Chapter 18

HIV/AIDS, Nutrition, and Food Security: Looking to Future Challenges

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The Challenge of ARV Rollout

Rollout of antiretroviral (ARV) therapy under the aegis of the WHO's "3 by 5" initiative, with funding from numerous donors via the Global Fund for TB, HIV/AIDS, and malaria, the U.S. PEPFAR and U.K. DFID, gives cause for hope for all those millions of people in Africa who are living with HIV/AIDS. Midway through 2005 nobody seriously believed that the target of 3 million people on treatment by year end would be achieved. However, it was a necessary goal at that stage. But for those concerned with meeting the challenge of HIV/AIDS impacts, increased antiretroviral therapy (ART) availability has to be seen for what it is: an opportunity to take a breath in the struggle against the impact of AIDS and think, and think hard, about what we do next.

The last 20 years have not shown any great success in confronting the impact of HIV/AIDS on nutrition and food security. Although this problem was identified as early as 1988 (Abel et al. 1988; Gillespie 1989) and explored through field research in 1989 (Barnett and Blaikie 1990), most if not all of the response has been to roll out policies that have been tried and tested in other, non-AIDS, situations, to try to apply existing "installed capacity," whether ideas, techniques, or institutions, rather than to recognize the specific nature of HIV/AIDS impact and respond to that. To use solutions to yesterday's problems to confront the new problems of today and tomorrow is to invite failure. This is even more the case in a world with ART. ART offers us a window of opportunity in which we must work hard to come up with new solutions appropriate to the new situation.

Viral Resistance

The danger that accompanies ART rollout is that potential transmission of viral resistance could quickly limit the effectiveness of antiretroviral treatment in Africa. There are two kinds of viral resistance, acquired and transmitted. Acquired viral resistance is seen where the viral population of an HIV individual's body adapts to the antiretroviral regimen he or she is receiving and is therefore able to increase its population, reflected in the individual's viral load despite treatment. In other words, the virus in that particular person evolves so as to be able to survive the medication being used to control it. Acquired resistance is bad news for the sick person, particularly as resistance to one medication often means that the virus is resistant to all medications in that class of drugs. In the absence of a second- or third-line treatment regimen, the individual prognosis is poor, and we should bear in mind that in most African countries, third-line treatments are not available.

The second type of resistance is transmitted resistance. This is bad news for the individual and is cause for concern at the population level. It means that already resistant forms of the virus may be transmitted between individuals, potentially creating an epidemic of drug-resistant HIV. Acquired resistance is already quite widespread in Europe and the United States, and around 20 percent of people treated for AIDS exhibit this form of resistance and have to have their treatment changed for this reason. Cases of transmitted resistance are rare, but they have made an appearance, most dramatically in New York in early 2005 (O'Rourke 2005; Smith 2005).

How the situation with regard to acquired resistance will play out is unclear. Thus, in a review of the situation, Wainberg concludes:

> Resistance to every HIV drug class is clearly emerging, and, alarmingly, transmission sometimes involves resistant strains that can cripple the effectiveness of combination chemotherapy. However, new agents, not cross-resistant with existing drugs, are being developed on a regular basis. This affords hope to patients who harbor viruses resistant to a variety of currently approved products. Whether the discovery of new agents keeps resistance at bay in the future is of obvious concern given the increasing reservoir of HIV patients worldwide that are being maintained on antiretroviral chemotherapy. (Wainberg 2004)

However, although this conclusion is sanguine and broadly optimistic, it strikes a note of caution. With regard to resource-poor settings, we cannot be so certain. First of all, we have to doubt whether the minimum level of compliance with treatment (95 percent)[1] can be met in many resource-constrained environments; second, we have to doubt whether the new pharmaceutical responses will

be appropriate or available to people in resource-poor settings in time and at prices that will meet the rising curve of viral resistance.

The situation in regard to transmitted viral resistance at the population level is currently not at all well understood. Our understanding is largely dependent on modeling exercises (Blower et al. 2005). There is considerable uncertainty and debate as to the future development of transmitted viral resistance (Baggaley, Ferguson, and Garnett 2004). For the present it seems that we should err on the side of caution and assume that we will see viral resistance in resource-poor settings in the years ahead.

So, on both the acquired and transmitted viral resistance fronts, we should assume that ARTs provide a limited breathing space to think about how we proceed in our response to nutrition and food security issues in relation to the impact of AIDS. What should we do in the window that ARTs might provide if they were rolled out effectively, bearing in mind that this scenario is fairly unlikely in many countries where health infrastructure will just not meet the demands the ARV rollout will place on it?

How Should We Respond to the Opportunity?

The problem is, we do not know what to do with the opportunities offered by that 5- to 10-year window. There is an urgent need for innovative solutions if we are not to waste them, but to develop these solutions we need to have a better understanding of the problem. Right now there is a real possibility that we will be responding to the wrong problem and the wrong story.

The impact of HIV/AIDS on nutrition and food security has tended to take a particular form; a particular story has been told. Early research (Barnett and Blaikie 1990) used field material from a number of sites in Uganda to suggest (1) the effects of AIDS on rural production in Uganda and possibly more broadly in Africa and (2) the methods that might be employed to explore the variability of the impact in production systems differentiated in terms of people, climate, soils, and temperature. Since then, many studies using mainly qualitative and participatory methods have confirmed a story of AIDS impact, which runs broadly as follows: AIDS causes rural labor shortages because of excess illness and death in the productive age group; this leads to a progressive decline of agricultural production and food availability as a result of reduction of cultivated land area and shrinkage of crop and livestock portfolios accompanied by decay of rural infrastructure and overall reduced rural production and productivity, and thus nutrition status of the population.

But we do not know whether and how far this story applies everywhere in Africa, let alone in other AIDS-affected rural communities globally. It is now of the

greatest importance that we come to as clear an understanding as possible of the diversity of the AIDS impact on rural societies that depend predominantly on human labor. If we homogenize what is in reality a very diverse situation, we will come up with inappropriate solutions derived from a wrong analysis. For example, one frequently proposed solution has been to meet the labor shortage with a range of "labor-saving technologies" (LSTs). The problem here is that we do not have sufficient examples of successful LSTs that have been adopted in Africa in ordinary circumstances: there has been no African green revolution, let alone any examples of LST innovations appropriate to the new situation consequent on the impact of AIDS.

Because of this situation, there is a danger that attempts at impact mitigation could lead in the wrong direction if they are based on "simple stories," narratives of the epidemic and its impacts that have become accepted by policymakers, donors, opinion leaders, and the research community. The situation is that even so far into the epidemic, the third decade, we really do not have long-term evidence with the kind of detailed analysis necessary to understand the complexity and diversity of the impact of the epidemic on rural society in Africa. What we do have is a large and growing body of very uncertain "evidence" about what has been happening (this is reviewed in Gillespie and Kadiyala [2005]). Within that "evidence" it is hard to isolate the causal influence of HIV/AIDS from other underlying environmental and policy conditions. Indeed, the epidemic may be a tipping point factor, but in many circumstances, it may not be the sole reason for the effects that we are seeing. We are dealing with an extremely complex set of causal links, and these are likely to be different or nuanced from place to place.

What we know about HIV/AIDS impacts on rural societies, nutrition, and food security can be summed up as follows: seroprevalence figures provide a peek into the future, not an account of the present; there is an impact in most societies where seroprevalence levels have been high; it is without exception adverse and reaches beyond the individual into his or her household and community; but we do not know where it is worst and where it is less bad. Generalizations about the process in one place drawing on narratives derived from experience (often anecdotal) from elsewhere are probably unhelpful; policy responses based on general statements about "famine," "labor-saving technologies," "scaling up," and so on are likely to waste resources and fail to meet the needs of local communities. We must also be acutely aware that the development of the disease over eight to nine years in an individual, during which time their effectiveness is compromised, may not be long enough for adoption of innovation to take place. In communities severely affected by AIDS, the entire dynamic of innovation and adoption may be compromised.

The Challenge

So, in the limited window of opportunity that might be provided by ART rollout, were it widespread and effective, the challenge is to recognize the diversity of impact, to learn from local circumstances, and to aim to create large-scale responses that can cope with that impact.

This is difficult because governments, multilateral agencies, and bilateral agencies have great difficulty in dealing with diversity. Diversity has high overhead costs and requires constant learning capacity and institutional adaptation. Such an approach does not fit with the modus operandi of the major donors. It is very hard to have large programs that take into account the complexity of the situation. One size does not fit all, but it is hard for large organizations to take this into account. The situation does not ride well with the slow rate of innovation by large organizations.

The real challenges revolve around recognition of the following:

- The diversity of HIV/AIDS impact on food and nutrition security.
- The magnitude of the epidemic and its impact will span many decades in the most seriously affected countries.
- Long-term demographic changes alter the technical response possibilities: changed gender and age balances in a population will challenge existing and available intervention technologies, which are based on assumptions about the age and gender balance of "typical" communities.
- Community structure is likely to be weakened, and safety nets likely to break down.
- The contours of destitution may be redefined and include the very young and the very old, and among these women in particular. The numbers of destitute people in rural areas may increase. These will be people whose destitution reflects inability to access resources or decreased ability to use available resources as a result of weakened social, economic, and, in some cases, environmental infrastructure.
- In mature epidemics women are affected by HIV/AIDS more than men, and the gender balance is likely to alter. Thus, assumptions about the availability of women's labor and skills for household and farm work may not hold in the future.

- The crisis develops over a very long period and is a slow rather than abrupt crisis. It is thus not visible to the usual detection instruments. This means that there is a choice: (1) we can fail to act because the event is happening slowly (which is what has occurred so far), or (2) we can respond now so as to change the future.

Given the danger of viral resistance, we must act in relation to these realities now.

Note

1. This is generally held by clinicians to be the minimum level of compliance; see, for example, Ministry of Health, Malawi 2003; Garcia, Schooley, and Badaro 2003; Weiser et al. 2003.

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