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SANCLARE BUILDING 3rd FLOOR 21 DREYER STREET CLAREMONT 7700 CAPE
TEL: (+27 21) 671-3301 www.epri.org.za FAX: (+27 21) 671

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AIDS, Poverty and Malnutrition

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Carrie Green (Williams College and EPRI)
Robert van Niekerk (Oxford University and EPRI)
Michael Samson (EPRI and Williams College)

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EXECUTIVE SUMMARY

The purpose of this paper is to assess household studies performed in Zimbabwe, Zambia, Thailand, and Tanzania, as well as an array of medical literature on the relationship between AIDS, poverty and malnutrition. The paper analyses the economic impact of AIDS deaths on the household and provides a discussion of vulnerability within the household. Coping mechanisms and strategies used by households in the event of adult death are outlined, as well as recommendations for targeting, mitigation and government intervention.

Poor households face the highest risk with regard to contracting HIV/AIDS. For many individuals, particularly women, children and extended family caregivers, this has severe physical, economic, educational and nutritional ramifications. The financial and emotional drain placed on households, in which one or more person is infected with the virus reduces the relative wealth of a household and worsens the poverty situation. The greater extent of poverty faced by such households then places household members at an even greater risk of contracting HIV/AIDS.

HIV/AIDS also raises the risk of malnutrition for young household members through a number of direct and indirect mechanisms. Directly, children infected with the virus are more susceptible to other types of infection such as TB. Indirectly, although children may not have the virus, they may nevertheless become malnourished through exposure to other HIV positive household members who have become infected with other contagious illnesses.

To cope with the impact of HIV/AIDS, many households rely on extended family support, but the rising incidence of such infections has compromised the family's ability to cope with this disease. Monetary and community-based assistance is thus needed for many poor families.

1. INTRODUCTION

The discussion of HIV/AIDS on the African continent no longer revolves simply around issues of health. It has evolved, rather, into a deliberation of economics, national development and poverty relief. The study of how this particular disease affects individuals, households and the national economy reveals a complex but important relationship between HIV and poverty. In Sub-Saharan Africa, the rates of infection are actually higher among the wealthy than among the poor, but because the poor population is so much larger, infection among the poor is considerably higher in absolute terms. Economic growth, moreover, typically leads to higher rates of HIV in the poor population with large project investments resulting in labour migrations and family disruptions. [1] According to Bonnel (2000), the growth effects on the greater economy are more pronounced the longer HIV has been around while HIV is most advanced in the weakest economies least able to adjust expenditures and revenues. School attendance rates decline, medical costs rise, economic opportunities for women become more limited, and infrastructural investment declines.[2]

Sound fiscal policies are eroding while gains in employment and economic growth are reversing in what Bonnel terms a "vicious cycle of underdevelopment."[3] Martha Ainsworth of the World Bank, in her study of the impact of household death on the health of children in Kagera, Tanzania, notes that AIDS is slowly reversing a thirty year trend (1960 to 1990) of improvement in the health and education of poor children, severely compromising their prospects for future productivity. Maternal infection rates

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[1] R. Bonnel,"HIV/AIDS and Economic Growth: A Global Perspective," South African Journal of Economics, Vol. 68:5 (Dec 2000), p. 848.

[2] "HIV/AIDS and Economic Growth: A Global Perspective," pages 824, 825, 848.

[3] HIV/AIDS and Economic Growth: A Global Perspective," p. 848.

for newborns in Southern Africa are as high a 30% to 40% without intervention. Children born with HIV suffer stunting, nutritional wasting, acute, chronic and persistent diarrhoea, failure to thrive, pneumonia, thrush, and neurological abnormalities.[4] In addition to this grim clinical picture, children infected with AIDS, if cared for by their family, are typically raised in households economically compromised by previous HIV infection.

According to UNAIDS and the World Health Organisation, 90% of the 600,000 children under the age of fourteen who became HIV-infected in the year 2000 were born to HIV-infected mothers. Nearly 90% of these new infections were in Sub-Saharan Africa, while 70% of the global total of HIV-infected persons reside in Sub-Saharan Africa. The number of AIDS orphans (a child under fifteen years of age who has lost one or both parents to AIDS) in South Africa alone is estimated to reach one million by the year 2005. By the year 2010, the estimate is closer to 2.5 million with the majority of these being under four years of age. Despite this, very little research has been devoted to the impact of AIDS at the household level in South Africa. Reflecting this lack of research, the authors of the Kaiser Foundation Lovelife publication, a report specifically devoted to the HIV/AIDS epidemic in South Africa, cited the need to rely on anecdotal evidence and research from other countries. [5]

The consequences of AIDS deaths, though similar throughout the African countries, are unlike those from other diseases. By striking adults in their prime, at the peak of their productivity and earning capacity, this disease disables and kills those people on whom families rely for their very survival. [6] AIDS is also characterised by the

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4 Martha Ainsworth, Innocent Semali, "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," World Bank Policy Research Working Paper (2000), p. 5.

5 "Impending Catastrophe Revisited: An update on the HIV/AIDS Epidemic in South Africa," Henry J. Kaiser Foundatation, LoveLife (2001), p. 4, 8, 10.

6 M. Lundberg, M. Over, P. Mujinja, "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," *South African Journal of Economics*, vol. 68, no. 5 (Dec 2000), p. 948.

likelihood of multiple deaths in a given household.[7] The high cost of transportation to medical facilities and funeral expenses at a time when household income is diminishing due to reduction in labour time puts the household at serious financial risk.[8] With multiple deaths, the family's ability to cope is additionally compromised by the potential for stigmatisation and the inability or refusal of extended family to lend support due to either this same stigmatisation or the financial burden of deaths within the family.

Given the many factors characteristic of HIV/AIDS death-- what Gladys Bindura Mutangadura labels a "major form of idiosyncratic shock affecting households" [9] -- the financial cost to a household is considered to be as much as 30% higher than deaths from other causes. [10] The role of public sector intervention at the household level is the subject of many debates. There is evidence that public assistance "crowds out" private support and reduces the incentives for family and other donors to contribute to the welfare of those in need. On the other hand, it is possible that public assistance stimulates private transfers. Most importantly, however, is the evidence that family support systems are weakening. The burden of multiple deaths from a highly stigmatised disease has either lessened the degree to which families and communities are willing to assist or, in some cases, brought such assistance to a halt. Public sector intervention may be required to meet the basic needs of household's whose ability to self-insure has been compromised by HIV/AIDS. [11]

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7 Gladys Bindura Mutangadura, "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," Paper presented at the AIDS and Economics Symposium (2000), p.13.

8 "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," p. 948.

9 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.30.

10 "Impending Catastrophe Revisited: An update on the HIV/AIDS Epidemic in South Africa," p. 9.

11 "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," pages 950-951.

The purpose of this literature review is to assess household studies performed in Zimbabwe, Zambia, Thailand, and Tanzania, as well as an array of medical literature on the relationship between AIDS, poverty and malnutrition. Section one provides a discussion of household surveys and the methods used by different researchers. Section Two involves an analysis of the economic impact of AIDS deaths on the household and a discussion of vulnerability within the household. Section Three will focus on coping mechanisms and strategies used by households in the event of adult death. Section Four relies heavily on the medical literature to explore the link between HIV/AIDS, poverty and malnutrition, while Section Five assesses the recommendations for targeting, mitigation, and government intervention.

2. HOUSEHOLD SURVEY

The HIV/AIDS researcher conducting a household survey must begin by defining the household unit. Martha Ainsworth defines the household as "a group of persons living and sharing meals together in the same dwelling for at least 3 of the past 12 months."[12] Foster *et al* also defines the household as those people who cook and eat food together but without a specific time frame.[13] Foster defines the AIDS orphan as a "child aged 14 years or less whose mother and/or father has died."[14] This definition is consistent among researchers.

Defining the AIDS-affected family is a more difficult prospect for this type of research. In a five-year retrospective study on risk factors for AIDS-affected families in

12 "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," p. 11.

13 G. Foster, R. Shakespeare, F. Chinemana, H. Jamckson, S. Gregson, C. Marange & S. Mashumba. "Orphan Prevalence and Extended Family Care in a Peri-urban Community in Zimbabwe," p. 6.

14 "Orphan Prevalence and Extended Family Care in a Peri-urban Community in Zimbabwe," p. 5. Foster notes that this definition is consistent with the Shona cultural definition in Zimbabwe.

Zambia, Nampanya-Serpell used structured interviews of a purposive sampling. Based on information obtained by NGOs providing services in the urban sample or mission hospital data for the rural sample, this research team was able to select families likely to be suffering from a recent AIDS death. The working definition of an AIDS-affected family in this case was one in which one parent, both parents or the principle breadwinner had died of AIDS over the five year sampling period (January 1992 to December 1995).[15]

Mutangadura also used a purposively selected sample for her study of the impact of adult female death on the Zimbabwean household. In this case, the conditions leading to death among females were self-reported with no confirmation from medical examinations or records. The leading causes of adult female death were determined to be childbirth, TB/coughing, malaria, diarrhoea, high blood pressure, and meningitis (in order of prevalence). TB and diarrhoea are considered primary manifestations of AIDS. This data, in combination with fact that 33% of deceased females had lost a spouse prior to their death and 48% had lost a child, led Mutangadura to accept the implication that "the leading cause of death in adult females in this purposively selected sample was AIDS related." Focus group discussions, pointing to the brief intervals between the death of the female and spouse (or sometimes the youngest child) also indicated that AIDS was the primary cause of premature adult female death in the study. [16]

Ainsworth, in order to avoid telescoping and recall bias, chose not to use retrospective reports for her study of the impact of adult death on children's health in North-western Tanzania. Instead, she questioned all respondents on four primary AIDS symptoms: chronic diarrhoea, weight loss, chronic fever and skin rash. She accepted

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15 Namposya Nampanya-Serpell. "Social and Economic Risk Factors for HIV/AIDS-Affected Families in Zambia," Paper presented at the AIDS and Economics Symposium (2000), pages 5-6, 15.

16 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.15.

only reports of child illness on the day of interview. Over 25% of the children were ill, with fever and diarrhoea being the most frequent symptoms. No parent or caregiver reported AIDS as the cause of child illness. Ainsworth noted that this was not surprising given that AIDS presents itself as a series of common childhood illnesses. Interviewers also took measurements of height and weight for the children interviewed to aid in determining child health. [17] Community health indicators were measured through questionnaires. Nearly 50% of the children were determined to be living in communities with AIDS cited as the major cause of adult death with the adult death rate (15/1000) being three times height than would be expected without AIDS present.[18]

In order to determine the relationship between household wealth and impact of adult death on the health of surviving family members, Ainsworth also took measurements of household assets. These included coffee as a proxy for cash income (as a tree crop and the major cash crop of the area, it is considered an enduring asset), durable goods, and type of flooring as an indicator of wealth. Though coffee was grown by over 75% of the children's households, 48% of the children lived in households that reported zero durable goods. [19] Thus, the households with the fewest assets had no durable goods, no coffee and a dirt floor, and Ainsworth was able to determine that "the impact of adult mortality on reported morbidity is critically linked with the household's wealth." [20]

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[17] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," pages 12-13. Interviewers in the Zambian study also took measurements of children under five in AIDS-affected families in order to determine nutritional status. Measurements were limited weight for age indexing and mid-upper-arm circumference.

[18] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," p. 17.

[19] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," p. 17. Dirt floors, while significant as a low measure of wealth, are also significant in the higher exposure to bacteria for young children living in these households.

[20] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," p. 20.

Mutangadura, in order to target nutritional supplement programmes to needy children, also questioned the Zimbabwean households she surveyed on changes in consumption of specific commodities. Though she found decreased consumption of most commodities following adult female death in the household, she was not able to separate the cause of this change from the rising inflation in the country. Mutangadura also took information from teachers on the frequency of fainting in school and was able to determine, in the end, that food security was indeed poorer following adult female death. [21]

Kongsin and Watts, researching the economic impact of HIV morbidity on the household in rural Thailand, acknowledge the distressing nature of the interviews. In 30% of the cases, they had to return in order to complete the interview process because of the respondent's emotional duress.[22] Their research team used key informants within the community to identify households with chronically ill members. They focused on the presence of chronic illness or incidence of death within the one-year prior to the interviews as opposed to the cause of illness or death. Since they limited their study to illness (or death) in adults aged 15 to 49, they reasoned that most illnesses within this age range would be AIDS-related. [23]

Foster *et al* chose to focus on the cause of parental death in the Zimbabwe study. They used interviewers trained in the method of "verbal autopsy" in order to categorise deaths as "Not AIDS", "Possible AIDS", "Probable AIDS", or "Undetermined". They also relied on focus group discussions with the groups composed of caregivers,

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21 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.17.

22 Sukhontha Kongsin, Charlotte H.Watts, "Conducting a Household Survey of Economic Impact of Chronic HIV/AIDS Morbidity in Rural Thailand: Methodological Issues," Paper presented at the AIDS and Economics Symposium (2000), pages 1-2.

23 "Conducting a Household Survey of Economic Impact of Chronic HIV/AIDS Morbidity in Rural Thailand: Methodological Issues," pages 10-12.

community members and teachers. Though only one family stated AIDS as the cause of death, Foster *et al* determined that 50% of the adult deaths since 1987 in their sample were due to AIDS with 32.2% due to probable or possible AIDS since 1979. Acknowledging that verbal autopsy may not be the most accurate way of obtaining information on AIDS-related symptoms, Foster *et al* justified this exploratory approach by the importance they placed on the determining AIDS as the cause of death. [24]

3. IMPACT AND VULNERABILITY

Because HIV/AIDS is a sexually transmitted disease, all those who are sexually active are at risk for contracting the virus.[25] Women are particularly vulnerable to infection during unprotected intercourse, as the rate of infection for women is two to four times greater than that of males.[26] Those carrying other sexually transmitted diseases also carry a considerably higher risk of infection during intercourse due to skin lesions and open sores that expedite the exchange of blood between partners. HIV is characterised by a potentially long period of latency (10 to 20 years) after sero-conversion but prior to the expression of opportunistic infections. During this period, the infected person is asymptotic. This is followed by a one to two year period of AIDS illness prior to death.[27] During both latency and active AIDS, those carrying the disease are at risk of spreading HIV to their partners, or in the case of pregnant women, to their newborn children. As blood supplies become safer around the world, the risk of contracting HIV form blood transfusions diminishes. Most infants (90%) who contract

[24] "Orphan Prevalence and Extended Family Care in a Peri-urban Community in Zimbabwe," pages 6,8, 12.
[25] In countries where education and discussion have been effective, the primary risk factor is IV drug use, but that is not the case in South Africa.
[26] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.2.
[27] Gerald J. Stine, *AIDS Update 2001*, (New Jersey: Prentice Hall, 2001), pages 183-184.

HIV/AIDS will get it from their mothers either in utero, during birth or from breastfeeding. Newborns of mothers with HIV/AIDS are therefore particularly vulnerable to infection but the vulnerability does not stop there. These babies are born to mothers who are sick or will be sick. They are born into households that have most likely experienced at least one prior death. Should their HIV status become known to the community, they are subject to stigmatisation, rejection, and abandonment. This section will focus on the physical, economic, educational and nutritional impact of HIV/AIDS morbidity and mortality on women, children and extended family caregivers. The focus will be on poor individuals and households because they are the most vulnerable to risk and are the most likely to be affected by HIV. [28]

In many African countries, women are economically more vulnerable than men prior to experiencing the impact of HIV. In Zimbabwe, for instance, women work in more labour-intensive jobs, earn lower incomes, have less access to social security, and have fewer entitlements to ownership of savings and assets. As is true in South Africa, Zimbabwean women also lack sexual and reproductive autonomy. Not only are South African women subjected to economic maltreatment and violence within the home,[29] they, like the Zimbabwean women, are denied the right to protect themselves from disease. Neither abstinence, nor mutual fidelity, nor the use of condoms is within the control of the female partner.[30]

Some researchers contend that poor African women also run a greater risk of contraction than nonpoor women. According to Bonnel, “empowerment of women through greater economic independence is associated with a lower HIV prevalence

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[28] “HIV/AIDS and Economic Growth: A Global Perspective,” pages 828, 832.

[29] “Impending Catastrophe Revisited: An update on the HIV/AIDS Epidemic in South Africa,” p. 10.

[30] “Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development,” p.2.

rate."[31] Women with bank accounts, jobs or businesses are less likely to become infected. Women with education are more likely to have jobs and education is, indeed, associated with lower prevalence in some studies. As a key determinant of independence, education raises the cost of becoming infected and improves knowledge of the risks. [32]

The loss of the mother in the Zimbabwean household has profound social and economic consequences. As the key provider of food, clothing and utilities, the mother is considered the "gatekeeper" of household food security. Not only does she spend more time with the children, attending to their daily subsistence needs, she spends more of her individual labour and income on household consumption. Without the mother, the children are more likely to grow up inadequately prepared for life and with reduced potential for meaningful social contribution. [33]

Children living in AIDS-affected households are perhaps the most vulnerable to the many potential impacts of the disease. A parent with full-blown AIDS is likely to bring other infections into the family. Increased exposure to infections can lead to higher morbidity as well as a lower nutritional status among the children. A parent who is ill with opportunistic infections characteristic of AIDS is not only less able to contribute income, but also less able to care for a child's daily needs. If one calculates child health as a function of three main inputs (nutrient intake, medical care, and adult time input), it is clearly the parent or caregiver's task to transform these inputs efficiently. Ainsworth and Semali cite Dayton (1999) as finding a "positive relation between parents' morbidity

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[31] "HIV/AIDS and Economic Growth: A Global Perspective," p. 832. See pages 17-18 for contrasting evidence of contraction prevalence among the poor versus the nonpoor.

[32] "HIV/AIDS and Economic Growth: A Global Perspective," p. 834.

[33] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 3-4.

and low weight for height in children under 10 in the same sample of Tanzanian children they used for their World Bank Study in 2000.[34]

Though death of an adult may have a transitory negative affect on household welfare, death of a parent is likely to be more permanent. In the event of parent death, a substitute caregiver is less likely to be able to respond to the children's needs, less able to transform inputs efficiently, and less likely to consider the children critical to household welfare. Ainsworth and Semali found that adults in their study considered their own children to be a source of future income and security and thus had economic incentives to care for them. Orphaned children, on the other hand, were not considered old age security for those other than close relatives. Households taking in children who are not close relations therefore had no incentive to provide health care and schooling.[35]

The impact of adult death on the health of children is most severe in the poorest households. Ainsworth and Semali found that "the poorest children who are paternal orphans or who live in households with a recent adult death are significantly more likely to be reported ill, but the negative signs on most of the death-asset interactions indicate that the impact is less severe among households with greater wealth."[36] Poor orphans had higher rates of mortality in their sample while paternal death raised the likelihood of orphan morbidity by 32% compared with non-paternal orphans also in low-asset households. [37]

Foster *et al* found that AIDS orphans in Zimbabwe were subject to isolation, discrimination and stigmatisation. AIDS orphans in this study were more likely to be maternal orphans, younger than other orphans, living in low-income areas, and out of

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[34] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," pages 6, 8.
[35] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," pages 6, 9.
[36] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," pages 20-21.
[37] "The Impact of Adult Deaths on Children's Health in Northwestern Tanzania," p. 28.

school. Community members in the study reported that caregivers abused and neglected AIDS orphans, depriving them of food, clothing and school fees. Community members also reported that AIDS orphans were given excessive physical work and treated differently from the biological children within the household. Teachers also reported that they could identify the AIDS orphans by their lack of school fees, poor clothing and lack of food. The data set from the Foste*r et al* study also showed that "AIDS is leading to an increasing proportion of maternal orphans and an increasing proportion of orphaned children under 5 years old."[38] Their 1995 enumeration showed and orphan prevalence of 12.8% as compared to 6.8% in 1991. Most importantly, perhaps, was the finding that that the care of orphans in the community often falls on individuals who have least resources."[39]

In Zimbabwe, AIDS has been labelled "the grandmothers' disease" because, according to Mutangadura, it is the elderly who bear the burden of caring for the sick and the survivors. This is care they perform with great difficulty due to their own limited wealth, education, capital and work opportunities. Not only are these grandmothers caring for orphaned children, they are also deprived of their own financial security by the loss of their own children – the parents of the orphans now in their care -- to AIDS. Without social and economic support in countries that provide little or no social security to the elderly, these grandparents invariably become destitute. The consequences for future growth are devastating with orphans entrenched in a cycle of poverty and limited potential for escape. [40]

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[38] "Orphan Prevalence and extended family care in a peri-urban community in Zimbabwe," pages 9-11,12.

[39] "Orphan Prevalence and extended family care in a peri-urban community in Zimbabwe," p. 16.

[40] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p. 24, also M. Lundberg, M. Over, P. Mujinja, "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," *South African Journal of Economics*, vol. 68, no. 5 (Dec 2000), p. 949.

In Zambia, too, the characteristic household response to AIDS was a "rapid transition from relative wealth to relative poverty."[41] In the Nampanya-Serpell study, the shift was most evident for urban paternal orphans when the father was both the breadwinner and the tenant of a house provided by the employer. The family invariably had to move to a poorer dwelling without electricity or piped water and, once again, the children were removed from school. Although education was free, the fees for books, uniforms and transport went to the parents whose resources were constrained by medical, funeral and daily food expenses.[42] Though displacement was less of an issue in the rural sample, death of the father meant a critical loss of labour and food security, especially since the heads of households in the majority of instances of paternal death was the maternal grandmother. [43]

Though Lundberg, Over and Mujinja reported that Tanzanian orphans were also withdrawn from school due to lack of money for school fees, uniforms and supplies, they noted that infection rates were higher among the wealthy and better educated population than among the poor.[44] With wealthy families more likely to suffer a death in this sample, Lundberg *et al* were able to compare impact of adult death based on available resources. While the wealthier households had higher expenditures and higher consumption on all measured components, the poorer households showed a drop in food expenditure and consumption in the first six months following the adult death. The wealthier households in this study had an abundance of physical, human and social capital with a broader network of friends and relatives on which to depend in a crisis. They were more likely to receive private assistance than were poor families and were

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[41] "Social and Economic Risk Factors for HIV/AIDS-Affected Families in Zambia," p. 1.
[42] "Social and Economic Risk Factors for HIV/AIDS-Affected Families in Zambia," pages 1-2.
[43] "Social and Economic Risk Factors for HIV/AIDS-Affected Families in Zambia," pages 8-9.
[44] "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," p. 949.

better able to engage in common risk-pooling within a larger social network. The implication, according to Lundberg *et al* is that "the impact of the death is potentially even worse for poor households – not only are they hit harder, but they must bear a larger part of the burden alone."[45]

3.1 MALNUTRITION

All children born to HIV positive mothers carry antibodies to HIV at birth. Approximately 30% of infants born to seropositive mothers in Sub-Saharan Africa will test positive themselves by the age of 12 months (the time when the mother's antibodies leave the child's system). [46] And the rate of HIV prevalence among pregnant women is on the rise. In Soweto, South Africa, for instance, the antenatal prevalence of HIV rose from 6.4% to 22.5% between the years 1994 and 1998.[47] According to Thea *et al*, approximately 80% of all HIV-infected children in Sub-Saharan Africa die by the age of five, with diarrhoea being the most frequently reported cause of death for children up to the age of 18 months (over 50%). In Rwanda, diarrhoea accounted for up to 60% of all illness in HIV-infected children, affecting 80% of all HIV-infected children in their second year of life. [48]

These are very grim statistics for an area of the world already plagued by poverty and malnutrition. The HIV epidemic has had a serious detrimental effect on the health of young children already struggling for their very survival in the poorest sections of Sub-Saharan Africa. This section will assess the affects of both the mother's and the

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[45] "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania,", p. 978.

[46] R.E. McKinney, J.W.R. Robertson and the Duke Pediatric AIDS Clinical Trials Unity. "Effect of Human Immunodeficiency Virus on the Growth of Young Children." *Journal of Pediatrics* 1993, vol.123, p. 580.

[47] T.M. Meyers, *et al*. "Pediatric Admissions with Human Immunodeficiency Virus Infection at a Regional Hospital in Soweto, South Africa," *Journal of Tropical Pediatrics*, Vol. 46 (August), Oxford: Oxford University Press, 2000, p. 224.

[48] D.M. Thea,. St Louis, M.E.; Atido, U. *et al*. "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairiian Infants," *New England Journal of Medicine* 1993; vol. 329, p. 1696.

child's HIV status on the health of children in Sub-Saharan Africa. The goal is to integrate data from medical studies with evidence from household surveys for a better picture of the relationship between HIV, poverty and malnutrition.

As previously noted from the Ainsworth study in Kagera, Tanzania, the presence of HIV in the household raises the likelihood of exposure to other infections. Exposure to infection, in turn, raises the risk of malnutrition for young family members. "Morbidity and malnutrition," states Ainsworth, "have a synergistic relationship. Illnesses such as tuberculosis, diarrhoea, and measles, have well-documented biological effects on worsening children's nutritional status, while severely malnourished children have higher morbidity and mortality." [49] Malnutrition in and of itself can cause immunosupression in young children by inhibiting host defences, impairing tissue repair functions, and compromising the body's ability to resolve attacks of acute diarrhoea. [50] It is therefore difficult, even with HIV positive infants, to distinguish whether the cause of increased immunosupression is the virus or the resulting malnutrition. "In either event," states Thea *et al*, "the cyclic effects of diarrhoea, malnutrition, and immune dysfunction can produce an accelerated downward course" for infected infants with persistent diarrhoea.[51]

Some medical studies, such as that conducted by Taha *et al* in urban Malawi, indicate that "maternal HIV infection is the main determinant of mortality in the first 30 months of life."[52] The mortality rate of children born to HIV-infected mothers was, in this study, three times higher (36% as compared with 12%) than those born to seronegative mothers, even though many of these infants had normal birthweights. Low birthweight

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[49] "The impact of adult deaths on children's health in Northwestern Tanzania," pages 6, 10.

[50] "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," p. 1701.

[51] "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," p. 1701.

[52] E. T. Taha*, et al*, "The Effect of Human Immunodeficiency Virus Infection on Birthweight, and Infant and Child Mortality in Urban Malawi," *International Journal of Epidemiology*, 1995, Vol. 24, No. 5,p. 1027.

(along with intra-uterine growth retardation (IUGR) and prematurity) has traditionally been considered a major determinant of child survival, yet this data suggests that birthweight may no longer be a reliable indicator for development and growth of infants born to HIV positive mothers. Children born to seronegative mothers had a higher probability of survival over their first 30 months while children born to seropositive mothers were more likely to die from pneumonia, fever, failure to thrive and diarrhoea. [53] Again, most of these infants had normal birthweights. Those infants born to seropositive mothers who were themselves seropositive had the lowest survival possibilities at 12 months of age. [54]

Excess mortality in infancy and early childhood is consistent in studies of infants born to seropositive mothers throughout Africa. [55] Bailey *et al*, in a prospective study of over five hundred children in the Democratic Republic of Congo, found that mother's HIV status had a direct affect on her ability to care for her children. "In Congo," according to Bailey's 1999 study, "uninfected children of seropositive mothers suffer nearly twice the incidence of persistent diarrhoea as uninfected children of seronegative mothers and the incidence of infant diarrhoea increases with severity of maternal disease." Bailey *et al* concluded that the mother's disease led to "increased risk in their children for undernutrition, diarrhoea, and respiratory infections that would likely retard growth progression."[56] The infected children, however, suffered significantly more stunting (low

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53 "The Effect of Human Immunodeficiency Virus Infection on Birthweight, and Infant and Child Mortality in Urban Malawi," p. 1024.

54 "The Effect of Human Immunodeficiency Virus Infection on Birthweight, and Infant and Child Mortality in Urban Malawi," p. 1025.

55 "The Effect of Human Immunodeficiency Virus Infection on Birthweight, and Infant and Child Mortality in Urban Malawi," p. 1027.

56 Robert C. Bailey, *et al*, "Growth of Children According to Maternal and Child HIV, Immunilogical and Disease Characteristics: A Prospective Cohort Study in Kinshasa, Democratic Republic of Congo," *International Journal of Epidemiology* (1999), Vol. 28,p. 537.

height for age), wasting (low weight for height) and undernutrition than did their uninfected cohorts ages 0-18 months. [57] Once again, the cycle was apparent.

Persistent diarrhoea was strongly associated with malnutrition and HIV infection in Congolese children as it was for the children in Soweto. The more severely wasted the child was prior to the diarrhoea episode, the more vulnerable he was to subsequent episodes as compared to less wasted children. [58]

Persistent diarrhoea, according to Thea *et al*, is likely to occur earlier in infected than uninfected infants. In their prospective study of over 400 Zairian infants, 45 deaths occurred in infants whose HIV status was known. Of these deaths, 24% were due to persistent diarrhoea and 91% occurred in HIV-infected children. Diarrhoea was the leading cause of death in the cohort (36%) but for HIV positive children, the mortality rate from diarrhoea increased by 11 fold. [59] Children whose mothers' were symptomatic of AIDS disease had higher incidence of diarrhoea though the risk of persistent diarrhoea increased for uninfected infants whose mothers had died of AIDS (but not those whose mothers were sick). The risk of persistent diarrhoea increased for infected infants as well if the mother was either symptomatic or had died.[60] Thea, like Bailey, asserted that morbidity "and by implication mortality, was related to the ability of the mother to care for her infant and maintain infant hygiene and nutrition, especially during episodes of acute diarrhoea needing increased attention."[61]

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57 "Growth of Children According to Maternal and Child HIV, Immunilogical and Disease Characteristics: A Prospective Cohort Study in Kinshasa, Democratic Republic of Congo," p. 537.

58 "Growth of Children According to Maternal and Child HIV, Immunilogical and Disease Characteristics: A Prospective Cohort Study in Kinshasa, Democratic Republic of Congo," p. 537.

59 "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants,"p. 1700.

60 "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," pages 1698, 1701.

61 "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," p. 1701.

The Zairian sample is but one study that provides quantitative estimates of the effect of HIV-1 infection of rates of disease and death among infants. In short, "episodes of acute, recurrent, and persistent diarrhoea occurred significantly more frequently among infected infants than among uninfected controls." The significance here lies in the fact that such "repeated episodes of acute diarrhoea often lead to increasingly sever protein-energy malnutrition, specific micronutrient deficiency. . . or a combination of the two."[62]

Thus, even if the child is uninfected with the virus, the mother's illness with AIDS-related infections is likely to create a situation in which the child is more susceptible to diarrhoea which in turn leads to malnutrition, which then compromises the child's ability to resolve the acute diarrhoea which then increases the child's risk of death. If the child is also infected, his system will inevitably be immunosupressed not simply by malnutrition but by the virus as well, furthering raising the risk of death. Interventions that delay the morbidity and mortality of the HIV-infected mother could thus, significantly contribute to the long-term survival of uninfected children of infected mothers.[63]

In the Soweto, South Africa study, Meyers *et al* assessed both the HIV and nutritional status of 92% of all children under the age of five admitted to the Chris Hani Baragwanath Hospital (CHB) from June to December of 1997 (507 of 549 admitted) and found an HIV prevalence of 22.9%. Of the 507 tested, 66.9% of the uninfected children were well nourished while only 34.3% were well nourished of those children who were HIV positive. 29.4% of the infected children had marasmus (emaciation) or marasmus-kwashiokor (protein-energy malnutrition with oedema) as compared with 4.7% of the

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62 "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," pages 1700-1701.
63 "A Prospective Study of Diarrhoea and HIV-1 Infection Among 429 Zairian Infants," p. 1701.

uninfected children. [64] Without citing diarrhoea as a factor, this study noted that "infectious disease and associated malnutrition were the most common reasons for admission in HIV infected children." 76% of the infected children who died were malnourished at the time of death, with over 50% being severely malnourished. Of those who died uninfected with HIV, 53% were nutritionally compromised but only two were severely malnourished. [65]

McKinney *et al*, in a retrospective analysis of 170 children under the age of 25.5 months, found that HIV infected children were proportionately smaller than the uninfected controls. These children, though not malnourished, "were appropriately proportioned but were the size of children younger than their chronological age."[66] By the age of four months, HIV-infected children were significantly smaller in both weight-for-age and height-for-age. Thus, the infected children in this study were neither lean nor wasted, but even with proper nourishment, did not experience normal growth. McKinney *et al* suggest a physical rather than a social cause. It is possible, he asserts, that the HIV-infected infant uses more energy at rest while receiving a caloric intake comparable to an uninfected child. While this study appears unrelated to poverty and malnutrition, it does point to the fact that HIV-infected infants may require even more calories and nutrients than uninfected infants – a requirement that impoverished mothers can not meet without adequate assistance.

Several household studies have attempted to assess the nutritional status of HIV-infected children as well. In the Zambia study, researchers used the mid-upper-

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64 "Pediatric Admissions with Human Immunodeficiency Virus Infection at a Regional Hospital in Soweto, South Africa," pages 224-226.

65 "Pediatric Admissions with Human Immunodeficiency Virus Infection at a Regional Hospital in Soweto, South Africa," p. 228

66 R.E. McKinney, J.W.R. Robertson and the Duke Pediatric AIDS Clinical Trials Unity. "Effect of Human Immunodeficiency Virus on the Growth of Young Children." *Journal of Pediatrics* 1993, vol.123, p. 582.

arm-circumference as the principle index of nutritional status in children ages 0 to 5, noting that it is "widely regarded as one of the most reliable measures of protein-calorie malnutrition in early childhood." Weight for Age was used for verification. Although the expectation was that socio-economic status would have a large effect on the nutritional status of AIDS affected children, this turned out not to be the case in the rural sample. The most significant variable here was age: the younger the child, the worse the nutritional status. In the rural sample, the number of children in the household was also negatively related to their nutritional status while in the urban sample, the socio-economic status of the caregiving family did have "a significant protective effect on the health status of the orphans." Why it was that "malnutrition was found among the youngest children in economically better off families as well as poorer families" is difficult to explain. It is possible that these young children were recent additions to the household, orphaned by AIDS-related deaths. If so, their malnutrition could have preceded their entry to the household.

Ainsworth, as previously mentioned, used morbidity, height-for-age (stunting) and weight-for-height (wasting) on the day of the interviews to measure child health. These children were also reported to be stunted at almost the same rate in the poor and better off households.[67] She found that 37% of her sample were stunted, 2% were wasted and 1% were both stunted and wasted, noting that stunting and wasting reflect very different types of nutritional deficits. Wasting reflects stress at the time of interview and is relatively easy to reverse whereas stunting is the result of cumulative stress and reduced growth rates and is much slower to recover. [68]

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67 "Social and Economic Risk Factors for HIV/AIDS-Affected Families in Zambia," pages 11,12,16.

68 "The impact of adult deaths on children's health in Northwestern Tanzania," p. 10.

Data regarding malnutrition in AIDS-affected households or AIDS-infected children must be regarded cautiously. In many of the countries cited by these studies, protein-energy malnutrition (PEM) was prevalent prior to the AIDS epidemic. Nevertheless, it is clear that Paediatric AIDS brings with it symptoms of weight loss and protracted diarrhoea. Failure to thrive, is in fact, the most consistent symptom of HIV-infected children. [69] What is also clear is that HIV infection in the mother and in the child is making worse an already desperate problem of malnutrition in Sub-Saharan Africa. If poor women and children were considered the most vulnerable members of society prior to the AIDS outbreak, it would appear that their status as a group has worsened considerably.

4. COPING MECHANISMS

Throughout Africa, individuals and households have relied on the extended family to cushion the shock of adult death. Family networks have historically contributed goods and money to meet immediate needs, helped with funeral expenses and cared for orphans in the event of parental death. In Zimbabwe, the extended family as a safety net has been the most important community response to income crisis throughout history. [70] There is evidence, however, that the extended family is now under stress. In many countries, poor economies and the burden of mounting deaths from HIV/AIDS have severely compromised the extended family's ability to contribute to the security of households suffering adult death. [71]

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[69] J.B. Kurawige *et al*,"HIV-1 Infection Among Malnourished Children in Butare, Rwanda," *Journal of Tropical Paediatrics* 1993; vol. 39, pages 94-95.

[70] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.8.

[71] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.31,

While this section will rely heavily on evidence of extended family coping mechanisms in Zimbabwe, it is important to note that South African families may be compromised to an even greater degree than families in other African countries. Apartheid was responsible for disrupting both family and community life and weakening traditional coping mechanisms that may still be strong in other countries. Rapid urbanisation and migration have further weakened informal support networks. It is also possible to argue that the expectation of health care and support from the state has contributed to the weakening of traditional systems. Many South African families do indeed rely on old age pensions, child support grants, and other social support grants to cope with financial crises and meet survival needs. This paper will not argue that social support grants weaken already strong family and community networks, because these networks, weakened by Apartheid, have become weaker due to the impact of adult death from the HIV/AIDS epidemic. What is apparent in Zimbabwe also holds true in South Africa. South African families and communities need monetary and community–based assistance in order to cope with the levels of death, illness and poverty resulting from this current epidemic.

Some researchers claim that the extended family in parts of Africa is breaking down under the weight of the current death burden.[72] Some of these studies, in turn, emphasise the need for innovative mechanisms and non-traditional strategies for coping with the failures of families to care for orphans. While there may indeed be a need for alternative institutions such as foster care, orphanages, and day care centres, Foster *et al* argues that such alternatives may, in fact, contribute to undermining extended family coping mechanisms. Foster argued in 1995 that the extended family coping mechanism

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72 "Impending Catastrophe Revisited: An update on the HIV/AIDS Epidemic in South Africa," p. 10.

in Zimbabwe was still strong, as evidenced by the fact that 99% of all orphans in their study were cared for by extended families within the community. 84% of these orphans were cared for by maternal kin with 16% cared for by the paternal family.[73] In their 1998 publication, however, Drew, Foster and Makufa acknowledged that the extended family was demonstrating great difficulty in caring for orphaned children in areas of very high infection. The burden of care in this study, and increasingly in all areas hardest hit by HIV/AIDS, was falling to the elderly and adolescents. [74]

In Zimbabwe, child-headed households are indicative of a family under stress. For the majority of these children, their relatives are unwilling to take care of them. Mutangadura points to the negative impact on the family's living standard as the reason for refusing to take in orphans. Limited in the amount of love, time, and space for extra children, these relatives are overcommitted with too many other sick and dying family members. "In localities where prevalence of AIDS is very high and many families are affected," Mutangadura notes, "the capacity of the social capital to provide for the needy is severely curtailed."[75] She does not advocate orphanages, however, as they are too costly and not in the best interests of the children. Not only does removal to orphanages isolate children from their communities and hinder their socialisation, it jeopardises their right to inherited land and denies them their sense of belonging within the community.[76] Though children may be stigmatised and left to care for themselves following an adult death, orphanages do appear to be a viable alternative.

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[73] "Orphan Prevalence and extended family care in a peri-urban community in Zimbabwe," pages 5, 9.
[74] "Strategies for Providing Care and Support to Children Orphaned by AIDS," p. S10.
[75] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 8-9.
[76] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p. 9.

The fact is that most children, as previously stated, are cared for by elderly relatives (usually the maternal grandmother) upon the death of one or both parents. In Mutangadura's study, 62% of the heads of foster households were female with 60% being grandparents, 25% another relative, 13% adolescent and 2 % child-headed. 40% of all female foster household heads were age 60 or over. The responsibility of caring for orphaned children clearly diverts resources from the maternal family and places undue burdens on elderly women with only limited means of earning income. Though the maternal family was also responsible for meeting funeral costs in 80% of the adult death cases, 24% of households sold assets to cover funeral costs, remarriage, food and school fees as well. [77] Foster *et al* notes that the maternal family's responsibility for orphans upon parental death is a departure from a tradition that, until recently, dictated that widows and children be cared for by the paternal family. Not only does the paternal side now decline care, but should the paternal aunts take in orphans, they are reportedly more likely to exploit their charges. Finally, the paternal family, while denying the widow remarriage to a sibling in her husband's family as was the custom, is also likely to take possession of the husband's property and deny the survivor the resources necessary for survival. [78]

Dominant coping strategies used by surviving family members dealing with decreased income due to adult death include reducing consumption or elimination of food items, decreasing meals to one meal at night time, selling assets, engaging in informal business activities, utilising child labour, and borrowing from family or other sources. Approximately half of all those questioned in both the urban and rural sample in

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[77] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 11, 15.

[78] "Orphan Prevalence and extended family care in a peri-urban community in Zimbabwe," pages 13-14.

the Zimbabwe study asked extended family and community members for assistance with food and money. A relatively small percentage requested aid in the form of clothing, credit or child fostering. 95% of households at both sites reported that help of any sort was not easily obtainable. [79] Focus groups reported that communities rarely helped with school fees, medical fees or rent. "Both key informants and focus group discussion participants," according to Mutangadura, "pointed out that community help was not forthcoming anymore because of inflation, lack of money, because of high unemployment, and too much commitment as everyone is being affected by the high morbidity and mortality" of the HIV/AIDS epidemic.[80]

Family networks may still be strong, as Foster *et al* report, but it is clear from the Zimbabwe study that both families and communities, once able to cope with low to moderate levels of household shock, are failing to meet the needs of needy households. Both families and communities need external support in order to assist those households struggling to cope with multiple deaths from HIV/AIDS. [81] Drew, Makufa, and Foster argue that large numbers of orphans can still be supported within their own communities with governmental assistance. Programmes such as the Zimbabwe Department of Social Welfare sponsored FOCUS model that identify orphans, utilise volunteers within the community, and promote community-based self-reliance are both cost effective and preferable to removing orphans from the community. [82]

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[79] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 19-20

[80] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.20.

[81] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.20.

[81] "Strategies for Providing Care and Support to Children Orphaned by AIDS," pages S10-S13.

Mutangadura also advocates community self-help projects that move children into self-sustenance and away from relief. Many of the urban women in her study, especially elderly foster grandmothers, turned to informal business activities such as food vending and urban agriculture to cope with income shortages but were faced with high competition and lack of resource to purchase goods. Micro-credit was not used in such communities due to prohibitive interest rates. One could argue that an infusion of money into this sort of scenario would boost informal business and enable these families to better sustain themselves. In the rural sample, grain saving schemes proved an important source of community support, mitigating the loss of an adult in the household. For this population, Mutangadura suggests that contribution of seed and fertiliser would be an appropriate means of providing much needed assistance.[83]

5. MITIGATION

According to Over (1999), government intervention is justified if it improves social welfare and if such improvement would not occur without the specified intervention. In order to evaluate a given intervention, therefore, it is necessary to characterise a situation in the absence of the proposed intervention. [84] That has, in part, been the object of this research. Sub-Saharan Africa is an area of the world riddled with poverty, malnutrition and social inequity, even in the absence of the HIV/AIDS epidemic. HIV/AIDS has exacerbated all three of these problems while poverty, malnutrition and social inequity have made certain people more vulnerable to the impact of HIV. The one

[83] "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 21-22.

[84] Mead Over," The Public Interest in a Private Disease: An Economic Perspective on the Government Role in STD and HIV Control," *Sexually Transmitted Diseases*, eds King K. Homes, et al, McGraw-Hill, 1999, p. 3.

point on which all researchers in this study agree is that mitigation efforts, whether designed to assist orphans, caretakers or households, should focus on the problem of poverty and not the specific problem of AIDS.

The 1993 pilot programme in Zimbabwe, FOCUS (Families, Orphans, and Children Under Stress) did not differentiate between AIDS orphans and other orphans. It targeted those most in need with community-based interventions that enabled local communities to better support orphan populations. [85] Foster *et al* advocate the need to support orphans within their own communities. Advocating a more thorough and systematic method of orphan enumeration, they agree there is merit in considering relief of all orphans and not AIDS orphans *per se*. Their prediction is that an inclusive policy could reduce the discrimination, prejudice and stigmatisation associated with being an AIDS orphan, while raising awareness of the need for community-based initiatives. [86] Although Foster *et al* warn against undermining community support mechanisms by raising expectations of formal assistance without benefit, they also point to the underlying strength of the community. That orphans are now being cared for by elderly maternal relatives they consider to be adaptive rather than a sign of family decay. "The fact that community coping mechanisms are changing does not imply that the extended family method of caring is about to break down," they state, but rather that the family is accommodating to a changing society. Foster is concerned that those who emphasise the breakdown of the extended family and support institutional care as an alternative could encourage family members to relinquish their responsibility for caring for orphans within the community. [87]

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85 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p.10.

86 "Orphan Prevalence and Extended Family Care in a Peri-urban Community in Zimbabwe," p. 15.

87 "Orphan Prevalence and Extended Family Care in a Peri-urban Community in Zimbabwe," p.16.

Over agrees that targeting support for orphans should be broadly based. "To the extent that poor orphans can be identified," he states, "they can be a particularly useful target group for anti-poverty safety net policies or for policies designed to mitigate the impact of the epidemic." Where equity is the concern, according to Over, it is important to "target assistance efforts to the poorest orphans, regardless of the cause of their parents' death."[88] Ainsworth and Semali find that children in the poorest household are the ones most severely affected by adult death. "Both maternal and paternal orphans," according to their data, "are substantially more likely to be short for their age: the loss of a parent raises stunting among the nonpoor to levels found among poor children with living parents; among the poor, orphanhood raises stunting even higher." They agree, therefore, that interventions should be targeted to the poorest households since these are the families hit the hardest by adult mortality. "Targeting health interventions solely to orphans or children in households with a recent adult death," moreover, "would miss many children with equally severe" poverty related health problems, and benefit children in households that have adequate resources.[89]

Mutangadura, based on her study, also agrees that "the orphan problem needs to be considered in the context of poverty."[90] The government, she argues, must target social welfare assistance to the most needy, regardless of the immediate cause of poverty. She predicts that social welfare assistance to highly vulnerable households will result in improvements in child welfare, more adequate nutrition and access to education. While recommending specific nutrition supplementary programmes be

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88 Mead Over," The Public Interest in a Private Disease: An Economic Perspective on the Government Role in STD and HIV Control," *Sexually Transmitted Diseases*, eds King K. Homes, et al, McGraw-Hill, 1999, p. 8.

89 "The impact of adult deaths on children's health in Northwestern Tanzania," pages 31-32.

90 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," p. 26.

provided to needy children at schools and clinics, she also suggests that mitigation take gender into consideration.[91] Because elderly grandmothers are disproportionately affected by premature female deaths in her study, she recommends targeting assistance directly to elderly women raising orphans. [92]

Public and private transfers, where available, are a critical means of assisting elderly women and poor households in overcoming the shock of adult death. In Tanzania, for instance, households with a recent death receive more assistance through government, Non-Governmental Organisations and formal institutions than do households without a recent death. In the absence of government transfers, moreover, a family with greater physical resources available will have access to private transfers from informal family and community networks, whereas the poorer family without assets is forced to rely more on credit at high interest rates to meet its needs.[93] According to Lundberg, Over, and Mujinja, "government and non-government agencies made a substantial difference to resource poor households which had suffered an adult death in Kagera, Tanzania in 1990-1994."[94] More than one third of the assistance to poor households within the first month following an adult death was formal, making the assistance quite substantial in absolute terms.

The data from the studies used in this review support the need to strengthen governmental grants that alleviate poverty. Social support grants already in place in South Africa, such as the old age pension, the child support grant, and the disability grant can all work to improve the welfare of those suffering the greatest impact from the

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91 Kurawige et al also advocate aggressive nutritional support to prevent PEM in HIV-infected children in households where proper nutrition is unattainable due to poverty and premature death of the parents. "HIV-1 Infection Among Malnourished Children in Butare, Rwanda," p. 95.

92 "Household Welfare Impacts of Mortality of Adult Females in Zimbabwe: Implications for Policy and Program Development," pages 12, 24, 26.

93 "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," p. 978.

94 "Sources of Financial Assistance for Households Suffering an Adult Death in Kagera, Tanzania," p. 980.

HIV/AIDS epidemic. The elderly, having lost the traditional financial security from their own offspring on which most elderly rely, must now support grandchildren who may themselves be sick with AIDS. It is safe to say that an orphan living with a grandparent in a country that provides an old age pension is significantly better off than one residing in a country that does not. The child support grant, were it to be efficiently distributed, could also substantially improve the welfare of children suffering the loss of a parent. It is clear from the research that the youngest children are the most vulnerable to malnutrition in the event of a parental death. Yet providing assistance for children up to the age of seven may not be enough. Children whose parents have died of AIDS (or any other means) need continual support in order to avoid being exploited, abandoned or sent out into the streets. There is evidence, however, that in poor rural areas children suffer more malnutrition with greater numbers of children in the household. The grant should not be seen as an incentive to take in extra children. Rather it should be a means of holding families and communities together as the data also suggests that children living with a person other than a close relative are subject to more exploitation than those supported by their kin.

The disability grant is one area in which it may prove helpful to focus specifically on AIDS. Through providing assistance to those unable to care for themselves or others, this grant would appear to be a critical part of the solution to maintaining child health in the AIDS-affected household. To ascertain the extent to which people who qualify as "disabled" are suffering with AIDS may be difficult to determine due to the lack of testing and stigmatisation involved in discussing the disease. Yet the risk of malnutrition for poor children rises substantially if the mother is sick with AIDS. We know, based on these studies, how AIDS manifests, how it can be identified as the cause of death, and

how it impacts the poor household when it strikes. It is clear that education and prevention are of the utmost importance, yet equally critical to the welfare of children suffering from the impact of AIDS in South Africa may be qualifying households affected with AIDS for disability grants.

6. CONCLUSION

Poor households face the highest risk with regard to contracting HIV/AIDS. For many individuals, particularly women, children and extended family caregivers, this has severe physical, economic, educational and nutritional ramifications. The financial and emotional drain placed on households, in which one or more person is infected with the virus reduces the relative wealth of a household and worsens the poverty situation. The greater extent of poverty faced by such households then places household members at an even greater risk of contracting HIV/AIDS.

HIV/AIDS also raises the risk of malnutrition for young household members through a number of direct and indirect mechanisms. Directly, children infected with the virus are more susceptible to other types of infection such as TB. Indirectly, although children may not have the virus, they may nevertheless become malnourished through exposure to other HIV positive household members who have become infected with other contagious illnesses.

To cope with the impact of HIV/AIDS, many households rely on extended family support, but the rising incidence of such infections has compromised the family's ability to cope with this disease. Monetary and community-based assistance is thus needed for many poor families.

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