

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

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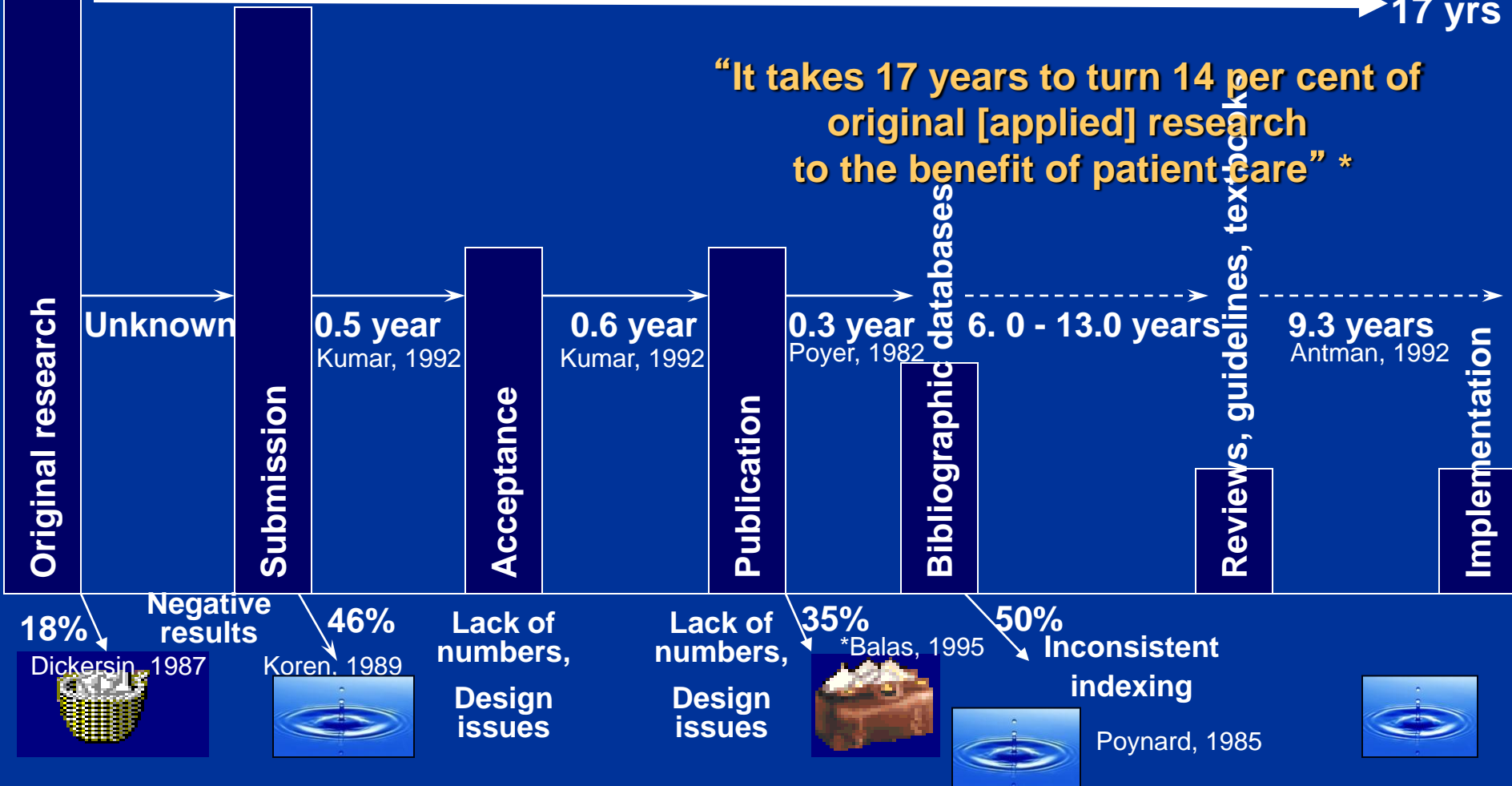
The Challenges & Opportunities

- 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

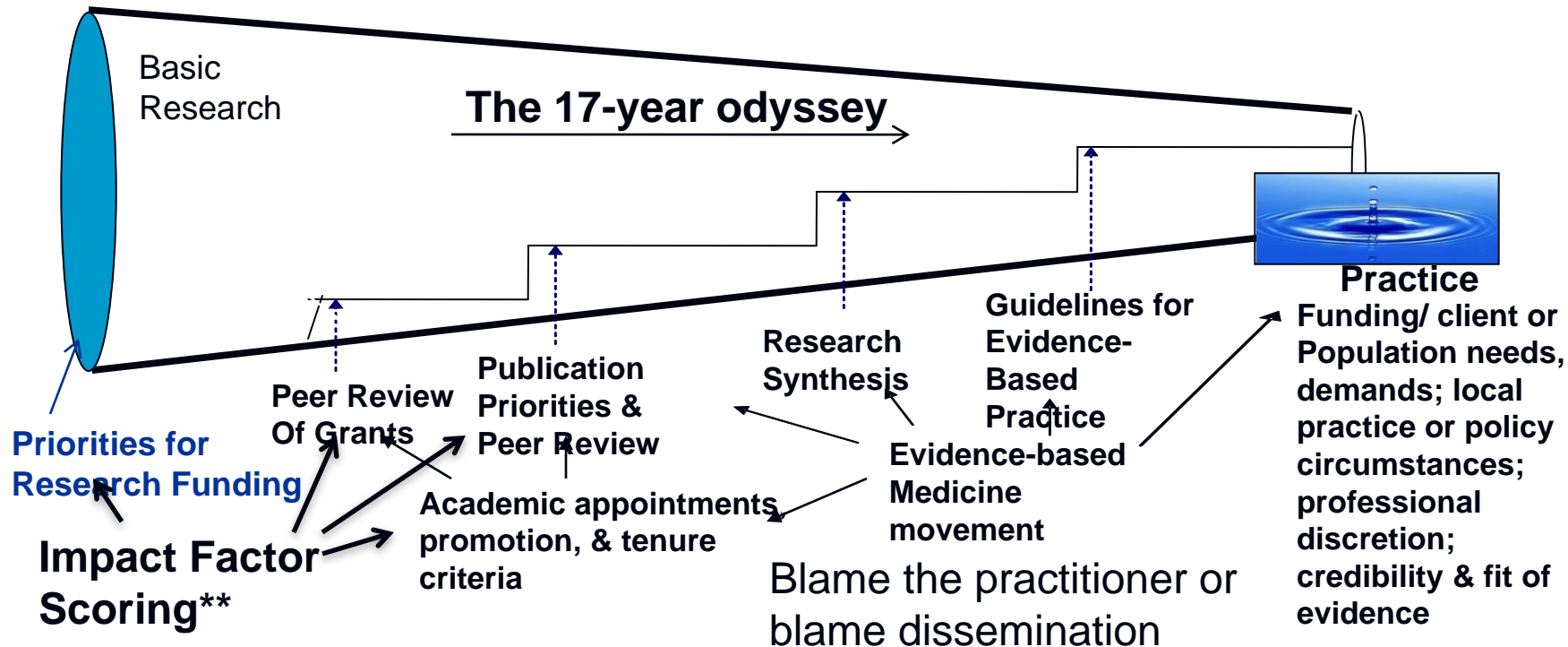
Where Have All the Data Gone? Longtime Passing...

17 yrs

“It takes 17 years to turn 14 per cent of original [applied] research to the benefit of patient care” *

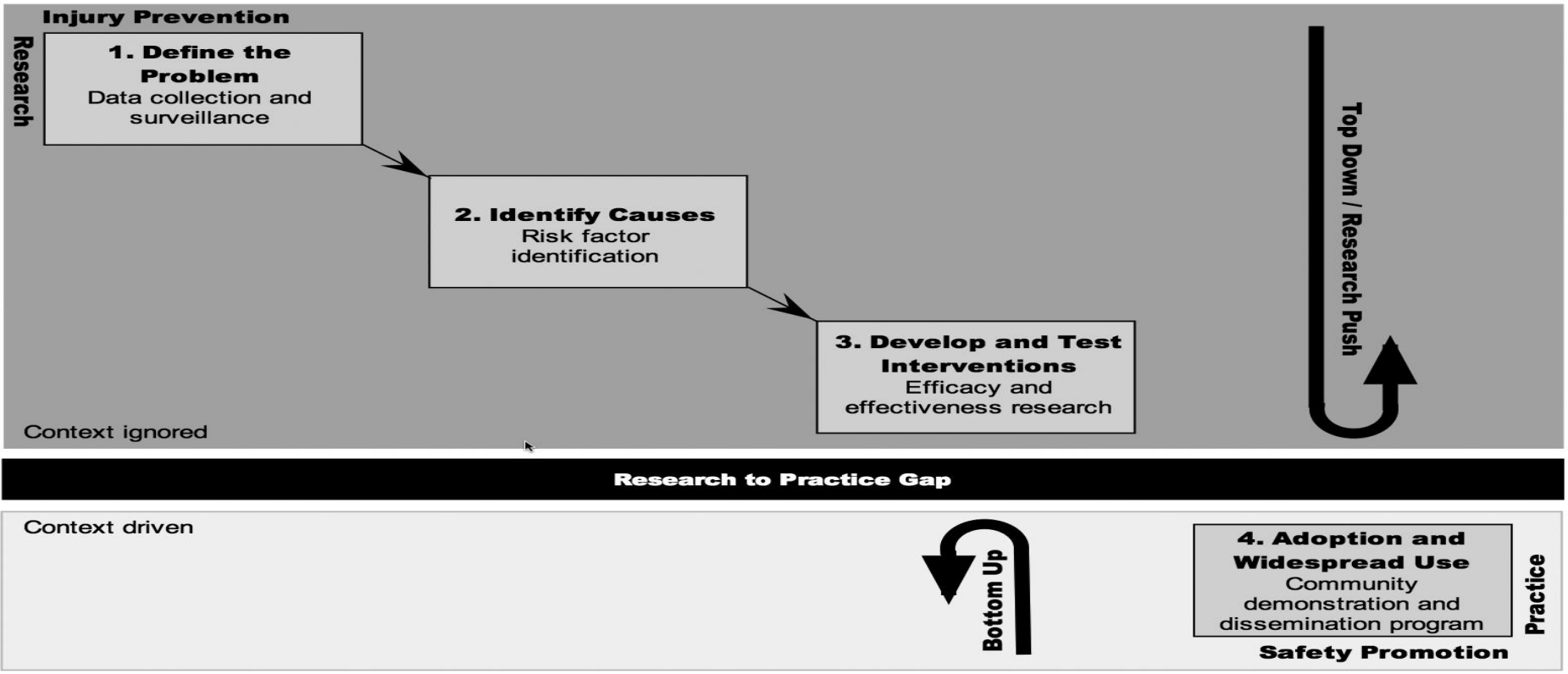


The Pipeline Fallacy of Producing & Vetting Research to Get Evidence-Based Practice*



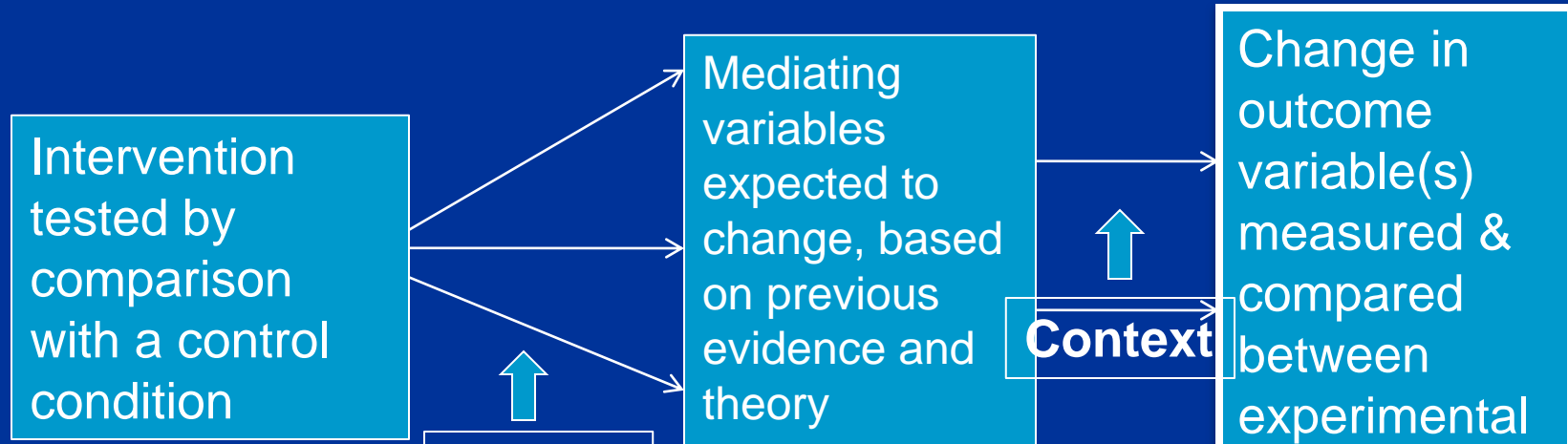
*Green LW (2008). If it's an evidence-based practice, where's the practice-based evidence? *J Family Med* 25 (suppl 1): 20-24; ** *J Partic Med* 2009;1(1).<http://iopm.org/index.php/jpm/article/view/16/31>.

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



- 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)**



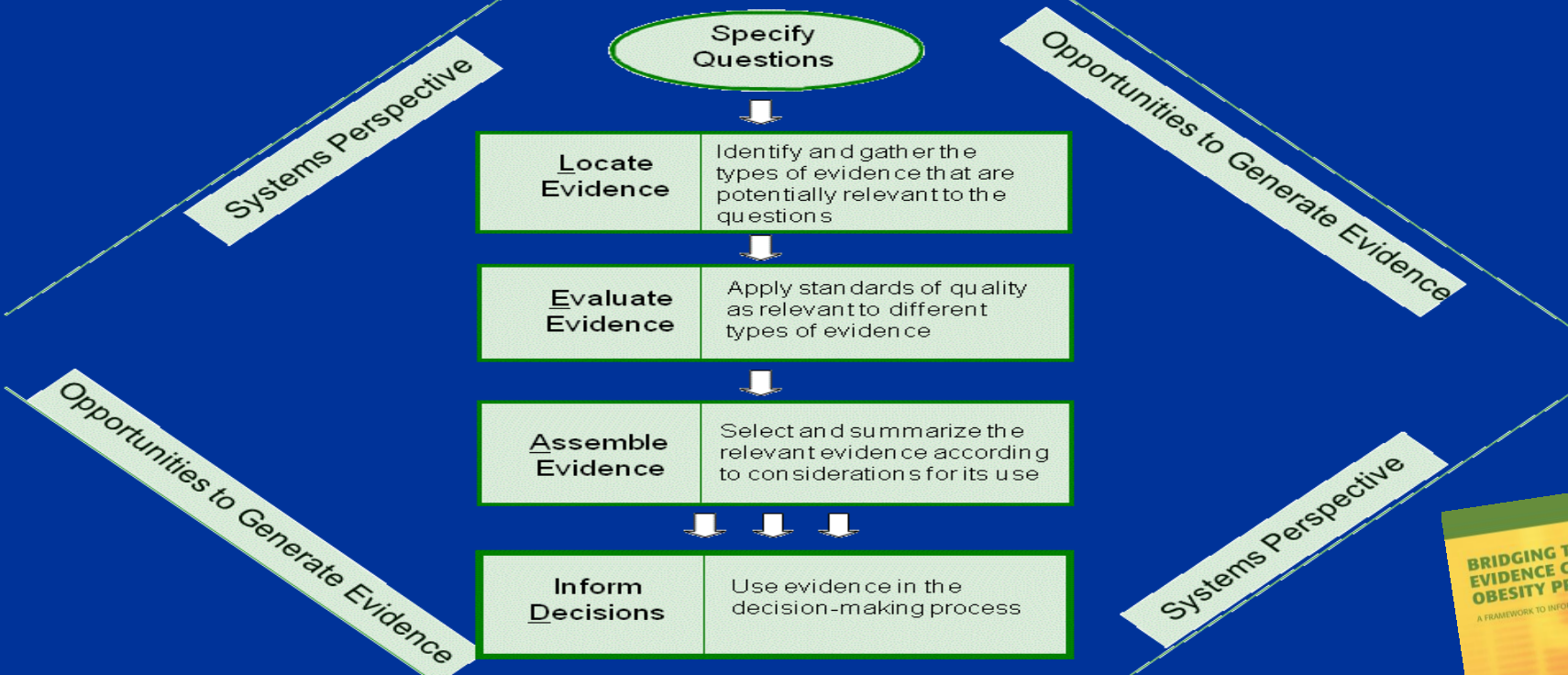
*Institute of Medicine. *Bridging the Evidence Gap in Obesity Prevention: A Framework to Inform Decision Making*. Washington, DC: The National Academies Press, 2010.

IOM Conclusions about Status of Evidence

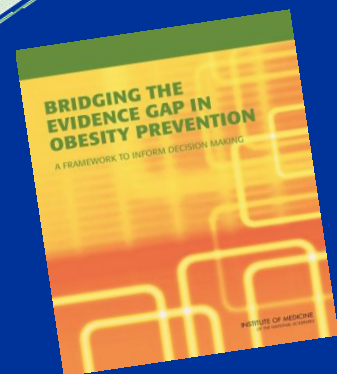
- The current evidence lacks the power to set a clear direction for obesity prevention across a range of target populations
- This lack of evidence for effectiveness seen as a lack of effectiveness
- It is difficult to fund, conduct & publish research on community, environmental, and policy-based obesity 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



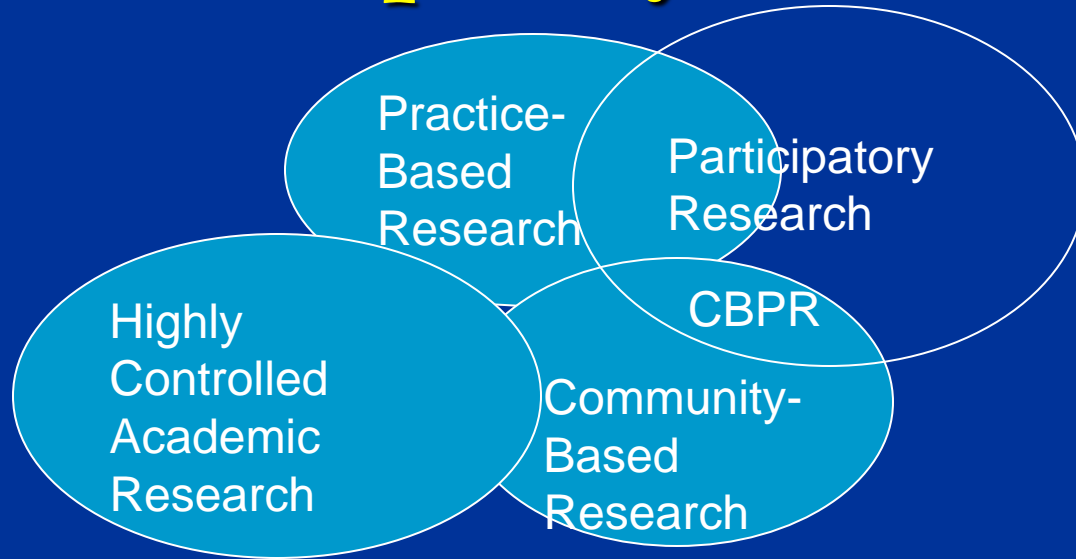
Institute of Medicine. *Bridging the Evidence Gap in Obesity Prevention*. Washington, DC: The National Academies Press, 2010. (www.nap.edu)



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

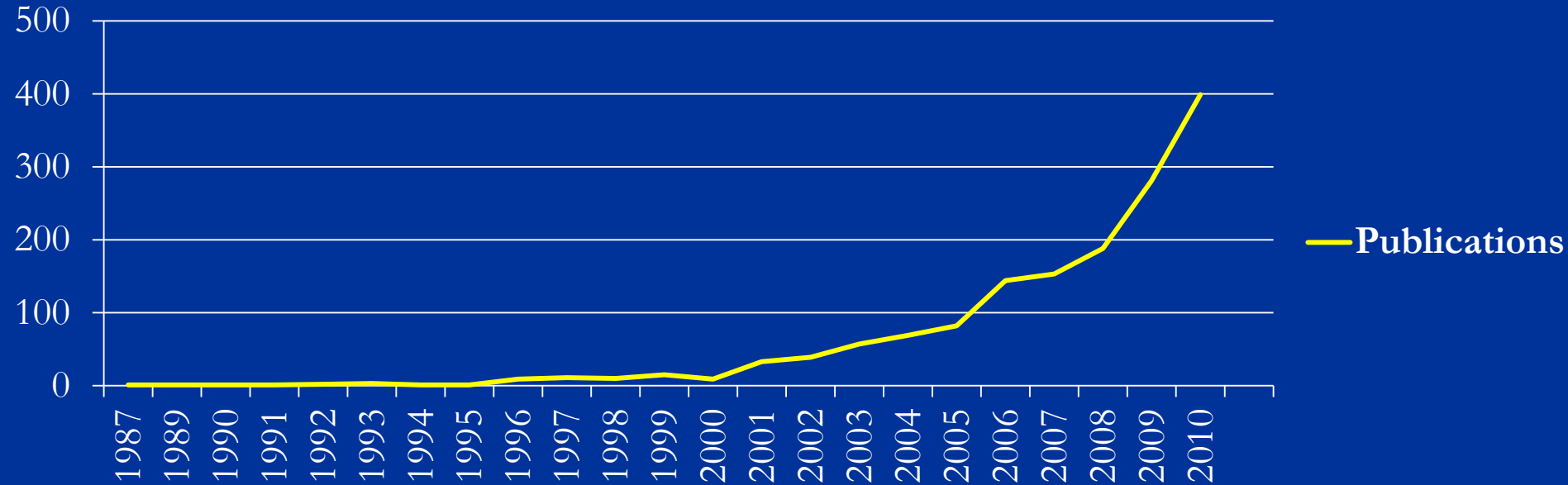


Three Paradoxes

- **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*

Publications on CBPR



*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

Subject Areas with Most CBPR Pubs*

- **Medicine & Public Health (1,056)**
 - **Biochemistry, Genetics and Molecular Biology (49)**
 - **Social Sciences (407)**
 - **Business, Management and Accounting (33)**
 - **Nursing (187)**
 - **Economics, Econometrics and Finance (22)**
 - **Environ Science (141)**
 - **Earth and Planetary Sciences (19)**
 - **Psychology (118)**
 - **Engineering (19)**
 - **Agricultural & Biological Science (54)**
 - **Health Professions (53)**
- *Scopus

The Lenses of Scientists, Health Professionals and Lay People

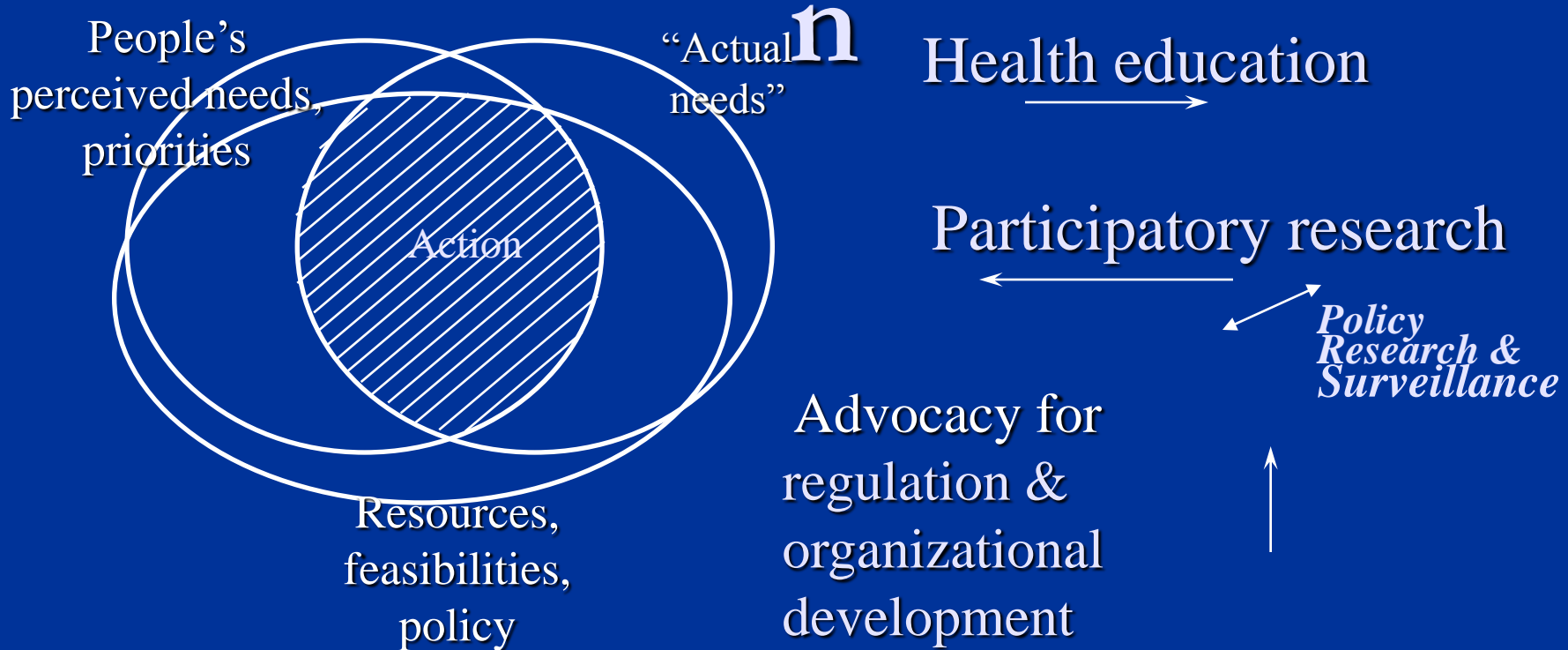


Closing the Gaps Between Population & Scientists' or Practitioners' Perception of Needs, and Funders' Assessments*



*Green & Kreuter, *Health Program Planning*, 4th ed., NY: McGraw-Hill, 2005, p. 40.

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

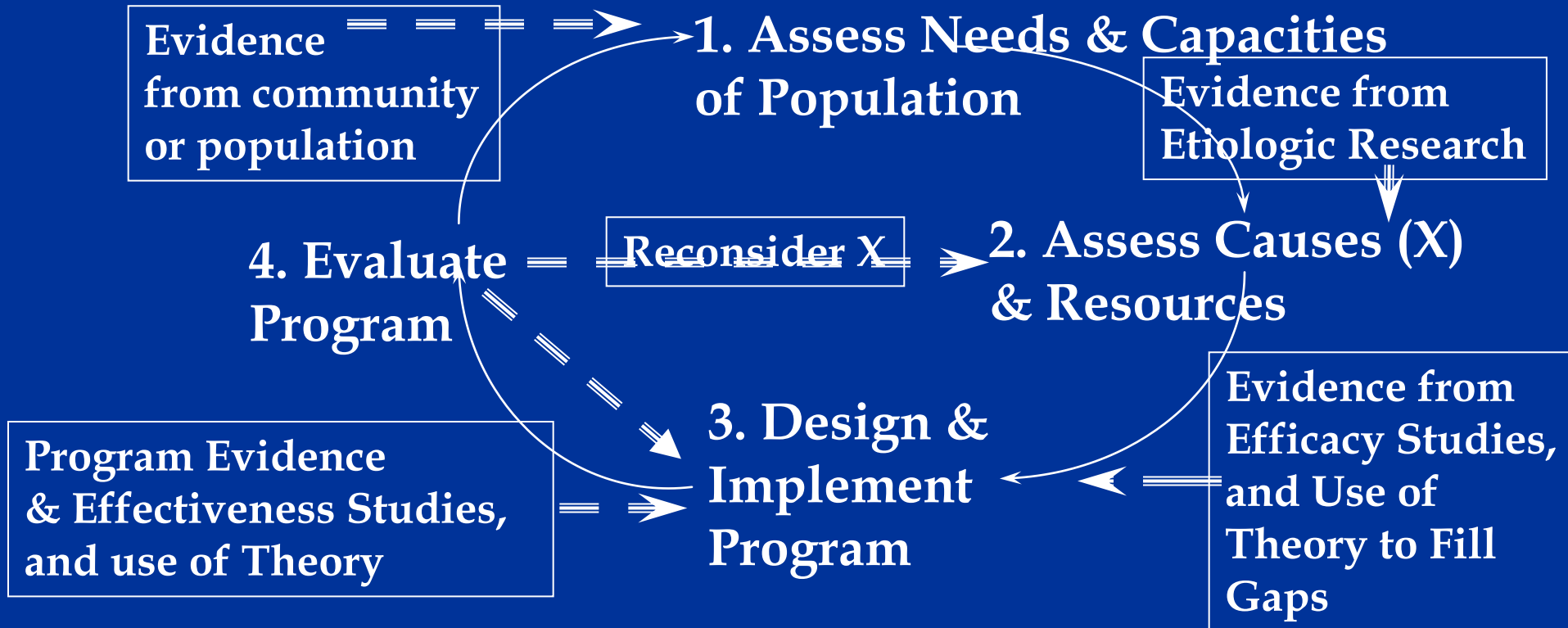


*Source: Green LW & Kreuter MW. *Health Program Planning, 4th edition, 2005. p.41.*

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*



*Green & Kreuter, *Health Program Planning*. 4th ed. NY: McGraw-Hill, 2005, Fig. 5-1.

Reasons for Surveillance as a Challenge and an Opportunity

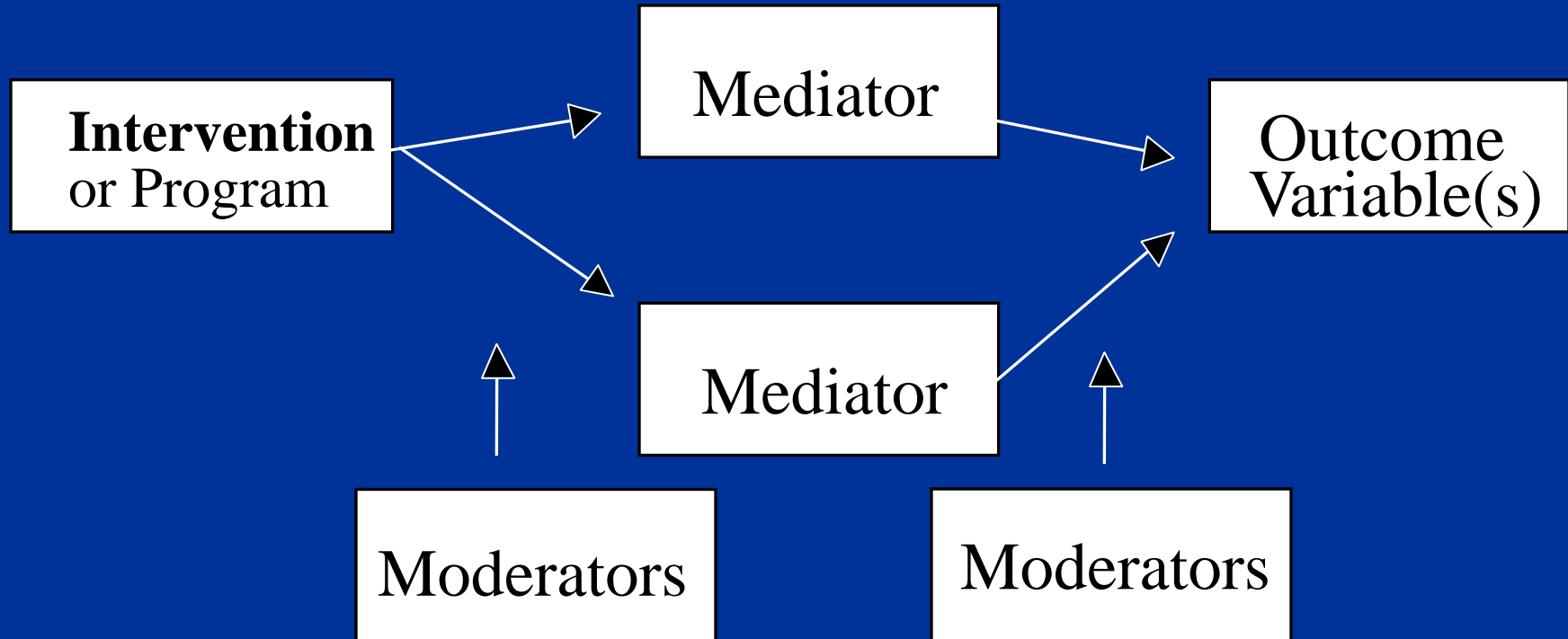
■ For CBPR

- 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

Mediating and Moderating Variables*



*Green & Kreuter, *Health Program Planning: An Educational and Ecological Approach*. 4th ed. New York: McGraw-Hill, 2005. Green & Glasgow, *Eval & Health Professions*, 2006.

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...

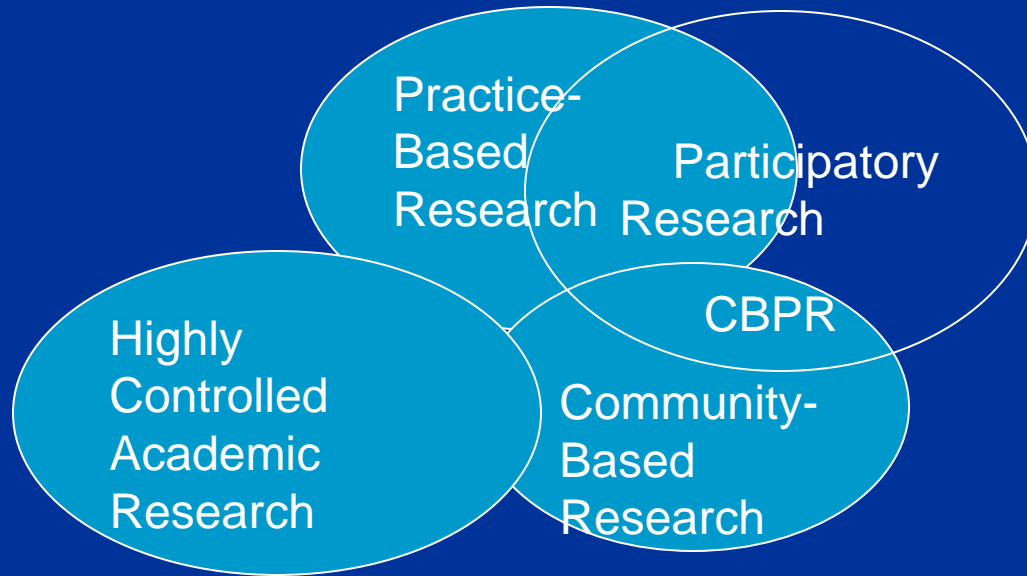
*Green LW. From research to ‘best practices’ in other populations... *Am J H Behav*, 25(3), May 2001, pp. 165-178.

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

*Katz DL et al. From controlled trial to community adoption...*Am J Public Health*,2011; 101(8): pp. e17-e27. Full text Online www.ajph.org, Aug. 2011, e17.

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

*Green & Kreuter, *Health Program Planning: An Educational and Ecological Approach*. 4th ed. NY: McGraw-Hill, 2005, Chapter 5. Green & Glasgow, 2006.

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.”
 - Commission on Community-Engaged Scholarship in the Health Professions. Linking Scholarship and Communities: Report of the Commission on Community-Engaged Scholarship in the Health Professions. Seattle: Community-Campus Partnerships for Health, 2005.
- “If we want more evidence-based practice...
- ...we need more practice-based evidence” *AJPH, 2006*