Implementation Research and Practice: If We Want More Evidence-Based Practice, We Need More Practice-Based Evidence

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The Challenges & Opportunities

- The two biggest challenges:
  - To close the gap between the evidence for implementation that policy makers, program planners, practitioners and communities need & what they are getting from our research
  - Reform some peer review & editorial tendencies

- The two biggest opportunities
  - Extend participatory research principles to work with policy makers, program planners & practitioners in use of natural experiments—e.g., evaluation and continuous quality improvement methods
  - Combine PR with multi-site RCT methods that expand the external validity of the results
“It takes 17 years to turn 14 per cent of original [applied] research to the benefit of patient care” *
The Pipeline Fallacy of Producing & Vetting Research to Get Evidence-Based Practice*

Meeting the Top-Down Evidence Push with Bottom-Up Practice-Based Evidence*

*CDC, National Center for Injury Prevention & Control, as adapted by Hanson DW, Finch CF, Allegrante JP, Sleet DA. Closing the gap between injury prevention research & community safety promotion practice: Revising the public health model. *Public Health Reports* 2012;127(2), p. 147.
The Prevailing Standard of Evidence: The Randomized Controlled Trial

Intervention tested by comparison with a control condition

Mediating variables expected to change, based on previous evidence and theory

Change in outcome variable(s) measured & compared between experimental groups

--Interventions highly standardized.
--Interventions reduced to simplistic form
--Everything else held constant.
--Clients randomized, no choice.
--Interventionists have no discretion.

--Comparison based on average change for each group
--Subgroup analysis discouraged
--Dropouts discounted, ignored
--Cut-off date for outcomes often too soon for change to occur
Problems Identified by IOM Report*

- Narrow focus: Lack of attention to larger systems context
- Lacking details of implementation process
- Lack of relevance to real world
- Many studies focus on one intervention, but obesity may require a combination of interventions; in fact, some things appear not to work when tested alone, but are essential ingredients in a more comprehensive program (www.nap.edu)

IOM Conclusions about Status of Evidence

- The current evidence lacks the power to set a clear direction for obesity prevention across a range of target populations.

- This lack of evidence for effectiveness seen as a lack of effectiveness.

- It is difficult to fund, conduct & publish research on community, environmental, and policy-based obesity prevention initiatives.

- Assessing or reporting on generalizability of research results to other populations or settings has not been given priority.
The L.E.A.D. Framework

Specify Questions

Locate Evidence: Identify and gather the types of evidence that are potentially relevant to the questions

Evaluate Evidence: Apply standards of quality as relevant to different types of evidence

Assemble Evidence: Select and summarize the relevant evidence according to considerations for its use

Inform Decisions: Use evidence in the decision-making process

Types of Community-Engaged Evidence for Health Research

- Participatory research evidence
  - Community-Based Participatory Research (CBPR)
  - Practice-based or action research
- Surveillance evidence
- Population diagnostic evidence
- Program evaluation evidence
  - Multi-component; Continuous Quality Improvement
  - How context effects (moderates) outcomes
The Spheres of Practice-Based, Community-Based, Academic & Participatory Research

- Practice-Based Research
- Participatory Research
- Community-Based Research
- CBPR
- Highly Controlled Academic Research
Three Paradoxes

- The internal validity–external validity paradox
  - The more rigorously controlled a study testing the efficacy of an intervention, the less reality-based it becomes, so it cannot be taken to scale or generalized

- The specificity – generalizability paradox
  - The more relevant and particular to the local context, the less generalizable to other contexts

- The homophily–social distancing paradox
Number of Publications on CBPR
Based on Scopus Search*

*Based on unpublished Scopus review by Doug Brugge, Tufts U., 2011.
Top 9 journals publishing CBPR papers

- *Progress in Community Health Partnerships: Research, Education & Action* (87)
- *American Journal of Public Health* (49)
- *Journal of Health Care for the Poor and Underserved* (33)
- *Health Promotion Practice* (30)
- *Environmental Health Perspectives* (29)
- *Ethnicity and Disease* (26)
- *Health Education and Behavior* (25)
- *American Journal of Preventive Medicine* (21)
- *Journal of Urban Health* (21)

*Based on unpublished Scopus review by Doug Brugge, 2011*
Second Tier of CBPR Journals*

- *Social Science and Medicine* (16)
- *Journal of Empirical Research on Human Research Ethics* (14)
- *AIDS Education and Prevention* (14)
- *Family and Community Health* (14)
- *American Journal of Community Psychology* (13)
- *American Journal of Bioethics* (13)
- *Cancer* (13)
Authors publishing most CBPR articles*

- Minkler, M. (23)
- Israel, B.A. (21)
- Parker, E.A. (15)
- Jones, L. (13)
- Hergenrather, K.C. (11)
- Rhodes, S.D. (10)
- Schulz, A.J. (10)
- Flicker, S. (9)
- Macaulay, A.C. (8)
- Wallerstein, N. (8)

- Rhodes, S.D. (7)
- Eng, E. (7)
- Travers, R. (7)
- Wells, K.B. (6)
- Senturia, K. (6)
- Montano, J. (6)
- Farquhar, S.A. (6)
- Sullivan, M. (6)
- Shiu-Thornton, S. (6)

*Scopus
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</tr>
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</tr>
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<td>19</td>
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<td>Engineering</td>
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*Scopus
The Lenses of Scientists, Health Professionals and Lay People

Objective Indicators of Health

Subjective Indicators of Health

Professional, Scientific

Layperson
Closing the Gaps Between Population & Scientists’ or Practitioners’ Perception of Needs, and Funders’ Assessments*

Reconciling Perceived Needs, “Actual Needs,” & Resources*

People’s perceived needs, priorities

Resources, feasibilities, policy

“Actual needs”

Action

Health education

Participatory research

Advocacy for regulation & organizational development

New (neglected) Evidence Forms

- Participatory research evidence
  - Community-Based Participatory Research
  - Practice-based or action research
- Surveillance evidence
- Population diagnostic evidence
- Program evaluation evidence
  - Multi-component evaluations
  - Continuous quality improvement
  - How context effects (moderates) outcomes
Uses of Evidence & Theory in Population-Based, Diagnostic, Planning & Evaluation Models*

1. Assess Needs & Capacities of Population

2. Assess Causes (X) & Resources

3. Design & Implement Program

4. Evaluate Program

Evidence from community or population

Evidence from Etiologic Research

Evidence from Efficacy Studies, and Use of Theory to Fill Gaps

Program Evidence & Effectiveness Studies, and use of Theory

Reconsider X

Reasons for Surveillance as a Challenge and an Opportunity

- For CBPR
  - Communities need/want more particular, local data
  - CBPR projects usually can’t afford to do population surveys, much less time-series surveys

- For community research in general
  - Provides the most powerful alternative to RCTs for population-level change & community interventions
  - Provides the most credible source of evidence for external validity and dissemination of practice-based evidence
Intervention or Program

Mediator

Outcome Variable(s)

Mediators

Moderators

Moderators

Challenges to “Best Practices” from Controlled Trials*

- Challenge of translating “best practices” from science to practitioner behavior, and to different circumstances
- …of generalizing from research in one place, with one population, to other places, people and circumstances
- …of imposing experimental controls to generate “best practices” for community and population efforts
- Recommend “best practices” with “best processes” of locally-specific, diagnostic-planning procedures & CBPR to adapt efficacy-tested interventions to moderating variables…

The Multi-Site Translational Community Trial (mTCT) Proposal*

- Blends the internal validity advantages of
  - Cluster randomized trial or multi-site RCT
  - Fidelity to the function (but not the form) of an efficacy-tested intervention

- With the external validity advantages of
  - Diversity of settings, cultures, circumstances
  - Adaptation of the form (not the function) of the efficacy-tested intervention with some sacrifice of CBPR degrees of freedom

The mTCT for Practice-Based, Community-Based, Academic to Participatory Research

- Practice-Based Research
- Participatory Research
- CBPR
- Community-Based Research
- Highly Controlled Academic Research
Aligning Evidence* with (and deriving it from) Practice: Matching, Mapping, Pooling & Patching

- **Matching** ecological levels of a system or community with RCT evidence of *efficacy* for interventions at those levels
- **Mapping** theory to the causal chain to fill gaps in the evidence for *effectiveness* of interventions
- **Pooling** experience to blend interventions to fill gaps in evidence for the effectiveness of programs in similar situations
- **Patching** pooled interventions with indigenous wisdom and professional judgment about plausible causes & interventions to fill gaps in the *program* for the specific population

The Case for Participatory and Practice-Based Research

- "Participatory approach at the front-end of the research pipeline is the best assurance of relevance and utilization of the research at the other end of the pipeline."

- "If we want more evidence-based practice…"
- "…we need more practice-based evidence" AJPH, 2006