

Title Slide: Research to Reality: Going to Scale

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BRP CrossTalk

March 17, 2011

Slide 2: Take Home Messages: D&I Science

There *is* a science of implementation and dissemination

Familiar (e.g. replication, external validity)

Not so familiar (e.g. complexity, causation, sustainability, unintended consequences, adaptive)

Vital need for research that translates and is relevant in real world setting

Opportunities

Research community needs to be open to new approaches to “evidence”

Slide 3: Outline

Current Gap Between Research and Practice

What Do We Know About Strategies for Going to Scale (D&I Perspective)?

Use of D&I Decision Support Tools in Practice Settings

Future Directions/Dissemination and Implementation Opportunities

Slide 4: Translation Continuum

Current Gap

[image]

Bi-directional arrow going across 5 areas, starting from left to right

- Bench
- Bedside
- Clinic
- Community
- Population and Policy

[end image]

Slide 5: Bench to Bookshelf

[image]

Doctor looking at vial and writing notes. An arrow points to some book covered in cobwebs
[end image]

Slide 6: The 17 year Odyssey

[image]

A cone with the wide portion on the left hand side and the narrow part on the right hand side. Inside the cone there are 4 steps. At the opening of the cone (left side) is "Priorities for research funding". The first step is "Peer review of grants". The second step is "Publication priorities and peer review". The third step is "Research synthesis". The fourth step is "Guidelines for evidence-based practice". Coming out of the cone is "Practice: Funding; population needs, demands; local practice circumstances; professional discretion; credibility and fit of the evidence." Below the steps are two influences that need to be taken into consideration. The first is "Academic appointment, promotion, and tenure criteria" which affects steps 1 and 2. The second is "Evidence based medicine movement" which affects, with the exception of "Priorities for research funding", all the steps and the outcome "Practice".
[end image]

Green, LW et al. 2009.
Annual Rev. Public Health. 30: 151-174

Slide 7: No Title

*Why do we think that "Trickle Down" research will work now...
...when this has failed for the past 50 years to trickle down public health impact?*

Slide 8: No Title

"The significant problems we face cannot be solved by the same level of thinking that created them."

A. Einstein

Slide 9: Breast Cancer Screening Guidelines Development and Implementation Timeline

STEP	POTENTIAL TRANSLATION ISSUES	YEAR	MORTALITY (INCIDENCE)*
Initial Research and Replication Research	Choice of measures; generalizability; Degree measures harmonized, samples similar study(ies).	1966	---
National Breast Cancer Detection Demonstration Program (NBCDDP)	---	1973-74	31.45 (105.07)
Synthesis Review based on NBCDDP	Criteria used for: Inclusion, quality, outcomes, realist review?	1977	32.48 (100.82)
Guidelines developed by NCI and ACS	Implementation guides? Adaptation guides, feasibility.	1978	31.73 (100.63)
Guidelines revised ACS	Consistency with original, cost and ease of implementation.	1980 and 1983	31.68 (102.22) and 32.07 (111.15)
AMA, NCI, ACS and other relevant orgs. developing uniform screening guidelines	Politics, costs, adaptation. Readiness, capacity, incentives, tracking, guidelines.	1988	33.20 (131.28)
Breast and Cervical Cancer Mortality Prevention Act Passed	---	1990	33.14 (131.75)
BCCEDP started	Competing demands, cost, meaning.	1991	32.69 (133.75)
BCCEDP expanded nationwide	Evolution over time, "drift".	1997	28.21 (137.84)
Community Guide Systematic Review on Breast, Cervical, & Colorectal Cancer Screening	---	2005	24.03 (124.44)
USPSTF revise clinical guidelines	---	2009	
Complete Cascade	Partnership, relevance, and adaptation are cross-cutting issues.	---	---

* Rates are per 100,000 and are age-adjusted to the 2000 US Std Population. Data from SEER Cancer Statistics Review: 1975-2007.
Glasgow: 1/6/2011

Sources:

NIH/NCI Consensus Development Meeting on Breast Cancer Screening Issues and Recommendations (1978). *The Yale Journal of Biology and Medicine*, 51, 3-7
Gordillo, C. (1989). Breast Cancer Screening Guidelines Agreed On by AMA, Other Medically Related Organizations. *JAMA*. 262(9):1155.
Dodd, G.D. (1992). American Cancer Society Guidelines on Screening for Breast Cancer, An Overview. *Cancer Supplement*, 69 (7), 1885-1887

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. (2002). National Breast and Cervical Cancer Early Detection Program: 1991-2002 National Report. http://www.cdc.gov/cancer/nbccedp/pdf/national_report.pdf.
 Parker, P.M. (Eds.). (2009). Breast Cancer Screening: Webster's Timeline History 1967-2007. San Diego, CA: ICON International Group, Inc.

Slide 10: Rapid Learning Approaches

- Data Collected:
- With real (and complex) patients
- By real-world staff
- Under real-world conditions and settings
- And evaluated through real-time data (often with Electronic Health Records)

Tunis, S.R.; Carino, T.V.; Williams, R.D.; Bach, P.B. A Rapid Learning Health System. *Health Affairs* (supplement). 2007;26(2):140-149.

Slide 11: Recommended Purpose of Research (ala RE-AIM)

Collect evidence to document interventions that can:

- Reach large numbers of people, especially those who can most benefit
- Be widely adopted by different settings
- Be consistently implemented by staff members with moderate levels of training and expertise
- Produce replicable and long-lasting effects (and minimal negative impacts) at reasonable cost

Slide 12: Ultimate Impact of an Insurance-sponsored Weight Management Program in West Virginia¹

Dissemination Step	Concept	% Impact
8.8% of Weight Management sites participate	Adoption	8.80% (Are they representative?)
5.9% of member participate	Reach	0.52% (Are they representative?)
91.4% program components implemented	Implementation	0.47%
43.8% of participants showed weight loss	Effectiveness	0.21%
21.2% individuals maintained benefit (individual)	Maintenance	.004%

¹Abildso CG, Zizzi SJ, Reger-Nash B. Evaluating an Insurance-Sponsored Weight Management Program With the RE-AIM Model, West Virginia, 2004-2008. Preventing Chronic Disease Public Health Research, Practice, and Policy. 2010. 7(3).

Slide 13: Rationale for Diabetes DVD

- Diabetes self-management education (DSME) is effective, at least short-term
- The majority of patients have not received DSME
- Vast majority of U.S. homes have DVD players
- Education can be individualized
- DVD available for repeated viewing, as needed
- And family can watch together

Slide 14: Preference Design Features

- Traditional RCT cannot evaluate Reach
- Potential participants randomized to Choice (mailed DVD or class) or RCT condition
- Allows more realistic evaluation of intervention Reach
- Can evaluate impact of Choice on outcomes

Slide 15: Study Design

[flowchart]

At the top:

Data Pulled and Letters Mailed

These go to two areas called "Choice" and "RCT" (This split is symbolized by an 'R' symbol).

Both of these go "Calls for Consent, Eligibility, Baseline Survey".

On the "Choice" side it goes to:

- Decline/Ineligible
- Choose DVD
- Choose Class

On the "RCT" side it goes to:

- Decline/Ineligible
- DVD
- Class

"Choice Choose Class" and "RCT Class" come together (This is symbolized by an 'R' symbol).

The result is split into two areas:

- On the "Choice" side: Class + DVD
- On the "RCT" side: Class Alone

[end flowchart]

Slide 16: Participation

- Among Those Confirmed Eligible (n=130)
 - Choice: 70.5%
 - RCT: 55.8%
- Among Choice Condition Confirmed Eligible
 - DVD: 55.8%
 - Class: 14.7%

Glasgow RE, Edwards LL, Whitesides H, Carroll N, Sanders TJ, McCray BL. Reach and effectiveness of DVD and in-person diabetes self-management education. *Chronic Illn.* 2009 Dec;5(4):243-9.

Slide 17: 3-Month Results

- Among DVD Condition
- No differences between Choice and RCT
- Within group change analyses from baseline:
 - Significant decrement: healthy eating, problem solving
 - Significant improvement: blood glucose testing, A1C, systolic blood pressure
- The DVD appears to substantially increase the reach of diabetes education

Slide 18: Ask the RE-AIM Genie

[image]

Disney's Aladdin genie comes out of the lamp/

[end image]

Slide 19: External Validity: Key Issues

- Research synthesis insufficient for uptake of EBIs
- Representativeness – a range of participants, not just willing and eligible
- Implementation/Adaptation – Key components, delivery across staff, fit local settings
- Relevant Outcomes – effective on multiple measures, across subgroups, cost-effectiveness
- Maintenance – long-term effects; sustainable

“What is it about this kind of intervention that works, for whom, in what circumstances, in what respects and why?”- R Pawson

Slide 20: IF AN INTERVENTION WORKS

AND NOBODY CAN USE IT.....

DOES IT STILL MAKE AN IMPACT?

Slide 21: Decisions in “Real World” Settings

- Decisions in absence of “external validity” evidence
- Decisions in complex “real world” settings
 - Time constraints
 - Lack of skilled personnel
 - Perspectives of “Evidence”
 - Inadequate funding
 - Fidelity vs. Fit

Will this intervention work in my setting, with my staff, for my community?

Slide 22: Cancer Control P.L.A.N.E.T.

[image]

Screenshot of 'Cancer Control P.L.A.N.E.T. web site.

<http://cancercontrolplanet.cancer.gov>

[end image]

Slide 23: NCI Intervention Programs

[image]

Screenshot of "Implementation Guide" on the NCI Research-tested Intervention Programs (RTIPs) web page

web page url: <http://rtips.cancer.gov/rtips/programDetails.do?programId=109261>

Implementation Guide (PDF): http://rtips.cancer.gov/rtips/reference/adaptation_guidelines.pdf

[end image]

Slide 24: RTIPs

[image]

Screenshot of a proposed "5 A Day Peer Education Program" web page on the NCI Research-tested Intervention Programs (RTIPs) web site. The difference on this mock-up and the original is the following:

- The "5 A Day Peer Education Program" was a section on the original page and this is the whole page
- There are expanded areas which include:
 - The Need
 - The Program
 - Time Required
 - Program Scores
 - Required Resources, etc.

- An electronic form to see "how this program might work for your situation, using the RE-AIM framework".

Original web page url:

<http://rtips.cancer.gov/rtips/programDetails.do?programId=230912#Program>

[end image]

Slide 25: Research to Reality (R2R): A Virtual Community of Practice

A dialogue between practitioners and researchers on how to move evidence-based programs into practice

- Launched February, 2011 (NCI)
 - Linked to Cancer Control P.L.A.N.E.T. Step 2
- Site Features:
 - Monthly cyber-seminars
 - Discussion forums
 - An events calendar
 - Featured partners
 - Community profiles

<https://ResearchtoReality.cancer.gov>

Slide 26: Current and Future Directions

No content

Slide 27:

[flowchart]

Intervention (Program/Policy) (e.g. design; key components; principles; external validity) has a bi-directional connection to "Practical Measures (e.g. actionable & longitudinal measures)".

"Practical Measures" has bi-directional connection to "Implementation Process" (e.g. team-based science; CBPR; patient centered care). "Implementation Process" has a bi-directional connection to "Intervention (Program/Policy)". Each bi-directional arrow displays the word "Feedback" above it. This completes the circular connection from "Intervention (Program/Policy)" to "Practical Measures" to "Implementation Process" back to "Intervention (Program/Policy)".

"Ongoing Partnership & Stakeholder Engagement" is in the middle of the circle.

Multi-Level Context

- Intrapersonal/Biological
- Interpersonal
- Organizational

- Policy
- Community/Economic
- Social/Economic

[end flowchart]

Slide 28: Identifying Practical Patient-Report Measures for the Electronic Health Record (EHR)

- Rationale: One thing is missing from all the investment and advances in EHRs- patient reports
- Scope: 13 areas most commonly encountered in adult primary care related to:
 - Health Behaviors- tobacco, healthy eating, medication adherence, physical activity, substance use
 - Psychosocial Factors-
 - Outcomes- quality of life, depression, anxiety, sleep, stress/distress, patient goals and preferences
 - Influences- health literacy/numeracy, demographics

Slide 29: Patient Report EHR Measures Project Phases

- Identify 2-3 candidate measures
- Widespread web-based wiki activity YOU are invited: www.gem-beta.org (till April 4)
- Meeting on May 2-3- Day 1 town hall followed by Day 2 invited stakeholder decision makers
- Post Meeting and Beyond: Your advice, suggestions?

Slide 30: Evidence that...

[image]

Balancing scale between 'Is More' and 'Is Less'. See table below.

[end image]

IS MORE	IS LESS
Contextual	Isolated
Practical, efficient	Abstract, intensive
Robust, generalizable	Singular (setting, staff, population)
Comparative	Academic
Comprehensive	Single outcome
Representative	From ideal settings

Slide 31: Questions

[image]

Question mark

[end image]

[end presentation]