networks:

A 'Design' for Early Intervention Service Dissemination?

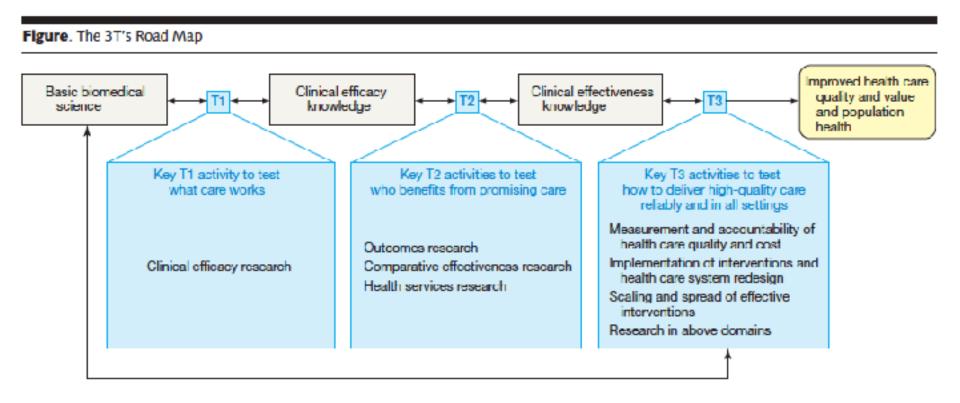
A Learning Health Network occurs when "<u>science</u>, <u>informatics</u>, <u>incentives</u>, <u>and culture</u> are aligned for continuous improvement and innovation...and new knowledge is captured as an integral by-product of the care experience</u>"

Roundtable on Value and Science-Driven Health Care, Institute of Medicine. National Academies Press (US); 2013

### Diverse Early-adopter Hubs

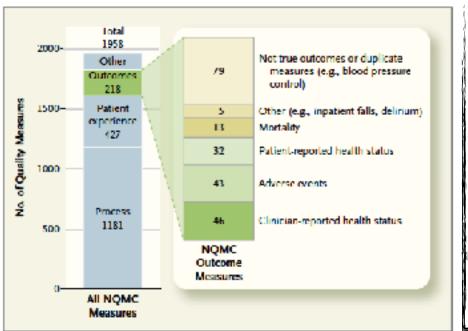


### Knowledge Translation\*: The aspiration Doing 'what we know' while learning 'what to do'\*\*



\*Dougherty et al., JAMA 2008 \*\* Glasziou P, et al. *Can evidence-based medicine and clinical quality improvement learn from each other? BMJ Qual Saf.* 2011

### 'Value' = patient outcomes achieved per dollar spent\*



### *"< 2% are 'patient reported outcomes"*

Categories of Quality Measures Listed in the National Quality Measures Clearinghouse (NQMC).

International Consortium for Health Outcomes Measurement
- Commit to measure a minimum sufficient set of outcomes
- Consider outcomes across a full 'care delivery value chain'
<ul> <li>Well-defined methods for collection &amp; risk adjustment of measures of outcomes</li> </ul>
- Standardization of sets nationally and globally.
<ul> <li>Maximizing 'Value' (= health outcomes achieved per dollar spent)</li> </ul>

www.ichom.org

\*Quality of healthcare: Compliance with evidence-based practice guidelines or improvement in outcomes? Porter et al., NEJM 374;6; February 11, 2016

### STEP's System specification for EIS

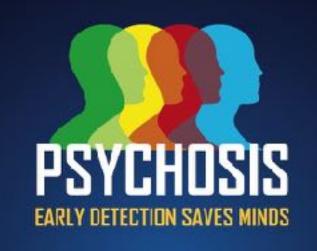
Table. Population Health System for Early Intervention, With an Overall Aim to "Transform Outcomes of All Individuals Within the First 3 Years of Psychosis Onset Within a Catchment Zone of 10 Surrounding Towns"<sup>a</sup>

Objective	Measure	Standard
A Access		
A.1. Rapidity	DUP 1 < 3 mo <sup>b</sup>	Achievable (30%); aspirational (75%)
	DUP 2 < 12 mo <sup>c</sup>	Achievable (50%); aspirational (75%)
A.2. Equity	Proportion of female patients, ethnic groups, town of residence, age	% of Female patients: achievable (20%); aspirational (40%). Aspirational: % of minorities will meet Census minimal proportions aspirational: all 10 target towns will be represented at enrollment. % of Patients 16 or 17 y: achievable (5%); aspirational (10%)
A.3. Coverage	No. of patients annually offered STEP care/expected annual incidence	Achievable (15%); aspirational (80%)
A.4. Pathway to care	Proportion of patients admitted to STEP after psychiatric hospitalization	Achievable (80%); aspirational (30%)
B. Engagement		
B.1. Overal.	In contact with FES at 1 y	Achievable (70%); aspirational (90%)
B.2. Engagement	% of Patients with at least 2 visits in 1st month	Achievable (70%); aspirational (90%)
B.3. Exposure to family education	Family attendance at 1 education session in 1st month	Achievable (75%); aspirational (90%)
C. Outcomes		
C.1. Hospitalization	No psychiatric admission in 1st year after enrollment in FES	Achievable (<25%); aspirational (<10%)
C.2. Remission	FANSS 8-item score < 3 at 6 mo FANSS 8-item score < 3 at 1 y	Achievable (50%-70%); aspirational (85%) Achievable (80%); aspirational (90%)
C.3. Vocational engagement	Not in labor market (NEET and not a full-time caregiver)	Achievable (<20%); aspirational (<10%)
C.4. Cardiovascular risk		
Smeking	New smokers at 1 y	Achievable (20%); aspirational (10%)
	% of Smokers at 1 y	Achievable (60%); aspirational (30%)
Overweight or obese	EMI < 25 at 1 y	Achievable (30%); aspirational (75%)
	Retain normal BMI at 1 y	Achievable (60%); aspirational (75%)
C.5. Disposition	% Successfully transitioned to routine community services after 2 y in FES	Achievable (80%); aspirational (90%)

### System Specification: Implications

- Individualized, phase-specific care
- Care Processes responsive to Population Outcomes across domains of access, disease-related morbidity and broader determinants of social & vocational functioning.
- Fidelity (like adherence) as a variably important mediator of patient oriented outcomes, not ends in themselves
- Ownership: Local implementation choices
- Creative resourcing of & disinvestment from services
- Accountability: e.g. annual report focused on outcomes of value to local stakeholders

### STEP 3.0 - Next steps



### WHO DO WE TREAT?



Revent inset of psycholo (~3 years) Ages 15 - 35 Restricted to the following towns



A risk for psychosis Ages 12 - 35 No geographic restrictions

If in doubt about eligibility, just call us. LOCAL - EFFECTIVE - FREE

> www.mindmapet.org (203) 589-0388

- 1. "**STEP-In**" : Reducing DUP, improving experience To AND Through care Mindmap
- 2. "STEP-Up": Refining treatment model: integration and cognitive remediation PT/CET project
- 3. "STEP-Out": What after STEP? Audit/Tele-consultation model
- 4. Hub and Spoke for CT: need an FES in Southwest CT
- 5. Linking CT to National Learning Healthcare Network: building an open source digital platform STEP-ONE in beta-testing