Science of Dissemination & Implementation to Improve Healthcare Outcomes

Gretchen A. Piatt, MPH, PhD
Associate Professor
Associate Chair for Educational Programs
Director, HILS PhD & MS Program
Director, Precision Health Certificate
Department of Learning Health Sciences
Objectives

• Define implementation research, differentiating it from other related areas.

• Identify the potential impact of implementing and/or sustaining effective interventions in health.

• Describe common implementation evaluation strategies relevant to specific questions or problems.
Today's Outline

1. Context
2. Case Study
3. Assess, Prepare, Implement, and Evaluate
Efficacy

Effectiveness

Implementation

TRANSLATION TO HUMANS

Efficacy

T1

Preclinical studies
Animal research
Basic health services research
Epidemiology

T2

Case studies
Phase 1 and 2 clinical trials

BEDSIDE

Human Clinical Research

Controlled observational studies
Phase 3 clinical trials & health services studies

T2

Guideline development
Meta-analyses
Systematic reviews

Practice-Based Research

Phase 3 & 4 trials
Observational studies
Survey research

T3

Dissemination research
Implementation research

POLICY & PRACTICE

Clinical Practice Across the System

Delivery of recommended care to the right patient at the right time
Identification of new clinical questions and gaps in care

TRANSLATION TO

PATIENTS, POLICY & PRACTICE

TRANSLATION TO POLICY & PRACTICE


# What are the differences?

<table>
<thead>
<tr>
<th></th>
<th><strong>Efficacy</strong></th>
<th><strong>Effectiveness</strong></th>
<th><strong>Implementation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study Design</strong></td>
<td>RCT</td>
<td>RCT and CRT</td>
<td>CRT, PBT, wedge, time-series, roll-out, quasi</td>
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<tr>
<td><strong>Randomization</strong></td>
<td>Individual</td>
<td>Individual or cluster</td>
<td>Cluster</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>Single</td>
<td>Single or multiple</td>
<td>Multiple</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Controlled</td>
<td>Uncontrolled</td>
<td>Uncontrolled</td>
</tr>
<tr>
<td><strong>Exclusion criteria</strong></td>
<td>Many</td>
<td>Few</td>
<td>Few</td>
</tr>
<tr>
<td><strong>Methods</strong></td>
<td>Quantitative</td>
<td>Quantitative and Mixed</td>
<td>Mixed</td>
</tr>
<tr>
<td><strong>Conceptual Framework</strong></td>
<td>Never</td>
<td>Sometimes</td>
<td>Always</td>
</tr>
<tr>
<td><strong>Disciplines</strong></td>
<td>Medicine, Epi, Psychology</td>
<td>Same but add health policy, non-health related, community, health systems</td>
<td>Same but add public health entities, professional organization</td>
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</table>
How is Implementation Science Different from:

- Process Evaluation
- Improvement Science
- Health Systems Science
- Dissemination Science
Activity: Differentiation
Process Evaluation

• describes how program activities were delivered.
• determines the degree to which program activities were implemented as planned.
• assesses link between program activities and outcomes.
• Useful for:
  • Monitoring, improvement, replication
  • Investigating dose-response relationships
Improvement Science

• **Quality improvement (QI)**
  • uses quantitative and qualitative methods to improve the effectiveness, efficiency, and safety of service delivery processes and systems, as well as the performance of human resources in delivering products and services.

• **Improvement science**:  
  • a body of knowledge that describes how to improve safety and quality consistently.  
  • the primary goal to determine which improvement strategies work as we strive to assure effective and safe patient care.
Health Systems Science

• Critical competencies that are necessary to deliver the highest quality, value-based health care in a manner that is both patient and population centered.

• It is how we operationalize the education necessary to meet the **Quadruple Aim** of health care

• Competencies include population health (social determinants and healthcare equity), value-based care, health care policy and economics, interprofessional skills, informatics, and health system improvement.
Dissemination Science

• **Dissemination**: targeted distribution of information and intervention materials to a specific public health or clinical practice audience

• Core processes: communication and social influence

• Key outcomes:
  • Awareness
  • Knowledge
  • Positive view
  • Intention to adopt
  • Adoption
Implementation Science is the study of methods to promote the integration of research findings and evidence into healthcare policy and practice.

It seeks to understand the behavior of healthcare professionals and other stakeholders as a key variable in the sustainable uptake, adoption, and implementation of evidence-based interventions.

Implementation Science is the study of human behavior change under organizational constraints.
When Defining Implementation Science, Some Very Non-Scientific Language Can Be Helpful.....

The intervention/innovation/practice is **THE THING**

*Effectiveness* research looks at whether **THE THING** works

*Implementation* research looks at how best to help people/places do **THE THING**

Implementation strategies are the stuff we do to try to help people/places **DO THE THING**

Main implementation outcomes are **HOW MUCH** and **HOW WELL** they **DO THE THING**
Case Study
Physician Burnout
(refer to handout)
Implementing a Wellness Initiative at Michigan Medicine for Physician Burnout
What is the Evidence?

- Interventions” = “Practices” = ”Programs”
- Evidence-based intervention
  - health-focused intervention, practice, policy, or guideline with evidence demonstrating its ability to change a health-related behavior or outcome
  - Less robust the body of evidence, more important it is to evaluate it

Who are the stakeholders?

Assess  Prepare  Implement  Evaluate
Is fidelity maintained?
  • Do not compromise the program’s effectiveness
    • Content
    • Delivery
    • Methods

Should you adapt?
  • Addition, deletion, expansion, reduction, or substitution of intervention components
  • Core components to adapt include setting, target, audience, delivery, or culture
What framework(s) should you use?
• Process Frameworks (exp. PDSA)
  • Describe and Guide
• Determinants Frameworks (exp. CFIR)
  • Understand and Explain
• Evaluation Frameworks (exp. RE-AIM)
  • Measures success

What implementation strategy should you use?
• Focus on improving outcomes like acceptability, adoption, feasibility, etc.
Is it Sustainable?

What You Can Do: Sustain Your Intervention Program

Consider the following eight core domains to increase the intervention’s capacity for sustainability. These domains were developed by practitioners, scientists, and funders from several public health areas.

You can use the Program Sustainability Assessment Tool to understand factors that influence your intervention’s capacity for sustainability and develop an action plan to increase the likelihood of sustainability. The tool helps identify your organization’s sustainability strengths and weaknesses and can guide your sustainability planning.

Factors Influencing Sustainability

- **Funding Stability**: Establishing a consistent financial base for your program
- **Partnerships**: Cultivating connections between your program and its stakeholders
- **Program Adaptation**: Changing your program to ensure its ongoing effectiveness
- **Strategic Planning**: Using processes that guide your program’s direction, methods, and goals
- **Political Support**: Maintaining relationships with internal and external stakeholders who support your program
- **Organizational Capacity**: Having the internal support and resources needed to effectively manage your program and its activities
- **Program Evaluation**: Assessing your program to inform planning and document results
- **Communications**: Exchanging information about your program with stakeholders and the public

Can it be scaled up?

**Vertical**
Adoption by different jurisdictions for policy-based, systematic, and structural change

**Horizontal**
Expansion across the same system levels, such as departments, organizations, sectors

**Depth**
Addition of new components to an existing innovation
In summary:

• Figure out what THE THING is first
• Understand how best to help people do THE THING
• Do the stuff to help people DO THE THING
• Report on HOW MUCH and HOW WELL the people DID THE THING
Thank You.

Gretchen A. Piatt, MPH, PhD
734-764-2287
piattg@umich.edu
https://medicine.umich.edu/dept/lhs/gretchen-piatt-mph-phd