Theoretical and Practical Approaches to Implementation Science

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Learning Objectives

• Define implementation science
• Describe the development of implementation science
• Identify select theories, models, and frameworks used in implementation science
• Discuss “coaching” as an important strategy used in implementation science
Defining Implementation Science

Implementation science is defined as:

“the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence to improve the quality and effectiveness of health services.”

Eccles and Mittman, et al. 2006
Implementing Science, Quality Improvement, and Dissemination

• Implementation science typically begins with an EBP that is under-utilized, and then identifies and addresses resultant quality gaps at the provider, clinic, or healthcare system level.

• Implementation science has an explicit goal of developing generalizable knowledge that can be widely applied beyond the individual system under study.

Bauer, et al. 2015
Why is Implementation Science Needed?

Interventions Effective to Close:
EBP Gap

- Progress
- Best practice
- Actual practice
- Time
Both implementation science and QI efforts share the ultimate goal of improving the quality of healthcare.

Methods used in the two fields often overlap, although there are some differences.

QI efforts usually begin with a specific problem in a specific healthcare system, recognized at the level of the provider, clinic or health system. Strategies are designed to improve a specific problem for that specific healthcare system.
Dissemination in contrast to implementation, refers to the spread of information about an intervention, assisted at most by educational efforts. There is some overlap in that implementation efforts may incorporate dissemination techniques. However, they are typically embedded in more comprehensive, targeted, and active efforts to spread the EBP.
Development of Implementation Science

Requirements → Analysis & Design
Planning → Implementation
Initial Planning → Deployment
Evaluation → Testing
## What Methods Promote Systemic Uptake of Research?

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Number of Studies</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and information</td>
<td>11</td>
<td>Only short-term effects</td>
</tr>
<tr>
<td>Reminders</td>
<td>7</td>
<td>Modest but sustained effects</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>9</td>
<td>Effective, but effect stops if feedback is not continued</td>
</tr>
<tr>
<td>New soap and hand rub</td>
<td>3</td>
<td>Small effect for hand rub</td>
</tr>
<tr>
<td>Adjusted sinks</td>
<td>3</td>
<td>Unclear effect</td>
</tr>
<tr>
<td>Multifaceted interventions</td>
<td>11</td>
<td>Pronounced effects on practice and outcomes</td>
</tr>
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Grol and Grimshaw 2003
Theories, Models, and Frameworks

• Theories, models and frameworks, are needed to guide implementation and build knowledge about what works where and why.

• Describing, implementing, and then sustaining any innovation is a complex undertaking.

• Complex because implementation strategies are typically multi-component and must adapt to local contexts.

• Contexts in which implementation efforts are themselves complex because of multiple interacting levels. (e.g. patients, providers, teams, clinical units)

• There are wide variations from setting to setting.
Define Theories, Models and Frameworks

Theory

• A *theory* is defined as “a system of ideas or statements held as an explanation or account of a group of facts or phenomena” (Michie and Abraham 2004)

• A theory shows how a mechanism or construct may change the behavior of another construct or outcome.

![Lewin's Change Theory Diagram](image)

Lewin’s Change Theory

*Foi, et al. 2011*
Model

• A *model* is a simplified depiction of a more complex concept with relatively precise assumptions about cause and effect.
• Each construct in the model can be assessed and the model tested.
• Based on results, the model may need refinement or be rejected altogether.
Define Theories, Models and Frameworks

Frameworks

- *Frameworks* provide a broad set of constructs that organize concepts and data descriptively without specifying causal relationships.

- Frameworks provide a prescriptive series of steps summarizing how implementation should ideally be planned and carried out.

*Meyers, et al., 2012*
Rogers Theory: *Diffusion of Innovation in Healthcare*

- Diffusion of an innovation (rate and extent of innovation adoption) is influenced by:
  - Nature of the innovation (e.g., EBPG)
  - The manner in which it is communicated (communication process) to members (nurse and physicians)
  - Members of a social system (healthcare organization, acute and critical care unit, clinic, etc.)

Model of Diffusion of Innovation

- **Social System**
  - Hospital; Patient Care Unit
  - Feedback on Use of the Evidence-Based Practice

- **Adoption of Innovation**
  - Adherence to the Evidence-Based Practice Guideline

- **Users**
  - Nurses, Physicians and Other Healthcare Providers
  - Feedback on Use of the Evidence-Based Practice

- **Communication Process**
  - Characteristics of the Innovation
    - Type of Evidence-Based Practice

**Communication**

*Titler, M.G. & Everett, L.Q. (2001)*
Diffusion

- Diffusion is the process by which (1) an Innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system.

Key Factor in the Rate of Spread: The “Tipping Point”

“The part of the diffusion curve from about 20-30 percent adoption is the heart of the diffusion process. After that point, it is often impossible to stop the further diffusion of a new idea, even if one wished to do so.”

- Everett Rogers
Innovativeness of Adopters

- Innovators: 2.5%
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%

Degree of Innovativeness

- **Innovators**: Venturesome is almost an obsession with innovators.
  - Control of resources
  - High tolerance for uncertainty
  - Gatekeeper for ideas
  - Cosmopolite
  - Cliques despite geographical separation

- **Early Adopters**: The key to successful spread of change. As they go, so will the system go.
  - More socially integrated than innovators
  - Role models
  - Convey evaluation to near-peers

Degree of Innovativeness

**Early Majority:** Local networks  
... local communication.

- Interact frequently with peers
- Seldom opinion leaders
- Deliberative

**Late Majority:** The weight of the system must definitely favor a certain change b/f late majority are convinced.

- The pressure of peers is necessary to motivate adoption

Degree of Innovativeness

- **Laggards:**
  - *Historians*
  - Possess little leadership…
  - The point of reference is the past

Implementation Science: Supporting the Uptake of Nursing Guidelines (SUNG) Framework

**FRONTLINE LEADER(S)**

**Facilitating:**
- Translating guidelines to practice
- Learning activities
- Bedside mentoring, **COACHING**, and role modeling
- Critical reflecting
- Accountability
- Trialing new practices & getting feedback
- Collaborating

**IMPACT**
- Client
- Nurse
- Unit
- Inter-professional
- Organization
- System (e.g., community)

**Visioning, Igniting, Sustaining**
Flames of Change

**Organizational Level**

**Collaborating**
- Choosing Relevant, Credible Guidelines
- Innovating
- Embedding
- Reviewing
- Revising

**Leading with Passion & Persistence**

**Transforming Nurse Believing & Doing**
- Practicing without Research Evidence
- Learning
- Doubting, Fearing, Resisting
- Trusting to Trial
- Getting Feedback
- Believing, Repeating, Doing
- Diffusing

**Adapted from Matthew-Maich et al., (2013). Worldviews on Evidence-Based Nursing, 10:2, 104-115**
Implementation Science: Supporting the Uptake of Nursing Guidelines (SUNG) Framework

Visioning, Igniting, Sustaining Flashes of Change

- Choosing Relevant, Credible Guidelines
- Collaborating
  - Innovating
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  - Reviewing
  - Revising

Organizational Level

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Transforming Nurse Believing & Doing

- Practicing without Research Evidence
- Learning (C)
- Doubting, Fearing, Resisting (C)
- Trusting to Trial (C)
- Getting Feedback (C)
- Believing, Repeating, Doing (C)
- Diffusing (C)

Individual Level

Adapted from Matthew-Maich et al., (2013). Worldviews on Evidence-Based Nursing, 10:2, 104-115
Visioning, Igniting, Sustaining Flames of Change

Organizational Level

Choosing Relevant, Credible Guidelines

Collaborating

- Innovating
- Embedding
- Reviewing
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Leading with Passion & Persistence

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- Translating guidelines to practice
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Transforming Nurse Believing & Doing

Practicing without Research Evidence

Learning (C)

Doubting, Fearing, Resisting (C)

Trusting to Trial (C)

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Believing, Repeating, Doing (C)

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Visioning, Igniting, Sustaining Flames of Change

Individual Level

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Coaching: A Strategy for Implementation Science

- The term “coaching” is used to describe a specific action such as encouraging, reinforcing, giving feedback, and demonstrating.

- *Coaching* provides an opportunity to discuss the rationales, specific actions, and desired outcomes of EBP changes.

- A “coach” provides guidance, feedback, and direction to ensure success of the EBP change.
The Role of the Coach

• Establish and clarify goals of the EBP change
• Develop a plan to accomplish embedding and sustaining EBP changes
• Ensure nurse colleagues have the knowledge, skills and tools for the EBP change
• Advise, instruct, and demonstrate desired behaviors and skills for the new EBP change
• Encourage and provide feedback re: the change
• Acknowledge and reinforce desired behaviors when observed
Critical Thinking Question

Think about people in your lives who have been a coach to you.

What characteristics did they have that made them an effective coach?
Characteristics of an Effective Coach

• **Competence** – degree to which the coach is qualified to develop the skills of others for the EBP change

• **Influence** – the ability to effect change. The effective coach is highly respected among colleagues, uses formal and informal power to effect change

• **Interpersonal Style** – effective coaches typically demonstrate a supportive attitude and ability to build confidence in others

• **Effective Feedback** – effective coaches know how to provide feedback to promote change (descriptive, problem oriented, empowering, considerate)
Critical Thinking Question

What competencies are especially relevant to the coaching role for EBP changes?
Coaching Competencies

Communication
- Communicating Instructions
- Providing Feedback
- Listening for Understanding

EBP Change
- Setting Goals
- Rewarding Improvement
- Dealing With Failure
- Assessing Strengths and Weaknesses

Relationships
- Building Rapport and Trust
- Motivating Others
- Working with Personal Issues
- Confronting Difficult Situations

Execution
- Responding to Requests
- Following Through
The Coach as Motivator

• Help team members see the bridge between:
  • Current practice and desired new practice …
  • The task or role for which they are responsible

• Provide specific, timely observations on performance regarding the uptake and continued use of the new EBP change

• Encourage staff’s belief in their own ability to be successful

• Validate current levels of accomplishment while advocating greater achievement

• Identify potential challenges, pitfalls, and unforeseen consequences
Coaching Feedback

• Considered a development tool used to enhance the uptake and sustainability of EBP change

• Meant to improve skills by making colleagues aware of what was right or what requires adjustment in performance

• **Two-way**; that is, it allows colleagues the opportunity to interact and ask questions
Set the Stage and Create a Sense of Urgency

• Get people’s attention! Lead with passion!
• Sell the need for change…sell the plan and the effect of change on patient outcome
• Immerse people in information about the change
• Discuss ways to solve the problems people identify with the change
  • Empower people to solve the “problem.”
Communicate for Understanding and Buy-In

• Provide supportive actions for fear and resistance
• Encourage discussion, dissent, disagreement, debate…keep people talking
• Tell people what you know-and what you don’t know
• Acknowledge people’s frustration, perceived losses, and anger
• Value resisters
  • They can clarify the problem and identify other problems that need to be solved first
  • Their tough questions can strengthen and improve the change

…communicate, communicate, communicate, communicate…
Sustainability May Require A Different Approach

“I’ve got too much work to do to stop and listen to you”

“The Tools Are Available”
Implementation Science: Sustaining the Progress

- Create readily accessible visible data to display progress over time
- Put ownership for sustainability into a group (not on to you alone!) that includes nursing, physicians, staff and patients
- Design the process to fit into daily routines and work flow
- Identify important time frames to evaluate sustainability (i.e., measure quarterly, then biannually, etc.)
Develop Actions Plans for Sustaining the Change

• Acknowledge hard work
• Celebrate successes and accomplishments
• Reaffirm the vision for sustainability
• Bring people together toward the vision & obtain input for strategies for sustainability
• Develop long-term goals and plans for sustainability
• Create systems and structures needed for sustainability
• Provide additional tools and training for sustainability
Summary

• Defined *implementation science*

• Described the development of *implementation science*

• Identified **selected** theories, models, and frame works used in *implementation science*

• Discussed “**coaching**” as an important strategy used in *implementation science*
Questions
Comments?
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References


