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

Intervention Description

- Clear description of key aspects of the intervention

Quality of Study Design

- At least a quasi-prospective study design
- Appropriate comparison arm
- At least a non-concurrent comparison arm that was implemented within 12 months of the start of the intervention and was similar with respect to population characteristics and setting
- At least non-random allocation with moderate selection bias unrelated to the intervention or adherence behavior

Quality of Study Implementation

- At least a 1-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 3-month post-initiation follow-up assessment for each study arm for all other types of interventions
- At least a 60% retention rate (or medical chart recovery) at all assessment time points 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
- 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 40 participants per study arm
- Non-randomized controlled trials (non-RCTs) must either demonstrate baseline equivalence or control for baseline differences in outcome variables. Non-RCTs with moderate bias must also demonstrate baseline equivalence or control for baseline differences in demographics and other critical variables.

Strength of Evidence

Demonstrated Significant Positive Intervention Effects

- Positive and statistically significant ($p < .05$) intervention effect for at least 1 relevant behavioral outcome measure or 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 Good-Evidence MA intervention.