

**Urgent Needs: A Literature Review of Strategies for Sustainable
Access to Anti-Retroviral Therapy for HIV/AIDS Patients in Sub-
Saharan Africa**

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Declaration

Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis **Urgent Needs: A Literature Review of Strategies for Sustainable Access to Anti-Retroviral Therapy for HIV/AIDS Patients in Sub-Saharan Africa** is my work.

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Abstract

Urgent Needs: A Literature Review of Strategies for Sustainable Access to Anti-Retroviral Therapy for HIV/AIDS Patients in Sub-Saharan Africa

Two thirds of all people living with HIV and 70% of all who require anti-retroviral therapy (ART) live in sub-Saharan Africa (SSA). Despite unprecedented international commitment to the HIV/AIDS epidemic, only 30% of all who need ART in SSA are currently receiving it. The funding gap for HIV/AIDS in this region remains daunting despite huge donor contributions. The current global economic crisis could greatly affect the accelerated efforts to halt spread of HIV and to achieve universal access to HIV/AIDS treatment for all who require it, and the other millennium development goals (MDGs). There is urgent need for evidence-based and sustainable solutions for access to ART for patients in SSA, which has the highest HIV/AIDS burden.

This study set out to assess the current situation and identify pragmatic and sustainable strategies for access to ART for HIV/AIDS patients in SSA. A comprehensive literature review of available print and electronic resources was undertaken including journal articles, reports, policy documents and books.

SSA faces numerous challenges in access to ART: there is poor infrastructure for health; a critical shortage of health workers; overcrowded health units and inexistent chronic care management. The western model of individualized HIV/AIDS treatment cannot be adopted here. Bigger challenges are being faced with scaling up prevention of HIV; adherence to ART and management of second line ART. Crippled government funding for health and unstable donor contributions for HIV compound the health crisis even more.

Primary health Care strategies which have been well known for 30 years are being adopted for the HIV/AIDS crisis in SSA. The WHO public health approach to ART in resource-limited settings emphasises equitable and comprehensive access to ART for all through simplified and standardized drug regimens, treatment protocols and patient monitoring. Task shifting and re introduction of community health workers is necessary to rapidly expand the health workforce. Also, combining comprehensive HIV prevention with treatment can effectively reduce new infections.

The current available resources for HIV should be maximized for health system strengthening through improving infrastructure, expanding and training the health workforce and empowering local educational and research institutions to adequately respond to the HIV/AIDS crisis.

The civil society and activists have a key role in maintaining HIV/AIDS on the political agenda thus ensuring long term local and international commitment to free and universal access to HIV treatment and care for all.

Acronyms and Abbreviations

ART	Anti Retroviral Therapy
CBOs	Community Based Organizations
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GHIs	Global Health Initiatives
HAART	Highly Active Anti Retroviral Therapy
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
MDGS	Millennium Development Goals
NGOs	Non Governmental Organizations
PEPFAR	President's Emergency Plan for AIDS Relief
PHM	People's Health Movement
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission
SSA	Sub Saharan Africa
STIs	Sexually Transmitted Infections
TRIPS	Trade Related Aspects of International Property Rights
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
WTO	World Trade Organization

1 Introduction and Background

Today, 33 million people are living with HIV/AIDS, two thirds of them in sub-Saharan Africa and 10 million people are in need of anti-retroviral therapy (ART), with 71% of them living in this region. (WHO, 2008a) The targets for the millennium development goal (MDG) on HIV are “to halt by 2015 and begin to reverse the spread of HIV/AIDS” and “to achieve by 2010 universal access to treatment for HIV/AIDS for all those who need it.” (UN, 2008b)

At the end of 2007, 3 million people were receiving ART worldwide, with nearly 1 million more people in this year compared to 2006. (WHO, 2008a) Most of this increase was in sub-Saharan Africa (SSA). The “3 by 5” target of getting 3 million people in low and middle income countries on to ART by 2005 was achieved 2 years after the target, but this was a tremendous increase from only 400,000 people on ART in 2003. (WHO, 2003) This huge success was made possible through significant political and international commitment, and funding through global health initiatives (GHIs) like the Global Fund to fight AIDS, tuberculosis and malaria (GFATM) and the US President’s Emergency Plan for AIDS Relief (PEPFAR). (UNAIDS, 2007)

However, despite this tremendous increase in the number of people accessing ART, only 31% [27-34%] of all the people who need ART in low and middle income countries are currently receiving it (WHO, 2008a).

These countries are facing serious challenges in terms of weak health systems (El-Sadr and Abrams, 2007), critical shortage of health workers (Fredlund and Nash, 2007) and lack of long-term sustainable financing for HIV/AIDS and the health sector. (Gilks et al., 2006) Few countries are likely to meet the set targets for the Millennium Development Goals. (UN, 2008a)

More than two thirds of the financial support for the control of the HIV/AIDS epidemic and provision of ART in sub-Saharan Africa is provided by external donors. To meet the universal access goals, the annual available resources need to increase fourfold from the 2007 level to up to nearly US\$ 35 billion in 2010 and US\$ 41 billion by 2015. (UNAIDS, 2007) Furthermore, the sustainability of donor funding for HIV/AIDS is not guaranteed and the current global economic crisis could drastically affect the efforts to scale up access to ART for those who need it in low income countries. (UN, 2008a)

There is urgent need for evidence-based and sustainable solutions for access to ART for patients in sub-Saharan Africa, where the highest burden of the HIV/AIDS epidemic lies.

2 Overall Aim of the Study

The overall aim of this research project is to assess the current situation and to identify pragmatic and sustainable strategies for access to anti retroviral therapy for all who require it in sub-Saharan Africa, through a literature review of available print and electronic resources.

3 Specific Objectives

- To describe the current state of access to anti-retroviral therapy available for HIV/AIDS patients in Sub-Saharan Africa
- To identify and describe the challenges and barriers to access to ART for those who require it in the region
- To propose strategies for sustainable access to ART in sub-Saharan Africa

4 Methodology

A comprehensive literature review of available electronic and print resources was undertaken including: journal articles, reports, policy documents, books and dissertations. All relevant literature up to June 2009 was included and the duration of the research was April to July 2009.

Using the University of Bergen library, the following data bases were comprehensively searched: Pub Med, the Cochrane library, ISI Web of Science and EMBASE.

Main search terms used were; “Highly active antiretroviral therapy (HAART)”, “scaling up”, “health service accessibility”, “sub-Saharan Africa”, “resource-limited settings” and “sustainable”.

Different combinations of the key words were used to ensure that the bulk of available literature was accessed.

The researcher read the abstracts of all available literature to screen for relevant articles whose full text were then read prior to inclusion in the review. Bibliographies of relevant articles were also hand searched for further references.

The World Health Organisation (WHO), United Nations (UN) and World Bank (WB) organisational websites were also carefully searched for relevant information. Reports produced by these and other similar organizations were access and included in the review.

The endnote X citation programme was used for organizing, storing and citation of literature during writing.

A synthesis of the available literature best fulfils the objectives because of the broad nature of the topic.

5 Terms and Definitions

Access (WHO, 2008a)

“A broad concept that measures three dimensions of key health sector interventions: availability, coverage and outcome and impact.”

Availability: Is defined in terms of “reachability (physical access), affordability (economic access) and acceptability (socio-cultural access) of services that meet a minimum standard of quality.”

Coverage: “the proportion of the people needing an intervention who receive it.” “It is influenced by the supply (provision of services) and by the demand from those who need the services.”

Outcome and impact: Is defined in terms of “behavioural change, lower infection rates or higher survival rates. These are the result of coverage, efficiency and effectiveness of the interventions.”

The terms access, utilization, availability, and coverage are commonly used interchangeably to describe whether particular health needs of people are being met. Other important factors to consider in looking at access to ART in sub-Saharan Africa include equitable distribution, quality, acceptability and effectiveness of the service. (WHO, 2008a)

Equity

Equity means social justice or fairness. Equity in health has been broadly defined as “the absence of socially unjust or unfair health disparities.” But “for the purposes of measurement and operationalisation, equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage – that is wealth, power or prestige.”(Braveman and Gruskin, 2003)

Sustainable

To meet the required needs “throughout the lives of those receiving treatment as well as over the course of the epidemic (WHO, 2004a).” Other relevant aspects of sustainability of a project include; integration into available health care services, strong community ownership and using resources mobilized by the community and government.(WHO, 2009a)

Global Health Initiatives (GHIs)

“An emerging and global trend in health is a focus on partnerships – alongside public-private partnerships there are also a number of global health initiatives. Such initiatives are thought to be one of the benefits of globalization.

GHIs are typically programs targeted at specific diseases and are supposed to bring additional resources to health efforts. Examples include the Global fund to fight HIV/AIDS, TB and Malaria, Roll Back Malaria and Stop TB initiatives.” (WHO, 2009b)

Task Shifting

“This is the name given to a process of delegation where by tasks are moved, where appropriate to less specialized health workers. By reorganizing the workforce in this way, task shifting can make more efficient use of the human resources currently available. For example, when doctors are in short supply, a qualified nurse could often prescribe and dispense anti retroviral therapy. Further, community workers can potentially deliver a wide range of community services, thus freeing the time of qualified nurses.” (WHO, 2007d)

6 The Current State of Access to ART in sub-Saharan Africa

In 1996, despite overwhelming evidence for the effectiveness of HAART in HIV/AIDS patients in the western world, there was little hope that this medication would ever reach the neediest patients in sub-Saharan Africa which was hardest hit by the epidemic (Katabira and Oelrichs, 2007).

Pressure from activists and affected groups helped to change this and about ten years later, the global response to the HIV/AIDS epidemic in resource limited countries has been monumental. The recent HIV initiatives are being seen as a likely beginning of “true global health programmes” because the international community is committing to long term involvement.

The extent of Global commitment to universal access to HIV prevention, treatment, care and support is as follows: The Millennium Development Goals (MDG) set by the UN member countries in the year 2000 stressed the importance of the HIV/AIDS crisis. The sixth goal is to halt and begin to reverse the spread of HIV/AIDS by 2015. (UN, 2008b) Further political support was expressed through the UN declaration of commitment on HIV/AIDS at the United Nations General assembly in 2001. (UN, 2001) The World Bank’s multi-country HIV/AIDS programme (MAP) and then the global fund to fight AIDS, TB and Malaria (GFATM) were established in 2001 and 2002 respectively. In 2003 president George Bush launched the President’s Emergency Plan for AIDS relief (PEPFAR) which dedicated 15 billion dollars for HIV/AIDS. That same year, the WHO launched the “3 by 5” initiative with a goal to get 3 million people in resource limited settings on ART by 2005 (WHO, 2003) and this provided the necessary momentum and guidance to improve access to ART.

In the 2006 UN political declaration on HIV/AIDS, the world leaders committed themselves towards the goal of universal access to comprehensive prevention, treatment, care and support by 2010. (WHO, 2008a, Giuliano and Vella, 2007)

With all this commitment and support, there has been a rapid increase in HIV/AIDS funding per year from USD 2 billion in 2001 to USD 10 billion in 2007. Numerous global health initiatives and bilateral partnerships are involved in funding for HIV/AIDS, especially ART. By far the leading bodies for HIV/AIDS funding are the PEPFAR (32%) and GFATM (17%) which together provide nearly 50% of all the AIDS disbursement of funds for Africa.(UNAIDS, 2007)

Resources have been massively mobilized for HIV/AIDS such that by the end of 2007, over 3 million people in low and middle income countries were receiving ART, mostly free of charge. Many more are currently enrolled into numerous chronic care programmes for HIV/AIDS. (WHO, 2008a)

The term “scaling up” has been used to describe the need to provide simplified ART on a large scale to people with HIV/AIDS in resource poor countries. (Person et al., 2007)

Numerous programs providing ART free of charge in sub-Saharan Africa have shown similar and even better early clinical outcomes in terms of immunology, virology and survival than in the developed world. These include results from clinical trials in Khayelitsha, South Africa (Coetzee et al., 2004b), Tororo, Uganda (Weidle et al., 2006), Zambia (Stringer et al., 2006) and in Malawi (Ferradini et al., 2006). All these trials showed over 90% survival after 1 year on ART, 80% suppression of viral load to undetectable levels, and 1-10% loss to follow up. (Person et al., 2007)

These studies and others show better adherence and clinical outcome in those receiving ART free of charge at service delivery point than those who pay for it. (Souteyrand et al., 2008) Some of these programs are home-based, (Weidle et al., 2006) delivering drugs and care to patients at home, free of charge.

Recently, numerous home-based care programs taking ART to patients in their homse or to nearby community distribution points have greatly improve their reachability or physical access.

However, the number of people receiving ART remains small. 70% of people in most need of ART do not have access to it. Numerous crippling challenges are currently being faced within sub-Saharan Africa. The huge number of HIV/AIDS patients in need of chronic care has exposed serious weaknesses and further crippled an already over burdened health system. Current evidence from successful treatment programs has stressed the need for access to ART free of charge, further reliance on external funding and timely adherence counselling. It is estimated that the provision of universal access by 2010 would cost between 30-40 billion dollars and that 4 million more trained health workers are needed to provide even the most basic care to people in resource limited settings. (Person et al., 2007, WHO, 2008a)

Estimated Number of People Receiving Antiretroviral Therapy (ART), People Needing ART and Percentage Coverage in Low and Middle Income Countries according to Region, December 2007.

[Redrawn from: Towards Universal Access. Scaling Up Priority HIV/AIDS Interventions in the Health Sector. Progress Report 2008.] (WHO, 2008a)

Geographical region	Estimated No. of people receiving ART, December 2007 (range)	Estimated number of people needing ART, 2007 (range)	ART coverage, December 2007 (range)	Estimated number of people receiving ART, December 2006 (range)	Estimated number of people needing ART, 2006 (range)	ART coverage, December 2006 (range)	Estimated number of people receiving ART, December 2003 (range)
Sub Saharan Africa	2,120,000 (1,925,000 – 2,315,000)	7,000,000 (6,250,000 – 7,900,000)	30% (27% - 34%)	1,375,000 (1,280,000 – 1,470,000)	6,700,000 (5,900,000 – 7,600,000)	21% (18% - 23%)	100,000 (75,000 – 125,000)
East and Southern Africa	1,690,000 (1,56,000 – 1,820,000)	5,300,000 (4,700,000 – 6,000,000)	32% (28% - 36%)	1,115,000 (1,050,000 – 1,180,000)	5,100,000 (4,400,000 – 5,700,000)	22% (20% - 25%)	75,000 (56,000 – 94,000)
West and Central Africa	430,000 (370,000 – 490,000)	1,700,000 (1,400,000 – 2,100,000)	25% (20% - 31%)	260,000 (230,000 – 290,000)	1,600,000 (1,400,000 – 2,100,000)	16% (12% - 19%)	25,000 (19,000 – 31,000)
Latin America and the Caribbean	390,000 (350,000 – 430,000)	630,000 (550,000 – 770,000)	62% (51% - 70%)	345,000 (305,000 – 385,000)	600,000 (510,000 – 740,000)	58% (47% - 68%)	210,000 (160,000 – 260,000)
East, South and South-East Asia	420,000 (375,000 – 465,000)	1,700,000 (1,300,000 – 2,100,000)	25% (20% - 32%)	280,000 (225,000 – 335,000)	1,600,000 (1,220,000 – 2,060,000)	18% (14% - 23%)	70,000 (52,000 – 88,000)
Europe and Central Asia	54,000 (51,000 – 57,000)	320,000 (240,000 – 440,000)	17% (12% - 22%)	35,000 (33,000 – 37,000)	260,000 (180,000 – 380,000)	13% (9% - 19%)	15,000 (11,000 – 19,000)
North Africa and the Middle East	7,000 (6,000 – 8,000)	100,000 (70,000 – 135,000)	7% (5% - 10%)	5,000 (4,000 – 6,000)	97,000 (66,000 – 130,000)	5% (4% - 8%)	1,000 (750 – 1,250)
Total	2,990,000 (2,700,000-3,280,000)	9,700,000 (8,700,000 – 11,000,000)	31% (27% - 34%)	2,040,000 (1,850,000 – 2,230,000)	9,300,000 (8,200,000 – 10,600,000)	22% (19% - 25%)	400,000 (300,000 – 500,000)

Note: Some of the numbers do not add up due to rounding. Data on children is included where available.

The coverage estimate is based on the estimated numbers of people receiving and needing antiretroviral therapy.

7 The Health System and Health Services in sub-Saharan Africa

7.1 Poor Health Infrastructure

Chronic underfunding for health in SSA has resulted in run down health centres in most rural areas: poor infrastructure; lack of clean water and electricity supply; minimal laboratory services (Bates and Maitland, 2006); irregular supply of medications; nonexistent systems for monitoring and evaluation of health services as well as a critical shortage of skilled health workers (Van Damme et al., 2006, El-Sadr and Abrams, 2007). In addition to all the above, transportation for patients to these centres is a major barrier for them and cost of drugs and accessing ART is prohibitive for most. (Person et al., 2007)

7.2 Critical Shortage of Health Workers

Sub-Saharan Africa, with 14% of the world population, carries 25% of the disease burden, and yet it is in possession of only 1.3% of the human resources for health. To achieve the MDGs, the WHO recommends a minimum level of health worker density (including doctors, nurses and midwives) of 2.5 health workers per 1000 population. The health-worker density is 0.8 per 1000 population in sub-Saharan Africa, compared to 24.8 in the Americas region and 9.3 in the rest of the world. Of the 46 countries in sub-Saharan Africa, only 6 have a health workforce density of over 2.5 per 1000 people. (WHO, 2006d, JLR, 2004, Blair, 2005)

There are a high number of AIDS deaths annually with over 2 million AIDS deaths in 2007. Health worker deaths from AIDS have also been very high, with for example Botswana losing more than 17% of its health work force to AIDS from 1999 – 2005. The WHO estimates that the health worker shortage in sub-Saharan Africa is more than 140%. (WHO, 2007d)

Numerous factors explain the very low health staff. Firstly, few health sciences colleges and medical schools exist, resulting in fewer health staff turnover than required.

Secondly, brain drain (large scale out-migration of health workers) is a major contributor to the health worker crisis. Both internal and external brain drain exists. Internally, health workers leave their public sector positions in national institutions to work in NGOs which pay numerous times more salary than most governments in SSA can. External brain drain involves staff leaving their resource poor countries of origin for jobs in richer countries. Numerous push factors contribute to brain drain, both internally and externally. These include: fear of contracting HIV/AIDS; heavy workload for the few existent staff especially with the HIV/AIDS crisis in sub-Saharan Africa; poor remuneration; poor motivation; lack of support supervision and remote working conditions with poor access to roads and schools for their children. Pull factors in the receiving countries include; more organised working environment, better remuneration, safer working conditions; opportunities for training and career development etc. (Awases, 2004)

7.3 Inexistent Chronic Care Management

The health crisis with minimal health care infrastructure and few health workers is worsened by an approach to health care that is largely curative and sporadic in nature. Due to overcrowding of patients at the clinics with few health workers to attend to them, health care encounters are brief and mainly for management of acute symptoms. Poor record keeping, inability to track missed visits and little emphasis on counselling and patient education make continuity of care impossible. (El-Sadr and Abrams, 2007)

The western model of HIV/AIDS treatment relies upon individually tailored treatment provided by specialists and guided by serial viral load measurements and other high tech laboratory monitoring. (Gazzard, 2005) This cannot be extrapolated to SSA where there is critical shortage of health workers and minimal health infrastructure. Proper management of thousands of patients in need of chronic HIV care is a huge challenge being faced by health systems of countries in SSA (Harries et al., 2008).

8 Prevention is Losing Out

In 2007 alone, despite 3million people on ART, 2.5 million new cases of HIV infection occurred worldwide and 2.1 million people died from AIDS. (WHO, 2008a) In 2006, nearly 3 million new HIV infections occurred. Very few people in SSA actually know their HIV status and access to voluntary counselling and testing programs is still limited. Similarly, many patients with tuberculosis do not know their HIV status. The high number of new infections poses one of the greatest threats to the universal access to HIV, prevention, treatment, care and support and is making targets for access to ART impossible to meet. With the increasing number of new infections annually, the MDG goal on HIV/AIDS is out of reach for most of SSA. (WHO, 2008a) Some have even described it as “scandalous that the access to ART campaign has not been matched by an access to prevention campaign”(Horton and Das, 2008).

Studies on prevention in Tanzania have shown that 50% of men have multiple sexual partners yet 78% of the population have never used a condom. (Yahya-Malima et al., 2007) In high risk places for HIV in Lusaka, lack of access to condoms was the most common reason why condoms were not used. (Sandoy et al., 2008)

9 Clinical Challenges to Access to ART

9.1 Adherence to ART

Adherence levels to Highly Active Anti Retroviral Therapy (HAART) of greater than 95% are required for optimal suppression of the HIV virus. Non adherence to HAART is of great public health concern since it leads to treatment failure in HIV/AIDS patients and creates increased risk of transmission of drug resistant strains of the HIV virus. (Maggiolo et al., 2007) Non adherence is also an important predictor in progression to AIDS and death (Bangsberg et al., 2001) and has been associated with greater than 2 fold increased risk of death in non adherent patients compared to those who are adherent to HAART (Abaasa et al., 2008). For a successful ART programme, 3 essential components are necessary. These include: an uninterrupted drug supply, good patient adherence and compliance with follow up (Harries et al., 2008).

Treatment failure in terms of poor viral load suppression (virological failure) of between 15-20% has been demonstrated in many SSA cohorts (Person et al., 2007) and this is comparable to studies in the western world. Mills and colleagues in a meta analysis of adherence to ART in SSA and North America showed better adherence in the African studies of 77% (95% CI 68 – 85%) compared to 55% (95% CI 49 – 62%) in the North American studies (Mills et al., 2006). However, there is huge concern that in SSA published results are from controlled trial settings where patients are well monitored.

The worry is that with the roll out of ART, treatment is now being provided at community level with less rigid monitoring and adherence is likely to be worse than is actually reported.

Evidence from studies in SSA has also shown that cost of ART and poor physical access to ART are key contributors to non adherence. Other important factors leading to non adherence include forgetfulness, severity of adverse effects of the drugs, complexity of the drug regimen and lack of understanding of the treatment benefits. (Zachariah et al., 2008, Souteyrand et al., 2008, Mills et al., 2006)

Studies in SSA on adherence have actually shown that good adherence is possible in a community treatment and care program with minimal laboratory monitoring of patients. Abaasa et al., in a community HIV/AIDS program in Uganda showed that 78% of the patients had mean adherence to ART of greater than 95%. However, mortality in non adherence patients was 7 times higher than in adherent patients. Mortality in patients with CD4 count less than 50 cells/mm³ was also two times higher than in those with CD4 count greater or equal to 50 cells/mm³ (HR = 4.3; 95% CI 2.22 – 5.66 compared to HR = 2.4; 95% CI 1.79 – 2.38). (Abaasa et al., 2008)

This and other studies in community AIDS programs in SSA (Coetzee et al., 2004a) have shown similar levels of good adherence which have been attributed to continuity of care in the community through home visits; total patient and family care and support; free access to HIV care including ART and close support of patients especially by family members who are recruited as treatment companions or supporters.

These studies have the following important policy implications for treatment of patients with HIV: there is urgent need to identify and initialize treatment of eligible HIV patient early so as to prevent excess mortality in those with low CD4 count; and it is important to provide intensive adherence interventions for HIV/AIDS patients with lowest CD4 count by continuity

of care in the community. They also highlight the need for sustained access to ART drugs; provision of high quality clinical and laboratory support and the urgent need to overcome financial barriers to this.

Community follow up of patients on ART during continuity of care is an excellent opportunity for identifying other patients requiring ART early, through home based voluntary counselling and testing (VCT) which has been shown to be effective for this.

9.2 High Loss to Follow up and Early Mortality of Patients on ART

Poor retention of patients on ART is another big challenge which treatment programmes in SSA are facing. Loss to follow up levels of between 1 – 10% (Person et al., 2007) have been reported in clinical trials, but levels of up to 30% have been reported in community treatment programmes with less capacity for follow up of patients. This high loss to follow up has been attributed to early mortality of patients on ART, poor physical access to ART and the high cost of drugs. (Zachariah et al., 2008, Lawn et al., 2008b, Maskew et al., 2007)

Mortality in patients on HAART has been shown to be highest during the first 3 months on treatment, and much higher in low income countries compared to high income ones (Braitstein et al., 2006). Studies from SSA showing very high mortality of patients during the early months on ART treatment mainly attribute this to patients starting ART late, when CD4 levels are very low (Mermin et al., 2008).

9.3 Access to First and Second - Line ART Drugs

Few data are currently available on the use of both first line and second line ART in clinical programmes in SSA. However, this information is paramount for planning of ART programs and projection of drug requirements annually, and in the future. (Renaud-Thery et al., 2007)

The WHO reports that there is an equal number of both men and women currently on ART (WHO, 2008a). However, there is inequitable distribution with children being left behind in the scale up of ART. Less than 8% of HIV positive children in need of ART in low and middle income countries are actually receiving it, and only 9% of pregnant women with HIV have access to prophylactic ART to prevent mother-to-child transmission (PMTCT) of the virus (WHO, 2008a, Giuliano and Vella, 2007, Person et al., 2007).

With increased number of patients on ART and as treatment cohorts in SSA mature, the need for rescue therapy with second line treatment will increase due to development of drug resistance. (Boyd and Cooper, 2007, Galarraga et al., 2007) Recent studies show that the uptake of second line ART after one year ranges from 0.8% in MSF cohorts (Pujades-Rodriguez et al., 2008) to between 1-15% in a 2006 WHO survey. In this survey, 96% of adults on ART were on 1st line treatment compared to 4% on second line treatment, while only 1% of children were on reported to be on second line ART. Children accounted for only 8% of all the people on ART (Renaud-Thery et al., 2007, WHO, 2007e).

Although these studies have shown good early treatment outcome in patients on second line treatment which is comparable to those on first line treatment, they highlight numerous challenges to accessing second line ART (Pujades-Rodriguez et al., 2008). These include: the price of second line ART is currently more than 10 times that of first line ART (Vasan et al., 2006); ensuring adherence with second line treatment is very difficult due to high pill burden of protease-inhibitor regimens, their need for refrigeration, meal restrictions and lack of fixed-dose drug combinations; and they showed that there was increased risk of death of patients on second line ART who had severe immune suppression before starting first line therapy and a history of severe opportunistic infection (WHO stage 3 and 4).

Also, over 50% of patients alive on second line ART after one year still had very low CD4 levels (less than 200 cells/micro litre) and continued thus to be at risk of severe opportunistic infections and death.

Consequently, there is urgent need to improve diagnosis of first-line treatment failure through increased viral load monitoring in SSA and standardization of treatment-failure algorithms (Colebunders et al., 2006); price reductions for second line ART is paramount; and strategies to improve adherence while on second line drugs should be maximized including development of heat stable formulations, fixed dose combinations and drugs which require less food restrictions. (Boyd and Cooper, 2007, Pujades-Rodriguez et al., 2008, Renaud-Thery et al., 2007)

10 Lack of Long Term Sustained Funding

10.1 Government Contributions for Health

Decades of underfunding for the health sector in sub-Saharan Africa have contributed to the health crisis which is exacerbated by the HIV/AIDS epidemic. The annual per capita expenditure on health in sub-Saharan Africa is about US\$ 10-20, compared to about US\$ 5300 in USA. (El-Sadr and Abrams, 2007) In the Abuja declaration on HIV/AIDS, TB and other infectious diseases, African heads of governments pledged to allocate at least 15% of their annual budgets to improvement of the health sector (O.A.U., 2001). Despite this, the world development report of 2004 shows that only 6 countries in sub-Saharan Africa have a per capita expenditure on health of greater than USD 34, which is the WHO recommended minimum expenditure.

10.2 The Volatile Nature of Donor Contributions to HIV/AIDS

Donor contributions to HIV/AIDS have not been consistent in the past. The graph below shows the unstable pattern of contributions to HIV/AIDS at country level in various SSA countries. (Lewis, 2005) With the current global economic crisis, we one can only speculate about what could happen to these contributions over the next few years. It is feared that much of the HIV/AIDS success could be easily undone.

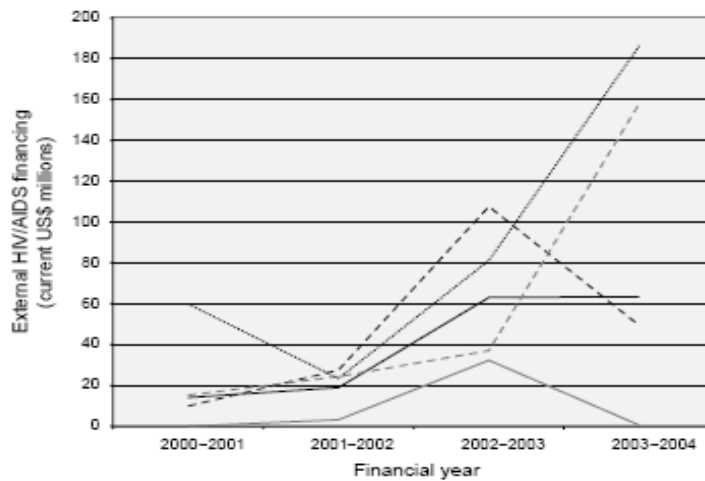


Fig. 2. The volatile nature of contributions to HIV/AIDS initiatives at the country level. Trends in external HIV/AIDS funding commitments are shown for selected African countries from 2000 to 2004. The surge in total international funding for the HIV/AIDS response belies the instability of resources at the country level. Significant fiscal ramifications revolve around the jump in external funding that reached, for example, approximately 1000% in Swaziland between 2002 and 2004. In some cases HIV/AIDS monies exceeded 150% of the government's total allocations for health. — Malawi; - - - Mozambique; — Swaziland; - - - Tanzania; Uganda. Adapted from Lewis M. Addressing the challenge of HIV/AIDS: macroeconomic, fiscal and institutional issues. Center for Global Development working paper no. 58. 2005.

[This Graph was extracted from Katabira, E.T. & Oelrichs, R.B. (2007) "Scaling up antiretroviral treatment in resource-limited settings: successes and challenges" in *Aids*, 21 Suppl 4, S5-10]

10.3 Negative Effects of the Global Health Initiatives

HIV/AIDS funding especially ART is mainly financed by international donors with African governments currently providing about 20% of the available resources. As described above, over USD 10 billion was made available for HIV/AIDS funding from the international community in 2007. The highest funding in low and middle income countries for HIV is by PEPFAR (32%), followed by GFATM (17%), then other bilateral agreements. (WHO, 2008a)

Despite all the funding availed through the global health initiatives, their activities have created some negative effects on health systems. These include duplication of services; imbalances especially in remuneration and staff utilization; and interruptions in routine services due to prioritization of donor activities. (Travis et al., 2004, Marchal et al., 2009) These are further elaborated upon below.

The funding approach of the major GHI, PEPFAR, is mainly through international Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs) and Faith Based Organizations (FBOs), with minimal funding going directly to the government and local institutions (England, 2007, Marchal et al., 2009). A parallel, duplicate and vertical programme has been created with its own funding, staffing, and monitoring and evaluation mechanisms with concerns that this is creating “fragmentation in local health systems and undermining local control of programs”. (Patterson, 2006)

Furthermore, PEPFAR allocates 70% of its funding for treatment and care especially purchase and distribution of drugs; 20% for prevention; and 10% for support to orphans and vulnerable children. The GFATM currently allocates 45% to drugs and commodities, 23% to human resources, 12% to infrastructure and equipment, 10% to administration while only 3% is allocated to monitoring and evaluation and only 5% to educational and academic institutions. PEPFAR currently does not provide any allocations for local institutional capacity building. (Patterson, 2006) Research centres, educational and academic institutions in sub-Saharan Africa have been left out and most of the expertise and knowledge is concentrated in centres in resource rich countries.

The numerous NGOs, CBOs and FBOs receiving funding from the GHIs usually provide better remuneration to staff and have been contributing to an internal brain drain from local institutions, further weakening local institutional capacity.(Drager et al., 2006, El-Sadr and Abrams, 2007)

For the above reasons, this vertical or parallel programme funding of only one disease, with huge sums of money and resources directed towards HIV/AIDS has been criticised. (England, 2007) Their effects could “undermine progress towards the long term goal of an effective, high-quality, inclusive health system” (Marchal et al., 2009). Some people have even expressed fear that GHIs will have a “detrimental effect on other health services and other health threats” (Kober and Van Damme, 2004) mainly because only people with HIV/AIDS are likely to have better access to health care, while the majority of the population in low income countries could remain with even weaker services.

Furthermore, anecdotal evidence suggests that governments are facing other challenges from current donor practices including: difficulties with donor procedures; numerous donor driven priorities and uncoordinated systems; excessive demands on government time and delays in disbursement (Brugha, 2007). They call for greater coordination of GHI efforts.

In response to the above dangers of disease specific donor funding by GHIs, the WHO and GFATM have proposed a “diagonal approach” to health system strengthening. This will ensure that disease specific outcomes can be achieved through improving the local health systems. Barriers to achieving the required outcomes for HIV/AIDS, TB and malaria are first identified and then strategies are designed to address the barriers such that both disease specific outcomes and health system-wide effects are achieved. (WHO, 2007c, WHO, 2007b, Marchal et al., 2009, GFATM, 2008) This approach could be adopted by other GHIs.

11 Strategies for Sustainable Access to ART in sub-Saharan Africa

11.1 The WHO Public Health Approach to Anti-retroviral Treatment against HIV in Resource-limited Settings

Treatment of HIV/AIDS patients in the western world is based on an individualized model where treatment is tailored for each patient by a specialized physician with a wide variety of ART to choose from and guided by high technical serial laboratory monitoring. (Gazzard, 2005) Given the weak health systems with poor infrastructure and critical shortage of health workers in SSA, such a model cannot be effectively adopted.

Since 2001, the WHO has promoted a public health approach to ART against HIV in resource limited settings so as to improve access to treatment and care for HIV/AIDS patients. (WHO, 2002, WHO, 2004c) This approach has been guided by emerging evidence and best practice in these settings, leading to further revisions on the treatment guidelines(WHO, 2006a).

The WHO public health approach to ART is based on the principles of standardization and simplification of drug regimens and formularies; simplification of treatment protocols (for easier clinical decision-making); and standardized monitoring and management of drug toxicities and HIV drug resistance. It is also based on the principles of decentralisation, equity and patient and community participation.

To achieve universal access to ART, the public health approach emphasises decentralized service delivery that is integrated into national health services. WHO developed the Integrated Management of Adult and Childhood Illnesses (IMAI/IMCI) guidelines, which are

evidence based implementation tools that can be easily used in decentralisation of ART within existing HIV services. (WHO, 2006c, WHO, 2007a, WHO, 2004b)

Task shifting (delegation of appropriate tasks to less specialized health workers) with specialist supervision and provision of ART free at the point of delivery are also key aspects of implementation of the WHO public health approach to ART treatment. (Gilks et al., 2006)

Finally, improved drug procurement and supply chain along with timely monitoring and evaluation are paramount for implementation of the public approach.

As a result of the WHO public health approach, the standardization of ART regimens and simplified drug formularies encouraged wide scale production of fixed drug combinations of first line ART treatment. This was an important factor in lowering the price of ART by more than 50% in less than 2 years between 2001 and 2002 and it greatly increased availability of ART in SSA.

Recent studies on the use of ART in SSA and other low income countries have shown that most countries have developed their national ART guidelines according to the WHO recommendations (Beck et al., 2006) and over 50% of the people on ART are receiving it in good compliance with the current guidelines (WHO, 2006a, WHO, 2004c) for treating Adults and children with ART. (Renaud-Thery et al., 2007, WHO, 2007e)

11.2 Tackling the Health Worker Crisis

To tackle the health worker crisis in sub-Saharan Africa, WHO instituted the “treat, train and retain” AIDS and health workforce plan in 2006 to “strengthen and expand the health workforce by addressing both the causes and effects of HIV and AIDS on health workers.” (WHO, 2006b) It is a strategy detailing how to maintain the minimal available staff in resource limited settings by: providing a package of HIV treatment, care and support for health workers affected and infected by HIV, in response to their health needs; pre-service and continuous training to expand the human resource pool and maximize utilization of skilled staff so as to provide universal access to HIV services through a public health approach; and ways to retain health workers through financial incentives, occupational health and safety and initiatives to reduce brain drain (migration of health workers).

A key strategy of the “teach, train and retain plan” is task shifting. This is “a process of delegation whereby tasks are moved, where appropriate, to less specialized health workers” (WHO, 2007d). It is a radical approach which even before clear documentation and backing of by the WHO, has been in effect in most countries in SSA. However, a legal regulatory framework for credentialing, defining tasks and maintaining standards related to task shifting should be implemented to ensure protection of both health workers and all the people receiving treatment (WHO, 2006b, WHO, 2007d).

In Uganda, lay field workers with 2 months of ART training have been successfully used in delivery of ART and monitoring of patients at their homes, and people living with HIV/AIDS (PLWHA) have been integrated into the health care system as adherence motivators and

peer supporters in the community. (Weidle et al., 2006, Abaasa et al., 2008, Jaffar et al., 2005)

In Malawi (Harries et al., 2006, Harries et al., 2007) and Ethiopia (Assefa et al., 2009) most HIV care and ART programs are run by trained nurses and paramedical staff. The medical regulatory bodies have endorsed the expanded role of trained nurses for ART prescription, patient monitoring and management of opportunistic infections in HIV patients.

Currently, in South Africa, there is a strong presence of community health workers in response to the HIV/AIDS epidemic. They assume a variety of roles from lay counsellors, home based carers to ART supporters. They are trained volunteers, resident in their communities and they receive a stipend for services through government grants. (Schneider et al., 2008)

Task shifting can occur at any level: from doctors and specialized physicians to non-physician clinicians; from clinicians to nurses; from nurses to nursing assistants and community health workers; and from these to PLWHA. It has the potential to expand the human resource pool rapidly; it creates vital linkages between the health facility and community and creates job and opportunities for community members and PLWHA. (WHO, 2007d)

Lessons from Brazil could be useful in informing the scale up of ART access in SSA and other low income countries. Brazil was the first developing country to provide universal access to ART in 1996, through the public health system. It did this by adopting the western model of therapy, based on an individualized approach to treatment with an open formulary of drugs to choose from. After over 10 years of provision of ART to patients, Brazil is currently

experiencing huge challenges in sustaining the individualized model of care in face of marked socio-economic disparity in the country. This socio-economic disparity is second only to South Africa. There is unequal quality of care even within regions and neighbouring hospitals, with complete absence of some specialities in some areas.

With even bigger number of patients now requiring ART and even more complex regimens, (over 15% are on third line drugs) the country needs to increase capacity to manage complex treatment options and clinical conditions, increase the treatment facilities and probably revise the individualized approach to treatment. (Schechter, 2007) This lends further strength to the WHO public health approach to ART in low income countries which maximizes population level survival and takes in to consideration such expected operational challenges.

Further evidence from Brazil highlights the urgent need for population based data which is lacking despite successful universal access to ART (Beyrer, 2005). Data is necessary on overall survival on ART, early mortality on ART, duration on first line ART regimen and incident (new) infections. All this is necessary for any projections on ART need in any country. (Schechter, 2007)

11.3 Local Institutional Capacity Building

To achieve long term impact of the scale up of access to ART for sub-Saharan Africa, strengthening the local institutional capacity is paramount. This is in terms of health management; clinical and laboratory skills; drug procurement and supply management; research capacity; monitoring and evaluation.

Capacity building for surveillance of HIV drug resistance; monitoring and early diagnosis of treatment failure; research skills for long term follow up of patients on first, second and tertiary-line ART therapy are urgently needed. (Person et al., 2007, WHO, 2007e, WHO, 2008a)

Despite availability of funding for HIV/AIDS the major funding agent, PEPFAR, funds mainly treatment and care (70%) with less emphasis on prevention (20%) and currently no focus on local institutional capacity building (Patterson, 2006, Marchal et al., 2009). In comparison, the GFTATM provides 23% of its funding for human resource development, 12% for infrastructure and 10% for administration but only 5% to educational and academic institutions and 3% for monitoring and evaluation. (Feachem and Sabot, 2006)

Furthermore, the choice of major GHIs to channel funding through parallel vertical programs usually international NGOs with expatriates undermines strengthening of local institutions. Parallel programs also “undermine local decision-making autonomy and lead to inefficiency (Unger et al., 2003).” Thus this is a missed opportunity for direct strengthening of the existing local health system which is a pre-requisite for sustainability of access to ART and HIV/AIDS treatment and care in sub-Saharan Africa and low income countries (Giuliano and Vella, 2007).

Important aspects of local institutional capacity building which require urgent attention include: expanding the health workforce and strengthening their skills; empowering local health managers to manage and organise responsive systems; expanding and improving health infrastructure; and empowering educational and academic institutions.

The currently available funds for HIV/AIDS could be better channelled through the local institutions, both clinical and academic to improve the health systems and local capacity. (Patterson, 2006, El-Sadr and Abrams, 2007) For example, in dealing with the health worker crisis, money should be invested in training and increasing staff salaries for the whole health workforce and not only staff working for GHI programs. Such investment will ensure a long lasting and sustainable health system able to cater for the needs of both HIV/AIDS patients and the entire community. (Marchal et al., 2009)

11.4 Prevention of HIV

Prevention of new infections will ease the burden on the health system and reduce clinical staff work-load allowing emphasis on chronic care; rehabilitation; prevention and promotion of health.

A comprehensive package for HIV prevention in sub-Saharan Africa which has a generalized HIV epidemic and heterosexual mode of transmission was described by Stover and colleagues. (Stover et al., 2002) It includes mass media campaigns; voluntary counselling and testing (VCT); peer counselling for sex workers; school, youth and work place based programs; condom promotion and distribution; treatment for STIs and prevention of mother-to-child transmission. Population wide access to condoms, routine counselling and testing (RCT), as well as voluntary counselling and testing (VCT) and wide scale HIV prevention education are tested strategies.

Studies on changes in prevalence of HIV and risky behaviour by education status in Zambia have shown that the relationship between education and risk for HIV infection is inversely related; i.e. the more educated an individual or community is, the less likely for them to acquire HIV (Sandoy et al., 2007). Although this is the more common trend as prevention of HIV campaigns are scaled up, in a different local context in Cameroon, education was associated with higher risky behaviour (Voelksen, 2009)¹.

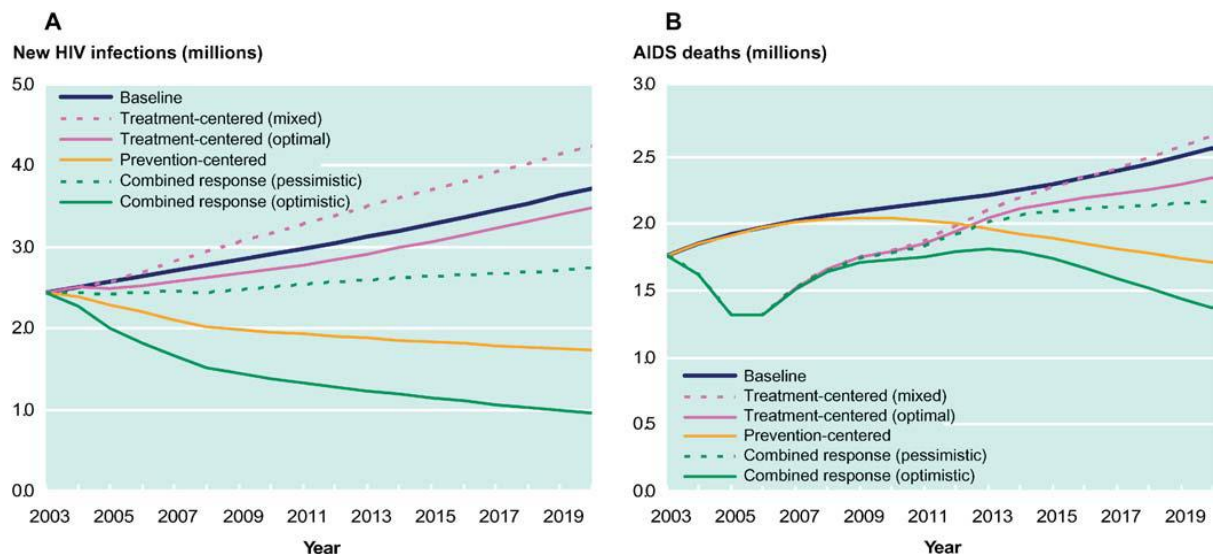
ARV treatment services and prevention of HIV complement each other. Large scale availability of ART drugs for treatment of HIV/AIDS patients has been shown to enhance the uptake of HIV prevention services. (Salomon et al., 2005) Confidence of accessing treatment if one receives an HIV positive result has allowed many more people to seek VCT services. For example, uptake of VCT services increased 12 fold in Khayelitsha, South Africa between 1998 and 2002, largely attributed to ART roll out (MSF, 2003).

Although presence of ART improves uptake of VCT services, only effective prevention can make treatment programmes in SSA affordable in the long term, hence more sustainable. A combination of these two strategies within a comprehensive community response to HIV can have lasting impact on the epidemic.

Salomon et al demonstrated the synergistic effect of a comprehensive care model which integrates HIV prevention and treatment in adults in sub-Saharan Africa. In their model, treatment alone had a minimal effect on new HIV infections; prevention had a moderate reduction, while the combined effect of prevention and treatment was substantial. (Salomon et al., 2005)

¹Supervisor made me aware of this German master thesis which was submitted to University of Basel, spring 2009

The Synergistic Effect of HIV Prevention and Antiretroviral Therapy, on New HIV Infections and Mortality due to AIDS



(From Salomon et al, Integrating HIV prevention and Treatment: From Slogans to Impact. PLoS Medicine, 2005)

11.5 Commitment by Governments in sub-Saharan Africa to Health Funding

As early as 1996, Brazil was the first developing country to show very strong political commitment to provision of ART for HIV/AIDS patients in need. This year, the government passed a law which ensured free universal access to ART and HIV prevention and care services through the public health system. This led to a huge reduction in mortality due to AIDS and the epidemic was controlled and reversed. Since then the Brazilian response to HIV/AIDS especially the universal access to ART has been heralded as an excellent example to other developing countries. (Schechter, 2007) Brazil has been sharply contrasted with South Africa another middle income country where government suspicion of ART and refusal to provide ART drugs to AIDS patients led to an escalating epidemic with currently nearly the highest HIV prevalence of 35%. (Nattrass, 2008) Only recently, after 2006 has access to ART improved in South Africa.

The World Trade Organisation (WTO) Trade-Related aspects of International Property Rights (TRIPS) agreement of 1994 which required all except the very poorest countries to ratify patent protection on new drugs was defied by Brazil, India and Thailand which have the capacity to “reverse engineer” patented drugs. For humanitarian reasons, they only provided generic drugs to their patients and did not buy any patented ones. This and pressure from activists led to changes in the TRIPS agreement in 2001 where the Doha Declaration clarified that countries which modify their patent laws to include public health provisions can issue compulsory licences to produce or import generic drugs without consulting patent holders.

Basically, high prices of essential medicines is a violation of rights to health for all and thus a form of patent abuse, so justifying wide scale production of generic ARVs. This provided

negotiating leverage for drove down prices of patented drugs. (Ford et al., 2007, Schechter, 2007, Natrass, 2008)

South Africa, despite its local capacity has not taken advantage to improve its pharmaceutical industry. Numerous governments in SSA are currently developing their capacity to produce generic ART for local consumption. These include Botswana, Kenya, Uganda and Nigeria among others.

Government commitment has been shown in other ways in SSA. In 1996 there was early recognition and acceptance of the magnitude of the AIDS epidemic by the president of Uganda. The government spoke openly about the epidemic, spearheaded behaviour change campaigns and there was mass mobilization and education on transmission and prevention of HIV. This was the reason for behaviour change and the early control of the HIV/AIDS epidemic in Uganda. (UAC, 2009, Stoneburner and Low-Ber, 2004)

Clearly, national governments play a key role in determining access to ART. Without their commitment, little can be achieved, regardless of the international support. Local commitment to put in the place the legal framework and improve infrastructure for sustainable access to ART is paramount. Financing ART and HIV/AIDS care should be prioritized and matched by the budgetary allocations to the health sector.

Ultimately, local leaders respond to political incentives. If majority of electoral constituents demand an action, leaders usually prioritize it.

It was pressure from the civil society in Brazil which helped government to take HIV/AIDS action. Pressure from activists in South Africa helped ensure access to ARVs despite the government's reservations.

The entire international commitment to HIV/AIDS in resource limited countries was driven by pressure from activists and PLWHA for equitable access to treatment and care. (Nattrass, 2008) This same pressure must be maintained on governments in sub-Saharan Africa for sustained commitment (Giuliano and Vella, 2007). Education of the civil society in the poorest regions of sub-Saharan Africa to demand their rights to access to treatment and care is thus very important.

Some organisations like the People's Health Movement (PHM), a civil society network of health activists, are working to protect the rights to health of poor people in low income countries by tackling the broader determinants of health; economic, social, political, environmental war and conflict related (PHM, 2009). Such activities are needed all over sub-Saharan Africa and other low income settings to maintain civil society involvement in their own health and to provide necessary evidence for advocacy and local demands. (Piot, 2006, Saunders, 2009)

12 Limitations and Conclusions

Although an extensive literature search was undertaken, this work still has a number of limitations. Due to the broad nature of the topic, few publications actually address it as a whole. Also, any unpublished work was inaccessible and finally, a complete assessment of the literature may have been hampered by short duration of the study time.

Many successful ART programs in SSA have stressed the critical role of donor support, which enables free care and continuous adherence counselling. The consensus is that for ART to be sustainable for individuals and equitably reach all segments of the population, treatment should be offered free of charge. (Person et al., 2007, WHO, 2008a)

The purpose of the WHO public health approach to ART is to ensure equitable and comprehensive access to ART for all, especially the world's poorest in sub-Saharan Africa. Implementing a public health approach to ART requires integrated and decentralized delivery of care, task shifting, provision of ART free at point of delivery, improved procurement and supply chain and timely monitoring and evaluation of the program. (Gilks et al., 2006)

The World health report of 2008 focuses on "Primary Health Care, Now More Than Ever" (WHO, 2008b). Thirty years after the WHO/UNICEF Alma Ata conference in Kazakhstan which stressed "health for all by the year 2000" health policy again emphasises a public health approach through Primary Health Care (PHC). The principles of PHC which were raised by the 1978 Alma Ata declaration are: universal access and coverage on the basis of equity; comprehensive care with emphasis on prevention; health promotion; community

involvement; intersectoral action for health and appropriate technology. (Lawn et al., 2008a, WHO, 1978) Although these basic principles are well known, over the last 30 years they have sometimes been ignored (PHM, 2009). Health sector reform in the early 1990s with the components of broadening health financing options, introduction of user fees and adoption of a sector wide approach to aid was a quest for efficiency and cost effectiveness which neglected environmental and social determinants of health. (Walley et al., 2008, Gilson and McIntyre, 2005, Palmer et al., 2004)

A move from comprehensive to selective approaches to health care also seems to be occurring and has recently been associated with the funding approach of the HIV/AIDS global health initiatives.

Even though few countries in SSA are likely to meet the goals for universal access to HIV, the momentum generated by these targets must be maintained. For sustainability of ART programs in SSA, most emphasis must be put on strengthening of existing health systems: improving infrastructure and expanding and training the health workforce so that they can be prepared to take on chronic care, for the long term benefit of both HIV patients and the general community. The current abundant resources for HIV/AIDS should also be equally used for integrating comprehensive HIV prevention strategies into expanded ART programmes at community level; local capacity building and the urgently needed research on optimal second line regimens and mechanisms for early detection of treatment failure.

All of these strategies cannot be accomplished without political commitment of leaders in SSA. There must be commitment to provide free and universal access to ART for all who are in need through prioritization of health sector financing as well as endorsing relevant trade policy to ensure access to both generic and branded ART drugs.

Since local leaders respond to political incentives, sustained pressure from their electoral constituencies, PLWHA, activists and civil society is very important to ensure political commitment. (Nattrass, 2008)

13 Recommendations

Based on this review, the following recommendations are reasonable:

- The WHO public health approach, improving health infrastructure and local capacity development should be considered key strategies for improving access to ART for all who require it in SSA.
- Task shifting and re-introduction of community health workers will be necessary to tackle the health worker crisis in SSA.
- A legal regulatory framework for credentialing, defining tasks and maintaining standards related to task shifting should be implemented to ensure protection of both health workers and all the people receiving treatment.
- Emphasis should be put on combining comprehensive HIV prevention with the expanded treatment services.
- Defining simple and standardized regimens for second line ART and expanded access to viral load monitoring for all HIV patients on HAART should be prioritized.
- For sustained response, HIV/AIDS should remain on the political agenda locally and internationally. Also, activists and the civil society should maintain pressure on governments to ensure their long term commitment to free universal access to HIV treatment, care and prevention services for all.

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