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HAART and harvest: antiretroviral therapy and nutrition when food is scarce

Nutritional interventions for people with HIV in resource-limited settings

“Whence shall we buy bread, that these may eat?”

Book of John 6.5

“A program of care without a nutritional component is like a leaky bucket; the efficacy of antiretroviral drug treatment may be compromised by malnutrition, and any mitigation strategy must take account of the fact that what those affected need most usually is food, at a time when their ability to acquire food may be diminished.”

Gillespie and Kadiyala (see references)

A month ago in HATIP, we reviewed the complex interactions between HIV/AIDS and nutrition — both macronutrients (food, protein, carbohydrates, fat) and micronutrients (vitamins and minerals) level. Much of the article was drawn from various presentations made at the recent WHO Consultation on HIV/AIDS and Nutrition held in Durban this past April.

After reviewing the scientific outcome of the WHO consultation, the meeting’s participants urged “all concerned parties to make nutrition an integral part of their response to HIV/AIDS,” and offered a number of recommendations for immediate implementation (which can be seen here at <http://www.sahims.net/archive/who/>).

Coming up with simple concrete recommendations to improve the nutritional status of people infected with, affected by and/or at risk of HIV was a tall order because there really is no “one size fits all solution.” The needs — and interventions — vary with each situation.

While it is a given that everyone with HIV disease needs good nutrition, some may need more targeted assistance. For example, in many cultures, women eat last and less than other family members — and are the first to feel the effects of hardship and increased food insecurity. Pregnant women with HIV need better nutrition to reduce the likelihood of transmitting the virus to their infants and for improved birth outcomes. If an infected woman later chooses to breast feed her infant, she needs support in this decision as well. But women often receive mixed messages about the wisdom of this infant feeding option and as a result, mixed feeding (the most dangerous choice for infant feeding) is common. Finally, HIV-infected children have special nutritional needs to prevent stunting and to help them thrive.

Nutritional needs also change over the course of HIV disease. Many people are already malnourished when they become HIV-infected and HIV only increases a person’s energy requirements. People recovering from an opportunistic infection (OI) need even more food but rarely have the resources to eat a well-balanced diet, not to mention, more food.

The burden of providing for a person with AIDS usually falls upon the family and the community where the person lives. Having a member of the family fall ill or die from HIV/AIDS can lead to food insecurity for the whole household — which in turn may increase their vulnerability to HIV infection (see below).

Immediately after the WHO Consultation, the International Food Policy Research Institute (IFPRI) hosted a meeting that looked at the effects of HIV/AIDS on food and nutrition security for the family or community. The meeting also reviewed some potential ways to both improve the health and nutrition of people living with HIV and their family members. (Many of the presentations from this conference can now be viewed at www.ifpri.org, and the subject is also addressed in *HIV/AIDS and Food and Nutrition Security, From Evidence to Action* by Drs. Stuart Gillespie and Suneetha Kadiyala — which can be downloaded from the IFPRI site as well).

Some potential consequences of having HIV/AIDS in the family and community

Studies suggest that the size of the HIV-impacted household changes: the family may grow smaller due to deaths, or it may increase when adult children return home for care or as orphans are taken in. What is important is that (usually) the dependency ratio changes — with more mouths to feed or fewer hands to feed them. The household thus tends to consume less food and food of poorer quality — just as nutritional intake and variety should increase.

Family incomes fall when a breadwinner becomes ill or dies, or when more time is spent at home to care for other family members. Children frequently have to drop out of school to manage the home — or worse, migrate out of the community to find work (which puts them at increased risk of exposure to HIV). Additionally, money normally spent on food must be diverted to health care, transport costs (to and from the clinic) and funerals.

The majority of households affected by HIV/AIDS in Africa work in the agricultural sector (and often grow their own food). But HIV-impacted families have fewer funds available to put back into the business. Farmers may buy less seed or fertilizer — which leads to reduced yields. If they borrow money, debts mount just as credit decreases. As a result, households frequently must sell off livestock, land and other assets. Farms get smaller as land is sold or rented out — and if the male head of household dies, the farm may be appropriated outright by his relatives (women and orphans have no rights of inheritance in many cultures).

As a result, households become increasingly reliant on the extended family and community for help on the farm, around the house and to care for the children. But communities heavily impacted by HIV/AIDS generally have fewer resources with which to respond to increased demands for services. As a result, the local infrastructure may suffer, roads deteriorate, wells and irrigation go without maintenance and schools fall into decline. There may be decreased agricultural production, and a drop off in local commerce, increasing food insecurity in the community which in turn increases worker mobility, individual vulnerability, and the risk of exposure to HIV infection.

But these are the worst case scenarios. Not all households and communities are equally affected — and longitudinal data suggest that some show very little strain from HIV/AIDS at all. In some cases, the gloomy forecasts about HIV/AIDS impact have proven mostly false (see <http://www.aidsmap.com/en/news/94698640-181B-4D28-931E-0844006CCA15.asp>). For example, long predicted labour shortages as a result from AIDS simply haven’t materialised in settings where the population is still growing and unemployment is high (see the Durban conference presentation by Thomas S. Jayne at www.ifpri.org). So while households in some settings may struggle to replace the lost contribution of a member with HIV/AIDS, others

simply employ a surplus of local labour to help out around the farm. Meanwhile, some communities with established and functional social structures pull together effectively to deal with the crisis — while others — such as newer informal settlements and shanty-towns cannot.

Furthermore, HIV/AIDS is only one of a number of factors that impact on food security. The role of drought, famine and social upheaval/war are obvious. International trade policy or local governance can also have significant consequences upon food security. But because of the complex two-way interactions between nutrition and HIV/AIDS, these other factors that influence food security can also affect the lives of people with HIV and increase or decrease vulnerability to the epidemic.

Interventions

The upside to these interactions is that institutional responses such as government policies, humanitarian or development programmes that enhance food security can, in turn, play a role in the fight against HIV/AIDS. But these responses must be adapted to the local situation. At the policy level, Dr. Gillespie and his colleagues suggest a research tool, “the HIV/AIDS lens” that could help clarify whether existing or proposed responses/policies would be a useful intervention locally or alternatively have negative consequences. To use the lens: “First, HIV/AIDS and food and nutrition security are analysed to summarise what is known about the nature and extent of their interactions and what forms of institutional response currently exist. This analysis helps construct the lens. Second, key policies and programs are reviewed in terms of their potential contribution — positive or negative — to HIV/AIDS prevention and mitigation... The result of the review will be a list of policies and programs prioritised according to their potential positive or negative contribution to HIV/AIDS prevention and mitigation. Depending on the state of existing knowledge, further field-level evidence may be required prior to policy modification or enough may be known to take action.”

Uganda is using a similar approach to incorporate a nutritional component into the country’s multisectoral response to HIV/AIDS. The country has brought together HIV/AIDS focal point officers from the Ugandan Ministries of Health, Agriculture, Education, and Gender, Labour and Social Services Administration (which houses the issues of gender, orphans and vulnerable children) to work together with the private sector, NGOs and the community based organizations in an effort to improve nutritional support for people with or affected by HIV.

At present, the Ugandan government programme primarily offers nutrition counselling although they are planning to add appropriate food support (other groups in Uganda do deliver parcels of food — see below). In the meantime, home-based care teams are being trained to identify and refer food insecure clients for support services and agricultural extension staff are now being trained to promote proper feeding in HIV/AIDS. “Because of the human resource gap,” said Dr. Elizabeth Madraa of Uganda’s Ministry of Health (speaking at the WHO consultation), “We feel that this is another group that we can target at the community level.”

Of course, such programmes work best when they play to the strengths of the respective sectors or groups implementing them — and when the HIV/AIDS focus is mainstreamed into the response — rather than just “pegged on.”

For example, one of the IFPRI meeting reports entitled “From Condoms to Cabbages” described early efforts by Care South Africa - Lesotho to attach HIV prevention messages (including the

distribution of condoms) onto its agricultural and food security programmes in Lesotho. According to Makojang Mahao, Project Manager for Care’s Livelihoods Recovery through Agriculture Programme (LRAP), “these initial efforts had only a limited effect. Staff would just distribute information, but did not know how to explain what they were giving.”

So, working with Lesotho’s Ministry of Agriculture and Food Security, the programme developed an approach that instead focused on how agriculture could help mitigate the impact of HIV/AIDS at the household level. Now LRAP promotes the cultivation of diverse crops in homestead gardens which can be used for income generation and improving household nutrition.

Because of concerns regarding stigma, the programme “does not directly target households living with HIV/AIDS — these activities are open to all,” said Mahao. However, at least 75% of the households are selected on the basis of proxy indicators for HIV impact such as whether the household is headed by a woman or child, or caring for orphans or chronically sick individuals.

Implemented by Care’s local NGO partners, LRAP is now reaching over 1252 households and 20 schools in the program in Lesotho with plans for continued expansion. And Care is using similar approaches in other settings where it works.

Other programmes deliver food packages to vulnerable children (through school programmes) or directly to people with HIV. These also use the opportunity to offer a range of other services (such as adherence support, prevention messages etc.). For example, in Uganda, ACDI/VOCA, a private non-profit organisation working in community development, has partnered with The AIDS Support Organization (TASO), CRS, World Vision, Africare, to provides direct food distribution of a very basic type of emergency ration (a corn soya blend with vegetable oil) on a monthly basis to approximately 60,000 Ugandans and their families living with HIV/AIDS. Funded by USAID, the food ration is designed to complement care and counselling activities for program participants. The most vulnerable beneficiaries are even visited at home to gauge their hygiene and nutrition practices and advise them how to make improvements, when necessary. At the IFRPI meeting, data were presented suggesting that the program improved weight, muscle rebuilding, health and overall food security of its participants (when compared to their own baseline measurements) — though there were questions about the validity of how body composition was measured.

In another particularly innovative and ambitious programme, the HAART ‘n’ Harvest Initiative (HHI), food is actually “prescribed” to people with HIV on antiretroviral therapy. HHI is a collaboration between Appropriate Grassroots Interventions (AGRI) and AMPATH (**A**cademic **M**odel for **P**revention and **T**reatment of **H**IV/**A**IDS) — a partnership between Kenya’s Moi University/Hospital and Indiana University that has several comprehensive HIV care clinics in urban and rural centres in western Kenya with close to 4000 on antiretroviral therapy.

The HHI is a system of small scale, low cost, high production farms using locally sustainable methods on land donated by local communities to produce a wide variety of fruit, vegetables and dairy products. All HIV-infected patients registered with AMPATH undergo comprehensive nutritional assessment and those who are found to be malnourished or food insecure are given nutritional counselling and a prescription for food. The prescriptions are presented at the HHI farms or distribution points for supply of fresh, locally acceptable food that should meet the needs of the patient *and* their household. Also, patients and the surrounding community are

educated about nutrition, agriculture as well as on HIV prevention, treatment and care.

At present, food prescriptions are only for a six month period (to keep patients from becoming dependent on the programme), though they are flexible if patients are not well enough to support themselves after six months of antiretroviral treatment. To assist those recovering support themselves, AMPATH has also introduced a micro finance project "to train patients... how to run and successfully manage small business/farming enterprises. Patients are taught how to maintain simple records, establish marketing cooperatives as well as open savings bank accounts. Small loans are advanced to a few patients with a keen interest in business/farming."

Whether the HHI programmes will be sustainable in the long run is another question. At present, the HHI farms are only able to supply about 10% of the AMPATH's food requirements, and AMPATH has had to negotiate with World Food Programme for additional food.

Other interventions

Because of space constraints, we can't discuss the range of interventions discussed at the IFPRI meeting. We refer everyone to the IFPRI site and to Gillespie and Kadiyala, who review a wide variety of other nutritional and food security interventions (see Annex I, pages 117-123). Briefly, these include labour-saving technologies (to help AIDS-impacted families/communities grow more food), credit and loan programmes (including microfinance schemes to encourage income earning projects), changes to existing agricultural programmes, policies, and investment strategies, rural development (even something as simple as building a road), promotion of year-round agricultural production, different farming systems and vocational training projects.

Data on the impact of these interventions (when it exists) is mixed because not every strategy is appropriate to every situation. Sometimes interventions have unintended negative consequences. For example, on occasion, microfinance initiatives have actually increased the financial burden of people with advanced HIV, who may be too ill to work and pay back the small loans.

And not everyone believes that "multisectoral responses" are an inherently good idea. One problem is that involving players from other sectors may just keep them from affecting their existing mandates. Furthermore, pouring resources into food security programmes in an attempt to prevent and mitigate HIV disease could divert funding from cash-strapped prevention, treatment and care programmes. And there is no guarantee that non-health care professionals will relay complex messages about HIV/AIDS and nutrition correctly.

Even healthcare professionals don't always get the message right. According to Dr. Mickey Chopra, of the University of Cape Town, who conducted a review focusing on the role of nutrition in PMTCT programmes, nutritionists have been quite successful at integrating nutrition into the PMTCT agenda – "after much resistance." But after surveying many clinics – looking at the knowledge, performance and the impact training was having on the ground, the review found that the messages weren't getting through clearly. "In most cases, health workers were even more confused and paralyzed on what to do about infant feeding. We've been putting a lot of emphasis on the development of protocols, policies and materials, and relatively little focus on the translation and implementation in the districts and clinics on the frontline." There is always a need for operational research on the ground – every intervention should be subject to ongoing monitoring and

evaluation to show how or whether any of these activities actually improve the health of people with HIV and reduce the vulnerability of the HIV-affected population.

Our panel's experience

Healthcare workers and community advocates have to work with the institutional responses where they are at – and as noted above these run the gamut, from programmes simply offering "nutritional advice", to the delivery of actual parcels of food, to helping people plant gardens or other "policies/programmes" that increase household income so that people have the money to improve their diets on their own.

But these programmes are not always easy to access or work with, and caregivers often struggle to refer patients to humanitarian programmes, community-based home care programmes and/or civil services.

According to Chris Green in Indonesia "There are a number of donors who have offered nutritional supplements for us to distribute to people with AIDS in our network. One typical one offered three container loads on noodles. Among the conditions was that we had to take all in one shipment (where the hell would we store them?), they would provide no funding for further distribution, and we had to ensure that the product was not sold at any stage. These conditions were clearly impossible for us to accept. However, a national NGO operating TB clinics has accepted similar offers and distributed the product to its TB patients."

South Africa's comprehensive HIV/AIDS plan goes to great lengths to ensure nutritional security of people with HIV, though not always successfully. According to Dr. Halima Dawood in KwaZulu Natal – the province with the highest HIV burden, "the [nutritional] programmes are not well integrated; it seems that they are overwhelmed by numbers."

"I am fortunate that my hospital dietician has an interest in this subject. She provides patients with food packs [and multivitamins] that supplement the nutrition and dietary advice. I also refer patients for HIV grants in order to supplement the household income."

Dr. Dawood is very fortunate indeed to have a dietician on staff as the country's HIV treatment plan actually mandates that a clinic must have a dietician on staff before it can be accredited to treat patients with antiretrovirals. This particular nutritional intervention actually serves as a barrier to the rollout. Said Dr. Francois Venter, "is a dietician really necessary? I don't understand this obsession with getting a dietician when for the diabetes programme, we often have situations where people are given dietary advice by nurses and counsellors who don't necessarily have a dietary degree." Ironically, he notes, "I have more fat patients with HIV in my clinic than thin ones."

But the situation can vary dramatically by setting – even within the same country. According to Dr. Paul Roux in Cape Town "A significant proportion of families attending our paediatric HIV/AIDS clinic (at Groote Schuur Hospital) number amongst the 'destitute poor'."

"We run a nutritional survey of children attending our clinic. In our clinic we have a patient base of approximately 500 children. Of these, some 75% are on anti-retroviral treatment and the rest are either new patients whose mothers are being counseled and prepared to start ARVs, or established patients who do not yet need ARVs. Of our patients new to the system, approximately 40% have a weight below the third percentile for age or growth faltering. For the

patients on treatment, approximately 4% have weights below the third percentile for age."

The good nutritional status of the children who are long-term patients of the clinic can be explained by an exceptionally well-integrated nutritional programme operated at this government-funded public hospital. "Management includes screening height and weight at each visit, multivitamin, vitamin A and trace element supplementation. Children who are failing to thrive qualify for a government-funded food supplementation scheme (PEM scheme). We facilitate, through our social worker and counsellors, applications for all the grants (children's grant and disability) for which the mother and child might qualify. Because the hospital is some distance from the community, the Groote Schuur Hospital benevolent association provides funds for return bus fares to and from the clinic."

They have also set up their own NGO within the clinic (visit www.kidzpositive.org) to do fund-raising and to run an income generation project. Says Dr. Roux. "This is a craft project which enables those mothers most indigent to earn between R600 and R800 per month, in addition to whatever grants they can obtain. Currently 90 plus mothers in the clinic (and some satellite sites outside our hospital) benefit from this project. It has proved sustainable — running for 3 years — and has earned participating mothers an aggregate income of just over 1.3 million Rand (from an initial donation of R 4000).

"Some of our mothers have taken the skills learnt from the craft project to develop businesses of their own. We also employ some of the mothers in the administration of the project."

Dr. Simon Sadler has experience working in Asia and Australia with another population with specific nutritional needs: "Some of our local clients are homeless and use injectable drugs. Some of the interventions we use for this group include area (geographical) specific resources of where people can access free and cheap food. These include charity services, food vans etc. (often much of this knowledge comes from people living in these conditions — over time we learn from them about what services are available)."

Our panellists are also concerned with mixed messages people with HIV received about the role of multivitamins in HIV infection. Even though South Africa provides free multivitamin supplements (at reasonable recommended daily doses) to people with HIV, Mathias Rath has been selling poor vulnerable South African's mega-doses of his own expensive brand of vitamins (see <http://www.aidsmap.com/en/news/59AB8C74-AF40-4500-A389-9B39DA28E7EA.asp>). According to Dr. Venter, Rath is an "opportunistic, trying to make money in the back of the national programme while pretending to be the voice of nutrition."

Dr. Henry Barigye has observed a similar problem in Uganda, "I have done a study in Uganda and found that many people living with AIDS (PLWA) are using incredibly expensive food supplements for benefits which I think they could easily obtain cheaply with natural foods. The industry has a long list of supplements with fancy names like "immune booster" marketed aggressively by people whose primary motive is to make profit. These supplements should not be marketed as medications but they get away with it because of our weak regulatory system."

"PLWA should be well advised to use their money to buy natural food that would benefit the whole family. Although vitamins were referred to as health-giving foods in our early science instruction, it does not mean the more the better. Too much of some of these micronutrients is not healthy. Finally, food supplements should be taken as that-supplements. They supplement an adequate well-balanced diet."

Chris Green points out that even well-meaning community based-organisations can over-emphasise multivitamins "Groups in our network frequently feel called on to offer vitamin supplements to members by operating a form of buyers club. While this may be of some value, many times these are provided to folk who are eating poorly. We generally feel that the members would be better served by the buyers club going to the market every morning and buying good fresh vegetables and fruit for distribution to members. However, this is less exciting, and more complicated for both the group and the members, who may not have the time or the facilities to cook the purchased product.

"The challenge is often not so much with availability of suitable foodstuffs, but the lack of time and cooking facilities in the home."

Dr. Sadler also recognised this as a challenge "We use cooking classes using cheap (but nutritious ingredients) which require little in the way of facilities (such stoves, fridges etc.). The idea being to expose our clients to a range of new foods and enhance their overall nutritional intake. Evaluation of these groups has been good, clients feel they are learning new living skills and also learning a little about nutrition at the same time."

"At the present time we are trying to set up a few interventions (in north west China) working with local communities. Some of the interventions we are putting forward include growing some foods at home (in pots or gardens), raising chickens (obviously where space allows), food co-operatives (the idea being for people to pool their money and resources to negotiate better prices for bulk purchase staples such as flour, rice, coal, oil, meat, vegetables), developing resources on cheap yet nutritious foods, making some foods at home (such as yoghurt, bread, noodles), negotiating with local traders for individual contracts, developing community gardens. These are particularly hard to establish based on PLWHA capacity based on health, resources, disclosure, ability to form into collectives etc."

"Our nutrition team has established a group called HANSAR (HIV/AIDS Nutrition Strategies in the Asian Region), one of the key aims of this group is to network HIV nutrition interventions in this region. We are all keen to learn from the experience of others. Cultural specific food security interventions should be a key consideration of all HIV care programs as nutrition is such an important part of holistic care."

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WHO Department of Nutrition

Contact: Randa Jarudi Saadeh

Scientist

Nutrition for Health and Development

World Health Organization
Geneva, Switzerland
Tel: +41-22-791-3315/3878

Fax: +41-22-791-4156
email: saadehr@who.int

about HATiP

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