Models of Dissemination & Implementation Research

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“The latest research shows that we really should do something with all this research”
Overview

• The “Big Picture” (Translational Research)
• Why LSSN is well positioned to conduct high quality Dissemination and Implementation (D&I) Research
• Value of conceptual frameworks & theories (models)
• D&I conceptual frameworks (i.e., RE-AIM and CFIR)
• Methodological considerations in D&I research
Characterize discovery & assess potential health applications

1. Describe patterns & find determinants of health outcomes
2. Assess the efficacy of interventions
3. Assess the dissemination and implementation of guidelines into practice
4. Assess the effectiveness of interventions on health outcomes

Translational Epidemiology

“From discovery to reducing the burden of disease in a population”


Goal of Dissemination and Implementation (D&I) Research

Generate new insights and generalizable knowledge regarding intervention dissemination and implementation processes, facilitators, barriers, & strategies for improvement.
Characteristics of a High Quality D&I Study

1. Focuses on an important public health or clinical problem

“Increase the proportion of persons with newly diagnosed colorectal cancer who receive genetic testing to identify Lynch syndrome (or familial CRC syndromes).”

Chambers D, Kerner, J. Dissemination and implementation PARs: background, overview, and review challenges. Presentation to the National Institutes of Mental Health, National Cancer Institute, 2007
Characteristics of a High Quality D&I Study

2. *Efficacy* data strongly supports the value of dissemination and implementation
Characteristics of a High Quality D&I Study

3. Thorough understanding of implementation and dissemination principles, frameworks, theories

4. Multidisciplinary team with expertise in I&D

5. Challenges an existing paradigm; or invokes innovative hypotheses or methods

6. Has potential to contribute to I&D knowledge base and advance the field

7. Show how you can disseminate to reach expanded / high-risk target populations
Characteristics of a High Quality D&I Study

8. Specific dissemination products will be created
Translational Epidemiology

“From discovery to reducing the burden of disease in a population”

Population Health Measures

Assess the dissemination and implementation of guidelines into practice

Practice

Evidence-based Recommendations & Policies

Assess the effectiveness of interventions on health outcomes (i.e. reduction in cancer morbidity/mortality among patients and their family members)

T4

T3

dissemination and implementation of guidelines into practice
Precede Proceed Model

PHASE 1 Social Assessment
PHASE 2 Epidemiological assessment
PHASE 3 Educational & ecological assessment
PHASE 4 Administrative and policy assessment and intervention alignment

HEALTH PROGRAM
Educational Strategies
Policy regulation organization

PHASE 5 Implementation
PHASE 6 Process evaluation
PHASE 7 Impact evaluation
PHASE 8 Outcome evaluation

Predisposing → Genetics
Reinforcing → Behavior
Enabling → Environment
Health → Quality of Life

PRECEDE evaluation tasks: Specifying measurable objectives and baselines
PROCED evaluation tasks: Monitoring & Continuous Quality Improvement

UNIVERSITY OF SOUTH FLORIDA
What We Know

• Screening methods and procedures vary across institutions

• Patient follow-through with both genetic counseling and germline testing after an abnormal screen varies across institutions
What We DON'T Know

- Factors that contribute to the decision to adopt universal tumor screening (UTS) for Lynch syndrome
- Why institutional differences exist in terms of UTS procedures/protocols
- Implementation challenges & how they were overcome
- Whether there have been unintended outcomes of UTS
- What contributes to variability in UTS outcomes across institutions
Translational Epidemiology

“From discovery to reducing the burden of disease in a population”

Population Health Measures

T4
Assess the effectiveness of interventions on health outcomes
(i.e. reduction in cancer morbidity/mortality among patients and their family members)

Practice

Evidence-based Recommendations & Policies

T3
Assess the dissemination and implementation of guidelines into practice

T3 ½
Assess implementation effectiveness
(i.e. assess for unintended consequences and determine how implementation factors influence patient follow-through with genetic counseling and germline testing)
Theories & Frameworks

___________ are strategic or action-planning models that provide a systematic way to develop, manage, and evaluate interventions.

___________ are systematic ways of understanding events or behaviors. They illustrate how concepts interrelate and can be used to explain or predict events/behaviors.

1. Increase intervention and research quality & effectiveness
2. Enhance interpretability of findings
3. Ensure critical components are included and/or evaluated

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*Multi-level Conceptual Framework of Organizational Innovation Adoption*

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*Multiple D&I Models*
Conceptual Framework #1

RE-AIM enhances the quality, speed, and impact of efforts to translate research into practice


http://re-aim.org/
## RE-AIM Dimension Research Questions

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<th>RE-AIM Dimension</th>
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<td><strong>Reach</strong> Absolute number, proportion, and representativeness of individuals who participate.</td>
<td>What proportion of CRC patients who screen positive follow-through with genetic counseling and genetic testing at each respective institution?</td>
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<td><strong>Effectiveness</strong></td>
<td>Have there been any unexpected outcomes or negative effects associated with UTS implementation?</td>
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<td>If so, what implementation factors may be related to negative effects and how can negative effects be avoided?</td>
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<td><strong>Adoption</strong></td>
<td>Who was involved in making the decision to adopt UTS?</td>
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<td>What centers/institutions have adopted UTS and how do they compare to others that have not adopted UTS?</td>
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<td>What factors influence the decision to adopt UTS?</td>
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The absolute number, proportion, & representativeness of settings and staff who currently offer UTS and reasons for adopting UTS.
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| **Implementation**  
Consistency of delivery, time and cost of the program, and what adaptations to the program are made in various settings. | • What challenges, if any had to be overcome when implementing screening?  
• How and why do implementation processes and protocols vary across centers? |
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<td><strong>Maintenance</strong></td>
<td>• If and how have UTS protocols been adapted at various centers over time?</td>
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<td>The extent to which a program or policy becomes institutionalized.</td>
<td>• Are patients who have been diagnosed through UTS or as a result of cascade testing undergoing recommended cancer screening?</td>
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<td>At the individual level, maintenance is the long-term effects of a program on outcomes after 6 or more months.</td>
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**RE-AIM Dimension Research Questions**

- Maintenance
  - The extent to which a program or policy becomes institutionalized.
  - At the individual level, maintenance is the long-term effects of a program on outcomes after 6 or more months.
  - If and how have UTS protocols been adapted at various centers over time?
  - Are patients who have been diagnosed through UTS or as a result of cascade testing undergoing recommended cancer screening?
The Consolidated Framework for Implementation Research (CFIR) organizes factors (constructs) that may be important to implementation and outcomes into 5 domains:

1. Intervention
2. Outer Setting
3. Inner Setting
4. Process
5. Individuals involved

Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci, 4 (2009)
CFIR Contextual Factors

**Intervention Characteristics**
- Intervention source
- Relative advantage
- Complexity
- Cost

**Outer Setting**
- Contacts with other centers or hospitals performing UTS
- Practice guidelines

**Inner Setting**
- Structural characteristics of the institution
- Quality of communication
- Implementation climate
- Readiness for implementation

**Process**
- Screening method
- Who gives results & follows up with patients
- When, where, & how results are given
Methodological Considerations in D&I Research

- **Context is critical**
- Begin with stakeholders / implementers
- Appreciate and integrate multiple types of evidence and methods (*quantitative & qualitative*)
- Broaden evaluations to include multiple outcomes and report on contextual factors (*models will help here*)
- Recognize that processes are complex and non-linear and multilevel factors influence outcomes
- Know where to look for validated measures
Questions?