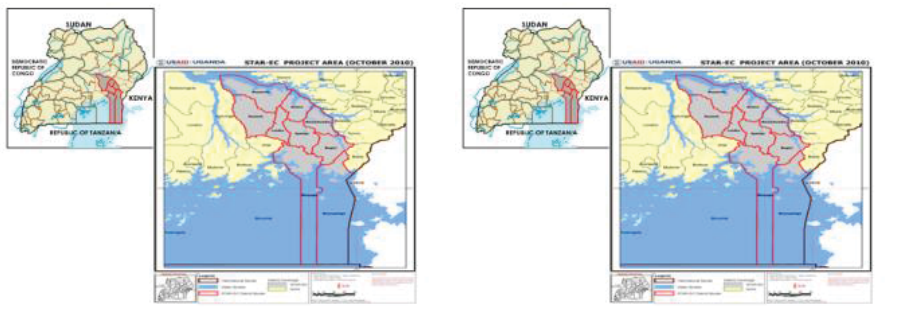
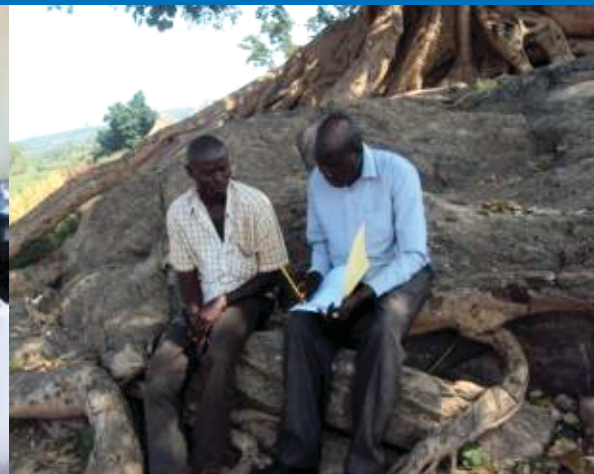




SURVEY PROGRESS REPORT

Results from Nine Districts in East Central Uganda
July, 2013



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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

Highlights

For each of the last 5 years, the Strengthening TB and HIV&AIDS Responses in East Central Uganda (STAR-EC) program has conducted Lot Quality Assurance Sampling (LQAS) surveys to assess program progress. Additionally, results from these surveys have been used to prioritize districts and sub counties, which represent the supervision areas, for planned interventions. Six districts were assessed during 2009 while a total of nine STAR-EC supported districts¹ have been assessed during the subsequent years that include the 2013 survey. This survey is conducted during the period May - June of each year.

As part of the 2013 survey, a total of 63 Local Government (LG) personnel from all the aforesaid districts were trained or re-trained in the application of the LQAS survey methodology. Only six participants were new to this training. Details on the survey methodology and specifics on all of the findings can be found in the main body and appendices of this report. Table 1 summarizes data trends from 2009 to 2013 on key assessed indicators..

Table 1: STAR-EC Household Baseline LQAS Survey Results

Indicator definitions	Survey Results					Notes (unless mentioned, all notes herein refer to the year 2012 results)
	2009 baseline	2010	2011	2012	2013	
REPRODUCTIVE HEALTH						
% of pregnant women attending ANC at least 4 times during the last pregnancy	49.1	44.8	42.3	47.9	50.2 ⁰⁰⁰	The proportion of women receiving ANC services at least once remains high at 92.6%. However, it was highest during 2011 at 96.8%.
% of deliveries (in the last 2 years) that took place in a health facility	69.1	66.3	66.9	67.4	72.7 ⁰⁰	Kaliro (86.8%) and Namayingo (41.6%) districts reported the highest and lowest findings respectively
% of married/cohabiting women 15-49 years using modern family planning methods			26.2	29.2	33.1 ⁰⁰⁰	35.5% (15-49) of married/cohabiting women reported currently using any family planning method
PMTCT						
% of women tested and received their HIV test results during ANC in last 2 years	43.9	48.5	62.8	70.7	79.7% ⁰⁰⁰⁰	The advent of eMTCT interventions is expected to generate higher results during subsequent surveys
% of adults who know all the 3 MTCT ways (during pregnancy, delivery and breast feeding)	45.2	44.7	47.0	50.3	54.0 ⁰⁰⁰⁰	More women (56.8%) than men (47.3%) knew all three MTCT ways (Pearson chi2 (1) = 32.8, p<0.001).
HIVTESTING AND COUNSELING (HCT)						
% of adults (15 years and above) who have ever taken an HIV test	47.9	51.3	58.6	63.7	73.9 ⁰⁰⁰⁰⁰	Significant changes (p<0.001) when comparing sex of respondents as well as when comparing performance by year since baseline.
% 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	48.4	55.7 ⁰⁰⁰⁰⁰	Significant changes (p<0.001) when comparing sex of respondents as well as when comparing performance by year since baseline.
% of adults (15+ years) who know where they can be tested for HIV	82.5	83.2	85.0	90.4	93.2 ⁰⁰⁰	77.3% of those who know of a place where to go for an HIV test in case they wanted one, have actually tested for HIV

¹In 2009, six districts were assessed and these included; Bugiri, Iganga, Kaliro, Kamuli, Mayuge and Namutumba. However, in 2010, there was a national redistricting exercise that led to the creation of Buyende, Luuka and Namayingo districts that were demarcated out of Kamuli, Iganga and Bugiri districts respectively.

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Indicator definitions	Survey Results					Notes (unless mentioned, all notes herein refer to the year 2012 results)
	2009 baseline	2010	2011	2012	2013	
BIO-MEDICAL HIV PREVENTION						
% of men (15-54 years) who have ever been circumcised	37.4	34.2	35.8	45.0	51.0 ⁰⁰⁰	Significant increments (p<0.001) reported from 32% during 2012 to 54% in Namayingo District
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	75.9	68.5%	Results show a decline in the last two survey years Follow up operations research may be able to explain this down trend
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	51.8	59.3 ⁰⁰⁰	60.9% were males and 58.5% females.
% of adults (15+ years) who know a place to get ARV drugs for HIV patients	58.0	58.8	66.3	76.5	89.1 ⁰⁰⁰⁰⁰	Each year, 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	88.8	89.0	Fewer females (87.3%) than males (93.0%) 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	68.8	70.4	Among districts, Kaliro(88.4%) had the highest while Namayingo had the lowest at 47.2%
% of adults (15+) able to reject all the major HIV&AIDS misconceptions (witchcraft, mosquito bites and sharing food)	48.3	42.9	51.8	57.9 ⁰⁰⁰	60.4	Among those that believe in these misconceptions, most believe that HIV can be transmitted through mosquito bites. Prioritization of targeted BCC interventions among affected groups and SAs will be upheld during PY6.
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	8.7	8.5 ⁰⁰⁰⁰⁰	Among districts, the highest proportions were reported from Luuka(18.1%), Mayuge (12.7%) while the lowest was reported from Kamuli and Kaliro at 3.7% each.
(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	65.5	69.4 ⁰⁰⁰⁰	Support received by affected households included: <ul style="list-style-type: none"> ▶ Free Medical 68.4% ▶ Free emotional 34.2% ▶ Free material 19.8% ▶ Social Support 40.2%

Indicator definitions	Survey Results					Notes (unless mentioned, all notes herein refer to the year 2012 results)
	2009 baseline	2010	2011	2012	2013	
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	86.9	85.7	Slight reduction from what was reported the previous year
% of adults (15+ years) who know that TB is a curable disease	55.4	53.1	61.5	69.1	69.6	No significant differences over the last two survey years ($p>0.05$).
% of adults (15+ years) who know of any signs and symptoms of TB	84.4	80.6	85.3	88.1	90.8 ⁰⁰⁰⁰	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	75.5	00000	Most of the BCC indicators show an increment in coverage especially over the last two survey years when compared to the first three years of this assessment. Three more district based radio stations were brought on board to target areas which had not been reached (making a total of four). In addition, there was increased involvement of edutainment during community integrated outreaches.
% of households that received at least one message about HIV&AIDS care and treatment in the last 3 months	55.9	53.2	60.4	70.6	88.5 ⁰⁰⁰⁰⁰	
% of households that received at least one message about TB in the last 3 months	39.9	41.7	51.7	68.1	86.1 ⁰⁰⁰⁰⁰	
% of households that received at least one message about ART treatment in the last 3 months	40.6	40.3	48.1	62.2	85.2 ⁰⁰⁰⁰⁰	
% 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	65.3	85.3 ⁰⁰⁰⁰⁰	
% of households that received at least one message on AB in the last 12 months.	58.6	45.0	59.5	69.7	86.7 ⁰⁰⁰⁰⁰	

Source: Health facility assessment and household LQAS 2009-2013 surveys

⁰⁰⁰⁰⁰ Significant trend in improvements since baseline survey ($p<0.05$)

⁰⁰⁰⁰ Significant trend in improvements for the last four survey years ($p<0.05$)

⁰⁰⁰ Significant trend in improvements for the last three survey years ($p<0.05$)

⁰⁰ Significant trend in improvements for the last two survey years ($p<0.05$)

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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. This survey provides a good source of routine health statistics that complement the existing national Health Management Information system (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.

Over the last five years, the LQAS methodology has been used by STAR-EC to establish progress of different national, district and program level indicators at the community level. Manually tabulated results were immediately analyzed in the aftermath of data collection then shared with all the nine district team members, leaders and decision makers so as to promote evidence based planning and decision making.

With co-support from both STAR-EC and the SDS program, the 2013 survey was conducted during June to early July. This survey 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. These were assessed with the participation of district local government personnel. Findings from these surveys have been instrumental to STAR-EC as well as central government, 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 survey results, minor additions and revisions were made during the preparation of survey questionnaires. Therefore, most of the questions within the tools developed during the baseline and subsequent survey years 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 other 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.

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 during the last three survey years: These included (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. In order to cater for immunization indicators, the split between biological mothers of children under 2 years was instituted during the 2011 survey so as to have assessments based on the 0-11 months and 12-23 months age groups. Therefore in total there were six household based questionnaires for different age categories during this survey. Unlike the previous years, the HIV&AIDS module was added onto interview questions for the 2013 survey biological mothers of children 12 -23 months questionnaire category.

Most questions were common across different target age 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

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

sanitation (except for the youth group), HIV&AIDS and family planning. Other modules, however, were specific to some groups and did not feature in some target group questionnaires. 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 some questionnaires in this kind of format (whereby all respondents from the six²target groups were asked the same questions), the sample size derived from 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 had question modules that explored specific interests related to a given age category. For example, PMTCT service utilization was only restricted to biological mothers of children under 2 years and in no other age category questionnaire.

Prior to the training of district LG and CSO personnel, extensive pre-testing of survey questions took place at the village level. 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 20th-24th May, 2013 at Ntinda Valley Resort Hotel in Iganga District. This group included Iganga, Mayuge, Namutumba, Kaliro and Kamuli district LG personnel. The second group which comprised of Luuka, Bugiri, Namayingo and Buyende district personnel trained from 27th -31st May, 2013 in the same venue as the first group.

The training covered the following topics: introduction to surveys and LQAS methodology, field preparation, sampling and selection of households, selection of respondents, pre-testing, interviewing techniques and logistics of data collection. Training was participatory with practical sessions where 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 where applicable.

During the training, a day was dedicated to training interviewers on the questionnaires that were eventually used to collect data. A total of six categories of questionnaires were reviewed and these included; one on 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 years, the OVC questionnaire as well as the health facility questionnaire. During the training workshop, questions were translated into Lusoga (the local language). A pretest of these questionnaires was henceforth conducted and its results reviewed overnight by survey supervisors. The following day it was discussed together with field

interviewer teams. Lastly, as a means to establish the knowledge and recall levels of training participants, prior and end training evaluation exercises were conducted as part of the workshop.

Household Survey General Information

- ▶ 4,275 respondents aged 15-54 years were interviewed from 4,275 households within 855 villages
- ▶ 30.2 % (1,289) were males aged 15-54 years and
- ▶ 69.9% (2,986) were females aged 15-49 years
- ▶ 45.3% (1,936) were young people 15-24 years

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

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 more³). Details of the history and statistics behind the method have been discussed in various literatures⁴.

LQAS is a lower cost, less time consuming sampling method that can be adapted to the service sector by using supervision areas (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 (sub-counties) were used as SAs and each district as a program area or lot. 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/neighborliness of different sub-counties. Weighting in respect to population size was used while deriving SAs for districts with more than 5 sub-counties. The higher the population of a given sub-county, the more likely it stood a chance of being selected as a standalone SA while at the same time if two or more sub-counties within the same district were geographically neighboring each other and had a lower combined population when compared to one sub-county in the same district, they would then form a given 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

3 - Valadez J. et al (2003) Assessing Community health programs, Using LQAS for baseline and monitoring
4 - Lemeshow S, Taber S. Lot quality assurance sampling: single and double-sampling plans. World Health Statistics Quarterly 44, 115-132

2 - One out of the six questionnaires (OVC tools) did not carry modules on HIV related indicators

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improved or enhanced interventions.

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. As already elucidated in the previous section, 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, 2010 - 2013

No.	Districts	Supervision Areas (sub-counties)
1	Bugiri	Bugiri TC, Iwemba&Nabukalu (BukooliB); Bulesa&Buluguyi (Bukooli C); Bulidha&Budhaya (BukooliA); Buwunga&Kapyanga (Bukooli D) and Muterere&Nankoma (Bukooli E)
2	Buyende	Bugaya, Buyende, Kagulu, Kidera, and Nkondo sub-counties
3	Iganga	Buyanga&Namalemba (Bugweri A); Ibulanku&Makuuutu (Bugweri B); Iganga TC & Nakigo (Kigulu C); Nabitende, Nambale&Nawandala (Kigulu A) and Namungalwe, Bulamagi&Nakalama (Kigulu B)
4	Kaliro	Bumanya, Gadumire, Namwiwa, Nawaike and Namugongo sub-counties

No.	Districts	Supervision Areas (sub-counties)
5	Kamuli	Balawoli&Namasagali (Bugabula A); Bugulumbya, Nawanyago, Wankole (Buzaaya A); Bulopa, Kitayunjwa, Namwenda (Bugabula C); Kisozi, Mbulamuti (Buzaaya B) and Nabwigulu, Butansi, Kamuli TC (Bugabula B)
6	Luuka	Bukanga/Waibuga, Bukooma, Bulongo/Nawampiti, Ikumbya and Irongo sub-counties
7	Mayuge	Baitambogwe, Wairasa, Imanyiro (Bunya A); Bukatube, Mayuge TC, Mpungwe (Bunya B); Buwaaya, Bukabooli, Kigandalo (Bunya C); Kityerera, Busakira (Bunya D) and Malongo, Malongo Islands (Bunya 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, 2010 -2013

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 supervisors⁵ 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 LQAS 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 in-existent 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.

⁵ - 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.

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.



An interview at the showers of Lake Victoria (Sigulu Islands)



An interview of a biological mother of a child 0-11 months

2.7 Data Sources and Analysis

Households were the lowest units from which respondents for this 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.

3.0 Results

Table 3: Demographic Characteristics of Survey Population, 2011 and 2012 Surveys

Year of Survey		2011		2012		2013	
Characteristic	Category	n= 4,275	Percentage	n=4,275	Percentage	n=4,275	Percentage
Sex	Male	1,253	29.3	1,345	31.5	1,289	30.2
	Female	3,022	70.7	2,930	68.5	2,986	69.8
Age Group (years)	15-24	1,986	46.5	2,017	47.2	1,936	45.3
	25-34	1,287	30.1	1,294	30.3	1,364	31.9
	35-44	723	16.9	671	15.7	716	16.7
	45-54	279	6.5	293	6.9	259	6.1
Education Status (highest level of education attained)	No school education	454	10.6	423	9.9	320	7.5
	Primary 1-4	636	14.9	546	12.8	545	12.7
	Primary 5-7	1,848	43.2	1,876	43.9	1,885	44.1
	Secondary	1,187	27.8	1,259	29.5	1,305	30.5
	Tertiary	120	2.8	144	3.4	174	4.1
	missing responses	30	0.7	27	0.6	46	1.1

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Year of Survey		2011		2012		2013	
Characteristic	Category	n= 4,275	Percentage	n=4,275	Percentage	n=4,275	Percentage
Marital Status	Single, no partner	617	14.4	691	16.7	656	15.4
	Single, regular partner	169	4.0	206	4.8	199	4.6
	Single, non-regular partner	95	2.2	94	2.2	106	2.5
	Married/Cohabiting	3,234	75.7	3,128	73.2	3,079	72.0
	Divorced/Separated	141	3.3	135	3.2	151	3.5
	Others/missing responses	29	0.7	21	0.5	84	2.0
District of Residence	Bugiri	475	11.1	475	11.1	475	11.1
	Buyende	475	11.1	475	11.1	475	11.1
	Iganga	475	11.1	475	11.1	475	11.1
	Kaliro	475	11.1	475	11.1	475	11.1
	Kamuli	475	11.1	475	11.1	475	11.1
	Luuka	475	11.1	475	11.1	475	11.1
	Mayuge	475	11.1	475	11.1	475	11.1
	Namayingo	475	11.1	475	11.1	475	11.1
	Namutumba	475	11.1	475	11.1	475	11.1

Source: STAR-EC LQAS Household survey, 2011 – 2013

Results taken from all the five survey years show that there was equal representation of respondents from each of the target groups and districts involved in this survey. The 2013 survey results show that respondents were predominately female (69.8%) while the mean and median ages were 27.6 (ranges 15 – 54 years) and 26 years respectively. Additionally, only 7.5% of the respondents had never received any formal education while 34.6% had attained secondary or tertiary level education – an increment from 32.9% reported the previous year.

HIV&AIDS Related Indicators

Key HIV&AIDS indicators assessed during this and previous survey years 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.

High Risk Sexual Behavior and Condom use

STAR-EC interventions include 'combination HIV prevention' that involves behavioral, biomedical and structural interventions. Behavioral risk prevention activities focus on delay of sexual debut; reduction in the number of sexual partners; and promotion of correct and consistent condom use and condom distribution. Structural HIV prevention was promoted through peer support groups and by using the 'men and HIV' program that benefited the champions trained to reach out to boys, men and the entire community challenging and calling upon them to adopt social norms and values that promote respect for girls and women while rejecting violence against women, disallowing risky cultural practices such as risky rites of passage and widow inheritance.

Overall, 15.6% (n=2,931) of individuals (15-54 years) reported having had sexual intercourse with a non-marital/non-cohabiting or regular partner within the last 12 months prior to the survey. This was a reduction when compared to last year's 18.4%. Table 4: provides details by age group and district.

Table 4: Sexual intercourse with a non-marital/non-cohabiting or regular partner within the last 12 months prior to the survey

Disaggregation	Sub- group disaggregation	Sample size	Percentages	Probability values
Age group	15-24 years	1,213	18.1	Pearson chi2(2) = 10.2, p = 0.006
	25-34	926	13.2	
	35-54	792	14.7	
Sex	Males	1,059	23.5	Pearson chi2(1) = 79.0, p < 0.001
	Females	1,872	11.1	
Districts	Bugiri	324	13.9	Pearson chi2(8) = 23.1, p = 0.003
	Buyende	305	13.4	
	Iganga	335	11.9	
	Kaliro	326	14.7	
	Kamuli	316	23.4	
	Luuka	309	12.9	
	Mayuge	339	16.5	
	Namayingo	333	17.7	
	Namutumba	344	15.7	
Total		2,931	15.6	

In addition, 64.8% (n=344) of all adults 15-54 years who reported having had sex with a non-regular partner in the last 12 months prior to the survey, reported having used a condom at last high risk sex (a finding lower than last year's 74.8%). When comparing results by sex, there were no significant differences (pearson chi2 (1) =0.0, p=0.916) between males (64.6%, n=192) and females (65.1%, n=152).

Among young people age 15-24 years, only 18.1% (n=1,213) reported having had sex with a non-regular partner (non-marital/non-cohabiting partner) in the last 12 months prior to the survey, while at the same time 64.9% (n=165) of those who had had such sex reported using a condom with such a partner. Findings among other age groups (beyond 24 years) were almost akin for the latter indicator (p=0.991) while they were significantly different (p=0.006) for the former indicator. Logistic regression results show that males were 2.6 times more likely than females (p<0.001) to have had multiple sexual relationships while persons in the age group 15-24 years were 1.3 times more likely (p=0.029) to do the same when compared to the 25-34 years age group (reference group). There were no significant differences (p=0.235) when the 35-54 years age group was compared to the reference group.

Additionally, 12.9% (n=4,275) adults age 15-54 years reported having perceived themselves to be at low or no risk of getting HIV infection. Among young people, findings were at 21.1% (n=1,936) while they were much lower at 5.1% (n=1,364) and 7.5% (n=975) for the 25-34 and 35-54 year old age groups.

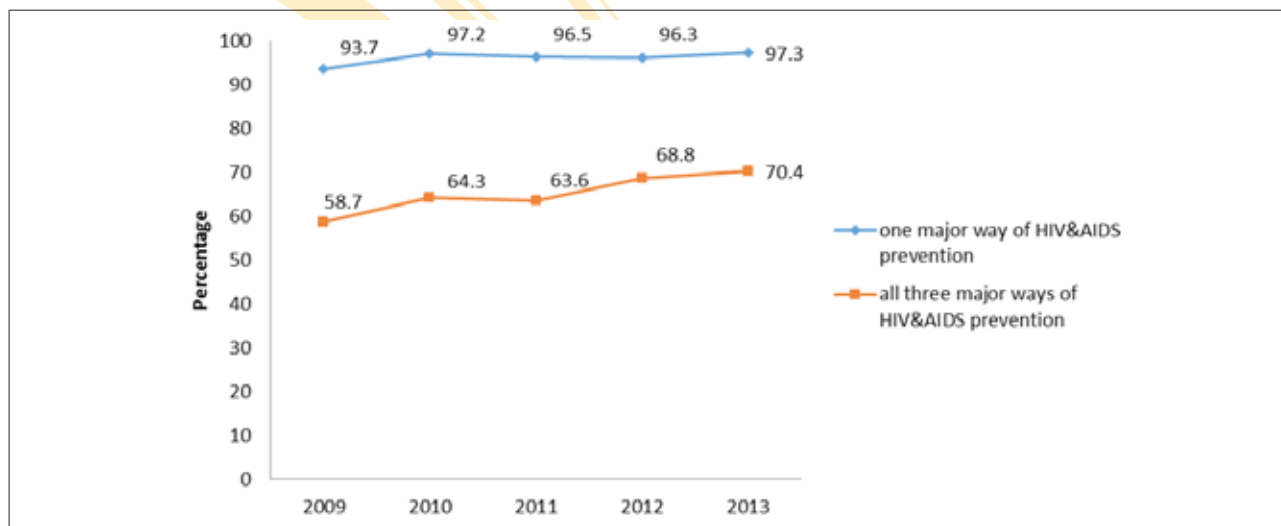
Behavioral Prevention (Abstinence, Being Faithful and Condom use - ABC)

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 and knowledge of all three ways (abstaining from sex, consistent condom use and having one faithful, uninfected partner), results showed an increment from 58.7% (n=2,280) reported in the 2009 baseline to 68.8% (n= 3,420) and 70.4% (n=4,275) of respondents in 2012 and 2013 respectively. At the same time, when analyzing information on at least one major HIV prevention method comprising any of all the three aforementioned prevention ways, there was an increment from 93.7% (n=2,280) to 97.3% (n=4,275) reported during the 2009 baseline and 2013 survey results respectively. A trend analysis for both indicators is illustrated in figures 1-3 below.

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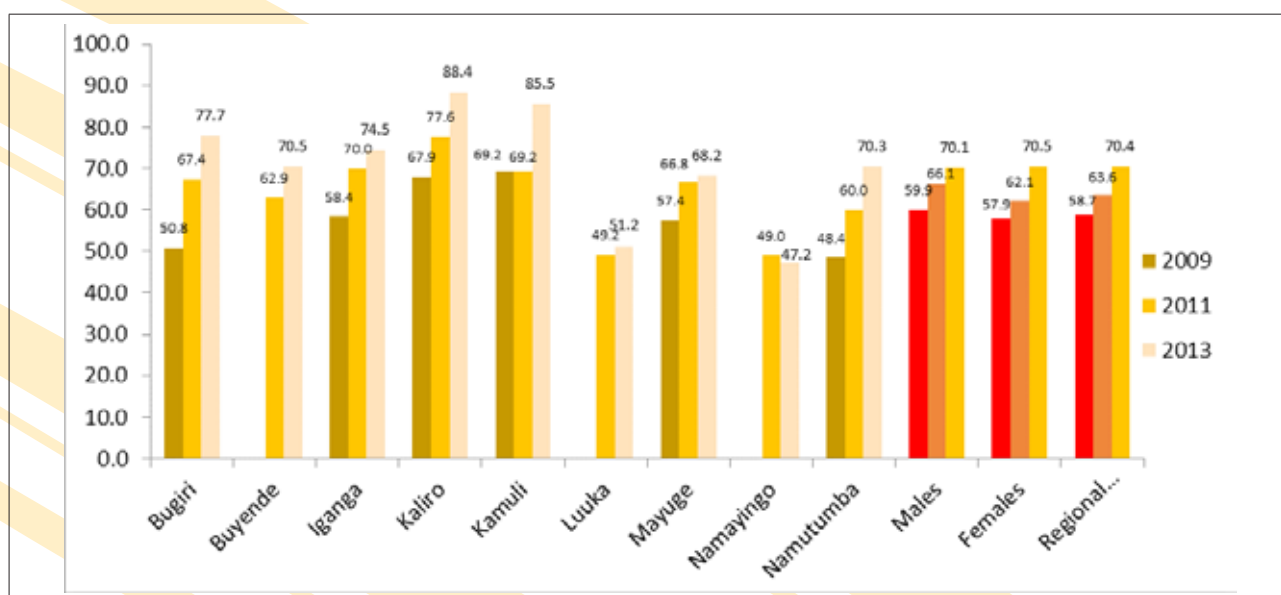
Figure 1: Trend in the Proportion of Respondents that Mentioned One or All Major Ways of HIV&AIDS Prevention (ABC) by Year of Survey



Source: STAR-EC LQAS household surveys, 2009-2013

The proportion of males (70.1%, n=1,289) and females (70.5%, n=2,986) that knew about the aforementioned HIV&AIDS prevention methods was almost akin. Kamuli (85.5%) and Kaliro (88.4%) districts reported the highest findings while the least were found in Namayingo (47.2%) and Luuka (51.2%) districts. Similar to findings over the previous years, the 2013 survey showed that there were significant differences across districts (Pearsonchi2 (8) =350.3, p<0.001) while at the same time there were no significant differences (Pearsonchi2 (1) =0.1, p=0.755) related to gender comparisons on the proportion of respondents that mentioned all the three HIV prevention approaches. Among individuals who mentioned all the three major ways, 91.7% (n=3,003) reported that they knew of a place where they could obtain condoms. 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* and Year

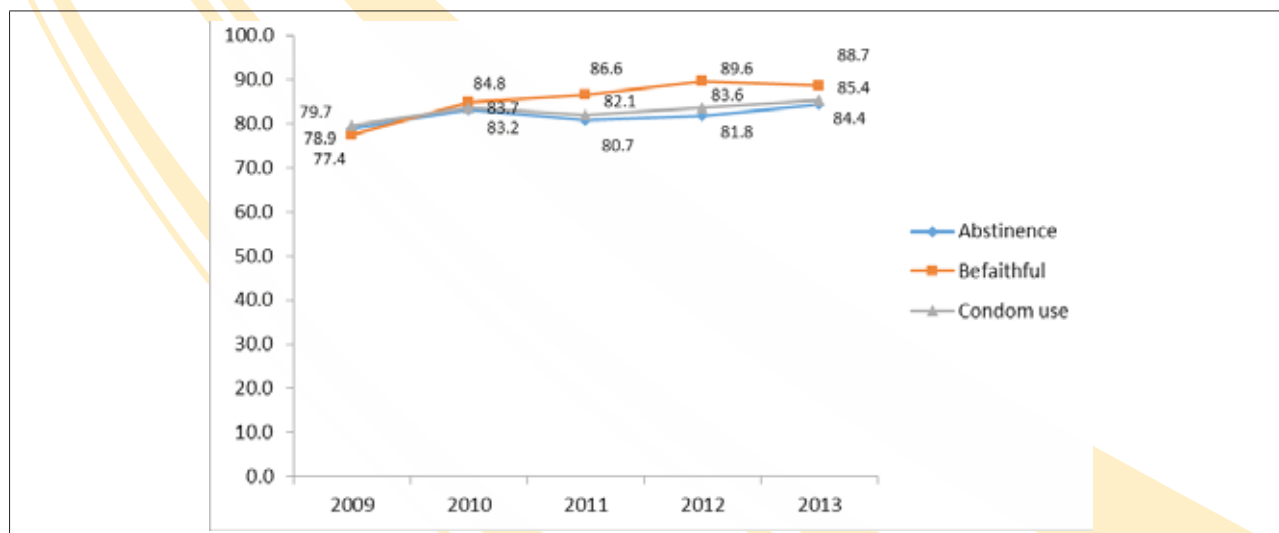


Source: STAR-EC LQAS household surveys, 2009-2013

*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 each prevention method. Knowledge by respondents on each of the HIV prevention ways still remains high.

Figure 3: Knowledge and Awareness of Each of the HIV Prevention Method by Year



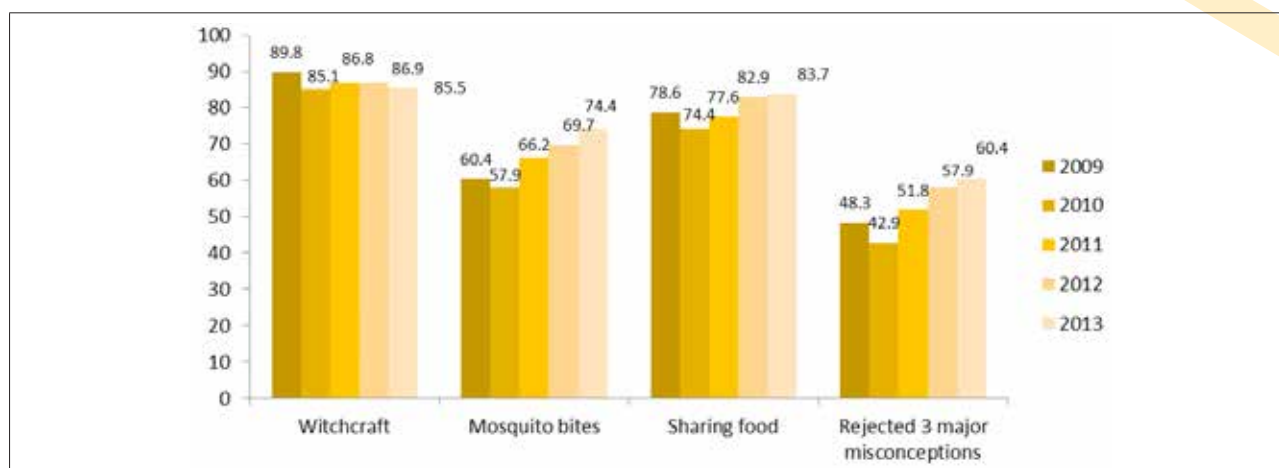
Source: STAR-EC LQAS Household Surveys, 2009-2013

HIV Transmission Misconceptions

A sizeable part of the population still believes in certain misconceptions about the transmission of HIV. Most common among them include transmission through mosquito bites, witchcraft, sharing food, utensils and sharing of toilets with an infected person as well as touching/contact with an infected person. Among the afore-listed, an analysis was conducted concentrating on the three major misconceptions that include transmission of HIV through mosquito bites, witchcraft and sharing of food with an infected person.

Overall, as illustrated in Figure 4, there has been an increase from 48.3% (n= 2,280) reported at baseline 2009 to 60.4% (n=4,275) in 2013 among individuals who were able to reject the three major aforementioned HIV transmission misconceptions. For the fifth year running, most of the respondents were able to reject transmission through witchcraft while fewer respondents (when compared to those who rejected witchcraft) rejected transmission through mosquito bites—something that still calls for improved, well packaged and tailor made information, education and communication interventions. Though not significant (Pearson chi2 (1) = 1.2, p = 0.270), more males (61.7%, n=1,289) than females; (59.9%, n=2,986) were able to reject the three major HIV transmission misconceptions.

Figure 4: Rejection of HIV Transmission Misconceptions by Year

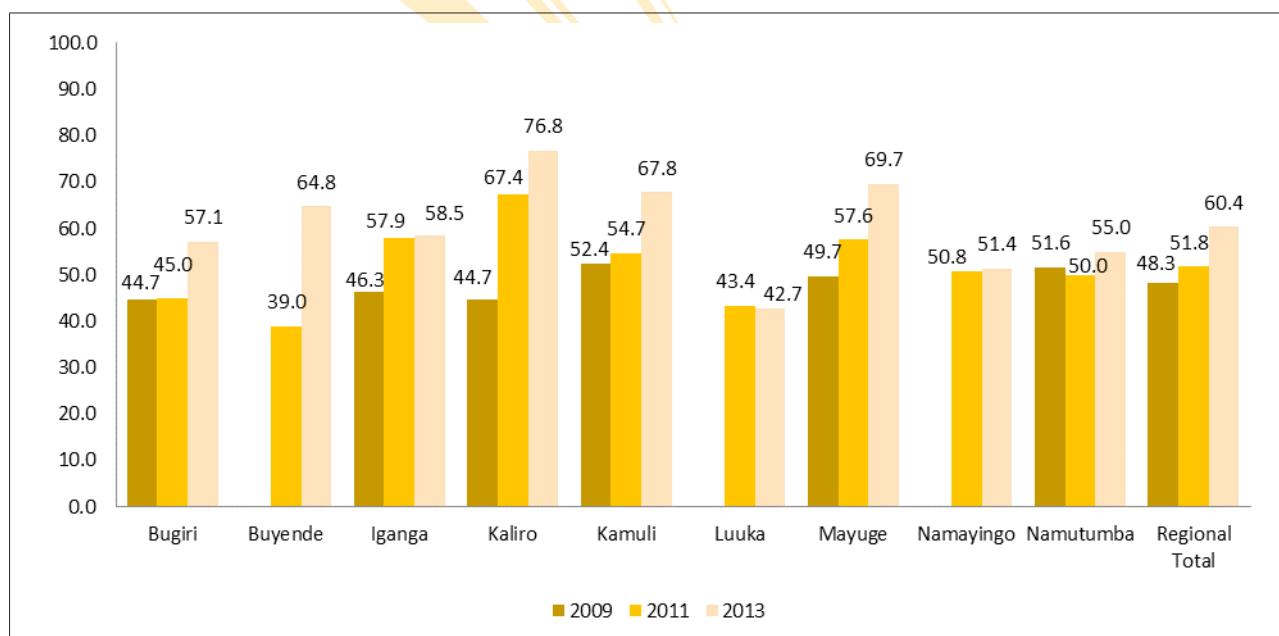


Source: STAR-EC LQAS household surveys, 2009-2013

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Figure 5 illustrates the significant variations ($p < 0.001$) in knowledge of HIV transmission misconceptions by district with Mayuge (69.7%) and Luuka (42.7%) having the highest and lowest findings respectively.

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



Source: STAR-EC LQAS Household Surveys, 2009-2013

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

Further analysis was conducted on HIV transmission and misconception knowledge. It was found that only four in every ten (40.4%, $n=4,275$) respondents were able to mention at least two ways of HIV transmission and at the same time reject all major HIV misconceptions. This knowledge was highest in Kaliro (63.4%) and Kamuli (51.6%) districts while it was lowest in Namayingo (25.3%) and Luuka (18.5%) districts (Pearson $\chi^2(8) = 291.0, p < 0.001$). There were no significant differences when comparing results by sex (Pearson $\chi^2(1) = 0.3, p = 0.588$).

Bio-Medical Prevention

Voluntary Medical Male Circumcision (VMMC) has been prioritized by STAR-EC as a key pivot in the national HIV&AIDS response. By the end of June 2013, STAR-EC had supported health facilities and outreach sites to conduct over 200,000 male circumcisions (MCs) in about 4 years. The integrated services delivery model was implemented in STAR-EC's past program year with greater reach and success among hard-to-reach areas and this helped to foster linkages to other HIV&AIDS prevention, care and treatment services. Special community VMMC outreaches have been used to target the general population of men, MARPs and 'emerging MARPs' (such as the 'bodaboda' motorcyclists, plantation workers, and HIV negative males from discordant support groups). The program offers priority to males aged 35-45 years since this sub-population has the highest HIV prevalence nationally (11-12%)⁶. Additionally, VMMC is one of the novel HIV prevention methods 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 PY4, the program was supporting 19 static sites and 40 outreaches per week (conducted by a total of 16 sites) in extending SMC services to different targeted males.

Figure 6 shows 2013 survey results among males 15-54 years who have ever been circumcised (51.0%, $n=1,283$). Among these: 55.2% ($n=614$) were males 15-24 years; 52.4% ($n=229$) males 25-34 years, 50.2% ($n=285$) males 35-45 years and 33.6% ($n=155$) males 46-54 years old (Pearson $\chi^2(3) =$

6 - Ministry of Health (MoH) [Uganda] and ICF International. 2012. Uganda AIDS Indicator Survey 2011: HIV Indicator Factsheet. Calverton, Maryland USA: Ministry of Health and ICF International

23.5, $p < 0.001$). In addition, out of 33.0% ($n=618$) males who were circumcised in one year prior to the survey; 20.1% were 35-45 years and this was the second highest finding after the 15-24 years age group (61.3%). The rest of the age groups reported 14.2% (25-34 years old) and 4.4% (36-54 years).

Figure 7 shows an increasing trend for most districts since 2009. Unlike some of the previous years' survey results, most districts reported an increase in 2013 in the proportions of males who had ever been circumcised. The highest proportion was registered in Bugiri District (69.3%) while Kaliro (33.8%) reported the least (mainly due to the fact that it is among the districts with the lowest HIV prevalence rates in the region, therefore most of VMMC service provision is given to districts with the highest HIV prevalence rates. Herein, emphasis is given to reaching out to gazillions of HIV negative men such that their HIV infection risks are minimized).

Figure 6: Map on Males 15-54 years who have ever been circumcised in 2013 in East Central Uganda

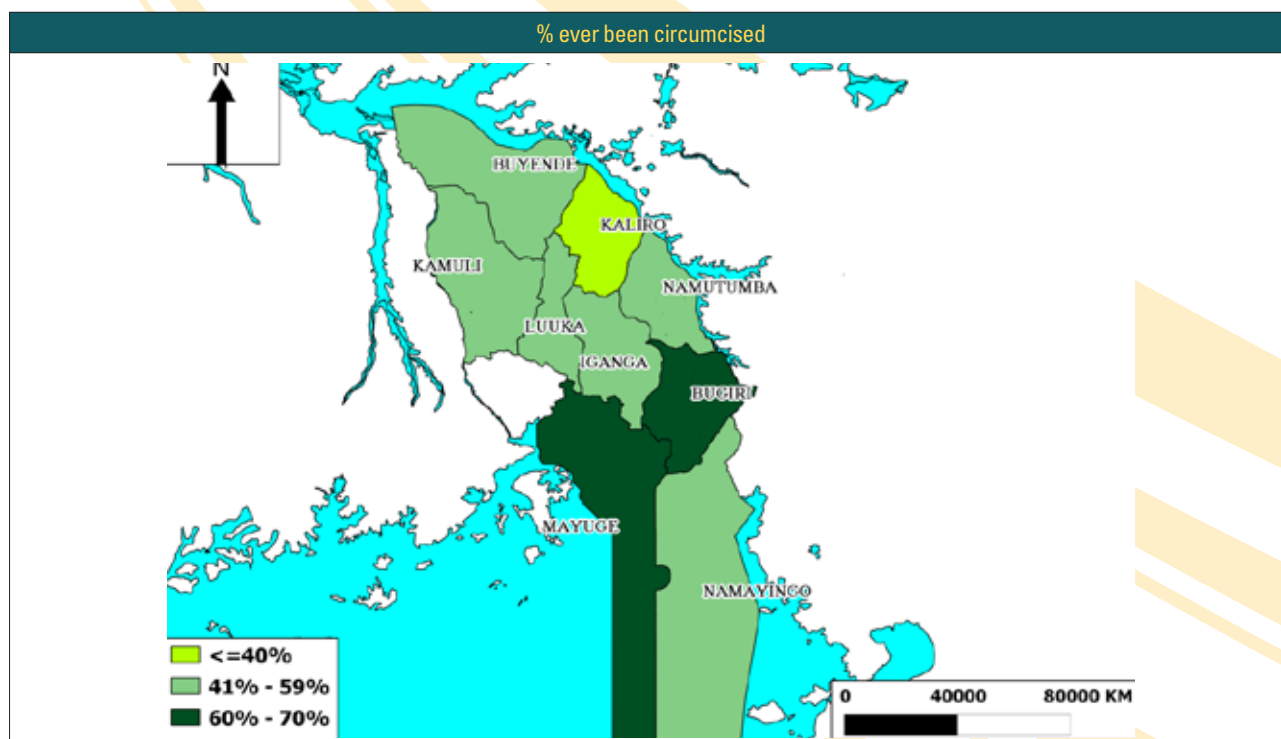
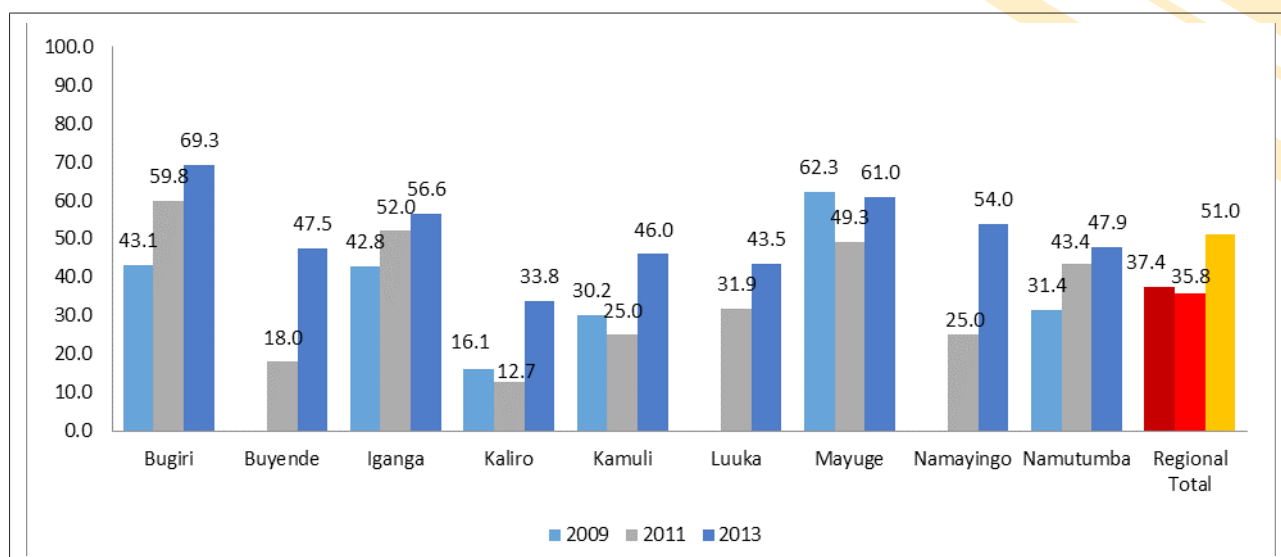


Figure 7: Proportion of Males 15-54 years Who Have Ever Been Circumcised by District and Year*



Source: STAR-EC LQAS 2009-2013 Household Surveys

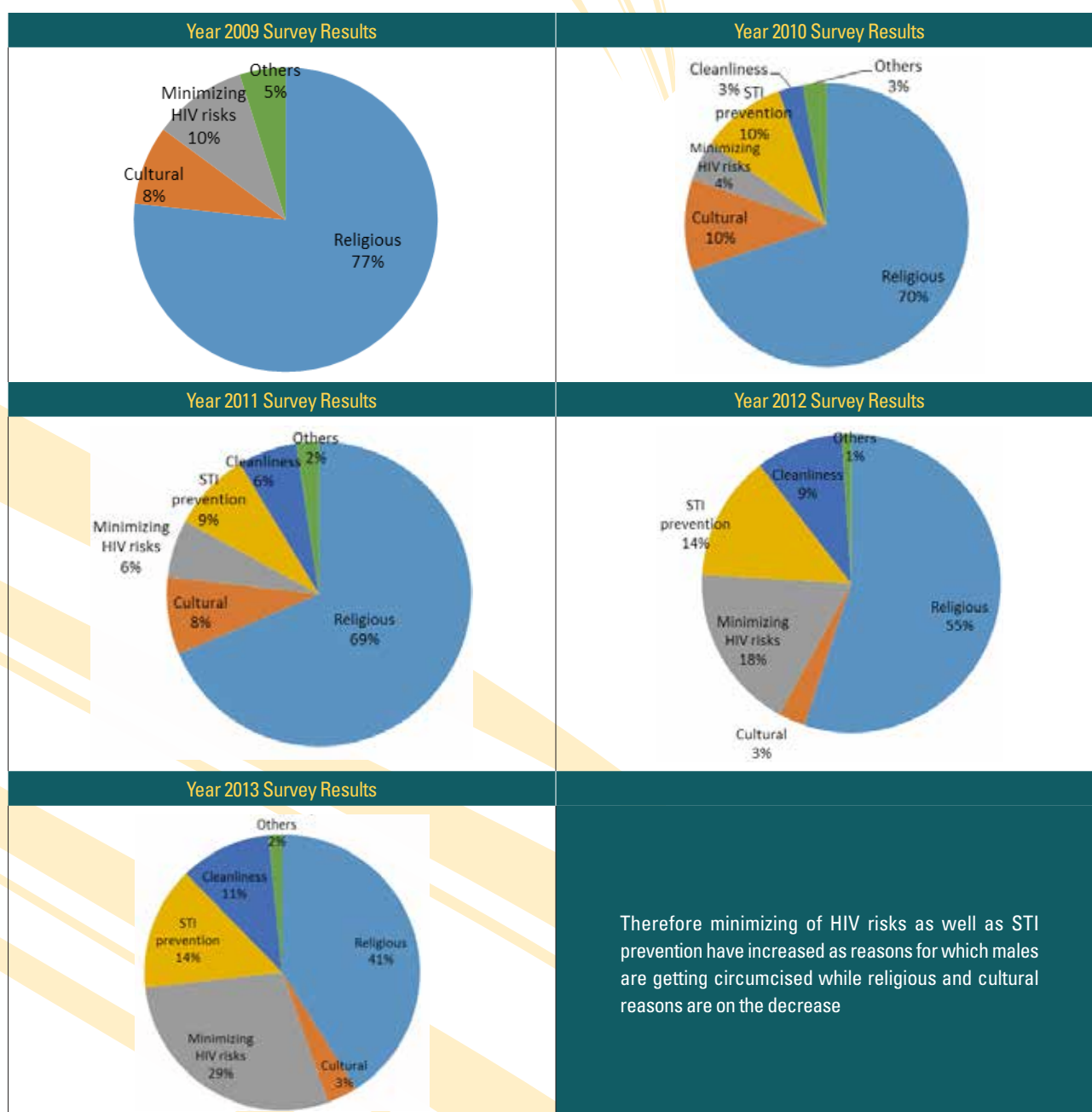
*Buyende, Luuka and Namayingo districts were not yet in existence by 2009, therefore no results during the same year

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As illustrated in Figure 7, there has been a significant increase (pearson $\chi^2(4) = 105.4, p < 0.001$) from 37.4% (n=872) reported in the 2009 baseline to 51.0% (n=1,283) in 2013. This increase can also be supported by the fact that STAR-EC has conducted over 200,000 male circumcisions since program inception. Namayingo, a district with most MARPs in the region, is one such district that has benefited from VMMC interventions. In 2011, only 25.0% males had ever been circumcised while 54.0% were reported as the new 2013 proportion in the same district. Interestingly, past LQAS household survey findings seem to agree with the actual amount of inputs and outcomes on VMMC that STAR-EC was able to achieve in the region. Further information and analysis on this can be found in the STAR-EC 2012 LQAS Survey Report.

The study further examined male respondent's reasons for circumcision. While results have always shown that the majority of respondents who had ever been circumcised mentioned that they were circumcised for religious and cultural reasons, there has been a decrease in proportions related to this indicator from 80.0% in 2009 to 44.6% (n=634) in 2013. This study further shows that more of the men who have ever been circumcised are reporting that they were circumcised for HIV and STI prevention reasons. These proportions have increased each year. Figure 8 illustrates the respondent's reasons for circumcision.

Figure 8: Respondent's Reasons for Circumcision



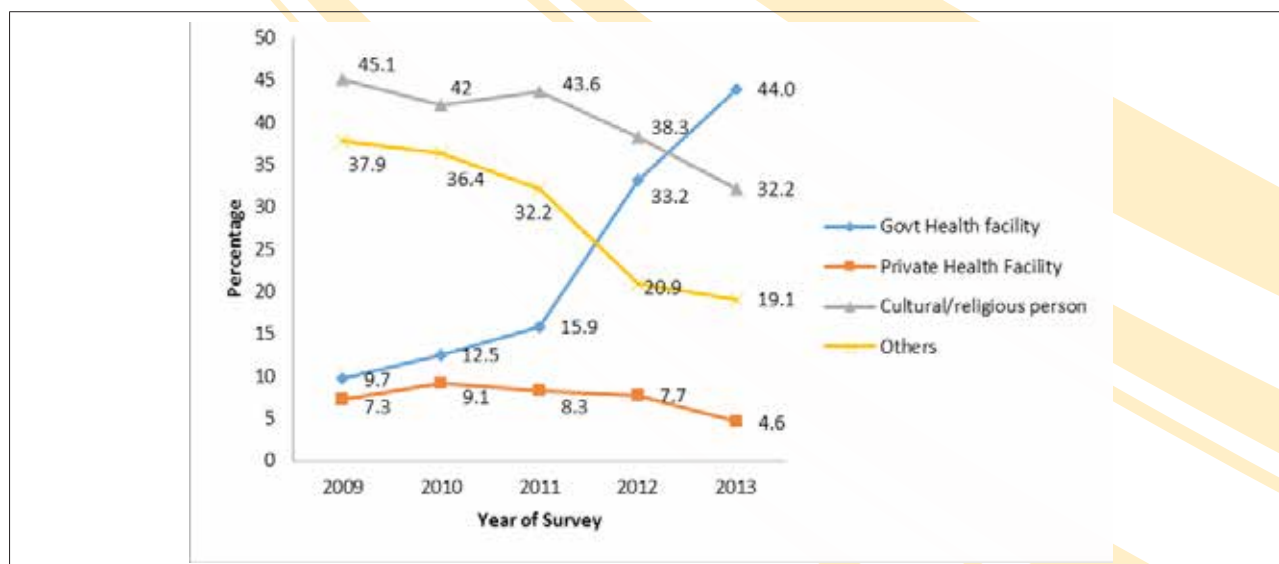
Source: STAR-EC LQAS 2009-2013 Household Surveys

Places where circumcisions took place

The survey investigated places where men's circumcision procedures were conducted. These questions applied to all men who had been circumcised irrespective of their last circumcision time period. Both Figures 9 and 10 illustrate findings in the last five years prior to the survey. Figure 9 below represents the proportion of males who reported the location of the place from which they were circumcised and also includes all men irrespective of whether they were circumcised at birth. Figure 10 illustrates circumcisions within the last year prior to the survey.

STAR-EC continues to mainly support government health facilities and their organized outreaches in the provision of VMMC services. Only one private health facility is currently being supported by the program. Overall, results continue to show that every year more proportions of men who have ever been circumcised reported having undergone the procedure from a government health facility while on the other hand there is a decline in the proportions of men having gotten circumcised from a private health facility, religious/cultural setting or any other place other than the aforementioned. This applies to both groups of men who have ever been circumcised and those who were circumcised one year prior to the survey.

Figure 9: Places Where Men Were circumcised From, by Year (among men who have ever been circumcised)



Source: STAR-EC LQAS 2009-2013 Household Surveys

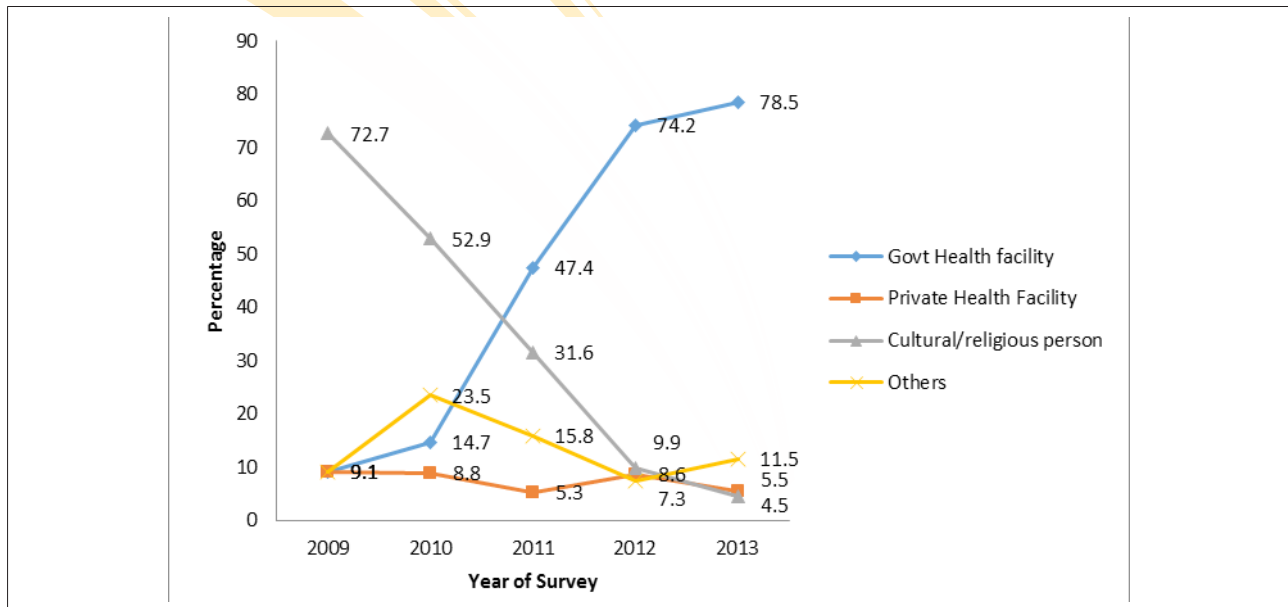
As illustrated in Figure 9 above, the 2013 survey shows that among men who have ever been circumcised, most of such men (44.0%, n=627) were circumcised from a government health facility. Additionally, 4.6% (n=627) were circumcised from a private health facility.

Circumcision within one year prior to the survey

Figure 10 below illustrates a similar but more significant trend (pearson $\chi^2(12) = 120.7, p < 0.001$) in the proportion of males getting circumcised within one year prior to the survey and the place where their circumcision took place. There was a high significant increase ($p < 0.001$) in the proportion of males from 9.1% (reported during the 2009 baseline) to 78.5% among those circumcised from a government health facility while on the contrary there were high significant declines ($p < 0.001$) reported against other circumcision sites. Despite an increment from 5.3% reported in 2011 to 8.6% in 2012 among circumcisions conducted in private health facilities, there has a decrease to 5.5% (n=200) as part of the 2013 results.

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Figure 10: Proportion of Men and Places Where They Were Circumcised Within the Last Year Prior to the Survey (by Year)

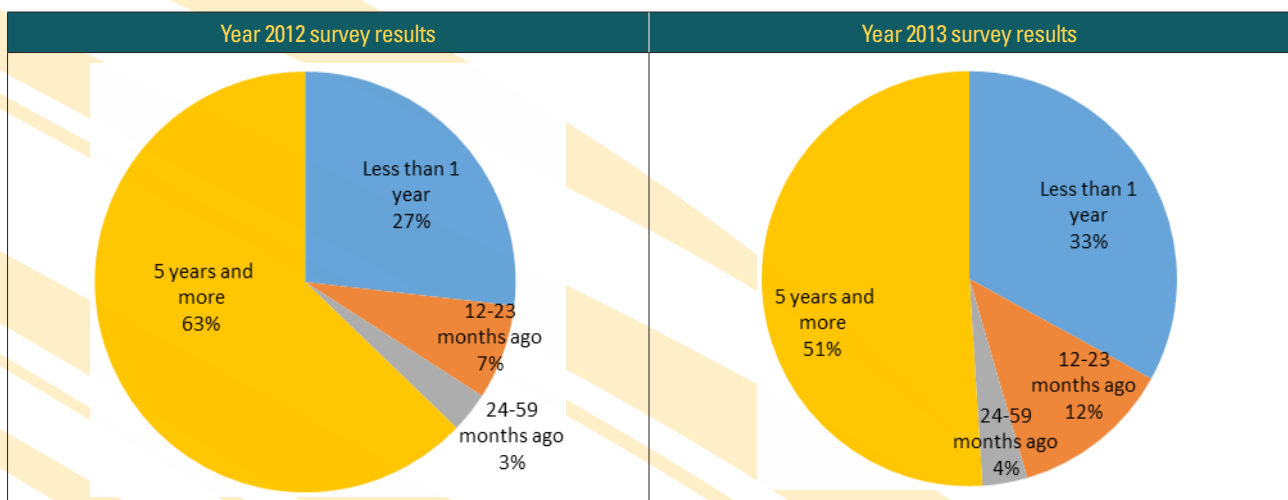


Source: STAR-EC LQAS 2009-2013 Household Surveys

Time period when circumcisions took place

All men who reported that they had ever been circumcised were asked when their circumcison took place. Similar to previous survey findings, most of the men (51.0%, n=618) reported having gotten circumcised more than 5 years prior to the survey. It should be noted that most of the men who were circumcised during the time period beyond five years are those that had their circumcisions before any VMMC interventions. However, over the years, it has been noted that the proportion of men getting circumcised one year prior to the survey is on a significant increase (pearson $\chi^2(12) = 286.9, p < 0.001$). This increased from 3.8% (n= 320) at baseline in 2009 to 26.8% (n=578) in 2012. In 2013, this proportion increased further to about a third (33.0%, n=618). Figure 11 below illustrates some of these findings.

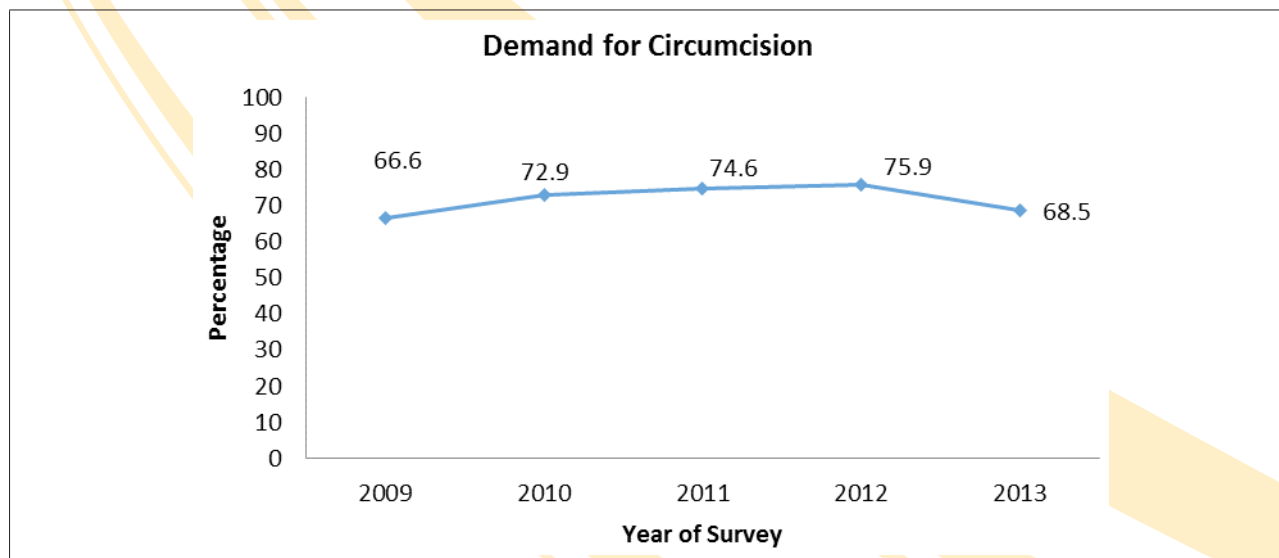
Figure 11: Time Period When Men were Circumcised as Reported in 2012 and 2013



Source: STAR-EC LQAS 2012 and 2013 Household Surveys

The desire and demand for circumcision services has also been on a significant increase (Pearson $\chi^2(3) = 15.7, p = 0.001$) over the last five years from 66.6% (n=551) reported at baseline in 2009 to 75.9 (n=744) in 2012. However, there was a decrease between the last two survey years to 68.5% (n=641). Among districts, the highest demand for circumcision services was reported in Namayingo (84.9%) and Namutumba (80%) while the lowest was reported from Buyende (57.7%) and Luuka (62.6%).

Figure 12: Trend in Demand for Circumcision Services Over The Last 5 years



Among those who have never been circumcised and reported that they would not undergo circumcision even if they were offered a free chance at a health facility (n=163), 34.4% reported that circumcision is against their religion or faith; 39.9% that it is too painful; 1.2% mentioned having no funds to facilitate this undertaking and believe it still has some hidden costs; 3.1% mentioned the existence of poor quality services while 21.5% gave other reasons.

HIV Testing and Counseling (HTC)

Since program inception, STAR-EC has facilitated the scale up of HTC service delivery through 121 health facilities and several outreaches in over 170 parishes in the region. Health facilities have been supported to deliver HTC using both static and outreach based approaches (i.e. stand alone and couple HIV counseling and testing outreaches) prioritizing the hard-to-reach, underserved communities and key populations like MARPs. 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 nexus for referral to umbrella/clinical care and support services including screening or testing for TB. Therefore, HTC also formed an important part of this study.

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 4,275 (1,289 males and 2,986 females). The analysis also looked at 1,936 young people (15-24 years old) as a sub-population of interest, whose performance against the various survey indicators was also assessed. Detailed results on key HIV indicators by gender, district and age group can be found under Appendix 1.

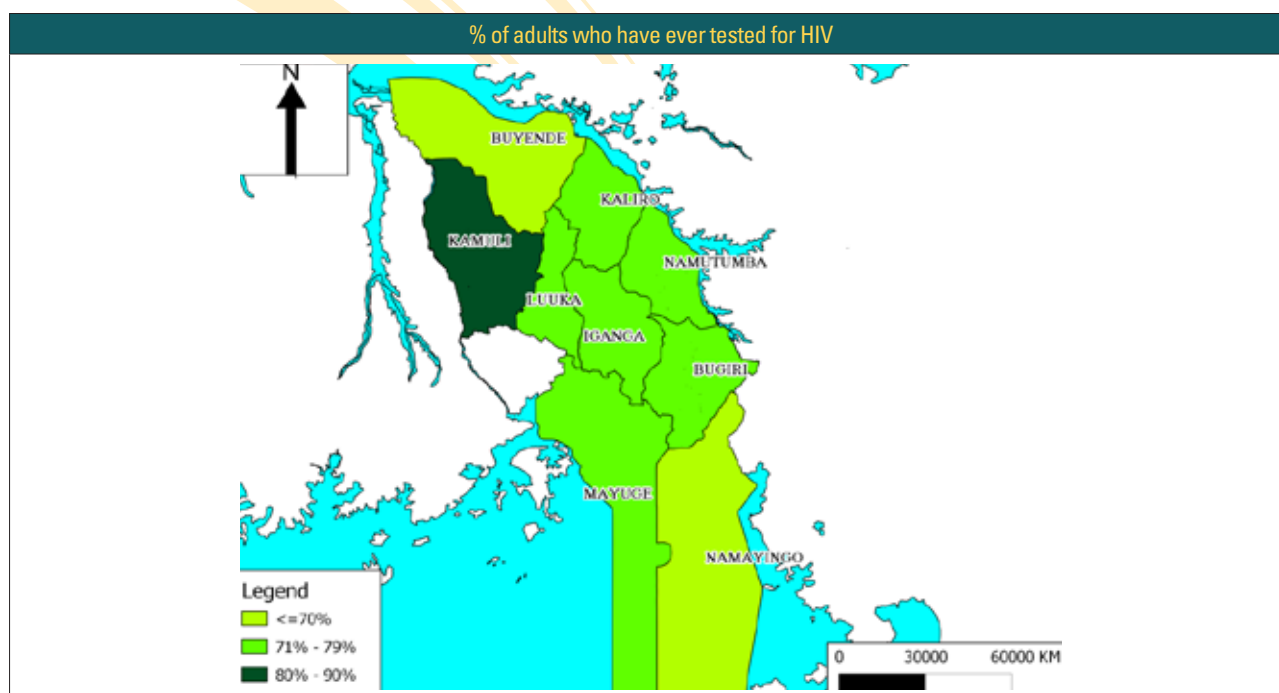
Ever tested for HIV

Significant differences ($p < 0.001$) were noticed among districts and when drawing comparisons between males and females. Kamuli District has continued to have the highest proportion of persons who have ever tested for HIV (82.0%, n=473). While Buyende and Mayuge were reported to have the lowest coverage on this same indicator during the previous year's findings, they both reported increases from 52.9% (n=380) to 65.3% (n=470) and from 58.4% (n=380) to 79.2% (n=471) respectively. This can mainly be attributed to utilization of past LQAS results prior to implementation of HTC interventions during the period between July 2012 and June 2013.

Overall, there has been a gradual and significant increase ($p < 0.001$) from 47.9% (n=2,280) reported during the 2009 baseline to 73.9% (n=4,237) in 2013 among adults 15-54 years who have ever taken an HIV test in their entire life. Similar to findings in the previous LQAS surveys, more females (78.6%, n=2,965) than males (62.9%, n=1,272) have ever tested for HIV (Pearson $\chi^2(1) = 113.5, p < 0.001$). Figure 13 shows further details.

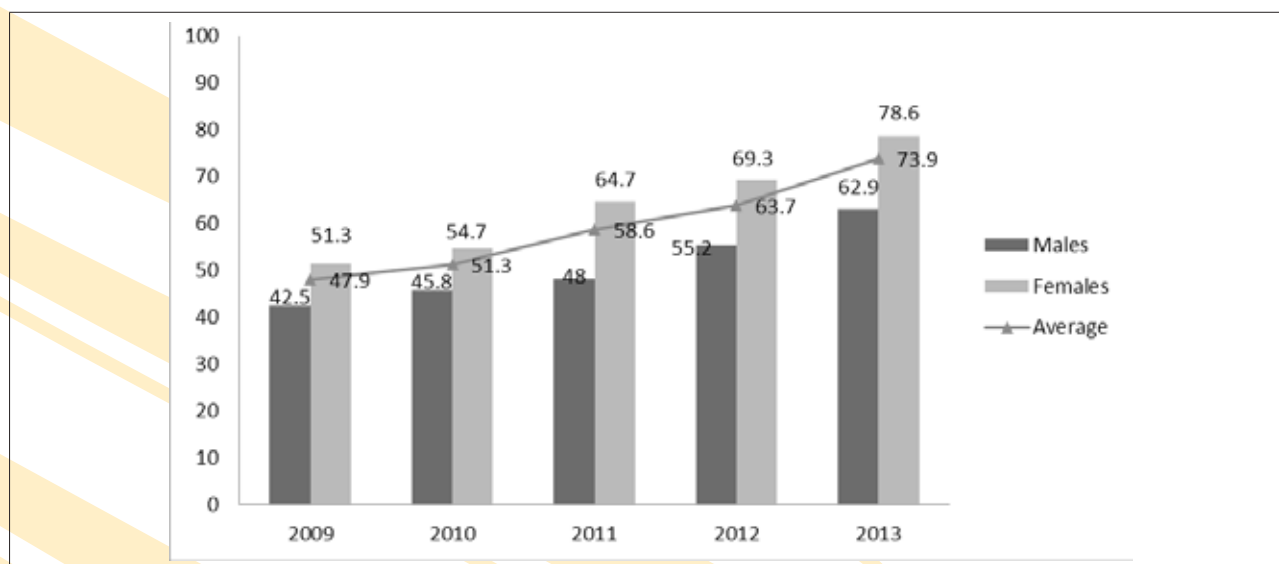
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Figure 13:Percentage of Adults Age 15–49 Who Have Ever Been Tested for HIV in the East Central region - July, 2013



Source: STAR-EC LQAS Household Surveys, 2013

Figure 14:Percentage of Adults Age 15–49 Who Have Ever Been Tested for HIV (by Year)

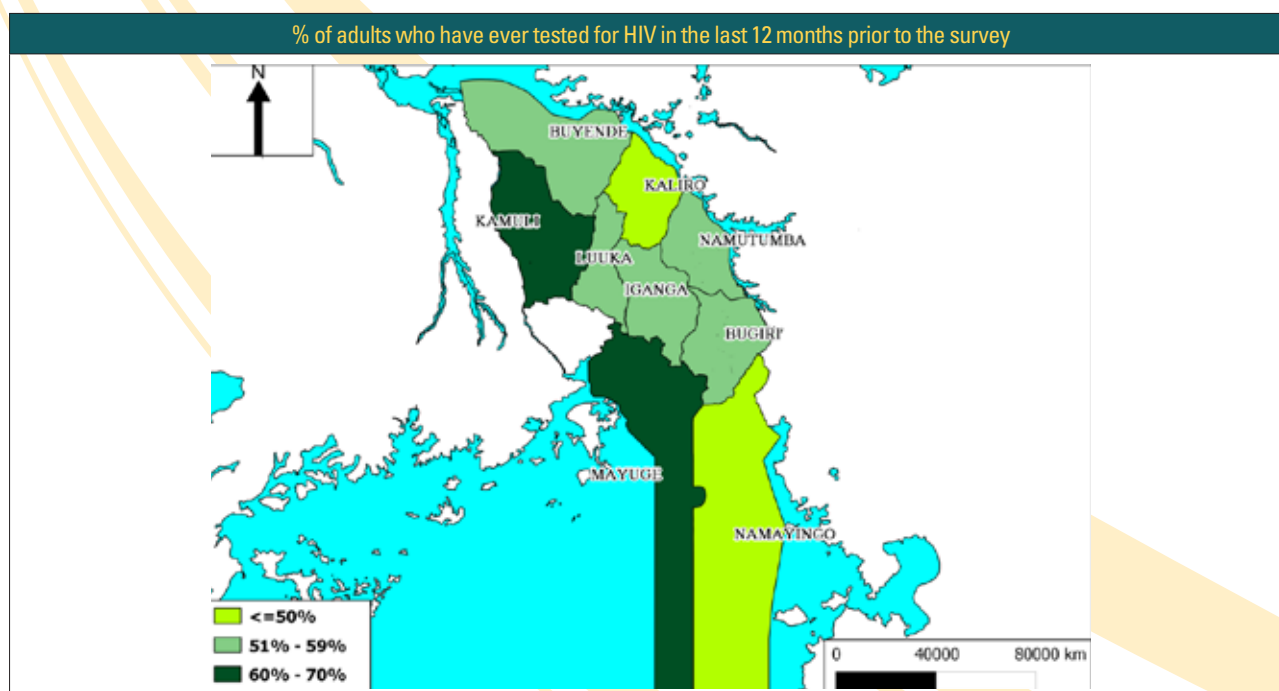


Source: STAR-EC LQAS Household Surveys, 2009-2013

HIV Testing Within One Year Prior to the Survey

The current HTC interventions drive is to have HIV negative individuals testing at least once every year. Testing once for HIV among those that turn out to be negative may not be sufficient as one's status may change over time. Additionally, it is 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.

Figure 15: 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 in 2013



Source: STAR-EC LQAS Household Surveys, 2013

Respondents were asked whether they had taken an HIV test and received their results 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 48.4% (n=3,420) in 2012 and 55.7% (n=4,275) reported in 2013. Among districts, Kamuli (68.6%, n=475) has consistently had the most persons ever tested and testing within the last one year prior to survey. During this survey year Namayingo (48.2%, n=475) and Kaliro (48.8% n=475) had the least proportions for testing within the last one year prior to survey. Namayingo is one of the districts where STAR-EC interventions have been made a priority so this low performance is a concern. Additionally, among adults that have ever tested for HIV, Kaliro (75.5%, n=466) is among the top performing districts while among those who tested and received results in the last one year, they are the least together with Namayingo. This may probably be explained by the fact that Kaliro has consistently been among districts with the lowest HIV prevalence and therefore is not among the priority districts for scale up of HTC services even though services are still being extended there.

Due to increased access of HTC in the region, analysis shows that of those individuals who have tested for HIV within the last one year prior to the survey, 67.2% (n=1,891) had tested for HIV more than once in the same year. At the same time of those individuals who have ever tested for HIV, eight in every ten (80.9%, n=3,117) last tested within 12 months prior to the survey. Table 5 below shows findings among persons who have ever tested and the last time they ever tested for HIV.

Table 5: Proportion of persons who have ever taken an HIV test and the last time they took an HIV test

Sex	Proportions (%)					Total number of respondents
	Within the last 12 months	Between 12 to 24 months	Between 2 and 5 years	Between 5 and 10 years	10+ years	
Males	73.7	19.1	4.8	1.4	1.0	794
Females	83.3	13.7	1.9	0.9	0.2	2,323
Total	80.9	15.1	2.7	1.0	0.4	3,117

Additionally, about two thirds (68.5%, n=3,052) and close to eight in every ten (77.3%, n=3,952) in 2012 and 2013 respectively of adults age 15-54 years knew of a place where to take an HIV test and had actually ever taken an HIV test.

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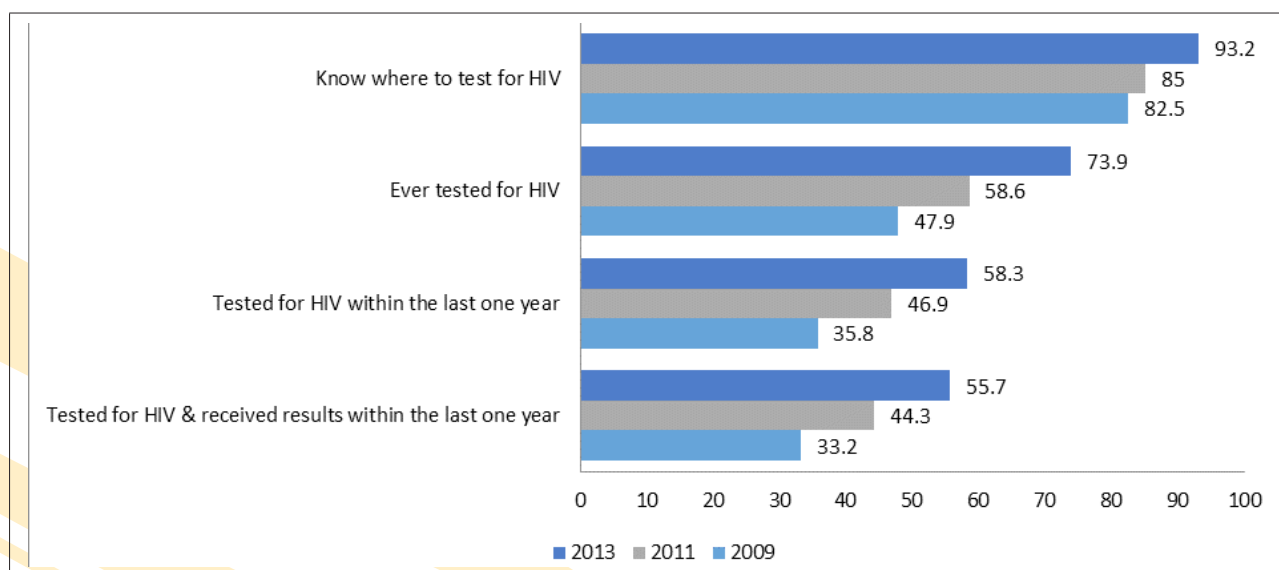
Disclosure of HIV results among partners

When offering HIV testing and counseling services, emphasis is also 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, of the respondents who tested and received their results within the last one year prior to the survey and had a partner at the time of test, 90.3% (n=1,795) compared to an almost similar finding in 2012 (89.8%, n=1,200) reported that they disclosed results to their partners. Similar to findings during the previous year, there were no significant differences ($p > 0.05$) between males (88.0%, n=375) and females (90.9%, n=1,420).

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 survey years ($p < 0.001$). Unlike comparisons on the small increments that were realized over the first three years, there was a 5% point increment between 2011 and 2012 from 85.0% to 90.4%. Overall, there was an increase from (82.5%, n=2,277) reported during the 2009 baseline to 93.2% (n=4,275) in 2013 among individuals who knew where they could take an HIV test. Additionally, there were no significant differences between females and males for the fourth year running (Pearson $\chi^2(1) = 1.7, p = 0.191$).

Figure 16: Progress on Key HTC Indicators Over the Last Five Years Since the 2009 Baseline



Young People (15-24 years) and HIV&AIDS

Social Demographics on Young People

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

Year		2011		2012		2013	
Characteristic	Category	n= 1,986	%	n=2,017	%	n= 1,936	%
Sex	Male	582	29.3	676	33.5	618	31.9
	Female	1,404	70.7	1,341	66.5	1,318	68.1

Year		2011		2012		2013	
Characteristic	Category	n= 1,986	%	n=2,017	%	n= 1,936	%
Highest level of education attained	No school education	92	4.6	67	3.3	46	2.4
	Primary 1-4	175	8.8	150	7.4	140	7.2
	Primary 5-7	943	47.5	987	48.9	884	45.7
	Secondary	720	36.3	748	37.1	795	41.1
	Tertiary	46	2.3	56	2.8	58	3.0
	Missing/unknown	10	0.5	9	0.5	13	0.6
Marital Status	Single, no partner	557	28.1	629	31.2	621	32.1
	Single, regular partner	137	6.9	166	8.2	151	7.8
	Single, non-regular partner	76	3.8	78	3.9	95	4.9
	Married/cohabiting	1,172	59.0	949	47.1	1,013	52.3
	Divorced	18	0.9	13	0.6	18	0.9
	Separated	22	1.1	24	1.2	26	1.4
	Widowed	*	*	*	*	4	0.2
	Missing/unknown	4	0.2	9	0.5	8	0.4

*not assessed during survey year

Source: STAR-EC LQAS Household Surveys, 2011 –2013

Young People (15-24 years) and HTC

Overall, most of the key young people indicators did not seem to change much over the last one year, however there were significant changes when compared to the 2009 baseline result of 81.4% (n=1,087). Among the young people age 15-24 years, 91.6% (n=1,936) up from 88.8% (n=1,664) in 2012 reported that they had knowledge of a place where one could go for an HIV test.

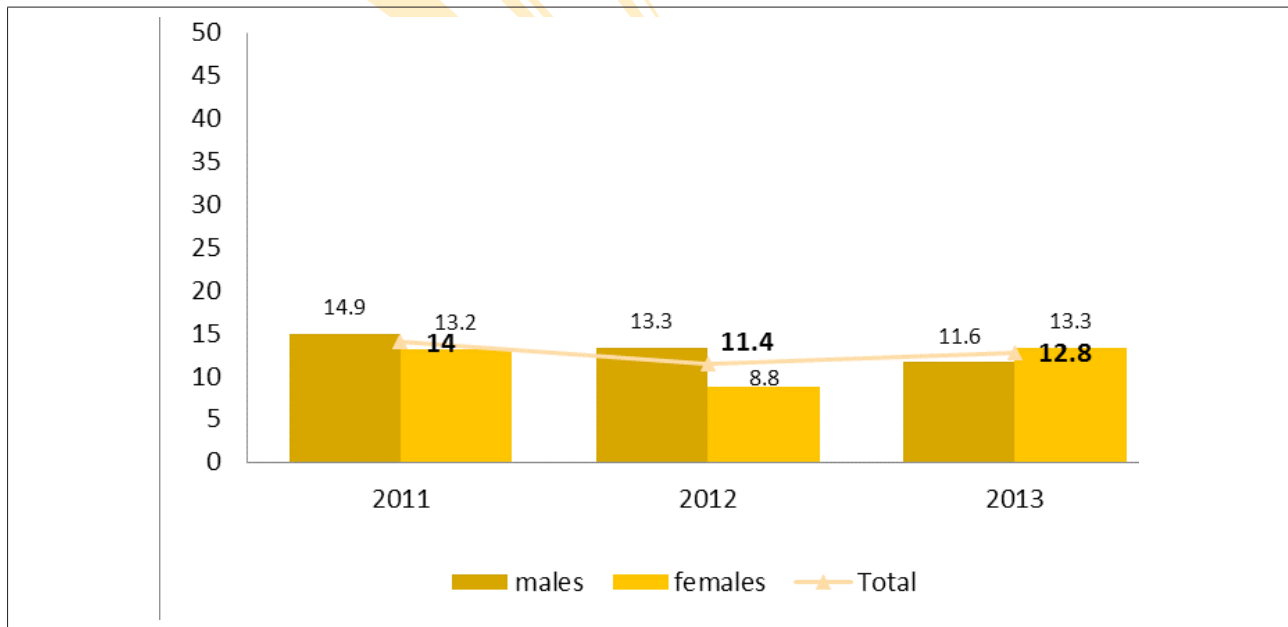
Each year results continue to show significant increments ($p < 0.001$), among young people who have ever taken an HIV test. This has increased from (41.8%, n=1,087) reported in 2009 to 67.2% (n=1,921) in 2013. Similar to the findings during previous surveys, there was evidence of significant gender and age differentials on HIV testing among young people. More females (72.5%, n=1,307) than males (55.9%, n=614) reported having ever taken an HIV test (Pearson $\chi^2(1) = 52.7, p < 0.001$). There were also significant differences across districts (Pearson $\chi^2(8) = 22.8, p = 0.004$). Kamuli District (73.9%) reported the highest findings while the least were reported from Namayingo (60.3%).

In addition, survey findings also suggest that 52.3% (n=1,936) in 2013 compared to 43.0% (n=1,684) of young people age 15-24 years in 2012 reported that they had taken an HIV test and received their results in the last year prior to the survey. The 2009 baseline results were much lower at 30.9% (n=1,087). Among districts, there were significant differences (Pearson $\chi^2(16) = 53.1, p = 0.030$) 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 (67.0%) while the lowest in Namayingo (42.3%). These district findings are similar to last year's survey results, however, there were significant improvements ($p < 0.001$) reported from Mayuge District from 35.6% to 58.1%.

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Young People and Sexual Behavior

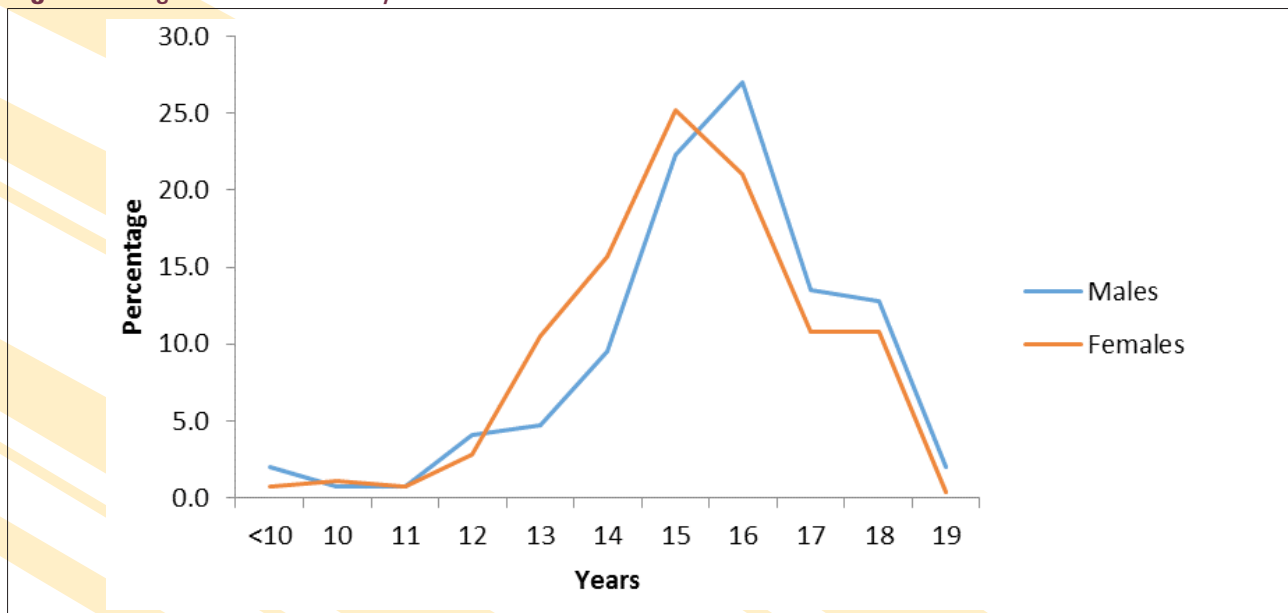
Figure 17: Percentage of Youth 15-24 Years Who Have Had Sexual Intercourse Before the Age of 15 Years (by year of survey and sex)



Source: STAR-EC LQAS Household Surveys, 2011-2013

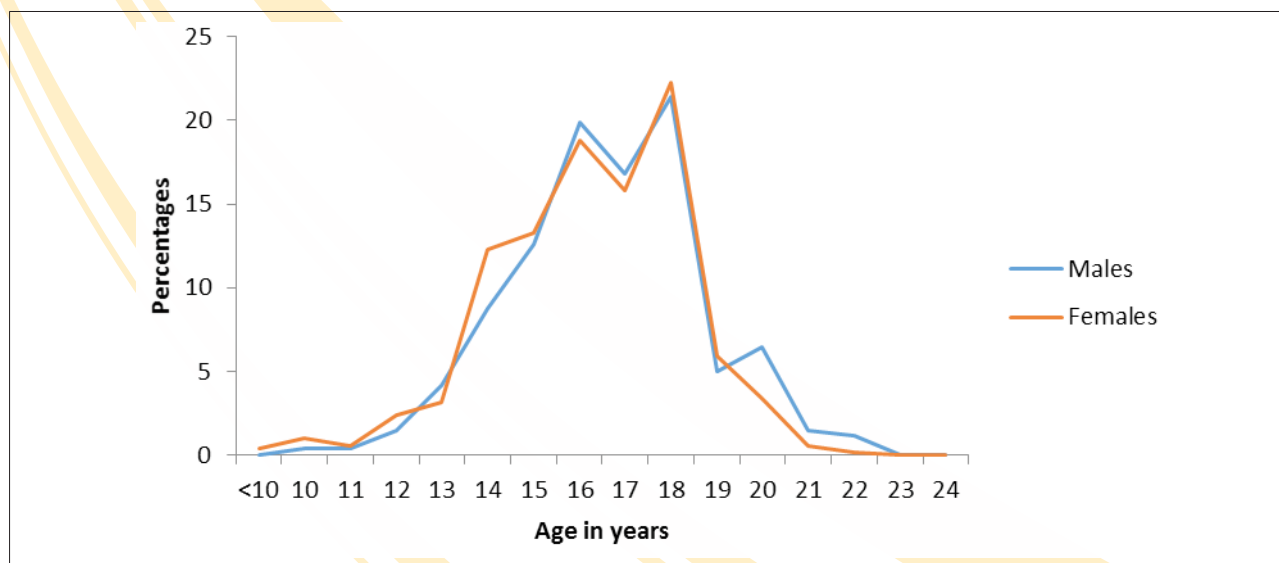
As illustrated in Figure 18 below, first sexual debut peaks at 15 and 16 years for most of the female and male respondents age 15-19 years old respectively and this was reported at (25.2%, n=286) and (27.0%, n=148) respectively for both aforementioned ages. Findings are almost similar to last year's survey results. The study therefore shows that more females start sex earlier than males in this same age bracket.

Figure 18: Age at which 15-19 years old first had sex



For respondents between the ages 20-24 years, most respondents reported having had their first sexual encounter starting with 15 years (13.0%, n=767) and peaking at 18 years (21.8%, n=767). Figure 19 below shows further details by gender.

Figure 19: Age at which 20-24 years old first had sex



Reproductive Health among adults 15-54 years

The World Health Organization defines reproductive health as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, reproductive health, or sexual health/hygiene, addresses the reproductive processes, functions and system at all stages of life. 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. However, over the last 2 years, the 2012 and 2013 surveys show a rise to 27.6% (n=2,930) and 32.9% respectively (p<0.05). Results also showed an increase from 26.2% (n=2,373) in 2011 to 35.5% (n=2,294) in 2013 among currently married/cohabiting women 15-49 years (excluding pregnant women) who were using modern family planning methods.

- ▶ 50.2% attended ANC at least 4 times –an increment from 47.9% in 2012
- ▶ 17.8% of pregnant women tested and received their HIV results together with their partners during ANC -an almost akin finding to 17.3% in 2012
- ▶ 72.7% pregnant women gave birth from a health facility in the 2 years prior to the survey-an increment from 67.4% in 2012
- ▶ 35.5% of all married/cohabiting women interviewed reported using modern family planning methods -an increment from 29.2% in 2012

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.

Comparisons were made between indicators on ANC attendance atleast once and four or more times. While the proportion (92.6% (n=1,710) among those who attend ANC at least once during 2013 remains akin to last year's findings of (92.7%, n=1,710) and at the same time lower than what was reported in 2011 (96.8% (n=1,710), the proportion (50.2%, n=1,709) of those attending ANC the recommended four or more times has been reported on the increase from 42.3%, (n=1,710) in 2011 to 47.9% (n=1,710) in 2012 and now at 50.2% in 2013. The proportion of biological mothers of children 0-23 months who reported having attended ANC with their partners and tested together as a couple for HIV was at 28.7% (n=1,710) in 2013, however, in this same year, a lesser proportion (17.8%, n=1,710) tested and received their results as couples –an almost similar finding to the 2012 results of 17.3% (n=1,710). For the second survey year running, the highest findings of results were found in Kamuli (24.7%) and Kaliro (24.7%) while the least were found in Mayuge (9.5%), Namayingo (11.1%) and Namutumba (13.2%).

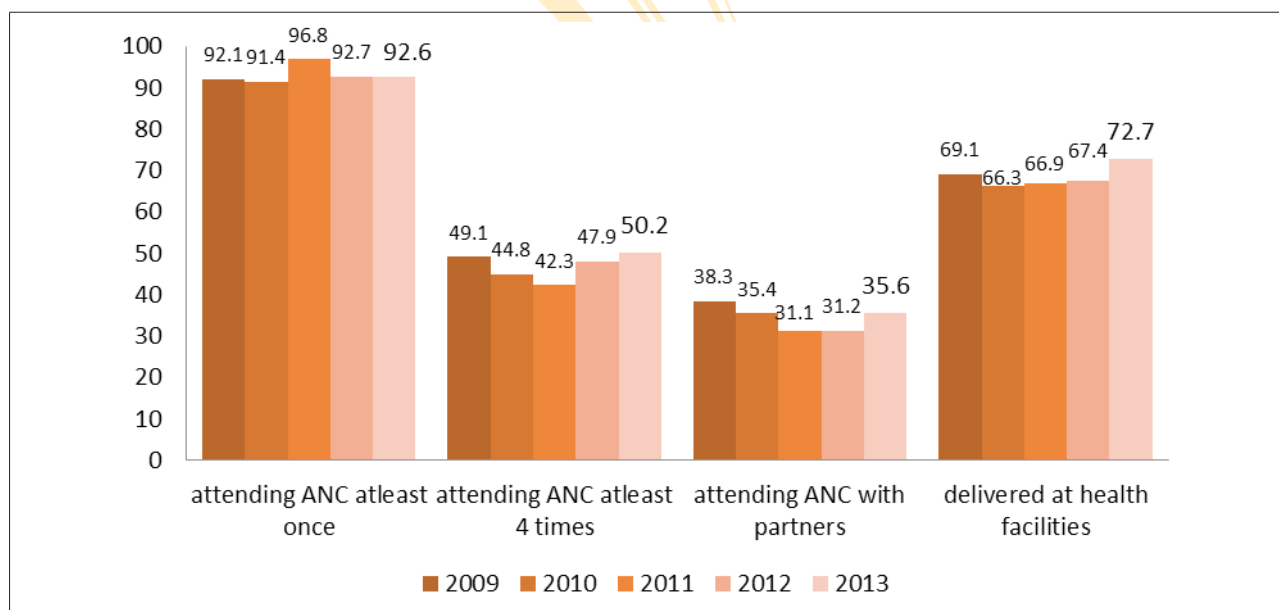
Contrary to stagnation of results reported since baseline, there was an increment from 67.4% (n=1,710) reported in 2012 to 72.7% (n=1,710) in 2013 (p<0.05) among the proportion of biological mothers of children 0-23 months who reported having had their last birth at a health facility. There were significant variations across districts (p<0.001) – something that seems to suggest the need for a lot of attention in response to the low performing districts. Similar to the previous years' findings, Kaliro (86.8%), Kamuli (84.2%), Iganga (82.1%) and Mayuge (81.6%) had the highest proportion of deliveries at a health facility while for the second year running, Bugiri (57.4%) and Namayingo (41.6%) had the lowest coverage. Except for Bugiri and Kaliro districts, the rest of the aforementioned districts performing at the highest level against this indicator are most probably achieving such

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results due to the existence of district referral hospitals (alongside other health facility levels) within their boundaries. At the same time, Bugiri District has a high level hospital, however, its results are among the lowest.

While it is possible for women to deliver from a health facility setting, it is also possible for some women to deliver from such settings in the absence of a skilled or qualified service provider. Overall, 71.6% (n=1710) in 2013 compared to 67.2% (n=1,710) in 2012 of biological mothers of children 0-23 months reported having their deliveries at the health facility assisted by qualified staff (i.e. a doctor, nurse or midwife). All these findings show annual increments when compared to the 2011 findings of 65.8% (n=1,710).

Figure 20: Reproductive Health Indicator Results (%) by year of survey



Source: STAR-EC LQAS Household Surveys, 2009-2013

Prevention of Mother to Child Transmission of HIV (PMTCT)

- ▶ 89.2% of adults (15-54) years identified at least one way of MTCT – an akin finding to 89.3% in 2012
- ▶ 54.0% adults were able to identify all the 3 MTCT ways – an increment from 50.3% in 2012

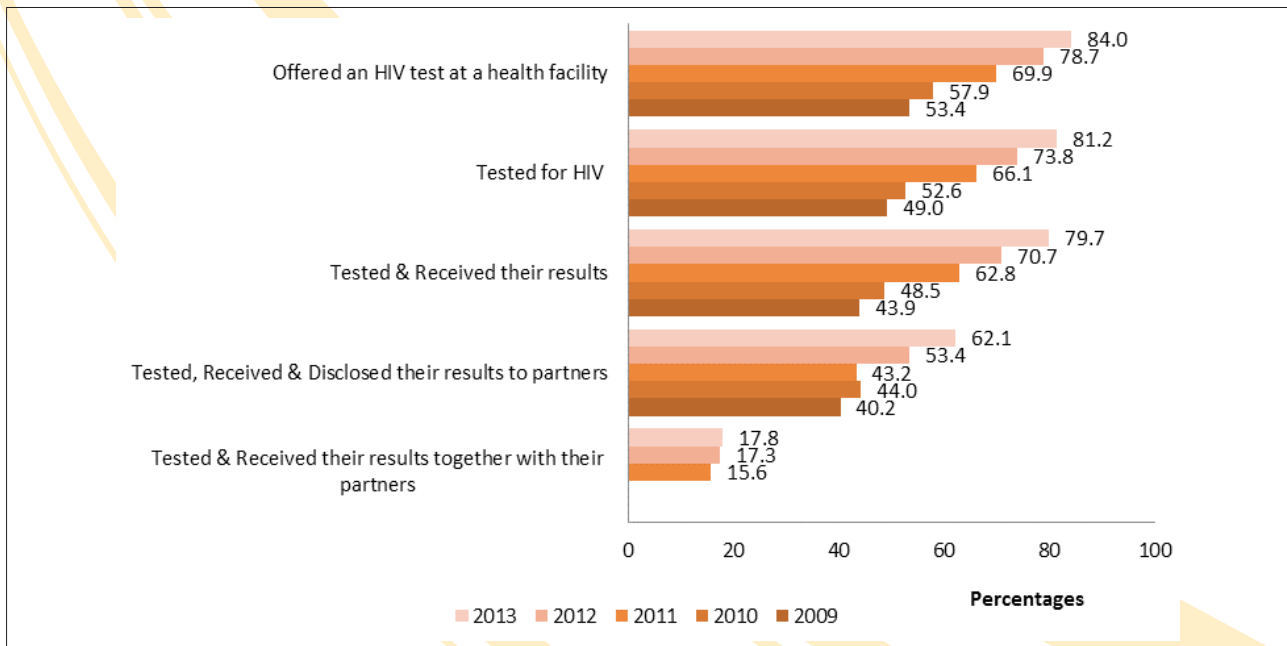
% of respondents 15-54 years who knew that HIV can be transmitted to a baby through;

	Males	Females
Pregnancy	59.7	68.0%
Delivery	78.2%	86.3%
Breast feeding	68.8%	79.3%

PMTCT 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 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 each annual 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 21 illustrates the upward trend in the key PMTCT indicators across the years.

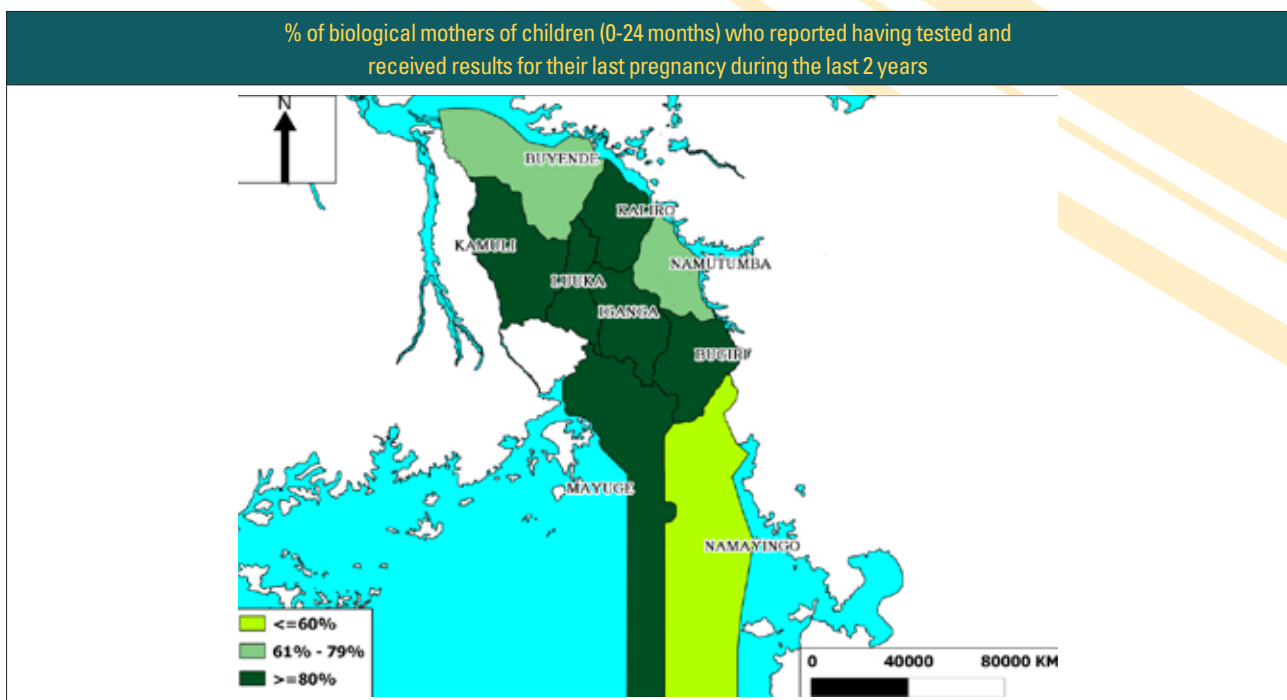
Figure 21: PMTCT Indicator Results (%) during ANC, by year of survey



Source: STAR-EC LQAS Household Surveys, 2009-2013

Overall, PMTCT indicator results continue to show increments each subsequent year starting with the 2009 baseline. This is clearly illustrated in the figure above. While results continue to show stagnation when comparing the proportion of individuals (both men and women) who were able to identify one MTCT way (89.2% (n=4,275) in 2013 and 89.3% (n=1,710) in 2012), there was an increasing trend from 45.2% (n=570) to 50.3% (n=1,710) and 54.0% (n=4,275) for both years respectively among individuals who were able to identify all three MTCT ways.

Figure 22: HTC for PMTCT purposes in East Central Uganda (Overall Regional Coverage =79.7%)



Source: STAR-EC LQAS Household Surveys, 2013

Knowledge and Perceptions on Anti-Retroviral Therapy (ART)/ Cotrimoxazole (CXT)

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Like all past household surveys, this year's survey was only able to investigate some information on ART among the general population (adults 15–54 years) and did not include investigations among Persons Living with HIV&AIDS (PLHIV) thus no information on their practices could be obtained. The survey therefore set to find out respondents' knowledge, perceptions and thoughts on ART. Table 7 highlights some of these findings. While there was a decreasing trend in the proportion of adults who believe that HIV patients should take ARV/ cotrimoxazole drugs from the baseline year in 2009 to 2011, there is now an increasing trend reported in the last two survey years ($p < 0.001$). Overall, proportions increased from 36.1% ($n=2,280$) at baseline to 51.8% ($n=3,420$) in 2012 and 59.3% ($n=4,275$) in 2013.

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

Districts	Year of Survey				
	2009	2010	2011	2012	2013
Bugiri	45.5	38.4	30.0	52.1	61.7
Buyende	-	17.6	13.4	36.6	42.5
Iganga	32.6	50.8	42.4	61.8	66.1
Kaliro	33.7	37.9	41.8	56.1	68.6
Kamuli	41.6	30.5	36.3	61.1	75.6
Luuka	-	41.1	29.2	54.7	64.8
Mayuge	31.3	41.6	37.4	51.6	58.7
Namayingo	-	33.7	30.8	62.9	60.8
Namutumba	31.8	27.6	22.6	29.7	34.3
Regional Total	36.1	35.5	31.6	51.8	59.3

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- 2013

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

Districts	Year of Survey				
	2009	2010	2011	2012	2013
Bugiri	66.8	64.1	60.6	79.8	89.6
Buyende	-	43.8	51.4	78.6	88.5
Iganga	56.0	71.9	85.1	83.8	91.7
Kaliro	55.2	59.0	80.7	85.0	96.2
Kamuli	51.9	49.9	67.1	76.8	86.0
Luuka	-	59.7	66.4	67.6	88.4

Districts	Year of Survey				
	2009	2010	2011	2012	2013
Mayuge	57.1	73.1	75.8	78.7	90.5
Namayingo	-	42.7	42.0	59.2	79.6
Namutumba	61.5	64.9	66.7	78.1	91.2
Regional Total	58.0	58.8	66.3	76.5	89.1

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- 2013

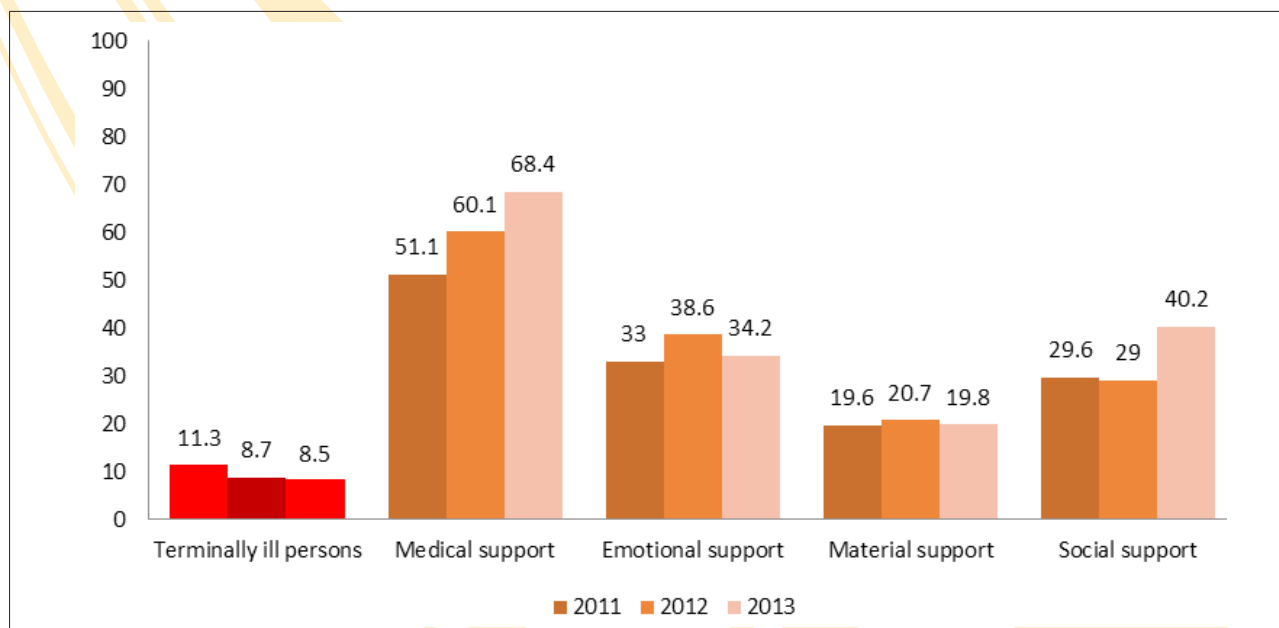
Overall, results showed that more individuals are getting aware of where to access ARVs every year. Additionally, awareness is highest in Kaliro and lowest in Namayingo District.

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 in the number of respondents that reported they would want to keep it a secret if a family member were found HIV positive from 65.6% ($n=2,276$) at baseline in 2009 to 53.4% ($n=3,277$) in 2011 and 47.0% ($n=4,241$) reported in 2013.

In order to minimize respondent bias, all past surveys 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 were significant changes in the trend and proportion of households reporting having existence of such persons over the last five years. Results at baseline in 2009 were reported at 12.7% while in 2013, they were at 8.5% ($n=1,694$) as illustrated in Figure 23. Among districts when comparing 2013 results, the highest of such findings were in Luuka (18.1%, $n=182$) and Mayuge 12.7% ($n=189$) while similar and lowest results were found in Kaliro and Kamuli at (3.7%, $n=189$) for each district. Earlier, the 2012 survey results had revealed Namayingo District (12.7%) with the highest proportion and as a result of these findings the STAR-EC program developed targeted interventions to reduce on such undesirable findings. When assessed in the 2013 survey, only 6.9% were reported as terminally ill persons in Namayingo District. Figure 23 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 23: Care and Support Indicator Results



Source: STAR-EC LQAS household surveys, 2011 –2013

More (69.4%, n=144) of the affected households in 2013 when compared to about two thirds (65.5%, n=141) during the previous survey year reported receiving home care and support for the terminally ill person(s). Both findings were higher than the 2011 year's finding of 56.3% (n=192). The survey also established that almost all respondents' households (92.1%, n = 140) with terminally ill persons reported their willingness to care for a PLHIV in their own

However, this was slightly lower than the 94.3%, n=141) reported during the previous survey year.

Knowledge and Perception on Tuberculosis (TB)

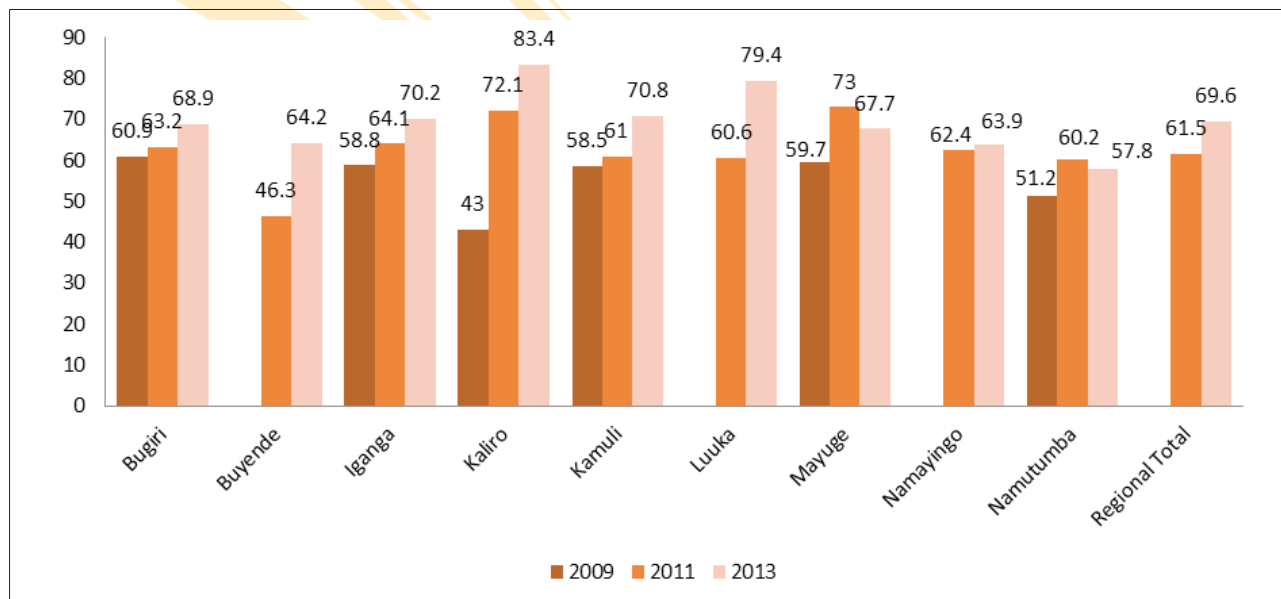
Every year more than 2 million people around the world die from TB, but the disease's greatest impact is felt in sub-Saharan Africa. With 102,000 new cases every year, Uganda is ranked sixteenth out of the 22 countries with the highest burden of TB. A total of 45,546 new TB cases had been identified in Uganda by the end of the year (2010). Of these, 545(1.2%) were confirmed 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: 51% 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 5.8% (AIDS Indicator Survey, 2011), 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. In 2013, nine in every ten (90.8% , n=4254) compared to (88.1%, n=3,397) in 2012 knew of at least one sign and symptom of TB; 85.7% (n=4,253) knew that it is possible for one to have both HIV and TB at the same time while 69.6% adults aged 15-54 years knew that TB is a curable disease– an almost similar finding to 69.1% (n=3, 364) in 2012. Additionally, there were significant findings (Pearson chi2(2)=20.1, p<0.001) as more males (74.4%) than females (67.5%) knew that TB is a curable disease and 87.4% respondents mentioned they would take TB suspects to a health unit for testing, care and treatment. Figure 24 shows the trend in the proportion of adults who knew that TB is a curable disease by district.

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Figure 24: Percentage of Adults 15-54 Years Who Knew of TB is a Curable Disease by District



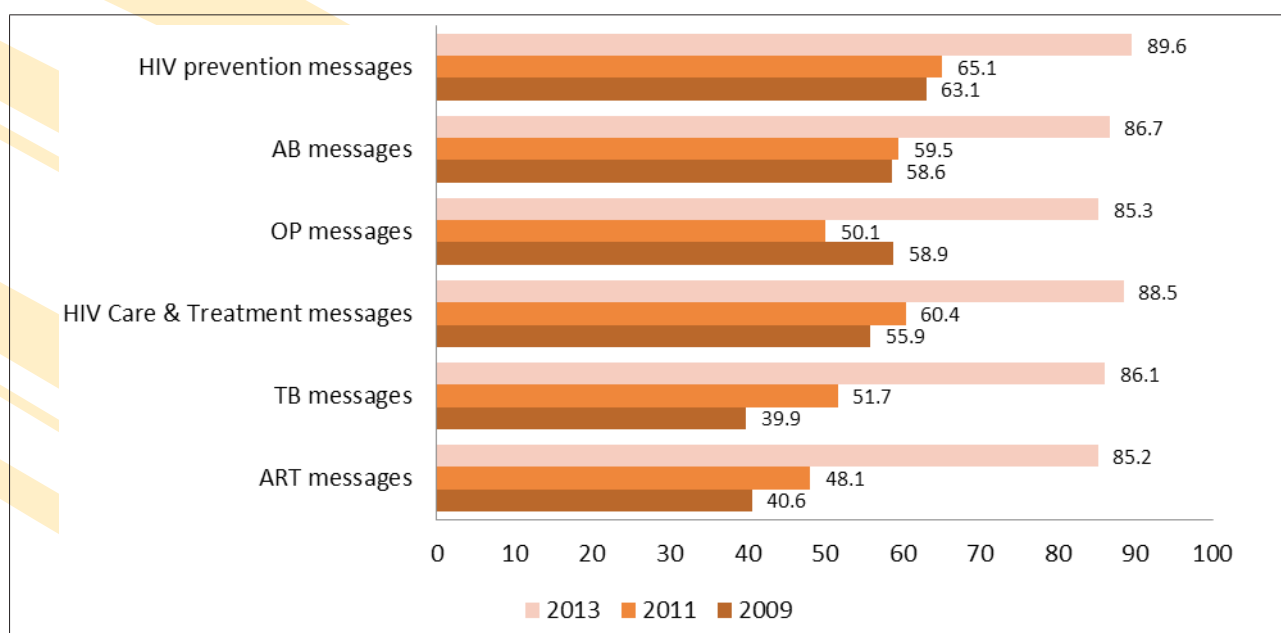
Source: STAR-EC LQAS Household Surveys, 2009-2013

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 25 shows the trend in the proportion of respondents receiving health messages by type of message.

Unlike the 2012 survey results that reported no increment on OP messages, the 2013 results did show significant increments across the board among all major BCC indicators. Variations across districts for most indicators were also found significant ($p < 0.001$). More BCC indicator results can be found under Appendix 2.

Figure 25: Percentage Distribution of Respondents Receiving Health Messages



Source: STAR-EC LQAS Household Surveys, 2009- 2013

Challenges and Lessons Learned

Challenges

Almost all of the challenges for this survey year are similar to the previous survey years though the magnitude of some of the previous challenges have lessened over the years. Among these include SDS funding as well as response to inflation and rise in data collection fuel costs. These aforementioned challenges still remain existent; however improvements on these specific challenges have been noticed.

Below are some of the challenges that continue to recur each survey year:

There has been inflation in Uganda over the past years and this has caused most budget line items to shoot up. On the contrary, there hasn't been enough funding to increase on LQAS activities even when some line items such as fuel have clearly risen. Some of the data collectors therefore had to improvise or use their own money to top up on fueling bikes to the far hard to reach sampled villages while others ended up sharing one bike – something that increased on the length of time for data collection. Although the transport refund for the data collection was increased from the subsequent years' shs. 15,000/= to shs. 20,000/=, the data collectors still found it a challenge to traverse the sampled villages with just that amount.

Similar to the previous years, the SDS program extended support to six of the nine STAR-EC supported districts and is commended for releasing funds to each district LGs on time. This was better than the previous years' experiences. However, there was still a delay when it came to timely disbursement of funds to the LG data collectors by the LGs themselves. A case in point is the Iganga District data collectors who had not received any allowance or transport refund by the end of the exercise. This was not only a de-motivator but also could have compromised the quality of data collected since they had to dig deep in their own pockets to facilitate themselves during this exercise as they waited for these funds.

Data collection on Sigulu and Jaguzi islands was very challenging. The data collectors had to spend many days and nights on the island since the number of data collectors was reduced to seven compared to nine or more during the first three survey years. The rains and lake storms also made it almost impossible to move from one island to another in search of interview locations – something that left some data collectors unable to continue with the process. The remaining few however managed to visit all the sampled locations and thus quality data was collected.

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. Recall failure among some respondents could not also be ruled out.

- ▶ Interpreting the findings of surveys always poses the challenge of attribution of the results. Due to the cross-sectional design of all past 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 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 the baseline and 2013, STAR-EC cannot fully claim 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.
- ▶ 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. 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. 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.

Lessons Learned

- ▶ Partnerships between USAID IPs on such undertakings are not only good at promoting improved partnerships and coordination of activities but also with reducing activity costs that mainly arise out of the advantages of the economies of scale. Additionally, partnerships have helped in avoiding the duplication of the same activities within the same district and such ventures help in reducing on the fatigue that the district officials

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would face with undertaking the same activity by different partners thus reducing on their workload.

- ▶ Increased involvement of LQAS district specific focal persons in the management of this survey activity is one way of ensuring and promoting sustainability. 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.
- ▶ Triangulation of program routine data (where applicable) with LQAS findings is one way of supporting the process of evidence based planning and decision making.
- ▶ 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.
- ▶ 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 once districts and their respective department staff are fully trained to understand and utilize the results that are generated by the survey in their annual planning. LQAS activities will be sustainable once embedded within district owned planning and budgeting processes.
- ▶ 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 since the 2009 baseline survey showed improvements across most of the districts.

Despite most of the efforts made by the STAR-EC program in reaching out to hard to reach areas such as the islands of Namayingo and Mayuge Districts, the 2013 results continue to show that such areas and districts continue to lag behind when compared to performance from other districts (even though their performances are on the increase). As a whole, Namayingo District was noticed with least performances across a number of indicators highlighted under the findings section of this report. Therefore, there is need to further increase on the level of support provided to this district.

Much as the results show significant increases (from baseline to the current program and survey year) in the proportion of persons who have ever tested for HIV as well as those who have tested for HIV in the last one year, the proportion of individuals involved in marital, cohabiting and regular relationships testing for HIV is still low. The program therefore needs to increase its 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. As mentioned in recommendations of other past

LQAS reports, there is need for the program to exploit the opportunity of males who escort their pregnant wives to health facilities for ANC by providing them with HTC services. Home to home would be another useful strategy once increased to scale. Prioritization of areas or sub-counties deemed to have MARPs is another important approach that should continue to be upheld. This would increase HTC uptake amongst the neediest areas that have the highest prevalence and will result into increased extension of care and treatment services for the infected persons. Results also suggest that there is a group of persons who have never tested for HIV and there is increased need to break into this group more rapidly than is currently the case.

Increased partnership and collaboration with district local government and the private sector is highly recommended. Large numbers of private health facilities assessed during past health facility assessments were found to serve a sizeable number of clients that cannot be ignored. There is also a need to increase the level of partnerships with some of the implementing partners in the region that are charged with direct increase in the quality and quantity of RH and Goal ANC service provision. STAR-EC and STRIDES should therefore increase on the level of this partnership as the success of PMTCT/eMTCT outcomes largely depends on both USAID IPs working closely with local governments

(especially on goal oriented ANC). Further strengthening of SDS collaboration is also imperative and may not only help in promoting a sustainable environment with district funding mechanisms towards various public health interventions but LQAS survey activities as well.

The proportion of pregnant women delivering from health facilities increased over the last one year unlike during previous years. At the same time, while the proportion of pregnant women attending ANC at least four times during the last three years prior to the survey shows increments, the proportion of those attending at least once seems to be stagnant or on the decrease when comparing results from the last three survey years. STAR-EC does not directly support all the reproductive health (RH) and goal oriented ANC indicators and its' main emphasis is on PMTCT/eMTCT interventions. However, since this is an era of integrated service delivery, the program needs to delve into such intervention areas.

Results continue to show that more adults in the region have acquired more TB knowledge. This applies to TB indicators on adults who know that it is possible for a person to have TB and HIV at the same time; adults who knew that TB is a curable disease and those who knew some signs and symptoms of TB. However, a big proportion of adults could not mention the most imperative signs and symptoms of TB. This is therefore an area that needs improvement especially with the way TB messages are packaged as part of IEC interventions.

There is a need to refocus, 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 are also very imperative. 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 is highly recommended.

Achievements on VMMC interventions have been established over the last three years. However, there is need to scale up on the promotion of VMMC in all districts if population based targets on male circumcision are to be achieved. Survey results continue to show high levels of willingness for circumcision among non-circumcised men once offered the service but on the contrary, the 2013 results showed a sudden drop in trend (on this willingness) when compared to previous year results. It is recommended that the STAR-EC program investigates further why there is such a down-ward sudden trend so as targeted solutions can be devised. As expressed under the recommendations of previous surveys, there is a need for further VMMC scale up through

emphasis on 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 referred to such service points. 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. In addition, school holidays are an opportunity for reaching out to more students who may opt for VMMC services during such time periods.

Improvements have been noticed on the level of timeliness for disbursement of LQAS funds to districts by the SDS Project. However, there is need for further improvement by the district LGs themselves while disbursing the same funds to LQAS district personnel otherwise there is a risk of compromising quality standards when data collectors are faced with such challenges. As the STAR-EC program nears its end, both SDS and STAR-EC need to engage more with each other so as to address the sustainability question.

STAR-EC has already built the capacity of over 100 local government (LG) and 15 CSO personnel in the execution of LQAS surveys in the region over the last five program years. With this kind of built capacity, the program should continue to support LQAS activities with more leadership roles directly played by LG personnel (particularly the district planning and HMIS departments). Data from LQAS has been useful in the development of the district management improvement plan (DMIP) and district operation plan and as such this practice should be extended to strengthening of the overall annual LG planning and budgeting process through support from the CAO's office. In order to respond to LQAS funding issues beyond STAR-EC's program life, the program should continue to encourage different district departments to conduct their own "miniature" LQAS surveys as part of their own district routine activities. DMIPs should also include plans to conduct these miniature LQAS. This can involve a set of few indicators that can be collected by each district department as opposed to large scale LQAS that definitely needs huge funding. Namutumba is one such example of a district where this is currently taking place. Other districts can borrow a leaf on what has enabled Namutumba to achieve this milestone. STAR-EC should also support linkages between local governments and the Uganda Bureau of Statistics (UBOS) who are the intended national body that will hold the LQAS data base thus contributing to the national LQAS institutionalization process.

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5.0 Appendices

Appendix 1: Summary of Key HIV Counseling and Testing (HCT) Indicator Results

	Know where testing services are offered					Have ever tested					Tested and received HIV results in one year prior to the survey				
Year of Survey	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Age in Years															
15-24	81.5	81.6	84.1	88.8	91.6	42	47	56.1	56.1	67.2	30.9	33	42.9	43.0	52.3
25-34	83	85.5	86.8	91.7	94.6	55.3	57.5	65.3	73.4	82.2	37.4	40.1	50.1	57.2	64.2
35-54	84	83.9	85.0	92.1	94.6	50.9	52.7	56.7	68.8	75.5	33	36.4	41.1	50.0	50.9
p value	p=0.416	p=0.034	p=0.208	p=0.010	p=0.001	p<0.001	p=0.002	p=0.208	p<0.001	p<0.001	p=0.001	p=0.003	p<0.001	p<0.001	p<0.001
Sex															
Males	84.9	84.4	84.1	90.9	92.5	42.5	45.8	48	55.2	62.9	27.5	30.6	32.4	39.1	42.1
Females	81	82.5	85.5	90	93.6	51.3	54.7	64.7	69.3	78.6	36.8	39	51.1	54.5	61.7
p value	p=0.019	p=0.150	p=0.271	p=0.403	p=0.191	p<0.001	p<0.001	p<0.001	p<0.001	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	91.3	93.9	50.9	57.3	58.1	66.3	76.0	34.2	40.8	41.8	49.7	59.0
Buyende	*	79.4	84.1	91.0	93.9	*	37.6	43.7	52.9	65.3	*	19.2	29.5	40.0	51.8
Iganga	82.6	87	91.8	94.7	95.8	41.5	51.2	58.5	62.6	72.1	27.9	34.5	42.6	47.6	53.5
Kaliro	81.3	83.2	92.9	98.7	94.5	44.9	44.5	55.9	63.2	75.5	26.6	30	44.7	48.4	48.8
Kamuli	84.5	88.3	90.4	94.5	98.3	48	63.7	69.3	75.3	82	36.6	51.3	57.4	62.9	68.6
Luuka	*	76.4	80.9	84.2	89.9	*	38.3	55.2	61.3	75.6	*	24.2	42.6	43.2	54.3
Mayuge	87.9	88.4	89.2	89.4	95.0	56.9	63.9	66.8	58.4	79.2	41.6	43.4	45.3	42.4	62.5
Namayingo	*	78.8	70.8	78.1	83.8	*	50.1	58.1	65.8	65.9	*	38.7	44	50.0	48.2
Namutumba	80	81.8	81.5	91.3	94.1	45.1	54.6	62	67.6	73.2	32.4	39.7	50.8	51.6	55.0
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	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001	p<0.001
Sample Size	2,277	3,401	3,383	3,377	4,275	2,266	3,401	3,404	3,420	4,237	2,280	3,420	3,420	3,420	4,275
Totals	82.5	83.2	85.0	90.4	93.2	47.9	51.3	58.6	63.7	73.9	33.2	35.8	44.3	48.4	55.7

*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, 2009-2012

Appendix 2: Household Survey Results

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