when they seemed to hamper the treatment of this life threatening disease.[6]

A third ingredient is national commitment to prevention. Compare, for example, the different commitment shown by Uganda and South Africa. Uganda's blunt public HIV prevention campaign, coupled with political commitment that extended to all government offices, resulted in greater than a 50% reduction in HIV seroprevalence over four years.[7] In contrast, facing one of the highest rates of HIV infection in the world, the South African government determined last year that antiretroviral therapy for perinatal HIV prevention was too expensive—a decision that will cost over 70 000 infant lives each year. Months later the government announced spending of $3bn-4bn to refurbish military weapons.[8] Its leaders now stand accused of violating fundamental human rights.[9]

The fourth ingredient is rapid implementation of prevention methods. India's first documented case of AIDS in 1986 resulted from a blood transfusion.[9] A two year delay in implementing testing of blood donors is estimated to have resulted in over 350 000 HIV infections. India and South Africa now vie for being the single country with the most people infected with HIV.[10 11] China reported its first HIV infection in 1985. Epidemiological studies then showed that all transmission vectors for HIV were expanding rapidly—large numbers of people were migrating to the cities, and there were increases in the sex trade, in sexually transmitted diseases, and in the number of intravenous drug users. China also has a poorly regulated blood donor system. Pleas to implement prevention measures went unheeded. As a result of the delays China forfeited the chance to play an international leadership role in prevention. It could have been the first nation to avert a major HIV/AIDS epidemic.[12] Instead, in the first quarter of 2001 there was an 67% increase in new HIV infections, and the number of HIV infected individuals in China is expected to reach over 10 million in the next decade.[13]

The fifth ingredient is a change in how resources for public health are determined, along with a reinterpretation of the national and international laws that govern the use of resources for public health. Globalisation creates international trade laws that determine the cost and availability of lifesaving drugs. Nowhere is this more sharply seen than in the antiretroviral drug "price war." However, when the public health of entire nations is at risk, the basis of these laws cannot be mired in economics.[14]

What is a solution to getting governments to move more quickly? Nothing short of a new paradigm. The availability of public health measures must be seen as an issue of justice rather than economics. Patents may protect individuals economically, but if life saving drugs are out of the reach of the poor has justice been served? If governments proceed as usual the relentless spread of HIV throughout the world will ultimately disrupt the social and economic structures that governments say they are out to protect.

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Mass orphanhood in the era of HIV/AIDS

Bold support for alleviation of poverty and education may avert a social disaster

AIDS has devastated the social and economic fabric of African societies and made orphans of a whole generation of children. Although donor agencies initially viewed the plight of orphans as a short term humanitarian disaster, they now acknowledge the long term social consequences of African children growing up without parental love and guidance. The potential for these children to form a large group of dysfunctional adults, which could further destabilise societies already weakened by AIDS, has increased the urgency of finding an effective solution to the orphan crisis.

Africa is home to 95% of the world's 13 million children orphaned as a result of AIDS. The numbers will rise until at least 2010, by which time a third of African children will be orphaned.[1 2] These orphans' psychosocial needs are a growing concern. Orphans in Africa suffer recurrent psychological trauma, starting with the illness and deaths of their parents, followed by cycles of poverty, malnutrition, stigma, exploitation,

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and, often, sexual abuse. Experiencing this without family love and support, and without the education needed to understand and rise above their circumstances, these orphans are at risk of developing antisocial behaviour patterns that can endanger community and national development.[3 4]

Who is caring for these orphans? As the epidemic takes its toll on adults, many orphans have come to rely on ageing and often impoverished grandparents. Studies of population dynamics suggest that for the next generation of orphans there will be far fewer grandparents to be carers.[5 6] When there are no grandparents older children are often left to care for their younger brothers and sisters.

The early days of the orphan crisis saw a rush by well meaning non-governmental organisations to build orphanages. This response was unsustainable, given the size of the problem. In Zimbabwe, for example, fewer than 4000 orphans out of an estimated 800 000 are accommodated in the country's 45 registered institutions. The cost of maintaining a child in one of these institutions is many times that of other forms of care. While the trend to establishing small, family based orphanages reduced some of the adverse psychological and social effects associated with institutionalisation, children's homes also undermined traditional models of care and alienated children from their families and culture. This has particular relevance in Africa, where children's spiritual connection to their family and clan is central to their social development and helps define their place in society.

Given the scale of the problem and the poverty afflicting many communities, it is amazing that most of Africa's orphans have been absorbed into extended family networks. These form the foundation of the deep rooted kinship system characteristic of African societies. International agencies and national policies now recognise that the extended family, with the support of the surrounding community, is the best way of caring for orphans and probably the only viable and sustainable solution to the problem of mass orphanhood.[7 8] The extended family can provide orphans with continuity, emotional support, and a secure environment, and its functioning does not depend on major external funding. Most importantly, in Africa, it allows orphans to develop within their family, culture, and traditions. Nevertheless, these extended families face mounting pressure due to high mortality among the adults of reproductive age, deepening poverty, and the growing number of orphans.

Governments and non-governmental organisations have responded by initiating community based orphan programmes designed to strengthen families' and communities' capacity to provide care. These use local administrative structures to target support to families and rely heavily on local community leadership and volunteers.[2 9 10] An evaluation of the operation of community based orphan care initiatives in two rural districts of Zimbabwe suggested that these programmes can successfully support families in maintaining their caring role.[10]

Support for extended families must be coupled with support for education for orphans, the key to their socialisation and the re-establishment of their self esteem. Education is the means whereby orphans can realise the possibility of productive employment, minimising their risk of being exploited and of themselves becoming infected with HIV. But the debt crisis of the 1980s and the World Bank's ill conceived attempt to remedy the situation through structural adjustment forced many African countries to introduce school fees in the name of "cost recovery."[11] This had the effect of excluding poor children from school. Extended families see school fees as a major factor in deciding not to take on additional children orphaned by AIDS.[4] Universal, free access to good quality education would have a profound and lasting impact on the economic and social development of African countries and would do much to alleviate the impact of HIV and AIDS on orphans and vulnerable children. Such education is affordable. In 1997 Unicef put the annual cost of extending primary education to all children in Africa at US$1.9bn[11]—about the same amount that is spent each year on Sony Playstations for the children of wealthy nations.

Interventions that just target HIV infection, such as distribution of antiretroviral drugs, but ignore the intractable poverty and social malaise afflicting African populations, will not provide a sustainable solution to Africa's HIV epidemic. The continent needs a massive transfer of resources to confront AIDS and to remove the burden of debt, to secure investment, and to stimulate African economies. This is the only way in which we will put a generation of African children affected by AIDS through school and equip them for a better future.

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