

Title Slide: National Cancer Institute

U.S. Department of Health and Human Services

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The Evidence Integration Triangle

Implementation Science Team, Division of Cancer Control and Population Sciences, National

Cancer Institute

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Slide 1: Rationale – Square Peg, Round Hole

- Majority of research tested programs do not translate into real world settings
- Those that do, often take an inordinately long period of time to do so

Slide 2: Research to Practice Pipeline

[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

Balas EA, Boren SA. 2000. Managing clinical knowledge for health care improvement. In: Yearbook of Medical Informatics.

Slide 3: Evidence Integration Triangle: Intervention Program/Policy

[E IT]

Intervention Program/Policy (Prevention or Treatment)

(e.g. design; key components; principles; external validity)

Circles with the words "Evidence & Stakeholders" appears in the middle of the slide.

Multi-Level Context

- Intrapersonal/Biological
- Interpersonal
- Organizational
- Policy
- Community/Economic
- Social/Environment

[Animation] [Notes]

1. Let's take look at what is needed to close this gap or chasm, and why the 'evidence-based' movement has not been sufficient to foster such dissemination.
It is all about context. And context is multi-level and all these levels need to be considered when thinking about a problem and developing or implementing an intervention.
Unfortunately, context and setting factors- although critically important, are often not considered part of the 'evidence' that is reported.
2. (After first click): Next, we have to consider the stakeholders and stakeholder engagement. The stakeholders could be a community group, clinicians, political leaders, community members, program staff, etc. With this group, the goal(s) and objectives are defined and consider the evidence.
3. (After click 2): The first component of the evidence-based triangle we need to consider is the program or policy intervention. There are a number of reviews that exist (Cochrane, Community Guide, AHRQ guidelines, etc) that outline the evidence of intervention design, key components and principles. What has, in the past, been lacking is a focus on external validity. There is still work do be done so that intervention designs include factors that make research both "rigorous and relevant" and thus far we have ignored the relevance.
4. We consider this evidence to be NECESSARY BUT NOT SUFFICIENT to produce wide scale uptake and successful implementation

Slide 4: Evidence Integration Triangle: Practical Progress Measures

[E IT]

"Intervention Program/Policy (Prevention or Treatment)" (e.g. design; key components; principles; external validity) has a bi-directional connection to "Practical Progress Measures (e.g. actionable & longitudinal measures)." Circles with the words "Evidence & Stakeholders" appears in the middle.

Multi-Level Context

- Intrapersonal/Biological
- Interpersonal
- Organizational
- Policy
- Community/Economic
- Social/Environment

[Notes] Leg two is the practical progress measures. This is how we know how well we are doing and needs to be done iteratively throughout development and implementation. But to do so, these measure must be practical so they can, like an intervention, be appropriate and relevant to the setting in which they are used. These measures are often part of CQI programs, but often those measures do not have established reliability or validity. In contrast, most of the research tools to evaluate progress are so lengthy or burdensome as to not be practical for use in applied settings. Like Evidence-based interventions, practical measure of progress are also NECESSARY BUT NOT SUFFICIENT. [end Notes]

Slide 5: Evidence Integration Triangle: Implementation Process

[E I T]

"Intervention Program/Policy (Prevention or Treatment)" (e.g. design; key components; principles; external validity) has a bi-directional connection to "Practical Measures (e.g. actionable & longitudinal measures)". "Practical Progress Measures" has bidirectional connection to "Implementation Process" (e.g. team-based science; CBPR; patient centered care). "Implementation Process" has a bi-directional connection to "Intervention (Program/Policy)". This completes the circular connection from "Intervention (Program/Policy)" to "Practical Progress Measures" to "Implementation Process" back to "Intervention (Program/Policy)". "Evidence and Stakeholders" is in the middle of the circle.

Multi-Level Context

- Intrapersonal/Biological
- Interpersonal
- Organizational
- Policy
- Community/Economic
- Social Environment

[Notes] The third leg of the triangle is the implementation process. This is really how one implements things and the evidence around the process. This has for the most part be excluded from the evidence-based focus thus far (*this will be covered more in a couple of slides*).

This is the HOW part of the triangle. Now lets look in more detail at each of these aspects of the triangle. [end Notes]

Slide 6: Intervention Program/Policy – The “What”

[E I T]

- Identify key components or theoretical principles
- Need for detailed implementation guides, lessons learned manuals
- Need to focus and report on both internal and external validity (need to add relevance to rigor)
- Most focus on treatment; less on prevention; least on policy

Green LW & Glasgow R. *Eval Health Profess*. 2006, 29: 126-53.

Rothwell, PM. *Lancet*. 2006, 365:82-93.

[Notes] This is the “what” - it is the theoretical principles and the key components of the intervention. Like context, these interventions are most often multi-level.

Researchers and practitioners need to provide detailed implementation guides and lessons learned – show what can and cannot be modified (key components)

Reiterate that we must focus on evidence that is both internally and externally valid (*for researchers, this means developing interventions that are relevant and realistic and for practitioners, this may refer*

more to evaluating an intervention on both the internal and external validity before selecting and implementing it and if it is relevant for their setting).

In terms of relevance, we need to consider the cost, value, the settings, etc. in which this intervention will be ultimately delivered. [end Notes]

Slide 7: Practical Progress Measures – the “So What”

[E I T]

Measures need to be:

- Brief and practical
- Collected longitudinally to assess progress
- Reliable and valid
- Sensitive to change
- Have national norms, easily understood and ACTIONABLE
- Culturally appropriate across groups
- Reflect multiple stakeholder perspectives

Society of Behavioral Medicine Health Policy Statement on Public Health Need for Patient Reported Measures. http://www.sbm.org/policy/patient-reported_measures.pdf

[NOTES] More specifically, measures need to be designed and selected with evidence in mind. Measures to track progress and provide feedback on progress toward goals should be... brief and practical enough to be able to be collected over time and sensitive enough to assess change (ex. Some of the best measures such as quality of life are not all that sensitive on a short term basis). [end Notes]

Slide 8: Implementation Process – The “How”

[E I T]

- Partnership and Community Based Participatory Research (CBPR) approaches¹
- Patient-centered Care Approach
- Team science in action^{2,3}
- Iterative, self-correcting

¹ Guidelines and Categories for Classifying Participatory Research Projects in Health: <http://lgreen.net/guidelines.html>

² Gray, D. O. (2008). In C. L. S. Coryn & M. Scriven (Eds.), *Reforming the evaluation of research. New Directions for Evaluation, 118, 73–87.* ³ Mâsse, LC, et al. *Am J Prev Med.* 2008; 35 (2S): S151-S160. Practical (Pragmatic) Trials: Key Contextual Characteristics

[Notes] What do we mean by this? For example, if we are talking about a primary care setting, we are talking about how patient-centered is your care. If we are talking about a community program, are you really using CBPR and partnership approaches. If we are talking about a research collaboration center, CTSI, are we really using team science principles. Or are we just paying lip service to these principles, but not actually implementing them in action.

The process needs to be iterative and self-correcting. The participants need to feel they have the permission to fail and they are not on the line. It is often through failure that we learn and correct ourselves, which, again, incorporates the need for an iterative process. And, as with the other components of the triangle, stakeholder engagement and buy-in is critical. [end Notes]

Slide 9: Evidence Integration Triangle: Current Research Focus

[E I T] [Current] This slide uses animation and each is described to convey information and function/relationships.

"Intervention (Program/Policy)" (e.g. design; key components; principles; external validity) has a bi-directional connection to "Practical Progress 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)". This completes the circular connection from "Intervention (Program/Policy)" to "Practical Progress Measures" to "Implementation Process" back to "Intervention (Program/Policy)". "Evidence and Stakeholders " is in the middle of the circle.

Multi-Level Context

- Intrapersonal/Biological
- Interpersonal
- Organizational
- Policy
- Community/Economic

The triangle displays evidence-based intervention, practical progress measures, and the implementation process.

[Notes]

1. (click) {Current image appears, the implementation process and practical measures text boxes shrink in size and the Intervention text box increases in size}: This is to demonstrate there, currently, almost all our D and I efforts are focused on the top point in the triangle-established evidence....and then often assuming that 'magic will happen' and this evidence-based intervention will somehow automatically diffuse. This is to demonstrate there, currently, is too much focus on just evidence-based interventions and little attention paid to incorporating evidence into the implementation process and measurement [End Notes]

Slide 10: Evidence Integration Triangle: The Ideal Situation

[E I T] [Ideal]

[Notes] {Ideal image appears, the three legs of the triangle even out in size}: Ideally, we need to balance out these three components more and focus our time and efforts on establishing and integrating evidence into and from each of these when designing and implementing solutions to public health problems. This is the second take home message. First is context is king, second is we need to address all three of these legs of the triangle and not only integrate the evidence into each leg but also integrate the legs with one another. [End notes]

Slide 11: Evidence Integration Triangle – Feedback Loop

Intervention (Program/Policy) (e.g. design; key components; principles; external validity) has a bi-directional connection to "Practical Progress 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 Progress Measures" to "Implementation Process" back to "Intervention (Program/Policy)". "Ongoing Partnership & Stakeholder Engagement" is in the middle of the circle.

[Notes] Like the Chronic Care Model and most models, the key is not just that this components exist and are done, but it is how they are connected that is important. Do the activities interact with one another or do they conflict? Continual feedback and two-way connection is needed. [End notes]

Slide 12: Conclusions

- The evidence-based movement was a good start, but only gets us so far
- To make greater progress, two other elements also need attention:
 - Practical MEASURES to track PROGRESS, and
 - Implementation PROCESSES that use partnership principles
 - The 3 legs of the 'EIT' are each necessary but not sufficient by themselves