

# PRS Efficacy Criteria for Best-Evidence Medication Adherence (MA) Interventions

## Intervention Description

- Clear description of key aspects of the intervention

## Quality of Study Design

- Prospective study design
- Appropriate comparison arm
- Concurrent comparison arm
- Random allocation of participants to study arms

## Quality of Study Implementation

- At least a 3-month post-intervention follow-up assessment for each study arm (with recall referring to post-intervention period only) for interventions that are clearly discrete or at least a 6-month post-initiation follow-up assessment for each study arm for all other types of interventions
- At least a 70% retention rate (or medical chart recovery) at a single follow-up assessment for each study arm

## Quality of Study Analysis

- Analysis contrasting intervention arm and an appropriate comparison arm
- Intent-to-treat analysis:
  - Analysis of participants in study arms as originally allocated
  - Analysis of participants regardless of the level of intervention exposure
  - Analysis using appropriate imputations to account for missing data due to attrition or other reasons
- Use of appropriate cluster-level analyses if allocated to study arms by cluster
- Comparability of measures:
  - Measures must be identical, including recall, for any repeated measures or change score analyses
  - Baseline measures do not have to be identical, but must be of the same construct as outcome measures, if being used as a covariate in analyses (i.e., adjusted for BL)
- Analysis based on a 2-sided test and an  $\alpha = .05$  (or more stringent)
- Analytic sample of at least 50 participants per study arm

## Strength of Evidence

### Demonstrated Significant Positive Intervention Effects

- Positive and statistically significant ( $p < .05$ ) intervention effect for at least 1 relevant behavioral outcome measure and 1 relevant biologic outcome measure
  - A positive intervention effect is defined as a statistically significant greater improvement in, or better level of, medication adherence behavioral or biologic outcome in the intervention arm relative to the comparison arm.

- A relevant behavioral outcome measure may include electronic data monitoring (e.g., MEMs caps), pill count, pharmacy refill, or self-reported adherence. A relevant biologic outcome measure may include a lab test or medical chart recovery of HIV viral load levels.
- Effect at the follow-up and based on the analyses that meet study design, implementation and analysis criteria

### **No Demonstrated Negative Intervention Effects**

- No negative and statistically significant ( $p < .05$ ) intervention effect for any HIV-related behavioral or biologic outcome
  - A negative intervention effect is defined as a statistically significant greater improvement in, or better level of, HIV-related behavioral or biologic outcomes in the comparison arm relative to the intervention arm.
- No other statistically significant harmful intervention effect
- For an intervention with a replication evaluation, no significant negative intervention effects in the replication study

### **Additional Limitations to Evaluate:**

- The totality of the limitations (as described below) cannot introduce considerable bias that substantially reduces the confidence placed on the findings.
- Examples of limitations include:
  - Intervention and comparison arms did not receive similar medication regimens
  - Findings based on too many post-hoc analyses
  - Inconsistent evidence between effects
  - Inconsistent evidence across intervention comparisons within the study
  - Effects only found within a potentially biased subgroup analysis
  - Substantial (>40%) overall missing data (due to attrition and non-attrition such as missing responses)
  - Substantial differential attrition in rates (>10%) or participant characteristics across study arms
  - Differences in characteristics between those lost-to-follow up and those retained in the study
  - Any other notable bias threatening internal or external validity

**All criteria must be satisfied for an intervention to be considered as a best-evidence MA intervention.**

