Real World Research

We Need More Useful Research

Research needs to have more emphasis on applications and less emphasis on implications

Azrin (1977)

Kessler & Glasgow (2011)

Efficacy trials have had limited impact on practice and policy

A moratorium is proposed on such research for the next decade

We need pragmatic, transparent, contextual, and multilevel designs to produce actionable, generalizable findings that can be implemented in real-world settings

Real World Implementation

California Institute for Behavioral Health Solutions

Annual EBP Symposium 2016

Dean L. Fixsen, Karen A. Blase, & Allison J. Metz
National Implementation Research Network
University of North Carolina at Chapel Hill

Achievement Place 1967

49 Years and Counting

Teaching and Motivation Systems

Timbers, et al. (1972)

Rational Problem Solving

(Fixsen, Phillips, Phillips, & Wolf, 1973)
Leadership

(Phillips, Phillips, Fixsen, & Wolf, 1973)

Classroom Behavior

(Bailey, Wolf, & Phillips, 1970)

Actionable Research

- Operationalize effective procedures (clear descriptions of independent variables)
- Functional analyses of core intervention components (efficiently done using within-subject designs)

The Nature of Systems

We need more supportive systems

"All organizations [and systems] are designed, intentionally or unwittingly, to achieve precisely the results they get."

R. Spencer Darling

National Assessment of Education Progress (NAEP)

Churning Around a Mediocre Mean

Federal SPENDING on K-12 Education and NAEP READING Scores (Age 9)

It's not (just) the money or top-down support!
Human Service Systems

Medical error is the third leading cause of death in the USA
(Starfield, 2000; Mercola, 2001)

Prison rates in the US are the world’s highest, at 724 people per 100,000.
Half of the world’s prison population of about nine million is held in the US, China or Russia.

Human Service Systems

Legacy systems characterized by:
- Fragmentation
- Layering and Overload
- Incoherence
- Inefficiency
Decades of good ideas, optimistic claims, and faded names – “tinkering to utopia”

The Nature of Systems

“The tyranny of the status quo.”
Fritz Oser

“There is no substitute for knowledge. But the prospect of use of knowledge brings fear.”
Edward Deming

Implementation Science

Convergence in the new millennium
1. Innovation science
2. Implementation science
3. Improvement science
4. Complexity theory

Implementation factors are universal (like gravity) and apply equally to any human service sector (shared learning!)
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 (mission driven)

Formula for Success

- Effective Innovations
- Effective Implementation
- Enabling Contexts

= Socially Significant Outcomes

Evidence-based Practices

- If we use EBPs as intended, they will produce promised outcomes
- Names, claims, and attempts are not enough
- If we don’t change what we do, we cannot change our outcomes

Implementation Science

- Evidence-based implementation supports for evidence-based programs and other effective innovations!

Active Implementation Frameworks

- Usable Innovations
- Implementation Stages
- Implementation Drivers
- Improvement Cycles
- Implementation Teams
- Enabling Change
“Framework” Defined

Frameworks provide guidance for purposeful and effective action in complex human service environments

The National Implementation Research Network

Framework Benefits

- Promote the ability to generalize beyond the immediate project or initiative (e.g., smallpox)
- Enhance communication among partners (e.g., common language, common metrics, alignment of efforts)
- More easily share and apply “lessons learned” among groups

Active Implementation Frameworks

- Accountable framework components
  - WHAT to do
  - WHEN to do it
  - HOW to do it
  - WHO will do it
- Components are practical: teachable, learnable, doable, and assessable in practice
- Benchmarks and metrics for framework components are developed and available

Evidence-based Implementation

Implementation Research: A Synthesis of the Literature


HTTP://NIRN.FPG.UNC.EDU

Google NIRN

Reliable Benefits
Consistent uses of Innovations

Fidelity

- Coaching
- Training
- Selection

Leadership Drivers

- Technical
- Adaptive

Integrated & Compensatory

Systems Intervention
Facilitative Administration
Decision Support Data System
Reliable Benefits
Consistent uses of Innovations

Fidelity

Systems Intervention
Facilitative Administration
Decision Support Data System
Adaptive

Leadership Drivers

Integrated & Compensatory

Coaching
Training
Selection

Efficiency

Implementation Drivers

Implementation

Training, Coaching, Performance

<table>
<thead>
<tr>
<th>OUTCOMES</th>
<th>(% of Participants who Demonstrate Knowledge, Demonstrate new Skills in a Training Setting, and Use new Skills in the Classroom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAINING COMPONENTS</td>
<td>Knowledge</td>
</tr>
<tr>
<td>Theory and Discussion</td>
<td>10%</td>
</tr>
<tr>
<td>- Demonstration in Training</td>
<td>30%</td>
</tr>
<tr>
<td>- Practice &amp; Feedback in Training</td>
<td>60%</td>
</tr>
<tr>
<td>- Coaching in Classroom</td>
<td>95%</td>
</tr>
</tbody>
</table>

Joyce and Shers, 2008

Evidence: Quick Summary

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

Minimum of three people (four or more preferred) with expertise in:
- Innovations
- Implementation
- Organization change
- Tolerate turnover; teams are sustainable even when the players come and go (Higgins, Weiner, & Young, 2012; Patras & Klest, 2015)

Implementation Team

<table>
<thead>
<tr>
<th>Implementation Team</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection</td>
<td>1.44</td>
<td>2.06*</td>
<td>1.88*</td>
</tr>
<tr>
<td>Training</td>
<td>1.33</td>
<td>1.50*</td>
<td>1.10</td>
</tr>
<tr>
<td>Coaching</td>
<td>1.27</td>
<td>1.73*</td>
<td>1.83*</td>
</tr>
<tr>
<td>Perf. Assessment</td>
<td>0.78</td>
<td>1.34</td>
<td>2.00*</td>
</tr>
<tr>
<td>DSDS</td>
<td>0.18</td>
<td>1.36</td>
<td>2.00*</td>
</tr>
<tr>
<td>Fac. Administration</td>
<td>1.38</td>
<td>2.06*</td>
<td>2.06*</td>
</tr>
<tr>
<td>Systems Intervention</td>
<td>1.38</td>
<td>1.86*</td>
<td>2.06*</td>
</tr>
<tr>
<td>Average Composite Score</td>
<td>1.1</td>
<td>1.68*</td>
<td>1.83*</td>
</tr>
<tr>
<td>Fidelity (% of cases)</td>
<td>18%</td>
<td>83%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Balas & Boren, 2000
Timbers, & Wolf, 2001
Green, 2008
Saldana & Chamberlain, 2012
Solutions to Problems

Frameworks provide guidance for purposeful and effective action in complex human service environments

The National Implementation Research Network

Identify Solutions

High fidelity and poor outcomes
- Improve the innovation

Low fidelity and poor outcomes
- Improve implementation Drivers

Low fidelity and good outcomes
- Identify the usable innovation and improve the fidelity measure

Functional Family Therapists (WSIPP)

% Recidivism

Highly Competent & Competent Therapists
N=12; 204 Families
13% Recidivism

Borderline & Not Competent Therapists
N=13; 223 Families
28% Recidivism

Identify Solutions

Leadership
- Commitment to effective innovations
- Commitment to implementation supports
- Modify roles, functions, structures
- Assure knowledge, skills, and abilities for practitioners and implementation specialists
- Commit to trial and learning; involvement of & feedback from staff, frequent use of data

Facilitative Administration
- Scheduling timely and competent coaching and fidelity assessments (multiple staff; individual timeframes)
- Meeting agendas (5 minutes for problem; 40 minutes for solutions; 10 minutes for assignments)
- Maximizing practitioner contact with recipients (reduce paperwork & admin.)
Usability Testing
- A planned series of tests of an innovation or of implementation processes.
- Use proactively to test the feasibility and impact of a new way of work prior to rolling out the innovation or implementation processes more broadly.

More is learned from 4 cycles with 5 participants each than from 1 pilot test with 20 participants.

Improvement Cycles
- Plan: What do you intend to do?
- Do: Can you do it in practice?
- Study: Did you do it? What happened?
- Act: How can the problems be fixed?
- Cycle: Prepare a new plan; go again.

Shewart (1931), Deming (1986)

Meta-analysis N=73 Improvement Studies
- Plan: 100%
- Do: ???
- Study: 15%
- Act: 14%
- Cycle: 19%

Taylor et al. (2014)

Teaching-Family Site Development
Phillips, Baron, Blase, Fixsen, and Maloney (1975)

1975 - Present

Implementation & Outcome
Fixsen, Phillips, et al. (1985)

N = 41 Group Homes at Boys Town (152 Couples)
**Implementation Quotient**

0 = Practitioner position vacant  
1 = Practitioner hired, untrained  
2 = Practitioner completed initial training  
3 = Practitioner trained + receives weekly coaching  
4 = Practitioner meets fidelity criteria this month  
5 = Practitioner met fidelity criteria 10 of past 12 mos.

Add up the scores across all of the intended practitioners for the effective innovation and divide by the number of positions devoted to that innovation.

---

**Implementation Team**

- Multiple effective innovations (EBPs)  
- Active Implementation Frameworks = Common approaches to supporting each innovation effectively and efficiently  
- Appropriate Stage-based supports  
- Finding commonalities (e.g. relationship development, motivation, problem solving)

---

**Alberta Community Services**

- Receiving home  
- Treatment foster care  
- Transitional living program  
- Home based treatment  
- Family resource centers

---

**Fidelity for Sustainability**

Existing System

Existing System Is Changed To Support The Effectiveness Of The Innovation

Effective Innovation

---

**Implementation for a Change**

Invent a new future for human services  
- Stop wasting time and money on things that don’t work (and never have!)  
  - Sugai’s Law: For every new initiative, stop two (ineffective or harmful) current ones.  
  - De-scale: Avoid layering and fragmentation  
- Set aside 20% of funds for implementation  
- Require regular reports of fidelity data

---

**Implementation Infrastructure**

- New/repurposed roles, functions, and structures in human service systems  
- Active Implementation Frameworks in support of developing linked Implementation Teams  
- Active Implementation Frameworks in support of using effective innovations as intended (fidelity; good outcomes)
Wexelblatt’s Algorithm

Major restructuring efforts are politically challenging because the benefits of change often do not appear for several years, but the costs are immediate.

Rhim et al., 2007

Learning Organizations

- **Able to learn from their own experience**
  - **Action:** Modify their structure and design to reflect that they have learned
- **Staff and organizational elements are multiskilled**
  - **Action:** Systematically detect and correct errors arising in other parts of the system
- **System has the capacity to search for errors and faulty operating assumptions**
  - **Action:** Make changes needed to defragment and align functions within the system

Contribute!

**GIC | Global Implementation Conference**

**GIC 2017**
June 19-21 Toronto Canada

[www.globalimplementation.org](http://www.globalimplementation.org)

Implementation Science

**Implementation Research: A Synthesis of the Literature**


For More Information

**Allison Metz**
allison.metz@unc.edu

[http://nirn.fpg.unc.edu/](http://nirn.fpg.unc.edu/)
[www.scalingup.org](http://www.scalingup.org)

Get Connected!

[www.scalingup.org](http://www.scalingup.org)

@SISEPcenter