Reviewer's report

Title: High Rates of Unplanned Interruptions from HIV Care Early After Antiretroviral Therapy Initiation in Nigeria

Version: 2 Date: 23 April 2015

Reviewer: Hilary Wolf

Reviewer's report:

This is a very important topic. Overall the paper is well-written.

Minor essential revisions

Background
1. For citation 21 you should reference UNAIDS 2012 instead of 2004
2. You are missing a space next to [15] in paragraph 4.

Discussion
1. This sentence is not clear “In a systematic review of cohorts in Sub-Saharan Africa, between 31% and 95% of patients not initially ART-eligible are retained in care between completion of clinical staging and becoming ART-eligible”
2. This sentence should be revised: “one in ten adolescents/young adults are enrolled in higher and tertiary education [39].”

Major Compulsory Revisions

Abstract
1. The abstract conclusion is a summation of the results. What are the implications of these results?

Background
1. In the last paragraph of the background, line 95 you mention 25% of patients have care interruptions. It would be helpful to know if these are patients on ART, especially since you make that point in paragraph 2. In addition it would be helpful to know how care interruption is being defined since you make this distinction in paragraph 2 as well.

Methods
1. You mention in the study design paragraph that pregnant women were not included. What if women in the cohort became pregnant during the study?
2. Why was this specific age range included?
3. Newly diagnosed patients are required to come more often and therefore more likely to miss an appointment. This therefore biases your results and should be listed as a limitation.
4. The definitions in the outcome measures paragraph are confusing. How would you classify a patient if the time between any two consecutive visits was >90 days and the time between the last visit and the censor date was also >180 days.

5. Not everyone is on the same visit schedule, are you basing this on calendar year or patient year? If this is calendar year, there is a bias that needs to be accounted for. How were there people on ART for 4 years if the study only went for three years?

Results
1. In the first line of paragraph 2, you use the denominator 2,029 to report the number of participants with available cd4 counts? In the regression analysis did you exclude participants who did not have cd4 counts? Why or why not? If you adjusted for CD4 count all of the participants who did not have a CD4 count would have dropped out of the analysis. Therefore, you should clearly state that your n for this analysis was 2,029 participants.

2. Prior studies have shown that HIV infected youth have much higher attrition rates compared to adults. Given your range of ages, treating age as a continuous variable does not take this factor into account. It would be more meaningful to treat age as a categorical variable and it likely has a collinear relationship with being a student, which is not as well accounted for when treating age as a continuous variable.

3. It would be useful to know the level of education of the students. If the students were in tertiary education this would impact your results and interpretation of your results.

Discussion
3. “Additionally, students, most of whom were university students, had a 2-fold increase in UCI; patients with less than tertiary education had a 50% increased risk of UCI.”

These are not mutually exclusive groups and seem to be a contradiction that should be addressed in the discussion.

4. “Our data showed a trend towards improvement in the risk of UCI over time in the context of local and national efforts to improve retention.”

This result is in table 2 but it is not reported in the results section at all. If you are going to include in the discussion it should be reported, however the evidence for this conclusion is somewhat weak.

5. Line 285-The literature has shown that there is a discrepancy in stigma for HIV concordant vs discordant marriages. This should be addressed.

Discretionary Revisions

Discussion
1. Line 283- Guidelines are moving toward test and treat regardless of cd4 count.
This should be taken into account

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.