

# THEORIES AND FRAMEWORKS IN D&I RESEARCH

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# Overview

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- Terminology
- Importance of frameworks and theories (models) in D&I research
- Paper and website methodology and results
- Inventory and categorization of models to inform selection
- Selecting a model
- Discussion

# Terminology

- Theory: a set of interrelated concepts, definitions, and propositions that present a systematic view of events or situations by specifying relations among variables, in order to explain and predict events or situations.<sup>1</sup>
- 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.<sup>2</sup>
- Model: A description of analogy used to help visualize something that cannot be directly observed.<sup>3</sup>

1. Glanz K et al.. Theory, Research, and Practice in Health Behavior. In: Glanz K, Rimer BK, Viswanath K, eds. *Health Behavior and Health Education: Theory, Research, and Practice*. 5th ed: Jossey-Bass; 2015:23. (pg 26)

2. Wikipedia. Conceptual Framework. 2013; [http://en.wikipedia.org/wiki/Conceptual\\_framework](http://en.wikipedia.org/wiki/Conceptual_framework).

3. In Merriam-Webster online. Model & Theory. 2013; Retrieved from <http://www.merriam-webster.com>.

# Benefits of Theory/Framework

- Enhance effectiveness of interventions
  - ▣ Public health interventions that utilize health behavior theory-more effective than those without a theoretical base
  - ▣ Helps focus interventions on complex, essential processes
- Ensure inclusion of essential D&I strategies
- Enhance interpretability of findings
- Provide systematic structure for the development, management, and evaluation of D&I efforts
- Models suggest what is important to measure
- Helps explain why an intervention works (or doesn't)

# Questions to Consider

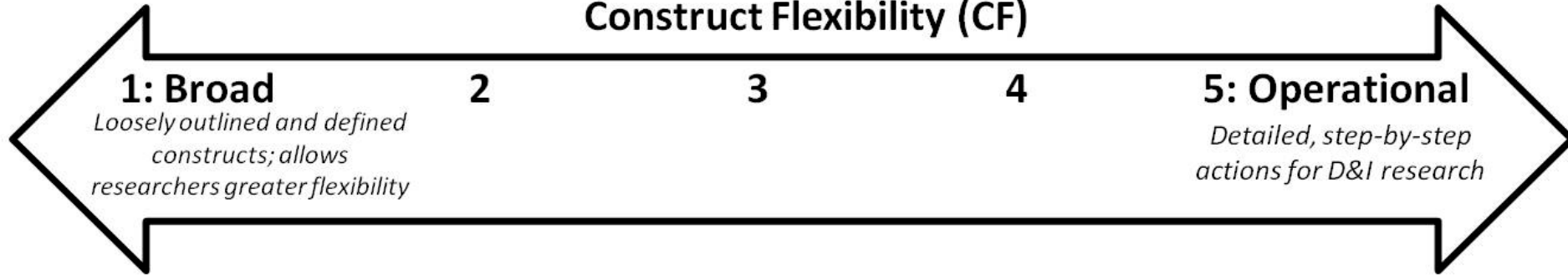
- What is the scope of the study?
- What characteristics of context are relevant to the research questions?
- What is the timeframe?
- Are measures available?
- Does the study need to be related to a single model?
- How strict does the use of the model need to be?
- Does the model need to be adapted?

# Review Methods

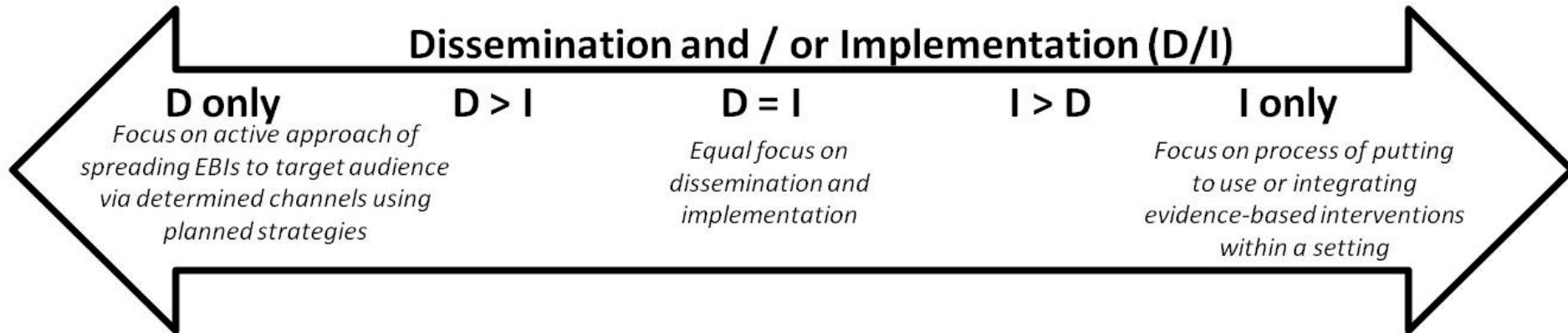
- Snowball sampling: published literature and available presentations
- Selection criteria – D+I research
  - Exclude: Individual behavior change theories, practitioner/clinician focused, end of grant knowledge translation
  - Setting: local level vs. national dissemination plans
  - Publication in English
- Categorizing models
- Contacting authors

# Model Categories

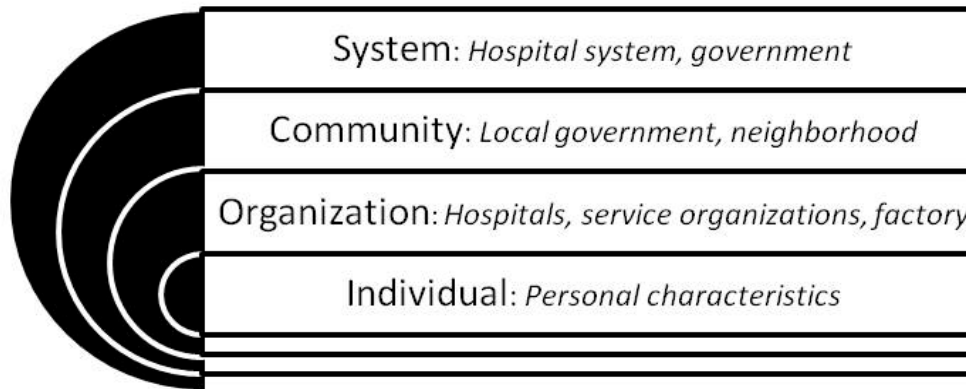
## Construct Flexibility (CF)



## Dissemination and / or Implementation (D/I)



## Socio-ecological Framework (SEF)



**Policy**

# Review Results

- 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

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**“Look at the bright side...we’re still on the cutting edge of yesterday’s technology!”**



Model	Dissemination and/or Implementation	Construct flexibility: broad to operational	Socioecologic Level					References
			System	Community	Organization	Individual	Policy	
Diffusion of Innovation	D-only	1		x	x	x		21
RAND Model of Persuasive Communication and Diffusion of Medical Innovation	D-only	1		x	x	x		22
Effective Dissemination Strategies	D-only	2		x	x	x		23
Model for Locally Based Research Transfer Development	D-only	2		x	x			24
Streams of Policy Process	D-only	2	x	x	x		x	25, 26
A Conceptual Model of Knowledge Utilization	D-only	3	x	x			x	27
Conceptual Framework for Research Knowledge Transfer and Utilization	D-only	3			x			28
Conceptualizing Dissemination Research and Activity: Canadian Heart Health Initiative	D-only	3		x	x			29, 30
Policy Framework for Increasing Diffusion of Evidence-Based Physical Activity Interventions	D-only	3	x	x	x		x	31
Blueprint for Dissemination	D-only	4		x	x			32
Framework for Knowledge Translation	D-only	5		x	x	x		33
A Framework for Analyzing Adoption of Complex Health Innovations	D > I	2	x	x	x	x		34, 35
A Framework for Spread	D > I	2		x	x			36, 37
Collaborative Model for Knowledge Translation Between Research and Practice Settings	D > I	2			x	x		38
Coordinated Implementation Model	D > I	2			x	x		39
Model for Improving the Dissemination of Nursing Research	D > I	2		x	x	x		40
Framework for the Dissemination & Utilization of Research for Health-Care Policy & Practice	D > I	3		x	x	x		41, 42
Framework of Dissemination in Health Services Intervention Research	D > I	3	x	x	x			43
Linking Systems Framework	D > I	3		x	x	x		44

	<b>Dissemination vs Implementation</b>				
<b>CF</b>	<b>D only</b>	<b>D &gt; I</b>	<b>D = I</b>	<b>I &gt; D</b>	<b>I only</b>
<b>Broad = 1</b>	1-Diffusion of Innovation 2-RAND Model of Persuasive Communication and Diffusion of Medical Innovation	-	1-Health Promotion Technology Transfer Process 2-Real-World Dissemination	-	-
<b>2</b>	1-Effective Dissemination Strategies 2-Model for Locally Based Research Transfer Development 3-Streams of Policy Process	1-A Framework for Spread 2-Collaborative Model for Knowledge Translation Between Research and Practice Settings 3-Coordinated Implementation Model 4-Framework For Analyzing Adoption of Complex Health Innovations 5-Model for Improving the Dissemination of Nursing Research	1-A Framework for the Transfer of Patient Safety Research into Practice 2-Interactive Systems Framework 3-Interacting Elements of Integrating Science, Policy, and Practice 4-Push-Pull Capacity Model 5-Research Development Dissemination & Utilization Framework 6-Utilization-Focused Surveillance Framework	1-FAB Model	-
	1-A Conceptual Model of Knowledge Utilization 2-Conceptual Framework for Research Knowledge Transfer and Utilization 3-Conceptualizing Dissemination Research and Activity: Canadian Heart Health Initiative 4-Policy Framework for Increasing Diffusion of Evidence-based Physical Activity Interventions	1-Framework for the Dissemination and Utilization of Research for Health-Care Policy and Practice 2-Framework of Dissemination in Health Services Intervention Research 3-Linking Systems Framework 4-Marketing and Distribution System for Public Health 5-OPTIONS Model	1-"4E" Framework for Knowledge Dissemination and Utilization 2-CRARUM 3-Davis' Pathman-PROCEED Model 4-Dissemination of Evidence-based Interventions to Prevent Obesity 5-Knowledge Translation Model of TUMS 6-Multi-level Conceptual Framework of Organizational Innovation Adoption	1-Pathways to Evidence Informed Policy 2-Six-Step Framework For International Physical Activity Dissemination	1-Active Implementation Framework 2-An Organizational Theory of Innovation Implementation 3-Conceptual Model of Implementation Research 4-Implementation Effectiveness Model 5-Normalization Process Theory 6-PARIHS 7-Pronovost's 4E's Process Theory 8-Sticky Knowledge
<b>4</b>	1-Blueprint for Dissemination	1-Conceptual Model for the Diffusion of Innovations in Service Organizations 2-HPRC Framework 3-Knowledge Exchange Framework 4-Research Knowledge Infrastructure	1-OMRU 2-RE-AIM	1-CDC DHAP's Research-to-Practice Framework 2-PRISM	1-CFIR 2-REP Plus
<b>Operational = 5</b>	1-Framework for Knowledge Translation	1-A Convergent Diffusion and Social Marketing Approach for Dissemination 2-Framework for Dissemination of Evidence-Based Policy	1-Precede-Proceed	-	1-ARC Model 2-Conceptual Model of Evidence-Based Practice Implementation in Public Service Sectors

\*CF = Construct Flexibility

Model	D vs I	CF	SEF				Policy	Field of Origin	Studies Using Model	#of Times Model Cited	Citation
			Syste	Cōlin	ōf g	Indv					
Diffusion of Innovation	D only	1		x	x	x		Agriculture	1-8	39364 <sup>†</sup>	9
RAND Model of Persuasive Communication and Diffusion of Medical Innovation	D only	1		x	x	x		Medical Information: Technology Assessment	10	56	11
Effective Dissemination Strategies	D only	2		x	x	x		Nursing Research	--	24	12
Model for Locally Based Research Transfer Development	D only	2		x	x			Local Health and Social Service Delivery Agency	--	50	13
Streams of Policy Process	D only	2	x	x	x		x	Political Science	14-16	8091 <sup>‡</sup>	17, 18
A Conceptual Model of Knowledge Utilization	D only	3	x	x			x	Knowledge Utilization in Public Policy	--	52	19
Conceptual Framework for Research Knowledge Transfer and Utilization	D only	3			x			Workplace Health and Safety	20	32	21
Conceptualizing Dissemination Research and Activity: Canadian Heart Health Initiative	D only	3		x	x			Public Health Systems	--	31	22, 23
Policy Framework for Increasing Diffusion of Evidence-based Physical Activity Interventions	D only	3	x	x	x		x	Public Health: Health Behavior - Physical Activity	--	54	24
Blueprint for Dissemination	D only	4		x	x			Quality of Health Care	--	6	25
Framework for Knowledge Translation	D only	5		x	x	x		Knowledge Translation	--	113	26
A Framework For Analysing Adoption of Complex Health Innovations	D > I	2	x	x	x	x		Health Systems	27-32	34 <sup>§</sup>	33, 34
A Framework for Spread	D > I	2		x	x			Veteran Affairs Health Care Access	35	32	36, 37
Collaborative Model for Knowledge Translation Between Research and Practice Settings	D > I	2			x	x		Clinical Healthcare Settings	--	30	38
Coordinated Implementation Model	D > I	2			x	x		Health Care: Obstetric Care	--	111	39
Model for Improving the Dissemination of Nursing Research	D > I	2		x	x	x		Nursing Research	--	49	40
Framework for the Dissemination & Utilization of Research for Health-Care Policy & Practice	D > I	3		x	x	x		Health Policy and Clinical-Decision Making	41-44	125	45, 46
Framework of Dissemination in Health Services Intervention Research	D > I	3	x	x	x			Health Services	--	44	47
Linking Systems Framework	D > I	3		x	x	x		Public Health: Health Promotion	--	29	48
Marketing and Distribution System for Public Health	D > I	3	x	x	x	x		Public Health	--	--	49
OPTIONS Model	D > I	3		x	x	x		Mental Health: Substance Abuse	50, 51	57	52
A Conceptual Model for the Diffusion of Innovations in Service Organizations	D > I	4		x	x			Health Services	53, 54	1190	55
Health Promotion Research Center Framework	D > I	4	x	x	x		x	Public Health: Health Promotion	--	--	56
Knowledge Exchange Framework	D > I	4	x	x	x	x		Knowledge Transfer	57	27	58-60
Research Knowledge Infrastructure	D > I	4		x	x	x	x	Knowledge Transfer in Health and Economic/Social Research Organizations	61	111, 437 <sup>¶</sup>	62-65

# Appendix A

## Categorization of dissemination and implementation models for use in research studies

Model	D and/or I	Construct flexibility	Socio-ecological level				Policy	Field of origin	Studies that use the model (Reference #)	Number of times model has been cited <sup>a</sup>	Citations (Reference #)
			System	Community	Organization	Individual					
Diffusion of Innovation	D-only	1		x	x	x		Agriculture	1–8	39,364 <sup>b</sup>	9
RAND Model of Persuasive Communication and Diffusion of Medical Innovation	D-only	1		x	x	x		Medical information: technology assessment	10	56	11
Effective Dissemination Strategies	D-only	2		x	x	x		Nursing research	—	24	12
Model for Locally-Based Research Transfer								Local health and social			

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## Bridging Research and Practice:

### Models for Dissemination and Implementation Research

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

Prevention Research Center in St. Louis, Brown School, (Tabak, Khoong, Brownson), Division of Public Health Sciences and Alvin J. Siteman Cancer Center, School of Medicine, (Brownson), Washington University in St. Louis, St. Louis, Missouri; National Institute of Mental Health (Chambers), NIH, Bethesda, Maryland

### Abstract

**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 socio-ecological 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/contained 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.

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*Nurs Outlook*. 2010 ; 58(6): 287–300. doi:10.1016/j.outlook.2010.07.001.

## A Thematic Analysis of Theoretical Models for Translational Science in Nursing: Mapping the Field

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<sup>1</sup>Clinical Center, National Institutes of Health, Bethesda, MD

### Abstract

**Background**—The quantity and diversity of conceptual models in translational science may complicate rather than advance the use of theory.

**Purpose**—This paper offers a comparative thematic analysis of the models available to inform knowledge development, transfer, and utilization.

**Method**—Literature searches identified 47 models for knowledge translation. Four thematic areas emerged: (1) evidence-based practice and knowledge transformation processes; (2) strategic change to promote adoption of new knowledge; (3) knowledge exchange and synthesis for application and inquiry; (4) designing and interpreting dissemination research.

**Discussion**—This analysis distinguishes the contributions made by leaders and researchers at each phase in the process of discovery, development, and service delivery. It also informs the selection of models to guide activities in knowledge translation.

**Conclusions**—A flexible theoretical stance is essential to simultaneously develop new knowledge and accelerate the translation of that knowledge into practice behaviors and programs of care that support optimal patient outcomes.

### Keywords

Translational science; evidence-based practice; knowledge translation; dissemination research; theory

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**SYSTEMATIC REVIEW**

**Open Access**

**Bridging Research and Practice: Conceptual Models for Dissemination and Implementation**

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**Disseminating research findings: what should researchers do? A systematic scoping review of conceptual frameworks**

Paul M Wilson<sup>1\*</sup>, Mark Petticrew<sup>2</sup>, Mike W Calnan<sup>3</sup>, Irwin Nazareth<sup>4</sup>

**Abstract**

**Context**—Theories and frameworks (hereafter referred to as conceptual models) used in implementation (D&I) research by making them more accessible. This work organizes and synthesizes these models into two categories: (1) synthesizing this information into a model to inform study design and execution.

**Evidence acquisition**—This review began with a search of the literature and used snowball sampling to collect models from presentations, and books. All models were analyzed using a set of author-defined variables: construct flexibility, fidelity, and the socio-ecological framework. We rate construct flexibility from broad to operationally focused. All SEF levels (systems, organization, individual) applicable to a model were also extracted. Models were categorized into three categories.

**Evidence synthesis**—Sixty-one models were identified across all levels of the SEF; they were distributed across all levels of the SEF; they were distributed across all levels of the SEF; they were distributed across all levels of the SEF.

**Conclusions**—These findings may enable researchers to inform their D&I work.

**Abstract**

**Background:** Addressing deficiencies in the dissemination and transfer of research-based knowledge into routine clinical practice is high on the policy agenda both in the UK and internationally. However, there is lack of clarity between funding agencies as to what represents dissemination. Moreover, the expectations and guidance provided to researchers vary from one agency to another. Against this background, we performed a systematic scoping to identify and describe any conceptual/organising frameworks that could be used by researchers to guide their dissemination activity.

**Methods:** We searched twelve electronic databases (including MEDLINE, EMBASE, CINAHL, and PsycINFO), the reference lists of included studies and of individual funding agency websites to identify potential studies for inclusion. To be included, papers had to present an explicit framework or plan either designed for use by researchers or that could be used to guide dissemination activity. Papers which mentioned dissemination (but did not provide any detail) in the context of a wider knowledge translation framework, were excluded. References were screened independently by at least two reviewers; disagreements were resolved by discussion. For each included paper, the source, the date of publication, a description of the main elements of the framework, and whether there was any implicit/explicit reference to theory were extracted. A narrative synthesis was undertaken.

**Results:** Thirty-three frameworks met our inclusion criteria, 20 of which were designed to be used by researchers to guide their dissemination activities. Twenty-eight included frameworks were underpinned at least in part by one or more of three different theoretical approaches, namely persuasive communication, diffusion of innovations theory, and social marketing.

**Conclusions:** There are currently a number of theoretically-informed frameworks available to researchers that can be used to help guide their dissemination planning and activity. Given the current emphasis on enhancing the uptake of knowledge about the effects of interventions into routine practice, funders could consider encouraging researchers to adopt a theoretically-informed approach to their research dissemination.

16/j.outlook.2010.07.001.

**Conceptual Models for Translational Research in the Field**

Cheryl A. Fisher, RN-BC, EdD<sup>1</sup>, Clare E. Hastings, PhD<sup>1</sup>, and Gwennyth R. Wallen, RN, PhD<sup>1</sup>  
 Bethesda, MD

Conceptual models in translational science may vary.

A thematic analysis of the models available to inform practice.

Models for knowledge translation. Four thematic areas were identified: (1) knowledge transformation processes; (2) strategic planning; (3) knowledge exchange and synthesis for practice; and (4) interpreting dissemination research.

The contributions made by leaders and researchers at the level of implementation, and service delivery. It also informs the practice of knowledge translation.

It is essential to simultaneously develop new models that integrate knowledge into practice behaviors and programs.

Keywords: knowledge translation; dissemination research;

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**SYSTEMATIC REVIEW** **Open Access**

**Bridging Research and Practice**  
Models for Dissemination and Implementati

# Disseminating research findings: what should researchers do? A systematic scoping review of conceptual frameworks

**etical Models for Translational**  
**he Field**

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**Wealth of existing models for D&I:**

- 61 with research focus (Tabak et al., 2012)
- additional 25+ with practitioner/clinician focus (Mitchell et al., 2010)
- 33 frameworks from a UK perspective (Wilson et al. 2010)

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# Dissemination & Implementation Models in Health Research & Practice

**Need Help?**

- Tutorial
- FAQ
- Glossary
- Contact Us

Google™ Custom Search

- Home
- Resources
- Submit Models
- About Us

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

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Google™ Custom Search

- View All D&I Models
- Search D&I Models
- Select
- Adapt
- Integrate
- Measure constructs

User Name

Password

Login Register

## Search D&I Models

You can search for D&I Models by entering a keyword OR by selecting from the categories below.

Enter keyword for model search:  [Submit Keyword Search](#)

----- OR -----

Dissemination & Implementation Models can be searched using individually set criteria.

### D And/Or I

- Dissemination Only
- Implementation Only
- Any

### Socio-Ecological Levels

- Individual
- Organization
- Community
- System
- Policy
- All

### Constructs

- Acceptability/feasibility
- Awareness
- Communication
- Context
- Development of an intervention
- Barriers and facilitators
- Communication channels
- Context - Inner setting
- Complexity

## Searchable website

http://dissemination-implementation.org/index.aspx



# Selecting a model

Adapted from: Chambers DA. Guiding theory for dissemination and implementation research: A reflection on models used in research and practice. In: Beidas RS, Kendall PC, eds. *Dissemination and Implementation of Evidence-Based Practices in Child and Adolescent Mental Health*: Oxford University Press; 2016:3. and Tabak RG, et al. The Conceptual Basis for Dissemination and Implementation Research: Lessons from Existing Models and Frameworks. In Brownson RC, Colditz GA, Proctor EK (eds). *Dissemination and Implementation Research in Health: Translating Science to Practice*. 2nd Edition. New York: Oxford University Press; 2018 (in press).

# What is/are the research question(s) I'm seeking to answer?

- Reviewing D&I literature to identify and utilize essential concepts and established definitions
- Articulating a research question and aims
- Determine what evidence is needed

# What is the purpose of the model in the context of the study?

Nilsen proposed five categories within three aims:

- Process models ‘describe and/or guide the process of translating research into practice’.
- Determinant frameworks help explain/understand influences on implementation outcomes.
- Classical theories and Implementation theories explain/understand implementation efforts.
- Evaluation frameworks specify aspects to evaluate to determine success.

# What socioecological level(s) of change am I seeking to explain?

- Individual, organizational, community, system
- Policy: “big P” policy and “small P” policy

# Why do we choose a certain model?

Most important criteria in a survey of implementation researchers and practitioners:

- Empirical support
- Explanatory power/testability
- Applicability to setting
- Description of change process
- Analytic level

# Other listed criteria

- Familiarity
- Degree of specificity
- Accessibility
  
- Pragmatic: contributes substantively to the conceptualization of the research question (e.g., generalizability)
- Political: (i.e. disciplinary approval or uniqueness)

# A note on model categorization

- Organized using a number of different categories
- Divisions to assist in model selection – not actual classifications
- Overlap between models/constructs
- Similarity of the theoretical underpinnings

# Also in the Paper...

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- Researcher Considerations
  - ▣ Using an existing model vs. developing a new model
  - ▣ Selecting the model
  - ▣ Using the selected model
  - ▣ Adaptation
  - ▣ Measurement
- Case Studies



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