



SURVEY PROGRESS REPORT

Results from Nine Districts in East Central Uganda
July, 2011



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List of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
BCC	Behavior Change Communications
CDO	Community Development Officer
CI	Confidence Interval
CSO	Civil Society Organizations
CTX	Cotrimoxazole
DHO	District Health Office(r)
DOTS	Directly Observed Therapy Short Course
EC	East Central
FP	Family Planning
HIV	Human Immunodeficiency Virus
HC	Health Center
HF	Health Facility
HTC	HIV Testing and Counseling
HMIS	Health Management Information System
HSD	Health sub-district
IEC	Information, Education and Communication
JSI	JSI Research & Training Institute, Inc.
LQAS	Lot Quality Assurance Sampling

LG	Local Government
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MTCT	Mother-to-Child Transmission of HIV
NGO	Non-Governmental Organization
NLTP	National TB and Leprosy Control Program
P value	Probability Value
PLHIV	People Living with HIV&AIDS
PMTCT	Prevention of Mother-to-Child Transmission of HIV
RH	Reproductive Health
SA	Supervision Area
STAR-EC	Strengthening Tuberculosis and HIV&AIDS Responses in East Central Uganda
STRIDES	STRIDES for Family Health program
TB	Tuberculosis
UAC	Uganda AIDS Commission
UDHS	Uganda Demographic Household Survey
USAID	United States Agency for International Development
USG	United States Government
VHT	Village Health Team

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Highlights

As a follow up to the 2009 baseline and 2010 health facility assessments and household Lot Quality Assurance Sampling (LQAS) surveys, the Strengthening TB and HIV&AIDS Responses in East Central Uganda (STAR-EC) program conducted its third annual survey in July 2011. All nine STAR-EC districts (Bugiri, Buyende, Iganga, Kaliro, Kamuli, Luuka, Mayuge, Namayingo and Namutumba) were assessed.

A total of 81 Local Government (LG) and 11 Civil Society Organization (CSO) personnel from all the aforesaid districts were trained/re-trained in the application of the LQAS survey methodology. Table 1 summarizes data trend from 2009 to 2011 on key indicators assessed during these surveys. For most of the indicators, the change from baseline to 2011 reflects expectations in program and district performance progress, however there are some undesirable results that reveal a downward trend. These are areas which the program will need to focus on while prioritizing future interventions. Further details on the survey methodology and specifics on all of the findings can be found in the main body of this report.

Table 1: STAR-EC Household Baseline LQAS Survey Results

Indicator definitions	Survey Results			Notes (unless mentioned, all notes herein refer to the year 2011 results)
	2009 baseline	2010	2011	
REPRODUCTIVE HEALTH				
% of pregnant women attending ANC at least 4 times during the last pregnancy	49.1	44.8	42.3	Continued decline in progress. However, there was an increment in the proportions of women receiving ANC services at least once (from 91.4% in 2010 to 96.8% in 2011).
% of deliveries (in the last 2 years) that took place in a health facility	69.1	66.3	66.9	Result's stagnation. More efforts needed.
% of women 15-49 years using modern family methods	25.3	23.6	23.6	Results continue to be the same for the last 2 years.
PMTCT				
% of women tested and received their HIV test results during ANC in last 2 years	43.9	48.5	62.8	Significant increase in the last 3 years (Pearson chi ² (4) =107.0, p<0.001).
% of adults who know all the 3 MTCT ways (during pregnancy, delivery and breast feeding)	45.2	44.7	47.0	Women (49.7%) were more likely than men (42.4%) to know of all three MTCT ways (Pearson chi ² (1) = 16.6, p<0.001). Most respondents mentioned transmission through delivery (84.2% males and 84.9% females.)
HIVTESTING AND COUNSELING (HCT)				
% of adults (15 years and above) who have ever taken an HIV test	47.9	51.3	58.6	Significant changes (p<0.001) when comparing sex as well as when comparing performance over the last 3 years.
% of adults (15 years and above) who have tested and received their HIV test results in last 1 year.	33.2	35.8	44.3	Significant changes (p<0.001) when comparing sex as well as when comparing performance over the last 3 years.
% of adults (15+ years) who know where they can be tested for HIV	82.5	83.2	85.0	81.6% (n=1,875) of those who know of a place where to go for an HIV test in case they wanted one, have actually tested for HIV in the last one year.
BIO-MEDICAL HIV PREVENTION				
% of men (15-54 years) who have ever been circumcised	37.4	34.2	35.8	Still no significant change (Pearson chi ² (2) = 2.4, p=0.298) on the number of circumcised adult males, however though not yet significant (Pearson chi ² (6) =12.6, p= 0.050), more proportions are getting circumcised every year.

Indicator definitions	Survey Results			Notes (unless mentioned, all notes herein refer to the year 2011 results)
	2009 baseline	2010	2011	
Of those who have never been circumcised, % of males who say they would accept to undergo circumcision in case they were offered a chance at a health facility	66.6	72.9	74.6	Only 14.5% of those circumcised mentioned that they were circumcised for HIV and/or STI prevention purposes. This was almost akin to the proportion in 2010 (14.4%).
ANTI RETROVIRAL THERAPY (ART)				
% of adults (15+ years) who believe that HIV patients should take ARV drugs and/or cotrimoxazole	36.1	35.5	31.6	Results seem to show a down ward trend.
% of adults (15+ years) who know a place to get ARV drugs for HIV patients	58.0	58.8	66.3	More proportions of adults are getting to know where to obtain ARVs.
BEHAVIORAL PREVENTION				
% of adults (15+ years) who know a place to obtain condoms	82.8	90.5	82.6	Fewer females (87.1%) than males (95.9%) knew of where to obtain condoms.
% of adults who can mention the 3 major ways of HIV&AIDS prevention (Abstinence, Being faithful and Condom use)	58.7	64.3	63.6	No significant change ($p>0.05$) on HIV prevention knowledge especially over the last 2 years.
% of adults (15+) able to reject all the major HIV&AIDS misconceptions (Witchcraft, mosquito bites and sharing food)	48.3	42.9	51.8	Among those that believe in these misconceptions, most believe that HIV can be transmitted through mosquito bites.
CARE AND SUPPORT				
% of households with a person who is very sick or bed ridden for a period of three or more months, or anyone who died after being sick for more than three months	12.7	11.6	11.3	Among districts, the highest proportions were reported from Namutumba (14.8%), Buyende (14.4%) and Luuka (14.3%) while the lowest was reported from Kaliro at 4.3%.
(Of those affected households) % of households receiving care and support for a sick bedridden person or someone who died after being sick or bedridden for more than 3 months	55.9	54.0	56.3	Support received by affected households included: <ul style="list-style-type: none"> ▶ Free Medical 51.1% (n=186) ▶ Free emotional 33.0% (n=179) ▶ Free material 19.6% (n=179) ▶ Social Support 29.6% (n=179)
TUBERCULOSIS				
% of adults (15+ years) who know that it is possible for a person to have TB and HIV at the same time	81.9	80.8	84.8	Most respondents (81.1%) mentioned that they would take a family member to a health facility once they suspected them of TB infection.
% of adults (15+ years) who know that TB is a curable disease	55.4	53.1	61.5	Significant differences across all districts for all survey years ($p<001$).

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Indicator definitions	Survey Results			Notes (unless mentioned, all notes herein refer to the year 2011 results)
	2009 baseline	2010	2011	
% of adults (15+ years) who know of any signs and symptoms of TB	84.4	80.6	85.3%	Findings were high across all districts, however results show low proportions of those who know of two or more important signs.
BEHAVIORAL CHANGE COMMUNICATION				
% of households that received at least one message about HIV&AIDS prevention in the last 3 months	63.1	60.0	65.1	Most of the BCC indicators show an increment in coverage especially over the last two years when compared to the first two years of this assessment.
% of households that received at least one radio message about HIV&AIDS care and treatment in the last 3 months	55.9	53.2	60.4	
% of households that received at least one radio message about TB in the last 3 months	39.9	41.7	51.7	
% of households that received at least one message about ART treatment in the last 3 months	40.6	40.3	48.1	
% of households that received at least one message on other HIV prevention (OP) methods in the last 3 months.	58.9	56.5	50.1	
% of households that received at least one message on AB in the last 12 months.	58.6	45.0	59.5	
HEALTH FACILITY ASSESSMENT				
Number of Health facilities interviewed	292	319	328	A total of 292 and 319 health facilities were surveyed in the years 2009 and 2010 respectively.
% of health facilities that counsel HIV+ clients on TB prevention and treatment	25.7	24.8	27.4%	<p>Of the 328 health facilities (HFs) surveyed in the year 2011:</p> <ul style="list-style-type: none"> ▶ 5 HFs were district hospitals; ▶ 13 HC IVs; ▶ 70 HCIIIs; ▶ 208 HCIs; ▶ 32 not classified <p>In terms of ownership:</p> <ul style="list-style-type: none"> ▶ 210 Health facilities were government owned; ▶ 57 Non-Governmental Organizations (NGO); ▶ 44 private sector (private clinics); ▶ 1 Community Based Organization (CBO) ▶ 16 Faith Based Organization (FBO)
% of health facilities that reported conducting HCT outreach services	15.8	22.6	28.4%	
Number of health facilities that were found to be offering any form of PMTCT services i.e. Counselling, referrals or HIV testing itself	206	170	207	
% of health facilities that reported that HIV+ mothers receive ARVs for PMTCT purposes	19.2	25.1	26.5	
% of health facilities that reported that all HIV+ clients are screened for TB	18.8	22.9	25.0	
% of health facilities that reported that all patients diagnosed with TB are tested for HIV	21.6	21.9	26.8	

Source: Health facility assessment and household LQAS 2009, 2010 and 2011 survey

1.0 Introduction

1.1 Background

STAR-EC is a USAID PEPFAR funded program which is being implemented in nine districts of east central Uganda. STAR-EC aims at expanding access to and utilization of the comprehensive package of TB and HIV&AIDS services by building upon existing networks, expanding geographical coverage and populations served through strengthening district specific responses and expanding the role of CSOs and communities in planning, implementing and monitoring activities. Routine monitoring and periodic evaluation are crucial aspects of effective and efficient program implementation. The STAR-EC Program adopted the LQAS survey, a rapid and cost-effective tool to measure coverage of relevant indicators while identifying gaps in performance. This survey is conducted annually and commenced with a baseline assessment in 2009. Additionally, it is conducted simultaneously with a health facility assessment. Both surveys provide a good source of routine health statistics that complement the existing national Health Management Information systems (HMIS).

1.2 Major Objectives of STAR-EC

STAR-EC has five major objectives that include:

- ▶ Increasing access to, coverage of, and utilization of quality comprehensive HIV&AIDS and TB prevention, care and treatment services within district health facilities and their respective communities.
- ▶ Strengthening decentralized HIV&AIDS and TB service delivery systems with emphasis on health centers (HCs) IV and III and community outreach.
- ▶ Improving quality and efficiency of HIV&AIDS service delivery within health facilities and civil society organizations.
- ▶ Strengthening networks and referral systems to improve access to, coverage of, and utilization of HIV&AIDS and TB services.
- ▶ Intensifying demand generation activities for HIV&AIDS and TB prevention, care and treatment services.

Similar to the 2009 baseline survey, the LQAS methodology has been used by STAR-EC in subsequent years (2010 and 2011) to establish progress of different national, district and program level indicators at the community level. Additionally, follow up health facility assessments were conducted on all the registered health facilities that were found functional in the nine East Central Ugandan districts during the aforementioned years. None of the districts had a supervision area (SA) with more than 19 known or registered health facilities. Therefore, all existing health facilities in each district (both government and private) participated in this assessment except for less than five cases where some health facility in-charges of mostly private settings refused to be interviewed. Results were thereafter shared with all the nine district leaders and decision makers so as to promote evidence based planning and decision making.

Both 2011 follow-up surveys (Health Facility and Household LQAS surveys) were conducted during July. These surveys primarily

assessed the availability, accessibility, effectiveness and efficiency of services related to HIV&AIDS and TB indicators. Other non-HIV&AIDS related indicators included reproductive and adolescent reproductive health; water and sanitation indicators; and other health facility based service indicators. These were assessed at both household and health facility level (respectively) with the participation of district local governments and CSO personnel. Findings from these surveys have been instrumental to STAR-EC as well as the central, LG and other development partners in the assessment of program progress, identification of underperforming areas that each respective district should endeavour to address during their next LG annual planning and budgeting process. Further, the continued dissemination of these results will help in building a consensus on the value of LQAS with district and national leaders thus enhancing the feasibility of institutionalizing LQAS as a routine monitoring and evaluation approach for district and nationwide interventions.

2.0 Methodology

2.1 Questionnaire Preparation

For consistence and comparability of the survey results, minor additions and revisions were made during the preparation of the questionnaires. Therefore, most of the questions within the tools developed during the baseline and 2010 survey were maintained and these tools contained standard questions that were based on most of the USAID PEPFAR new generation indicators, World Health Organization (WHO), the Ugandan Ministry of Health (MoH), Uganda AIDS Commission (UAC) as well as the STAR-EC program level indicators and intervention areas. Consideration was also given to specific district LG indicators of interest. Special attention was also given to making sure that the considered indicators were useful for comparison with routinely collected service data. Survey questions were structured according to the standard questions used nationally and internationally to measure the chosen indicators. Soon after, questionnaires were pre-tested and revised accordingly. However, it should be noted that the 2011 survey questionnaires incorporated some new indicators on maternal and child health that included immunization and malaria management for under 5 year olds and pregnant women. Other indicators and special groups assessed included Orphans and Vulnerable Children (OVC)¹. These questions and indicators were added to this survey to help collect data for other implementing partners and stakeholders in the country that are charged with such interventions.

As opposed to four sets of questionnaires that were being examined in the first two survey years, namely: (1) biological mothers with children less than two years of age; (2) young people aged 15-24 years; (3) men aged 15 to 54 years; and (4) women aged 15 to 49 years, two more sets or target groups were introduced: (1) biological mothers with children aged 12-23 months (this meant that the previous category of biological mothers with children 0-24 months was subdivided into two groups – that is 0-11 months and 12-23 months) and (2) OVC. As aforementioned, the split between biological mothers of children happened so as to mainly cater for immunization indicators that are mainly assessed among children who are 12 or more months.

¹ Data on OVC was collected with STAR-EC's support, however, analysis and reporting of this data was conducted by the STAR-EC LQAS project.

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Most questions were common across different groups in order to ensure comparability and increase the sample size. Each individual questionnaire contained questions about household characteristics (including the exact location) and questions in the following “modules”: socio-demographic characteristics, water and sanitation (except for the youth group), HIV&AIDS and family planning. Other modules, however, were specific to some groups and did not feature in the questionnaires for the others. For example, questions on ANC and PMTCT testing were only included in the questionnaires for mothers with children under two years of age. By arranging all questionnaires in this kind of format whereby all respondents from the five target groups were asked the same questions, the sample size for all these shared modules was increased to 475 per district instead of 95, thereby increasing the degree of precision in measuring the related indicators. Overall, the random sample size for all the six target groups examined in this survey was 5,130 individuals. However, the concentration of results for this report will dwell on 4,275 individuals excluding the 855 individuals examined under the OVC group category whose questionnaire was limited to OVC type of questions. Additionally, each age specific category questionnaire still had question modules that explored specific interests related to that particular age group category being investigated.



District and CSO participants during the training workshop at Ntinda Valley Hotel, Iganga District

The health facility questionnaires assessed service interventions on HTC, PMTCT, ART, diagnosis and treatment of Sexually Transmitted Infections (STIs) and Tuberculosis (TB), Laboratory Services, ANC, Basic/Comprehensive Emergency Obstetric Care Services, Adolescent Youth Friendly Services, Health Management Information Systems (HMIS) records and Commodity Management (Drug Stores).

Prior to the training of district LG and CSO personnel, extensive pre-testing of survey questions took place at the village and health facility levels. Edits and various adjustments were made to improve these data collection tools before the final printing of questionnaires could commence.

2.2 Training/re-training

Training/re-training of the two groups lasted five days each. The first group trained from 4th- 8th July, 2011 and this group included participants from Iganga, Kamuli, Kaliro, Mayuge and Namutumba while the second group trained from 11th-15th July, 2011 and included participants from Buyende, Bugiri, Luuka and Namayingo districts. Participants consisted of persons from the District Departments of Health and Community Development and from the CSOs partnering with STAR-EC in their respective districts of work. Majority of the participants had taken part in the previous STAR-EC LQAS activities apart from a few that had been brought on board to replace those that could not make it. The overall number of trainees was eighty nine.

The training covered the following topics: introduction to surveys and LQAS methodology, field preparation, sampling and selection of households, selection of respondents, pretesting, interviewing techniques and logistics of data collection. The training was participatory with practical sessions where the interviewers demonstrated knowledge on household selection within a mini, mock village. During the session on interviewing techniques, tips were provided to the interviewers on how to contact the household in a village, explain the purpose of the study, gain cooperation, enumerate household members, select the respondent, ask questions in the required manner, put the respondent at ease, and accurately record the respondent's answers and any other required information. Role-play and mock interview training techniques were employed.

Household Survey General Information

4,275 respondents aged 15-54 years were interviewed from 4,275 households within 855 villages. Of those interviewed 1,253 (29.3%) were males aged 15-54 years and 3,022 (70.7%) were females aged 15-49 years, 1,986 (46.5%) were young people aged 15-24 years.

An additional 855 respondents were interviewed as part of the OVC questionnaire. This number is excluded from all those mentioned above.

During the training, a day was dedicated to training interviewers on the questionnaires used to collect data. During the trainings, six categories of questionnaires were reviewed. These included the biological mother of child 0-11 Months, biological mother 12-23 Months, females 15-49 years, males 15-54 years, young people 15-24-24 years, the new OVC questionnaire as well as the health facility questionnaire. Questions were translated into Lusoga (the local language). Results of the pre-test were reviewed overnight by the survey supervisors and discussed the following day together with the field interviewer teams. Lastly, as a means to establish the knowledge levels of training participants, prior and end training evaluation exercises were conducted.

2.3 A Brief Background to the LQAS Methodology

The LQAS methodology was developed in the USA in the 1920s and widely used in the manufacturing industry for quality control of the goods produced on a production line. This methodology involves taking a small random sample of a manufactured batch (lot) and testing the sampled items for quality. If the number of defective items in the sample exceeds a pre-determined criteria (decision rule) then the lot is rejected. The decision rule is based on the desired production standards and a statistically determined sample size. This methodology was borrowed by the public health sector. It uses a small sample of 19 respondents that provides an acceptable level of error for making management decisions (samples larger than 19 have practically the same statistical precision as 19 - they do not result in better information, and they cost more²). Details of the history and statistics behind the method have been discussed in various literatures³.

LQAS is a low cost, less time consuming sampling method that can be adapted to the service sector by using SAs instead of production lots to identify poorly performing areas that do not reach an established benchmark. It can also provide an accurate measure of coverage or service system quality at a more aggregate level (e.g. program area). In this survey, existing lower level administrative structures such as counties and sub-counties were used as SAs and a district as a program area or SAs. A minimum of five supervision areas per district was required to obtain an acceptable 95% confidence level in the LQAS survey. SAs were derived in respect to population size and geographical locations of different sub-counties. The higher the population of a given sub-county or county, the more likely it stood a chance of being selected as a SA. The overall district coverage for the survey indicators was then used as a benchmark against which SA performance was assessed as either below or above the desired performance and poorly performing areas identified as a priority for improved or enhanced interventions.

As earlier mentioned, there was no need to apply the LQAS survey methodology in selecting health facilities for the health facility survey. Neither of the districts in the EC region had a number of registered health facilities that exceeded 19 units per SA or 95 health units per district. Subsequently, in every district, all the registered government and private health facilities and those which were found functional at the time of the survey were assessed. However, though negligible, a few health facilities (especially private ones) objected to participating in this assessment. It is believed that most of them feared that interviewers were interested in checking on their operation licenses while others probably thought of this as a policing activity.

2.4 Village and Household Sampling

Sampling of villages during the 2011 survey was conducted in relation to the SAs that had already been formulated and defined during the baseline. SA boundaries were formulated in respect to population size

and the geographical location of different sub-counties within each district. Sampling was executed with each district considered as an independent 'Supervision Unit' and divided into 5 SAs.

A two-stage sampling plan, first randomly selected 19 villages per SA by use of proportionate to size sampling. Sampling proportionate to size is a sampling technique for use with surveys or mini-surveys in which the probability of selecting a sampling unit (e.g. village, camp) is proportional to the size of its population. It is most useful when the sampling units vary considerably in size because it ensures that those in larger sites have the same probability of getting into the sample as those in smaller sites and vice versa.

The second step is to randomly select a household within the village. This step involved using the village local council household listings or register that is periodically updated when in- or out-migration and movement within the village takes place. This is the most up-to-date household list, and in cases where one was not available, the interviewer compiled a list together with the village leader(s) based on a village map. Interview locations for the household survey were therefore selected using the updated household listings obtained from local authorities.

Each of the nine East Central districts in the region was divided into five SAs as follows:

Table 2: District Supervision Areas and LQAS in the East Central Region – September 2011

No.	Districts	Supervision Areas
1	Bugiri	Bugiri TC, Bulesa, Bulidha, Buwanga and Muterere sub-counties
2	Buyende	Bugaya, Buyende, Kagulu, Kidera, and Nkondo sub-counties
3	Iganga	Bugweri A and B and Kigulu A, B and C
4	Kaliro	Bumanya, Gadumire, Namwiwa, Nawaikoke and Namugongo sub-counties
5	Kamuli	Bugabula A, B and C and Buzaaya A and B
6	Luuka	Bukanga/Waibuga, Bukooma, Bulongo/Nawampiti, Ikumbya and Irongo sub-counties
7	Mayuge	Bunya A, B, C, D and E
8	Namayingo	Banda, Buswale, Buyinja, Mutumba and Sigulu sub-counties
9	Namutumba	Bulange, Ivukula, Kibaale&Nsinze, Magada and Namutumba sub-counties

Source: STAR-EC LQAS Household Surveys, 2009-2011

² Valadez J. et al (2003) Assessing Community health programs, Using LQAS for baseline and monitoring

³ Lemeshow S, Taber S. Lot quality assurance sampling: single and double-sampling plans. World Health Statistics Quarterly 44, 115-132

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2.5 Quality Assurance and Control

Quality assurance was taken to be an integral component of the entire survey process and included appropriate preparation and orientation of research assistants to ensure that they were sufficiently trained and familiar with the survey processes and the different questionnaires; provision of adequate support supervision by a team of supervisors⁴ at every stage of the survey with an emphasis on quality data collection; and regular and prompt feedback and reporting to each responsible survey line manager or consultant in each district by the data collectors.

At each survey stage, instant field problem solving as well as the production and constant field editing was exercised by the participants themselves in each district. Fully edited questionnaires would then be given to each respective district LOAS focal person and ultimately their supervisors (district survey consultants) would give the final take. Further, cleaning of collected data still took place at both data entry and analysis levels. Lastly, during the dissemination exercise, the data especially the health facility data was cleaned by the district participants themselves.

2.6 Ethical Considerations

2.6.1 Informed Consent

In this survey, every respondent had the right to refuse the interview or to refuse to answer specific survey questions. In this survey, the interviewers respected this right and verbally administered informed consent before conducting the interview. However, such cases were almost inexistent and very negligible. Most of the intended and randomly selected respondents accepted to be interviewed the very first time they had been approached by an interviewer.

2.6.2 Privacy

It is important for each respondent's interview to be conducted in a manner that is comfortable for them and in which they are able to speak openly and honestly. Therefore, all interviews were conducted in the respondent's home and in a private area. During the interview, no other adult man, woman or older child was present or able to hear the interview. Babies and other younger children in some instances were allowed to be present during the interview. If the respondent indicated that she or he was uncomfortable holding the interview at home, the interview was done at another location of the interviewee's preference.

2.7 Data Sources and Analysis

The data sources of the health facility survey were the health facilities themselves (found within each specific district). Households were the lowest units from which respondents to the household based LOAS survey were obtained.

Data analysis focused on assessing coverage levels for the different program indicators and comparisons between districts. To a large extent, proportions were computed to determine the status of each indicator and statistical tests (z-test, chi-square and fisher's exact) were

applied to assess whether the resultant changes were significant at the 5% level. Desegregation by district, respondent's age and sex, and other key variables were done to some extent in order to understand the possible factors behind the variations. Data was entered using the Epi Data software and STATA statistical software was used to compute proportions and significance levels.

Table 3: Number of Health Facilities Assessed by Year

District	Baseline (2009)	2010 Survey	2011 Survey
Bugiri	55	40	40
Buyende	*	19	20
Iganga	91	69	63
Kamuli	59	18	17
Kaliro	17	51	51
Luuka	*	20	28
Mayuge	37	43	47
Namayingo	*	26	24
Namutumba	33	33	38
TOTALS	292	319	328

Some health facilities that had been assessed in the previous years were either found to be non-functional or were private drug stores not worthy re-assessing as health facilities thus the decrease in the number of health facilities in some districts

*Districts were still part of their mother districts during survey year (Buyende was part of Kamuli, Luuka part of Iganga and Namayingo part of Bugiri)

Source: STAR-EC Health Facility Assessments, 2009 – 2011

3.0 Results

Table 4: Demographic Characteristics of Survey Population, 2011 Survey

Characteristic	Category	n= 4,275	Percentage
Sex	Male	1,253	29.3
	Female	3,022	70.7
Age Group (years)	15-24	1,986	46.5
	25-34	1,287	30.1
	35-44	723	16.9
	45-54	279	6.5

⁴ The team of supervisors included a total of 10 personnel (one provided the overall technical oversight and support supervision) as well as nine district specific consultants who extended technical assistance to district participants during the execution of this methodology in each district.

Characteristic	Category	n= 4,275	Percentage
Education Status (highest level of education attained)	No school education	454	10.6
	Primary 1-4	636	14.9
	Primary 5-7	1,848	43.2
	Secondary	1,187	27.8
	Tertiary	120	2.8
	missing responses	30	0.7
Marital Status	Single, no partner	617	14.4
	Single, regular partner	169	4.0
	Single, non-regular partner	95	2.2
	Married/Cohabiting	3,234	75.7
	Divorced/Separated	141	3.3
	Others/missing responses	29	0.4
District of Residence	Bugiri	475	11.1
	Buyende	475	11.1
	Iganga	475	11.1
	Kaliro	475	11.1
	Kamuli	475	11.1
	Luuka	475	11.1
	Mayuge	475	11.1
	Namayingo	475	11.1
	Namutumba	475	11.1

Source: STAR-EC LQAS Household survey, 2011

There were significant differences in the sample size adopted for the 2009 baseline (n = 2,280), the 2010 follow-up survey (n =3,420) and the

2011 survey (n=4,275). This is mainly attributed to an increase in the number of districts and target groups for this survey over the years. Additionally, there were significant changes by sex and age when comparing the different years (p<0.001). Results taken from the 2011 survey show that respondents were predominately female (70.7%) while the mean and median age were 27.6 and 25 years (ranges 15 - 54) respectively. The population did not have very high levels of education with only 30.6% had any secondary or higher schooling and the majority of people interviewed (75.7%) were married or cohabiting.

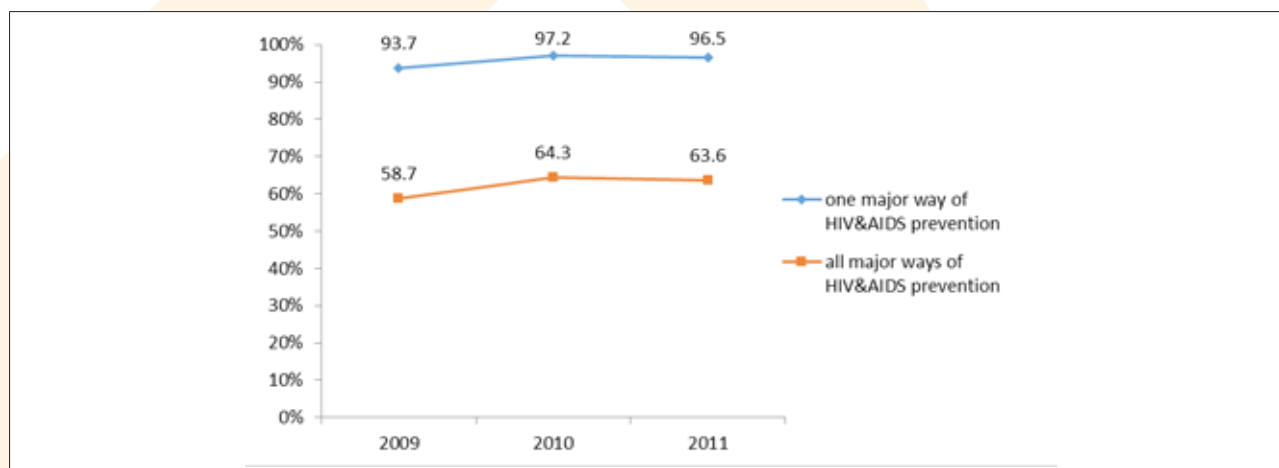
HIV&AIDS Related Indicators

Key HIV&AIDS indicators assessed included those from the following interventions: a) Behavioral Prevention; b) HIV Testing and Counseling (HTC); c) Prevention of Mother-to-Child Transmission (PMTCT); d) Anti-Retroviral Therapy (ART); e) Care and support services for People Living with HIV&AIDS; and f) HIV/TB collaborative services.

Behavioral Prevention (Abstinence, Being Faithful and Condom use - ABC)

Abstaining from sexual activity, being faithful to one sexual partner, and using condoms during sexual intercourse are three behaviors that can prevent or reduce the likelihood of sexual transmission of the HIV virus. These behaviors constitute the "ABC approach." Key questions related to this aspect of knowledge of HIV transmission were assessed during the survey as well as questions concerning HIV-related misconceptions. When asked about ways to reduce the risk of HIV transmission, 63.6% (n=3,420) of respondents reported knowing that all three ways (abstaining from sex, consistent condom use and having one faithful, uninfected partner) are key prevention methods. Though not significant, there was a slight decrease from the previous year's 64.3% (n=3,420) in 2010 as illustrated in figure 1 below. There was also a similar pattern of results in the proportion of respondents who were able to mention at least one major HIV prevention method comprising any of the three aforementioned prevention ways from 93.7% (n=2,280) in 2009 to 97.2% in 2010 and 96.5% (n=3,420) in 2011. A trend analysis for both indicators is illustrated in figures 2 and 3 below.

Figure 1: Trend in the Proportion of Respondents that Mentioned One or All Major Ways of HIV&AIDS Prevention (ABC)

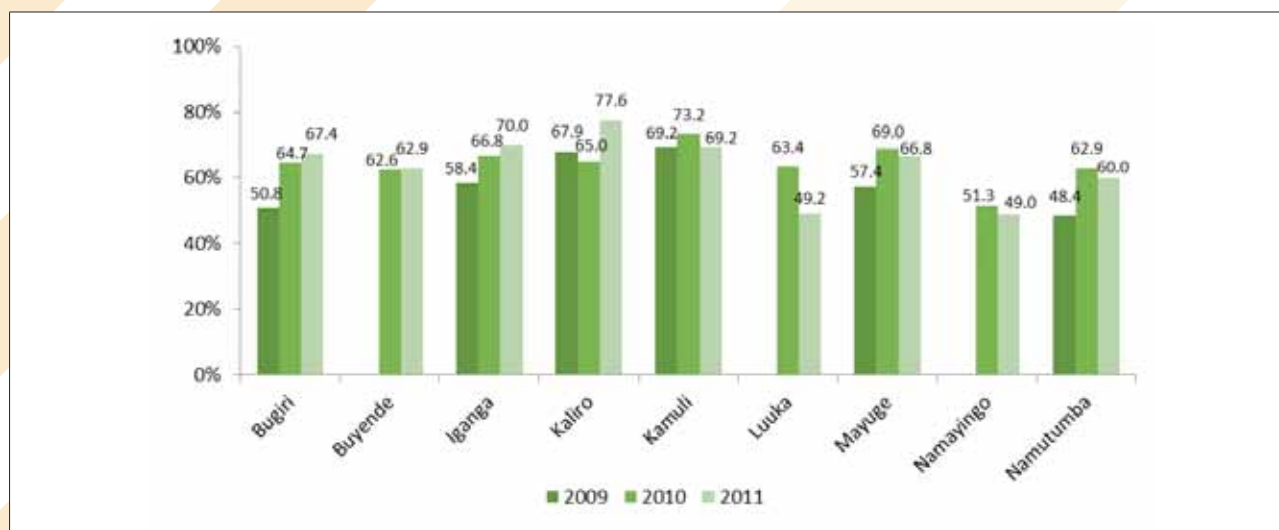


Source: STAR-EC LQAS household surveys, 2009- 2011

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There were significant differences across districts (Pearsonchi2 (8) =119.7, $p<0.001$) and gender (Pearsonchi2 (1) =5.4, $p=0.021$) for the proportion of respondents that mentioned all the three HIV prevention approaches. More proportions of men (66.1%, $n=1,247$) than women (62.1%, $n=2,173$) knew about these HIV&AIDS prevention methods. Among districts, males in Bugiri (73.0%, $n=137$) recorded the highest proportions while female respondents from Luuka (45.6%, $n=237$) and Namayingo (45.1%, $n=244$) had the least knowledge of HIV&AIDS prevention methods. Figure 2 below shows differences related to awareness of the three major prevention ways by district.

Figure 2: Percentage of Adults Who Can Mention All Three Major Ways of HIV&AIDS Prevention by District*

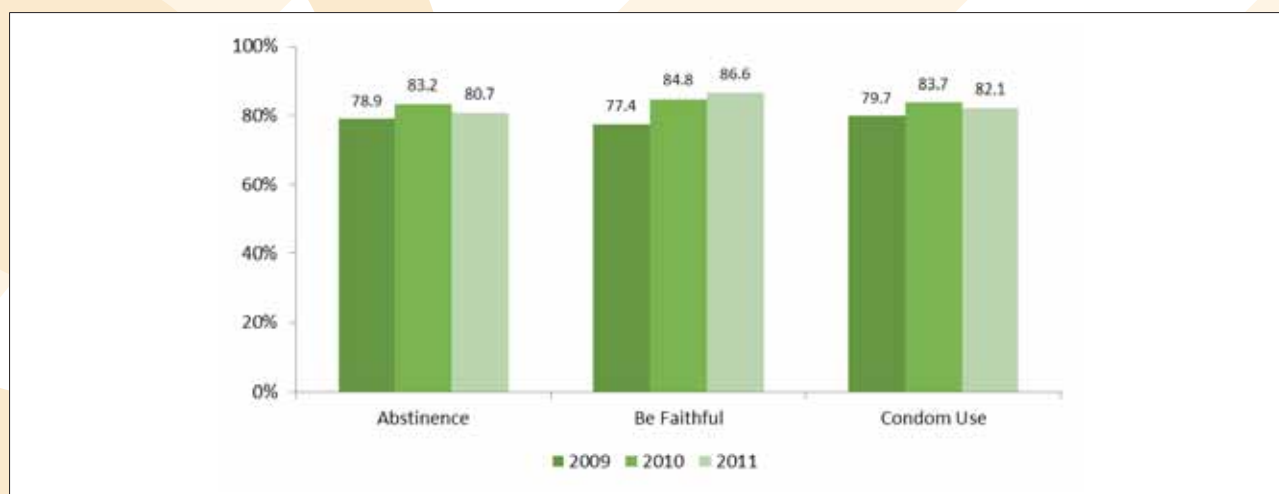


Source: STAR-EC LQAS household surveys, 2009-2011

*Buyende, Luuka and Namayingo districts were not yet in existence by 2009, therefore no results during the same year

Figure 3 below shows further evidence of the trends related to respondents' knowledge and awareness of one prevention method. Being faithful maintained an upward trend since baseline when compared to abstinence and consistency condom use.

Figure 3: Knowledge and Awareness of At Least One HIV Prevention Method



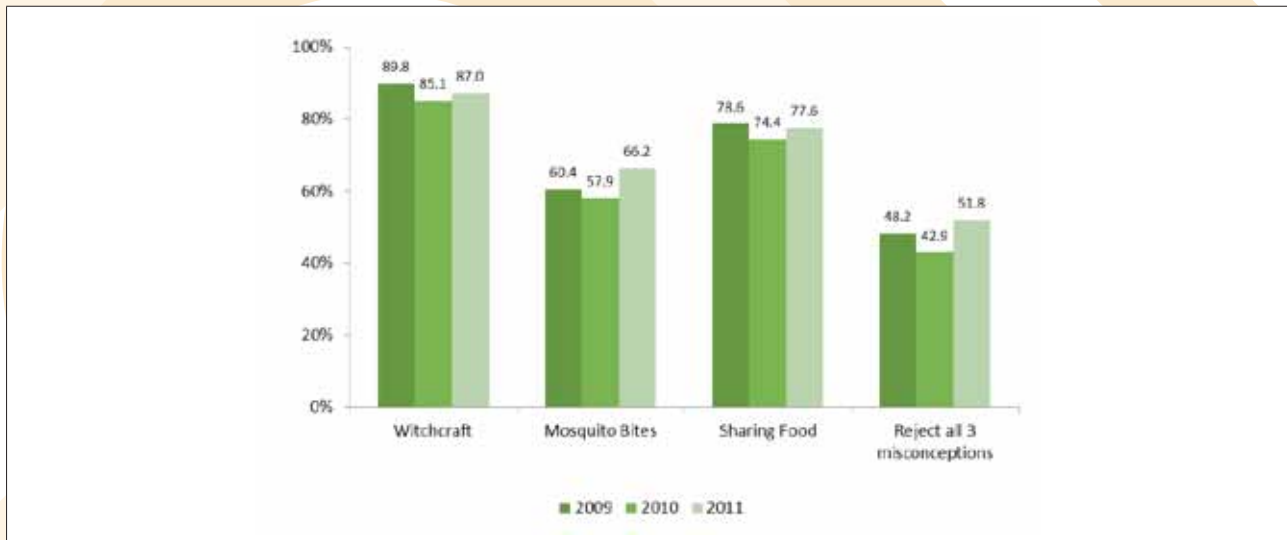
Source: STAR-EC LQAS Household Surveys, 2009-2011

HIV Transmission Misconceptions

The study also focused on investigating beliefs in the three major HIV transmission misconceptions that include the transmission of HIV through mosquito bites, witchcraft and sharing of food with an infected person. Overall, as illustrated

in Figure 4, half of the respondents (51.8%, n=3,420) were able to reject the major aforementioned HIV transmission misconceptions. This figure also shows an increase from 42.9% (n=3,420) reported in 2010. For the third year running, most of the respondents were able to reject transmission through witchcraft while fewer respondents rejected transmission through mosquito bites –something that calls for well packaged and tailor made information, education and communication interventions to alleviate this undesirable situation. Knowledge on HIV transmission misconceptions was significantly (Pearson chi2 (1) = 4.7, p = 0.031) more common among females (53.2%, n=2,173) than males (49.3%, n=1,247).

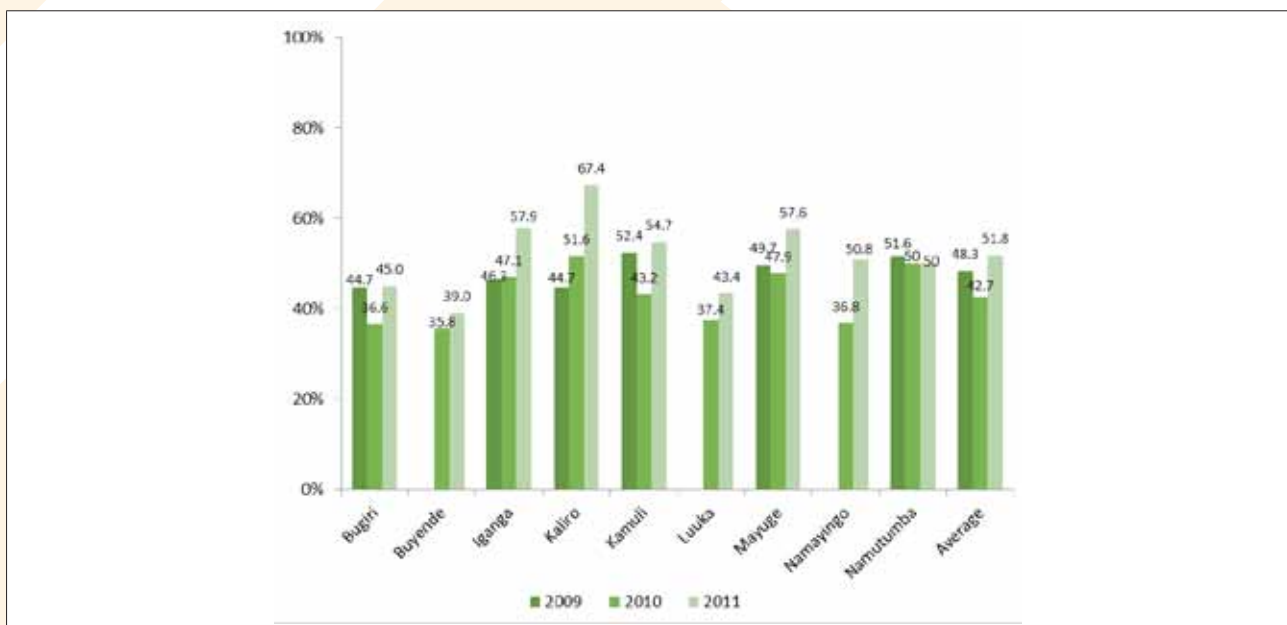
Figure 4: HIV Transmission Misconceptions by Year of Survey



Source: STAR-EC LQAS household surveys, 2009-2011

Figure 5 illustrates the significant variations ($p < 0.001$) in knowledge of HIV transmission misconceptions by districts with Kaliro having the highest and Buyende with the lowest proportions.

Figure 5: Percentage of Adults that Rejected HIV Transmission Misconceptions by District*



Source: STAR-EC LQAS Household Surveys, 2009-2011

*Buyende, Luuka and Namayingo districts were not yet in existence by 2009, therefore no results during the same year

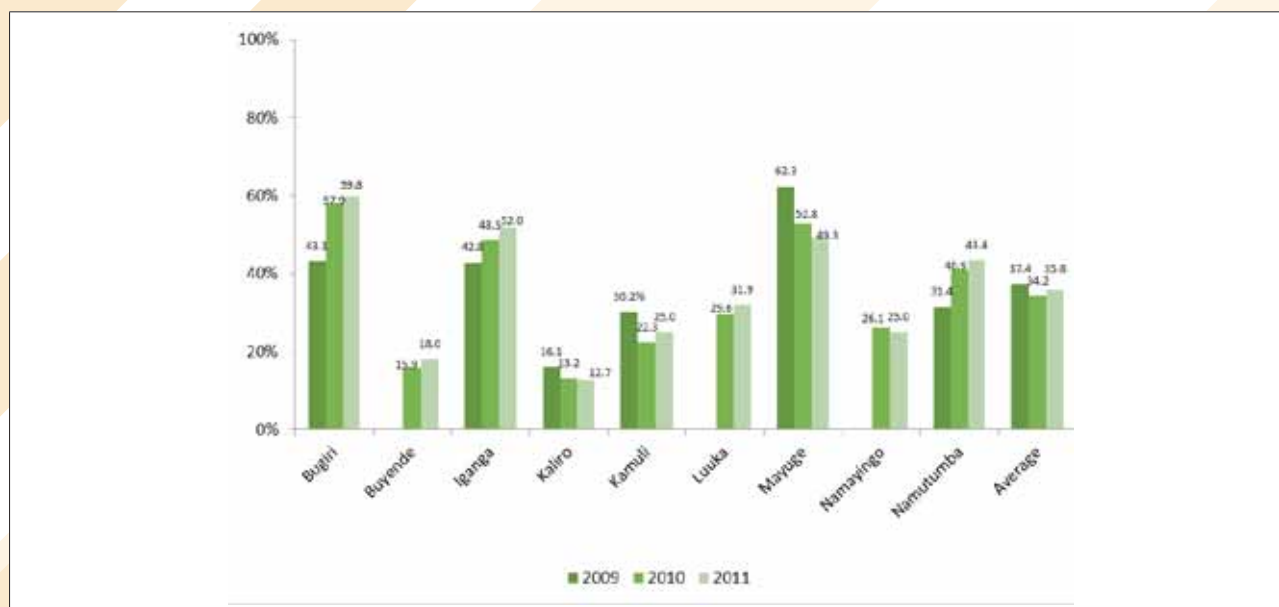
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Bio-Medical Prevention

Safe Male Circumcision (SMC) is one of the novel ways that have been proven to minimize HIV transmission risks. Clinical trial results conducted in three different countries did show an effectiveness of 60% in South Africa, 53% in Rakai-Uganda and 57% effectiveness in Kisumu-Kenya. In March 2007, WHO/UNAIDS recommended SMC as an integral part of HIV prevention strategies following clinical trial results that had been obtained in South Africa, Uganda, and Kenya. Globally, 30% of men are circumcised and this practice is primarily done for cultural and religious reasons and occasionally for medical reasons. Over 40 observational studies have shown a protective effect of SMC against HIV acquisition and countries with high male circumcision prevalence tend to have low HIV prevalence. The MoH in Uganda has also worked out a policy in support of SMC. During PY2 (Oct 2009 – Sept 2010), STAR-EC initiated SMC services in seven health facilities within East Central Uganda. By the end of PY3, the program was supporting 15 sites and several outreaches in extending SMC services to different targeted males.

Figure 6 shows the increasing trend for most districts in the proportion of men that have ever been circumcised since 2009. On the other hand, Kaliro, Mayuge and Namayingo showed a downward trend across the years. Overall, the proportion of men that have ever been circumcised in 2011 increased when compared to the previous year.

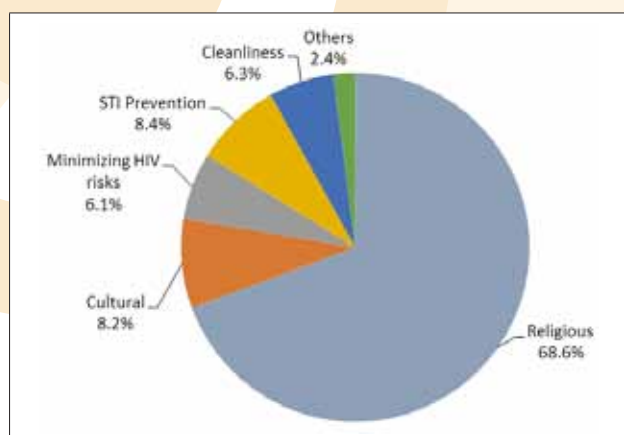
Figure 6: Proportion of Males 15-54 years Who Have Ever Been Circumcised by District and Year*



Source: STAR-EC LQAS 2009-2011 Household Surveys

*Buyende, Luuka and Namayingo districts were not yet in existence by 200, therefore no results during the same year

Figure 7: Respondents' Reasons for Circumcision



Overall, results show that there is still no significant change (Pearson $\chi^2(2) = 2.4, p = 0.298$) on the proportion of circumcised adult males in the last three years. However, the proportion of those getting circumcised within the last year prior to the survey was not significant (Pearson $\chi^2(6) = 12.6, p = 0.050$). Of those circumcised in the one year prior to the survey, there was an increment from 3.8% at baseline, 7.8% in 2010 and 9.2% in 2011.

Figure 7 illustrates the respondent's reasons for circumcision. Overall, of the men between 15-54 years who reported having been circumcised, the majority, 76.8% reported being circumcised for both religious and cultural reasons, a decline from last year's 80.0%.

Though not significant (Pearson $\chi^2(6) = 8.0, p = 0.240$), more are getting circumcised from health facilities (17.0% in 2009, 21.6% in 2010 and 24.2% (n=422) in 2011). Only 43.6% reported being circumcised from a cultural/religious setting or by a cultural/religious person – a finding

slightly lower than the previous year's finding of 41.7%. About 32.2% (n=422) in 2011 compared to 36.6% in 2010 reported getting circumcised from other non-medical settings. With all these findings, however, there is still the need to promote quality circumcision through supporting more health facilities with SMC services and trained SMC service providers.

Of those men who reported that they have never been circumcised, approximately seven in every ten (74.6%, n=792) reported that they would take up the opportunity once free circumcision services were offered at a health facility –this was slightly more than the 72.9% reported in 2010. Of the 176 male respondents who reported that they would still not undergo circumcision even if they were offered a free chance at a health facility: 26.1% reported that circumcision is against their religion or faith; 43.8% that it is too painful, 2.3% mentioned the existence of poor quality services while 27.8% gave many other reasons among which included the existence of poor quality circumcision services and/or that the service still has some hidden costs even if it were provided free.

HIV Testing and Counseling (HTC)

- ▶ An increment from 203 (63.6%) in 2010 to 232 (70.7%) in 2011 of health facilities were found to be offering any form of HCT services i.e. Counselling, referrals or HIV testing itself
- ▶ Only a quarter (24.8% in 2010 and 27.4% in 2011) of health facilities reported counselling HIV+ clients on TB prevention and treatment
- ▶ Only (22.6% in 2010 and 28.4% in 2011) HFs reported that they are currently carrying out HCT outreach services

HIV testing and counseling is the entry point for other HIV services such as treatment, care and support. Interventions encourage one who is negative to stay negative by adhering to abstinence, being faithful or proper and consistent condom use. Among other things, one who is HIV positive is encouraged to live a positive life and seek proper medication. This makes HTC the first step of referral to umbrella/clinical care and support services including screening or testing for TB.

The analysis of HIV&AIDS related questions was limited to respondents of reproductive age (15-49 years for women and 15-54 years for men). Therefore, the total sample size for these specific questions was 3,420 (1,247 males and 2,173 females). The analysis also looked at the young people (15-24 years old) as a sub-population of interest, whose performance against the various survey indicators was also assessed.

Table 5: Summary of Key HIV Counseling and Testing (HCT) Indicator Results

Year of Survey	Know where testing services are offered			Have ever tested			Tested and received HIV results in one year prior to the survey		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Age in Years									
15-24	81.5	81.6	84.1	42.0	47.0	56.1	30.9	33.0	42.9
25-34	83.0	85.5	86.8	55.3	57.5	65.3	37.4	40.1	50.1
35-54	84.0	83.9	85.0	50.9	52.7	56.7	33.0	36.4	41.1
p value	p=0.416	p=0.034	p=0.208	p<0.001	p=0.002	p=0.208	p=0.001	p=0.003	p<0.001
Sex									
Males	84.9	84.4	84.1	42.5	45.8	48.0	27.5	30.6	32.4
Females	81.0	82.5	85.5	51.3	54.7	64.7	36.8	39.0	51.1
p value	p=0.019	p=0.150	p = 0.271	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001
Districts									
Bugiri	78.9	85.6	83.3	50.9	57.3	58.1	34.2	40.8	41.8
Buyende	*	79.4	84.1	*	37.6	43.7	*	19.2	29.5
Iganga	82.6	87	91.8	41.5	51.2	58.5	27.9	34.5	42.6
Kaliro	81.3	83.2	92.9	44.9	44.5	55.9	26.6	30.0	44.7
Kamuli	84.5	88.3	90.4	48	63.7	69.3	36.6	51.3	57.4
Luuka	*	76.4	80.9	*	38.3	55.2	*	24.2	42.6
Mayuge	87.9	88.4	89.2	56.9	63.9	66.8	41.6	43.4	45.3
Namayingo	*	78.8	70.8	*	50.1	58.1	*	38.7	44.0

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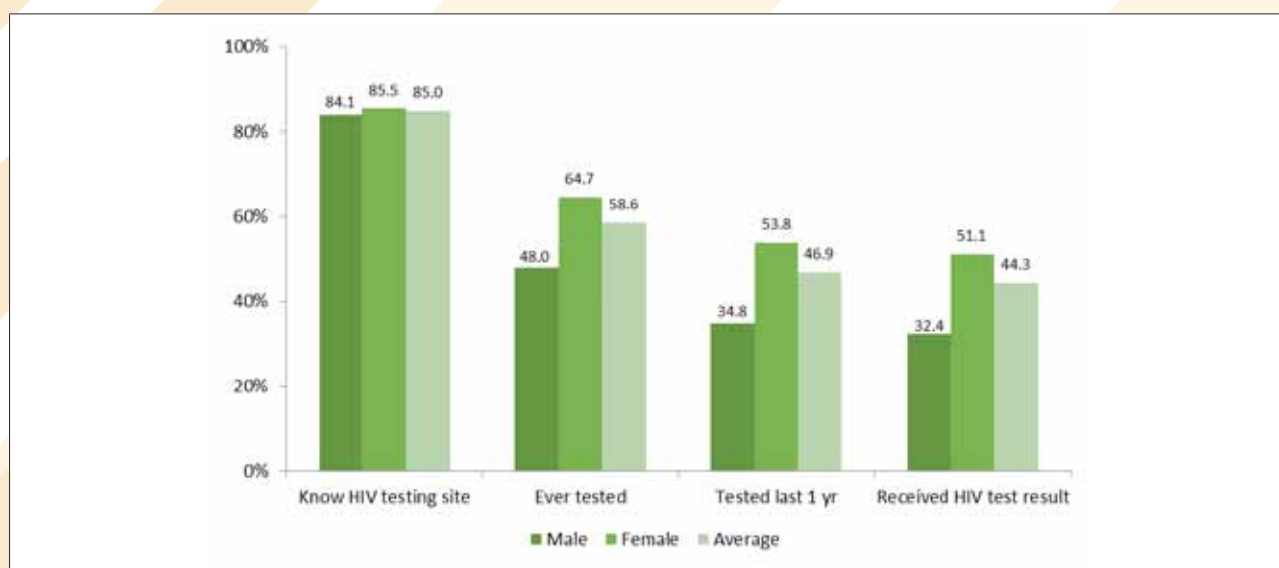
Year of Survey	Know where testing services are offered			Have ever tested			Tested and received HIV results in one year prior to the survey		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Namutumba	80.0	81.8	81.5	45.1	54.6	62.0	32.4	39.7	50.8
p value	p=0.015	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001
Totals	82.5	83.2	85.0	47.9	51.3	58.6	33.2	35.8	44.3

*District was not in existence during baseline and was only formulated in 2010 after the national re-districting exercise.

Source: STAR-EC LQAS Household Surveys, 2009-2011

Figure 8 shows this year's results on key HIV indicators by gender. A total of 85% of the respondents knew an HIV testing site while only 58.6% (n=3404) had ever tested for HIV since the advent of HIV&AIDS. Across the board, there were significant differences in sex (Pearson chi2 (1) = 90.9, p < 0.001) as well as districts and when comparing the three years (p<0.001). However, when comparing knowledge on access of testing sites, there were no significant differences between females and males (Pearson chi2 (1) = 1.2, p = 0.271).

Figure 8: HIV Counseling and Testing Indicator (adults 15 -54 years) Results by Gender



Source: STAR-EC LQAS Household Surveys, 2009-2011

Knowledge of a Testing Site

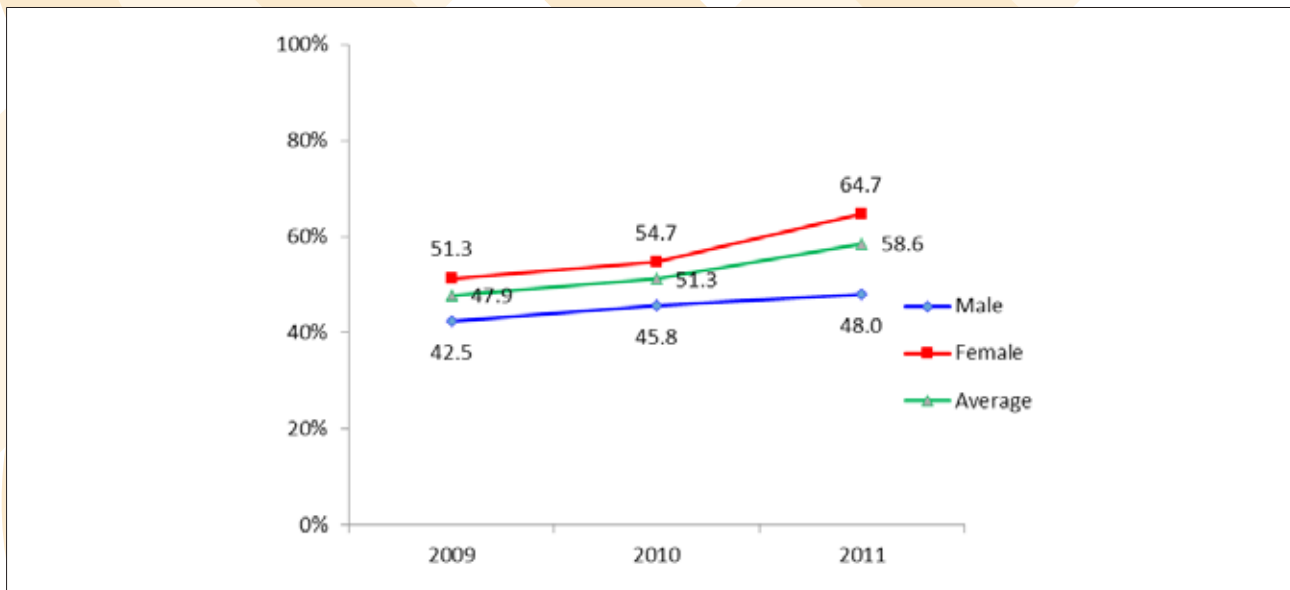
Results show a gradual and steady increase for most districts on the proportion of adults that knew where to test for HIV. There were significant differentials in coverage noted by district for all three surveys (p < 0.001). In 2011, the majority of respondents who knew such places were found in the districts of Kaliro (92.9%) and Iganga (91.8%) while the least performing were found in Namayingo District (70.8%).

Overall and similar to the baseline (82.5%, n=2,277) and the 2010 survey (83.2%, n=3,401), the vast majority of respondents (aged 15-54 years) in the 2011 survey (85%, n=3,383) knew where they could take an HIV test.

Ever Tested for HIV

Respondents were asked whether they have ever taken an HIV test in their entire life. Figure 9 shows a gradual increase to 58.6% (n=3,404) in 2011. Similar to findings in the previous LQAS surveys, significant differentials in the estimates were noted by gender and district (p < 0.001); where, a higher proportion of females (51.3% in 2009, 54.7% in 2010 and 64.7% in 2011) compared to the males (42.5% in 2009, 45.8% in 2010 and 48% in 2011) reported having ever been tested for HIV.

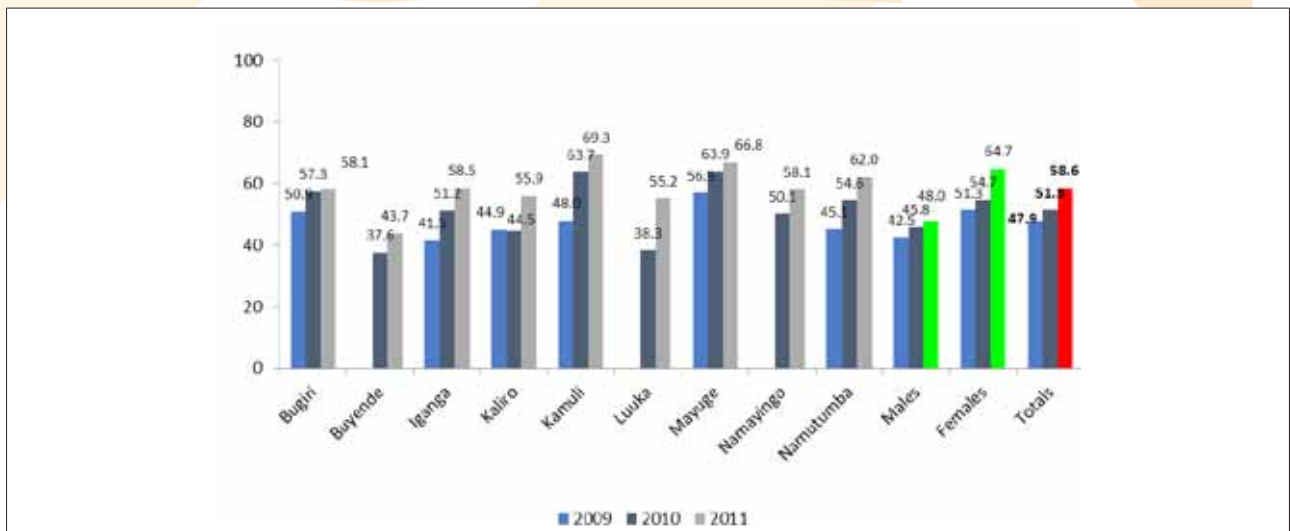
Figure 9: Percentage of Women and Men Age 15–49 Who Have Ever Been Tested for HIV by Year



Source: STAR-EC LQAS Household Surveys, 2009-2011

As shown in Figure 10, among districts, Kamuli (69.3%, n=378) reported the highest coverage while the least was found in Buyende (43.7%, n=378). It is also worth mentioning that significant progress ($p < 0.001$) was realized from Luuka District which had results increase from 38.3% in 2010 to 55.2% in 2011.

Figure 10: Percentage of Adults (15-54 years) that Have Ever Tested by District and Year)*



Source: STAR-EC LQAS Household Surveys, 2009-2011

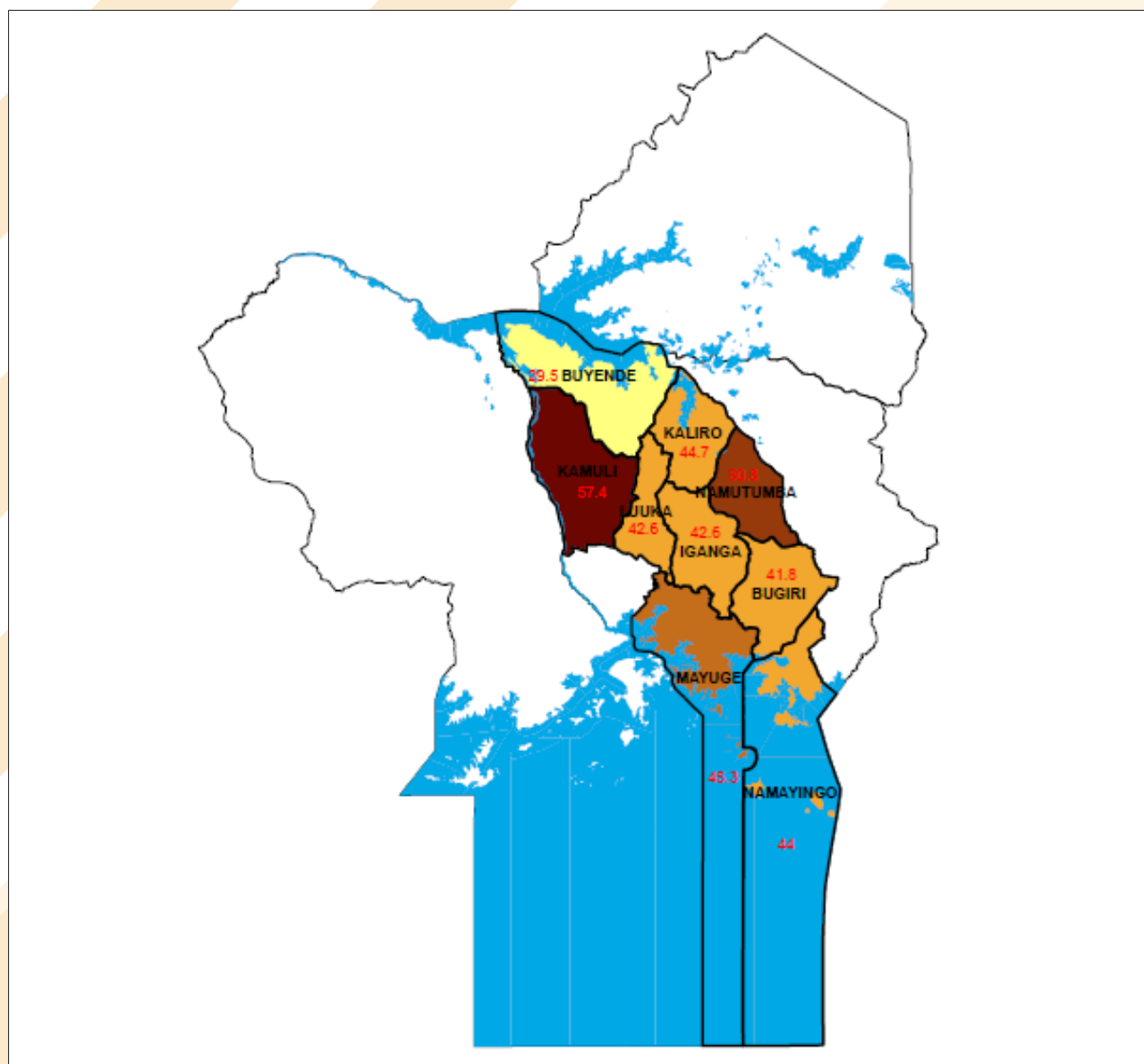
*Buyende, Luuka and Namayingo districts were not yet in existence by 200, therefore no results during the same year

HIV Testing Within One Year Prior to the Survey

It is always desirable that over certain periods of time, one should test for HIV more than once especially if they have been practicing risky sexual behavior. Testing once for HIV (especially for those that turn out to be negative) may not be sufficient as one's status may change over time. As earlier stated, it is therefore advisable that one tests at subsequent time periods especially if they know that they have been practicing risky sexual behavior or in cases where they doubted their partner(s)' faithfulness. Routine HTC is therefore very imperative. This survey therefore involved a series of questions on HIV testing among respondents within the last year prior to the survey.

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Figure 11: Map Illustrating the Proportion of Adults (15-54 years) that Tested for HIV and Received Their Results in Last One Year Prior to the Survey in East Central Uganda



Source: STAR-EC LQAS Household Surveys, 2011

Respondents were asked whether they had taken an HIV test in the last year prior to the survey. There was a steady increase in all districts in the proportion of adults (15 years and above) from 33.2% (n=2,280) during baseline to 35.8% (n=3,420) in 2010 and finally to 44.3% (n=3,420) in 2011. Similar to the previous survey findings, estimates in 2011 (Pearson $\chi^2(2) = 118.0, p < 0.001$) varied significantly by gender where a higher proportion of females (36.8% in 2009, 39.0% in 2010 and 51.1 in 2011) than males (27.5% in 2009, 30.6% in 2010 and 32.4% in 2011) were noted to have taken an HIV test. Furthermore, significant differences ($p < 0.001$) among districts were noted in 2011 with Kamuli (57.4%, n=380) reporting the highest coverage while the least was in Buyende (29.5%, n=380).

Findings revealed that 80.5% (n=1,989) of those who had ever tested for HIV had taken an HIV test within one year prior to the survey – a finding that probably implies that a huge proportion of those who have ever tested are the ones who keep on re-seeking the same service and thus a need to design interventions that can help break into the group (41.4%) that has never tested for HIV. Additionally, about two thirds (65.4%, n=2,872) of those who knew where to take an HIV test had actually ever taken an HIV test and 52.9% (n=2,876) of those who knew where to take an HIV test had taken one within 12 months prior to the survey. Within HIV testing and counseling programs, emphasis is placed on the importance of HIV status disclosure among HIV-infected clients, particularly to their sexual partners. Disclosure is an important public health goal for a number of different reasons. First, disclosure may motivate sexual partners to seek testing, change behavior and ultimately decrease transmission of

HIV. In addition, disclosure has a number of potential benefits for the individual including increased opportunities for social support, improved access to necessary medical care including antiretroviral treatment, increased opportunities to discuss and implement HIV risk reduction with partners, and increased opportunities to plan for the future (WHO 2004 report). As part of this survey, partner disclosure was investigated for respondents who had tested within one year prior to the survey. Overall, 91.2% (n=1,098) of those respondents who had partners at the time of HIV testing reported that they disclosed and discussed their results with their partners. There were no significant differences among the districts (Pearson chi2 (16) =19.7, p=0.234).

Young People and HIV&AIDS

Social Demographics on Young People

Table 6: Surveyed Population Socio Demographic Characteristics: Sex, Highest Level of Education Attained and Marital Status

Characteristic	Category	n=1,986	Percentage
Sex	Male	582	29.3
	Female	1,404	70.7
Highest level of education attained	No school education	92	4.6
	Primary 1-4	175	8.8
	Primary 5-7	943	47.5
	Secondary	720	36.3
	Tertiary	46	2.3
	Missing/unknown	10	0.5
Marital Status	Single, no partner	557	28.1
	Single, regular partner	137	6.9
	Single, non-regular partner	76	3.8
	Married/cohabiting	1,172	59.0
	Divorced	18	0.9
	Separated	22	1.1
	Missing/unknown	4	0.2

Source: STAR-EC LQAS household surveys, 2011

Young People and HTC

Among the young people aged 15-24 years, 84.1% (n=1,643; 95%) reported knowledge of a place where one could go for an HIV test; the coverage did show some increment when compared to the baseline (81.5%, n=1,086) and 2010 result (81.6% (n=1,635). No significant gender differentials were noted on this very indicator in all the three annual surveys (P> 0.05).

More youth (56.1% n=1,653) had ever taken an HIV test in 2011 compared to 47.0% (n = 1,628) in the 2010 survey and 41.8% (n=1,087) in the baseline year of 2009. Similar to the findings of the previous surveys, there was evidence of significant gender and age differentials on HIV testing among young people. More females (61.3%) than males (46.3%) reported having ever taken an HIV test (Pearson chi2 (1) =34.5, p<0.001). There were also significant differences across the districts (Pearson chi2 (8) =15.9, p=0.043).

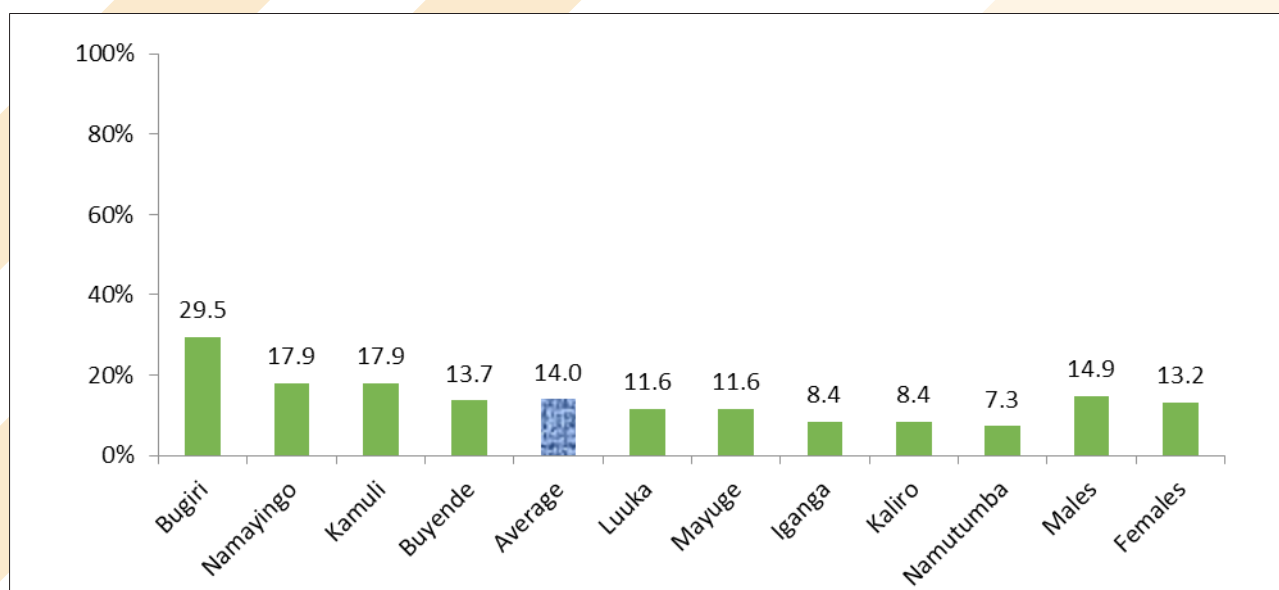
Survey findings also suggest that 42.9% (n=1,662) in 2011, 33.0% (n=1,639) in 2010 and 30.9% (n=1,087) in 2009 of young people aged 15-24 years reported that they had taken an HIV test and received their results in the last year prior to the survey. Among districts, there were significant differences (Pearson chi2 (16) =35.9, p=0.003) in the coverage of young people who tested for HIV and received their results within one year prior to the survey. The highest proportions were noted in Kamuli (54.1%) and Namutumba (49.5%) while the lowest were reported in Bugiri (36.2%) and Buyende (33.3%) districts.

Figure 12 shows the district differentials in percentage of youth who had had sexual intercourse by the age of 15. Overall, the average was 14%. However, there were significant differences across districts with Bugiri having 30% as the highest and Namutumba having the lowest at 7%.

When comparing outcomes on different age groups and HIV testing, more adults aged 25-34 years (65.3%, n=878) have ever tested for HIV when compared to adults aged 36-54 years (56.7%, n=873) and young people aged 15-24 years (56.1%, n=1,653). Similar to findings from different years, these results were significant (Pearson chi2 (2) = 21.7, p < 0.001).

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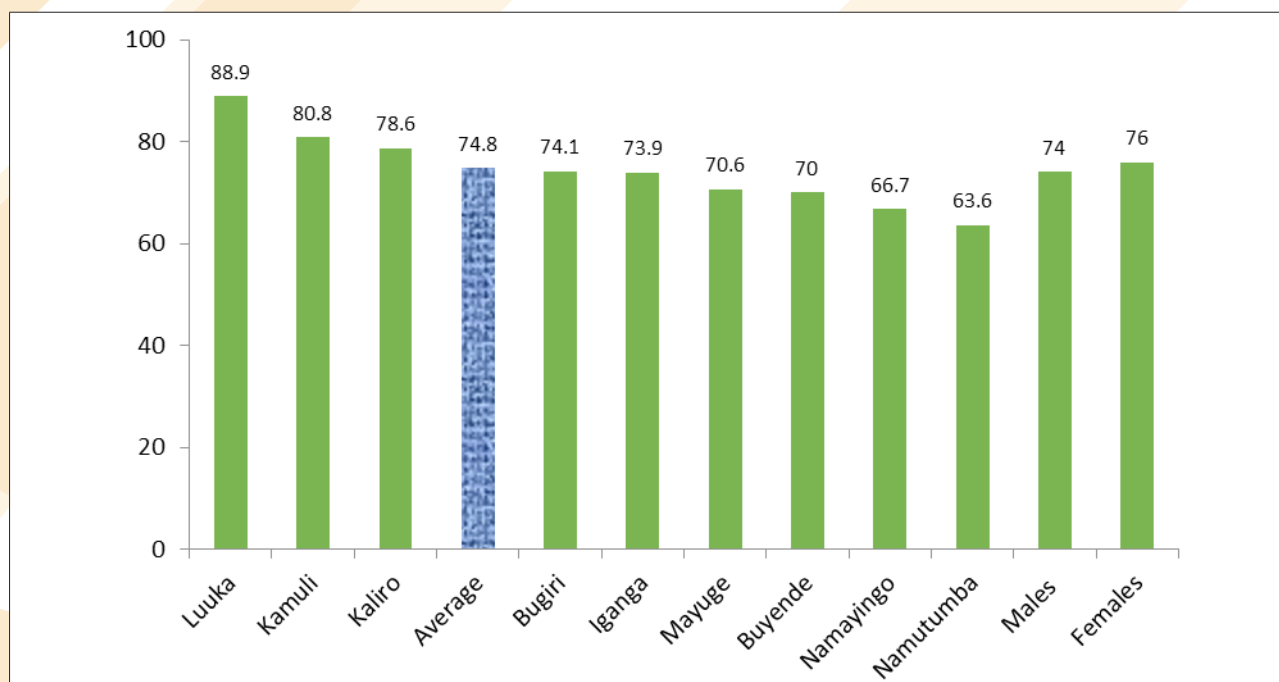
Figure 12: Percentage of Youth 15-24 Years Who Have Had Sexual Intercourse Before the Age of 15 Years in 2011



Source: STAR-EC LQAS Household Surveys, 2011

Figure 13 highlights the proportion of youth that used condoms at last high risk sex in the last 12 months. Luuka had the highest proportion while Namutumba had the lowest proportion.

Figure 13: Condom Use at Last High Risk Sex in the Last 12 Months Among Young People



Source: STAR-EC LQAS Household Surveys, 2011

Young People and HIV Prevention

Overall, 63.1% (n=1,662) of young people 15-24 years mentioned the three major programmatically important ways to prevent HIV&AIDS transmission (abstinence, mutual faithfulness and proper condom use). Unlike the 2010 survey (Pearson chi2 (1) = 9.2, p=0.002), there were no significant

gender differences (Pearson chi2 (1) = 3.6, p=0.057) during the 2011 survey. However, more males (66.2%) than females were found to be slightly more knowledgeable. Among districts, the highest coverage for knowledge among young people was found in Kaliro at 82.8% while the lowest was reported in Namayingo at 45.6%. Additionally, analysis shows that almost all (96.2%, n=1,662) of the young people 15- 24 years mentioned at least one major programmatically important way to prevent HIV&AIDS transmission.

Reproductive Health among adults 15-54 years

Areas assessed under reproductive health during this survey comprised mainly of aspects that were related to family planning utilization and goal oriented antenatal care. Family planning results showed that the proportion of women aged 15-49 years using any method during the baseline was 25.3% (n=2,217) but stagnated at 23.6%, (n=3,327) during both the 2010 and 2011 follow-up surveys. Further assessments were conducted on women who use modern family planning methods. Results also showed that 26.2% (n=2,373) of currently married/cohabiting women 15-49 years (excluding pregnant women) were using modern family planning methods. This finding can be compared to the earlier year's proxy findings of 22.1% (n=2,217) in 2009 and 21.6% (n=3,327) on women of the same age group who were found to be using modern family planning. All the three year's findings are higher than the 2008 national estimates of 19.6% .

- ▶ While the proportion of those who attend ANC at least once increased from 91.4% (2010) to 96.8%, the proportion of those attending ANC 4 times seems to be on a decline 49.1% (2009), 44.8% in 2010 and 42.3% in 2011.
- ▶ Results indicate a drop from 8.3% (2009) to 35.4% (2010) and 31.1% (2011) of those reported being accompanied by their partners during pregnancy.
- ▶ Two thirds of pregnant women (66.9%) reported giving birth in a health facility in the 2 years prior to the survey – this finding was almost akin to last year's 66.3%
- ▶ Only 26.2% of all married/cohabiting women interviewed reported using modern family planning method

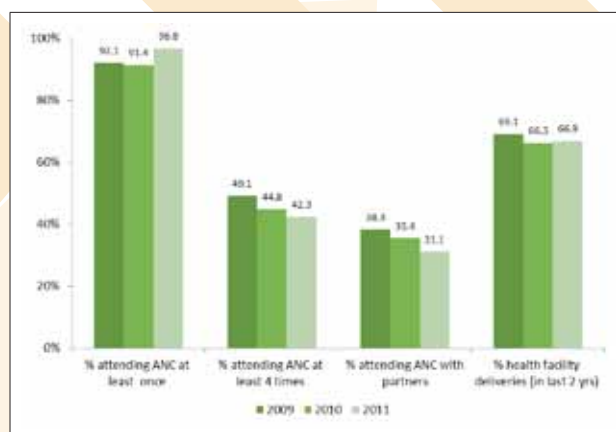
Women who had given birth to children two years prior to the survey were asked questions related to goal oriented ANC. Other questions entailed their last pregnancy related experiences, practices and behaviors.

Almost all biological mothers of children 0-23 months (96.8%, n=1,710) had attended ANC at least once during their last pregnancy in 2011. However, there was a decline in the percentage of these women who attended ANC at least 4 times during their last pregnancy in the last two years prior to the survey from 49.1% (n=570) in 2009 to 44.8% (n=855) in 2010 and finally to 42.3% (n=1,710) in 2011. The proportion of biological mothers of children 0-23 months who reported having attended ANC with their partners also seemed to be on the decrease from 38.3% (n=570) at baseline to 35.4% (n=855) and 31.1% (n=1,710) in the years

2010 and 2011 respectively.

Over the last two years, there was no change in the proportion of health facility deliveries (66.3%, n=855 in 2010 and 66.9%, n=1,710 during 2011). Additionally, both these findings were slightly lower than the 2009 baseline findings of 69.1% (n=570). There were significant variations across districts (Pearson chi2 (8) = 248.8, p<0.001) – something that seems to suggest the need for a lot of attention in response to the low performing districts. Kaliro (84.2%), Iganga (83.2%) and Kamuli had the highest number of deliveries at a health facility while Bugiri (45.3%) and Namayingo had the lowest at 29.0%. While it is possible for women to deliver from a health facility setting, it is also possible for some women to deliver from a health facility in the absence of a skilled or qualified service provider. Overall, 65.8% (n=1,710) of biological mothers of children 0-23 months reported having their deliveries assisted by qualified staff (i.e. a doctor, nurse or midwife) at the health facility.

Figure 14: Reproductive Health Indicator Results



Source: STAR-EC LQAS Household Surveys, 2009-2011

Prevention of Mother to Child Transmission of HIV (PMTCT)

- ▶ 91.3% of adults (15-54) years identified at least one way of MTCT
- ▶ 47.0% compared to 45.2% in 2010 of adults (15-54 years) were able to identify all the 3 MTCT ways
- ▶ % of respondents 15-54 years who knew that HIV can be transmitted to a baby through;

	Males	Females
Pregnancy	60.2%	63.6%
Delivery	84.2%	84.9%
Breast feeding	64.6%	73.7%

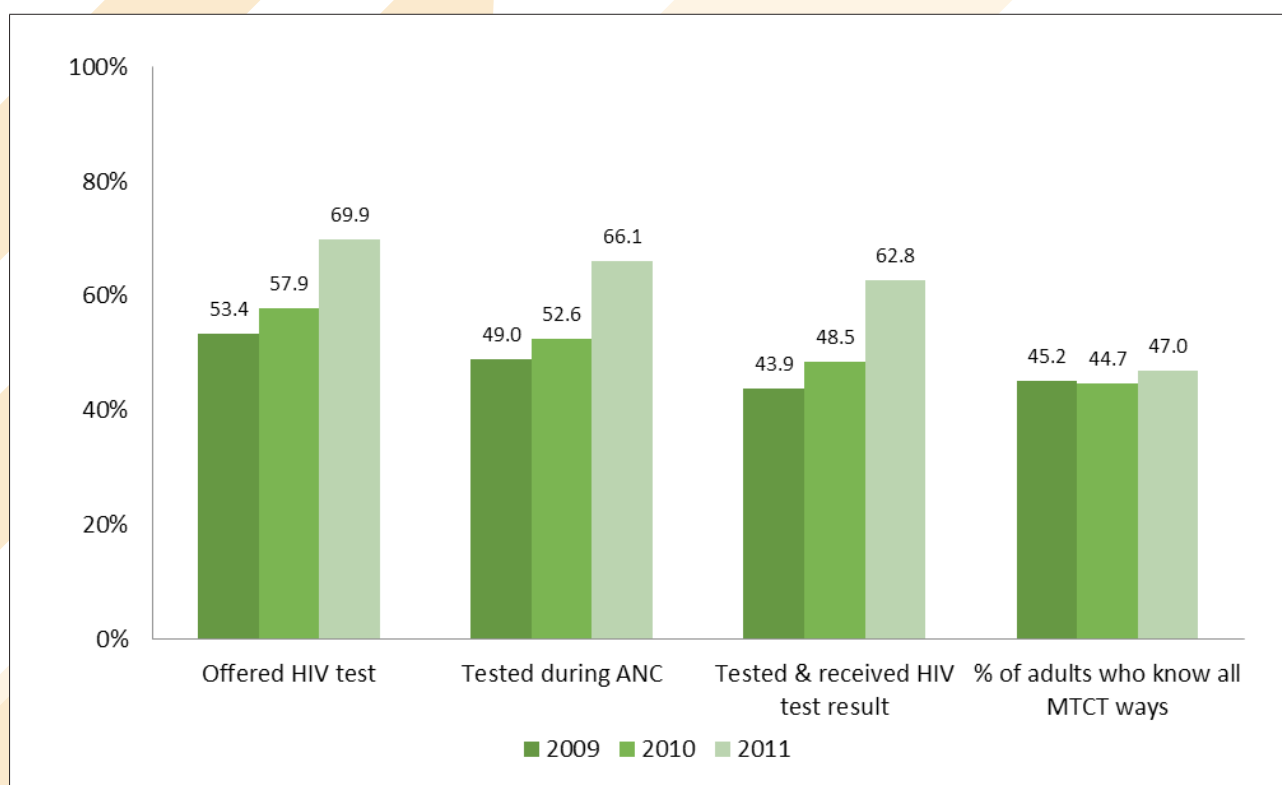
PMTCT of HIV is an important strategy promoted by the MoH and other development partners in the fight against pregnant women infecting their unborn babies with HIV during pregnancy, delivery and after birth while breast feeding. Without treatment, many babies born to HIV positive women can become infected with HIV through the three aforesaid transmission ways. Uganda was among the first countries

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in sub-Saharan Africa to initiate a pilot clinical PMTCT program in the year 2000. Back then, PMTCT services were given as a routine service to consenting HIV-positive women at delivery. Educating women that PMTCT is of benefit to them and their babies is another approach that has been adopted. This is a diversion to the earlier approach where PMTCT services were a part of the birth delivery package, given as a routine offer for those who tested HIV positive during prenatal clinic visits. Currently, MoH is advocating for virtual elimination of mother to child transmission of HIV where implementing partners have to target all pregnant HIV positive women.

Information related to PMTCT practices was sought from biological mothers of children 0-11 months and those with children 12-23 months who had given birth to children two years prior to the 2011 survey. Additionally, knowledge of PMTCT was assessed from both males and females in the reproductive age groups 15-54 years and 15-49 years respectively. Figure 15 illustrates the upward trend in the key PMTCT indicators across the years.

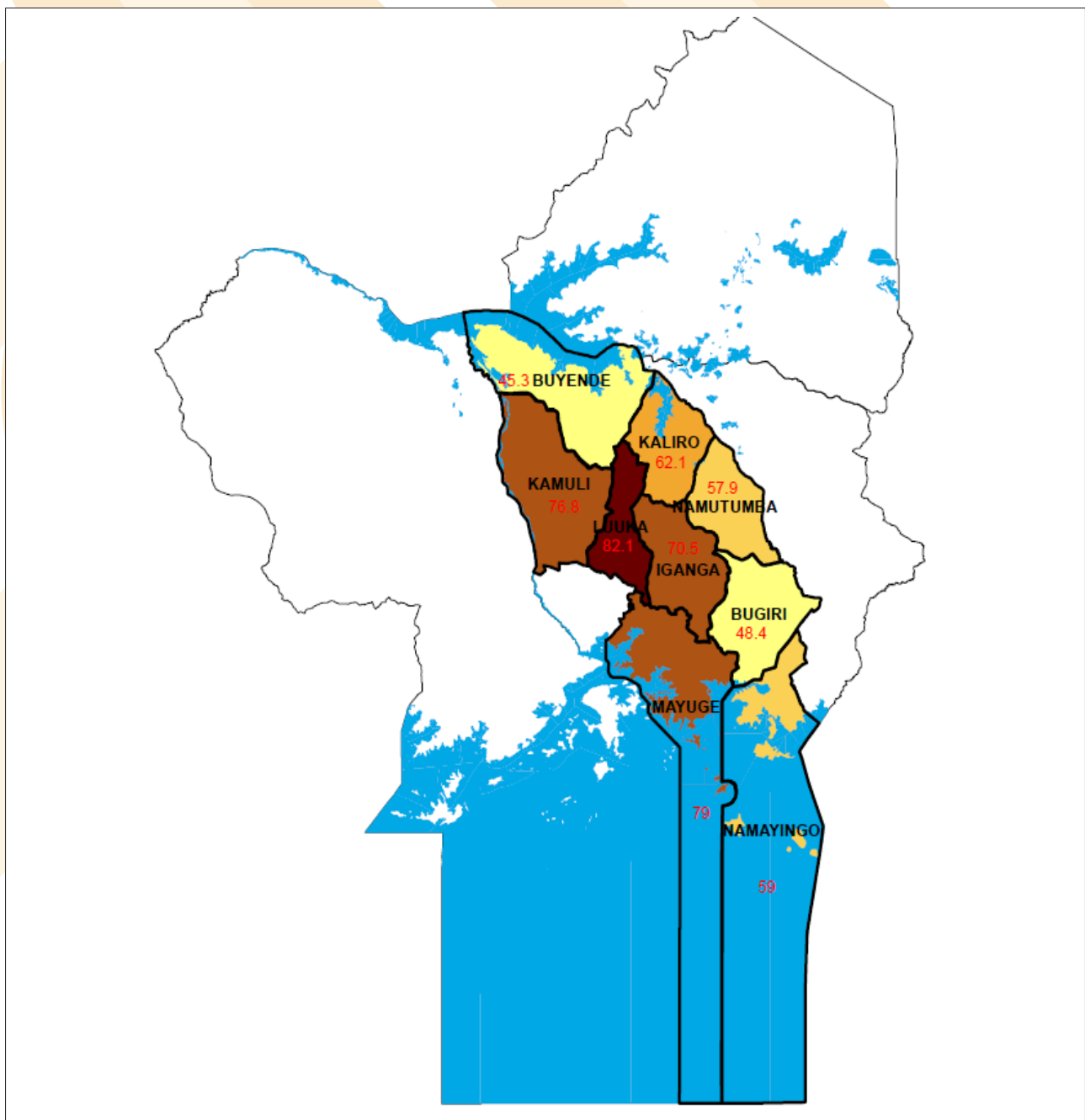
Figure 15: PMTCT Indicator Results



Source: STAR-EC LQAS Household Surveys, 2009-2011

Overall, there were substantially more women that were offered the HIV test and who were tested and received their HIV test results this year compared to previous years. Though not significant ($p > 0.05$), there was a reduction in the knowledge of any one MTCT way compared to the past surveys i.e. 91.3% ($n = 3,420$) in 2011 compared to 95.5% ($n = 2,280$) in 2009 and 93.7% ($n = 3,420$) in 2010 of respondents mentioned having knowledge of any one MTCT way. Although nine in every ten of the respondents knew at least one way of mother-to-child transmission, less than half of the respondents (47%, $n = 3,420$) were able to mention all three ways of HIV vertical transmission, marking a negligible improvement from 2010 at 44.7% ($n = 3,420$). Women (49.7%) were more likely than men (42.4%) to know of all three ways (Pearson $\chi^2(1) = 16.6$, $p < 0.001$).

Figure 16: Map Showing Biological Mothers of Children (0-11 Months) Who Tested and Received Their HIV Results During Their Last Pregnancy in East Central Uganda (Overall Regional Coverage =64.6%)



Source: STAR-EC LQAS Household Surveys, 2009-2011

Anti-Retroviral Therapy (ART)

The uptake of ART services has considerably increased and by the end of September 2009, there were 200,213 clients on antiretroviral therapy country wide i.e. 8.5 % children aged <15 years and 91.5% of adults aged over 15years (UNGASS Country Progress Report, 2010).The household survey set out to find respondents' knowledge, perceptions and thoughts on ART. Table 7 highlights a decrease in the trend of proportion of adults who believe that HIV patients should take ARV drugs across the districts. Overall, proportions reduced from 36.1% (n=2,280) at baseline to 35.5% (n=3,420) and 31.5% (n=3,420) in the years 2010 and 2011 respectively.

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Table 7: Percentage of Adults (15+ years) Who Believe That HIV Patients Should Take ARV Drugs

Districts	Year of Survey		
	2009	2010	2011
Bugiri	45.5	38.4	30.0
Buyende	-	17.6	13.4
Iganga	32.6	50.8	42.4
Kaliro	33.7	37.9	41.8
Kamuli	41.6	30.5	36.3
Luuka	-	41.1	29.2
Mayuge	31.3	41.6	37.4
Namayingo	-	33.7	30.8
Namutumba	31.8	27.6	22.6
Regional Total	36.1	35.5	31.6

Buyende, Luuka and Namayingo districts were not yet in existence by 2009, therefore no results during the same year

Source: STAR-EC LQAS Household Surveys, 2009- 2011

Table 8: Percentage Who Know of a Place to Obtain ARV Drugs (Government and Private Health Facilities)

Districts	Year of Survey		
	2009	2010	2011
Bugiri	66.8	64.1	60.6
Buyende	-	43.8	51.4
Iganga	56.0	71.9	85.1
Kaliro	55.2	59.0	80.7
Kamuli	51.9	49.9	67.1
Luuka	-	59.7	66.4
Mayuge	57.1	73.1	75.8
Namayingo	-	42.7	42.0
Namutumba	61.5	64.9	66.7
Regional Total	58.0	58.8	66.3

Buyende, Luuka and Namayingo districts were not yet in existence by 2009 therefore, no results during the same year

Source: STAR-EC LQAS household surveys, 2009- 2011

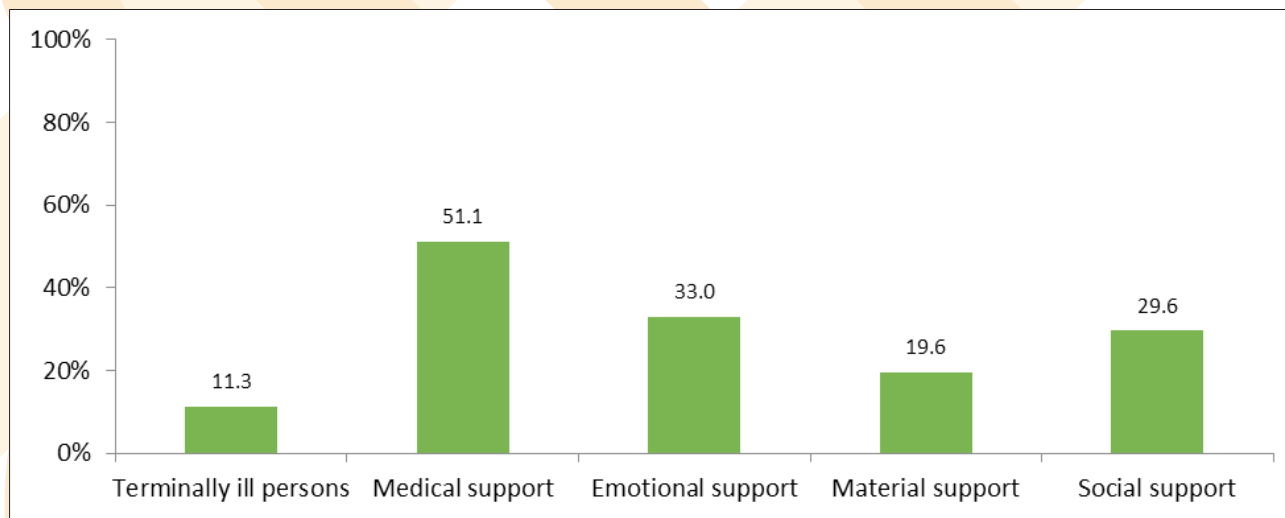
Overall, household results showed that while individual beliefs on ART treatment seem to portray a negative trend, more individuals are getting to know where to access ARVs.

Care and Support

The survey asked questions on both community and clinical care with respect to the various HIV&AIDS and/or related indicators. Due to stigma related issues, it is not as possible to get an actual measure of the number/proportions of PLHIV at the household level or the actual measure of PLHIVs in need of care and treatment support. Most people are always hesitant to mention and opt never to reveal whether they are HIV positive. Again, people are always reluctant to mention if someone in their household is HIV positive. However, survey findings did reveal a decrease from 65.6% (n=2,276) at baseline to 62.6% (n=3,404) and 53.4% (n=3,277) in 2010 and 2011 respectively in the number of respondents that reported they would want to keep it a secret if a family member were found to be HIV positive. In order to minimize respondent bias, the survey therefore opted to adopt a proxy question that would help to measure the existence of PLHIVs and their need for care services. Thus, respondents were asked whether they had a sick and bedridden person (including the respondent) or someone who had died after being sick or bedridden for more than three months in their household.

There was no significant change (Pearson chi2 (4) = 4.8, p = 0.306) in the trend and proportion of households reporting having existence of such persons over the last three years. Results at baseline in 2009 were reported at 12.7% while in 2011 they were at 11.3% (n=1,700) as illustrated in Figure 17. The 2011 survey revealed significant district differentials (Pearson chi2 (16) = 28.6, p = 0.027) in coverage of terminally ill persons. The highest proportions among districts were noted in Namutumba (14.8%) while the lowest were found in Kaliro (4.3%). Over half of the affected households (56.3%, n=192) reported receiving home care and support for the terminally ill person(s). Among districts, the highest findings were reported from Namayingo (87%) while the lowest were reported from Buyende at 37%. The survey also established that almost all respondents' households (96.2%, n=183) with terminally ill persons reported their willingness to care for a PLHIV in their own) mentioned that they would take them to the health facility. Figure 17 further illustrates the proportion of households with terminally ill persons and the type of support they received for the terminally ill or bedridden person.

Figure 17: Care and Support Indicator Results



Source: STAR-EC LQAS household surveys, 2011

Tuberculosis (TB)

Every year more than 2 million people around the world die from TB (tuberculosis), but the disease's greatest impact is felt in sub-Saharan Africa. With 102,000 new cases every year, Uganda is ranked sixteenth out of the 22 countries with the highest burden of TB. A total of 45,546 new TB cases had been identified in Uganda by the end of last year (2010). Of these, 545 (1.2%) were confirmed to be HIV positive (Uganda National TB and Leprosy Program, 2010).

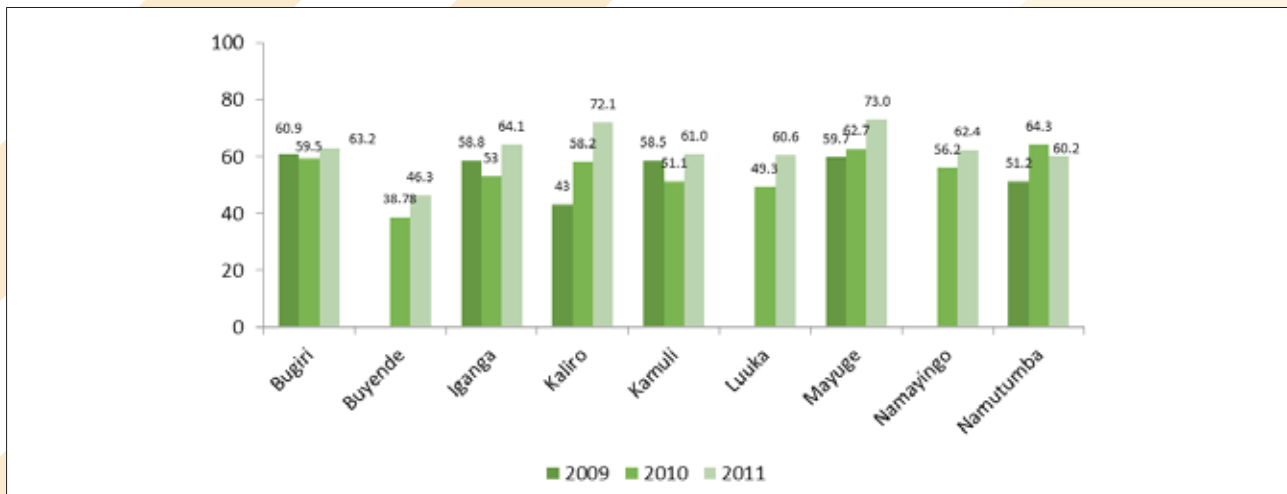
Directly Observed Treatment Short Course (DOTS) (the internationally recommended strategy for TB control) case detection and treatment success rates: 5% and 70%, respectively) for new sputum smear-positive (SS+) cases are still below the World Health Organization's (WHO) global targets of 70 and 85%, respectively. These low rates are mainly due to insufficient case reporting, non-adherence to TB treatment, poor access to health care services, and a limited number of skilled staff and diagnostic facilities. In addition to these challenges, Uganda has the highest default rate of any high-burden country. For the East Central Ugandan region, the high prevalence of HIV infection, at 6.5%, further exacerbates the problem of TB control.

The STAR-EC program routine TB/HIV indicators have improved across all districts. Most notable however, is the low prevalence of TB/HIV co-infection at 34% in the region when compared to the national estimate on prevalence at 50-60% TB/HIV co-infection (National TB and Leprosy Program, 2010). This improvement and others are the result of improved linkages and internal referrals between the TB and HIV care services as well as improved knowledge and dissemination of the new policy among the health care providers.

As part of the household survey, knowledge and awareness on TB within the various East Central region communities were investigated. Close to nine in every ten (85.3%, n=3,385) knew of at least one sign and symptom of TB; 84.8% (n=3,393) knew that it is possible for one to have both HIV and TB at the same time while more adults aged 15-54 years this year knew that TB is a curable disease (61.5%, n=3,367 in 2011 compared to 53.1% during the previous year). Additionally, though not significant (Pearson $\chi^2(2)=5.1, p=0.079$) more males 63.4% than females 60.5% knew that TB is a curable disease and 69.7% respondents knew about the risk of not completing TB treatment. Figure 23 shows the trend in the proportion of adults who knew that TB is a curable disease by district.

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Figure 18: Percentage of Adults 15-54 Years Who Knew of TB is a Curable Disease by District

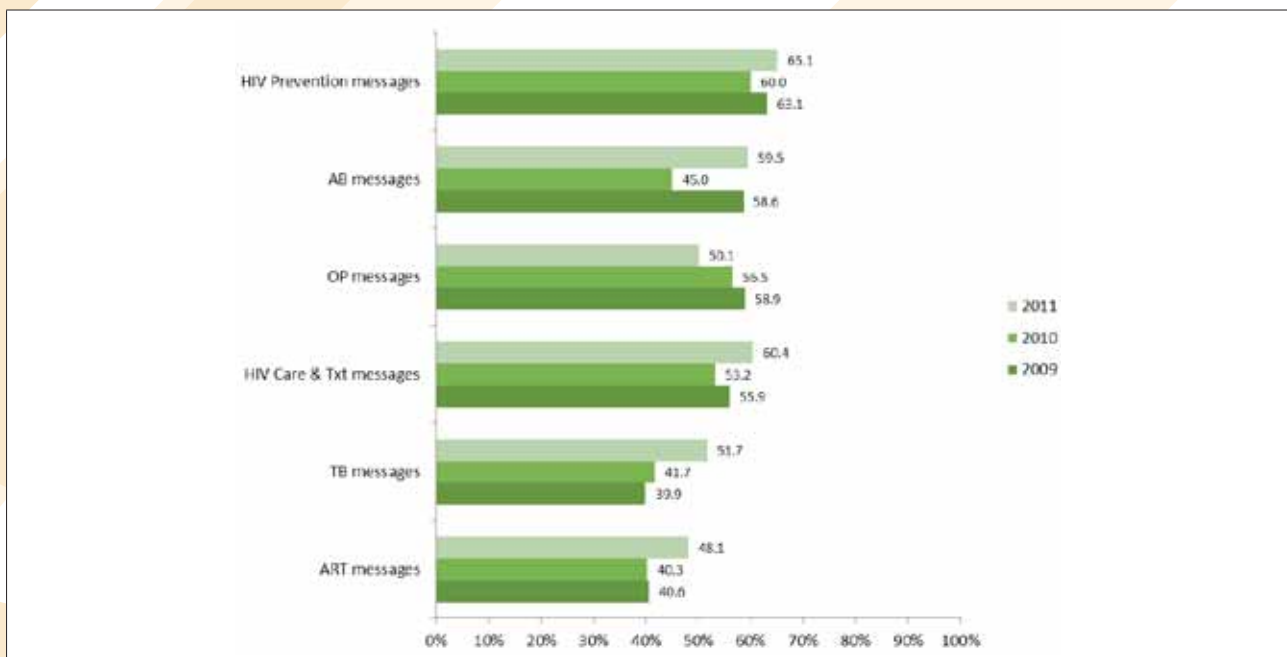


Source: STAR-EC LQAS Household Surveys, 2009- 2011

Buyende, Luuka and Namayingo districts were not yet in existence by 2009, therefore no results during the same year

BCC and IEC are also an important component in the success of both HIV and TB interventions hence respondents were asked whether they had heard or received any of these messages within three months prior to the survey. Figure 19 shows the trend in the proportion of respondents receiving health messages by type of message. There was a significant increase in the messages received in all intervention areas except OP messages. The variations across the districts for most indicators were found to be significant $p < 0.001$.

Figure 19: Percentage Distribution of Respondents Receiving Health Messages



Source: STAR-EC LQAS Household Surveys, 2009- 2011

Challenges and Lessons Learned

Challenges

As with all cross-sectional surveys, the 2011 LQAS survey had some limitations to the data collected and the interpretation of it. These challenges continued to suffice in similar ways as those from previous surveys including:

- ▶ Whenever possible, interviewers were instructed to observe items like bed nets and toilet facilities. However, information like ante-natal attendance, HIV testing during pregnancy and malaria intermittent presumptive treatment were not systematically verified against the ANC card, except in case of contradicting answers. Similarly, the details of the treatment given to children with history of fever were not confirmed with respective medical forms, thus possibly contributing to erroneous categorization of the medicines prescribed.
- ▶ Because respondents were asked to report on information from their past, such as previous utilization of health services especially during ANC or episodes of illness for malaria, it is possible that their responses did not accurately reflect their experiences because their memory of the event might have changed over time. Though everything possible was done to control for response bias, some respondents might have intentionally reported their own behavior or experiences incorrectly based on a perceived desirability of responses rather than actual knowledge or practices.
- ▶ Interpreting the findings of surveys always poses the challenge of attribution of the results. Due to the cross-sectional design of all the 2009, 2010 and 2011 surveys, it is only possible to draw conclusions about associations between various factors and the resultant measures of each indicator. Any attribution of causality is not as possible. In a dynamic environment like the health sector in Uganda, it is also difficult to attribute an estimated association between a certain intervention and the related findings. More specifically, while the constellation of efforts and activities of the STAR-EC Program may well have had an impact on the direction and change in many of the indicators measured between 2009 and 2011, we cannot claim fully responsibility for the changes observed.
- ▶ In some supervision areas, it was discovered that some of the sampled villages had their names changed and this would cost interviewers a lot of time and money in trying to trace for such villages. However, these would later be traced with the help of the local guides and the objectives of the survey were therefore not compromised.

Other challenges remained as mentioned during the baseline and 2010 reports. These included:

- ▶ Most of the training participants complained of the length of time it took to find a randomly selected village as well as the time taken to randomly select the first household. This was an experience shared by the participants in both the pre-test and the actual data collection exercise.

Other participants also experienced challenges with the time it took to find any member of a given village local council. A village local council member is very necessary in introducing the interviewer to the village as this helps the village populace to build trust in the intentions of the survey exercise.

- ▶ The LQAS methodology suggests that after the first randomly selected household in a village has been identified one moves to the next nearest household that is directly opposite the door of the aforementioned household for the first interview in that village. For this very point, the methodology probably works best in areas where households are located along well defined streets unlike in Ugandan villages where such a household would end up being located over hills and mountains that may be kilometers apart.
- ▶ The poor state of some roads in the region characterized with huge pot holes also slowed transportation and in some areas data collectors had to walk for miles on foot as there was no easy navigation of roads. Similar to some areas within Uganda, most of the roads in East Central Uganda are seasonal and when it rains, they become wet and impassable. Though it did not rain so much during the time of the survey, rains in different districts posed a challenge during the data collection exercise as work would come to a standstill. The worst scenario was found in Sigulu, Jaguzi and other islands that are situated on Lake Victoria. First, it is hard to access them as interviewers have to travel a long time on water to reach them. Additionally, there are few or no roads on these islands thus making it hard to access sampled villages on these islands. Further, there are hardly any vehicles on the islands thus interviewers had to walk for long hours on foot to reach sampled villages and households.
- ▶ In some districts, most or all the district officials who were selected by their respective different District Health Offices were very quick at conceptualizing the methodology, committed to the exercise and did show high levels of engagement and involvement. However to a limited extent, some district officials were either not very committed to the LQAS exercise or simply not competent to conduct this exercise. These were noted and their respective DHOs advised accordingly. In other cases, trainers would pay more attention to trainees who had been identified as not performing to the desired standards. Some of these individuals were later on seen to improve.
- ▶ It is STAR-EC's desire that all the trained district participants will continue with the execution of this activity on an annual basis. However, STAR-EC is not certain that the same personnel that were trained will be the very ones to continue with the execution of this exercise during the subsequent years. Over 80% of the previously trained staff appeared for re-training and continuation of this exercise. Capacity building for any given task is never a one off event but a continuous one.

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Therefore, it is very imperative that the same individuals who received this initial training are the very individuals who should turn up for the subsequent follow on activities as this will enhance their individual and district capacities. It is a challenge that the ever increasing staff turnover cuts across all the East Central districts and it could also contribute to hiccups in subsequent trainings and surveys.

Lessons Learned

Involvement of both junior and senior district officers in this exercise has additional advantages when compared to the sole utilization of senior officers. The senior officers help to give stewardship to junior officers. Additionally, they get to interface with district specific gaps first hand as they are collecting this data. This was very evident especially during the collection of data from health facilities. Owing to their experiences during the survey, senior district officials thereafter get empowered to become better planners and managers based on evidence obtained from collected data. On the other hand, junior officers are more likely to be involved in the actual execution of this entire methodology. Again, they are more readily available given the fact that they have fewer district roles to play when compared to senior district officials who are at times called upon mid-way through the survey exercise to attend to some other district activities.

The 'bodaboda' (motorcycle taxi) hire mechanism is very effective in helping data collectors reach randomly sampled villages at a relatively cheaper cost. Additionally, if the participating District Local Governments could provide their motorcycles for the data collectors

and they are fueled by STAR-EC during the data collection exercise, then this would help to cut costs further and in a way help in the promotion of a spirit of partnership. However, most districts report having their motorcycles occupied in other district on-going activities.

District involvement in the planning and execution of LQAS activities helps to promote ownership of the activity by each district. Partnerships between districts and STAR-EC have also been enhanced by all districts providing their staff in the utilization of the entire methodology thus providing some answers to making LQAS activities sustainable.

Supporting district LQAS focal persons was found to be very helpful. These personnel are continuously being groomed into the future leaders of this exercise in every district. These focal persons not only helped during the survey exercise but in the mobilization of the district authorities to discuss results and come up with action plans during LQAS dissemination.

The continuity of the LQAS exercise can only be ensured if districts and their program staff can fully be trained to understand and utilize the results that are generated by the survey in their annual planning.

Building rapport especially with the local authorities is very important and builds confidence in the local community sharing their ideas freely.

Training of district and CSO staff in the LQAS methodology has empowered them in the deeper conceptualization of community programs, how they operate, what affects them and insights on how to alleviate undesirable issues.

4.0 Conclusions and Recommendations

Overall, the performance of most indicators in the 2011 LQAS survey showed improvements from the 2010 and the 2009 baseline findings.

In particular, the proportion of women who tested and received their HIV test results during ANC in last 2 years showed significant increases. There were also significant increases among the HIV counseling and testing indicators (i.e. ever tested, tested and received their results and knowledge of a center for testing). However, this pattern of increase was not uniform across the region. For most indicators, there were significant differences across districts and gender which should be taken into account during the next planning and prioritization of activities and interventions. There should also be increased focus on couple counseling and testing that will help to identify concordant positives and discordant couples who can then be helped with appropriate care, treatment and prevention services. Since a substantial score of males escort or transport their partners (pregnant women) on bicycles or other means to health facilities for ANC, such an opportunity should be exploited to test more couples for HIV. Other mechanisms that include home to home and couple week testing activities can also be scaled up. Further, targeting of MARPs for HTC services should also be upheld since most data in Uganda and the East Central region suggests these areas as those with high HIV prevalence.

The 2011 results for TB are promising – there was a significant increase in the proportion of adults who know that it is possible for a person to have TB and HIV at the same time. There were also more adults who knew that TB is a curable disease and who knew the signs and symptoms of TB. Focus should be put on efforts to maintain the upward trend in the above indicators. From the health facility assessment, more health facilities were found to be delivering quality TB and HIV prevention, care and treatment services.

Special attention should be given to those indicators that did not show improvements from the previous survey results. For example, the reproductive health indicators such as the proportion of pregnant women attending ANC at least 4 times during the last pregnancy showed a decline since baseline. In addition some results did not register any change from last year for example the percentage of deliveries that took place in a health facility and proportion of women 15-49 years using modern family methods. ANC is the entry point towards increasing access to PMTCT services and as such STAR-EC needs to strengthen its local government health facilities and closely work with other partners such as STRIDES that are directly charged with reproductive health interventions. This will help in improving access to ANC and PMTCT services.

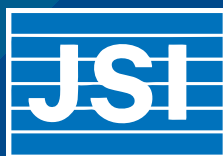
Under behavioral prevention, there was a decline in the proportion of adults (15+ years) who knew a place to obtain condoms while the adults who can mention the 3 major ways of HIV&AIDS prevention (abstinence, being faithful and condom use) did not show any increase but a slight decrease. In addition, only half of the adults rejected all the major HIV&AIDS misconceptions (witchcraft, mosquito bites and sharing food). There is a need to refocus and increase on prevention interventions and to increase on their integration into other interventions and services. Upholding and scaling up the “Know your Epidemic, Know Your Response” ideology and putting it into practice is also very imperative. There should also be an increase on diversification of venues from the usual institutional settings like schools and health facilities where information on HIV transmission and prevention is routinely provided.

Additionally, there is need to scale up on the promotion of SMC in all districts if population based targets on male circumcision are to be achieved. This survey's results showed a lot of willingness among non-circumcised men to circumcise once offered the service – something that can be achieved through emphasis on the increased integration of services (SMC, HTC and other behavioral prevention services. Males who escort their pregnant women during ANC can also be extended this service or directed where to obtain it). As opposed to providing SMC services in health facilities alone, more outreaches should be created and services should be extended to all men irrespective of sero-status otherwise stigma will be created when some men are turned away (from this service) on discovery of a positive sero status. Targeting of secondary schools and higher institutions of learning within districts is also very important since such settings are already a mobilized community.

Increased partnership and collaboration of the district local government and the private sector is highly recommended as a large number of private health facilities assessed were found to serve a sizeable number of clients that cannot be ignored.

As has always been the case with previous survey findings, the LQAS approach has again proven to be helpful and effective in providing health-related information for planning at local, district and project levels. Its ultimate goal has been to inform decision makers and to offer an updated picture for planning purposes. STAR-EC needs to continue working more closely with both LGs and CSOs in the institutionalization of LQAS as a method that can generate data that would complement other forms of existing data i.e. HMIS. Sustainability towards the utilization of this methodology is also another question that STAR-EC as a program should help to instill in LGs and CSOs and this could be achieved through districts including more LQAS activities in their LG annual budgets or simply utilizing the methodology as part of their routine work and activities.

5.0 Annexes



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