Slide 1: Using RE-AIM to Address Health Impact Evaluation Issues
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Slide 2: 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

Slide 3: 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)


Slide 4: Internal vs. External Validity
What are the trade-offs of in maximizing internal or external validity?

Slide 5: 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

Slide 6: External Validity
A framework for closing the gap between research and practice/policy

Slide 7: 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

**Slide 8: 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


**Slide 9: Example of Applying RE-AIM Ultimate Impact of ‘The Magic Pill’**

<table>
<thead>
<tr>
<th>Dissemination</th>
<th>Concept</th>
<th>% Impacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% of Federally Qualified Health Centers Use</td>
<td>Adoption</td>
<td>50%</td>
</tr>
<tr>
<td>50% of Clinicians Prescribe</td>
<td>Adoption</td>
<td>25%</td>
</tr>
<tr>
<td>50% of Patients Accept Medication</td>
<td>Reach</td>
<td>12.5%</td>
</tr>
<tr>
<td>50% Follow Regimen Correctly</td>
<td>Implementation</td>
<td>6.2%</td>
</tr>
<tr>
<td>50% of Those Taking Correctly Benefit</td>
<td>Effectiveness</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

**Slide 10: 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

**Slide 11: RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact**

<table>
<thead>
<tr>
<th>RE-AIM ELEMENT</th>
<th>GUIDELINES AND QUESTIONS TO ASK</th>
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<tbody>
<tr>
<td><strong>REACH</strong></td>
<td>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)?</td>
</tr>
<tr>
<td>Percent and</td>
<td></td>
</tr>
<tr>
<td>representativeness of</td>
<td></td>
</tr>
<tr>
<td>participants</td>
<td></td>
</tr>
<tr>
<td><strong>EFFECTIVENESS</strong></td>
<td>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)?</td>
</tr>
<tr>
<td>Impact on key outcomes, quality of life, unanticipated outcomes and subgroups</td>
<td></td>
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Slide 12: RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (Cont)

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<td>ADOPTION</td>
<td>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?</td>
</tr>
<tr>
<td>IMPLEMENTATION</td>
<td>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?</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>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?</td>
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Slide 13: RE-AIM Guidelines for Developing, Selecting, and Evaluating Programs and Policies Intended to Have a Public Health Impact (Cont)

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Slide 14: What Evidence is Needed?

Slide 15: CONSORT diagram

Slide 16: 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
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


**Slide 17: 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

**Slide 18: 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

**Slide 19:** [Image] Screen shot of Research Tested Intervention Programs (RTIPs)

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

**Slide 20:** [Image] Screen shot of Research Tested Intervention Programs (RTIPs)

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**Slide 21:** [Image] Screen shot of Research Tested Intervention Programs (RTIPs)

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**Slide 22:** 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

Slide 23: Resources
www.re-aim.org
http://rtips.cancer.gov/rtips/index.do


Slide 24: Questions?