

Using RE-AIM to Address Health Impact Evaluation Issues

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Outline of Talk

- Background and Definitions
- Comprehensive use of RE-AIM framework
- Adaptation of RE-AIM for rating evidence-based interventions
- Creation of new RE-AIM tool for practitioners

Definitions

- ***Internal Validity*** – identifies causal relationships ... in this study, the intervention made a difference in the outcome.
- ***External Validity*** – findings are true beyond the controlled limits of the study. “To what populations, settings, treatment variables and measurement variables can this effect be generalized?” (Campbell & Stanley, 1963)

Campbell DT, Stanley JC. Experimental and quasi-experimental designs for Research. Chicago, IL: Rand McNally. 1966.

Internal vs. External Validity

- What are the trade-offs of in maximizing internal or external validity?

Gold Standard ≠ Translation

“Where did the field get the idea that evidence of an intervention’s efficacy from carefully controlled trials could be generalized as **THE** best practice for widely varied populations and settings?”

L.W. Green

Green LW. From research to "best practices" in other settings and populations
Am J Health Behav 2001; 25:165-78

External Validity

- A framework for closing the gap between research and practice/policy

Purposes of RE-AIM

- To broaden the criteria used to evaluate programs to include elements of external validity
- To evaluate issues relevant to program adoption, implementation, and sustainability
- To help close the gap between research studies and practice by:
 - *Suggesting standard reporting criteria*
 - *Informing design of interventions*
 - *Providing guides for program planners and potential adopters*

Goal of RE-AIM Evaluation

Determine characteristics of 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

- Glasgow, Vogt, Boles, *Am J Public Health*, 89, 1999
- Glasgow RE, Linnan L. Evaluation of theory-based interventions. In: *Health Education: Theory, Research, and Practice*, 4th Ed., 2007.

Example of Applying RE-AIM

Ultimate Impact of 'The Magic Pill'

Dissemination	Concept	% Impacted
50% of Federally Qualified Health Centers Use	Adoption	50%
50% of Clinicians Prescribe	Adoption	25%
50% of Patients Accept Medication	Reach	12.5%
50% Follow Regimen Correctly	Implementation	6.2 %
50% of Those Taking Correctly Benefit	Effectiveness	3.1%
50% Continue to Benefit After 6 Months	Maintenance	1.6%

The Moral of the Story?

1. “Focus on the **Denominator**”(not just the numerator)
2. Each step of the dissemination sequence, or each “RE-AIM” dimension is important

RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
REACH Percent and representativeness of participants	Can the program attract large and representative percent of target population? Can the program reach those most in need and most often left out (i.e., the poor, low literacy and numeracy, complex patients)?
EFFECTIVENESS Impact on key outcomes, quality of life, unanticipated outcomes and subgroups	Does the program produce robust effects across sub-populations? Does the program produce minimal negative side effects and increase quality of life or broader outcomes (i.e., social capital)?

RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (Cont)

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
ADOPTION Percent and representativeness of settings and staff that participate	Is the program feasible for majority of real-world settings (costs, expertise, time, resources, etc.)? Can it be adopted by low resource settings and typical staff serving high-risk populations?
IMPLEMENTATION Consistency and cost of delivering program and adaptations made	Can the program be consistently implemented across program elements, different staff, time, etc.? Are the costs—personnel, up front, marginal, scale up, equipment costs—reasonable to match effectiveness?

RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (Cont)

RE-AIM ELEMENT	GUIDELINES AND QUESTIONS TO ASK
MAINTENANCE Long-term effects at individual and setting levels, modifications made	Does the program include principles to enhance long-term improvements (i.e., follow-up contact, community resources, peer support, ongoing feedback)? Can the settings sustain the program over time without added resources and leadership?

What Evidence is Needed?

EXTENDED CONSORT DIAGRAM

RE-AIM Issue

Content

Critical
Considerations

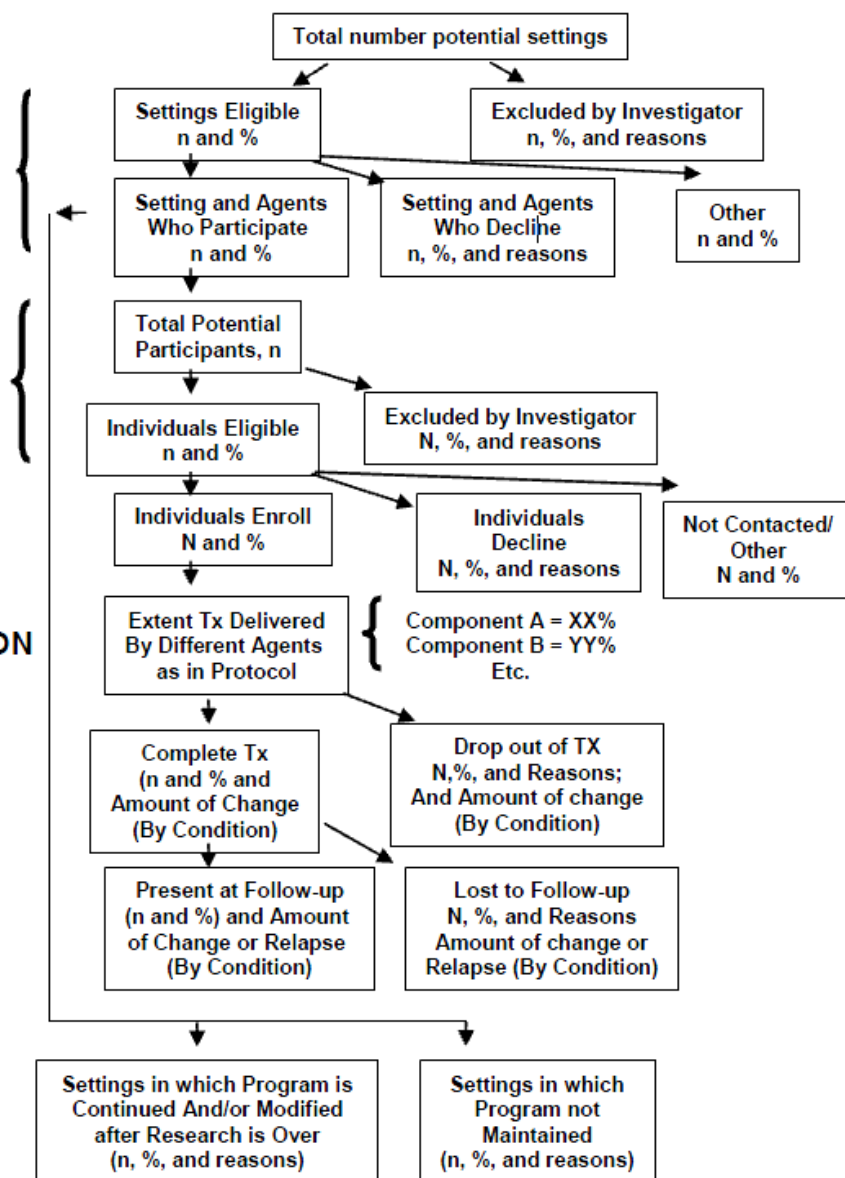
ADOPTION

REACH

IMPLEMENTATION

EFFICACY

MAINTENANCE

a) Individual
Levelb) Setting
Level*Characteristics
Of Adopters vs Non**Characteristics
Of Enrolles vs.
Decliners**Extent Tx
Delivered as
Intended**Characteristics
of Drop-outs vs
Completers**Characteristics
of Drop-outs vs.
Completers**Characteristics
of Settings that
Continue vs
Do Not*

External Validity

Checklist for Researchers

(from meeting of 13 journal editors)

1. _____ Record recruitment and/or selection procedures, participation rate, and representativeness at each of the following levels:
 - a. Individuals, patients, citizens, or clients
 - b. Intervention staff, or program delivery agents
 - c. Delivery settings, work sites, health care clinics, schools
2. _____ Take note of any differences in delivery across:
 - a. Settings, populations, and/or staff
 - b. Program components
 - c. Time, taking special care to note any modifications over time
3. _____ Record all impacts of intervention, including:
 - a. Quality of life, or unintended adverse consequences
 - b. Costs of implementation and/or program replication
 - c. Moderator variables, especially those related to health disparities
4. _____ When conducting long-term follow-up report, pay attention to:
 - a. Long-term effects on item #3 above
 - b. Attrition at all levels in #1 above
 - c. Institutionalization, modification, or discontinuance of the program

Glasgow, R. E., Green, L. W., and Ammerman, A. (2007). A focus on external validity. *Evaluation & the Health Professions* 30(2): 115-117.

Reporting External Validity

Future Directions

- Document reliability of EV coding criteria
- Consider *summary metrics*, composite or overall EV quality scores
- Report on impact on health equity for all RE-AIM levels
- Assistance to practitioners on how to combine with theory and local experience
- Evaluate which criteria most strongly related to long-term dissemination success
- Revise criteria based on lessons learned

Assistance to practitioners on how to combine with theory and local experience

- NCI has revised the Research-tested Interventions Program (RTIPs) review process and website to incorporate RE-AIM
- April 2012 began scoring new RTIPs programs on RE-AIM criteria
- October 2012 launched “RE-AIM notes” on all program summary pages

<http://rtips.cancer.gov/rtips/index.do>



Research-tested Intervention Programs (RTIPs)



■ RTIPs- Moving Science into Programs for People

■ RTIPs Home ■ RTIPs Archive ■ Frequently Asked Questions ■ Fact Sheet ■ Contact Us

■ Cancer Control P.L.A.N.E.T. Home

Use the link below to select a number of criteria, and see a list that contains programs from several topics.

Select from 128 Intervention Programs

RTIPs is a searchable database of cancer control interventions and program materials and is designed to provide program planners and public health practitioners easy and immediate access to research-tested materials.

Register your program now and be part of the RTIPs Community.

RTIPs and Research Reviews

The [Guide to Community Preventive Services](#) evaluates the effectiveness of types of interventions (as opposed to individual programs) by conducting [systematic reviews](#) of all available research in collaboration with partners. The [Task Force](#) on Community Preventive Services then uses the systematic review findings as the basis for their recommendations for practice, policy and future research. The symbol to the right links to Community Guide findings. Many Research-tested Intervention Programs (RTIPs) are directly linked to associated Community Guide findings.



RTIPs News: RTIPs was featured in the PubMed article - [What Works to Prevent Adolescent Smoking? A Systematic Review of the National Cancer Institute's Research-Tested Intervention Programs](#).

New Programs on RTIPs:

- Colorectal Cancer Screening
 - ★ -[Culturally Tailored Navigator Intervention Program for Colorectal Cancer Screening](#) (Post date: September, 2012)
 - Survivorship
 - [Healthy-Steps](#) (Post date: August, 2012)
 - Obesity
 - [New Moves](#) (Post date: July, 2012)
- ★ New programs are released periodically. Please check for updates.

Tools Available:

- [Using What Works](#): a train-the-trainer course that teaches users how to adapt a research-tested intervention program to the local community context



We welcome your feedback on the Research-tested Intervention Programs Web site. To submit feedback, please [contact us](#). Thank you for helping to improve this site for the cancer control community.

If you use tobacco and are trying to quit, please visit [Smokefree.gov](#).

Looking for general information about cancer? Please visit [Cancer.gov](#) or call the Cancer Information Service at 1-800-4-CANCER.

Last Modified: 09/05/2012



Healthy-Steps

On This Page

- [The Need](#)
- [The Program](#)
 - » [Implementation Guide](#)
- [Time Required](#)
- [Intended Audience](#)
- [Suitable Settings](#)
- [Required Resources](#)
- [About the Study](#)
- [Key Findings](#)
- [Publications](#)

Products



Preview and order the materials from the developer

Discuss this program on the NCI's Research to Reality (R2R) website.

+ Expand All Sections Below

Highlights

Purpose	Designed to enhance the quality of life for breast cancer survivors. (2005)
Program Focus	Psychosocial - Coping
Population Focus	Cancer Survivors
Topic	Survivorship
Age	Adults (40-65 years), Older Adults (65+ years), Young Adults (19-39 years)
Gender	Female
Race/Ethnicity	Black, not of Hispanic or Latino origin, Hispanic or Latino, White, not of Hispanic or Latino origin
Setting	Clinical, Suburban, Urban/Inner City
Origination	United States
Funded by	<i>This information is not available.</i>

RTIPs Scores

Research Integrity	4.3	<div><div></div></div>
Intervention Impact	3.0	<div><div></div></div>
Dissemination Capability	5.0	<div><div></div></div>

1.0 = low 5.0 = high

RE-AIM Scores

Reach	50.0%	<div><div></div></div>
Effectiveness	66.7%	<div><div></div></div>
Adoption	80.0%	<div><div></div></div>
Implementation	71.4%	<div><div></div></div>

The Need

An increasing number of women are living with breast cancer and adjusting to the changes that accompany survivorship. Many factors can profoundly affect quality of life for survivors, such as disturbances in body image, reduced range of motion in the shoulder hindering full engagement in everyday activities, and changes in psychological well-being. Women with breast cancer report distress, depression, and anxiety at greater rates, and these symptoms may persist for years following treatment. ... [Show more ▾](#)

[Back to Top](#)

The Program

Description

Healthy-Steps is a dance and movement program based on The Lebed Method, Focus on Healing Through Movement and Dance developed by Lebed-Davis, which was designed to restore shoulder range of motion, reduce lymphedema, and bring a renewed sense of body symmetry, femininity, sexuality, and grace through dance and arm movements. For the Healthy-Steps program, the Lebed Method is designed to help improve quality of life, body image, and shoulder function in breast cancer survivors. ... [Show more ▾](#)

Implementation Guide

The Implementation Guide is a resource for implementing this program. It provides important information about the staffing and functions necessary for administering this program in the user's setting. Additionally, the steps needed to carry out the research-tested program, relevant program materials, and information for evaluating the program are included. The Implementation Guide can be viewed and downloaded in the [Products page](#).

[Back to Top](#)

Time Required

The Healthy-Steps program includes 3 days of training for instructors who administer the program to breast cancer survivors. The program is 12 weeks in duration, with two sessions per week for the initial 6 weeks and one session per week for an additional 6 weeks, for a total of 18 sessions. Each session consists of 10-15 minutes of warm-ups, 10 minutes of core exercises, 25-30 minutes of dance movements, 5-7 minutes for water breaks, and 10 minutes for the wrap-up.

[Back to Top](#)

Intended Audience

Healthy-Steps is designed for adult women who have undergone diagnosis and surgical treatment for breast cancer.

[Back to Top](#)

Suitable Settings

Healthy-Steps was evaluated in an out-patient and community setting. It has also been implemented in health centers, and churches.

[Back to Top](#)

Hide

RE-AIM Notes

Print

Use this area to take notes about how this program might work for you. [Read More about RE-AIM.](#)

▼ Reach

Absolute number, proportion and representativeness of individuals who participate in the program.

Your overall rating of this program's **potential reach** in your situation:

Total # of people who could **benefit**:
 (Max. 8 characters)

Total # of people you could **reach**:
 (Max. 8 characters)

Your demographic focus:

(No max # of characters)

Barriers to reaching your target population:

(No max # of characters)

► Effectiveness

► Adoption

► Implementation

► Maintenance

Take Home Points

- Failure to focus on external validity is a major contributor to the disconnect between research and practice
- Need a broader approach to evaluating interventions that places appropriate focus on dimensions of external validity
- Reporting on external validity issues is needed to facilitate moving research into practice
- RE-AIM is continuing to evolve and welcomes your input

Resources

- www.re-aim.org
- <http://rtips.cancer.gov/rtips/index.do>
- Gaglio B, Glasgow RE. Evaluation approaches for dissemination and implementation research. In R Brownson, G Colditz, E Proctor (Eds.). *Dissemination and implementation research in health: Translating science to practice*. New York: Oxford Univ. Press, 2012, pages 327-356.
- Kessler RS, Purcell EP, Glasgow RE, Klesges LM, Benkeser RM, Peek CJ. What Does It Mean to "Employ" the RE-AIM Model? Eval Health Prof. 2012
- Klesges, L.M., Estabrooks, P.A., Glasgow, R.E., Dzewaltowski, D.A. Beginning with the Application in Mind: Designing and Planning Health Behavior Change Interventions to Enhance Dissemination. Ann Behav Med 2005; 29:66-75.

Questions?

