Dissemination and Implementation Models & Theories

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Session Outline

- The Context for Considering D&I Models
- Examples of Models Used in D&I research
- Resources
- Questions and Discussion
It takes 17 years to turn 14 percent of original research to the benefit of patient care.

Negative results

Dickersin, 1987

Submission

Original research

18%

variable

Negative results

Poynard, 1985

Inconsistent indexing

Reviews, guidelines, textbook

Antman, 1992

Koren, 1989

Balas, 1995

Kumar, 1985

Poyer, 1982

Dickersin, 1987

“PUBLICATION PATHWAY”
Key Terms

- **Dissemination**: The targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to spread (scale up) and sustain knowledge and the associated evidence-based interventions.

- **Implementation**: The use of strategies to adopt and integrate evidence-based health interventions and change practice patterns within specific settings.” (PAR-16-238)

- **Dissemination research** is the scientific study of targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to understand how best to spread and sustain knowledge and the associated evidence-based interventions.

- **Implementation research** is the scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings in order to improve patient outcomes and benefit population health.
Key Terms

- **Theory**: A plausible or scientifically acceptable general principle or body of principles offered to explain phenomena (Merriam-Webster, 2013)

- **Conceptual Framework**: A type of intermediate theory that attempts to connect to all aspects of inquiry; can act like maps that give coherence to empirical inquiry (Wikipedia, 2013)

- **Model**: A description of analogy used to help visualize something that cannot be directly observed (Merriam-Webster, 2013)

Chambers, 2014 (Chapter Two) in Beidas & Kendall (eds), OUP.
Caveats to use of Models for D&I

- There is no comprehensive model sufficiently appropriate for every study or program
- Not all models are well operationalized
- Models should be considered dynamic

Chambers, 2014 (Chapter Two) in Beidas & Kendall (eds), OUP.
Tabak et al. review

- Identified 109 models
- Exclusions
  - 26 focus on practitioners
  - 12 not applicable to local level dissemination
  - 8 end of grant knowledge translation
  - 2 duplicates
- Included 61 models
- Across Construct Flexibility, SEF, D/I

Tabak, Khoong, Chambers, Brownson, *AJPM*, 2012
Tips for thinking about how you use theory/frameworks

- In your research study…
  - Do you have a theory/model?
  - Is your theory/framework well developed throughout your proposal?
    - Linked to aims, research design, measures, analytic strategies
  - When finished, will use of your theory/framework advance the field of dissemination research?
  - Is the theory from outside of health? (may get you innovation points!!)

(Brownson, TIDIRH, 2013)
Choosing Implementation Frameworks

“[Models] inform the (frameworks) that provide the undergirding or infrastructure, much like the frame of a house.”

- Explanatory: how implementation activities will affect a desired change
- Process: what implementation strategies should be planned


(adapted from Kilbourne, TIDIRH, 2013)
Implementation Frameworks

- Common factors
  - Nature of change (simple or complex)
  - Importance and priority of change
  - Local context (microsystem)
  - External context
  - Target of change
- Most changes require active facilitation
  - Local champions, tools, training
- Barriers differ across sites
  - Leadership, resources, IT, inertia

(Kilbourne, TIDIRH, 2013)
Studying Implementation

What?
QIs
ESTs

How?
Implementation Outcomes
Feasibility
Fidelity
Uptake
Costs

THE CORE OF IMPLEMENTATION SCIENCE

Service Outcomes*
Efficiency
Safety
Effectiveness
Equity
Patient-centeredness
Timeliness

Health Outcomes
Satisfaction
Function
Health status/symptoms

Implementation Research Methods

Proctor et al 2009 Admin. & Pol. in Mental Health & Mental Health Services Research
Roger’s Theory of Diffusion

Characteristics of the intervention

Organizational characteristics

Environmental context

Adoption decision

Effective implementation

Outcomes

CIPRS: Stetler & Damschroder Theoretical Frameworks

Surveillance, Planning and Evaluating for Policy and Action: PRECEDE-PROCEED MODEL*

**Phase 1** Social assessment

**Phase 2** Epidemiological assessment

**Phase 3** Behavioral & environmental assessment

**Phase 4** Educational & ecological assessment

**Phase 5** Administrative & policy assessment

**Phase 6** Implementation

**Phase 7** Process evaluation

**Phase 8** Impact evaluation

**Phase 9** Outcome evaluation

**Public Health**

- **Health education**
- **Policy regulation organization**

**Predisposing**

**Reinforcing**

**Enabling**

**Behavior**

**Environment**

**Health**

**Quality of life**

- **Longer-term health outcome**
- **Short-term social impact**
- **Long-term social impact**

*Input* → *Process* → *Output* → *Short-term impact* → *Long-term health outcome* → *Short-term social impact* → *Long-term social impact*

Glasgow et al, re-aim.net, 2011
Example: Enhanced Replicating Effective Programs (REP) Framework

**Pre-implementation**
- Identification of Problem/barriers
- Customize appropriate intervention

**Package** intervention
- Core elements
- Menu options

**Implementation**
- Orientation
- Cross-functional team
- Training
- Technical assistance
- Facilitation
- Evaluation

**Dissemination**
- Further diffusion, spread
- Sustainability
- Business case

REP was developed by the Centers for Disease Control to rapidly translate HIV prevention programs to community-based settings

Enhanced REP includes additional facilitation based on the PARiHS framework: developing relationships and promoting provider self-efficacy

*Kilbourne et al. Imp Science 2007; Kilbourne et al. Psychiatric Services 2012*
Mendel et al, 2008

Context of Diffusion
- Norms & Attitudes
- Structure & Process
- Resources
- Policies & Incentives
- Networks & Linkages
- Media & Change Agents

Stages of Diffusion
- Adoption
- Implementation
- Sustainment

Evaluation Process
- Intervention Development Process
- Capacity/Needs Assessment
- Implementation/Process Evaluation

Intervention Outcomes
- Patient Care & Health Outcomes
- Organization & System Outcomes

Formative Feedback Process

Summative Feedback Process

Outcome/Impact Evaluation
Interactive Systems Framework

Wandersman et al, AJCP, 2008
EXPLORATION

OUTER CONTEXT
Sociopolitical Context
Legislation
Policies
Monitoring and review
Funding
Service grants
Research grants
Foundation grants
Continuity of funding
Client Advocacy
Consumer organizations
Interorganizational networks
Direct networking
Indirect networking
Professional organizations
Clearinghouses
Technical assistance centers

INNER CONTEXT
Organizational characteristics
Absorptive capacity
Knowledge/skills
Readiness for change
Receptive context
Culture
Climate
Leadership
Individual adopter characteristics
Values
Goals
Social Networks
Perceived need for change

ADOPTION DECISION / PREPARATION

OUTER CONTEXT
Sociopolitical
Federal legislation
Local enactment
Definitions of “evidence”
Funding
Support tied to federal and state policies
Client advocacy
National advocacy
Class action lawsuits
Interorganizational networks
Organizational linkages
Leadership ties
Information transmission
Formal
Informal

INNER CONTEXT
Organizational characteristics
Size
Role specialization
Knowledge/skills/expertise
Values
Leadership
Culture embedding
Championing adoption

ACTIVE IMPLEMENTATION

OUTER CONTEXT
Sociopolitical
Legislative priorities
Administrative costs
Funding
Training
Sustained fiscal support
Contracting arrangements
Community based organizations
Interorganizational networks
Professional associations
Cross-sector
Consortium partners
Information sharing
Cross discipline translation
Intervention developers
Engagement in implementation
Leadership
Cross level congruence
Effective leadership practices

INNER CONTEXT
Organizational Characteristics
Structure
Priorities/goals
Readiness for change
Receptive context
Culture/climate
Innovation-values fit
EBP structural fit
EBP ideological fit
Individual adopter characteristics
Demographics
Adaptability
Attitudes toward EBP

SUSTAINMENT

OUTER CONTEXT
Sociopolitical
Leadership
Policies
Federal initiatives
State initiatives
Local service system
Consent decrees
Funding
Fit with existing service funds
Cost absorptive capacity
Workforce stability impacts
Public-academic collaboration
Ongoing positive relationships
Valuing multiple perspectives

INNER CONTEXT
Organizational characteristics
Leadership
Embedded EBP culture
Critical mass of EBP provision
Social network support
Fidelity monitoring/support
EBP Role clarity
Fidelity support system
Supportive coaching
Staffing
Staff selection criteria
Validated selection procedures


Damschroder’s Consolidated Framework for Implementation Research (CFIR)

- **Core Components**
- **Adaptable Periphery**
- **Outer Setting**
- **Inner Setting**
- **Intervention** (unadapted)
- **Intervention** (adapted)

**Individuals Involved**

**Process**

Damschroder and Damush, 2009
A Different Paradigm for IS

▪ IS as a Pathway for:
  ▪ Improving Health Care
  ▪ Improving Health
  ▪ Improving Knowledge
  ▪ Improving Interventions
  ▪ Reducing/Eliminating Disparities
  ▪ Designing Interventions
  ▪ Conducting Most HS Research

▪ The Ultimate Goal: Practice & Research Co-exist
Chambers, Glasgow, Stange (2013), The Dynamic Sustainability Framework. *Implementation Science*
The Use of D&I Models in NIH-funded Research

- NIH Studies use D.O.I and RE-AIM most frequently
- Many studies use more than one model
- Many studies use no model

Chambers, 2014 (Chapter Two) in Beidas & Kendall (eds), OUP.
Selecting a Model for Study

- What is/are the research questions I’m seeking to answer?
- What level(s) of change am I seeking to explain?
- What characteristics of context are relevant to the research questions?
- What is the timeframe?
- Are measures available?
- Does the study need to be related to a single model?
This interactive website was designed to help researchers and practitioners to select the D&I Model that best fits their research question or practice problem, adapt the model to the study or practice context, fully integrate the model into the research or practice process, and find existing measurement instruments for the model constructs. The term ‘Models’ is used to refer to both theories and frameworks that enhance dissemination and implementation of evidence-based interventions more likely.

Select
Search, view, and select D&I Models

Adapt
Read strategies for adapting D&I Models to research or practice context

Integrate
Read strategies for incorporating D&I Models into the full spectrum of your project

Measure constructs
Find a list of constructs and links to measurement tools associated with the D&I Models

http://dissemination-implementation.org
“Selecting a Model by criteria”

http://dissemination-implementation.org/search_di.aspx
SIRC’s Instrument Repository

- Organized by
  - Consolidated Framework for Implementation Research (39 constructs)
    - Damschroder, Aron, Keith, Kirsh, Alexander, & Lowery, 2009
  - Outcomes for Implementation Research (17 constructs)
    - Proctor, Silmere, Raghavan, Hobmand, Aarons, Bunger, et al., 2011
  - Construct reviews resulted in over 400 measures

http://www.societyforimplementationresearchcollaboration.org/sirc-projects/sirc-instrument-project/
Consolidated Framework for Implementation Research

INNER SETTING

- Combined
- Culture
- Implementation Climate
- IC: Tension for Change
- IC: Compatibility
- IC: Relative Priority
- IC: Organizational Incentives & Rewards
- IC: Goals and Feedback
- IC: Learning Climate
- Networks & Communications
- Readiness for Implementation (RI)
- RI: Leadership Engagement
- RI: Available Resources
- RI: Access to Knowledge and Information
- Structural Characteristics

Outer Setting

Interventions Adapted

Inner Setting

Core Components

Adaptable Periphery

Individual Involved

Process