Uganda Prisons Service

UGANDA PRISONS SERVICE SERO-BEHAVIOURAL SURVEY, 2013-2014

May 2019

This report presents findings from Uganda Prisons Service sero-behavioural survey to determine Human Immunodeficiency Virus (HIV) prevalence, incidence, and behavioural and biological correlates of infection among prisoners and staff of Uganda Prisons Service (UPS) performed from 2013 to 2014.

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Preface

The prevalence of HIV and other infections in prisons is higher relative to that in the general population. National programs against HIV which are focused in the general public on addressing factors that drive the epidemic, do not adequately address the HIV situation in prisons. The environment in prisons presents a unique profile of HIV determinants, which require customized responses to prevent HIV acquisition and to provide prompt care and treatment to those infected. However, information on risk factors for HIV in prisons in Uganda and Africa at large is sparse.

The Uganda Prisons Service sero-behavioural survey assessed the prevalence, incidence, and behavioural and biomedical correlates of HIV infection among prisoners and staff of Uganda Prisons Service. The information in this report provides the evidence needed on the transmission dynamics among prisoners, staff, and the communities that support Ugandan prisons, and offer an empirical foundation on which to develop prevention, care, and treatment strategies that will reduce disease transmission and improve health. This study and subsequent activities based upon these data are consistent with the goal of the UPS health policy to provide prisoners with adequate and appropriate health care, equivalent to that available in the community without discrimination on grounds of their legal status or nationality.

UPS is committed to the principles of its stated mission, to provide safe, secure, and humane custody of offenders while placing human rights at the center of their correctional programs. It is our hope that this invaluable source of information will accelerate collaborations with our partners, civil society organizations, other government agencies and the public in the fight against HIV, not only in Uganda Prisons Service, but also in other African prisons and beyond as we aim to attain the Fast Track targets towards ending the AIDS epidemic.

Finally, I wish to express my appreciation to my staff and the staff of CDC Uganda who through a cooperative agreement conducted this survey on behalf of Uganda Prisons Service. This survey report forms a firm foundation upon which appropriate policies to address the HIV epidemic in prisons will be formulated. In addition, I thank the expert team from Makerere University College of Health Sciences (Dr. Bruce Kirenga, Dr. Simon Kasasa, Dr. Jayne Tusiime, Dr. Joseph Imoko, Dr. Samuel Kasozi, Dr Winters Muttamba and Dr Levi Mugenyi) who contributed to the data analysis and report writing. This survey report forms a firm foundation upon which appropriate policies to address the HIV epidemic in prisons will be formulated.

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COMMISSIONER GENERAL OF PRISONS

Abbreviations

ACASI	Audio computer-assisted self-interview
AIDS	Acquired immunodeficiency virus
AIS	AIDS Indicator Survey
BED	BED capture enzyme immunoassay
CAPI	Computer assisted personal interview
CDC	Centers for Disease Control and Prevention
COR-E	General Conservation of Resource Evaluation
DHS	Demographic and Health Surveys
EIA	Enzyme immunoassay
GIS	Geographic information system
HBM	Health belief model
HBV	Hepatitis B virus
HBsAg	Hepatitis B surface antigen
HIV	Human immunodeficiency virus
HSV-2	Human herpes virus type 2
IDI	Infectious Disease Institute of Uganda
MOH	Ministry of Health
MOI	Ministry of Internal Affairs
MSM	Men who have sex with men
NTLP	National Tuberculosis and Leprosy Program
OC	Officer in-charge
OD	Optical density
PCL-C	Posttraumatic Stress Disorder Check List
PIN	Participant identification number
PPS	Probability proportional to population size
PTB	Pulmonary tuberculosis
PTSD	Post-traumatic stress disorder
STARHS	Serological Testing Algorithm for Recent HIV Sero-conversion
RITA	Recent infection testing algorithm
rIDR-M	Recombinant protein immune-dominant Region HIV-1 group M
TP	Treponema pallidum
TPB	Theory of planned behaviour
TTM	Trans-theoretical model
UNCST	Uganda National Council of Science and Technology
UPS	Uganda Prisons Service
UVRI	Uganda Virus Research Institute Scientific and Ethics Committee

Executive Summary

The Prisons Act 2006 mandates Uganda Prison Service (UPS) to provide custodial and rehabilitative services including health and welfare to offenders in Uganda. At the time of this survey, UPS had 241 (223 male and 91 female) prison units, 38,158 prisoners and 6,182 staff.

The prevalence of human immunodeficiency virus (HIV) and associated diseases is disproportionately high among prisoners relative to the general population. This is attributed to several factors including overcrowding, risk behaviour, poor sanitation, inadequate nutrition, exposure to violence, and limited health services that contribute to disease transmission.

Though an accurate estimate of the burden of HIV among prisoners was not known, previous studies had estimated the prevalence at 15.0% (1987), 26.0% (1996); and 12.0% among female and 11.0% among male prisoners (2009). However, these studies had limitations of small sample size, non-robust sampling methodologies and limited information on drivers of the epidemic.

The goal of this nationally-representative prison survey was to comprehensively assess HIV epidemiology and services so as to provide evidence for policy makers and program planners to develop, implement, and evaluate HIV/AIDS prevention, care, and treatment services for UPS staff and prisoners.

A sample size of 11, 966 participants with 9,885 prisoners (9,253 males and 632 females) and 2,081 staff (1,316 males and 765 females) was derived based on an estimated HIV prevalence of 11.0% for men and 13.0% for women [1] and incidence of 2.0% per 100 person years; a design effect of 1.307, a confidence interval of 95% and a precision of 20.0%.

The sample was randomly selected from 117 prison units in a two-stage cluster sampling process with probability proportional to population size (PPS). A current list of prisoners and staff was obtained two days prior to study interviews from within the sampled prison units. Using this list, random samples of both prisoners and staff were drawn using Microsoft access 2013 random query function. In addition, 299 persons were randomly selected to replace staff members or prisoners who were either unwilling or unavailable to participate in the survey in order to keep the sample size to 14,265 (2,393 staff and 11,872 prisoners) participants after noticing that only 9,667 participants had responded out of 11,966 participants originally invited to participate.

The aim of this survey was to provide national estimates of HIV prevalence and incidence among prisoners and staff, and to identify risk factors associated with prevalent and incident HIV infections across the country. Being a prisoner or staff member of UPS; aged at least 18 years; and being willing to provide informed consent were the criteria for inclusion in the survey. Furthermore, since prisoners aged 18 years and below are not detained in adult but in

juvenile Prisons, they could not be included in the study because juvenile prisons were out of the scope of this study.

The study protocol, data collection instruments, consent forms, and other study-related materials; were approved by Uganda Virus Research Institute (UVRI) Scientific and Ethics Committee, the Uganda National Council of Science and Technology (UNCST), and the U.S. Centers for Disease Control and Prevention Institutional Review Board prior to commencement of the survey.

Participants were informed of the purpose of the study, the risks and benefits of participation. Before providing informed consent, the respondents were assured they would be free to opt out at any time during the survey with no impact to either their incarceration, job, health care, or other services, and that survey activities would take place with minimal disruption of daily routines. They were also informed that treatment of any conditions uncovered during survey testing would be provided to those needing it. A unique participant identification number (PIN) was used to identify each participant.

A study team composed of 26 personnel was trained for two weeks on survey design and methodology, study standard operating procedures (SOPs), ethics, HIV counselling and testing; prison security procedures and policies, basic legal issues relevant to prisoners; audio-computer assisted self-interview (ACASI) methodology for administering the survey questionnaire, and basic background of the different infections to be tested.

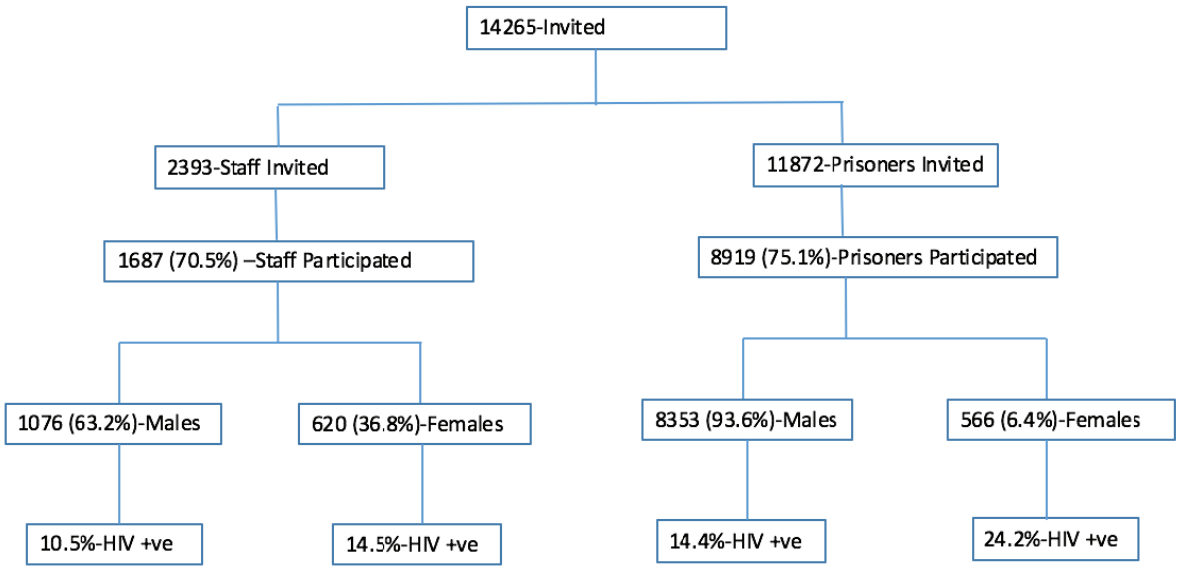
Data collection was conducted over a period of 11 months. The structured questionnaire used in this study was available in English and translated into 6 local languages (Luganda, Swahili, Lugbara, Luo, Runyakitara, and Ateso) and administered using ACASI or computer-assisted personal interview (CAPI) for those who preferred or were unable to use ACASI on their own.

Blood was collected from consenting participants for tests including HIV, CD4, complete blood count (CBC); viral load and for recent HIV infections among HIV positive participants; Hepatitis B virus, Herpes simplex 2 virus, Treponema pallidum and serum chemistry. For TB, laboratory tests were offered to those with a positive symptom screen. All samples were barcoded with the respective participants PIN on site. All the collected samples were sent to the UVRI laboratory for analysis twice a week.

Results:

Participation rates and demographic characteristics: Overall, among the 14,265 prisoners and prisons staff who were invited to participate in the survey, 10,606 (74.3%) participated (70.5% and 74.5% for staff and prisoners respectively). Of the 10,606 participants, 8,919 (84%) of participants were prisoners, and 1,687 (16%) were UPS staff. Men constituted 93.6% of prisoners and 63.2% of staff compared to 49.3% men in the general population (Uganda Bureau of Statistics, 2014 population census). The mean age for prisoners was 31.1 (SD ±10.1) years and 38.1 ((± 9.1) years for staff. Majority of the Prisoners (24.8%) were in the age group of 25-

29 years while among the Staff, most of the respondents (21.3%) were in the age group of 30-34 years. Among the prisoners, 72.9% had been to school while among the staff 99.9% had been to school.



Imprisonment history: The median (±IQR) age at first imprisonment was 26 (± 12) years; 25 years (±12) for men, and 28 years (±18) for women. The majority of prisoners (67% male, 83.3% female) had been imprisoned once and over half the prisoners (59.7% men, 57.4% women) were on remand waiting for trial. The majority, 81.6% of convicted prisoners were serving a period while 6.1% had life sentences and 11.3% were given a death penalty. Crimes for which prisoners had been imprisoned for included murder (31.8% of women, 11.9% of men); robbery (21.7% of men, 10.4% of women); assault (10.8% women, 8.9 men) and defilement (1.8% women, 13.1% men).

Imprisonment History	**Prisoners**	**Staff**
Age at First Imprisonment	26 (25 male, 28 female)	NA
Imprisoned once	67% male; 83.3% female	NA
On remand awaiting trial	59.7% male; 57.4% female	NA
Offences for which prisoners had been imprisoned		
Robbery	21.7%	NA
Defilement	13.1%	NA
Murder	11.9%	NA
Embezzlement	6.2%	NA

Knowledge about HIV/AIDS

General knowledge: 75.4% of staff and 74.0% of prisoners had ever heard of HIV/AIDS. By Regions, awareness was highest in Northern (81.5%), Mid-Eastern (81.4%), North Western (78.8%) among staff, and highest in Kampala extra (85.8%), Central (82.7%) and North (78.5%) among prisoners.

Knowledge of preventing transmission of HIV: Among staff 70.2% knew consistent condom use prevents HIV transmission, 70.1% knew having sex with one uninfected partner reduces the risk of HIV transmission; and 70.4% knew that healthy looking people can have HIV infection. However, nearly a third had misconceptions: 33.6% that HIV infection can be contracted through witchcraft, 30.1% that mosquito bites can transmit HIV infection and 27.3% that HIV can be contracted by sharing food with an infected person.

Among prisoners, *56.8%* reported consistent use of condoms can prevent HIV, 61.6% knew having only one uninfected sex partner can reduce the risk of HIV transmission; and 58.5% that healthy looking people can have HIV infection. However, 55.8% thought mosquito bites can transmit HIV and 45.4% and 42.8% that the HIV virus can be contracted through witchcraft or sharing food with an infected person respectively. Women and those who had ever been to school were more knowledgeable.

Knowledge about HIV/AIDS	**Prisoners (%)**	**Staff (%)**
Ever heard of HIV/AIDS	74.0	75.4
Consistent condom use prevents HIV transmission	56.8	70.2
Sex with one uninfected partner reduces risk	61.6	70.1
Healthy-looking people can have HIV	58.5	70.4
HIV can be contracted through witchcraft	45.4	33.6
Mosquito bites can transmit HIV	55.8	30.1
HIV can be contracted by sharing food with an infected person	42.8	27.3

Knowledge on prevention of mother to child transmission of HIV (PMTCT): 26.0% of staff knew that breast feeding can transmit HIV infection, and 69% that antiretroviral (ARVs) drugs can reduce mother to child HIV transmission. Women who had ever been to school were more knowledgeable than those who had not attended school (24.7% vs. 17.7%). Prisoners had similarly low knowledge about HIV transmission during breastfeeding; only 21.2% knew that breast feeding can transmit HIV and 63.6% that ARVs can reduce MTCT.

Attitudes towards HIV/AIDS

Attitudes about HIV testing: Staff attitude- 90.8% (more men than women) agreed that their friends think being tested for HIV is good; 95.0% that getting tested is good and 95.8% that it is good for their health. Furthermore, 96% of staff thought prisoners should easily access HIV

testing services whilst in prison; 83.7% that prisoners would test if the service was available; 86% that having routine HIV testing would reduce the spread of HIV in prison; and 89.2% that routine HIV testing of staff would reduce HIV spread in prison.

Prisoners' attitude: Fewer prisoners (78.6% compared to 90.8% of staff) agreed that their close friends thought being tested for HIV is good; 48.9% didn't think they would lose close friends and 45.9% didn't think their close friends would think that they are using drugs if they tested for HIV. A high proportion of prisoners (82.3%) thought HIV testing services should be readily available in prisons, 83.4% that prisoners would take HIV test if the service was available, and 81.1% thought that routine HIV testing would reduce the spread of HIV in prison.

Prisoners' attitude towards sex among prisoners: Approximately a third of prisoners (35.2% of men and 30% of women) reported it was possible to have sex with someone whilst in prison, and almost half of the prisoners (47.7% of men and 43.1% of women) thought they would not be able to avoid sex whilst in prison. The survey established that30.3% of men and 29.4% of women feared they were likely to get infected with AIDS virus while in prison; and 17.5% of men and 17.2% of women thought they were likely to infect others while in prison.

Prisoners' attitude towards condom use: A quarter (25.4%) of the prisoners (25.1%men, 29.7% women) agreed that condoms should be provided to prisoners; 23.9% (23.6% men, 27.5% women) that having condoms is a good idea and 27.9% (27.8% men, 29.5% women) that men would use condoms if they could get them. However, 39.5% (40.5% men, 30.7% women) believed that giving condoms would lead to more sex in prisons.

Attitude toward provision of HIV testing in Prisons	**Prisoners (%)**	**Staff (%)**
Agreed that getting tested is good for their health	83.6	95.8
Prisoners should easily access HIV testing services whilst in Prison	82.3	96
Prisoners would be tested if the services were available	83.4	83.7
routine HIV testing of staff would reduce spread of HIV in prisons	81.1	89.2
Agreed that condoms should be provided to prisoners in prison	25.4	-
Agreed that having condoms is a good idea respectively.	23.9	-
Men would use condoms if they could get them	29.5	-
Believed that giving condoms would lead to more sex in prisons	39.9	-

Sexual behaviour

The median age at first sex for staff was 19 years for women and 20 years for men. For prisoners, median age at first sex was 17 for males and females.

Among male staff, 69.3% (740/1,067) had had at least 2 sexual partners in their lifetime; 64.6% of those who ever had a sexual partner (374/579) knew the HIV status of at least one sexual partner. On the other hand, 70% of female staff reported having at least 2 sexual partners**.**

Among male staff, 29% of those who had had sex in the past 3 months had at least 2 partners; and 18.8% consistently used condoms. Among female staff, 4.6% had at least 2 sexual partners in the last 3 months; and 88.2% of them consistently used condoms. 2.3% (13/566) female prisoners reported having had consensual sex with men while in prison; 2 (15.4%) of them had used a condom.

Among male staff, 2.9% reported having had sex with other men and 38.8% of these had at least 2 male sexual partners in the past three months. The proportion of male prisoners who reported having had sex with men was 6.5%, and 50.3% of those had at least 2 sexual partners.

Sexual behaviour	**Prisoners**		**Staff**	
	Male	Female	Male	Female
Median age at first sexual intercourse	17	17	20	19
Had 2 or more sexual partners in their life time, %	58.9	28.8	69.0	70.0
Knew HIV status of at least one partner, %	53.2	28.1	54.3	70.7
Didn't know HIV status of any of their partners, %	6.9	6.5	9.8	11.0

High risk behaviours

Perceived risk of acquiring the AIDS Virus (some questions asked only of prisoners): The most common perceived risk behaviour was sharing razor blades (38.5%), having sex with other prisoners (29.3%), and cutting the skin for decorations (11%). Other risk behaviours included: smoking marijuana (17.5%) and taking alcohol (10.4%). Overall, 19.2% of participants had ever seen a prisoner drinking alcohol, whereas 7.1% reported seeing a prisoner inject drugs. When asked about their own behaviors, 9.8% of prisoners and 5.7% of staff had ever used drugs to get high. Among those who had used drugs to get high, 260 (29.9%) of prisoners reported having injected drugs, including cocaine, heroin and opium. Among prisoners who reported using injecting drugs, 49.2% reported sharing injection instruments and only 97 (76%) of those who shared cleaned the instruments before sharing. For staff, 18 (18.8%) of those who had ever used drugs had injected drugs. No staff acknowledged sharing injection instruments.

High Risk behaviours among prisoners	Prisoners (%)
Got a tattoo in prison	7.8
Shared tattooing instruments	33.6
Sharing razor blades	38.5
Having sex with other prisoners	29.3
Cutting the skin for decorations	11
Smoking tobacco	34.3
Smoking marijuana	17.5
Taking alcohol	10.4
Prisoners that self-reported that it is easy to get alcohol in prison	16.7
Prisoners that had ever seen a prisoner drinking alcohol	19.2

Drugs/substance abuse among staff and prisoners	Prisoners (%)	Staff (%)
Had ever used drugs to get high	9.8	5.7
Reported using injectable drugs (among those who had ever used drugs to get high)	29.9	18.8
Sharing instruments used in injecting drugs (among those who acknowledged injecting)	49.2	0
Cleaned injection instruments before sharing with others (among those who shared)	76	-

HIV testing and ART

History of HIV testing and HIV prevalence by self-report: Among staff, a high proportion of staff had been tested for HIV, with slightly more women than men reporting ever testing for HIV (96.9% vs. 92.3%) as well as having received test results (96.3% vs. 90.7%). The proportion reporting testing and having received results decreased with age. Among prisoners, 69.6% of men and 80% of women gave a history of ever having tested for HIV and 62.4% of the males and 71.2% of the females reported that they had received the test results. Among staff, 184 (11.7%) reported being HIV positive while among prisoners, 936 (16.7%) reported being HIV positive. Among staff, HIV prevalence by self-report (11.7%) was less than that determined by laboratory tests in this study (12%). Among prisoners, prevalence by self-report (16.7%) was higher than determined by study laboratory tests (15%).

HIV testing location: Over half (51.2%) of prison staff were tested through community based Prison Health Centres and 37.1% through Government hospitals. 33.8% of prisoners reported being tested at Prison Health Centres and 24.9% were tested in community based government hospitals.

CD4 and ART status: Of the 201 HIV positive prison staff, 84/201 (41.8%) had a CD4 count less than 350, with more men (64.3% (54/84) than women (35.7% (30/84) having a CD4 count <350.

ART Status: Of the 201 HIV + staff, 60.7% were on ART, 23.0% not on ART, while the ART status of 16.4% of them was undefined. Among the 84 prison staff with a CD4 count of <350, only 45.2% were on ART, 14.3% were not on ART while ART status was undefined in 17.9%.

Of the 1,333 HIV positive prisoners, 438/1,333 (32.9%) had a CD4 count less than 350, more men 397/438 (90.6%) than women 41/438 (9.4%) had a CD4 count <350. ART Status:
Of the 1333 HIV + prisoners, 36.7% were on ART, 37.4% not on ART, while the ART status of 26.0% of them was undefined. Among the 438 prisoners with a CD4 count of <350, only 45.0% were on ART, 32.4% were not on ART while ART status was undefined in 22.6%.

Antenatal and HIV-related care for female prisoners

Eighty women (14.2%) reported having been imprisoned with a pregnancy with 20 (4.6%) being pregnant at the time of the survey. Only 45% of pregnant women were offered antenatal care; 61.3% were offered an HIV test; 41.3% of mothers knew the HIV status of their infants and 18.3% of infants were HIV positive. Being offered HIV test was most common in the North East (100%), Kampala Extra (84.2%), East (80%) and South West (76.9%) regions. Overall, 83.3% HIV infected infants received treatment for HIV.

Antenatal and HIV-related care for female prisoners	**%**
Women imprisoned with a pregnancy	14.2
Women pregnant at time of the survey	4.6
Pregnant women offered ANC	45
Women offered an HIV test	61.3
Mothers that knew the HIV status of their infants	41.3
Infants positive	18.3
Infected infants receiving treatment for HIV	83.3

Prevalence of HIV, incidence of recent HIV infection and circumcision rates

HIV prevalence: HIV prevalence was 12.0% among staff and 15.0% among prisoners compared to 7.3% among the general population aged 15-59 years as reported in the 2011 AIDS Indicator Survey (AIS). HIV was less prevalent in male than female participants among staff (10.5% vs.14.6%) and prisoners (14.1% vs.23.9%). By region, HIV was most prevalent amongst staff working in the Northern region (19.6%), followed by Mid-Eastern (18.6), North West (17.3%) and lowest in Southern (6.8%). HIV among prisoners was most prevalent in Northern (20.9%), Kampala Extra (18.7%), and Southern regions (17.4%), while Eastern (8.5%) had the lowest rate. By comparison, HIV prevalence among the general population according to the 2011 UAIS by region was: Central-1 8.4%, Central-2 8.0%, Kampala 4.1%, South Eastern 4.8%, Mid-Eastern 3.8%, North East 5.2%, West Nile 5.0%, Mid Northern 6.3%, South Western 6.6% and Mid-Western 7.1%.

Knowledge of HIV Status: Of the staff who tested positive for HIV, 77.7% knew their HIV positive status as compared to 55.8% of the prisoners.

	HIV prevalence by region*													
	Central	East central	Eastern	Kampala extra	Mid central	Mid-western	Mid-eastern	North Eastern	North western	Northern	South eastern	South western	Southern	Western
Staff, %	11.0	10.9	10.1	7.5	9.1	13.4	18.6	12.1	17.3	19.6	12.6	9.6	5.4	11.3
Prisoners %	13.3	8.5	9.7	18.5	12.3	8.7	13.8	8.7	9.1	20.8	13.2	16.4	17.2	12.7

*Uganda Prison Service region

Unadjusted incidence of HIV infections: Among the staff, there were only 2 (1.0%) recent infections among 201 HIV positive individuals. The estimated annualized incidence (per 100 staff per year) was 0.321% (95% 0.319 – 0.322). Among prisoners, there were 47 (3.6%) classified as recently infected out of 1315 HIV positive individuals. Duration of incarceration data was available for 40 of 47 recently infected prisoners. Nearly half had been incarcerated more than 12 months (42.5%), implying possible HIV acquisition while incarcerated, while 12.5% had been incarcerated 6-12 months, and 45% less than 6 months. The estimated annualized incidence (per 100 prisoners per year) was 1.463% (95% 1.462 – 1.465).

Prevalence and Incidence of HIV	Prisoners (%)	Staff (%)
HIV prevalence	Overall: 15.0	Overall: 12.0
	Male: 14.1	Male: 10.5
	Female: 23.9	Female:14.5
Estimated annual HIV incidence	1.46	0.320

Circumcision status: Reported circumcision coverage was 45.7% among staff and 49.8% in prisoners. However 69.6% (403/579) uncircumcised male staff were willing to undergo voluntary medical male circumcision, and 55.8% (2,339/4,192) uncircumcised male prisoners were willing to be circumcised.

Viral load suppression: Of the 201 staff and 1,333 prisoners who tested positive for HIV, 58.4% and 43.5%, respectively had their viral load suppressed.

Prevalence of HIV biological correlates

Hepatitis B prevalence : The prevalence of chronic Hepatitis B virus (HBV) infection as determined by the combination algorithm of initial HBV core antibody test and subsequent HBV surface antigen test for those HBcAb+ was 6.2% among UPS staff and 7.0% among prisoners.

HBV was more prevalent among male than female staff participants (7.3% vs. 4.4%) and also follow a similar trend among prisoners (7.2% vs.3.7%).

Herpes simplex prevalence: The prevalence of herpes simplex virus (HSV) among staff was 50% while that among prisoners was 44.3%. HSV was less prevalent among men than women in both staff (36.7% vs 63.3%) and prisoners (42.6% vs. 69.1%) populations. By region, the highest HSV prevalence was observed among staff working in Mid-eastern (66.3%) region followed by Northern (63.0%) and Eastern (59.7%) regions; while highest prevalence was observed in prisoners in Southern (51.0%), Northern (49.7%) and Kampala extra (48.4%).

Malaria prevalence: The malaria prevalence was slightly lower among staff (4.0%) than in prisoners (4.6%); less prevalent among female than male staff (3.1% vs. 4.5%). Among staff the prevalence was highest in North West region (11.5%) followed by those in Mid-West (7.2%) and North Eastern (6.9%). For prisoners, it was highest among those in North West (20.6%) followed by Central (10.8%) and East Central 8.5%.

Syphilis prevalence: Syphilis was less prevalent among staff (1.2%) than prisoners (4.2%); three times more prevalent among male than female staff (1.6% vs. 0.5%) but contrary among prisoners (4.1% vs. 6.2%). Regionally, Syphilis prevalence was higher in Southern region (6.9%) among prisoners and 2.7% in staff followed by South Western region 6.4% among prisoners and 0.5% among staff.

TB prevalence: Note: Although it was planned to estimate the prevalence of pulmonary tuberculosis, multiple drug resistant tuberculosis (MDR-TB) and extremely drug-resistant pulmonary tuberculosis (XDR-TB) among staff and prisoners of UPS, the current recommended strategy for determining the prevalence of TB that involves use of a combined symptom and CXR screening strategy was not used. Consequently, only the prevalence of cough and chronic cough are presented in the results. More than half of the respondents (55.3% for prisoners and 68.5%) had ever had a cough of 2 weeks and more.

Prevalence of HIV biological correlates	**Prisoners (%)**	**Staff (%)**
Prevalence of chronic Hepatitis B virus (HBV)	7.0	6.2
Prevalence of Herpes Simplex Virus type 2 (HSV2)	44.3	50
Prevalence of Malaria	4.6	4.0
Prevalence of Syphilis	4.2	1.2
TB knowledge and screening		
Respondents who had ever had cough of 2 weeks or more	55.3	68.5
Respondents who had ever been tested for cough	29.2	17.9

Conclusion: Prisoners and prison staff had double or higher the national adult prevalence of HIV, excess burden of related infections, and higher rates of illicit drug use and MSM behaviour

than national estimates. higher than the national prevalence. This is coupled with glaring gaps in knowledge about HIV/AIDS in both prisoners and staff as well as high risk behaviours in prisons. These findings call for systematic HIV prevention, testing, treatment and related services tailored to the unique challenges of prison settings. Such interventions will be critical for improving the health of both prisoners and prison staff, and for reducing new HIV and TB infections in prisons and communities throughout Uganda

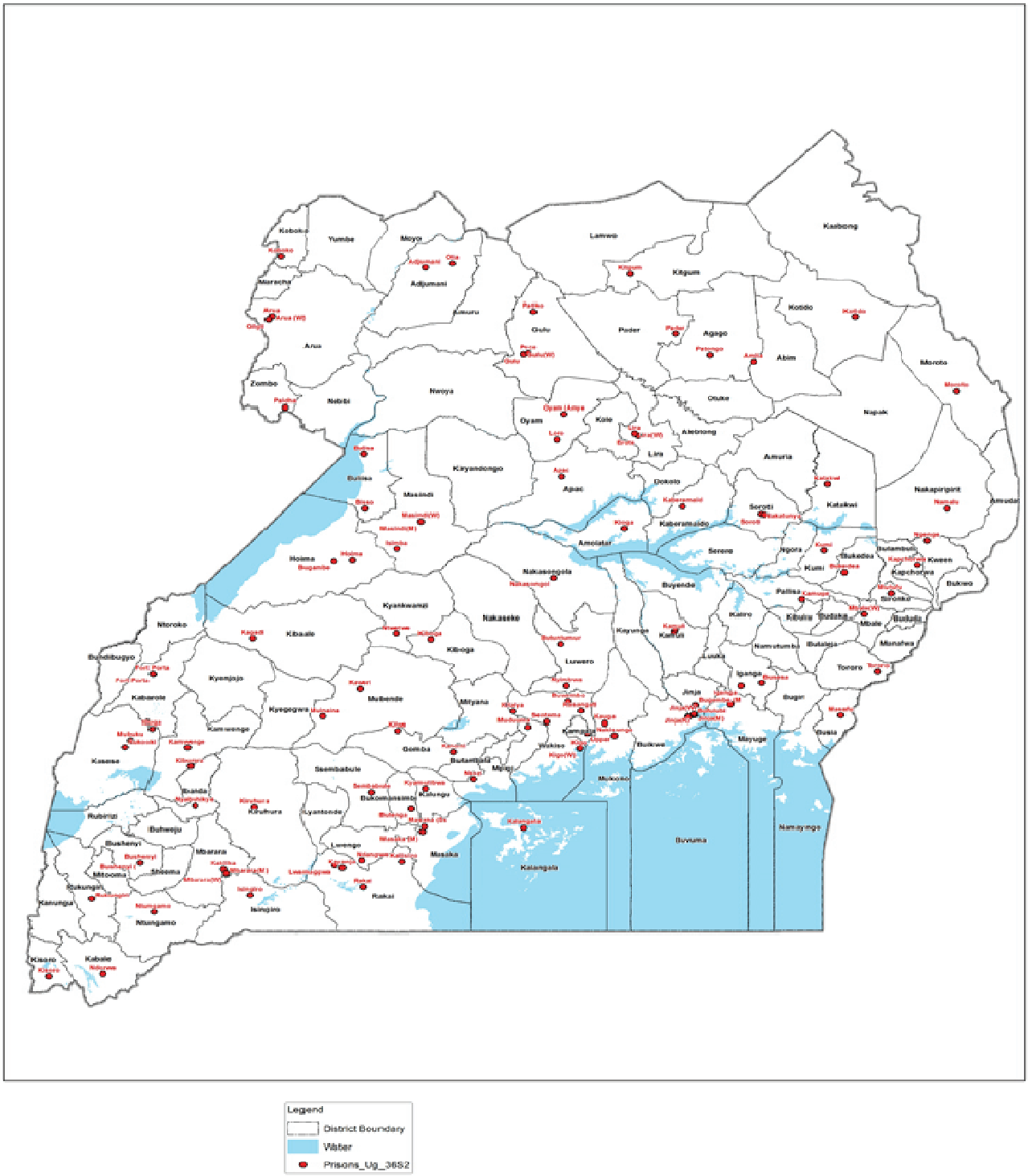
Chapter 01-Introduction

1.1 Uganda Prisons Service

Uganda Prisons Service is an autonomous body under the Ministry of Internal Affairs. The Prisons Act 2006 mandates the Uganda Prisons Service (UPS) to provide reasonable, safe, secure and humane custodial and rehabilitative services to offenders in accordance with universally acceptable standards.

At the time of this survey there were 241 (223 male and 91 female) prison units housing approximately 38,158 (1,606 female and 36,552 male) prisoners and employing approximately 6,182 staff across Uganda. See a map (figure 1) below showing the locations of these prisons.

Figure 1: Map of Uganda showing the Prisons.



1.2 Situation analysis of HIV/AIDS, associated infections and correlates

Relative to the general population, the prevalence of human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and tuberculosis (TB) among prisoners worldwide is disproportionately high.[2-4] Limited access to health care[3,17]; unprotected sex; drug use[8,10, 25,] ;sharing of injecting equipment, razors and hygiene products; and other behaviours may facilitate HIV transmission in prisons.[5-15] Movement and social mixing of prisoners, staff, and visitors in and out of prison may also increase the likelihood of transmission among these groups.[3]

In Africa, prisons are usually seriously overcrowded and the trends reflect increasing prison populations housed in out-dated and inadequate prison facilities.[16] Poor sanitation, inadequate nutrition, exposure to violence, high disease prevalence and exposure pose health challenges to both prisoners and prison staff[17-19, 21].

In 1987, limited data from a convenience sample of prisoners in Uganda found that 15% of prisoners tested were HIV seropositive[20] and similar data from 1996 found HIV prevalence to be 26%.[21] In 2003, a mortality study of deceased UPS prisoners found that HIV-related illness was the leading cause of death among prisoners.[22] In 2009, a rapid situational assessment of HIV/STI/TB and drug abuse conducted among prisoners of UPS, found HIV prevalence to be 13% among female and 11% among male prisoners.

Risk factors for HIV transmission in prisons typically include injection drug use, homosexual behaviour, tattooing, and sexual assault.[11] In Uganda, potential risk factors may also include sharing of razor blades, using unsterilized instruments to cut, scar, and pierce the skin, and among women, the reusing and sharing of locally made cloth sanitary towels.

Injection drug use is often claimed to be non-existent or not prevalent in many African prisons, however, it may occur and be unrecognized.[3] Similarly, men having sex with men (MSM) in African prisons is frequently denied, as is same-sex behaviour in Africa generally. However, data regarding sexual behaviour and sexually transmitted infections in Africa suggests that male same-sex behaviour does occur both within and outside of prison environments, and that a significant proportion of MSM in Africa report having sex with women.[23-26] The refusal to consider and acknowledge that same-sex behaviour occurs in various African settings, including prisons, precludes the ability to gather epidemiological data that can inform the development of prevention programs to reduce the transmission of HIV.[27-30] One study of MSM in Uganda found that these men perceived that their risk of HIV infection was low relative to heterosexuals.[31] In one African study, 55% of MSM believed that prevention messages about vaginal sex did not apply to anal sex, and in another study 73% of MSM thought that anal sex was safer than vaginal sex.[24]

In addition to illegal and socially tolerated risk behaviour, low level of knowledge and negative attitudes about HIV transmission and treatment may also be associated with a higher risk of HIV transmission in prison settings. A recent rapid situational assessment of HIV/STI/TB conducted

in Uganda Prisons indicated that prisoner's knowledge of HIV is lacking, as about half of the prisoners surveyed expressed myths about HIV transmission, including the beliefs that transmission is related to mosquito bites (39%), sharing eating utensils (21%), and sharing toilets (14%).[21]

Until the conduct of this survey, Uganda had little nationally representative information on the prevalence and incidence of recent HIV infection among prisoners and staff of the Uganda Prison Service, and even less information on the potential correlates of HIV among prisoners and prison staff. Available surveys were small and were not based on standard statistical methods of sample selection. Though very informative, these HIV prevalence estimates had wide confidence intervals, limited information on HIV risk behaviour, and were based on face-to-face interviews which could have inhibited disclosure of highly stigmatized risk behaviours that could be illegal and subject to sanctions and punishment.

1.3 Survey Goal and Objectives

The main goal of the survey was to assess HIV epidemiology and service provision to inform policy makers and program planners on the development, implementation, and evaluation of evidence-based HIV/AIDS prevention, care, and treatment services for UPS staff and prisoners.

This survey had two groups of objectives. Phase one group of objectives was concerned with measuring the prevalence of HIV and its behavioural and biological correlates, while phase two objectives aimed to use the findings of phase one to plan and improve HIV care in the prisons.

Phase one had five primary objectives and three secondary ones. The primary objectives included to:

- Characterize HIV prevention, treatment, and care services within UPS;
- Determine HIV prevalence & incidence among prisoners and staff of UPS;
- Identify biologic and socio-behavioural correlates of prevalent and incident HIV infection among prisoners and staff of UPS;
- Develop a geospatial database that includes epidemiologic; socio-behavioural; and HIV prevention, care, and treatment service program information to facilitate strategic planning and implementation of HIV-related prevention and services programs in UPS.
- Increase the technical and program capacity of UPS to develop, utilize, evaluate, and sustain HIV prevention, care, and treatment programs addressing the needs of prisoners, staff, and supporting communities.

The secondary objectives included to:

- Estimate the prevalence of pulmonary tuberculosis (PTB), multiple drug resistant tuberculosis (MDR-TB), and extremely drug-resistant pulmonary tuberculosis (XDR-TB) among prisoners and staff of UPS.
- Estimate the prevalence of hepatitis B (HBV) and hepatitis C (HCV) among prisoners and staff of UPS and to identify risk factors associated with these infections;
- Estimate the prevalence of Malaria among prisoners and staff of UPS.

1.4 Survey design and methodology

This was a cross-sectional study designed to provide national estimates of HIV prevalence and incidence among prisoners and staff, and to identify risk factors associated with prevalent and incident HIV infections across the country. A representative sample of prison facilities, prisoners and staff was selected in a two-stage cluster sampling strategy with probability proportional to population size (PPS). Prison facilities housing male and female prisoners were selected based on their population sizes. The number of participants sampled per facility was also based on population.

1.4.1 Sample size

It was estimated that a sample size of 11,966 participants with 9,885 prisoners (9,253 male and 632 female) and 2,081 prison staff (1,316 male and 765 female) randomly selected from 117 prison units across the country would provide the most precise estimates of prevalence and incidence of HIV. This sample represented 25% of all UPS male prisoners and staff and 38% of all UPS female prisoners and staff. It was expected to yield approximately 824 prevalent and 169 incident HIV infections. It was based on an estimated HIV prevalence of 11% for men and 13% for women as well as an estimated incidence of 2% per 100-person years; a design effect of 1.307, a confidence interval of 95% and a precision of 20%. Women being especially vulnerable to HIV infection and of great interest epidemiologically, but constituting a small proportion of the total population of staff and prisoners, were independently sampled using a finite population approach to achieve reasonable confidence intervals around HIV prevalence.

1.4.2 Sampling of study participants

To be included in the survey, a participant had to be: a prisoner or staff; aged at least 18 years; willing and able to provide informed consent and without known mental health disorders that would preclude the provision of informed consent. Participants who had previously participated in sero-behavioural surveys were excluded, as were those who were on leave or were otherwise unavailable during the data collection period at that facility.

Two days prior to the initiation of the study interview activities, study staff obtained a current list of prisoners and staff within the sampled prison units. Using this list, random samples of both prisoners and staff were drawn as specified in the appropriate sampling plan using random selection procedures available in Microsoft access 2013 random query function.

Additional randomly selected 2, 299 persons were selected to replace staff or prisoners who were either unwilling or unavailable to participate in the survey in order to keep the sample size to 14,265 (2,393 staff and 11,872 prisoners) participants.

The replacement was done after the field team noticed that only 9,667 participants had responded out of 11,966 participants originally invited to participate. Below, table 1.4.3a shows details of originally selected participants by region and by gender and table 1.4.3b showing all staff and prisoners invited by administrative region after replacement of non-responders. Because prisoners are often transferred from one prison facility to another, finger

print software was used to translate each participant's finger print into a unique code. This enabled the exclusion of participants who had already participated in the survey.

Table 1: showing participants' selection by gender and administrative region.

Region	Prisoners					Staff					Overall Total
	Male	%	Female	%	Total	Male	%	Female	%	Total	
Central	720	94.5	42	5.5	762	85	69.1	38	30.9	123	885
East Central	237	97.5	6	2.5	243	50	73.5	18	26.5	68	311
Eastern	658	96.5	24	3.5	682	80	53.0	71	47.0	151	833
Kampala Extra	1,980	91.7	180	8.3	2,160	270	61.6	168	38.4	438	2,598
Mid Central	165	96.5	6	3.5	171	37	68.5	17	31.5	54	225
Mid-Western	555	94.9	30	5.1	585	75	65.8	39	34.2	114	699
Mid-Eastern	461	94.3	28	5.7	489	60	54.1	51	45.9	111	600
North Eastern	180	93.8	12	6.3	192	60	83.3	12	16.7	72	264
North Western	425	92.4	35	7.6	460	70	62.5	42	37.5	112	572
Northern	840	91.1	82	8.9	922	150	64.1	84	35.9	234	1,156
South Eastern	573	94.6	33	5.4	606	100	58.5	71	41.5	171	777
South Western	1,200	92.4	99	7.6	1,299	149	64.2	83	35.8	232	1,531
Southern	609	95.2	31	4.8	640	40	49.4	41	50.6	81	721
Western	650	96.4	24	3.6	674	90	75.0	30	25.0	120	794
Total	**9,253**	**93.6**	**632**	**6.4**	**9,885**	**1,316**	**63.2**	**765**	**36.8**	**2,081**	**11,966**

Table 2: showing all staff and prisoners invited by administrative region after replacement of non-responders

Administrative Region	All invited participants		
	Prisoners	Staff	Total
Central	903	155	1058
East Central	276	98	374
Eastern	817	161	978
Kampala Extra	2911	506	3417
Mid Central	193	61	254
Mid-Western	651	126	777
Mid-Eastern	544	125	669
North Eastern	188	73	261
North Western	533	120	653
Northern	1140	286	1426
South Eastern	760	209	969
South Western	1533	248	1781
Southern	679	84	763
Western	744	141	885
Overall	**11872**	**2393**	**14265**

1.4.3 Survey instruments (tools)

The interview instruments used in this study were adapted from existing questionnaires. They were designed to give the following information about each participant: demographic characteristics, prison history, knowledge about HIV, attitudes towards HIV including HIV testing, HIV testing history, HIV treatment experience; knowledge about TB; sexually transmitted diseases; circumcision status of men; sexual experience; pregnancy experience for women prisoners; substance use/abuse and tattooing. The tool also explored depression/anxiety, and evaluated the level of resource loss, condom use, violence and group formation whilst in prison. In short, in addition to demographic information the instrument was set to capture HIV risk behaviours and their socio-behavioural correlates.

The questionnaires were translated into 6 local languages; Luganda, Ateso, Lugbara, Runyakitara, Swahili and Luo. A contractor was hired to do both back and forward translations of the original English questionnaires into these 5 local languages except Luganda. For Luganda, translation was done in-house by two staff who volunteered. All the final translations by the contractor were reviewed and corrected by volunteer-staff at CDC Uganda and UPS study staff.

All the translated elements for the six (6) languages were entered into the Questionnaire Design System (QDS ^{TM} Version 2.6.1.1) studio, reviewed and exported into Microsoft Word. Volunteers reviewed the outputs to ensure they were correctly entered and that they matched the original English version. Using the QDS text-to-speech for the local languages was not possible and so, audio recording for the entire questionnaire was done. This was achieved for the English language. However, in order to avoid the accent being misunderstood by the local population, voice recording was also done.
The recordings were done using a laptop inbuilt microphone and edited with Audacity^{TM} freeware. Volunteers sourced from CDC Uganda and UPS were assigned to audition one language each. All the recordings were edited and audio files generated for each of the questionnaire elements. The audio file names for each element were added into the studio and the initial ACASI generated were piloted in-house by volunteers conversant with these languages.

Prior to being administered, instruments were reviewed by the study staff and Community Advisory Board (CAB) and piloted to assess reading and interpretation issues, cultural appropriateness, and potential burden on participants.

1.4.4 Training of study personnel

The study team was composed of 13 field staff constituting of; one study coordinator, two data assistants, seven interviewers/counsellors and three laboratory personnel. All survey team members had background training in counselling, social science research, nursing or public health. These were all trained for two-weeks at UVRI by UPS project officers and CDC Uganda technical advisors. The training covered survey design and methodology, study standard operating procedures (SOPs), ethics, HIV counselling and testing, prison security procedures

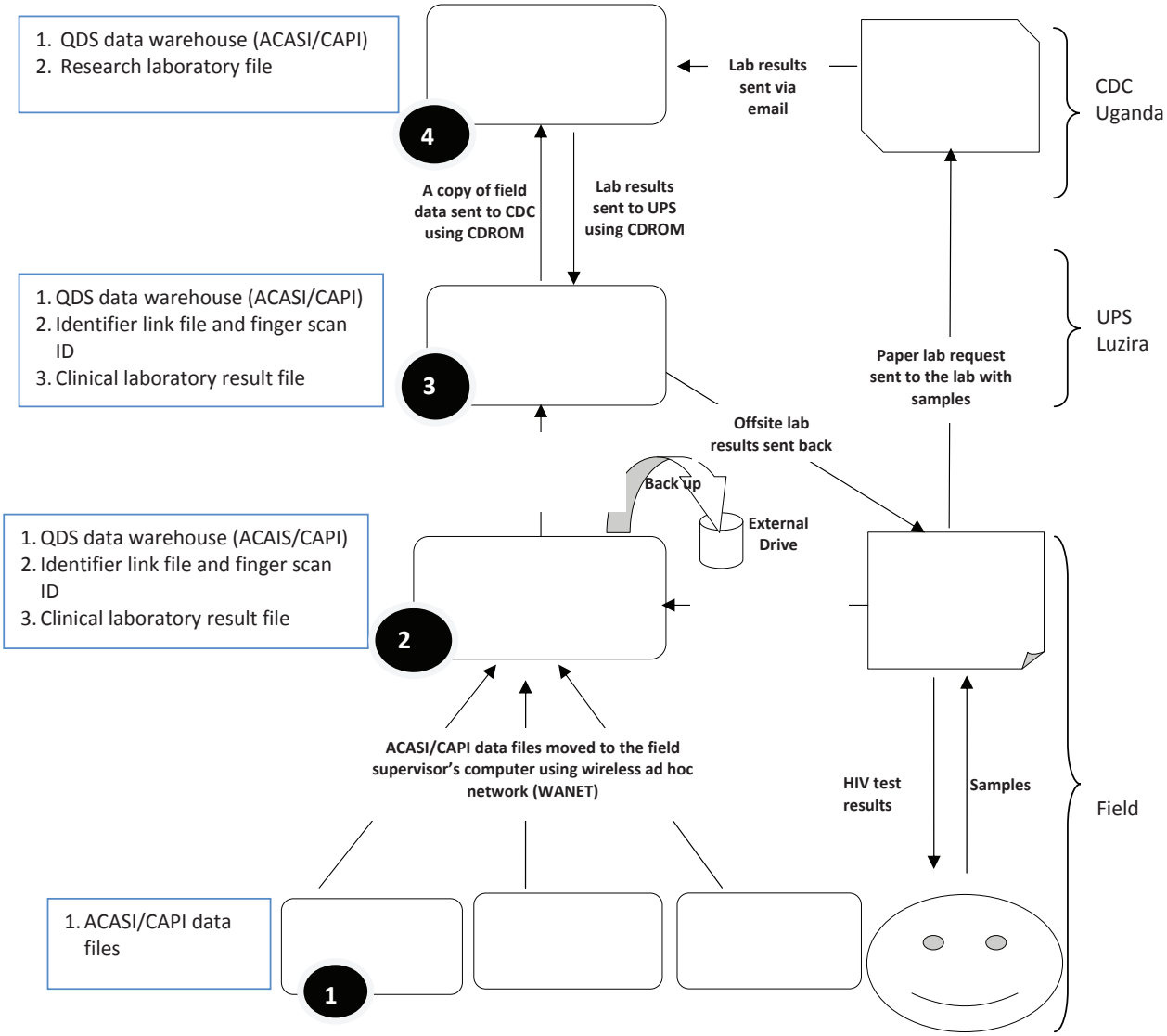
and policies, basic legal issues relevant to prisoners, ACASI methodology and basic knowledge of the different infections to be tested.

1.4.5 Data management

Four primary operational data, files were established and maintained for this study; namely participant identification file, ACASI/CAPI file, clinical laboratory, and research laboratory file.

On a daily basis, after all interviews had been conducted, a utility program packaged these files for upload to the field supervisor's computer, and then automatically purged the records from each of these files on the field computer. This process ensured security and minimized loss of data should a field computer be misplaced or broken. On the field supervisor's computer, a utility program merged these files and appended them to an QDS data warehouse file. The encrypted warehouse file was backed up on a password protected and encrypted external study drive that was kept in a secured lock box in the field vehicle. Using CDROM, data from the field were shipped together with the lab sample on a weekly basis to UPS project office and CDC Uganda and upon receipt; the Data Manager downloaded the data onto the office computers and CDC server (figure 2 below).

Figure 2: Data flow and storage for UPS Sero-Behavioural Survey.



Notes:

1. The ACASI/CAPI data files generated from the field computers were moved to the field supervisor's computer using a wireless ad hoc network connection, and purged from the field computer on daily basis. The field computers contained the ACASI/CAPI file were all password-protected and encrypted.
2. The field supervisor's computer housed the QDS Data Warehouse which tracked all ACASI/CAPI data files entered from the field computers via the wireless ad hoc network. This computer also contained the Identifier Link File and the Clinical Laboratory Results File which included all field lab test results. These data files were backed up daily onto an external drive. Both the external drive and the field supervisor's computer were kept in a safe and secured field vehicle. A copy of the backup data and paper lab request forms were sent weekly to the CDC/Uganda Virus Research Institute lab together with samples using the project vehicle.
3. A copy of all the data were kept at a central computer located at the Ups project office and it was at this stage that the Clinical Laboratory Result File with all the results were generated after receiving results from the CDC lab. These clinical results were given to the medical team so that relevant clinical results can be provided to the study participants.
4. Finally, a copy of unlinked data received from the UPS study office was kept on the CDC password-protected server. Access to these files was only granted to study staff.

1.4.6 Ethical review

The research protocol was reviewed and approved by two human subjects' regulatory committees in Uganda; the Uganda Virus Research Institute (UVRI) Scientific and Ethics Committee and the Uganda National Council of Science and Technology (UNCST). Additionally, the protocol was reviewed by the CDC Institutional Review Board. The UVRI committee holds Federal institutional review board (IRB) Assurance status and serves as the reviewing body for all CDC-sponsored research activities in Uganda. The study protocol, data collection instruments, consent forms, and other appropriate study-related materials (e.g. educational information); were submitted to and approved by the above Review Boards prior to commencement of the survey. Additionally, all protocol modifications were reviewed and approved by the same Review Boards before implementation of modifications.

Study participants provided written informed consent prior to participation. Staff were initially informed about the study through written communication from the Commissioner General of Prisons to the Officer in Charge (OC) of each prison facility. This letter was received one-month prior to initiation of the study activities by each facility and included an overview of the study and recommendations as to how the OC could effectively facilitate and implement the study among both prisoners and staff. Prior to actual implementation of the study at each facility, study staff assisted the OC and his/her staff with study planning, preparation, and information dissemination.

Prisoners were also initially informed about the study through general group information and parade sessions conducted routinely in the morning prior to daily work sessions. At these sessions, the UPS study coordinator informed them of the purpose of the study and the anticipated presence of study personnel at the selected prison facility. The study coordinator explained the risks and benefits of participating in the study, emphasizing that, individuals would be free to refuse participation, and that survey activities would take place with minimal disruption of daily routine.

All eligible, randomly selected staff and prisoners were individually informed about the study in their language of preference out of seven study languages by the study staff, and were provided with study-related information addressing the study objectives, voluntary and confidential nature of participation, biological testing, types of questions that would be asked, provision of treatment, and the risks and benefits of participating in the study. All study activities, including the informed consent session, were conducted in a private area, to allow study participants to undergo study procedures without being overheard or unduly observed. Participants signed, or made a mark on the informed consent form to indicate consent (figure 3).

1.5 Data Collection Methods

Field data collection was carried out from 6th September 2013 to 31st July 2014, a period of approximately 11 months.

1.5.1 Services provided

Whereas it was planned to use site assessment instrument to collect basic information about the type of health care services provided and human resources for health at each prison in the sampling frame, this was not done.

1.5.2 Audio Computer Administered Self Interview

A structured questionnaire was administered using the Audio Computer Assisted Self Interview (ACASI) set to obtain information from male and female prisoners and prison staff.

Keyless, touch-screen, ultra-mobile computers running ACASI software (NOVA Research: Questionnaire Development System version 2.6.1; NOVA, 2009) were used to perform ACASI. ACASI methodology has been shown to significantly increase disclosure of sensitive information related to HIV risk.[32] The ACASI instrument was administered in the language of preference of each study participant and it took on average 60 minutes to complete the interview. After a participant had been consented and enrolled, the study staff oriented the participant to the ACASI hardware and software and answered any questions. The study staff initiated the ACASI tutorial and ensured that the participant understood how to use the ACASI technology. After the ACASI tutorial, the ACASI study interview was initiated and the participant was left to respond in private, however, a study staff member was available if the participant had any questions during the interview. Participants who completely failed to do ACASI were provided CAPI (Computer Assisted Personal Interview) whereby the interviewer used the ACASI to conduct the interviews.

1.5.3 HIV Risk behaviours and HIV risk behaviour correlates

Besides basic personal identification data, interviewees provided information on high risk behaviours. HIV risk behaviour assessed included sexual risk behaviour and other risk behaviours.

Regarding sexual risk behaviours, participants were asked about age at first sex, having had unprotected sex, number of lifetime sexual partners; the number of partners known to be HIV-infected, HIV-uninfected, or of unknown HIV sero-status; specific sexual risk behaviours (e.g. oral, vaginal, anal sex) condom use before and during incarceration, concurrency of sexual partnerships, forced sex, and if this forced sex experience occurred prior to incarceration or while incarcerated; same-gender sex and; transactional sex. For transactional sex, respondents were asked if they had ever had sex with another person, if they paid someone something (money, goods, or services) to have sex and if they had used condoms or not in their life time,

at any time while incarcerated and during the previous three months. Sex was defined as a penis entering a mouth, vagina, or anus; or any vaginal, anal, or oral sex whether or not the partner used a condom and with or without ejaculation. Similarly, the occurrence of other sex risk behaviours was assessed over the lifetime, at any time while incarcerated, and during the previous three months. Forced/coercion was defined as sexual acts one performs against their will included fondling, oral sex, penetration with a finger or object, or intercourse)

For women, additional information was collected on pregnancy experience while in prison; and for pregnant women additional information was collected on ante-natal care (ANC), HIV status of their babies and whether HIV-positive babies were on treatment for HIV. Data was also collected on other risk behaviours such as alcohol use; drug use and sharing injecting instruments; tattooing and sharing of tattooing equipment; and sharing of personal hygiene items such as razors and sanitary napkins/pads. Participants were asked about their use of alcohol and drugs over their lifetime, at any time while incarcerated, and during the previous three months. The Michigan Alcoholism Screening Test (MAST)[33] was used to determine if participants had alcohol-related problems (using the cut off points: No problem=0-2: Early drinker=3-5; problem drinker 6+) while additional questions were asked to determine if they consumed alcohol while in prison, and the frequency of this consumption. Regarding drug use, participants were asked whether they injected drugs prior to incarceration, while incarcerated, or during the previous three months. Participants were also asked about piercing, tattooing, cutting the skin and scarification and sharing of tattoo equipment, hygiene products such as razors or sanitary napkins prior to and during incarceration.

HIV knowledge was assessed using 12 questions from the Demographic and Health Surveys such as the AIDS Indicator Survey,[34] To assess susceptibility to infection and likelihood of transmission, perceived treatment effectiveness, intention to engage or avoid risk behaviour, personal efficacy i.e. ability to avoid specific risk behaviour, attitudes and norms regarding sexual risk behaviour ordinal and Likert scales were used. On awareness about HIV/AIDS, survey respondents were asked if they have ever heard of HIV/AIDS while on transmission participants were asked whether they consistently used condoms, if having only one uninfected partner can reduce risk of catching AIDS virus. In addition, knowledge on misconceptions was assessed: whether AIDS virus can be contracted through mosquito bites, witch craft and sharing food with someone infected with the AIDS virus. Regarding prevention of mother to child transmission, participants were asked if they thought that the AIDS virus can be transmitted to the child through breastfeeding and whether the risk of mother to child transmission can be reduced by taking special drugs. About attitudes and norms, participants were asked what their friends think about being tested for HIV, if getting tested for HIV helps them feel better about their health; whether they think being tested for HIV is beneficial to their health and whether other people would think that they are using drugs if they took an HIV test; and if they feared losing friends if they tested for HIV.

Data was also collected on knowledge of HIV/AIDS**,** susceptibility to infection and likelihood of transmission, prevention of spread of AIDS virus, perceived treatment effectiveness, intention to engage or avoid risk behaviour, personal efficacy i.e. ability to avoid specific risk behaviour, attitudes and norms regarding sexual risk behaviour, depression, hopelessness, violence, post-traumatic stress disorder (PTSD) and loss of resources. To get an idea of the extent of violence in prison, prisoners were asked if they had seen prisoners fight, seen prisoners beaten by guards, ever physically been assaulted while in prison or whether they themselves ever assaulted someone in prison. Regarding Depression, it was planned to have it assessed using seven items from the Center for Epidemiologic Studies Depression Scale (CES-D)[35], however, since there were only 12 questions a cut-off of 10 points was used instead of 16 which is applied when the questions are 20 and this was done proportionately. Hopelessness was assessed with Beck's Hopelessness Scale[36, 37] based on the following cut off points: None=0-3; mild=4-8: moderate-Severe=9 and above) Post-traumatic Stress Disorder (PTSD) was screened for using the Post-traumatic Stress Disorder Check List (PCL-C)[38]. The PCL-C is an instrument based on the DSM III R symptoms of PTSD. Using the PCL-C, participants were assessed regarding how much they had been bothered by symptoms in the past month using a 5 point scale ranging from 1 = "Not at all" to 5 = "Extremely." Based on the overall score attained, participants were categorised as being normal if score was less than 50 or with PTSD if the score was 50 plus (50+).A modified version of the General Conservation of Resource Evaluation (COR-E)[39, 40] was used to measure loss of resources. Individuals were rated about the extent to which they lost resources, or the threat to which resources may be lost using a 5-point scale ranging from 0='Not at all' to 4 = 'to a great degree. A median of 14 as the cut-off point out of 21 indicators used was applied to determine "big loss" (14 points above) and "least loss" (less than 14 points) of resources.

Regarding circumcision, male staff and prisoners were asked whether they are circumcised, if they thought circumcision protects them and whether they would go for circumcision if made available to them while in prison or after being released from prison.

1.5.4 Laboratory procedures

After completing interviews participants were counselled and offered laboratory tests. CDC guidelines for HIV counselling, testing and referral services in non-traditional settings and the relevant Ugandan MOH guidelines were followed as appropriate. Pre- and post-test counselling was provided. However, for TB, laboratory tests were only offered to those with a positive symptom screen. All laboratory results were entered into the clinical laboratory file that allowed the study and UPS clinical staff to follow-up with study participants thereby providing feedback on test results, post-test counselling, and necessary clinical follow-up including referrals.

A study phlebotomist collected venous blood from consenting participants after completing pre-test HIV counselling. Two 7 ml EDTA Vacutainers were used to collect 5 millilitres of blood in each. One was used to collect whole blood for HIV, CD4 (for HIV infected participants), and

complete blood count (CBC) and the other was used to collect blood that would be separated into serum for cd4, testing for recent HIV infections among HV positive participants; HBV/HCV, HSV-2, *Treponema pallidum* and serum chemistry. Care was taken to ensure that each Vacutainer was labelled with the respective participants PIN. Collected samples were sent to the UVRI Laboratory twice a week.

1.5.4.1 HIV Tests

HIV prevalence

All samples were initially tested with Determine rapid test and positive samples were confirmed with Statpak rapid test, the screening and confirmatory tests respectively. In case of disagreement between the screening and confirmatory test, Unigold was used as tiebreaker.

Recent HIV infections

To estimate incidence of recent HIV-1 infections, the Limiting Antigen Avidity assay (Lag, Sedia BiosSciences, Portland OR) was applied to HIV positive samples.[18] The principle behind this assay is that the strength or avidity of HIV antibodies for an antigen changes as antibodies mature. HIV antibodies produced early in infection have a lower binding strength than those produced later on in infection.

All specimens with ODn values greater than 1.0 were classified as long-term infections. HIV-1-positive specimens with an ODn value less than or equal to 1.0 underwent HIV-1 viral load (VL) analysis as an indirect indicator of ART usage or a natural ability to control HIV infection (elite control). ART usage or immune control of the virus will result in decreased levels of circulating HIV-1, which may lead to a reduction in antibody production, and thus create the potential for misclassification of a long-term infection as recent infection by the antibody-based LAg Assay. Thus, specimens with a LAg ODn ≤1.0 and a VL ≥1000 copies/mL were classified as recent infections. Specimens with a LAg ODn ≤1.0 and a VL ≤1000 copies/mL were interpreted to be either on ART or elite controllers, and therefore were classified as long-term infections.
Incidence estimates were then obtained from the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays. Assay performance characteristics of a Mean Duration of Recent Infection (MDRI) =153 days (95% CI: 128-179), with time cutoff (T) = 1.0 year and residual proportion false recent (PFR) = 0.00 were used for the estimation of HIV incidence.

1.5.4.2 Syphilis

Syphilis screening was conducted using a rapid test kit (Taytec, Aldercrest, Canada) to determine participants' previous exposure to *Treponema pallidum*. Acute syphilis infection was determined by conducting a RPR test (Plasmatec or Human Diagnostics) on all rapid test positive samples. All participants with positive RPR results that indicated current infection were referred to the prison health services for treatment follow up.

1.5.4.3 Hepatitis B Virus (HBV)

HBV testing was performed with Murex 3rd generation anti-HBcore enzyme immunoassay (EIA) for one-step qualitative determination of life-time exposure to HBV infection. HBcore-EIA-reactive specimens were tested for the presence of Hepatitis B surface antigen with HBsAg rapid test to confirm current HBV infection (Cypress Diagnostics, Langdorp, Belgium) and 5% of samples were retested for quality assurance purposes.

1.5.4.4 Herpes simplex virus (HSV-2)

HSV-2 infection was determined using HSV-2 enzyme-linked immunosorbent assay (ELISA) (Kalon Biological Ltd, Guilford, UK). The assay was performed according to manufacturer specifications; however, based upon the evaluation of test performance using Ugandan serum samples, HSV-2 positive individuals were defined as those with an index value of ≥ 1.5.112 Plasma specimens were extracted from each blood sample immediately after collection and stored at -20°C until processing.

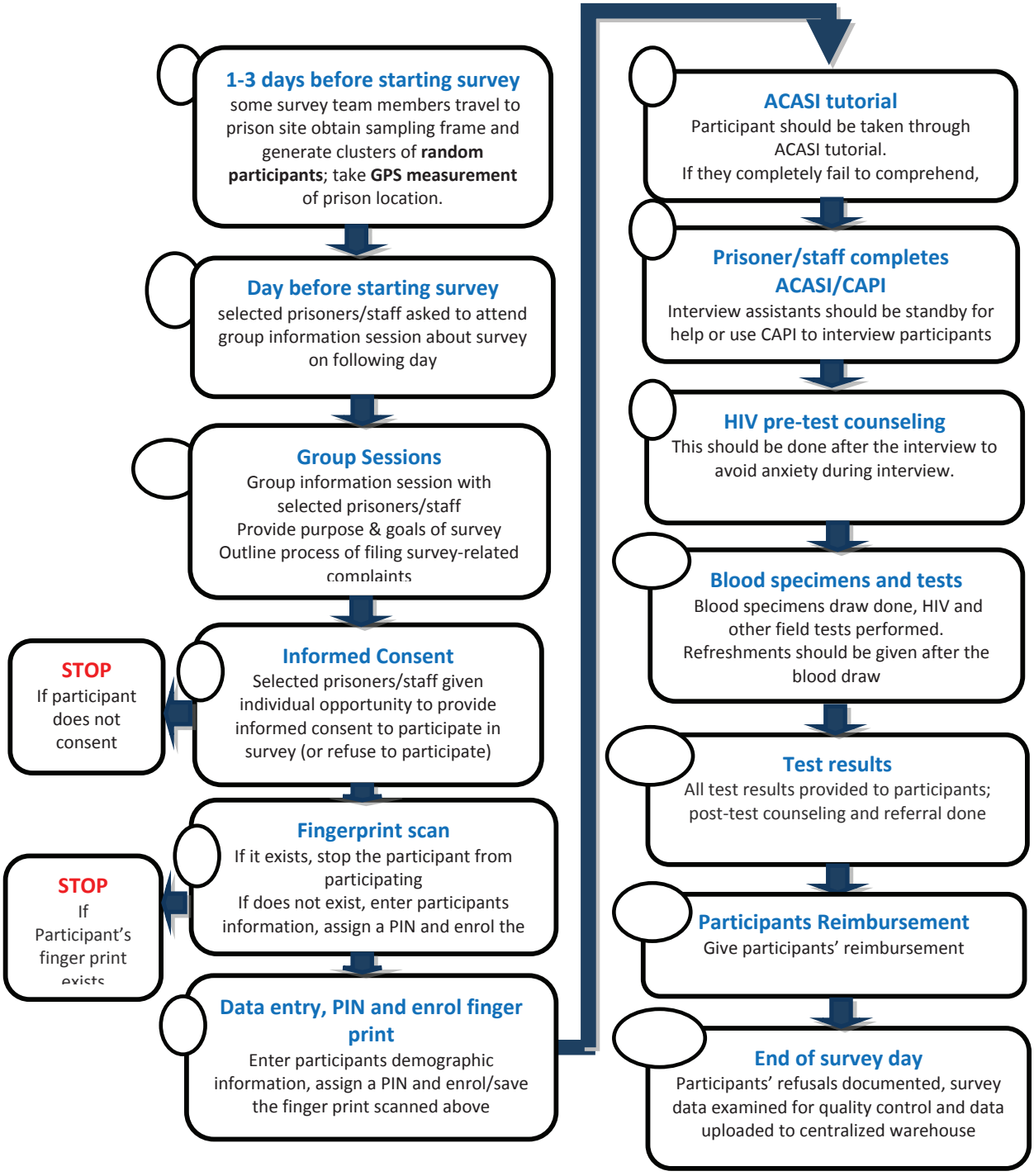
1.5.4.5 Malaria

Participants underwent a parasitological screening for malaria using SD Bioline rapid antigen test to determine the prevalence of malaria infection. Participants identified as having malaria were referred to prisons health services for treatment according to the MOH Malaria Control Programme guidelines.[41]

1.5.4.6 Tuberculosis

It was planned to collect two sputum samples (spot and morning) for sputum-smear microscopy from participants with a positive symptom screen. All the sputum samples were to be transported in cooler boxes to the Murchison Bay Hospital laboratory for ZN staining and microscopy examination. All results were to be communicated back to the source prison/prisoner and anti TB treatment provided to all identified as TB positive cases through the routine health system following the NTLP Guidelines. Participants with negative ZN smears were supposed to have had chest radiographs but this was not done. It was also planned to estimate the prevalence of pulmonary tuberculosis, multiple drug resistant tuberculosis (MDR-TB) and extremely drug-resistant pulmonary tuberculosis (XDR-TB) among staff and prisoners of UPS, however, the current recommended strategy for determining the prevalence of TB that involves use of a combined symptom and CXR screening strategy was not used. Consequently, the prevalence of pulmonary TB (PTB), MDR-TB and XDR-TB are not presented apart from that of cough and chronic cough.

Figure 3: Flow of Procedure followed during the UPS survey at Prison Sites



1.6 Study Findings

Chapters 2 to 8 present the findings of this study. Chapter 2 describes the participant's participation rates as well as their characteristics. Chapter 3 covers knowledge about HIV specifically their awareness on HIV/AIDS, knowledge on prevention, transmission of AIDS virus including MTCT, rejection of misconceptions and comprehensive knowledge on HIV/AIDS. Chapter 4 gives findings on attitudes towards HIV testing, provision of HIV testing services in prisons and on condom use. The chapter also covers participants' attitude towards sex and their perceived risk of HIV infection. Chapter 5 covers sexual behaviour in as far as age at first sex, number of sexual partners, participants awareness of the HIV status of their partners, consensual sex, transactional and coerced sex as well as MSM. Chapter 6 covers high risk behaviours such as getting pregnant and pregnancy experience while in prison including antenatal care (ANC) and elimination of mother to child transmission (eMTCT), tattooing, alcohol use, drug and substance abuse, violence, depression and prison group formations. Chapter 7 describes the prevalence of HIV as determined in this study, HIV prevalence by history and compares HIV prevalence by study and by history. It also describes prevalence of recent HIV infections, CD4 count and ARV status among PLHIV. Chapter 8 describes HIV biological correlates which include hepatitis B (HBV), hepatitis C (HCV), tuberculosis, malaria and genital ulcer disease (GUD) like herpes simplex virus-2 (HSV-2) and syphilis.

Chapter 02-Characteristics of survey participants

This chapter covers the participation rates and demographic characteristics of staff and prisoners; and ends by describing prisoners' prison history.

2.1 Participation rates

The field team tracked the response rate of the participants by considering the number of participants approached versus those that responded. Out of the invited 14,265 (2393 staff and 11,872 prisoners) , 10,606 participated, giving an overall participation rate of 74.3%, 70.5% and 74.5% for staff and prisoners respectively..

2.2 Demographic Characteristics

A total of 10,606 participants; 8,919 prisoners and 1,687 prison staff, were enrolled in the study. Most prisoners (21.3%) were from the Kampala Extra Region, 12.9% from South Western and 9.5% from Northern Region. Similarly, the highest proportion of staff 17.4% were in Kampala Extra Region, followed by South Western 11.7% and Northern Region 10.9%.

Demographic characteristic data is presented in table 3. Men in this study constituted the majority (93.6%) of prisoners and prison staff (63.2%) compared to 49.3% men in the general population (Uganda Bureau of Statistics, 2014 population census). These findings show a disproportionately high number of men in prisons in contrast to the general population. This could be that men in Uganda tend to commit custodial offenses more often than women, and that most of the prison staff are men.

The largest proportion of prisoners (24.8%) were aged between 25-29 years followed by 20-24 years (22.2%) and 30-34 years (18.0%), and thereafter the proportion decreased with age. Among staff, the group aged 30-34 years made up 21.3%, followed by 25-19 (16.2%) and 35-39 (15.7%). Prisoners were generally younger than prison staff with a mean age of 31.1 (SD ±10.1) years as compared to 38.1 (SD± 9.1) years among staff.

While 72.9% of prisoners reported ever having attended school, two thirds had completed 'O' level (14 years of schooling) or less. Very few prisoners (3.8%) had completed "A level" or 16 years of schooling and only 2.7% had post-secondary education (17 to 22 years of schooling). Among staff, 56.9% reported Ordinary level (O level) as the highest education level attained; 13.3% had post-secondary education.

The majority of respondents were Christians followed by Muslims. Among prisoners, 78.5% were Christians (40% catholic, 27.6% protestant, 10.9% born again) and 16.6% were Muslims. Among staff, 93.4% were Christians (39.1% catholic, 44.3% protestants and 10% born again); and only 4.3% were Muslims.

Table 3: Characteristics of Survey Participants by sex, age group, education, marital status and administrative Region

Background characteristic		Staff (n = 1, 687)		Prisoners (n = 8,919)	
		Number	%	Number	%
Gender	Male	1,067	63.2	8,353	93.6
	Female	620	36.8	566	6.4
Age groups in years	Under 20	1	0.1	533	6.0
	20-24	47	2.8	1,982	22.2
	25-29	274	16.2	2,212	24.8
	30-34	415	24.6	1,601	18.0
	35-39	265	15.7	969	10.9
	40-44	236	14.0	709	8.0
	45-49	212	12.6	351	3.9
	50-54	146	8.7	286	3.2
	55-59	88	5.2	111	1.2
	60+	3	0.2	165	1.9
Ever Attended school	Yes	1,670	99.0	6,501	72.9
	No	17	1.0	2,418	27.1
Highest Level of Education	None	17	1.0	2,418	27.1
	Lower Primary	34	2.0	1,734	19.4
	Upper Primary	149	8.8	2,583	29.0
	O-Level	960	56.9	1,609	18.0
	A-level	302	17.9	336	3.8
	Post-Secondary	225	13.3	239	2.7
	Not stated				
Religion	Catholic	659	39.1	3,563	40.0
	Protestant	748	44.3	2,463	27.6
	Born again	168	10.0	971	10.9
	Muslim	73	4.3	1,484	16.6
	Others	35	2.1	425	4.8
	Not stated	4	0.2	13	0.2
Marital status	In Union	1,446	85.7	4,600	51.6
	Not in union	238	14.1	4,319	48.4
	Not stated	3	0.2	0	0.0
Employment status	Uniformed	1,600	94.8		
	Civilian	84	5.0		
	Not stated	3	0.2		
Administrative Region	Central	109	6.5	649	7.3
	East-central	55	3.3	236	2.7
	Eastern	129	7.7	627	7.0
	Kampala extra	293	17.4	1,899	21.3
	Mid central	44	2.6	163	1.8

Table 4: Age at first imprisonment by sex, age group, education status, marital status & administrative Region (n=8,919)

Background characteristics		Male (n = 8,353)				Female (n = 566)			
		Total	Under 25	25 plus	Undefined	Total	Under 28	28 plus	Undefined
		N	%	%	%	N	%	%	%
Age group	Under 20	499	93.6	1.2	5.2	34	97.1	0.0	2.9
	20-24	1,871	91.7	2.3	6.0	111	95.5	1.8	2.7
	25-29	2,110	40.5	54.8	4.7	102	78.4	17.7	3.9
	30-34	1,508	19.9	74.1	6.0	93	25.8	72.0	2.2
	35-39	913	10.5	84.3	5.2	56	3.6	87.5	8.9
	40-44	644	6.8	87.3	5.9	65	6.2	87.7	6.2
	45-49	316	6.0	87.0	7.0	35	2.9	91.4	5.7
	50-54	246	5.3	88.6	6.1	40	2.5	97.5	0.0
	55-59	99	5.1	89.9	5.1	12	8.3	91.7	0.0
	60+	147	6.1	86.4	7.5	18	0.0	77.8	22.2
Ever Attended school	Yes	6,115	42.9	52.4	4.6	386	51.0	45.6	3.4
	No	2,238	40.1	51.7	8.2	180	30.6	62.8	6.7
Type of marital status	Single	3,445	60.2	34.7	5.2	197	56.4	39.1	4.6
	Married-monogamous	3,555	29.2	65.3	5.5	219	38.4	57.1	4.6
	Married-polygamous	758	26.7	67.6	5.8	32	46.9	50.0	3.1
	Divorced/separated	440	34.6	58.9	6.6	58	46.6	50.0	3.5
	Widowed	122	36.9	55.7	7.4	57	24.6	70.2	5.3
	Don't know	33	39.4	27.3	33.3	3	33.3	66.7	0.0
Administrative Region	Central	616	40.3	54.6	5.2	33	57.6	39.4	3.0
	East-central	230	48.3	44.8	7.0	6	83.3	16.7	0.0
	Eastern	603	42.6	50.9	6.5	24	37.5	50.0	12.5
	Kampala extra	1,735	36.0	60.3	3.8	164	44.5	52.4	3.1
	Mid central	157	50.3	45.9	3.8	6	50.0	50.0	0.0
	Mid-western	525	38.7	53.9	7.4	28	42.9	57.1	0.0

Background characteristics		Male (n = 8,353)				Female (n = 566)			
		Total	Under 25	25 plus	Undefined	Total	Under 28	28 plus	Undefined
		N	%	%	%	N	%	%	%
	Mid-eastern	425	48.2	44.5	7.3	23	34.8	60.9	4.4
	North Eastern	176	43.8	40.9	15.3	8	75.0	25.0	0.0
	North western	386	46.1	45.1	8.8	32	65.6	28.1	6.3
	Northern	763	40.8	54.5	4.7	80	42.5	45.0	12.5
	South eastern	554	39.5	51.8	8.7	24	41.7	50.0	8.3
	South western	1,059	49.1	47.1	3.8	95	37.9	61.1	1.1
	Southern	548	44.2	51.5	4.4	21	33.3	66.7	0.0
	Western	576	43.1	51.7	5.2	22	40.9	59.1	0.0
Total		**8,353**	**42.2**	**52.2**	**5.6**	**566**	**44.5**	**51.1**	**4.4**
Incarceration duration		**Males**				**Females**			
Median duration (months)		**11**				**10**			

Number of times in prison: Table 5 shows number of times prisoners had been in prison. Of the male prisoners, 65.3% had been imprisoned once, 17.4% twice and 14.8% three or more times. Of the female prisoners, 82.0% had been imprisoned once, 8.8% twice while 7.6% had been in prison three or more times.

Prison status and crimes for which prisoners were convicted: Prisoners in this study were asked if they were on remand or had been convicted, and what crime they were charged for. Table 6 gives the prison status of prisoners. More men than women (59.7% versus 57.4%) were on remand; however fewer men than women were convicts (39.2% versus 40.8%). All administrative Regions had more prisoners on remand than convicted prisoners. However, South west had the highest proportion on remand (72.4%), followed by mid central (71.8%) and North West (67.5%). This could be influencing the overcrowding in prisons. The proportion of prisoners on remand decreased with age, while that of those convicted increased.

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Background characteristic		Staff (n = 1, 687)		Prisoners (n = 8,919)	
		Number	%	Number	%
	Mid-western	97	5.8	553	6.2
	Mid-eastern	86	5.1	448	5.0
	North Eastern	58	3.4	184	2.1
	North western	104	6.2	418	4.7
	Northern	184	10.9	843	9.5
	South eastern	151	9.0	578	6.5
	South western	197	11.7	1,154	12.9
	Southern	74	4.4	569	6.4
	Western	106	6.3	598	6.7
Nationality	Ugandan			8,167	91.6
	Rwandan			310	3.5
	Kenyan			108	1.2
	Sudanese			33	0.4
	DR Congo			128	1.4
	Tanzanian			53	0.6
	Other African			73	0.8
	Other non-African			35	0.4
	Refuse to Answer			12	0.1
Totals		**1,687**		**8,919**	

2.3 Incarceration History

In this study, prisoners were asked for duration of current incarceration, their age at first imprisonment, their imprisonment status, number of times they had been in prison and the crime for which they were charged. Table 4 provides information on proportion of prisoners who were imprisoned under 25 or 25 plus years (for males) and under 28 or above 28 plus years for females based on their current demographic characteristics.

Duration of current incarceration: The median (±IQR) duration for the current imprisonment was longer among male prisoners at 11 (±27) months compared to female prisoners at 10 (±24) months.

Age at first imprisonment: Male prisoners were younger at first imprisonment than their female counterparts. The median (±IQR) age at first imprisonment for both sexes was 26 (± 12) years; at 25 (±12) years for males and 28 (±18) years for females. For both male and female prisoners, majority were imprisoned at a young age and thus interventions to curb crime have to target young people. However, there is some observable mismatch between the current age and age at first imprisonment which is attributed to data errors since data was collected through self-administered questionnaires. Therefore, data in this table has to be interpreted with caution.

Table 5: Number of times prisoner was in a prison by sex, age group, education, marital status & administrative Region (n = 8,919)

Background characteristics		Male (n = 8,353)					Female (n = 566)				
		Total	Once	Twice	At least 3	Undefined	Total	Once	Twice	At least 3	Undefined
Age group	Under 20	499	69.5	15.4	13.2	1.8	34	73.5	11.8	8.8	5.9
	20-24	1,871	63.6	18.4	15.4	2.6	111	80.2	12.6	6.3	0.9
	25-29	2,110	64.7	17.9	15.0	2.3	102	79.4	10.8	6.9	2.9
	30-34	1,508	65.9	16.9	14.5	2.7	93	78.5	7.5	12.9	1.1
	35-39	913	64.3	18.5	14.8	2.4	56	87.5	5.4	5.4	1.8
	40-44	644	63.8	17.2	15.8	3.1	65	78.5	9.2	10.8	1.5
	45-49	316	68.7	16.1	12.7	2.5	35	94.3	2.9	2.9	0.0
	50-54	246	66.3	16.7	15.5	1.6	40	92.5	2.5	5.0	0.0
	55-59	99	80.8	8.1	8.1	3.0	12	91.7	0.0	8.3	0.0
	60+	147	66.0	15.0	17.0	2.0	18	83.3	16.7	0.0	0.0
Ever Attended school	Yes	6,115	67.7	16.5	13.7	2.1	386	83.9	7.8	7.0	1.3
	No	2,238	58.7	19.9	17.8	3.7	180	77.8	11.1	8.9	2.2
Marital status	Single	3,445	64.4	18.3	15.0	2.3	197	82.2	8.6	7.6	1.5
	Married-monogamous	3,555	68.1	16.2	13.5	2.2	219	81.3	9.6	7.3	1.8
	Married-polygamous	758	63.9	16.4	16.1	3.7	32	81.3	6.3	12.5	0.0
	Divorced/separated	440	55.0	23.2	19.6	2.3	58	86.2	6.9	6.9	0.0
	Widowed	122	58.2	16.4	20.5	4.9	57	82.5	8.8	5.3	3.5
	Don't know	33	51.5	9.1	18.2	21.2	3	33.3	33.3	33.3	0.0
Administrative Region	Central	616	62.3	18.5	17.2	2.0	33	81.8	15.2	0.0	3.0
	East-central	230	59.6	18.7	19.1	2.6	6	66.7	0.0	33.3	0.0
	Eastern	603	62.5	17.7	18.1	1.7	24	70.8	20.8	8.3	0.0
	Kampala extra	1,735	70.7	15.5	12.2	1.7	164	87.8	5.5	6.1	0.6
	Mid central	157	58.0	28.0	13.4	0.6	6	100.0	0.0	0.0	0.0
	Mid-western	525	66.5	14.9	15.4	3.2	28	85.7	3.6	10.7	0.0

Background characteristics		Male (n = 8,353)					Female (n = 566)				
		Total	Once	Twice	At least 3	Undefined	Total	Once	Twice	At least 3	Undefined
	Mid-eastern	425	66.8	14.1	15.8	3.3	23	87.0	13.0	0.0	0.0
	North Eastern	176	62.5	15.9	18.2	3.4	8	62.5	37.5	0.0	0.0
	North western	386	70.2	12.2	11.7	6.0	32	53.1	18.8	21.9	6.3
	Northern	763	74.7	11.1	10.5	3.7	80	81.3	6.3	7.5	5.0
	South eastern	554	68.6	16.1	11.6	3.8	24	91.7	4.2	4.2	0.0
	South western	1,059	55.4	23.6	19.2	1.8	95	81.1	11.6	7.4	0.0
	Southern	548	57.1	24.8	16.4	1.6	21	81.0	0.0	14.3	4.8
	Western	576	64.8	18.6	14.6	2.1	22	86.4	4.6	9.1	0.0
Total		**8,353**	**65.3**	**17.4**	**14.8**	**2.5**	**566**	**82.0**	**8.8**	**7.6**	**1.6**

Table 6: Current status of prisoners by sex, age group, education status, religion and Region (n = 8,919)

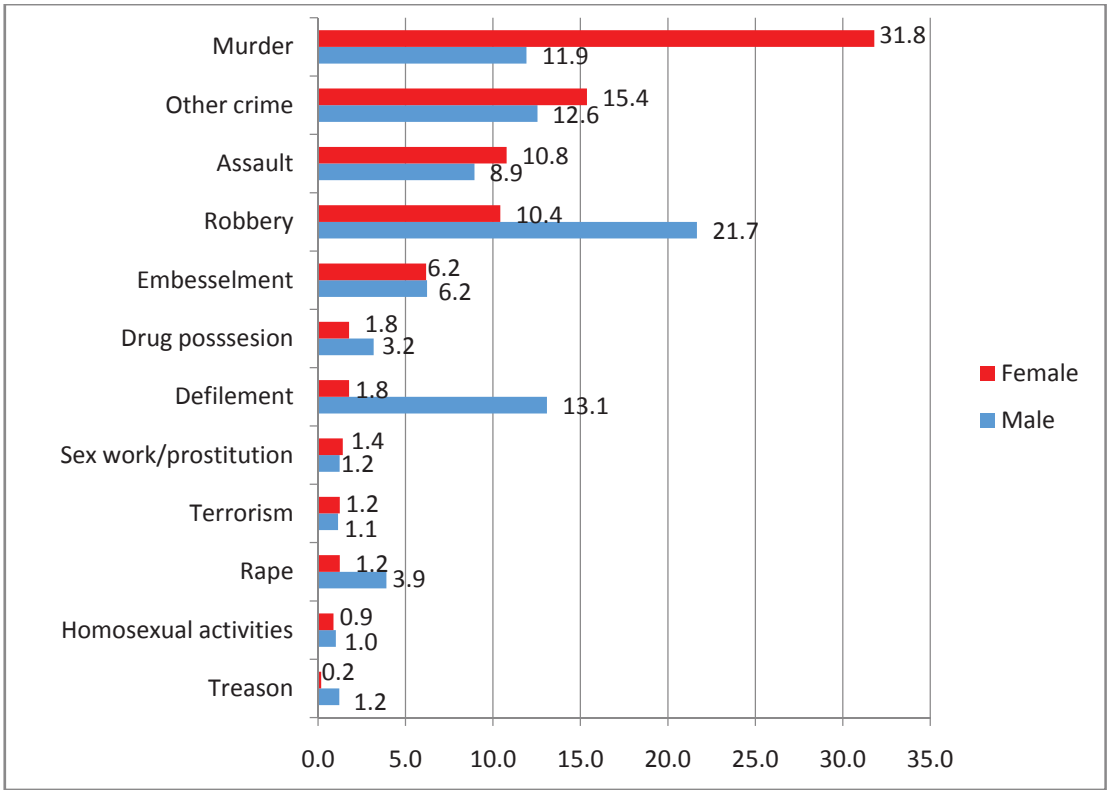
Background characteristics		Prisoners status			
		Remand	Convict	Debtor**	Total
		%	%	%	N
Gender	Male	59.7	39.2	1.0	8,353
	Female	57.4	40.8	1.8	566
Age group	Under 20	74.1	25.3	0.6	533
	20-24	65.2	34.2	0.6	1,982
	25-29	59.5	39.5	1.0	2,212
	30-34	56.8	42.4	0.9	1,601
	35-39	56.2	42.7	1.0	669
	40-44	56.8	41.6	1.6	709
	45-49	51.9	45.6	2.6	351
	50-54	45.8	51.4	2.8	286
	55-59	52.3	46.0	1.8	111
	60+	50.3	46.7	3.0	165
Ever Attended school	Yes	59.2	40.0	0.8	6,501
	No	60.5	37.7	1.8	2,418
Marital status	Single	62.0	37.4	0.6	3,642
	Married-monogamous	58.9	40.1	1.0	3,774
	Married-polygamous	52.7	45.2	2.2	790
	Divorced/separated	58.8	40.2	1.0	498
	Widowed	59.8	32.4	7.8	179
	Don't know	50.0	47.2	2.8	36
Administrative Region	Central	55.6	44.2	0.2	649
	East-central	44.5	54.7	0.9	236
	Eastern	68.4	30.0	1.6	627
	Kampala extra	57.9	41.3	0.7	1,899
	Mid central	71.8	28.2	0.0	163
	Mid-western	52.3	47.0	0.7	553

Background characteristics		Prisoners status			
		Remand	Convict	Debtor**	Total
	Mid-eastern	64.5	33.7	1.8	448
	North Eastern	46.7	49.5	3.8	184
	North western	67.5	31.3	1.2	418
	Northern	58.4	40.3	1.3	843
	South eastern	47.6	51.2	1.2	578
	South western	72.4	26.6	1.0	1154
	Southern	63.1	36.0	0.9	569
	Western	49.3	48.8	1.8	598
Total		**59.6**	**39.3**	**1.1**	**8,919**

*** Includes 3 prisoners whose status was undefined

Offences for which prisoners had been imprisoned by gender: Prisoners were asked what offence they were charged for their current prison sentence. Figure 4 shows the reported offences. Regarding men, 21.7% were convicted on robbery charges, 13.1% for defilement, 11.9% for murder and 6.2% for embezzlement. Women were in prison mostly for the following offenses in descending order: murder (31.8%), assault (10.8%), robbery (10.4%) and embezzlement 6.2%.

Figure 4: Percentage of Prisoners' current Offences by gender sex



Sentences being served/Convictions: Out of 8,919 prisoners 3,605 (40.4%) had been convicted by time of interview. Table 7 shows the type of sentence that had been given to the prisoners. The majority, 81.6% (2953/3605) of the 3,605 prisoners were serving a period while 11.3% (407/3605) were on death penalty and 6.1% (221/3605) were on life sentence. Those that did not state their sentence were 0.7% (24/3605). Proportionately, almost equal numbers of men and women were serving a period and life sentence (93.6% and 6.4% versus 93.7% and 6.3%) respectively.More men than women were on death penalty (92.1% versus 7.9%).

Table 7: Type of sentence by sex, age group, education, marital status and administrative Region (n = 3,605)

Background characteristics		Life %	Death %	Period %	Not Stated %
Gender	Male	93.67	92.14	93.57	79.17
	Female	6.33	7.86	6.43	20.83
Age group	Under 20	8.14	5.41	3.32	0
	20-24	25.79	17.69	18.93	8.33
	25-29	19.46	20.15	25.97	16.67
	30-34	19.46	16.22	19.61	16.67
	35-39	10.41	12.78	11.68	16.67
	40-44	6.79	11.79	8.06	20.83
	45-49	4.52	5.16	4.64	4.17
	50-54	2.71	6.39	4.1	8.33
	55-59	1.36	1.97	1.42	0
	60+	1.36	2.46	2.27	8.33
Ever Attended school	Yes	68.78	65.85	75.04	58.33
	No	31.22	34.15	24.96	41.67
Type of marital status	Single	39.82	37.59	38.37	37.5
	Married-monogamous	36.2	40.05	44.12	29.17
	Married polygamous	14.48	11.55	9.85	16.67
	Divorced/separated	5.43	7.62	5.49	0
	Widowed	3.17	2.21	1.83	8.33
	Don't know	0.9	0.98	0.34	8.33
Region of work	Central	8.14	4.42	8.36	20.83
	East-central	2.71	2.95	3.83	0
	Eastern	5.88	4.91	5.49	12.5
	Kampala extra	23.53	27.27	21.33	25
	Mid central	2.71	0.98	1.22	0
	Mid-western	4.98	7.13	7.55	4.17
	Mid-eastern	8.14	5.65	4	0
	North eastern	3.62	3.44	2.54	4.17
	North western	6.33	2.46	3.76	4.17
	Northern	9.95	16.46	8.7	20.83
	South eastern	10.86	5.9	8.64	0
	South western	6.33	7.13	9.35	0
	Southern	1.36	4.67	6.37	0
	Western	5.43	6.63	8.87	8.33
	All	**221**	**407**	**2,953**	**24**

Chapter 03-Knowledge about HIV/AIDS

3.1 Awareness about HIV/AIDS

This study assessed staff and prisoners' knowledge on HIV/AIDS. Respondents were asked whether they had ever heard of HIV/AIDS.

The analysis of these data followed what was done under DHIS survey to allow for comparison and thus confidence intervals were not applied. Table 8 displays staff and prisoners who had ever heard of HIV/AIDS. Nearly three quarters of participants, 75.4% staff and 74% prisoners, had ever heard of HIV/AIDS. Almost the same number of men and women among both staff and prisoners had ever heard of HIV/AIDS (75.6% and 78.7% versus73.9% and73.5%) respectively. Awareness was higher among those who had ever attended school (75.6%) than those who had never (52.9%). More civilian staff were aware about HIV/AIDS than uniformed staff (84.5% versus 75.1%). Furthermore, among staff, awareness was highest in the Northern Region (81.5%), followed by Mid-Eastern Region (81.4%) and Central Region (78.0%). Among prisoners, it was highest in Kampala extra Region (85.8%), followed by Central (82.7%) and Northern Region (78.5%). However, nearly a quarter of staff had reportedly not heard of HIV/AIDS. The proportion of prisoners who were not aware of HIV/AIDS was nearly the same as that of staff. UPS could urgently plan to raise awareness within Prisons prioritising staff as lack of awareness could negatively impact on their ability to appropriately guide prisoners.

Table 8: Awareness of Staff and Prisoners about HIV/AIDS by demographic characteristics

Background characteristics		Staff (n = 1,687)			Prisoners (n = 8,919)		
		Aware		Total	Aware		Total
		Number	%		Number	%	
Gender	Male	784	73.5	1,067	6,169	73.9	8,353
	Female	488	78.7	620	428	75.6	566
Age group	Under 20	1	100.0	1	378	70.9	533
	20-24	35	74.5	47	1,404	70.8	1,982
	25-29	201	73.4	274	1,659	75.0	2,212
	30-34	311	74.9	415	1,174	73.3	1,601
	35-39	199	75.1	265	743	76.7	969
	40-44	189	80.1	236	550	77.6	709
	45-49	169	79.7	212	267	76.1	351
	50-54	102	69.9	146	219	76.6	286
	55-59	62	70.5	88	87	78.4	111
	60+	3	100.0	3	116	70.3	165
Ever Attended school	Yes	1,263	75.6	1,670	5,169	79.5	6,501
	No	9	52.9	17	1,428	59.1	2,418
Marital status	Single	106	77.9	136	2,637	72.4	3,642
	Married-monogamous	950	75.2	1,264	2,821	74.7	3,774
	Married- polygamous	125	74.9	167	610	77.2	790
	Divorced/separated	41	75.9	54	379	76.1	498
	Widowed	40	83.3	48	122	68.2	179
	Divorced & remarried	10	66.7	15			
	Don't know	0	0.0	3	28	77.8	36
Employment	Uniformed	1,201	75.1	1,600			
	Civilian	71	84.5	84			
	Not stated	0	0.0	3			
Administrative Region	Central	85	78.0	109	537	82.7	649

	East-central	41	74.5	55	171	72.5	236
	Eastern	88	68.2	129	448	71.5	627
	Kampala extra	230	78.5	293	1,629	85.8	1,899
	Mid central	34	77.3	44	99	60.7	163
	Mid-western	67	69.1	97	374	67.6	553
	Mid-eastern	70	81.4	86	328	73.2	448
	North Eastern	45	77.6	58	123	66.8	184
	North western	82	78.8	104	283	67.7	418
	Northern	150	81.5	184	662	78.5	843
	South eastern	109	72.2	151	388	67.1	578
	South western	135	68.5	197	713	61.8	1,154
	Southern	56	75.7	74	403	70.8	569
	Western	80	75.5	106	439	73.4	598
Total		**1,272**	**75.4**	**1,687**	**6,597**	**74.0**	**8,919**

3.2 Comprehensive knowledge on HIV *prevention*

Abstaining from sex, being faithful to one uninfected partner, consistently using condoms and taking ARVs are ways of minimising the chances of being infected with HIV. Consequently, respondents in this study were asked sets of questions that helped to explore their knowledge on methods of preventing the spread of AIDS virus and misconceptions about AIDS virus transmission. Questions covered included consistent use of condoms; whether maintaining only one uninfected sex partner reduces the risk of catching AIDS virus; whether healthy looking people can have AIDS virus; as well as their knowledge on some misconceptions, such as whether AIDS virus can be contracted through mosquito bites, witchcraft or sharing food with someone infected with AIDS virus. The study also assessed for possession of comprehensive knowledge about HIV/AIDS among staff and prisoners. Comprehensive knowledge in this regard is knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus (AIDS can be transmitted by mosquito bites and sharing food). Table 9 shows comprehensive knowledge among staff while table 10 shows that of prisoners.

Comprehensive knowledge on HIV prevention among Staff: Over half (56.4%) of staff had comprehensive knowledge about HIV/AIDS, this was more among female than male staff. The proportion of staff with comprehensive knowledge decreased with age, and was much higher among those who had ever been to school than those who had not (56.6% versus 35.3%). By specific indicator, 72.7% of staff knew that AIDS virus cannot be contracted by sharing food with an infected person; 70.1% knew that having one sexual partner reduces the risk of being infected with the AIDS virus; 70.2% knew that consistent use of condoms reduces the chances of getting the AIDS virus; while 69.9% knew that people cannot get the AIDS virus through mosquito bites and 66.4% knew that the AIDS virus cannot be got through witchcraft.

Comprehensive knowledge on HIV prevention among prisoners: Table 12 displays the responses of prisoners. About a fifth (20.5%) of prisoners had comprehensive knowledge about HIV/AIDS, and this was less among female than male prisoners. Some 56.8% consistently used condoms while 61.6% knew that having only one uninfected sex partner can reduce the risk HIV infection. This has the potential to reduce HIV transmission.

Table 9: Percentage of knowledge on methods of transmission of AIDS virus and comprehensive knowledge among staff (n = 1,687)

Background characteristics		Having only one uninfected partner can reduce risk of HIV	Consistent use of condoms reduces the chances of getting AIDS virus	A healthy-looking person can have AIDS virus	People cannot get AIDs virus by mosquito bite	People cannot get AIDs virus by sharing food with an infected person	AIDs virus cannot be contracted through witchcraft	Comprehensive knowledge ¥	Total
Gender	Male	68.7	69.2	68.3	67.9	70.9	64.4	55.1	1,067
	Female	72.6	71.9	74.0	73.4	76.0	69.8	58.6	620
Age group	Under 20	100.0	100.0	100.0	100.0	100.0	0.0	100.0	1
	20-24	70.2	74.5	72.3	70.2	72.3	63.8	61.7	47
	25-29	69.7	67.9	71.2	70.1	69.3	72.6	59.9	274
	30-34	69.6	71.1	72.3	72.5	68.0	73.5	61.9	415
	35-39	69.1	67.2	69.8	70.9	67.2	72.1	53.2	265
	40-44	74.6	75.0	72.9	75.4	77.5	67.4	59.8	236
	45-49	74.1	73.6	71.2	70.8	76.4	66.5	54.3	212
	50-54	61.6	63.7	61.6	56.8	63.0	56.8	41.1	146
	55-59	68.2	68.2	65.9	58.0	64.8	61.4	47.7	88
	60+	100.0	100.0	66.7	66.7	100.0	100	33.3	3
Ever Attended school	Yes	70.4	70.4	70.7	70.1	72.9	66.6	56.6	1,670
	No	47.1	47.1	47.1	47.1	52.9	47.1	35.3	17
Marital status	Single	72.1	73.5	75.7	69.9	74.3	67.6	58.1	136
	Married-monogamous	69.9	70.3	70.3	70.7	73.1	67.2	57.5	1,264
	Married-polygamous	70.1	68.3	66.5	65.9	70.1	61.1	50.9	167
	Divorced/separated	68.5	68.5	70.4	64.8	72.2	68.5	48.2	54
	Widowed	77.1	72.9	79.2	75.0	77.1	72.9	54.2	48
	Divorced &	66.7	66.7	66.7	60.0	60.0	33.3	53.3	15

	remarried								
	Don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3
Employment	Uniformed	75.1	69.8	69.9	69.5	72.4	65.9	55.8	1,600
	Civilian	84.5	81.0	83.3	79.8	82.1	77.4	69.1	84
	Not stated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3
Administrative Region	Central	71.6	72.5	72.5	71.6	74.3	70.6	62.4	109
	East-central	69.1	69.1	69.1	69.1	72.7	61.8	52.7	55
	Eastern	65.1	63.6	65.9	63.6	65.9	56.6	55.0	129
	Kampala extra	75.1	74.7	76.1	75.1	76.8	72.7	65.2	293
	Mid central	65.9	70.5	72.7	68.2	70.5	65.9	50.0	44
	Mid-western	64.9	66.0	66.0	64.9	64.9	63.9	52.6	97
	Mid-eastern	75.6	73.3	77.9	72.1	75.6	65.1	54.7	86
	North Eastern	75.9	70.7	74.1	69.0	74.1	75.9	53.5	58
	North western	73.1	76.0	71.2	67.3	76.0	71.2	55.8	104
	Northern	72.8	75.0	71.2	76.6	79.9	71.2	54.4	184
	South eastern	65.6	68.2	64.9	69.5	70.9	60.9	55.0	151
	South western	64.5	60.9	62.4	62.4	64.5	57.9	48.2	197
	Southern	70.3	71.6	75.7	67.6	74.3	68.9	58.1	74
	Western	69.8	69.8	70.8	72.6	74.5	66.0	58.5	106
Total		**70.1**	**70.2**	**70.4**	**69.9**	**72.7**	**66.4**	**56.4**	**1,687**

Two most common misconceptions: AIDS can be transmitted by mosquito bites and sharing food

¥ Comprehensive knowledge: knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus.

Table 10: Percentage of knowledge on methods of transmission of AIDS virus and comprehensive knowledge among prisoners (n = 8,919)

Background characteristics		Having only one uninfected partner can reduce risk of HIV	Consistent use of condoms reduces the chances of getting AIDS virus	A healthy-looking person can have AIDS virus	People cannot get AIDs virus by mosquito bite	People cannot get AIDs virus by sharing food with an infected person	AIDs virus cannot be contracted by witchcraft	Comprehensive knowledge¥	Total
Gender	Male	61.7	56.6	58.4	43.8	56.9	54.7	20.5	8,353
	Female	60.4	58.8	60.4	49.8	60.8	54.1	21.4	566
Age group	Under 20	57.4	52.5	53.8	37.7	51.0	47.8	14.6	533
	20-24	59.1	53.8	55.2	38.7	54.4	49.7	16.2	1,982
	25-29	63.2	58.5	58.8	44.7	59.3	55.5	22.2	2,212
	30-34	61.0	56.1	59.2	45.5	57.5	54.5	21.1	1,601
	35-39	63.9	60.4	62.0	47.6	59.9	59.8	24.4	969
	40-44	64.3	59.7	64.7	47.8	57.1	58.7	23.3	709
	45-49	64.1	57.0	63.1	49.6	55.8	58.4	22.5	351
	50-54	63.3	57.7	57.7	52.1	61.2	61.5	25.5	286
	55-59	67.6	66.7	63.1	44.1	62.2	60.4	26.1	111
	60+	51.5	46.7	47.3	49.1	56.4	52.7	12.7	165
Ever Attended school	Yes	67.9	62.7	64.0	48.8	62.4	60.6	24.7	6,501

	No	44.8	40.7	43.6	31.7	43.3	38.6	9.3	2,418
Marital status	Single	60.5	55.8	56.9	41.3	55.7	52.4	19.0	3,642
	Married-monogamous	62.2	57.8	58.8	45.8	58.0	56.2	21.5	3,774
	Married-polygamous	64.4	59.4	61.4	48.9	59.6	58.4	22.4	790
	Divorced/separated	63.3	55.6	63.3	49.0	61.8	57.6	23.9	498
	Widowed	58.1	52.0	57.0	36.3	48.0	45.3	17.3	179
	Don't know	50.0	33.3	58.3	33.3	47.2	38.9	2.8	36
Administrative Region	Central	67.5	62.6	70.0	52.2	70.3	63.5	25.6	649
	East-central	58.9	49.2	56.8	39.0	59.3	53.0	17.0	236
	Eastern	59.3	53.6	53.7	36.8	51.2	49.0	15.6	627
	Kampala extra	74.1	68.2	74.1	60.0	71.7	67.9	33.3	1,899
	Mid central	49.7	42.9	49.1	28.8	42.3	37.4	9.8	163
	Mid-western	55.0	47.4	47.9	37.3	53.0	48.8	13.6	553
	Mid-eastern	62.1	57.4	50.2	43.8	47.8	52.7	18.5	448
	North Eastern	54.3	52.7	48.9	38.6	39.7	45.7	15.8	184
	North western	50.7	51.7	48.3	42.3	50.0	48.1	13.6	418
	Northern	68.2	64.7	54.3	52.4	58.6	64.3	25.6	843
	South eastern	53.1	48.4	54.2	45.0	54.8	50.0	17.7	578
	South	51.5	48.4	49.9	27.7	43.1	41.8	11.5	1,154

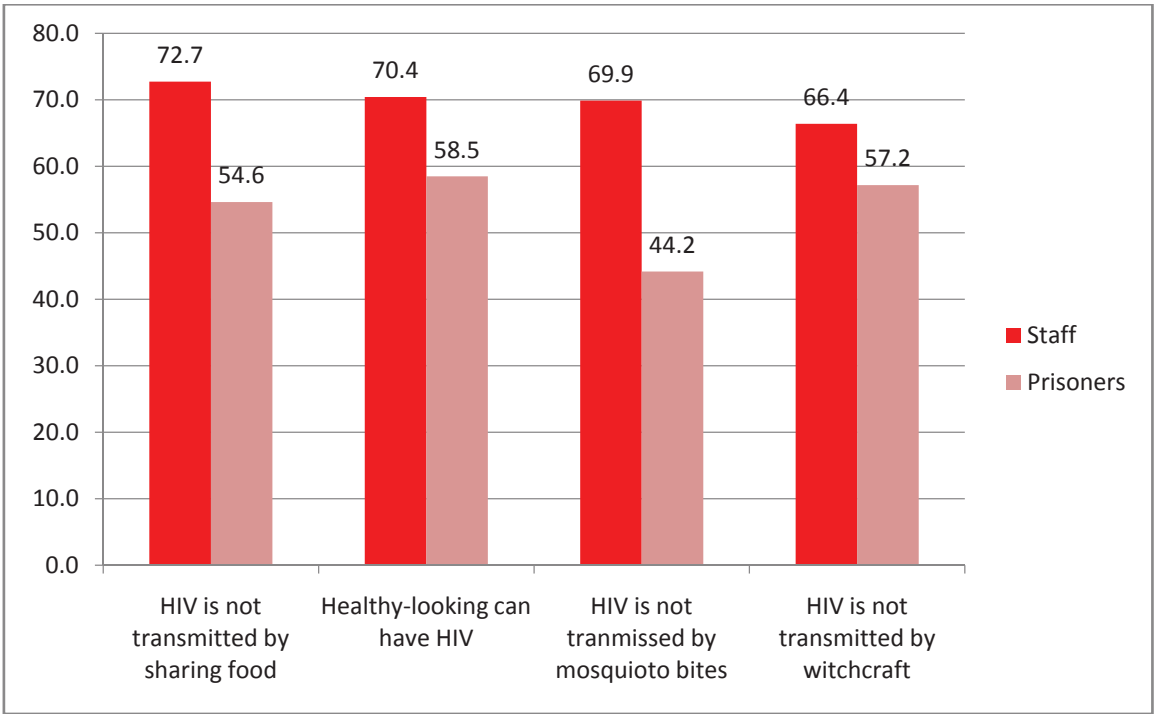
	western								
	Southern	59.8	53.1	60.5	33.7	58.3	49.0	17.2	569
	Western	58.0	54.2	55.5	38.1	54.2	49.2	14.2	598
Total		**61.6**	**56.8**	**58.5**	**44.2**	**57.2**	**54.6**	**20.5**	**8,919**

Two most common misconceptions: AIDS virus can be transmitted by mosquito bites and sharing food
¥Comprehensive knowledge: knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and *rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus.

Figure 5: shows misconceptions on AIDS virus transmission. Among staff, 72.7% knew that AIDS virus cannot be transmitted by sharing food,70.4% knew that a healthy-looking person can have the AIDS virus,69.9% knew that mosquitoes cannot transmit the AIDS virus, and 66.4% knew that HIV AIDS virus cannot be transmitted through witchcraft.

More prisoners than staff had more misconceptions on AIDS virus transmission. For example, only 58.5% of the prisoners knew that a healthy looking person can have HIV, 57.2% knew that HIV is not transmitted through witchcraft, and 54.6% knew HIV is not transmitted by sharing food while 44.2% knew HIV is not transmitted by mosquito bites. In comparison, 72.7% of staff compared to 54.6% of prisoners knew that AIDS virus cannot be transmitted by sharing food with a person who has AIDS; 70.4% of the staff as opposed to 58.5% of the prisoners knew that a healthy looking person can have AIDS virus while 69.9% of the staff compared to 44.2% of the prisoners knew that mosquitoes cannot transmit AIDS virus and 64.6% compared to 57.2% knew that AIDS virus cannot be transmitted through witchcraft.

Figure 5: Rejections of misconceptions of AIDS virus transmission among prisoners and staff



3.3 Knowledge of prevention of mother to child transmission of AIDS virus

One of the methods of HIV virus transmission is from mother to child. Participants of this survey were asked if they thought the HIV virus can be transmitted to a child by breastfeeding, and whether the risk of mother to child transmission (MTCT) can be reduced by taking special drugs. Table 11 shows the knowledge of staff and prisoners about the role of breast feeding in transmitting HIV and the role of ARVs in preventing transmission of HIV infection from mother to child.

Staff knowledge on prevention: While only 26% of staff knew that breastfeeding can transmit the AIDS virus, 69% knew that ARVs can reduce MTCT. Proportionately more women than men were knowledgeable on both indicators and those who have ever been to school were more knowledgeable than their counterparts who had not. By administrative Region, knowledge of risk of breastfeeding was higher among staff in East Central (30.9%), followed by those in Southern 29.7%, Kampala extra 29.4% and North Eastern 29.3%.

Prisoners' knowledge on prevention: Prisoners were less knowledgeable than staff; 26% of prisoners knew breastfeeding can transmit the AIDS virus and 63.6% knew ARVs can reduce MTCT. Only one out of five (19.1%) prisoners, fewer men than women (18.9% versus 23.3%) knew both indicators i.e. that mothers can transmit the virus through breastfeeding and that special drugs can reduce the risk of transmission. The knowledge on these two indicators was higher among those who had ever attended school. By administrative Region, knowledge of risk of breastfeeding was higher among those in Northern (32.5%), Mid-western (29.0), Kampala extra (25.5%) and Central (22.2%).

Table 11: Knowledge of prevention of mother to child transmission of AIDS virus

Background characteristics		Staff (n = 1,687)				Prisoners (n = 8,919)			
		AIDS virus can be transmitted to baby by breastfeeding	Risk of MTCT can be reduced by taking special drugs	Knowledge about the two (breast feeding and MTCT)	Total	AIDS virus can be transmitted to baby by breastfeeding	Risk of MTCT can be reduced by taking special drugs	Knowledge about the two (breast feeding and MTCT)	Total
Gender	Male	24.6	65.3	22.8	1,067	20.9	63.3	18.9	8,353
	Female	28.4	75.3	27.7	620	26.0	68.9	23.3	566
Age group	Under 20	100.0	100.0	100.0	1	23.5	59.1	20.5	533
	20-24	23.4	66.0	23.4	47	20.4	60.6	18.5	1,982
	25-29	30.3	65.0	28.5	274	21.3	66.1	19.7	2,212
	30-34	31.6	69.9	29.6	415	20.2	65.0	18.4	1,601
	35-39	26.0	69.4	24.9	265	22.6	65.8	20.4	969
	40-44	20.8	75.9	19.9	236	21.0	65.7	19.0	709
	45-49	23.1	69.8	21.2	212	19.4	63.3	17.4	351
	50-54	19.2	63.7	18.5	146	24.1	61.9	21.0	286
	55-59	19.3	64.8	19.3	88	23.4	58.6	15.3	111
	60+	0.0	100.0	0.0	3	24.2	54.6	18.8	165
Ever Attended school	Yes	26.1	69.2	24.7	1,670	22.6	69.7	20.6	6,501
	No	17.7	52.9	17.7	17	17.7	47.2	15.2	2,418
Marital status	Single	27.9	72.8	27.9	136	21.5	62.1	19.3	3,642
	Married-monogamous	26.1	68.4	24.6	1.264	20.8	64.8	18.7	3,774
	Married-polygamous	19.8	68.3	18.0	167	20.6	64.1	18.9	790
	Divorced/separated	37.0	72.2	35.2	54	22.5	66.3	20.7	498
	Widowed	22.9	81.3	22.9	48	24.0	61.5	22.9	179
	Divorced & remarried	40.0	60.0	40.0	15				
	Don't know	0.0	0.0	0.0	3	25.0	58.3	25.0	36
Administrative	Central	21.1	67.9	19.3	109	22.2	70.1	19.9	649

Background characteristics		Staff (n = 1,687)				Prisoners (n = 8,919)			
		AIDS virus can be transmitted to baby by breastfeeding	Risk of MTCT can be reduced by taking special drugs	Knowledge about the two (breast feeding and MTCT)	Total	AIDS virus can be transmitted to baby by breastfeeding	Risk of MTCT can be reduced by taking special drugs	Knowledge about the two (breast feeding and MTCT)	Total
Region	East-central	30.9	70.9	30.9	55	19.9	63.1	17.8	236
	Eastern	20.2	62.0	17.8	129	19.8	60.0	16.1	627
	Kampala extra	31.7	71.3	29.4	293	24.5	75.1	22.4	1,899
	Mid central	22.7	70.5	22.7	44	11.0	55.2	11.0	163
	Mid-western	23.7	63.9	22.7	97	15.2	57.0	12.3	553
	Mid-eastern	22.1	75.6	22.1	86	29.0	65.0	27.7	448
	North Eastern	29.3	75.9	29.3	58	17.9	53.3	15.8	184
	North western	26.9	73.1	26.0	104	21.8	55.7	21.1	418
	Northern	25.0	70.7	22.3	184	32.5	68.6	30.0	843
	South eastern	27.8	66.9	27.8	151	17.5	57.4	16.3	578
	South western	22.8	64.0	21.8	197	14.4	53.9	12.7	1,154
	Southern	29.7	70.3	29.7	74	19.3	60.5	17.1	569
	Western	25.5	70.8	23.6	106	17.9	61.2	15.6	598
Total		**26.0**	**69.0**	**24.6**	**1,687**	**21.2**	**63.6**	**19.1**	**8,919**

Chapter 04-Attitudes towards HIV/AIDS and HIV/AIDS services

The study explored staff and prisoners' attitudes towards HIV testing,sex among prisoners, pregnancy and condom use, and their perceived risk of acquiring HIV as elaborated in the following sections.

4.1 Personal attitudes about HIV testing

Knowing one's HIV status can enhance adoption and adherence to appropriate behaviour. In addition, it helps someone to obtain care that is appropriate to the sero-status. Therefore, participants in this study were asked what their friends think about being tested for HIV, if getting tested for HIV helps them feel better about their health; whether they think being tested for HIV is beneficial to their health and whether other people would think that they are using drugs if they took an HIV test; and if they feared losing friends if they tested for HIV. The data for these interviews are presented in tables 12 and 13.

Personal attitudes about HIV testing among staff: Among the staff, nearly nine out of ten (90.8%, more men than women) agreed that their friends think being tested for HIV is good. At a personal level, 95.0% of staff believed that getting tested would make them feel healthy and 95.8% believed getting tested is good for their health. Eighty three percent (83.4%) disagreed that they would lose friends if they tested for HIV and 72.3% felt their friends would think that they are taking drugs if they tested for HIV. Those who have ever attended school were more likely to agree than those who had not.

Personal attitude about HIV testing among prisoners: Regarding personal attitude about HIV testing, 78.6% of prisoners compared to 95.0% of staff agreed that their close friends think being tested for HIV is good. Eighty-three percent (83.7%) of prisoners think getting tested for HIV makes them feel healthy while 83.6% think it's good for their health. On the other hand, less than a half of the prisoners (48.9%) compared to staff (83.4%) disagree that they would lose close friends while 45.9% of the prisoners compared to 72.3% of the staff disagree that their close friends would think they are taking drugs if they tested for HIV.

Table 12: Percentage of staff expressing specific accepting attitudes toward HIV testing (agree, disagree) (n=1,687)

Background characteristics		My close friends think being tested for HIV is important(Agree)	Getting tested for HIV helps me to feel healthy (Agree)	By being tested for HIV I am doing something good for my health (agree)	I fear that I will lose my friends if I get tested for HIV (disagree)	If I am tested for HIV people might think that I use drugs (disagree)	Total
Gender	Male	92.5	95.9	96.8	83.8	71.6	1,067
	Female	87.9	93.4	94.0	82.7	73.6	620
Age group	Under 20	100.0	100.0	100.0	100.0	100.0	1
	20-24	95.7	97.9	93.6	91.5	78.7	47
	25-29	91.2	92.0	95.2	88.7	80.7	274
	30-34	90.4	95.7	97.3	89.2	80.2	415
	35-39	92.5	95.9	97.0	83.8	75.9	265
	40-44	91.1	93.6	94.9	84.8	68.2	236
	45-49	91.5	96.2	97.6	75.9	59.0	212
	50-54	87.0	97.3	92.5	69.9	58.2	146
	55-59	88.6	93.2	95.5	70.5	61.4	88
	60+	66.7	100.0	100.0	100.0	66.7	3
Ever Attended school	Yes	90.9	95.2	96.1	83.7	72.6	1,670
	No	82.4	6.5	86.7	58.8	47.1	17
Marital status	Single	94.1	94.9	94.1	82.4	75.0	136
	Married-monogamous	90.4	95.0	96.0	85.2	74.5	1,264
	Married-polygamous	93.4	97.6	97.0	76.7	59.3	167
	Divorced/separated	90.7	90.7	96.3	85.2	70.4	54
	Widowed	87.5	93.8	100.0	68.8	60.4	48
	Divorced & remarried	93.3	100.0	86.7	73.3	73.3	15
	Don't know	0.0	0.0	0.0	0.0	0.0	3
Employment	Uniformed	91.0	95.2	96.1	83.1	71.8	1,600
	Civilian	90.5	94.1	94.1	92.9	85.7	84
	Not stated	0.0	0.0	0.0	0.0	0.0	3

Administrative Region	Central	89.0	95.4	94.5	83.5	67.9	109
	East-central	92.7	98.2	98.2	67.3	67.3	55
	Eastern	94.6	95.4	96.9	79.8	71.3	129
	Kampala extra	90.1	94.5	95.2	88.7	77.8	293
	Mid central	93.2	97.7	95.5	88.6	70.5	44
	Mid-western	87.6	93.8	94.9	88.7	66.0	97
	Mid-eastern	90.7	96.5	100.0	74.4	68.6	86
	North Eastern	98.3	98.3	98.3	81.0	72.4	58
	North western	90.4	95.2	96.2	79.8	65.4	104
	Northern	87.5	91.9	94.6	79.9	72.3	184
	South eastern	91.4	96.0	95.4	83.4	76.2	151
	South western	91.4	94.4	93.9	84.8	72.1	197
	Southern	90.5	96.0	98.7	91.9	77.0	74
	Western	91.5	94.3	96.2	84.0	73.6	106
Total		**90.8**	**95.0**	**95.8**	**83.4**	**72.3**	**1,687**

Table 13: Percentage of prisoners expressing specific accepting attitudes toward HIV testing (agree and disagree) (n = 8,919)

		My close friends think being tested for HIV is important(Agree)	Getting tested for HIV helps me to feel healthy (Agree)	By being tested for HIV I am doing something good for my health (agree)	I fear that I will lose my friends if I get tested for HIV (disagree)	If I am tested for HIV people might think that I use drugs (disagree)	Total
Gender	Male	78.8	83.9	83.7	48.9	45.6	8,353
	Female	75.3	80.0	81.8	48.1	49.5	566
Age group	Under 20	76.9	81.6	82.0	46.7	46.5	533
	20-24	79.3	83.7	83.0	47.3	41.6	1,982
	25-29	81.7	85.9	86.4	49.0	45.9	2,212
	30-34	79.5	84.6	84.7	47.2	47.4	1,601
	35-39	77.8	83.2	82.8	52.6	47.1	969
	40-44	75.5	82.9	81.5	46.1	45.4	709
	45-49	74.9	79.5	80.6	53.9	51.3	351
	50-54	73.4	81.1	81.8	50.0	48.3	286
	55-59	75.7	82.9	74.8	62.2	61.3	111
	60+	61.2	72.7	77.6	58.2	49.7	165
Ever Attended school	Yes	81.6	86.6	86.7	39.3	48.3	6,501
	No	70.4	75.9	75.4	52.5	39.4	2,418
Marital status	Single	77.4	82.2	82.8	25.1	44.2	3,642
	Married-monogamous	79.4	84.8	84.9	49.7	47.3	3,774
	Married-polygamous	80.4	86.0	85.2	46.7	45.2	790
	Divorced/separated	81.9	86.4	82.7	50.4	51.6	498
	Widowed	69.8	76.5	71.5	40.8	41.9	179
	Don't know	63.9	72.2	69.4	38.9	25.0	36
Administrative Region	Central	80.6	86.9	84.3	47.5	47.6	649
	East-central	78.8	82.2	86.9	41.1	43.6	236
	Eastern	73.2	76.4	77.7	45.8	43.9	627
	Kampala extra	84.3	90.2	89.1	56.1	52.8	1,899
	Mid central	81.0	84.7	82.2	44.2	42.9	163
	Mid-western	77.2	81.2	80.8	45.4	42.1	553
	Mid-eastern	78.4	83.7	81.0	48.0	36.8	448
	North Eastern	69.0	69.6	72.3	50.0	44.6	184
	North western	66.0	73.4	78.5	46.2	35.2	418

	Northern	81.3	85.7	86.7	48.6	43.9	843
	South eastern	75.6	81.8	82.5	47.1	49.0	578
	South western	78.9	84.8	83.2	48.1	44.4	1,154
	Southern	79.6	83.1	84.0	37.8	42.4	569
	Western	73.4	78.6	79.4	54.7	50.0	598
otal		**78.6**	**83.7**	**83.6**	**48.9**	**45.9**	**8,919**

4.2 Attitude toward provision of HIV testing in Prisons

Increased accessibility to HIV testing services can lead to more uptake of HIV tests and to an increased proportion of people who know their sero status and who can benefit from care appropriate to the sero status. This study explored participants' attitude towards HIV testing services in prisons, their willingness to utilise them, whether prisoners should be tested at entry into prisons and whether routine HIV testing would reduce the spread of HIV in prisons.

Staff: Table 14 shows the staff attitude towards testing. Nearly all staff (96%) thought prisoners should easily access HIV testing services whilst in Prison; 83.7% thought prisoners would be tested if the services were available; 86.0% believed that having routine HIV testing would reduce the spread of HIV in prisons; and 89.2% believed that routine HIV testing of staff would reduce spread of HIV in prisons.

Among staff, more men than women held the above beliefs. By age, the proportion of staff holding the belief increased with age. Beliefs were more prevalent among those who had ever been to school than those who had not.

Prisoner's attitude towards HIV testing: Table 15 shows the prisoners attitude towards HIV testing. For each of the attributes the proportion of prisoners who agreed was less than that of staff. For example, 82.3% of prisoners thought HIV testing services should be readily available in prisons, 83.4% thought that most prisoners would take HIV test if the service was available, while 81.1% thought that routine HIV testing would reduce the spread of HIV in prison.

Among prisoners, both men and women held the same beliefs regarding HIV testing in prisons. By age group, just like for staff, the proportion of prisoners who agreed tended to increase with age and the beliefs were more prevalent among those who had ever been to school than those who had not.

Table 14: Staff expressing accepting attitudes (agree + strongly agree) towards HIV testing in prisons (n = 1,687)

		Prisoners should be to easily access HIV testing while in prison	Most prisoners would be tested while in prison if testing was available	Having routine HIV testing in prison would reduce the spread of HIV in prison	Routine HIV testing for prison staff would reduce HIV spread in prisons	Total
Gender	Male	96.5	84.8	85.9	90.5	1,067
	Female	95.2	81.8	86.3	86.9	620
Age group	Under 20	100.0	100.0	100.0	100.0	1
	20-24	93.6	70.2	83.0	89.4	47
	25-29	94.9	82.1	83.9	88.0	274
	30-34	95.7	82.4	82.4	88.9	415
	35-39	97.0	83.8	87.6	89.1	265
	40-44	95.8	84.3	88.1	87.7	236
	45-49	98.6	84.9	89.6	92.0	212
	50-54	94.5	87.7	84.9	89.0	146
	55-59	96.6	89.8	93.2	92.1	88
	60+	100.0	100.0	100.0	100.0	3
Ever Attended school	Yes	96.2	83.9	86.2	89.5	1,670
	No	82.4	64.7	70.6	58.8	17
Type of marital status	Single	96.3	77.9	86.8	86.0	136
	Married-monogamous	96.1	83.8	85.4	89.6	1,264
	Married- polygamous	96.4	91.0	89.2	92.8	167
	Divorced/separated	100.0	75.9	92.6	85.2	54
	Widowed	93.8	85.4	85.4	87.5	48
	Divorced & remarried	93.3	86.7	93.3	86.7	15
	Don't know	0.0	0.0	0.0	0.0	3
Employment	Uniformed	96.2	84.6	86.4	89.8	1,600
	Civilian	96.4	70.2	82.1	81.0	84
	Not stated	0.0	0.0	0.0	0.0	3
Administrative Region	Central	90.8	84.4	80.7	85.3	109
	East-central	94.6	81.8	83.6	89.1	55
	Eastern	97.7	85.3	85.3	93.0	129
	Kampala extra	96.6	80.2	88.4	88.1	293
	Mid central	97.7	84.1	86.4	86.4	44
	Mid-western	96.9	92.8	85.6	91.8	97
	Mid-eastern	98.8	88.4	88.4	94.2	86
	North Eastern	96.6	86.2	89.7	87.9	58
	North western	96.2	84.6	91.4	94.2	104
	Northern	95.7	82.6	84.2	85.9	184
	South eastern	96.7	84.1	90.1	92.7	151
	South western	94.4	83.3	81.7	86.8	197
	Southern	94.6	78.4	83.8	89.2	74
	Western	98.1	83.0	84.9	87.7	106
Total		**96.0**	**83.7**	**86.0**	**89.2**	**1,687**

Table 15: Prisoners expressing accepting attitude (agree + strongly agree) towards HIV testing in prisons (n = 8,919)

Background characteristics		Prisoners should be to easily access HIV testing while in prison	Most prisoners would be tested while in prison if testing was available	Having routine HIV testing in prison would reduce the spread of HIV in prison	Total
Gender	Male	82.3	83.5	81.1	8,353
	Female	82.7	82.2	81.1	566
Age group	Under 20	77.7	81.2	78.4	533
	20-24	82.4	83.4	80.7	1,982
	25-29	83.0	84.6	82.0	2,212
	30-34	83.0	84.2	82.0	1,601
	35-39	83.1	83.0	81.8	969
	40-44	82.2	83.4	80.8	709
	45-49	80.1	80.9	78.9	351
	50-54	82.2	82.5	79.4	286
	55-59	82.9	82.9	83.8	111
	60+	80.0	78.8	75.8	165
Ever Attended school	Yes	85.4	86.6	83.2	6,501
	No	74.1	74.9	75.4	2,418
Marital status	Single	81.6	82.7	80.5	3,642
	Married-monogamous	83.2	84.3	81.9	3,774
	Married-polygamous	84.4	85.2	82.4	790
	Divorced/separated	82.7	84.3	81.1	498
	Widowed	69.8	73.2	73.7	179
	Don't know	77.8	75.0	66.7	36
Administrative Region	Central	84.3	86.1	84.6	649
	East-central	83.5	87.3	80.9	236
	Eastern	76.7	79.7	74.6	627
	Kampala extra	87.6	87.9	86.7	1,899
	Mid central	81.6	80.4	81.6	163
	Mid-western	77.6	77.9	76.0	553
	Mid-eastern	80.6	79.5	80.1	448
	North eastern	74.5	73.9	75.5	184
	North western	72.3	72.3	72.7	418
	Northern	87.0	84.7	81.6	843
	South eastern	82.9	82.9	81.1	578
	South western	81.9	85.5	82.2	1,154
	Southern	81.4	85.6	82.4	569
	Western	78.8	81.1	74.8	598
Total		**82.3**	**83.4**	**81.1**	**8,919**

4.3 Prisoners' attitudes towards sex among prisoners

The most prevalent way of contracting AIDS virus in Uganda is through sexual intercourse. This study, sought to better understand prisoners' attitudes/beliefs towards sex that could potentially increase the risk of spreading AIDS virus in prison so as to enable Prison Health Services design effective control strategies. Prisoners were therefore asked a number of questions to assess their attitudes/beliefs towards sex while in prison. Table 16 presents the questions and answers.

Nearly a half of prisoners (48.5% of men and 50.3% of women) believed they can have sex with someone while they were in prison; 47.7% men and 43.1% women thought they cannot avoid sex whilst in prison. Responding to questions of whether respondents' behaviour placed them at risk of getting infected with AIDS virus, 29.7% of men and 24.9% of women answered yes (agree and strongly agree combined). On the other hand, 18.0% of men and 15.9% of women thought their behaviour places others at risk of getting AIDS virus. In addition, 33.5% of men and 27.7% of women thought that their sexual behaviour was risky and could expose them to AIDS virus, while 20.7% of men and 16.6% of women think that their risky sexual behaviour puts their sex partners at the risk of catching AIDS virus.

Nearly a fifth of the prisoners (21.4% of men and 19.4% of women) expressed fear that they would not be able to resist sexual advances while in prison (agree and strongly agree combined). Just under a third (30.3%) of men and 29.4% of women feared that they were likely to get infected with AIDS virus while in prison; and 17.5% of men and 17.2% of women thought they were likely to infect others while in prison (likely and extremely likely combined).

Table 16: Prisoners attitudes towards Sex in prison by sex, age, marital status and Region (n = 8,919)

Prisoners attitudes towards Sex		Male (N=8,353)		Female (N=566)	
		Freq.	%	Freq.	%
Will not have sex with anyone in prison	Strongly disagree	2,944	35.2	170	30.0
	Disagree	1,112	13.3	115	20.3
	Agree	1,844	22.1	146	25.8
	Strongly agree	2,327	27.9	122	21.6
	Don't know	126	1.5	13	2.2
Doubt can avoid having sex in prison	Strongly disagree	3,900	47.7	244	43.1
	Disagree	1565	18.7	158	27.9
	Agree	1332	16.0	82	14.5
	Strongly agree	1301	15.6	67	11.8
	Don't know	175	2.1	15	2.6
My behaviour places me at risk of getting HIV	Strongly disagree	3,362	40.3	183	32.3
	Disagree	1,491	17.9	138	24.4
	Agree	1,352	16.2	81	14.3
	Strongly agree	1,128	13.5	60	10.6
	Don't know	999	12.0	60	10.6
My behaviour places others at risk of getting HIV	Strongly disagree	1,748	20.9	89	15.7
	Disagree	880	10.5	75	13.3
	Agree	816	9.8	55	9.7
	Strongly agree	682	8.2	35	6.2
	Don't know	4,227	50.6	312	55.1
My sexual behaviour is risky and can expose me to HIV	Strongly disagree	3,179	38.1	189	33.4
	Disagree	1,358	16.3	120	21.2
	Agree	1,555	18.6	90	15.9
	Strongly agree	1,248	14.9	67	11.8
	Don't know	1,013	12.1	100	17.7
My sexual behaviour is risky and can expose my sex partners to HIV	Strongly disagree	1,562	18.7	94	16.6
	Disagree	823	9.9	64	11.3
	Agree	936	11.2	55	9.7
	Strongly agree	792	9.5	39	6.9
	Don't know	4,240	50.8	314	55.5
I fear that I will not be able to resist the sexual advances of other prisoners	Strongly disagree	4,709	56.4	296	52.3
	Disagree	1701	20.4	146	25.8
	Agree	976	11.7	72	12.7
	Strongly agree	811	9.7	38	6.7
	Don't know	156	1.9	14	2.5
How likely to be infected with HIV in prison	Extremely unlikely	3,157	37.8	178	31.5
	Unlikely	1,611	19.3	113	20.0
	Likely	1,489	17.8	109	19.3
	Extremely likely	1,040	12.5	57	10.1
	Don't know	1,056	12.6	109	19.3
How likely to infect others with HIV while in prison	Extremely unlikely	1,719	20.6	92	16.3
	Unlikely	919	11.0	62	11.0
	Likely	834	10.0	61	10,8
	Extremely likely	626	7.5	36	6.4
	Don't know	4,255	50.9	315	55.7

4.4 Prisoners' attitude towards condom use in prison

Consistent use of condoms can reduce the chance of acquiring AIDS virus through sexual intercourse, the most common method of spread of AIDS virus in Uganda. In this study, prisoners were asked if they agreed with a number of questions regarding condom use.

Table 17 shows prisoners' responses to the questions indicated by sex, age group, education status and religion. Approximately a quarter of the prisoners valued condoms: 25.4% agreed condoms should be provided to prisoners in prison; 23.9% and 29.5% agreed that having condoms is a good idea and that men would use condoms if they could get them respectively. However, 39.9% of prisoners believed that giving condoms would lead to more sex in prisons.

By gender, fewer male than female prisoners thought condoms should be provided in prisons (25.1% versus 29.7%); that it would be a good idea to provide condoms in prisons (23.6% versus 27.5%); and finally that most men who have condoms would use them (27.8% versus 29.5%). However, more men than women thought providing condoms would lead to more sex in prisons (30.7% versus 40.5%). By age group, the proportion agreeing with all the four attributes decreased with age.

Table 17: Percentage of prisoners expressing specific accepting attitudes toward Condom use among prisoners (agree + strongly agree) (n = 8,919)

Background characteristic		Condoms should be provided to prisoners while they are in prison. (Agree)	Giving prisoners condoms would lead to more sex in prisons. (Agree)	I think that having condoms in prisons is a good idea. (Agree)	Most men who have sex in prison would use condoms if they could get them (Agree)	Total
Gender	Male	25.1	40.5	23.6	27.8	8,353
	Female	29.7	30.7	27.5	29.5	566
Age group	Under 20	28.0	38.3	26.5	34.1	533
	20-24	26.8	37.9	26.3	29.5	1,982
	25-29	24.9	42.0	22.5	29.1	2,212
	30-34	27.9	41.0	25.3	29.0	1,601
	35-39	23.3	39.2	24.1	27.1	969
	40-44	24.8	40.5	20.2	23.8	709
	45-49	21.1	39.9	20.5	21.9	351
	50-54	16.4	36.4	19.5	21.3	286
	55-59	22.5	38.7	19.8	17.1	111
	60+	23.0	37.6	22.4	16.9	165
Ever Attended school	Yes	24.5	42.9	22.5	28.6	6,501
	No	27.8	31.7	27.5	26.0	2,418
Marital status	Single	27.0	40.0	25.0	30.1	3,642
	Married-monogamous	24.0	40.1	23.0	26.4	3,774
	Married-polygamous	24.8	41.5	22.5	27.7	790
	Divorced/separated	23.9	37.9	21.7	24.9	498
	Widowed	30.2	34.1	31.3	27.4	179
Administrative Region	Central	22.5	37.3	22.3	26.6	649
	East-central	31.8	31.8	32.2	28.8	236
	Eastern	26.6	36.7	24.1	28.4	627
	Kampala extra	15.8	45.5	15.3	24.0	1,899
	Mid central	38.0	37.4	32.5	28.8	163
	Mid-western	30.0	35.6	26.0	28.4	553
	Mid-eastern	31.3	41.2	28.5	30.3	448
	North Eastern	32.0	37.0	33.2	35.3	184
	North western	31.5	40.7	29.9	32.3	418
	Northern	26.7	40.1	26.0	17.9	843
	South eastern	21.8	40.2	21.8	24.7	578
	South western	27.7	38.5	27.5	30.2	1,154
	Southern	31.6	39.4	24.6	31.5	569
	Western	28.1	38.1	25.9	28.4	598
Total		**25.4**	**39.9**	**23.9**	**27.9**	**8,919**

4.5 Perceived risk of acquiring AIDS virus among staff and prisoners

Practices are often guided by perceptions. Respondents in this survey were asked about whether they perceived their risk of catching AIDS virus through sex and from a partner as being low, medium or high; and whether they thought the risk of infecting their partner was low, medium or high. Table 18 shows the perceived risk among staff and prisoners.

Staff perception: Some 39.4% of staff perceived their risk as low. Proportionately more men than women staff perceived their risk as low (42.6% versus 33.7%); and the proportion that perceived the risk as low increased with age and was higher among those who had not been to school (47.1% versus 39.3%). Some 22.9% of staff perceived their risk as high with more men than women staff perceived their risk as high (19.9% versus 13.2%); and the highest perceived risk among staff of 28.8% was observed in the 25-29 age group. The perceived high risk was more among those who had been to school than not (22.6% versus 5.9%).

Prisoners' perception: Prisoners who thought their risk was low was slightly less than that of staff (38.5% versus 39.4%). Just like with staff, the proportion perceiving the risk as low was more among men than women (38.6% versus 36.0%). However, unlike staff, the proportion perceiving the risk as low decreased with age up to those aged 35- 39 years, and progressively increased thereafter. It was comparable among those who had ever been to school and those who had not (39.1% vs. 37%). Some 25.8% of prisoners perceived their risk as high with more men than women prisoners perceiving their risk as high (26.1% versus 21.4%); and the highest perceived risk among prisoners of 28.9% was observed in the 25-29 age group. Again, this perceived high risk was comparable among those who had not been to school and those who had done so (27.4% versus 25.2%).

Table 18: Perceived risk of catching AIDS virus among staff and prisoners by sex, age group, education marital status and Region

Background characteristic		Staff (n = 1,687)						Prisoners (8,919)					
		Low	Medium	High	Already infected	Unknown	Total	Low	Medium	High	Already infected	Unknown	Total
Gender	Male	42.6	27.2	19.9	8.3	2.0	1,067	38.6	22.7	26.1	10.6	1.9	8,353
	Female	33.7	23.5	26.8	13.2	2.7	620	36.9	23.1	21.4	16.3	2.3	566
Age group (yrs.)	Under 20	0.0	100.0	0.0	0.0	0.0	1	48.2	24.6	22.3	3.0	1.9	533
	20-24	27.7	42.6	25.5	0.0	4.3	47	40.8	24.3	26.8	6.1	2.1	1,982
	25-29	31.4	33.2	28.8	4.0	2.6	274	36.3	22.8	28.9	10.1	1.9	2,212
	30- 34	40.2	25.8	26.3	5.1	2.7	415	35.2	23.3	26.6	13.6	1.4	1,601
	35-39	36.2	25.7	26.8	8.7	2.6	265	34.2	21.4	24.9	17.4	2.2	969
	40-44	41.9	22.9	18.2	16.1	0.8	236	36.4	20.5	24.0	17.3	1.8	709
	45-49	40.1	20.8	15.6	22.2	1.4	212	41.0	22.2	19.1	15.7	2.0	351
	50-54	47.3	23.3	11.0	15.8	2.7	146	43.7	17.1	23.1	12.6	3.5	286
	55-59	52.3	19.3	17.0	9.1	2.3	88	45.0	25.2	18.0	9.0	2.7	111
	60+	100.0	0.0	0.0	0.0	0.0	3	57.0	19.4	15.2	4.8	3.6	165
Ever Attended school	Yes	39.3	25.9	22.6	10.1	2.2	1,670	39.1	22.9	25.2	11.2	1.6	6,501
	No	47.1	23.5	5.9	11.8	11.8	17	37.0	22.4	27.4	10.3	2.9	2,418
Marital status	Single	34.6	25.7	25.0	13.2	1.5	136	40.7	23.1	25.9	8.3	1.9	3,642
	Married-monogamous	40.9	25.6	23.0	8.2	2.2	1,264	38.0	22.6	25.5	12.0	2.0	3,774
	Married-polygamous	35.9	28.1	22.8	12.0	1.2	167	34.2	23.5	29.0	12.2	1.1	790
	Divorced/separated	35.2	29.6	18.5	11.1	5.6	54	33.9	21.3	24.3	17.7	2.8	498
	Widowed	35.4	14.6	6.3	43.8	0.0	48	36.3	17.9	23.5	20.1	2.2	179
	Divorced & remarried	26.7	46.7	13.3	13.3	0.0	15						
	Don't know	0.0	0.0	0.0	0.0	100.0	3	41.7	19.4	19.4	13.9	5.6	36
Administrative Region	Central	46.8	21.1	21.1	7.3	3.7	109	40.5	17.7	28.8	9.7	3.2	649
	East-central	27.3	34.5	20.0	12.7	5.5	55	36.4	25.4	29.7	5.9	2.5	236
	Eastern	41.9	33.3	17.1	7.0	0.8	129	39.1	25.4	26.2	8.0	1.4	627

	Kampala extra	35.8	28.3	26.3	6.5	3.1	293	36.3	19.6	27.1	13.8	3.1	1,899
	Mid central	43.2	20.5	31.8	4.5	0.0	44	33.1	27.6	28.8	9.2	1.2	163
	Mid-western	33.0	22.7	29.9	14.4	0.0	97	40.1	28.9	22.6	7.4	0.9	553
	Mid-eastern	43.0	23.3	16.3	15.1	2.3	86	39.3	29.2	21.9	8.0	1.6	448
	North Eastern	39.7	22.4	25.9	10.3	1.7	58	38.0	32.6	23.4	3.8	2.2	184
	North western	40.4	35.6	9.6	14.4	0.0	104	49.3	20.6	19.1	6.9	4.1	418
	Northern	40.8	17.9	22.3	17.9	1.1	184	37.2	22.1	26.2	13.8	0.7	843
	South eastern	40.4	25.2	20.5	10.6	3.3	151	42.2	17.3	25.8	12.8	1.9	578
	South western	40.6	26.4	22.3	7.6	3.0	197	36.7	25.7	24.6	11.5	1.4	1,154
	Southern	39.2	32.4	20.3	6.8	1.4	74	34.4	22.0	29.9	12.7	1.1	569
	Western	38.7	18.9	30.2	8.5	3.8	106	40.8	21.9	25.3	10.9	1.2	598
Total		**39.4**	**25.8**	**22.4**	**10.1**	**2.3**	**100**	**38.5**	**22.7**	**25.8**	**11.0**	**2.0**	**8,919**

Chapter 05-Sexual behaviour

5.1 Age at first sex:

Sexual intercourse is the commonest mode of HIV transmission in Uganda. Tables 19 and 20 show staff and prisoner age at first sexual intercourse and median age at first sexual intercourse for those who had had sex.

Among staff, the median age at first sex was slightly lower among women than men (19 versus 20).

For prisoners, the median age at first sex was 17 for both sexes. Prisoners were younger at first sex than prison staff.

Table 19: Staff age at first sexual intercourse by sex and age group.

Background characteristics		Percent who had first sexual intercourse[ϕ] by age group						
Current Age	Number N	Under 15 %	15-17 %	18-20 %	21-23 %	24+ %	Unknown %	Median age at first sexual intercourse[¥]
				MEN (n = 1,067)				
Under 20	0	0	0	0	Na	Na	Na	Na
20-24	18	5.6	22.2	38.9	27.8	Na	5.6	19.0
25-29	145	5.5	25.5	26.9	17.2	6.2	18.6	19.0
30-34	272	5.2	16.5	34.9	11.8	19.1	12.5	20.0
35-39	169	3.6	14.2	37.9	11.8	14.8	17.8	20.0
40-44	147	2.0	10.9	36.1	15.7	10.9	24.5	19.0
45-49	160	3.8	11.3	33.8	10.0	15.6	25.6	19.0
50-54	99	3.0	5.1	35.4	7.1	10.1	39.4	19.5
55+*	57	5.3	10.5	28.1	10.5	15.8	29.9	20.0
Total	**1,067**	**4.0**	**14.5**	**34.0**	**12.6**	**13.7**	**21.2**	**20.0**
				WOMEN (n=620)				
Under 20-24*	30	0.0	6.7	53.4	16.6	0.0	20.0	20.0
25-29	129	2.3	22.5	43.4	18.6	1.9	2.3	19.5
30-34	143	6.3	21.0	44.8	10.5	13.3	4.2	19.0
35-39	96	4.2	18.8	43.8	14.6	13.5	5.2	19.0
40-44	89	5.6	16.9	46.1	12.4	7.9	11.2	19.0
45-49	52	3.9	5.8	51.9	11.5	19.2	7.7	20.0
50-54	47	8.5	2.1	57.5	12.8	17.0	2.1	20.0
55+*	34	0.0	5.9	38.2	11.8	8.8	29.5	20.0
Total	**620**	**4.4**	**16.3**	**46.5**	**13.7**	**11.9**	**7.3**	**19.0**

¥

Excluding those who could not remember their age at first sexual intercourse or refused to answer

ϕ Includes all sexual intercourse encounters with women and/or men (vaginal, anal with women, insertive anal with men and/or receptive anal)

**The age categories were condensed to avoid individual identification*

Na –Not applicable

Table 20: Prisoners' Age at first sexual intercourse by sex and age groups

Background characteristics		Percent who had first sexual intercourse[ϕ] by age group						
Current Age	Number N	Under 15 %	15-17 %	18-20 %	21-23 %	24+ %	Unknown %	Median age at first sexual intercourse[¥]
				MEN (n= 8,353)				
Under 20	499	20.4	30.3	10.0	0.2	0.2	39.1	15
20-24	1871	15.3	24.6	23.0	3.2	0.5	33.2	17
25-29	2110	12.1	21.3	22.6	5.0	4.9	34.0	17
30-34	1508	10.2	16.5	21.6	5.8	8.0	38.0	18
35-39	913	8.4	13.8	19.3	5.6	9.1	43.8	18
40-44	644	6.7	11.3	17.2	6.1	11.5	47.5	19
45-49	316	7.0	9.5	17.1	6.0	8.9	51.9	18
50-54	246	8.5	9.8	18.3	3.7	9.4	50.4	18
55-59	99	1.1	9.1	12.1	2.0	6.1	60.6	18
60+	147	3.4	5.4	12.2	5.4	9.5	64.0	20
Total	**8,353**	**11.7**	**18.9**	**20.3**	**4.6**	**5.5**	**39.0**	**17**
				WOMEN (n = 566)				
Under 20	34	5.9	35.3	20.6	0.0	0.0	38.2	17
20-24	111	10.8	11.7	16.2	0.9	0.0	60.4	17
25-29	102	7.8	15.7	9.8	2.0	6.9	57.8	17
30-34	93	6.5	4.3	12.9	0.0	1.1	75.3	18
35-39	56	14.3	12.5	12.5	3.6	3.6	53.6	16
40-44	65	6.2	10.8	12.3	1.5	1.5	67.7	17
45-49	35	5.7	8.6	0.0	0.0	0.0	85.7	16
50-54	40	2.5	10.0	22.5	0.0	2.5	62.5	18
55-59*	12	0.0	0.0	0.0	0.0	0.0	100	--
60+	18	0.0	0.0	11.1	11.1	5.6	72.2	21
Total	**566**	**6.9**	**11.7**	**12.9**	**1.4**	**2.3**	**64.8**	**17**

**only one woman in this group reported ever had sexual intercourse and didn't remember when had first sex,*

¥ Excluding those who could not remember their age at first sexual intercourse or refused to answer

ϕ Includes all sexual intercourse encounters with women and/or men (vaginal, anal with women, insertive anal with men and/or receptive anal)

Tables 21 shows age at first sex and median age at first sex by age group, religion and administrative Region of staff while table 22 shows the same data for prisoners. The age grouping 20-34 and 20-59 was used in the analysis of median age at first sex. The age grouping 20-34 was used to represents the youth while 20-59 was used to allow for comparison with previous surveys that used this age group.

Among staff, the median age at first sexual intercourse for men aged 20-34 and 20-59 years was 19 and 20 compared to 19 and 19 among women in the same age bracket respectively. By education status, staff who had never been to school tended to have had their first sexual encounter at a slightly younger age than those who had ever been to school. For both men and women, the divorced/remarried staff had their first sexual contact at a younger age.

Regarding Prisoners, these tended to have their first sexual encounter while still teenagers. The prisoners' median age at first sexual intercourse for men aged 20-34 and 20-59 years was 17 and 17 compared to 17 and 18 among women in the same age bracket respectively. By administrative Region, the first sexual encounter for prisoners in Kampala Extra, Western, Southern Eastern and Mid-Western tended to occurred at a younger age. Prisoners had their first sexual encounter at a younger age than staff.

Table 21: Median age at first sexual intercourse for staff (whether with opposite or same sex).

Background characteristic	Median age at first sexual intercourse[¥]							
	Men current age				Women current age			
	20-34[*]		20-59		20-34[*]		20-59	
	Median age	n	Median age	n	Median age	n	Median age	n
Ever attended school								
Yes	19.0	371	20.0	833	19.0	284	19	570
No	19.5	2	19.5	8	9.5	2	18	4
Marital status								
Single	20,0	39	20	49	20,0	28	20,0	72
Married-monogamous	19	297	20	662	19	231	19	391
Married-polygamous	17.5	26	19	108	19.5	8	20	30
Divorced/separated	19	5	19.5	10	18	15	18	37
Widowed	20	1	20	3	17	3	19	39
Divorced & remarried	18	5	18	9	17	1	17	5
Administrative Region								
Central	19	32	19	64	17.5	14	18	29
East-central	18.5	14	19	27	22	6	20.5	12
Eastern	18.5	14	20	53	18	17	19	48
Kampala extra	19	86	19	130	19	70	19	111
Mid central	21	12	19.5	26	19	6	20	13
Mid-western	18.5	22	20	52	20	16	20	34
Mid-eastern	21	8	20	29	20	11	20	37
North Eastern	18	16	19	41	18	6	18.5	8
North western	20	17	20	53	21	13	21	35
Northern	19	23	19	86	20	30	20	69
South eastern	19.5	32	20	71	20	26	20	56
South western	20	52	20	109	19	37	20	64
Southern	19	17	19	33	18	21	19	35
Western	19	28	20	67	18	13	18	23
Total	**19**	**373**	**20**	**841**	**19**	**286**	**19**	**574**

** Youth*

[¥] *Excluding those who could not remember their age at first sexual intercourse or refused to answer*

Table 22: Median age at first sexual intercourse for prisoners (whether opposite and/or same sex)

Background characteristic	Median age at first sexual intercourse[¥ϕ]							
	Men current age				Women current age			
	20-34[*]		20-59		20-34[*]		20-59	
	Median age	n	Median age	n	Median age	n	Median age	n
Ever attended school								
Yes	17	2,804	17	3,705	18	87	16	134
No	17	772	18	1,035	16	21	18	45
Marital status								
Single	17	1,669	17	1893	18	45	18	65
Married-monogamous	18	1,377	18	2054	17	37	17	64
Married-polygamous	17	273	18	460	18	7	17.5	8
Divorced/separated	18	214	18	271	16	13	16	21
Widowed	16	34	17	53	17.5	6	17.5	20
Don't know	16	9	16	9	na[‡]	0	18	1
Administrative Region								
Central	17	287	17	377	17	10	17	13
East-central	17	110	18	137	18	1	18	1
Eastern	18	244	18	340	18.5	2	18.5	4
Kampala extra	17	790	17	1151	16	38	17	65
Mid central	17	80	18	98	--	0	--	0
Mid-western	17	214	18	273	16	5	16	10
Mid-eastern	17	159	18	197	12.5	4	18	5
North Eastern	18	60	18	72	--	0	--	0
North western	17	132	18	166	15.5	4	16	6
Northern	18	278	18	370	18	22	18	37
South eastern	17	209	17	289	16	3	15	5
South western	18	531	18	639	18	13	18	23
Southern	18	248	18	325	18.5	2	17	4
Western	17	234	18	306	17.5	4	16.5	6
Total	**17**	**3,576**	**18**	**4,740**	**17**	**108**	**17**	**179**

** Youth*

[‡] all women currently aged 20-24 years knew their marital status

-- all women in these Regions didn't know or refused to tell the age at which they had their first sexual intercourse

[¥] Excluding those who could not remember their age at first sexual intercourse or refused to answer

[ϕ] Includes all sexual intercourse encounters (vaginal and/or anal)

5.2 Sexual activity, number of sexual partners and knowledge of partners' HIV status.

Having sex with many sexual partners places one at an increased risk of catching AIDS virus and especially so if one does not consistently use condoms. The study explored whether respondents had ever had sex, with how many partners and whether they knew if some of their sexual partners were HIV+, HIV- or knew their sexual partners HIV status at all. These data are shown in tables 23, 24 (for male and female staff).

Staff: 69.3% (740/1,067) of male staff had at least 2 sexual partners in their life time. This proportion of male staff with at least 2 sexual partners decreased with age; was higher among those who had ever been to school compared to those who had not; and was most prevalent in Central followed by southern region.

Of the male staff who ever had a sexual partner, 64.6% (374/579) knew the HIV status of at least one sexual partner compared to 73.0% (438/600) of the female staff. Among male staff, the proportion of those who knew the HIV status of at least one partner decreased with age; and was more among the educated compared to those not. Also for female staff, the proportion of those who knew the HIV status of at least one partner was lowest among those aged 60+ years, and was more among those who had no education.

Table 23: Sexual partners: Male Staff (n = 1,067)

Number of lifetime sexual partners of **opposite sex** and percentage knowing/don't know HIV status of their partners by background characteristics

Background characteristics	Number of Men	2+ Partners in life time	Number who ever had a sexual partner	Knew HIV status of at least one Partner
	N	%	N	%
Current age				
20-24	18	88.9	17	82.4
25-29	145	70.3	123	74.0
30-34	272	75.7	243	72.0
35-39	169	72.2	146	64.4
40-44	147	64.6	115	67.8
45-49	160	67.5	138	50.7
50-54	99	59.6	73	53.4
55-59	56	55.4	42	42.9
60+	1	0.0	0	…
Ever attended school				
Yes	1054	69.5	888	64.9
No	13	53.9	9	33.3
Marital status				
Single	58	77.6	54	70.4
Married-monogamous	845	68.3	708	64.3
Married-polygamous	136	71.3	111	65.8
Divorced/separated	11	81.8	11	45.5
Widowed	5	60.0	4	50.0
Divorced & remarried	9	88.9	9	66.7
Missing	3	0.0	0	…
Administrative Region				
Central	77	68.8	70	60.0
East-central	41	56.1	30	60.0
Eastern	71	64.8	57	57.9
Kampala extra	173	65.9	137	59.1
Mid central	31	80.7	27	66.7
Mid-Western	62	71.0	55	70.9
Mid-eastern	47	61.7	36	63.9
North Eastern	49	75.5	43	74.4
North western	66	71.2	57	61.4
Northern	111	72.1	91	68.1
South eastern	88	70.5	75	68.0
South western	130	70.8	82	71.3
Southern	38	79.0	21	61.8
Western	83	68.7	42	60.0
Total	**1,067**	**69.3**	**579**	**64.6**

The proportion of female staff that had at least two sexual partners over their lifetime was nearly the same as that among male prisoners (70% versus 69.3%). The proportion increased with age up to group aged 40 - 44 years then declined thereafter. More women who had never been to school than those who had ever been to school had at least 2 partners.

Table 24: Number of lifetime sexual partners of opposite sex: Female Staff (n = 620)

Background characteristics	Number of Women N	2+ Partners in life time %	Number who ever had a sexual partner	Knew HIV status of at least one partner %
Current age			N	
20-24	29	34.5	1	100
25-29	129	71.3	26	64.4
30-34	143	69.9	127	80.3
35-39	96	77.1	143	78.3
40-44	89	80.9	96	72.9
45-49	52	75	84	66.7
50-54	47	68.1	49	75.5
55-59	32	37.5	46	60.9
60+	3	34.7	26	53.9
Ever attended school				
Yes	616	70.0	596	72.8
No	4	75.0	4	100
Marital status				
Single	78	71.8	76	65.8
Married-monogamous	419	67.8	407	74.7
Married-polygamous	31	80.7	31	87.1
Divorced/separated	43	79.1	40	67.5
Widowed	43	72.1	40	70.0
Divorced & remarried	6	66.7	6	33.3
Administrative Region				
Central	32	78.1	32	71.9
East-central	14	57.1	13	76.9
Eastern	58	75.9	53	60.4
Kampala extra	120	65.0	117	70.1
Mid central	13	84.6	13	84.6
Mid-western	35	74.3	34	85.3
Mid-eastern	39	76.9	39	69.2
North Eastern	9	66.7	9	77.8
North western	38	57.9	35	60.0
Northern	73	60.3	71	78.9
South eastern	63	71.4	60	71.8
South western	67	68.7	66	81.8
Southern	36	91.7	35	80.0
Western	23	69.6	23	65.2
Total	**620**	**70.0**	**600**	**73.0**

Male prisoners: Generally and surprisingly twice as many male as female prisoners had at least 2 or more sexual partners (58.4% vs. 29%) in their lifetime. This increased with age up to those aged 25 – 29 years, and decreased thereafter. Proportionately more of those who had ever attended school had at least 2 partners (62.8% vs. 48.4%), 53.2% knew the HIV status of their partners, while 6.9% did not know the HIV status of all partners (Table 25).

Female prisoners: The proportion of female prisoners with at least 2 sexual partners was nearly half that of male counterparts (28.8% vs. 58.5); but only 28.1% of them knew the HIV status of at least 1 sex partner compared to 53.2% among men; while 6.5% (cf. 6.9% men) did not know HIV status of any partners. Generally, the proportion of female prisoners with at least two partners or more decreased with age and was more among female prisoners who had ever been to school (Table 26).

Table 25: Sexual partners: Male prisoners by age group, education and marital status and Region (n = 8,353)

Background characteristics	Number of Men	2+ Partners	Number who ever had a sexual partner	Knew HIV status of at least one partner
	N	%	N	%
Current age				
Under 20	499	55.5	329	75.4
20-24	1871	62.2	1,338	82.7
25-29	2,110	64.7	1,531	81.0
30-34	1,508	60.2	1,035	79.2
35-39	913	55.6	579	76.2
40-44	644	52.3	388	71.7
45-49	316	48.7	176	73.3
50-54	246	48.8	140	70.0
55-59	99	37.4	49	75.5
60+	147	34.7	62	67.7
Ever attended school				
Yes	6,115	62.8	4,391	78.6
No	2,238	48.4	1,236	80.2
Marital status				
Single	3,445	59.2	2,328	79.9
Married-monogamous	3,555	57.8	2,373	78.6
Married-polygamous	758	63.7	537	77.5
Divorced/separated	440	63.4	310	77.7
Widowed	122	45.9	67	73.1
Don’t know	33	33.3	12	75.0
Administrative Region				
Central	616	66.4	454	76.2
East-central	230	61.7	168	73.2
Eastern	603	56.9	389	78.0
Kampala extra	1735	67.4	1,345	74.8
Mid central	157	64.3	108	88.0
Mid-western	525	53.0	319	83.7
Mid-eastern	425	52.5	254	84.7
North Eastern	176	40.9	85	78.8
North western	386	45.9	207	68.6
Northern	763	50.1	434	81.8
South eastern	554	55.1	365	71.0
South western	1,059	62.0	746	85.4
Southern	548	62.2	391	82.1
Western	576	55.9	362	81.8
Total	**8,353**	**58.9**	**5,627**	**78.9**

Table 26: Sexual partners: Female prisoners by age group, education and marital status and Region (n = 566)

Background characteristics	Number of women	2+ Partners	Number who ever had a sexual partner	Knew HIV status of at least one Partner
	N	%	N	%
Current age				
Under 20	34	44.1	22	72.7
20-24	111	34.2	51	70.6
25-29	102	36.3	47	76.6
30-34	93	20.4	27	63.0
35-39	56	35.7	26	73.1
40-44	65	26.2	21	76.2
45-49	35	11.4	7	28.6
50-54	40	27.5	15	73.3
55-59	12	8.3	1	100
60+	18	5.6	6	83.3
Ever attended school				
Yes	386	31.9	166	71.7
No	180	22.2	57	70.2
Marital status				
Single	197	32.0	85	68.2
Married-monogamous	219	23.3	82	74.4
Married-polygamous	32	28.1	10	80.0
Divorced/separated	58	37.9	23	60.9
Widowed	57	29.8	22	77.3
Don't know	3	33.3	1	100
Administrative Region				
Central	33	42.4	16	62.5
East-central	6	50.0	3	100
Eastern	24	20.8	5	80.0
Kampala extra	164	30.5	77	52.0
Mid central	6	16.7	2	0.0
Mid-western	28	28.6	10	70.0
Mid-eastern	23	21.7	6	100
North Eastern	8	12.5	3	100
North western	32	15.6	6	83.3
Northern	80	42.5	47	83.0
South eastern	24	33.3	8	87.5
South western	95	20.0	30	86.7
Southern	21	19.1	4	100
Western	22	27.3	6	83.3
Total	**566**	**28.8**	**223**	**71.3**

5.3 Men having sex with Men (MSM)

Men who have sex with other men are at an increased risk of catching the AIDS virus. This study explored this.

Staff: Data below is for both male staff and prisoners who had ever had sex with a male partner and the median number of partners in the past 3 months. It can be seen that 2.9% of male staff had ever had sex with a male partner; 38.8% had at least 2 male sexual partners; with 5 as the median number of partners. The proportion of staff engaging in MSM was most prevalent among staff aged 20 -24 years (5.6%) , followed by 40-44 years (4.8%) with no MSM reported among the 60+ age group. However, 2.7% and 3.7% of staff who practiced homosexuality, were also in Married-monogamous and Married- polygamous unions respectively. This has the potential to exacerbate spread from MSM respondents to their heterosexual partners. By administrative Region, MSM was most prevalent in Mid-Eastern 10.6%, followed by North-Western 4.6%, Kampala extra 4.1% and Mid-Western 3.2%. Central, East Central and Mid Central were reported to have no MSM.

Prisoners: The proportion of male prisoners engaging in MSM is over twice that of staff (6.5% versus 2.9%). Similarly, the proportion with at least 2 sexual partners was higher among prisoners than staff (50.3% versus 38.8%). However, they had slightly less median number of partners than staff (3 versus 5).

The proportion of prisoners engaging in MSM was most prevalent in those aged under 20 years (8%) and decreased with increasing age to 1.4% in the group aged 60+ years. By marital status, MSM was more prevalent among the widowed 11.5% followed by the divorced/separated 7.3%. MSM was most prevalent among Prisoners in North Western (11.1%), followed by those in East Central (9.6%), North Eastern (9.1%) and Eastern (8.8%).

Table 28: Number of lifetime sexual partners of same gender among male prisoners and staff by background characteristics (n = 8,353)

Background characteristic	Among prisoners reporting MSM activity					Among staff reporting MSM activity				
	Number of Men	Ever had sex with same gender		Median number of lifetime partners®	2+ Partners	Number of Men	Ever had sex with same gender		Median number of lifetime partners®	2+ Partners
	N	%	n	n	%	N	%	n	n	%
Current age										
Under 20	499	8.0	40	3	60.0	0	na	Na	na	Na
20-24	1871	7.7	144	3	56.3	18	5.6	1	--	--
25-29	2,110	6.7	142	3	45.1	145	1.4	2	2	50.0
30-34	1,508	6.5	98	3	51.0	272	3.7	10	2.5	50.0
35-39	913	6.1	56	3	51.8	169	3.0	5	8	40.0
40-44	644	5.6	36	2	41.7	147	4.8	7	7	42.9
45-49	316	3.8	12	8	33.3	160	1.3	2	--	--
50-54	246	4.1	10	14.5	30.0	99	3.0	3	--	--
55-59	99	3.0	3	3	66.7	56	1.8	1	20	100
60+	147	1.4	2	15	50.0	1	0.0	0	na	Na
Ever attended school										
Yes	6,115	6.5	400	3	49.5	1054	2.9	31	5	38.7
No	2,238	6.4	143	3	52.5	13	0.0	0	na	Na
Marital status										
Single	3,445	6.6	226	3	51.3	58	5.2	3	7	33.3
Married-monogamous	3,555	6.4	226	3	53.5	854	2.7	23	3	39.1
Married-polygamous	758	5.9	45	2	42.2	136	3.7	5	11	40.0
Divorced/separated	440	7.3	32	2	37.5	11	0	0	na	Na
Widowed	122	11.5	14	3	35.7	5	0	0	na	Na
Don't know	33	0.0	0	na	Na	3	0	0	0	0

Administrative Region										
Central	616	5.0	31	5	38.7	77	0	0	na	Na
East-central	230	9.6	22	4	40.9	41	0	0	na	Na
Eastern	603	8.8	53	3	54.7	71	2.8	2	2.5	100
Kampala extra	1,735	4.7	82	5.5	51.2	173	4.1	7	23	28.6
Mid central	157	8.9	14	3	50.0	31	0	0	na	Na
Mid-western	525	5.9	31	4	64.5	62	3.2	2	8	100
Mid-eastern	425	8.5	36	2	50.0	47	10.6	5	11	40.0
North Eastern	176	9.1	16	2	37.5	49	2.0	1	1	0.0
North western	386	11.1	43	6	74.4	66	4.6	3	5.5	66.7
Northern	763	7.3	56	4	55.4	111	1.8	2	--	--
South eastern	554	4.5	25	3	44.0	88	3.4	3	2	33.3
South western	1,059	6.0	63	2	49.2	130	2.3	3	1	0.0
Southern	548	6.9	38	2	34.2	38	2.6	1	--	--
Western	576	5.7	33	1	36.4	83	2.4	2	7	50.0
Total	**8,353**	**6.5**	**543**	**3**	**50.3**	**1,067**	**2.9**	**31**	**5**	**38.8**

na = not applicable

-- = Refused to answer

® Excluding those who could not remember number of partners or refused to answer

5.4 Multiple sexual partners

Being faithful to one sex partner can minimize the risk of catching AIDS virus. Conversely engaging in sex with multiple partners, especially if one is not certain of their HIV status and does not consistently use condoms, can increase the chances of contracting the AIDS virus. In this study, participants were asked whether they had engaged in sex in the past 3 months, the number of partners they had sex with and whether they used condoms during all the sexual encounters. Table 29 shows this data for male staff while table 30 shows the same data for female staff.

Staff male: It can be seen from these data that among men, 29% of those who had had sex in the past 3 months had at least 2 partners; and 18.8% of them consistently used condoms; and the median number of partners was 5. The proportion with multiple sexual partners decreased with age; while that of those who used condoms consistently among those who had multiple sexual partners varied greatly from zero among those aged less than 20 - 24 years who also had the second highest proportion with multiple sex partners to nearly a half of them in 3 age groups (25-29, 40-44 and 45-49) to over two thirds in three other age groups.

Staff female: Fewer women had two or more sexual partners than men. Only 4.6% (compared to 29% among men) had at least 2 sexual partners in the last 3 months; and a much larger proportion than men consistently used condoms (88.2% vs. 18.8%) and also tended to have fewer sexual partners than men (2 vs. 5) in the past 3 months.

Among women, the proportion that had had sex during the last 3 months increased with age. The median number of partners was also smaller for women than men.

Table 29: Multiple sexual partners: Male Staff by age group, education and marital status and Region (n = 790)

Background characteristic	All men		Among men who had sex in the past 3 months[ϕ]		Among men who had2+ partners in the past 3 months[ϕ]		Among men who ever had sexual intercourse[ϕ]	
	Who had partners in the past 3 months[ϕ]%	Number of men N	Had 2+ partners in the past 3 months%	Number of men	Who reported using a condom during all sexual intercourses[††] %	Number of men	Median number of Sexual Partners in lifetime®	Number of men®
Current age								
Under 20	0.0	0	0.0	0	0.0	0	0	0
20-24	27.8	18	35.7	14	0.0	5	3	17
25-29	23.5	145	34.0	100	17.7	34	4	109
30-34	21.0	272	28.9	197	24.6	57	4	220
35-39	14.2	169	21.4	112	16.7	24	4	129
40-44	19.7	147	33.3	87	17.2	29	5	100
45-49	15.0	160	25.3	95	12.5	24	5	117
50-54	18.2	99	37.5	48	22.2	18	5	63
55-59	10.7	56	22.2	27	16.7	6	6	35
60+	0.0	1	0.0	0	0.0	0	0	0
Attended school								
Yes	18.5	1,054	28.9	674	19.0	195	5	782
No	15.4	13	33.3	6	0.0	2	5	8
Marital status								
Single	15.5	58	33.3	27	11.1	9	4	49
Married-monogamous	16.2	845	25.0	549	21.8	137	4	623
Married-polygamous	34.6	136	51.1	92	12.8	47	6	98
Divorced/separated	27.3	11	60.0	5	33.3	3	5	9
Widowed	0.0	5	0.0	0	0.0	0	5	3
Divorced & remarried	11.1	9	14.3	7	0.0	1	6.5	8
Missing	0.0	3	0.0	0	0.0	0	0.0	0
Administrative Region								
Central	23.4	77	32.1	56	16.7	18	4	57
East-central	22.0	41	33.3	27	22.2	9	4	24
Eastern	23.9	71	35.4	48	29.4	17	4	50
Kampala extra	15.6	173	26.7	101	11.1	27	5	119

Mid central	22.6	31	29.2	24	28.6	7	5.5	26
Mid-western	17.7	62	27.5	40	18.2	11	5	48
Mid-eastern	14.9	47	26.9	26	28.6	7	6	31
North Eastern	22.5	49	35.5	31	36.4	11	5	41
North western	18.2	66	29.3	41	33.3	12	4.5	52
Northern	15.3	111	25.4	67	17.7	17	4	81
South eastern	20.5	88	29.5	61	16.7	18	5	66
South western	18.5	130	30.8	78	12.5	24	4	103
Southern	15.8	38	22.2	27	16.7	6	4	31
Western	15.7	83	24.5	53	0.0	13	4	61
Total	**18.5**	**1,067**	**29.0**	**680**	**18.8**	**197**	**5**	**790**

[††] used condom all times during any type of sexual intercourse (vaginal, anal with women, insertive anal with men and/or receptive anal)

[Φ] includes all sexual intercourse encounters with women and/or men

[®] Excluding those who could not remember number of partners or refused to answer

Table 30: Multiple sexual partners: Female Staff by age group, education & marital status and Region (n = 620)

Background characteristic	All women		Among women who had sex in the past 3 months[ϕ]		Among women who had 2+ partners in the past 3 months[ϕ]		Among women who ever had sexual intercourse[ϕ]	
	Percentage who had 2+ partners in the past 3 months[ϕ]	Number of women	Percentage who had 2+ partners in the past 3 months	Number Of women	Percentage who reported using a condom during all sexual intercourses[††]	Number of women	Median number of Sexual Partners in lifetime®	Number Of women®
Current age								
Under 20-24	3.3	0	5.0	20	100.0	1	3	22
25-29	1.6	129	2.1	95	100.0	2	2	120
30-34	2.1	143	2.8	106	100.0	3	2	137
35-39	3.1	96	5.0	60	66.7	3	3	89
40-44	5.6	89	9.3	54	100.0	5	3	82
45-49	3.9	52	11.1	18	50.0	2	2	48
50-54	0.0	47	0.0	10	0.0	0	3	43
55-59	3.1	32	12.5	8	100.0	1	2	21
60+	0.0	2	0.0	1	0.0	0	2.5	2
Attended school								
Yes	2.6	616	4.3	370	87.5	16	2	560
No	25.0	4	50.0	2	100.0	1	3.5	4
Marital status								
Single	2.6	78	6.5	31	100.0	2	2	70
Married-monogamous	2.9	419	4.0	298	83.3	12	2	382
Married-polygamous	6.5	31	10.5	19	100.0	2	3.5	30
Divorced/separated	2.3	43	7.7	13	100.0	1	3	38
Widowed	0.0	43	0.0	9	0.0	0	3	39

Divorced & remarried	0.0	6	0.0	2	0.0	0	3	5
Administrative Region								
Central	3.1	32	7.1	14	100.0	1	3	31
East-central	0.0	14	0.0	9	0.0	0	2	11
Eastern	3.5	58	6.9	29	100.0	2	3	50
Kampala extra	1.7	120	2.4	83	50.0	2	2	104
Mid central	7.7	13	16.7	6	100.0	1	3	13
Mid-western	0.0	35	0.0	22	100.0	1	3	33
Mid-eastern	2.6	39	4.4	23	100.0	1	2.5	38
North Eastern	0.0	9	0.0	6	0.0	0	2.5	8
North western	2.6	38	7.1	14	100.0	1	2	32
Northern	2.7	73	5.0	40	100.0	2	2	68
South eastern	3.2	63	5.3	38	50.0	2	3	56
South western	6.0	67	7.7	52	100.0	4	2.5	64
Southern	2.8	36	4.6	22	100.0	1	3	34
Western	0.0	23	0.0	14	0.0	0	2	22
Total	**2.7**	**620**	**4.6**	**372**	**88.2**	**17**	**2**	**564**

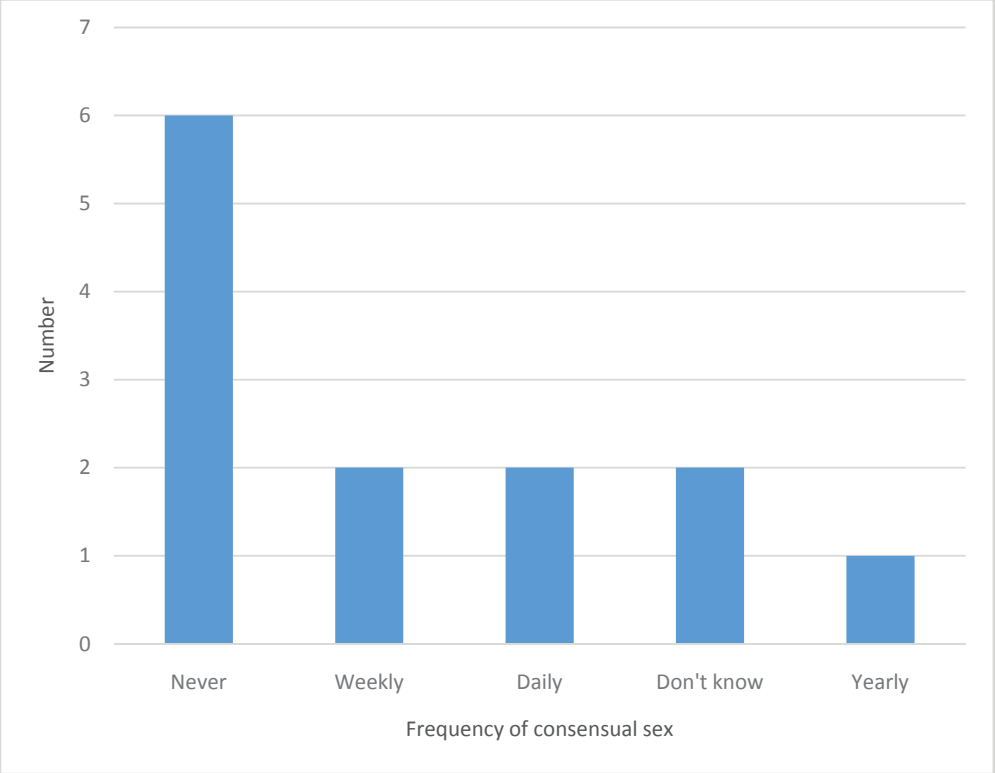
[††] used condom all times during any type of sexual intercourse (vaginal & receptive anal)

[ϕ] Includes all sexual intercourse encounters with men (vaginal& receptive anal)

[®] Excluding those who could not remember number of partners or refused to answer

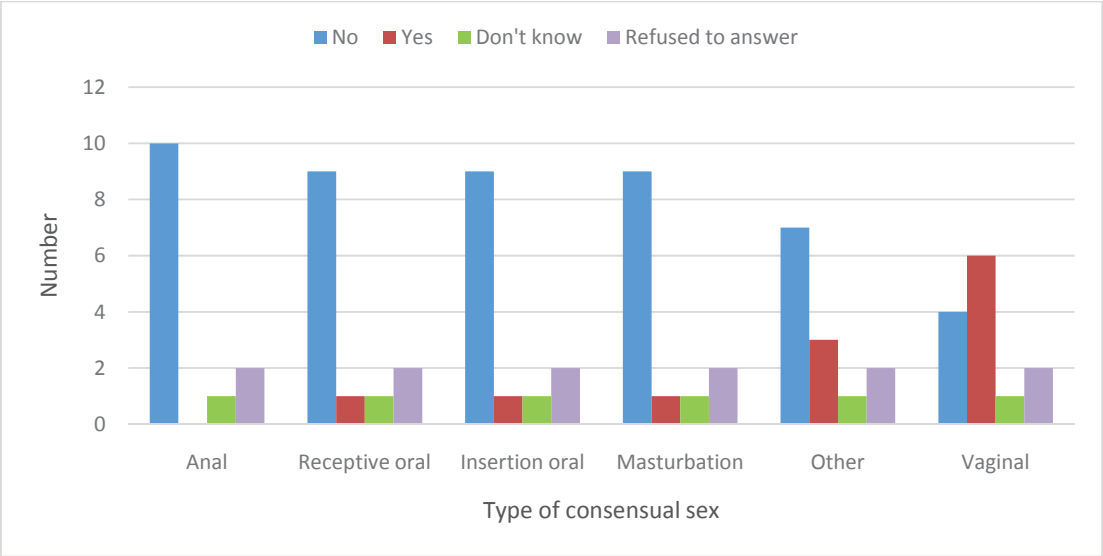
5.5 Consensual sex

Figure 6: Frequency and intervals of having consensual sex with men among female prisoners



Female prisoner consensual sex with men while in prison (FSM): Female prisoners were asked if they had ever had consensual sex with men while in prison. Among the 566 female prisoners, 13 (2.3%) provided responses regarding consensual sex with men while in prison; two of these had it a daily, two weekly, one on a yearly basis while six had never had consensual sex and two didn't know. Of these, only 2 (15.4%) had used condoms. For details, see figure 6 and 7.

Figure 7: Number of female prisoners having consensual sex with men by type of consensual sex



Key: Receptive oral: Female prisoner sucks man's penis, Insertion oral: Man sucks female prisoner vagina, Vaginal: Man's penis in female prisoner vagina, Anal: Man's penis in female prisoner's anus, Masturbation: Female prisoner masturbates man.

5.6 High risk sexual intercourse

Some types of sex such as transactional and coerced sex increase the risk of catching and spreading AIDS virus. The study explored both transactional and coerced sex as detailed below.

5.6.1 Transactional sex

Transactional sex increases the risks of catching AIDS virus. Respondents were asked if they had ever had sex with another person; if they paid someone (money, goods, or services) in exchange for sex and if they had used condoms or not in their life time, at any time while incarcerated and during the previous three months. Sex was defined as a penis entering a mouth, vagina, or anus; or when a person kisses, sucks, or licks a vagina, penis, or anus (any vaginal, anal, or oral sex) whether or not the partner used a condom and with or without ejaculation.

Male Prisoners: Here is a description among male prisoners who had engaged in transactional sex, median number of their partners and the number who used condoms. Thirty eight percent (2,171/5,627) of male prisoners reportedly engaged in transactional sex in their life time; 14.7% had used condoms all the time; with 3 as the median number of partners. Transactional sex was more prevalent among those who had ever been to school than those who had not (39.4% versus 35.8%).

Female prisoners: Approximately 24.7% (55/223) of women prisoners engaged in transactional sex in their life time; half (50%) of these used condoms all the time; with 2.5 as the median number of sex partners. The proportion that used condoms all the time varied from 14% in the group aged 35 – 39 years to 50% (though the number here, 2, was very small). However, while some consistently used condoms (which could decrease the risk of contracting AIDS virus), about

one out of ten (10.3%) of those paid for sex were also paid not to use condoms. However, it's worth noting that the numbers presented here are too small and thus not generalizable.

5.6.2 Forced and coerced sex

The study explored about unwanted sex. Participants were asked whether they had ever been coerced to have sex in their life; whether they were coerced to have sex whilst in prison, by whom, how many times and if they knew whether the person who coerced them had AIDS virus. Forced/coerced sex was defined as sexual acts including fondling, oral sex, penetration with a finger or object, or intercourse one performs against their will.

Forced or coerced sex, male prisoners

Table 31 shows men who had ever been coerced to have sex in their life time; those coerced in prison and whether by fellow prisoners or by staff. Within prison, 2.5% of all men had been coerced, nearly half (53.5%) of them had been coerced within the first year of stay in prison: 36.6% by fellow inmates and 33.1% by guards/staff.

By education, it was observed that the proportion of prisoners coerced by prisoners was greater among those who had attended school than not. The converse was true for prisoners coerced into sex by guards/staff.

By administrative Region, coerced sex was most prevalent in mid central (66.7% coerced by staff), followed by Northern (57.1% by guards/staff), North Western (44.3% by guards/staff), Southern (equally 40% by guards/staff), and central (50.0%, mainly by prisoners).

Table 31: Forced or coercive sex: Male prisoners by age group, education & marital status and Region (n = 5,627)

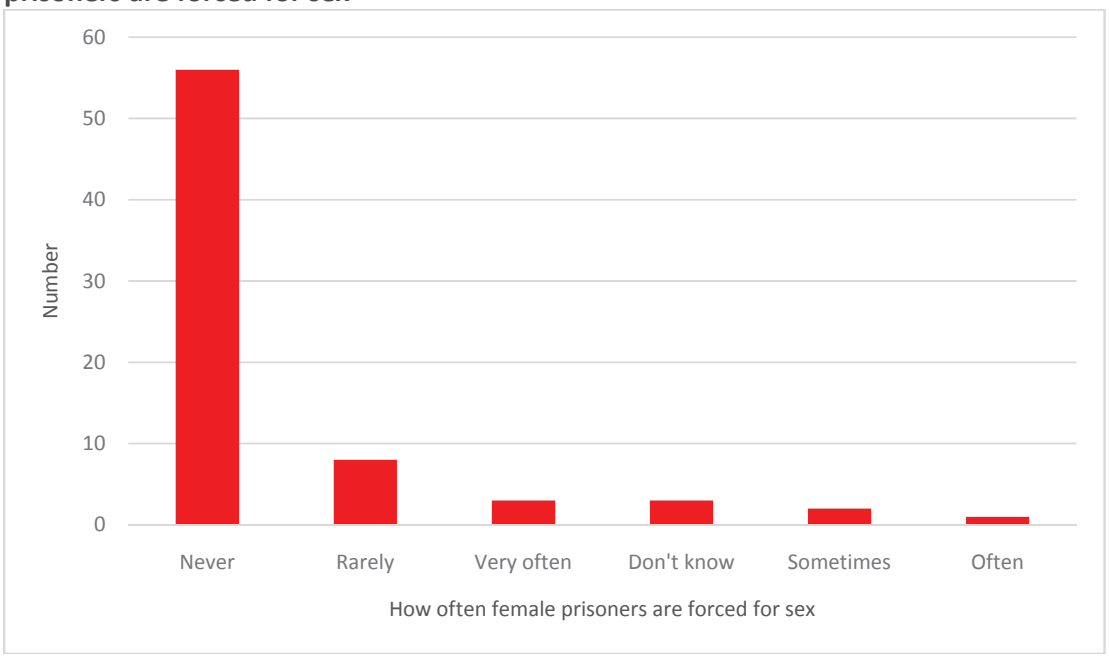
Background characteristics	All male prisoners		Among males who were forced to have sex while in prison$^{\phi}$				
	Number ever had sex	Percent forced to have sex while in prison	Number forced to have sex	Percent forced within first year	Percent forced by inmate	Percent forced by prison guard/staff	Coerced by others/refused to answer
	N	%	n	%	%	%	%
Current age							
Under 20	329	4.3	14	50.0	35.7	21.4	42.9
20-24	1,338	3.3	44	36.4	50.0	31.8	29.6
25-29	1,531	2.0	31	58.1	35.5	29.0	38.7
30-34	1,035	2.3	24	37.5	29.2	45.8	29.2
35-39	579	2.1	12	58.3	25.0	16.7	66.7
40-44	388	3.1	12	41.7	25.0	41.7	41.7
45-49	176	1.1	2	100	0.0	100	0
50-54	140	0.7	1	100	0.0	100	0
55-59	49	0.0	0	Na	Na	Na	Na
60+	62	3.2	2	50.0	50.0	0.0	50.0
Ever attended school							
Yes	4,391	2.4	104	45.2	41.4	29.8	37.5
No	1,236	3.1	38	50.0	23.7	42.1	34.2
Marital status							
Single	2,328	2.9	68	42.7	42.7	27.9	39.7
Married-monogamous	2,373	1.9	44	47.7	34.1	31.8	34.1
Married-polygamous	537	3.2	17	52.9	23.5	41.2	41.2
Divorced/separated	310	2.6	8	62.5	25.0	75.0	12.5
Widowed	67	4.5	3	33.3	33.3	0.0	66.7
Don't know	12	16.7	2	50.0	50.0	50.0	0.0
Administrative Region							
Central	454	1.8	8	50.0	50.0	25.0	25.0
East-central	168	3.6	6	33.3	50.0	16.7	50.0
Eastern	389	4.9	19	26.3	57.9	26.3	26.3
Kampala extra	1,345	1.4	19	47.4	31.6	31.6	36.8
Mid central	108	2.8	3	100	33.3	66.7	33.3
Mid-western	319	1.9	6	66.7	16.7	66.7	16.7
Mid-eastern	254	3.9	10	40.0	40.0	30.0	40.0
North Eastern	85	3.5	3	33.3	33.3	33.3	33.3
North western	207	4.4	9	55.6	11.1	44.3	44.4

Northern	434	3.2	14	35.7	21.4	57.1	35.7
South eastern	365	2.2	8	37.5	25.0	12.5	62.5
South western	746	2.4	18	55.6	50.0	16.7	38.9
Southern	391	1.3	5	60.0	40.0	40.0	20.0
Western	362	3.9	14	57.1	28.6	35.7	42.9
Total	**5,627**	**2.5**	**142**	**53.5**	**36.6**	**33.1**	**36.6**

ᵠ includes all types of sex with women and/or men

Forced or coerced sex female prisoners: Out of 223 female prisoners who had ever had sex in their lifetime, only 3 (1.4%) were once forced to have sex whilst in prison. When asked how often they are forced to have sex in the prison, 32.7% (73/223) of the female prisoners responded, and their responses are summarized in Figure 8.

Figure 8: Number of female prisoners responding to the question of how often female prisoners are forced for sex



Chapter 06-High Risk behaviours

This chapter deals with some of the high risk behaviours and associated correlates. Some types of behaviours are associated with increased chances of being infected with AIDS virus than others. Such behaviours include getting pregnant and pregnancy experience while in prison, unsafe tattooing, sharing sharp instruments, alcohol use, injectable drug use and other forms of substance abuse. Violence also falls within this category. These are detailed below.

6.1 Prisoners' pregnancy experiences whilst in prison

Pregnancy is related to the spread of AIDS virus in basically two ways; through sexual intercourse and through MTCT. This study explored pregnancy among female prisoners and also explored whether the pregnant mothers were tested for HIV or not as this helps to determine the need for ART including PMTCT (now called elimination of mother to child transmission).

Table 32 shows women who had ever been pregnant. Eighty (14.2%) women reported ever being pregnant while in prison with twenty (25.0%) being pregnant before entering prison The proportion of women ever pregnant and pregnant before entering prison decreased with age. Ever being pregnant in prison was most prevalent in North Eastern Region (37.5%) followed by Eastern (20.8%) and Northern (20%).

Table 32: Pregnancy while in Prison by sex, age group, marital status and administrative Region (n = 566)

Background characteristics	Number of women (N)	Number of women who had ever been pregnant in prison (n)	Percentage of women who had ever been pregnant in prison (%)	Number of women currently pregnant (n)	Percentage of women currently pregnant (%)	Number of women pregnant before entering prison (n)	Percentage of women pregnant before entering prison (%)
Current Age							
Under 20	34	10	29.4	6	17.7	6	60
20-24	111	17	15.3	6	5.4	5	29.4
25-29	102	13	12.8	3	2.9	3	23.1
30-34	93	15	16.1	3	3.2	2	13.3
35-39	56	6	10.7	3	5.4	1	16.7
40-44	65	8	12.3	4	6.2	2	25
45-49	35	3	8.6	0	0	0	0
50-54	40	3	7.5	0	0	0	0
55-59	12	4	33.3	0	0	1	25
60+	18	1	5.6	0	0	0	0
Ever attended School							
Yes	386	55	14.3	19	4.9	13	23.6
No	180	25	13.9	7	3.9	7	28
Marital Status							
Single	197	28	14.2	8	4.1	7	25
Married-monogamous	219	38	17.4	14	6.4	12	31.6
Married-polygamous	32	5	15.6	1	3.1	0	0
Divorced/separated	58	5	8.6	0	0	0	0
Widowed	57	4	7.0	3	5.3	1	25
Administrative Region							
Central	33	4	12.1	0	0	0	0
East-central	6	1	16.7	0	0	0	0
Eastern	24	5	20.8	1	4.2	1	20

Kampala extra	164	19	11.6	5	3.1	4	21.1
Mid central	6	0	0	0	0	0	0
Mid-western	28	4	14.3	1	3.6	1	25
Mid-eastern	23	4	17.4	2	8.7	1	25
North Eastern	8	3	37.5	2	25	2	66.7
North western	32	4	12.5	1	3.1	1	25
Northern	80	16	20.0	7	8.8	5	31.3
South eastern	24	2	8.3	1	4.2	1	50
South western	95	13	13.7	4	4.2	3	23.1
Southern	21	3	14.3	1	4.8	1	33.3
Western	22	2	9.1	1	4.6	0	0
Total	**566**	**80**	**14.2**	**26**	**4.6**	**20**	**25**

Antenatal care (ANC) for prisoners & services offered: ANC offers an opportunity for mothers to learn their HIV status and the positive ones to be educated on what to do in order to avoid transmitting HIV to their children. This study, sought to know the proportion of women who: had given birth in prison, knew their HIV status, were offered HIV test while pregnant, and knew the HIV status of their babies. Mothers with HIV positive babies were also asked if their babies were on treatment for HIV.

Table 33 shows mothers who were pregnant while in prison, were offered ANC services, offered HIV test, who knew their babies HIV status, and whose babies were receiving treatment for HIV. Among the outstanding findings: only 45% of pregnant women were offered ANC care as opposed to the expected 100%. Furthermore, only 61.3% against expected 100% of pregnant mothers were offered an HIV test; 41.3% of mothers knew the HIV status of their babies and 18.3% of infants had HIV infection.

Proportionately more mothers who had ever been to school were offered ANC compared to their counterparts (54.6% versus 24%); offered an HIV test (65.5% versus 52%); and knew their baby's HIV status (43.6% versus 36%). Overall, 83.3% of HIV-infected infants were on treatment. However, while only 75% of the HIV+ babies of mothers who had ever attended school received treatment for HIV, all babies (100%) of mothers who had never attended school did so.

The highest proportion of mothers being offered HIV testing was in North East (100%), Kampala Extra (84.2%), East (80%) and South West (76.9%) regions. The proportion of HIV infected infants receiving treatment for HIV were highest in Kampala Extra, North West and South West where 100% of HIV positive babies were reported to have received HIV treatment. These regions also had the highest coverage of ANC services.

Table 33: Antenatal Care and HIV testing among pregnant prisoners by age, education & marital status and Region (n = 566)

Background characteristics	Number of women N	Number of women who were pregnant in prison n	women who had given birth to babies while in prison %	women offered an HIV test while pregnant %	women who were offered antenatal care while pregnant %	women who knew HIV status of their babies %	HIV + babies among women who knew their babies' HIV status %	HIV+ babies on treatment for HIV %	women who are currently living with a baby in prison %
Current Age									
Under 20	34	10	11.8	60.0	40.0	40.0	0.0	0.0	8.8
20-24	111	17	2.7	47.1	47.1	29.4	20.0	100.0	6.3
25-29	102	13	4.9	61.5	38.5	30.8	50.0	50.0	1.0
30-34	93	15	6.5	46.7	40.0	26.7	0.0	100.0	6.5
35-39	56	6	8.9	83.3	83.3	66.7	25.0	0.0	7.1
40-44	65	8	4.6	75.0	37.5	62.5	0.0	0.0	6.2
45-49	35	3	5.7	100	66.7	100.0	0.0	100.0	8.6
50-54	40	3	2.5	100	33.3	33.3	100	100.0	0.0
55-59	12	4	16.7	50	25.0	50.0	50.0	100	16.7
60+	18	1	5.6	100	100	100.0	0.0	0.0	5.6
Ever attended School									
Yes	386	55	6.7	65.5	54.6	43.6	16.7	75.0	6.2
No	180	25	3.3	52.0	24.0	36.0	22.2	100.0	3.9
Marital Status									
Single	197	28	4.1	50.0	35.7	32.1	22.2	100.0	5.1
Married-monogamous	219	38	8.2	73.7	50.0	47.4	5.6	100.0	6.9
Married-polygamous	32	5	9.4	80.0	80.0	60.0	33.3	0.0	9.4
Divorced/separated	58	5	1.7	20.0	20.0	40.0	50.0	100.0	1.7
Widowed	57	4	3.5	50.0	50.0	25.0	100	100.0	3.5

Background characteristics	Number of women N	Number of women who were pregnant in prison n	women who had given birth to babies while in prison %	women offered an HIV test while pregnant %	women who were offered antenatal care while pregnant %	women who knew HIV status of their babies %	HIV + babies among women who knew their babies' HIV status %	HIV+ babies on treatment for HIV %	women who are currently living with a baby in prison %
Administrative Region									
Central	33	4	0.0	25.0	25.0	0.0	0.0	0.0	0.0
East-central	6	1	16.7	0.0	0.0	0.0	0.0	0.0	0.0
Eastern	24	5	12.5	80.0	20.0	20.0	0.0	0.0	8.3
Kampala extra	164	19	6.7	84.2	73.7	63.2	8.3	100.0	6.1
Mid central	6	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mid-western	28	4	7.1	50.0	50.0	25.0	0.0	0.0	3.6
Mid-eastern	23	4	4.4	25.0	75.0	25.0	0.0	0.0	13.0
North Eastern	8	3	25.0	100.0	33.3	66.7	0.0	0.0	25.0
North western	32	4	3.1	25.0	0.0	25.0	100.0	100.0	3.1
Northern	80	16	8.8	62.5	43.8	50.0	25.0	50.0	7.5
South eastern	24	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South western	95	13	3.2	76.9	46.2	53.9	28.9	100.0	4.2
Southern	21	3	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Western	22	2	4.6	50.0	50.0	0.0	0.0	0.0	4.6
Total	**566**	**80**	**5.7**	**61.3**	**45.0**	**41.3**	**18.2**	**83.3**	5.5

6.2 Tattooing

Table 34 shows tattooing experiences of prisoners. About a fifth of prisoners (1765/8919 = 19.8%) had seen another prisoner getting a tattoo; 7.8% of prisoners were tattooed whilst in prison and 33.6% had shared tattooing instruments. Proportionately, more male than female prisoners were: seen with a tattoo (20.3% versus 11.7%); had been tattooed whilst in prison (7.9% versus 6.0%) and twice as many of male than female prisoners shared tattooing instruments (34.5% versus 14.7%).

Generally, sharing tattooing instruments was more prevalent in the younger age groups; as was getting a tattoo whilst in prison. By Region, being seen with a tattoo was commonest in Mid-Eastern and Northern Regions where a quarter of prisoners were seen with tattoos. Being tattooed whilst in prison was highest in Mid-Eastern (15.2%), North Eastern (14.7%) followed by northern Region with 13%. Sharing tattooing instruments was observed in 66.7% of prisoners in Mid Central, 44.8% in those in Southern region, 36.8% of prisoners in Mid-east, 33.3% in those in North Eastern and 32.5% among those in North West Region.

Table 34: Tattooing experience of Prisoners by sex, age group and Region (n = 8,919)

Background characteristics		Seen tattoo with inmate		Got a tattoo in prison		Shared tattooing instruments		Total
		N	%	n	%	n	%	
Gender	Male	1,699	20.3	663	7.9	229	34.5	8,353
	Female	66	11.7	34	6.0	5	14.7	566
Age group	Under 20	102	19.1	51	9.6	21	41.2	533
	20-24	421	21.2	178	9.0	63	35.4	1,982
	25-29	454	20.5	178	8.0	62	34.8	2,212
	30-34	303	18.9	126	7.9	40	31.7	1,601
	35-39	198	20.4	72	7.4	22	30.6	969
	40-44	140	19.7	39	5.5	12	30.8	709
	45-49	60	17.1	24	6.8	6	25.0	351
	50-54	45	15.7	13	4.5	3	23.1	286
	55-59	18	16.2	11	9.9	4	36.4	111
	60+	24	14.5	5	3.0	1	20.0	165
Administrative Region	Central	127	19.6	31	4.8	12	38.7	649
	East-central	51	21.6	16	6.8	6	37.5	236
	Eastern	126	20.1	56	8.9	19	33.9	627
	Kampala extra	329	17.3	86	4.5	29	33.7	1,899
	Mid central	28	17.2	9	5.5	6	66.7	163
	Mid-western	78	14.1	29	5.2	12	41.4	553
	Mid-eastern	113	25.2	68	15.2	25	36.8	448
	North Eastern	30	16.3	27	14.7	9	33.3	184
	North western	80	19.1	40	9.6	13	32.5	418
	Northern	211	25.0	110	13.0	24	21.8	843
	South eastern	130	22.5	39	6.7	16	41.0	578
	South western	250	21.7	112	9.7	36	32.1	1154
	Southern	95	16.7	29	5.1	13	44.8	569
	Western	117	19.6	45	7.5	14	31.1	598
Total		**1,765**	**19.8**	**697**	**7.8**	**234**	**33.6**	**8,919**

Figure 9: Type of instrument Prisoners used for tattooing

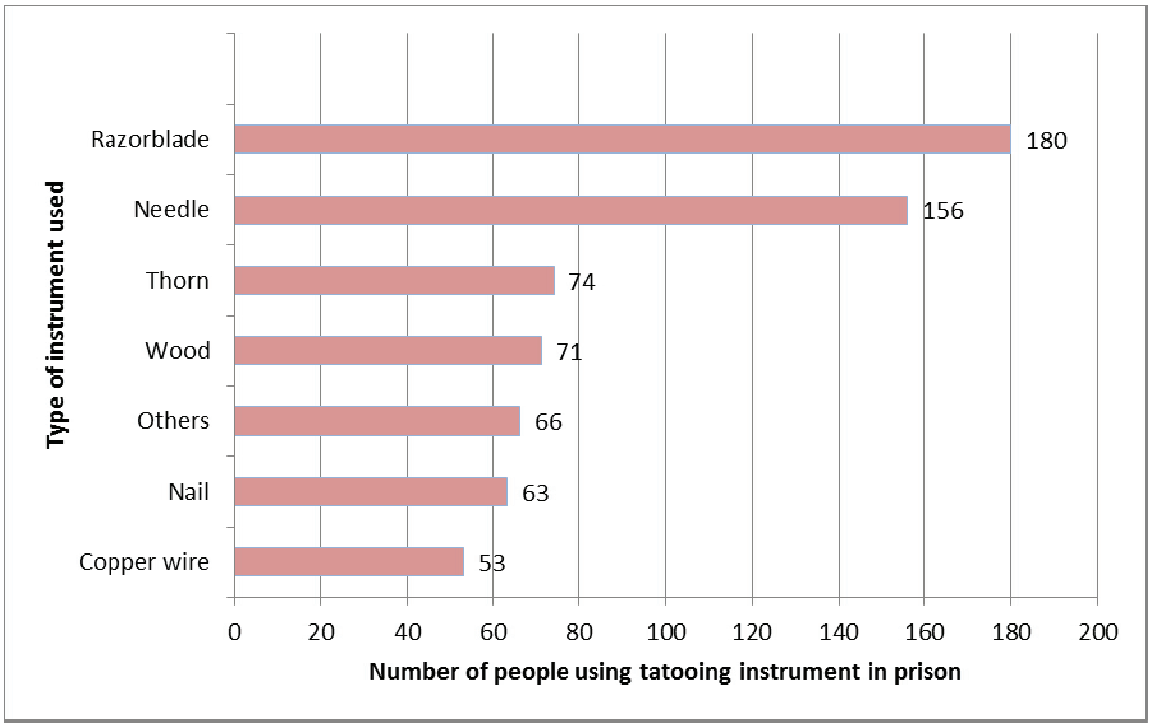
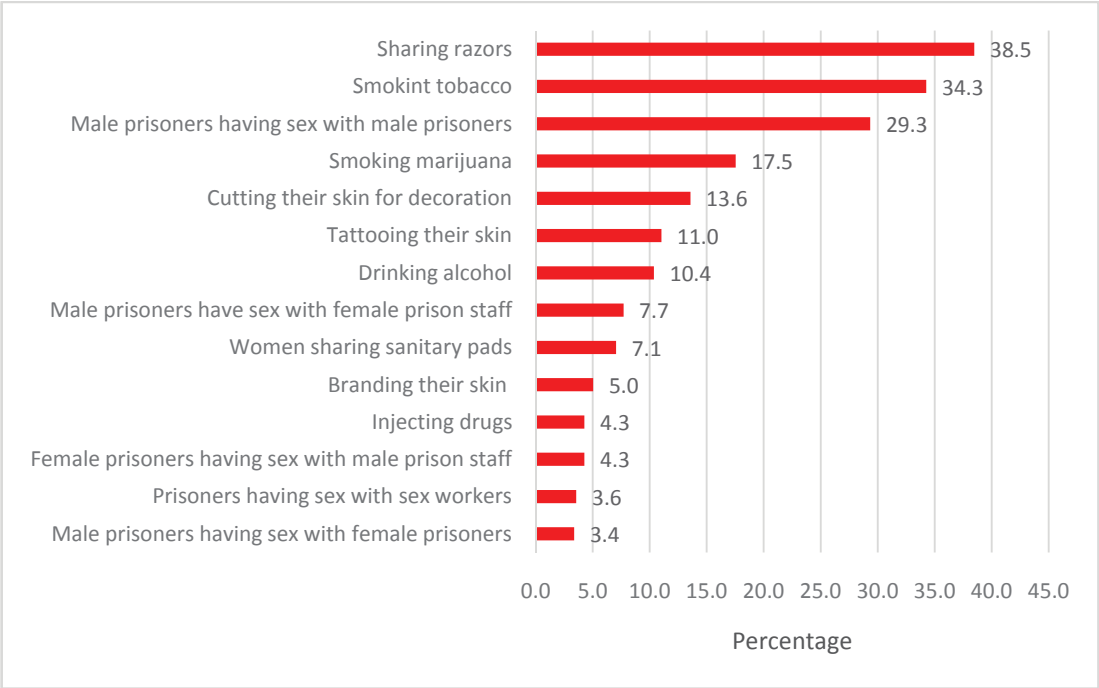


Figure 9 shows the type of instruments prisoners used for tattooing whilst in prison. Over a quarter (25.6%) used razor blades, 22.2% used needles while 10.5% and 10.1% used thorns and wood respectively.

Staff perception about prisoners' risky behaviour: Staff perceived that prisoners engaged in behaviours that placed them at risk of various infections while in prisons. The commonest perceived risk was sharing razor blades (38.5%), having sex with prisoners (29.3%), and cutting the skin for decorations (11%).

Other risky behaviours staff observed in prisoners included: smoking tobacco (34.3%), smoking marijuana (17.5%) and drinking alcohol (10.4%) as detailed in figure 10 below.

Figure 10: Staff perception about in-mates risky behaviour



6.3 Alcohol use within the Prison

The extent of alcohol use among study participants was assessed using the Michigan alcohol screening test (MAST). The findings in this study are shown in table 35.

Out of 8,919 prisoners, 16.7% self-reported that it is easy to get alcohol in prison and 19.2% had ever seen a prisoner drinking alcohol. Problem drinking in lifetime was more prevalent among prisoners (18.9% male, 11.0% female) than staff (8.9% male, 2.9% female).
By age category, problem drinking was highest among staff aged 45-49 (11.7%) and lowest in those aged 20-24 years (2.3%). For Prisoners, problem drinking was highest among those aged 30-34 years (21.4%) and lowest among prisoners aged 60 plus (11.1%).

However, while problem drinking was more common among staff who had never been to school (23.1% versus 6.2%), for prisoners, it was among those who had ever been to school (19.0% versus 16.9%). For both staff and prisoners, this problem was mainly among the divorced/remarried (13.3% versus 24.2%) and those married in polygamous union (11.6% versus 21.0%) respectively. By administrative region, North-Eastern had the highest (13.0%) with Southern having the lowest number of problem drinkers (1.4%) among staff. For prisoners, the highest number was recorded in the North-Western region (21.3%) while Southern Region had the lowest number of problem drinkers (14.5%). Problem drinking was generally more among prisoners than staff across the different demographic characteristics.

Table 35: MAST Scale results (cut off points: No problem=0-2: Early drinker=3-5; problem drinker 6+) (n = 8,717)

Background characteristics		Staff				Prisoners			
		No problem	Early drinker	Problem drinker	Total	No problem	Early drinker	Problem drinker	Total
Gender	Male	63.2	28.0	8.8	1,000	53.0	28.0	18.9	8,172
	Female	72.9	24.2	2.9	583	55.6	33.4	11.0	545
Age group in years	Under 20	100.0	0.0	0.0	1	53.4	31.6	14.9	522
	20-24	75.0	22.7	2.3	44	54.6	28.5	16.9	1,938
	25-29	78.6	17.5	4.0	252	54.0	26.7	19.2	2,162
	30- 34	70.9	22.8	6.3	381	51.2	27.4	21.4	1,574
	35-39	69.1	24.3	6.6	243	54.0	26.1	19.9	940
	40-44	64.3	29.1	6.6	227	52.3	29.3	18.4	692
	45-49	58.3	30.1	11.7	206	48.7	36.4	14.9	343
	50-54	53.9	39.7	6.4	141	48.7	34.9	16.4	275
	55-59	50.0	43.0	7.0	86	56.9	25.7	17.4	109
	60+	100.0	0.0	0.0	2	57.4	31.5	11.1	162
Ever Attended school	Yes	66.9	26.6	6.5	1570	53.9	27.1	19.0	6,366
	No	46.2	30.8	23.1	13	51.2	31.9	16.9	2,351
Marital status	Single	71.5	22.3	6.2	130	53.5	28.3	18.2	3,570
	Married-monogamous	68.1	25.8	6.0	1177	53.7	28.3	18.0	3,684
	Married-polygamous	56.1	32.3	11.6	164	49.9	29.1	21.0	773
	Divorced/separated	66.0	30.0	4.0	50	51.1	29.5	19.4	485
	Widowed	59.6	34.0	6.4	47	56.4	26.7	16.9	172
	Divorced & remarried	60.0	26.7	13.3	15				
	Don't know					54.5	21.2	24.2	33
Administrative Region	Central	61.5	31.3	7.3	96	50.6	31.5	18.0	635
	East-central	66.7	25.0	8.3	48	54.0	25.9	20.1	224
	Eastern	65.6	30.4	4.0	125	45.1	31.7	23.1	618
	Kampala extra	74.7	19.5	5.7	261	53.9	28.7	17.4	1,815
	Mid central	73.8	23.8	2.4	42	63.6	22.8	13.6	162

	Mid-western	57.0	36.6	6.5	93	53.2	31.2	15.6	545
	Mid-eastern	64.7	30.6	4.7	85	52.4	26.5	21.1	441
	North Eastern	63.0	24.1	13.0	54	45.0	36.1	18.9	180
	North western	64.0	25.0	11.0	100	45.1	33.6	21.3	408
	Northern	59.9	32.8	7.3	177	54.3	24.7	21.0	825
	South eastern	60.7	34.5	4.8	145	49.0	34.3	16.7	563
	South western	74.1	18.9	7.0	185	58.9	21.8	19.3	1,148
	Southern	77.5	21.1	1.4	71	59.6	25.9	14.5	557
	Western	65.3	23.8	10.9	101	53.0	30.5	16.4	596
Total		**66.8**	**26.6**	**6.6**	**1583**	**53.19**	**28.38**	**18.42**	**8,717**

6.4 Drugs/substance abuse among staff and prisoners

Substance abuse among staff: Table 36 below shows substance abuse among staff. Some 5.7% of staff had ever used drugs to get high, and 1.1% had ever injected drugs. More men than women used drugs to get high while 0.1% men compared to 1.5% women injected. Substance abuse was higher among staff who had never attended school (11.8%), and among staff in East Central Region (12.7%).

Substance abuse among prisoners: The study explored prisoners' substance use experience, what they had witnessed and what they had done. Table 37 below shows these experiences. Some 30.5% of prisoners had ever seen someone use drugs to get high; 14.5% reported it is easy to get drugs in prison; while 7.1% reported seeing prisoner inject drugs. More male than female prisoners had seen someone using drugs to get high (31.7% versus 12.7%), ever used drugs to get high (10.0% versus 6.0%) as well as asserted that it is easy to get drugs in prison (15.5% versus 5.5%).

Prisoners were also asked if they had ever used drugs to get high and whether they had ever injected drugs in prison. Nine point eight percent and 2.9% of prisoners reported that they had ever used drugs to get high and that they had ever injected drugs while in prison respectively. The proportion of male prisoners who used drugs was almost twice that of women prisoners (10% versus 6%); while the proportion injecting drugs whilst in prison was comparable to that of female prisoners (2.3% vs. 2.5%).

By age, prisoners who ever saw someone use drugs increased with age while reporting that it is easy to get drugs in prison also increased with age up to the group aged 35 – 39 years. Injecting drugs in prison also increased with age up to the group aged 25 – 29 years then declined with age thereafter. By Region, prevalence of injecting drug use was highest in North Eastern Region (6.0%) while it was lowest 2.4% in Mid Central Region.

Table 36: Substance abuse among staff by sex, age group, education, marital status and Region (n = 1,687)

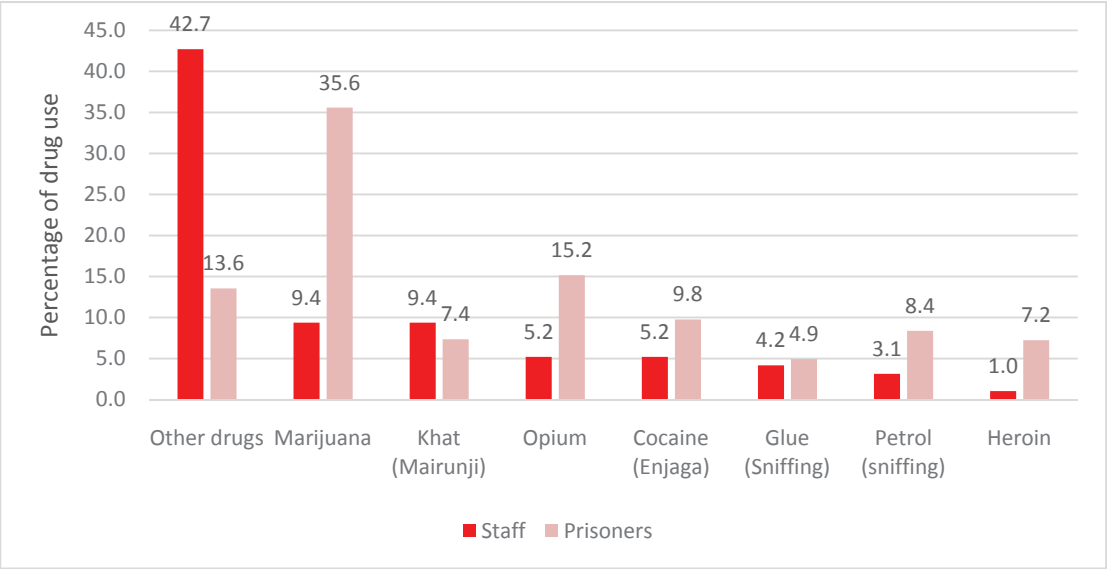
Background characteristics		Ever used drugs/substance to get high	Ever injected drugs	Total
Gender	Male	6.8	0.1	1,067
	Female	3.7	1.5	620
Age group	Under 20	0.0	0.0	1
	20-24	4.3	0.0	47
	25-29	5.1	0.0	274
	30-34	5.8	0.7	415
	35-39	5.3	0.8	265
	40-44	5.1	2.5	236
	45-49	8.0	2.4	212
	50-54	6.2	0.7	146
	55-59	4.6	1.1	88
	60+	0.0	0.0	3
Ever Attended school	Yes	5.6	1.1	1,670
	No	11.8	0.0	17
Marital status	Single	5.2	0.7	136
	Married-monogamous	5.6	1.0	1,264
	Married-polygamous	6.0	1.8	167
	Divorced/separated	5.6	1.9	54
	Widowed	4.2	2.1	48
	Divorced & remarried	20.0	0.0	15
	Don't know	0.0	0.0	3
Administrative Region	Central	2.8	0.0	109
	East-central	12.7	3.6	55
	Eastern	4.7	2.3	129
	Kampala extra	6.8	0.7	293
	Mid central	4.6	2.3	44
	Mid-western	6.2	1.0	97
	Mid-eastern	5.8	2.3	86
	North Eastern	5.2	0.0	58
	North western	8.7	1.0	104
	Northern	4.9	0.5	184
	South eastern	7.3	3.3	151
	South western	3.6	0.0	197
	Southern	4.1	0.0	74
	Western	3.8	0.0	106
Total		**5.7**	**1.1**	**1,687**

Table 37: Substance abuse experience among prisoners by sex, age, education, marital status & Region (n = 8,919)

Background characteristics		Ever seen anyone using drugs to get high	Easy It is easy to get drugs in prison	Even seen prisoner inject drugs	Ever used drugs to get high	Ever injected drugs in a prison	Total
Gender	Male	31.7	15.5	7.3	10.0	2.3	8,353
	Female	12.7	5.5	4.1	6.0	2.5	566
Age group	Under 20	25.1	11.1	7.3	9.8	2.8	533
	20-24	29.2	14.8	7.1	12.8	3.3	1,982
	25-29	32.3	15.9	7.0	10.5	3.4	2,212
	30-34	32.5	15.6	7.6	10.5	3.0	1,601
	35-39	32.3	16.7	6.1	8.3	3.3	969
	40-44	30.6	14.0	8.3	5.9	1.4	709
	45-49	27.4	10.0	6.3	4.3	2.0	351
	50-54	28.8	13.3	6.3	4.6	1.4	286
	55-59	30.6	16.2	9.0	7.2	0.9	111
	60+	18.8	11.5	4.2	4.2	0.6	165
Ever Attended school	Yes	33.4	15.3	7.3	9.7	2.9	6,501
	No	22.8	13.6	6.5	9.9	3.0	2,418
Marital status	Single	31.6	15.4	7.1	11.1	3.1	3,642
	Married-monogamous	28.9	14.6	6.9	8.6	2.7	3,774
	Married-polygamous	34.7	16.4	8.3	9.7	2.5	790
	Divorced/separated	32.7	13.5	6.5	9.6	3.0	498
	Widowed	23.2	13.6	8.0	10.2	3.4	179
	Don't know	19.4	11.1	8.3	11.1	5.6	36
Administrative Region	Central	40.4	22.8	4.8	9.6	2.5	649
	East-central	34.3	16.5	7.6	10.2	3.8	236
	Eastern	23.6	9.4	7.0	10.4	4.2	627
	Kampala extra	40.8	25.7	8.7	8.5	2	1,899
	Mid central	25.2	13.5	5.5	6.8	2.5	163
	Mid-western	18.8	6.9	4.3	7.1	1.8	553
	Mid-eastern	23.4	8.9	7.4	10.3	3.6	448
	North Eastern	22.3	8.2	7.1	20.1	6.0	184
	North western	24.2	9.1	10.5	12.2	4.8	418
	Northern	18.3	7.5	7.8	9.9	3.9	843
	South eastern	28.7	9.5	6.1	10.2	3.1	578
	South western	32.2	12.7	6.4	9.4	3.0	1,154
	Southern	33.6	17.8	5.5	9.1	1.6	569
	Western	30.3	12.5	7.5	12.0	2.5	598
Total		**30.5**	**14.9**	**7.1**	**9.8**	**2.9**	**8,919**

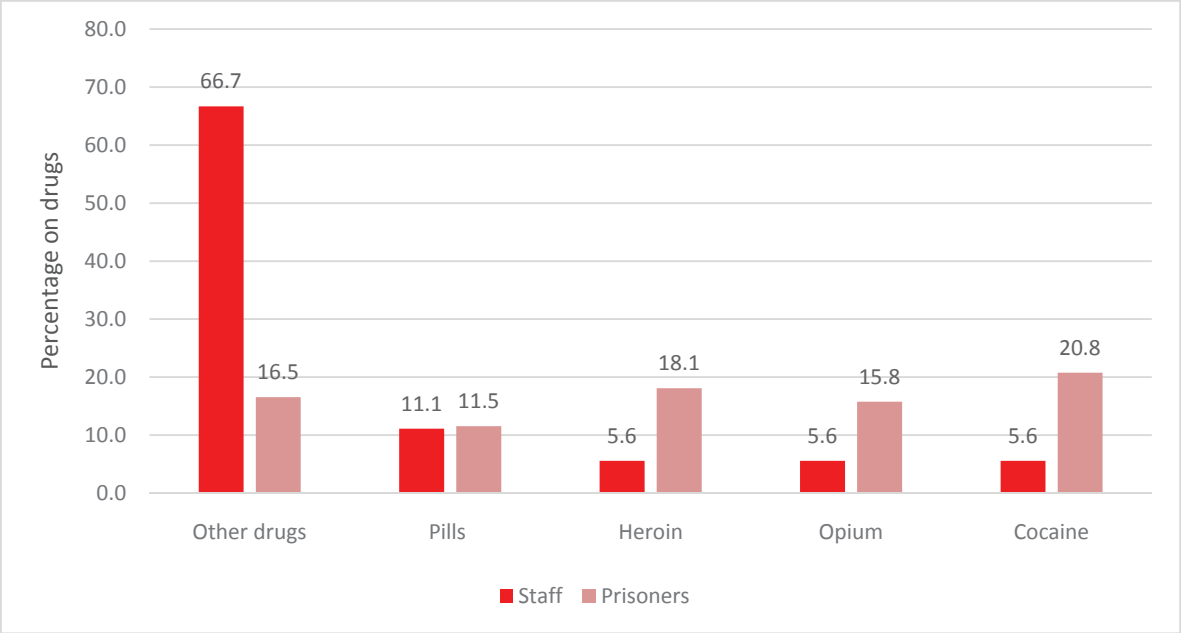
Drugs used: 96 (9%) of staff and 871 (10%) of prisoners who were on drugs reported the type of drug they used (Figure 11).. Among staff who used drugs, 9.4% used marijuana, 9.4% use khat and almost a half (42.7%) used other drugs. For prisoners, about 35.6% used marijuana, followed by opium (15.2%), cocaine (9.8%) and khat (7.4%).

Figure 11: Type of drug used by staff and prisoners in percent (n = 967)



Injecting Drug Use (IDU): Respondents using drugs in this study were asked if they used injectable drugs. Some 18 and 260 representing 18.8% and 29.9% of those staff and prisoners respectively who had used drugs reported using injectable drugs, Figure 12. Nearly a fifth (20.8%) of prisoners who injected drugs used cocaine, followed by heroin (18.1%) and opium (15.8%). Prison staff on the other hand reportedly most commonly injected "pills" (11.1%, although it was unclear how this would have been done or whether the question was poorly phrased), followed by opium, heroin and cocaine in equal measure (5.6% each). Reported injectable drug use was less among staff than among prisoners, see Figure 12 below.

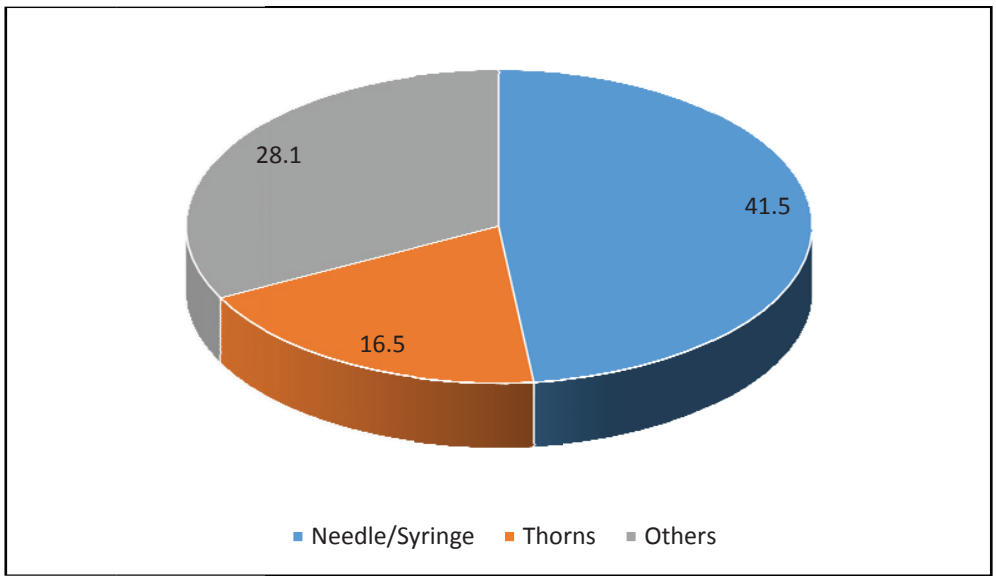
Figure 12: Injection drugs* used by staff and prisoners (n = 278)



*not clear how respondents would have injected 'pills'

Instrument used for injecting drugs: Respondents who reported being on injectable drugs were asked what type of instruments they used and if they shared the instruments or not. The pie chart, figure 13, shows instruments used for injections by those injecting drugs. Staff reported that they do not share instruments, which is good as this minimises the risk of contracting and spreading AIDS virus. However, nearly a half (49.2%) i.e. 128 of 260 prisoners using injectable drugs shared injection instruments and only 97 (76%) of these cleaned them before sharing with others. This is a risky practice, as sharing instruments can increase the chances of contracting and spreading AIDS virus.

Figure 13: Type of injecting instruments used by injecting drug Prisoners (n = 260)



6.5 Violence

This study explored the level of violence in prison.

Staff experiences: Prison staff were asked if they had ever seen prisoners fighting; whether they had ever been assaulted by prisoners or whether they themselves had ever assaulted someone in prison. Table 38 below shows the responses.

80.1% of staff had seen prisoners fighting, 17% had been assaulted while working in prison and 5.9% had ever assaulted someone. Assault was more prevalent among male than female staff. This could reflect that violence in prisons is more prevalent among male prisoners or could be that women are more tolerant to hide violence.

Prisoners' experiences: To get an idea of the extent of violence in prison, prisoners were asked if they had: seen prisoners fight, seen prisoners beaten by guards, ever physically been assaulted while in prison or whether they themselves ever assaulted someone in prison.

Table 39 shows indicators of violence as per inmate's responses. While 58.5% of them had seen prisoners fight and 60.4% had seen prisoners being beaten by a guard; 44.1% had ever been physically assaulted in prison and 13.2% had themselves assaulted someone in prison. Proportionately more male than female prisoners reported the following: having seen prisoners fight (59.3% versus 46.3%); seen prisoners being assaulted by guards (61.2% versus 49.5%); ever been physically assaulted (44.9% versus 33.4%) or to have physically assaulted someone themselves (13.4% versus 10.1%).

Table 38: Indicators of violence within prisons according to staff (n = 1,687)

Background characteristics		(%) Seen prisoners fight	Ever been assaulted by a prisoner while working in prison %	Ever assaulted anyone in prison %	Total
Gender	Male	81.9	18.1	6.8	1,067
	Female	76.9	15.0	4.4	620
Age group	Under 20	100.0	100.0	0.0	1
	20-24	78.7	10.6	0.0	47
	25-29	75.6	19.7	5.5	274
	30-34	79.0	21.9	6.0	415
	35-39	84.5	13.6	4.9	265
	40-44	82.6	13.1	8.1	236
	45-49	84.4	15.1	8.0	212
	50-54	78.1	16.4	4.1	146
	55-59	73.9	13.6	5.7	88
	60+	33.3	0.0	0.0	3
Ever Attended school	Yes	80.3	17.0	5.9	1670
	No	58.8	11.8	5.9	17
Marital status	Single	75.7	13.2	4.4	136
	Married-monogamous	81.3	17.4	6.0	1,264
	Married-polygamous	80.8	17.4	6.0	167
	Divorced/separated	77.8	27.8	9.3	54
	Widowed	68.8	6.3	0.0	48
	Divorced & remarried	73.3	6.7	20.0	15
	Don't know	0.0	0.0	0.0	3
Administrative Region	Central	77.1	14.7	8.3	109
	East-central	81.8	18.2	0.0	55
	Eastern	83.7	14.7	4.7	129
	Kampala extra	78.8	20.5	8.2	293
	Mid central	84.1	13.6	11.4	44
	Mid-western	74.2	10.3	6.2	97
	Mid-eastern	83.7	17.4	4.7	86
	North Eastern	87.9	15.5	5.2	58
	North western	86.5	20.2	5.8	104
	Northern	66.9	8.2	3.8	184
	South eastern	80.8	21.2	3.3	151
	South western	82.2	18.3	5.1	197
	Southern	85.1	20.3	8.1	74
	Western	85.9	20.8	8.5	106
Total		**80.1**	**17.0**	**5.9**	**1,687**

Table 39: Indicators of violence among prisoners by sex, age group, education & marital status and Region (n = 8,919)

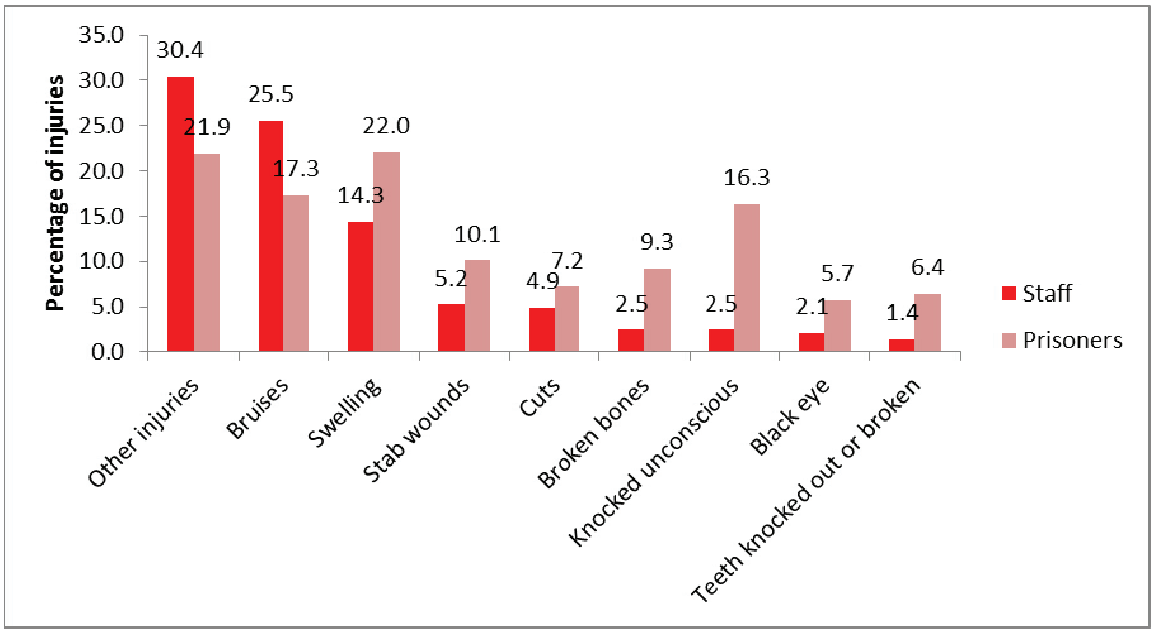
Background characteristics		Seen prisoners fight	Seen prisoner beaten by a guard	Ever been physically assaulted in prison	Ever physically assaulted anyone in prison	Total
Gender	Male	59.3	61.2	44.9	13.4	8,353
	Female	46.3	49.5	33.4	10.1	566
Age group	Under 20	51.6	57.6	43.7	16.3	533
	20-24	56.4	62.1	49.6	15.3	1,982
	25-29	61.7	63.4	47.4	13.8	2,212
	30-34	61.4	61.2	46.1	13.2	1,601
	35-39	61.7	61.9	42.4	11.5	969
	40-44	55.6	56.1	36.8	12.1	709
	45-49	54.4	55.3	29.9	8.8	351
	50-54	55.2	50.7	29.4	7.3	286
	55-59	53.2	51.4	27.0	8.1	111
	60+	46.1	45.5	26.7	6.7	165
Ever Attended school	Yes	62.8	63.6	45.1	12.7	6,501
	No	46.9	51.8	41.6	14.5	2,418
Marital status	Single	58.3	61.8	47.1	14.7	3,642
	Married-monogamous	58.5	60.2	42.7	12.1	3,774
	Married-polygamous	59.0	58.6	42.0	13.1	790
	Divorced/separated	60.8	62.8	43.4	12.9	498
	Widowed	54.8	54.8	37.9	11.3	179
	Don't know	55.6	52.8	38.9	8.3	36
Administrative Region	Central	60.7	65.6	49.8	10.8	649
	East-central	50.9	61.9	53.8	13.6	236
	Eastern	53.9	49.0	36.7	14.4	627
	Kampala extra	74.4	70.1	42.1	10.1	1,899
	Mid central	54.0	63.8	55.2	16.6	163
	Mid-western	42.5	55.2	42.7	12.8	553
	Mid-eastern	48.7	59.8	30.1	11.8	448
	North Eastern	37.0	41.9	30.4	17.4	184
	North western	42.6	47.6	38.3	12.4	418
	Northern	47.2	52.2	33.7	12.6	843
	South eastern	56.9	59.2	43.3	12.5	578
	South western	62.1	65.5	57.1	17.2	1,154
	Southern	61.3	64.5	53.8	13.4	569
	Western	62.4	53.5	47.0	17.7	598
Total		**58.5**	**60.4**	**44.1**	**13.2**	**8,919**

Perpetrators of assault in prison: Among staff, 286 had ever been assaulted by; prisoners 56%, prison guards 17%, gang 7% and other persons in the prisons 16%.

For the 3,937 prisoners who have ever been physically assaulted, it was mostly done by fellow prisoners 46%, followed by prison guards 32% and members of prison gangs 16%.

Respondents were also asked the type of injuries they sustained as a result of the assault. Figure 14 demonstrates these types of injuries. Of the staff who reported assault, about a quarter reported bruises as the commonest specified injury while one out of ten sustained stab wounds or broken bones. However, among prisoners who said they had been assaulted, the commonest reported injury was swelling reported by nearly a quarter followed by bruises and being knocked unconscious.

Figure 14: Injuries received after physical assaults in a prison (n =286)



6.6 Depression and Hopelessness

Data for depression is shown in table 40. Depression was more prevalent among prisoners than staff. While 30.9% of prisoners were moderately to severely depressed, only 6.4% of staff were so. Moderate to severe depression was more prevalent among women than men. Depression among staff increased with age; and was more common among staff deployed in Mid-Eastern, Eastern, Mid central, and Mid-western Regions while it was more common among prisoners in southern, south western and mid-central Region.

Table 40: Depression among staff and prisoners by sex, age group and Region

Background characteristics		Staff				Prisoners			
		Normal	Mild	Moderate-Severe	Total	Normal	Mild	Moderate-Severe	Total
Gender	Male	82.0	12.6	5.3	863	41.4	27.9	30.7	7533
	Female	72.8	18.9	8.4	455	38.8	26.6	34.6	511
Age group	Under 20	0.0		0.0	0	45.3	26.9	27.8	468
	20-24	86.5	13.5	0.0	37	41.4	28.8	29.7	1782
	25-29	84.7	11.4	4.0	202	41.1	26.3	32.6	2006
	30-34	81.5	12.6	5.9	325	39.6	27.9	32.5	1470
	35-39	81.8	14.4	3.8	209	37.9	28.2	33.9	865
	40-44	72.4	18.4	9.2	185	44.2	29.5	26.3	634
	45-49	76.3	15.0	8.7	173	40.6	28.3	31.1	318
	50-54	73.7	17.8	8.5	118	44.7	26.9	28.5	253
	55-59	68.1	21.7	10.1	69	42.2	30.4	27.5	102
	60+	0.0		0.0	0	47.3	27.4	25.3	146
Ever Attended school	Yes	79.1	14.6	6.3	1305	42.7	27.9	29.5	5,838
	No	53.9	30.8	15.4	13	37.6	27.7	34.7	2,206
Type of marital status	Single	69.6	23.5	6.9	102	42.9	27.6	29.5	3283
	Married-monogamous	80.4	13.7	5.9	998	40.7	28.1	31.3	3427
	Married-polygamous	77.0	17.0	5.9	135	40.4	26.9	32.7	703
	Divorced/separated	76.3	13.2	10.5	38	38.3	29.6	32.1	446
	Widowed	70.3	16.2	13.5	37	31.7	26.7	41.6	161
	Divorced & remarried	87.5	0.0	12.5	8				
	Don't know					45.8	29.2	25.0	24
Region of work	Central	78.4	17.6	4.1	74	45.5	29.4	25.0	591
	East-central	86.1	13.9	0.0	36	54.7	21.2	24.1	212

Eastern	68.6	19.6	11.8	102	42.9	24.3	32.8	573
Kampala extra	81.8	12.3	5.9	203	41.5	27.9	30.6	1622
Mid central	68.6	22.9	8.6	35	38.3	29.6	32.1	162
Mid-western	76.3	16.3	7.5	80	39.8	27.6	32.6	503
Mid-eastern	71.2	12.3	16.4	73	45.0	25.1	29.9	411
North eastern	86.0	10.0	4.0	50	43.5	23.0	33.5	161
North western	83.7	11.6	4.7	86	37.3	31.2	31.5	349
Northern	75.7	17.1	7.2	152	39.4	28.0	32.6	754
South eastern	80.3	17.1	2.6	117	47.4	26.3	26.3	528
South western	76.3	16.3	7.5	160	36.2	29.8	34.0	1085
Southern	88.3	11.7	0.0	60	35.5	28.2	36.3	524
Western	86.7	8.9	4.4	90	42.5	29.9	27.6	569
All	78.8	14.8	6.4	1318	41.3	27.8	30.9	8,044
TOTAL	**1,039**	**195**	**84**	**1,318**	**3,319**	**2,238**	**2,487**	**8,044**

Note: ***The following cut off was used: 0-9 = Normal, 10-16 = Mild and 17+ = Moderate-Severe.***

Table 41 presents data on the level of hopelessness among staff and prisoners based on Becks Hopelessness scale. Thrice as many prisoners as staff perceived their level of hopeless as moderate to severe (48.8% versus 12.5%). Among staff, perceived hopelessness increased with age, among prisoners it was highest (51.8%) in the group aged 50 – 59 years followed in the group aged 20-24 years (51.4%). By Region, hopelessness among staff was most prevalent in northern followed by North West and Midwest; while among prisoners it was most prevalent in North Eastern, north west and eastern.

Table 41: Hopelessness among prisoners and staff by sex, age group and Region
(Becks Hopelessness scale; Cut-off points: None=0-3; mild=4-8: moderate-plus=9 and above)

Background characteristics		Staff				Prisoners			
		None	Mild	Moderate-Severe	Total	None	Mild	Moderate-Severe	Total
Gender	Male	57.8	30.4	11.7	1,058	12.7	38.4	48.9	8,321
	Female	53.5	32.6	13.9	619	11.6	40.9	47.5	560
Age group	<20	0.0	100.0	0.0	1	8.9	42.4	48.8	531
	20-24	57.4	38.3	4.3	47	11.5	37.0	51.4	1,975
	25-29	70.0	24.4	5.6	270	14.2	38.1	47.7	2,209
	30-34	65.4	28.1	6.5	413	11.9	40.6	47.5	1,598
	35-39	58.6	26.6	14.8	263	12.7	41.0	46.3	961
	40-44	46.2	39.0	14.8	236	14.1	36.6	49.4	703
	45-49	48.1	34.0	17.9	212	15.6	34.6	49.9	347
	50-54	36.6	42.8	20.7	145	14.4	35.2	50.4	284
	55-59	44.3	30.7	25.0	88	12.7	35.5	51.8	110
	60+	0.0	0.0	100.0	2	6.7	42.3	50.9	163
Ever Attended school	Yes	56.4	31.1	12.5	1,662	15.8	40.8	43.3	6,481
	No	33.3	46.7	20.0	15	3.9	32.5	63.7	2,400
Marital status	Single	57.4	27.9	14.7	136	12.1	38.1	49.8	3,632
	Married-monogamous	57.7	31.5	10.8	1,259	13.5	38.8	47.7	3,761
	Married-polygamous	47.6	34.3	18.1	166	12.5	36.8	50.7	785
	Divorced/separated	62.3	24.5	13.2	53	13.3	43.1	43.7	490
	Widowed	41.7	33.3	25.0	48	5.1	38.4	56.5	177
	Divorced & remarried	40.0	26.7	33.3	15				
	Don't know					5.6	38.9	55.6	36
Administrative Region	Central	54.6	34.3	11.1	108	16.8	41.5	41.7	648
	East-central	54.7	34.0	11.3	53	12.3	36.4	51.3	236
	Eastern	51.9	35.7	12.4	129	9.8	32.2	58.0	621

	Kampala extra	62.2	27.8	10.1	288	23.8	41.3	34.9	1,886
	Mid central	47.7	40.9	11.4	44	5.5	44.2	50.3	163
	Mid-western	57.7	35.1	7.2	97	9.2	36.2	54.5	552
	Mid-eastern	46.5	36.0	17.4	86	9.9	32.7	57.4	444
	North Eastern	55.2	31.0	13.8	58	6.0	31.9	62.1	182
	North western	51.0	30.8	18.3	104	6.7	32.9	60.4	417
	Northern	49.2	31.7	19.1	183	9.7	39.4	50.9	837
	South eastern	54.0	32.7	13.3	150	13.7	40.4	45.9	577
	South western	59.4	31.0	9.6	197	6.9	39.5	53.6	1,154
	Southern	70.3	20.3	9.5	74	7.1	41.1	51.9	567
	Western	63.2	25.5	11.3	106	8.2	38.2	53.6	597
Total		**56.2**	**31.3**	**12.5**	**1,677**	**12.6**	**38.6**	**48.8**	**8,881**

6.7 PTSD among Staff and Prisoners

Table 42 shows post-traumatic stress disorder (PTSD) among staff and prisoners. PTSD was screened by using a DSM III R symptom based Post-Traumatic Stress Disorder Check List (PCL-C). Using the PCL-C, participants were assessed regarding how much they had been bothered by symptoms in the past month using a 5-point scale ranging from 1 = "Not at all" to 5 = "Extremely." Based on the overall score attained, participants were categorised as being normal if score was less than 50 and having PTSD when the score was 50 plus (50+).

PTSD among Staff: the prevalence of PTSD was 14.6% and was less among males compared to females (12.8% versus 17.8%). PTSD was highest among staff aged 20-24 years (17.0%) and 45-49 years (16.0%) and zero among 60+. PTSD was more among staff who had never attended school (33.3%) than those who had ever (14.5%). PTSD was more among the widowed (29.8%) and divorced/remarried staff (27.3%). By administrative region, Central region (17.2%) and East Central (16.7%) has the highest prevalence while Southern region had the lowest prevalence of 8.5%.

PTSD among prisoners: prisoners had a higher PTSD prevalence of 34.7% compared to staff with 14.6%. Just like among staff, PTSD was less among males compared to females (34.4% versus 39.7%). In the age categories, PTSD was highest among prisoners aged 55-59 years (38.3%) and 40-44 years (35.7%) and lowest in those less than 20 years (29.4%). PTSD was more prevalent among prisoners who had never attended school (39.5%) than those who had ever (32.9%). By marital status, PTSD was more prevalent among the divorced/remarried (46.7%) and widowed (38.7%). By administrative region, Eastern region (40.2%) and Southern (39.8%) has the highest prevalence while Mid-Eastern region had the lowest of 29.7%.

Table 42: PTSD of prison staff and prisoners by sex, age group and Region (n = 8,537)

(Cut-off points : <50 normal & 50+ PTSD for both).

Background characteristics		Staff			Prisoners		
		Normal %	PTSD %	Total	Normal %	PTSD %	Total
Gender	Male	87.2	12.8	987	65.6	34.4	7,996
	Female	82.2	17.8	578	60.3	39.7	541
Age group in yrs.	Under 20	100.0	0.0	1	70.6	29.4	504
	20-24	83.0	17.0	47	65.5	34.5	1,909
	25-29	85.5	14.5	248	64.5	35.5	2,113
	30-34	86.5	13.5	378	64.7	35.3	1,553
	35-39	85.8	14.2	246	65.3	34.7	927
	40-44	84.9	15.1	219	64.3	35.7	673
	45-49	84.0	16.0	206	67.7	32.3	331
	50-54	84.7	15.3	137	64.6	35.4	268
	55-59	85.4	14.6	82	61.7	38.3	107
	60+	100.0	0.0	1	65.8	34.2	152
Ever Attended school	Yes	85.5	14.5	1550	67.1	32.9	6,238
	No	66.7	33.3	15	60.5	39.5	2,299
Marital status	Single	78.0	22.0	127	66.6	33.4	3,500
	Married-monogamous	86.8	13.2	1173	64.8	35.2	3,617
	Married-polygamous	86.6	13.4	157	63.0	37.0	749
	Divorced/separated	84.0	16.0	50	65.3	34.7	473
	Widowed	70.2	29.8	47	61.3	38.7	168
	Divorced & remarried	72.7	27.3	11	0.0	0.0	0
Administrative Region	Don't know	0.0	0.0	0	53.3	46.7	30
	Central	82.8	17.2	93	66.7	33.3	622
	East-central	83.3	16.7	48	66.1	33.9	227
	Eastern	86.2	13.8	123	59.8	40.2	609
	Kampala extra	84.8	15.2	256	63.8	36.2	1,755
	Mid central	85.0	15.0	40	62.0	38.0	163
	Mid-western	88.0	12.0	92	69.5	30.5	538
	Mid-eastern	78.8	21.3	80	71.1	28.9	436
	North Eastern	88.9	11.1	54	70.3	29.7	172
	North western	91.8	8.2	97	69.2	30.8	396
	Northern	84.7	15.3	177	69.2	30.8	803
	South eastern	82.5	17.5	143	64.6	35.4	553
	South western	86.7	13.3	188	64.3	35.7	1,128
	Southern	91.5	8.5	71	60.2	39.8	548
	Western	82.5	17.5	103	64.4	35.6	587
Total		**85.4**	**14.6**	**1,565**	**65.3**	**34.7**	**8,537**

Table 43 below displays data on relationship between depression and violence. There is a significant relation between PTSD and causing violence in prisons among the staff (p-value 0.041, Chi-Sq. = 4.173) and prisoners (p-value 0.0001, Chi-Sq. = 50).

Table 43: Relationship between depression and violence

	Staff		Prisoners	
Ever Assaulted someone	Depression		Depression	
	Normal	PTSD	Normal	PTSD
Yes	71 (5.3%)	20 (8.7%)	646 (11.5%)	506 (17.1)
No	1265 (94.7%)	209 (91.3)	4929 (88.4)	2456 (82.9%)
	1336	229	5575	2962
	Chi-Sq=4.173	p-value=0.041	Chi-Sq=50	p-value<0.0001

6.8 Loss of resources among prisoners

The survey evaluated the extent to which respondents experienced actual loss of any resources in the last 3 months. Resources included objects, conditions, personal characteristics or energies. Actual loss of resources was taken to have occurred when a specific resource decreased in its availability to the respondent (e.g. actual loss of personal health or actual loss of intimacy). A modified version of the General Conservation of Resource Evaluation (COR-E)[39, 40] was used to measure loss of resources. Individuals were rated about the extent to which they lost resources, or the threat to which resources may be lost using a 5-point scale ranging from 0='Not at all' to 4 = 'to a great degree. A median of 14 as the cut-off point out of 21 indicators used was applied to determine "big loss" (14 points above) and "least loss" (less than 14 points) of resources.

Generally, actual loss of resources was more among male (59%) than female (50.1%) prisoners with the biggest impact among those aged 20-24 (61.7%), and minimal loss in those aged 55-59 (48.6%). Again, loss of resources was more among prisoners who have ever attended school (60.9%), among singles (59.4%), those in married polygamous unions (58.3%), the divorced/separated (58.7%) and among prisoners in Central (70.6%) and East Central (68.2%) Regions. The rest of the data on loss of resources is shown in table 43 below

Prisoners ranking of losses: **Biggest loss:** my future is depending on me (82.6%); followed by Personal health (80.6%); loyalty of friends (76.1%); **least loss**: Adequate loss of clothing (45.6%)

Table 43: General resource evaluation among prisoners (n = 8, 455)

Background characteristic		Felt a big loss		Total
		n	%	
Gender	Male	4,675	59.0	7,920
	Female	268	50.1	535
Age group	Under 20	291	58.3	499
	20-24	1,155	61.7	1,872
	25-29	1,237	59.0	2,095
	30-34	897	58.4	1,535
	35-39	547	59.5	919
	40-44	371	55.2	672
	45-49	172	52.3	329
	50-54	139	50.9	273
	55-59	52	48.6	107
	60+	82	53.2	154
Ever Attended school	Yes	3,749	60.9	6,155
	No	1,194	51.9	2,300
Marital status	Single	2,042	59.4	3,437
	Married-monogamous	2,106	58.3	3,611
	Married- polygamous	423	56.9	743
	Divorced/separated	274	58.7	467
	Widowed	83	49.7	167
	Don't know	15	50.0	30
Administrative Region	Central	442	70.6	626
	East-central	152	68.2	223
	Eastern	329	54.5	604
	Kampala extra	1,098	63.5	1,729
	Mid central	103	64.0	161
	Mid-western	290	54.3	534
	Mid-eastern	214	49.1	436
	North Eastern	80	49.4	162
	North western	123	30.8	399
	Northern	362	45.8	790
	South eastern	345	63.5	543
	South western	681	60.9	1,118
	Southern	363	66.5	546
	Western	361	61.8	584
Total		**4,943**	**58.5**	**8,455**

Used a median of 14 as the cut of out of 21 indicators used

Chapter 07- Prevalence and incidence of HIV

This chapter covers HIV prevalence and incidence of recent HIV infections among staff and prisoners. It also gives the prevalence of HIV by history and compares HIV prevalence as determined in this study and by history. In addition, it gives an idea of coverage by HIV related services such as male staff and prisoners' circumcision coverage and age at circumcision.

7.1 Prevalence and Incidence of HIV

7.1.1 HIV Prevalence

Overall, HIV prevalence was 12.0% among staff and 15.0% among prisoners. Of the staff who tested positive for HIV, 77.7% knew their HIV positive status as compared to 55.8% of the prisoners. HIV prevalence in this survey was much higher than that in the general population as found in the 2011 Uganda AIDS Indicator Survey (UAIS), which reported an overall prevalence of 7.3% among the general population aged 15 – 59 years. Table 44 displays HIV prevalence by demographic characteristics of staff and prisoners.

Among both prisoners and staff, HIV was less prevalent among male participants than their female counterparts (10.5% versus 14.6% for staff and 14.1% versus 23.9% for prisoners respectively). The UAIS also had similar findings where the prevalence of HIV among women (8.3%) was higher than that among men (6.1%). However, the difference between the two groups in UAIS report was not as high as that found among staff and prisoners. In this survey, the highest prevalence among staff was (24.5%) in the group aged 45-49 years and 21.6% among prisoners aged 35-39 years. Whereas, the HIV prevalence was higher among those who had never attended school, it was found to decrease with increasing level of education. However, there was a significant trend in HIV prevalence by education among staff (Chi-Sq. = 5.01, p-value = 0.001) but none for the prisoners (Chi-Sq. = 1.60, p-value = 0.111).

Table 44 displays HIV prevalence by employment, marital status, religion and country of origin. Among staff, HIV prevalence was higher in the uniformed (12.1%) than the civilian (9.5%) staff and higher among the widowed (41.7%) than the divorced/separated (18.5%) staff. By Region, HIV was most prevalent amongst staff working in Northern Region (19.6%), followed by Mid-Eastern (18.6), North West (17.3%) and lowest in Southern (6.8%).

On the other hand, among prisoners, HIV was most prevalent in the Northern Region (20.8%), followed by Kampala Extra (18.5%), Southern (17.2%) then South Western (16.4%) while East Central (8.5%) had the lowest rate. By Region comparison, HIV prevalence among the general population according to the 2011 UAIS by Region was: Central 1 8.4%, Central 2 8.0%, Kampala 4.1%, South Eastern 4.8%, Mid-Eastern 3.8%, North Eastern 5.2%, West Nile 5.0%, Mid Northern 6.3%, South Western 6.6% and Mid-Western 7.1%.

Table 44: HIV sero status of prison staff and prisoners by sex, age group, education, religion & marital status and Region (n = 8,919)

Background characteristics		Staff (n = 1,687)		Prisoners (n=8,919)	
		HIV +ve (%)	N	HIV +ve (%)	N
Gender	Male	10.5	1,067	14.1	8,353
	Female	14.4	620	23.9	566
Age groups	Under 20	0.0	1	6.0	533
	20-24	0.0	47	9.1	1,982
	25-29	3.6	274	14.6	2,212
	30-34	5.5	415	18.2	1,601
	35-39	12.5	265	21.6	969
	40-44	18.6	236	21.0	709
	45-49	24.5	212	17.7	351
	50-54	19.2	146	15.7	286
	55-59	12.5	88	11.7	111
	60+	0.0	3	6.1	165
Highest Level of Education					
	None	23.5	17	15.4	2418
	Lower Primary	20.6	34	15.0	1734
	Upper Primary	12.1	149	14.5	2,583
	O-Level	15.0	960	14.4	1,609
	A-level	6.3	302	14.0	336
	Post-secondary	4.0	225	11.7	239
Religion					
	Catholic	14.9	659	16.0	3,563
	Protestant	10.6	748	15.1	2,463
	Born again	9.5	168	14.0	971
	Muslim	9.6	73	12.2	1,484
	Others	2.9	35	12.0	425
	Not stated	0.0	4	30.8	13
Marital status					
	In Union	10.3	1,446	15.7	4,600
	Not in Union	21.4	238	13.7	4,319
	Not stated	0.0	3	0.0	0
	Overall	12.0		14.7	8,919
Employment	Uniformed	12.1	1,600		
	Civilian	9.5	84		
	Not stated	0.0	3		
Type of marital	Single	15.4	136	12.0	3,642

Background characteristics		Staff (n = 1,687)		Prisoners (n=8,919)	
		HIV +ve (%)	N	HIV +ve (%)	N
status	Married-monogamous	9.3	1,264	15.4	3,774
	Married-polygamous	18.0	167	16.8	790
	Divorced/separated	18.5	54	23.7	498
	Widowed	41.7	48	21.8	179
	Divorced & remarried	20.0	15	0.0	0
	Don't know	0.0	3	25.0	36
Administrative Region	Central	11.0	109	13.3	649
	East-central	10.9	55	8.5	236
	Eastern	10.1	129	9.7	627
	Kampala extra	7.5	293	18.5	1,899
	Mid central	9.1	44	12.3	163
	Mid-western	13.4	97	8.7	553
	Mid-eastern	18.6	86	13.8	448
	North Eastern	12.1	58	8.7	184
	North western	17.3	104	9.1	418
	Northern	19.6	184	20.8	843
	South eastern	12.6	151	13.2	578
	South western	9.6	197	16.4	1,154
	Southern	5.4	74	17.2	569
	Western	11.3	106	12.7	598
Nationality	Uganda			15.1	8167
	Rwandan			12.3	310
	Kenyan			13.0	108
	Sudanese			6.1	33
	DR Congo			7.0	128
	Tanzanian			15.1	53
	Other African			5.5	73
	Other non-African			14.3	35
	Refuse to Answer			25.0	12
Total		**11.9**	**1687**	**14.7**	**8,919**

Table 45: HIV prevalence among prisoners and prisons staff by gender and age

Background Characteristics		Staff						Prisoners					
		Female		Male		Both Sexes		Female		Male		Both Sexes	
		% HIV positive	n	% HIV positive	n	% HIV positive	N	% HIV positive	n	% HIV positive	n	% HIV positive	N
Age group in years	Under 20	0.0	1	0.0	0	0.0	1	23.5	34	4.8	499	6.0	533
	20-24	0.0	29	0.0	18	0.0	47	20.7	111	8.4	1,871	9.1	1,982
	25-29	4.7	129	2.8	145	3.7	274	25.5	102	14.1	2,110	14.6	2,212
	30 -34	7.7	143	4.4	272	5.5	415	26.9	93	17.6	1,508	18.2	1,601
	35- 39	24.0	96	5.9	169	12.5	265	37.5	56	20.6	913	21.6	969
	40-44	28.1	89	12.9	147	18.6	236	21.5	65	21.0	644	21.0	709
	45-49	26.9	52	23.8	160	24.5	212	25.7	35	16.8	316	17.7	351
	50-54	12.8	47	22.2	99	19.2	146	12.5	40	16.3	246	15.7	286
	55-59	12.5	32	12.5	56	12.5	88	16.7	12	11.1	99	11.7	111
	60+	0.0	2	0.0	1	0.0	3	11.1	18	5.4	147	6.0	165
Total		**14.4**	**620**	**10.5**	**1,067**	**11.9**		**23.8**	**566**	**14.1**	**8,353**	**14.7**	**8,919**

Figure 15 shows HIV prevalence among staff by sex and age group. Generally, the prevalence was quite low among those aged less than 20 years. Between the ages of 20 and 49 years, HIV prevalence was higher among female than male staff, and peaked at 28.1% among female staff aged 40 – 44 years. However, among those older than 49 years the prevalence was higher among male than female staff.

Figure 16, depicts the same data for prisoners, and shows the prevalence is higher among female than male prisoners of all age groups except those aged 50 -54 years. Secondly, comparing 15 and 16 shows that the prevalence was higher among prisoners than among staff; the highest HIV prevalence among female prisoners was 37.5% in the group aged 35 – 39 years and 21.1% among male prisoners aged 40-44 years.

Figure 15: Prevalence of HIV among prison staff by sex (n = 1,739)

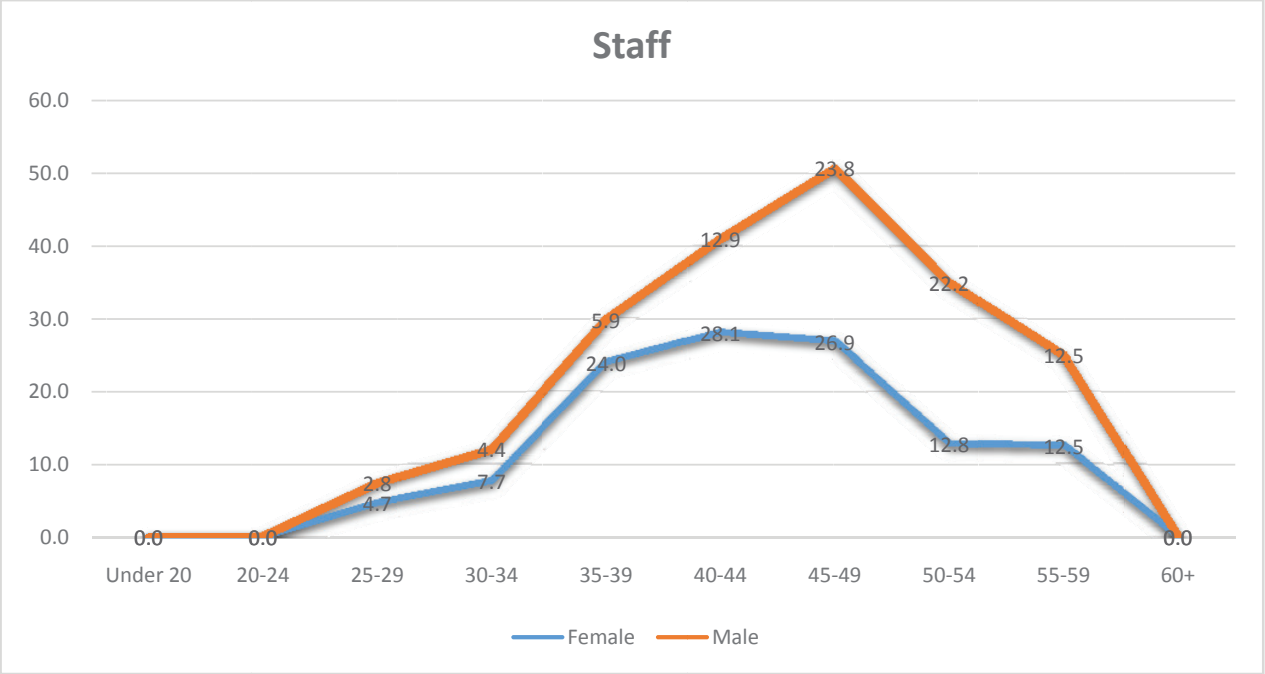


Figure 16: HIV Prevalence among prisoners by sex

7.1.2.1 Unadjusted incidence of recent HIV infections

Limiting Antigen avidity assay (LAg)- [Sedia BioSciences] was used to confirm HIV sero-positivity and to distinguish between recent and long-term HIV infections. This assay measures antibody avidity for the antigen, which increases over time after sero-conversion. All HIV-positive specimens underwent HIV-1 LAg avidity testing; ODn (Optical Density normalized) values were calculated for each specimen. Because HIV-negative samples will be incorrectly classified as recently infected on the LAg assay, all specimens with ODn values of <0.4 were retested by the HIV diagnostic testing algorithm to confirm HIV-1 sero-positive status. Any HIV sero-negative specimens identified at this step were excluded from the total HIV positives and incorporated into the total number of negative specimens (N) for the incidence estimation. All specimens with ODn values greater than 1.0 were classified as long-term infections.

HIV-1-positive specimens with an ODn value less than or equal to 1.0 underwent HIV-1 viral load (VL) analysis as an indirect indicator of ART usage or a natural ability to control HIV infection (elite control). ART usage or immune control of the virus will result in decreased levels of circulating HIV-1, which may lead to a reduction in antibody production, and thus create the potential for misclassification of a long-term infection as recent infection by the antibody-based LAg Assay. Thus, specimens with a LAg ODn ≤1.0 and a VL ≥1000 copies/mL were classified as recent infections. Specimens with a LAg ODn ≤1.0 and a VL ≤1000 copies/mL were interpreted to be either on ART or elite controllers, and therefore were classified as long-term infections.

Incidence estimates were then obtained from the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays. Assay performance characteristics of a Mean Duration of Recent Infection (MDRI) =153 days (95% CI: 128-179), with time cutoff (T) = 1.0 year and residual proportion false recent (PFR) = 0.00 were used for the estimation of HIV incidence.

N.B. As ART coverage has increased, it has become apparent that some individuals on ART for long-periods of time have the potential to be misclassified by the LAg plus VL algorithm as a recent infection. Although they may have suppressed VL for years, drug resistance or lack of adherence may result in VL ≥ 1000 copies/ml. Based in part on data from multiple Population HIV Impact Assessment (PHIA) surveys in various sub-Saharan African countries, the updated incidence algorithm includes ARV detection as a second exclusion criteria. However the UPS 2013-2014 survey, ARV detection was not available for use as an exclusion criteria for HIV recency. In addition, the UPS incidence analysis was not weighted and thus is not strictly representative of the national population. Thus, results may not be strictly comparable with Uganda PHIA 2017 findings, for example.

Among the staff, there were only 2 (1.0%) recent infections among 201 HIV positive individuals. The estimated annualized incidence (per 100 staff per year) was 0.321% (95% 0.319 – 0.322).
Among prisoners, there were 47 (3.6%) recent infections out of 1315 HIV positive individuals. The estimated annualized incidence (per 100 prisoners per year) was 1.463% (95% 1.462 –

1.465). Of the 47 prisoners with recent HIV infections, 91.5% (43/47) were male, 93.6% (44/47) were below 30 years; 44.7% (21/47) were single and 31.9% (15/47) had one lifetime sexual partner. None of the two staff with recent HIV infection were MSM while only 2 out of the 47 (4.3%) prisoners with recent HIV infection were MSM.

Table 46a: Proportion of recent versus long-term HIV infections among HIV positive staff and prisoners

Recent vs. Long-term	Staff (n=201)		Prisoners (n= 1,315)	
Results	Number	%	Number	%
Recent infection (RT)	2	1.0	47	3.6
Long-Term (LT)	199	99.0	1,268	96.4
Total	**201**	**100.0**	**1315**	**100.0**

RT: Recent infection, LT: Long-term infection, LAg: Limiting Antigen Avidity assay
All specimens with LAg ODn values greater than 1.0 were classified as long-term infections. HIV-1-positive specimens with an ODn value less than or equal to 1.0 underwent HIV-1 viral load (VL) testing. Specimens with LAg ODn ≤1.0 and VL ≥1000 copies/mL were then classified as recent infections. Specimens with LAg ODn ≤1.0 and VL ≤1000 copies/mL (14 staff and 53 prisoners) were interpreted as either on ART or elite controllers, and therefore were reclassified as long-term infections.

7.1.2.2 Characteristics of Recently HIV-Infected Prisoners

47 prisoners (3.6% of total prisoner participants) were classified as recently infected. The majority of recently infected prisoners were male (91.5%), aged <30 years (93.6%), and 44.7% were single (relationship status). Among recently infected males, 4.3% reported having sex with men. Duration of incarceration data was available for 40 of 47 recently infected prisoners. Nearly half had been incarcerated more than 12 months (42.5%), while 12.5% had been incarcerated 6-12 months, and 45% less than 6 months.

Characteristics of Recently Infected Prisoners	Prisoners (n=47)
Sex (% male)	91.5%
Aged <30 years	93.6%
% single	44.7%
Duration of incarceration (n=40 due to missing data)	
Less than 6 months	45%
6-12 months	12.5%
More than 12 months	42.5%
Reported having sex with men (male respondents only)	4.3%

Note: 2/201 (1%) of HIV-positive staff were recently infected – characteristics not analysed due to low number.

7.1.3 Viral load, CD4 levels and ART status of HIV positive prison staff and prisoners

Of the 201 staff and 1, 333 prisoners who tested positive for HIV, 58.4% and 43.5%, respectively had their viral load suppressed. Table 47 shows the CD4 and ART status among HIV positive prison staff who were subjected to CD4 testing and asked about their ART status.

Of the 201 HIV positive prison staff, 84/201 (41.8%) had a CD4 count less than 350, with more men (64.3% (54/84) than women (35.7% (30/84) having a CD4 count <350.

ART Status: Of the 201 HIV + staff, 60.7% were on ART, 23.0% not on ART, while the ART status of 16.4% of them was undefined. Among the 84 prison staff with a CD4 count of <350, only 45.2% were on ART, 14.3% were not on ART while ART status was undefined in 17.9%.

Of the 201 HIV positive prison staff (recent and old HIV infection put together), 55.2% (111/201) were men while 44.8% (90/201) were women. Among the 111 HIV positive men, 55.0% were on ART, 26.1% not on ART and 18.9% their ART status was undefined. Among the 90 HIV positive females, 67.8% were on ART, 18.9% not on ART and 13.3% their ART status was undefined.

Table 48 shows the CD4 and ART status among the HIV positive prisoners who were subjected to CD4 testing and asked about their ART status. Of the 1,333 HIV positive prisoners, 438/1,333 (32.9%) had a CD4 count less than 350, more men 397/438 (90.6%) than women 41/438 (9.4%) had a CD4 count <350.

ART Status: Of the 1333 HIV+ prisoners, 36.7% were on ART, 37.4% not on ART, while the ART status of 26.0% of them was undefined. Among the 438 prisoners with a CD4 count of <350, only 45.0% were on ART, 32.4% were not on ART while ART status was undefined in 22.6%.

Of the 1,333 HIV positive prisoners, 89.7% (1196/1333) were men while 10.3% (137/1333) were women. Among the 1196 HIV positive men, 36.1% were on ART, 37.5% not on ART and 26.3% had their ART status undefined. Among the 137 HIV positive females, 41.6% were on ART, 35.8% not on ART and 22.6% their ART status was undefined. The undefined ART status refers to participants who didn't know their ART status or refused to disclose.

Table 47: CD4 levels and ART status of HIV positive Prison Staff

CD4 level	Women				Men				Both Sexes			
per µL	No of women HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status	No of men HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status	Total HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status
<100	2	50.0	0.0	50.0	5	20.0	40.0	40.0	7	28.6	28.6	42.9
100-199	9	66.7	22.2	11.1	18	66.7	27.8	5.6	27	66.7	26.0	7.4
200-249	5	100.0	0.0	0.0	10	50.0	30.0	20.0	15	66.7	20.0	13.3
250-349	14	57.1	14.3	28.6	21	47.6	33.3	19.1	35	51.4	25.7	22.9
350-499	22	72.7	13.6	13.4	24	62.5	20.8	16.7	46	67.4	17.4	15.2
500-599	11	63.6	36.4	0.0	16	62.5	18.7	18.8	27	63.0	26.0	11.1
600+	27	66.7	22.2	11.1	17	47.1	25.3	29.4	44	59.1	22.7	18.2
TOTAL	90	67.8	18.9	13.3	111	55.0	26.1	18.9	201	60.7	23.0	16.4

Table 48: CD4 levels and ART status of HIV positive prisoners (n = 1,333)

CD4 level	Women				Men				Both Sexes			
per µL	No of women HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status	No of men HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status	Total HIV +	% Taking ARVs	% Not Taking ARVs	% Undefined ARV status
<100	3	33.3	33.3	33.3	21	57.1	28.6	14.3	24	54.2	29.2	16.7
100-199	7	42.8	28.6	28.6	77	54.6	26.0	19.5	84	53.6	26.2	20.2
200-249	6	83.3	16.7	0.0	78	38.5	44.9	16.7	84	41.7	42.9	15.5
250-349	25	44.0	24.0	32.0	221	42.1	32.1	25.8	246	42.3	31.3	26.4
350-499	34	55.9	35.3	8.8	379	38.8	36.9	24.3	413	40.2	36.8	23.0
500-599	24	33.3	41.7	25.0	154	31.8	37.7	30.5	178	32.0	38.2	29.8
600+	38	26.3	44.7	29.0	266	22.2	44.7	33.1	304	22.7	44.7	32.6
TOTAL	137	41.6	35.8	22.6	1196	36.1	37.5	26.3	1333	36.7	37.4	26.0

7.1.4 HIV prevalence by history

7.1.4.1 History of HIV testing

In this survey, respondents were asked whether they had ever tested for HIV, and if so whether they had received the test results. Table 49 shows the responses to these. Among staff, slightly less men than women reported having tested for HIV (92.3% versus 96.9%) as well as having received test results (90.7% versus 96.3%). The proportion reporting testing and having received results decreased with age. Among prisoners, 69.6% of men and 80% of women gave a history of ever having tested for HIV and 62.4% % of the males and 71.2% of the females reported that they had received the test results.

Table 49: History of HIV testing among staff and prisoners (n = 8,919)

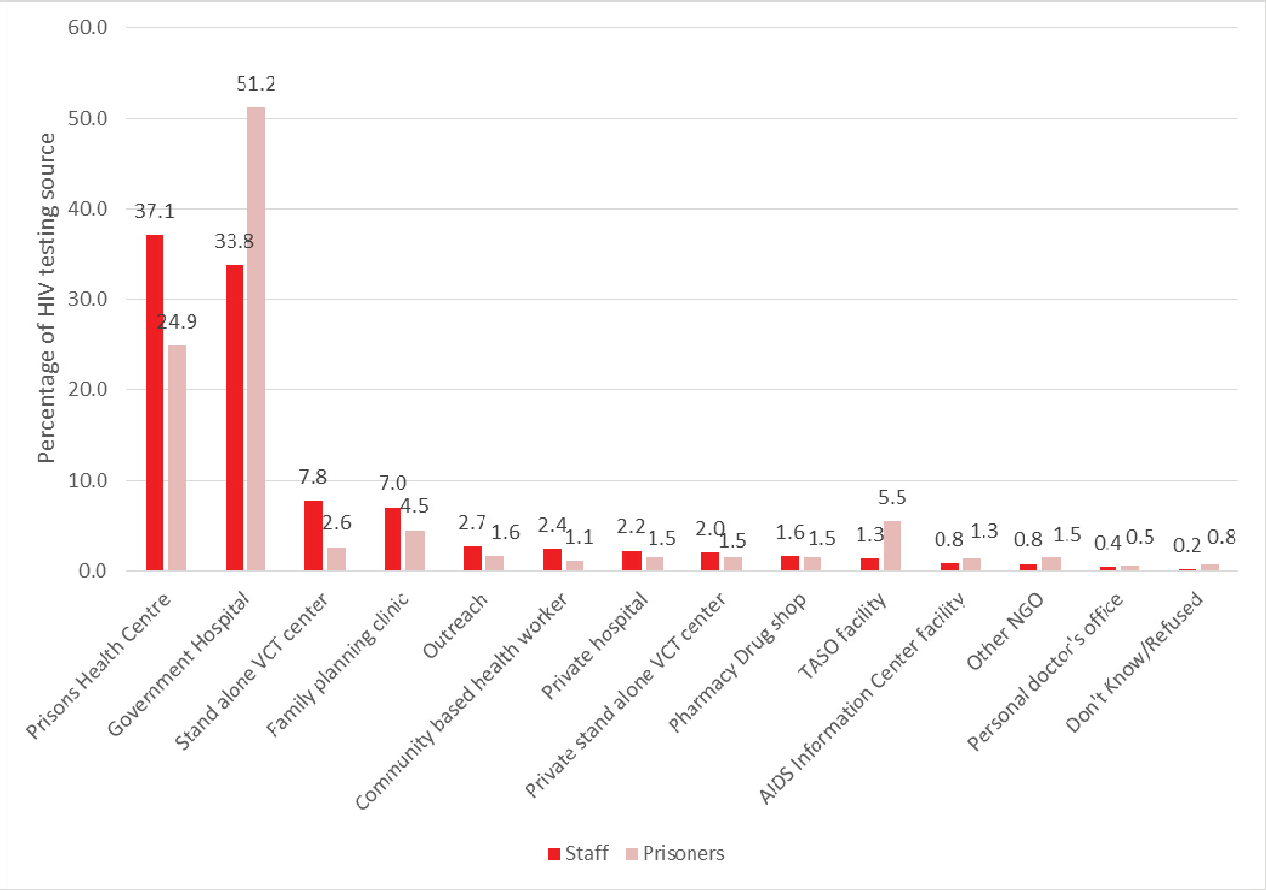
Background characteristics		Staff				Prisoners			
		Ever tested (%)	Never tested (%)	Received results (%)	Total (n)	Ever tested (%)	Never tested (%)	Received results (%)	Total (n)
Gender	Male	92.3	7.7	90.7	1067	69.6	30.4	62.4	8,353
	Female	96.9	3.1	96.3	620	80.0	20.0	71.2	566
Age group	Under 20	100.0	0.0	100.0	1	55.4	44.7	46.0	533
	20-24	100.0	0.0	100.0	47	65.2	34.8	56.7	1,982
	25-29	97.1	2.9	95.6	274	72.8	27.2	66.0	2,212
	30-34	95.9	4.1	94.9	415	72.7	27.3	66.0	1,601
	35-39	94.3	5.7	93.6	265	73.9	26.1	68.5	969
	40-44	91.1	8.9	90.7	236	74.5	25.5	68.4	709
	45-49	92.9	7.1	92.5	212	77.8	22.2	69.0	351
	50-54	88.4	11.6	85.6	146	71.0	29.0	63.6	286
	55-59	90.9	9.1	85.2	88	72.1	27.9	63.1	111
	60+	100.0	0.0	100.0	3	63.0	37.0	53.9	165
Ever Attended school	Yes	94.1	5.9	92.9	1670	75.4	24.6	69.1	6,501
	No	82.4	17.7	82.4	17	56.3	43.7	46.6	2,418
Marital status	Single	96.3	3.7	94.9	136	67.0	33.0	59.6	3,642
	Married-monogamous	94.2	5.8	93.3	1264	73.8	26.2	66.8	3,774
	Married-polygamous	91.6	8.4	88.0	167	70.6	29.4	63.0	790
	Divorced/separated	96.3	3.7	94.4	54	71.1	28.9	64.3	498
	Widowed	95.8	4.2	95.8	48	61.5	38.6	52.0	179
	Divorced & remarried	86.7	13.3	86.7	15	-	-	-	0
	Don't know	0.0	100.0	0.0	3	50.0	50.0	36.1	36
Employment	Uniformed	94.1	5.9	92.8	1600	-	-	-	-
	Civilian	96.4	3.6	95.2	84	-	-	-	-
	Not stated	0.0	100.0	0.0	3	-	-	-	-
Administrative Region	Central	95.4	4.6	93.6	109	68.4	31.6	63.3	649
	East-central	83.6	16.4	83.6	55	60.6	39.4	50.9	236
	Eastern	89.9	10.1	87.6	129	59.7	40.4	50.9	627

	Kampala extra	95.6	4.4	94.2	293	80.7	19.3	73.9	1,899
	Mid central	93.2	6.8	90.9	44	61.4	38.7	55.2	163
	Mid-western	99.0	1.0	97.9	97	64.9	35.1	57.9	553
	Mid-eastern	91.9	8.1	89.5	86	70.1	29.9	59.8	448
	North Eastern	93.1	6.9	93.1	58	44.6	55.4	35.3	184
	North western	94.2	5.8	92.3	104	61.2	38.8	51.2	418
	Northern	92.9	7.1	92.4	184	77.8	22.2	71.1	843
	South eastern	95.4	4.6	94.7	151	76.1	23.9	68.5	578
	South western	95.4	4.6	94.4	197	66.5	33.5	60.5	1154
	Southern	96.0	4.1	94.6	74	70.0	30.1	62.0	569
	Western	92.5	7.6	91.5	106	66.9	33.1	60.0	598
Total		**94.0**	**6.0**	**92.8**	**1687**	**70.2**	**29.8**	**63.0**	**8,919**

7.1.4.2 Sources of HIV testing among staff and prisoners

Respondents in this study provided information on where they had received HIV testing services in the past. Figure 17 shows locations where UPS staff and prisoners received HIV testing services in the past. Nearly a third (37.1%) of staff were reportedly tested at Prison Health Centres and 33.8% at government hospitals. Over half (51.2%) of prisoners were tested through Government hospitals and 24.9% through Prison Health Centres.

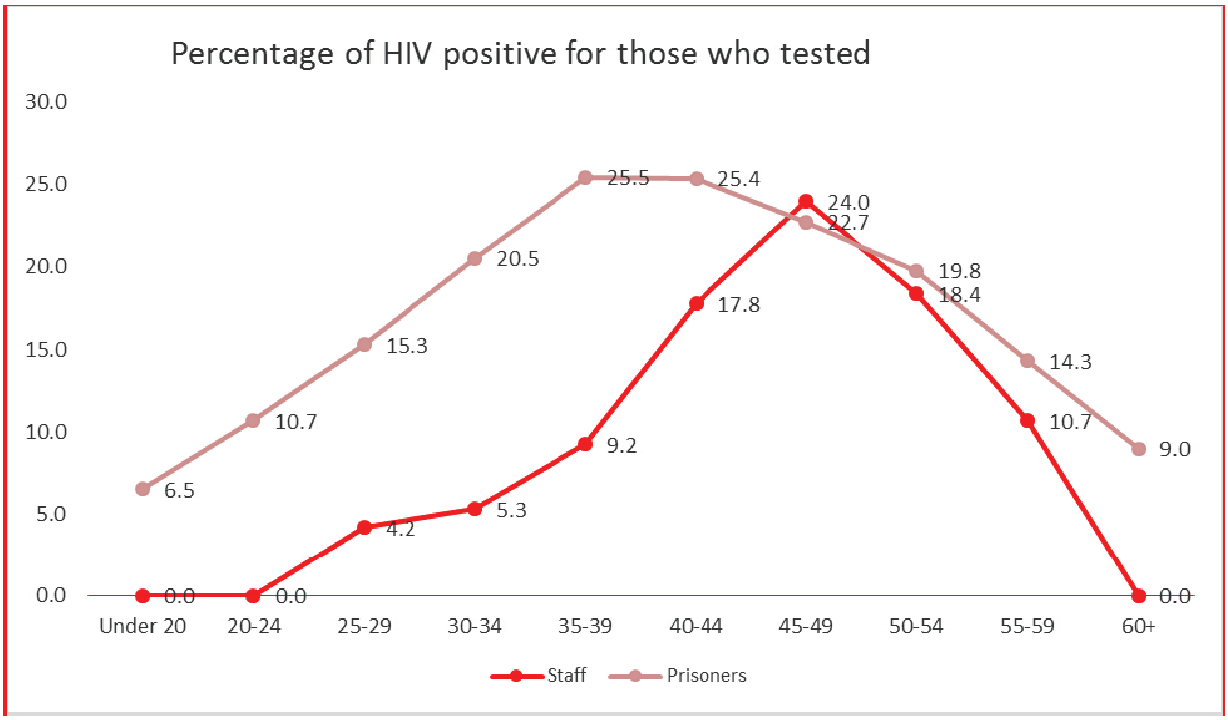
Figure 17: Source of HIV testing services for staff and prisoners by history (n = 9,846)



7.1.4.3 HIV prevalence by self-report

Respondents were also asked what their HIV test results were. Most staff, 98.7% (1,566 out of 1,586) and prisoners 89.6% (5,616 out of 6,265) reported having received their HIV test results. Out of these, 184 (11.7%) staff and 936 (16.7%) prisoners reported being HIV positive. Among staff, HIV prevalence by self-report (11.7%) was close to that determined by laboratory tests in this study (12%). Among prisoners prevalence by self-report (16.7%) was higher than determined by laboratory tests (15%).

Figure 18: HIV prevalence by History among Staff and prisoners (n = 1,566)



Generally, HIV prevalence by history was higher among female than male staff of all age groups except 45-49 years where prevalence in men surpassed that among women. Prevalence peaked in staff at 25.5%, in those aged 35 – 39 years; among prisoners, it peaked at 24% in those aged 45-49 years (figure 18).

Table 50 compares self-reported HIV status and the survey (i.e. laboratory) results. Among prisoners with self-reported history of HIV, 79.7% were confirmed to be positive and 15.7% among those who had reported negative results were confirmed positive. For staff, 85.3% who tested positive had reported a positive HIV sero- status, while 11% who reported a negative status were found to be positive during the survey.

Table 50: Percentage distribution of HIV sero-status by self-reported HIV status

Self-reported HIV status	HIV positive or Negative self-reported survey results			
	Staff (n = 1,566)		Prisoners (n = 5,616)	
	HIV positive (%)	HIV-Negative (%)	HIV positive (%)	HIV-Negative (%)
Positive	85.3	1.0	79.7	4.9
Negative	10.9	98.6	15.7	91.3
In-determinant	3.8	0.4	4.5	3.4
Don't know	0.0	0.0	0.0	0.3
Refused	0.0	0.0	0.1	0.1
Total (self-reported)	**184 (11.7%)**	**1,382 (88.2%)**	**936 (16.7%)**	**4,680 (83.3%)**

7.2 Circumcision

Table 51 portrays male circumcision status of prison staff and prisoners. Prisoners had higher circumcision coverage than staff (49.8% versus 45.7%). Among staff, the circumcision coverage was highest (77.8%) in the group aged 20 – 24 years and decreased progressively with age thereafter. Among prisoners, coverage was lowest in those less than 20 years, rose to its highest among the group aged 25 – 29 years, then declined progressively with age thereafter. More participants (whether staff or prisoners) who had ever attended school were circumcised than those who had not attended school. Over half of staff working in Kampala Extra, South East, South West and Southern Regions were circumcised. Overhalfof prisoners incarcerated in Kampala Extra, Western and South East Regions were circumcised.

Among the two staff with recent HIV infection only one was circumcised while only 17% of the prisoners with recent HIV infection were circumcised.

Table 51: Circumcision coverage among male staff and prisoners by sex, age group and Region

Background characteristics		Staff (n = 1,067)		Prisoners (n = 8,353)	
		%	N	%	N
Age group in years	Under 20	0	0	43.7	499
	20-24	77.8	18	46.4	1871
	25-29	60.7	145	47.8	2110
	30-34	59.6	272	46.9	1508
	35-39	48.5	169	44.6	913
	40-44	35.4	147	48.3	644
	45-49	31.9	160	52.8	316
	50-54	28.3	99	43.1	246
	55+	20.1	57	43.4	99
Ever Attended school	Yes	45.9	1054	51.4	6,115
	No	30.8	13	45.5	2,238
Religion	Catholic	40.1	456	40.4	330
	Protestant	45.5	470	41.3	2290
	Born again	54.6	77	51.4	902
	Muslim	97.3	37	85.2	421
	Others	52.2	23	47.3	398
	Not stated	25.0	4	58.3	12
Marital status	Single	62.1	58	48.2	3,445
	Married-monogamous	45.6	845	50.9	3,555
	Married-polygamous	39.0	136	54.0	758
	Divorced/separated	54.5	11	49.8	440
	Widowed	60.0	5	45.1	122
	Divorced & remarried	55.6	9		
	Don't know	0.0	3	33.3	33
Administrative Region	Central	42.9	77	48.7	616
	East-central	46.3	41	48.7	230
	Eastern	35.2	71	72.1	603
	Kampala extra	56.6	173	56.5	1,735
	Mid central	35.5	31	28.0	157
	Mid-western	45.2	62	47.2	525
	Mid-eastern	17.0	47	36.0	425
	North Eastern	30.6	49	36.4	176
	North western	42.4	66	39.1	386
	Northern	38.7	111	41.3	763
	South eastern	53.4	88	65.2	554
	South western	51.5	130	39.3	1,059
	Southern	52.6	38	43.8	548
	Western	55.4	83	59.2	576
Total		**45.7**	**1,067**	**49.8**	**8,353**

Figure 19 shows circumcision coverage among staff and prisoners by age group, while figure 20 shows the age at which participants were circumcised. Across the different age bands, there were more prisoners with circumcision history than staff with the exception of the age bracket of 20-24 (staff 77.8% and prisoners 46.4%) and 25-29 (staff 56.7% and prisoners 52.8%).
Lowest coverage among prisoners was in the group aged over 60 years followed by those below 20 (43.5%).

Circumcision coverage among both staff and prisoners tended to be high among the sexually active age groups. This is good as circumcision is known to reduce the risk of contracting HIV.

Age at circumcision: Over a third (68.9%) of staff and nearly a half (49.4%) of prisoners were circumcised when they were 20 years old and above.

Figure 19: Circumcision coverage among male prisoners (n = 8,353) and male staff (n = 1,067) by age group

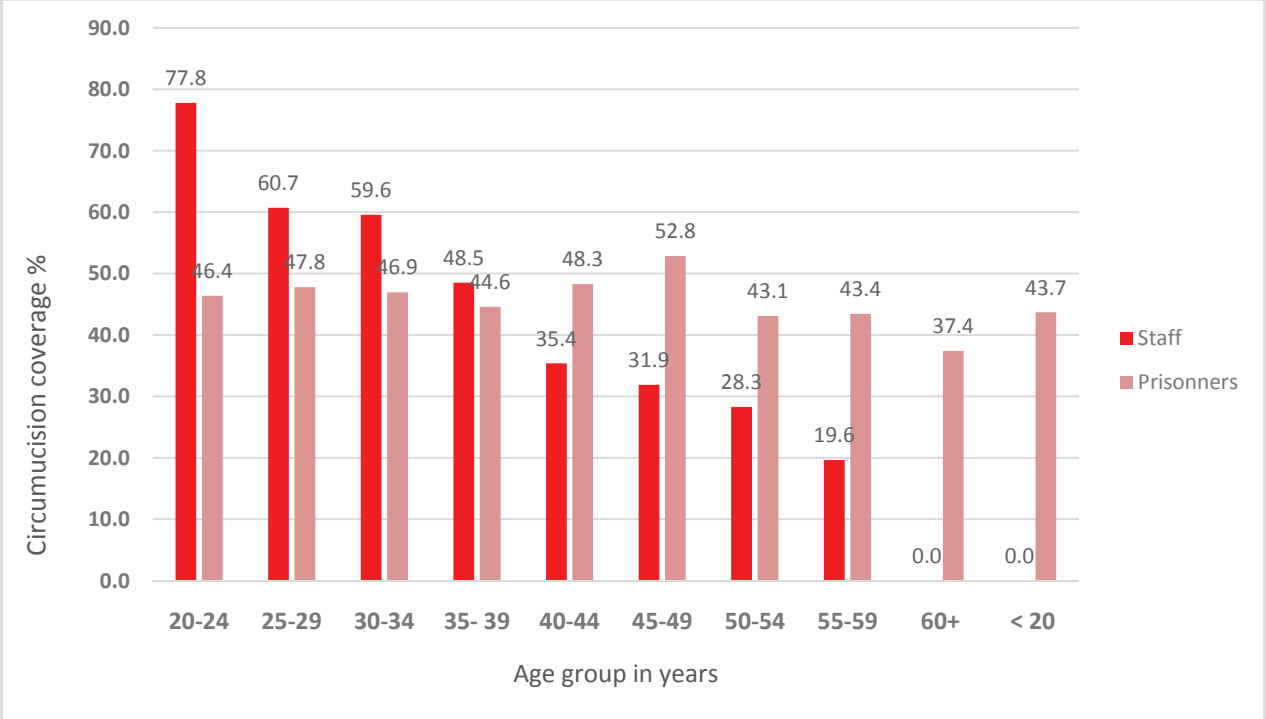
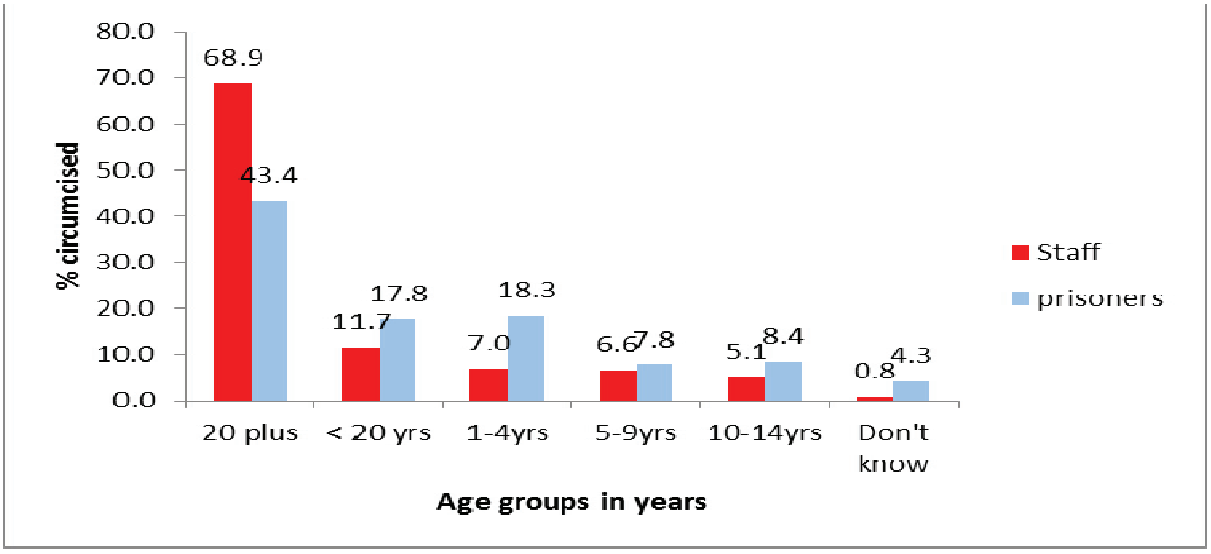


Figure 20: Circumcised staff and prisoners in % by age of prisoners



Willingness to be circumcised

A total of 403 (69.6%) out of 579 uncircumcised male staff were willing to be circumcised; while 2,339 (55.8%) out of 4,192 uncircumcised male prisoners were willing to take the service.

Chapter 08- HIV associated infections and correlates

This chapter covers prevalence of HIV associated infections and correlates among staff and prisoners. Specifically, it covers Hepatitis B virus (HBV), Herpes simplex Virus (HSV), Malaria, Syphilis and Tuberculosis (TB)

8.0 Hepatitis B Prevalence

Tables 52a and b show the prevalences of Hepatitis B core antibody positivity (indicative of past exposure to Hepatitis B virus) and among those who were HBcAb+, of Hepatitis B surface antigen positivity (HBsAg+) (indicative of chronic infection with Hepatitis B virus) among staff and prisoners by sex, age group, marital status and region, respectively. These prevalences were calculated based on proportion with positive core antibody (HBcAb) tests [for evidence of exposure to HBV} and proportion of positive surface antigen (HBSAg) testing [for chronic HBV infection} among only those who had evidence of exposure to HBV (i.e. those with positive core antibody). Assuming that all persons negative for core antibody (aHBC) would have also been negative for HBSAg (these were not tested but this is a valid assumption which underlies the survey's staged HBV testing algorithm), the overall prevalences of chronic HBV are 7.0% for prisoners (7.2% male, 3.7% female) and 6.2% for staff (7.3% male, 4.4% female).

Chronic HBV was more prevalent among male than female participants and also more prevalent among the younger age groups; Chronic HBV was most prevalent among those staff working in North Eastern region and those prisoners in East-Central region.

Table 52a: Prevalence of exposure to HBV (by core antibody) among staff and prisoners by sex, age group and region

Background characteristics		Staff (n=1686)*		Prisoners (n=8915)*	
		Positive	Total	Positive	Total
		(%)	n	(%)	n
Gender	Male	35.7	1066	56.0	8349
	Female	43.6	620	51.1	566
Age group	Under 20	100	1	45.0	533
	20-24	53.2	47	47.1	1982
	25-29	49.5	273	52.8	2211
	30-34	44.1	415	58.4	1600
	35-39	40/4	265	61.6	668
	40-44	31.8	236	64.7	708
	45-49	27.4	212	68.4	351
	50-54	30.1	146	70.3	286
	55-59	25.0	88	70.3	111
	60+	0.0	3	70.9	165
Ever Attended school	Yes	38.6	1669	54.1	6498
	No	35.3	17	59.9	2417
Type of marital status	Single	41.5	135	51.1	3639
	Married-monogamous	40.1	1264	59.0	3774
	Married-polygamous	29.9	167	61.1	790
	Divorced/separated	37.0	54	56.0	498
	Widowed	27.1	48	55.6	178
	Divorced & remarried	20.0	15		
	Don't know	33.3	3	58.3	36
Region of work	Central	45.0	109	47.3	649
	East-central	54.6	55	47.5	236
	Eastern	43.4	129	54.8	626
	Kampala extra	38.6	293	51.6	1898
	Mid central	50.0	44	36.8	163
	Mid-western	37.1	97	61.1	553
	Mid-eastern	23.3	86	84.6	448
	North eastern	27.6	58	87.0	184
	North western	20.2	104	79.0	418
	Northern	25.5	184	82.3	843
	South eastern	35.1	151	63.5	578
	South western	57.4	197	32.6	1154
	Southern	44.6	74	57.0	568
	Western	39.1	105	46.1	597
	All	**38.6**	**1686**	**55.7**	**8915**

*excludes those with missing data

Table 52b: Prevalence of chronic HBV (HBsAg positive) among staff and prisoners with evidence of past exposure to HBV (HBcAb positive)

Background characteristics		Staff (n = 1034)*		Prisoners (n= 4960)*	
		Positive (%)	N	Positive (%)	N
Gender	Male	11.4	684	12.9	4671
	Female	7.7	350	7.3	289
Age group	Under 20	---	0	16.3	240
	20-24	13.6	22	13.9	931
	25-29	11.6	138	16.3	1167
	30-34	10.8	232	12.7	935
	35-39	12.1	157	11.9	596
	40-44	11.2	161	8.6	456
	45-49	9.1	154	7.5	240
	50-54	5.9	102	6.5	201
	55-59	6.2	65	5.1	78
	60+	0.0	3	1.7	116
Ever Attended school	Yes	10.3	1023	12.8	3514
	No	0.0	11	12.1	1446
Marital status	Single	13.9	79	14.1	1856
	Married-monogamous	10.1	755	12.0	2222
	Married-polygamous -	8.6	117	11.4	483
	Divorced/separated	8.8	34	11.8	279
	Widowed	8.6	35	6.1	99
	Divorced & remarried	8.3	12		
	Don't know	50.0	2	9.5	21
Administrative Region	Central	10.0	60	15.0	307
	East-central	12.0	25	16.1	112
	Eastern	11.0	73	9.0	343
	Kampala extra	8.3	180	10.8	980
	Mid central	13.6	22	13.3	60
	Mid-western	8.2	61	13.6	338
	Mid-eastern	6.3	64	13.6	374
	North eastern	16.7	42	15.6	160
	North western	12.1	83	14.9	330
	Northern	10.2	137	13.7	694
	South eastern	9.2	98	10.9	367
	South western	8.3	84	10.1	376
	Southern	17.1	41	13.9	244
	Western	10.9	64	13.5	275
Total		**10.2**	**1034**	**12.6**	**4960**

*excludes those with missing data

Table 53: Prevalence of chronic HBV (HBsAg positive) among all respondents by testing algorithm

Background characteristics		Staff (n=1684)*		Prisoners (n=8910)*	
		Positive	Total	Positive	Total
		(%)	n	(%)	n
Gender	Male	7.3	1066	7.2	8344
	Female	4.4	620	3.7	566
Age group	Under 20	0	1	7.3	533
	20-24	6.4	47	6.5	1980
	25-29	5.9	273	8.6	2211
	30-34	6.0	415	7.4	1600
	35-39	7.2	264	7.3	968
	40-44	7.6	236	5.5	706
	45-49	6.6	212	5.1	351
	50-54	30.1	146	4.6	286
	55-59	25.0	88	3.6	111
	60+	0.0	3	1.2	164
Ever Attended school	Yes	6.3	1667	6.9	6494
	No	0	15	7.2	2416
Type of marital status	Single	8.2	135	7.2	3637
	Married-monogamous	6.2	1203	7.1	3771
	Married-polygamous	6.0	161	7.0	790
	Divorced/separated	5.6	54	6.6	498
	Widowed	6.3	48	3.4	178
	Divorced & remarried	20.0	15		
	Don't know	33.3	3	5.6	36
Region of work	Central	5.5	109	7.1	649
	East-central	5.5	55	7.6	236
	Eastern	6.2	129	5.0	626
	Kampala extra	5.1	293	5.6	1898
	Mid central	6.80	44	4.9	163
	Mid-western	5.2	97	8.3	553
	Mid-eastern	4.8	84	11.5	443
	North eastern	12.1	58	13.6	184
	North western	9.6	104	11.7	418
	Northern	7.6	184	11.3	843
	South eastern	6.0	151	6.9	578
	South western	3.64	197	3.3	1154
	Southern	9.5	74	6.0	568
	Western	6.7	105	6.2	597
	All	6.2	1686	7.0	8910

*excludes those with missing data

8.1 Herpes Simplex Virus (HSV) Prevalence

Table 54 shows herpes simplex virus prevalence among staff and prisoners by sex, age group and Region. The observed prevalence of herpes simplex virus (HSV) among staff was 50% while that among prisoners was 44.3%. HSV was less prevalent among men than women in both staff (36.7% vs 63.3%) and prisoners (42.6% vs. 69.1%) populations. In both staff and prisoners, HSV prevalence was higher among the widowed and separated. It also increased with age group to maximum 79.9% and 76.6% in staff and prisoners respectively who were aged 55-59 years. By Region, the highest HSV prevalence was observed among staff working in Mid-eastern (66.3%), Northern (63.0%) and Eastern (59.7%) Regions; while highest prevalence was observed in prisoners in Southern (51.0%), Northern (49.7%) and Kampala Extra (48.4%) Regions.

Table 54: Prevalence of Herpes simplex virus among staff and prisoners

Background characteristics		Staff (n = 1,687)		Prisoners (n = 8,919)	
		Positive (%)	N	Positive (%)	N
Gender	Male	42.2	1,067	42.6	8,353
	Female	63.4	620	69.1	566
Age group	Under 20	0.0	1	17.8	533
	20-24	21.3	47	27.8	1,982
	25-29	30.3	274	40.1	2,212
	30-34	35.4	415	49.8	1,601
	35-39	51.7	265	56.6	969
	40-44	58.5	236	61.2	709
	45-49	67.9	212	67.0	351
	50-54	76.7	146	70.6	286
	55-59	79.6	88	76.6	111
	60+	33.3	3	69.1	165
Ever Attended school	Yes	49.8	1,670	43.5	6,501
	No	73.3	17	46.3	2,418
Marital status	Single	51.5	136	35.0	3,642
	Married-monogamous	45.2	1,264	49.9	3,774
	Married-polygamous	67.7	167	52.3	790
	Divorced/separated	70.4	54	53.2	498
	Widowed	83.3	48	55.3	179
	Divorced & remarried	66.7	15		
	Don't know	33.3	3	38.9	36
Employment	Uniformed	49.9	1,600		
	Civilian	52.4	84		
	Not stated	33.3	3		
Administrative Region	Central	50.5	109	45.2	649
	East-central	41.8	55	44.5	236
	Eastern	59.7	129	41.2	627
	Kampala extra	39.3	293	48.4	1,899
	Mid central	50.1	44	47.2	163
	Mid-western	53.6	97	42.1	553
	Mid-eastern	66.3	86	40.4	448
	North Eastern	39.7	58	28.8	184
	North western	46.2	104	36.4	418
	Northern	63.0	184	49.7	843
	South eastern	53.0	151	41.5	578
	South western	46.2	197	40.8	1,154
	Southern	48.7	74	51.0	569
	Western	41.5	106	42.8	598
Total		**50.0**	**1,687**	**44.3**	**8,919**

8.3 Malaria Prevalence

Table 55 represents malaria prevalence among staff and prisoners by sex, age group and Region. The prevalence of malaria was slightly lower among staff (4.0%) than prisoners (4.6%); more prevalent among men than women staff (4.5% versus to 3.1%); however, among prisoners it was more prevalent among men than women (4.7% versus 2.6%). Among staff, the prevalence was highest in those in North West (11.5%) followed by those in Mid-West (7.2%) and North Eastern (6.9%). For prisoners it was highest among those in North West (20.6%) followed by Central (10.8%) and East Central 8.5%.

Table 55: Malaria Prevalence among staff and prisoners by sex, age group, education, employment, marital status and Region

Background characteristics		Staff (n = 1,687)		Prisoners (n = 8,919)	
		Positive (%)	N	Positive (%)	N
Gender	Male	4.5	1,067	4.7	8,353
	Female	3.1	620	2.6	566
Age group	Under 20	0.0	1	7.9	533
	20-24	8.5	47	6.3	1,982
	25-29	2.2	274	4.4	2,212
	30-34	5.3	415	3.7	1,601
	35-39	4.2	265	4.2	969
	40-44	0.9	236	2.7	709
	45-49	6.2	212	3.4	351
	50-54	4.1	146	4.9	286
	55-59	3.4	88	0.0	111
	60+	0.0	3	1.2	165
Ever Attended school	Yes	4.0	1,670	4.7	6,501
	No	0.0	17	4.5	2,418
Employment	Uniformed	4.1	1,600		
	Civilian	1.2	84		
	Not stated	0.0	3		
Administrative Region	Central	6.4	109	10.8	649
	East-central	3.6	55	8.5	236
	Eastern	3.1	129	4.0	627
	Kampala extra	3.4	293	1.3	1,899
	Mid central	6.8	44	7.4	163
	Mid-western	7.2	97	7.1	553
	Mid-eastern	2.3	86	5.1	448
	North Eastern	6.9	58	6.5	184
	North western	11.5	104	20.6	418
	Northern	1.6	184	2.3	843
	South eastern	4.0	151	3.1	578
	South western	1.0	197	1.6	1,154
	Southern	0.0	74	2.3	569
	Western	4.7	106	5.0	598
Total		**4.0**	**1,687**	**4.6**	**8,919**

8.4 Syphilis Prevalence

Table 56 shows the observed syphilis prevalence among staff and prisoners by sex, age group and Region. Syphilis was less prevalent among staff (1.2 %) than prisoners (4.2%); thrice more prevalent among male than female staff but less prevalent among male than female prisoners. By Region, the highest prevalence was seen in the Southern Region: 2.7% of the staff and 6.9% of the prisoners were positive in that region. Furthermore, the prevalence was observed to be highest among prisoners who are married in polygamous union followed by those divorced/separated.

Table 56: Syphilis prevalence among staff and prisoners by sex, age group and Region

Background characteristics		Staff (n = 1,687)		Prisoners (n = 8,919)	
		Positive (%)	Total	Positive (%)	Total
Gender	Male	1.6	1,067	4.1	8,353
	Female	0.5	620	6.2	566
Age group	Under 20	0.0	1	3.4	533
	20-24	0.0	47	4.6	1,982
	25-29	0.7	274	4.4	2,212
	30-34	1.2	415	4.5	1,601
	35-39	0.8	265	4.3	969
	40-44	1.7	236	2.3	709
	45-49	1.9	212	2.9	351
	50-54	0.7	146	5.9	286
	55-59	2.3	88	0.9	111
	60+	0.0	3	5.4	165
Ever Attended school	Yes	1.2	1,670	3.9	6,501
	No	0.0	17	4.9	2,418
Marital status	Single	0.0	136	4.0	3,642
	Married-monogamous	1.4	1,264	4.0	3,774
	Married-polygamous	1.2	167	5.7	790
	Divorced/separated	0.0	54	5.0	498
	Widowed	0.0	48	4.5	179
	Divorced & remarried	0.0	15	0.0	0
	Don't know	0.0	3	2.8	36
Employment	Uniformed	1.3	1,600		
	Civilian	0.0	84		
	Not stated	0.0	3		
Administrative Region	Central	2.8	109	6.5	649
	East-central	1.8	55	3.8	236
	Eastern	1.6	129	1.3	627
	Kampala extra	1.4	293	3.6	1,899
	Mid central	0.0	44	1.8	163
	Mid-western	0.0	97	2.9	553
	Mid-eastern	1.2	86	2.2	448
	North Eastern	0.0	58	5.4	184
	North western	1.0	104	4.3	418
	Northern	1.1	184	3.7	843
	South eastern	2.0	151	3.6	578
	South western	0.5	197	6.4	1,154
	Southern	2.7	74	6.9	569
	Western	0.0	106	4.2	598
Total		**1.2**	**1,687**	**4.2**	**8,919**

8.5 Prevalence of Tuberculosis (TB)

TB knowledge testing, and history

Out of 1,687 staff who participated in the survey, a total of 1,156 (68.5%) had ever had a cough while working in the prison with 381 not remembering when this cough occurred.

A total of 302 of 1,687 (17.9%) staff had ever been tested for TB while working in a prison of which fifty-six (18.5%) had TB. Among the 131 staff who reported have ever had TB, 77 were tested within the prison and the rest were tested outside the prison health services.

Among prisoners, 4,933 (55.3%) reported having ever had a cough regardless of duration while in prison, and among these, 2,604 out of 8,919 prisoners (29.2%) had ever been tested for TB. Among those having a two week or more cough while in a prison, 31.7% (1,259/3,971) had ever been tested for TB. A total of 1,280 (14.4%) reported having had a previous TB diagnosis. However only 868 (67.9%) were tested for TB from within the prison (Table 57).

Note: the current WHO recommended strategy for determining the prevalence of TB involves use of a combined symptom and CXR screening strategy. It may therefore be advisable in future to repeat this using the recommended strategy.

Table 57: Prevalence of cough and chronic cough among prisoners and prisons staff

Background characteristics		Staff (n = 1,687)					Prisoners (n = 8,919)				
		Ever had cough		Cough 2 wks.			Ever had cough		Cough 2 wks.		Total
		n	%	n	%	Total	n	%	n	%	N
Gender	Male	732	68.6	188	17.6	1,067	4,677	56.0	3,778	45.2	8,353
	Female	424	68.4	106	17.1	620	256	45.2	193	34.1	566
Age group	Under 20	0	0.0	0	0.0	1	273	51.2	251	47.1	533
	20-24	30	63.8	4	8.5	47	1,095	55.2	912	46.0	1,982
	25-29	187	68.2	40	14.6	274	1,287	58.2	1,031	46.6	2,212
	30-34	276	66.5	63	15.2	415	909	56.8	723	45.2	1,601
	35-39	200	75.5	51	19.2	265	532	54.9	386	39.8	969
	40-44	168	71.2	52	22.0	236	403	56.8	298	42.0	709
	45-49	139	65.6	41	19.3	212	188	53.6	139	39.6	351
	50-54	92	63.0	26	17.8	146	134	46.9	132	46.2	286
	55-59	61	69.3	15	17.0	88	54	48.6	41	36.9	111
	60+	3	100.0	2	66.7	3	58	35.2	58	35.2	165
Ever been tested for TB while in prison		Staff					Prisoners				
Ever Attended school	Yes	1,147	68.7	290	17.4	1670	3,833	59.0	2,914	44.8	6,501
	No	9	52.9	4	23.5	17	1,100	45.5	1,057	43.7	2,418
Marital status	Single	98	72.1	28	20.6	136	2,042	56.1	1,711	47.0	3,642
	Married-monogamous	861	68.1	206	16.3	1,264	2,066	54.7	1,560	41.3	3,774
	Married Polygamous	115	68.9	34	20.4	167	450	57.0	376	47.6	790
	Divorced/separated	38	70.4	9	16.7	54	272	54.6	237	47.6	498
	Widowed	32	66.7	13	27.1	48	87	48.6	72	40.2	179
	Divorced & remarried	12	80.0	4	26.7	15					
	Don't know	0	0.0	0	0.0	3	16	44.4	15	41.7	36
Administrative Region	Central	79	72.5	20	18.3	109	355	54.7	312	48.1	649
	East-central	37	67.3	8	14.5	55	114	48.3	119	50.4	236
	Eastern	84	65.1	31	24.0	129	281	44.8	266	42.4	627
	Kampala extra	209	71.3	55	18.8	293	1,083	57.0	917	48.3	1,899
	Mid central	32	72.7	8	18.2	44	105	64.4	77	47.2	163
	Mid-western	69	71.1	18	18.6	97	290	52.4	219	39.6	553
	Mid-eastern	59	68.6	15	17.4	86	262	58.5	188	42.0	448
	North Eastern	39	67.2	9	15.5	58	87	47.3	72	39.1	184
	North western	61	58.7	14	13.5	104	191	45.7	165	39.5	418
	Northern	124	67.4	40	21.7	184	576	68.3	446	52.9	843
	South eastern	96	63.6	18	11.9	151	240	41.5	217	37.5	578
	South western	141	71.6	36	18.3	197	682	59.1	454	39.3	1,154
	Southern	45	60.8	7	9.5	74	306	53.8	252	44.3	569
	Western	81	76.4	15	14.2	106	361	60.4	267	44.6	598
Total		**1,156**	**68.5**	**294**	**17.4**	**1,687**	**4,933**	**55.3**	**3,971**	**44.5**	**8,919**

Background characteristics	Staff (n = 1,687)			Prisoners (n = 8,919)		
	Ever had cough	Cough 2 wks.		Ever had cough	Cough 2 wks.	Total
Ever tested for TB	Staff	n	%	Prisoners	n	%
		302	17.9		2604	29.2
Ever had TB		77	58.8		1280	14.4

Appendices

Table 58: Participants originally sampled for the UPS Sero-Behavioural Survey

CODE	Region	District	Station	Prisoners			Staff			Total
				Male	Female	**Total**	Male	Female	**Total**	
001	Central	Luwero	Butuntumura	60	6	66		6	6	72
002	Central	Luwero	Nyimbwa		6	6			-	6
003	Central	Mpigi	Kanoni	60	6	66	10		10	76
004	Central	Mpigi	Nkozi	60		60		5	5	65
005	Central	Nakasongola	Nakasongola	180	12	192	20	12	32	224
006	Central	Wakiso	Buwambo	60		60	9		9	69
007	Central	Wakiso	Kasangati	60	12	72	10	6	16	88
008	Central	Wakiso	Kitalya	120		120	20		20	140
009	Central	Wakiso	Muduuma	60		60	6	3	9	69
010	Central	Wakiso	Sentema	60		60	10	6	16	76
Central				720	42	762	85	38	123	885
011	East-central	Mukono	Bugungu YO	60		60	10	6	16	76
012	East-central	Mukono	Bugungu YP	60		60	20	6	26	86
013	East-central	Mukono	Kauga	60	6	66	10	6	16	82
014	East-central	Mukono	Nakisunga	57		57	10		10	67
East Central				237	6	243	50	18	68	311
015	Eastern	Busia	Masafu	60		60		6	6	66
016	Eastern	Kapchorwa	Kapchorwa	60		60	10	6	16	76
017	Eastern	Kapchorwa	Ngenge	58		58			-	58
018	Eastern	Mbale	Mbale(M)	240		240	30	6	36	276
019	Eastern	Mbale	Mbale(W)		12	12		18	18	30
020	Eastern	Pallisa	Kamuge	60		60	10	6	16	76
021	Eastern	Sironko	Mutufu	60		60	10	5	15	75
022	Eastern	Tororo	Tororo	120	12	132	20	24	44	176
Eastern				658	24	682	80	71	151	833
023	Kampala extra	Kampala	B/Security			-	50	24	74	74
024	Kampala extra	Kampala	Kampala Remand	360		360	30	12	42	402
025	Kampala extra	Kampala	Kigo	360		360	40	12	52	412
026	Kampala extra	Kampala	Kigo(W)		24	24		12	12	36
027	Kampala extra	Kampala	Luzira(W)		156	156		48	48	204
028	Kampala extra	Kampala	Murchison Bay	420		420	60	12	72	492

029	Kampala extra	Kampala	Murchison Bay Hospital			-	10	42	52	52
030	Kampala extra	Kampala	Upper	840		840	80	6	86	926
Kampala Extra				1,980	180	2,160	270	168	438	2,598
031	Mid central	Kibaale	Kagadi	60		60	10	5	15	75
032	Mid central	Mubende	Kaweri		6	6	10	6	16	22
033	Mid central	Mubende	Kitwe	45		45	7		7	52
034	Mid central	Mubende	Muinaina	60		60	10	6	16	76
Mid Central				165	6	171	37	17	54	225
035	Mid-western	Buliisa	Bisso	30		30			-	30
036	Mid-western	Buliisa	Buliisa	17		17	5		5	22
037	Mid-western	Hoima	Bugambe	11		11			-	11
038	Mid-western	Hoima	Hoima	60	6	66	10	6	16	82
039	Mid-western	Kiboga	Kiboga	60		60	10	6	16	76
040	Mid-western	Kiboga	Ntwetwe	17		17		3	3	20
041	Mid-western	Masindi	Isimba	120		120	20		20	140
042	Mid-western	Masindi	Masindi(M)	240		240	30	12	42	282
043	Mid-western	Masindi	Masindi(W)		24	24		12	12	36
Mid-Western				555	30	585	75	39	114	699
044	Mid-eastern	Amolatar	Kioga	60		60	10	5	15	75
045	Mid-eastern	Kaberamaido	Kaberamaido	59		59		5	5	64
046	Mid-eastern	Katakwi	Katakwi	60		60		6	6	66
047	Mid-eastern	Kumi	Bukedea	60		60		6	6	66
048	Mid-eastern	Kumi	Kumi	60	6	66	10	6	16	82
049	Mid-eastern	Soroti	Serere		4	4	10	5	15	19
050	Mid-eastern	Soroti	Soroti	120		120	30	6	36	156
051	Mid-eastern	Soroti	Nakatunya	42		42			-	42
052	Mid-eastern	Soroti	Soroti (W)		18	18		12	12	30
Mid-Eastern				461	28	489	60	51	111	600
053	North Easternern	Abim	Amita	60		60	10		10	70
054	North Easternern	Kotido	Kotido		6	6	20		20	26
055	North Easternern	Moroto	Moroto	60	6	66	10	6	16	82
056	North Easternern	Nakapiripirit	Namalu	60		60	20	6	26	86
North Eastern				180	12	192	60	12	72	264
057	North western	Adjumani	Adjumani	60	5	65	20	6	26	91
058	North western	Adjumani	Olia	34		34			-	34
059	North western	Arua	Arua	180		180	30	6	36	216
060	North	Arua	Arua (W)		18	18		12	12	30

	western									
061	North western	Arua	Gilgil	31		31	10		10	41
062	North western	Koboko	Koboko	60	6	66		6	6	72
063	North western	Nebbi	Paidha	60	6	66	10	12	22	88
North Western				425	35	460	70	42	112	572
064	Northern	Apac	Apac	60	6	66	20	6	26	92
065	Northern	Gulu	Gulu	240		240	30	12	42	282
066	Northern	Gulu	Gulu(W)		24	24		12	12	36
067	Northern	Gulu	Patiko	120		120	20		20	140
068	Northern	Gulu	Pece	60		60	10	6	16	76
069	Northern	Kitgum	Kitgum		6	6		12	12	18
070	Northern	Lira	Erute	60		60	10	6	16	76
071	Northern	Lira	Lira	180		180	20	6	26	206
072	Northern	Lira	Lira(W)		30	30		12	12	42
073	Northern	Oyam	Loro	60		60	20	6	26	86
074	Northern	Oyam	Oyam (Anyeke)	60	6	66	10	6	16	82
075	Northern	Pader	Pader		4	4			-	4
076	Northern	Pader	Patongo		6	6	10		10	16
Northern				840	82	922	150	84	234	1,156
077	South eastern	Bugiri	Bugembe (M)		6	6		6	6	12
078	South eastern	Bugiri	Jinja(M)	240		240	40	18	58	298
079	South eastern	Bugiri	Jinja(R)	180		180	20	12	32	212
080	South eastern	Bugiri	Jinja(W)		12	12		12	12	24
081	South eastern	Iganga	Busesa		3	3			-	3
082	South eastern	Iganga	Iganga	60	6	66	10	12	22	88
083	South eastern	Kamuli	Kamuli		6	6	10	6	16	22
084	South eastern	Kamuli	Nabwigulu	33		33			-	33
085	South eastern	Mayuge	Bufulubi	60		60	20	5	25	85
South Eastern				573	33	606	100	71	171	777
086	South western	Bushenyi	Bushenyi	180		180	20	12	32	212
087	South western	Bushenyi	Bushenyi (W)		18	18		6	6	24
088	South western	Ibanda	Kiburara	120		120	20	6	26	146
089	South western	Isingiro	Isingiro	60		60	9		9	69
090	South western	Kabale	Ndorwa	60	12	72	10	6	16	88
091	South western	Kamwenge	Kamwenge	60		60		6	6	66

092	South western	Kamwenge	Nyabuhikye	60		60	10	6	16	76
093	South western	Kiruhura	Kiruhura	60	6	66			-	66
094	South western	Kisoro	Kisoro	60	3	63	10	5	15	78
095	South western	Mbarara	Kakiika	180		180	20	6	26	206
096	South western	Mbarara	Mbarara(M)	240		240	30	6	36	276
097	South western	Mbarara	Mbarara(W)		42	42		18	18	60
098	South western	Ntungamo	Ntungamo	60	12	72	10		10	82
099	South western	Rukungiri	Rukungiri	60	6	66	10	6	16	82
South Western				1,200	99	1,299	149	83	232	1,531
100	Southern	Kalangala	Kalangala	42		42			-	42
101	Southern	Lyantonde	Kabula		3	3			-	3
102	Southern	Masaka	Butenga	35		35		3	3	38
103	Southern	Masaka	Kyamulibwa	31		31		4	4	35
104	Southern	Masaka	Masaka (M)	180	18	198	30	18	48	246
105	Southern	Masaka	Masaka (Ssaza)	60		60	10	6	16	76
106	Southern	Masaka	Ndangwe	52		52			-	52
107	Southern	Rakai	Kaliisizo		5	5		5	5	10
108	Southern	Rakai	Kayanja	60		60			-	60
109	Southern	Rakai	Lwamaggwa (R)	29		29			-	29
110	Southern	Rakai	Rakai	60	5	65			-	65
111	Southern	Sembabule	Sembabule	60		60		5	5	65
Southern				609	31	640	40	41	81	721
112	Western	Kabarole	Fort Portal	240		240	20	6	26	266
113	Western	Kabarole	Fort Portal (W)		12	12		12	12	24
114	Western	Kabarole	Ruimi	120		120	30	6	36	156
115	Western	Kasese	Ibuga	120		120	20		20	140
116	Western	Kasese	Mubuku	120	12	132	10	6	16	148
117	Western	Kasese	Rukooki	50		50	10		10	60
Western				650	24	67	90	30	120	794
Total				**9,253**	**632**	**9,885**	**1,316**	**765**	**2,081**	**11,966**

Table 59: All participants invited for the UPS after replacement of non-responders

Region	Code	District	Station	Approached		
				Prisoners	Staff	Total
Central	001	Luwero	Butuntumura	79	6	85
	002	Luwero	Nyimbwa	4		4
	003	Mpigi	Kanoni	51	9	60
	004	Mpigi	Nkozi	55	5	60
	005	Nakasongola	Nakasongola	258	37	295
	006	Wakiso	Buwambo	73	12	85
	007	Wakiso	Kasangati	74	21	95
	008	Wakiso	Kitalya	142	31	173
	009	Wakiso	Muduuma	75	11	86
	010	Wakiso	Sentema	92	23	115
Sub Total				903	155	1058
East central	011	Mukono	Bugungu YO	70	21	91
	012	Mukono	Bugungu YP	68	43	111
	013	Mukono	Kauga	76	25	101
	014	Mukono	Nakisunga	62	9	71
Sub Total				276	98	374
Eastern	015	Busia	Masafu	66	7	73
	016	Kapchorwa	Kapchorwa	56	15	71
	017	Kapchorwa	Ngenge	48		48
	018	Mbale	Mbale(M)	297	37	334
	019	Mbale	Mbale(W)	12	18	30
	020	Pallisa	Kamuge	63	15	78
	021	Sironko	Mutufu	83	16	99
	022	Tororo	Tororo	192	53	245
Sub Total				817	161	978
Kampala extra	023	Kampala	B/Security		87	87
	024	Kampala	Kampala Remand	451	46	497
	025	Kampala	Kigo	524	57	581
	026	Kampala	Kigo(W)	26	12	38
	027	Kampala	Luzira(W)	192	54	246
	028	Kampala	Murchison Bay	571	92	663
	029	Kampala	MBay Hospital		65	65
	030	Kampala	Upper	1147	93	1240
Sub Total				2911	506	3417
Mid central	031	Kibaale	Kagadi	60	15	75
	032	Mubende	Kaweri	7	18	25
	033	Mubende	Kitwe	46	7	53

		034	Mubende	Muinaina	80	21	101
	Sub Total				193	61	254
Mid-Western		035	Bulisa	Bisso	24		24
		036	Bulisa	Bulisa	17	7	24
		037	Hoima	Bugambe	11		11
		038	Hoima	Hoima	70	16	86
		039	Kiboga	Kiboga	80	20	100
		040	Kiboga	Ntwetwe	17	1	18
		041	Masindi	Isimba	125	24	149
		042	Masindi	Masindi(M)	280	45	325
		043	Masindi	Masindi(W)	27	13	40
	Sub Total				651	126	777
Mid-eastern		044	Amolatar	Kioga	64	17	81
		045	Kaberamaido	Kaberamaido	61	5	66
		046	Katakwi	Katakwi	60	6	66
		047	Kumi	Bukedea	65	6	71
		048	Kumi	Kumi	71	22	93
		049	Soroti	Serere		16	16
		050	Soroti	Soroti	160	41	201
		051	Soroti	Nakatunya	44		44
		052	Soroti	Soroti (W)	19	12	31
	Sub Total				544	125	669
North eastern		053	Abim	Amita	60	10	70
		054	Kotido	Kotido	6	21	27
		055	Moroto	Moroto	62	16	78
		056	Nakapiripirit	Namalu	60	26	86
	Sub Total				188	73	261
North western		057	Adjumani	Adjumani	70	26	96
		058	Adjumani	Olia	38		38
		059	Arua	Arua	220	40	260
		060	Arua	Arua (W)	18	16	34
		061	Arua	Gilgil	35	10	45
		062	Koboko	Koboko	82	6	88
		063	Nebbi	Paidha	70	22	92
	Sub Total				533	120	653
Northern		064	Apac	Apac	50	35	85
		065	Gulu	Gulu	346	72	418
		066	Gulu	Gulu(W)	24	14	38
		067	Gulu	Patiko	140	20	160
		068	Gulu	Pece	70	20	90
		069	Kitgum	Kitgum	6	12	18
		070	Lira	Erute	78	16	94
		071	Lira	Lira	233	27	260
		072	Lira	Lira(W)	30	12	42

		073	Oyam	Loro	67	30	97
		074	Oyam	Oyam (Anyeke)	86	18	104
		075	Pader	Pader	4		4
		076	Pader	Patongo	6	10	16
	Sub Total				1140	286	1426
South eastern		077	Bugiri	Bugembe (M)	3	6	9
		078	Bugiri	Jinja(M)	318	89	407
		079	Bugiri	Jinja(R)	238	37	275
		080	Bugiri	Jinja(W)	12	15	27
		081	Iganga	Busesa	3		3
		082	Iganga	Iganga	75	22	97
		083	Kamuli	Kamuli	2	16	18
		084	Kamuli	Nabwigulu	34		34
		085	Mayuge	Bufulubi	75	24	99
	Sub Total				760	209	969
South western		086	Bushenyi	Bushenyi	230	27	257
		087	Bushenyi	Bushenyi (W)	19	6	25
		088	Ibanda	Kiburara	141	28	169
		089	Isingiro	Isingiro	76	9	85
		090	Kabale	Ndorwa	76	19	95
		091	Kamwenge	Kamwenge	68	6	74
		092	Kamwenge	Nyabuhikye	70	16	86
		093	Kiruhura	Kiruhura	71		71
		094	Kisoro	Kisoro	66	15	81
		095	Mbarara	Kakiika	210	30	240
		096	Mbarara	Mbarara(M)	302	42	344
		097	Mbarara	Mbarara(W)	47	22	69
		098	Ntungamo	Ntungamo	81	11	92
		099	Rukungiri	Rukungiri	76	17	93
	Sub Total				1533	248	1781
Southern		100	Kalangala	Kalangala	41		41
		101	Lyantonde	Kabula	0		0
		102	Masaka	Butenga	35	3	38
		103	Masaka	Kyamulibwa	35	4	39
		104	Masaka	Masaka (M)	228	50	278
		105	Masaka	Masaka (Ssaza)	68	20	88
		106	Masaka	Ndangwe	52		52
		107	Rakai	Kaliisizo	4	5	9
		108	Rakai	Kayanja	60		60
		109	Rakai	Lwamaggwa (R)	31		31
		110	Rakai	Rakai	60		60
		111	Sembabule	Sembabule	65	2	67
	Sub Total				679	84	763
Western		112	Kabarole	Fort Portal	310	29	339

	113	Kabarole	Fort Portal (W)	12	13	25
	114	Kabarole	Ruimi	137	46	183
	115	Kasese	Ibuga	75	25	100
	116	Kasese	Mubuku	154	18	172
	117	Kasese	Rukooki	56	10	66
Sub Total				744	141	885
Overall				**11872**	**2393**	**14265**

Pictures of UPS central staff, survey team and field survey operations

LABORATORY

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