Session II: Theoretical Framework Selection and Intervention Planning

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Role & Value of Theory in Implementation Research

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LOST IN TRANSLATION

Ref: Dougherty & Conway. JAMA 2008;299:2319-2321
& QUERI Framework

A Perfect (albeit Simplistic & Unrealistic) Scenario

New Practice Guidelines for preventing catheter-related infections in hospitals

Hospital decides to ADOPT the practice

Hospital IMPLEMENTS the practice

Practice has SUSTAINED use

Repeated in hospitals nationwide
Define Key Terms
Implementation Research

- “the scientific study of methods to promote the uptake of research findings for the purpose of improving quality of care”
  McDonald et al., 2004 Toward a Theoretic Basis for Quality Improvement Interventions in K.G. Shojania et al., Closing the Quality Gap.

- “…scientific investigations that support movement of evidence-based, effective health care approaches (e.g., as embodied in guidelines) from the clinical knowledge base into routine use.”
  Rubenstein & Pugh, 2006

Implementation Defined

- Efforts designed to get evidence-based practices and related products into use
- Implementation typically follows dissemination and includes:
  – Identification of barriers, facilitators and strategies to reduce, overcome, leverage them
  – Adaptation of the EBP
  – Developing a tailored implementation strategy
Implementation Strategy

• An integrated set (bundle, package) of implementation interventions
  – Individual interventions, alone, are rarely sufficient to achieve implementation in complex clinical settings

Implementation Intervention

• A single method or technique to facilitate organizational change and thus, individual-level adoption of evidence-based practice
  – E.g., clinical reminder, opinion leader
• NOT a clinical, system, or health promotion intervention
  – E.g., weight management intervention
• NOT a practice model
  – E.g., Patient-centered medical home
Value and uses of theory

More Terminology

• **Theory**
  - “A set of logical constructs that jointly offer answers to the questions ‘why’ and ‘how,’ as in ‘why would someone change their behavior in this way?’ and ‘how could this behavior/situation/outcome be changed” (Sales, et al, 2006)

• **Framework**
  - “…identifies a set of variables and relationships that should be examined in order to explain the phenomena…need not specify the direction of relationships or identify critical hypotheses” (Kitson, et al, 2008)

• **Model**
  - Sheds light on causal relationships and seeks to explain the phenomena
Forget the Tower of Babel

• Be clear what you mean
• Be consistent in your own work

• Today, we use the term “theory” to embrace models, frameworks, theory
The power of theory-driven implementation research

**Provides a systematic method…**

… for identifying, understanding, operationalizing & evaluating the black box phenomenon = "IMPLEMENTATION"

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The Case for "Common Sense"

- Using implementation theory does not make it easier to translate evidence into a specific setting
- It is not clear how to design studies to establish and validate theories
- There are so many theories in the literature, it is challenging to discern which to use
- Highly touted approaches (e.g., 6 Sigma, LEAN) seem to work
  - Haven't been proved through methodologically strong studies*

The case against “Common Sense”

- Makes systematic progress harder & increases inefficiency
- Trial & error approaches cannot be replicated
- Reinventing the wheel
- We end up, retrospectively, trying to figure out what went wrong…or right
  - The black box of implementation

Objectives of Implementation Research

- Replicate successful implementation
  - Core components
  - Rationale
- Generalize knowledge about how to implement and sustain interventions
- Navigate complex implementations
- Improve prospects for sustainability

Theory-driven implementation enables accomplishment of these objectives
Use Theory to:

• Ensure the implementation process is based on evidence in the same way as the practices or clinical interventions being implemented
• Study as well as engage with change in different healthcare settings (e.g., inpatient unit, clinic)
  – Understand role of salient contextual features across settings
• Conduct focused, rigorous evaluation of the implementation process so we better understand why something did or did not work within in a given setting
Types and levels of relevant theories

Choosing Theory

- Consider nature of the theory
  - Process v. explanatory
  - Context (e.g., policy, organization)
  - Discipline (e.g., social science, psychology)
- Consider level at which it will be applied
  - Individuals
  - Teams
  - Organization
  - System
- Previous findings, experience
- Greatest potential for adding to the knowledge-base
Types of Theories

• Multiple theories often needed
  – **Process** theories – (aka prescriptive, planned action)
    • How implementation should be planned, organized and scheduled
  – **Explanatory** theories (aka descriptive, impact)
    • Hypotheses and assumptions about how implementation activities will facilitate a desired change, as well as the facilitators and barriers for success
  – Mixed theories
    • Elements of both


Process Theories

• **Policy level**
  – QUERI core 6-step process
• **Application**
  – Study- or implementation-specific level
  – Organization Transformation
Process Theory – Policy

QUERI Framework

Mainstream HSR&D Groundwork

Pre-Implementation Studies

Implementation Planning, Pre-Trial

Implementation Trial & Evaluations

Theory-driven Implementation & Evaluation

Evidence-based Practices in the real world

Process Theory – Study-specific

- Ottawa Model of Research Use
- Prescribes 3 main steps
- Assess
- Monitor
- Evaluate

Figure 1. Ottawa Model of Research Use (Logan and Graham, 2003)

Explanatory Theories – Individual Level

- **Motivational Models**
  - Explain why people *want* to change
- **Action Models**
  - Explain why people *do* change
- **Descriptive Stage of change Models**
  - Assumptions about the phases individuals go through to achieve desired behavior change:
    - Awareness ➔ Insight ➔ Acceptance ➔ Actual Change ➔ Maintenance


Explanatory Theories – Group

- **Social context theories**
  - Social Marketing
  - Social learning
  - Communication
  - Social network & influence
  - Teamwork
  - Professional development
  - Leadership

Example: Social Network Theory

• Tailor engagement strategy to social networks

http://www.istheory.yorku.ca/socialnetworktheory.htm

Explanatory Theories – Organization & Beyond

• Organizational Context Theories
  – Innovative organizations
  – Quality management
  – Integrated care
  – Complexity
  – Organizational learning
  – Organizational culture

• Political & Economic Context Theories
  – Reimbursement
  – Contracting

Grol et al., 2007.
Example: Roger’s Theory of Diffusion

Characteristics of the intervention

Organizational characteristics

Adoption decision

Effective implementation

Outcomes

Environmental context

Adoption decision

Effective implementation

Outcomes

Example: Greenhalgh, et al’s Conceptual Model

Application to infection prevention practices
Example: Implementation Effectiveness Model

- Quantitative measures of predictors of implementation effectiveness
  - Strength of relationships empirically estimated

Example Mixed Theory - PARIHS

- Promoting Action on Research Implementation in Health Services (PARIHS)*
  - Successful Implementation =
    - Explanatory: Evidence & Context
    - Process: Facilitation

Conducting Theory-based Implementation

1. Assess targeted EBP change and context
2. Select targeted theory(s) & provide rationale
3. Develop tailored implementation strategy
4. Execute tailored implementation strategy
5. Evaluate effectiveness of implementation strategy
6. Assess fit of findings with initial theory


Developmental Formative Evaluation: Assess EBP intervention and barriers, facilitators, and setting
Conducting Theory-based Implementation

1. Assess targeted EBP change and context
2. Select targeted theory(s) & provide rationale
3. Develop tailored implementation strategy
4. Execute tailored implementation strategy
5. Evaluate effectiveness of implementation strategy
6. Identify potential factors or theories from prior research related to this type of implementation
   - Identify applicable types of published theories (See A SAMPLE CLASSIFICATION OF THEORIES handout)
   - Select specific theory(s)

Select Targeted Theories

<table>
<thead>
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<th>Potential Theories</th>
<th>Rationale</th>
<th>Component / Tool</th>
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....AND MORE....

Conducting Theory-based Implementation

1. Assess targeted EBP change and context
2. Select targeted theory(s) & provide rationale
3. Develop tailored implementation strategy

4. ID general implementation approach(es); theory and pragmatic considerations
5. Operationalize specific implementation interventions consistent with theoretical and pragmatic intent
6. ID implementation tools to support implementation interventions

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Develop Tailored Implementation Strategies

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AND MORE...
Conducting Theory-based Implementation

1. Assess targeted EBP change and context
2. Select targeted theory(s) & provide rationale
3. Develop tailored implementation strategy
6. Assess fit of findings with initial theory
5. Evaluate effectiveness of implementation strategy

Progress-focused Formative Evaluation

Implementation-focused Formative Evaluation

Conducting Theory-based Implementation

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Add to the knowledge-base


Synthesizing Findings Across Studies

- Consolidated Framework for Implementation Research (CFIR)
  - Comprehensive taxonomy and definitions for constructs that influence implementation success
    - Builds on theories already in the literature
    - Provides foundation on which to compare findings across studies and settings
    - Can be used to build, affirm, or evaluate theory(s)