Introduction

The HIV epidemic in Nigeria is complex, with substantial heterogeneity in HIV prevalence across different regions and diverse factors that drive the epidemic. Therefore, the development of appropriate HIV prevention strategies and policies at the state level is critical to ensure that the prevention response is appropriate for the local context and to ensure that resources are allocated to interventions that will have the greatest efficiency and impact. To do this it is imperative to match prevention strategies to the local epidemic, considering both the epidemic typology and transmission dynamics and the phase of the epidemic.

The purpose of this document is to provide a summary of the HIV epidemic in Nasarawa State and recommend prevention priorities and implementation strategies, to answer the following questions:

1) What is driving the HIV epidemic in Nasarawa State?

2) What needs to be done in Nasarawa State to reduce the number of new HIV infections?

It is anticipated that this prevention prioritization and implementation brief will be updated periodically as further knowledge about the HIV epidemic in Nasarawa State and its drivers emerge.

HIV in Nigeria

Nigeria is composed of 36 States and one Federal Capital Territory, arranged in six broader geo-political zones: North West, North East, North Central, South West, South East, and South South. Among the 36 States and FCT, the average state HIV prevalence among the general population was 3.6% in 2007 and in 2008 the average state HIV prevalence among women receiving antenatal care was 4.6%.
The average HIV prevalence among the general population and women received antenatal care for each geopolitical zone in 2007 is displayed in Table 1.

Table 1. Average general population HIV prevalence in the 6 geopolitical zones of Nigeria

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>North West</td>
<td>2.9%</td>
<td>2.4%</td>
</tr>
<tr>
<td>North East</td>
<td>3.4%</td>
<td>4.0%</td>
</tr>
<tr>
<td>North Central</td>
<td>5.7%</td>
<td>5.4%</td>
</tr>
<tr>
<td>South West</td>
<td>3.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>South East</td>
<td>2.9%</td>
<td>3.7%</td>
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<tr>
<td>South South</td>
<td>3.3%</td>
<td>7.0%</td>
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A. The Status of the HIV Epidemic in Nasarawa State

Nasarawa State is located in Nigeria’s North Central geopolitical zone, which had an average general population HIV prevalence of 5.7%, ranging from 3.2% in Kwara State to 8.8% in Benue State. The general population HIV prevalence of Nasarawa is 6.8%, higher than the average for the geopolitical zone.

In 2008, the average state ANC HIV prevalence was 5.4% in the North Central geopolitical zone, ranging from 1.8% in Kwara State to 10% in Nasarawa and 10.6% in Benue State. In 2010, Nasarawa’s ANC HIV prevalence, continued to be higher than the average for the geopolitical zone, at 7.5%. Trends over time in ANC HIV prevalence are presented in Figure 1.

Figure 1. Nasarawa State ANC HIV Prevalence 1999-2010

Geographic Distribution of HIV in Nasarawa State

Nasarawa has an estimated population size of 2 million (2005 Census) and 13 Local Government Areas (LGAs). There is a paucity of specific data on the geographic distribution of HIV within Nasarawa, although some data is available for two urban and two rural sites. ANC surveillance data collected in
2010 suggests geographic heterogeneity with HIV prevalence ranging from 1.3% in Doma to 10.7% in Garaku, both rural areas (Figure 2).

**Figure 2. ANC HIV Prevalence in 4 Sites in Nasarawa State, 2001-2010**

* 2003 data was not available for N’Eggon. 2001 and 2003 data were not available for Doma and Garaku.

**B. Factors Driving the HIV Epidemic in Nasarawa State**

Much remains to be determined with respect to the transmission dynamics in Nasarawa State due to a paucity of data on specific patterns of sexual behavioural patterns and networks in the state. However, existing data does suggest that the transmission dynamics are complex. It is somewhat difficult to interpret the sexual structure due to a lack of detail about sexual mixing and networking patterns and the tendency to social desirability biases in responses. However, there is evidence for relatively high levels of sexual behavioral risks in the general population of Nasarawa.

**HIV Transmission Risk Factors in the General Population**

The following sexual behavioral risks in the general population may be contributing to ongoing HIV transmission:

1. **Multiple and non-marital partnerships**
   
   Nasarawa State has the highest reported multiple partnerships of any state of Nigeria, with 11.4% of men and 1.4% of women report two or more partners in the past year. 44.3% of men and 12.2% of women report sex with a non-marital partner in the past year, much lower than the national average. Overall, the mean self-reported number of lifetime partners was 4.6 for men and 1.3 for women. It should be noted that the discrepancy in sexual partner reporting between men and women could represent social desirability biases, high levels of sex work, or both. Self-reported data collected in population-based surveys, which are prone to social desirability bias, indicated that 3.4% of men had ever paid for sex.

2. **Condom use patterns**

   Condom use at last sex with a non-marital partner was 40.4% for men and 10.5% for women.
Most at Risk Populations and Other High Risk Networks

Presently, nothing is known about the size and characteristics of most at risk populations (MARPs) such as female sex workers and their clients, injection drug users, and men who have sex with men in Nasarawa State. Self-reported data collected in population-based surveys indicated that 3.4% of men had ever paid for sex, which indicates the presence of FSWs in Nasarawa State. Data is lacking on the size of other MARPs, including IDU and higher risk MSM, and HIV prevalence in these populations in Nasarawa is unknown.

C. Key Strategies for Preventing HIV in Nasarawa

Based on the existing data, it appears that Nasarawa has an advanced mixed epidemic, with transmission dynamics dependent on both key most-at-risk populations (MARPs) and a strong generalized component driven by behavioural patterns through high risk sexual networks of the general population. As with most mixed epidemics, much remains unknown about the transmission dynamics, and therefore the prevention priorities in Nasarawa. Chief among the knowledge gaps are:

- The size and distribution of the MARPs in Nasarawa, how these populations link with the general population, and their relative contribution to the overall HIV epidemic.
- The geographic and sub-population distribution of HIV in the general population. As yet, it is difficult to know the extent to which prevention efforts ought to be focused on particular locales (e.g. LGAs), versus a broad-based prevention program.
- The specific behavioural patterns and contexts that promote HIV transmission in the general population, and the extent to which prevention programs should focus on particular behavioural norms.

HIV Prevention Objectives and Strategies

HIV prevention objectives should include rapid assessments of both categories of subpopulations and the rapid implementation of programs promoting behavior change, reaching a very high proportion of the identified target subpopulations. Specifically, HIV prevention objectives include:

1. Rapidly assess and implement programs for female sex workers
   a) **Mapping and rapid appraisals** – to provide information about the size and location and operational typology of FSWs and clients across the state, to guide the scaling up process.
   b) **Bio-behavioural surveys of FSWs and clients** – to better understand the current status of the epidemic, define prevention needs, and set a baseline for tracking progress in prevention programs.
   c) **Assessment of transmission dynamics** – by incorporating mapping and bio-behavioural data into mathematical models to estimate the contribution of FSWs and clients to the overall epidemic.
   d) **Rapidly scale up HIV prevention programs** - achieve near saturation coverage FSWs

2. Rapidly assess and implement programs for injection drug users
   a) **Mapping and rapid appraisals** – to provide information about the size and location and operational typology of IDUs across the state, to guide the scaling up process.
   b) **Bio-behavioural surveys of IDUs** – to better understand the current status of the epidemic, define prevention needs, and set a baseline for tracking progress in prevention programs.
   c) **Assessment of transmission dynamics** – by incorporating mapping and bio-behavioural data into mathematical models to estimate the contribution of IDUs to the overall epidemic.
d) **Rapidly scale up HIV prevention programs** - achieve near saturation coverage of IDUs

3. Rapidly assess and implement programs for men who have sex with men

   a) **Mapping and rapid appraisals** – to provide information about the size and location and operational typology of MSM across the state, to guide the scaling up process.

   b) **Bio-behavioural surveys of MSM** – to better understand the current status of the epidemic, define prevention needs, and set a baseline for tracking progress in prevention programs.

   c) **Assessment of transmission dynamics** – by incorporating mapping and bio-behavioural data into mathematical models to estimate the contribution of MSM to the overall epidemic.

   d) **Rapidly scale up HIV prevention programs** - achieve near saturation coverage of higher risk MSM, defined as those who are regularly engaging in high risk behaviours.

4. Rapidly assess and implement programs for other high risk networks

   a) **Mapping and rapid appraisals** – to provide information about the size and location of other high risk networks across the state, to guide the scaling up process.

   b) **Rapidly scale up HIV prevention programs** - achieve near saturation coverage of programs to promote behaviour change.

5. Rapidly assess and implement programs for the general population

   a) **Rapid ethnographic assessments of sexual behaviours** – to provide information about sexual behaviour norms that are likely contributing to HIV transmission in the general population.

   b) **Rapid assessments of risk contexts** - to identify if there are particularly high risk settings which are amenable to focused prevention efforts

   c) **Rapidly scale up HIV prevention programs** - achieve near saturation coverage of programs to promote behaviour change.

6. Increase accessibility and utilization of PMTCT

   Develop effective health system models to increase accessibility and utilization of PMTCT, prioritizing first geographic areas and population groups with the highest HIV prevalence.

7. Develop other approaches to reducing HIV transmission

   Develop effective health system models to ensure blood safety, safe healthcare waste management, adherence to universal precautions, post-exposure prophylaxis, and other approaches to reducing HIV transmission.

**D. Nasarawa HIV Prevention Strategy Implementation Plan**

*Logical Framework for the Design and Implementation of the HIV Prevention Strategy*
Objective 1: Establish effective and efficient HIV prevention programs for FSWs in Nasarawa State

Activity 1: Improve knowledge of the sexual behaviors and other risk factors contributing to HIV transmission in the context of female sex work using baseline surveys to gather data

Activity 2: Implement an HIV prevention program focusing on risk reduction with high coverage of the local FSW population

Activity 3: Implement an HIV prevention program focusing on vulnerability reduction with high coverage of the local FSW population

Activity 4: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Activity 5: Perform annual evaluation to assess achievement of targets of the prevention program

Target 1.1: Complete data collection by DATE

Target 2.1: Individual annual contact with at least 80% FSW by 2015

Target 2.2: Registration and regular contact (i.e. twice per month) with at least 50% of FSWs

Target 2.3: STI clinical services received by at least 80% FSWs, with a reduction of treatable STIs by at least 50%

Target 2.4: VCT of at least 80% of FSWs

Target 2.5: Consistent condom use of a) 80% of FSWs with last client/casual partner and b) 60% of FSWs with last sexual intercourse with regular partner.

Target 3.1: A reduction of 80% in the proportion of FSWs reporting violence, by 2015

Target 4.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Target 5.1: Perform annual program evaluation by DATE

Target 5.2: Implement program improvements by DATE
Objective 2: Establish effective and efficient HIV prevention programs for IDUs in Nasarawa State

Activity 1: Improve knowledge of the sexual behaviors and other risk factors contributing to HIV transmission in the context of injection drug use using baseline surveys to gather data

Activity 2: Implement an HIV prevention program focusing on injection risk reduction with high coverage of the local IDU population

Activity 3: Implement an HIV prevention program focusing on sexual risk reduction with high coverage of the local IDU population

Activity 4: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Activity 5: Perform annual evaluation to assess achievement of targets of the prevention program

Target 1.1: Complete data collection by DATE

Target 2.1: Individual annual contact with at least 80% IDUs by 2015

Target 2.2: Registration and regular contact (i.e. twice per month) with at least 80% of IDUs

Target 2.3: At least 80% of estimated IDUs will have received needle and syringes.

Target 2.4: At least 80% of estimated IDUs will have used clean injection equipment during last injection

Target 2.5: At least 80% of estimated IDUs will have received drug maintenance or substitution treatment

Target 3.1: STI clinical services received by at least 80% IDUs, with a reduction of treatable STIs by at least 25%

Target 3.2: VCT of at least 80% of IDUs

Target 3.3: Condom use by 80% of IDUs at last sexual intercourse

Target 4.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Target 4.2: VCT of at least 80% of IDUs

Target 5.1: Perform annual program evaluation by DATE

Target 5.2: Implement program improvements by DATE
Objective 3: Establish effective and efficient HIV prevention programs for high risk MSM in Nasarawa State

Activity 1: Improve knowledge of the risk factors contributing to HIV transmission among high risk MSM using baseline surveys to gather data

Activity 2: Implement an HIV prevention program focusing on risk reduction with high coverage of the local MSM population

Activity 3: Implement an HIV prevention program focusing on vulnerability reduction with high coverage of the local high risk MSM population

Activity 4: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Activity 5: Perform annual evaluation to assess achievement of targets of the prevention program

Target 1.1: Complete data collection by DATE

Target 2.1: Individual annual contact with at least 80% of high risk MSM by 2015
   Target 2.2: Registration and regular contact (i.e., twice per month) with at least 80% of high risk MSM
   Target 2.3: STI clinical services received by at least 80% of high risk MSM, with a reduction of treatable STIs by at least 50%
   Target 2.4: VCT of at least 80% of high risk MSM
   Target 2.5: Consistent condom use of a) 80% of high risk MSM with last client/casual partner and b) 60% of MSM with last sexual intercourse with regular partner.

Target 3.1: A reduction of 50% in the proportion of MSM reporting violence, by 2015

Target 4.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Target 5.1: Perform annual program evaluation by DATE
   Target 5.2: Implement program improvements by DATE
Objective 4: Establish effective and efficient HIV prevention programs for other high risk networks in Nasarawa State

Activity 1: Improve knowledge of the sexual behaviors and other risk factors contributing to HIV transmission in the context of other high risk networks using baseline surveys to gather data

Target 1.1: Complete data collection by DATE

Activity 2: Implement an HIV prevention program focusing on behavior change with high coverage of the other high risk networks

Target 2.1: Individual annual contact with at least X% by DATE

Target 2.2: Registration and regular contact (i.e. twice per month) with of at least X%

Target 2.3: X behavior change by X% of other high risk networks

Activity 3: Implement an HIV prevention program focusing on vulnerability reduction with high coverage of other high risk networks

Target 3.1: A reduction of X% in the proportion reporting X, by DATE

Activity 4: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Target 4.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Activity 5: Perform annual evaluation to assess achievement of targets of the prevention program

Target 5.1: Perform annual program evaluation by DATE

Target 5.2: Implement program improvements by DATE
Objective 5: Establish effective and efficient HIV prevention programs for the general population in Nasarawa State

Activity 1: Improve knowledge of the sexual behaviors and other risk factors contributing to HIV transmission in the general population using baseline surveys to gather data

Activity 2: Implement an HIV prevention program focusing on behavior change within the general population

Activity 3: Implement an HIV prevention program focusing on vulnerability reduction within the general population

Activity 4: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Activity 5: Perform annual evaluation to assess achievement of targets of the prevention program

Target 1.1: Complete data collection by DATE

Target 2.1: X behavior change by X% of other high risk networks

Target 3.1: A reduction of X% in the proportion reporting X, by DATE

Target 4.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Target 5.1: Perform annual program evaluation by DATE

Target 5.2: Implement program improvements by DATE
Objective 6: Increase accessibility and utilization of PMTCT in Nasarawa State

Activity 1: Assess incidence of vertical HIV transmission and assess current PMTCT programs

Target 1.1: Complete assessment by DATE

Activity 2: Implement effective health system models to increase accessibility and utilization of PMTCT, prioritizing geographic areas and populations with the highest HIV prevalence

Target 2.1: Increase accessibility of PMTCT by X% by DATE in X geographic areas and with X population

Activity 3: Implement routine program monitoring system to assess program performance and identify opportunity gaps

Target 3.1: Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

Activity 4: Perform annual evaluation to assess achievement of targets of the prevention program

Target 4.1: Perform annual program evaluation by DATE

Target 4.2: Implement program improvements by DATE
Objective 7: Develop **other approaches** to reducing HIV transmission

**Activity 1:** Assess structural and institutional HIV transmission risks

**Target 1.1:** Complete assessment by DATE

**Activity 2:** Implement HIV prevention programs addressing structural and institutional HIV transmission risks

**Target 2.1:** Blood safety by X% by DATE
**Target 2.2:** Safe healthcare waste management by X% by DATE
**Target 2.3:** Adherence to universal precautions by X% by DATE
**Target 2.4:** Post-exposure prophylaxis by X% by DATE

**Activity 3:** Implement routine program monitoring system to assess program performance and identify opportunity gaps

**Target 3.1:** Implement system to routinely monitor program performance and identify opportunities for program improvement by DATE

**Activity 4:** Perform annual evaluation to assess achievement of targets of the prevention program

**Target 4.1:** Perform annual program evaluation by DATE
**Target 4.2:** Implement program improvements by DATE
References