

# Ensuring sustainable antiretroviral provision during economic crises

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Although the expansion of antiretroviral therapy (ART) in Africa has been celebrated for its success in providing treatment to more than four million people, there remain core challenges to expanding therapy to those in immediate need of care and those who will require it in the future [1]. The successes have depended substantially on funding from the international community, notably the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund) and the U.S. government's President's Emergency Plan For AIDS Relief (PEPFAR). The current international financial crisis, and the United States financial crisis in particular, represents a major impediment to sustainable funding and the necessary increased numbers of patients on treatment [2]. The future of AIDS in Africa requires sustainable responses to ensure scale-up and maintenance of ART.

We are already witnessing decreased funding and slow dispersal of funds across Africa, leading to decreased treatment targets and the withdrawal of care for some patients [3]. PEPFAR has issued a system-wide recommendation to decrease scale-up and focus on sustained technical assistance [4]. Wealthy countries are not meeting their repeatedly pledged targets, resulting in decreased support to the Global Fund and other unilateral and multilateral contributions [5]. In Uganda, for example, different antiretroviral providers are now making efforts to share patients when stocks of drugs are high at one provider and low at another. In some

districts of Uganda, well established clinics are closing their doors [6]. Funding for PEPFAR-implementing partners, such as Joint Clinical Research Centre (JCRC) in Uganda, was flat this year, instead of being scaled up as is needed and was expected after the 2008 reauthorization of PEPFAR. JCRC, a model for expanded access under the Bush presidency, is now advising patients to seek alternative providers of ART. The AIDS Support Organization (TASO), the largest community-based ART provider in Africa, based in Uganda, is laying off part-time staff to ensure that patient recruitment can continue. Last year, in South Africa, patient enrollment into ART was frozen because of lack of funds [7], and recent reports indicate a budget shortage of one billion rand for the coming year [8]. Similar drug shortages are compromising patient care across southern Africa ([www.stopstockouts.org](http://www.stopstockouts.org)). Under dire circumstances, plans should be in place to ensure that we do not slide back to a time of little hope.

AIDS is a lifelong disease, but donor assistance is subject to the vicissitudes of short-term voting horizons; history provides ample evidence that the priorities of western governments change over time, sometimes abruptly, and are highly dependent on the philosophies of the elected parties [9]. There are some indications that western development interests will shift towards other areas such as climate change, although within the health field, AIDS funding has been attacked as existing at the expense of

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other priority concerns such as maternal child health [10]. Although advocacy efforts focus on maintaining and increasing current funding levels, it is worth considering how to build a long-term response to HIV/AIDS that is less dependent on the vagaries of external support. To this end, international efforts to support HIV/AIDS care in Africa could consider four key areas.

### **Increasing human resources**

The lack of human resources for health is recognized as a key barrier to expanding and sustaining HIV care in Africa today. Considerable attention has focused on measures to prevent the out-migration of health staff to developed countries. Less effort has been made to support the potential for increasing domestic production. There are only 103 medical schools in sub-Saharan Africa compared with 592 in the United States and 484 in Europe [11]. Yet, with efforts focused on the immediate need to put more people on treatment, and donors reluctant to support what are crudely viewed as infrastructure projects, the need to establish training capacity is largely ignored [12]. Until domestic human resource production capacity is increased, Africa will continue to rely on foreign health professionals to fill gaps and saturated health services will limit enrollment into care and encourage defaulting [13,14].

The delegation of tasks from higher to lower health cadres, such as nurses, medical assistants, and lay health workers, is an important step towards increasing health worker capacity in the short term [15], but such task shifting is not a panacea to the human resource crisis, as it still depends on nurses for routine patient care and doctors for management of complicated cases, both of which are insufficient. Increasing domestic health worker production should therefore be a donor priority to improve sustainability.

### **Developing training capacity to increase quality of care**

Western-based universities have a long tradition of providing training opportunities for healthcare. However, the profile of patients most affected by HIV in Africa is different to that generally seen in the west, including a greater proportion of pregnant women, children, and comorbid patients presenting with diseases, such as tuberculosis (TB) and malaria, and malnutrition. Moreover, what is seen as a specialized disease in the west is increasingly being managed by generalist nurses in Africa. The expertise required to improve local clinical skills is far more likely to originate from regionally relevant institutes than from abroad.

The Brazilian government has supported training in ART provision for hundreds of doctors in Mozambique (<http://www.irinnews.org/InDepthMain.aspx?InDepthId=12&ReportId=56099>). One such important institute, the Infectious Diseases Institute (IDI) in Kampala, Uganda, now aims to expand training beyond Uganda on AIDS-specific training related to research methods, opportunistic infections, and advanced AIDS care. However, fragmented initiatives are inadequate to deal with the requirements for training in hard-hit settings. A 'university without borders' that provides relevant, affordable training and qualifications throughout Africa would be an important step towards making specialized training available and desirable.

### **Supporting regional drug production**

The bulk of international funding to date has been used to support the purchase of antiretrovirals and other commodities [16]. A drop in funding, therefore, has a critical impact on the ability to purchase these essential goods. Antiretroviral production capacity has recently been developed in Uganda, Egypt, and Mozambique and may serve to withstand some of the negative impact of reduced funding (<http://www.plusnews.org/Report.aspx?ReportId=74715>).

Patent protection issues require continued attention. The turn of the millennium debates on trade and patent issues resulted in the delay of antiretroviral trade between countries and arguably resulted in massive mortality. Patent pools, aggressive patent rejections, and generic production may pave the way for sustained access to drugs. This will require leadership at both the company and national level.

### **Building research capacity**

The skills required to conduct locally and operationally relevant research are highly variable within individual countries and across the continent. Important programmatic questions remain unanswered. For example, evidence is largely lacking on optimal skill mixes and task distribution in ART delivery, the performance of different models of integrating vertical ART programs with TB treatment programs and integration into the larger healthcare system, resistance development, and systems to ensure positive outcomes and retention in ART programs. Several academic institutions in Africa have developed substantial clinical and public health research initiatives with the support of academic partners from overseas. However, the extent to which these partnerships benefit the development of sustainable local capacity (to do research or support patient care) is variable. There are examples of collaborations that make

the development of local academic capacity an explicit part of their mission, usually relying on locally led instructors and staff [17]. Such models should become the norm. A critical threat to developing local research capacity is the lack of career paths to attract and retain highly qualified researchers. Donors can help by supporting the establishment of retention packages that include appropriate salaries, career posts, training opportunities, and postdoctoral researcher support [18].

The development of capacity in many African nations represents an important and low-cost response to improving retention of health workers and improving morale. Increasing authorship and presentations by local partners at regional and international conferences and genuine participation in the dispersal of research grant funding represent important steps in the career development of local partners. Although there has been a tremendous interest in expanding academic global health by universities overseas, they have often provided limited training opportunities for emerging researchers in Africa. Recognizing that a degree from a western institution holds impressive academic weight in Africa, it is lamentable that with the exception of a few programs, such as the Fogarty training programs, few overseas institutions or research partners provide ongoing training and certification. In the age of the Internet and with existing distance education already developed, collaborating institutions should be encouraged to expand these opportunities to their overseas collaborators.

### The way forward

The evolving fiscal crisis is a poor excuse not to fulfill the G8 commitment to 'Universal Access to HIV prevention, care, and treatment by 2010' in Africa. The roll-out of ART is an essential part of the solution, particularly as the evidence mounts that ART not only decreases AIDS-related morbidity and mortality, but it also decreases HIV transmission and incidence of other diseases such as TB [19] and malaria [20,21]. This was clearly recognized in the 'The Treatment Timebomb' report recently released by the UK All-Party Parliamentary Group on AIDS [22].

The above proposal represents a starting point for constructing a sustainable approach to HIV care. Implementing these approaches will, in the short term, require even more resources, but donors must move beyond taking a 3-year perspective on a lifelong disease. Although we have addressed several key areas for sustainability of ART programming, other challenges will remain: integration of ART programs into the general primary healthcare system, developing systems that ensure long-term patient retention and high levels of antiretroviral adherence, and robust evidence-based guidelines on initiation and switching to second-line ART. Investing in universal access to HIV prevention, care, and treatment represents a fiscally responsible investment, particularly at this time.

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