Housekeeping

- All participants will be muted
- Enter all questions in the Zoom chat box and send to All Panelists and Attendees
- Moderator will review questions from chat box and ask them at the end
- Want to continue the discussion? Look for the associated podcast released about 2 weeks after Grand Rounds.
- Visit impactcollaboratory.org
- Follow us on Twitter: @IMPACTcollab1
- LinkedIn: <u>https://www.linkedin.com/company/65346172</u> @IMPACT Collaboratory



Implementation Outcomes: their role in treatment success

Enola Proctor, PhD

November 2020



Disclosure Enola Proctor Shanti K. Khinduka Emeritus Distinguished Professor

Relevant Financial Relationships:

Salaried professor emeritus at Washington University in St. Louis Research funded by the NIMH, NHLBI, NCATS

Co-author of and receives royalties for a text, *Dissemination and Implementation Research in Health, second edition*, Oxford University Press based on sales

Occasional speaker fees from Universities and scientific/professional societies

Nonfinancial

Reviewer for several peer-reviewed journals







Phases of Clinical Research





National Research Council and Institute of Medicine, 2009, p. 326



Conceptual Model of Implementation Research





Proctor et al. (2009). Administration and Policy in Mental Health and Mental Health Services Research, 36, 24-34.

Session outline



- What are implementation outcomes and why are they important?
 - Distinction from clinical & service system outcomes
 - Measurement resources
- Conceptual and methodological challenges
- Research priorities



Implementation Outcomes

WHAT ARE IMPLEMENTATION OUTCOMES & WHY ARE THEY IMPORTANT?







Dissemination and Implementation Research in Health PAR # 18-007

Primary purpose: identify, understand, & develop

- Strategies for the:
 - Adoption, adaptation, integration, scale-up,& sustainability----these are implementation outcomes
- Of EB interventions, tools, policies, & guidelines



From PAR 18-007



- Dissemination research outcomes:
 - -spread and sustain knowledge
 - -reach many different stakeholders
- Implementation research outcomes:
 - adopt and integrate evidence-based health interventions into clinical and community settings
 - -adoption, implementation and sustainability



10

Why Focus on Distinct Outcomes in D&I Research?

Could have an effective intervention:

- -Information never reaches potential users
- -Information poorly understood
- -Poor delivery
- -Poor reach in relevant health systems
- -Implemented but with poor fidelity
- -Not sustained





Implementation Outcomes

Adm Policy Ment Health (2011) 38:65–76 DOI 10.1007/s10488-010-0319-7

ORIGINAL PAPER

Outcomes for Implementation Research: Conceptual Distinctions, Measurement Challenges, and Research Agenda

Enola Proctor · Hiie Silmere · Ramesh Raghavan · Peter Hovmand · Greg Aarons · Alicia Bunger · Richard Griffey · Melissa Hensley

- Acceptability
- Adoption
- Appropriateness
- Feasibility

- Fidelity
- Implementation cost
- Penetration
- Sustainability



Implementation Outcomes (examples from NIH funded research studies)

WHAT IS THE DISTINCTION FROM CLINICAL & SERVICE SYSTEM OUTCOMES?





Evidence-based intervention/ program/guideline	Implementation outcomes	Service system outcomes	Clinical outcomes	NIH study (PI, University)
Rapid ART initiation for pregnant mothers for PMTCT of HIV	Acceptability, Feasibility, Cost-effectiveness	Rate of retention in care through 6mo	Viral suppression at time of delivery; MTC transmission at 6mo post-partum;	R01 HD074558 (Abrams, E.; Columbia University)
Mobile computer-based video intervention to increase HIV testing rates in ED	Acceptability, Feasibility	None specified	Post-intervention HIV testing rate (RCT; 4 groups)	R34 DA037129 (Aronson, I.; National Development and Research Institutes)
Tobacco use treatment guidelines	Fidelity, Cost, Organizational readiness to implement change, Provider adherence to guidelines	None specified	Smoking abstinence at 6mo	R01 CA175329 (Shelley, D.; NYU School of Medicine



Evidence-based intervention/ program/guideline	Implementation outcomes	Service system outcomes	Clinical outcomes	NIH study (PI, University)
Cognitive Processing Therapy for PTSD	Fidelity, adaptation, penetration	Capacity to deliver CPT	PTSD symptom change	R01 MH106506 (Wiltsey Stirman, S.; Palo Alto Veterans Institute for Research
SafeCare w/Technological Enhancement (compared with SafeCare as usual)	Feasibility, Acceptability, Fidelity	Perceived job demands & resources	Parent and child behavior change, Client satisfaction	R21 MH098244 (Self- Brown, S.; Georgia State University)
FAST TB Transmission Control in Hospitals	Acceptability, Barriers to use, Cost, Cost- effectiveness, Reach, Adoption	None specified	Reduction in hospital worker TB infections; Reduced time to treatment	R01 AI112748 (Nardell, E.; Brigham & Women's Hospital)



Hybrid Effectiveness-Implementation Designs



Effectiveness-implementation Hybrid Designs Combining Elements of Clinical Effectiveness and Implementation Research to Enhance Public Health Impact

Geoffrey M. Curran, PhD,* Mark Bauer, MD,† Brian Mittman, PhD,‡ Jeffrey M. Pyne, MD,* and Cheryl Stetler, PhD‡







Outcomes will vary by design

Design type	Clinical outcomes	Implement outcomes
Hybrid One	Priority	Secondary
Hybrid two	Equal Focus	Equal Focus
Hybrid three	Secondary	Primary



Implementation Outcomes

MEASUREMENT RESOURCES





SHORT REPORT

CrossMark



Measurement resources for dissemination and implementation research in health

Borsika A. Rabin^{1,2*+}, Cara C. Lewis³⁺, Wynne E. Norton⁴, Gila Neta⁴, David Chambers⁴, Jonathan N. Tobin⁵, Ross C. Brownson^{6,7} and Russell E. Glasgow²

Martinez et al. Implementation Science 2014, 9:118 http://www.implementationscience.com/content/9/1/118



DEBATE

Open Access

Instrumentation issues in implementation science

Ruben G Martinez^{1*}, Cara C Lewis^{2,3} and Bryan J Weiner⁴



Implementation Scier

SYSTEMATIC REVIEW

Quantitative measures of health policy implementation determinants and outcomes: a systematic review

Peg Allen^{1*}⁽ⁱ⁾, Meagan Pilar¹, Callie Walsh-Bailey¹, Cole Hooley², Stephanie Mazzucca¹, Cara C. Lewis³, Kayne D. Mettert³, Caitlin N. Dorsey³, Jonathan Purtle⁴, Maura M. Kepper¹, Ana A. Baumann⁵ and Ross C. Brownson^{1,6}

Lewis et al. Implementation Science (2015) 10:155 DOI 10.1186/s13012-015-0342-x



Open Access

CrossMark

SYSTEMATIC REVIEW

Outcomes for implementation science: an enhanced systematic review of instruments using evidence-based rating criteria

Cara C. Lewis^{1,2*}, Sarah Fischer¹, Bryan J. Weiner³, Cameo Stanick⁴, Mimi Kim^{5,6} and Ruben G. Martinez⁷





Open Acce



SIRC Instrument Review Project



Instrument Review Project

The SIRC Instrument Review Project: A Systematic Review of Dissemination and Implementation Science Instruments

Video of Instrument Review Taskforce at SIRC 2011 Power Point Presentation from ABCT SIRC_IRP Update_2013 (video of full presentation coming soon).

Exciting advances have been made in the field of dissemination and implementation (D&I). However, much like the science-practice gap that motivates our field, a communication gap exists among stakeholders at the forefront of this work. Measurement issues have slowed the progression of the field of D&I given the laborious process of systematically developing psychometrically sound yet feasible and cost-effective ways to assess our efforts. The lag that occurs between initial development, implementation, and then publication delays the process further, resulting in instances in which independent research teams are devoting considerable resources to unnecessarily redundant work. As a consequence, progress toward the development of commonly used instruments has been very slow, limiting the extent to which researchers have access to and are able to

Iser	
Password	
	6 Paramakan ma

Looking ahead to SIRC 2015

Thank you for your interest in the Seattle Implementation Research Collaborative.

www.seattleimplementation.org/sirc-projects/sirc-instrument-project/

Instrument Review Project



Aim:

To develop conduct an enhanced systematic review of instruments and synthesize the knowledge for the field of D&I





Implementation Outcomes

CONCEPTUAL AND METHODOLOGICAL CHALLENGES





Complexity of Implementation

"IT'S ALL ABOUT CONTEXT"





Multiple-levels of Context







Context is addressed	Context is multilevel Contextual factors measured & analyzed
Outcomes	Multiple types Interrelated
Two interventions	EBI being implemented Implementation strategy Complex intervention
Change process	Rarely linear Adaptation typical





How does context affect the salience of implementation outcomes?



- Feasibility
- •Cost
- Acceptability
- Fidelity
- Sustainment



Complexity of Implementation

SEQUENCED, ITERATIVE, DYNAMIC





Studying complex change processes



- Multi-component, multi-level interventions (delivery system intervention, health promotion program) varying across time and place targeting
- Multiple, changing processes (human behavior, organizational structures and processes) to achieve
- Multiple, varying, (often) competing goals (social outcomes, organizational, societal goals) within
- Dynamic, heterogeneous settings
- Weak main effects, dominance of contextual factors



Unit of analysis & salience by phase

Implementation outcome	Unit of analysis referent	Salience to phase
Acceptability	Individual provider Individual health user (pt)	Early, ongoing
Adoption	Individual provider Organization or health setting	Early to mid
Appropriateness	Individual provider Individual health user Organization or setting	Early (prior to adoption)
Fidelity	Individual provider	Early, mid, over time (drift)
Implementation cost	Provider Organization or health setting	Early, mid, late



Washington University in St. Louis BROWN SCHOOL 31 Complexity of Implementation

TENSION: LOCAL VS. GENERALIZED





Implementation Science within implementation complexity

Science	Complex change
Standardization	Variation
Generalizability	Local
Identifiable patterns	Dynamic
Predictability	Iterative, cyclical





Measurement Challenges & Implementation Outcomes

- Data source
 - -Self-report
 - Open ended, structured taxonomy
 - -Observation
 - -Archival records
 - No procedure codes
 - Meeting notes
- Perspective
 - -Multiple actors





Measurement data sources

Implementation outcome	Data sources
Acceptability	Surveys Interviews Observation
Adoption, scale up, sustainability	Records of use
Appropriateness	Surveys, interviews, observation
Fidelity	Observation Checklists
Implementation cost	Time logs Budget data



Implementation Outcomes

ROLE OF IMPLEMENTATION OUTCOMES IN RESEARCH STUDIES





Current project: scoping review of implementation outcomes research



- Assess degree to which implementation outcomes have been examined in the literature
 - -What outcomes are most frequently studied?



Current project: scoping review of implementation outcomes research

- Assess extent to which context is addressed in implementation outcomes research
 - -clinical populations
 - -settings



Current project: scoping review of implementation outcomes research

- Examine implementation outcomes studied in relation to;
 - -Evidence-based interventions and programs
 - -Implementation strategies employed



Current project: scoping review of implementation outcomes research

- Capture research design features of IO research
- What research questions are addressed?
 - -How to attain IO's (DV)?
 - -Effect of IO's (IV)
 - -Interactions among IO's
- Capture rigor of research

-study designs used, data collection and measurement decisions.



Value added of successful Implementation





Adapted from Proctor et al., 2011

What We Know About Implementation Outcomes

- Fidelity = most frequently measured outcome
- Provider attitudes frequently assessed
- Implementation outcomes are interactive:
 - -Effectiveness

greater acceptability

- -Cost _____ feasibility
- We don't know much about:
 - -Sustainability
 - -Scale up and spread





Fidelity: changing views



- Prior to 1970, fidelity of implementation assumed:
 - implementers would copy or imitate the innovation exactly as earlier adopters had used it (<u>Rogers, 2003</u>).
 - This assumption was made because adopters were "considered to be rather passive acceptors of an innovation, rather than active modifiers of a new idea" (<u>Rogers, 2003</u>, p. 180).
- By 2000, apparent that adopters adapt innovations to local needs
 - Fidelity recognized as variable, and a potential threat to Tx quality and effectiveness



Fidelity: widely studied

- 550+ articles in IS
- 39 in ISC, 10 months of publication
- 375 in Admin Pol MH Serv Res
- 7,221 in APA journals, including 58 in 2020

Original Paper | Published: 05 November 2019

Assessing the Fidelity of Evidence-Based Practices: History and Current Status of a Standardized Measurement Methodology

Gary R. Bond 🖾 & Robert E. Drake

Administration and Policy in Mental Health and Mental Health Services Research **47**, 874–884(2020) Cite this article

416 Accesses 9 Citations 7 Altmetric Metrics







Implementation outcomes: which matter, when, to whom?

Successful implementation as a "portfolio" of factors, including

- · effectiveness of the intervention, and
- implementation outcomes

I = (*f*) *E* (*EST*) + *IO*'s



Situation A



Evidence-based intervention treatment =

➢Highly effective

➢Very costly

Mildly acceptable to key stakeholders

≻Low in sustainability.

potential implementation success =

f of effectiveness (high) + acceptability (low) + cost (high) + sustainability low



Situation B



Evidence based intervention moderately effective but highly acceptable to stakeholders because current care is poor, the treatment is inexpensive, and current training protocols ensure high penetration through providers.

Potential implementation success (I) =

f of treatment effectiveness (moderate) + acceptability (high) + cost (low) + penetration (high)



Tips for investigators: Implementation outcomes should



- Be relevant:
 - justified in terms of a pressing service system problem (the quality gap, current levels of uptake of the EBI tested)
- Derive from guiding conceptual model/ framework – Help inform mechanisms or process of practice change
- Correspond to the phase of implementation
- Be assessed within context
- Measured robustly (qualitative or quantitative)
- Be linked to any more distal outcomes to be measured



Scientific priorities for dissemination and implementation science



- More complete uptake of evidence-based interventions
- De-implementation of ineffective or suboptimal care
- Scale up & spread of effective interventions across health plans, systems, and networks
- Implementation of genomic testing into practice
- Sustainability/adaptation of effective practices in a changing health care context





Establish your footprint toward the field through prior publications and studies

- The evidence-based "what" to be implemented
 - Intervention (policy research)
- The quality gap
- The population
- The setting



Training Opportunities







Types of Influence:

- Adoption of curriculum & mentorship model
- IRI trainees become trainers
- Shared core faculty
- Use of evaluation metrics





Enola K. Proctor <u>ekp@wustl.edu</u>

Twitter: @enola_proctor



Washington University in St. Louis BROWN SCHOOL

Thank You!





Washington University in St. Louis BROWN SCHOOL