The Socioeconomic Impact of HIV on Children in a Low-Prevalence Context: the Case of Senegal

Cheikh Ibrahima Niang and Paul Quarles Van Ufford

Introduction

This chapter examines the socioeconomic impacts of HIV on children in Senegal as well as the results of the policies being implemented in response to the virus. The primary data presented were collected at seven research sites across the country, while the secondary data were gathered mainly in Dakar. The first part of the chapter briefly introduces the current situation of HIV and AIDS in Senegal, giving some basic data and an analysis of the major factors that are likely to have contributed to the low and stable HIV prevalence, characteristic of this West African country. The next part outlines the research questions and the methodology employed to carry out what was a rather complex research project among vulnerable HIV-infected and affected adults and children. The third section presents the main research findings, analysing the socioeconomic impact of HIV at the national, community/household and individual levels. The final part summarizes the major conclusions drawn from the answers to the initial research questions.

HIV in Senegal

In the context of sub-Saharan Africa, the case of Senegal is a rather unique one, in that the HIV infection rate has been both low and stable since the first cases were detected in the mid-1980s (Meda et al. 1998). Whereas for sub-Saharan Africa the average HIV prevalence in the general population is about 8 per cent, it is 1.4 per cent in Senegal (ONUSIDA 2000a). However, even though the national average rate is low, there are major variations between the social groups from which the serological samples have been taken. Thus, from the outbreak of the epidemic, high prevalence has been recorded among sex workers; a study carried out in 1989 found a rate of 44.8 per cent among sex workers in Ziguinchor and rates higher than 30 per cent were noted in Kaolack (Sankale et al. 1989). As shown in table 1, a decade later sex workers continued to reveal the highest prevalence whereas pregnant women had the lowest.[1]

Table 1. HIV prevalence among specific groups (estimates for 1999)

Population	HIV prevalence %
General population	1.4
Pregnant women	1.2
Prisoners	3
STI patients	3
Tuberculosis patients	10
Hospital prevalence	15
Sex professionals	20

Source: ONUSIDA/OMS 2000b.

The distribution by sex of the number of people infected with HIV shows a comparatively lower number of infected women. According to the estimates for the year 2000, among the 80,000 people infected with HIV in Senegal, 35,000 were women. The ratio of women to men has gradually increased since the early 1990s. Whereas in 1987 HIV-positive women represented only 10 per cent of the total, this percentage had already risen to 30 per cent in 1992 and in 2002 was estimated to be slightly less than 50 per cent (table 2).

At end-2004, the estimated number of children living with HIV was 3,000, the same as it had been in 2000 (ONUSIDA/OMS, 2000b; UNAIDS 2004). The breakdown by region of HIV prevalence among adults, women and children is presented in table 2. It appears that the regions of Kaolack and Fatick are relatively hardest hit in terms of the number of infected persons in comparison with their share of the total population.

Table 2. Breakdown of HIV prevalence by region for adults, women and children (estimates for 2000)

	% of total population	Total		Adults	Children (0–15 years)	Women
Dakar	24%	20,000	25%	19,400	600	9,000
Kaolack	12%	14,000	18%	13,600	400	6,000
Thiès	14%	8,800	11%	8,500	300	4,000
Fatick	6%	7,700	10%	7,400	300	3,000
Diourbel	9%	7,200	9%	7,000	200	3,100
Saint-Louis	9%	5,800	7%	5,500	300	2,600
Louga	6%	5,500	7%	5,200	300	2,400
Kolda	8%	4,500	6%	4,300	200	2,000
Ziguinchor	6%	3,500	4%	3,300	200	1,500
Tambacounda	5%	3,000	4%	2,800	200	1,400
Senegal		80,000		77,000	3,000	35,000

Source: PNLS (Programme National de Lutte contre le SIDA) 2001.

There is much higher prevalence in areas with high emigration rates. In northern Senegal, for instance, rates of 23 per cent were observed among the adult populations of some villages where links between prior emigration and HIV have been clearly and strongly established (Kane et al. 1993).

On the whole, the number of people living with HIV has remained comparatively low, although increases were recorded for the years 1986–1988, 1992–1994 and 1996–1997. From the outbreak of the epidemic until 2000, the estimated cumulative total number of people who died of HIV-related illnesses was 30,000, 5,000 of them in 2000.

The low intensity of the HIV epidemic is reflected in the forecasts by the National Programme against HIV/AIDS. While previous forecasts for sub-Saharan Africa turned out to underestimate the spread of HIV (in 1999 there were 23.5 million people living with HIV against the 9 million forecast in 1990), the forecasts for Senegal have proven to be overestimates. In 1997 it was predicted that the HIV prevalence would be 2.3 per cent in 2000, but that year the estimate had to be revised downwards to 1.4 per cent (table 1). At the end of 2003, UNAIDS estimated the rate to be 0.8 per cent (UNAIDS 2004).

Low and stable prevalence and prevention policies: The low and stable HIV prevalence has led some researchers to suspect that there are biological factors that have limited the spread of HIV (Mboup 1996). However, this hypothesis does not seem to account for the epidemiological situation particular to Senegal (Meda et al. 1998).

Social and cultural hypotheses have also been put forward including, for instance, the widespread practice of male circumcision, the generally low consumption of alcohol, and the strong religious values that encourage the control of sexuality. In addition, the relatively late age of first sexual activity, the low level of extramarital sexual relations, and high condom use during extramarital sexual relations, especially commercial sex, have been identified as important factors. However, some authors have emphasised that this apparently favourable behavioural context has been under increasing pressure – as elsewhere in Africa – in the wake of migration, urban development and modernization (ONUSIDA/OMS 2000c).

That is why at least part of the explanation for the low and stable HIV prevalence is considered to be the policy response. In particular, strenuous efforts in the fields of STI control and treatment, condom promotion, and early and sustained commitment by political and religious leaders have had a considerable effect in limiting the general population's exposure to HIV.

The public health policy is based on basic service delivery and information for high-risk groups, a strong tradition of community engagement in favour of health and development, and positive dialogue with faith and community leaders at all levels, according to their specific spheres of influence. Thus, parliamentarians were

expected to work for the campaign against HIV during the state budget voting sessions, whereas faith leaders were asked to talk about abstinence and fidelity (ONUSIDA/OMS 2000c). A guide on *Islam and HIV/AIDS* was developed, propagating the advantageous role of Islamic prescriptions in the prevention of HIV and at the same time recommending religious sermons and lectures to better protect people. The consensus about condoms did not involve faith leaders' support for the circulation of condoms, but it did help avoid 'a war against condoms'. In fact, the success of the promotion of condom use is often interpreted as being the result of an approach that integrates cultural values.

A recent document on best practices in the response to AIDS in Senegal identifies the following elements as being important in Senegal's response to the epidemic: the existence of a policy of legalization of sex work and STI treatment of sex workers since well before the outbreak of the epidemic; a secure blood transfusion policy since 1970; the integration of STI treatment in family planning activities from the early 1980s; health sector reforms that favour access to care, and the participation of the population in management of the health system; the existence of a strong network of young people's and women's movements as well as faith-based structures receptive to social mobilization activities (Groupe Thematique ONUSIDA/Senegal 2001). In terms of general approaches, the report underlines the effectiveness of having a cross-sectoral and integrated approach and intervening early enough in the onset of the epidemic.[2] Senegal had already instituted an HIV sentinel system by the end of the 1980s. Ever since, the number of sentinel sites and the diversity of target groups have progressively increased. In 1997, Senegal served as a pilot country for the implementation of regular social and behavioural surveys. The combined collection of biological and behavioural data has been accompanied by consistent capacity building. In fact, the national laboratory for bacteriology and virology has become a reference centre for sub-Saharan Africa. A more recent illustration of the proactive attitude towards new developments in HIV prevention and treatment is the fact that Senegal is one of the first African countries to have undertaken negotiations with pharmaceutical companies and obtained substantial price reductions for antiretroviral drugs.

The analysis of best practices also highlights, among other factors, the focus of interventions on specific groups (high-risk and vulnerable groups, faith and community leaders, journalists, etc.), the attention paid to the social and cultural context, the National Programme for the Fight against HIV/AIDS, and the strong political commitment at the highest level.

Research methodology

To analyse the socioeconomic consequences of HIV for children, it was assumed on the basis of the literature survey that HIV might have an impact on:

- physical capital (property, financial savings, investments, production);
- social capital (social networks, solidarity arrangements, family structures);
- human capital (education, health, nutrition).

These types of capital exist at the individual, household (nuclear and extended family) and community levels (social groups, networks, community-based organizations) and therefore constitute a relevant framework for analysis (cf. Bollinger, Stover and Diop 1999). In order to take into account the variety of ways in which HIV impacts on children, the survey design included children who live with HIV and children whose parent(s) live with HIV (often these were the same children).

The research methodology involved primary and secondary data collection. The primary data were collected between June and September 2001 at seven research sites, the main characteristics of which are shown in table 3. The secondary data were mainly used to analyse national level social, demographic, health and economic indicators.

Table 3. Main characteristics of the research sites

Locality	HIV prevalence %	Ethnic groups	Other features
Dakar	1.3	Cosmopolitan city – predominance of Wolof	Capital of the country; high population growth; substantial socioeconomic inequality
Kaolack	1.8	Wolof, Serere	Major commercial crossroads near border with Gambia; frequent movements of traders, seasonal workers, farmers, sex workers, etc.
Thiès	1	Wolof, Serere	Mining and tourist region (frequent population movements)
Mbour		Serere, Wolof, Mandinka	Heavy influx of tourists, seasonal fishermen and sex workers; also drug trafficking
Saint-Louis	0.9	Wolof, Toucouleur	After a long spell of decline (1960–1990), the city is now experiencing some expansion of tourism
Ourossogui		Toucouleur, Peul	Substantial migration to Côte d'Ivoire, central Africa and France
Tambacounda	0.8	Mandinka, Soninke, Peul	Poor region; strong community-based management of HIV

The site selection was intended to be as representative of Senegal as possible, in that there are both rural and urban areas with ethnic and socioeconomic diversity and varying HIV prevalence.

In view of the pioneering nature of the present study (no earlier studies had been carried out on the subject), several qualitative and quantitative research techniques were used in order to increase data collection capacity and allow for triangulation of information obtained. A crucial component of the approach consisted of systematically comparing two categories of respondents:

- people living with HIV and people affected by HIV: i.e. adults living with HIV; children living with HIV; children orphaned by AIDS; and the parents or foster parents of such children.
- people not infected with, or affected by, HIV and parents of children not orphaned by AIDS.

At each research site, with the assistance of medical personnel, an epidemiological data sheet was compiled, listing anonymous data on adults and children living with HIV. The sheets contained data about the serological status and sociodemographic background of the families involved. Local medical staff were then trained to administer the household and individual questionnaires. The research team took care of questionnaires for control groups that were selected on comparable social and demographic profiles. Additional information was obtained through case studies and through an analysis of drawings made by children (4 to 12 years of age). The children were asked to draw their families, their dreams and what they would like to be in the future and then to comment on their drawings. They were selected with the collaboration of the medical doctors treating them and with the prior agreement of their parents or foster parents. The drawings were only discussed in the presence of medical staff known to the children.

Table 4. Data collection instruments and survey populations

Instruments	Surveyed population	
	Cases	Control group
Epidemiological data sheet	Adults and children living with HIV	-
Child-centred medical data sheet	Children living with HIV (n=34)	-
Adult-centred medical data sheet	Adults living with HIV (n=100)	-
Household questionnaire	Adults living with HIV (n=100)	Adults not living with HIV (n=100)
Individual questionnaire on children (administered to parents)	Children not living with HIV (n=34)	Children living with HIV (n=34)
Children's drawings	Children living with HIV (n=7)	Children not living and not affected by HIV (n=7)
Case studies	Adults living with HIV, or related to someone who had died of AIDS (n=10)	-

Finally, semi-structured interview guides were used to obtain information from key informants in ministries, international organizations and NGOs, and from people directly in contact with children and adults living with HIV and their families.

Impact of HIV and AIDS

Impact at the national level

At the national level, so far the epidemic has had no significant impact on demographic indicators or on the health or education sectors.

At the end of 2003, more than 90 per cent of the people living with HIV nationwide (low and high estimates 22,000 and 89,000 respectively) were aged between 15 and 49 years (UNAIDS 2004). In 1997, a study carried out at the main infectious diseases clinic in Dakar showed that 25 per cent of women infected with HIV were aged between 20 and 30 years, and 72 per cent between 30 and 40 (Sow et al. 1997). In the current study sample, 92 per cent of the HIV cases were between 30 and 40, with an average age of 38. Given the relatively low numbers compared to the total population of over 9 million, developments in key demographic indicators such as the structure of the population pyramid, life expectancy, or population growth cannot be attributed to the number of AIDS-related deaths. On the contrary, life expectancy increased from 1970 to 2000. Similar conclusions can be drawn with regard to the under-five mortality rate, which fell from 300 per 1,000 live births in 1960 to 147 per 1,000 in 1990 and then to 145 per 1,000 in 1999, despite a slight increase in recent years (chapter 10). The infant mortality rate also dropped from 173 per 1,000 in 1960 to 68 per 1,000 in 1999 (UNICEF 2000).

The nationwide impact on the health and education sectors has been negligible so far, and in contrast to countries such as Uganda, neither teachers nor health personnel are regarded as high-risk groups, so they are not included in regular epidemiological surveys.

Impact at the household level

At the household level, the social, human and physical impact on families affected by HIV is considerable and they have to adopt specific strategies in order to cope (chapter 7).

Structure and dynamics of HIV-affected households: An analysis of the medical records of those studied shows that, in most cases, HIV-infected children lived with a parent who had the same serological status. In fact,

- 96 per cent of infected children had at least one HIV-infected parent (father and/or mother);

- 74 per cent of infected children had at least one parent who died of AIDS (among these children, 59 per cent lost their father, 29 per cent their mother and 12 per cent both parents);
- 11 per cent had an HIV-infected brother or sister;
- 20 per cent of HIV-infected children had a family member who was currently in hospital or had been hospitalized that year.

The results of the adult-centred questionnaire reveal that typically more than one member of a household is infected with HIV.

Table 5. Presence of HIV infection within households

People infected with or affected by HIV, in families with at least one HIV-infected person	%
HIV-infected spouse	43
HIV-infected child	32
Women with at least one husband who died of AIDS	28
Men with at least one wife who died of AIDS	31
Families with at least one child orphaned by AIDS	22

Source: Adult-centred questionnaire.

However, the data presented have to be interpreted merely as indications about the presence of people infected with or affected by HIV living in the same household. The figures do not reflect the whole truth because the serological status of family members is not always revealed. When a man discovers that he is HIV-positive, he does not necessarily take the initiative to have his wife (or wives) and children tested, and according to health workers, when a woman discovers that she is HIV-positive, her husband often refuses to be screened.

The poor awareness about the existence of HIV cases within families is due to the fact that the subject of HIV and AIDS is still considered taboo. Very often, HIV-infected people strive hard to hide their condition from members of their families. In some cases, a communication gap is purposely created. The case of a migrant who returned home is illustrative:

When I came back from Central Africa, I was admitted to Fann hospital, where I was told that I had tuberculosis and AIDS; when I came out of hospital, I talked about my tuberculosis to my wives, brothers and sisters, but I didn't dare talk about the AIDS disease. I kept it secret for months. During that period, I kept silent when faced with embarrassing questions, and I considerably reduced sexual intercourse with my wives, arguing that my tuberculosis stopped me.

While, in these circumstances, children are obviously not receiving the care they need from their parents, the extent to which the communication gap between parents

affects children's lives is difficult to assess. But an analysis of children's drawings reinforces the impression that the presence of HIV within a family, even though people will avoid talking about it, has an impact on the way in which the children reconstruct the image of their families and social environment. In a drawing by 10-year-old Momo who was infected with HIV but did not know it and whose mother was also infected, his uncle, aunt and cousins appear in the foreground, while his father and mother are only in the background in much less detail. His father had died of an HIV-related illness two years previously. Was he confused and so drew the living and the dead together, or did he put the family members whom he felt were different in the background? Unlike all the other children who pictured their families, Momo did not put himself in his drawing. Perhaps he could not find his place between the two groups. When he was asked to draw his house, like other children in HIV-infected families, Momo painted it in the form of a prison, with vertical and horizontal iron bars. Perhaps the prison represented the isolating effect of HIV or the burden it inflicts on those infected and affected by the virus.

Samba, a five-year-old boy, was another child who separated his family members according to whether or not they were infected by HIV. In his case, he put his uncle, brother and half-sister, who were not infected, in the background, and his HIV-positive mother and sister in front of them. But again, the family members who were HIV free were drawn in more detail. Samba was apparently anxious to keep his family intact, because he drew a circle around all the figures, emphasizing his mother who was the largest figure of the group.

In the context of Senegalese families, the mother's position is central when it comes to taking domestic responsibilities arising from ill health; she keeps that role even if she is ill herself. When the mother is seriously ill, all the relatives, particularly her own sons and daughters, gather around her. When she has a medical condition such as HIV infection, rivalry between siblings born to different mothers can aggravate tensions. Thus the stigma of HIV may be felt even within the family unit. Moreover, the HIV-positive member may be blamed for being the cause of the 'decline' of the family's status within the community.

Table 6. Percentage of families with members not part of the nuclear family unit

People living in the family but not belonging to the nuclear family unit	Families with at least one HIV-infected person (%)	Families without any HIV-infected person (%)
Brothers and sisters	29	41
Nephews and nieces	24	47
Sisters- and brothers-in-law	17	19
Grandchildren	11	21
Orphans	6	15

Source: Data from the adult-centred questionnaire.

Matrimonial status and instability of family units: Table 6 shows that households without any HIV-infected member are more likely to consist of extended families than those with at least one HIV-positive member.

The table confirms that it is normal practice for domestic units to include members of the extended family such as nephews and nieces or brothers and sisters of the head of household or his wife. It further shows the extent to which this practice has come under pressure when someone in the household is HIV-positive. As an interviewee commented:

It is not advisable to entrust children to a poor or diseased person; this would add to that person's troubles and would not provide the child with the ease and comfort he needs for his future.

Table 7 shows the matrimonial status of households included in the survey.

Table 7. Breakdown of matrimonial status of people living with HIV

Matrimonial status	Men living with HIV (%)	Women living with HIV (%)
Married	75.8	28.6
Single	21.2	22.4
Divorced	3.0	22.4
Widow		22.4
Other		4.1

Source: Data from the adult-centred questionnaire.

It appears from the figures that a substantially higher percentage of women living with HIV are divorced or widowed and there are more married men than women who live with the condition. This can be attributed to the fact that when their partner dies, men remarry quite quickly or do not consider themselves as widowers when they are polygamists, because at least one of their wives is still alive.

In specific cultural contexts such as in northern Senegal – a region characterized by substantial outward migration – widows and divorcees used to be coveted for marriage. A migrant's widow was, and to a certain extent still is, regarded as an excellent match because of her wealth and prestige. Divorced women also appeal to men because of the maturity it is assumed they have gained from previous marriages. However, it has been reported that widows of migrants now have increasing difficulties remarrying because their former husbands are suspected of having been HIV-positive.

Table 8. Percentage of children moving into other households (1997–2001)

Family composition	1997	1998	1999	2000	2001
Has had at least one child who lives with other relatives	10%	12%	12%	15%	16%
Has had at least one child who took the initiative to live with another relative	2%	5%	7%	9%	10%

Source: Data from the adult-centred questionnaire.

The movements of children following the death of one of their parents or the disruption of a marriage are intimately related to complex social and cultural practices. When the father dies, for instance, according to tradition, the widow automatically marries his younger brother (a custom known as *lévirat*) and the children consequently move to another location. When the mother dies, her sister traditionally replaces her in the household (known as *sororat*), but informants affirmed that this practice is progressively declining in the areas covered by the survey. However, even without *sororat*, the widower typically seeks another wife without much delay, and as a result, the children of the deceased wife usually leave their father's house. Their mother's sisters may then bring them up. In other cases, it was noted that grandmothers or aunts substituted for the parents. The data reveal that children orphaned by AIDS who have lost both parents are in most cases adopted by their grandmothers, who are their closest relatives.

In the sampled households affected by HIV, a gradual reduction of the number of people involved in solidarity networks was observed. Responsibility for children orphaned by AIDS, for instance, appeared to rest upon a limited number of family members. Moreover, the most substantial support appeared to be provided by projects, associations or NGOs responding to AIDS. According to the survey data, 13 per cent of children with HIV benefited from some type of NGO assistance. The majority of those children live in Tambacounda, Saint-Louis and Dakar, where there is a dynamic environment of NGOs working in the area of HIV. The data further show that about 20 per cent of children infected with HIV (most of them living in Dakar, Kaolock and Tambacounda) have had at least one parent who benefited from an income-generating programme for people living with HIV.

In conclusion, after a parent's death, children were found likely to have enormous difficulties accommodating themselves to their new family or matrimonial arrangements. It was often stressed by interviewees that the unstable situations described above make children feel marginal, undervalued and confronted with new and difficult challenges, a situation which, in turn, is aggravated by intra-household communication or affection deficits. In fact, the compassion expressed by others was said to be often only temporary.

Social networks: Analysis of the adult-centred questionnaire highlights many ways in which interpersonal relationships and social networks are adversely affected by the presence of HIV within families. While the death of a head of family usually results in the dispersal of family members (wives and children) who move into other, possibly separate, domestic units, the presence of HIV infection may cause disintegration or reorganization of the family unit.

A second feature that indicates the relative decline of social networks is the practice of sharing meals together. In traditional and rural families, meals are shared not only with household members but also with people who do not live in the same

compound. This practice is typically considered a sign of wealth or social prestige, and contributes significantly to the construction and maintenance of social networks. Yet, if the financial resources of a family are under pressure as a result of the presence of disease, the number of people who eat together may decrease. In addition to the stigma that is already faced by families living with HIV, the obligation to reduce the number of people with whom a meal is shared is likely to contribute to the relative social isolation of the family concerned and to a decline in its social prestige. In turn, this is likely to influence the support-base an affected family relies upon.

Table 9 shows that HIV-affected families, on average, share their different meals with fewer people than non-affected families.

Table 9. Average number of people who share the same meals

Meals	Families with at least one person with HIV	Families unaffected by HIV
Breakfast	6.42	7.89
Lunch	6.89	7.34
Dinner	8.02	8.11

Source: Data from the adult-centred questionnaire.

People with whom meals are shared, or who live in the same compound, or with whom a family type of relationship exists, form the core group of the solidarity network that provides moral support, material assistance and health care to people who live with a disease. The brother of a migrant who died of an HIV-related illness illustrates this:

When AIDS laid him low, it was his roommates with whom he had shared meals who helped him return to Senegal. When he came home, his wife and elder brother took him to a series of hospitals, stayed with him until he died, caring for him and endeavouring to find money and traditional medical healers or marabouts who provided talismans and gris-gris.

Wives are often accompanied in their efforts by other women (such as sisters, cousins or close friends) or by their own daughters. Daughters, irrespective of their age, are involved in tasks such as bringing meals to the patient and carrying out domestic activities that would typically have been carried out by their mothers (cooking meals, taking care of children, cleaning the house, etc.). In this way, the father's illness results in an increase of stress for young girls, and a possible cause of school failure or dropout. When the mother herself is ill, the situation worsens because her daughters have to take care of her. Finally, in situations where the mother cares for an ill child, the burden of her domestic chores is borne by her daughters or by other girls who live in the same compound.

The results of the survey show that just after the revelation of HIV infection or the occurrence of AIDS symptoms, families benefit substantially from assistance provided by relatives, friends or neighbours, but that resource mobilization consistently declines over time. Moral support is also apparently difficult to maintain. At the onset of illness, people show their sympathy for, and provide assistance to, the patient, but if that support needs to be kept up for an unlimited length of time, the solidarity network soon runs out of steam.

Paradoxically, when they have health problems, families that are not affected by HIV receive more assistance to meet additional expenses than do families that are affected by HIV. This assistance is likely to be provided by parents, relatives, neighbours and friends, whereas patients with HIV-related illness rely much more on health structures, organizations that assist people living with HIV, *marabouts* or the inner circle of family members. The gap widens when data about women are examined.

However, even though solidarity networks tend to tighten as HIV continues to place more and more of a burden on families, when the patient dies, resource mobilization starts anew, with the widening of the circle of community members involved in providing assistance for the funeral. These generally gather many people, as is illustrated by the following anecdote:

We, my brothers and I, wanted the funeral to be as simple as possible. Our dead relative and his intimate friends and family had already suffered much from the disease and its attendant problems. But because of the crowd of people who came for condolences, we had to slaughter a bull and many relatives and visitors stayed in the house for more than 10 days.

As well as impoverishing families, funerals disturb children's lives. The children are the first to have to sleep on the floor and leave their beds to visitors or be sent to neighbouring homes for long sleepless nights. Few people take the trouble to look after children on such occasions, and they are overwhelmed with domestic duties, which may affect their school results.

Impact on human capital

The impact of HIV on human resources has been analysed through indicators related to health care, education and nutrition.

Health care: Analysis of the impact of HIV on health care was based on examination of medical expenses: consultations, biomedical screening and hospital admissions (see also chapter 10). As might be expected, the number of people with HIV who had been to a health centre during the three months preceding the survey was higher than the number of non-infected people.

Table 10. HIV and health-care indicators

Health care indicators	Adults with HIV	Adults without HIV
At least one consultation in the last 3 or 6 months	89%	69%
Average number of consultations in the last 3 months	3	1
Average consultation costs in the last 3 months (in CFA francs)	8,085	3,458

Source: Data from adult-centred questionnaire.

The number of adults with HIV who had ever been admitted to a hospital was also greater: 32 per cent, as against 10 per cent for non-infected adults. On average, adults infected with HIV paid almost twice as much for consultations as did those without, although in localities like Saint-Louis, HIV-infected patients do not pay for consultations in public hospitals. Those living with HIV also paid more for medicines than their uninfected counterparts. Children's health care expenses are traditionally the father's responsibility, but on a day-to-day basis it is usually the mother who endeavours to find the necessary money, as she takes immediate care of the patient.

There was no significant difference in the percentage of people who had consulted a *marabout* or a traditional healer over the three months preceding the survey. Yet, from the analyses of expenses related to these visits, it appears that people with HIV spent significantly larger amounts. The number of people with HIV who were treated by a traditional healer or a *marabout* at home was also greater, and when they had to travel for their consultations, their expenses were considerably higher.

Table 11. HIV and consultations with marabouts or traditional healers

Indicators	Adults with HIV	Adults without HIV
Consulted a *marabout* or a healer in the last 3 months	42.5%	45.5%
Average consultation costs (in CFA francs)	23,713	3,304
Average for other expenses (purchase of drugs or sacrifices; in CFA francs)	30,880	8,511
Average amount of gifts	23,713	3,304
Provided in-house lodging to a *marabout* or a healer	14%	4%
Average amount of money spent on transport to visit a healer or a *marabout* (in CFA francs)	6,309	2,595

Source: Data from adult-centred questionnaire.

The following extract from a case study from Saint-Louis throws light on how these expenses mount up:

The first marabout my brother consulted lived in Ndioum. As he didn't want his wife, who was with him, to know that he had HIV, he didn't tell the marabout that he was HIV-positive but only explained that he was suffering from tuberculosis. The marabout asked for CFA francs 40,000 and promised he would recover. But my brother only gave him CFA francs 20,000 and said he would give the other half after the three-month treatment. The three months elapsed without any improvement. In October 1999, my brother heard about another marabout and went to see him. The latter told him that he was the victim of an evil spirit and that he should act promptly if he wanted to stay alive. He asked for CFA francs 4,875, a white ram, a white cock, 25 red kola nuts, 25 white kola nuts and 25 candles.

When people infected with HIV or members of their families talk to *marabouts* or healers, they never mention the name of the virus, but talk about another illness with similar symptoms. As a *marabout* from Ourossogui said:

We do not cure AIDS because it is incurable and the patient inevitably has to die… AIDS patients are people who committed deadly sins. However, we do cure a disease that has infected migrants who have been in Côte d'Ivoire, Gabon and Zambia. This disease is called Jokao or Ñaw funange. Its symptoms are progressive loss of weight, diarrhoea, vomiting, hot flushes, fever and often itchiness or tumours on the back; we are the only ones who can heal that disease, no hospital can.

Education: The survey results show that 40 per cent of the children with HIV were of school age, and that of these, 89 per cent were currently attending formal education at public or private schools, with the remainder enrolled in Koranic schools. According to social workers interviewed, Koranic schools are generally considered to be substitutes for public education for children infected with HIV. The social workers suggested that parents hesitate to send their children to public schools because they think they will soon be obliged to drop out, or will not be able to find a remunerative job afterwards. Attending a Koranic school is seen as a way of getting closer to God. In addition to negatively affecting public school enrolment, HIV appeared, not surprisingly, to have an impact on school results. Children frequently miss classes and, as a consequence, tend to repeat grades. Of the children included in the survey, many were still at primary level even though most of them were over the age of 12.

The survey revealed that 6 per cent of the adults living with HIV said that at least one of their children had been dismissed from school during the school year 1999–2000. According to these parents, in addition to the children frequently missing classes (because of their extra involvement in domestic duties), the dismissals and poor school results were due to their failure to pay sufficient attention to their

children's education and to difficulties with paying school registration fees or buying school stationery.

Table 12. Impact of parents' HIV infection on children's school results

Type of difficulty	95–97%	97–98%	98–99%	99–00%	00–01%
Child had to miss classes	1.2	1.2	3.7	4.9	4.9
Parents had difficulty buying school stationery	4.9	12.2	12.2	13.4	13.4
Parents had difficulty paying school enrolment fees	3.7	8.5	8.5	9.8	7.3
Parents stopped paying private tuition fees	2.4	3.7	3.7	3.7	6.1
Parents had difficulty paying transport to school	1.2	2.4	2.4	3.7	3.7

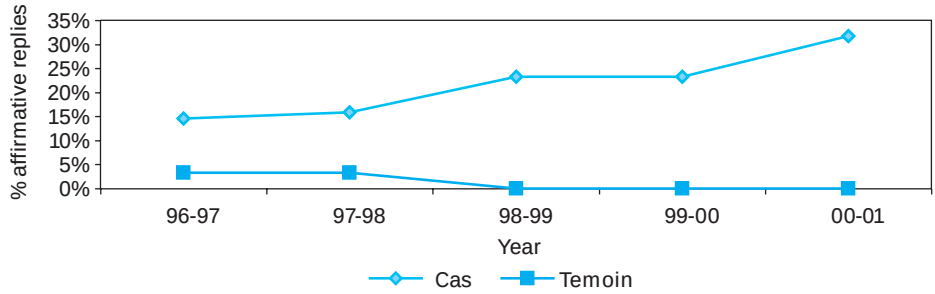
Source: Data from the child-centred questionnaire.

Nutrition: Analysis of the impact of HIV on the household nutrition situation shows that the main changes occur in the variety and quantity of food available, and the difficulty of paying for it.

Certain practices are considered to be poor in terms of nutrition and to reflect a lack of financial resources. This is the case, for instance, when part of the lunch is kept and then heated up for dinner. Traditionally, meals served for lunch and dinner are qualitatively different (rice for lunch and millet or another dish eaten with bread at night). The practice of reducing food diversity appeared to be more frequent among HIV-affected households, for whom the percentage increased from 15 per cent in 1996 to 32 per cent in 2001. Over the same period, only a very low percentage of non-affected households changed their food habits.

The practice of serving part of the lunch at night not only represents restricted variety in the diet and a decline in food expenditure, it also suggests that the quantity of food eaten by adults or older children decreases, as very often the remains of midday meals are kept for younger children. The percentage of people who acknowledged that the quantity of food served had decreased was substantially higher among HIV-affected households: it rose from 11 per cent in 1996 to 32 per cent in 2000–2001, while the percentage remained low and stable for non-affected households. A quantitative reduction in nutrition often means that the family breakfast is eliminated or reduced to a minimum (and might be reserved for the youngest children), that dinner is not served every day, or that sometimes lunch is not cooked or is served very late, because the mother had to find help to purchase the food.

Figure 1. Percentage of households that had reduced diet diversity over the last five years



Key: Cas = people with HIV; Témoin (control subjects): people without HIV.
Source: Data from the adult-centred questionnaire.

Children are likely to suffer from these coping strategies that result in reduced quality and quantity of nutrition at the household level. For instance, the percentage of HIV-affected adults who stated that their children did not have breakfast every day rose from 15 per cent to 20 per cent over the 1996–2001 period, while fewer than 2.2 per cent of the non-affected people reported such a problem.

The survey results further illustrate that HIV-affected households have difficulty meeting daily food expenses. Over the period 2002–2001, almost one third of respondents in this category declared that at least occasionally the purchase of food items was problematic. It was difficult to get a detailed and systematic overview of household budgets, but the data indicate that the average level of household expenditure is noticeably lower in families with at least one HIV-infected person, although both types of families included in the survey were of comparable size and were headed by adults with similar professional activities. The most significant disparities were in foodstuffs bought on a daily basis. Moreover, the majority of the indicators reveal downward trends over the period, which can be interpreted as a gradual worsening of living conditions for families affected by HIV.

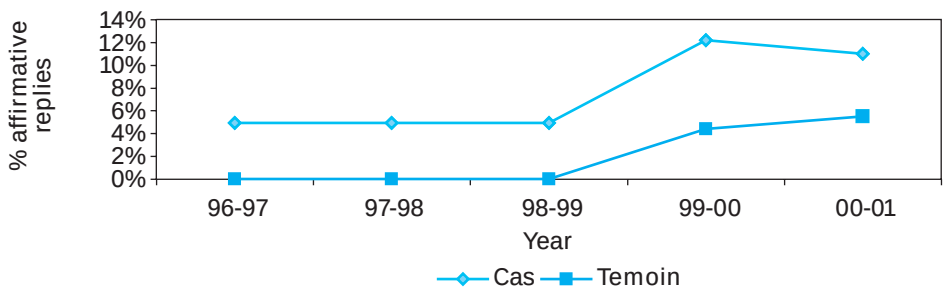
Physical capital: The impact of HIV on the physical capital of families concerned was examined by analysing the role of domestic savings and the availability of material property. The survey results reveal that domestic savings are used to meet health care expenses. In rural areas, domestic savings are typically in the form of livestock. When cash is needed in an emergency to purchase food or cover medical expenses, livestock is only sold if no other options are available. Livestock, especially cattle, are crucially important for the social prestige and livelihood of their owners, so they are only sold as a last resort. When HIV-affected households occasionally did have to sell livestock in order to raise necessary cash, it was usually sheep and goats rather than cattle that they disposed of. In urban areas, a

significant number of HIV-affected people had to resort to borrowing money or using bank savings.

Another crucial indicator of the impact on physical capital is access to basic social services such as water and electricity, which have a direct impact on the household's living conditions and on the environment in which the children grow up.

The questionnaire data indicate an increase among HIV-affected households in the number of power cuts due to unpaid electricity bills. While 4.5 per cent of this group had power cuts for non-payment of bills in 1996–1997, the figure had risen to 12.6 per cent in 1999–2000 and 11 per cent in 2000–2001. Over the same period, the percentage among non-affected households rose from zero to 5.5 per cent. Power cuts are seen as one of the more visible indicators of a decline in a family's financial status and are likely to affect children's welfare, particularly as regards their education. The children are ashamed in front of their school mates, and have difficulty studying at home by candlelight or even fail to do their homework altogether.

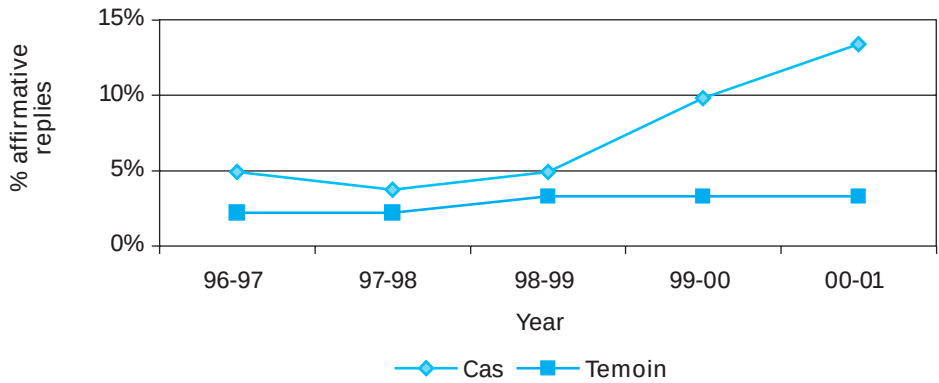
Figure 2. Percentage of people who had power cuts as a result of non-payment of electricity bills



Key: Cas = people with HIV; Témoin (control subjects): people without HIV.
Source: Data from the adult-centred questionnaire.

Unpaid water bills lead to similar problems. Figure 3 shows that for HIV-affected households, water supply cuts became more and more frequent between 1998 and 2000 when they were reported by almost 14 per cent. For non-affected households, the percentage ranges between 3 per cent and 5 per cent. In addition to potential health problems for children, interruptions in the water supply tend to give more work to children, particularly girls, as they are usually in charge of fetching water from neighbouring houses or public water sources.

Figure 3. Percentage of people who reported having water supply cuts due to non-payment of bills



Key: Cas = People with HIV; Témoin (control subjects): People without HIV.
Source: Data from the adult-centred questionnaire.

Impacts at the individual level

HIV has an important psychological impact on infected people. This is illustrated by several of the indicators used in the questionnaire, which, among other things, reveal that more than half the HIV-positive adults acknowledged frequently feeling upset. For 60 per cent of this group, this feeling was usually accompanied by a sense of depression, which together with the physical symptoms, led more than half the patients to stay in bed for hours on end.

Although HIV-infected people frequently gave the impression that they had been ruined and lost much of their property because of the virus, comparatively few divorces linked to HIV were recorded. It seems that divorce under such circumstances would be seen as a transgression of the moral principles underlying marriage, which is considered to be the fulfilment of God's will.

The general psychological mood of many people living with HIV is summed up by the following passage taken from a life-history recounted in Ourossogui:

When I was told I was HIV-positive, I felt very sad and depressed. I often stayed in bed and rarely went outdoors for my usual errands; I thought I was good for nothing and was overwhelmed by feelings of failure and guilt. I did not work because I entrusted my little shop to one of my brothers who was managing it well.

Similar cases confirm that the emotional shock of the discovery of being HIV-positive can lead to instability in one's professional and social activities.

Table 13. Psychological impact of HIV on adults

Impact of HIV	People living with HIV (%)	People not living with HIV (%)
Often feels upset	51.2	12.1
Is often in a melancholy mood	58.5	19.8
Stays in bed for hours	46.3	16.5
Is broke	47.6	19.8
Lost his/her property	40.2	11.8
Decided to stop having children	29.3	2.2
Relatives and friends avoid meeting him/her	14.6	1.1
Stopped entertaining himself/herself	32.9	11
Travelled for treatment	18.3	3.3
Was divorced	4.9	2.2
Was abandoned by spouse	4.9	3.3

Source: Data from the adult-centred questionnaire.

Children, especially those living with HIV themselves, can be highly affected by adults' social and emotional instability. In the drawing of an HIV-infected boy, the HIV-positive father occupies a tiny space in the background. According to psychologists, this means that while physically present, the father tends to disappear from the child's imagination. They explain that children who live in similar situations are often faced with problems of identifying with people who live in their immediate environment.

Occasionally, children sense the fact they live with HIV, even if nobody told them so. Samba, who did not know that he was living with HIV, drew himself without his arms. It was as if he felt he was maimed. It probably did not mean that Samba was unable to draw his limbs accurately or that he had accidentally forgotten them. He just wanted to express the idea that he had something missing.

The feeling of discomfort experienced by HIV-infected children is highlighted in the replies to the child-centred questionnaire. In 35 per cent of cases, parents of children infected with HIV realized that their children had been rejected by many of their friends. They therefore played less. They were also frustrated by the lack of other forms of socialization that would have allowed them to escape the family environment momentarily. None of the parents of children living without HIV mentioned such problems.

Table 14. Impact of HIV on child socialization situations

Characteristics	Children living with HIV (%)	Children not living with HIV (%)
Stopped playing	33	18
Often in bed	50	36
Rejected by friends	35	-
Lost appetite	60	29
No longer goes on holidays	65	14

Source: Data from the child-centred questionnaire.

On the other hand, no systematic discrimination of children was observed in schools or other locations at which children socialize. An informant from Tambacounda explained:

In most cases, neither the teacher nor the students know that there is an HIV-positive pupil in the classroom. When the pupil misses classes for health reasons, they just say he/she is sickly, without envisaging the possibility of HIV. If ever the teacher knows that one of his pupils is HIV-positive, he tries hard to keep it secret.

Often, the fact of not revealing the HIV status in school is related to it being hidden at home. Sometimes family members are the last to know that one of their relatives is HIV-positive. Thus, conflicts may arise from strategies developed within families to conceal the disease, and these in turn are likely to have considerable emotional impact.

Conclusions

Analysis of a variety of indicators related to the periods before and after the onset of AIDS in Senegal (mid-1980s) did not permit an assessment of its nationwide impact in general, or the sectors of health, education, demography and economy in particular. This can undoubtedly be attributed to the relatively low and stable rate of HIV prevalence and to the low number of deaths from HIV-related illnesses. These favourable figures are generally attributed to a complex set of social and behavioural factors, complemented by a successful policy to fight against the spread of the virus. The main features of this policy consist of a timely response, an eagerness to anticipate new developments, the strategic involvement of religious and political leaders, effective STI control programmes and strong responses at the community level.

However, the study clearly identified the impact of HIV at the family and individual levels. At the family level, it was observed that the serological status of individual members is rarely known, presumably because of the taboo that still exists.

People who are HIV-positive may face stigma both at the community level and within their families – particularly in the case of a polygamous family.

For HIV-infected families, health care expenses constitute a heavy burden, especially those related to the treatment of opportunistic infections and consultations with *marabouts* and traditional healers. These expenditures contribute to unstable and progressively deteriorating living conditions for children, particularly girls. The presence of HIV was found to lead to changes in the family structure, matrimonial problems and the gradual decline of social networks, thus adversely affecting children's growth and development still further. Moreover, discovery of HIV-positive status appeared to have a strong impact on the self-esteem and emotional stability of individual adults and children.

The results of this study suggest that, if the programmes which aim to reduce the presence and impact of HIV were to be strengthened, they should include specific components focusing on children and families that are vulnerable to HIV infection, notably in the field of communication on HIV and AIDS. These programmes should not be limited to prevention efforts but should also cover care for the infected.

References and Bibliography

Anderson, R.M. et al. 1991. The spread of HIV1 in Africa: sexual contact patterns and the predicted demographic impact of AIDS. *Nature*, vol. 352.

Baier, E.G. 2000. *De l'impact du VIH/SIDA sur les familles / communautés rurales et de la nécessité de concevoir des stratégies multisectorielles en vue de prévenir la pandémie et d'en atténuer les effets dans les zones rurales*. Rome: FAO.

Banque Mondiale. 1992. *Rapport sur le développement dans le monde: le développement et l'environnement, indicateur du développement dans le monde*. Washington DC: Banque Mondiale.

Banque Mondiale. 1993. *Rapport sur le développement dans le monde. Investir dans la santé, indicateur du développement dans le monde*. Washington DC: Banque Mondiale.

Banque Mondiale. 2000. *Rapport annuel 1999*. Washington DC: Banque Mondiale.

Banque Mondiale. 2001. *Rapport sur le développement dans le monde: combattre la pauvreté*. Washington DC: Banque Mondiale.

Bollinger, L., J. Stover and I. Diop. 1999. *The Economic Impact of AIDS in Senegal*. Glastonbury: The Futures Group International.

Botchwey, K. 2000. *HIV/SIDA and Economic Development in Sub-Saharan Africa*. Addis Ababa: African Development Forum 2000.

Bulletin Epidemiologique HIV. 1993. Groupe de surveillance séro épidémiologique Comité National de Prévention du SIDA. *Bulletin Epidemiologique HIV*; vol. 4.

Bulletin Epidemiologique HIV. 1994. Groupe de surveillance séro épidémiologique Comité National de Prévention du SIDA. *Bulletin Epidemiologique HIV*; vol.5.

Bulletin Epidemiologique HIV. 1997. Groupe de surveillance séro épidémiologique Comité National de Prévention du SIDA. *Bulletin Epidemiologique HIV*; vol. 6.

Bulletin Epidemiologique HIV. 1999. Groupe de surveillance séro épidémiologique Comité National de Prévention du SIDA. *Bulletin Epidemiologique HIV*; vol.7.

Bulletin Epidemiologique HIV. 2000. Groupe de surveillance séro épidémiologique Comité National de Prévention du SIDA. *Bulletin Epidemiologique HIV*; vol.8.

Charbit, Y., L. Gueye and S. Ndiaye. 1985. *Nuptialité et Fécondité au Sénégal*. Paris: PUF, Travaux et Documents, cahier no. 112.

Cohen, D. 1992. *The Economic Impact of the HIV Epidemic Issues*. New York: UNDP.

Etchepare, C. and M. Etchepare. 1998. *SIDA en Afrique: analyse par pays*. Dakar: Enda-Editions.

Groupe Thematique ONUSIDA/Senegal. 2001. *Lutte contre le SIDA, Meilleures Pratiques, L'expérience sénégalaise*. Dakar: ONUSIDA.

Kane, F. et al. 1993. Temporary expatriation is related to HIV-1 infection in rural Senegal. *AIDS*, vol. 7(9), pp. 1261–1265.

Le Guenno, B. et al. 1992. HIV2 Prevalence in three rural regions of Senegal: low levels and heterogeneous distribution. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol. 86, pp. 301–302.

Mboup, S. 1996. Mise en évidence d'une immunité croisée HIV1, HIV2. *Le journal du SIDA*, numéro spécial Afrique, 117–118 juin–juillet 1996.

Mboup, S. et al. 1990. Emergence of HIV1 in a high risk group from an HIV2 endemic area, Senegal. Paper presented at the 6th International Conference on AIDS, San Francisco.

Mboup, S. et al. 1988. HIV and later viruses in Senegal. Poster presented at the IV International Conference on AIDS, Stockholm.

Meda, N. et al. 1998. Low and stable HIV infection rates in Senegal: natural course of the epidemic or evidence for success of prevention? *AIDS*, vol. 13, pp. 1397–1405.

Ministère de l'Economie et des Finances et du Plan – Direction de la Prevision et de la Statistique. 2000. *Situation économique et sociale du Sénégal, Edition 1999*. Dakar: Ministère de l'Economie.

Ministère de la Santé Publique et de l'Action Sociale. 1997. *Plan National de développement Sanitaire et Social*. Dakar: Ministère de la Santé Publique et de l'Action Sociale.

Moser, C. and E. Shrader. 1999. *A Conceptual Framework for Violence Reduction*. LCR Sustainable Development Working Paper, No.2. Washington DC: World Bank.

Ndiaye, S., P.D. Diouf and M. Ayad. 1994. *Enquête démographique et de Santé au Sénégal (EDS-II)*. Dakar: République du Sénégal, Ministère de l'Economie, des Finances et du Plan, Direction de la Prévision et de la Statistique, Division des Statistiques Démographiques, Dakar; Calverton: Macro International Inc.

Ndiaye, S., M. Ayad and A. Gaye. 1997. *Enquête démographique et de Santé au Sénégal (EDS-III)*. Dakar: République du Sénégal, Ministère de l'Economie, des Finances et du Plan, Direction de la Prévision et de la Statistique, Division des Statistiques Démographiques; Calverton: Macro International Inc.

Niang, I.C. et al. 2001. *Collecte d'information pour la prévention des IST et du VIH/SIDA chez les hommes ayant des relations sexuelles avec d'autres hommes à Dakar*. Dakar: ISE.

ONUSIDA and OMS. 2000a. *Rapport sur l'épidémie mondiale de VIH/SIDA*. Geneva: ONUSIDA.

ONUSIDA and OMS. 2000b. *Sénégal: Fiche épidémiologique sur le VIH/SIDA et les infections sexuellement transmises*. Geneva: ONUSIDA.

ONUSIDA and OMS. 2000c. *Agir vite pour prévenir le SIDA: le cas du Sénégal. Collection meilleures pratiques*. Geneva: ONUSIDA.

Over, M. 1992. *The Macroeconomic Impact of AIDS in Sub-Saharan Africa*. Washington DC: World Bank Health and Nutrition Division (AFTPN Technical Working Paper 3).

Pillsbury, B. 1991. *Senegal Health and Population Sector Assessment*. Population Technical Assistance Project, DUAL and Associates, Inc. and International Sciences and Technology Institute, Inc.

Programme national de Lutte contre le SIDA (PNLS). 2001. *Plan stratégique 2002–2006*. Dakar: Ministère de la Santé / PNLS.

République du Sénégal. 2001. Document de stratégie de réduction de la pauvreté. Draft. Dakar.

République du Sénégal, Ministère de la Femme, de l'Enfant et de la Famille. 1996. *Plan d'action de la femme 1997–2001*. Dakar: Ministère de la Femme, de l'Enfant et de la Famille.

Sankale, J.L. et al. 1989. Expérience de l'utilisation de tests rapides dans une enquête épidémiologique au Sénégal. Paper presented at the 5th International Conference on AIDS and Associated Cancers, Marseille (abstract no.132).

Sow, P. et al. 1997. Aspects épidémiologiques de l'infection rétro virale à VIH à partir d'une population malade de Dakar. Paper presented at the 7th International Conference on AIDS in Africa, MOP54.

Thiam, D. et al. 1990. Prévalence de l'infection VIH au sein de la population des donneurs de sang dans la région de Dakar. Poster presented at the 5th International Conference on AIDS in Africa, Kinshasa (poster TPE 9).

UNAIDS. 2004. *2004 Report on the Global AIDS Epidemic*. Geneva: UNAIDS.

UNICEF. 2000. *The State of the World's Children 2001*. New York: UNICEF.

UNICEF and AIDS. 1999. *Children Orphaned by AIDS: Front-line Responses from Eastern and Southern Africa*. New York: UNICEF.

UNICEF et le Gouvernement du Sénégal, Direction de la Prévision et de la Statistique. 2001. *Rapport de l'enquête sur les objectifs de la fin de décennie sur l'enfance (MICS II 2000)*. Dakar: UNICEF.

Notes

1 Epidemiological data for 2002 show that HIV prevalence remained relatively low and stable (Bulletin Séro-Epidémiologique du VIH N°10, July 2003, Ministry of Health). HIV infection of pregnant women was found to be 1.2 per cent on average, with regional figures varying from 0.2 per cent (Saint-Louis) to 2.9 per cent (Kolda). HIV prevalence among sex workers varied between 5.1 per cent (Mbour) and 28.5 per cent (Ziguinchor).

2 The 2002–2006 strategic plan for the response to AIDS, elaborated at the time this research was undertaken, confirms this integrated approach. Whereas the Health Ministry used to be the coordinating body, the newly established National Council on the Fight against Aids (CNLS) is attached to the Prime Minister's Office. Focal points have been appointed in several Ministries and there is strong involvement of civil society organizations. In addition, the 2002–2006 strategic plan provides for the strengthening of institutional mechanisms at decentralized level.