PRS Project Efficacy Criteria for Structural Evidence-Informed Interventions (S-EI)

Intervention Description

- Clear description of key aspects of the intervention

Quality of Study Design

For before/after studies

- Evaluates data before and after intervention implementation in studies without a comparison arm

For two-group studies with a comparison arm that did not meet the evidence-based criterion on sample size

- Studies with a comparison arm that met all evidence-based criteria with the exception of sample size (i.e., n ≥ 40 per arm), and have at least 25 participants per study arm will be considered as evidence-informed.

Quality of Study Implementation and Analysis

- Analysis must be based on pre-post changes or post-intervention levels
    - Note: For pre-post changes used in analysis, measures must be identical, including identical recall period
- Analysis based on an α =.05 (or more stringent) and a 2-sided test

Strength of Evidence

Demonstrated Significant Positive Intervention Effects

- Statistically significant ($p < .05$) positive pre-post intervention effect for ≥ 1 relevant outcome measure
- A positive intervention effect is defined as:
    - Greater reduction (or lower increase) in HIV/STD incidence, risk behaviors or HIV-related stigma;
    - Greater increase in HIV protective behaviors (including Pre-exposure prophylaxis [PrEP] uptake and adherence);
    - Greater improvement in, or higher level of, a medication adherence-related behavioral or biologic outcome (including viral suppression); or
    - Greater improvement in linkage to, retention in, engagement or re-engagement in HIV medical care post intervention versus pre intervention
- A relevant outcome is defined as:
    - Sex risk behaviors (e.g., abstinence, mutual monogamy, number of sex partners, consistent condom use with anal/vaginal sex, condomless anal/vaginal sex, proportion of anal/vaginal sex acts protected, refusal to have unsafe sex) directly impacting HIV risk
    - Drug injection behaviors (e.g., frequency of injection drug use, needle sharing)
    - PrEP behavioral or biological outcomes, including:
        - PrEP patient-level outcomes:

- Screening for PrEP eligibility and referring to PrEP services: assessed HIV risk behavior to identify a participant as an eligible PrEP candidate and referred them to PrEP services (e.g., scheduled the first PrEP service appointment)
- Linkage to PrEP care: a participant completed healthcare visit that includes being prescribed PrEP
- PrEP initiation/uptake: initiation of PrEP among PrEP-naïve participants or those who were not PrEP users as defined by study authors via self-report or medical or pharmacy records (e.g., filled a prescription for PrEP, started PrEP);
- PrEP use: on PrEP (including lifetime, current use) based on self-report or medical or pharmacy records;
- PrEP medication adherence or persistence: taking PrEP on a regularly agreed to schedule (e.g., daily dose, on demand) measured by electronic data monitoring (e.g., Medication Event Monitoring System [MEMS] caps), pill count, pharmacy refill, self-reported adherence, or medical record;
- PrEP drug levels: based on assays that assess PrEP drug or drug metabolite levels in plasma, urine, hair, or dried blood spots;
- Retention in PrEP care: completed PrEP medical visit(s) over a period of time (e.g., attended one visit every 3 months for at least 6 months) that is self-reported or documented in medical records;
- HIV incidence: HIV infections that are self-reported or documented in medical records

▪ PrEP Healthcare Provider-or System-Level outcomes

- PrEP prescribing behavior: self-reported by provider or documented in medical or pharmacy records
- PrEP utilization among health care systems and communities: number of people on PrEP assessed at the healthcare system or community level

o HIV-related stigma
o HIV testing (e.g., utilization of HIV C&T services, repeat testing)
▪ Note: HIV testing is a relevant outcome only if the study reports new HIV infections
o Medication adherence outcome measure that may include electronic data monitoring (e.g., MEMs caps), pill count, pharmacy refill, or self-reported adherence
o Antiretroviral treatment (ART) prescriptions (as outcomes of provider interventions only)
o Biologic measure indicating HIV or STD (e.g., prevalence or incidence measures of hepatitis, HIV, or other STDs)
▪ Note: Biologic measures of STD infections are relevant outcomes only as a proxy for HIV behavior
o HIV morbidity or AIDS mortality (includes biologic measures of HIV viral suppression or CD4 count)
o HIV medical care visit – measures of a completed outpatient primary HIV medical care visit or HIV viral load and/or CD4 count when used as proxies for a HIV medical care visit

        - For *linkage to care*, a relevant outcome is the completed first HIV medical visit for newly diagnosed HIV-positive persons
        - For *retention in care*, a relevant outcome is having completed multiple HIV medical visits over a period of time
        - For *engagement in care*, a relevant outcome is having one completed HIV medical visit
        - For *re-engagement in care*, a relevant outcome is the completed HIV medical visit for persons who were lost to or inconsistent in care
            - Note: Completed HIV medical visits must be documented in medical records, administrative or agency records, or surveillance reports
            - Note: Self-reports of completed medical visits validated by medical records, administrative or agency records are also acceptable
- In summary, the effect must be:
    - Reported at the required follow-up
    - Based on the quality of the study design
    - Based on the study implementation and analysis

No Demonstrated Significant Negative Intervention Effects

- No negative and statistically significant ($p < .05$) pre-post intervention effect for any relevant outcome
    - A negative intervention effect is defined as:
        - a greater increase in HIV/STD incidence, risk behaviors or HIV-related stigma;
        - a greater decrease in HIV protective behaviors;
        - greater reduction in, or lower level of, a medication adherence-related behavioral or biologic outcome;
        - Greater reduction in, or lower level of, PrEP initiation/uptake, PrEP use, PrEP medication adherence or persistence or PrEP drug levels;
        - Lower level of screening for PrEP and referring to PrEP services, linkage to PrEP care, retention in PrEP care;
        - Lower proportion of PrEP prescribing behavior;
        - Lower proportion of people on PrEP assessed at the healthcare system or community level; and/or
        - Lower level of linkage to, retention in, engagement in, or re-engagement in HIV medical care in the intervention arm relative to the comparison arm

Additional Limitations to Evaluate

- No evidence that additional limitations resulted in considerable bias that reduces the confidence of the findings
    - Examples of limitations
        - Effects only found within potentially biased subset analyses
        - Too many post-hoc analyses
        - Inconsistent evidence between effects
        - For serial cross-sectional studies, statistically significant differences in demographic characteristics between “pre” and “post” samples that may introduce bias

- Other notable biases threatening internal or external validity

All criteria must be satisfied for an intervention to be considered as an effective Structural Evidence-Informed (S-EI).