Implementation outcomes

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2011 National Child Welfare Evaluation Summit
Washington DC
August 2, 2011
Key question in evaluating evidence-based practice implementation

- How to conceptualize and measure success of implementation processes and their impact on service delivery

- Implementation outcomes need to be identified and assessed, distinct from client clinical outcomes
Why distinct implementation outcomes?

When services are unsuccessful, is failure due to:

– Services didn’t work (service or treatment failure)?
– Services or treatments were not implemented well (implementation failure)?
– Could have an effective treatment, poorly implemented
– Could have an ineffective treatment, successfully implemented
Conceptual Model: three types of outcomes

What?
- QIs
- EBP

How?
- Implementation Strategies

Implementation Outcomes
- Feasibility
- Fidelity
- Penetration
- Acceptability
- Sustainability
- Uptake
- Costs

Service Outcomes*
- Efficiency
- Safety
- Effectiveness
- Equity
- Patient-centeredness
- Timeliness

Clinical Outcomes
- Satisfaction
- Function
- Symptoms

*IOM Standards of Care

Proctor et al 2009 Admin. & Pol. in Mental Health Services
Implementation Outcomes

State of field*:
- Widely varying constructs used, including clinical outcomes
- Lack of detail regarding constructs
- Unit of analysis errors
- Poor measurement quality

*Grimshaw et al., 2006
Types of outcomes evaluated in IR

**Implementation Outcomes**
- Acceptability
- Adoption
- Appropriateness
- Costs
- Feasibility
- Fidelity
- Penetration
- Sustainability

**Service Outcomes***
- Efficiency
- Safety
- Effectiveness
- Equity
- Patient-centeredness
- Timeliness

**Client Outcomes**
- Satisfaction
- Function
- Symptomatology

*IOM Standards of Care
Our scan of implementation outcomes & their measurement

<table>
<thead>
<tr>
<th>Outcomes</th>
<th># Measurement Approaches or Tools</th>
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</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>40</td>
</tr>
<tr>
<td>Adoption</td>
<td>27</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>10</td>
</tr>
<tr>
<td>Feasibility</td>
<td>10</td>
</tr>
<tr>
<td>Fidelity</td>
<td>14</td>
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<tr>
<td>Penetration</td>
<td>4</td>
</tr>
<tr>
<td>Sustainability</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>113</td>
</tr>
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</table>
Studies in SUD measuring implementation outcomes

*Glass et al. 2010
Measurement: Fidelity

Typically multiple item, Likert measures
Summed up scale yields continuous measure of fidelity, often dichotomized

Assessment via:
Self-report (e.g., of components delivered)
Face-to-face or telephone interviews
Observation by research teams
Psychometric validation of many, most scales
Fidelity Measurement: Dartmouth Assertive Community Tx Scale*

Excellent psychometric properties.

Licensed measure in the public domain and is included in SAMHSA’s ACT toolkit.

http://store.samhsa.gov/shin/content//SMA08-4345/EvaluatingYourProgram-ACT.pdf

*Teague and colleagues’ (1998) for scale

* McHugo (2007) for its use by SAMHSA in a national EBP project.
Measurement: Acceptability

Typically brief (10-20 item) Likert scales summarized and dichotomized (Karlsson and Bendtsen (2005)).

Administered via interview & questionnaires, trending toward online administration.
Acceptability: Evidence Based Practice Attitude Scale (EBPAS)*

15-items, 5-point Likert scale (Aarons, 2004)

One factor, four subscales:

- Appeal (intuitive appeal of EBPs),
- Requirements (likelihood of adopting EBPs when required),
- Openness (to new practices),
- Divergence (between research-based/academically developed interventions and current practice).

Properties: subscales ranging from .91 to .67; total scale coefficient of .74 (Aarons et al., 2010).
Measurement: Feasibility

• Rarely directly measured
• Often inferred or judged by researchers
  – Program may be deemed feasible if highly rated on other implementation outcomes (acceptability)
• Often inferred retrospectively on basis of burden
  – Program, screener, or treatment may require too much time
Measurement: Adoption

Dichotomous measure:
- is intervention being used? (Henggeler et al, 2008)

Continuous measures of adoption:
- adding number of program components adopted (Li, Simon, Bodenheimer, Gillies, Casalino, & Shortell, 2004).
- considering adoption intent.

Consistent with transtheoretical model of behavior change (stages of change).

Little psychometric evaluation
Adoption: McGovern et al readiness to adopt

1 – We are not interested and do not think this practice would be effective in our program.
2 – We have considered this practice but see many pros and cons.
3 – We are leaning in the direction of adopting this practice in our program.
4 – We have just begun to implement this practice in our work.
5 – We have been using this practice and efforts are in place to maintain it.

Key issue: spread

To what scale are we implementing evidence-based practices?

Early research stuck on:
- Early adopters
- One EBP at a time
- Small numbers
- Favorable contexts

Penetration and reach can reflect ‘spread”
Measurement: Penetration

- Reflects “depth” of implementation in target sites
- Measured as a proportion
  - \# sites within agency adopting an EBP/
    \# agency sites exposed to EBP
  - \# of providers delivering the EBP /
    \# of providers trained
  - \# of providers' cases receiving the EBP /
    \# eligible clients served by provider
Measurement: Reach (RE-AIM)

Reflects “participation” in an EBP

Measured as a proportion

- # of persons receiving the EBP / # of persons in population who would benefit from the EBP

*Individual characteristics important:

- Is numerator representative of the population who needs it?
Key issue: how do we sustain service improvement?

Return on investment in testing and implementing EBPs requires some capacity to sustain........

Groups with an “ROI” concern:
- Research funders
- Administrators
- Treatment developers
- Communities who participate in research

Yet little measurement of sustainability, once improvements are introduced in care
Questions around sustainability

What factors are associated with sustainability?

What does sustainability mean?
   Continued use of an EBP?
   Continued capacity to deliver evidence-based care (even if the EBP is changed)

How long should an EBP be implemented?
   “life cycle” of an EBP
   “expiration” dates
   Sustainability “curves”
      Crowd out, flame out, burn out, ramp up?
Implementation outcomes:

Multiple stakeholders, with multiple perspectives

- service consumers
- families
- providers
- administrators
- funders
- legislators
Implementation Outcomes: Moving the field forward

Consistent terminology needed
Clear referent of “what” is being evaluated
   one EBP, the implementation approach, several new Tx’s at once
Specify level of analysis
Test and report measurement properties
Assess salience of outcomes to stakeholder groups
Model interrelationships among outcomes
   Among implementation outcomes
   Between IO’s, service outcomes, client outcomes
Acknowledgments


Glass, J., Powell, B.A., Bunger, A.C., Santens, R., & Proctor, E.K. Implementation Outcomes in Specialty Substance Use Disorder Treatment Research
THANKS!

Question?

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