Implementation Science (IS) Perspectives on Health Inequities

NCI DCCPS Implementation Science Team

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

Delivered to: NCI DCCPS Health Disparities Interest Group
January 17, 2013
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
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)
Key Issues in Implementation Science

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

IS approaches that may be useful

☐ Models
- Evidence Integration Triangle
- RE-AIM

☐ Methods
- Pragmatic studies
- Practical measures and outcomes

☐ Measures

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
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’
Taking Health Inequities into account in D&I studies

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


## RE-AIM—Inequity Implications

<table>
<thead>
<tr>
<th>RE-AIM Issue</th>
<th>Disparity</th>
<th>Overall Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach</td>
<td>30%</td>
<td>70% of benefit</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>0 (equal)</td>
<td>70% of benefit</td>
</tr>
<tr>
<td>Adoption</td>
<td>30%</td>
<td>49% of benefit</td>
</tr>
<tr>
<td>Implementation</td>
<td>30%</td>
<td>34% of benefit</td>
</tr>
<tr>
<td>Maintenance</td>
<td>30%</td>
<td>24% of benefit</td>
</tr>
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</table>
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
Welcome, Erica

We hope you’re enjoying Be Fit, Be Well!

Take a look at the boxes below. How are you doing so far? Are you getting close to your goals?

To enter your information, click on "Track this goal."

**Sugary Drinks**

We recommend that you avoid all sugary drinks.

Over the last 7 days, you had an average of 2 sugary drink(s) a day.

You’re near your goal! Try to cut down on sugary drinks next week.

**Walking**

We recommend that you walk 10,000 steps every day. Your goal right now is 5,000 steps a day.

Over the last 7 days, you’ve walked an average of 5,709 steps(s) a day.

You’re doing great! Keep up the good work.

**Your Medicine**

We recommend that you take your blood pressure medicine the right way every day.

It looks like you missed some days this week. Remember to enter your information on the site every day!
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
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
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
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 ± SD: 54.6 vs. 58.3 years, \(P=0.005\)) and had a higher mean BMI (mean ± SD: 37.0 vs. 35.8, \(P<0.05\)), 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.

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<th>Key Inequity Issues</th>
<th>How BFBW Design Addressed Issues</th>
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| Reach          | • 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  | • 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       | • 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. |

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<td>Implementation</td>
<td>Monitoring delivery to different subgroups and by different staff. Understanding and tracking costs of delivery. Transparently documenting adaptations to original program.</td>
<td>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</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Assessing long-term results across subgroups and identifying inequities and reason Providing infrastructure and links to community resources for individuals to sustain program results.</td>
<td>Ongoing assessment for 2 years; addressed social environment barriers and facilitators; website remains for study participants to use.</td>
</tr>
<tr>
<td>Individual</td>
<td>Planning for and supporting sustainability of program after initial evaluation. Preparing delivery settings with tools to guide monitoring and adaption of the program long term.</td>
<td>Assessed, but more could have been done to increase setting-level maintenance.</td>
</tr>
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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

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
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
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
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
**Patient Health Update**
Check the box next to your answer.

Q1: Over the past 7 days:
   a. How many times did you eat fast food meals or snacks?
      - less than 1 time
      - 1-3 times
      - 4 or more times
   b. How many servings of fruits/vegetables did you eat each day?
      - 5 or more
      - 3-4 servings
      - 2 or less
   c. How many soda and sugar sweetened drinks (regular, not diet) did you drink each day?
      - Less than 1
      - 1-2 drinks
      - 3 or more

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**Summary display and printout for patient**

**Summary display and printout for physician**

**Database of text messages and triggers**

**Action Plan printout**

**Report data stored in database**

**Research analysis**
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
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
Select Implementation
Science and Health Disparities Resources
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)
RE-AIM Resources for assessing Health Inequities

http://re-aim.org/resources_and_tools/index.html

http://rtips.cancer.gov/rtips/index.do
Visit Us at the IS Team Website
http://cancercontrol.cancer.gov/IS/

Or contact us:
NCIdccpsISTeam@mail.nih.gov