Introduction to Implementation Research on Addictions

Kathy Bradley, MD, MPH
Senior Investigator GHRI
Affiliate Professor Medicine and Health Services, University of Washington
Research Associate VA Puget Sound HSR&D
Outline

1. What is implementation research?
   - Overview
   - Example
   - Lessons learned

2. Introduction to conceptual models
   - Greenhalgh
   - Other models
   - Patient- and user-centered design

3. Training and tools...
## Implementation Research

<table>
<thead>
<tr>
<th>Efficacy Trials</th>
<th>Effectiveness Trials</th>
<th>Implementation Trials</th>
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<tbody>
<tr>
<td>Internal validity</td>
<td>External validity</td>
<td>In the “real” world</td>
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<td>Select sample</td>
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<td>Real world sample</td>
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<td>Detailed inclusions/exclusions</td>
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<td>No exclusions for research reasons</td>
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<td>Research clinic</td>
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<td>Real-world clinic</td>
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<td>Interventionist hired by study</td>
<td>Interventionist trained as in clinical setting</td>
<td>Routine clinical staff provide care</td>
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<td>Care per protocol</td>
<td>Trained as in the real world</td>
<td>Clinicians in health system Trained</td>
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<td>+++ patient time</td>
<td>Minimize research time</td>
<td>0-small research time</td>
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<tr>
<td>Many outcomes (often pay subjects)</td>
<td>Few select outcomes</td>
<td>Outcomes as in clinical care (don’t pay subjects)</td>
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</table>
“...the scientific study of methods to promote the systematic uptake of research findings ...into routine practice...”

-Eccles & Mittman, Implementation Science, 2006

(Mark Bauer - 2016)
Case Study
Implementation Research
1. Screening and Brief Alcohol Interventions (SBI)
2. Initiated by QI leaders
SBI in VA Nationwide

1. Initiated by QI leaders
2. Performance measures
   - Screening 2004
   - BI 2008
3. EHR tools
EHR Clinical Decision Support

Provider Education

Assessment & Risk Stratification

Decision Support & Education

Options for Patient Feedback and Further Assessment

Documentation in progress note
SBI in VA Nationwide

1. Initiated by QI leaders
2. Performance measures
3. EHR tools
4. Training materials available
SBI in VA Nationwide

1. Screening rates: 95% immediately
2. BI increased slowly but reached 76%
3. Evaluation using clinical data

Bradley Am J Manag Care 2006;
Lapham Medical Care 2012
Bradley Addiction 2011
Some Things Didn’t Not Go as Planned
SBI in VA Nationwide

1. Prevalence of positive screens
   - Low prevalence:
     - Patient survey ~25%
     - EHR ~ 11-16%
   - Decreasing over time: 16% to 4-9%

Bradley Am J Manag Care 2006
SBI in VA Nationwide

Documented BI Among Screen-positive Patients

* Rates are from VA’s National Performance Measure Reporting System\textsuperscript{12} (Chavez, JSAD, in press)
Patient-reported Advice

Among screen positive patients
Adjusted for age, gender, race/ethnicity, education, smoking status
(Chavez, JSAD, 2016)
SBI in VA Nationwide

1. Documented advice higher than patient report?
2. Reward sites who identified fewer patients?

Bradley Psych Services 2013; Lapham DAD 2014
Greenhalgh Model: Designing Implementation Strategies
Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations

TRISHA GREENHALGH, GLENN ROBERT, FRASER MACFARLANE*, PAUL BATE, and OLIVIA KYRIAKIDOU*

University College London; *University of Surrey

The Milbank Quarterly, Vol. 82, No. 4, 2004 (pp. 581–629) © 2004 Milbank Memorial Fund. Published by Blackwell Publishing.
Innovators
Innovators

Resources
Support: Financial & Technical
Innovators

Resources
Support: Financial & Technical

Experts
Researchers - Content Experts

Change Agents
Operations
Congress

Bradley KA & Williams EC, Principles of Addiction Medicine, 2009
Innovators

Resources
Support: Financial, Technical & Clinical

Experts
Researchers
- Content Experts

Change Agents
Operations
Congress

User System

System Antecedents
VA System

INTERLINKAGE

Bradley KA & Williams EC, Principles of Addiction Medicine, 2009
Innovators

Resources
Support: Financial, Technical & Clinical

Experts
Researchers
- Content Experts

Change Agents
Operations
Congress

User System

System Antecedents
VA System

System Readiness
Pressures for Change

Bradley KA & Williams EC, Principles of Addiction Medicine, 2009
“Implementation research is a team sport”

Dan Kivlahan
Innovators

Resources
Support: Financial, Technical & Clinical

Knowledge Purveyors
Researchers - Content Experts

Change Agents
Operations Congress

The Innovations

Diffusion

Dissemination

LINKAGE

User System
System Antecedents
VA System

System Readiness
Pressures for Change

Adopters/Assimilation
Managers & Clinicians

LINKAGE
Passive Implementation of BI

We neglected “adopters”
Adopter Attitudes

1. National webinar for quality managers
   - Screening
   - BI
2. After the second...
Adopter Attitudes

“She’s Crazy”
Email from PCP re EHR Tools

SMALL PRINT:
ALSO THE BRIDGE IS OUT AHEAD
The Innovations

Innovators
- Resources: Support: Financial, Technical & Clinical
- Knowledge Purveyors: Researchers - Content Experts
- Change Agents: Office of Quality & Performance

User System
- System Antecedents: VA System
- System Readiness: Pressures for Change
- Adopters/Assimilation: Managers & Clinicians
- Implementation
- Consequences

Diffusion

LINKAGE

Bradley KA & Williams EC, Principles of Addiction Medicine, 2009
Innovators

Knowledge Purveyors
Researchers
- Content Experts

Change Agents
Office of Quality & Performance

Resources
Support: Financial, Technical & Clinical

The Innovations

User System
System Antecedents
VA System

System Readiness
Pressures for Change

Adopters/Assimilation
Managers & Clinicians

Implementation

Consequences

Bradley KA & Williams EC, Principles of Addiction Medicine, 2009, 2013
Other Implementation Research Conceptual Models
Other Conceptual Models for Implementation Research

1. RE-AIM – Glasgow
2. PRISM – Feldstein and Glasgow
3. UCLA/RAND/NIMH model – Mendel
4. CFIR - Damschroder
5. Hybrid Effectiveness-Implementation Trials – Curran
   ✓ Hybrid Type 1 Mostly effectiveness
   ✓ Hybrid Type 2
   ✓ Hybrid Type 3 Mostly implementation

Glasgow, Implement Sci 2011
Feldstein Jt Comm J Qual Patient Saf 2008
Curran MedCare 2012
RE-AIM

• **Reach** – % patients reached
• **Effectiveness** – Impact of implementation on outcomes
• **Adoption** – % providers (“agents”) or clinics who adopt
• **Implementation fidelity** – evidence-based practices?
• **Maintenance** – sustained after research left?

Glasgow Patient Educ Counseling 2001; Glasgow and Chambers Clin Trans Science 2012
PRISM

1. RE-AIM plus
2. Simple yet complete
3. Good for grants
Sustained Patient-centered Alcohol-Related Care (SPARC Trial)

AHRQ R18
Ideal Alcohol-related Primary Care

- Screen
  - Assess
  - Shared decision making & treatment
  - Monitor and Adapt
Implementation in Group Health

Hi! I'm Dr. Mike Evans and today's discussion is about... Alcohol and Health

https://vimeo.com/user29108320/review/119979917/b789e88c36

www.bit.ly/drinkvideo
Goal: Improve the Quality of Behavioral Health Care

“When I had my knees replaced my doctor gave me a video & booklet and sent me to talks at the hospitals. Then, we talked about the option that seemed best for me… When I sought help for my addictions he just gave me a phone #…”

—GH patient
# Overview SPARC Project

**Pragmatic Trial of Alcohol SBI and Shared Decision-Making for Alcohol Use Disorders**

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### Preparation
- Pilot – 3 clinics

### Waves
1. Wave 1 – 3 clinics
2. Wave 2 – 3 clinics
3. Wave 3 – 3 clinics
4. Wave 4 – 3-4 clinics
5. Wave 5 – 3-4 clinics
6. Wave 6 – 3-4 clinics
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**Preparation**

- Pilot – 3 clinics
- Wave 1 – 3 clinics
- Wave 2 – 3 clinics
- Wave 3 – 3 clinics
- Wave 4 – 3-4 clinics
- Wave 5 – 3-4 clinics
- Wave 6 – 3-4 clinics
User Centered Design
User Centered Design
Part 4
Trainings and Tools
Trainings and Tools

1. Implementation research institute (IRI): http://iristl.org/about/
4. Prevention science and Methodology group: http://psmg.usf.edu/
6. Dartmouth Microsystems Training
Funding
Implementation Research
Acknowledgements

NIAAA – K24 - AA022128
NIDA CTN:
- UG1 - DA040314-01
- CTN – #0065
AHRQ – R18 HS023173
Small grants
Thank You!
(References on Coversheet)
Questions?
UCLA/RAND/NIMH Model

Processes:
Stage 1: Capacity & needs assessment
Stage 2: Implementation & process evaluation
Stage 3: Outcome & impact evaluation

Mendel Adm Policy Mental Health 2008
Contextual Factors
1. Norms and attitudes
2. Organizational structure and process
3. Resources
4. Policies & incentives
5. Networks and linkages
6. Media and change agents

Mendel Adm Policy Mental Health 2008
UCLA/RAND/NIMH Model

Stages of Diffusion
1. Adoption
2. Implementation
3. Sustainability

Mendel Adm Policy Mental Health 2008
UCLA/RAND/NIMH Model

Intervention Outcomes

1. Individual level
   ✓ Process
   ✓ Health status

2. Organization and system level
   ✓ Service priorities
   ✓ Reorganization
   ✓ New policies or collaborations

Mendel Adm Policy Mental Health 2008