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WORKING-AGE ADULT MORTALITY AND PRIMARY SCHOOL ATTENDANCE IN RURAL KENYA

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BACKGROUND: The onset of the AIDS epidemic in the past two decades raises serious questions about long term human capital development, including education, and the future quality of the workforce in many countries of Africa where the disease is particularly acute. There is growing concern over the effect of high AIDS-related adult mortality and illness on child welfare and the disease's effects on their potential over the long run to support themselves as adults and to contribute to their countries' development

OBJECTIVES: This paper measures the impact of working-age adult mortality on child primary school attendance in Kenya. Kenya is one of the most heavily HIV-infected countries in the world: 13.5 percent of adults aged 15 to 49 are estimated to be living with HIV in June 2000. The paper estimates effects on boys' and girls' schooling separately, to understand potential gender differences resulting from adult mortality. We also examine how adult mortality potentially affects child schooling differently *before* as opposed to after the death occurs. The paper also estimates the importance of households' initial asset levels in influencing the relationship between adult mortality and child school attendance.

A major difficulty in measuring the impact of adult mortality, especially mortality attributable to AIDS, is that it is caused by behavioral choices rather than by random events. We overcome this problem, to some extent, by estimating household- and child-fixed effects models using panel data.

DATA AND METHODS: Two sources of data are used: a three-year nationwide panel data set of 1,422 rural households, collected in 1997, 2000,

and 2002, by the Tegemeo Institute of Egerton University, and secondary data on HIV-prevalence rates from 13 sentinel surveillance sites, collected annually between 1990 and 1999 by the National AIDS and STDs Control Programme (NASCO). The data are used to estimate the effect of working-age adult mortality, conditional on the timing of the death, on school attendance of children aged 7 to 14 during the 5 year period between the first and third surveys in 1997 and 2002. The analysis first identifies potential pathways by which adult mortality may affect child school attendance and the timing of each pathway. We next estimate re-interview models to assess the degree to which sample attrition is a problem and use the inverse probabilities of being re-interviewed as weights to control for attrition in the subsequent analyses. Then, using household fixed-effects, the paper estimates the impacts of adult mortality on child school attendance in rural Kenya after stratifying sampled households and their children by wealth and gender.

FINDINGS:

First, we find a high correlation between lagged HIV-prevalence at nearby urban sentinel surveillance sites and the probability that a household experiences the death of a working-age adult. This indicates that a high proportion of the working-age mortality in the household data are AIDS-related.

Second, children's school attendance is adversely affected by the death of working-age adults among the bottom half of sample households ranked by initial asset levels in 1997, but no significant effects are detected among households in the top

half of the asset distribution. We also find that children, especially girls, in relatively poor households are less likely to be in school in the period prior to the adult death in their household compared with children in unafflicted households. The probability that girls from relatively poor households attend school in the one- to two-year period *before* the death of an adult declines from roughly 90% to 62%.

The effects of adult mortality in poor households on boys is nearly as severe, with the probability of remaining in school declining from 89% to 63%. This suggests that children, especially girls, are sharing the burden of caring for sick working-age adults and/or that school fees tend to be among the first expenditures curtailed in relatively poor households after one of their prime-age members becomes chronically ill.

Third, while the effects on girls' schooling *after* an adult's death does not appear to be great (in either poor or non-poor households), we find that in the one- to two-year period directly after the death of an adult, the probability that boys in relatively poor households attend school declines from roughly 89% to 65%.

The fact that we find larger impacts among the poor could be because households closer to the edge of economic survival are forced to take more extreme measures to adjust to major shocks to their livelihoods, even at the expense of long-run human capital development, than their neighbors. Because they have fewer options, poor households appear more likely to reallocate their children's time from schooling to care-giving for sick adults or to providing labor to compensate for the lost labor of the sick adult. By contrast, school attendance among boys in relatively poor households drops more sharply after the adult member dies. However, because of this study spans only a few years, it is unclear whether the effects on schooling as measured in this study are long-term or only temporary.

Because of limited capacity of local hospitals compared with the overwhelming number of AIDS patients, most AIDS patients are taken care of at their homes in rural areas. Although home-based

care should be promoted to ease the burden on the medical system in rural areas, children appear to be bearing part of the burden of taking care of the sick.

Policies to reduce the burden of taking care of the sick at home, such as improved community health care systems, may have an added advantage of helping afflicted households keep their children in school.

Fourth. School attendance among the poor is negatively correlated with lagged provincial HIV-prevalence rates, even after controlling for child fixed-effects. This result suggests that AIDS is indirectly affecting child school attendance in ways other than through the death of household members, or that unobserved time varying factors correlated with changes in HIV-prevalence rates are impeding school attendance

Overall in Kenya, primary school enrollment rates are high compared with neighboring countries. Thus, it is quite possible that we would find much larger impacts of the working-age adult mortality on the primary school enrollment in other countries. There is a need to deepen our understanding on the impacts of adult mortality on child schooling in countries that are suffering from the AIDS epidemic so that governments and donor institutions can determine the best use of limited financial and human resources to mitigate the impacts of HIV/AIDS. Otherwise, there is the risk that the AIDS epidemic may produce as yet unanticipated intergenerational consequences on human capital development that might have been mitigated if understood and addressed earlier.

For the full downloadable report, visit the Tegemeo Institute website at: www.tegemeo.org Tegemeo Institute, in Nairobi, Kenya, is a branch of Egerton University devoted to responding to agricultural and rural development challenges in Kenya. Funding for this study was provided by USAID/Kenya under the Tegemeo Agricultural Monitoring and Policy Analysis (TAMPA) Project. Supplementary assistance is acknowledged from the Food Security III Cooperative Agreement, funded by AID/Washington's Global Bureau.

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