The Current State of Implementation Science: The Critical Role of Research Education

Panel Moderator: Junius Gonzales, MD, MBA

Dean Fixsen, PhD  Michael Dennis, PhD
Ken Martinez, PsyD  Jennifer Wisdom, PhD

March 23, 2015
Implementation Science

Dean Fixsen, Karen Blase, Melissa Van Dyke, Allison Metz
National Implementation Research Network
FPG Child Development Institute
University of North Carolina at Chapel Hill
A fundamental truth:

- People cannot benefit from innovations they do not experience
Implement = Use

Implementation Science = the study of factors that influence the full and effective use of innovations in practice

The goal is not to answer factual questions about what is, but rather to determine what is required
Convergence in the new millennium
1. Innovation science
2. Implementation science
3. Improvement science
4. Complexity theory
Convergence

Effective Innovations

Effective Implementation

Enabling Contexts

Socially Significant Outcomes
Convergence: Active Implementation Frameworks

- Usable Innovations
- Implementation Stages
- Implementation Drivers
- Improvement Cycles
- Implementation Teams
- Enabling Change
# Implementation Benefits

<table>
<thead>
<tr>
<th></th>
<th>Haphazard Attempts</th>
<th>Implementation On Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Competency Drivers</strong></td>
<td>5 - 15% use in practice</td>
<td>80 - 95% use in practice (coaching)</td>
</tr>
<tr>
<td><strong>Fidelity in Practice</strong></td>
<td>29% EBP outcomes if low fidelity use</td>
<td>81% EBP outcomes if use meets criteria</td>
</tr>
<tr>
<td><strong>Implementation Team</strong></td>
<td>18% fidelity with no/poor Drivers</td>
<td>83% fidelity if Drivers at criteria</td>
</tr>
<tr>
<td><strong>Training + Coaching + Fidelity</strong></td>
<td>22% staff retained 3+ yrs.</td>
<td>58% staff retained 3+ yrs.</td>
</tr>
<tr>
<td><strong>Competency + Organization Drivers</strong></td>
<td>17% sustain 6+ yrs.</td>
<td>84% sustain 6+ yrs.</td>
</tr>
</tbody>
</table>
# Implementation Science

Approaches to implementation of innovations in 376 organizations (public, private, profit, non-profit)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Usage</th>
<th>Success</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actively Lead and Support</td>
<td>8%</td>
<td>87%</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>18%</td>
<td>73%</td>
<td>16</td>
</tr>
<tr>
<td>Tell and Sell</td>
<td>37%</td>
<td>47%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>37%</td>
<td>35%</td>
<td>15</td>
</tr>
</tbody>
</table>

Nutt (2001)
# Implementation Teams

<table>
<thead>
<tr>
<th>INNOVATION</th>
<th>IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>Expert Impl. Team</td>
</tr>
<tr>
<td>Effective</td>
<td>NO Impl. Team</td>
</tr>
<tr>
<td>Effective</td>
<td>Effective use of Implementation Science &amp; Practice</td>
</tr>
<tr>
<td>Effective</td>
<td></td>
</tr>
</tbody>
</table>

- Fixsen, Blase, Timbers, & Wolf, 2001
- Saldana & Chamberlain, 2012
- Balas & Boren, 2000
- Green, 2008
Active Implementation Capacity Development – Purposeful

State Capacity Assessment: Fixsen, Duda, Blase and Horner, 2009

SMT = State Management Team
RIT = Regional Implementation Team
Convergence

GIC May 26-28, 2015
Dublin, Ireland

www.globalimplementation.org
Global Implementation Initiative

GI Society

- Legitimize implementation as a profession (practice, research, policy)

GI University

- Web-based courses, classroom discussion, residency placements

GI Conference

- Convening, sharing, energizing, collaborating
There is sufficient information to support a rapidly evolving science of implementation.

On the verge of creating a virtuous circle where evidence-based implementation practice improves implementation science that improves implementation practice ...
For More Information

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Frank Porter Graham Child Development Institute
University of North Carolina
Chapel Hill, NC

http://nirn.fpg.unc.edu/
www.scalingup.org
www.globalimplementation.org
Implementation Research: A Synthesis of the Literature


HTTP://NIRN.FPG.UNC.EDU
Get Connected!

www.scalingup.org

SISEP

For more on Implementation Science
http://nirn.fpg.unc.edu
www.globalimplementation.org
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Implementation of Evidence-Based Practices Across Systems

Michael Dennis, PhD
Institute for Translational Research in Adolescent Behavioral Health
March 23, 2015
### Typical Intra-System Service Cascade For Substance Use Identification, Referral and Treatment

<table>
<thead>
<tr>
<th></th>
<th>Screened</th>
<th>Need for SU Treatment</th>
<th>Referrals to SU Treatment</th>
<th>Initiated SU Treatment</th>
<th>Engaged in SU Treatment</th>
<th>Continuing Care in SU Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>165</td>
<td>85</td>
<td>44</td>
<td>18</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>177</td>
<td>165</td>
<td>85</td>
<td>44</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td><strong>% YES</strong></td>
<td>93%</td>
<td>52%</td>
<td>52%</td>
<td>41%</td>
<td>56%</td>
<td>50%</td>
</tr>
</tbody>
</table>

Can also examine things like:
- Timing of transition
- What they received
- Who did it
- Quality / Fidelity of what was delivered
- Health disparities in delivery

Source: An actual example from a probation department 2014 records and targets from NIDA's Juvenile Justice Translational Research on Adolescents in the Legal System (JJTRIALS).
Major Predictors of Bigger Effects
Found in Multiple Meta Analyses (Lipsey, 1997, 2005)

1. Triage to focus on the highest severity subgroup (Standardized Screening/Assessment)
2. Proactive case supervision of individual (Linkage/referral practices)
3. A strong intervention protocol based on prior evidence (Evidenced based intervention)
4. Quality assurance to ensure protocol adherence and project implementation (Monitoring/feedback)
Impact of the numbers of these Favorable features on Recidivism in 509 Juvenile Justice Studies in Lipsey Meta Analysis

<table>
<thead>
<tr>
<th>Number of favorable features</th>
<th>Distribution of programs</th>
<th>Percentage reduction in recidivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>7%</td>
<td>+12</td>
</tr>
<tr>
<td>1</td>
<td>50%</td>
<td>-2</td>
</tr>
<tr>
<td>2</td>
<td>27%</td>
<td>-10</td>
</tr>
<tr>
<td>3</td>
<td>15%</td>
<td>-20</td>
</tr>
<tr>
<td>4</td>
<td>2%</td>
<td>-24</td>
</tr>
</tbody>
</table>

This is a 36% point range with more features associated with lower recidivism

Source: Adapted from Lipsey, 1997, 2005
In practice we need a Continuum of Measurement (Common Measures)

- **Screening to Identify Who Needs to be “Assessed” (5-10 min)**
  - Focus on brevity, simplicity for administration & scoring
  - Needs to be adequate for triage and referral
  - GAIN Short Screener for SUD, MH & Crime
  - ASSIST, AUDIT, CAGE, CRAFT, DAST, MAST for SUD
  - SCL, HSCL, BSI, CANS for Mental Health
  - LSI, MAYSi, YLS for Crime

- **Quick Assessment for Targeted Referral (20-30 min)**
  - Assessment of who needs a feedback, brief intervention or referral for more specialized assessment or treatment
  - Needs to be adequate for brief intervention
  - GAIN Quick
  - ADI, ASI, SASSI, T-ASI, MINI

- **Comprehensive Biopsychosocial (1-2 hours)**
  - Used to identify common problems and how they are interrelated
  - Needs to be adequate for diagnosis, treatment planning and placement of common problems
  - GAIN Initial (Clinical Core and Full)
  - CASI, A-CASI, MATE

- **Specialized Assessment (additional time per area)**
  - Additional assessment by a specialist (e.g., psychiatrist, MD, nurse, spec ed) may be needed to rule out a diagnosis or develop a treatment plan
  - CIDI, DISC, KSADS, PDI, SCAN
Longer Measures Assess and Identify More Problems

Source: CSAT 2010 AT Summary Analytic Data Set  (n = 17,356)
Evidenced Based Treatment (EBT) that Typically do Better than Usual Practice in Reducing Juvenile Use & Recidivism

- Adolescent Community Reinforcement Approach (A-CRA)
- Aggression Replacement Training (ART)
- Assertive Continuing Care (ACC)
- Cognitive Behavior Therapy (CBT)
- Functional Family Therapy (FFT)
- Moral Reconciliation Therapy (MRT)
- Thinking for a Change (TFC)
- Interpersonal Social Problem Solving (ISPS)
- Motivational Enhancement Therapy/Cognitive Behavior Therapy (MET/CBT)
- Motivational Interviewing (MI)
- Multi Systemic Therapy (MST)
- Multidimensional Family Therapy (MDFT)
- Reasoning & Rehabilitation (RR)
- Seven Challenges (7C)

*Small or no differences in mean effect size between these brand names*
Strength of Contrast Issue from Adolescent Treatment Meta Analysis on Substance Use

- Treatment as usual and prevention no better than no treatment
- Range of interventions have effects of +.2 to .3 over none
- Going to family therapy is .4 (but only .1 to .2 over middle group)

Source: Tanner-Smith, Lipsey et al 2013
Impact of Quality Assurance: Adolescent Community Reinforcement Approach (A-CRA)

Effects associated with Coaching, Certification and Monitoring (OR=7.6)

Source: CSAT 2008 SA Dataset subset to 6 Month Follow up (n=1,961)
Community Defined Evidence

Successfully Advancing the Science of Implementation

Ken Martinez, Psy.D.
Institute for Translational Research in Adolescent Behavioral Health
March 23, 2015
Community Defined Evidence

- *CDE is a set of practices that have been found to yield positive results as determined through ongoing efforts to achieve community consensus, and which have reached a level of acceptance by service recipients despite varying degrees of empirical measurement of practice effectiveness.* (Martinez, et al. 2010; 2012)
### Ethnic/Racial Group

<table>
<thead>
<tr>
<th>Ethnic/Racial Group</th>
<th>Population</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (Non-Hispanic)</td>
<td>202.9 million</td>
<td>62.6%</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>54.7 million</td>
<td>17.1%</td>
</tr>
<tr>
<td>African American</td>
<td>41.3 million</td>
<td>13.2%</td>
</tr>
<tr>
<td>Asian American</td>
<td>1 million</td>
<td>5.4%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>4.1 million</td>
<td>1.3%</td>
</tr>
<tr>
<td>Native Hawaiian and other Pacific Islander</td>
<td>1.1 million</td>
<td>.3%</td>
</tr>
<tr>
<td>Bi/multi-racial</td>
<td>6.9 million</td>
<td>2.2%</td>
</tr>
<tr>
<td>Other Races/Ethnicities</td>
<td>19.0 million</td>
<td></td>
</tr>
</tbody>
</table>

People of Color: >128 million/331 million; Total: 39%

(US Census Bureau 2013)
The Data Says...

• People of color will be majority in U.S. by 2043
• In 10 states and DC children of color surpass 50%
• NM, CA, TX, HI and DC are “majority/minority” states...8 more states by 2020
• In CA >65% are people of color and Latinos are the plurality at 39%
• Latinos are the plurality in NM at 47%
Dynamic Ecological Model
National Implementation Research Network’s Formula for Success
California Reducing Disparities Project
Using Community Defined Evidence

– Phase 1: Strategic plan to reduce mental health disparities in five populations (African American, Asian/Pacific Islander, Native American, Latino, LGBT) by funding five Strategic Planning Workgroups to:

  – Engage communities
  – Identify promising programs and practices
  – Develop strategic plan goals and strategies to reduce disparities

– Phase 2: Implement strategic plan with the focus on validating promising practices/community-defined evidence practices and programs - $60 million/4 years
Preparing researchers and practitioners for leadership

Jennifer P. Wisdom, PhD MPH
Associate VP for Research
Professor of Health Policy
George Washington University
Agenda

• What is leadership?

• Six critical skills for leadership
What is leadership?

A leader is simply a person who motivates people to work collaboratively to accomplish great things.

**Managers** mobilize people and resources to get things done.

**Leaders** set the purpose and direction for short and long term of the unit/organization.
Six critical skills for leadership

- How to set goals and enact them
- How to run a meeting
- How to find mentors
- How to understand/apply research
- How to build a team
- How to negotiate conflict
Success what people think it looks like

Success what it really looks like
Critical Skill: How to set goals and enact them

Increasing… client outcomes
efficiency
staff relationships
customer service
revenue

Use the scientific method!
Critical Skill: How to run a meeting

Q: Is a meeting the best way to accomplish this goal?

Plan: Participants, setting, agenda, challenges
Consider pre-meetings

At the meeting: Listen
Encourage participation
Be authentic
Be positive
Stay goal oriented
Critical Skill: How to find mentors (and be one)

• Mentor is someone who takes a special interest in helping someone develop
• Characterized by mutual trust, understanding, empathy
• Multiple mentors most helpful
• Be a good protégé (prepared, responsible, loyal)
• … Ask!

Critical Skill: How to understand/apply research

- Understand Research
  - Technical aspects
  - Assumptions
  - Implications
- Translate research
  - To policy
  - To practice
- (How to make change)
Critical Skill: How to build a team

**TEAM**: A small number of people with complementary skills who are committed to a common purpose, set of performance goals, and an approach for which they hold themselves mutually accountable.”

Ground rules
Goals/Agenda
Clear roles/responsibilities
Paths for discussion/decision making (action items)
Follow-up

*Katzenbach & Smith (Harvard Business Review 2005)*
Critical Skill: How to negotiate conflict

Know which approach to use:

- Directing
  - “My way”
- Cooperating
  - “Our way”
- Compromising
  - “Halfway”
- Avoiding
  - “No way”
- Harmonizing
  - “Your way”

Credit: Catherine Morrison
Selected Resources:


Leaders…

Set purpose and direction
Motivate and inspire
Accomplish great things
Create the future
Thank you

Jennifer Wisdom PhD MPH
jpwisdom@gwu.edu
Reflections on Implementation Presentations

Institute for Translational Research in Adolescent Behavioral Health

March 23, 2015
SI = f (E, C, F)

- SI – Successful Implementation is a function (f) of
  - E - Evidence
  - C - Context
  - F – Facilitation

E, C and F each have three components

Kitson et al., 1998
EVIDENCE: research, clinical experience, client preferences

- LOW
  - Anecdotal
  - Descriptive

- HIGH
  - RCTs
  - Systematic Reviews
  - Evidence based guidelines
CONTEXT: culture, leadership, measurement

- **LOW**
  - Task driven
  - Low morale

- **HIGH**
  - Learning organization
  - Valuing people
FACILITATION: characteristics, role, style

- **LOW**
  - Inflexible
  - Sporadic

- **HIGH**
  - Consistent support
  - Range in style
Implementation Science: Future Forward

- Great opportunities for meaningful and lasting impact
- Great challenges – often related to the dynamic world
  - Resources
  - Sustainability
  - Demographic blending
  - Tensions with personalized, or now precision, science and medicine