**Appendix 1. A practical guide to Implementation Science terminology for operationalizing stigma reduction and stigma measurement scales**

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| **Key terms** | **Definition** | **Application of term** | **Adapted from** |
| **Effectiveness study** | Examines the effect of interventions in real-world situations that may include greater variability in patient populations, implementation, and delivery due to uncontrollable factors in the environment. | In trying to mimic real-world conditions, *effectiveness studies* standardize the availability of the intervention in the study sample but do not go to great lengths to reinforce implementation by providers or participation by patients. | [Gartlehner 2006](https://www.ncbi.nlm.nih.gov/books/NBK44024/#:~:text=Efficacy%20trials%20(explanatory%20trials)%20determine,%E2%80%9Creal%20world%E2%80%9D%20clinical%20settings); [Singal 2014](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3912314/) |
| **Effectiveness- implementation hybrid design** | A study that analyzes outcomes pertaining to a) how well the intervention worked to reduce a client-level outcome, and b) how well it was implemented as intended. They can be categorized into roughly three types; studies that focus more on testing the *intervention*, studies that focus more on testing the *implementation*, or studies that do both. | *Hybrid designs* can be used to simultaneously test how effective a stigma reduction intervention is for reducing stigma reported by clients and to study which implementation strategies worked best for successful implementation of the stigma reduction intervention. | [Curran 2012](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3731143/) |
| **Efficacy study** | Determines whether an intervention produces the expected result under ideal and controlled circumstances. | Although *efficacy studies* have multiple methodologic advantages and create high internal validity, they require substantial deviations from clinical intervention, including restrictions on the patient sample, control of the provider skill set and actions, and elimination of multimodal treatments. | [Gartlehner 2006](https://www.ncbi.nlm.nih.gov/books/NBK44024/#:~:text=Efficacy%20trials%20(explanatory%20trials)%20determine,%E2%80%9Creal%20world%E2%80%9D%20clinical%20settings); [Singal 2014](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3912314/) |
| **Emerging stigma reduction intervention** | Common or innovative activities, services, policies, and processes that show real world validity and promise in reducing HIV stigma, but do not yet have sufficient evaluation or published research evidence. | Integration of HIV with other healthcare services offered by organizations was a common *emerging stigma reduction* intervention reported by HIV organizations in NYC. | [Psihopaidas 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7647058/pdf/pmed.1003128.pdf) |
| **Evidence-informed stigma reduction intervention** | Stigma reduction interventions that are based on a wide range of influences such as research evidence, expert opinion, case study, patient preferences, and social values, which provide theoretical and empirical plausibility of the intervention’s impact on changing stigma. | An *evidence-informed stigma reduction intervention*, such as the FRESH workshop, acknowledges the importance of both person-centered factors learned in practice as well as quantitative evidence of the workshop’s effectiveness in reducing stigma. | [Orton 2011](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0021704#s1); [Woodbury 2014](https://www.researchgate.net/publication/260793333_Evidence-based_Practice_vs_Evidence-informed_Practice_What's_the_Difference); [Batey 2016](https://pubmed.ncbi.nlm.nih.gov/27849373/) |
| **HIV Implementation Outcomes Crosswalk** | A tool developed by the Implementation Science Coordination, Consultation, & Collaborative Initiative (ISC3I) to select and operationalize implementation outcomes according to stage of research that is based on two frameworks: Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) and Proctor et al.’s outcomes of acceptability, adoption, appropriateness, feasibility, fidelity, cost, penetration, and sustainability. | The *HIV Implementation* *Outcomes Crosswalk* provides a menu of guiding questions to consider and metrics for use that can be helpful to implementers determining which implementation outcomes to measure and how. | [HIV Implementation Outcomes Operationalization Guide – ISC3I](https://isc3i.isgmh.northwestern.edu/hivoutcomes/) |
| **HIV organization** | Organizations, agencies, or clinical facilities that provide HIV prevention, testing, and/or care and treatment services either directly onsite, in a colocated space, or through established linkage agreements. As integration of HIV with other services and the provision of wrap-around services to people with HIV (PWH) are increasingly common, HIV may not be the primary focus, as with a syringe service program that also offers HIV testing. | It is important to us that as individuals touch the HIV prevention and care system, they do not experience structural, interpersonal, or individual-level stigma within the setting of *HIV organizations*. | Working definition developed for this manuscript |
| **HIV stigma** | A socially dynamic process of labeling, stereotyping, separation, status loss, and discrimination that occur within a power imbalance that places certain individuals and populations at greater risk of acquiring and being harmed by HIV. | Internalized, anticipated, and enacted *HIV stigma* may be differentially associated with specific affective, behavioral, and physical indicators of health and well-being. | [Earnshaw 2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664141/); [Earnshaw 2009](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4511707/); Link and Phelan 2001 |
| **Implementation determinant** | An implementation determinant is a factor related to the intervention, individuals, setting, or planning process that either ease or hinder implementation. A determinant that eases implementation is called a facilitator; a determinant that hinders implementation is called a barrier. | The lack of dedicated funding streams for stigma reduction is an *implementation determinant* that makes implementing stigma reduction programming harder; thus it is a barrier to stigma reduction programming being implemented at organizations. | [IRLM - Determinants of Implementation Worksheet](https://isc3i.isgmh.northwestern.edu/wp-content/uploads/2019/10/Worksheet_determinants_2020-03-29.pdf) |
| **Implementation mechanism** | The exact process or event through which an implementation strategy operates to achieve desired implementation outcomes. | With the implementation of racial equity training, the quality of care provided in the clinic improved through the *mechanism* of increased knowledge and skills in cultural humility among clinical staff. | [Lewis 2018](https://pubmed.ncbi.nlm.nih.gov/29868544/) |
| **Implementation outcome** | The effects of deliberate and purposive actions to implement new treatments,  interventions, and services which are often at the level of the system, setting, or  service provider.  They serve as (1) indicators of implementation success, (2)  proximal indicators of implementation processes, and (3) intermediate outcomes in relation to service and  clinical/client outcomes. | The implementation strategy of mandating stigma reduction training for all staff led to the *implementation outcomes* of (1) reaching more staff in the clinic, and (2) increased acceptability of stigma reduction intervention by staff as intrinsic to patient care. | [Proctor 2011](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068522/); [Glasgow 1999](https://pubmed.ncbi.nlm.nih.gov/10474547/) |
| **Implementation Research Logic Model** | A model that focuses on implementing research findings by outlining context-specific barriers and facilitators, developing strategies to change or work through specific behaviors, and evaluating how implementation strategies and mechanisms relate to clinical outcomes. | The *Implementation Research Logic Model*  is useful when considering what implementation strategies might be needed and appropriate to test in different contexts. | [Smith 2020](https://implementationscience.biomedcentral.com/track/pdf/10.1186/s13012-020-01041-8.pdf) |
| **Implementation science** | The scientific approach to addressing organizations’ barriers to research uptake in a clinical or policy setting in order to eliminate the research-to-practice gap. | Due to evidence-based practices taking an average of 17 years to be incorporated into general practice, *implementation science* was developed to facilitate the spread of those evidence-based practices. | [Bauer 2015](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4573926/) |
| **Implementation science framework** | Theories, models, conceptual frameworks, and quantitative and qualitative tools that facilitate implementation, sustainability, and/or scale-up of innovations in practice. They are based on considerations of both theoretical and empirical evidence to justify their approach. | For their program’s *implementation science framework*, they adapted elements from the Consolidated Framework for Implementation Research (CFIR) and the Exploration, Preparation, Implementation, and Sustainment (EPIS) model to create a logic model to guide their new initiative. | [Damschroder 2009](https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-4-50); [Nilsen 2015](https://implementationscience.biomedcentral.com/articles/10.1186/s13012-015-0242-0) |
| **Implementation strategies** | Methods or techniques used to enhance the adoption, implementation, and sustainability of a clinical program or practice. | Client feedback, interactive trainings, and policies mandating EMR changes are *implementation strategies* designed to increase the adoption of a stigma reduction intervention such as using correct pronouns for clients. | [Proctor 2013](https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-8-139); [Curran 2012](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3731143/pdf/nihms480660.pdf) |
| **Implementer** | A stakeholder who  delivers the implementation strategy. | A wide range of stakeholders can take on the role of *implementer*, as implementation strategies may be employed or enacted by payers, administrators, intervention developers, outside consultants, or personnel within an organization. | [Proctor 2013](https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-8-139) |
| **Intersectionality** | A theoretical framework which acknowledges that people with multiple marginalized or stigmatized identities will be uniquely affected as a result of the interaction between multiple systems of oppression (such as racism, homophobia, and classism) at the social-structural level that then impact the interpersonal and individual levels. | Far from representing a simple addition of social identities such as race (e.g., Black) plus gender (e.g., woman), the perspective of *intersectionality* asserts that for Black women, race and gender constitute each other such that one identity alone (e.g., gender) cannot explain the unequal or disparate outcomes without the intersection of the other identity. | [Bowleg 2012](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3477987/) |
| **Reach Effectiveness Adoption Implementation Maintenance (RE-AIM)** | The RE-AIM planning and evaluation framework has been used extensively within implementation science and is designed to enhance the quality, speed, and public health impact of efforts to translate research into practice in five steps: reach, effectiveness, adoption, implementation, and maintenance. | A pragmatic application of *RE-AIM* provides questions to help programs consider what they want their outcomes to be when planning their implementation, including but not limited to: Who is intended to benefit from the stigma reduction intervention; what is the likelihood of negative outcomes; where is the program or policy applied; how consistently is the program or policy delivered; who is delivering it; and how long will the intervention be sustained? | [RE-AIM Planning Tool](https://www.re-aim.org/wp-content/uploads/2016/09/planningtool.pdf); [Pragmatic Applications of RE-AIM](https://www.cdc.gov/pcd/issues/2018/17_0271.htm); [Key Articles and Guidance on RE-AIM](https://www.re-aim.org/key-articles-and-guidance/) |
| **Stigma surveys** | Surveys designed to measure stigma in an organizational or community setting; they may be addressed to healthcare staff and/or clients, and employ quantitative and/or qualitative methods or a mix of both. | *Stigma surveys* may include quantifiers such as asking participants to rank how often a stigmatizing event occurs, how strongly the participant agrees or disagrees with a statement, or whether stigma-reducing interventions take place in the organization. | [Van Brakel 2007](https://www.tandfonline.com/doi/full/10.1080/13548500600595160); [B2 Bibliography in Bauer 2021](https://ars.els-cdn.com/content/image/1-s2.0-S2352827321000732-mmc1.pdf) |
| **Strategy specification** | The process of defining a) Who carries out the strategy (actor)? b) What is being done (action)? c) When does it occur (temporality)? d) How long and how frequently is it done (dose)? e) What is it designed to achieve (outcome)? f) How will the outcome be achieved (target)? and g) What evidence exists that the action will achieve the outcome as planned (justification)? | *Strategy specification* leads to better operationalization and contextualization of implementation strategies, thereby propelling the field toward a greater understanding of not just what strategies are effective, but how and why they are effective in different contexts. | [Proctor 2013](https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-8-139) |

**Selected Stigma Surveys**

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| **Measurement Tool** | **Description** | **Link to Tool\*** | **Reference** |
| **Healthcare Stigma** | | | |
| **Measuring HIV Stigma and Discrimination Among Health Facility Staff** | A 25-item questionnaire for measuring HIV stigma in health facilities. This tool can help facilitate routine monitoring of HIV stigma among staff, as well as the expansion and improvement of programming and policies at the health-facility level. It’s available in five languages. | <https://www.healthpolicyproject.com/index.cfm?ID=publications&get=pubID&pubID=49> | [Nyblade 2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3833189/) |
| **Community Stigma Scale** | | | |
| **Explanatory Model Interview Catalogue** (**EMIC) Community Stigma Scale (EMIC-CSS)** | The 15-item EMIC-CSS measures perceived attitude and behavior of other community members, rather than of the respondent directly, towards persons affected by a stigmatized condition. It has been used across various health conditions; quantitative and mixed methods versions exist. | <https://www.infontd.org/toolkits/emic-cs-emic-community-stigma> | [Weiss 1992](https://pubmed.ncbi.nlm.nih.gov/1617366/) |
| **Individual-Level Stigma Scales** | | | |
| **The HIV Stigma Scale (HSS)**  **or**  **Berger HIV Stigma Scale** | The 40-item HIV Stigma Scale measures stigma and psychosocial aspects of having HIV (personalized stigma, disclosure concerns, negative self-image, and concern with public attitudes toward PWH). Shorter, adapted versions are often used in practice such as a 12-item version by Reinius et al. | <https://elcentro.sonhs.miami.edu/research/measures-library/hss/index.html> | [Berger 2001](https://pubmed.ncbi.nlm.nih.gov/11746080/); [Reinius 2017](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5450123/) |
| **Internalized Stigma of Mental Illness (ISMI) Scale** | The 29-item Internalized Stigma of Mental Illness (ISMI) scale measures the subjective experience of stigma, with subscales measuring alienation, stereotype endorsement, perceived discrimination, social withdrawal, and stigma resistance. The ISMI was developed together with people with mental illnesses. | <https://www.mirecc.va.gov/visn5/training/docs/Handout_ISMI.pdf> | [Boyd 2003](https://pubmed.ncbi.nlm.nih.gov/14572622/) |
| **EMIC Stigma Scale**  **Affected Person** | The 15-item EMIC Affected Persons scale measures perceived and experienced stigma among those with the stigmatized condition. It is similar to the EMIC-CSS. | <https://www.infontd.org/toolkits/nmd-toolkit/emic-affected-persons> | [Weiss 1992](https://pubmed.ncbi.nlm.nih.gov/1617366/) |
| **Stigma at the Individual Level, Community Level, and Among Healthcare Providers** | | | |
| **Measuring HIV Stigma and Discrimination Technical Brief** | The brief proposes specific questions for measuring HIV stigma across three populations: PWH, the general population, and healthcare providers organized by key conceptual domains. | <https://www.icrw.org/wp-content/uploads/2017/07/STRIVE_stigma-brief-A4.pdf> | Not applicable |

\*Link last accessed May 2021