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

#### **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
  - $_{\odot}$  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  $\geq$  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.
  - o Relevant PrEP-related behavioral or biological outcomes are defined as and include:

#### PrEP Patient-Level

- 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:
  - $_{\rm O}$  For studies using serial cross-sectional designs in a clinic setting, having comparable clinic samples across different times
  - o Follow-up assessment occurring ≥12 months for any PrEP-related outcomes
  - o 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;
    - o are diagnosed with a recent bacterial sexually transmitted infection (STI);
    - have a high number of sex partners;
    - $_{\odot}$  have a history of inconsistent or no condom use; or
    - o engage in commercial sex work
  - Heterosexual women and men who:
    - $_{\odot}$  have HIV-positive sex partner;
    - $_{\rm O}$  are diagnosed with a recent bacterial STI;
    - o have a high number of sex partners;
    - o have a history of inconsistent or no condom use;
    - $\circ$  engage in commercial sex work; or
    - $_{\rm O}$  live in a high-prevalence area or network
  - Injection drug users who:
    - $_{\rm O}$  have HIV-positive injecting partner; or
    - $_{\rm O}$  share injection equipment
- o 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 ≥ 100
- Implementation-related strengths:
  - o 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).

