

Country summaries: Nigeria

1. Introduction

Nigeria is the most populous country in Africa. It has a land area of 923,768 square kilometers. It is bordered to the north by Niger, to the north east by Chad, to the east by Cameroon, to the west by Benin and to the south by approximately 800 kilometers of the Atlantic Ocean.

Based on the 1991 national population census, the National Population Commission (NPC) estimated Nigeria's population to be 88,597,944. Using a growth rate of 2.8% per annum, Nigeria's population was estimated at 138 million in 2006¹. Approximately two-thirds of the population live in rural areas (defined by the NPC as single geographic settings or communities with a population of less than 20,000 people).

There are more than 350 ethnic and linguistic groups in the country. Nigeria is a democratic Federal Republic consisting of 36 states and the Federal capital Territory. The states and the FCT are organized for political administration and are further divided into 774 Local Government Areas. The states have also been grouped, on the basis of geographical proximity, ethnic homogeneity and/or other political considerations, into six geopolitical zones – North East, North West, North Central, South West, South East and South South. The major source of national revenue is crude oil, in addition to agriculture, minerals, and to some extent tourism^{2,3}.

See **Main Report Table 2** for a summary of basic socio-demographic indicators.

2. Epidemiological situation

2.1. HIV and AIDS cases

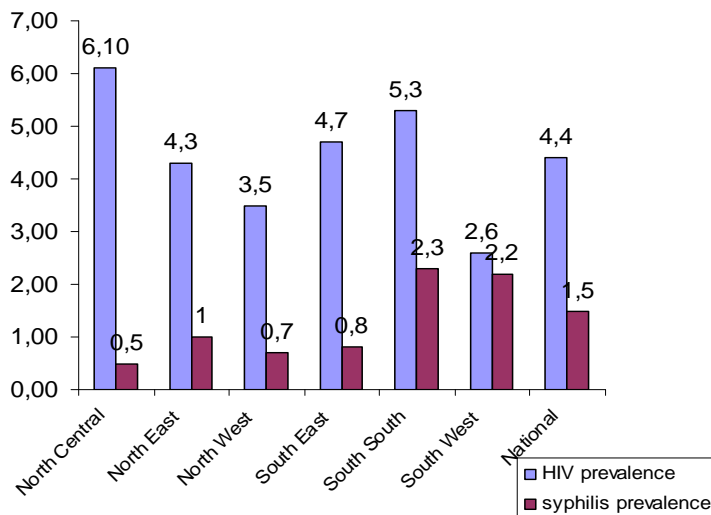
The first case of AIDS was reported in Nigeria in 1986. Using the Estimates and Projections Package (EPP), and the 2005 ANC sentinel surveillance data, the number of people living in Nigeria with HIV infection was estimated at 3.86 million in 2005³. About 296,000 new adult, 74,000 childhood HIV infections and 138,000 AIDS cases were estimated to have occurred in 2005. It was estimated that just over 500,000 persons living with HIV required ART, while about 74,000 HIV+ births took place in 2005. Whereas the number of deaths due to AIDS in 2005 was estimated to be about 221,000, the cumulative number of deaths due to AIDS was estimated to be 1.45 million³. In terms of number of cases, Nigeria was considered to have the third highest burden of HIV in the world, after South Africa and India⁴. With the recent revision of the estimate of the size of the epidemic in India to less than 3 million people, it is possible that Nigeria ranks in fact as the second country of the world in terms of HIV burden.

2.2. Sentinel surveillance of HIV among pregnant women

The mainstay of HIV surveillance system in Nigeria is the unlinked anonymous sentinel surveillance system among pregnant women, which was established in 1991. Eligibility criteria are women aged 15-49 attending an ANC clinic for the first time during the current pregnancy and accepting syphilis testing. ANC sites are public health facilities that provide antenatal care to pregnant women and which could be a general hospital, maternity hospital, comprehensive health center, specialist or university teaching hospital³. The number of sites has increased over time, from 28 in 1991 through 55 in 1995⁵, 85 in 2001² and 160 in 2005. The number and proportion of rural sites increased significantly to 74 in 2005, with 86 urban sites³, and at least two urban and two rural sites from each state and the Federal Capital Territory (FCT). A minimum sample size of 300 is considered adequate for urban sites and 150 for rural sites. It is estimated that ANC clinics cover 60% of pregnant women. Respectively 27,708 and 36,703 samples were analysed in 2003 and 2005³. During the 2005 seroprevalence sentinel survey of ANC attendees all the urban sentinel sites (86 sites) used in the 2001 and 2003 surveys were maintained to provide for continuous monitoring of the HIV/AIDS epidemic in the country (Appendix 1).

The most recent HIV sentinel surveillance data among pregnant women available at the time of writing this report were from 2005³.

Figure NA-1. HIV and syphilis prevalence by zones, HIV sentinel survey among pregnant women attending ANC clinics, 2005³



Overall prevalence in 2005 was 4.4% (95% CI: 4.2 – 4.6%). As can be seen in Figure NA-1, HIV prevalence was highest in North Central Zone (6.1%), and the lowest in South West (2.6%) (Figure NA-1). The North Central, South East and South South zones have prevalence higher than the national average. The South South zone has the highest prevalence of syphilis (2.3%), and Rivers state in this Zone recorded the highest state

syphilis prevalence (7.6%). Current syphilis prevalence does not correlate with HIV prevalence (Figure NA-1).

The geographical distribution of the epidemic by state is shown in Figure NA-2 below. Benue state appears to be the epicentre of the epidemic, with prevalence highest in the states surrounding Benue and decreasing to the north and west. Prevalence ranges from 1.6% in Ekiti State to 10% in Benue State.

In 2005 ANC survey, HIV prevalence was generally somewhat higher in urban compared with rural areas, with median urban vs rural prevalence of 4.6% vs 3.9%. However in 12 states the rural was higher than urban prevalence³. Iqita-Oron which is the rural site in Akwa Ibom State had the highest site-specific prevalence of 14.4% (the sample size was 150). It is a mini-port and a meeting site for commercial fishermen, sailors and traders.

Figure NA-3 shows trends in HIV prevalence from *all* ANC sites in Nigeria from 1991 to 2005. HIV prevalence rose from 1.8% in 1991, through 3.8% in 1994, 4.5% in 1996, 5.4% in 1999 to 5.8% in 2001. Thereafter prevalence declined through 5.0% in 2003 to 4.4% in 2005³. This may be partly due to greater numbers of rural sites participating in 2005³. However, as shown in Appendix 1, median prevalence also decreased from 5.5% in 2001 through 4.3% in 2003 to 4.0% in 2005 in sites that have consistently participated in all three surveys, suggesting that the decline is 'real'.

Figure NA-2: HIV prevalence among pregnant women by state, ANC sentinel surveillance 2005 ⁶

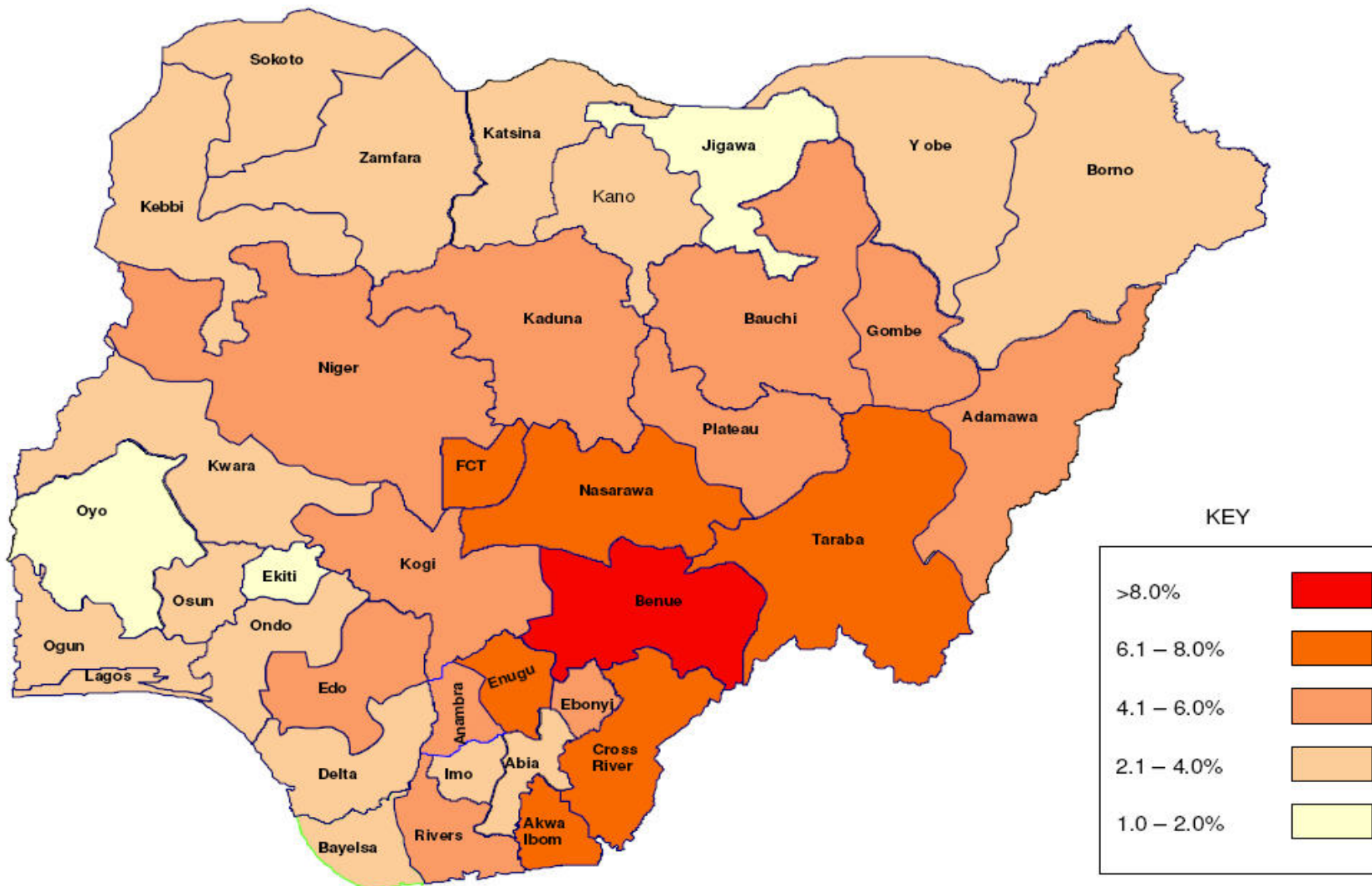


Figure NA-3: Trends in median HIV prevalence among pregnant women in Nigeria, ANC sentinel surveillance 1991-2005

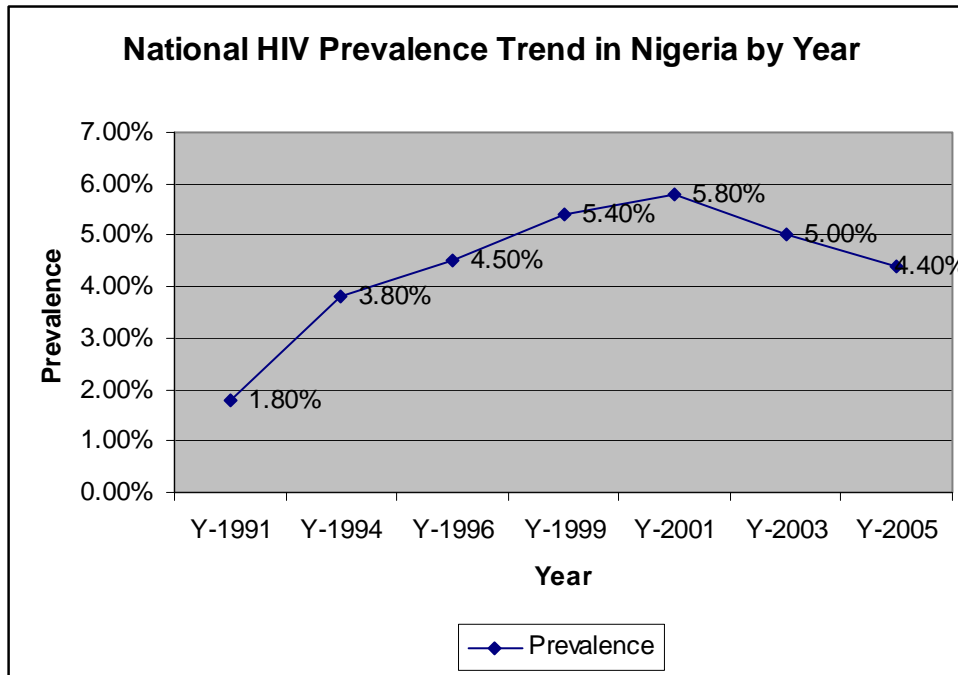
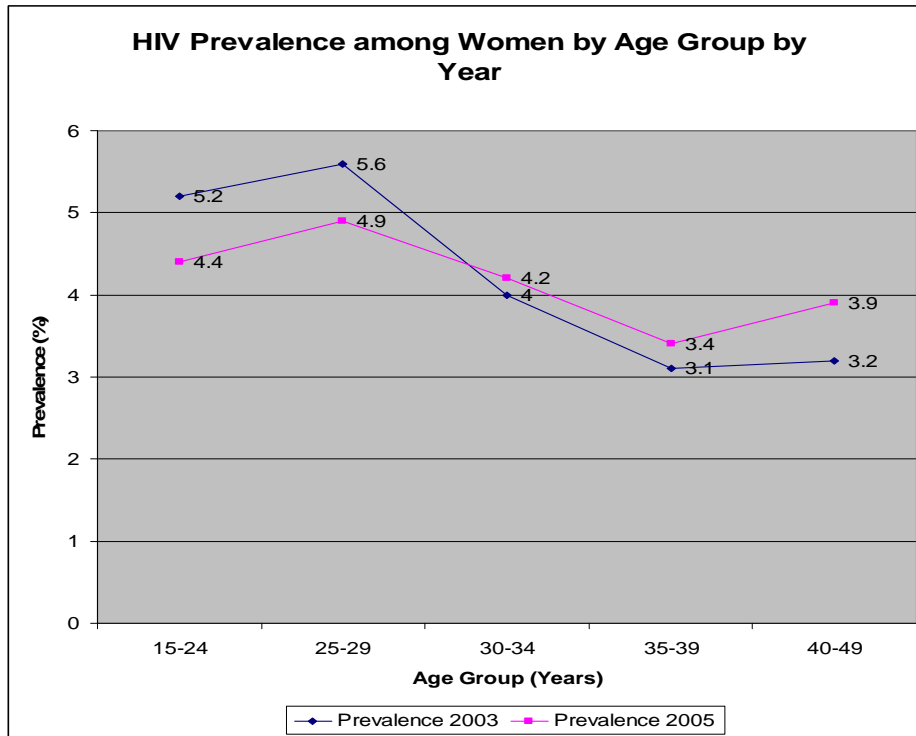


Figure NA-4 shows HIV prevalence from all ANC sites in 2003 and 2005 by age groups. Highest prevalence is seen in the age group 25-29, although prevalence is already very high among 15-24 year olds.

HIV prevalence decreased from 5.2% to 4.4% in the 15-24 age group (4.0% to 3.6% in 15-19 year olds and from 5.6% to 4.7% in 20-24 year olds ^{2,3} suggesting a possible decline in incidence (new infections) from 2003 to 2005. Prevalence also declined in the 25-29 age group, while it increased in age groups 30-34 and older.

Figure NA-4: HIV prevalence among pregnant women in Nigeria by age group, ANC sentinel surveillance 2003² and 2005³



Seven states grouped in the central part of the country - Benue, Kogi, Kaduna, Enugu, Abia, Cross River, and Akwa Ibom - recorded prevalences of over 8% in the 15-24 year age group in 2005. These are the states with highest prevalence in the 15-49 year age group, with the exception of Abia state, where overall HIV prevalence (15-49 years) was 4%, compared to over 8% among the newly infected cohort (15-24 years)³. This suggests that incidence may be rising rapidly in this state, and further investigation of the reasons for this is warranted.

Respectively 17 and 10 urban and rural state areas recorded prevalences above the national median of 4.4% among 15-24 year olds. In five states – Kogi, Akwa Ibom, Kaduna, Benue and Abia, rural prevalence is higher than urban prevalence among 15-24 year olds. The difference is most striking for Abia, with urban and rural prevalence of 1% vs 13.6% among 15-24 year olds. Such data suggests that while HIV infection was initially more concentrated in urban areas, as prevalence increased rural areas became increasingly affected, and incidence may now be higher in rural areas of some of the states most affected by the epidemic.

2.3 General population-based surveys

Demographic and Health surveys were carried out in Nigeria in 1990, 1999 and 2003; HIV testing has not been included in these surveys. Other relevant general population

behavioural surveys include the National HIV/AIDS and Reproductive Health Survey which was carried out in 2003 and 2005; and the National Behavioural Surveillance Survey of Young People aged 15-24, carried out in 2005.

2.3.1 HIV prevalence data

The most recent Demographic and Health Survey (DHS 2003) did not include HIV testing, and there are no other population-based HIV prevalence surveys. This is unfortunate since data from DHS surveys in a growing number of African countries indicate that prevalence among pregnant women in West African countries may for various reasons not reliably estimate general population prevalence, particularly male prevalence. Indeed in most West African countries for which both types of are available, prevalence is higher in ANC samples than in the general population (see **Main Report Table 4, Figure 6 and Figure 7**; and **Main Report Section 4.4.3** for a general discussion of this issue).

2.3.2. HIV-related behaviour in the general population and youth

2.3.2.1. Demographic and Health Survey (DHS), 2003

A representative probability sample of 7,864 households was selected ^{7]}. The final sample included 7,620 women aged 15-49 years (95.4% response rate) and 2,346 men aged 15-59 years (91.2% response rate). The sample was designed to provide estimates for Nigeria as a whole, for urban and rural areas and for the six major zones.

Tables 3 and 5 (Main Tables) show key indicators related to sexual and HIV testing behaviour, and HIV-related knowledge and attitudes, from the DHS 2003. They are also discussed in **Section 4.4.4, 4.4.5 and 4.4.6 of the Main Report**.

Knowledge of HIV/AIDS was almost universal among men (97.0%) but was lower among women (86.3%). Knowledge about condoms as a means of HIV prevention and where to obtain them was low, also particularly in women (**Main Report Table 5**). HIV-related knowledge was also lower in rural than urban residents. For example, 69% of urban women and 82% of urban men know that a healthy looking person can have AIDS, in comparison to 45% and 67% of respondents in rural areas, respectively. Levels of stigma towards PLWHA were high (**Main Report Table 5**). Only 3% of women and 6% of men had been tested for HIV in the last year and knew their results: this figure was 6.4% and 13.6% respectively for ever having been tested for HIV.

Table NA-1 shows rates of men reporting paying for sex in the last year. Interestingly, rates are higher in rural than urban areas.

Table NA-1: Regional and urban/rural distribution of men paying for sex in the last 12 months, DHS Nigeria, 2003 ^{7]}

Residence	Paid for sex in last 12 months	
	%	N
Urban	1.8	792
Rural	3.5	1,301
Total	2.9	2,093
Region		
North Central	0.7	313
North East	6.3	377
North West	1.8	529
South East	2.5	192
South South	3.8	385
South West	1.7	296

Extramarital sex was reported by 1.3% of women and 14.6% of men; condom use rates at last sex with such a partner were 6% and 51% respectively (**Main report Table 3**).

Among youth, one fifth of young women reported early sexual intercourse, and the first intercourse was unprotected in nearly all cases in women. Condom use at first sex and with non-marital partners is higher among men than women; men also reported more than one sex partner in the last year more frequently than women.

2.3.2.2. National HIV/AIDS and Reproductive Health Surveys (NARHS), 2003 and 2005

The NARHS surveys included a sample of all urban and rural localities in Nigeria. A three level multi-stage sampling procedure was used with the objective of selecting eligible persons in each reporting domain (state) with equal probability. NARHS 2003 included 10,090 respondents (5,128 women aged 15-49 and 4,962 men aged 15-64) ⁸, while the 2005 survey included 10,081 respondents (4,688 women aged 15-49 years and 5,393 men aged 15-64 years) ⁹.

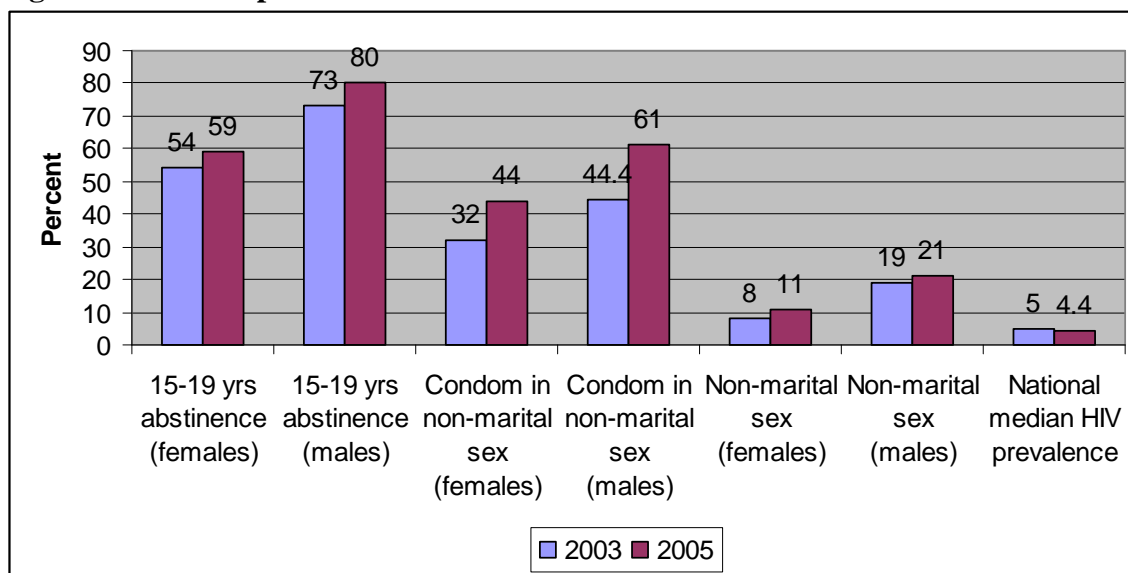
Following are the key findings from the 2005 survey:

- Polygamous unions were reported by over 40% of females in the North and less than 20% in the South; and by over 24% of males in the North and about 13% in the South;
- Over 3% of females in the North and about 20% in the South reported non-marital sexual partners; and about 13% of males in the North and over 30% in the South, potentially consistent with the DHS zonal data;
- 44% of females in the North and over 45% in the South reported condom use during last sex with non-marital partner; this figure was 58% for males in the North and 66% in the South;

- Over 3% of females in the North and less than 3% in the South reported ever exchanging sex for favours; less than 10% of males in the North and over 13% in the South reported this behaviour;
- 6% of people in the North and 17% in the South had ever been tested for HIV (10.8% overall);
- Nearly 50% of all respondents did not want to be tested for HIV.

Since the sample in the NARHS 2003 was drawn from the same sampling frame as NARHS 2005, results from the two surveys should be comparable (Figure NA-5). While slightly higher proportions of young people aged 15-19 reported abstaining from sex in 2005 compared to 2003, the proportion of 15-24 years old engaging in non-marital sex rose from 8% to 11% among females and from 19% to 21% among males. Condom use at last extra-marital sex increased from 32% to 44% among females, and from 44% to 61% among males.

Figure NA-5: Comparison of some indicators from NARHS 2003 and 2005 ^{8,9}



2.3.2.3. National Behavioural Surveillance Survey among Youth, 2005 ¹⁰

A total of 18,922 unmarried youths aged 15-24 years participated in this survey. Following are the key findings:

- Median age at first sexual intercourse was 18 years. 20% of male and 17% of female youths used a condom during their first sex act (higher among women than the DHS 2003 figure of 6%), and more so in urban areas;
- About 60% had sex in the last 12 months preceding the survey. Among those, 38% of males and 43% of females used a condom during their last sexual act, and this proportion was higher among more educated youth;
- 8% of females and 15% of males reported multiple sexual partnerships in the last 12 months (higher than the DHS 2003 rates of 2% and 8% respectively);

- About 3% of males reported sexual intercourse with FSW – the DHS 2003 figure was also 3%;
- Radio was cited as the most common source of information about HIV. Among in-school youth, teachers rated second;
- More than 80% knew that HIV could be transmitted through sex and over 90% knew it could be transmitted from an infected mother to her child. While over 50% knew of an HIV testing facility, only about 7% had ever taken an HIV test (similar to DHS figures);
- 2% perceived themselves to be at high risk of HIV while 5% perceived themselves to be at moderate risk;
- Stigma levels were high: only about 20% would buy food from an infected shopkeeper (25% in the DHS), and about 50% would want PLWHAs quarantined.

In general, the data presented above are similar to the DHS 2003 data for young people (section 2.3.2.1 above), indicating that rates of HIV-related sexual behaviour have not changed much, while rates of multiple sexual partnerships may have increased. Use of condoms by women may have increased, and the DHS 2003 data shows that young women (but not young men) are more likely to use condoms than older women. Thus the findings from these surveys among young people are similar to those among the general population NARHS data.

2.4. Population sub-groups at high risk of HIV infection

HIV prevalence surveys were carried out in 1991, 1994 and 1996 among TB, STI patients and FSW, as part of the sentinel surveillance system. (Table NA-2). For these surveys a minimum sample size of 100 per STI/TB/FSW site was defined^{3,10}. In 1996 samples were collected from 38 sites in urban / peri-urban areas for FSW (N varying from 2 to 472)⁴. These surveys were subsequently discontinued due to operational and budgetary constraints.

Behavioural Surveys among brothel-based FSWs were carried out in 2001 and 2004 and included 2,578 and 2,792 FSWs respectively. Family Health International also carried out behavioural surveys among brothel-based FSW in 1999/2000 in Jigawa, Katsina and Kebbi in the North, Lagos and Ekiti in the South West and Abia, Anambra and Enugu in the South East.

The 2005 National Behavioural Surveillance Survey was carried out among FSW, transport workers and the armed forces¹¹. In the 2007 National Integrated Bio-Behavioural Surveillance Survey (IBBSS), a biological component (HIV and syphilis testing) was included, and MSM and IDU were included as additional groups to those surveyed in 2005 - brothel- and non brothel-based FSW, transport workers, the armed forces and the police¹². The 2007 IBBSS was carried out in five states: Anambra, Cross River, Edo, Kano and Lagos and the Federal Capital Territory (FCT).

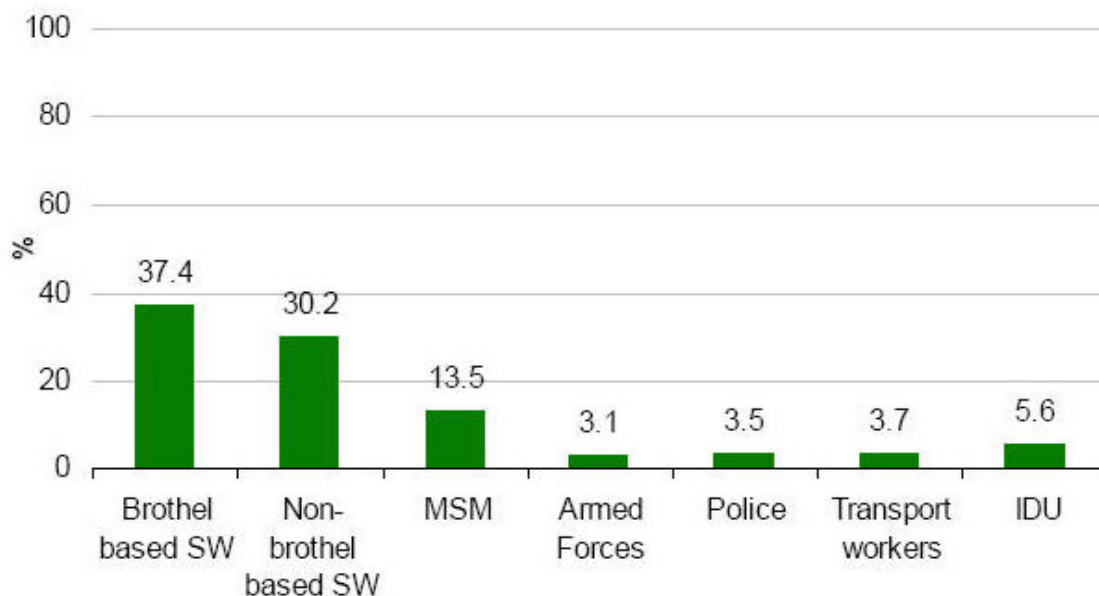
Table NA-2: HIV Prevalence among ANC, TB, STI and FSW, HIV sentinel surveillance, 1991-2000 ^{3,10,13}

Year	ANC	TB	STI	FSW
1991	1.8%	2.8%	4.6%	17.5%
1994	3.8%	7.9%	3.8%	22.5%
1996	4.5%	13.1%	15.1%	35.6%
2000	5.8%	19.0%	13.5%	NA

Among pulmonary TB patients HIV prevalence increased steadily from 2.8% in 1991 to 19% in 2000 (6.8-fold) (Table NA-2). Out of 12 states where the survey was carried out in 2000, HIV prevalence was highest in Benue state (35%), and lowest in Oyo (4%), closely reflecting differences in ANC prevalence in different states (10% and 1.8% respectively in 2005) ¹³. Highest HIV rates were seen in TB patients aged 30-39 years, which is older than the HIV peak prevalence age-group in pregnant women (25-29 years), likely since HIV-positive people are more prone to developing pulmonary TB ¹³.

HIV prevalence in STD patients increased 3.3-fold from 1991 to 1996, and then decreased slightly in 2000. Again prevalence in 10 states broadly reflected differentials in ANC HIV prevalence, e.g. Benue 23% and Rivers 6.8%. 13.5% of males and 11.7% of females with STD symptoms were HIV positive ¹³. HIV prevalence varied by syndrome: it was 23% in people with syphilis, 19% in men with inguino-scrotal swelling; 12.4% in men with urethral discharge; 11% in females with lower abdominal pain; and 17% in patients with genital ulcers ¹³.

Figure NA-6: HIV prevalence by risk group, 2007 IBBSS ¹²



2.4.1. Female sex workers

HIV prevalence among FSW was already 17.5% by 1991 (cf. 1.8% in pregnant women in that year), and doubled to 36% within five years, eight-fold higher than prevalence in pregnant women (Table NA-2).

Some additional data on HIV prevalence among brothel-based FSW are available from a study conducted by Onoja *et al* in 2001 in three Nigerian cities: Jos the capital city of Plateau state; Makurdi the capital city of Benue State; and Abuja, the capital city of Nigeria. In Jos, 55% of 89 FSWs; in Markurdi, 65.3% of 75 FSWs; and in Abuja, 75% of 100 FSWs, were HIV-positive¹⁴. HIV prevalence was 54.3% among the 15-24 years group, 51.9% among the 25-34 years age group and 62.5% among the 35-49 years age group. Although sample sizes were small, data suggest consistently very high rates of HIV among FSW in major cities in 2001, and suggest a near doubling of rates since 1996 (Table NA-2). In 2007 prevalence was similar to 1997, and somewhat higher at among brothel-based (37.4%) than among non brothel-based FSW (30.2%) (Figure NA-6); this may be due to a lower volume of clients¹². Rates varied between 23.5% in Lagos and 49.2% in FCT for brothel-based FSW; and between 12.9% in Lagos and 44.1% in Kano for non brothel-based FSW¹².

The 2001 National Behavioral Survey (NBS)¹⁵ among brothel based FSWs was conducted to generate baseline pre-intervention data. Using a multi-stage sampling method, 2,578 FSWs were recruited from brothels in urban and peri-urban settings in seven states spread across the six geopolitical zones were interviewed. The same sites and methods were maintained for the 2004 NBS (NBS II)¹⁶.

A total of 2,792 FSWs participated in NBS II. Over 50% of FSWs had secondary education or more, while about 25% had completed primary education. Over 10% had worked in about three brothels (20% in at least two) in the last year. About 75% were into full time sex work while 25% combined sex work with other jobs.

Brothel-based FSW had an average of five clients per day. The majority (93%) had heard about STIs, much fewer (34%) however were familiar with STI symptoms. Over 60% of sex workers sought STI treatment from standard health facilities. Improvements in HIV-related knowledge and condom use rates occurred between the two study rounds (Table NA-3). However, only 6% of FSW acknowledged that they were at a higher risk of contracting HIV, while 55% stated that they were unlikely to contract the disease.

Table NA-3: Data from 2001 and 2004 NBS among FSW, Nigeria^{15,16}

	NBS I 2001	NBS II 2004
Knows that a healthy looking person can transmit HIV	24%	44%
Not using condoms increases risk of HIV infection	39%	75%
Consistent condom use in week preceding survey	55%	80%
Refuse to have sex without condoms	62%	80%

Another behavioural survey was carried out by FHI from 1999-2000 in FSW and truck drivers ¹⁷, in collaboration with the National AIDS and STD Control Programme (NASCP). The sites selected were Jigawa, Katsina and Kebbi in the North, Lagos and Ekiti in the South West and Abia, Anambra and Enugu in the South East. The primary sampling units for the FSW were the bars/ brothels where they worked. The brothels were mapped, and selected using probability proportional to size sampling.

The sample size was 943 in all three locations. Table NA-4 presents the main indicators from the BSS. Condom use during commercial sex was higher in Lagos and Abia, compared with Jigawa. Fully 40% of FSW in Jigawa (compared to 1% in Lagos and Abia) stated that they had never used a condom with paying clients. However women in Jigawa with good knowledge of HIV prevention methods were much more likely to use condoms with paying clients, as well as if they could be accessed in under one hour. Condom use with non-paying partners was low in all sites. Mobility is common among sex workers in Lagos and Abia. Overall 24% of FSW reported ever having an HIV test, a much higher proportion than in the general population. However 11% did not respond to the question, and it should be noted that there were no structured voluntary counseling and testing services in Nigeria at the time of the survey.

It should also be noted that during the survey sex work was outlawed in Jigawa State as a result of the introduction of Sharia Law, and so the study was stopped before the full sample size of 300 was reached.

Table NA-4: Indicators from the FHI FSW BSS, 2000*

Indicator	Lagos	Abia	Jigawa
Condom protects against HIV	77%	71%	57%
Healthy looking person can spread HIV	64%	63%	44%
Condom use at last commercial sex	94%	89%	48%
Consistent condom use during commercial sex in the last month	89%	76%	24%
Sex with non-paying partner in the past year	40%	26%	51%
Condom use at last sex with non-paying partner	34%	48%	34%
Median number of partners on the last working day	2	4	2
Mobility: lived in current location for 1 year or less	70%	53%	40%

* denominators are not available in the report

As far as we could ascertain, no studies have been conducted to estimate the size of the population of female sex workers in Nigeria. According to Vandepitte, the proportion of the adult female population (aged 15-49) who are female sex workers in the capitals of sub-Saharan Africa ranges between 0.7% and 4.3% ¹⁸. Based on these numbers, the size of the FSW population in urban locations in Nigeria would be between 347,243 and 2,133,062. Given this, and that on average in the 2007 IBBSS, each brothel-based FSW sees 34 clients per week, and each non brothel-based FSW sees on average 25 clients per week ¹² (average of 30 clients per week), this could mean that between 4.2 million and 25.6 million high risk sexual acts between FSWs and their clients take place in urban locations alone each day.

The data from the above surveys demonstrate significant heterogeneity in HIV-related knowledge and behaviour among FSW in different regions of Nigeria, and sub-optimal condom use rates with clients and non-paying partners. The 2001 and 2004 NBS indicate some improvements in knowledge and behaviour over time among some populations of FSW in some areas of Nigeria.

Although limited comparable data over time are available to examine trends, the 2007 IBBSS states that FSW in Lagos have maintained high rates of condom use in the 2000, 2005 and 2007 surveys¹². However, the IBBSS 2007 data also indicate continuing very high HIV prevalence among brothel and non-brothel based FSW.

2.4.2. Clients of FSW

In a study in 2004, Lawoyin et al attempted to determine the characteristics of male partners of brothel-based female sex workers in Ibadan, the capital city of Oyo state in the South West geopolitical zone of Nigeria¹⁹. Male clients of FSW (n=202) drawn from randomly selected brothels were interviewed using a semi-structured questionnaire. Median age of the men was 28 years (range 17-71 years); 54.5% were currently married. Only 30.5% of married and 59.6% of single men who reported penetrative sex used a condom during last sexual contact.

Using ELISA-based rapid kits, over half (54%) of the samples taken from the men were apparently positive for HIV. However the make and performance characteristics of the test were not available, since the data are taken from a conference abstract and thus cannot be validated in detail. However they suggest that HIV prevalence among clients of FSW may be high, and much higher than in the general population (Oyo state ANC prevalence was 1.8% in 2005³). Reported condom use rates with FSW are very low.

2.4.3. Transport workers

The FHI behavioural survey carried out in 1999/2000 included truck drivers and their assistants recruited at truck stops in Kebbi in the north west (90% Muslim) and Anambra in the south (88% Christian)¹⁷. The sample size was 984. Sex with FSW in the last year was reported by 7% of men in Kebbi and 17% of men in Anambra. Use of condoms during last sex with commercial partners was reported by 30% of men in Kebbi and 60% of men in Anambra. Thirteen per cent of respondents reported ever having had an HIV test.

Median age at first marriage was much lower in Kebbi than Anambra. In addition, 41% of men in Kebbi reported more than one marital or cohabiting sex partner, compared with 19% in Anambra. These cultural differences may partly explain the much lower rates of reported sex with non-regular sex partners in Kebbi. All of the HIV knowledge, the HIV sexual risk behaviour, and condom use indicators were lower in Kebbi, except those relating to accepting attitudes towards people living with HIV.

In addition, 5% of men from Kebbi reported symptoms of a STI in the previous 12 months, compared with 31% from Anambra – to be expected since much higher proportions of men reported risky sex with non-regular and commercial sex partners in Anambra. The percentage of men who sought STI treatment from an approved clinic was low at both sites.

Another study was undertaken in 2005 by Ekanem et al among 395 intra-city commercial bus drivers, conductors and motor park attendants in a suburban community in Lagos, Nigeria²⁰. A semi-structured interview schedule was used for data collection. The men were found to have a strongly woven network of sexual relationships. Their sexual networks included - in addition to their wives and regular partners - FSW, young female hawkers, schoolgirls, and market women within and outside the motor parks. More than two thirds (74.3%) of the men had multiple sex partners. The reported condom ever-use rate was 65.6% but consistent and regular use with casual partners was reported by only 11.6% of the sample. The study concluded that transport workers could play a major role in transmitting HIV infection in urban communities in Nigeria and that there is a need for intervention programmes with a focus on men at motor parks and similar high risk groups.

The 2005 National BSS¹⁰ included a sample of 4,882 transport workers which included long distance drivers (47%), short distance drivers (29%), and commercial motorcycle riders (24%) aged 15-49 years. Overall 90% of transport workers were sexually experienced; ~66% were married and living with their spouses. About 83% of long distance drivers, 82% of short distance drivers and 76% of motorcycle riders reported sexual intercourse with female sex workers in the 12 months preceding this survey. Commercial motorcycle riders and short distance drivers are in the habit of exchanging “free ride” for sex, which may explain these very high rates of sex with FSW.

Although over 95% had heard of condoms while 80% knew a place where they could be obtained, only 20% indicated that they had ever used condoms. At least 70% of all transport workers were of the opinion that male condom were affordable. Among transport workers who had had sex in the last 12 months preceding this survey, condom use was much higher in sex with non-regular partners. Over 95% of all categories of transport workers have heard about HIV and AIDS and majority knew that HIV could be transmitted through sex (81%). However, only 26% knew of blood transfusion, and less than 10% knew of mother to child transmission of HIV as modes of HIV transmission. Though about 70% of transport workers knew of the existence of counseling centers within their community, only about 25% had ever had an HIV test. About 60% of the transport workers were of the opinion that they had no chance of having HIV, while 30% rated their chance of HIV infection low and 1% rated their chance high.

2.4.4. Military personnel

In 2001 a study was carried out among military personnel in all zones in Nigeria²¹. In each zone, four sites were randomly selected from sampling frames drawn from each

division. The sample consisted of 1,549 respondents (94.0% men and 6.0% women). The majority had been sexually active in the past 12 months (95.8% of men and 83.7% of women), and 17.3% reported more than two partners in the past year. Commercial partners in the past year were reported by 2.6% of respondents, and casual partners by 14.6%. Just over half of respondents had ever used a condom (58.8%). Only 21.2% of those with none/primary incomplete education used condoms compared with 71.6% of those with tertiary education. Condoms were used by 54.3% at last sex with commercial partners and by 61.3% at last sex with casual partners. 40.4% of respondents said that they had been tested for HIV, of whom 80.8% knew their test result.

2.4.5. Prisoners

In Nigeria, as of December 2006, there were 144 main prisons and 87 satellite prisons with close to 41,000 prisoners. There were about 23,000 prison staff overseeing several services to the prisons. In 2002, Nigeria Prisons Services, in collaboration with the National Institute for Pharmaceutical Research and Development conducted a seroprevalence survey of prison inmates and staff. The study sites for prison inmates included Makurdi prison (Benue state), Keffi prison (Nasarawa state), Kuje prison (FCT), Port Harcourt prison (Rivers state), Enugu prison (Enugu state), Kirikiri maximum security prison (Lagos state) and Kaduna borstal institution (Kaduna state). Study sites for prison staff included Headquarter (FCT), Port Harcourt prison and Enugu prison. Of the 442 prisoners screened for HIV, 39 (8.8%) tested positive, while the corresponding prevalence was 5.7% (12/210) among prison staff.

Of the prisoners and prison staff surveyed about 90% knew that HIV could be transmitted sexually, about 33% had past history of STIs and over 10% reported same sex partners.

2.4.6. Drug users

A rapid situation assessment conducted in 1999 by UNODC found that the use of illicit drugs is growing and that a significant percentage of the prison population were drug users²². Surveys on drug use in Nigeria showed limited use of hard drugs such as heroin and cocaine. A study carried out in 2000 in Lagos revealed that the HIV prevalence rate among heroin and cocaine street users was almost twice as high as among non-drug users (9.8% in drug users versus 5.4% for non-drug users)²².

The 2007 IBBSS indicated a prevalence of 5.6% among injection drug users¹², with considerable variation between states: 10% in Kano compared to about 3% in Cross River and Lagos. About 20% of IDU surveyed reported sex with FSW.

2.4.7. MSM

In a small-scale focus group study of MSM carried out prior to the implementation of a HIV/STI prevalence study²³, five focus groups were conducted with a total of 58 men aged 16-58 years. Among these, 66% of men self-identified as bisexual and 31% as homosexual. The study found that their networks were hidden, and social activities take place in private venues.

In the IBBSS 2007, overall HIV prevalence was 13.5% in MSM¹², varying from 25% in Lagos to 3% in Cross River. Up to 50% of MSM surveyed also had sex with women and about one third had also sold sex to other men. A smaller proportion had bought sex from other men, and less than 10% had had sex with FSW. Consistent condom use was considerably lower than among FSW, never exceeding 50%, even with commercial partners.

The MSM population in Nigeria is unknown. However, Alliance Right Nigeria (ARN) is working in collaboration with the Ford Foundation to estimate the MSM population in the country¹⁰. ARN estimates that about 40% of MSMs in their community are married but continue to have sex with male partners covertly, thus putting their wives and families at risk of HIV infection. This is similar to the IBBSS figure above.

2.5. Interpretation of the data

See **Main Report section 6** for a general interpretation of data from West African countries.

Data from the ANC surveillance that was initiated in 1991 suggest that HIV prevalence increased until 2001 (5.8%), and subsequently declined to 4.4% in 2005. From 2003 to 2005, HIV prevalence decreased in the 15-24 age group, suggesting that incidence may be decreasing. However further and more recent data are necessary to confirm this.

The central part of the country is the most affected by HIV. Seven states (Benue, Kogi, Kaduna, Enugu, Abia, Cross River, and Akwa Ibom) recorded prevalence higher than 8% among 15-24 years old. At the country-level, the median prevalence at rural sites (3.9%) was somewhat lower than the prevalence at urban sites (4.6%). Ten rural sites recorded prevalence of equal or above the median prevalence from all sites (4.4%) in 2005. DHS in Nigeria has not included testing on HIV, which does not enable to assess the validity of ANC data. DHS indicated that rural respondents have substantially lower knowledge of HIV than urban respondents. The highest proportion of women and men who reported high risk sex in the past year was in South South Zone and the lowest in North West. Condom use at last high-risk sex tends to be the highest in South West. Although this indicator is not particularly meaningful as “high risk sex” includes sex with extra-marital partners irrespective of the marital status, to some extent it corresponds with the data from the ANC sentinel surveillance survey carried out in 2005. Namely, South South zone had the second highest HIV prevalence in the ANC survey in 2005 (5.3%) and

South West zone the second lowest prevalence (2.6%). Though North Central zone had the highest HIV prevalence, only 0.7% of men there reported commercial sex in the past year. Surprisingly, reporting sex with a FSW was twice higher in rural areas (3.5%) compared with urban. This might provide clues to the spread of the epidemic in the rural areas or suggest underreporting of such behaviours by men in urban parts of the country.

Comparison of the results from the national surveys on reproductive health carried out in 2003 and 2005 indicate that more young people aged 15-19 are reporting abstaining from sex. Condom use at last non-marital sex increased in both males and females but proportion of 15-24 years old reporting non-marital sex rose in both genders.

There are few data sources on sex workers, and all of them included only brothel-based. Onoja et al in 2001 estimated very high HIV prevalence in three Nigerian cities: Jos, Makurdi and Abuja were 55%, 65.3% and 75% of FSW, respectively, were HIV positive. However, sample sizes were less than 100 in each of these three cities.

National behavioral surveys among brothel based FSWs were carried out in 2001 and 2004 in all 6 zones and included more than 2000 FSW. Data were not presented by zones, but were aggregated. Comparison of the two surveys indicates the improvement in all indicators but it is not known what kind of interventions was implemented at sites where women were selected. Another survey carried out among brothel-based FSW by FHI in 2000 showed that use of condoms at last commercial sex in Lagos was almost universal, while much less common in Jigawa. A third of FSW had unprotected last sex with non-paying partners. No data were available to estimate the differences in interventions' coverage across these three cities. In a study carried out in 2004 among clients of FSW in Ibadan, 54% of 202 men were HIV positive. In addition, at least in the most recent surveys, transport workers appear to be highly involved in using FSW services.

A study carried out in 2002 in several prisons in Nigeria showed that of 442 prisoners 8.8% tested positive, as did 5.7% of 210 prison staff. 10% of those interviewed reported same sex partners, but the time-frame of this behaviour is not known. The 2007 IBBSS indicated HIV prevalence of 5.6% among IDUs, varying from 3-10% by region.

In conclusion, the HIV epidemic in Nigeria is geographically heterogeneous, with significant variations in ANC prevalence between the states and, although based on more limited data, with similar variations in prevalence among high-risk groups. Significant geographical variations are also observed in reported risky behaviour.

Given this heterogeneity, it would be important to better understand HIV epidemiology at the local, state and zone levels to better adapt the response. The importance of this more in-depth understanding extends to rural areas, where heterogeneity is also observed: although ANC HIV prevalence is generally higher in urban areas, this is not the case in all states and there are also indications that HIV is currently spreading more quickly in many rural settings than in urban areas.

Although the HIV epidemic in Nigeria could be considered as generalized according to the commonly used criteria, it is unlikely, given the experience from other West African countries, that HIV prevalence is as high as the estimates from ANC sentinel surveillance. Given the very high differential between prevalence in some of the most at-risk groups, such as FSW and MSM, and that in the general population, and the millions of commercial sex acts happening daily, even when considering urban areas only, high-risk groups clearly contribute disproportionately to HIV transmission in all of Nigeria, and in some states, the epidemic is likely in a concentrated state.

3. The Response

3.1. History of the response the current National Strategic Framework

The first case of AIDS in Nigeria was reported in 1986 and subsequently the Honourable Minister of Health inaugurated a National Expert Advisory Committee on AIDS (NEACA) to monitor the epidemic and report directly to the Minister. In 1992, NEACA was replaced with the National AIDS/STI Control Programme (NASCP). NASCP spearheaded and coordinated the country's national response to HIV/AIDS until 1999 when the National Action Committee on AIDS (NACA) was created and located in the Presidency to coordinate Nigeria's national multi-sectoral response to HIV/AIDS. Also created in 1999 was the Presidential Committee on AIDS (PCA). NACA reports to PCA.

In order to give more autonomy and improve on its efficiency, NACA was upgraded in 2007 to a fully fledged self-accounting government agency, the National Agency for the Control of AIDS (NACA). State Action Committees on AIDS (SACAs) and Local Government Action Committees on AIDS (LACAs) were established to coordinate HIV/AIDS activities at the state and local government levels. While NACA leadership reports to the President, the SACAs and LACAs report to the State Governors and the local government Chairmen respectively. At the national level, several Federal Government line Ministries and Parastatals, the United Nation's agencies, the Global Fund for AIDS, Tuberculosis and Malaria, bilateral government agencies, international and local NGOs, faith based organizations (FBOs) and civil society organizations (CSOs) are involved in programmatic responses to the HIV/AIDS epidemic.

The goal of the 2005-9 HIV/AIDS National Strategic Framework for Action (NSF) is to reduce HIV/AIDS incidence and prevalence by at least 25%, and provide equitable prevention, care, treatment, and support while mitigating its impact amongst women, children and other vulnerable groups and the general population in Nigeria by 2009. The NSF has 8 objectives:

Objective 1: To increase the HIV programme implementation rate by 50% from 2005 to 2009 through improved co-ordination mechanisms and effective mobilization and utilization of resources.

Objective 2: To have 95% of the general population make the appropriate behavioral changes (safe sex, abstinence etc) through social mobilization and greater access to information by 2009.

Objective 3: To increase access to comprehensive gender-sensitive prevention, care, treatment and support services for the general population, PLWAs and PABAs, including OVC by 50% in 2009, and mitigate HIV/AIDS impact on the health sector.

Objective 4: To increase gender-sensitive non-health sectoral responses for the mitigation of the impact of HIV/AIDS by 50%.

Objective 5: To have 95% of groups with special needs make the appropriate behavioral changes (safe sex, abstinence etc) through social mobilization by 2009.

Objective 6: To strengthen national capacity for monitoring and evaluation of the HIV/AIDS response such that the national monitoring and evaluation plan is 100% implemented by 2009.

Objective 7: To build national capacity for research, knowledge sharing, and the acquisition and utilization of new HIV/AIDS technologies.

Objective 8: To improve the policy environment (policies, guidelines, legislations) that supports safer sex practice, reduces stigma, promotes positive living and rights of women and the general population, particularly PLWAs.

Preventive interventions include BCC for safer sex practices – abstinence, faithfulness, and condom use, PMTCT, HIV counselling and testing, blood safety, universal precaution and injection safety, and post-exposure prophylaxis. Groups mainly targeted are youth, women and the uniformed services, though the NSF mentions MSM, sex workers, IDUs and prisoners among specific groups to be targeted.

Though mention is made in the NSF of STI-specific interventions, using the syndromic approach, it appears that all stakeholders including government shied away from this important intervention as there are no public health programmes specifically funded for early diagnosis and prompt treatment of STIs. Exception to this are STIs treated under general provisions made to hospitals by government for treatment of endemic diseases.

Care and support interventions include home based care (HBC) of persons living with HIV/AIDS, including prevention and treatment of opportunistic infections (TB inclusive), and care of orphans and vulnerable children (OVC). Treatment interventions include anti-retroviral therapy (ART). The implementation of the NSF to date is currently being reviewed by NACA in collaboration with all the stakeholders

As of the end of 2007, the WHO/UNAIDS/UNICEF estimate of the number of PLWHA receiving ART in Nigeria was 198,000 (including private sector data), representing 26% of the estimated 750,000 people in Nigeria in need of treatment according to current

criteria ²⁴ (see also **Main Report Tables 12 and 17**). It would appear that there has been a considerable downsizing of the estimate of the size of the epidemic in Nigeria in recent years: the NSF 2005-9 target for the number of people receiving treatment was 1,000,000; and the WHO/UNAIDS estimated number of people in need of treatment was 420,000 in 2006 ²⁵.

In 2007, Nigeria reported that 207,107 pregnant women had been tested for HIV, an estimated coverage of 4% ²⁴. WHO/UNAIDS/UNICEF also estimates that the coverage of PMTCT services in Nigeria was 7% for administration of ART prophylaxis during pregnancy, and 2% for administration of ART prophylaxis to infants born to infected mothers ²⁴.

Reliable data on the cumulative number of persons reached with preventive interventions (abstinence, be faithful, and condom use) are difficult to obtain. However, a US PEPFAR-funded project reports having far reached 2,589,881 people with abstinence and be faithful (AB) only messages and 402,541 people with preventive programs that are not AB focused from 2004 to date.

3.2. Responses targeted to groups at high risk of HIV infection

3.2.1 Female sex workers

Working in 342 brothels in 102 sex worker communities with an estimated FSW population of 14,000, Society for Family Health (SFH) reached 10,147 FSWs between 2003 and 2006. This is the single largest project in Nigeria targeting FSW. The 102 sex worker communities reached through this project are located in each of the 6 geopolitical zones in the country. In the North Central zone, 5 communities are located in the federal capital territory, FCT, 5 in Plateau state, and 6 in Benue state; in the North East zone, 5 sex worker communities are located in Bauchi state, and 4 in Borno state; in North West zone, 7 communities are located in Kano state, and 4 in Sokoto state; in the South East zone, 10 communities are located in Enugu state and 6 communities in Imo state; in the South South zone, 6 communities are located in Edo state, 6 in Cross River state, and 9 in Rivers state; in the South West zone, 10 communities are located in Oyo state, and 17 in Lagos state.

There are other organizations, mainly NGOs such as Nkan Iban Uko (women of courage) in Calabar and Women's Health, Education and Development (WHED) in Abuja, which work with FSWs.

3.2.2 Men who have sex with men

Information is quite scanty on other groups who are at a high risk of HIV infection such as men who have sex with men (MSM), injecting drug users (IDU), and prisoners.

Alliance Right Nigeria (ARN), an MSM focused NGO in Nigeria and winner of the Red Ribbon-Breaker of silence awards on HIV & AIDS in 2000 ¹⁰, is one of few organizations representing sexual minorities in the country. From eight members who founded the organization in 1999, the organization has grown to a membership of 8,000.

According to the ARN's present coordinator, many funding agencies are reluctant to work with ARN. He further emphasized that regardless of the fact that some organizations have friendly dispositions towards ARN, notably UNAIDS, the US-funded Global HIV/AIDS Initiative in Nigeria (GHAIN), Ford Foundation and the National Agency for the Control of AIDS (NACA), the organization had only received US\$1,000 funding from the University of Toronto, Canada for a peer education programme. UNAIDS had also directly funded another peer education programme conducted by ARN.

The stigma and discrimination that ARN has had to confront on an ongoing basis has been such that it was refused official registration by the Nigerian authorities, a situation which denied them the opportunity for funding from the World Bank MAP project in Nigeria, as the project funds registered entities only. The recent IBBSS survey indicates very high HIV prevalence in this group, as well as high levels of bisexuality and sub-optimal condom use rates ¹². They are a very high priority group for interventions.

3.2.3 Prisoners ^{26,27}

Supply of condoms in prisons remains a contentious issue and was not discussed in the survey report. The Nigerian Prisons HIV/AIDS Programme which caters for both prisoners and prison staff receives its main funding from the World Bank MAP I Project in Nigeria through NACA. Main activities undertaken so far include HIV/AIDS workplace policy formulation and policy document production, capacity development, production of operational manual for field workers, monitoring and evaluation, and care and support to PLWHAs. So far the prisons project has been funded with about N7.5 million mainly from World Bank funded MAP I project administered by NACA.

Low proportions of both prisoners and prison staff who are eligible receive it, since they cannot access services due to lack of ARVs and of funds.

3.2 Funding and implementation of the response

Funding for HIV/AIDS activities in Nigeria increased tremendously with the inception of democratic rule in 1999. The National Agency for the Control of AIDS (NACA) estimates that Nigeria needs an annual budget of at least US\$500m to make any reasonable impact on the epidemic.

Appendix 3 shows the contributions of different donors. Data were obtained from FMOH and published in 2005 ¹⁰. A few updates to Appendix 1 indicate that the World Bank has extended its project (MAP II) to 2012 with additional US\$140million.

With the exception US PEPFAR that provided a budget breakdown, it was not possible to collect a breakdown of the different stakeholders' budget by thematic area, to enable calculation of what proportion of their budget and subsequently the proportion of the overall national budget that goes into the different thematic areas of the NSF. The budget breakdowns were not available from majority of the stakeholders either because they do not have their budgets structured by thematic areas or because of reluctance to provide data. HIV/AIDS epidemiology and response match or mismatch might be better demonstrated from epidemiology versus budgetary allocation standpoints.

DfID has revised its program plan and will implement an expanded multi-sectoral HIV and AIDS programme at the cost of additional £100m over the next five years. The US's President's Emergency Plan for AIDS Relief (PEPFAR) funded its Nigeria's country operational plan for fiscal year 2007 with US\$257,223,414. About 18% of this amount was budgeted for prevention activities (PMTCT, Abstinence & Be faithful, blood safety, injection safety and other non-Abstinence & Be faithful prevention), 47% was allocated to anti-retroviral therapy (Drugs and Services), 15% allocated to care of orphans and vulnerable children and palliative care (TB & HIV, and basic health care and support) and 6% to HIV counseling and testing. Other prevention programmes that supports non-AB behaviour changes and condom availability was allocated 3% of the total budget. This is the budget sub-category that could accommodate preventive activities for most at risk populations (even though that they were not specifically mentioned in the budget) and workplaces.

Out of the total annual budget of N1.8trillion in 2006, N10.8billion was sectoral allocation (NACA and the federal line ministries) to HIV/AIDS representing 0.58% of the total budget and about 10% total Health budget of N106billion. The Federal Government of Nigeria approved the sum of N2,296,464,901 (over two billion naira) for HIV and AIDS activities for fiscal year 2007 for NACA alone.

The Federal Government of Nigeria and the several development partners appear to be more active in HIV prevention and impact mitigation in terms of funding than the State and Local Governments. This view was corroborated by the FMOH in a statement it published in 2005 ¹⁰ *"...it is clear that financial allocations to HIV & AIDS vary significantly from state to state ... Surveys indicate that 13 out of 36 states plus FCT reported receiving funds from the states itself ... Where Governors have become directly involved in the HIV & AIDS response, allocations have been reasonably generous. A good example of this is the Rivers State Government that has been supporting the procurement of ARVs with N20m annually. The NACA review of SACAs and LACAs found that the degree of state participation in funding HIV & AIDS programmes ranged from nothing in some states, to as much as N10 million in Lagos state. Fourteen states had nothing more than the N2 million grants from NACA, implying that there was no state support of any kind."*

This meant that 23 states received nothing from their state governments. AIDS activities in such states are supported either by the Federal Government, development partners or

both. Against this background therefore, the presence or absence of donor activities in any state may be predictive of the level of HIV/AIDS activities in such states. Appendix 3 shows the distribution of donors through their implementing partners (international and local NGOs, FBOs, and CSOs) by state¹⁰. Akwa Ibom State, with consistently high HIV prevalence (currently 8%) falls within the category of states with only one or no donor agency working within the state.

4. Recommendations

In addition to the general recommendations presented in **section 9 of the main report**, the following recommendations apply specifically to the current state of the response in Nigeria:

- A population-based survey (DHS or other) of HIV prevalence and related behaviour is urgently needed in order to validate ANC data; given the very large population of Nigeria, such a study should be powered to give a level of precision at the level of geopolitical zones that would be equivalent to the precision sought in a typical West African country;
- To include testing on STIs in HIV surveys, as there is very limited data on STIs in all groups included in this report;
- Recent studies on truck drivers indicate that a very high proportion was reporting sex with FSWs. They could be an important bridging population and their potential role in the HIV spread in Nigeria should be carefully assessed in additional more in-depth studies;
- To include questions on access (coverage) to various HIV interventions in all surveys as that enables appropriate interpretation of changes in behavioural and biological indicators;
- DHS data from 2005 indicate that only a quarter of pregnant women were counseled on HIV. In light of the generalized epidemic, counseling and testing on HIV among pregnant women should be offered to all;
- Stigma levels seem to be high and that may well limit the acceptance of testing
- Prevention activities need to be intensified in rural parts of the country, particularly those where HIV prevalence was higher than the national median;
- ANC data indicate that over the years, several states such as Benue, Akwa Ibom, Nasarawa and the FCT have had the highest HIV prevalence, which means that treatment and prevention interventions need to be focused there;
- The states with the lowest prevalence are Oyo, Jigawa, Osun and Ekiti. It would be useful to explore which factors are associated with lower prevalence there, compared to other states;
- More generally, decentralisation of the response to the state level should be improved in order to allow a better adaptation of the response to the geographical heterogeneity of the epidemic in Nigeria;
- Finally, given the highly variable investments in the response by the state governments, advocacy for improved political commitment and financial implication at the state level should be a priority.

5. References

1. National Population Commission National Population Census 1991. Analysis. National and State Population Projections. Abuja, Nigeria; 2002.
2. Federal Ministry of Health, Department of Public Health, National AIDS/STDs Control Programme. A technical report on The 2001 National HIV/Syphilis sentinel survey among pregnant women attending ante-natal clinics in Nigeria; 2001.
3. Federal Ministry of Health, Department of Public Health, National AIDS/STI Control Programme. Technical report 2005: National HIV/Syphilis sero-prevalence sentinel survey among pregnant women attending antenatal clinics in Nigeria. Abuja; 2005.
4. WHO/AFRO. HIV surveillance report for Africa 2000. Harare, Zimbabwe; 2001 November.
5. WHO/AFRO. HIV sentinel surveillance summary report, Nigeria, 1995-96.
6. National Agency for the Control of AIDS. Nigeria UNGASS Report 2007; 2008.
7. National Population Commission (NPC) [Nigeria], ORC Macro. Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro; 2004.
8. Federal Ministry of Health. National HIV/AIDS & Reproductive Health Survey (NARHS). Abuja, Nigeria; 2003.
9. Federal Ministry of Health. National HIV/AIDS & Reproductive Health Survey (NARHS). Abuja, Nigeria; 2005.
10. Federal Ministry of Health, National AIDS and STI Control Programme. National situation analysis of the health sector response to HIV & AIDS in Nigeria. Abuja; 2005.
11. National Action Committee on AIDS (NACA). HIV/AIDS National Strategic Framework for Action, 2005-2009. Abuja; 2005.
12. Federal Ministry of Health. HIV/STI Integrated Biological and Behavioural Surveillance Survey (IBBSS) 2007; 2007.
13. Federal Ministry of Health, Department of Public Health, National AIDS/STD Control Programme. The prevalence of HIV, Syphilis, and STD syndromes among PTB/STD patients and drug users in Nigeria.
14. Onoja AJ, Nasidi A, Abu A, Braimoh G, Inyang US, Wambebe C, et al. HIV-1 sero-prevalence and incidence among commercial sex workers in three major Nigerian cities. International Conference on AIDS, WePeC6218; 2004.
15. Ladipo O, Emmanuel JA, Akinyemi Z, Ankomah A. National behavioural survey 1: Brothel based sex work in Nigeria: The Society for Family Health; 2001.
16. Ankomah A, Jennifer A, Godpower O, Ali B, Zaccheus A, Olaronke L. National behavioural survey 2: Brothel based sex work in Nigeria. Abuja: The Society for Family Health; 2004.
17. Family Health International (FHI). Behavioural surveillance survey, Nigeria 2000. Female sex workers, male truck drivers, male in-school youth, female in-school youth. Narrative summary and data sheets.
18. Vandepitte J, Lyerla R, Dallabetta G, Crabbe F, Alary M, Buve A. Estimates of the number of female sex workers in different regions of the world. *Sex Transm Infect.* 2006;82 Suppl 3:iii18-25.

19. Lawoyin TO. Characteristics of male partners of brothel-based sex workers in Ibadan, Nigeria: Implications for intervention and program development. International Conference on AIDS, ThPeE8201; 2004.
20. Ekanem EE, Afolabi BM, Nuga AO, Adebajo SB. Sexual behaviour, HIV-related knowledge and condom use by intra-city commercial bus drivers and motor park attendants in Lagos, Nigeria. *Afr J Reprod Health*. 2005;9(1):78-87.
21. Adebajo SB, Mafeni J, Moreland S, Murray N. Knowledge, attitudes, and sexual behaviour among the Nigerian Military concerning HIV/AIDS and STDs: Armed Forces Programme on AIDS Control (AFPAC); 2002.
22. United Nations Office on Drug & Crime. Substance Abuse and HIV/AIDS in Africa: ODCCP Update March 2002.
23. Allman D, Adebajo S, Myers T, Odumuye O, Ogunsola S. Challenges for the sexual health and social acceptance of men who have sex with men in Nigeria. *Cult Health Sex*. 2007;9:153-68.
24. World Health Organization, UNAIDS, Unicef. Towards universal access. Scaling up priority HIV/AIDS interventions in the health sector. Progress Report 2008. Geneva: WHO; 2008.
25. UNAIDS-WHO. Epidemiological fact sheets on HIV/AIDS and sexually transmitted infections. Nigeria, 2006 Update; 2006.
26. Federal Ministry of Internal Affairs. Technical report on baseline HIV/AIDS serosurveillance and incidence rates, risks and behaviour assessment amongst prison inmates, staff of the paramilitary Services and the FMIA. Abuja, Nigeria; 2002.
27. Labo HS. Situation of HIV/AIDS in Nigerian prisons: Response and challenges. Fourth National Conference on HIV/AIDS in Nigeria; 2004.

Appendix 1: HIV prevalence in urban sites participating in sentinel surveillance from 2001 to 2005 ('stable sites') (ref 2)

Zone / State	Site	2001	2003	2005
South East				
Abia	Umuahia	2.7	4.7	2.0
	Aba	4.0	2.7	2.3
Anambra	Awka	6.7	4.3	5.0
	Onitsha	6.0	4.0	4.0
	Ekwulobia	6.8	2.9	3.7
Ebonyi	Abakiliki	6.7	4.6	5.3
	Afikpo	5.7	4.3	5.0
Enugu	Enugu Parklane	4.7	2.0	3.0
	Achi	13.6	11.9	12.7
Imo	Owerri	4.0	2.0	4.0
South West				
Ekiti	Ado Ekiti	2.3	1.7	2.3
	Ikole Ekiti	4.0	2.3	1.0
Lagos	Ikeja	1.3	7.7	1.3
	Lagos Island	2.0	1.7	9.3
	Suru Lere	3.1	2.7	3.6
	Badagry	5.6	6.3	1.9
	Epe	6.9	4.2	2.4
Ogun	Abeokuta	2.9	0.7	0.7
	Ijebu-Ode	4.0	2.3	4.0
Ondo	Akure	6.3	2.0	4.3
	Ondo	7.0	2.3	3.3
Osun	Oshogbo	3.0	0.7	1.3
	Ilesha	5.7	1.7	3.7
Oyo	Ibadan	3.3	1.7	1.0
	Saki	4.7	6.4	3.3
	Ogbomosho	4.7	3.7	1.3
North West				
Jigawa	Dutse	2.3	2.3	2.0
	Hadeija	1.3	2.7	2.3
Kaduna	Kaduna	4.0	6.0	7.0
	Zaria	3.3	2.1	1.0
	Kafanchan	9.3	9.7	7.0
Kano	Kano MMSH	3.7	5.7	2.7
	Kano AKTH	3.3	4.3	4.3
	Rano	4.3	2.3	3.7
Katsina	Katsina	3.7	3.4	3.3
	Funtua	3.3	2.3	2.7
Kebbi	Argungu	4.7	2.7	3.3
Sokoto	Sokoto	3.0	7.7	2.7
	Dogon-Daji	2.7	1.3	3.3
State	Site	2001	2003	2005
Zamfara	Gusau	5.0	3.0	5.0
	Talata Mafara	2.0	3.7	2.7

North East				
Adamawa	Yola	5.7	7.4	6.7
	Mubi	3.3	7.7	2.3
Bauchi	Bauchi	6.7	4.0	5.7
	Azare	6.9	5.7	3.3
Borno	Maiduguri	4.3	3.7	3.7
	Biu	4.7	2.7	2.3
Gombe	Gombe	4.0	7.3	6.3
	Kaltungo	12.3	6.3	6.0
Taraba	Jalingo	6.7	6.3	5.7
	Zing	5.7	5.8	7.3
Yobe	Damaturu	5.0	4.3	3.0
	Geidam	1.0	6.6	4.7
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North Central				
Benue	Makurdi	14.4	9.7	13.0
	Otukpo	11.0	7.7	9.0
	Ihugh	15.0	10.7	11.4
FCT	Gwagwalada	5.3	5.8	11.7
	Nyanya	14.3	9.2	6.7
Kogi	Lokoja	3.7	7.0	4.3
	Ankpa	7.7	4.4	5.7
Kwara	Ilorin	3.7	3.0	2.3
	Offa	5.2	2.3	3.0
Nasarawa	Lafia	10.7	8.9	9.2
	N/Eggon	5.3	3.7	4.3
Niger	Minna	5.7	6.4	6.7
	Wushishi	3.3	7.7	6.7
Plateau	Jos	11.3	7.7	5.0
	Shendam	5.7	5.0	7.7
<hr/>				
South South				
Akwa Ibom	Uyo	13.0	6.4	5.7
	Essien-Udim	8.3	8.0	9.0
Bayelsa	Yenogoa	7.5	5.0	4.0
	Sagbama	6.7	3.0	3.3
Cross River	Calabar	8.3	12.7	6.3
	Ikom	7.7	11.3	7.0
Delta	Warri	2.3	4.0	5.0
	Agbor	9.3	6.0	4.0
Edo	Benin City	4.3	4.0	5.7
	Ekpoma	7.0	4.7	5.0
Rivers	Port Harcourt	7.0	3.7	5.1
	Bonny	8.2	8.3	6.0
	Bori	7.9	7.7	5.7
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Median		5.5	4.3	4.0
Range		1.0-15	2.3-12.7	2.3-13.0
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Appendix 2:

Donor Support by Thematic Area

Donors	Supported Via	Budget	Time Frame	NACA	SACA	LACA	NASCP	VCT	ART	PMTCT	Ois	OVC	Surv & Research	Blood Safety	Health System	Policy/ Advocacy	CSOs
World Bank (MAP)	NACA/NPT SPT	US\$93m	2002-2006	17 Fed line ministries	3-10 line ministries	50-80	X	X	X	X	X	X	X	X	X	X	NAF
UNDP	NPC	US\$7.19m	2003-2007	X												X	NEPWHAN
WHO	Direct Supp. to public Sector	US\$1.5m	2004-2005	Co-chair ETG Advoc/Res			Capacity 3x5 Tas		ART Scale up		\$20k		Sentinel surv. OR	\$65k	3X5	FMOH	TA
UNAIDS	UN Co-sponsor agencies	US\$420k	2002-2003	X			HSP						X				X
UNICEF	Fed. Centres									8 sites		X					X
UNFPA		US\$40m	2003-2007	X	X		X	X		X	X		X			X	X
UNIFEM	State Govt	US164K		Policy												X	X
UNODC	Justice Min CSO	US\$800k	2003-2005													Drugs Prisons	X
USG	Implementing partners	US\$34.4m	2004	Salary for Director PPP			HSPSP	X	X	X	X	X	X	CRS SBFAF		PP	X
DFID	SFH (PRSSH) FHI (SNR)	£83m	2002-2008				HSP	X			X				PATH	NACA	SFH
JICA	FMOH	N60m	2005-2008						Equip. Plan								
CIDA	UNICEF & PFI	C\$4.8m	2004-2009							X						X	NARF via PFI
GFATM	NACA/YGC	US\$80m						X	25 sites	21 sites							
GATES	Harvard/APIN CRC	US\$25m	2001-2005	X					6 sites	6 sites	X		X		X		X
FORD	NIMR/CSOs	US\$1m	2000-2003						Lab/Res								X

Appendix 3:

Donor Support by State

Zone	State	HIV Prev. (%)	MDG States	World Bank	UNDP (cap. build.)	WHO	UNICEF PMTCT IEC	UNFPA STI, condom	UNIFEM Policy	UNODC Drug abuse Prisons	USG ART/VCT PMTCT NGOs	DFID SFH/SNR PATH	CIDA PMTCT NGO	JICA CD4 lab. equip.	Italian Dev. Coop	Gates ART, labs	Others
North West	Sokoto	3,2	X		X			X									PFI SCF
	Zamfara	3	X														
	Katsina	2,7	X					X									
	Kaduna	5,6		X			XX										
	Kebbi	4						X									
	Kano	3,4		X			XX				X	X					
Jigawa	1,8										X						
North East	Borno	3,6		X			XX	X								X	pfd, vision SCF Pfd, sipaa PFD
	Yobe	3,7															
	Gombe	4,9			X		X	VCT					X				
	Taraba	6,1	X	X							X						
	Adamawa	4,2	X	X							X						
Bauchi	3,4	X			X		IEC	X		X-P							
North Central	Niger	5,3	X	X							X						PFD
	Nasarawa	6,7		X			X	X			X-P						
	FCT	6,3		X	X		XX				X						
	Benue	10		X							X						
	Kogi	5,5	X		X							X					
	Kwara	2,8			X						X						
Plateau	4,9			X		XX	X			X					X		
South West	Lagos	3,3		X	X		XX				X	X			X	X	SiPAA
	Ogun	3,6	X					X									
	Ondo	3,2			X			X									
	Osun	2						X									
	Oyo	1,8		X			XX									X	
	Ekiti	1,6	X									X					
South South	Edo	4,6	X	X			XX	X			X						IOM GLRA SiPAA
	Delta	3,7						X									
	Rivers	5,4			X		XX	X			X						
	Bayelsa	3,8	X				X										
	Akwa Ibom	8		X							X						
Cross Rive	6,1		X	X		X				X							
South East	Anambra	4,2	X	X			XX	X			X						
	Imo	3,9	X	X													
	Abia	4			X			X									
	Enugu	6,5			X		XX		X			X					
	Ebonyi	4,5		X													

