Household Mortality Analysis: HIV/AIDS and non-HIV/AIDS Deaths in Mozambique, 2002-2007

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Purpose

Mozambique has an HIV/AIDS prevalence rate of 16 percent, varying substantially from 8 to 27 percent across provinces.[1] In response to the epidemic, the government of Mozambique has scaled up access to anti-retroviral (ARV) treatment for HIV/AIDS from 2004-2008 as part of the Treatment Acceleration Program (TAP). From 2005 to June 2008, the number of health facilities offering ARVs increased from 34 sites to 211, providing treatment to approximately 25,000 to 94,000 patients respectively. In this study, we evaluate the impact of the arrival and scaling up of ARV treatment in Mozambique on mortality using the TAP household survey data.

Specifically, we examine trends in mortality by age, gender, and socioeconomic status (determined by a wealth index built by household asset holdings). Since the TAP household survey was administered to 658 HIV+ households and 312 non-HIV households, we can compare mortality in households with an HIV patient to mortality in households without (known) HIV. We examine the economic impact of a household member's death by looking at the effect of the death on household agricultural output, income generating activities, whether a household had to sell assets to pay for medical expenses resulting from the death, and whether a household had to sell assets in order to pay for the deceased's funeral expenses.

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[1] Source: UNAIDS, 2007

Methods

From 2002-2007, about 27.5 percent of households with an HIV patient experienced a death, compared to 16.4 percent of comparison households.[2] It is expected that AIDS related deaths would decline with the scaling up of ARV treatment. However, it is difficult to identify AIDS-related deaths because of stigma related to AIDS, lack of national vital statistics, and limited access to health facilities. To circumvent the lack of data, we use three different measures to label a death as AIDS-related: 1) diagnosed as HIV/AIDS related by a professional (*professional diagnosis*), 2) household head reports death was HIV/AIDS related (*personal diagnosis*), and 3) death occurred in a household with an HIV patient (*patient household diagnosis*). *Professional diagnosis* will underestimate the number of AIDS-related deaths because of access to health facilities. *Personal diagnosis* may suffer from bias as it is self-reported by the household head. The final measure, *patient HH diagnosis*, assumes that if the death occurs in an HIV patients' household, the death is HIV/AIDS related. This can possibly overestimate the number of AIDS-related deaths and should be viewed as an upward bound. We compare trends in mortality implementing these three measures. T-tests of differences of means are used to compare unadjusted mortality across various strata and regression analysis is used to adjust for additional covariates.

Findings and Implications

Figure 1 illustrates the decline in the fraction of HIV/AIDS related deaths since 2005 using *patient household diagnosis* as the measure of AIDS-related deaths. The decline in AIDS-related deaths coincides with the scaling up of ARV treatment.

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[2] There were 294 deaths across 242 households over the 5 year period.

Proportion of HIV+ Deaths Over Time
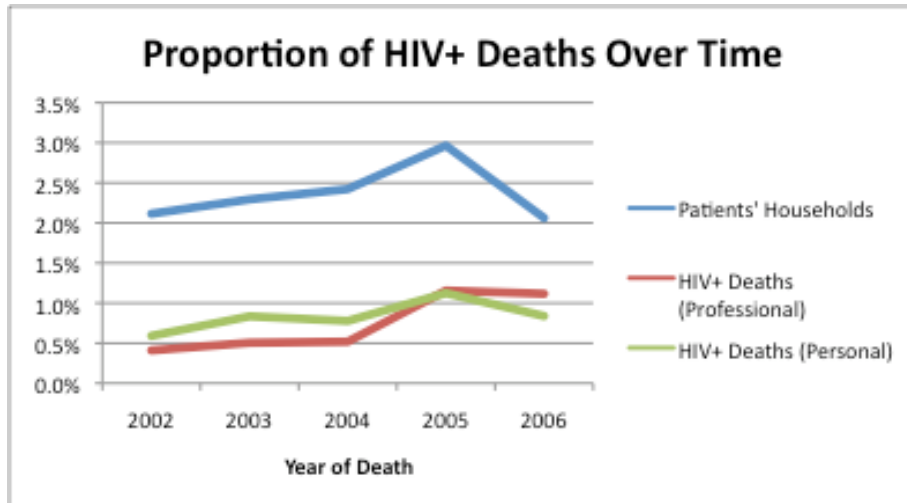
The highest fraction of deaths occurred in the 0-4, 35-44, and 45+ age groups. Using *professional diagnosis* as an indicator of AIDS-related death, child mortality resulting from HIV/AIDS is 6 percent, whereas the *patient household diagnosis* measure suggests that HIV/AIDS related child mortality is 13.5 percent. This large shift in child mortality rates raises concern that children are rarely diagnosed with HIV, probably because they are not taken to health facilities for HIV/AIDS testing or treatment.

Households including an HIV patient are more likely to have sold assets to face expenses linked to a death in the household and are more likely to have lower funeral expenses. The latter suggests evidence of the stigma associated with AIDS. Female deaths were more likely to result in the household selling assets to pay for medical expenses including treatment. Deceased females were more like have a lower age at death (reflecting the age profile of HIV) and more likely to be less educated (reflecting education differences by gender). If the deceased adult was a spouse of a household member, it is more likely that household economic activities, including agricultural output and income generating activities, are affected. Over time, increased ARV treatment should mitigate the welfare loss experienced by a household from AIDS.