Children with perinatal HIV infection are at-risk for neuropsychological deficits, but few studies have performed neuropsychological evaluation of African children across multiple sites in resource-poor settings where children have received well-documented anti-retroviral treatment and medical care and follow-up.

Principal study aims are:
1) To evaluate neuropsychological outcomes in perinatally HIV-infected (HIV), HEU and HUU sites in Africa and PHEU,
2) Comparing the HIV, HEU, and HUU groups on the Kaufman Assessment Battery for Children (KABC-II)

Statistical Methods (continued)
- Linear regressions analyses were performed including age and sex as covariates. The p-values were adjusted for multiple comparisons and age as covariates.
- Linear regressions models are conducted to evaluate potential confounders in two steps: 1) all covariates with p < 0.20 in principal test outcomes, making it necessary to adjust by the full model.
- Significant associations were found between child, site and/or demographic variables and test outcomes in perinatal HIV, with scores averaging above 90% at 5/6 sites.

Comparing the HIV, HEU, and HUU Groups on the Tests of Variables of Attention (TOVA)
- Test of Variables of Attention (TOVA)
- Visual
  - Target
  - Non Target

Limiting Summary of Principal Statistical Findings (construct validity)
- For pairwise comparisons between groups, whereas the HIV group performed significantly more poorly than either the HEU or HUU groups, the HEU and HUU groups did not differ from one another.
- For the KABC Mental processing index score (MPi), the HIV group scored on average, 5 points lower than both the HEU and HUU groups. There were significant differences among sites for the principal test outcomes, making it necessary to adjust by site when comparing the HIV, HEU, and HUU groups.
- However, HIV, HEU, and HUU groups differed on the neuropsychological outcomes were consistent across all six study sites.

Conclusions from Years 1 of P1104s
- We established the feasibility of obtaining multiple site neuropsychological measures in African children with HIV along with appropriate control comparisons; with significant performance deficits for the HIV group across all sites despite language and cultural differences.
- Still, significant differences by site for our cognitive test outcomes evidence the importance of considering site-specific contextual and sampling features (e.g., adjusting between-group differences by site).
- Even with early treatment intervention through P1060, the HIV performance deficits demonstrate the need for neuropsychological monitoring and rehabilitative interventions.
- P1104s children have been assessed for a 2nd time (week 48), are now being assessed for a third time (6/3 completed week 96 assessment as of June, 2016), providing a neuropsychological evaluation at several time points over a two-year period in order to further gauge the brain/behavior developmental trajectory of early and ongoing pediatric HIV treatment/care options in the African context.