# Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Pierre S, Pape J, McNairy ML, et al. 10-Year survival of patients with AIDS receiving antiretroviral therapy in Haiti. N Engl J Med 2016;374:397-8. DOI: 10.1056/NEJMc1508934

**Supplemental Material**

**Title**: Methods for estimating survival among patients with unknown vital status at 10-years after ART initiation.

**Contents**

We used three methods to estimate cumulative incidence of survival at 10 years of follow-up: 1) Kaplan-Meier survival analysis methods, 2) inverse probability weighting survival analysis, and 3) logistic regression with the use of multiple imputation with chained equations. Each method accounts for lost to follow-up (LTF) differently given the status of LTF is not a definitive patient outcome but rather a mixed category of undocumented deaths, undocumented transfers, and patients who are alive but disengaged from care.[1-3] Standard Kaplan Meier survival methods censor patients who are LTF, which assumes that being LTF is not associated with survival independent of covariates. Patients who were LTF or transferred were censored at the date of last clinic date or date of transfer. Survival analysis with inverse probability weighting assigns a weight equal to the inverse probability of vital status ascertainment for traced participants.[4] Applying these weights, participants traced are weighted to represent the population of all patients who were LTF. In this analysis, all patients who were categorized as LTF were traced in 2014 to ascertain vital status. This method assumes that the sample with successful tracing is representative of the survival probability among all patients who were LTF. The third method is logistic regression with the use of multiple imputation with chained equations (20 imputations) to assign vital status 10 years.[5] Multiple imputation techniques assume that missing data is missing at random and that, conditioned on the covariates used to impute outcome status, individuals who are LTF have the same risk of an outcome (in this case death) as individuals not LTF. Using this method, vital status was imputed among participants categorized as LTF or transferred.

Characteristics associated with early or late death were generated using Cox Proportional Hazards Models. Adherence was measured at six months after ART initiation and was defined as the proportion of pills prescribed that patients collected from the pharmacy.[6] Diagnosis of

tuberculosis followed the definition of the American Thoracic Society and has been used in our prior reports.[7-11] Missing data for CD4 count, weight, and adherence at six months were imputed using the following predictors: sex, age, weight (categorized by quartile by sex), WHO Stage, residence, income, referral source, and baseline tuberculosis. Variables associated with mortality in previous publications or in our clinical experience were included in the initial model. We used STATA statistical software (Version 13.0, College Station, Tx) for all analyses.

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