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The economic impact of AIDS on orphaned children: What does the evidence show?

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This briefing paper seeks to address two issues. First, what do we think will be the impact of the AIDS epidemic on families and, in particular, on orphaned children? Second, what evidence do we have about the magnitude of the impact of AIDS on orphaned children?[1]

Background: the African AIDS epidemic

According to the World Health Organization, an estimated 10 million adults worldwide are infected with the human immunodeficiency virus (HIV), the virus that causes AIDS. Roughly two-thirds of these infections are thought to be in Sub-Saharan Africa, spread mainly through sexual transmission.[2] Under existing technology, AIDS is a fatal illness for which there is no cure and no vaccine. Both the 100 percent fatality of AIDS and the fact that it is disproportionately striking adults in their most productive years, means that we can expect AIDS to have a large economic impact per case, compared to other endemic diseases in Africa (Over and Piot, 1992). Further, there is evidence in a number of countries that, unlike other diseases, AIDS is disproportionately striking the more socioeconomically advantaged groups of the population. This distinguishes AIDS from most other infectious diseases in Africa, which usually disproportionately affect the poorer groups. Since the more privileged are also those with the most human capital, this imposes additional economic losses from AIDS. Finally, it must be noted that even if all further transmission could be halted today, the full impact of existing levels of HIV infection will be felt for as much as two decades. This is because those infected with HIV may show no sign of disease for 5, 10 or even 15 years prior to development of full-blown AIDS. However,

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[1] This briefing paper draws heavily on two major sources: (1) Martha Ainsworth and Mead Over (1992), "The Economic Impact of AIDS: Shocks, Responses and Outcomes", Technical Working Paper no. 1, Population, Health and Nutrition Division (AFTPN), Africa Technical Department, The World Bank, Washington, D.C.; and (2) Martha Ainsworth and A.A. Rwegarulira (1992), "Coping with the AIDS Epidemic in Tanzania: Survivor Assistance", Background paper for the Tanzania AIDS Assessment. The World Bank, Washington, D.C.

[2] Perinatal transmission from mother to child at birth is the second major mode of transmission in Africa.

future transmission is difficult to prevent and the prospects for halting the spread of AIDS in the very near term are not great. This means that AIDS and its economic impact will be an important development problem for many decades to come, particularly in Africa.

1. How will AIDS affect the economy of the family, and orphans in particular?

Under normal circumstances, households possess an endowment of the time and human capital of their members and their physical and financial wealth. Based on these endowments and prevailing market conditions, household members make production, consumption, savings and investment decisions so as to maximize their well-being. At the microeconomic level, AIDS affects families by "shocking" their endowments of time and human capital, with the illness and death of a household member. However, almost from the moment that a member falls ill, households act to mitigate the impact of the illness and eventual death. Thus, the economic impact of AIDS is a dynamic process of shock and response, resulting in an "outcome" that is the net effect of the two at any point in time.

Most fundamentally, in hard-hit countries and communities, the AIDS epidemic will create large number of groups of surviving household members --orphans, widows, widowers and the elderly parents of AIDS victims -- with limited means of economic support. This will most certainly have an impact on the current well being and future productivity of orphaned children. From the time that a parent falls ill, other household members, including children, will respond by caring for the sick parent and compensating for his/her lost labor. This means that the value of the opportunity cost of the child's time will rise and he/she will often be withdrawn from school. The lost labor of the sick adult will also lower income, while the expenditures on medical care for the patient will take an increasing share of what remains. In this environment, fewer resources will be available for educational and health investments

in children, and for other productive investments. Further, household assets may be sold to pay for medical care or funerals.

The outcomes implied for surviving children are: fewer child investments; lower school attendance; lower health status; higher child mortality; and lower productivity as adults. These are potential outcomes for all orphans, regardless of the cause of death of their parents. However, AIDS orphans face additional difficulties. Because AIDS is a sexually transmitted disease, AIDS orphans are more likely to have lost both parents and often aunts and uncles as well. This limits the ability of family to absorb orphaned children. Unlike other causes of adult mortality, AIDS tend to be concentrated in communities and thus so are AIDS orphans. This creates a greater burden on the entire community in terms of absorbing these children. Finally, children may face substantial emotional trauma from caring for their parents as they suffer a long and painful death. After their parents' death they may suffer additional stigma owing to the fact that their parents died of AIDS.

2. What evidence do we have about the magnitude of the impact of AIDS on children?

The number of AIDS orphans in Africa. There are two approaches to estimating the number of AIDS orphans in Africa: (1) predicting them, based on plausible assumptions about adult mortality rates, the number of surviving children for each adult victim, and their age distribution; and (2) counting them in a door-to-door enumeration (Preble, 1990).

The two main *predictive* models have come from WHO and UNICEF. WHO predicts that by the year 2000, more than 10 million HIV-negative children under age 10 will have lost their mothers due to AIDS, worldwide (WHO, 1992). Of these, perhaps 90 percent will be living in Sub-Saharan Africa.

Note, however, that this is a cumulative estimate of the number of AIDS orphans since the beginning of the AIDS epidemic in the 1980s. Further, these predictions do not include HIV-positive orphans who later die from AIDS (leading to an underestimate), nor do they allow for any other source of child mortality (leading to an overestimate). The UNICEF model, generated by Preble (1990), predicts that 3-5 million maternal orphans will be created by the AIDS epidemic in the 10 Central and East African countries by 1999, amounting to 6-11 percent of all children under the age of 15.

The accuracy of both of the UNICEF and WHO predictive models rests on their underlying assumptions. Neither source has predicted the number of children who will be orphaned by their fathers, nor the number of children who will be orphaned from both parents. For older children, the loss of a father may have a more dramatic effect on well-being than the loss of the mother because of the drop in cash income associated with a father's death.

In terms of *counting* the number of orphans, there are two types of sources -- orphan enumerations and data derived from national censuses. Orphan enumerations have been conducted in two hard-hit regions of Uganda and Tanzania. A 1989 enumeration in Rakai and Masaka Districts of Uganda estimated 25,634 and 22,051 orphans, respectively, in the two districts, under the age of 18 (Dunn et al, 1990). This accounted for an estimated 12.81 and 4.95 percent, respectively, of all children. To the south, an enumeration in May 1991 of orphans in the Kagera Region of Tanzania counted 35,291 children under 15 who had lost one or both parents (Rwegarulira and Mushi, 1991). However, neither of these enumerations were able to identify AIDS orphans specifically.

An examination of census data reveals that high baseline levels of adult mortality in Africa produce many orphans, even in the absence of AIDS (see Table 1, from Ainsworth and Over, 1992). Censuses from before the onset of the AIDS epidemic in Kenya, Malawi and Uganda show that roughly 2 percent of children under 15 were motherless and from 3.5 - 7 percent had lost their father. In the only country that collected information on two-parent orphans (Malawi), about 0.5 percent of children under 15 were affected. The shaded areas of Table 1 are extrapolations of the number of paternal and two-parent orphans in the absence of the AIDS epidemic.[3] Thus, in the absence of AIDS, overall orphan rates from one or both parents might have amounted to 5.5-7 percent of all children under age 15. If the numbers are updated to 1991 for Uganda, we would expect as many as 507,000 non-AIDS, non-war orphans in that year. In Tanzania, more than half a million children are orphans; as the AIDS epidemic was not widespread in 1988, it is believed that only a small fraction of these children are AIDS orphans.[4]

Evidence of the impact of orphanhood on child welfare. There is considerable uncertainty concerning how the well-being of AIDS orphans compares with that of other disadvantaged children in these low-income countries. Virtually all of the evidence is anecdotal, pointing to severe consequences for children in AIDS-affected households. However, because they are anecdotes, it is unclear how representative they are of reality. It seems to be the case that in the hardest-hit areas of Tanzania and Uganda, AIDS orphans are still being absorbed by communities and not sent to institutions. In Northwestern Tanzania, for example, orphanages were operating at only about half of their capacity in 1990 (Ainsworth and Rwegarulira, 1992). Other limited evidence suggests that orphaned children are less likely than non-orphaned children to attend school, but that the differential in enrollment between

[3] These estimates are based on the assumption that half of one percent of children under 15 would be two-parent orphans, and that the ratio of fatherless to motherless orphans is 2:1.

[4] Ainsworth and Rwegarulira (1992) estimated that of the 46,000 orphans under the age of 15 in Kagera region in 1988, perhaps 6,000 were due to AIDS.

orphans and non-orphans is relatively small compared to the very large portion of both groups of children in the general population who, for whatever reason, cannot attend school (see Dunn et al, 1990, and Ainsworth and Rwegarulira, 1992).

More empirical evidence is needed to allow policymakers to identify which children are most vulnerable in these areas hard-hit by AIDS. Fortunately, two research projects have been launched to answer these questions:

- A longitudinal household survey is currently underway in Northwestern Tanzania to measure quantitatively the economic impact of AIDS on households and communities (Over et al, 1989). The stratified random sample of 800 households includes 700 that were selected due to high probability of AIDS illness or death. The sample will be interviewed at 6-month intervals for 18 months to measure the impact of adult morbidity and mortality on living standards of households and individuals. The first quantitative results of this study are expected in fall, 1992.

- A second, multi-country field study of the "Socioeconomic evolution of children and families affected by HIV/AIDS in developing countries", with similar objectives, is being launched by the International Children's Center in Paris (Chevallier et al, 1991). This project will conduct a socioeconomic survey of 200 households with AIDS patients in Haiti, Cote d'Ivoire and Benin. The households will be recruited from health service records and be questioned on their socioeconomic characteristics, use of and expenditures on medical care. Subsequently, 120 of the households in each country will be interviewed at two-month intervals over a year with a more detailed questionnaire.

Conclusion

The economic impact of AIDS on households and individuals can be measured in terms of the shocks it inflicts on households, the responses of households ("coping"), or the net outcomes. To date, there is far better documentation of the shocks or predicted shocks of the epidemic than there is of households' responses or the net outcomes for well being. The numbers of AIDS orphans are growing, but are superimposed on much larger numbers of orphans from other causes. AIDS orphans have been singled out as a special target group by donor organizations and governments, yet surprisingly little is known about the welfare implications of being an AIDS orphan relative to other orphans or to other poor or needy children in the population. Given the large number of vulnerable children in African countries, including the large number of orphans, orphan status is unlikely to be a very efficient or feasible criterion for targeting special programs of assistance. Research is critically needed to identify: (a) children in greatest distress; and (b) cost-effective programs to assist household and community responses, without displacing existing coping mechanisms that have proven to be effective.

Actual and estimated numbers of orphans, age 0-14, based on census data from selected East African countries

COUNTRY	YEAR	Maternal orphans		Paternal orphans		2-parent orphans		Total orphans	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Kenya	1969	100,837	1.91	374,563	7.08	26,465	0.50	448,935	8.49
Malawi	1977	49,355	2.03	85,096	3.51	12,421	0.51	122,030	5.03
Tanzania	1988	200,985	1.96	401,970	3.91	57,637	0.53	545,318	5.31
Kagera Region	1988	18,125	2.92	36,250	5.85	7,771	1.25	46,604	7.5
Uganda	1969	106,203	2.44	203,869	4.68	21,779	0.50	280,293	6.82
Masaka/Rakai	1969	6,717	2.31	12,467	4.28	1,451	0.50	17,727	6.09

Note: Shaded areas denote estimates; unshaded areas are census results.

Sources: Kenyan Census (1969); Census of Malawi (1977); Ainsworth and Rwegarulira (1992), cited in World Bank (1992a); Republic of Uganda (1976); shaded areas estimated by Ainsworth.

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