PRS Efficacy Criteria for Pre-Exposure Prophylaxis (PrEP) Evidence-Informed Interventions (EIs)

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 (e.g., pre/post, historical comparison)

For two-group studies with a comparison arm

- 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 at baseline will be evaluated with evidence-informed criteria.

Quality of Study Implementation and Analysis

- Analysis must be based on pre-post changes
    - Note: Measures must be identical, including identical recall period
- Analysis based on a p value of < 0.05 and a 2-sided test

Strength of Evidence

Demonstrated Significant Positive Intervention Effects

- Statistically significant ($p < .05$) positive intervention effect for ≥ 1 relevant outcome measure
    - A positive intervention effect is defined as an improvement in PrEP-related behavioral or biologic outcomes from pre- to post-intervention.
    - Relevant PrEP-related behavioral or biological outcomes are defined as and include:

<u>PrEP Patient-Level</u>

- Screening for PrEP eligibility and referring to PrEP services: assessed HIV risk behavior to identify a participant as an eligible PrEP candidate and referred those who were eligible to PrEP services (e.g., scheduled the first PrEP services 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 taking 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

- 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

No Demonstrated Significant Negative Intervention Effects

- No negative and statistically significant ($p < 0.05$) pre- to post- intervention effects for any PrEP-relevant outcome
  - A negative intervention effect is defined as the post-intervention effect showing:
    - 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;
    - Greater increase in HIV incidence;
    - Lower proportion of PrEP prescribing behavior; and
    - Lower proportion of people on PrEP assessed at the healthcare system or community level

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

Additional Study Strengths

Evidence-Informed intervention studies that exhibit additional strengths will have those strengths noted on all summary documentation. These strengths include:

- Study design-related strengths:
  - For studies using serial cross-sectional designs in a clinic setting, having comparable clinic samples across different times
  - Follow-up assessment occurring ≥12 months for any PrEP-related outcomes
  - Outcomes occuring within or exceeding optimal follow-up assessment time points
    - Screening for PrEP eligibility and referring to PrEP care or linkage to PrEP care ≤ 1 month;
    - PrEP initiation/uptake ≤ 3 months;
    - PrEP use, medical adherence or persistence, drug levels, or no HIV incidence ≥12 months; or

        - Retention in PrEP care: one visit every 3 months for at least 6 months as recommended by the CDC PrEP guideline
    - Targeting persons who meet indications for PrEP according to CDC guidelines
        - Men who have sex with men who:
            - have HIV-positive sex partner;
            - are diagnosed with a recent bacterial sexually transmitted infection (STI);
            - have a high number of sex partners;
            - have a history of inconsistent or no condom use; or
            - engage in commercial sex work
        - Heterosexual women and men who:
            - have HIV-positive sex partner;
            - are diagnosed with a recent bacterial STI;
            - have a high number of sex partners;
            - have a history of inconsistent or no condom use;
            - engage in commercial sex work; or
            - live in a high-prevalence area or network
        - Injection drug users who:
            - have HIV-positive injecting partner; or
            - share injection equipment
    - Targeting populations that experience HIV disparities (e.g., black men who have sex with men)
    - Recruiting adequate sample size
        - PrEP studies with baseline sample sizes $\geq$ 100
- Implementation-related strengths:
    - Delivering intervention as planned
        - Measures fidelity of intervention
- Outcome-related strengths:
    - Lack of disparities in study outcomes (e.g., same intervention effects are observed throughout all racial/ethnic, gender, or/and age groups)

All criteria must be satisfied for an intervention to be considered an effective PrEP Evidence-Informed Intervention (EI).