Atrium Health Wake Forest Baptist

Introduction to Dissemination & Implementation Research

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About the series

Description

 This series provides an introduction to dissemination and implementation (D&I) science and a theoretical foundation to translate evidence into clinical practice, health policy, or public health.

Sessions

- Wed, 9/1: Implementation Science 101
- Wed, 9/15: Study Designs in Implementation Science
- Wed, 9/29: Integrating Implementation Science Frameworks and Behavioral Theory into Implementation Research
- Wed, 10/13: Process Evaluation and Implementation Monitoring





A little about me...



- I have formal training in exercise science, health behavior, epidemiology, & implementation science
- I've been conducting implementation science research since 2003.
- The primary focus of my research has been the epidemiology of health behaviors related to obesity and the design, delivery, and evaluation of interventions to prevent or treat obesity.





DISSEMINATION AND IMPLEMENTATION RESEARCH IN HEALTH

> TRANSLATING SCIENCE TO PRACTICE

SECOND EDITION

EDITED BY ROSS C. BROWNSON GRAHAM A. COLDITZ ENOLA K. PROCTOR

10/13/21

Recommended Texts

- Dissemination and Implementation Research in Health: Translating Science to Practice (2nd Edition)
 - Ross C. Brownson, Graham A. Colditz, Enola K. Proctor
- Handbook on
 Implementation Science
 - Per Nilsen & Sarah A. Birken



NDBOOK ON plementation Science id by en • Sarah A. Birken

An introduction to Implementation Science



Objectives for today



- To explain why we need dissemination & implementation science
- To define terminology relevant to dissemination & implementation research
- To differentiate implementation from quality improvement and related concepts
- To provide context for dissemination & implementation research in the translation continuum
- To provide a brief introduction to frameworks that can guide dissemination & implementation research





Why D&I science?

- Innovations are sometimes spread passively, but most often they are not
 - Often require active dissemination
- Evidence-based innovations, once disseminated, must be put into practice
 - Moving from adoption to maintenance can be a complicated process
- Often, ineffective or outdated practices need to be uninstalled
- Evaluation shouldn't be limited to effectiveness





Terminology



What is D&I research?

- **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.



Terminology

- **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 specific setting.
- Innovation: "An idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003)

Wake Forest[®] From: Brownson, Ross C., Graham A. Colditz, and Enola K. Proctor, eds. *Dissemination and implementation research in health: translating science to practice*. Oxford University Press, 2017.



Terminology

- Evidence-based intervention: The objects of dissemination and implementation are interventions with proven efficacy and effectiveness.
- Quality Improvement: a systematic, formal approach to the analysis of practice performance and efforts to improve performance (AAFP, 2018).
- Implementation Monitoring: the measurement of what is actually happening during an intervention compared to what is supposed to be happening in an intervention.

Wake Forest[®] From: Brownson, Ross C., Graham A. Colditz, and Enola K. Proctor, eds. *Dissemination and* School of Medicine *implementation research in health: translating science to practice*. Oxford University Press, 2017.



Implementation Science Questions

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Quality Improvement vs. Implementation





Quality Improvement vs. Implementation

- Quality Improvement
 - Scale: small
 - Resources: low
 - Intended duration: short
 - Tolerance for failure:
 high
 - Feedback: continuous

- Implementation
 - Scale: medium to large
 - Resources: high
 - Intended duration: long
 - Tolerance for failure: low
 - Feedback: varies





Dissemination & Implementation Research in the Translation Continuum





Stakeholders at translational steps in the NIH Roadmap Initiative



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Fig. 1. The Integrative Framework of Dissemination, Implementation, and Translation (IFDIT).

Leppin, A., Mahoney, J., Stevens, K., Bartels, S., Baldwin, L., Dolor, R., . . . Meissner, P. (2020). Situating dissemination and implementation sciences within and across the translational research spectrum. *Journal of Clinical and Translational Science*, *4*(3), 152-158. doi:10.1017/cts.2019.392



Frameworks that can guide Dissemination & Implementation Research





Many models to choose from...

Bridging Research and Practice Models for Dissemination and Implementation Research

Rachel G. Tabak, PhD, Elaine C. Khoong, BS, David A. Chambers, DPhil, Ross C. Brownson, PhD

Context: Theories and frameworks (hereafter called models) enhance dissemination and implementation (D&I) research by making the spread of evidence-based interventions more likely. This work organizes and synthesizes these models by (1) developing an inventory of models used in D&I research; (2) synthesizing this information; and (3) providing guidance on how to select a model to inform study design and execution.

Evidence acquisition: This review began with commonly cited models and model developers and used snowball sampling to collect models developed in any year from journal articles, presentations, and books. All models were analyzed and categorized in 2011 based on three author-defined variables: construct flexibility, focus on dissemination and/or implementation activities (D/I), and the socioecologic framework (SEF) level. Five-point scales were used to rate construct flexibility from broad to operational and D/I activities from dissemination-focused to implementation-focused. All SEF levels (system, community, organization, and individual) applicable to a model were also extracted. Models that addressed policy activities were noted.

Evidence synthesis: Sixty-one models were included in this review. Each of the five categories in the construct flexibility and D/I scales had at least four models. Models were distributed across all levels of the SEF; the fewest models (n=8) addressed policy activities. To assist researchers in selecting and utilizing a model throughout the research process, the authors present and explain examples of how models have been used.

Conclusions: These findings may enable researchers to better identify and select models to inform their D&I work. (Am J Prev Med 2012;43(3):337–350) © 2012 American Journal of Preventive Medicine





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IN 2012!!!



Considerable variability in focus, flexibility, and level of focus exists

Table 2. Categorization of D&I models for use in research studies

	Dissemination Construct flexibili		Socioecologic Level					
Model	implementation	operational	System	Community	Organization	Individual	Policy	References
Diffusion of Innovation	D-only	1		х	х	х		21
RAND Model of Persuasive Communication and Diffusion of Medical Innovation	D-only	1		х	x	x		22
Effective Dissemination Strategies	D-only	2		х	х	х		23
Model for Locally Based Research Transfer Development	D-only	2		х	х			24
Streams of Policy Process	D-only	2	х	х	х		х	25, 26
A Conceptual Model of Knowledge Utilization	D-only	3	х	х			x	27
Conceptual Framework for Research Knowledge Transfer and Utilization	D-only	3			х			28
Conceptualizing Dissemination Research and Activity: Canadian Heart Health Initiative	D-only	3		х	X			29, 30
Policy Framework for Increasing Diffusion of Evidence-Based Physical Activity Interventions	D-only	3	х	х	х		х	31





Consolidated Framework for Implementation Research (CFIR)



- Intervention
 - Eight constructs
- Outer setting
 - Four constructs
- Inner setting
 - Five constructs
 - Nine sub-constructs
- Individuals
 - Five constructs
- Process
 - Four constructs
 - Four sub-constructs





Translation gap

- A research-practice gap exists across all fields of public health and medical practice
- Our inability or unwillingness to apply what is known to improve health results in significant health deficits and persistent inequalities.
 - For example, it is estimated that the lives of 6 million children could be saved each year if 23 proven interventions were implemented in 42 countries.
- This translation gap is partially due to a lack of dissemination

Wake Forest[®] Bryce et al. Can the world afford to save the lives of 6 million children each year? Lancet. 2005;365(9478):2193-2200.





What is known

- Passive approaches to dissemination are largely ineffective because uptake does not happen spontaneously
- Stakeholder engagement in research and evaluation processes is likely to enhance dissemination
- The dissemination of research to nonscientists is enhanced when messages are framed in ways that evoke emotion and interest and demonstrate usefulness



What is known

- At an agency level dissemination approaches should be time efficient, consistent with organizational climate, culture, resources, and aligned with the skills of staff members
- Dissemination to policy audiences needs to take into account unique characteristics of policy makers as dissemination targets
- The objective of research dissemination is to achieve impact; measures of academic impact often differ significantly from the markers of importance to practice and policy audiences

Wake Forest[®] Brownson et al. JPHMP. March/April 2018 • Volume 24, Number 2 26 School of Medicine



Components of dissemination

- Source
 - Where is the new innovation or knowledge coming from?
- Message
 - What is the new information to be disseminated?
- Audience
 - There is a higher likelihood of success when a product and promotion strategy is targeted to the characteristics of a desired segment.
- Channel
 - There are multiple approaches or channels for reaching various audiences, each with distinct pros, cons, and costs



RE-AIM

- The RE-AIM framework is designed to enhance the quality, speed, and public health impact of efforts to translate research into practice in five steps:
 - <u>Reach</u> your intended target population
 - Efficacy (or more often effectiveness)
 - Adoption by target staff, settings, systems or communities
 - <u>Implementation</u> consistency, costs, and adaptations made during delivery
 - Maintenance of intervention effects in individuals and settings over time





Why is this important? Impact of loss at each RE-AIM CONCEPT

Example of Translation of Interventions into Practice					
Dissemination Step	RE-AIM Concept	% Impact			
50% of settings use intervention	Adoption	50.0%			
50% of staff take part	Adoption	25.0%			
50% of patients identified, accept	Reach	12.5%			
50% follow regimen correctly	Implementation	6.2%			
50% benefit from the intervention	Effectiveness	3.2%			
50% continue to benefit after six months	Maintenance	1.6%			





In the next lectures...

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Web-based resources

University of Washington Implementation Science Resource Hub:

http://impsciuw.org

Consolidated Framework for Implementation Research:

• https://cfirguide.org/

Dissemination & Implementation Model selection tool:

http://www.dissemination-implementation.org/

Overcoming Barriers to Implementation in Global Health toolkit:

<u>https://www.fic.nih.gov/About/center-global-health-studies/neuroscience-implementation-toolkit/Pages/default.aspx</u>





Questions?





