Dissemination and Implementation
Science Theories, Models, and Frameworks: What They Are and How to Select and Apply Them in the HIV Field and Current Projects
Dissemination and Implementation Science: What They Are and How To Select and Apply Them in the HIV Field And Current Projects

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San Diego CFAR Implementation Science Hub
Disclosures

• Nothing to disclose.
Objectives

• Objective 1: Review what dissemination and implementation science theories, models, and frameworks are and how they can be used to support EHE projects and more broadly HIV research.

• Objective 2: To provide case examples of the use of dissemination and implementation science theories, models, and frameworks in funded EHE projects.

• Objective 3: To discuss key areas for future work needed to increase the uptake and use of dissemination and implementation science theories, models, and frameworks in EHE projects and more broadly in HIV research.
Overview of D&I Theories, Models & Frameworks (TMFs)

**Theories** are generally specific and predictive, with directional relationships between concepts making them suitable for hypothesis testing.

**Models** are specific, more often prescriptive, strategic or action-planning to provide a systematic way to develop, manage, and evaluate interventions.

**Frameworks** organize, explain, or describe information and the range and relationships between concepts, including some which delineate processes, and therefore are useful for communication.
How can IS TMFs support research?

- Provides a systematic structure for the development, implementation, and evaluation of programs
- Creates a natural linkage between study aims, data collection, and analytic approaches
- Helps expand or narrow the scope of the study
- Creates a structure for presenting findings and sharing with various partners and audiences
- Supports the interpretation of study findings
- Ensures that key implementation strategies are considered

Important component of DIS proposals
Criteria for selecting implementation science theories and frameworks: results

Wealth of existing TMFs for DIS:

- 61 models with research focus (Tabak et al., 2012)
- 25+ models with practitioner/clinician focus (Mitchell et al., 2010)
- 33 models from a UK perspective (Wilson et al. 2010)
- 100 + used in an international sample (Birken et al. 2017)
- 159 KT theories, models, or frameworks (Strifler et al. 2018)
- More publications with diverse models from sub-areas (e.g., de-implementation, community engagement, etc)
“THEORIES ARE LIKE TOOTHBRUSHES. EVERYONE HAS ONE AND NO ONE WANTS TO USE ANYONE ELSE’S”
Considerations for Applying TMFs

Theoretical approaches used in implementation science

- Describing and/or guiding the process of translating research into practice
- Understanding and/or explaining what influences implementation outcomes
- Evaluating implementation

Getting Started

Novice users:
Use the tutorial to receive guidance on the webtool overall and each section.

If you are new to D&I theories, models, and frameworks (TMFs) and their use, we strongly recommend starting with the Plan section and advancing in a linear manner.

Experienced users:
If you have some experience working with D&I TMFs, you might use the webtool in a non-linear manner, visiting sections that are most relevant to your research and/or practice problem.

A few key tips to help you navigate the webtool:
A tutorial is available for each section of the webtool under the Guidance section of the website.

We use “TMF” throughout this tool when referring to D&I Theories, Models, and Frameworks.

Sections of the D&I Models Webtool

[Buttons for Plan, Select, Combine, Adapt, Use, Assess]

https://dissemination-implementation.org/index.aspx
Health Equity

This section of the webtool provides an introduction to health equity, shares guidance for practitioners and researchers who aim to increase their focus on health equity, and points to specific examples of health equity applications applying dissemination and implementation (D&I) theories, models and frameworks (TMFs). This section begins with an overview and definitions of health equity and shares health equity dimensions linked to case examples applying TMFs. Then, we offer guidance on how to select, combine, adapt, use, and measure TMFs with a health equity lens. We also share and link to articles and resources on the topic of health equity in D&I. While serving as a resource for those working in the field of D&I Science, we acknowledge the experience and scholarship on the topic of health equity from many disciplines and communities of practice, and encourage readers to draw on their contributions to continually improve efforts aimed at increasing health equity.

- What is Health Equity?
- What are the dimensions of Health Equity identified in the empirical D&I literature?
- What does health equity mean in the context of D&I Science?
- Considerations when SELECTING health equity-relevant TMFs
- Considerations when COMBINING TMFs to incorporate health equity more explicitly
Ten recommendations for using implementation frameworks in research and practice

Joanna C. Moulin¹²*, Kelsey S. Dickson²³, Nicole A. Stadnick²⁴⁵, Bianca Albers⁶⁷, Per Nilsen⁸, Sarabeth Broder-Fingert⁹, Barbara Mukasa¹⁰ and Gregory A. Aarons²⁴⁵
### Table S1. Implementation Framework Application Worksheet

**Project title:** ________________________________

**Instructions:** For each recommendation, use this table to consider relevant questions to facilitate comprehensive application of the selected framework(s) across your implementation project. This is best done in collaboration with relevant stakeholders at the outset of a project and reviewed periodically. The sequence of the 10 recommendations is not designed to be strictly linear, as they will differ from project to project, and steps may also occur concurrently. Furthermore, depending on the project not all recommendations or questions may be relevant, in which case select not applicable (NA).

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Framework(s) selected</th>
<th>Key Questions to Guide Application of Implementation Framework Recommendation</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Select appropriate implementation framework(s)</td>
<td></td>
<td>What is the purpose of the framework (e.g., guiding the process of implementation, analyzing the influences of implementation, or evaluating the implementation effort) and does this align with what is required for this implementation project?</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What level(s) does the framework address (provider, team, organisation, system) and does this align with the levels that are most relevant to this implementation project?</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What implementation concepts are included within the framework (process, determinants (barriers and facilitators), strategies, evaluation) and to what degree are they operationalized?</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>How generalizable or specific is the implementation framework’s orientation (e.g., context, innovation,</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Table S2: Implementation Framework Utilization Tool

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Framework(s)</th>
<th>Framework utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Select appropriate framework(s)</td>
<td>The selected framework(s) cover all phases and aspects of the implementation project</td>
<td>Not at all</td>
</tr>
<tr>
<td>Establish and maintain community stakeholder engagement and partnerships</td>
<td>The selected implementation framework(s) are used to: Select and define the roles of key stakeholders Engage stakeholders across all phases of the implementation process</td>
<td>Not at all</td>
</tr>
<tr>
<td>3 Define issue and develop research or evaluation questions and hypotheses</td>
<td>Research and evaluation questions or hypotheses are derived from or consistent with the selected implementation framework(s)</td>
<td>Not at all</td>
</tr>
</tbody>
</table>

Instructions: This tool is intended to assist in thinking through and reviewing ways in which the selected framework(s) are used. For each recommendation, note the extent to which each recommendation is applied. In combination with the Implementation Framework Application Worksheet, the tool may inform revisions to your project (proposal, active project or dissemination materials) to facilitate comprehensive framework application. Additionally, this tool may serve to provide documentation of implementation utilization (e.g., for inclusion in project proposals, reports, manuscripts). Depending on the project not all recommendations may be relevant, in which case select not applicable.
Illustrating Applications of D&I Frameworks in HIV Research

**Aim:** Adapted from the health equity applications in D&I TMFs webtool, conduct a review of D&I frameworks to illustrate applications in HIV research.

In progress

**Methods:**
- Identify and prioritize D&I frameworks
- Develop search terms
- Apply search and save Google Scholar & Web of Science citations
- Merge citations in EndNote and compile PDFs
- Determine inclusion and conduct case abstraction
Determine inclusion for case abstraction

**INCLUSION DECISION TREE**

1. Does this article refer to a single, original empirical research study?
   - **Yes!**
   - **No**
     - **Code 1** Protocol, systematic review
     - Not Sure? Code 2 for eligible and make notes

2. Is the study clearly on a topic related to HIV prevention, HIV intervention, and/or HIV implementation?
   - **Yes!**
     - Does the study use the referenced D&I framework to inform study design, guide measurement, analysis, evaluation, implementation or strategy, and/or interpretation of findings?
       - **Yes! Include**
       - **No**
         - **Code 2**
         - Study references the framework, but does not use it in a substantive way
         - Not Sure? Code 2 for eligible and make notes
   - **No**
     - Study does not have a direct focus on HIV
     - Not Sure? Code 2 for eligible and make notes
Use Case Template for included articles

**D&I HIV Applied Case Template**

**Criteria for consideration to review full article:**

1. The article refers to a single original empirical study, not a protocol paper or a systematic review paper.
2. The study clearly identifies using at least one D&I framework to inform study design, guide measurement, analysis, evaluation, implementation or strategy, and/or interpretation of findings.
3. The study is clearly on a topic related to HIV prevention, HIV intervention, and/or HIV implementation. The article should not only mention HIV but be focused directly on the above topics.
4. The framework has been used for explicit development, implementation, and/or assessment of HIV-relevant diagnostic, treatment, prevention, or response programs, to inform data collection, implementation, and/or analysis.

**Full citation:**

**Population:**

**Topic:**

**Setting:**

**Socio-ecological level(s):**

**Sector(s):**

**Type of study:**

**Framework(s):**

**Implementation stage:**

**HIV prevention pillars: Diagnose, Treat Prevent, Respond**

**Implementation strategies:**

**Community partnership focus**

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**Abstract**

Involvement of male partners has been shown to be key for the prevention of mother-to-child HIV transmission (MTCT). Despite the recorded success, uptake and implementation of strategies to involve men in MTCT continues to be low in Malawi. In this study, we used the Reach Effectiveness Adoption Implementation and Maintenance (RE-AIM) implementation science framework to explore the implementation of male involvement (MI) strategies in Lilongwe, Malawi. We used a cross-sectional mixed-methods complementary-concurrent design from September to October 2020 in two health facilities. Qualitatively, we used a phenomenological approach and conducted seven focus group discussions (FGDs), three with women and four with men. We further conducted four key informant interviews (KII) among health care workers. Quantitatively, we conducted a cross-sectional study comprising 158 men presenting at an antenatal clinic (ANC). We used univariate analysis in Stata for the quantitative data, whereas a manual thematic analysis was applied to the qualitative data. Implementation and adoption of the strategies was high among health providers and there were indications of maintenance of the strategies. Provider’s attitude, coordinated service provision, integrated training and service provision, information provision, and birdy’s HIV outcomes were driving factors in implementing the MI strategies. These factors have contributed to the sustained implementation of the strategies over time. In contrast, financial and time constraints, inadequate human resources, and male-friendly spaces impede the implementation of MI strategies. Improving MI will require a systemic approach combining health system and individual-level factors for both providers and consumers.

**Keywords**

men, male involvement, MTCT, RE-AIM framework
Panel Discussion

Mariano Kanamori and Edda Rodriguez

“FINISHING HIV: An EHE model for Latinos Integrating One-Stop-Shop PrEP Services, a Social Network Support Program and a National Pharmacy Chain”

D&I Frameworks: CFIR & RE-AIM

Erik Storholm & Kim Murtaugh

“Implementing Behavioral Economic Incentives to Support Peer-led Prep Navigation At A Trans Community Center ”

D&I Frameworks: EPIS & RE-AIM
FINISHING HIV: An EHE Model for Latinos
Integrating One-Stop-Shop PrEP Services,
a Social Network Support Program
and a National Pharmacy Chain

3rd National Ending the HIV Epidemic Partnerships for Research Meeting
April 15-16, 2024 I Los Angeles, CA
Population
Inclusion criteria:
• cisgender Latino MSM
• at least 18 years of age
• PrEP eligible (CDC guidelines)

Geographic Area
Miami-Dade County Florida, where:
• the rate of newly diagnosed HIV per 100,000 population is four times the national rate (55 vs. 14)
• 64% of those newly diagnosed with HIV are Latinos
• 82% is due to male-to-male sex
Settings of Study

Our EHE pilots developed methods to engage Latino MSM based on sexual self-identity

Setting 1: Latino MSM who self-identify as gay
-Latino Salud’s gay-oriented social events are effective settings to reach Latino MSM who self-identify as gay

-Activities include yoga at the beach, movie nights, gaming nights, art events, sport events, etc
Setting 2: Latino MSM not engaged in the gay scene
- Pharmacy chains provide neutral environments where PrEP service information can reach Latino MSM not engaged in the gay scene

-In-store information provided at:
**Current**: COVID-19 testing sites, waiting rooms, photo machines, pharmacies, doors, cashiers, wellness clinics, etc
**Coming**: On the air in store messages, coupons, television screens, etc
# Study Aims and Implementation Science Frameworks

| Implementation | Aim 1a: Use the **RE-AIM framework** to evaluate Reach (the extent to which high risk persons initiate participation in the program), and Implementation (extent to which implementation strategies are delivered as designed) of FINISHING HIV.  

Aim 1b: Use the **Consolidated Framework for Implementation Science Research (CIFR)** to examine contextual factors associated with Reach and Implementation (e.g., facilitators and challenges/barriers to reach and implementation; participants’ reaction to these strategies). |
|---|---|

Theory-based modifiers (e.g., recruitment venue) and social network mediators of intervention effects will be identified.  

We will also assess how friendship network structural evolution contributes to increasing PrEP initiation. |
Study Design

Penetration at Pharmacies And Latinos Salud Social Events (N=168x2) → Informed Consent and Screening (N=336) → Randomization (N=336) → FINISHING HIV (N=12x2) → 24 Seeds → Standard Health Promotion (N=156x2) → Responding-Driven Sampling is used to create groups of 13 friends (24 groups) → One-Stop-Shop PrEP Component, after baseline → Assessments at Baseline, 6- and 12-Month Follow-ups (N=312)

Social Network Support Component, 3 and 9 months after baseline
1 CFIR scoring: strongly agree = 2, agree = 1, neither agree nor disagree = 0, disagree = -1, and strongly disagree = -2. The closer the score to 2 the more positive answers for the questions within each subconstruct.
The goal of this implementation science pilot project was to understand modifiable factors and the behavior of practitioners and support staff, clients, and stakeholders influencing the adoption and implementation of a culturally tailored PrEP program for Latinx men.
CFIR scoring: strongly agree = 2, agree = 1, neither agree nor disagree = 0, disagree = -1, and strongly disagree = -2. The closer the score to 2 the more positive answers for the questions within each subconstruct.
**Intervention**

The culturally-tailored one-stop-shop PrEP component
Funding: Research reported in this presentation was supported by the National Institute of Allergy and Infectious Diseases (award #1R01AI169643-01) of the National Institutes of Health.

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Allergy and Infectious Diseases or the National Institutes of Health.
Applying Behavioral Economic Incentives to Support Implementation of PrEP in a Trans Community Center

Erik Storholm, PhD
Clinical Psychologist & Associate Professor
SDSU-School of Public Health, RAND Corporation, & UCLA CHIPTS

Kimberly Ling Murtaugh, PhD
Behavioral Economist & Chief Strategy Officer for National Child Traumatic Stress Network
UCLA Luskin School of Public Affairs & CHIPTS
PrEP Well Program Overview

• EHE supplement leverages larger implementation science project known locally as PrEP Well

• PrEP Well represents a community-academic partnership
  • Los Angeles Trans Wellness Center
  • Los Angeles LGBT Center Implementing Partner
  • SDSU Sexual Health Equity Lab, RAND, and UCLA CHIPTS

• PrEP Well aims:
  • To assess the fit of PrEP services and the multi-component implementation strategies with the organizational capacities and client needs at TWC
  • To use the PrEP Well strategy to implement PrEP services at TWC
  • To explore options for sustaining PrEP services at the TWC and generalizing PrEP Well for implementation of PrEP services in other EHE priority counties of California

• EHE Supplemental aim:
  • To examine the acceptability, feasibility, and preliminary effects of offering the behavioral economic strategy to support the implementation of PrEP at TWC.
PrEP Well Implementation Framework 1

• Needed a framework to help guide our **process** of bringing PrEP to scale at Trans Wellness Center

**Determinant Domains:**

**Innovation**
- +: reduces HIV risk, various forms available
- -: perceived risk of interacting with hormone therapy

**Inner context**
- +: TWC has strong community presence/trust
- -: limited space for on-site PrEP services

**Outer context**
- +: partnerships w/ other organizations (eg, Translatin@, Bienestar)
- -: clients have other serious needs (eg, housing, employment)

**Bridging factors**
- +: SDSU/UCLA/RAND help secure resources
- -: don’t have academic research personnel on-site at TWC to help
PrEP Well Implementation Framework 2

• Needed a second framework to help define implementation **outcomes** and measure impact of bringing PrEP to scale at Trans Wellness Center (RE-AIM² Framework)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Plain-Language Definition</th>
<th>Example Application for PrEP-Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach</td>
<td>Proportion of target recipients for the innovation who receive and engage in it</td>
<td>Proportion of eligible TWC clients who enroll in PrEP Well and receive PrEP, overall and for specific subgroups (e.g., race/ethnicity, gender identity)</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>How much benefit or improvement the recipients show for the target problem</td>
<td>Number of PrEP Well program participants who are taking adequate levels of PrEP (verified by blood spot analysis) at 90 days post-enrollment</td>
</tr>
<tr>
<td>Adoption</td>
<td>Extent to which those who can provide or deliver the innovation start to do so</td>
<td>Proportion of TWC staff and providers making referrals to PrEP Well</td>
</tr>
<tr>
<td>Implementation</td>
<td>Extent to which the innovation is implemented effectively and with quality</td>
<td>Acceptability, appropriateness, and feasibility of the PrEP Well program from the perspective of program recipients and TWC staff</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Extent to which the innovation continues after initial implementation support ends</td>
<td>Costs of PrEP Well program and extent to which sustainable funding is available for each cost</td>
</tr>
</tbody>
</table>
Behavioral Economic Strategy

• Broad feedback about economic incentives to mitigate barriers and increase engagement

• Identity Economics combines incentives and self concept to motivate

PrEP participants get to spin wheel based on their movement along the PrEP care continuum

• For example: learning about PrEP, attending PrEP appointment, filling prescription, taking PrEP, etc.
Prize Choice & Community Engagement

Engage Trans Owned Businesses and prizes with high value to the clients
References


Panel Questions

1. How did you use the TMFs to help with project planning?
2. How did you use the TMFs to support implementation activities?
3. How did you use the TMFs to support evaluation?
4. What were the key challenges and strategies to address those challenges in using D&I TMFs in your study?