Implementation Science: Overview and Proposed Role in Increasing Immunization Rates

October 2, 2014
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Leveraging implementation science to increase immunization rates

1. What is implementation science? *(aims, scope)*
2. What does it offer *(guidance, insights, tools)*
3. (How) Can implementation science help us increase immunization performance? *(specific suggestions)*
What is implementation research?

1. Clinical research produces new evidence, innovation
2. Initial efforts to promote implementation
3. Measurement of rates of implementation – and implementation (quality) gaps
4. Research to develop and evaluate implementation programs* to increase adoption

* quality improvement programs, practice change programs (interventions)

Health benefits of research
The Clinical Research Crisis

- AAMC Clinical Research Summit: Clinical Research: A National Call to Action (Nov 1999)

Translational research
Translational research

Type 1 Translation

Basic Science → Pre-Clinical/Translational Research → Clinical Research → Implementation Research → Improved Health Processes, Outcomes

Type 2 Translation

Implementation research

Basic Science → Pre-Clinical/Translational Research → Clinical Research → Implementation Research → Improved Health Processes, Outcomes
Implementation science definition

Implementation research is 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.

It includes the study of influences on healthcare professional and organizational behavior.

Eccles and Mittman, 2006

Implementation science aims

1. Develop reliable strategies for improving health-related processes and outcomes; facilitate widespread adoption of these strategies

2. Produce insights and generalizable knowledge regarding implementation processes, barriers, facilitators, strategies

3. Develop, test and refine implementation theories and hypotheses; methods and measures
The *Tower of Babel* problem

- Knowledge translation
- Translational research
- Research utilization, knowledge utilization
- Knowledge-to-action, knowledge transfer & exchange
- Technology transfer
- Dissemination research
- Quality improvement research
- T-1, T-2, T-3, T-4
- Etc.

The “*Quality Chasm*”

- Institute of Medicine (1999, 2001)

  ![To Err is Human](image1.png)  ![Crossing the Quality Chasm](image2.png)

- Quality “report cards” (US, international)

  The Quality of Health Care Delivered to Adults in the United States

  Elizabeth A. McGlynn, Ph.D., Steven M. Asch, M.D., M.P.H., John Adams, Ph.D.,
  Joan Keesey, B.A., Jennifer Hicks, M.P.H., Ph.D., Alison DeCristofaro, M.P.H.,
Implementation research vs. QI research

- QI often focuses on the “here and now” – immediate, local improvement needs via rapid-cycle, iterative improvement, addressing a quality problem
- IS often attempts to develop, deploy and rigorously evaluate a fixed implementation strategy across multiple sites, emphasizing theory, contextual factors, (sometimes) mediators, moderators, mechanisms, addressing an implementation gap
- IS aims to develop generalizable knowledge

Clinical research vs. implementation research

<table>
<thead>
<tr>
<th>Study feature</th>
<th>Clinical research</th>
<th>Implementation research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aim: evaluate a / an …</td>
<td>clinical intervention</td>
<td>implementation strategy</td>
</tr>
<tr>
<td>Typical intervention</td>
<td>drug, procedure, therapy</td>
<td>clinician, organizational practice change</td>
</tr>
<tr>
<td>Typical outcomes</td>
<td>symptoms, health outcomes, patient behavior</td>
<td>adoption, adherence, fidelity</td>
</tr>
<tr>
<td>Typical unit of analysis,</td>
<td>patient</td>
<td>clinician, team, facility</td>
</tr>
<tr>
<td>randomization</td>
<td></td>
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</table>
Gaps in the pipeline; opportunities to strengthen implementation science

- Efficacy vs. effectiveness studies
- Research syntheses, guidelines
- Pre-implementation tasks: quality gap documentation and diagnosis
- Observational implementation studies
- Phased implementation trials

Implementation science insights

- Multi-level influences, constraints, levers for change
- Contextual influences
- Complex social interventions
- Extreme heterogeneity (across time, place)
- Adaptability and heterogeneity of implementation strategies
Implementation science implications for vaccine delivery policy/practice goals

- Document and diagnose current practices and gaps
- Map multi-level influences
- Identify and assess contextual factors
- Identify core functions for improvement programs
- Develop guidance in operationalizing these functions and adapting improvement strategies for different settings

US, international resources

- NIH grant funding, review committee, training programs
- Journals: *Implementation Science*, *Translational Behavioral Medicine*, special issues of general and specialty journals
- NIH CTSAs (selected), PBRNs (AHRQ, other), VA QUERI
- Patient-Centered Outcomes Research Institute (PCORI), AAMC Research on Care Community (ROCC)
- Knowledge Translation Canada, Kings College London Centre for Implementation Science, etc.
### Local resources

<table>
<thead>
<tr>
<th>Health Sciences:</th>
<th>Main Campus:</th>
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<tbody>
<tr>
<td>Community Health, Health Behavior</td>
<td>Psychology, Sociology, Anthropology, Political Science, Economics</td>
</tr>
<tr>
<td>Health Services, Management</td>
<td>Management, Education, Public Policy</td>
</tr>
<tr>
<td>GIM, Family/Prev Medicine, Subspec</td>
<td></td>
</tr>
<tr>
<td>Nursing, Dentistry, Psychology, Social Work, OT, PT, other allied</td>
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