WASHINGTON UNIVERSITY IN ST.LOUIS
Institute of Clinical and Translational Sciences

DIRC | **Implementation Outcomes Toolkit**

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Overview

Implementation outcomes are "the effects of deliberate and purposive actions to implement new treatments, practices, and services."[1] These outcomes are used as indicators of implementation processes and success, and are also often employed as intermediate outcomes in health services and clinical outcome effectiveness research.[1] This toolkit reviews outcomes commonly used in implementation research, offers guidance on choosing which implementation outcomes to include in your study, and provides resources for additional learning.

Objectives

This toolkit is designed to help further your understanding of implementation outcomes, and to help you identify those outcomes and corresponding measures that are most relevant to your research.

What's Inside

Inside this toolkit, you will find outcome definitions, recommended search strategies for identifying measures of implementation outcomes, and resources for further study.

Acceptability: Extent to which implementation stakeholders perceive a treatment, service, practice, or innovation to be agreeable, palatable, or satisfactory.

Adoption: Intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption may also be called "uptake."

Appropriateness: Perceived fit, relevance, or compatibility of the innovation or evidence-based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation or evidence-based practice to address a particular issue or problem.

Cost: Financial impact of an implementation effort. May include costs of treatment delivery, cost of the implementation strategy, and cost of using the service setting.

Feasibility: Extent to which a new innovation or practice can be successfully used or carried out within a given agency or setting.

Fidelity: Degree to which an intervention or implementation strategy was delivered as prescribed in the original protocol or as intended by program developers. May include multiple dimensions such as content, process, exposure, and dosage.

Penetration: Extent to which an innovation or practice is integrated within a service setting and its subsystems.

Sustainability: Extent to which a recently implemented practice is maintained and/or institutionalized within a service setting's ongoing, stable operations.

[1] Definitions adapted from Proctor et al. (2011) and SIRC Instrument Repository System (http://www.societyforimplementationresearchcollaboration.org/)

There are several factors to consider when choosing which implementation outcome(s) to include in your study. Your choice of outcome may be influenced by: a) the specific barriers to implementation you have observed, b) the novelty of the evidence-based practice you are trying to implement, c) the setting in which implementation is taking place, and d) the resources for and quality of usual training for implementation. In addition, Proctor et al. (2011) suggest that your current stage of implementation and your unit of analysis can inform your choice of implementation outcomes. For example, acceptability may be more appropriate to study during early implementation and sustainability may be more appropriately measured later in the implementation process. However, we have not yet identified empirical studies that explain which outcomes are best suited for different types of studies.

Definitions

Implementation Outcome	Other Terms	Example Articles with Measures
Acceptability	• satisfaction	• Van Schaik, P., Bettany-Saltikov, J. A., & Warren, J. G. (2002). Clinical acceptance of a low-cost portable system for postural assessment. *Behaviour & Information Technology*, *21*(1), 47-57. • Haddad, M., Walters, P., & Tylee, A. (2007). District nursing staff and depression: a psychometric evaluation of Depression Attitude Questionnaire findings. *International journal of nursing studies*, *44*(3), 447-456.
Adoption	• uptake • utilization • initial implementation • intention to try	• Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). *Mental health services research*, *6*(2), 61-74.
Appropriateness	• perceived fit • relevance • compatibility • suitability • usefulness • practicability	• Sheppard, M., McDonald, P., & Welbourne, P. (2010). The Parent Concerns Questionnaire and Parenting Stress Index: comparison of two Common Assessment Framework-compatible assessment instruments. *Child & Family Social Work*, *15*(3), 345-356.
Cost	• marginal cost • cost-effectiveness • cost-benefit	• Mdege, N. D., Chindove, S., & Ali, S. (2012). The effectiveness and cost implications of task-shifting in the delivery of antiretroviral therapy to HIV-infected patients: a systematic review. *Health policy and planning*, czs058.
Feasibility	• actual fit or utility • suitability for everyday use • practicability	• Roth, M. T., Watson, L. C., Esserman, D. A., Ivey, J. L., Hansen, R., Lewis, C. L., & Weinberger, M. (2009). Methodology of a pilot study to improve the quality of medication use in older adults: Enhancing Quality in Psychiatry Using Pharmacists (EQUIPP). *The American journal of geriatric pharmacotherapy*,*7*(6), 362-372. • Galukande, M., Kaggwa, S., Sekimpi, P., Kakaire, O., Katamba, A., Munabi, I., ... & Luboga, S. (2013). Use of surgical task shifting to scale up essential surgical services: a feasibility analysis at facility level in Uganda. *BMC health services research*, *13*(1), 292.
Fidelity	• delivered as intended • adherence • integrity • quality of program delivery	• Cross, W., West, J., Wyman, P. A., Schmeelk-Cone, K., Xia, Y., Tu, X., ... & Forgatch, M. (2015). Observational measures of implementer fidelity for a school-based preventive intervention: development, reliability, and validity.*Prevention Science*, *16*(1), 122-132.
Penetration	• level of institutionalization • spread • service access	• Langabeer 2nd, J. R., & Worthington, D. J. (2009). Operations research diffusion in health care management. *Journal of health care finance*, *36*(3), 73-87.
Sustainability	• maintenance • continuation • durability • incorporation • integration • institutionalization • sustained use • routinization	• Luke, D. A. (2014). The Program Sustainability Assessment Tool: a new instrument for public health programs. *Preventing chronic disease*, *11*.

The following tables provide a template for conducting database searches to identify literature and measures for each implementation outcome. Please note that databases differ in their use of Boolean operators. It is important to follow individual database guidelines to ensure a thorough search. Databases of interest: PsycINFO, Social Work Abstracts, Medline, CINAHL Plus

Acceptability

Terms	acceptab* AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment"

Adoption

Terms	Adoption OR uptake AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment"

Appropriateness

Terms	Appropriateness OR "perceived fit" OR relevance AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment"

⊹ Cost

Terms	cost* AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR" empirically supported treatment" OR "implementation strategy"

Feasibility

Terms	feasibility AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment" AND measure OR scale OR assessment

Fidelity

Terms	Fidelity OR integrity AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment" OR "implementation strategy"

Penetration

Terms	penetration AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment" AND measure OR scale OR assessment

Sustainability

Terms	Sustainability AND innovation OR EBP OR "evidence-based practice" OR "evidence based practice" OR "empirically supported treatment" AND measure OR scale OR assessment

Boolean Search Term Templates

Grid-Enabled Measures Database (GEM): https://www.gem-measures.org/Public/Home.aspx

GEM is a web-based collection of measures used in behavioral, social science, and other types of scientific research, sponsored by the National Cancer Institute. The collection includes a number of measures for implementation outcomes, some of which have been reviewed and rated by experts in the field. The number of measures available varies by outcome.

To find a measure for a specific implementation outcome:

1. First access the GEM Home Page at the link provided above.
2. Next, click on the "Measures" tab at the top of the page. This will bring you to a page that will allow you to search for measures by implementation outcome.
3. In the search box located on the top-right portion of the Measures page titled "Search Measures," select the implementation outcome you are interest in from the drop down menu titled "Construct." Then, click "Submit".
4. You will now be able to see a table of studies and related measures for the implementation outcome you selected. The far right columns provide the ratings given to the measure and a link to a pdf file of the study and/or actual measure. Ratings and pdfs are not provided for all measures.

Society for Implementation Research Collaboration (SIRC) Instrument Repository

The Society for Implementation Research Collaboration (formerly the Seattle Implementation Research Collaborative) brings together researchers and stakeholders interested in rigorous evaluation of implementation of evidence-based psychosocial interventions. Recently, SIRC published the first components of its Instrument Review Initiative – Instrument Repository online. The instrument review is guided by the Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009) and Proctor et al.'s (2011) Implementation Outcomes paper. The first component to be published is the section on Implementation Outcomes.

Each instrument receives an evidence-based assessment rating based on internal consistency, structural validity, predictive validity, norms, responsiveness, and usability. Additionally, SIRC provides sample items, links to relevant literature, and a link to the main document/study describing the measure.

To access the SIRC Instrument Repository, you must become a SIRC member. Membership fees are $50 for students, $175 for professionals, and $500 for institutions. To register, visit https://societyforimplementationresearchcollaboration.org/sirc-membership/

Once you are a member, you may access the Instrument Repository using the following steps:

1. Go to https://societyforimplementationresearchcollaboration.org/measures-collection/
2. Once on the Instrument Repository log-in page, enter your username and password and click "Log In."
3. Once logged in, scroll down to a list of implementation outcomes in red text. Click on your desired outcome.
4. Each outcome page contains red text links to measures. At the top of each page, you will also be directed to click a red text link to access side-by-side comparisons of reliability, validity, usability, and norms for each instrument contained in the repository for that outcome.

Other Sources for Outcome Measures

References:

Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., ... & Hensley, M. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research*, *38*(2), 65-76.