FEDERAL REPUBLIC OF NIGERIA

PROTOCOL VERSION 1.8

Mapping and Size Estimation of Key Populations in Nigeria

September 2018

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
BBFSW	Brother-based Female Sex Workers
CBO	Community-based Organization
CDC	US Centers for Disease Control and Prevention
CI	Confidence interval or credibility interval
CRC	Capture-recapture
DATIM	Data for Accountability Transparency and Impact
DHS	Demographic and Health Survey
FCT	Federal Capital Territory
FMoH	Federal Ministry of Health
FSW	Female Sex Worker
GBV	Gender Based Violence
GON	Government of Nigeria
HIV	Human Immunodeficiency Virus
HTTPS	Hyper Text Transfer Protocol Secure
IBBSS	Integrated Biological and Behavioral Surveillance Survey (now known as biobehavioral surveys or BBS)
KP	Key Population
KPMSE	Key Population Mapping and Size Estimation
LACA	Local Action Committee on AIDS
LGA	Local Government Areas
MARPs	Most-At-Risk-Population
MSM	Men who have Sex with Men
MSW	Male Sex Workers
NACA	National Agency for the Control of AIDS
NARHS	National HIV & AIDS and Reproductive Health Survey
NASCP	National HIV/AIDS and Sexual Transmitted Disease Control Program

NDLEA	National Drug Law Enforcement Agency
NHREC	Nigerian Health and Ethical Research Committee
NTT	National Technical Team
NBBFSW	Non-brothel-based Female Sex Workers
OSS	One-Stop Shop
PACA	Police Action Committee on AIDS
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PII	Personally Identifiable Information
POC	Point of Contact
PWID	People Who Inject Drugs
SFH	Society for Family Health
SACA	State Agency for the Control of AIDS
SASCP	State AIDS/STIs Control Programme
STT	State Technical Team
TWG	Technical Working Groups
UMB	University of Maryland Baltimore
WHO	World Health Organization

INVESTIGATORS AND INSTITUTIONAL AFFILIATIONS

Name	Affiliation/Contact Info	Position	SEV number
Principal Investigators			
Dr. Sunday Aboje	National HIV/AIDS and Sexual Transmitted Diseases Program (NASCP)	Program Coordinator	NA
Dr. Sanni Aliyu	National AIDS Control Agency Nigeria	Director General	NA
Co-Investigators			
Dr. Charles Nzelu	National HIV/AIDS and Sexual Transmitted Diseases Program (NASCP)	Head of Strategic Information NASCP	NA
Dr. Deborah Odoh	National HIV/AIDS and Sexual Transmitted Diseases Program (NASCP)	Head of HIV Prevention Unit	NA
Dr. Greg Ashefor	National AIDS Control Agency Nigeria	Head Strategic Information and Knowledge Management Unit	NA
Dr. Mahesh Swaminathan	US-Centers for Disease Control and Prevention Nigeria	Country Director	16975
Dr. Victor Sebastian	US-Centers for Disease Control and Prevention Nigeria	Senior Program Specialist HIV Surveillance	7404
Victor Adamu	US-Centers for Disease Control and Prevention Nigeria	Senior Program Specialist HTS	2594
Amee Schwitters	US-Centers for Disease Control and Prevention Nigeria	Senior Technical Advisor Prevention	13625
Dr. Ibrahim Jahun	US-Centers for Disease Control and Prevention Nigeria	Team Lead Survey and Surveillance Unit	19322

Dr. Jerry Gwamna	US-Centers for Disease Control and Prevention Nigeria	Branch Chief HIV Prevention	9309
Dr. Ibrahim Dalhatu	US-Centers for Disease Control and Prevention Nigeria	Branch Chief Strategic Information	14589
Dr. Mukhtar Ahmed	US-Centers for Disease Control and Prevention Nigeria	Science Advisor	18137
Aminu Yakubu	US-Centers for Disease Control and Prevention Nigeria	Science Program Specialist	6654
Dr. Anne McIntyre	US-Centers for Disease Control and Prevention, Atlanta	Epidemiologist	6267
Dr. Manhattan Charurat	University of Maryland School of Medicine (UMB) Baltimore, USA.	Director, IHV Division of Epidemiology and Prevention	NA
Julia Lo	University of Maryland School of Medicine (UMB) Baltimore, USA.	Epidemiologist	NA
Nwafor Samuel	University of Maryland School of Medicine (UMB) Abuja, Nigeria .	Epidemiologist	NA

ROLES

The principal investigators (PIs) will be responsible for the coordination and oversight of protocol development, project design, project funding/oversight of implementation, data collection, analysis, report writing and dissemination. Co-investigators will be directly involved in project design, project implementation, data collection, analysis, report writing and dissemination. Co-investigators will work directly with the PI.

CDC co-investigators however will only be involved in project design, implementation monitoring, data analysis, report writing and dissemination. They will not be involved in data collection activities nor will they have access to clients' personally identifiable information (PII).

PARTICIPATING INSTITUTIONS

Federal Ministry of Health (FMOH) Nigeria

National AIDS Control Agency Nigeria

University of Maryland Baltimore (UMB)

United States Centers for Disease Control and Prevention—Country Office (CDC **-** Nigeria)

United States Centers for Disease Control and Prevention- Headquarters (CDC-Atlanta/HQ)

Point of Contact: Victor Sebastian, Senior Program Specialist, Epi-SI/HSS Branch, US Centers for Disease Control and Prevention, Abuja Nigeria. Cellphone # +2347034032608; Email: wzn3@cdc.gov; SEV#7404.

ABSTRACT

The Nigeria key population size estimation exercise will aim to estimate the population size of men who have sex with men (MSM), people who inject drugs (PWID) and female sex workers (FSW), groups considered at high risk for HIV infection due to their specific social and behavioural characteristics. Using various epidemiological methods, keeping in mind the hidden and mobile nature of these populations, we will derive a point and interval estimate of FSW, MSM, and PWID population sizes in Federal Capital Territory (FCT) and 6 states where the 32 U.S. President's Emergency Plan for AIDS Relief (PEPFAR) scale-up Local Government Areas (LGAs) are located . Establishing an accurate estimate of the number of people at increased risk will allow Nigeria to plan and implement HIV prevention, care and treatment programs for these key populations (KP).

1 INTRODUCTION

1.1 BACKGROUND

Nigeria has the second largest HIV burden in the world with an estimated 3.2 million people living with HIV (PLHIV)[1]. Since the peak in 1998, when UNAIDS estimated 350,000 new infections, there has been a decline in new infections in the general population with an estimated 215,073 new infections in 2016. Out of this number, 78,557 are new infections among people aged 15-24 years[1]. According to the Nigeria National HIV & AIDS and Reproductive Health Survey (NARHS) 2012, the national HIV prevalence in the general population suggested signs of stabilizing around 3%. However, this still varies by geographic location in-country[2]. For example, the general population prevalence ranged from 0.4% in Zamfara state to 15% in Rivers state [2]. Furthermore, variations also exist amongst age groups (2.9% among those aged 15 to 19, 4.4% among those aged 35 to 39), sex (5.3% among men aged 35 to 39, 3.5% among women aged 35 to 39)[2]. Data from this study also reveals low national testing rates with only 29.2% of females and 23.5% of males ever tested and received their result for HIV[2].

The Integrated Biological and Behavioural Surveillance Survey (IBBSS) (2014) reports the following prevalence of HIV among key populations (KP) including men who have sex with men (MSM), female sex workers (FSW), and people who inject drugs (PWID): an HIV prevalence of 19.4% among brothel-based female sex workers (BBFSW), 8.6% in non-brothel-based female sex workers (NBBFSW), 22.9% among MSM and 3.4% among PWID[3]. Unfortunately, the current national HIV prevalence in Nigeria masks the disproportional contributions of KP to the epidemic. This is because the epidemic appears to be “mixed” in many regions, driven by HIV transmission both within networks involving KP and within segments of the wider “general” population who have multiple partners and/or belong to sexual networks.

There have been few efforts to estimate the size of KPs in Nigeria. Largely, these studies have been limited in scope and coverage. For example, Adebajo et al. (2013), provided estimates for male sex workers (MSWs) in only three cities (Lagos, Kano and Port Harcourt) [4]. The local epidemic appraisal study by National Agency for the Control of AIDS (NACA) in 2013 was conducted in only eight states (Abuja FCT, Anambra, Benue, Cross River, Gombe, Lagos, Nasarawa, and Ondo) out of the 36 + 1 states in Nigeria. The “Mapping and characterization study of Most at Risk Populations (MARPs)” conducted by Society for Family Health (SFH) in 2015 was done in only eight states (FCT, Kaduna, Lagos, Cross River, Rivers, Benue, Nassarawa and Akwa Ibom). While these studies had an overlap in number of states (five) where these studies were conducted, the methodologies were largely different with various KP size estimates obtained

1.2 LITERATURE REVIEW

It is expedient to have reliable data on any population which is targeted for a public health intervention. This is key to achieving program goals. A reliable denominator enables proper planning and design of appropriate interventions for specific populations and locales.

In 2013, NACA conducted an HIV epidemic appraisal and published a report with KP size estimates for the first eight states (i.e., Abuja FCT, Anambra, Benue, Cross River, Gombe, Lagos, Nasarawa, and Ondo) [5]. The methodology used was: hotspot mapping, venue profiling, and rural appraisals. A total of 11,523 hotspots were identified, with an estimated population of more than 125,000 FSWs, 6,000 PWID, and over 7,500 MSM across the eight states[5]. In 2013, Adebajo et al., conducted a size estimate of MSWs in three major cities in Nigeria[4]. Using capture-recapture (CRC) methodology, the study estimated the number of MSWs in Lagos, Kano, and Port-Harcourt between July and December 2009. Using key informants, hotspots were mapped, and counts conducted on two consecutive weekends. The highest number of MSWs identified was in Port-Harcourt (n = 723), followed by Lagos (n = 620), and Kano (n = 353). In 2015, SFH conducted a "Mapping and characterization study of Most at Risk Populations (MARPs)" using hotspot mapping and profiling, (commonly referred to as the University of Manitoba Level 1/2 method). The study revealed an estimated FSW population of 103,475, 43,260 PWID, and over 26,060 MSM across the eight states[6].

Table 1: Summary of Key Population Size Estimates Previously Conducted in Nigeria

	Author and date	**State (s)**	**KP group**	**Population size**	**Methodology**
1	Adebajo et al. 2013	Rivers, Lagos and Kano	MSW	1,696	CRC
2	NACA 2013	Abuja FCT, Anambra, Benue, Cross River, Gombe, Lagos, Nasarawa, and Ondo	MSM	7,500	Hotspot mapping, venue profiling, and rural appraisals (variation of the University of Manitoba approach)
			PWID	6,000	
			FSW	125,000	
3	SFH 2015	FCT, Kaduna, Lagos, Cross River, Rivers, Benue, Nassarawa and Akwa Ibom	MSM	26,060	1. CRC for MSM 2. Hotspot mapping and venue profiling for PWID and FSW‡ ‡(commonly known as the University of Manitoba approach)
			PWID	43,260	
			FSW	103,475	

Current program data from PEPFAR (DATIM Q3 program results) as of March 2017, indicate that, cumulatively, PEPFAR partners working with KP in six states (Lagos, Benue, Nasarawa, Rivers, Cross River, and Akwa Ibom) plus the FCT (6+1) have reached a total of 79,279 FSW, 16,130 MSM, and 5,217 PWID. These program results, however, might not be fully representative of the number of KP in any given location, but are the number of KP that have been reached by a form of intervention on the program. This could be a useful source of setting a baseline for a size estimation.

1.3 JUSTIFICATION FOR THIS ACTIVITY

Achieving maximal impact in the control of HIV requires providing targeted interventions to KP within countries. Availability of credible data to plan this set of interventions is key to achieving global goals on reaching HIV epidemic control. Identified challenges for HIV-prevention programming in Nigeria have been noted to include: lack of adequate evidence for programme planning, gaps in the knowledge of what is driving the HIV epidemic in different regions of Nigeria, and inadequate knowledge of the geographic distribution of key populations[7]. The impact of these challenges is that they hinder the targeting of HIV-prevention resources to those who really need it, possibly fuelling the HIV epidemic in Nigeria. While evidence shows that HIV prevalence in Nigeria is increasing across some KP sub group for example MSM recorded 17.2% in 2010 and 23.9% in 2014[3], programming for these populations remains difficult because of inadequate information on strategies that maximise the coverage and cost effectiveness of HIV interventions[7].

With the difference in non-empirical methodologies used and estimates obtained, the reliability of the size estimates have also been questioned; given their subjective nature of eliciting responses, i.e. asking KP at a given hotspot to provide an estimate of their population size in that hotspot, as seen in the local epidemic appraisal conducted by NACA in 2013 and SFH Mapping and characterization study of "MARPs" in 2015[5].

The empirical methods for size estimation proposed in this exercise are intended to provide critical information for planning and implementing targeted HIV prevention, care and treatment programs, taking into cognizance the heterogeneous nature of Nigeria's epidemic in the targeted states.

1.4 GOALS

The goal of this activity is to obtain population size estimate for key populations including FSWs, PWID and MSM in 6+1 states (Lagos, Benue, Nasarawa, Cross River, Rivers, and Akwa Ibom, + FCT) of Nigeria using empirical methods.

1.5 PRIMARY AND SECONDARY OUTCOMES

PRIMARY OUTCOME:

To obtain state-level population size estimate (PSE) of KP (MSM, FSW, and PWID) in the 6+1 States in Nigeria using multiple-source capture-recapture.

SECONDARY OUTCOME:

- To map and, where appropriate, characterize the type of KP hotspots in the 6+1 PEPFAR scale-up states
- To obtain sex and age-disaggregated PSE of PWID and age-disaggregated PSE of FSW and MSM in the 6+1 PEPFAR scale-up states

1.6 STUDY POPULATION

For this study, the following definitions are considered;

a. **FSW** is defined as any woman (female sex at birth) 15 years and above who has received money or goods in exchange for sexual services, either regularly or occasionally in the 12 months preceding this survey .

b. **MSM** is defined as any man (male sex at birth) 15 years and above who has engaged in oral and/or anal (receptive or insertive) sex with another man at least once in the 12 months preceding this activity.

c. **PWID** is defined as any person 15 years and above who has injected drugs (illicit, non-prescribed, and illegal) recreationally at least once in the last 12 months preceding this activity.

1.7 STUDY LOCATIONS

The size estimation will be conducted in the 6+1 states where the 32 PEPFAR Nigeria scale-up LGAs are located. These are: Lagos, Nasarawa, Benue, Cross River, Rivers, Akwa-Ibom, and the FCT. KP size estimates will be state specific. All LGAs in these states will be included in this activity and all active hot spots by KP subgroup will be visited for enumeration. A formative assessment and mapping of hotspots will be conducted prior to deploying materials and staff to any state.

Figure 1: Map of Nigeria showing target states for Key Population Mapping and Size Estimation

Table 2: Target States and LGAs for Key Population Mapping and Size Estimation.

Akwa-Ibom (31 LGAs)	Benue (23 LGAs)	Cross River (18 LGAs)	Lagos (20 LGAs)	Nasarawa (13 LGAs)	Rivers (23 LGAs)	FCT (6 LGAs)
Ikot Ekpene	Buruku	Calabar South	Apapa	Doma	Eleme	Abuja Municipal
Uruan	Gwer West	Calabar-Municipal	Ajeromi-Ifelodun	Obi	Obio/ Akpor	Bwari
Uyo	Katsina-ala	Abi	Surulere	Lafia	Port Harcourt	Abaji
Okobo	Konshisha	Akamkpa	Agege	Nasarawa	Abua/Odual	Gwagwalada
Oron	Logo	Akpabuyo	Mushin	Karu	Ahoada East	Kuje
Abak	Tarka	Bakassi	Ikeja	Akwanga	Ahoada West	Kwali
Eastern Obolo	Ushongo	Bekwarra	Alimosho	Awe	Akuku-Toru	
Eket	Agatu	Biase	Ifako-Ijaye	Keana	Andoni	
Esit Eket	Apa	Boki	Amuwo-Odofin	Keffi	Asari-Toru	
Essien Udim	Ado	Etung	Badagry	Kokona	Bonny	
Etim Ekpo	Gboko	Ikom	Epe	Nasarawa Egon	Degema	
Etinan	Guma	Obanliku	Eti Osa	Toto	Emuoha	
Ibeno	Gwer East	Obubra	Ibeju-Lekki	Wamba	Etche	
Ibesikpo Asutan	Kwande	Obudu	Ikorodu		Gokana	
Ibiono-Ibom	Makurdi	Odukpani	Kosofe		Ikwerre	
Ika	Obi	Ogoja	Lagos Island		Khana	
Ikono	Ogbadibo	Yakuur	Lagos Mainland		Ogba/Egbema /Ndoni	
Ikot Abasi	Ohimini	Yala	Ojo		Ogu/Bolo	
Ini	Oju		Oshodi-Isolo		Okrika	
Itu	Okpokwu		Shomolu		Omuma	
Mbo	Oturkpo				Opobo/Nkoro	
Mkpat-Enin	Ukum				Oyigbo	
Nsit-Atai	Vandeikya				Tai	
Nsit-Ibom						
Nsit-Ubium						
Obot Akara						
Onna						
Oruk Anam						
Udung-Uko						
Ukanafun						
Urue-Offong/Oruko						

Scale-Up LGAs

2 METHODS

This field implementation will be conducted across the 6 + 1 target states in Nigeria between May 2018 and September 2018.

These states were purposively selected because of current broad HIV programming experiences, evidence from literature, data from key informants, and their characterization as cosmopolitan and commercial nerve centres, pulling together people from the three major ethnic groups in Nigeria and different economic, environmental and social strata. Furthermore, these states are currently part of PEPFAR programming for KPs. Accurate size estimation will therefore help to determine the denominator base for programming and policy. Multiple-source capture-recapture (≥3S-CRC) will be used to estimate the size of FSW, MSM, and PWID. The survey will use combination of both direct (venue-based captures) and indirect data sources (non-venue based captures) to estimate the population size of all KP sub-groups. These methods may be applied to additional locations to address the need for key population size estimation as funding allows.

2.1 COMMUNITY-BASED ORGANIZATION CONSULTATION, FORMATIVE ASSESSMENT, MAPPING AND SELECTION OF DATA COLLECTORS (ENUMERATORS)

2.1.1 COMMUNITY BASED ORGANIZATION CONSULTATION AND FORMATIVE ASSESSMENT

In each state and study location, as a key component of community entry, advocacy visits will be made to relevant "gatekeepers" and stakeholders including the State Agency for the Control of AIDS (SACA), hotels owner's association, trusted KP networks, drug bunk owners, and identified KP CBOs. The purpose of these visits will be to inform the gatekeepers and stakeholders about the study, engage participation, and to explore the social organization of KP activities in each of the study areas. As part of this visit, in each study state, we will conduct semi-structured interviews, focus group discussions with staff of KP CBOs, SACA, KP referral facilities and KP experts/key informants to obtain relevant information necessary for the success of the activity. KP experts/informants are influential persons in the KP community who might have participated in KP interventions in the state, e.g., drug bunk owners, brothel chair ladies, hotel managers, party planners, king of boys, etc. KP referral facilities are centres that provide routine health and social services to KP sub-groups, e.g., USG supported one-stop-shop (OSS), drug treatment centres, etc. A total of 3 CBO per KP sub-group, 7 SACA representatives (1 per state), 14 KP referral facilities (2 per state), and 9 KP experts/ informants per state will be interviewed. The expected key output of the formative assessment is to update KP hotspot maps reported by SFH in 2015 and identify and prioritize other data sources (facility registries, online KP networks, drug treatment facilities, NDLEA drug arrest record, social media etc.) that we could utilize. More so, the exercise will provide insight on current KP sub-group visibility and social networks, where the KP sub-groups congregate, access services, what time of day the KP sub-groups are most approachable for data collection, how they react and interact with survey implementers or public officials such as police, etc. Only drug bunk, KP service delivery facilities, brothels, and MSM-friendly social centres recommended by the KP CBO or SACA will be visited for the assessment. CBO consultation/ formative assessment will be conducted by UMB state and central (Abuja) based staff. The list of questions to be asked during the key informant interview can be found in Appendix B.

2.1.2 SELECTION AND TRAINING OF DATA COLLECTORS (ENUMERATORS)

Enumerators, or field data collectors, for each KP sub-group will be individuals who are experienced and comfortable working with KPs, and trusted within the KP community. They may or may not be members of the KP themselves although the majority of them will be or had been KPs in the past. Enumerators will be responsible for visiting the list of KP hotpots and identifying, verifying, and capturing information on KPs identified in the hotspot. Criteria for enumerators selection will include: willingness and availability to participate over the time frame of the activity, interest in the activity, and proven experience and familiarity with the target population. The trusted KP network and KP CBO will recommend potential candidates while the study staff will use adopted criteria for the selection. For each state, in consultation with SACA, KP CBO, and trusted network representatives, we will estimate the number of enumerators that will be needed per KP sub-group per state. Identified and selected enumerators will be trained on purpose and importance of the size estimation and benefits to their community as well as multiple-source capture-recapture methodology and basic research ethics. Sessions of training will consist of interactive didactic and participatory work in which information will be elicited about KPs within each locale. Information on the concepts of mapping and capture-recapture methodology, ethical issues, confidentiality, security, data collection, and documentation of information will be shared. This will be combined with dynamic role-play to allow for ease with identifying, approaching and interacting with key populations in the field. This will include how to recognize and approach each KP to determine their eligibility for the activity, and discretion when “capturing and recapturing” so as not to alert bystanders. Enumerators will be compensated for their time based on established contract terms and costs incurred for transportation between target locations.

2.1.3 HOTSPOT MAPPING/VALIDATION

Post-training, the national study team will split into teams and travel to validate the updated list of KP hotspots in the 6+1 PEPFAR scale-up states obtained during CBO consultation/ formative assessment. Teams will validate the list to ensure that hotspots are active, geocodes and addresses are valid, and verify peak days/hours. Proposed forms to guide the mapping/ validation exercise can be found in Appendix C-E.

To facilitate the validation process, KP hotspots will be mapped to identify possible geographical clusters. Information on number and geographical spread of KP hotspots will be used to plan and allocate teams during the mapping/ validation exercise. Each state will be divided into a total of 3 zones using LGA (and/or ward or other smaller geographic boundaries unit if found to be appropriate) and each zone will be validated at the same time until all zones are covered. A zone may comprise 4-9 adjoining LGAs. Zonal boundaries may differ for each KP. The amount of time it takes to cover one zone should be roughly equal; taking into account number of hotspots and travel time between hotspots. Any one hotspot cannot belong to more than one zone. If a hotspot is located on the zonal boundary, it will be allocated to one zone based on its known geographic location. This may be revised post mapping and validation if it found that it is closer to the neighbouring zone. All of the venues identified during formative assessment will be visited for validation. The key output of the mapping and validation exercise will be a list of validated active hotspots with geocodes and addresses based on established landmarks showing all active hotspots for FSW, PWID, and MSM per zone for enumeration.

This will be used to guide enumerators during the venue-based capture-recapture phase of this activity.

2.2 MULTIPLE-SOURCE CAPTURE-RECAPTURE (≥3S-CRC)

Multiple-source capture-recapture methodology will be used to estimate the population size of FSW, MSM and PWID. This method determines population size estimates based on identifying individuals who appear in one, two, three or more "captures" within a specified time frame. Individuals will be "tagged" and in each round, we will ascertain the aggregate number of those who are newly tagged or are "recaptures" from previous round(s). This method allows estimation of the number who have not been captured and then uses this information on the "unobserved" with the "observed" to estimate the total key population size. Adding sources to traditional capture-recapture studies strengthens the design and produces more robust estimates across these KP sub-groups. The assumption of source independence is also relaxed with the additional sources because interaction terms are included in log-linear regression models, adjusting for source dependence[8,10].

Assumptions for all capture-recapture[9](≥3S-CRC)

- All identified individuals meet the target population definition
- Each "capture" and "recapture" are correctly identified
- Homogeneity of capture probabilities; each population member has an equal chance of being captured
- Each source or capture are independent and not correlated
- The study population remains constant over the study period; no migration in or out of the population

2.2.1 CAPTURE ONE

Trained data collectors (enumerators) will be broken down into teams specific for each KP group (section 3.2.1) and assigned specific delineated zones. Enumerators are to visit all pre-validated hotspots/venues (from the mapping and validation exercise) in the zone they are assigned to. There will be a map and specific list of hotspots to guide their movement.

Enumerators, with the help of an escort officer, will employ a three-step approach to identify members of the key populations during venue-based capture:

a. Observing body language and other techniques noted during formative assessment.
b. Approaching and interacting with a suspected "contact" using common slangs peculiar to each KP group until they self-identify as a member of the KP
c. Confirmation in a socially appropriate context that the person is attempting to engage in such KP-specific behaviour (transactional sex, drug injection, etc).

An escort officer is someone who is knowledgeable about the area and population and can be a CBO staff, trusted KP member (CBO referral), or brothel manager. If the above conditions are met and the contact has said that they have not been approached in the past week, a "tag"

(i.e., a unique object) will be offered to the "contact". If the contact accepts tag1, then the "contact" is documented as a capture. If the "contact" does not accept tag1, it is not counted (but is documented as a non-capture). The encounter location is documented (geocoded) by the enumerator. This continues for all suspected key populations until the venue closes, the predetermined time in field (e.g., 6 pm – 5 am) elapses, or some external event prevents continuation of the work. Enumerators will approach and attempt to capture all KPs that they are able to identify in the hotspot within the specified time frame.

"tags" will be distinct (coded) for each zone—for example, enumerators might offer wristbands for first capture, but each zone would have a different colour wristband that will have definite code linked to them. Codes will be used to verify round of capture as well as possible movement within states in the analysis phase. The objects, distinctive colours or other identifiers will be determined during formative assessment based on KII input and stakeholders guidance. Recipients of "tags" will be asked to remember the item and colour of item.

Table 3: Proposed Tag Codes and Colour for Each Enumerator Team ‡

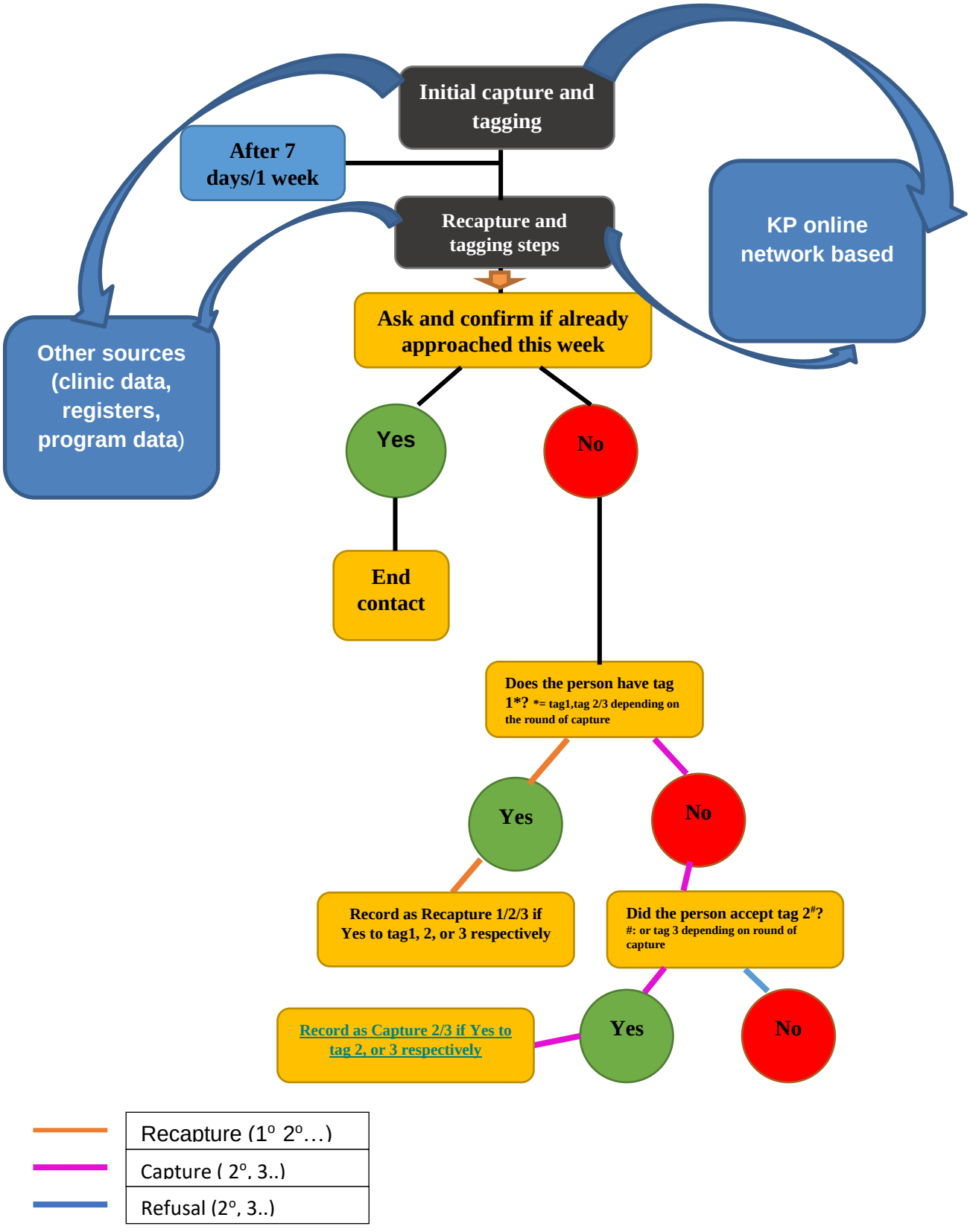
	FSW			PWID			MSM		
	Team 1	Team 2	Team 3	Team 1	Team 2	Team 3	Team 1	Team 2	Team 3
Code	T1-FW-PI	T2-FW-BL	T3-FW-RE	TI-PD-BR	T2-PD-WH	T3-PD-OR	T1-MM-RA	T2-MM-YE	T3-MM-GR
Color	PINK	BLUE	RED	BROWN	WHITE	ORANGE	RAINBOW	YELLOW	GREEN

‡To be verified during formative assessment along with proposed tag items

2.2.2 CAPTURE TWO (VENUE BASED)

After a brief interval (e.g., one week), a second capture (C_2/ recapture 1) will be initiated. This will occur in the same area as the original capture. Same methods, with additional questions about whether a person received a "tag" (tag1) one week before. If so, do they have the "tag" with them? Could they show it? If they do not have it with them, enumerator presents a page with images of objects, including the actual tag 1, and ask if the person can identify the "tag". Enumerators shall record the tag item and colour. Contacts will also be asked if s/he was already approached in the current week. Did person accept tag 2? The contact will be considered a recapture if s/he received tag 1 one week before and was able to show it or select it from a page of items, or capture if s/he did not receive tag 1 one week before or was unable to pick out the right tag from a selection of pictures. If the eligible study participants decline tag 2, the enumerators will record reason for refusal on the data collection system. Each round of capture (capture 1, 2, and 3) will be done by a different group of enumerators. No enumerator will conduct more than one round of capture in the same area. This is important to ensure independence of captures, an assumption of CRC.

***Figure** 2**:** Steps involved in the multiple-source capture recapture (≥3S-CRC) methodology*



2.2.3 CAPTURE THREE

Same as above, but during this phase, contacts will be asked about having received a “tag”. (tag 1 and/or 2) in the previous weeks (specifying the referred weeks on which rounds of capture had occurred in that state).

Table 4: Summary of Tags Distributed and Inquired about During Each Round of Capture

Round of Capture	Distribute	Inquire about having previously received:
Capture 1 (C^1)	Tag 1	-
Capture 2 (C^2)	Tag 2	Tag 1
Capture 3 (C^3)	Tag 3	Tag 1 and/or tag 2
Capture 4 (C^4) (non-venue/ other sources)	Tag 4 (physical item, picture, or catchphrase depending on mode of contact)	Tag 1, tag 2, and/or tag 3

2.2.4 OTHER SOURCES (NON-VENUE BASED); CAPTURE FOUR

To capture KPs who might not be easily found in physical venues, efforts will be made to utilize non-venue sources such as: online networks, USG supported OSS clinic registers, prevention program database, and other KP service delivery point registers, to capture KPs. This is especially important in the case of MSM where the criminalization of their activities has made it risky for them to physically congregate, and has forced them to disband many of their former hotspots. FSWs may have also expanded their reach or chosen to solely operate on online networks and sites. Capturing the presence of these sources is important to obtain an accurate size estimate of these KPs.

During the formative assessment phase of this activity, the study team will speak with various key informants to investigate the social visibility of KPs and identify available sources to be used for the exercise. If it is found that the KP is mostly venue-based and has limited visibility outside of physical venues, the study team might decide that the use of a non-venue source for that KP is not necessary. The study team is expected to produce a KP-specific list of (non-venue based) sources that could be utilized for the study as an output of the formative assessment.

After venue-based captures are conducted, KP members found in the registries/databases of these identified sources will be contacted and enumerated with the help of service providers, community gate-keeper, or group administrator (in the case of an online group). We will train one or two staff from the facility to contact the KP and complete our study questionnaires. These facilities are often staffed with members of the KP themselves. We will ensure that the

staff selected to administer the questionnaire for our study are members of the KP and/or comfortable and experienced in dealing with KP members.

This contact shall be “captured” as part of the exercise in a similar procedureas the venue-based captures where the contact is asked if s/he had have received a tag and to describe it (if a phone-based encounter) or pick out the tag from a picture of items if an in-person encounter. Non-venue based capture will be conducted after venue-based captures are completed. Depending on the source, this contact can be in-person, via phone call, or via online chat.

Tag 4 may be a “catchphrase” (if a phone contact), a physical object (if an in-person contact) or an online tag/picture (if an online encounter). The most appropriate mode of contact will be explored in the formative assessment, and decided on during discussions with the point of contact/gatekeeper for each source. The mode of contact will be consistent within the same source, but may be different across several non-venues (non-hotspots) sources (capture 4). Tags will be specific to each source.

A maximum of three venue-based (hotspots) sources and minimum of one additional “other-source” based data sources will be used.

The following information will be quantified:

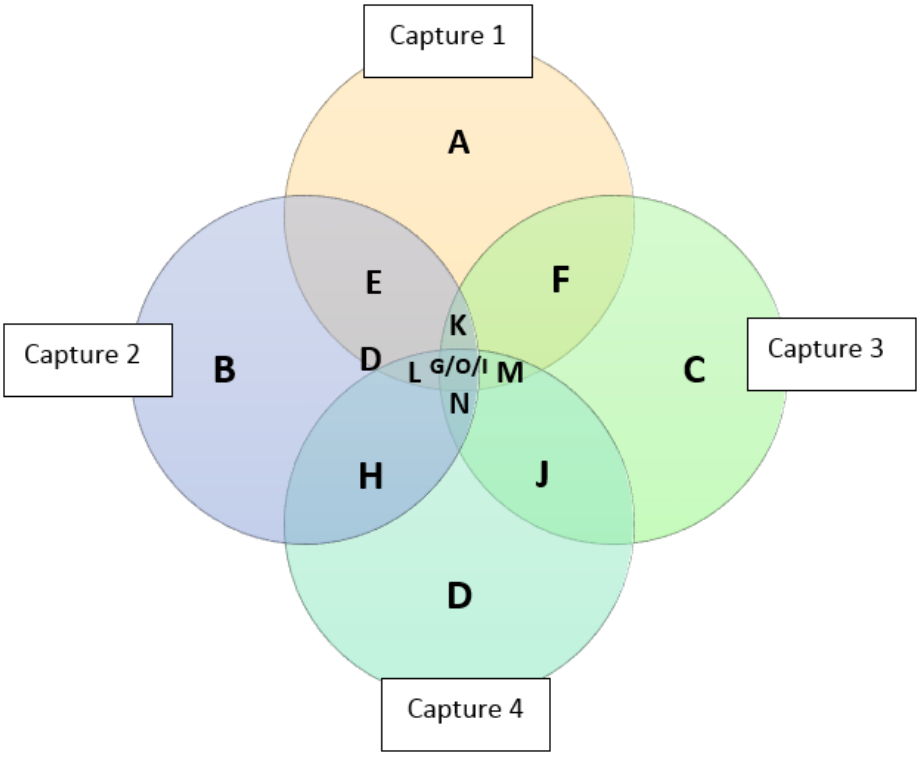
- *a* = number of members of the target population identified by venue based capture 1 only;
- *b* = number of members of the target population identified by venue based capture 2 only;
- *c* = number of members of the target population identified by venue based capture 3 only;
- *d*= number of members of the target population identified by non-venue based capture 4 only;
- *e* = number of members of the target population identified by venue based captures 1 and 2 but not by capture 3 and 4;
- *f* = number of members of the target population identified by venue based captures 1 and 3 but not by capture 2 and 4;
- g= number of members of the target population identified by captures 1 and 4 but not by capture 2 and 3;
- h= number of members of the target population identified by captures 2 and 4 but not by capture 1 and 3;
- i= number of members of the target population identified by venue based captures 2 and 3 but not by capture 1 and 4;
- j= number of members of the target population identified by captures 3 and 4 but not by capture 1 and 2;
- k= number of members of the target population identified by venue based captures 1, 2, and 3 but not by capture 4.
- l= number of members of the target population identified by captures 1, 2, and 4 but not by capture 3.
- m= number of members of the target population identified by captures 1, 3, and 4 but
- not by capture 2.
- n= number of members of the target population identified by captures 2, 3, and 4 but not by capture 1.
- o= number of members of the target population identified by captures 1, 2, 3, and 4.

All enumeration will be conducted in small groups of no more than 2 or 3 persons. Each team will be assigned to pre-validated hotspots at specified times within the activity (study) area. These are hotspots from a hotspot listing informed by the formative assessment and validation exercise done prior.

Table 5: Template for profiling of possible non-venue (non-hotspot) based data sources

Data Source	**For which KP(s)**	**For which state(s)**	**Do records/ data base exist?**	**If it exist, is it available for estimate work?**	**If not, how feasible to set up data collection?**
Possible responses should be listed here	FSW MSM PWID	FCT Lagos Akwa Ibom Benue Cross Rivers Rivers Nasarawa	Y/N	Y/N	Feasible/Not Feasible
Bio-behavioural Survey (BBS)					
NDLEA Registers of injecting drugs					
Trust Clinic register					
OSS clinic register					
Treatment centre data					
Data from KP outreach programmes					
Data from KP HIV prevention program					
Drug treatment centre					
Other focused surveys					
MSM online network group					
FSW online network group					
PWID online network group					

Figure 3 Captures in ≥3S-CRC



‡Figure above depicts 3 rounds of venue-based capture and 1 round of non-venue based captures (other sources). The number of venue-based captures and non-venue based captures might differ for each KP depending on their social visibility in physical venues. This is to be explored during the formative assessment phase of the activity.

Using statistical software with appropriate commands or packages (e.g., Stata "recap" command or R "R capture" package), a preliminary analysis will be conducted by fitting 2^n log-linear models arranged in a 2^n contingency table. Frequentist models (e.g., log-linear models) might not have flexibility to address heterogeneity among these populations. Thus, Bayesian nonparametric latent class models using R package "LCMCR" will be considered as they produce models with more flexibility than frequentist models.

To produce age- and sex- specific estimates for ≥3S-CRC, data will be arranged in a 2^n X 5 contingency table for age-specific estimates for FSW and MSM, and 2^n X 5 X 2 contingency table for age and sex specific estimates for PWID where n = number of data sources. Bayesian modelling is also an option that may be considered at data analysis.

An example of a contingency table depicting 3 sources can be found below as described in Rossi et al[11].and will be adapted for multiple-sources. [11]

Table 6: Example of a contingency table for ≥3S-CRC

	Capture 1	Capture 2	Capture 3	…	Total (# captures who accepted "tag")
A	1	0	0		
B	0	1	0		
C	0	0	1		
D	1	1	0		
E	0	1	1		
F	1	0	1		
G	1	1	1		
…	0	0	0		
H (unobserved)					
Total Population					∑(A:H)

2.3 ELIGIBILITY CRITERIA

The study population will consist of individuals who are identified as FSW, MSM and PWID aged 15 years and above who meet the criteria for their respective key population as defined below (Table 7).

These eligibility criteria will be used by enumerators who will "capture" individuals from the target population. Eligibility criteria will be discussed in detail with key informants/members of this community serving as enumerators during formative assessments and ascertained by the enumerators who will be tagging the individuals.

Table 7: Eligibility Criteria of key population sub-groups

Key population	Eligibility criteria
Men who have sex with men (MSM)	An MSM is defined as any male 15 years of age and above who has engaged in oral, anal insertive or receptive sex with other men at least once in the 12 months preceding the activity
Female sex workers (FSW)	A FSW is defined as any woman (female sex at birth) 15 years and above who has received money or goods in exchange for sexual services, either regularly or occasionally in the 12 months preceding this survey .frequently

People who inject drugs (PWID)	A PWID is defined as any person 15 years of age and above who has injected non-prescription, illegal, or illicit drugs recreationally at least once in the 12 months preceding the activity.

2.3.1 CRITERIA FOR EXCLUSION

- Individual who is unable to understand/communicate (hearing or speech handicap)
- Individual who is intoxicated from alcohol and/or drug abuse.
- Individual less than 15 years of age

2.4 SAMPLE SIZE CONSIDERATIONS

Table 8: Information to guide KP Multiple Source Capture-Recapture Logistics and Planning

Key Population	Crude threshold levels in urban settings	We will consider higher thresholds for urban centers with:
MSM	1.5% of adult males 2% in cap cities/commercial hubs	Larger population sizes *OR* substantial in-migration
FSW	0.5% of adult females	Substantial commercial activity *OR* transport hubs
PWID	No set threshold--large variation by country/locality can be expected	

Source: http://www.who.int/hiv/pub/guidelines/biobehavioral-hiv-survey/en/

Table 9: Population estimates disaggregated by gender across target states

State	Male >15	Female >15
FCT*	469,416	401,297
Benue	1,134,358	1,160,364
Cross River	896,950	890,768
Lagos*+§	3,250,954	2,910,037
Nasarawa	504,101	509,272
Rivers*	1,699,330	1,627,404
Akwa Ibom	122,289	1,222,240

**Largely urban; + Largely Commercial; § Transport hub*

Source: Nigeria 2006 census[12]

Table 10: Estimated minimum number of KPs based on calculated estimates and figures from Nigeria 2013 HIV epidemic appraisal and SFH Mapping and Characterizations study of KP

State	Male >15	MSM		MSM[5]	MSM[6]	Female	FSW		FSW[5]	FSW[6]	PWID[5]	PWID[6]
Thresholds		***1.5%***	***2% (urban)***				***0.5%***	***1% (urban)***				
FCT	469,416		9,388	1,892	4159	401,297		4,013	24,376	12297	205	1583
Benue	1,134,358	17,015		1,018	1485	1,160,364	5,802		10,034	4540	221	1812
Cross River	896,950	13,454		276	3509	890,768	4,454		9,838	7872	54	3899
Lagos	3,250,954		65,019	2,946	4828	2,910,037		29,100 (43,650*)	46,691	40863	1,186	5342
Nasarawa	504,101	7,562		440	2737	509,272	2,546		19,953	8867	414	2545
Rivers	1,699,330		33,987		1245	1,627,404		16,274		5711		4055
Akwa Ibom	122,289	1,834			3588	1,222,240	6,111			2873		739

[5]Figures obtained from NACA 2013 HIV Epidemic Appraisal
[6]Figures obtained from Mapping and Characterisation of Key Populations in Nigeria 2015

Table 11: Forecast number of KPs to be sampled per round of venue-based capture (Capture 1,2, and 3)

	No. of KPs to be sampled per round of venue-based capture		
	PWID	**MSM**	**FSW**
FCT	528	1386	2592
Lagos	1781	1609	5120
Nasarawa	848	912	2160
Cross Rivers	1300	1170	2400
Rivers	1352	415	1800
Akwa- Ibom	246	1196	760
Benue	604	495	2000
Total	6658	7184	16832

Sample size estimates were done based on the following suggestion from WHO[13], 'the combined total of sample 1 and sample 2 should be larger than the total number expected in the population (M + C > N) and the number captured in both samples is larger than seven (R > 7).' There is no specific sample size or precision estimates guideline for CRC with >2 sources. We extrapolated from the guidelines above to say that for ≥3S-CRC, the total population sampled during the ≥3 captures, M+ C_1+ C_2 + C3 ---------- + C_t >N where C_t is the total number of captures and N is the total number expected in the population. For venue based source, the expected number of KPs to be sampled per round of count were calculated from the number of KPs reported by SFH divided by 3.

The numbers of days of field work will be dependent on the number of validated active hotspots from the formative assessment. Enumerators will be engaged to visit all active hotspots within a specified data collection period. Reported population estimates will guide planning for other logistics giving room for extra. As the number of hotspots in each state differ for each KP, each KP team will be travelling separately. Enumerators will work in very small teams based on the projections for each hotspot). Each team will be assigned to pre-validated hotspots (from formative assessment and validation exercise) at specified times in different locations within the city.

3 DATA MANAGEMENT

3.1 FIELD WORK PREPARATION

Prior to commencement of data collection activities, engagement of key stakeholders at state, local government and community levels will be conducted to ensure ownership of the results and participation of the stakeholders in the activity. Consequent to this, a state study committee will be constituted to facilitate ownership of the activity and address barriers to implementation that may arise from implementation of the activity. They will also support monitoring during field data collection. Key stakeholders to be engaged for the activity include but are not limited to representatives of State AIDS/STIs Control Programme (SASCP), Police Action Committee on AIDS (PACA), Local Action Committee on AIDS (LACA), KP led CBOs domiciled in the state, and the different KP networks of interest.

Arrangements will be made for adequate security (including personnel) to ensure safety of the study team, respondents, and the wider community at every stage of data collection. These security arrangements will be included in the budget.

The activity will be utilizing REDCap to collect and manage data. REDCap is a secure web-based application used to build and manage surveys and databases[14]. REDCap Mobile application which allows offline data collection, will be installed in study tablets and smartphones and pre-tested prior to field activities. Each enumerator will have their own login (user ID and password). UMB state supervisors who will serve as team supervisors for this activity, as well as other study personnel who will be monitoring the data, will also have their own login information. Different roles will be given different levels of access. For example, enumerators will be given access to enter and submit (sync) data to the central sever but not to view entries or perform data quality check on data collected by other enumerators. UMB

state supervisors will be given access to monitor data collected from teams under their supervision. The use of 'data access groups' will allow for restricted access; UMB state officers in Lagos will only be able to view data coming in from enumerators responsible for enumerating KPs in Lagos. UMB data officers in Abuja and Baltimore will be able to view entries from all 7 states. More in-depth information on how data will be managed and secured can be found in section 3.5 and 3.6

3.2 DATA COLLECTION TEAMS

There will be three teams of KP enumerators in each state to complete three rounds of KP venue-based captures (one round per week). There shall be a different group of enumerators to conduct each round of capture. This is essential to reduce source dependence between captures. The three enumerator teams in each state shall conduct enumeration in three zones at any one time (one zone per team). As this method requires KPs to self-identify as a KP, a highly stigmatized and sometimes persecuted community, it is important that enumerators be someone who is comfortable with and trusted within the KP community. Teams will be travelling only within the defined assigned zones in the states in any one round of venue-based capture. Teams will switch zones at the next round of capture, but not across states.

3.2.1 TEAM COMPOSITION

Outside Lagos state: There will be three teams. Each teams shall have five enumerators for FSW, four enumerators for PWID, and three enumerators for MSM (Table 12).

Lagos state: Due to the high number of KP hotpots in Lagos state. There shall be seven enumerators per FSW team, four enumerators per PWID team, and four enumerators per MSM team to ensure that enumeration is completed within the activity time frame (Table 13)

These numbers might change depending on findings from the formative assessment and hotspot mapping and validation.

Table12: Enumerator team forecast for FCT, Benue, Akwa Ibom, Nasarawa, Cross Rivers and Rivers state

	FSW	PWID	MSM
Team 1	(5) FSW Enumerator	(4) PWID Enumerator	(3) MSM Enumerator
Team 2	(5) FSW Enumerator	(4) PWID Enumerator	(3) MSM Enumerator
Team 3	(5) FSW Enumerator	(4) PWID Enumerator	(3) MSM Enumerator

Table13: Enumerators team forecast for Lagos state

	FSW	PWID	MSM
Team 1	(7) FSW Enumerator	(4) PWID Enumerator	(4) MSM Enumerator
Team 2	(7) FSW Enumerator	(4) PWID Enumerator	(4) MSM Enumerator
Team 3	(7) FSW Enumerator	(4) PWID Enumerator	(4) MSM Enumerator

A training committee consisting of some members from the national and state technical team will be constituted to plan and review training curriculum, training slides, and other training manuals. Facilitators from the national technical team with support from the state technical team will facilitate the training in each of the state. State training will occur simultaneously. The state technical team and UMB state-based staff, who will act as team supervisors during the data collection period of the activity, shall, with the support of this training committee, plan training of enumerators at the state-level. Thus: Abuja-based UMB staff will support training for enumerators in FCT and Nasarawa; Cross River-based UMB staff shall support enumerators training in Cross Rivers and Akwa Ibom; the Benue-based staff shall support training of enumerators in Benue; the Lagos-based staff shall support training of Lagos enumerators; while the Rivers-based staff shall support training of Rivers enumerators.

3.3 SUPERVISION

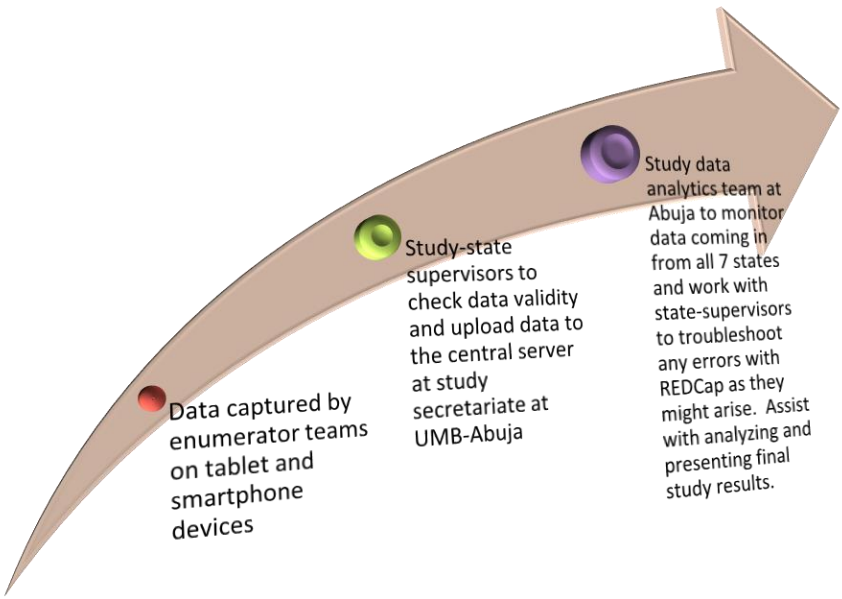
There shall be representative of the government of Nigeria in each state to supervise teams of enumerators. There are currently State Agency for Control of Aids (SACA)-based staff in Benue, Cross River, FCT, Lagos, and Rivers leading the field supervision. Representative of the State Technical Team (STT) including UMB staff based in Lagos, Benue, and Rivers, shall manage 9 team of enumerators in their respective states. Representative of the NTT with support from UMB staff based in FCT shall be responsible for managing 18 teams of enumerators in Nasarawa and FCT while the staff based in Akwa Ibom shall be responsible for managing total 18 teams of enumerator in Akwa Ibom and Cross Rivers. Team composition is described in Tables 11 and 12.

State and zone team supervisors for this activity shall be trained to work ethically and discretely with key populations and on management of enumerators, data management, principles of confidentiality and ethical handling of activity materials and data. State team supervisors refers to UMB staff residing in the five states whereas zone team supervisors refer to local KP CBOs the study team will be working closely with to provide supervision of enumerators in the field, assist in community entry and engagement, among other responsibilities. State and zonal supervisors will coordinate the administrative and logistic aspects of the day-to-day field activities and communicate with enumerators to ensure that data capture is done properly and ethically. Enumerators are to report daily to zone supervisors. Zone supervisors are to conduct briefings to convey issues that should be improved on based on their previous performance as well as resolve any issues that might have arisen in the field. The state supervisory team (STT) shall oversee the collection of data from other sources (non-venue) using adapted tools for each KP sub groups. They will provide support to the staff of the data source facility who will be trained to abstract needed information to enable contact with and enumeration of the potential KP participant from the other sources record using REDCap data management tool. The state supervisory team (STT) will be in close communication with the NTT and study point of contact in Abuja and will promptly communicate any issues that might arise. Any security issues will be reported by enumerators using Appendix O. Depending on the situation, enumerators will work with state and/or zonal enumerators to address any security issues. There will be regularly scheduled weekly meetings among NTT, UMB Abuja staff, state team supervisors, state technical team, CDC Atlanta, and Baltimore-based staff to discuss progress of field activities, security issues and other program related challenges once field work commences.

More so, members of the KP National Technical Team (NTT), State Technical Team (STT) and UMB Abuja based staff and US-CDC Nigeria shall conduct monitoring visits at hotpots and/or facilities chosen (non-venue based capture) during the data collection period to ensure data collection process is in line with study protocol. This supervision committee will provide additional guidance and oversight of all study activities.

Zonal supervisors will ensure that equipment including tablets and smartphones are checked and enumerators upload data to the secure server at the end of each day using a secure wireless connection.

Figure 4: Data flow from field

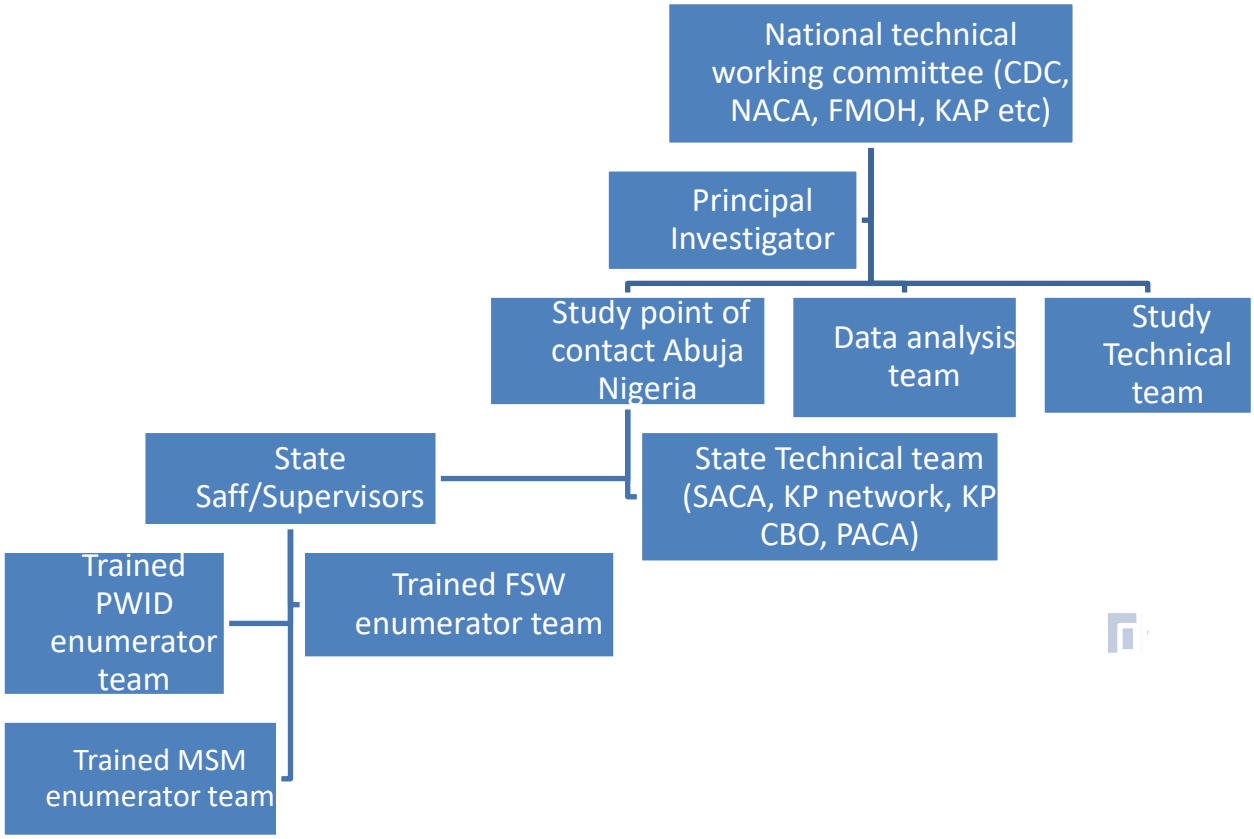


3.3.1 FIELD TEAM COMPOSITION AND SPECIFIC ROLES DURING PLANNING AND DATA COLLECTION

s/n	Designation	Function
1	Principal Investigator	The principal investigator (PI) will be responsible for the coordination and oversight of protocol development, data collection, analysis, scientific integrity and dissemination. He will also be responsible for personnel, study participants and data safety and security.
2	Point of Contact, UMB Baltimore	Provide technical assistance to POC Nigeria on planning and implementation of survey. This includes but not limited to: • Study protocol, training, and manual of operating procedures (MOP) development • Setting up of REDCap data collection and management system.

		• Data monitoring and analysis.
3	Point of Contact, UMB Nigeria	• Provide technical lead in planning and implementation of the survey. • Develop study protocol, MOP, and other activity tools. • Work with CDC to ensure timely approval of all activity tools. • Facilitate state trainings and assessment of CBO at the state level. • Lead advocacy for linkages, government involvement at the national and state level. • Co-coordinate state implementation.
4	Study zone supervisors	• Ensure proper community engagement and sensitization • Provide supervision for enumerators in the field
5	Study state supervisors	• Coordinate implementation of activities at the state level. • Work closely with local stakeholders to ensure acceptance of the process. • Train and monitor enumerators in the state. • Facilitate data collection from non-venue sources
6	Enumerators	• Support program staff in developing operational work plans for the data management exercise. • Support the implementation of data collection in accordance with activity Manual of Operating Procedures (MOPs). • Ensure timely submission of quality report, best practice, recommendations to field supervisor (UMB state staff) on daily basis. • When necessary, support in the generation and documentation of human interest stories or field innovative best practices from the field experience. • Proactively seek out and report relevant opportunities, linkages or challenges that may promote or deter field work. • Support advocacy for enabling environment to local community key stakeholders during site selection

Figure 5: Study Staff/ Supervisors



3.4 DATA COLLECTION

Enumerators will visit all validated active hotspots (defined based on formative assessment findings prior to field data collection) from the hotspot mapping and listing exercise to identify, approach, confirm, and "capture" KPs. The enumerators will be trained to interact with identified members of their key population and give out the unique items as well as enter basic non-identifying information on REDCap software on the tablet and smartphone device provided. The tablet and smartphone device should have a minimum standby time of 10 hours and run on the latest version operating system at the time of the activity.

For the venue sources, the "tags" (coded unique objects) will be distributed among identified key populations at three different time points independent of each other. For each round of capture, a different "tag" with assigned unique code linked to the enumerator team will be utilized to distinguish between the first, second, and third "tag". Unique items will be distinct for each enumerator team (see section "Capture" above). Enumerators will ask members of the target population during the second and third capture if they received an item previously, if they do not have the item, they will be asked to select the item from several pictures. No personal identifying information (PII) will be collected. For each KP encounter/count the following information will be collected:

A. Information to be filled in by enumerator

a. Enumerator code and unique tagging code/colour
b. Geocode of location of encounter,
c. State and LGA
d. Location/neighbourhood/area of encounter,
e. Date,
f. Time (of encounter),

B. Information to be asked directly to KP contact

a. Verification of eligibility (based on a few questions)
b. Sex at birth
c. Gender
d. Sexual orientation
e. Age group
f. State and LGA of residence
g. Tag1 offered, tag1 accepted (for capture 2: this would include questions for tag2 offered, tag2 accepted AND were you offered tag1? did you accept tag1? If yes, describe tag1…; for capture 3: this would include questions for tag3 offered, tag3 accepted AND were you offered tag1, or tag 2? Did you accept tag1, or tag2? If yes to any, describe tag1/2; and similar questioning logic for subsequent rounds of capture)

Data will be reviewed daily by UMB state-level staff, UMB data analytics team, and POC and feedback provided to make necessary corrections.

For other non-venue based sources or online based network/groups, information of KP visiting or enrolled at the facility or online shall be abstracted and used to contact the potential participant for enumeration when successfully contacted. Enumeration shall be conducted by similar questioning as in the venue-based enrolment. The following variables will be recorded per KP per data source.

A. Information to be completed by enumerator:

a. Type and name of source (per source)
b. State(s) that source contains information on (per source)
c. KP(s) that source contains information on (per source)
d. Number of KPs identified in source (aggregate per source)
e. Number of KPs successfully contacted in source (aggregate per source)
f. Number of KPs who declined participation in study in source (aggregate per source)
g. Date and time of contact (per KP contacted)
h. Tag offered (catchphrase, physical object, or picture to be shared online depending on mode of contact) (per source)

B. Information to be asked directly to KP contact:

a. Verification of eligibility based on a few questions

b. Did they recall having ever being offered a “tag” in the last month? How many times? Did they accept? For each item: what is the item they received? What colour is the item? When did they receive this item and where?
c. Sex at birth
d. Gender
e. Sexual orientation
f. Age group
g. State and LGA of residence.
    a. Other states/LGAs they might travel to for work.

Each staff/gatekeeper in each source identified shall be trained to contact the individual potential KP participant to administer enumeration questionnaire and tag accordingly.

3.5 DATA SECURITY

Data on the REDCap mobile app and central server at UMB Abuja office will be encrypted and password protected. The tablet and smartphone will be password protected. The tablet and smartphone will be programmed to automatically lock after a period of non-usage. Each enumerator team will have access to a tablet or smartphone throughout the data collection period. We will provide 5 extra tablet and/or smartphone devices per state in case of loss of tablet and/or smartphone. Data in transit from mobile app to central database will be secured via Hyper Text Transfer Protocol Secure (HTTPS), the secure version of HTTP. Upon syncing to the central server, data will be deleted from the tablet and smartphone. Only a selected few personnel (Authorized Data Analytics team members, UMB POCs) will be given access to the aggregate data. Data will be reviewed daily by the UMB POC and data analytics team at the central server to monitor entries from the field.

3.6 DATA MONITORING AND MANAGEMENT

During the data collection process, members of the KP National Technical Team (NTT), State Technical Team (STT) and UMB will be supported to do a spot check in selected hotspot to ensure data collection process is in line with study protocol.

Enumerators are responsible for uploading data collected in the mobile tablet and smartphone to the central server. Enumerators are to upload data upon leaving a hotspot, or as soon as they have internet access if there is no wireless signal where they are. There will be data management officers at UMB Abuja to monitor the data that is coming in and make sure that values are within reasonable range. Data management officers at Abuja will check-in with UMB State officers should data fail to enter the central server. Data will be reviewed on a daily-basis by both UMB state-staff and UMB data analytics team.

UMB data management officers will contact and work with UMB state staff to verify any implausible and/or missing values from teams. This is in addition to built-in default checks in the REDCap application to prevent upload of incomplete questionnaires, implausible values, and use of branching logic to limit navigation of questions; only applicable questions (based

on responses to previous question) will be shown. This is shown in detail in the data dictionary file.

The central server will be housed in UMB Abuja office and managed by the UMB data analytics team. The data analytics team will ensure that data in the central server will be backed up weekly. Back-up data will be accessible only to authorized personnel such as UMB POCs, PI, and UMB data analytics team. The data analytics team will also be responsible for troubleshooting any related errors in the field with the assistance of state-based UMB staff.

In addition to UMB, there will be a data committee comprising of members of the KP NTT, STT, GON, US-CDC Nigeria, and UMB Abuja based staff to provide additional oversight on data management.

3.7 DATA ANALYSIS

All files will be exported from REDCap in a comma separated values (CSV) format before transfer to the statistical software for analysis. Before data analysis commences, data will be cleaned and updated.

Data analysis for ≥3S-CRC will be performed in consultation with a statistician. Analysis of ≥3S-CRC data can be done with a frequentist approach developing log-linear models using appropriate statistical software. Log-linear models will produce age-specific and age- and sex at birth-specific population size estimates with 95% confidence bounds. If frequentist approach does not produce reasonable models, we will explore Bayesian options such as latent class models for capture-recapture ("LCMCR" package in R software). LCMCR will produce one model with a point estimate and 95% credibility intervals.

Table 6: Table Shells for ≥3S-CRC (venue + non-venue based): Distribution of KPs by LGAs and Estimated Population Sizes

	1st Capture			2nd Recapture				3rd Recapture, + additional sources					
	Accepted tag (C^1)	Refused tag	Already Counted	Accepted tag (C^2)	2nd Recapture (C^1 & C^2)	Refused tag	Already Counted	Accepted tag (C^3)	3rd Recapture (C^1, C^2, C^3)	2nd Recapture (C^1 & C^2)	Refused tag	Already Counted	Estimated Population
FCT													
Abuja Municipal													
Abaji													
Gwagwalada													
Kuje													
Kwali													
Bwari													
Benue													
Buruku													
Gwer West													
Katsina – Ala													
..													

Table15:Table shells for ≥3S-CRC : Estimated Key Population Sizes with 95% CI

(confidence intervals for log-linear models, credibility intervals for Bayesian models)

				People Who Inject Drugs (PWID)	
	Age group	**Female Sex Workers (FSW)**	**Men who have Sex with Men (MSM)**	**Female**	**Male**
1	15- 17 years	n (95% CI)			
2	18- 24 years				
3	25- 34 years				
4	35- 44 years				
5	45- 54 years				
6	>55 years				

3.8 REPORT WRITING, DISSEMINATION AND PUBLICATION

A written report with population size estimates and 95% confidence bounds (for log-linear modelling; credibility intervals for Bayesian models) will be made available to all stakeholders. three weeks after completion of data analysis. Following the writing of reports, results will be disseminated to the larger scientific community via scientific conferences and peer-reviewed publications. Results shall be reviewed to make sure they are reasonable in context of previous estimates, survey data and program data, etc. Wherever and whenever possible, GPS data shall be analysed along the variables of KP sub groups, by capture (to see patterns by enumerator, date, location) and to confirm proper methods were used to collect data.

3.9 DATA OWNERSHIP AND DISSEMINATION

All survey data is owned by the GON. UMB will be responsible for data governance on behalf of GON. Access will be granted following approval of access request from the Honourable Minister of Health, Federal Ministry of Health. Data in support of reports and manuscripts will be made available in the report and as required by journals respectively[1].

This data governance document will be consistent with policies of the health data governance council, and informed by CDC open access data guidelines and Nigerian Statistical Law[15,16].

Requests to gain access to the survey database prior to release of the final report will be handled by the FMOH, NACA, CDC, and (UMB). The FMOH, NACA, CDC, and (UMB) will have unrestricted access to the de-identified data. Access to identified data will be limited to protect privacy;

[1] FMOH 2014. Nigeria Health Information System Policy. Federal Ministry of Health. Available from http://ehealth4everyone.com/wp-content/uploads/2015/09/Nig-Health-Info.pdf

Findings from this activity will be shared with the various states using the National M&E and prevention technical working groups. The result will also be synthesized in form of policy briefs and fact sheets which will be shared among policy makers and programmers. Results will also be made available through CDC web sites, conferences and academic journals.

3.10 LIMITATIONS

- The ≥3S CRC method relies on assumptions that are difficult to meet[13]:
    - Samples must be independent and not correlated
        - KPs are known to migrate to the same venues. For this reason, the same FSW is more likely to be "recaptured" if enumerators return to the same street; creating dependence between rounds of capture. This will be mitigated through the inclusion of additional capture(s) which allows for interaction terms to be included in log-linear regression models, relaxing the independence assumption.
    - Each population member has an equal, or known, chance of selection
        - Certain KPs such as MSM, might not be easily found in physical venues and will thus have lesser chances of being captured. We have included non-venue based sources in our exercise to increase our chances of capturing MSM (or other KPs) who might not be easily found in physical venues. This will increase the representativeness of the information and results we obtain.
    - Each member must be correctly identified as "capture" or "recapture"
        - There is a possibility that a contact be incorrectly captured as a KP even if they do not meet our eligibility criteria (having engaged in risky behaviour within the last 12 months). In order to mitigate against this, enumerators will be trained to confirm that the contact is eligible (using specified criteria listed above) before proceeding with the remaining sections (consent, questionnaire, and tagging) of the study. The REDCap application will also be programmed in such a way that enumerators have to indicate or check-off that contact is eligible in the study (going through each specific criterion in the study) before the system will allow the enumerator to progress to other parts of the questionnaire.
        - KPs captured and "tagged" might not carry the tag with them throughout the duration of the activity, making it more difficult to "recapture" accurately. In order to mitigate against the inconsistencies and inaccuracy that might occur if a contact is asked to describe the tag that they have previously received, we will ask them to select the tag that they have received from a number of pictures. During the formative assessment, special care will also be taken to seek input from KPs as to what an appropriate tag might be. Selecting an attractive and appropriate tag might increase the numbers of KPs who carry the tag with the throughout the duration of the activity, increasing the accuracy of recaptures.
    - No major in/out migration may occur

        - KPs are mobile populations. There is also a large turnover in the population. In order to minimize in and out migration, captures will be done within a short period of time (eg.1 week) of one another.
- The sample sizes of each capture must be large enough to be meaningful.
    - There is not an abundance of literature to provide sample size guidelines for capture-recapture.
    - We will follow WHO recommended guidelines in that "the combined total of sample 1 and sample 2 should be larger than the total number expected in the population (M + C > N) and the number captured in both samples is larger than 7 (R > 7)."[13]
- Unreliable indirect data source e.g. clinic records
    - There may be poor data management in some established facilities in Nigeria. We will profile each data source to ascertain the reliability of any data source before we include it in the source to use.

3.11 STUDY STRENGTHS

In comparison to other population size estimation methods usually done with RDS surveys, this method is faster, less expensive and can be done as a standalone activity.

In comparison to two-source capture-recapture, the addition of additional sources relaxes the assumption of independence and allows us to account for dependence between captures.

4 HUMAN SUBJECT CONSIDERATIONS

The primary goal of this exercise is to obtain population size estimates of the different KP groups (FSW, MSM and PWID) in the FCT and 6 states**.** These estimates will be used to inform program planning and implementation for KPs. No personally identifying information will be collected in this activity. Final study results will be presented as state-level aggregated data: estimated number of KPs per state. This activity is a public health activity to contribute to the information needed to develop programming and policies to reduce HIV in Nigeria. The benefit is mainly to the communities within the areas where the size estimation study is carried out.

4.1 REQUEST FOR WAIVER ON ADULT INFORMED CONSENT AND PARENTAL PERMISSION FOR NON-MATURE MINORS AGED 15-17 YEARS

We are requesting a waiver for: (1) the documentation of informed consent and (2) the need for parental consent for individuals aged 15-17 years.

Waiver for the documentation of informed consent.

There is potential harm resulting a breach of confidentiality where the only record linking the individual and the study would be the consent document. In place of the documented informed

consent, an oral script will be read to the individual in order to guide him/her through the informed consent discussion/process. We will not obtain the individual's signature. An oral consent script is provided (Appendix F-H). The study staff will document the participant's consent, as well as date, and the name of the person conducting consent in the study files. This waiver is appropriate for survey or surveillance such as this enumeration study which is no more than minimal risk of harm to participants, and when signing the consent document could have a negative consequence for the individual.

Waiver for the need for parental permission.

The waiver of adult consent and parental permission (with individual verbal assent) would ensure that this group of individuals are given the chance to choose to participate while protecting their confidentiality as not personally identifiable information will be collected. Approaching the parents/guardians for permission will obviously threaten the participation of these groups of young men and women.

This request is in line with provisions of 45 CFR 46.408 (c). This is not research but rather a less than minimal risk public health activity to estimate the size of a set of key populations. The inclusion of the sample subset for which this waiver is sought is important in making sure services that addresses their needs are provided for in line with PEPFAR's commitment to increase access to services for vulnerable populations and adolescents. The waiver of adult consent and parental permission (with individual verbal assent) would ensure that this group of individuals are given the chance to choose to participate while protecting their confidentiality.

Special Protections for Children <18 years involved in sexual work or at risk of sexual exploitation/violence

In case of further support, the team will provide study participants with information and education materials with detailed support services available for them (Appendix K). Referral tracking template (Appendix L) will be used to record number of study participants age 15-17 years who were given the referral directory and referred for a specific service at each zone. This referral template will be built in into the REDCap questionnaire; if the contact engages in sex work and is below 18 years of age, enumerators will be prompted to provide referral services to the contact and record information as indicated in Appendix L. If the contact does not engage in sex work and is not under the age of 18, the enumerator may still provide referral services to the contact. This will also be recorded as in Appendix L. There will also be built-in reminders for KP CBOs to check back with referral services to record if KP has accessed services at the specified times as indicated in Appendix L (week 1,4,7 from initial time of contact). Service providers have been identified to whom these study participants <18 years of age will be referred for all sites where the study will be conducted. Any study participants <18 years of age identified as sex workers, trafficked or victims of violence will be referred for support services regardless of their eligibility (Appendix L). All study personnel who may meet the study participants are trained and knowledgeable of the need to make referrals for KP <18 years or above. Our team will ensure each participant before enrolment into the study be made aware of their right to not participate in the study, not answer any interview question, withdraw from the study at any time, and have the opportunity to seek clarification or additional information on these requirements without any harm. We will share a contact with all

participants in case they have questions about this survey or if anyone feels that s/he has been harmed as the result of taking part in the survey.

4.2 PERSONALLY IDENTIFIABLE INFORMATION (PII)

PII will not be collected from participants in the study.

4.3 RISKS

Potential risks from participation in this activity are minimal. Participants may be put at risk if their identity is revealed to persons other than study staff or the purpose of the study becomes known to person who ordinarily need not to know. Participants may be at risk of social harm (e.g. discrimination) should their sexual identity be revealed to persons other than study staff.

UMB will work closely with civil society organizations in the LGAs/ state and conduct advocacy to gatekeepers to ensure the safety of enumerators and key populations. Enumerators will go through sensitivity training and be trained on confidentiality and privacy. Discreteness will be emphasized when communicating with identified key populations. Should any security incidents occur, enumerators are to contact state- based GON-KPMSE staff who will then report to Abuja-based GON-KPMSE staff and UMB Baltimore. More so, emergency police help line per state will be made available to field staff to seek for support in case of any safety issue and be reported accordingly. Any security incidents will be documented and communicated accordingly by the state staff using the incident reporting template (appendix O).

4.4 BENEFITS

There is no direct benefit to participants in this activity. However, the study will provide information that could benefit the key population groups and help Nigeria HIV Prevention and control services to plan and provide improved HIV programming and services for key populations.

4.5 INCENTIVES

Tag items will be provided for any venue-based count/contact during the ≥3S-CRC sampling. These items will have no significant monetary value and will be used only as tags (purpose of “capture”). No monetary incentives will be given to participants

4.6 PRIVACY – ASSURANCE AND PROTECTION

The GON-KPMSE team (Government of Nigeria, UMB and US CDC Nigeria) will monitor issues regarding the protection of human subjects. All key investigators and members of the

study team will be trained in study and research ethics and will be required to obtain online certification/training on the protection of human subjects. Ethical approval will be obtained from Nigerian Health and Ethical Research Committee (NHREC), the CDC ethical approval from the Center for Global Health (CGH) in Atlanta, and University of Maryland Baltimore IRB.

4.7 CONFIDENTIALITY

Codes of confidentiality will be maintained throughout the duration of the study. Findings about individual participants will remain confidential.

All study data will be collected electronically using REDCap mobile application then transferred to the central server using HTTPS. Data in the mobile app and central server will be password protected and encrypted. The data will be accessible by restricted number of study personnel. The central server will be housed in the UMB office in Abuja. Privacy of the study subjects will be protected and confidentiality maintained at all times. Both data managers and data assistants will be trained on the Protection of Human Subjects in research.

The data from this study will be owned by the Government of Nigeria. No other category of persons outside the study team will have access to any of the data produced as part of this study. Request for access to the data will be directed to the Government of Nigeria and/or UMB.

4.8 SPECIAL PROTECTION CONSIDERATIONS FOR CHILDREN <18 YEARS

- Children <18 years of age will be referred for care at a facility of their choice. The list of all PEPFAR supported facilities providing HIV services will be compiled according to LGAs. Where an enumerator encounters a client less than 18 years, s/he upon completion of the capture/re-capture, will provide the client with a list of the facilities and a referral note **(Appendix K).** The PEPFAR supported facilities are trained in providing socially sensitive and quality services. These are dedicated focal points for providing support to victims of trafficking and GBV including sexual violence.
- Where a participant (including those that refuse participation) is identified as sex worker, trafficked or victim of violence, s/he will be referred to a Trafficking and Gender Based Violence (GBV) services point of contact in his/her state **(Appendix K) immediately.** A referral code will be generated for each referral in the format **ST/TG/CBO/enumcode/XX** representing state, KP target group, CBO to be link, enumerator code, and numeric count in that order, for easy tracking. KP CBO will be supported to follow up with facilities where participants were referred to for GBV/ trafficking services in the particular state to see if participants engaged in care.
- All enumerators will be trained on privacy and confidentiality and identification of victims of trafficking/violence.

- Per standard practice in surveillance studies, participants will be made aware of their right to not participate in the study, not answer any interview question, withdraw from the study at any time, and could seek clarification or additional information on these requirements.

5 REFERENCES

1. UNAIDS (n.d). Nigeria, Retrieved April 22,2018, from http://www.unaids.org/en/regionscountries/countries/nigeria/
2. Nigeria Federal Ministry of Health (2013) *National HIV & AIDS and Reproductive Health Survey 2012, (NARHS Plus II)* Retrieved from https://naca.gov.ng/wordpress/wp-content/uploads/2016/11/NARHS-Plus-2012-Final-18112013.pdf
3. Federal Ministry of Health, Nigeria National HIV/AIDS & STIs Control Programme. (2015). *Integrated Biological Behavioural and Surveillance Survey (IBBSS) 2014*. Retrieved from http://naca.gov.ng/final-nigeria-ibbss-2014-report/
4. Adebajo, S. B., Eluwa, G. I., Tocco, J. U., Ahonsi, B. A., Abiodun, L. Y., Anene, O. A., … Kellerman, S. (2013). Estimating the number of male sex workers with the capture-recapture technique in Nigeria. African Journal of Reproductive Health, 17(4 Spec No), 83–89.
5. National Agency for the Control of AIDS (2013). *HIV Epidemic Appraisals in Nigeria: Evidence for Prevention Programme Planning and Implementation*,, Retrieved from https://www.medbox.org/ng-policies-hiv-tb/hiv-epidemic-appraisals-in-nigeria-evidence-for-prevention-programme-planning-and-implementation-data-from-the-first-eight-states/preview?
6. SFH, USAID, PSI, Population Council, CRH (2015). *Mapping and Characterisations of Key Populations 2015: Evidence for Prevention Programme Planning and Implementation in Nigeria*. Retrieved from http://www.sfhnigeria.org/wp-content/uploads/2017/08/National-Mapping-Characterisation-Report.pdf
7. Ezirim, I. O., Ogungbemi, K., Daniel, U., Blanchard, J., & Ezire, O. (2015). Evidence from epidemic appraisals in Nigeria. *African Evaluation Journal*, *3*(2), 8. https://doi.org/10.4102/aej.v3i2.153
8. Héraud-Bousquet, V., Lot, F., Esvan, M., Cazein, F., Laurent, C., Warszawski, J., & Gallay, A. (2012). A three-source capture-recapture estimate of the number of new HIV diagnoses in children in France from 2003–2006 with multiple imputation of a variable of

heterogeneous catchability. *BMC Infectious Diseases*, *12*, 251. https://doi.org/10.1186/1471-2334-12-251
9. WHO. (2017). *Biobehavioural survey guidelines for populations at risk for HIV*. Retrieved from http://www.who.int/hiv/pub/guidelines/biobehavioral-hiv-survey/en/
10. Wittes JT, Colton T, Sidel VW. Capture–recapture methods for assessing the completeness of case ascertainment when using multiple information sources. J Chronic Dis. 1974;27:25–36 https://doi.org/10.1016/0021-9681(74)90005-8
11. Rossi, G., Pepe, P., Curzio, O., & Marchi, M. (2010). Generalized linear models and Capture-Recapture Method in a closed population: strengths and weaknesses. Statistica, 70(3), 371–390. https://doi.org/10.6092/issn.1973-2201/3593
12. National Bureau of Statistics, Nigeria. Nigeria 2006 census. http://nigeria.opendataforafrica.org/
13. World Health Organization, UNAIDS. (2011). Guidelines on Estimating the Size of Populations Most at Risk to HIV. Retrieved from http://apps.who.int/iris/bitstream/10665/44347/1/9789241599580_eng.pdf
14. REDCap. (2004). Retrieved February 26, 2018, from https://www.project-redcap.org/
15. Laws of the Federation of Nigeria -THE STATISTICS ACT, 2007. (2007). Retrieved April 22, 2018, from http://lawnigeria.com/LawsoftheFederation/THE-STATISTICS-ACT-2007.html
16. Centers for Disease Control and Prevention (CDC-GA-2005-14), Agency for Toxic Substances and Disease Registry. (2003). *CDC/ATSDR Policy on Releasing and Sharing Data*. Retrieved from https://www.cdc.gov/maso/policy/releasingdata.pdf

6 APPENDICES

6.1 APPENDIX A: CONFIDENTIALITY AGREEMENT

CONFIDENTIALITY AGREEMENT

Mapping and Size Estimation of Key Populations in Nigeria

Study Enumerators:

As a member of this study team I understand that I have access to confidential information about study sites and participants. By signing this statement, I am indicating my understanding of my responsibilities to maintain confidentiality and agree to the following:

- I understand that all information about study sites or participants obtained or accessed by me during my work is confidential.
- I agree not to disclose or reveal to unauthorized persons any of this information, unless specifically authorized to do so by approved protocol or by the principal investigator acting in response to applicable law or court order, or public health or clinical need.
- I agree to keep all study information, electronic or physical, secure while it is in my possession.
- I agree to return all study information in any form or format, electronic or physical, to UMB when I have completed the study tasks.
- I understand that I am not to read information about study sites or participants, or any other confidential documents, nor ask questions of study participants for my own personal information but only to the extent and for the purpose of performing my assigned duties on this study activity.
- I agree to notify the principal investigator immediately should I become aware of a breach of confidentiality or a situation which could potentially result in a breach.

Signature	Date	Printed name
Signature of UMB staff	Date	Printed name

6.2 APPENDIX B: KEY INFORMANT INTERVIEW GUIDE

For SACA and KP CBO:

1. Data collector/ enumerator recruitment and selection criteria
    a. What will be the best approach to recruit qualified and experienced enumerators for this KP mapping and size estimation?
    b. What selection criteria should be used in screening study enumerators for MSM, PWID and FSW?
    c. Do you have persons you can recommend? If yes, provide the list:
2. Where and when do KPs congregate?
    a. List the LGA and specific intervention sites where you have worked or currently providing services for KP (FSW, MSM & PWID)? Collect existing zonal map used during NACA mapping and size estimation.
    b. For each KP: list KP hotspots in the area (with geocode information if any) and peak day/hours?
    c. List other facilities in the state which provides services to KPs?
    d. What are your challenges working with the KP and how have you been managing them?
3. How will a KP be identified, approach and confirm at the hotspot?
    a. What verbal, body language, and other social cues to indicate intent to engage in KP behaviour of interest (transactional sex, needle sharing, or insertive/receptive anal sex among men) should enumerators look out for?
    b. What would be an appropriate “tag”?
    c. In what areas can your organization support this activity?
4. What additional security measures should we plan for to ensure safety of enumerators and study participants?
    a. KP CBOs to recommend informants and escort officers to facilitate entry of KP enumerators.
    b. SACA to recommend emergency response number and relevant security agency to work with in the state.
    c. Hotel owners and bunk owners will provide list of security tips.

For in-depth interview with Bunk owners, Chair ladies, Party planners, MSM friendly Centres, Hotel owners, etc…

- Which KP group mostly visit this type of venue in the state?
- List the typologies of KP sub groups who can be seen in this kind of facility at peak days/hours?
- Do KP found in this type of facility belong to any online platform? Name the possible platforms?
- What time do you think will be most appropriate to meet with KP persons in a venue like this?
- What are the major security issues in working with KP in a venue like this?
- Which law enforcement group should be most appropriate to engage for maximum security?
- On the average like how many of this type of venue exist in the state? Minimum and maximum.

- What do you think makes this venue appealing to these KPs?
- What verbal, body language, and other social cues to indicate intent to engage in KP behaviour of interest (transactional sex, needle sharing, or insertive/receptive anal sex among men) should enumerators look out for?
- What would be an appropriate ‘tag” to be used? (show picture samples)

For FGD involving key opinion leaders for PWID, FSW and MSM

- List the service delivery facilities/point in the state____ for KP.
    - When did the facility start operation?
    - Which KP group often visit the facility?
    - List the services they offer?
    - Which information are usually collected at those facilities before enrolment?
- Do FSW, MSM, PWID have an active online based network? If yes, tell me more about it
    - List the online software, platform or name which is currently being used for MSM, FSW and PWID?
        - Out of all this list, which platform has the largest members for FSW, MSM and PWID?
    - What is the average number of members in each of the network?
    - Does the network platform maintain database of members like state-LGA of residence, date of birth, name and surname?
    - What are the major reason for this kind of online network platform specific for each KP group?
    - Who usually manage the online network or platform?

6.3 APPENDIX C: FORMATIVE SPOT VALIDATION/MAPPING (FSW)

State: _____(Code); LGA: _____ Zones: _____ Spot Name: _____ Spot type: _____	Date: _____ ENU Code: _____ Spot active: ____YES _____NO _____ Duplicate If duplicate, which hotspot _____ Spot Geocode: Longitude _____ Latitude _____ Do you have proposes revisions to the address provided? 1. Yes, proposed new address:_____ 0.No

Spot profile

1	Code the venue based on option which best described it	1- Brothel, 2- Street/public place, 3- Bar/night club/casino, 4- Hotel/lodge, 5- Massage parlour, 6- Hostel/campus, 7- Escort/call girls/men, 8- Others
1b	If others, please specify:	
2	Which day of the week do FSWs visit this spot more than normal? (choose no more than **3** day/time combinations)	1. Monday 2. Tuesday 3. Wednesday 4. Thursday 5. Friday 6. Saturday 7. Sunday
3	For the days indicated above, what is/are the peak time?	1. Morning (before 12 noon) 2. Afternoon (12-5pm) 3. Evening (5-9pm) 4. Night (9pm-late night)
4	Do other key populations visit these hotspots? (multiple options allowed	1. MSM 2. PWID 3. FSW
5	Do sex take place in this spot	4. Yes 5. No
6	Do FSW negotiate sex with male partner in this spot	1. Yes 2. No
7	Do you know any other place like this where FSW seek male customer for sex	1. Yes 2. No
	If yes, name them	Estimate of FSW in the spot
1	_____	Max FSW_____ Min FSW_____
2	_____	Max FSW_____ Min FSW_____
3	_____	Max FSW_____ Min FSW_____

6.4 APPENDIX D: FORMATIVE SPOT VALIDATION/MAPPING (MSM)

State: _____(Code); LGA: _____ Zones: _____ Spot Name: _____ Spot type: _____	Date: _____ ENU Code: _____ Spot active: ____YES _____NO_____ Duplicate If duplicate, which hotspot _____Spot Geocode: Longitude _____ Latitude _____ Do you have proposes revisions to the address provided? 1. Yes, proposed new address:_____ 0.No

Spot profile

1	Code the venue based on option which best described it	1- Brothel, 2- Street/public place, 3- Bar/night club/casino, 4- Hotel/lodge, 5- Massage parlour, eateries/shopping mall 6- Hostel/campus, 7- Sport Centres, 8- Others
1b	If others, please specify:	
2	Which day of the week do MSMs visit this spot more than normal? (choose no more than **3** day/time combinations)	1. Monday 2. Tuesday 3. Wednesday 4. Thursday 5. Friday 6. Saturday 7. Sunday
3	For the days indicated above, what is/are the peak time?	1. Morning before 12 noon 2. Afternoon (12-5pm 3. Evening (5-9pm) 4. Night (9pm-late night)
4	Do other key populations visit these hotspots? (multiple options allowed)	1. MSM 2. PWID 3. FSW
5	Do anal sex between two adult men take place in this spot	1. Yes 0. No
6	Do male sex workers negotiate sex with male partner(s) in this spot	1. Yes 0. No
7	Do you know any other place like this where MSM gather to socialize	1. Yes 0. No
	If yes, name them	**Estimate of MSM in the spot**
1	_____	Max MSM_____ Min MSM____
2	_____	Max MSM_____ Min MSM____
3	_____	Max MSM_____ Min MSM____

6.5 APPENDIX E: FORMATIVE SPOT VALIDATION/MAPPING (PWID)

State: _____(Code); LGA: _____ Zones: _____ Spot Name: _____ Spot type: _____	Date: _____ ENU Code: _____ Spot active: ____YES _____NO_____ Duplicate If duplicate, which hotspot _____ Spot Geocode: Longitude _____ Latitude _____ Do you have proposes revisions to the address provided? 1. Yes, proposed new address:_____ 0.No

Spot profile

1	Code the venue based on option which best described it	1. Brothel 2. Street/public place, 3. Bar/night club/casino, 4. Hotel/lodge, 5. Massage parlour, 6. Hostel/campus, 7. Uncompleted building/bunk 8. Others
1b	If others, please specify:	
`2	Which day of the week do PWIDs visit this spot more than normal? (choose no more than **3** day/time combinations)	1. Monday 2. Tuesday 3. Wednesday 4. Thursday 5. Friday 6. Saturday 7. Sunday
3	For the days indicated above, what is/are the peak time?	1. Morning before 12 noon 2. Afternoon (12-5pm 3. Evening (5-9pm) 4. Night (9pm-late night)
4	Do other key populations visit these hotspots? (multiple options allowed)	1. MSM 2. PWID 3. FSW
5	Do drug injection take place in this spot	1. Yes 0. No
6	Do female drug users negotiate sex with male partner for drug in this spot	1. Yes 0. No
7	Do you know any other place like this where PWID gather to inject drugs	1. Yes 0. No
	If yes, name them	Estimate of PWID in the spot
1	_____	Max PWID_____ Min PWID____
2	_____	Max PWID_____ Min PWID____
3	_____	Max PWID_____ Min PWID____

6.6 APPENDIX F: ORAL CONSENT SCRIPT FOR FSW (FLESCH-KINCAID LEVEL 7.9)

Hello, my name is (*enumerator's name*). I am working with the University of Maryland Baltimore in collaboration with the Federal Ministry of Health, the National Agency for Control of AIDS (NACA) and the US Centers for Disease Control and Prevention.

You are being asked to take part in this study to help the government come up with a reliable number of Nigerians that are among female sex workers (FSW). This will help to improve the government's HIV program to address the needs of all groups at risk better.

If you agree to participate, I will ask you some questions about yourself such as your age, sex etc. I will then give you an object to keep. This will help us know that you have been contacted in this round of the study. Some other study staff will do this process for two additional rounds to contact. Each round of contact should take no more than 5 minutes.

Anticipated risks or discomfort
There is a risk that someone may get to know a little about your sexual preference/behaviour through this study. To prevent this, we will not collect any information that can be used to identify you or your contacts such as name, telephone number, and address. A study code number will be used instead of your name. All the information that we will collect will be kept confidential; all electronic information will be password protected with limited access. All enumerators are trained in privacy and confidentiality. They will also be required to sign a confidentiality agreement. The study will only report group results. All enumerators for this study are trained in working with KPs.

Anticipated benefits
You will not receive any direct benefit from your participation in this exercise. The results of this exercise will be used to inform better programs and policies for female sex workers and might ultimately benefit you and the larger community

You are free to choose to take part in this study. If you decide not to take part in the study, that will not affect you in any way. You may also discontinue participation at any time and it will not affect you in any way. If you have any questions and/or concerns you may contact Dr. Victor Sebastian, Study Point of Contact, US Centers for Disease Control & Prevention, Nigeria Country office, Abuja via phone: +234 7034032608 or email: wzn3@cdc.gov

Do you have any questions about this activity? May I proceed with the first question?

6.7 APPENDIX G: ORAL CONSENT SCRIPT FOR MSM

(Flesch-Kincaid level 7.9)

Hello, my name is (*enumerator's name*). I am working with the University of Maryland Baltimore in collaboration with the Federal Ministry of Health, the National Agency for Control of AIDS (NACA) and the US Centers for Disease Control and Prevention.

You are being asked to take part in this study to help the government come up with a reliable number of Nigerians that are among men who have sex with men (MSM). This will help to improve the government's HIV program to address the needs of all groups at risk better.

If you agree to participate, I will ask you some questions about yourself such as your age, sex etc. I will then give you an object to keep. This will help us know that you have been contacted in this round of the study. Some other study staff will do this process for two additional rounds to contact. Each round of contact should take no more than 5 minutes.

Anticipated risks or discomfort
There is a risk that someone may get to know a little about your sexual preference/behaviour through this study. To prevent this, we will not collect any information that can be used to identify you or your contacts such as name, telephone number, and address. A study code number will be used instead of your name. All the information that we will collect will be kept confidential; all electronic information will be password protected with limited access. All enumerators are trained in privacy and confidentiality. They will also be required to sign a confidentiality agreement. The study will only report group results. All enumerators for this study are trained in working with KPs.

Anticipated benefits
You will not receive any direct benefit from your participation in this exercise. The results of this exercise will be used to inform better programs and policies for men who have sex with men and might ultimately benefit you and the larger community

You are free to choose to take part in this study. If you decide not to take part in the study, that will not affect you in any way. You may also discontinue participation at any time and it will not affect you in any way. If you have any questions and/or concerns you may contact Dr. Victor Sebastian, Study Point of Contact, US Centers for Disease Control & Prevention, Nigeria Country office, Abuja via phone: +234 7034032608 or email: wzn3@cdc.gov

Do you have any questions about this activity? May I proceed with the first question?

6.8 APPENDIX H: ORAL CONSENT SCRIPT FOR PWID (FLESCH-KINCAID LEVEL 7.9)

Hello, my name is (*enumerator's name*). I am working with the University of Maryland Baltimore in collaboration with the Federal Ministry of Health, the National Agency for Control of AIDS (NACA) and the US Centers for Disease Control and Prevention.

You are being asked to take part in this study to help the government come up with a reliable number of Nigerians that are among people who inject drugs (PWID). This will help to improve the government's HIV program to address the needs of all groups at risk better.

If you agree to participate, I will ask you some questions about yourself such as your age, sex etc. I will then give you an object to keep. This will help us know that you have been contacted in this round of the study. Some other study staff will do this process for two additional rounds to contact. Each round of contact should take no more than 5 minutes.

Anticipated risks or discomfort
There is a risk that someone may get to know a little about your sexual preference/behaviour through this study. To prevent this, we will not collect any information that can be used to identify you or your contacts such as name, telephone number, and address. A study code number will be used instead of your name. All the information that we will collect will be kept confidential; all electronic information will be password protected with limited access. All enumerators are trained in privacy and confidentiality. They will also be required to sign a confidentiality agreement. The study will only report group results. All enumerators for this study are trained in working with KPs.

Anticipated benefits
You will not receive any direct benefit from your participation in this exercise. The results of this exercise will be used to inform better programs and policies for these people who inject drugs and might ultimately benefit you and the larger community

You are free to choose to take part in this study. If you decide not to take part in the study, that will not affect you in any way. You may also discontinue participation at any time and it will not affect you in any way. If you have any questions and/or concerns you may contact Dr. Victor Sebastian, Study Point of Contact, US Centers for Disease Control & Prevention, Nigeria Country office, Abuja via phone: +234 7034032608 or email: wzn3@cdc.gov

Do you have any questions about this activity? May I proceed with the first question?

6.9 APPENDIX I: VENUE- BASED MULTIPLE-SOURCE CAPTURE RECAPTURE FORM

Summary

Enumerator Code: ,……..

Stage	Give (Tag)	Tag Code	Ask (Previous tag)
C1	Give C1 tag		None
C2	Give C2 tag		Ask about C1 tag
C3	Give C3 tag		Ask about C1 and C2 tag

To be filled per hotspot per enumerator team

Capture 1: Enumerator: _____ Date: _____ Time In: _____ Time Out: _____

Questions for enumerators	Possible responses	Notes
What division, zone, and locality are you located in?	Context specific responses	This will be included if you ask your enumerators to go to specific areas only.
What is the name of the Hotspot?		
What type of hotspot is this	1- Brothel 2- Street/public place 3- Bar/night club/casino, 4- Hotel/lodge, 5- Massage parlour, 6- Hostel/campus, 7- Escort/call girls/men, 8- Drug bunk 9- Others	
Which KP sub group?	1- FSW 2- PWID 3- MSM	
GPS reading of hotspot	Longitude: _____ Latitude:_____	
1st, 2nd, or 3rd round of capture?	1- 1st round 2- 2nd round 3- 3rd round	

Number of eligible KPs found in hotspot		
Is this a count or actual estimate?	1- Actual Count 2- Estimate	
Is this hotspot a duplicate?	1- Yes 0- No	
If yes, of which hotspot ID?		If yes to 'Is this hotspot a duplicate'
Correct address		If incorrect address as currently in list
Correct spot name		If incorrect spotname as currently in list
To be filled per KP encountered		
Date and time of encounter		
Has the target population member been approached during this round of capture?	1. Yes 0. No 88. Don't know 99. Refused to answer	Yes >> End Form No >> Proceed to Next Questions
Did the target population member accept this round of tag?	1. Yes 0. No 88. Don't know 99. Refused to answer	Yes>> Proceed to Next question No>> Document any reasons (if given)
Does the individual engage in sex work (sex for gifts/ money)	1. Yes 0. No 88. Don't know 99. Refused to answer	If yes and below 18 years of age, provide with referral services
What is the individual's LGA and state of residence?		
Do they travel to current LGA for work?	1. Yes 0. No 88. Don't know 99. Refused to answer	

Which other LGAs/ state do they travel to for work?	----------	If no other, write (N**/A)** **If respondent refuses type "refused"**
What is the person's sex at birth?	1. Female 0. Male 99. Refused	
What does the person consider their sexual orientation to be?	1- Gay or homosexual (have sex with members of the same sex only) 2- Bisexual (have sex with both men and women) 3- Heterosexual or Straight (Have sex with member of the opposite sex only) 4- Other, specify: _____ 88- Refusal 99- Don't know	
What does the person consider their gender to be?	1 – Man 2- Woman 3- Other, specify: _____ 4- Both male and female 88- Refusal 99- Don't know.	
How old is the individual?		
What is the individual's highest level of education?	0- Never attended school 1- Quranic Only 2- Primary 3- Junior Secondary/ JSS 4- Senior Secondary/ SSS 5- Higher than SSS 88- Refusal	
What is the occupation from which the individual earn most of their income? **(choose one)**	0- Not Working (support from someone else) 1- Pupil/Student (support from someone else) 2- Professional career 3- Self-employed business 4- Petty trading 5- Entertainment/Service/Bar/Restaurant/Hotel	

	6- Sex work 7 - Other_____ 88- Refusal	
Are they an injecting drug user?	1. Yes 0. No 88. Don't know 99. Refused to answer	Only if individual is an MSM

To be filled per hotspot per enumerator team

Capture 2: Enumerator: _____ Date: _____ Time In: _____ Time Out: _____

Questions for enumerator	**Possible responses**	**Notes**
What division, zone, and locality are you located in?	Context specific responses	This will be included if you ask your enumerators to go to specific areas only.
What is the name of this hotspot		
What type of hotspot is this	1- Brothel 2- Street/public place 3- Bar/night club/casino, 4- Hotel/lodge, 5- Massage parlour, 6- Hostel/campus, 7- Escort/call girls/men, 8- Drug bunk 9- Others:_____	
Which KP sub group?	1- FSW 2- PWID 3- MSM	
GPS reading of Hotspot		
1st, 2nd, or 3rd round of capture?	1- 1st round 2- 2nd round 3- 3rd round	
Number of eligible KPs found in hotspot		

Is this a count or actual estimate?	1- Actual Count 2- Estimate	
Is this hotspot a duplicate?	1- Yes 0- No	
If yes, of which hotspot ID?		If yes to 'Is this hotspot a duplicate'
Correct address		If incorrect address as currently in list
Correct spot name		If incorrect spotname as currently in list
To be filled per KP encountered		
Date and time of encounter		
Has the target population member been approached during this round of capture?	1. Yes 0. No	Yes >> End Form No >> Proceed to Next Questions
Does the individual engage in sex work **(sex for gifts/ money)**	1. Yes 0. No 88. Don't know 99. Refused to answer	If yes and below 18 years of age, provide with referral services
Did the target population member receive tag one?	1. Yes 0. No 88. Don't know 99. Refused to answer	
Do they have tag one?	1. Yes 0. No 88. Don't know 99. Refused to answer	
If unable to present tag received, can they identify from page of item pictures?	1. Yes 0. No 88. Don't know 99. Refused to answer	

Where and when did the participant report receiving item one?		
Did the target population member accept this round of tag?	1. Yes 0. No 88. Don't know 99. Refused to answer	Yes>> Proceed to Next question No>> Document any reasons (if given)
What is the individual's LGA and state of residence?		
Do they travel to current LGA for work?	1. Yes 0. No 88. Don't know 99. Refused to answer	
Which other state/LGAs do they travel to for work?	----------	If no other, write (N**/A)** If respondent refuses type "refused"
What is the person's sex at birth?	1. Female 0. Male 99. Refused	
What does the person consider their sexual orientation to be?	1- Gay or homosexual (have sex with members of the same sex only) 2- Bisexual (have sex with both men and women) 3- Heterosexual or Straight (Have sex with members of the opposite sex only) 4- Other, specify: _____ 88- Refusal 99- Don't know	
What does the person consider their gender to be?	1 – Man 2- Woman 3- Other, specify: _____ 4- Both male and female 88- Refusal 99- Don't know.	
How old is the individual?		

What is the individual's highest level of education?	0- Never attended school 1- Quranic Only 2- Primary 3- Junior Secondary/ JSS 4- Senior Secondary/ SSS 5- Higher than SSS 88- Refusal	
What is the occupation from which the individual earn most of their income? **(choose one)**	0- Not Working (support from someone else) 1- Pupil/Student (support from someone else) 2- Professional career 3- Self-employed business 4- Petty trading 5- Entertainment/Service/Bar/Restaurant/Hotel 6- Sex work 7 = Other_____ 88= Refusal	
Are they an injecting drug user?	1. Yes 0. No 88. Don't know 99. Refused to answer	Only if individual is an MSM

To be filled per hotspot per enumerator team

Capture 3: Enumerator: _____ Date: _____ Time In: _____ Time Out: _____

Questions for Enumerator	Possible responses	Notes
What division, zone, and locality are you located in?	Context specific responses	This will be included if you ask your enumerators to go to specific areas only.
What is the name of the Hotspot?		1- Brothel, 2- Street/public place, 3- Bar/night club/casino, 4- Hotel/lodge, 5- Massage parlour, 6- Hostel/campus, 7- Escort/call girls/men, 8- Drug bunk 9- others
GPS reading of Hotspot	Longitude: _____ Latitude:_____	

1st, 2nd, or 3rd round of capture?	1- 1st round 2- 2nd round 3- 3rd round	
Number of eligible KPs found in hotspot		
Is this a count or actual estimate?	1- Actual Count 2- Estimate	
Is this hotspot a duplicate?	1- Yes 0- No	
If yes, of which hotspot ID?		If yes to 'Is this hotspot a duplicate'
Correct address		If incorrect address as currently in list
Correct spot name		If incorrect spotname as currently in list
To be filled per KP encountered		
Date and time of encounter		
Has the target population member been approached during this round of capture?	1. Yes 0. No	Yes >> End Form No >> Proceed to Next Questions
Does the individual engage in sex work **(sex for gifts/ money)**	1. Yes 0. No 88. Don't know 99. Refused to answer	If yes and below 18 years of age, provide with referral services
Did the target population member receive unique tag one?	1. Yes 0. No 88. Don't know 99. Refused to answer	
Do they have unique tag one?	1. Yes 0. No 88. Don't know 99. Refused to answer	
If they do not have it can they identify from page of item pictures?	1. Yes 2. No	
Where and when did they receive unique tag one?		

Did the (target population member) receive unique tag two?	1. Yes 0. No 88. Don't know 99. Refused to answer	
Do they have the unique tag two?	1. Yes 0. No 88. Don't know 99. Refused to answer	
If they do not have it can they identify from page of item pictures?	1. Yes 2. No	
Where and when did they receive unique tag two?		
Did the target population member accept this round of tag?	1. Yes 0. No 88. Don't know 99. Refused to answer	Yes>> Proceed to Next question No>> Document any reasons (if given)
What is the individual's LGA and state of residence?		
Do they travel to current LGA for work?	1. Yes 0. No 88. Don't know 99. Refused to answer	
Which other state/LGAs do they travel to for work?	----------	If no other, write (N**/A)** If respondent refuses type "refused"
What is the person's sex at birth?	1. Female 0. Male 99. Refused	
What does the person consider their sexual orientation to be?	1- Gay or homosexual (have sex with members of the same sex only) 2- Bisexual (have sex with both men and women) 3- Heterosexual or Straight (Have sex with members of the opposite sex only) 4- Other, specify: _____ 88- Refusal	

	99- Don't know	
What does the person consider their gender to be?	1 – Man 2- Woman 3- Other, specify: _____ 4- Both male and female 88- Refusal 99- Don't know.	
How old is the individual?		
What is the individual's highest level of education?	0- Never attended school 1- Quranic Only 2- Primary 3- Junior Secondary/ JSS 4- Senior Secondary/ SSS 5- Higher than SSS 88- Refusal	
What is the occupation from which the individual earn most of their income? **(choose one**	0- Not Working (support from someone else) 1- Pupil/Student (support from someone else) 2- Professional career 3- Self-employed business 4- Petty trading 5-Entertainment/Service/Bar/Restaurant/Hotel 6- Sex work 7 = Other_____ 88= Refusal	
Are they an injecting drug user?	1. Yes 0. No 88. Don't know 99. Refused to answer	Only if individual is an MSM

6.10 APPENDIX J: (NON-VENUE BASED) OTHER SOURCES MULTIPLE-SOURCE CAPTURE-RECAPTURE FORM

A. Per identified source

	Name of Source	Options	
1	Type of Source	1. Clinic Register 2. KP focused research study 3. Online network group 4. KP outreach programs 5. Drug treatment centre	
2	Name of Source		
3	For which of the activity states do these registers contain information on? (multiple answers allowed)	1. Akwa Ibom 2. Benue 3. Cross Rivers 4. FCT 5. Lagos 6. Nasarawa 7. Rivers	
4	Other Notes:		
5	Which key population does this register capture? (multiple answers allowed)	1. MSM 2. FSW 3. PWID	
6	How many KPs were identified in this register?	1. MSM : _____ 2. FSW : _____ 3. PWID : _____	Only KP selected in question 5 of this form will be asked.
7	How many KPs were successfully contacted and enumerated (either through phone/physical or online)	1. MSM : _____ 2. FSW : _____ 3. PWID : _____	Only KP selected in question 5 of this form will be asked.
8	How many KPs refused participation to study?	1. MSM : _____ 2. FSW : _____ 3. PWID : _____	Only KP selected in question 5 of this form will be asked.

B. Per identified KP person from source

No.	Name of Source	Options	
1	What is the mode of contact?	1. Phone/digital 2. In-person contact 3. Texting 4. E-mail	
2	Which key population does the contact belong to?	1. MSM 2. FSW 3. PWID	
3	Does the individual engage in sex work (sex for gifts/ money)	1. Yes 0. No 88. Don't know 99. Refused to answer	If yes and below 18 years of age, provide with referral services

4	Did the contact reported being approached and given a tag?	1. Yes 0. No 88. Don't Know 99. Refused	if YES continue to Q5 of this form if NO move to Q6 of this form
5	How many times did the contact reported being approached and accepting a tag?	1. Once 2. Twice 3. Thrice	Number of options will be as many round of captures done before for the KP group.
6	When did the contact say they received the tag?	[approximate date]	Question will be repeated according to how many rounds specified in question 4 of this form
7	Which location did the contact received the tag? (name of Hotspot or LGA)		Question will be repeated according to how many rounds specified in question 4 of this form
8	What colour of tag item did the contact receive?	1. Pink 2. Blue 3. Red 4. White 5. Green 6. Yellow	If Q1 is "1" Phone contact Question will be repeated according to how many rounds specified in question 4 of this form
9	Provide tag code and/or other description given by the contact.	[Notes]	If Q1 is "1" Phone contact Question will be repeated according to how many rounds specified in question 4.
10	Of the pictures shown below, which is the tag the contact received?	1. [pic 1] 2. [pic 2] 3. [pic3] 4. [pic4] 5. [pic5] 6. [pic6] 7. [pic7] 8. [pic8] 9. [pic9] 10. [pic10]	If Q1 is "2" in-person contact "3" texting, or 4 "e-mail" Question will be repeated according to how many rounds specified in question 4.
11	What is the contact 's LGA and state of residence?		
12	Does the contact travel to current LGA for work?	1.Yes 0. No 88.Don't know 99.Refused to answer	

13	Which other state/LGA do the contact travel to for work?		List the state/LGAs OR else type N/A
14	How old is the contact?		
15	What is the individual's highest level of education?	0- Never attended school 1- Quranic Only 2- Primary 3- Junior Secondary/ JSS 4- Senior Secondary/ SSS 5- Higher than SSS 88- Refusal	
16	What is the occupation from which the individual earn most of their income? (choose one)	0- Not Working (support from someone else) 1- Pupil/Student (support from someone else) 2- Professional career 3- Self-employed business 4- Petty trading 5- Entertainment/Service/Bar/Restaurant/Hotel 6- Sex work 7 = Other_____ 88= Refusal	
17	What is the contact's sex at birth?	1. Female 0. Male 88- Refusal 99- Don't know	
18	What does the contact consider their sexual orientation to be?	1- Gay or homosexual (have sex with members of the same sex only) 2- Bisexual (have sex with both men and women) 3- Heterosexual or Straight (Have sex with member of the opposite sex only) 4- Other, specify: _____ 88- Refusal 99- Don't know	
19	What does the contact consider their gender to be:	1 – Man 2- Woman 3- Other, specify: _____ 4- Both male and female 88- Refusal 99- Don't know.	

6.11 APPENDIX K: REFERRAL DIRECTORY IN CASES OF TRAFFICKING OR GENDER BASED VIOLENCE

SN	STATE / LOCATION	CONTACT PERSON	PHONE NO	EMAIL	ORGN/INST.	PHYSICAL ADDRESS
1	Abia	Mrs. Grace Amobi	08037026042		Women's Rights Advancement and Protection Alternative (WRAPA)	**Abia**
		Mrs. Uzoamaka Uche-Ikonne	08038424988	abiafida@yahoo.co.uk ucheikonneu@yahoo.co.uk	International Federation of Female Lawyers (FIDA)	40, Warri Street, **Umuahia**
2	Adamawa	AsmaAsma"u Joda	08032917070	asmaujoda@hotmail.com		Galadima Quarters, Fatude Galadima, **Yola Town**
		Zubainatu Yahaya	07066727354	zubainatuyahaya@yahoo.com		Galadima Quarters, Fatude Galadima, **Yola Town**
		Mrs. Grati Philips Amuro	08036946429		GABS Ventures	Burto Plaza Lafia-Karim Lamido Road, **Lamurde**
		Mrs. Helen Edwin	08034389420 08035902004	adamawa@fidanigeria.org fida_adamawastate@yahoo.com	International Federation of Female Lawyers (FIDA)	High Court of Justice, **Yola**
3	Akwa Ibom	Mrs. Gloria Umoren	08023156457	akwaibom@fidanigeria.org fidaakwaibom@gmail.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice Legal Drafting Dept, **Uyo**
			08038878670 08027863494	ifuhandmaids@yahoo.ocm info@hhcjnigeria.org	The Handmaids of the Holy Child Jesus (HHCJ) Nigeria	**Ikot Ekpene**
4	Anambra	Mrs. Alfreda Oruche	08033970865	freddieliness@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	Uden Gbala Villa, Uruma Bian Egbema, **Ozubulu**
		Tina Emekekwue	08038728543 08063476746	anambra@fidanigeria.org tinae0555@yahoo.com	International Federation of Female Lawyers (FIDA)	335, Nnamdi Azikiwe Avenue, **Awka**
			08033246364	info@hhcjnigeria.org	The Handmaids of the Holy Child Jesus (HHCJ) Nigeria	**Onitsha**
5	Benue	Mrs. MaryLisa Oloko	08163184498 08059113200 08082118750		Women's Rights Advancement and Protection Alternative (WRAPA)	
		Mrs. Margaret N. Atu	08065310633	benue@fidanigeria.org fiddabenue@yahoo.com	International Federation of Female Lawyers (FIDA)	GP 380, 3rd Avenue, Lobi Quarters, Old G.R.A, **Markudi**
6	Bauchi	Haj Amina Jibrin Bala	08035803848; 08025477606	aminab@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	**Bauchi**
		Fadimatu Muhammad	08125150509	yalwa71@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Bauchi**

7	Borno	Babangida Labaran	08076974382	Kojol123@yahoo.com	National Human Rights Commission	**Maiduguri**
		Mrs.Binta Othman	08033512079 08094478807	fidamaid@yahoo.com bintaott@yahoo.co.uk	International Federation of Female Lawyers (FIDA)	c/o NBA Bar Centre. Shehu Laminu Way, G.R.A. **Maiduguri**
8	Bayelsa	Ella Douglas	08035501338		Women's Rights Advancement and Protection Alternative (WRAPA)	**Yenogoa**
		Mrs. Pat. Mavis Sini-Ototo	08037760026	bayelsa@fidanigeria.org fidabayelsa2011@yahoo.com	International Federation of Female Lawyers (FIDA)	FIDA Bayelsa Secretariat. 681, Melford Okilo Road, Opp. Arizona Filling Station, **Yenezuegene, Yenagoa**
9	Cross River	Mrs. Ekanem Bassey	08030958868	wrapacrs@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	Plot 232, Eta Agbo Layout, Akin Royal Cemetry, **Calabar**
		Mrs. Rosemary Ogon Onah	08024681115 08054354411	crossriver@fidanigeria.org onahrosemary@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice. New Secretariat, **Calabar**
			08068580085	info@hhcjnigeria.org	The Handmaids of the Holy Child Jesus (HHCJ) Nigeria	**Calabar**
10	Delta	Mrs. Lyna A. Ocholor	08083571117	delta@fidanigeria.org lynaocholor@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Asaba**
11	Ebonyi	Mrs. Nnenna Elekwa	08037433691	ebonyi@fidanigeria.org fidaebonyi@yahoo.com nnelekwa@yahoo.com	International Federation of Female Lawyers (FIDA)	13 Gunning Road, **Abakaliki**
12	Edo	Chief (Dr.) Mrs. Irene Odaro	08023514847 08033656231	edo@fidanigeria.org iredaro@hotmail.com stellaojeme@yahoo.com	International Federation of Female Lawyers (FIDA)	C/O 24, Chief Tony Anenih Avenue, G.R.A. **Benin**
		Hon Florence Gbinigie	08034922410	fonwip@yahoo.co.uk	Forum of Nigerian Women in Politics (FONWIP, Nigeria)	45, Owina Street, Off Sakponba Road, Ring Road, **Benin City**
13	Enugu	Oby Nwankwo	08033132494	nwankwooby@yahoo.com	Civil Resource Development and Documentation Centre (CIRDDOC)	16, 5th Avenue, **City layout, New Haven**, Enugu
		Joy Ezeilo Nkechi Nwabueze	08033062359 08068063470	ezeilojoy@yahoo.co.uk nnwabueze@wacolnigeria.org	Women's Aid Collective (WACOL)	**Enugu**
		Mrs. Elizabeth Oji	08033123974	enugu@fidanigeria.org lizzyejitu@yahoo.com	International Federation of Female Lawyers (FIDA)	6 Edem Close, Upper Chime Avenue, **New Haven**
		Uchenna Nwokocha	08072763456	nhrcnigeriasez@yahoo.com	National Human Rights Commission	**Enugu**

14	Ekiti	Dr. (Mrs.) Esther Fabusuyi	08033775835	ayodelefabusuyi@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	
		Mrs.Toyin Ajibulu	08038429601	ekiti@fidanigeria.org ekitisjf@yahoo.com	International Federation of Female Lawyers (FIDA)	Toyin Ajibulu & co. Damfestostom Plaza, Opp. University Teaching Hospital, **Adebayo, Ado Ekiti**
		Elder Adedeji	08060828209	wardcekiti@yahoo.com	Women Advocate Research and Development Centre (WARDC)	**Ekiti**
15	Gombe	Mrs. Anita Dogo	08036051580	wrapagombe@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	
		SaSa"adatu Bome Ishaya	08026852482 08062186837	gombe@fidanigeria.org hdaudasimon@yahoo.co.uk	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Gombe**
16	Imo	Dr. Jude Ohanele	08035927419	johanele@yahoo.com	Development Dynamics	52, Ohaozara Street, Aladimma, **Owerri**
		Mrs. Ine Nnadi	08033250809	imo@fidanigeria.org fidaimostate@yahoo.com inennadi2@yahoo.com gloriaegwuagu@yahoo.com	International Federation of Female Lawyers (FIDA)	C/o HOD Commercial Law, Faculty of Law, Imo State University, **Owerri**
		Dr. Jide Egwin	08033187641		FMC	**Owerri**
17	Jigawa	Hauwa Zakar	08035865925 08033975402	jigawa@fidanigeria.org naanaa56@yahoo.com zainabsambo@ymail.com	International Federation of Female Lawyers (FIDA)	Director Planning, Research & Statistics, Ministry of Justice, **Dutse**
18	Kogi	Mrs. Abigail Ibiyeye	08034733533		Women's Rights Advancement and Protection Alternative (WRAPA)	**Kogi**
		Mrs.Tina L. Elijah	07031046246 08036792295	fidakogi@yahoo.com christielawfirm@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Lokoja**
19	Kwara	Mrs. Victoria Dumade	08035678660		Women's Rights Advancement and Protection Alternative (WRAPA)	**Ilorin**
		Mrs. Adebiyi	08055920200	wardckwara@yahoo.com	Women Advocate Research and Development Centre (WARDC)	**Kwara**
		Mrs. Munait Tayo Adeleye	08034700431	fidakwara2009@yahoo.com kwara@fidanigeria.org	International Federation of Female Lawyers (FIDA)	FIDA Kwara House, Opp. High Court Complex,

						Lanjorin Road, **Ilorin**
20	Katsina	Haj Adama Bakori	08035965057	adamabakori@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	**Filin Samji**, Katsina
21	Kaduna	Dr. Victoria Adidu	07028808816 08033830482	vickyadidu@yahoo.com	Baobab Outreach Team	**Zaria**, Kaduna
		Mallam Abbas Shehu	08024285891	wrapakaduna@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	17, Rafindadi Road, **Unguwar Shanu,** Kaduna
		Zainab Atta	08025259623	leadsnigeria@yahoo.com	League of Democratic Women (LEADS - NIGERIA)	4th Floor, Hamza Zayyad House, 4, Muhammadu Buhari Way, **Kaduna**
		Lydia Umar	08033146543	gat_org@yahoo.com	Gender Awareness Trust (GAT)	F3 Barnawa Shopping Complex, New Extension, **Barnawa, Kaduna South**
		Mrs. Fatimah Okugade	08033204913 08023644706	kaduna@fidanigeria.org nallahchambers@yahoo.com jite67@hotmail.com	International Federation of Female Lawyers (FIDA)	20 Keffi Road by Lagos Street, **Kaduna**
		Aisha Ahmad	08037013657	wardczaria@yahoo.com	Women Advocate Research and Development Centre (WARDC)	**Zaria**
		Mariam Abbas	08068108028	wardczaria@yahoo.com	Women Advocate Research and Development Centre (WARDC)	**Zaria**
22	Kano	Amina Hanga;	07033418288	amina.hanga@iwei-ng.org ashm66@yahoo.com	Isa Wali Empowerment Initiative (IWEI)	10 Arakan Rd, **Nassarawa**, Kano
			08033088521	maryamu@leapafrica.org	Isa Wali Empowerment Initiative (IWEI)	10 Arakan Rd, **Nassarawa**, Kano
		Hauwa Ibrahim	08037051634		Women, Widows and Orphans Development Iniiative	Kano
		Zainab Ahmed	08065725403		Community support and development Initiative	
		Mohammed Datti	08075383187	hauwaasjauro@yahoo.com	National Human Rights Commission	**Kano**
		Mrs.Maryam A. Sabo	08037151647	kano@fidanigeria.org maryams02@yahoo.com	International Federation of Female Lawyers (FIDA)	**Office of the** Chief Magistrste, High Court of Justice complex, **Kano**
		Zainab Bello Maitama	08034505085		Women's Rights Advancement and Protection Alternative (WRAPA)	**Kano**

		Hadiza Bala	0813515442		Women and Peace Security Network	
23	Kebbi	Halima Aliyu	08036202208	aliyuhalima@ymail.com	Women's Rights Advancement and Protection Alternative (WRAPA)	Ministry of Justice, **Birnin Kebbi**
24	Lagos	Iheoma Obibi	08033020779	iheomaobibi@yahoo.com	Alliances for Africa (AfA)	29, Norman Williams Crescent, Off Awolowo Road, Ikoyi, **Ikoyi**
		Ada Ajina Ude	08033003435	adaagina@yahoo.com	Gender and Development Action (GADA)	**Lagos**
		Dr. F. Sholaye	08023395953		Women's Rights Advancement and Protection Alternative (WRAPA)	**Lagos**
		Bisi Olateru Olagbegi	08033347896	wocon95@yahoo.com	Women Consortium of Nigeria (WOCON)	**Lagos**
		Josephine Effa-Chukwuma	08052004698 08180091072	josephine@projectalertnig.org	Project Alert on Violence Against Women	**Lagos**
		Mausi Segun	08054707559	nhrcnigeriaswz@yahoo.co.uk nhrcnigeriaswz@gmail.com	National Human Rights Commission	**Lagos**
		Mrs. Omotola Rotimi	014713799 017926928	opdlagos@yahoo.com	National Human Rights Commission	Office of the Public Defender, Motorways Centre. 1 Motorways Avenue, **Alausa, Ikeja, Lagos**
		Mrs.Olufunmi Oluyede	08066553669	fida_lagos@yahoo.com lagos@fidanigeria.org olufunmi@trlplaw.com philnneji2005@yahoo.com	International Federation of Female Lawyers (FIDA)	FIDA National Secretariat, 14/16, Makoko Road, Off Herbert Macaulay Road, **Yaba**
		Princess Femi Kayode	08023331036 08058207164 08099522487		MEDIACON	**Lagos**
		Abiola Akiode - Afolabi	08055951858	abiolaak@yahoo.com	Women Advocate Research and Development Centre (WARDC)	9, Amore Street, Off Toyin, Ikeja, **Lagos**
			08033586364	info@hhcjnigeria.org	The Handmaids of the Holy Child Jesus (HHCJ) Nigeria	2-6, Somosu Street, **Surulere**
		Emmanuella Azu	08034616124	womenadvocate@yahoo.com	Women Advocate Research and Development Centre (WARDC)	9, Amore Street, Off Toyin, Ikeja, **Lagos**
		Grace Ketefe	08027592145	womenadvocate@yahoo.com	Women Advocate Research and Development Centre (WARDC)	9, Amore Street, Off Toyin, Ikeja, **Lagos**

		Itoro Eze Anaba	08094000028		Mirabel centre for victims & survivors of GBV	
25	Niger	Mrs. Laitu Danladi	08023754274		Women's Rights Advancement and Protection Alternative (WRAPA)	
		Mrs.Mairo Mohammed-Mann	08034531239 07034918677	niger@fidanigeria.org umimannn@yahoo.com fatitakuma@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Minna**
26	Nassarawa	Haj Maryam Danyaro	081322176997		Women's Rights Advancement and Protection Alternative (WRAPA)	3, Maharba Close, **Nasarawa Town,** Nasarawa
		Hajia Asmau Larai Yusuf	08035983668	nasarawa@fidanigeria.org asmau_dpp@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice, Shendam Road, **Lafia**
27	Oyo	Dr. (Mrs.) Stella Elugbe	08053515214		Women's Rights Advancement and Protection Alternative (WRAPA)	33, Amina Way, University of **Ibadan**, Oyo
		Mrs. Dupe Awosemusi	08038549885 08185067193	oyo@fidanigeria.org fidaoyo@yahoo.com dupetocom@yahoo.com	International Federation of Female Lawyers (FIDA)	RM 54, Ministry of Justice Secretariat, **Ibadan**
28	Osun	Mrs. Adefunmilola Fajemisin	08032440705	osun@fidanigeria.org fidaosun@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice. **Oshogbo**
29	Ondo	Mrs. Adeyemi Tuki	08033516730	ondo@fidanigeria.org fidaondo@yahoo.com	International Federation of Female Lawyers (FIDA)	Ministry of Justice. Alagbaka, **Akure**
		Dr. Victoria Adidu	08033830482	vickyadidu@yahoo.com	Independent Counsellor	Quarter Quard, 48th Street, House 4, Shagari Estate, **Akure**
30	Ogun	Adebajo Yemi	08033915711	wardcogun@yahoo.com	Women Advocate Research and Development Centre (WARDC)	**Ogun**
		Dr. (Mrs.) Mosunmola Imasogie	08037257095 08037256567	ogun@fidanigeria.org mimasoge@yahoo.com	International Federation of Female Lawyers (FIDA)	Faculty of Law. Olabisi Onabanjo University, **Ogun State**
31	Plateau	Mrs. Rebecca Isandu	08065564019		Women's Rights Advancement and Protection Alternative (WRAPA)	103/18F, Atili Street, Moonshine Hotels Junction, **Jos**
		Veronica Abe	08072449323	nhrcjos@yahoo.com	National Human Rights Commission	**Jos**
		Olivia Dazyam Milaham	08061689423	plateau@fidanigeria.org fidaplateau@yahoo.com bennydaudu@yahoo.co.uk	International Federation of Female Lawyers (FIDA)	Ministry of Justice, **Jos**
32	Rivers	Valentine Madubuko	08056513203	nhrcszo@yahoo.com valbuko@yahoo.com	National Human Rights Commission	**Port Harcourt**

		Nelly Ndahbros	08035435558	nellydoubra@yahoo.com	National Human Rights Commission	**Port Harcourt**
		Mrs.Eucharia Pepple	08036775060	rivers@fidanigeria.org fidarivers@yahoo.com sosopepple@yahoo.co.uk	International Federation of Female Lawyers (FIDA)	Ministry of Justice. State Secretariat Complex, **Port Harcourt**
33	Sokoto	Ummal Hair	08035606194		Women's Rights Advancement and Protection Alternative (WRAPA)	**Sokoto**
		Aishatu Abdullahi Illo	08062124964	sokoto@fidanigeria.org fidasokbranch@yahoo.com	International Federation of Female Lawyers (FIDA)	FIDA Secretariat. Western Bye Pass, **Sokoto**
34	Taraba	Mrs. Aisha M. Hassan	07065008227	taraba@fidanigeria.org fidajalingo@yahoo.com	International Federation of Female Lawyers (FIDA)	Attorney-General's Chambers, Ministry of Justice, **Jalingo**
35	Yobe	Fati Alhaji Mohammed Hauwa Abubakar	08036912020 08023666660 08030411976	fatimomd@yahoo.com	International Federation of Female Lawyers (FIDA) Women and Peaec Security NetwoorkS	Ministry of Justice, **Damaturu**
36	Zamfara		08024616852		Women's Rights Advancement and Protection Alternative (WRAPA)	**Zamfara**
37	FCT	FMWASD	08100000068		Shelter for survivors of GBV	**Abuja**
		Federal Min. of Justice	09-5235208, 09-5237676, 09-5235194			Federal Secratariat Complex, Shehu Shagari Way Abuja
		Maryam Uwais	08033088521	maryamu@leapafrica.org		
		Saudatu Mahdi	08033144905	saudatu@yahoo.com	Women's Rights Advancement and Protection Alternative (WRAPA)	12, Djibouti Crescent, Off Freetown Street, Behind Rockview Hotel, **Wuse 2**
		Ezinwa Okoroafor	08023039678	ezinwaokoroafor@yahoo.com	International Federation of Female Lawyers (FIDA)	52, Parakou Crescent, **Wuse 2**
		Ms. Iyabode O. Ogunseye	08033013474 08055605237	abuja@fidanigeria.org fidanigeriaabuja@yahoo.com	International Federation of Female Lawyers (FIDA)	FIDA Office, Federal Ministry of Justice Complex, Shehu Shagari Way, **Central Area**
		Zaccheaus Senbanjo		sirkay03@yahoo.com	National Human Rights Commission	19, Aguyi Ironsi Street, **Maitama**
		CIRDDOC	08034539760 08068360025	cirddoc@yahoo.co.uk	Civil Resource Development and Documentation Centre (CIRDDOC)	7, Onitcha Crescent, Off Gimbia Street, Area 11, **Garki**
		Abdulraman Yakubu	08075697449	nhrcmo@gmail.com	National Human Rights Commission	19, Aguyi Ironsi Street, **Maitama**
		Oti Anukpe Ovrawah	08023345227	otianuk@yahoo.com	National Human Rights Commission	19, Aguyi Ironsi Street, **Maitama**

		Uche Okwuobi	08103881281	ucheokwuobi@yahoo.com	National Human Rights Commission	19, Aguyi Ironsi Street, **Maitama**
		Ngozi Okore Call centeres	08038023017 08077091124 0807709123 08077091126	ngoziokore1@yahoo.com	National Human Rights Commission	19, Aguyi Ironsi Street, **Maitama**
		WACOL TAMAR SAC	09091333000 09092777000			Plot 8 kontagora street, off jos street Area 3 Abuja
		Dr Lola Mabogunje	09 670 0401		IPAS	8 Port Harcourt Crescent, off Gimbiya street Garki.
		CSP Olabsisi Kolawole DSP Ebu Dada - Moses	08096432555 08081772637	Babskay96@yahoo.com	Gender Advisor, Nigeria Police Force O/C Force family support unit	Force Head quarters Abuja
			07030000203		NAPTIP	202b Daaba street, Wuse Zone 5 FCT Abuja
			08034551462		FOMWAN FCT coordinator	
		Mr. Archibong	0803 742 6408		Child Rights Networks	

6.12 APPENDIX L: REFERRAL TRACKING TEMPLATE FOR TRAFFICKING AND GBV SERVICE FOR PARTICIPANTS 15-17 YEARS

A. To be filled at the first contact

a. Referral code: (ST/TG/CBO/enumcode/XX) b. Date of referral: c. Services referred for:	SELECT all that is applicable 1. Child trafficking 2. GBV 3. OVC services 4. HTS 5. STI 6. IGA 7. Support 8. Others
Name of KP CBO and contact person of KP-CBO who will follow-up:	
Facility of choice:	

B. To be filled during follow-up (every 3 weeks)

A phone contact is to be made by trusted KP CBO who was entrusted to follow-up with the service provider every 3-weeks interval from the date of initial contact to see if the individual has contacted the facility

	Date of individual's first visit to the facility	**Date when Individual was provided with services**	**Name and detailed address of facility referred to:**	**Name and phone number of contact person at the facility:**	**Services received at the visit**	**Name and phone of person who provided services**	**Was the participant satisfied with services received? (Y/N)**
Week 1							
Week 4							
Week 7							
Week 10							

C. Summary of all referral for GBV and Child trafficking (CT) per zone

State: …….

Zone (s): …….

What round: …… Enumerators Code:…….

Referral distribution	FSW	PWID	MSM	Comments
Total number of referral done for GBV				
Total number of referral done for CT				
Total number of referral done for other issues				
Number of successful GBV referral				
Number of successful CT referral				
Number of successful referral for other issue				
Total number of clients satisfied with services				

Section C to be completed by the UMB state supervisor. All referral documents/tracking's will be stored at the state offices and used for further care and service provision.

6.13 APPENDIX M: ORAL CONSENT SCRIPT FOR KEY INFORMANTS INTERVIEW

(Flesch-Kincaid Grade Level = 7.8)

Hello, my name is (*interviewer's name*). I am working with the University of Maryland Baltimore together with the Federal Ministry of Health, the National Agency for Control of AIDS (NACA) and the US Centers for Disease Control and Prevention.

You are being asked to take part in this exercise to help the government come up with a reliable number of Nigerians that are among men who have sex with men (MSM), females who sell sex (FSW), and people who inject drugs (PWID). This will help to improve the government's HIV program to address the needs of all groups at risk better. We are speaking with people like you who have knowledge on these populations to help us design our study. Your input will help us make sure our study is successful and accepted in the community.

If you agree to participate, I will ask you some questions about these populations. This includes: where and when they gather, how to identify them, and how to speak to them so as not to scare them. We will also ask you to suggest members of these populations that we could use as our study data collector. This interview should take about 1 hour of your time.

Anticipated risks or discomfort
These populations are highly discriminated against. Saying that you know them might put yourself at harm by others or the law. To guard against this, we will not collect any information that can be used to identify you such as your name. We will also not record the interview. Our study teams are trained on confidentiality and privacy and are required to sign a confidentiality agreement.

Anticipated benefits
You will not receive any direct benefit from your participation in this exercise. Light food and drinks will be provided for your comfort. Information from this interview will be used by our study team to better plan for our exercise. The results of this exercise will ultimately help inform better programs and policies for these marginalized groups and benefit the larger community

You are free to choose to take part in this exercise. If you decide not to take part in the exercise, that will not affect you in any way. You may also discontinue participation at any time and it will not affect you in any way. If you have any questions and/or concerns you may contact Dr. Victor Sebastian, Study Point of Contact, US Centers for Disease Control & Prevention, Nigeria Country office, Abuja via phone: +234 7034032608 or email: wzn3@cdc.gov

Do you have any questions about this activity? May I proceed with the first question?

To be filled in by participant obtaining consent:

Did the participant consent to study?

- ☐ Yes
- ☐ No

Date:

Time:

6.14 APPENDIX N: ORAL CONSENT SCRIPT FOR FOCUS GROUP DISCUSSION.

Flesch-Kincaid level 7.9

Hello, my name is (*interviewers' name*). I am working with the University of Maryland Baltimore together with the Federal Ministry of Health, the National Agency for Control of AIDS (NACA) and the US Centers for Disease Control and Prevention. You are being asked to take part in this exercise to help the government come up with a reliable number of Nigerians that are among men who have sex with men (MSM), females who sell sex (FSW), and people who inject drugs (PWID). This will help to improve the government's HIV program to address the needs of all groups at risk better. We are speaking with people like you who have knowledge on these populations to help us design our study. Your input will help us make sure our exercise is successful and accepted in the community.

If you agree to participate, you will be asked to join a discussion group. I will ask you some questions about these populations. This includes: where and when they gather, how to identify them, and how to speak to them so as not to scare them. We will also ask you to suggest members of these populations that we could use as our activity data collector. This interview should take about 1 hour of your time.

Anticipated risks or discomfort
These populations are highly discriminated against. Saying that you know them might put yourself at harm by others or the law. To guard against this, we will not collect any information that can be used to identify you such as your name. We will also not record the interview. Our activity teams are trained on confidentiality and privacy and are required to sign a confidentiality agreement. We will also ask others in the group not to share the information that is talked about in this session to others. They will also be told not to identify you in public. There is however always a risk of disclosure.

Anticipated benefits
You will not receive any direct benefit from your participation in this exercise. Light food and drinks will be provided for your comfort. Information from this interview will be used by our team to better plan for our exercise. The results of this exercise will ultimately help inform better programs and policies for these marginalized groups and benefit the larger community

You are free to choose to take part in this exercise. If you decide not to take part in the exercise, that will not affect you in any way. You may also discontinue participation at any time and it will not affect you in any way. If you have any questions and/or concerns you may contact Dr. Victor Sebastian, Study Point of Contact, US Centers for Disease Control & Prevention, Nigeria Country office, Abuja via phone: +234 7034032608 or email: wzn3@cdc.gov

Do you have any questions about this activity? May I proceed with the first question?

To be filled in by participant obtaining consent:

Did the participant consent to study?

- ☐ Yes
- ☐ No

Date:
Time:

6.15 APPENDIX O: DOCUMENTATION OF SECURITY ISSUES DURING FIELD WORK

State: ……

Zone/LGA of incident……

Date: …….

Name of Enumerator:……..

Description of incident	
Describe any damages recorded as at the time of this report	
Immediate action taken by reporting officer to address the incident	
Outcome of the action taken	
Other follow-up action recommended	

Name and phone number of staff reporting:

……
……

6.16 APPENDIX P: REFERRAL SCRIPT

SW below the age of 18 (child trafficking and gender based violence)

Because of your age, I have to provide you with a list of referral for gender based violence and child trafficking services.

Please contact the number listed in this referral. Here is the one that is closest to where we are [point/ highlight the referral]

Child trafficking is the use of force to get a child (someone below the age of 18) to do a work that they would otherwise not do willingly. This forced labour can be physical labour or sexual labour.

Gender based violence is the use of violence (physical, psychological, sexual...) because of your gender and/or sexual orientation (who you have sex with)