

Title Slide:

Implementation Science (IS) Perspectives on Health Inequities

NCI DCCPS Implementation Science Team

[Implementation Science Website \(http://cancercontrol.cancer.gov/is/index.html\)](http://cancercontrol.cancer.gov/is/index.html)

Delivered To: NCI DCCPS Health Disparities Interest Group

January 17, 2013

Slide 1: Presentation Outline

- **Overview:** Implementation science and health inequities
- **Be Fit Be Well:** Applying RE-AIM to reduce health inequities
- **MOHR Trial:** Developing and evaluating pragmatic patient report tools

Slide 2: Implementation Science Team Mission and Priorities

BUILD: Build the Field of Implementation Science (IS)

- Stimulate an increasing number of competitive grant submissions on cancer implementation science that contribute to the development of innovative methods and study designs.
- Build science to Integrate new knowledge across clinical and public health research, practice and policy.
- Promote science that is rigorous, transparent and relevant in the real world.
- Foster rapid learning strategies to improve individual and population health.

PARTNER: Establish Robust Partnerships

- Build partnerships for the development, dissemination, and implementation of evidence-based measures, initiatives, and programs.

TRAIN: Develop Ongoing Training Networks

- Develop a robust and supportive network of trained, trans-disciplinary implementation scientists.

[IS team "About Us" website \(http://cancercontrol.cancer.gov/is/about.html\)](http://cancercontrol.cancer.gov/is/about.html)

Slide 3: Key Issues in Implementation Science

- Contextual
- Complex
- Multi-component programs and policies
- Non-linear
- Transdisciplinary
- Multi-level
- Addresses 'wicked', messy, important problems

Glasgow R & Steiner J. (2012). In Dissemination and Implementation Research. Brownson, R, Colditz, G, and Proctor, E (Eds.). Oxford University Press

Slide 4: IS approaches that may be useful

- **Models**
 - Evidence Integration Triangle
 - RE-AIM
- **Methods**
 - Pragmatic studies
 - Practical measures and outcomes
- **Measures**

[Image] Evidence-Integration Triangle showing three triangles connected by bi-directional arrows. Three triangles are (1) Intervention Program/Policy; (2) Participatory Implementation Process; (3) Practical Progress Measures. [End Image]

Glasgow RE, Green LW, Taylor MV, et al. Am J Prev Med. 2012; 42:646-54

Slide 5: Inequities- broadly defined

- By race, ethnicity, SES/class
- By age
- By geographic location- rural, etc.
- By health literacy/numeracy (and computer)
- Immigration status and years in place
- By co-morbid conditions
- Other

Slide 6: International Context

- Policy context and history as dominant factors
- Task Shifting (or disruptive innovations) examples have great relevance for doing things efficiently in low resource U.S. settings
- Influence of culture
- Media Messaging- how to frame issues ‘for the common good’

Slide 7: Taking Health Inequities into account in D&I studies

- Applying RE-AIM to the Be Fit Be Well (BFBW) Study

Slide 8: Recommended Purpose of Research (ala RE-AIM—www.re-aim.org)

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 **maintained effects** (and minimal negative impacts) at reasonable **cost**

Gaglio B, Glasgow RE. In: Brownson R, Colditz G, Proctor E, eds. Dissemination and implementation research in health: Translating science to practice. New York: Oxford University Press, 2012:327-56

Kessler R, Purcell EP, Glasgow, RE, Peek CJ, Benkeser R. What Does it Mean to Employ RE-AIM? Evaluation Health Prof. 2012 May.

Slide 9: RE-AIM—Inequity Implications

<u>RE-AIM Issue</u>	<u>Disparity</u>	<u>Overall Impact</u>
Reach	30%	70% of benefit
Effectiveness	0 (equal)	70% of benefit
Adoption	30%	49% of benefit
Implementation	30%	34% of benefit
Maintenance	30%	24% of benefit

Slide 10: Be Fit Be Well (BFBW)

24-month randomized weight loss and hypertension self-management intervention trial among low-income urban clinics.

- Pragmatic Design (based on CONSORT)
- RE-AIM used to assess and reduce disparities

[image] 365 participants were randomized into either the intervention group (n=185) or the usual care group (n=180). The Intervention group then had the option to choose either web delivery (n=73, 39%) or Interactive Voice Response/Print (n=112, 61%). [End Image].

Slide 11: Who picked the web?

- Higher education attainment
- Higher income
- Higher literacy
- Daily internet use (vs. less regular use)
- Regular internet access at home and work
- Younger age

*No Difference on race/ethnicity

Bennett et al. Obesity Treatment for Socioeconomically Disadvantaged Patients in Primary Care Practice. *Arch Intern Med.* 2012;172(7):565-574

Slide 12: Disparities and Correlation

Correlates of web engagement

- **Bachelor's degree** vs. <12th grade RR=1.15[1.03, 1.27]
- **>25k income** vs. <25K RR=1.37[1.14,1.65]
- **High health literacy** vs. low RR 1.11[1.005, 1.23]
- **Daily Internet use** vs. none RR=1.26[1.02,1.56]
- **Work internet use** vs. none RR=1.19[1.03, 1.38]

Correlates of IVR engagement

- **None**

Bennett et al. Obesity Treatment for Socioeconomically Disadvantaged Patients in Primary Care Practice. *Arch Intern Med.* 2012;172(7):565-574

Slide 13: Results

- At 24 months, intervention (Ix) participants had greater weight losses compared with those receiving usual care (difference, -1.03 kg; 95% CI, -2.03 to -0.03 kg)
- The Ix promoted larger mean weight losses in 24 months relative to usual care (AUC difference, -1.07 kg; 95% CI, -1.94 to -0.22 kg).
- Ix participants had larger mean weight losses during the 24 months compared with that in the usual care group (area under the receiver operating characteristic curve, -1.07 kg; 95% CI, -1.94 to -0.22).
- Mean systolic blood pressure was not significantly lower in the Ix arm compared with the usual care arm.

*No differences in outcomes observed for disparity related sub-groups.

Bennett et al. Obesity Treatment for Socioeconomically Disadvantaged Patients in Primary Care Practice. *Arch Intern Med.* 2012;172(7):565-574

Slide 14: Results Continued

- **Reach:** 60% of eligible population was invited to participate (604), of those 365 (60%) completed baseline and were randomized. Those that participated vs. not were younger (mean \pm SD: 54.6 vs. 58.3 years, $P=0.005$) and had a higher mean BMI (mean \pm SD: 37.0 vs. 35.8, $P<.05$), but did not significantly differ by gender or co-morbid diabetes status.
- **Effectiveness:** See previous slide.
- **Adoption:** All three centers invited participated, 4 health centers were excluded for lack of EHR system. For staff, 19 of the 20 primary care physicians (95%) referred their patients to the program.
- **Implementation:** 70.6% completion rate of counseling calls and 63.3% of participants completing more than 70% of their calls. No difference in completion by study site or participant language, but calls were significantly more likely to be completed with participants making over \$10,000 a year (73.1% vs. 62.2%, $P<0.0001$). English speakers were more likely to have goals, barriers and strategies evaluated ($P<0.0001$), as were participants making more than \$10,000 ($P<0.001$).
- **Maintenance:** Strong individual-level maintenance with no sub-group differences, but at the setting-level none of the centers maintained the program components after conclusion of the study.

Glasgow RE et al. Use of RE-AIM to Address Health Inequities: Application in a low-income community health center based weight loss and hypertension self-management program. *Translational Behavioral Medicine.* (Accepted)

Slide 15:

RE-AIM Element	Key Inequity Issues	How BFBW Design Addressed Issues
Reach	<ul style="list-style-type: none"> • Accessing disparate populations • Understanding characteristics of those who participated vs. those who declined. 	Intervention(Ix) largely mediated by phone and internet with no added visits and participant options; use of community health workers (CHW); Collected basic demographic information on people who declined participation
Effectiveness	<ul style="list-style-type: none"> • Assessing broader, patient-centered outcomes. • Understanding the impact of the context on results. • Considering Minimal Intervention Needed for Change (MINC). • Analyzing results by disparity-related subgroups 	Allowed Ix tailoring, participant choice; use of multiple channels; follow-up contacts; culturally appropriate and designed for low literacy; use of evidence-based treatment; data collection for broad array of demographics and subgroups
Adoption	<ul style="list-style-type: none"> • Documenting and enhancing participation of low resource settings and a variety of staff. • Understanding and addressing reasons for non-participation by setting/staff. 	Ix designed with staff for buy-in and used CHWs; incorporated medical adherence for MDs; used pragmatic design; made feasible in context and placed low demands on staff and resources.

Glasgow RE et al. Use of RE-AIM to Address Health Inequities: Application in a low-income community health center based weight loss and hypertension self-management program. *Translational Behavioral Medicine*. (Accepted)

Slide 16:

RE-AIM Element	Key Inequity Issues	How BFBW Design Addressed Issues
Implementation	<ul style="list-style-type: none"> • Monitoring delivery to different subgroups and by different staff. • Understanding and tracking costs of delivery. • Transparently documenting adaptations to original program. 	Provided staff training in motivational interviewing and offered certification; offered feedback on delivery and implemented self-monitoring; planned to minimize (and track) resources and costs; kept web and IVR novel and fresh
Maintenance		
Individual	<ul style="list-style-type: none"> • Assessing long-term results across subgroups and identifying 	Ongoing assessment for 2 years; addressed social environment

RE-AIM Element	Key Inequity Issues	How BFBW Design Addressed Issues
	inequities and reason <ul style="list-style-type: none"> • Providing infrastructure and links to community resources for individuals to sustain program results. 	barriers and facilitators; website remains for study participants to use.
Setting	<ul style="list-style-type: none"> • Planning for and supporting sustainability of program after initial evaluation. • Preparing delivery settings with tools to guide monitoring and adaptation of the program long term. 	Assessed, but more could have been done to increase setting-level maintenance.

Glasgow RE et al. Use of RE-AIM to Address Health Inequities: Application in a low-income community health center based weight loss and hypertension self-management program. *Translational Behavioral Medicine*. (Accepted)

Slide 17: My Own Health Report The MOHR Project*

- Pragmatic Implementation Trial: Developing and implementing a patient report tool (MOHR) for provider/patient planning and goal-setting
- What kind of pts. might this program **reach**?
- For whom can this be **effective**?
- What settings/practitioners might **adopt** this practice?
- How is this **implemented**? What parts, what contexts, what cost?
- Can this be **maintained**?

*Funded by NCI, AHRQ, and OBSSR

Glasgow RE, McKay HG, Piette JD, Reynolds KD, 2001 The Re-Aim Framework for Evaluating Interventions, *Patient Education and Counseling* 44: 119-127

Slide 18: Pragmatic Studies: Key Characteristics

- Questions from and important to stakeholders
- Multiple, heterogeneous settings
- Diverse populations
- Comparison conditions are real-world alternatives
- Multiple outcomes important to decision and policy makers

Thorpe KE et al., *Can Med Assoc J*, 2009;180:E47-57

Tunis SR et al. Practical clinical trials...*JAMA* 2003;290:1624-1632

Glasgow RE et al. Practical clinical trials...*Med Care* 2005;43(6):551-557

Slide 19: Developing MOHR

- After early identification of evidence-based items important for adult primary care, content was developed and piloted as the "Patient Health Update" 2011-2012

- MOHR tool was developed by a process of iterative crowd-sourcing:
 - Small group developed initial model for MOHR based on the Patient Health Update
 - Reviewed with changes recommended by all partners,
 - Small group made recommended changes
 - Process repeated every 2-3 weeks over several months
 - Clinic stakeholders also involved in process

Slide 20: MOHR- Key Points

- Approximately half of clinics community health centers; others AHRQ type PBRN clinics
- Designing for flexibility and adoption—e.g., varying levels of clinic integration of EHRs, different levels and modalities of decision aids
- WHAT is delivered—e.g., Automated assessment tool, feedback, goal setting materials, follow-up are STANDARD;
- HOW this is delivered is customized to setting
- Study goal = Sustainable, routine use of intervention

[image] Map of the US showing research sites in VT, VA, NC, TX, OR, and CA [end image]

Slide 21: The MOHR Project (Fall 2012 - Summer 2013)

- Nine pairs of primary care clinics (18 total): Half FQHC community health centers (NCI), half other PBRN primary care clinics (AHRQ)
 - Each clinic contributes approximately 200 patients
 - Cluster Randomized *pragmatic study*—delayed intervention control—assess at 4 and 8 months
 - Clinics selected to be diverse and at different stages of EHR implementation
 - Context assessment to be conducted
 - Key outcomes include implementation; creation of action plans; patient behavior change is secondary
 - Final protocol designed collaboratively and iteratively

Slide 22: My Own Health Report Tool

[Image] Showing an image of the checklist tool which the patient fills out this is connected by a uni-directional arrow which points to a box with the text “Database of text messages and triggers.” The database is connected to two boxes (1) Summary display and printout for patient and (2) Summary display and printout for physician. These lead to a final box, “Action Plan printout.”

Additionally the first box showing the patient completing the form is connected to a separate box that says “Report Data stored in database” which is then connected through a uni-directional arrow to a box titled “Research Analysis.”[End Image]

Slide 23: How is this relevant to health equity?

- MOHR study is pragmatic so it is:

- Diverse – Clinics selected to be different
- Contextualized-One size does not fit all
- Collaborative- Includes perspectives of all stakeholders
- Iterative-As knowledge is gained, adjustments are made to protocol
- Relevant-To real world needs, e.g., decision makers, policy-makers, practitioners, persons receiving healthcare

Slide 24: Disparities in Healthcare

- Evidence-based practices (EBP) frequently developed under traditional controlled, narrow conditions (*efficacy focused rather than effectiveness*). Traditionally...
 - Differences in research participants minimized during sampling
 - Participants with multiple health problems frequently excluded
 - Cost of adopting a practice frequently not considered
 - Language and culture may not be factored in
- When the EBP gets to the real world it may reach a very small proportion of those who need it.

IMPLICATION: Using EBP's without implementation science considerations frequently results in disparities

Slide 25:

Select Implementation Science and Health Disparities Resources

Slide 26: The Trans-NIH D&I Funding Announcement (International investigators eligible)

- R01 - PAR 13-055 (\$500k per annum up to five years)
- R03 - PAR 13-056 (\$50K per annum up to two years)
- R21 - PAR 13-054 (\$275K up to two years)
- Participating Institutes: NIMH, NCI, NIDA, NIAAA, NIAID, NHLBI, NINR, NIDDK, NINDS, NIDCD, NIDCR, NCCAM, NHGRI*, NIA* & Office of Behavioral & Social Sciences Research
- Standing review committee, Dissemination and Implementation Health Research (DIRH)
- Three submission dates per year: February, June, October

* New Institute Added to PAR in 2013

[Link to Full Announcements \(http://cancercontrol.cancer.gov/funding_apply.html#is\)](http://cancercontrol.cancer.gov/funding_apply.html#is)

Slide 27: RE-AIM Resources for assessing Health Inequities

[Image] Series of screen shots for three tools: Cancer Control P.L.A.N.E.T., RE-AIM Self-Rating quiz, and RTIPs program summary. [End Image]

Slide 28: Time for Questions

Visit Us at the [IS Team Website \(http://cancercontrol.cancer.gov/IS/\)](http://cancercontrol.cancer.gov/IS/)

Or [email us \(NCIdccpsISteam@mail.nih.gov\)](mailto:NCIdccpsISteam@mail.nih.gov)