LESSONS FROM IMPLEMENTATION SCIENCE TO HELP YOU SOLVE CHALLENGES IN BEHAVIORAL HEALTH SERVICES DELIVERY
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PRESENTER:
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DIRECTOR, MENTAL HEALTH TECHNOLOGY TRANSFER CENTER (MHTTC) NETWORK COORDINATING OFFICE

- Nothing to Disclose
LEARNING OBJECTIVES:

• Define implementation and implementation science

• Describe the implementation gap and its effects on behavioral health service delivery

• Analyze how key strategies from implementation science can assist organizational leaders in efficiently changing practice to promote the best patient outcomes
CHALLENGES IN BEHAVIORAL HEALTH SERVICES DELIVERY
SERIOUS MENTAL ILLNESS (SMI) INCREASING

- **18-25 YEARS:**
  - 2008: 2.9M
  - 2019: 3.7M
  - 2012: 3.7M
  - 2016: 4.8M
- **18+ YEARS:**
  - 2008: 1.2M
  - 2019: 2.5M
  - 2012: 2.5M
  - 2016: 3.8M
- **50+ YEARS:**
  - 2008: 8.3M
  - 2019: 8.3M
  - 2012: 8.3M
  - 2016: 8.3M

- **2008-2019 NSDUH, 18+**

- **56.4%**
  - 1.6 MILLION YOUNG ADULTS WITH SMI RECEIVED TREATMENT IN 2019
  - 43.6% got NO treatment

- **65.1%**
  - 4.5M ADULTS AGED 26-49 WITH SMI RECEIVED TREATMENT IN 2019
  - 34.9% got NO treatment

+ Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.
MENTAL AND SUBSTANCE USE DISORDERS: HIGH PREVALENCE & HUGE TREATMENT GAPS

PAST YEAR, 2019 NSDUH, 12+

- Substance Use Disorder (SUD) 12+: 20.4M (89.7% NO TREATMENT*)
- Any Mental Illness (AMI) 18+: 51.5M (55.2% NO TREATMENT)
- Serious Mental Illness 18+: 13.1M (34.5% NO TREATMENT)
- Co-Occurring AMI and SUD 18+: 9.5M (90.1% NO TREATMENT*)
- Major Depressive Episode 12-17: 3.8M (56.7% NO TREATMENT)

* No Treatment for SUD is defined as not receiving treatment at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or prison/jail.
LACK OF MENTAL HEALTH EQUITY

Review of disparities in persons with SMI – Maura & Weisman de Mamani, 2017

Disparities related to:
- Diagnosis – over/under-diagnosis
- Access to services
- Utilization of services
- Utilization of effective treatments
## Table 1.1. Populations Receiving Select Evidence-Based Practices in Selected State Mental Health Systems in 2016

<table>
<thead>
<tr>
<th>Evidence-Based Practice</th>
<th>Target Population for Service</th>
<th>Percent of State MH Population Who Receive Practice in States that Report Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication management</td>
<td>Adults and youth with SMI/SED</td>
<td>32.0%</td>
</tr>
<tr>
<td>Illness self-management</td>
<td>Adults with SMI</td>
<td>19.0%</td>
</tr>
<tr>
<td>Dual diagnosis treatment</td>
<td>Adults with SMI and SUD</td>
<td>10.5%</td>
</tr>
<tr>
<td>Assertive community treatment</td>
<td>Adults with SMI</td>
<td>2.1%</td>
</tr>
<tr>
<td>Supported employment</td>
<td>Adults and transition-age youth with SMI</td>
<td>2.1%</td>
</tr>
<tr>
<td>Supported housing</td>
<td>Adults and transition-age youth with SMI</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

ISMICC Report to Congress, 2017
SAMHSA Uniform Reporting System Data - https://wwwdasis.samhsa.gov/dasis2/urs.htm
# FIDELITY TO EVIDENCE-BASED PRACTICES: ASSERTIVE COMMUNITY TREATMENT (ACT)

<table>
<thead>
<tr>
<th></th>
<th>Strong Implementation (High Fidelity) ACT team</th>
<th>Weak Implementation (Low Fidelity) ACT team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Drop-outs</td>
<td>15%</td>
<td>30%</td>
</tr>
<tr>
<td>Substance Use in Remission</td>
<td>55%</td>
<td>13%</td>
</tr>
<tr>
<td>Hospital Admissions</td>
<td>2.87</td>
<td>4.69</td>
</tr>
</tbody>
</table>

McHugo et al., 1999
THESE CHALLENGES ARE IMPLEMENTATION GAPS

Effective Intervention X Not Implemented = Poor Patient Outcomes

Effective Intervention X Ineffective or Insufficient Implementation = Inconsistent, Not Sustainable, Poor Outcomes

*AKA "Voltage Drop"

Adapted from Bertram, Blase, Shern, Shea, & Fixsen, 2011
WHAT D&I SCIENCE IS:

Definitions
Frameworks
Strategies
Outcomes

AND HOW IT CAN HELP...
TERMINOLOGY

**Diffusion:** A passive, untargeted, unplanned, and uncontrolled spread of new interventions.

**Dissemination:** An active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies.

**Implementation:** The process of putting to use or integrating evidence-based interventions within a setting.

**Sustainment:** The process of maintaining or continuing the intervention within a setting, beyond a more active implementation period.

Rabin & Brownson, 2018
D&I Research

Scientific study of processes and factors associated with successful integration of evidence-based interventions within a particular setting.

- How do you get evidence-based practices into routine practice settings so that more people can receive the best care possible?
- How do you keep the practice in place? (Sustainment research)

Rabin & Brownson, 2018
D&I SCIENCE

Draws upon research from many fields – public health, communications and marketing, evidence-based medicine, organizational change

It is NOT process/quality improvement

- Improvement science - improve the quality, safety, and value of health care
- Implementation science - promote the uptake of evidence-based interventions

Koczwara et al., 2018
THEORIES AND FRAMEWORKS IN D&I SCIENCE

An emerging discipline needs rigor & reproducibility

Types of theories and frameworks
  - Determinant
  - Process
  - Evaluative

Nilsen, 2015
DETERMINANT FRAMEWORKS: MEDIATORS & MODERATORS OF IMPLEMENTATION OUTCOMES

What are barriers and enablers of implementation?

Example: Consolidated Framework for Implementation Research (CFIR)

Damschroder et al., 2009
CONTEXT BEFORE IMPLEMENTATION:

DECISION MAKERS’ VIEWS OF A PEER-LED HEALTHY LIFESTYLE INTERVENTION FOR PEOPLE WITH SMI IN SUPPORTIVE HOUSING

Intervention: Peer-led healthy lifestyle intervention for people with SMI

Qualitative interviews with decision-makers in supportive housing agencies

CFIR model used to identify contextual factors perceived to affect implementation

Cabassa & Stafancic, 2019
What are the steps and stages to implement an evidence-based practice?

Example: EPIS Model

Aarons et al., 2011
IMPLEMENTATION OF WEB-BASED SHARED DECISION-MAKING IN TWO SPECIALTY MENTAL HEALTH CLINICS

Intervention: web-based shared decision-making system

2 clinics

Implementation strategies by stage

Examined implementation over 18 months

Qualitative analysis of CFIR constructs

Finnerty et al., 2019
How can I know whether the new practice, and how it is implemented, work?

Example: RE-AIM

Reach: Patients who need (& want) it, get it
Effectiveness: It works (patient level outcome)
Adoption: Providers deliver it
Implementation: It is delivered with quality
Maintenance: It continues to be delivered

Glasgow et al., 1999
# IMPLEMENTATION OF COORDINATED SPECIALTY CARE FOR EARLY PSYCHOSIS IN NY STATE: USING THE RE-AIM FRAMEWORK

OnTrackNY early psychosis program – coordinated specialty care, 21 sites
Examination of outcomes over 5 years using RE-AIM

<table>
<thead>
<tr>
<th>Reach</th>
<th>2013-2018, 1,215 individuals enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>Education/employment increased from 40% to 80%</td>
</tr>
<tr>
<td></td>
<td>Hospitalization rates decreased from 70% to 10%</td>
</tr>
<tr>
<td></td>
<td>GAF improved</td>
</tr>
<tr>
<td>Adoption</td>
<td>98% clinicians “I feel comfortable implementing the practices/approach covered in OnTrackNY training.”</td>
</tr>
<tr>
<td>Implementation</td>
<td>Fidelity ratings – all sites 20/24 domains</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Viable financing model; no post-discharge patient outcomes</td>
</tr>
</tbody>
</table>

Mascayano, Dixon et al., 2019
The intervention/practice is THE THING

Effectiveness research looks at whether THE THING works

D&I research looks at how best to help people/places DO THE THING

Implementation strategies are the stuff we do to try to help people/places DO THE THING

Implementation outcomes are HOW MUCH and HOW WELL they DO THE THING.

Curran, 2020
IMPLEMENTATION STRATEGIES

The activities, actions, or causal agents for the installation, scale up, scale out, or sustainment of an evidence-based practice

Training and technical assistance “interventions” of an implementation or sustainment endeavor

Passive dissemination strategies (e.g., research publications, training manuals), standalone trainings are not enough

Which implementation strategies can really push practice change?
# IMPLEMENTATION STRATEGIES

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>Conduct local needs assessment; assess for readiness and identify barriers; develop implementation plan; build local consensus; mandate change</td>
</tr>
<tr>
<td>Educate</td>
<td>Develop effective educational materials; conduct ongoing training; inform local opinions leaders; prepare patients/consumers to be active participants</td>
</tr>
<tr>
<td>Finance</td>
<td>Alter incentives; place on formularies; access new funding; make billing easier</td>
</tr>
<tr>
<td>Restructure</td>
<td>Create new clinical teams; change service sites; change physical structure and equipment; change records systems</td>
</tr>
<tr>
<td>Manage Quality</td>
<td>Develop and organize quality monitoring systems; audit and feedback; obtain and use patient/consumer/family feedback; provide clinical supervision; conduct cyclical small tests of change (PDSA cycles)</td>
</tr>
<tr>
<td>Attend to Policy</td>
<td>Encourage the promotion of programs and practices through accrediting bodies, licensing boards, and legal systems</td>
</tr>
</tbody>
</table>

Powell et al., 2012
STANDARD PRACTICE – IMPRECISE IMPLEMENTATION STRATEGIES

“Train and Pray” Approach

“Kitchen Sink” Approach

“One Size Fits All” Approach

“It seemed like a good idea at the time” (Eccles)

Grimshaw et al., 2004; Henggeler et al., 2002; Squires et al., 2014
TAILORING STRATEGIES TO BARRIERS:
PRECISION IMPLEMENTATION

Assess context to identify determinants of implementation outcomes (i.e., barriers and facilitators) that may need to be addressed.

Design and select strategies appropriate to the barriers.

Implement and evaluate the strategies.

Evaluate adaptations, sequencing and combining strategies based on context (and ongoing measures of implementation outcomes).

Model implementation outcomes and costs.

Photo by amirali mirhashemian on Unsplash
# SELECTING STRATEGIES BASED ON BARRIERS: TARGETED TAILORING

<table>
<thead>
<tr>
<th>Identified Barrier</th>
<th>Relevant Implementation Strategies</th>
</tr>
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<tbody>
<tr>
<td>Lack of knowledge</td>
<td>Interactive education sessions</td>
</tr>
<tr>
<td>Perception/reality mismatch</td>
<td>Audit and feedback</td>
</tr>
<tr>
<td>Lack of motivation</td>
<td>Incentives/sanctions</td>
</tr>
<tr>
<td>Beliefs/attitudes</td>
<td>Peer influence/opinion leaders</td>
</tr>
<tr>
<td>Workflow/time</td>
<td>Process redesign</td>
</tr>
</tbody>
</table>
REENGAGING VETERANS WITH SMI INTO CARE: NATIONAL RANDOMIZED TRIAL

- Intervention: Re-Engage - outreach for Veterans with SMI lost-to-care
- 158 facilities
- Adaptive implementation trial
  - How much implementation support is needed?
  - Does the level of support vary by specific factors?
    - Organizational culture and climate

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation manual</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Training</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Technical assistance</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>External facilitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gathering information</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Garner regional/local support</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Identify barriers/facilitators</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Develop action plans</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Feedback &amp; link to resources</td>
<td></td>
<td>x</td>
</tr>
</tbody>
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Kilbourne et al., 2014, 2015; Smith et al., 2018
HOW IMPLEMENTATION SCIENCE CAN (HELP) SOLVE CHALLENGES IN BEHAVIORAL HEALTH SERVICES DELIVERY
D&I SCIENCE CAN ACCELERATE SYSTEMS CHANGE TO CLOSE GAPS IN CARE

Gaps

- Lack of access to effective treatments
- Lack of access to effectively implemented EBPs
- Racial disparities in access/treatment

Solutions

Data: Develop the public mental health system into a learning health system that uses data to track the gaps and their resolution

Practice: Use D&I science at national, state, and systems levels to implement EBPs

Training & TA: Infuse D&I science in national training and TA centers

Research: Accelerate the innovation development-to-implementation pipeline
  - Hybrid effectiveness-implementation trials
IMPLEMENTATION AND EFFECTIVENESS OF A MEDICAL HOME TO IMPROVE HEALTH CARE OF PEOPLE WITH SMI: STUDY PROTOCOL

Hybrid implementation-effectiveness study

Test effectiveness of intervention – SMI PACT

Test level of and factors affecting implementation

Enrollment: N=3 Clinics

Usual Care – PC-MHI and PACT (n=2)

Patients with SMI (n=170), followed 1 yr

Staff interviews
Healthcare costs
Admin data

Intervention: Clinics

SMI PACT (n=1)

Patients with SMI (n=170), followed 1 yr

Staff interviews
Healthcare costs
Admin data

Implementation barriers/facilitators
SMI-PACT Fidelity

Young, Cohen, et al., 2018
If you’re thinking of utilizing a new practice or program, apply basic D&I science

Step back and consider the problem you’re looking to solve
Understand implementation occurs across multiple stages – start with Exploration
Carefully review research on EBPs, including their implementation
Put together an implementation team and use an implementation plan
Consider hiring an intermediary purveyor organization to provide implementation support
Pay as much attention to the process of implementation as you do to the practice itself
Clinicians with knowledge and training in D&I science and research can:

- Be better consumers of research on EBPs
- View clinical practice change with a larger lens than just provider behavior (e.g., outer context, policy, patients, factors associated with intervention)
- Assist in implementing EBPs in your practice
  - Help manage expectations of leadership and staff about the change process (implementation stages)
- Serve on quality improvement teams

Imperative to include D&I science and research in clinical training programs

Kirchner et al., 2018
BIBLIOGRAPHY


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Thank you!