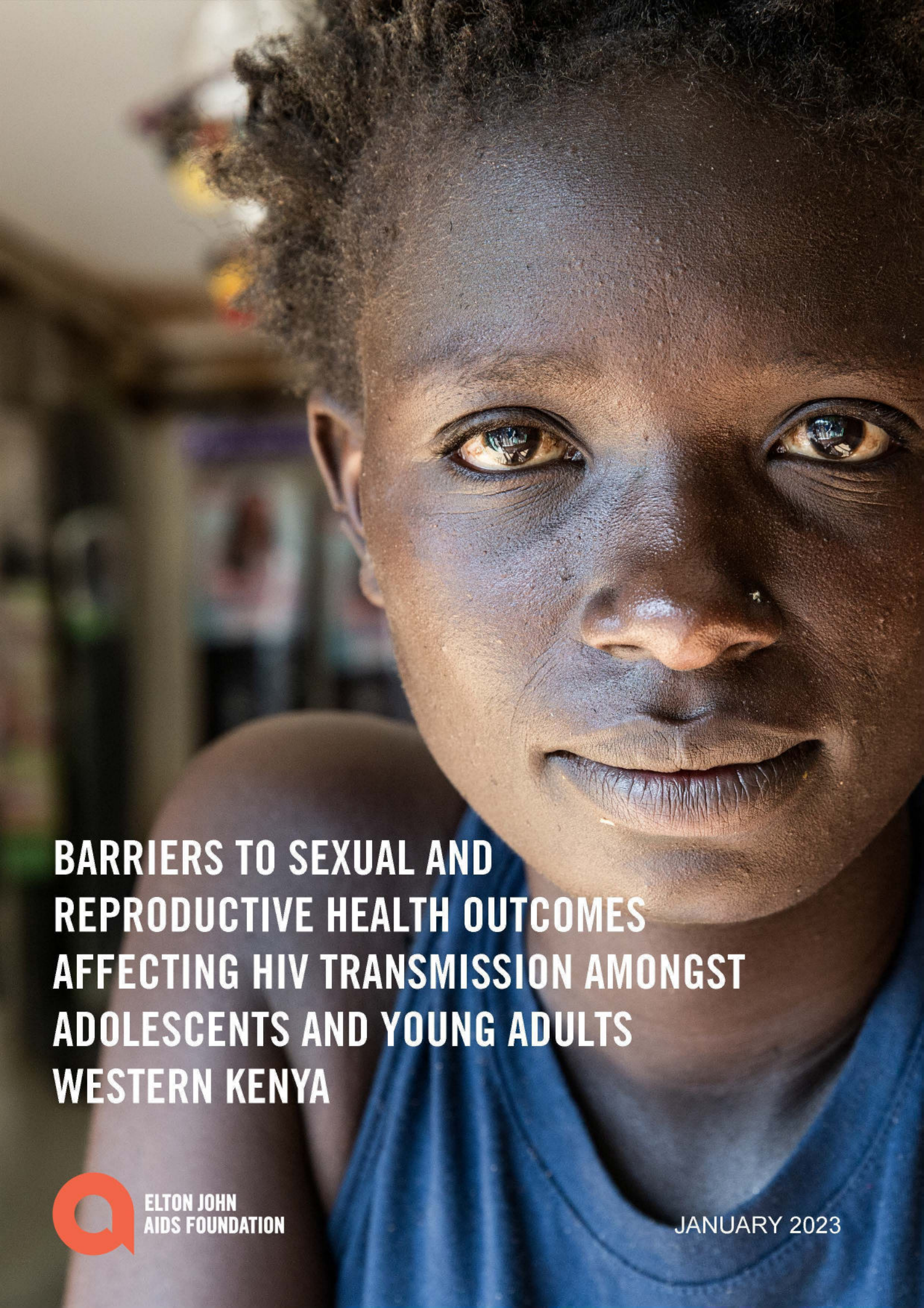


BARRIERS TO SEXUAL AND REPRODUCTIVE HEALTH OUTCOMES AFFECTING HIV TRANSMISSION AMONGST ADOLESCENTS AND YOUNG ADULTS WESTERN KENYA

ELTON JOHN
AIDS FOUNDATION

JANUARY 2023

PROJECT OVERVIEW

Kenya has the third largest HIV epidemic in the world, with an estimated 1.3 to 1.7 million people living with HIV (PLHIV) as of 2020[1]. While nearly 90% of Kenyans infected with HIV know their status[2], only 74% of those individuals were on treatment as of 2020, and only 68% had a suppressed viral load.[3] 42% of new infections are among young people aged 15-24, up from 29% in 2013.

In response to this, in 2022, the Elton John AIDS Foundation awarded a grant of $1,015,000.00 to Zipline to increase HIV prevention, testing, and treatment amongst adolescents and young people in Western Kenya through a decentralized, de-medicalized, and differentiated service delivery model. Over the span of three years, automated drones will deliver HIV commodities, including self-test kits, PrEP, ARVs, educational materials, and other related supplies to adolescents and young adults (AYAs). Once enrolled in the program, adolescents and young adults can place orders for the HIV commodities they need via community health workers, and peer educators supported by the project. Community-based organizations are trained by Zipline to promote HIV prevention and SRH empowerment, complementing the commodity linkages they facilitate.

zipline

[1] UNAIDS (2020) 'Country Fact Sheet: Kenya'.
[2] Republic of Kenya (2014). 'Kenya AIDS Indicator Survey 2012'.
[3] Ibid.

In 2022, Zipline conducted a Baseline Study to better understand the barriers to sexual and reproductive health amongst adolescents and young adults, and to inform future programming. This study aimed to describe the pre-implementation scenario from which midline and endline comparisons will be made to assess the project's impact.

The Baseline sampled a representative sample of AYAs at the county-level, meaning findings can be generalized with a high degree of confidence to the population of AYAs in Uasin Gishu County, providing insights into the relevance of this program for this population.

Findings on the grant's impact, value for money, and sustainability will be assessed and reported in the upcoming Midterm Evaluation in 2024 and in the Endline Evaluation in 2025.

RELEVANCE

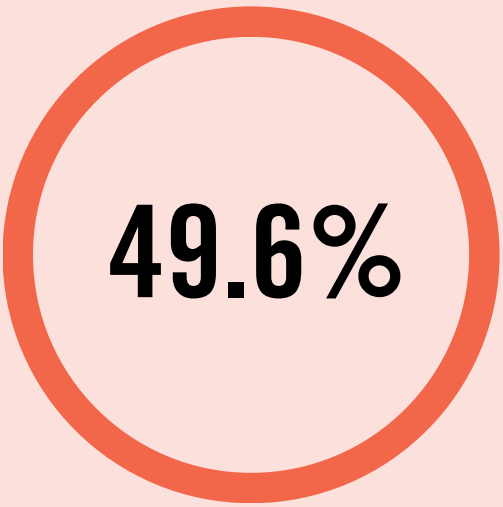
The Baseline Study highlighted the existing barriers faced by young people in Uasin Gishu in realizing their sexual and reproductive health rights, validating the need for differentiated support.

Of significant concern, the study indicated that almost half of young people[4] (49.58%) in Uasin Gishu report not using a condom the last time they had sex and significant proportions of young men and young women do not fully understand the modes of HIV transmission.

Amongst other findings, **the Baseline surfaced several gender-specific barriers affecting SRH rights realization.** Young men are less likely to support young women in asserting their sexual and reproductive health rights: young men were more likely to believe that women do not have a right to say no to unwanted sex from their partner or to negotiate condom use, even if they know their partner has an STD[5]. While 3 out of 4 young women have ever tested for HIV in target communities, only 1 out of 2 young men have ever tested for HIV, signaling they face additional barriers in testing for HIV. Young men are three times more likely than young women to have ever used IV drugs and a third (35%) more young women report trading sex than young men.

3 IN 4 YOUNG WOMEN HAVE TESTED FOR HIV IN TARGET COMMUNITIES

2 IN 4 YOUNG MEN HAVE TESTED FOR HIV IN TARGET COMMUNITIES



OF YOUNG PEOPLE IN UASIN GISHU REPORT NOT USING A CONDOM THE LAST TIME THEY HAD SEX

[4] Of those not engaged in sex work
[5] 18.2% of young men compared to 11.8% of young women; Chi-square test for association $p<0.05$

CONCLUSION

The Baseline underscored the sexual and reproductive health needs of adolescents and young adults in Uasin Gishu which the grant will seek to address to turn the tide on the HIV/ AIDS epidemic in the region.

The study raised several points to be considered in future programming and piloted tools to measure outcomes which will be tracked over time.

In response to gender-specific barriers identified, the project will seek ways to understand barriers faced by young men's to testing and ways to promote better access. In addition, the project will explore how it can address gender attitudes amongst young people which affect young women's sexual and reproductive rights empowerment and their access to HIV prevention and treatment services and commodities, including their ability to negotiate condom use, to say not unwanted sex, and to utilize available services.

The study highlighted the relevance of the project, particularly for key populations, raising the experiences of young people who use drugs and young people who trade sex for consideration in programming. In the case of people who use drugs, by Baseline, a higher proportion preferred receiving HIV testing services from EJAF supported facilities than from other facilities. Similarly, gaps in sex worker utilization of HIV services reinforce the likely role of stigma and discrimination in suppressing service uptake amongst high-risk groups. The project is exploring ways to address these gaps through future programming to promote sustained service uptake by these key populations.

Findings on the grant's impact, value for money, and sustainability will be assessed and reported in the upcoming Midterm Evaluation in 2024 and in the Endline Evaluation in 2025.

THE PROGRAMME AIMS TO SUPPORT:

14,500

young people to routinely test for HIV.

8,000

at risk adolescents to start PrEP.

1,000

adolescents with HIV to initiate ART.

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Barriers to sexual and reproductive health outcomes affecting HIV transmission amongst adolescents and young adults Western Kenya

Mercy Chepkemoi [1], Pedro Kremer [1], Tariq Omarshah [2]

[1]-Global Health Impact and M&E Unit – Zipline
[2]-Monitoring, Evaluation, and Learning Lead – Elton John AIDS Foundation

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SUMMARY

Kenya has the third largest HIV epidemic in the world. As HIV transmission among young people has reached crisis levels, a third of all new HIV infections occur among adolescent girls and young women. The lack of provider confidentiality, stigma around sexuality and HIV, and discrimination against key populations, create negative incentives for young people to visit health facilities, while the handful of "youth-friendly" clinics that exist are out of reach for many. While AMPATH runs the region's largest HIV intervention, using a holistic approach to community management of HIV prevention and treatment, Zipline provides a supply chain solution through autonomous drones to distribute health commodities on-demand and extend supply lines directly into communities. With support from the Elton John AIDS Foundation, AMPATH and Zipline are implementing a Differentiated Service Delivery Strategy to identify and serve adolescents and young adults who are often not reached by traditional health facilities, increasing their knowledge, and improving access to key commodities to empower them against HIV/AIDS.

The monitoring and evaluation strategy for this program involves regular gathering of programmatic and clinical information, including four waves of cross-sectional assessments to collect information on Knowledge, Attitudes, Beliefs, and Practices (KABPs) towards the disease. This report summarizes the main findings from the first wave of surveys, at baseline, where over 1,200 participants reported on KABPs in Uasin Gishu County.

Among other results, the data showed that while men engage in riskier behaviors, women are significantly less empowered to make decisions that would protect them for the infection due to cultural norms and stigma. Baseline data also showed that there is still plenty of room to work on knowledge and beliefs in relation to HIV. It was also apparent that the youth at higher risk tend to avoid governmental facilities for testing and consultations, and both knowledge and access to key HIV commodities -like PrEP- need to be improved. These findings confirm the need for policy adjustments and non-traditional interventions, as the one being implemented in Kenya.

Keywords: HIV/AIDS, SRH, Kenya,

INTRODUCTION AND PROJECT OVERVIEW

Kenya has the third largest HIV epidemic in the world, with an estimated 1.3 to 1.7 million PLHIV as of 2020 [1]. While nearly 90% of Kenyans infected with HIV know their status[2], only 74% of those individuals were on treatment as of 2020, and only 68% had a suppressed viral load.[3] The latest data shows that 42% of new infections in people 15+ years of age are among young people aged 15-24, up from 29% in 2013. AIDS remains the leading cause of death nationwide (29% of Kenya's overall mortality) and among 15-24 year olds [4]. A third of all new HIV infections occur among adolescent girls and young women (AGYW), who are twice as likely as young men to be infected, and who acquire HIV infection 5–7 years earlier[5].

HIV transmission among young people in Kenya has reached crisis levels, and reversing this trend is critical to ending the epidemic. But conventional approaches like expanding access to health facilities and exposure to health education[6,7] have not translated into increased demand for HIV services for this priority population. The lack of provider confidentiality, stigma around sexuality and HIV, and discrimination against key populations – all cultural norms that are pervasive despite years of health worker trainings and sensitizations – leave young people wary of visiting health facilities, while the handful of "youth-friendly" clinics that exist are out of reach for many. There is also a common misperception of "low risk" among high-risk groups of adolescents and young adults, which reduces their willingness to seek testing and preventive measures. As a result, adolescents (age 10-19) are less likely to know their status, and ART coverage among this cohort is only 24.7%[8].

Western Kenya is home to the highest HIV incidence and transmission rates in the country, and young people aged 15-24 account for >42% of new HIV infections annually[9].

The region's largest HIV intervention is run by AMPATH, which takes a holistic approach to community management of HIV prevention and treatment. AMPATH conducts health education and demand-generation activities deep into communities, where it successfully engages hundreds of thousands of young people. However, all clinical care is delivered in health facilities, and it is at that step that most young people are lost to follow-up. Offering prevention and treatment services at the same time and place as its education and outreach activities can eliminate the fear, stigma, logistical cost, and inconvenience that young adults report as barriers to accessing HIV services through conventional means [10], and thus could significantly improve AYAs engagement and retention in the AMPATH program. However, an effective decentralized care model that is cost-effective and scalable is yet to be identified and tested.

Extending AMPATH's clinical HIV services into communities, in young adults' preferred settings and on their own terms, is complicated by the limitations of commodity supply chains, which are prone to disruptions, delays, stockouts, counterfeits, theft, and other quality control issues. Decentralized care models introduce new

1 UNAIDS (2020) 'Country Fact Sheet: Kenya'.

2 Republic of Kenya (2014). 'Kenya AIDS Indicator Survey 2012'.

3 Ibid.

4 Ibid.

5 National AIDS Control Council (NACC) and National AIDS and STI Control Programme (NASCOP), Ministry of Health, Kenya. Kenya HIV estimates report 2018, NASCOP, Nairobi, Kenya (2018).

6 PAMJ (2021) 'Exposure and predictors of intention to use HIV PrEP among AGYW: assessment of Jipende JiPrEP campaign in Kisumu, Kenya'.

7 AIDS Patient Care and STDs (2020) 'High awareness, yet low uptake, of PrEP among AGYW within family planning clinics in Kenya'.

8 NAAC (2015) 'Fast-Track Plan to End HIV and AIDS Among Adolescents and Young People'.

9 Republic of Kenya (2014). 'Kenya AIDS Indicator Survey 2012'.

10 BMC Health Services Research (2014) 'Health facility barriers to HIV linkage and retention in Western Kenya'.

variables and vulnerabilities to supply chains that only exacerbate these issues. The proposed program, funded by The Elton John AIDS Foundation and Zipline, will test a novel on-demand supply chain solution designed to improve health access and equity, enabling AMPATH to provide AYAs with reliable, quality care in settings and circumstances of their choosing.

The supply chain solution provided by Zipline uses autonomous drones to distribute health commodities on-demand and extend supply lines directly into communities. Zipline partners with governments, pharmaceutical manufacturers and distributors, and healthcare providers to create resilient, responsive supply chains that can meet individual patient needs and broader population health challenges wherever they occur. As AMPATH conducts community-based health education and demand-generation activities, it will integrate on-site clinical services -- supported by Zipline's instant, on-demand logistics -- and test whether this decentralized, de-medicalized care model is more effective in engaging AYA in HIV prevention and treatment than traditional facility-based models.

The program will routinely document and incorporate learnings and share them with key stakeholders and decision-makers to cultivate program buy-in and support. As it proves effective, program implementers will advocate for nationwide adoption and sustainability, and disseminate learnings widely with the goal of changing modes of practice for adolescent care throughout the global health sector.

METHODOLOGY

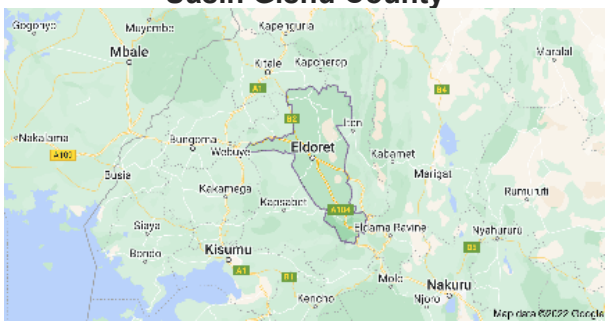
The monitoring and evaluation strategy for this program involves regular gathering of programmatic and clinical information to feed a set of over 25 key performance indicators, and a set of four observational and cross-sectional assessments, collecting information on Knowledges, Attitudes, Beliefs, and Practices (KABPs) from young adults located in Uasin Gishu, in four waves between the months of April and June of 2022 to 2025. A control group was identified among populations that will not be reached by the Differentiated Service Delivery (DSD) intervention.

In addition, three waves of qualitative data collection via in-depth interviews and focus groups will be implemented to add key insights that cannot be explored quantitatively. This report presents baseline findings after data collection on KABPs conducted during the year 2022.

STUDY SETTING

Data was collected from young adults of both sexes residing in Uasin Gishu between the months of April and June of 2022. Participants were surveyed both at health facilities and at specific locations within their communities, in order to include respondents that feel reluctant to engage with the formal health system.

Uasin Gishu County



STUDY POPULATION

Two sub-populations of young men and women were assessed: Population A consists of individuals that are covered by AMPATH services. Population B consists of individuals that reside within AMPATH's coverage area but are not necessarily receiving services from the Organization. The rationale for this division is the aim to explore the effect of AMPATH services as independent factors for differential levels of KABPs.

Population A was approached in the surroundings of AMPATH facilities, whereas Population B was assessed through community-based sampling. HIV positive status was not considered a criterion for inclusion of participants, since the DSD initiative was designed to improve young people's ability to manage their own care.

Overall, according to the latest Population and Household Census in Kenya, 147,665 AYAs

between 15 and 24 years of age reside in the County of Uasin Gishu.

The recruitment strategy for Population A began with the identification of AMPATH facilities at each of the counties. Trained enumerators recruited participants once they exited the health facilities and asked them to participate in the study. Providers and health personnel at the facilities did not have knowledge of who participated. For Population B, an environmental scan was conducted and information was collected from community stakeholders in order to identify locations where the target population gathered. The community settings initially targeted for identification of this population included tertiary institutions, slums and the meeting points for Boda-Boda riders, commercial sex workers and the LGBTQ community and any other points identified by the youth. The enumerators required authorization to be present at those locations when necessary.

Inclusion criteria were age between 18 and 25 years old (inclusive), residence at any of the selected Counties, ability to understand the research activity and to provide consent for participation.

Exclusion criteria were age outside the range mentioned above, residence outside the selected Counties, inability or unwillingness to understand the research activity and/or to provide informed consent for participation.

DATA COLLECTION METHODS AND SAMPLING PROCEDURES

The team was composed by a study supervisor and 10 study enumerators, who were trained on the study protocol. Sampling was conducted at AMPATH services and at the community.

A stratified cluster sampling approach was used with the aim of obtaining representativeness for the County population. Estimating a margin of error of 7.50% with a confidence level of 95%, 160 surveys for each group (exposed and unexposed) were needed for Population A, and 319 surveys were needed for Population B, also for each of the two groups. This Population was oversampled to account for an expected proportion of population that belong to population A, because of receiving care at AMPATH services. The minimum number of surveys needed was 958. However, to account for non-response, the number of attempted surveys was expanded by 25%, totaling a target of 1,197 surveys overall.

Data collection tool was based on a widely validated survey on HIV KABPs, currently in use by USAID-Demographic Health Survey (DHS) in Kenya and other countries in the world. This will allow for comparability with other geographical settings and populations. In addition

To minimize the burden on the respondents, the survey was designed to be implemented in less than 20 minutes, and it was administered through a digital platform via tablets. Responses were stored under encryption in a secured web-cloud.

ANALYSIS

Descriptive statistics included univariate analyses via histograms and summary statistics for each variable. In addition, bi-variate analyses combined demographic characteristics with KABP data elements by using T-Tests for Independent samples, ANOVAs, ANCOVAs, or Chi-Square tests, depending on the nature of the variables under study. Inferential statistics were used to model the main dependent variables within KABPs. Age, sex, location, sub-population and other covariates were used as independent variables in linear and logistic regression models.

All analyses were conducted using Stata SE V.17 (StataCorp LLC, TX)

MAIN FINDINGS

The total number of collected responses was 1,238. Sample proportions were almost equal in terms of sex with women being 49.7% and men 50.2%. A majority of participants (50.9%) had an education level less than secondary and 84% were not employed at the time of survey.

Table 1 - Socio-demographic characteristics

Variable	Category	Frequency (%)
Age Groups	18-19	241 (19.4)
	20-21	355 (28.6)
	22-23	369 (29.8)
	24-25	275 (22.2)
Sex	Female	616 (49.7)
	Male	622 (50.2)
	Non-binary	1 (0.1)
Education	Less than primary	178 (14.6)
	Less than secondary	620 (50.9)
	Vocational training	147 (12.1)
	Less than University	272 (22.3)
Employment	Full-time	54 (4.3)
	Part-time	136 (11.0)
	Not employed	1,042 (84.1)

Differences between facility based and community based populations

No significant socio-demographic differences were found between these two groups. Interestingly, the respondents at facilities reported initiating sexual relations later in life as compared to the community group. In terms of knowledge about HIV transmission, the group of respondents that was approached in the surroundings of health facilities reported more accurate knowledge regarding HIV transmission during pregnancy. Testing seemed to be, as expected, more frequent in facility-based participants (ever tested 72.5% vs 63.7%, P<0.05). However, more participants in the community reported having heard of PrEP as compared to those at facilities (60.4% vs 49.6%, P<0.01). In terms of risk behaviors, no significant differences were found with the exception of the use of condom in the last sexual relation, where 56% of the facility-based group mentioned not using, while 48.1% of the community based group responded in the same way. No other differences were found to be significant.

Barriers to sexual and reproductive health outcomes

Young men are 44% more likely to respond that a woman cannot ask a partner for the use of a condom if she knows he has an STD (5.13% vs 3.54%). This shows that the majority of male are against women asking for condoms. This can be explained by the fact that in many African settings females have a low bargaining power compared to their counterparts when it comes to sex-related decision making. The project aims to increase access to information about the use of condoms (Annex, Figure 1)**.**

Also, according to 18.2% of the men, a woman cannot refuse to have sex with her partner while he has sexual relations with other people. Among women, 11.8% responded in the same way (Annex, Figure 2)**.**

In terms of risk behaviors, **the proportion of young men who ever used IV drugs is almost three times higher than the proportion of women (6.6% vs. 2.8%)**. The relative increased likelihood of men using IV drugs when compared to women is useful information to tailor and target some of the program activities when it comes to primary prevention of HIV. (Annex, Figure 3)**.**

When observing sex differences regarding testing behaviors, two thirds of the respondents mentioned having been tested for HIV at least once. However, young women tested in significantly higher proportions than men (59.9% and 73.0% respectively, which represents a 21% increase) (Annex, Table A)

In addition, over 80% of the population who ever tested, reported having tested during the past year (see Annex, Figure 4). Again, the proportion of women was higher (81.8% Vs. 87.3%). **These findings suggest that women, although less empowered to make preventive decisions, tended to be more proactive in their health seeking behavior.** The program will keep this into account to enhance health seeking behavior among men.

Knowledge and practices among the high risk group of IV drug users

Even though the group of IV drug users represents a relatively small fraction of the surveyed population, it is of high relevance to understand their KABPs and identify key actions to approach this group through effective interventions. While within the entire sample 44.1% responded that saliva and kisses can transmit HIV, the proportion of IV drug users who mistakenly agreed with this statement was higher, by 42% (43.3% vs 61.8%).

Table 2 - Participants who believe that saliva and kisses can transmit HIV

Saliva can transmit	Ever IV drugs		
	No	Yes	Total
No	650	21	671
Row %	96.87	3.13	100.00
Column %	56.72	38.18	55.87
Yes	496	34	530
Row %	93.58	6.42	100.00
Column %	**43.28**	**61.82**	**44.13**
Total	1146	55	1201
	95.42	4.58	100.00

Pearson Chi2 = 7.31 Prob = 0.0068

On the other hand, there seemed to be a higher risk perception among those who reported IV drug use.

With regards to awareness of self-testing, those that used IV drugs doubled the proportion of affirmative responses as compared with those at lower risk. **Nonetheless, the overall proportion of participants who were aware of self-testing alternatives was very low (4.69%).**

Table 3 - Awareness about self-testing

Heard of self-test	Ever IV drugs		
	No	Yes	Total
No	259	7	266
Row %	97.37	**2.63**	100.00
Column %	21.99	12.07	21.52
Yes	919	51	970
Row %	94.74	**5.26**	100.00
Column %	78.01	87.93	78.48
Total	1178	58	1236
	95.31	4.69	100.00

Pearson Chi2 = 3.22 Prob = 0.0728

Those that reported use of IV drugs self-tested in higher proportions than the lower risk group. (65.9% Vs. 42.8%), representing a 53% relative increase. High risk groups are likely to be more informed about testing given that diverse interventions in the community and facilities target these groups promoting the use of self-testing kits.

Table 4 - Testing behavior among IV drug users

Ever self-tested	Ever IV drugs		
	No	Yes	Total
No	380	15	395
Row %	96.20	3.80	100.00
Column %	57.23	34.09	55.79
Yes	284	29	313
Row %	90.73	9.27	100.00
Column %	**42.77**	**65.91**	**44.21**
Total	664	44	708
	93.79	6.21	100.00

Pearson Chi2 = 8.96 Prob = 0.0028

In the same line, those that used IV drugs showed higher awareness about PrEP (56.4% Vs. 69.1%. Increased by 23%).

Table 5 - Knowledge about PrEP among IV drug users

Heard of PreP	Ever IV drugs		
	No	Yes	Total
No	500	17	517
Row %	96.71	3.29	100.00
Column %	43.59	30.91	43.01
Yes	647	38	685
Row %	94.45	5.55	100.00
Column %	**56.41**	**69.09**	**56.99**
Total	1147	55	1202
	95.42	4.58	100.00

Pearson Chi2 = 3.44 Prob = 0.0635

In terms of the place of the last HIV test, 60% among the high risks preferred Ampath clinics, while lower risk participants preferred Governmental facilities. Ampath clinics are widely accessible and known to deal with HIV services in the region. Furthermore, most outreaches are run by Ampath who normally target high risk populations. As for the lower risk group, potentially they are more likely to attend regular governmental facilities given the expectation of having normal results, hence being at lower risk of being stigmatized. **Also, the proportion of respondents who would prefer to test at home**

among the higher risk group almost doubled the one for the lower risk group (by 43%). Fear of stigma and being known to live with HIV is likely a major cause.

Table 6 - Preferred place to test

Preferred place to test	Ever IV drugs		
	No	Yes	Total
Ampath clinic	60	6	66
Row %	90.91	9.09	100.00
Column %	**7.78**	**12.50**	8.06
Gov facility	340	6	346
Row %	98.27	1.73	100.00
Column %	**44.10**	**12.50**	42.25
Mobile clinic	56	5	61
Row %	91.80	8.20	100.00
Column %	7.26	10.42	7.45
At home	131	18	149
Row %	87.92	12.08	100.00
Column %	**16.99**	**37.5**	18.19
Private hospital	132	8	140
Row %	94.29	5.71	100.00
Column %	17.12	16.67	17.09
Pharmacy	45	3	48
Row %	93.75	6.25	100.00
Column %	5.84	6.25	5.86
Others	5	2	7
Row %	71.43	28.57	100.00
Column %	0.65	4.17	0.85
Total	771	48	819
	94.14	5.86	100.00

Pearson Chi2 = 29.67 Prob = 0.0001

When asked about the place where participants last tested for HIV, most in the lower risk group mentioned Governmental facilities (52%). Instead, only 22.9% in the higher risk group tested in those settings, while they used pharmacies and home-testing in larger proportions (3.5 times more and 2 times more, respectively. See Table B in annex). **Stigma associated with a person turning out HIV positive and being judged by the providers or seen going to a health facility can be associated with the low turnout of high-risk populations visiting government facilities.**

When asked about difficulties in accessing medicines, almost half (47.4%) of the participants who ever used IV drugs reported that it was very difficult (12.3%) or somewhat difficult (35.1%), as compared to the lower risk group who reported difficulties in about 29%. The qualitative surveys planned for midterm should be able to elaborate more and shed light on these findings.

Knowledge and practices among the high-risk group with a history of sex trade

Those who reported having ever traded sex represent another high-risk group under analysis. Around 35% more women reported trading sex (5.5%) as compared to men (4.05%), being the overall proportion 4.85%.

Even though a relatively low proportion of participants reported having never gone to school (1.2%), the proportion was 4 time higher among those who reported sex trading (4.1% vs. 1.04%)

Table 7 - Education across high-risk groups

Ever in school	Ever traded sex		
	No	Yes	Total
Yes	952	45	997
Row %	95.49	4.51	100.00
Column %	98.86	91.84	98.52
No	10	2	12
Row %	83.33	16.67	100.00
Column %	**1.04**	**4.08**	**1.19**
Prefer not to answer	1	2	3
Row %	33.33	66.67	100.00
Column %	0.10	4.08	0.30
Total	963	49	1012
	95.16	4.84	100.00

Pearson Chi2 = 28.76 Prob = 0.0000

A high proportion of participants (72.1%) mistakenly reported that HIV cannot be transmitted vertically during pregnancy. The higher risk group showed more familiarity with HIV transmission mechanisms. and the proportion who responded incorrectly was 22% lower in this group when compared with the lower risk group (see Table 6 below).

Table 8 - Knowledge about HIV transmission

Transmission during pregnancy	Ever traded sex		
	No	Yes	Total
No	647	24	671

Row %	96.42	3.58	100.00
Column %	**72.78**	**57.14**	**72.07**
Yes	242	18	260
Row %	93.08	6.92	100.00
Column %	27.22	42.86	27.93
Total	889	42	931
	95.49	4.51	100.00

Pearson Chi2 = 4.87 Prob = 0.0273

Column %	14.50	25.71	15.02
Yes	619	26	645
Row %	95.97	4.03	100.00
Column %	**85.50**	**74.29**	**84.98**
Total	724	35	759
	95.39	4.61	100.00

Pearson Chi2 = 3.29 Prob = 0.0698

In addition, those with a history of sex trade were more familiar with PrEP, by 30%, which is a positive sign and aligns with the responses from IV drug users, who also reported higher awareness about this resource. Nonetheless, given the strength of the reported associations between both risk behaviors and HIV incidence, these proportions could be further improved by the program.

Table 9 - Awareness about PrEP among participants with a history of sex trade

	Ever traded sex		
Heard of PrEP	No	Yes	Total
No	385	11	396
Row %	97.22	2.78	100.00
Column %	41.31	23.40	40.45
Yes	547	36	583
Row %	93.83	6.17	100.00
Column %	**58.69**	**76.60**	**59.55**
Total	932	47	979
	95.20	4.80	100.00

Pearson Chi2 = 5.95 Prob = 0.0147

In spite of showing more awareness in terms of transmission mechanisms and PrEP, participants who traded sex reported lower rates of HIV testing, by 14%. About one quarter of the population in this high-risk group had not tested during the past 12 months. **This finding in combination with the fact of having more awareness about PrEP could suggest difficulties in accessing HIV services due to factors unrelated to lack of information, but potentially related to barriers to access appropriate and unstigmatized services.**

Table 10 - Testing behavior among participants with a history of sex trade

Tested last	Ever traded sex		
year	No	Yes	Total
No	105	9	114
Row %	92.11	7.89	100.00

Regarding the use of condoms, a third of those who reported sex trading had not used protection during their last sexual relation. This proportion rose to almost half of the participants in the lower risk group. In a scenario where information is not the main limitation, these findings could speak of the lack of capacity among women sex workers to request or decide the use of condoms.

Table 11 - Use of condom among participants with a history of sex trade

	Ever traded sex		
No condom last time	No	Yes	Total
No	477	16	493
Row %	96.75	3.25	100.00
Column %	**49.58**	**32.65**	**48.76**
Yes	485	33	518
Row %	93.63	6.37	100.00
Column %	50.42	67.35	51.24
Total	962	49	1011
	95.15	4.85	100.00

Pearson Chi2 = 5.35 Prob = 0.0207

In terms of risk convergence, among all participants, the use of IV drugs, 9.1% also reported sex trading. Although the absolute number remains small, the program will aim to identify all subjects with multiple risk factors in order to establish comprehensive interventions for this group.

Table 12 - Risk factors intersections

Used IV drugs	Ever traded sex		
	No	Yes	Total
Yes	50	5	55
Row %	**90.91**	**9.09**	**100.00**
Column %	5.20	10.20	5.45
No	906	40	946
Row %	95.77	4.23	100.00
Column %	94.28	81.63	93.66

Don't know	3	2	5
Row %	60.00	40.00	100.00
Column %	0.31	4.08	0.50
Prefer not to answer	2	2	4
Row %	50.00	50.00	100.00
Column %	0.21	4.08	0.40
Total	961	49	1010
	95.15	4.85	100.00

Pearson Chi2 = 33.98 Prob = 0.0000

CONCLUSION

The survey was conducted to explore changes in knowledge, attitudes, beliefs and practices towards HIV/AIDS among adolescents and young adults before the implementation of a Differentiated Service Delivery intervention via aerial logistics in Uasin Gishu County, Kenya. Population A was approached in the surroundings of AMPATH facilities, whereas Population B was assessed through community-based sampling.

It was found that more female young adults are open to getting tested than their male counterparts. This could be attributed to the fact that females are more proactive in their health seeking behaviors. On the other hand, women showed to be less capable of enforcing protective behaviors, which could relate to the general perception of the role of women in making decisions regarding sex practices. Qualitative research will contribute to the understanding of these findings and will inform additional aspects of the decentralized service delivery approach.

Knowledge about the transmission mechanisms for HIV also showed significant gaps, bot overall and between men and women. In particular, the insufficient understanding about vertical transmission needs to be tackled with more and better information.

In spite of showing increased awareness in terms of transmission mechanisms and PrEP, young adults who traded sex reported lower rates of HIV testing. The program will not only aim to increase knowledge but also improve the behaviors and practices of this special group, which will reflect in their patterns of testing and use of PrEP, as well as in retention rates for those under ARV treatment.

In addition, differential patterns of services utilization among higher and lower risk groups suggested the need to continue working on the quality of all types of healthcare services, particularly in public health facilities that do not specialize in HIV or STDs. Higher-risk groups may encounter negative incentives to seek care at public governments facilities, which creates barriers to deliver information and commodities. This is a reason why the delivery of services needs to be differentiated, at least until those barriers are removed.

Even though the survey did not explore objective measures of stigma and discrimination, the results suggest that those factors play a role in driving the volume and locations of the interactions with the health system.

The findings confirm the need for additional interventions to improve KABPs to reduce the HIV incidence and transmission rates of young men and women. Further quantitative and qualitative assessments, along with strict monitoring of clinical KPIs will shed light on the effectiveness of a differentiated service delivery strategy in Western Kenya.

Overall, this baseline assessment suggests the need for increased efforts in targeting the youth through specific interventions and policies to increase their understanding about the disease and reduce their risk. Moreover, the population of youth is heterogeneous. Men and women face diverse challenges when it comes to accessing information and services. In the same line, high risk and low risk populations also require interventions that likely imply varying levels of impact depending on their baseline risk levels. A deeper the understanding on these differences would enable policymakers in designing better data driven interventions, and the

partnership with non-governmental and private organizations opens an opportunity to facilitate this process.

ACKNOWLEDGEMENTS

References

[1] Kenya | UNAIDS. Accessed March 3, 2022. https://www.unaids.org/en/regionscountries/countries/kenya

[2] Waruiru W, Kim AA, Kimanga DO, et al. 2012; The Kenya AIDS indicator survey: Rationale, methods, description of participants, and response rates. J Acquir Immune Defic Syndr. 2014;66(SUPPL. 1)

[3] National AIDS Control Council, National AIDS Control Council (NACC). 2018; Kenya HIV Estimates Report. Kenya HIV Estim. Published online.

[4] Urgent action needed as COVID-19 threatens to accelerate adolescent HIV | UNICEF Kenya. Accessed March 3, 2022. https://www.unicef.org/kenya/stories/urgent-action-needed-covid-19-threatens-accelerate-adolescent-hiv.

[5] Okal J, Lango D, Matheka J, et al. 2020; "It is always better for a man to know his HIV status" - A qualitative study exploring the context, barriers and facilitators of HIV testing among men in Nairobi, Kenya. PLoS One. 15(4).

[6] Wachira J, Naanyu V, Genberg B, et al. 2014; Health facility barriers to HIV linkage and retention in Western Kenya. BMC Health Serv Res. 14(1).

[7] Were D, Musau A, Mugambi M, et al. An implementation model for scaling up oral pre-exposure prophylaxis in Kenya: Jilinde project. Gates Open Res. 2021;5.

[8] The DHS Program - Kenya: DHS, 2014 - Final Report (English). Accessed March 3, 2022. https://dhsprogram.com/publications/publication-fr308-dhs-final-reports.cfm?cssearch=441808_1

[9] home. Accessed March 3, 2022. https://differentiatedservicedelivery.org/

[10] Long L, Kuchukhidze S, Pascoe S, et al. 2020; Retention in care and viral suppression in differentiated service delivery models for HIV treatment delivery in sub-Saharan Africa: a rapid systematic review. J Int AIDS Soc. 23(11).

Annex

Figure 1 - A woman can ask for use of condom if partner has STD

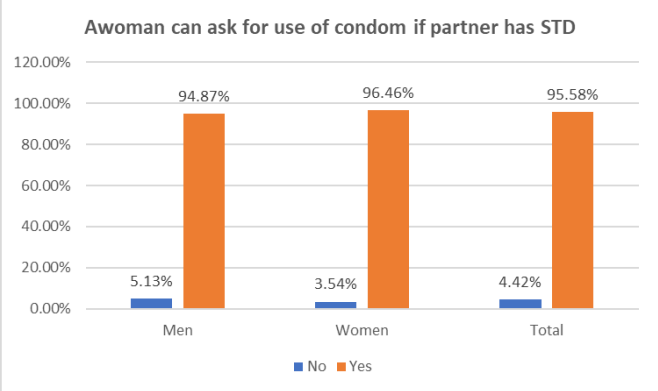


Figure 2: A woman can refuse sex when partner has sex with other people

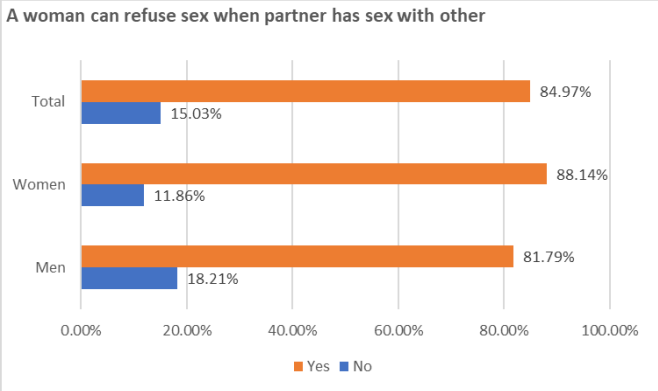


Figure 3: Ever used IV drugs

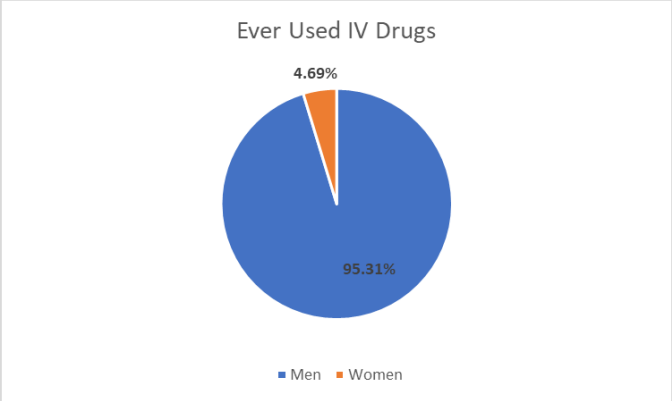


Table A - Respondent who were ever tested for HIV

SEX	Was ever tested for HIV		
	No	Yes	Total
Men	247	369	616
Row %	40.10	**59.90**	100.00
Column %	59.81	45.00	49.96
Women	166	450	616
Row %	26.95	**73.05**	100.00
Column %	40.19	54.88	49.96
Total	413	820	1233
	33.50	66.50	100.00

Pearson Chi2 = 24.41 Prob = <0.001

Figure 4 - Participants that tested for HIV during the past year

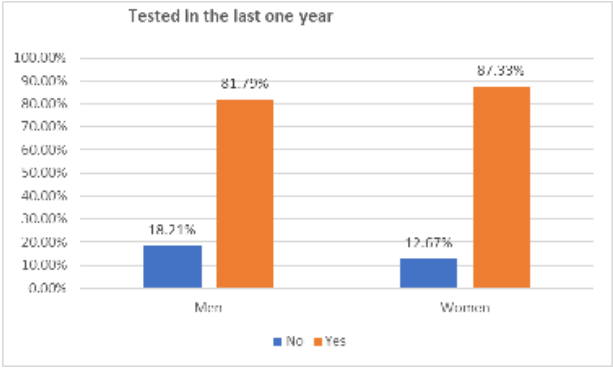


Table B - Place of last HIV test

Place of last test	Ever IV drugs		
	No	Yes	Total
Ampath clinic	45	3	48
Row %	93.75	6.25	100.00
Column %	5.84	6.25	5.86
Gov facility	403	11	414
Row %	97.34	2.66	100.00
Column %	**52.27**	**22.92**	**50.55**
Mobile clinic	95	6	101
Row %	94.06	5.94	100.00
Column %	12.32	12.50	12.33
Other public	8	3	11
Row %	72.73	27.27	100.00
Column %	1.04	6.25	1.34
Private hospital	117	9	126
Row %	92.86	7.14	100.00
Column %	15.18	18.75	15.38
Pharmacy	31	7	38
Row %	81.58	18.42	100.00
Column %	**4.02**	**14.58**	**4.64**
At home	65	7	72
Row %	90.28	9.72	100.00
Column %	**8.43**	**14.58**	**8.79**
Total	771	48	819
	94.14	5.86	100.00

Pearson Chi2 = 34.41 Prob = 0.0000

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