**Supplemental Table 1. Additional detail on site and participant selection and the methods for handling missing data for the analysis among adults in selected antiretroviral treatment programs in Tanzania, Uganda and Zambia, 2011**

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| --- | --- |
| **Topic** | **Additional Information** |
| **Site selection** | The site-selection process was conducted in consultation with country-specific stakeholders including Ministries of Health (MOH) and United States Government (USG) partner organizations. |
| **Participant selection** | Based on clinic client flow, participants were selected using a systematic sampling approach with every fifth patient attending the ART clinic selected at the larger facilities and every third patient at the smaller facilities. |
| **Missing data** | For individual level variables missing 10-30% of participant responses, the missing response was included in the model as its own separate category. The multiple imputation procedure was performed using Multivariate Imputation by Chained Equations as implemented by the “ICE” package for Stata. [36] Ten data sets were imputed, the final model run on each of the imputed datasets, and the results combined using Rubin's rules. |

**Supplemental Table 2. Additional detail on the measures used among adults in selected antiretroviral treatment programs in Tanzania, Uganda and Zambia, 2011**

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| --- | --- |
| **Variable** | **Additional Information** |
| **Adherence self-reported measures (3-day, 30-day, 30-day VAS, Case Adherence Index and missed ≥48 hours/3 months)** | We used the term tablet instead of dose in the these self-reported adherence questions as the pre-test exercise found that dose meant very different things to different people (i.e. ranging from the number of pills a person was expected to take at one point in time to the number expected for an entire day) |
| **Demographic and health survey’s wealth index** | The wealth index variable consisted of country specific questions [24-27] Each household asset was assigned a weight or factor score generated through principal component analysis, and the resulting asset scores categorized into wealth tertiles. |
| **Internalized AIDS Stigma Scale (IA-RSS) [28-29]** | We assessed stigma using five yes/no questions from the Internalized AIDS Stigma Scale (IA-RSS) The sixth question “Being HIV positive makes me feel dirty” was removed after pre-test results found that participants related the question to sexual immorality instead of capturing negative self-image. The scale development process resulted in two factors (see main text). Country-specific medians were used as the cutoff points to dichotomize responses into high (> median) vs. low stigma (medians for internalized stigma: zero for all three countries; medians for stigma disclosure: Tanzania=2, Uganda=1, Zambia=1). |
| **Duke University – University of North Carolina Functional Social Support Questionnaire [31-32]** | Exploratory and confirmatory factor analysis identified a two-factor model. The first factor, Social Support Care, consisted of seven questions about having people to talk with (e.g., about personal problems, important things in their life) and having people who visit and care about them (Chronbach’s alpha=0.76). The second factor, Social Support Help, consisted of four questions about instrumental help available to the participant (Chronbach’s alpha=0.78). The mean score of responses for each of the two factors were summed from a four-point scale response, ranging from “as much as I would like” to “never”, divided by 10. Scores in the lowest 10th percentile were categorized as having low levels of social support. |
| **HIV Symptom Index [35]** | The HIV Symptom Index is a 20-item index assessing factors ranging from fatigue to skin problems. During translation and pre-testing, the team modified the original five point Likert scale to a four point Likert scale, with 0 representing the absence of that symptom and 3 indicating that the patient did have the symptom and it bothered them “a lot”. A composite score of the responses was created with country specific medians used as the cutoff point to dichotomize responses into high vs. low (< the median) ­symptom burden (medians: Tanzania=6, Uganda=11, Zambia=7). |

**Supplemental Table 3: Site characteristics of ART clinics in multi-country adherence study, 2011**

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| --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Tanzania (n=7)** | **Uganda**  **(n=6)** | **Zambia**  **(n=6)** | **Total number of sites**  **(N=19)** | **Characteristics of sub-set of VL testing sites**  **(n=6)** |
| **General information** |  |  |  |  |  |
| **Level of health facility** |  |  |  |  |  |
| National Referral Hospital | 2 | 1 | 1 | 4 | 2 |
| Provincial/Regional Hospital | 2 | 0 | 2 | 4 | 2 |
| District Hospital | 3 | 1 | 2 | 6 | 1 |
| Primary/community based health care | 0 | 4 | 1 | 5 | 1 |
| **Type of health facility** |  |  |  |  |  |
| Government | 4 | 1 | 5 | 10 | 3 |
| Mission facility | 3 | 1 | 1 | 5 | 1 |
| Non-religious NGO | 0 | 4 | 0 | 4 | 2 |
| **Setting** |  |  |  |  |  |
| Urban | 4 | 5 | 4 | 13 | 4 |
| Rural/Peri-urban | 3 | 1 | 2 | 6 | 2 |
| **ART-related information** |  |  |  |  |  |
| **Year ART was started at facility** |  |  |  |  |  |
| 2003 | 1 | 2 | 2 | 5 | 2 |
| 2004 | 3 | 2 | 4 | 9 | 3 |
| 2005 | 2 | 2 | 0 | 4 | 1 |
| 2006 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 1 | 0 | 0 | 1 | 0 |
| **Number of adults currently on ART** |  |  |  |  |  |
| <2,000 | 6 | 1 | 1 | 8 | 3 |
| 2,000-4,000 | 1 | 4 | 2 | 7 | 2 |
| >4,000 | 0 | 1 | 3 | 4 | 1 |
| **ART dispensing characteristics** |  |  |  |  |  |
| **Buddy needed for ART initiation** |  |  |  |  |  |
| No | 0 | 0 | 4 | 4 | 1 |
| Yes | 7 | 6 | 2 | 15 | 5 |
| **Lay person provides adherence counseling** |  |  |  |  |  |
| No | 2 | 2 | 0 | 4 | 1 |
| Yes | 5 | 4 | 6 | 15 | 5 |
| **ART refill frequency after 6 months** |  |  |  |  |  |
| Monthly | 5 | 1 | 0 | 6 | 3 |
| Every two months | 0 | 4 | 5 | 9 | 3 |
| Every three months | 2 | 1 | 1 | 4 | 0 |
| **Community based distribution of ART** |  |  |  |  |  |
| No | 7 | 3 | 5 | 15 | 6 |
| Yes | 0 | 3 | 1 | 4 | 0 |
| **ART dispensing in the HIV clinic**  No  Yes | 1  6 | 1  5 | 5  1 | 7  12 | 2  4 |
| **Stock out of ART in past 6 months** |  |  |  |  |  |
| No | 5 | 6 | 6 | 17 | 5 |
| Yes | 2 | 0 | 0 | 2 | 1 |

VL, Viral Load