Access to antiretroviral treatment in developing countries: Which financing strategies are possible?

Access aux traitements antirétroviraux dans les pays en développement : quelles stratégies de financement ?

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Received 18 May 2009; accepted 15 February 2010
Available online 28 April 2010

Abstract

Background. – In low- and middle-income countries, access to combination antiretroviral therapy for all people living with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) in need of treatment is a major public health challenge. The objective of this paper was to provide an overview of the different financing modalities of HIV/AIDS care at the microeconomic level and an analysis of their advantages and limitations.

Methods. – A review of the published literature using mainly the Medline and Science Direct databases for the 1990–2008 period in English and French made it possible to explore different financing strategies for the access to combination antiretroviral therapy using as case studies specific countries from different regions: Ivory Coast, Uganda, Senegal, and Rwanda for sub-Saharan Africa, Brazil and Haiti in the Latin America/Caribbean region, and Thailand for Asia.

Results. – In these settings, direct payment through user fees is the most frequent financing mechanism in place for HIV/AIDS care and treatment, including combination antiretroviral therapy. Nevertheless, other mechanisms are being implemented to improve access to treatment such as community-based health insurance schemes with free care for the poor and vulnerable households and public–private partnerships.

Conclusion. – The type of financing strategy for HIV/AIDS care and treatment depends on the context. As direct payment through user fees limits access to care and does not enable program sustainability, national and donor agencies are introducing alternative strategies such as community financing systems (mutual health organizations, micro insurance, community health funds) and public–private partnerships. Finally, access to combination antiretroviral therapy has improved in resource-limited settings; however, there is a need to introduce alternative financial mechanisms to ensure long-term universal and equitable access to treatment and care, including combination antiretroviral therapy.

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Keywords: Combination antiretroviral therapy; Access; Financing strategies; Developing countries

Résumé

Position du problème. – Les financements de l’accès des patients vivant avec le virus d’immunodéficience humaine/syndrome d’immunodéficience acquise (VIH/SIDA) aux antirétroviraux dans les pays en développement constituent plus que jamais un problème de santé publique majeur. L’objectif de cet article est de proposer une synthèse des modalités de ces financements au niveau microéconomique et d’analyser leur portée et leurs limites.

Méthodes. – Une revue thématique de la littérature publiée, entre 1990 et 2008, en anglais et en français, principalement à partir des bases de données Medline et ScienceDirect a permis de réaliser un état des lieux des modes de financements des programmes d’accès aux antirétroviraux dans plusieurs pays : la Côte d’Ivoire, l’Ouganda, le Sénégal et le Rwanda (Afrique sub-saharienne), le Brésil et Haïti (Amérique latine/Caraïbes) et la Thaïlande (Asie).

DOI of original article: 10.1016/j.respe.2010.02.109.
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1. Introduction

In 2007, 33 million people in the world were living with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), the cause of 2.1 million deaths. Sub-Saharan Africa remains the most seriously affected region, with 67% of the world’s infected population [1]. However, exceptional progress has been observed over the last decade. Many programs providing access to antiretroviral (ARV) treatments were set up in sub-Saharan African, the Latin America/Caribbean region, and Southeast Asia during the 1990s, either through the initiative of the Joint United Nations Programme on HIV/AIDS (UNAIDS) or within governmental initiatives [2]. A variety of international initiatives (Global Fund, the President’s Emergency Plan for AIDS Relief [PEPFAR], the World Bank’s Multi-country AIDS Programme, UNITAID International Drug Purchase Facility), and the growing production of reduced-cost generic medications have significantly reduced the price of most first-line ARV therapy schemes by 30–64% from 2004 to 2007 in low- and middle-income countries [3]. This reflects a historic increase in the coverage of care (including access to ARVs) for HIV-infected individuals in developing countries in general and in sub-Saharan Africa in particular [4].

However, despite this progress, important challenges remain before universal access to ARVs is achieved in resource-limited countries. Only one-third of the people living with HIV (PLHIVs) in sub-Saharan Africa who need ARVs in fact receive them [4]. ARV treatment – particularly second-line treatment – remains very costly [5,6]. When all of the costs associated with the treatment are taken into account, this is an expense that is several times the per capita income [7,8]. Direct payment of the costs by the patients at the point of service delivery compromises the efforts deployed to ensure universal access to ARV treatment [9]. In most developing countries, settings with the highest HIV/AIDS prevalence, households contribute directly more than 50% of healthcare expenditures for HIV/AIDS treatment [9–11]. For this reason, alternative financing mechanisms to direct payment by patients founded on prepaid insurance systems and sharing health risks – mutual health organizations, micro insurance, health insurance – are being increasingly encouraged in developing countries [12,13].

Although access to ARV treatments is rapidly increasing in developing countries, over the past few years very little research has been devoted to describing and analyzing the mechanisms in financing these treatments. The main objective of this paper was therefore to provide an overview of the financing modalities of ARV treatment programs accessible to HIV-infected patients in need of ART (antiretroviral therapy) at the microeconomic level implemented in resource-constrained settings and analyze their advantages and limitations. This study does not claim to analyze all the initiatives that have been proposed to increase access to ART that have been implemented in all developing countries, but sheds light on factors that will contribute knowledge so as to better understand, notably, the problems concerning access to these treatments based on the experience of the countries selected. It also aims to provide information for the healthcare decision makers and program leaders managing PLHIVs on the relevance of particular financing strategies in specific contexts.

2. Methods

We conducted a thematic review of the literature published in English and French using the Medline and Science Direct databases. The key words used were the following: “antiretroviral,” “access,” “financing,” “out-of-pocket,” “user fees,” “cost recovery,” “insurance,” “developing countries,” “resource-poor settings,” “resource-limited settings” combined with “HIV” and “AIDS.” The search for articles was completed with reports, multi author book chapters, working documents, and abstracts from UNAIDS, the World Health Organization (WHO), the World Bank, and the International AIDS Society Conference Database search engines.

Only articles directly or indirectly involving healthcare access (including ARVs) of HIV-infected individuals and financing in developing countries and those on ARV access programs published between 1990 and 2008, under the auspices of UNAIDS – the world’s key actor in fighting AIDS – or in governmental initiatives, were retained. A preliminary selection was made based on the articles’ title and abstract and a second selection was made after they had been analyzed. When several documents treating the same topic were analyzed, we took into account the article matching our objective. The
developing countries selected for the case study were therefore those that had begun their ARV-access programs during the 1990 s or shortly after 2000, under the auspices of UNAIDS or governmental initiatives.

The article contents were analyzed in three parts:

- we describe the main healthcare financing mechanisms in general and ARV treatments in particular;
- we present case studies of ARV-access initiatives that were set up in sub-Saharan Africa (Ivory Coast, Uganda, Senegal, Rwanda), the Latin America/Caribbean region (Brazil, Haiti), and Southeast Asia (Thailand). For reasons of convenience, countries with reliable data and those studied by the authors within their research projects on financing the healthcare of people living with HIV/AIDS in developing countries were selected;
- finally, we discuss these data and provide perspectives on the financing of access to ARV treatments for HIV-infected patients in resource-limited countries.

In the end, the documents retained comprise 61 articles published in international peer-reviewed journals, two books, four book chapters, 12 WHO documents, UNAIDS and World Bank search engines, two abstracts from the International AIDS Society Conference search engine, and, finally, five other documents on antiretroviral treatment financing in developing countries meeting our objectives.

3. Results

3.1. Financing mechanisms

The main financing mechanisms for ARV treatments used by households, applied in developing countries, are: direct payment of fees at the point of service delivery and alternative mechanisms based on prepayment systems and risk sharing, and, to a certain degree, public–private partnerships.

3.1.1. Direct payment

Since the Bamako Initiative launched by the African Health Ministries meeting in Bamako in September 1987, under the auspices of WHO and the United Nations Fund for Children (UNICEF), patient participation in healthcare expenditures and user co-payment have become increasingly prevalent practices in healthcare system financing, particularly at the local and district levels [14,15]. The objective of this financing strategy was not only to generate income to improve the quality of healthcare services and equal access to healthcare, but also to increase the community participation in the management of healthcare facilities [16]. Financial participation was requested from users at the point of service delivery to ensure cost recovery. However, the mitigated results observed, notably in certain sub-Saharan African countries in terms of equity and efficacy, produced by the cost recovery policy, challenged this strategy [17,18]. The direct payment of healthcare (including ARVs) for HIV/AIDS by patients paying at the point of service delivery is an example. This payment system is a significant barrier for poor and vulnerable households [9,19,20], exposing them to catastrophic healthcare expenditures, which are encountered when households spend more than 40% of their payment capacity on healthcare [21–25]. Therefore, many patients do not use health services, including treatment centers, for fear of impoverishment. To cope with these risks, financing mechanisms based on prepayment and risk sharing are increasingly promoted in resource-limited countries [21,24].

3.1.2. Alternative mechanisms

For more than two decades, financing systems deemed to be relevant alternatives to direct payment at the point of service delivery have increased considerably, notably in sub-Saharan Africa. They can be grouped into two types: (i) community-based health insurance or prepayment and risk-sharing systems and (ii) public–private partnerships.

The term “community-based health insurance” is used to define nonprofit financing mechanisms based on the predominant role the community plays in mobilizing, pooling, allocating, and managing and/or supervising resources dedicated to healthcare services. They are often called mutual health organizations, micro insurance, or community health funds. These mechanisms are defined based on the role of the community, the type of beneficiary groups, and the notion of solidarity that underlies their functioning. Nevertheless, despite the points they have in common, they differ in their intrinsic characteristics, organizational structure, mode of management, and the institutional environment [26].

When they are set up in the public sector of HIV/AIDS management, the community systems improve the equity of access to healthcare. This is done by reducing the economic burden for the poorest families represented by the financial participation at the point of service delivery, through partial or complete exemption of contributions (free care) [27–29]. Likewise, these programs encourage efficiency in the organization of services by improving receipts and financial accessibility of service providers [28–30]. Actually, in ARV treatment financing, establishing prepayment and risk-sharing schemes is not easy in resource-limited countries because of the poverty of most HIV-infected or affected people [7]. Nevertheless, these mechanisms, because they are the most appropriate and the most viable financially, are promoted by the international community, notably since the Abuja Summit held 2–4th May 2006 to ensure universal access to treatments [31,32].

Public–private partnerships in healthcare are defined as a financing mechanism aiming to recover the costs of community goods and services – medical and pharmaceutical services, equipment, insurance, social security – by the private sector – private, multinational companies – within a given time period, in collaboration with the public sector [33]. In HIV/AIDS care and management in developing countries, these schemes can finance the distribution of ARV treatments, thus underlining the increasingly substantial involvement of private companies in the healthcare of their HIV-infected employees and their eligible family members [34–36]. In general, this financing system is based on a solidarity or equity fund dedicated to HIV/
AIDS management to which all employees contribute or private insurance [37]. Whatever the type of financing founded on a public–private partnership may be, it is now recognized that overall management of HIV-infected employees, including ARVs, within a private company is advantageous economically and socially [36–40]. Indeed, the financing strategy based on public–private partnerships can be cost-effective both for employers and employees in that it not only reduces production costs for companies, but also saves lives of infected employees [37].

3.2. Case study

3.2.1. Sub-Saharan Africa

In Africa, Ivory Coast is one of the countries in which the UNAIDS/Ministry of Health Drug Access Initiative in Ivory Coast pilot ARV access program was set up in 1996 [41,42]. HIV seroprevalence in adults 15–49 years of age decreased from 10% in 1998 to 6.0% in 2001 and 3.9% in 2007 [1]. This decrease results from a double prevention and treatment action. The prevention program includes primary prevention and prophylactic prevention (prevention of mother–child transmission [PMCT]). The treatment program’s main objective is to develop and integrate into the minimum activity packages (MAPs) of the healthcare structures, a specific healthcare offer for PLHIVs based on an overall approach including clinical management as well as psychological, social, and community support for treatment. This is a larger-scale extension of the multidisciplinary health management model centered on the family that has been developed and validated at the Clinical Research Study Center (Centre de prise en charge, de recherche et de formation, CePReF) – reference healthcare centers – located within the Yopougon urban healthcare education program [43].

From 2473 in 2003, the number of patients on ARV treatment was estimated at 17,404 in 2005, 38,221 at the end of 2007, reaching 52,000 at the end of 2008. This increase in ARV coverage also results from the policy of subsidized prices for ARV treatments established at approximately US$2 per patient per month beginning in 2005 [44]. However, despite these advances, a majority of patients still do not have access to ARVs, with the proportion of those needing treatment increasing from 21.3% in 2006 to 29.7% in 2007 [4]. To remedy this situation, a program of free ARV treatment was set up in public healthcare institutions in August 2008. Simultaneously, an HIV/AIDS intervention program, including care for PLHIVs as well as administration of ARVs, treatment of opportunistic infections, and complementary care for workers in the private sector, in partnership with public institutions and civil society organizations (public–private–civil society partnership) was also implemented under the auspices of the Ministry of Employment and Administrative Reform, the Ministry of Public Health and Hygiene, and the HIV-AIDS Control Ministry [44]. The preliminary results of this program’s feasibility study demonstrated that the interventions implemented both reduced employer costs related to HIV/AIDS care and management among their employees and saved lives while improving employees’ well-being [37].

Uganda, like Ivory Coast, was among the first African countries to set up a pilot program providing access to ARVs at the initiative of UNAIDS [2]. HIV prevalence in 15- to 49-year-olds was 5.4% in 2007 versus 7.9% in 2001 [1]. Among other results, this is the fruit of a vast prevention policy and an innovative training program for healthcare personnel led by Uganda’s government in close collaboration with all of the actors in HIV/AIDS prevention and care (partners in development, private and public sectors, nongovernmental organizations, PLHIV groups) [45,46]. The cost of ARV treatments and other HIV/AIDS care dropped considerably between 1980 and 2002, decreasing from US$7200 per year to US$1000 per year, for a first-line ARV therapeutic scheme for products produced by pharmaceutical laboratories with a research and development sector and US$480 for a first-line generic medication therapeutic scheme [46]. Thus, in 2001, the cost of ARVs dropped from 20 to 45%, notably because of the importation of generic drugs [2]. However, despite the decrease in ARV treatment prices registered, they remain inaccessible for many PVLHIVs [47]. In contrast to the Ivorian government, the political and healthcare authorities have chosen not to grant aid to patients needing ARV treatment, considering that it does not have sufficient capacity to finance these patients compared to private insurers [2]. The cost-recovery strategy was implemented in 1999 [46], and access to ARV treatments was fully financed by households. This policy was part of the general national priorities: reducing the impact of the irregularity of healthcare personnel payment, resolving the problem of medication shortages, and reinforcing the community management of healthcare centers [45]. In 2001, the government abandoned the policy of cost recovery because of the negative effects on the well-being of households in terms of equity [48,49]. It implemented free ARV treatments, accompanied by significant investment in the healthcare system [50]. However, of the 42,000 patients treated with ARVs, 75% were paying for the treatments and 25% received free treatments subsidized by the Ugandan government and international fund sponsors [48,49]. Finally, between 2007 and 2008, the number of patients started on ARVs increased from 111,232 to 164,000, respectively [4].

With a prevalence rate in 15- to 49-year-olds less than 2% in 1998, and 1.0% in 2007 [1], Senegal, like Ivory Coast and Uganda, initiated its own public program for ARV access called the Senegalese Initiative for ARV Access (Initiative sénégalaise d’accès aux ARV, ISAARV) [2]. This program planned the introduction of financial contribution by patients defined in relation to several fee schedules. In practice, these fee adjustments were not sufficiently operational because of the patients’ low ability to pay [51]. The financing mechanism was therefore adjusted based on two principles: patient financial contribution and a government subsidy. The purchase of medications, centralized by the national pharmacy, supplies healthcare centers and is financed by the government [51]. After ARV prices were reduced in 2000 and a specific follow-up for patient observance was initiated, 100% subsidies were created for the poorest households. This policy of free medical care has been successful in increasing access to ARV treatments [52]. In December 2003, when the “3 × 5” initiative to treat three million people with HIV/AIDS by 2005 was launched, the
government adopted the free medical care policy within a vast public program [2]. This program also includes free CD4 and viral load enumeration, but other expenses not included in ARV treatment (medical consultations, paraclinical examinations, medications for opportunistic infections, hospitalizations, transportation) remain payable by the patient. However, despite this ambitious program, many Senegalese households still are unable to pay for all HIV/AIDS treatments and care [53].

In Rwanda, HIV prevalence in adults aged 15–49 years decreased from 4.3% in 2001 to 2.8% in 2007 [1]. The expenses relative to prevention, treatment, and care related to HIV/AIDS cost US$25 per infected person, i.e., 10% of total healthcare expenses [54–56]. The main sources of financing HIV/AIDS treatments and care are direct payments by households within a cost recovery system (93%), outside aid from development partners (6%), and the government within a health insurance system (1%). This financing structure is part of a national policy founded on a multisectorial, multidisciplinary, decentralized community approach established in 2002 [54–56]. To improve the financial Rwandan households’ – particularly the poorest – access to care (including ARV treatments), beginning in 1999, the government encouraged the creation of private financing systems based on mutual health insurance as an alternative to direct payment [30]. The implementation of these mutualist structures was intended not only to improve financial accessibility to health care, quality of services, fiscal viability of healthcare centers and prepayment funds, but also to reinforce the organizational capacity of these centers [30]. A pilot study conducted in three healthcare centers – regarding prevention, treatment, and care – demonstrated broader access for the poor and the most vulnerable, as well as an improvement in the managerial capacity of the healthcare centers [54]. This results of this study demonstrated that insurance systems as alternatives to a cost recovery strategy can improve equity in access to care (including ARV treatments) [54–56].

3.2.2. Latin America and the Caribbean

In the Latin America and Caribbean region, Haiti presents the highest prevalence rate, i.e., 2.2% in 2007, stable between 2001 and 2007 [1]. The percentage of individuals treated with ARV is estimated at 42% for a population of 120,000 PLHIV adults. As in many developing countries, most HIV-infected people in Haiti do not have access to ARV treatments [57]. Nevertheless, great progress has been made in recent years, notably following an initiative for access to ARVs called the HIV Equity Initiative [58]. This initiative was launched in 1998 in Cange in the Central Plateau Central region by the non-governmental organization (NGO) Partners in Health (affiliated with the Harvard Medical School, USA) and its local associate Zanmi Lasante. This is a program integrating prevention and care involving PLHIVs, their family, and the community [59]. It includes three essential components: reproductive health, active tuberculosis treatments, and treatment of sexually transmitted infections [60]. It is particular in that it has benefitted from years of experience with the poorest rural communities in Haiti [61]. Since 1986, when the first case of HIV-related disease was observed at the Clinique Bon Sauveur in the Central Plateau region, Partners In Health and Zanmi Lasante undertook a community approach allowing them to obtain notable results at the Cange clinic (Table 1):

- a reduction in mother–child HIV infection transmission since the introduction of zidovudine in 1995;
- an increase in the number of pregnant women participating in informed, voluntary screening;
- the feasibility of provision, storage, and use of ARVs in a context of limited resources [62].

In 1998, given the growing place occupied by HIV/AIDS among the diverse diseases presented by patients (notably tuberculosis), highly active antiretroviral therapy (HAART) treatments for HIV infection were provided to patients free of charge [63]. This strategy demonstrated the possibility of reducing the risk for recurrent tuberculosis in HIV-infected individuals in developing countries through an increase in

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<tr>
<th>Region/country</th>
<th>Population in 2007 (millions)</th>
<th>GDP/capita in equal purchasing power in 2007 (US$)</th>
<th>Prevalence of HIV in adults (15-49 years) in 2007 (%)</th>
<th>ARV coverage in 2007 (%)</th>
<th>Financing mechanisms</th>
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<td>Direct payment Public–private partnership</td>
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<td>Free care Private insurance</td>
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<td>Free care in public service</td>
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<td>Direct payment Mutual health insurance</td>
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<td>Universal, free access</td>
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<td>Thailand</td>
<td>63.8</td>
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<td>1.4</td>
<td>88</td>
<td>Universal, free access Health insurance</td>
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treatment compliance and excellent clinical results [62,64]. Actually, the Haitian initiative made it possible to obtain a reduction in the price of ARV, thus making them more accessible to those needing this treatment. Nevertheless, at US$1000 per patient per year, the initial cost of ARV treatment remains high in Haiti, which is not the case in other Latin American and Caribbean countries, such as Brazil [58].

Brazil is one of the leading low- and middle-income countries to have implemented a large-scale program of ARV access [65,66]. This program was started up in 1991, and since 1996, the Brazilian political and healthcare authorities have given patients ARVs free of charge, thus instituting a universal access program through the public healthcare system [67]. The success of this policy has been recognized; it is based on an integrated approach of prevention, the respect of human rights, and universal access to treatments at no cost to the patient [68–70]. This success also results from the public pharmaceutical industry’s capacity to produce generic medications and the strong involvement of civil society through its support of governmental initiatives aiming to improve access to ARVs [70,71]. The Brazilian program has led to a decrease in treatment prices stemming from important negotiations with the multinational pharmaceutical industries and national investment in the production of generics [67,71].

In 2002, of 15 ARVs distributed, seven are produced locally in generic versions. To bring this initiative to fruition, US$2 billion was invested. The number of persons treated with ARVs increased from 35,900 in 1997 to 153,000 in 2004, reaching 175,000 in 2006 [67]. Prevalence stabilized at 0.6% in 15- to 49-year-olds between 2001 and 2007. In addition, between 1996 and 2004, AIDS-related mortality and hospitalizations have decreased by 50 and 80%, respectively. The mean survival rate of PLHIVs has increased from six months to five years [67,71]. Despite this success, the question of the financial viability of these large-scale programs of free universal access to ARVs is a permanent worry of Brazilian decision makers. Indeed, once these programs had been established, the governmental resources devoted to ARVs decreased between 1999 and 2004, despite the sharply increasing number of patients on HAART [70]. This problem of resources allocated to PLHIV treatment management is also raised in other emerging countries such as those in Southeast Asia.

3.2.3. Southeast Asia

Like Brazil in Latin America, Thailand is among the emerging countries in Southeast Asia where, since the 1990 s, political will has given a substantial push to the response to HIV/AIDS. In 2007, the prevalence in Thailand was 1.4%, versus 1.7% in 2001 [1]. This country has experienced spectacular progression in ARV treatment access over the last decade [72]. An ARV access program was set up in 1992 with treatment based on antiretroviral monotherapy, then dual therapy in 1995. However, these treatments have turned out to be very expensive and not sufficiently beneficial to patients [73]. In 2000, the government began to provide triple therapy to patients, but the program remains very costly and reaches only a limited number of patients. In 2003, the country went to a large-scale ARV treatment program. Three factors can explain its success: legislation for free access to treatments, the capacity of the public sector to produce the drugs, and strong action on the part of civil society supporting the government’s initiatives [67]. Producing its own medications has allowed Thailand to increase the number of patients being treated from 3000 at the beginning of 2002 to 27,000 at the end of 2003, 52,593 in February 2005, and 111,457 in December 2006 [73]. In 2004, 65% of the government’s budget was allocated to HIV treatments and care, and 25% to the production of medications. This budget was more than 60% financed by public (governmental) funds, 27–28% by households, and 9% by the Global Fund. At the end of 2004, the public sector provided ARV treatments to more than 80% of PLHIVs [72,73]. Despite the high cost of the distribution of second-line treatments, like Brazil, Thailand has successfully reached universal access thanks to the increase in financial resources dedicated to HIV treatments and care and the possibility of producing inexpensive generic medications [67].

4. Discussion

As for healthcare financing in resource-limited countries in general, the use of a given mechanism for financing ARVs largely depends on the context in which the problem has arisen [16]. Several studies have shown that the practice of cost recovery centered on a financial participation on the part of households raises a barrier to ARV access in developing countries [9]. It has negative effects in terms of long-term adherence to treatment (which decreases even with a minimum financial contribution by patients), the experience of the disease, and maintaining patients in the treatment program in certain resource-limited countries [74]. In each case, introducing household financial participation at the service dispensary has led to reducing compliance and a high rate of treated patients lost to follow-up [9]. In fact, a financing strategy founded on direct payment does not truly contribute to ensuring the permanence of programs at the points of service delivery for ARV treatments that are the most urgently needed [8,9].

On the other hand, socioeconomic analyses carried out over the last few years, have demonstrated the relevance of implementing free ARV access programs for individuals and society, in Senegal [49–51], Haiti [57], and Brazil [65–69]. The “3 × 5 Initiative” and the “Free by 5” Initiative launched in 2003 by WHO and in 2004 by public health experts, economists, and political decision makers, respectively, underscored the need to achieve universal and free access to ARV treatments, particularly for poor households [75,76]. However, faced with the extent of the AIDS epidemic in resource-limited contexts, the practice of free healthcare can raise questions in terms of the management of PLHIVs in these structures with regard to prevention, treatment, and care [12,13]. Therefore, with the goal of providing high-quality management of the greatest number of patients, this policy requires a strong commitment by the government and its partners in development. This commitment can be brought about by budget increases aiming to complete the loss of income induced by free healthcare, ensure the permanent
availability of ARV treatments in the healthcare structures, and, finally, motivate healthcare personnel [12]. In other words, replacing household financial participation with a policy of free care without setting up a system to compensate the resulting financial and organizational consequences, can turn out to be counterproductive [77].

In developing countries, this system is increasingly based on community insurance systems and public–private partnerships. Implementing community-financing schemes in HIV/AIDS management is quite recent. Micro insurance or mutual health insurance, a form of community health insurance, has been experimented, notably in various African countries such as Uganda, Senegal, and Rwanda. In these examples, it is a mechanism that protects low-income citizens from the risk for HIV/AIDS in exchange for regular payment of a contribution proportional to the probability and cost of this risk [78–81].

As for the strategies founded on public–private partnerships in PLHIV management – most particularly workers and their family members within a system of community healthcare – they are increasingly considered pertinent, efficient, and sustainable. Initiated soon after 2000, in Ivory Coast, where the results obtained in terms of improvement of worker healthcare management for workers and reduction of costs for private companies, this type of partnership has satisfied the immediate needs in terms of HIV/AIDS treatments and care and has also ensured the permanence of its financing in certain companies, mainly in West and Central Africa [82].

In conclusion, this review has brought to light a certain number of studies conducted in developing countries that have succeeded, through general mobilization, in providing ARV treatment to PLHIVs since their launch in the 1990s. It underscores the need to pursue and intensify the actions undertaken to achieve universal access to ARV treatments in all resource-limited countries. Although the initiatives in middle-income countries such as Brazil and Thailand and in low-income countries such as Haiti, Ivory Coast, Uganda, and Senegal demonstrate, in many respects, a certain success of ARV treatment access programs, this success depends on the state of the healthcare system to which these programs are attached. Compared to Brazil and Thailand, the healthcare systems of other developing countries are deficient. They can be reinforced by investing more in PLHIV management programs, whatever approach is used, whether it is vertical or horizontal [83].

Although ARV treatments are increasingly provided free of charge in the public sector, other non-ARV expenditures (notably for opportunistic infections and transportation) have particularly harmful economic effects for households in terms of catastrophic expenses [25,84]. These should be prevented as much as possible with adequate financing systems. Given that the financing system based on financial participation at the point of service delivery has shown its limitations, community insurance systems or prepayment and risk-sharing systems as well as public–private partnerships have become relevant and viable strategies that can respond to the medical and economic impacts of managing PLHIVs [28,84].

In this regard, two avenues of exploration stand out for achieving universal access to ARVs and HIV care: one sets up an AIDS social security community fund based on collegial governance (government, business, households, civil society, and sponsors) – or reinforcement of existing programs – guaranteeing both the efficiency of production of HIV/AIDS treatments and care and the equity of access in terms of protection of poor and vulnerable households against the risks of disease [21]. The other would stimulate governments to increase their encouragement of public–private partnerships so as to reach efficient management of PLHIVs, particularly in the workplace.

This multisectoral and multidisciplinary approach seems even more relevant in that this question of ARV access comes within an international context marked by financial and economic crisis affecting the healthcare sector, thus compromising the financing of HIV/AIDS-related treatments. Admittedly, international aid, even only somewhat amputated by today’s crisis, will again be an important source for financing these programs. Nevertheless, it is clear that resource-limited countries and their development partners should urgently search for equitable, efficient, and sustainable financing mechanisms to protect the poorest households. This is how they can contribute meaningful responses to the question of perpetuating a financing system for HIV/AIDS treatments and care in resource-limited countries.

Conflict of interest

No conflict of interest.

French version

A French version of this article is available at doi:10.1016/j.respe.2010.02.109.

Acknowledgments

This study was conducted within the research project titled “Efficience-ci ANRS 12137.” We thank the Agence nationale de recherches sur le sida et les hépatites virales (ANRS) for its support. We wish to thank Bernard Taverne (Institut de Recherche pour le Développement [IRD], UMR “VIIH/sida et maladies associées”) and Annick Tijou-Traoré (Aménagement, développement, environnement, santé et sociétés [ADES], UMR 5185) for their highly constructive comments.

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