Mapping and Characterisation of Key Populations

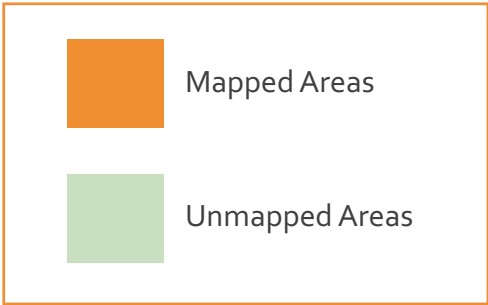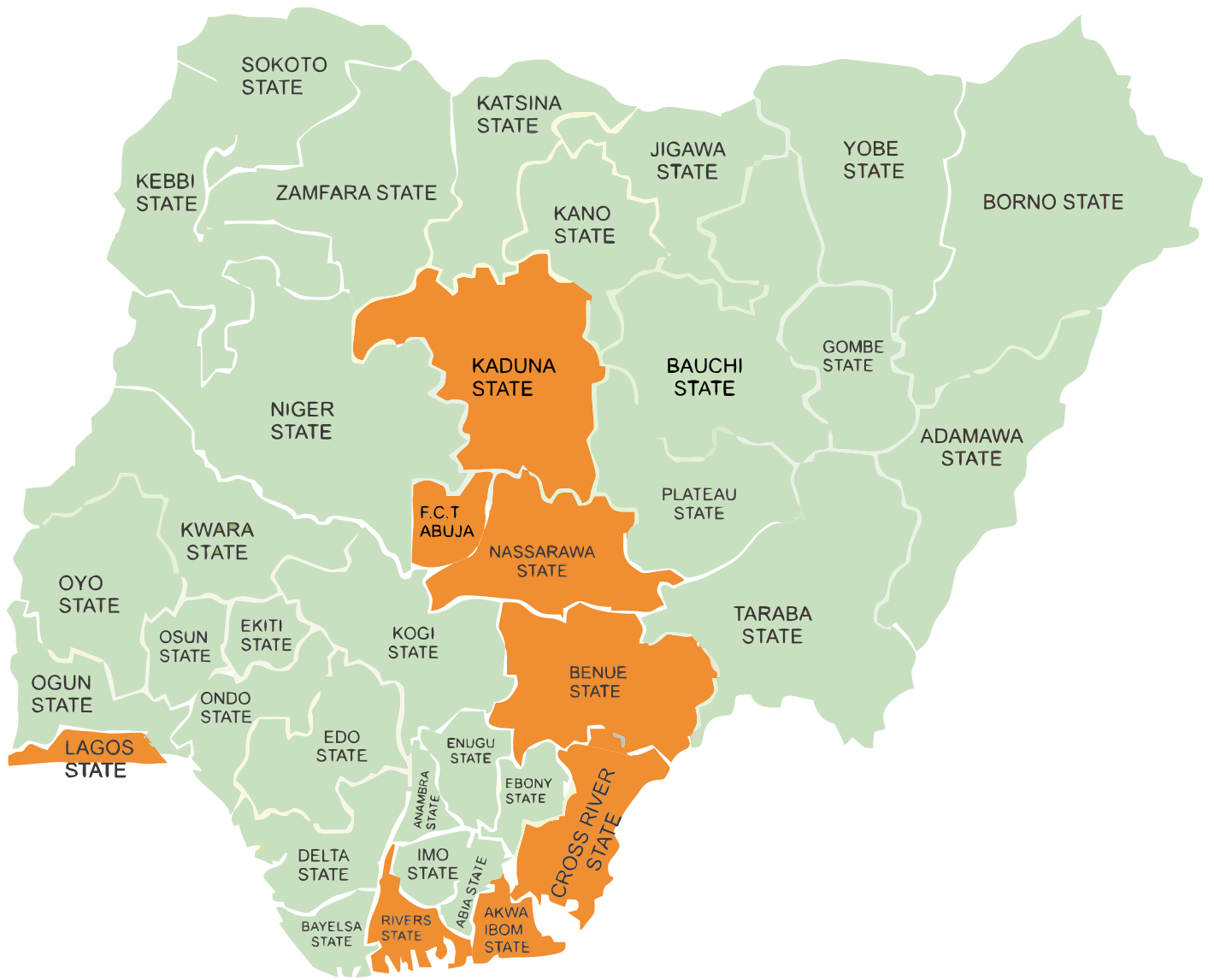## 2015

Mapping and Characterisation of Most-at-Risk Populations in Nigeria, 2015

SOKOTO STATE

KATSINA STATE

JIGAWA STATE

YOBE STATE

KEBBI STATE

ZAMFARA STATE

KANO STATE

BORNO STATE

KADUNA STATE

BAUCHI STATE

GOMBE STATE

NIGER STATE

ADAMAWA STATE

F.C.T ABUJA

PLATEAU STATE

KWARA STATE

NASSARAWA STATE

OYO STATE

KOGI STATE

TARABA STATE

OSUN STATE

EKITI STATE

BENUE STATE

OGUN STATE

ONDO STATE

EDO STATE

ENUGU STATE

LAGOS STATE

ANAMBRA STATE

EBONY STATE

CROSS RIVER STATE

DELTA STATE

IMO STATE

ABIA STATE

BAYELSA STATE

RIVERS STATE

AKWA IBOM STATE

Mapped Areas

Unmapped Areas

Confidentiality Clause and Disclaimer

The Steering Committee for the Mapping and Characterisation of Most-at-Risk Populations in Nigeria considers it necessary to duly safeguard the subject populations of the study and counteract any stigma and discrimination that may afflict this group.

The purpose of the data and other information that is detailed in this report is to support evidence based HIV planning, programming and implementation in Nigeria. It is the collective responsibility of all stakeholders who are privy to this information to apply adequate confidentiality safeguards in order to ensure that data contained in this report is not misused and misinterpreted. However, neither Society for Family Health nor the supporting partners – NACA and USAID – conducting or supporting the study on mapping and characterization of Most-at-risk Population groups is liable or can be held responsible or accountable for the misuse of data and information in the reports either through physical action or in any other manner.

Foreword

Effective response to HIV and AIDS requires evidence to inform its course of action and prioritisation for maximum impact. In Nigeria the reliable estimates for the sizes of Most at Risk Population groups have remained a big data gap in recent years and at all levels, it has become necessary to conduct a comprehensive exercise to map MARPs groups and estimate their sizes. The national response to HIV and AIDS should be prioritised according to burden of risk and vulnerability among most at risk populations in country. The reliable size estimates of MARPs at national and sub-national levels provide a basis for both policy and programming. It is also important to know where these population sub groups are located/concentrated in order to design and implement an effective intervention. Size of MARPs helps us to alert policy makers on the existence and the magnitude of a different sub population that may be at risk of HIV.

Results from this extensive exercise are expected to be useful in programme planning, policy formulation and strategy development, which will contribute to the outcome of shaping a more specific intervention.

I would like to thank all the organizations and individuals who have made substantial contributions to this important and meaningful study. I hope that facts from this report will be used extensively in programme planning and implementation.

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Society for Family Health, Nigeria

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Special appreciation goes to our respondents, who despite their busy lives spared their valuable time for the interviews and shared their personal experiences.

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Society for Family Health, Abuja

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centre for Disease Control
FCT	Federal Capital Territory
FMOH	Federal Ministry of Health
FSW	Female Sex Workers
HCT	HIV Counseling and Testing
HIV	Human Immunodeficiency Virus
LEA	Local Epidemic Appraisal
LGA	Local Government Area
MARP	Most at Risk Population
M&E	Monitoring and Evaluation
MIS	Management Information System
MSM	Men Who Have Sex with Men
NACA	National Agency for the Control of AIDS
NGO	Non-Governmental Organization
PEPFAR	US President's Emergency Plan for AIDS Relief
PWID	People Who Inject Drugs
SACA	State Agency for the Control of AIDS
SHiPS	Strengthening HIV&AIDS Prevention Services
SUOP	State Unified Operational Plans
STI	Sexually Transmitted Infection
ToT	Training of Trainers
UoM	University of Manitoba
USAID	United States Agency for International Development

Operational Definitions of Terms

Female sex worker (FSW): For the purpose of this report, a female sex worker is defined as any female 18 years and above who receives money or other valuable gifts/incentives from a man in exchange for sex in areas such as brothels, bars, hotels, nightclubs, restaurants, or on the street.

Person who injects drugs (PWID): For the purpose of this report, a PWID is defined as a male or female 15 years and above who has injected various drugs into their muscles or veins for intoxication and/or recreational purposes at least once in the past 12 months of the interview date. This group is considered to be at higher risk of contracting and spreading HIV through sharing of contaminated needles and indulgence in unsafe sex, either with the opposite or same sex (Note: people who inject drugs as a part of medical treatment are not categorized as PWID).

Men who have sex with men (MSM): For the purpose of this report, an MSM is defined as any male 15 years and above, resident in the state at the time of the study, who has engaged in oral or anal sexual activities with other men in the 12 months preceding the study. The MSM are a difficult group to identify and locate.

Site: For the purpose of this report, a site is an area within a state where high-risk activities are practiced by the group categorised as MARPs. A site may or may not be a hotspot, where MARPs may solicit, socialize and interact with other MARP members, have sex or share injecting drugs.

Active spot: For the purpose of this report, an active spot is a smaller area within the site, such as restaurants, nightclubs etc., where the above-mentioned MARPs gather/congregate for soliciting their clients or entering into high-risk behavior.

Executive Summary

The Strengthening HIV Prevention Services (SHiPS) for Most at Risk Populations is a five-year project aimed at improving the health of people in Nigeria by reducing the prevalence of HIV among those most at-risk and vulnerable to HIV. When designing targeted interventions, for example as part of an expanded and comprehensive response to HIV&AIDS, reliable information is required on the size of most at risk population (MARP) groups. Through the leadership of the National and the State Agencies for the Control of AIDS, a Mapping and Characterisation of MARPs Study was conducted in Akwa Ibom, Benue, Cross River, Kaduna, Nasarawa, Lagos, and Rivers states and FCT.

This report presents the data and key findings emerging through the mapping and size estimation exercise of MARPs. The specific aims of the mapping and size estimation exercise were firstly, to develop comprehensive maps of MARPs' sites; secondly, to estimate the size of MARPs at local and state levels; and thirdly, to study MARPs' background characteristics. The mapping and characterisation study was conducted across 157 systematically selected LGAs in the eight USAID-PEPFAR focus states. The report summarizes the key findings from the mapping and size estimation exercise.

Epidemiology
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 that resources are allocated to interventions that will have the greatest efficiency and impact. As acknowledged above, there is a need for accruing greater knowledge on the size of MARPs and their operational dynamics to guide the AIDS response.

Methodology

The methodology used to map and estimate the size of MARPs took due consideration of methods that would provide accurate information on the size, locations and operational dynamics of the MARP groups. The idea was to contribute to improving the scale, quality and impact of HIV prevention programmes among MARP groups. Various techniques and processes were applied for collecting data on active spots where MARPs are concentrated in the 157 systematically selected LGAs in the eight USAID-PEPFAR focus states. These included firstly, the state level stakeholder meetings. These meetings aimed at facilitating community participation in the data collection process at the field level and supporting monitoring and supervision of the entire study at the sub-national level through the State Technical Team.

Secondly, two methodologies were applied in this wave of mapping and characterization, the University of Manitoba (UoM) technique (Level 1 and Level 2 for female sex workers and people who inject drugs) and the Capture and Re-capture method (for the men who have sex with men). Population sizes were estimated and prevalent active spots determined based on information from interviews with secondary key informants. This identified active spots frequently visited by MARPs, their operational dynamics and the estimated numbers of MARPs in those spots. This was followed by validation of the estimates through interviews with MARPs at each spot identified. The State Technical Team used inbuilt quality checks for ensuring data quality.

Results

Information on MARP active spots and size estimates is pertinent for national and state level programmers to consider when planning programmes and focusing interventions to target specific geographical areas. Key findings from the MARP mapping and characteristics exercise are presented under this sub-section.

Within the 7 states and FCT selected for mapping, a total of 6,450 spots were identified as regularly visited by FSWs. Lagos had the highest number of spots (2,534) and Akwa Ibom had the lowest (150). The total number of active spots identified for PWID was 2,085 with Kaduna having the highest number of spots (901). Majority of the spots found were street- and home-based. The mapping exercise found that the overall estimated number of FSWs across the mapped states mapped ranged from a minimum of 81,188 to a maximum of 125,792 with an estimated average of 103,475. The estimated average number of FSWs was between 2,873 in Akwa Ibom and 40,863 in Lagos. In terms of the mean number of FSWs per spot, Cross River and Kaduna states had an average of 20 FSW on a peak day per spot, while Nasarawa and Rivers states had the least number at 15 FSWs per spot.

The overall estimated number of PWID ranged from a minimum of 30,490 to a maximum of 56,026 with an estimated average of 43,260. The estimated average number of PWID was between 739 in Akwa Ibom and 23,285 in Kaduna. The mean number of PWID per spot across the states ranged between 1 and 115 except in Kaduna where certain information was not available at the time of synthesizing the national report. The FCT had the highest average of 39 PWID on a usual day per spot while Nasarawa and Akwa Ibom states had the least density with 7 and 8 PWID per spot respectively. Kaduna had the highest estimated population of PWID who share needles (9,573) while the FCT had the least population of the same (208).

15,793 MSM were enumerated in the first count (capture phase), and 4,687 were enumerated in the second (re-capture phase). Majority of the MSM captured at both counts were between 20 to 29 years old. An overwhelming number (11,782) was neither married nor living with a sex partner. However, in the FCT, there were more MSM (3,165) who were formerly married. Almost half of the MSM (9,195) were still students at the time of enumeration.

In the capture phase, the highest numbers of interviews were conducted in streets/public areas (4,002), bars/cafés/restaurants (3,788) and private residence (3,221). Most of these interviews were in the FCT (3,554) while at the re-capture phase, the highest number of interviews were conducted in Kaduna and Lagos – each with over a thousand interviews taking place mostly at bars/cafés/restaurants (1,324) and streets/public areas (1,044).

Programme implications

This study provides significant national level data on the population size of people most at risk in Nigeria. Data can be used to enhance HIV prevention programme planning and implementation for FSW, PWID and MSM populations, to form the basis for impact evaluations, and to improve programme coverage by directing efforts to locations with the greatest need.

Chapter One: Background and Overview

1.1 Introduction

In Nigeria, with a population of approximately 180 million people, adult HIV prevalence increased from 1.8% in 1991 to 5.8% in 2001, before dropping to 5.0% in 2003 and 4.4% in 2005 and increasing slightly to 4.6% in 2007 and then dropping to 4.1% in 2010 (FMOH, 2005, FMOH 2009, FMOH 2010). Over the last two decades, the HIV epidemic in Nigeria has gone from affecting only a few populations with higher-risk behaviors ('concentrated' epidemic), to a 'generalised' epidemic in all states. The key target population whose HIV prevalence rate is higher than the general population continues to be the link between where the epidemic is concentrated and the general population. HIV has added to the burden of the already over-stretched health care infrastructure in Nigeria as well as increased the number of orphans and other vulnerable children, placing additional strain on family and community support structures.

Nigeria employs generation and use of sound data and a strong evidence base for policy and programme formulation, despite the generalised character of the epidemic. In addition, there are concerns about the spread of infection amongst sub-population groups coupled with the Government's endeavour to formulate a robust response to HIV to achieve the Sustainable Development Goals. In keeping with this objective, the Government of Nigeria – through the National Agency for the Control of AIDS (NACA) – and with support of key partners has undertaken a mapping and size estimation exercise for Most-at-Risk Population (MARPs) groups.

Knowledge on the size of MARPs and their characteristics is fundamental for HIV policy and programme formulation as well as for monitoring and evaluating interventions and undertaking necessary mid-course corrections. This will ensure effective and efficient delivery of the national AIDS programme.

This report presents data and analysis of key information emerging through mapping and size estimation exercises across 157 systematically selected LGAs in the eight USAID-PEPFAR focus states (used for mapping) including Akwa Ibom, Benue, Cross River, Kaduna, Lagos, Nasarawa and Rivers states and the FCT. Groups mapped include female sex workers (FSW), Men who have sex with other men (MSM), and Persons who inject drugs (PWID).

This introductory chapter presents the context, rationale and purpose of the mapping and characterisation. Chapter two details the methodology for size estimation through extrapolation based on risk and vulnerability. Chapter three presents key findings and analysis in text and tabular formats, including the number of locations, number of active spots and size of MARPs across the states mapped. Finally, chapter five summarises the conclusions and programmatic recommendations on the basis of the mapping and characterisation exercise.

1.2 Context, rationale and purpose of the mapping & characterization in Nigeria

The Government of Nigeria has declared HIV prevention as a national health sector and development priority. There is recognition of the need to intensify, scale up and accelerate prevention efforts in order to reduce the incidence of HIV infections. The goal of the national response is to reduce HIV transmission through the implementation of high impact, efficient and comprehensive programmes. Some of the challenges to date have included a lack of adequate evidence for programme planning, including knowledge gaps regarding factors that drive HIV epidemics in different regions of Nigeria and inadequate knowledge of the geographic distribution of key populations. This has hindered the targeting of HIV prevention resources to those areas and populations where they will have the highest impact. This wave of mapping identifies programme information needs and gaps, 'who', 'where', 'scale' and ensures relevance for local planning – coverage, scope, and coordination. Other reasons are to design programmes for key prevention issues around

behavioral patterns, networks, and sub-typologies and ensure timely and efficient evidence-informed programming.

The main objective of this study is to generate relevant information about the location; number of MARPs and types of HIV related services in MARPs' location. This will lead to understanding most at risk communities with the aim of providing evidence for improved programming. Specifically, the study will:

1. Define high-risk activities of FSW, MSM, and PWID populations. Provide a clear definition of "what" the risk is in focus.

2. Determine "who" is involved and also provide information on "How many" they are. Thus, estimates can be generated.

3. Determine "where and when" high-risk activity takes place.

4. Ascertain the sub-types of high-risk groups.

5. Identify gatekeepers and provide information on the operational dynamics of each group.

Chapter Two: Methodology

2.1 Introduction

A geographical mapping approach, which identifies the key locations where FSW, PWID and MSM can be found and enumerated was used for the study. The approach was based on programmatic experience in Nigeria, which has shown that populations at an increased risk of contracting and transmitting HIV generally congregate and/or meet clients (or casual partners) in specific geographic settings. Earlier studies in Nigeria have also pointed to geographical clustering of HIV infections and risk behaviors, underlying the importance of identifying such locations and the number of MARPs linked to the locations for targeted HIV preventive interventions. The geographical mapping approach focuses on identifying the locations frequented by high-risk populations, and characterises specific spots in terms of operational typologies and the sexual networks present. Preliminary steps of the geographical mapping approach involve developing or acquiring maps of the targeted area, segmentation of the target area into smaller geographic zones to facilitate field work planning and data collection, and identifying and enlisting the support of key stakeholders and gatekeepers linked to the spots and the target areas. Data on the locations where populations most-at-risk for HIV congregate were collected in two sequential steps, described as Level 1 and Level 2 activities.

2.2 Methodological approach

Two methodologies were applied in this wave of mapping and characterization. They were the University of Manitoba (UoM) technique (Level 1 and Level 2) and the Capture and Re-capture method.

This UoM methodology identifies locations where high-risk activities take place as well as when they take place. It also identifies gatekeepers to these populations and provides information on the operational dynamics of each key population.

The UoM technique entails two levels:

1. **Level One**: Information was systematically gathered from carefully selected secondary key informants regarding locations or spots ("active spots") where MARPs congregate to meet their casual or paying sexual partners, and/or gather to buy or inject drugs. A spot was considered active even if only one or a few most at risk individuals regularly visit it. The key informants provided the physical addresses of these spots in addition to the estimated minimum, maximum and usual number of individuals at risk that could be found there. During Level One mapping, the following information was collected by data collectors using the Level One form:

     1. Identification of spots where risk activities occur
     2. Type of MARPs that exist at the spot (FSW, PWID, MSM)
     3. Sub-typology of MARPs
     4. Minimum and maximum estimates of MARPs at the spot
     5. Contact information of resource for each spot
     6. Timing

2. **Level Two**: Validation and assessment of the information collected at level 1 is the underlying goal. At this second stage of data collection, all the spots identified in level 1 were visited and validated through primary key informants. This process determined the existence of a spot, whether or not they are regularly visited by the FSWs or PWID; in other words, 'was the spot active or inactive?' The process also determined the estimated minimum, maximum and usual number of FSWs and PWID who visited active spots and the other spots within the vicinity that had not been identified in level 1. Level 2 exercise produced a validated and comprehensive list of spots where key populations may be found, the typology of the spot, operational dynamics of each spot (peak and non-peak times) and a more realistic estimated minimum, maximum of FSWs or PWID at each spot. 100% of the spots mentioned at Level 1were validated.

In response to the prevailing legal and policy environment in Nigeria, the capture and re-capture methodology was used to estimate for MSM key population. Capture-recapture is a statistical method for estimating the number of individuals from groups that are hidden or hard to reach using a probabilistic calculation. The concept is based on the fact that individuals are more likely to be sampled multiple times within relatively small populations than within larger populations. On the assumption that the measured population is a close system, recapture activities are conducted within one to two weeks after the initial capture activities as described by Adebajo et al. (2013) to minimize any population drifts. No personal identifiable data was required from anyone during the study, while participants and enumerators were trained on principles of confidentiality and ethical handling of research data.

Capture phase: During the capture phase, data collectors were assigned venues and locations identified during the formative research and mapping. At each location, enumerators employed a three-step strategy to identify MSM:

1. Identification through body language and other techniques outlined during formative research/training of enumerators.
2. Approaching and interacting with informant "suspect contact" until self-identification as MSM.
3. Confirmation in a socially appropriate context that the informant is attempting to buy sex.
4. If any or all of the above conditions were met the informant was offered a "tag". If he accepts the tag, he will be captured as "captured and accepted tag". If he refused the tag, he will be captured as "captured and refused tag".

Recapture phase: On the same day of the week in the same venues, one week after the capture, the data collectors approached the informants the same way described above (see Capture-recapture tool). Venues or locations often designated as "hotspots" include bars, clubs, shopping areas, cinemas, beaches and private residences.

Lincoln Peterson's formula will be used to calculate the estimated population size:

- c1= Captured in first count

- c2= Captured in second count

- m=Matches (Captured in both counts)

- n=Estimated population size

Where:
$$\frac{c_1}{n} = \frac{m}{c_2} \qquad n = \frac{c_1 * c_2}{m}$$

$$95\% \text{ CI} = n \pm 1.96 * \sqrt{\text{Var}(n)}$$

$$\text{Var}(n) = \frac{c_1 * c_2 * (c_1 - m) * (c_2 - m)}{m^3}$$

2.3 Study sites

The MARP Mapping and Characterization Study covered a total of 151 LGAs across 5 states and the entire area councils in the Federal Capital Territory. Each local government was further delineated by political wards, as this was a more generally acceptable method well understood by the users of the report. The purpose of zoning was to make coverage and distribution of field data collectors less ambiguous. The delineation was based on the states' spatial distribution of population, contiguous locations and economic/socio-cultural affinity.

Table 2.1:   Geographic coverage of mapping by state and by LGA, Nigeria, 2015

States	Total Number of LGAs/area councils mapped	Local Government Areas mapped
Akwa Ibom	31	Abak, Eastern Obolo, Eket, Esit Eket, Essien Udim, Etim Ekpo, Etinan, Ibeno, Ibesikpo Asutan, Ibiono Ibom, Ika, Ikono, Ikot Abasi, Ikot Ekpene, Ini, Itu, Mbo, Mkpat Enin, Nsit Atai, Nsit Ibom, Nsit Ubium, Obot Akara, Okobo, Onna, Oron, Oruk Anam, Udung Uko, Ukanafun, Uruan, Urue Offong/Oruko, Uyo
Benue	23	Ado, Agatu, Apa, Buruku, Gboko, Guma, Gwer East, Gwer West, Katsina Ala, Konshisha, Kwande, Logo, Makurdi, Obi, Ogbadibo, Ohimini, Oju, Okpokwu, Otukpo, Tarka, Ukum, Ushongo, Vandeikya
Cross River	18	Abi, Akamkpa, Akpabuyo, Bakassi, Bekwarra, Biase, Boki, Calabar Municipal, Calabar South, Etung, Ikom, Obanliku, Obubra, Obudu, Odukpani, Ogoja, Yakurr, Yala
FCT	6	Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje, Kwali.
Kaduna	23	Birnin Gwari, Chikun, Giwa, Igabi, Ikara, Jaba, Jama'a, Kachia, Kaduna North, Kaduna South, Kagarko, Kajuru, Kaura, Kauru, Kubsau, Kudan, Lere, Makarfi, Sabon Gari, Sanga, Soba, Zangon Kataf, Zaria
Lagos	20	Agege, Ajeromi Ifelodun, Alimosho, Amuwo Odofin, Apapa, Badagry, Epe, Eti-Osa, Ibeju Lekki, Ifako Ijaiye, Ikeja, Ikorodu, Kosofe, Lagos Island, Lagos Mainland, Mushin, Ojo, Oshodi-Isolo, Somolu, Surulere
Nasarawa	13	Akwanga, Awe, Doma, Karu, Keana, Keffi, Kokona, Lafia, Nasarawa, Nasarawa Eggon, Obi, Toto, Wamba

States	Total Number of LGAs/area councils mapped	Local Government Areas mapped
Rivers	23	Abua Odual, Ahoada East, Ahoada West, Akuku Toru, Andoni, Asari Toru, Bonny, Degema, Emohua, Eleme, Etche, Gokana, Ikwere, Khana, Obio-Akpor, Ogba Egbema Ndoni, Ogu Bolo, Okrika, Omumma, Opobo Nkoro, Oyigbo, Port Harcourt, Tai.

2.4 Data collection and quality assurance

This study was implemented in collaboration with the National and State Agencies for the Control of AIDS in the eight states where the study was implemented. These agencies were included to build their capacity in geographical mapping methodology and to help facilitate the use of enumeration data for HIV prevention programming in the country. Training of field teams was conducted after finalization of the list of towns to be mapped. The approach was to train a cadre of master trainers (M&E and MIS Consultants) from the 8 SHiPS states including FCT who would then train their field teams on the mapping methodology, and also on field monitoring and quality assurance procedures. For this purpose, an initial four-days training of trainers (ToT) workshop was conducted targeting study site coordinators from each state. The study's technical team also provided considerable support for training of field data collection teams.

The fieldwork team collected and edited data at Level 1 in order to standardize names of spots and reduce duplication. Throughout the data collection process, staff of the State Agencies for the Control of AIDS undertook field monitoring and quality assurance visits to ensure that the all spots identified for validation were visited and high quality data collected. The supervisory visits also identified any security and field-access related challenges faced by the study team and addressed these with the local administration. Field monitoring visits were conducted with each field team at least once during Level 1 data collection

and at least twice during Level 2 data collection. PEPFAR (CDC) monitored the Level 1 mapping exercise while level 2 had USAID, NACA, and the State Ministry of Health to monitor the procedures/methodology, the tools, the personnel and logistics for the exercise.

Field data collection took place from August to October 2015.

2.5 Data analysis

Data were entered and processed using Epi-Data (v3.1) database with in-built quality checks. The same software was used to generate a list of hotspots and calculate MARP population size estimates by spot typology, LGA and state. The MARPs interviewed at the identified spots for validation purposes were also asked about their mobility across spots. This information on mobility was used to adjust the population size of MARPs, thereby reducing double counting of MARPs frequenting multiple spots. The adjustment for mobility was done using a mathematical model, expressed below.

$$E_i = s_i(1 - p_i) + (s_i * p_i/m_i)$$

Where E_i is the estimated number of MARPs in a site, s_i is the estimated number of MARPs at a spot level, p_i is the proportion of MARPs soliciting clients in more than one spot and m_i is the mean number of spots from which a most at risk person solicits clients. The analysis provided minimum and maximum estimates for each spot, LGA and state. To arrive at a point estimate, averages of the minimum and maximum estimates were calculated.

2.6 Ethical consideration and consent

Participation of all respondents in the study was strictly voluntary. Measures were taken to ensure the respect, dignity and freedom of each individual participating in the study. In order to guarantee the anonymity of each participant, interviewers were required to read out a consent form to each participant. This form explained the objectives of the study, considered the participant's willingness to respond to the questions and required him/her

to indicate their agreement through verbal consent. Participants provided verbal informed consent to participate in the study. They were not required to disclose any personal information and no biological specimen was obtained. The study protocol and consent procedure was reviewed and approved by the National Health Research Ethics Committee of the Federal Ministry of Health in Abuja.

2.7 Limitations of the study

To the extent possible, the methodology for the mapping exercise was comprehensively and uniformly applied across the 7 states and the FCT. However certain limitations, which are typical of a study of this scale, in attempting to estimate hidden population groups like PWID and MSM are summarized as follows:

Firstly, a central assumption is that the UoM technique as a mapping method focuses on the most key population. Whereas this is likely to identify the key locations and populations of FSW and PWID, it is less effective at identifying networks of high-risk MSM due to their highly stigmatized situation and discreet ways of interacting. To address this limitation, the Capture and Recapture methods were applied to identify the MSM key population.

Another factor that necessitates consideration is the mobility of key populations from one location to another. These weaknesses influence the size estimates of a population at an active spot or location and are beyond the researchers' control. In order to overcome them, different levels of correction factors were employed for adjusting frequency of the visit and avoiding duplication in the estimation of the population size.

Secondly, although the research team was successful in observing and interacting with PWID as required under the methodology terms for estimating the population at the active spots, some of the high-risk PWID active spots identified in two to three LGAs during the level one exercise were inaccessible during validation stage (level two). This was due to increasing high level of security threats in those areas and also among PWID themselves.

Chapter Three: Results and Findings

3.1 Level 1

This section describes the characteristics of key informants, including their educational level, and sex. A total of 30,660 secondary key informants were interviewed across 7 states and the FCT to identify spots frequently visited by key population. As shown in Table 3.1.1, the secondary key informants were predominantly male (85%). The largest number of key informants was interviewed in Cross River (n=6,356) and Lagos (n=6,114), while the least number of key informants was interviewed in Rivers (n=1,907) and Nasarawa (n=1,138). Most individuals interviewed were identified from a variety of public places such as taxi parks, bus stops, market places, fuel stations, shopping malls, streets, bars and other workplaces, etc.

Table 3.1.1: Distribution of key informants by state, Nigeria, 2015

State	Sex				Total	
	Female		Male			
	n	%	n	%	n	%
Akwa Ibom	830	21%	3,122	79%	3,952	13%
Benue	374	15%	2,121	85%	2,495	8%
Cross River	1,208	19%	5,148	81%	6,356	21%
FCT	674	13%	4,507	87%	5,181	17%
Kaduna	422	12%	3,095	88%	3,517	11%
Lagos	833	14%	5,281	86%	6,114	20%
Nasarawa	159	14%	979	86%	1,138	4%
Rivers	220	12%	1,687	88%	1,907	6%
TOTAL	4,720	15%	25,940	85%	30,660	100

The majority (n=14,584) of key informants interviewed had at least secondary level or vocational education, while 601 key informants had Qur'anic education. With exception to Nasarawa, there were more key informants who had primary education compared to those with tertiary level education across the mapped states.

Table 3.1.2: Distribution of key informants by state and by level of education, Nigeria, 2015

State	Primary	Qur'anic	Secondary /vocational	Tertiary	Un-specific	None	Total
Akwa Ibom	n/a	n/a	n/a	n/a	n/a	n/a	3,952
Benue	534	5	1,494	369	-	89	2,495
Cross River	1,594	12	3,532	1,043	-	65	6,356
FCT	870	214	2,744	637	384	322	5,181
Kaduna	633	331	1,694	421	-	492	3,517
Lagos	709	22	4,487	570	226	100	6,114
Nasarawa	203	26	633	236	19	21	1,138
Rivers	n/a	n/a	n/a	n/a	n/a	n/a	1,907
Total	**4,543**	**610**	**14,584**	**3,276**	**629**	**1,089**	**30,660**

3.2 Level 2 (FSW population size estimates)

The main focus of the geographic mapping approach was to identify spots where MARPs can be found and to derive an estimate of FSWs by type of spot. Although, data collected in level one provided these estimates, it was only after level two validation through interviews with at least one FSW from the identified spots that the final estimates were derived. This section describes active FSW spots and discusses the estimated number of FSWs in different geographic units and by types of spots.

The mapping process was conducted across 157 LGAs in 7 states and the FCT with a total of 6,450 spots identified, which were marked as regularly visited by FSWs. Lagos had the highest number of spots (2,534) while Akwa Ibom had the lowest (150).

Table 3.2.1: Distribution of FSW active spots by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/night club/casino	34	105	200	201	374	481	193	37	**1,625**
Brothel	45	59	54	212	358	733	103	268	**1,832**
Escort services	2	10	2	2	-	1	-	-	**17**
Garden/joint *	-	-	-	6	-	-	-	-	**6**
Home based	5	18	18	38	18	17	19	13	**146**
Hostel/campus based	1	-	11	-	-	14	-	1	**27**
Hotel/lodge	49	91	124	179	431	1,221	212	51	**2,358**
Market	-	-	-	1	-	-	-	-	**1**
Massage parlour	1	-	-	-	-	2	2	-	**5**
Street/public place	13	59	81	38	57	27	16	17	**308**
Trailer (truck) spot	-	1	1	-	-	1	-	1	**4**
Others (uncompleted buildings etc.)	-	1	6	-	42	37	30	5	**121**
TOTAL	**150**	**344**	**497**	**677**	**1,280**	**2,534**	**575**	**393**	**6,450**

* Joint is a term, which loosely refers to meeting point usually for social gathering.

FSWs were analyzed further by the type of spot from which they operated. The number of brothel-based FSWs as a proportion of all FSWs was higher across all the states mapped (34,874) and particularly in Lagos state (16,085). Among non-brothel based FSWs, those operating in bars/night clubs/casinos were more common in other states with the exception of Akwa Ibom, Kaduna, and Lagos states. Across all the states, there are fewer FSWs operating from markets (10), gardens/joints (70), and massage parlors (78). The number of FSWs operating from hostel/campus in Rivers state was negligible.

In addition, the overall estimated number of FSWs across the states mapped could range from a minimum of 81,188 to a maximum of 125,792 with an estimated average of 103,475. The estimated average number of FSWs was between 2,873 in Akwa Ibom and 40,863 in Lagos.

Table 3.2.2: Distribution of FSWs by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/night club/casino	815	2,052	4,175	4,129	7,621	8,451	3,782	838	31,863
Brothel	831	883	1,387	3,890	6,467	16,085	1,880	3,451	34,874
Escort services	43	115	10	27	25	45	-	-	265
Garden/joint	-	-	-	70	-	-	-	-	70
Home based	43	116	154	836	145	257	88	253	1,892
Hostel/campus based	38	-	224	-	-	233	-	5	500
Hotel/lodge	840	1,049	2,182	2,722	8,363	14,833	2,803	776	33,568
Market	-	-	-	18	-	-	-	-	18
Massage parlour	18	-	-	-	17	43	-	-	78
Street/public place	247	1,404	1,426	607	1,469	694	155	229	6,231
Trailer (truck) spot	-	-	10	-	30	10	-	145	195
Others (uncompleted buildings etc.)	-	25	177	-	960	212	159	32	1,565
TOTAL	2,875	5,644	9,745	12,299	25,097	40,863	8,867	5,729	111,119
FSW estimates on a peak day									
Minimum	2,416	3,435	5,998	10,202	15,792	31,790	7,046	4,509	81,188
Maximum	3,330	5,644	9,745	14,391	25,112	49,994	10,664	6,912	125,792
Average	2,873	4,540	7,872	12,297	20,452	40,863	8,867	5,711	103,475

In terms of mean number of FSWs per spot, Table 3.2.3 reveals that Cross River and Kaduna states had an average of 20 FSW on a peak day per spot while Nasarawa and Rivers had the least number with 15 FSWs per spot.

Table 3.2.3: Distribution FSW density by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers
Bar/night club/casino	24	20	21	21	20	18	20	23
Brothel	18	15	26	18	18	22	18	13
Escort services	22	12	5	14	†	-	-	-
Garden/joint	-	-	-	12	-	-	-	-
Home based	9	6	9	22	8	15	5	19
Hostel/campus based	†	-	20	-	-	17	-	†
Hotel/lodge	17	55	18	15	19	12	13	15
Market	-	-	-	†	-	-	-	-
Massage parlour	†	-	-	-	†	22	†	-
Street/public place	19	24	18	16	26	26	10	13
Trailer (truck) spot	-	††	-	-	†	-	-	†
Others (uncompleted buildings etc.)	-	13	27	-	23	7	5	6
MEAN per spot	19	16	20	18	20	16	15	15

† no measure of central tendency

†† value added in the list of numbers for *others (uncompleted building etc.)*

3.3 Level 2 (PWID population size estimates)

As shown in table 3.3.1, in total, 2085 active PWID spots were identified across the states. Kaduna had the highest number of spots (901). Majority of the spots found were street based. Escort service based, market based and massage parlors spots were only identified in Nasarawa, Akwa Ibom and FCT respectively.

Table 3.3.1: Distribution of PWID active spots by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/night club/casino	9	7	38	9	54	3	41	2	**163**
Brothel	5	2	3	2	36	-	10	1	**59**
Bunk/joint	-	-	111	-	-	-	-	-	**111**
Escort service	-	-	-	-	-	-	1	-	**1**
Home based	14	34	12	5	99	154	51	-	**369**
Hostel/campus based	-	-	-	-	-	-	5	1	**6**
Hotel/lodge	4	3	15	-	54	1	2	7	**86**
Market	-	-	-	2	-	-	-	-	**1**
Massage parlour	1	-	-	-	-	-	-	-	**2**
Street/public place	25	48	6	6	613	72	168	42	**980**
Trailer (truck) spot	1	2	2	2	-	-	25	-	**32**
Uncompleted buildings	3	3	5	7	18	-	30	7	**73**
Under the bridges	2	2	-	-	9	-	6	5	**24**
Others (under tree/bush etc.)	25	16	-	8	18	-	36	75	**178**
TOTAL	**89**	**117**	**192**	**41**	**901**	**230**	**375**	**141**	**2,085**

Table 3.3.2. shows the number of PWID by type of spots and states. Information about the proportion of PWID found in massage parlors was not available at the time of completing this report, hence the lowest number of PWID (7) who self-identified with escort services. More than one-third of PWIDs self-identified as operating in street/public places.

The proportion of PWID in Cross River and Lagos states combined equaled more than half of the total PWID identified, while Akwa Ibom had the lowest number of PWID (741).

The overall estimated number of PWID across the states mapped could range from a minimum of 30,490 to a maximum of 56,026 with an estimated average of 43,260. The estimated average number of PWID was between 739 in Akwa Ibom and 23,285 in Kaduna.

Table 3.3.2: Distribution of PWID by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/night club/casino	122	72	873	355	n/a	41	276	21	**1,760**
Brothel	31	205	70	12	n/a	-	57	-	**375**
Bunk/joint	-	-	3,456	-	n/a	-	-	-	**3,456**
Escort service	-	-	-	-	n/a	-	7	-	**7**
Home based	136	657	240	128	n/a	3,645	372	-	**5,178**
Hostel/campus based	-	-	-	-	n/a	-	26	9	**35**
Hotel/lodge	48	32	384	-	n/a	23	10	53	**550**
Market	-	-	-	101	n/a	-	-	-	**101**
Massage parlour	-	-	-	-	n/a	-	-	-	**0**
Street/public place	250	961	175	47	n/a	1,516	1,120	1,979	**6,048**
Trailer (truck) spot	-	17	95	230	n/a	-	172	7	**521**
Uncompleted buildings	3	30	185	325	n/a	-	228	114	**885**
Under the bridges	33	36	-	-	n/a	-	8	107	**184**
Others (under tree/bush etc.)	118	120	-	385	n/a	-	287	1,774	**2,684**
TOTAL	741	2,130	5,478	1,583	-	5,225	2,563	4,064	**21,784**
PWID estimates on a peak day									
Minimum	564	1,494	2,319	1,372	16,927	3,682	1,093	3,039	**30,490**
Maximum	914	2,130	5,478	1,791	29,642	7,002	3,998	5,071	**56,026**
Average	739	1,812	3,899	1,583	23,285	5,342	2,545	4,055	**43,260**

The mean number of PWID per spot across the states ranged between 1 and 115 except for Kaduna where certain information was not available at the time of synthesizing the national report. FCT had the highest average **of 39**

PWID on a usual day per spot while Nasarawa and Akwa Ibom states had the least density with 7 and 8 PWID per spot respectively. As shown in Table 3.3.3, Kaduna had the highest estimated population of PWID who share needles while FCT had the least population who share needle.

Table 3.3.3: Distribution of PWID density by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers
Bar/night club/casino	14	10	23	39	n/a	14	7	10
Brothel	6	103	23	6	n/a	-	6	†
Bunk/joint	-	-	31	-	n/a	-	-	-
Escort service	-	-	-	-	n/a	-	†	-
Home based	10	19	20	26	n/a	24	7	-
Hostel/campus based	-	-	-	-	n/a	-	5	†
Hotel/lodge	12	11	26	-	n/a	†	5	8
Market	-	-	-	50	n/a	-	-	-
Massage parlour	†	-	-	-	n/a	-	-	-
Street/public place	10	20	29	8	n/a	21	7	47
Trailer (truck) spot	†	9	48	-	n/a	115	7	†
Uncompleted buildings	1	10	37	46	n/a	46	8	16
Under the bridges	17	18	-	-	n/a	-	1	21
Others (under tree/bush etc.)	5	8	-	48	n/a	-	8	24
TOTAL	8	18	29	39	-	23	7	29
PWID sharing needles	286	211	2,244	208	9,573	2,091	1,435	813

† no measure of central tendency

3.4 Capture and re-capture (MSM population size estimates)

Table 3.4.1 contains a summary of the key socio-demographic characteristics of MSM. A total of 19,129 MSM were captured during the capture and recapture phase. Majority of the MSM group were between 20 to 29 years. Of the 19,021 MSM that stated their marital status, only 1,986 were currently married and 1,305 were living with a partner. The overwhelming majority (11,782) were neither married nor living with a sex partner. However, in FCT, there were more MSM (3,165) formerly married.

Of the MSM group seen at the two stage count, the majority of MSM (8,590) completed secondary education, and 7,867 of them had completed tertiary education. FCT had the highest educational attainment among this group with more than half of the total number of MSM group in FCT completing secondary school. Almost half of the MSM (9,195) were still students as at the time of enumeration. More than a quarter of MSM were either self-employed or employed. In contrast, there are more unemployed MSM in Benue, Cross River, Kaduna and Nasarawa than those actually employed.

Table 3.4.1: Distribution of selected demographic characteristics of MSM, Nigeria 2015

Socio-demographic variables	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Age (years)									
≤19	161	117	145	312	229	257	189	59	**1,469**
20-24	796	430	786	1,560	1,393	1,386	971	348	**7,670**
25-29	664	348	731	1,560	1,010	1,150	689	288	**6,440**
≥30	209	170	425	981	620	708	264	95	**3,472**
No response	8	2	23	45	-	-	-	-	**78**
Total	1,838	1,067	2,110	4,458	3,252	3,501	2,113	790	**19,129**
Marital status									
Married	153	108	170	268	541	430	240	76	**1,986**
Cohabiting	223	87	252	178	173	256	93	43	**1,305**

Socio-demographic variables	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Never married	1,379	833	1,571	669	2,391	2,631	1,672	636	**11,782**
Formerly married	48	39	59	3,165	53	75	66	27	**3,532**
No response	35	-	58	178	-	109	36	-	**416**
Total	1,838	1,067	2,110	4,458	3,158	3,501	2,107	782	**19,021**
Education									
No education	57	17	17	134	128	22	56	16	**447**
Vocational	118	19	132	223	117	142	95	50	**896**
Qur'anic only	6	12	6	268	174	7	43	3	**519**
Primary	46	43	21	134	198	63	59	2	**566**
Secondary	842	595	823	2,318	1,308	1,351	1,037	316	**8,590**
Tertiary	757	381	1,086	1,248	1,268	1,916	813	398	**7,867**
No response	12	-	25	89	-	-	10	-	**136**
Total	1,838	1,067	2,110	4,414	3,193	3,501	2,113	785	**19,021**
Employment status									
Student	994	562	981	1,739	1,777	1,567	1,226	349	**9,195**
Self-employed	409	244	547	1,337	809	767	427	182	**4,722**
Not employed	178	141	300	401	320	258	242	124	**1,964**
Employed	237	124	260	892	275	879	202	132	**3,001**
No response	20	-	22	89	-	-	16	-	**147**
Total	1,838	1,071	2,110	4,458	3,181	3,471	2,113	787	**19,029**

As shown in Table 3.4.2, a total of 15,793 MSM were interviewed at the first count (Capture). Of this, 4,002 were interviewed in streets/public areas; 3,788 were interviewed in bars/cafés/restaurants; 3,221 were interviewed in private residence, and only 4 persons were interviewed in garden/joints. The highest number interviewed was 3,554 in FCT while the least was 769 in Rivers state.

At the second count, out of the 4,687 MSM enumerated, 1,324 were identified in bars/cafés/restaurants; 1,044 in streets/public areas, and only 2 in gardens/joints. The highest number of interviews took place in Kaduna and Lagos each with over a thousand of the total population recaptured. The least (429) number of interviews took place in Benue state.

Table 3.4.3: Distribution of MSM identified using Capture method by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/café/restaurant	346	208	594	905	597	660	210	268	**3,788**
Beach/lake/river bank	28	1	50	46	17	87	10	6	**245**
Cinema	42	16	51	61	125	100	39	26	**460**
Garden/joint	-	-	-	4	-	-	-	-	**4**
Hotel/lodge	146	185	217	276	404	319	196	176	**1,919**
Night club	-	-	-	10	-	-	-	-	**10**
Private home/residence	78	295	282	946	705	417	397	101	**3,221**
Shopping area	62	57	103	318	271	95	223	31	**1,160**
Street/public area	265	212	501	948	854	607	533	82	**4,002**
Tertiary institution	-	-	-	13	-	-	-	-	**13**
Others *	125	81	275	27	190	137	57	79	**971**
No response	-	-	-	-	-	-	-	-	**0**
Total	1,092	1,055	2,073	3,554	3,163	2,422	1,665	769	**15,793**
* Others include barbing salon and markets									

Table 3.4.3: Distribution of MSM identified using Recapture method by spot typology and by state, Nigeria, 2015

Type of Spot	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	Total
Bar/café/restaurant	178	123	n/a	209	379	345	90	n/a	**1,324**
Beach/lake/river bank	46	-	n/a	-	4	73	1	n/a	**124**
Cinema	48	3	n/a	11	54	22	26	n/a	**164**
Garden/joint	-	-	n/a	2	-	-	-	n/a	**2**
Hotel/lodge	86	71	n/a	44	95	125	18	n/a	**439**
Night club	-	-	n/a	24	-	-	-	n/a	**24**
Private home/residence	43	79	n/a	182	196	184	92	n/a	**776**
Shopping area	48	23	n/a	184	76	28	75	n/a	**434**
Street/public area	175	81	n/a	196	294	160	138	n/a	**1,044**
Tertiary institution	-	-	n/a	-	-	-	-	n/a	**0**
Others *	71	49	n/a	50	85	93	8	n/a	**356**
No response	-	-	-	-	-	-	-	-	**0**
Total	695	429	n/a	902	1,183	1,030	448	n/a	**4,687**
* Others include barbing salon and markets									

Formula for calculating capture recapture, to determine the number of MSM estimates in the state.

- c_1= Captured in first count
- c_2= Captured in second count
- m=Matches (Captured in both counts)
- n=Estimated population size

$$\frac{c_1}{n} = \frac{m}{c_2} \quad n = \frac{c_1 * c_2}{m}$$

$$95\% \ \mathbf{CI} = n \pm 1.96 * \sqrt{\mathbf{Var}(n)}$$

$$\mathbf{Var}(n) = \frac{c_1 * c_2 * (c_1 - m) * (c_2 - m)}{m^3}$$

The estimated size of the population of MSM across the study locations is 26,060 with a 95% confidence interval of 20,578 to 22,033 – with exclusion of Cross River and River states data.

Table 3.4.4: Estimation of the size of MSM population, Nigeria, 2015

Location	First Count		Second Count		
	ACCEPT	REFUSE Tag 1st time	New CAPTURE	Total People RECAPTURE	REFUSE Tag 2nd time
Akwa Ibom	875	222	1,022	329	102
Benue	943	130	332	577	12
Cross River	2,017	93	2,620	1,560	67
FCT	3,228	326	580	2,915	325
Kaduna	2,822	357	771	1,289	335
Lagos	2,422	15	1,0791	2,165	0
Nasarawa	1,660	n/a	1,121	680	n/a

Location	First Count		Second Count		
	ACCEPT	REFUSE Tag 1st time	New CAPTURE	Total People RECAPTURE	REFUSE Tag 2nd time
Rivers	713	77	971	605	18

	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers
Total MSM estimate	3,588	1,485	3,509	4,159	4,509	4,828	2,737	1,245
95% Confidence limits (Lower)	3,321	1,439	n/a	4,106	4,398	4,677	2,637	n/a
95% Confidence limits (Upper)	3,855	1,531	n/a	4,212	4,620	4,979	2,836	n/a

Health seeking behavior

Table 3.4.5 shows that a higher proportion of the MSM enumerated in both counts reported a preference for accessing healthcare services in public facilities followed by private facilities.

Table 3.4.5: Percentage of MSM group using health services by type and by state, Nigeria, 2015

Facilities		Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers
Public	Capture	n/a	51.7	n/a	33	49.5	51.2	66.8	n/a
	Recapture	n/a	60.2	n/a		40.4	58.6	68.8	n/a
Private	Capture	n/a	43.4	n/a	45	36.6	68.9	24.3	n/a
	Recapture	n/a	39.2	n/a		42.2	64.5	24.8	n/a
Herbal/ traditional	Capture	n/a	7.0	n/a	6	23.1	13.2	7.3	n/a
	Recapture	n/a	4.5	n/a		23.6	12.4	6	n/a
Others *		-	-	-	17	-	-	-	-
* Others include chemist, pharmacy, self-medication, religious home, NGO									

Means of communication

Table 3.4.6 shows that the three most common means of communication among MSM in the two phases respectively were identified as phone calls, social media and with other friends. However, the least preferred means of communication were Twitter and through pimps and parties, etc.

Table 3.4.6: Most preferred means of communication for MSM group by state, Nigeria, 2015

Facilities		Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers
Email	Capture	4.8%	11.5%	10.7%	7%	7.5%	25.4%	2.1%	4.9%
	Recapture	2.9%	15.9%	3.2%		10.1%	26.8%	1.8%	4.5%
Phone calls	Capture	58.7%	67.5%	75.4%	26%	61.8%	83.0%	47.9%	46.7%
	Recapture	37.1%	70.8%	32.6%		65.2%	81.7%	64.3%	25.6%
Social media *	Capture	47.9%	63.7%	41.0%	34%	53.8%	86.2%	52.4%	74.4%
	Recapture	29.9%	73.8%	20.6%		57.2%	87.8%	47.8%	50.8%
Through a friend	Capture	47.5%	44.5%	40.0%	24%	67.3%	78.6%	32.6%	55.9%
	Recapture	35.5%	49.9%	18.1%		78.9%	84.9%	29.2%	36.3%
Twitter	Capture	6.8%	9.3%	7.3%	9%	5.7%	24.4%	3%	15.8%
	Recapture	3.9%	11.9%	2.1%		8.2%	20.2%	4.2%	12.1%
Others **	Capture	-	-	-	0%	-	100%	-	2.6%
	Recapture	-	-	-		-	100%	-	98.5%

* Social media include 2go; Manjam; Whatsapp; Bgclive; Planet; Romeo; Facebook; Badoo

**Others include pimps and parties

Sexual history and practice

Sexual behavior is vital in assessing factors contributing to the HIV&AIDS epidemic, and understanding their sexual history will guide measures to reduce the prevalence of HIV&AIDS and other STIs. The sexual risk of HIV transmission was assessed for MSM by examining type of sexual partnerships in the past 12 months and the rates of condom use in

these partnerships. Table 3.4.7 presents information on the MSM's sexual history and condom use. More than half (59.8%) of the MSM reported that they had sex with men in the last 12 months. Among those who had sex with other men in the last 12 months, more than half (52.5%) used condoms. More than two-fifths (43.3%) of the MSM self-identified as bisexuals.

Table 3.4.7: Sexual history and condom use of MSM by state, Nigeria, 2015

	Akwa Ibom	Benue	Cross River	FCT	Kaduna	Lagos	Nasarawa	Rivers	TOTAL
Those who had sex with a man in the last 12 months in exchange for money/goods	60.6%	57.3%	45.6%	n/a	73.0%	54.0%	60.5%	67.3%	59.8%
Those who used a condom among those who had sex with a man in exchange for money/gift	78.5%	35.1%	64.4%	n/a	43.9%	63.7%	39.6%	42.5%	52.5%
Those who had sex with a woman during the last 12 months	40.0%	33.5%	48.0%	36.0%	50.6%	45.2%	43.0%	49.9%	43.3%

Chapter Four: Discussions and Programmatic Implications of Findings

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This study has provided a significant understanding of key population size estimate; location and relevant information that will help improve characterization of drivers of the HIV&AIDS epidemic. This will ensure that HIV prevention programmes match the local epidemic context, with resources allocated to interventions that will have great impact. Information on the location of a spot and the number of key populations attached to each spot serves as a valuable tool for planning services and intervention (Emmanuel et al., 2010). For example, a significant proportion of sex workers in the states mapped operate from hotels/lodges and bars/night clubs; strategies such as engaging pimps, hotel staff and the bar/night club staff to facilitate outreach and services (Ikpeazu A et al., 2014) can be employed.

4.1 FSW population

Insights resulting from the methodology design that achieved reliable state-level data highlighted important contributions from the 2015 mapping and characterization of MARPs in Nigeria. Although it is well known and accepted that FSWs are a high risk group in the scope of the HIV epidemic, the estimates of the population of FSWs presented in this study show how important this most at risk population group is in Nigeria. This study revealed FSW active spots across the states mapped, identifying the various typologies of spots across these states. The total number of active spots recorded within the states in this study was 6,450 (Table 3.2.1).

When compared with a similar study carried out in 2012, there are differences observed in the number of spots identified in certain states such as Lagos. This may be due to the number of FSWs, which changes constantly over time and by place. FSWs move in and out of sex work according to their financial needs, and they migrate following seasonal laborers and tourists, or client flow or move through a region or in-between regions along highways and sometimes across borders.

Perhaps most important among the contributions are the new insights observed with the clusters of states in this study. The cluster of Kaduna–FCT–Nasarawa–Benue–Cross River–Akwa Ibom–Rivers provide proximity, which could be the basis for cost effective program implementation with human, material and fiscal resources in perspective.

4.2 PWID population

This study has been able to highlight active spots of PWID, identifying the various typologies of active spots across the mapped states. The total number of active spots recorded within the state and estimated population of PWID compared with a recent similar study (LEA 2012) shows that this research reported more numbers of PWID in certain states where both studies were conducted. For example, in the LEA report 2012, bar/night club and hotel/lodge were the most prevalent PWID spot types identified in Lagos state. This current study differs by recording home-based spots as the most common type in Lagos state.

During the mapping exercise some spots could not be identified specifically due to security issues and cultural sensitivity. However, the common peculiarity with high active spots such as environmental and socio-cultural factors should be considered in program planning and resource utilization. Streets and home based were the most common type of active spots for PWIDs recorded in this study. Street and home based combined accounted for one-third of all active spots validated. This suggests that it is important for more PWID-friendly interventions to be targeted at streets and home-related bunks.

The survey found that needle sharing among PWID was high across the various types of spots validated. This situation is an indication that PWID found in these spots could be more at risk of HIV transmission. Specific interventions, especially in harm reduction should be prioritized for these spot types. Additional research should be done to explore reasons for needle sharing among PWID, in order to better understand the potential for the wider spread of HIV.

4.3 MSM population

This study also revealed that MSM are dynamic and highly mobile as demonstrated by the difference in community members enumerated in the two counts. This study revealed that a larger proportion of members of the community are young (less than 30 years old). In the data generated on marital status of MSM, 10.4% of the community members enumerated reported that they are married. In addition, more than two-thirds (43.3%) of the community members self-reported that they had sex with a woman during the last 12 months.

This highlights the considerable scope for targeted interventions including a youth-friendly HIV&AIDS prevention program, which will target the more than 80% of the MSM group below 30 years; in addition to focused prevention programs for married MSM and those who self-identify as bisexuals. This section of the group is a linkage subgroup between the MSM and general population.

5.1 Conclusion

The enumeration of most-at-risk populations provides an important starting point for both macro- and micro-level planning of HIV prevention programmes. This includes the prioritisation of locations for establishing such programmes, determining the initial value of services required, and coordinating the provision of HIV prevention programmes for MARPs throughout the country.

This study represents an important national-level mapping of MARPs to be conducted in Nigeria. A key advantage of this approach is that it is transparent, making it possible for stakeholders implementing programmes with MARPs to continuously update the estimates provided. The mapping data can be used in MARP programmes for a variety of purposes, including programme design and programme evaluation. Programme coordination is also a challenge in Nigeria, as different organizations funded by different donor agencies implement MARP-related programmes, sometimes overlapping within the same locality. The new data will allow the state governments (SACAs) in Nigeria to play a greater role in MARP programme planning and implementation.

Indeed, this study was an ambitious one in scale as well as scope, by mapping demographic, typological and behavioral parameters among three most-at-risk sub-population groups, including those difficult to access and subject to stigma, discrimination and often persecution. It employed a range of methods, and was designed to produce reliable state-level data for groups surveyed. As such it provided important data that would be sued by both the national and state-level agencies for the control of AIDS to monitor the coverage and quality of existing HIV prevention programmes for MARPs throughout the country.

5.2 Recommendations

The report clearly highlights locations where interventions should focus. Data must be used to prioritize resource allocation and plan for an extension or the design of prevention services in these locations. These findings should form an integral part of the geographical prioritization scheme and target settings in the upcoming National Strategic Plan. Coverage and achievement must be decentralized and percolated down to the local level for effective monitoring.

For optimum saturation of programming in the mapped states, mobile outreaches should be used to augment other interventions with high numbers of active spot and MARPs, especially where resources for programming are limited in the state. This study discovered many locations where the estimated size of the MARP subgroups appeared lower than the threshold required to initiate targeted interventions. However, in order to prevent a sudden surge of the HIV epidemic in these locations, the national and state programmes should undertake innovative strategies to ensure coverage of these population groups and provision for a continuum of services to them. Moreover, the national programme should monitor the trend regularly so that the dynamic pattern of transmission in these locations can be tracked and corrective actions taken in a timely manner. One plausible option could be to commence composite targeted interventions for multiple MARP groups by initially providing a minimum package of services to them.

The findings of this mapping study can be extremely useful for increasing the effectiveness and efficiency of targeted interventions by using the detailed data on size, spread, behavioral patterns, etc. Detailed state reports which reflect the locations and active spots of MARP groups and critical information analyzed at LGA level are available at SACA offices in the states covered in this study. This information should be used to plan programmes, cover previously left out active spots; work out LGA-wise targets; and identify the programme components that require improvement. In addition, the information can be used to relocate HCT/STI service delivery points; open/stock-up additional condom outlets; decide the most efficient work schedule for peer educators and outreach workers; and etc.

If put to proper use, these data sets can considerably enhance the effectiveness of targeted interventions and expand their coverage. In addition, the findings suggest the need for state unified operational plans (SUOP). Data available in this report should be used as a baseline for state-based work planning processes.

As is clear from the analysis, a substantial number of PWID have been initiated into drug use, including injecting drug use, at an early age and many PWID were initiated at younger than 19-years-old. This highlights the need to ensure expansion of services to this young population before they are exposed to high-risk behavior. Therefore, programme monitoring should separately focus on and conduct follow up studies on PWID covered in this study, in order to identify them at younger ages. This also calls for the need to ensure age disaggregated monitoring of prevention, care and treatment programmes.

Since the dynamics of HIV epidemic transmission keep changing; this kind of mapping exercise should be repeated periodically, preferably at three to four year intervals in order to identify new active spots and emerging locations with MARP sub-populations. For LGAs that have not been mapped in this exercise, it is recommended that studies like light mapping be undertaken to validate the assumptions made for deciding the scheme for extrapolation. Some limitations observed in this study, such as types of substances used in various spots, age distribution of PWID, disaggregation by sex (male or female) and indications of top and middle class PWID locations were not indicated. This underscores the need for future studies, which will aid programme planning and implementation.

As demonstrated by this study, the true national picture of the presence of MARPs will emerge only when states excluded from this study are covered. It is recommended that the capacity of states not covered in this study be developed so that they can undertake the same exercise in their respective states.

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National Health Research Ethics Committee of Nigeria (NHREC)

Promoting Highest Ethical and Scientific Standards
for Health Research in Nigeria

Federal Ministry of Health

NHREC Protocol Number NHREC/01/01/2007-08/04/2015
NHREC Approval Number NHREC/01/01/2007-20/06/2015
Date: 20th June 2015

RE: CHARACTERIZATION AND SIZE ESTIMATION OF MOST AT RISK POPULATION IN NIGERIA

Health Research Ethics Committee (HREC) assigned number: NHREC/01/01/2007

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Date of receipt of valid application: 08-04-2015
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Notice of Exempt Review Determination

This is to inform you that the research described in the submitted protocol, the consent forms, advertisements and other participant information materials have been reviewed and is determined to be exempt from ethical oversight by the National Health Research Ethics Committee.

However any changes to the protocol or related study materials must be communicated to NHREC for further necessary determination.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the HREC. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.

Signed

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