



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

COMPENDIUM

# HIV and AIDS Case Studies from the USAID Applying Science to Strengthen and Improve Systems Project, 2013-2018

APRIL 2020

This compendium of previously published case studies related to improving HIV and AIDS services was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) through the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. The USAID ASSIST Project is made possible by the generous support of the American people through USAID.



COMPENDIUM

# HIV Case Studies from the USAID Applying Science to Strengthen and Improve Systems Project, 2013-2018

APRIL 2020

USAID Applying Science to Strengthen and Improve Systems Project

**DISCLAIMER**

The contents of this report are the sole responsibility of University Research Co., LLC (URC) and do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

## **Acknowledgements**

This compendium of 33 case studies previously published by University Research Co., LLC (URC) under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is made possible by the generous support of the American people through USAID's Bureau for Global Health, Office of Health Systems. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST included: American Academy of Pediatrics; EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC.

For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

## **Recommended citation**

USAID Applying Science to Strengthen and Improve Systems Project. 2020. HIV Case Studies from the USAID Applying Science to Strengthen and Improve Systems Project, 2013-2018. *Compendium*. Published by the USAID ASSIST Project. Chevy Chase, MD: University Research Co., LLC (URC).

## CONTENTS

**Botswana:** Strengthening HIV linkage and retention through improved community/facility collaboration in Palla Road, Botswana (August 2016)

**Burundi:** Increasing male partner participation in PMTCT in Burundi (May 2017)

**Democratic Republic of Congo:** Integrating quality improvement in HIV/AIDS care and treatment in the Lualaba Province of the Democratic Republic of Congo to retain PLHIV on antiretroviral therapy (June 2017)

**Kenya:** Retention in care of HIV-exposed Mother Baby Pairs in Kenya (October 2013)

**Lesotho:** Increasing adult ART uptake under Test and Treat in Lesotho through ART initiation at the village health post level (December 2017)

**Lesotho:** Improving the retention of mother-baby pairs at Seshote Health Center in Leribe District, Lesotho (December 2017)

**Lesotho:** Collaborative approach to improving the quality of voluntary medical male circumcision services in five districts of Lesotho (June 2018)

**Malawi:** A community-led approach to improve early childhood development (ECD) and nutrition in Blantyre District, Malawi using quality improvement methods (June 2013)

**Malawi:** Improving access to quality education in Nakanyanja Primary School in Mkata area in Mangochi District, Malawi (December 2013)

**Malawi:** Improving household food security in Mwanganya area through community involvement in Karonga District, Malawi (December 2013)

**Malawi:** Integrating nutrition services in HIV and TB care in Karonga and Balaka Districts of Malawi (December 2013)

**Malawi:** Improving educational performance of children in Chilore Primary school using quality improvement approaches in Mangochi District, Malawi (October 2017)

**Malawi:** Improving household food security and economic status of vulnerable households in Mangochi District (November 2017)

**Mozambique:** Community contributions to eliminating mother-to-child transmission at Licilo Health Center, Mozambique (May 2015)

**South Africa:** The Impact of Continuous Quality Improvement on Voluntary Medical Male Circumcision Services Offered in a Public Health Facility in Gauteng Province, South Africa (June 2018)

**Tanzania:** Improving Linkages between Health Facilities and Communities in Muheza, Tanzania (January 2015)

**Uganda:** Implementing the Partnership for HIV-Free Survival (PHFS) Initiative in Uganda: Retention of Mother-Baby Pairs in Kisoro District Hospital (July 2013)

**Uganda:** Improving income-generating activities for vulnerable children and families at Agape Nyakibare Civil Society Organization – Uganda (January 2014)

**Uganda:** A Fast Turn-around for Mengo Hospital: Improving the Quality of Safe Male Circumcision Services (February 2014)

**Uganda:** Improving retention of children in HIV treatment in Uganda (March 2014)

**Uganda:** The role of improvement teams in managing male circumcision-related adverse events: The experience of the mobile van clinic in Uganda (June 2014)

**Uganda:** Safe male circumcision: Improving client follow-up at Gulu Regional Referral Hospital, Uganda (June 2014)

**Uganda:** Increasing viral load monitoring of people living with HIV on ART in Northern Uganda in line with the 90-90-90 global targets (June 2016)

**Uganda:** The role of Village Child Protection Committees to support vulnerable children with social services: A story from Katuba Village, Uganda (June 2016)

**Uganda:** Improving Utilisation of GeneXpert Testing at Five Lab Hubs in Northern Uganda (December 2016)

**Uganda:** Systematic approach to improving six-week post voluntary medical male circumcision follow-up at Moroto Regional Referral Hospital in Uganda (December 2016)

**Uganda:** Addressing the Therapeutic Feeding Gap for PLHIV with Nutrition and Self-Management Support: A Case of Aboke Health Center IV (January 2017)

**Uganda:** Improving identification of new HIV-positive children and adults: the role of community structures (January 2017)

**Uganda:** Improving retention of clients on antiretroviral therapy through expert patients: Involving people living with HIV in Alebtong District, Northern Uganda (January 2017)

**Uganda:** Improving Access to Viral Load Monitoring through Viral Load Camps in Northern Uganda (February 2017)

**Uganda:** Addressing the 3rd 90 Gap through Integrated Health Delivery Camps in 4 Health Facilities in Nwoya District, Uganda (July 2017)

**Uganda:** Going beyond formation of QI teams: Evidence-based intervention gains adolescent girls and young women (AGYW) get when community QI teams are functional (December 2018)

**Zambia:** Integrating Nutrition Services in HIV and TB Care in Mindolo I Clinic in Kitwe, Zambia (March 2016)



MINISTRY of HEALTH  
REPUBLIC OF BOTSWANA



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

# Strengthening HIV linkage and retention through improved community/facility collaboration in Palla Road, Botswana

### Summary

In Palla Road village, an improvement team of community members and health post personnel identified retention in anti-retroviral treatment as a major challenge affecting their community. Facilitated by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, the *Pusetso* community improvement team (CIT) brainstormed how existing community platforms and resources could collaborate with local facility personnel in locating and returning patients for re-assessment. Taking into account sensitivities around confidentiality, the CIT developed change ideas involving team members to guide health care workers visiting patients who were lost to follow-up (LTFU), while others held health education talks throughout the village. On February 2, 2016, 23 patients were identified as LTFU at the facility. By March 29, 2016, 14 of those had been found: One had died and 13 returned to care. The number of traced patients increased further even after active CIT facilitation was concluded, resulting in a clarified and up-to-date status of all patients originally deemed lost. This experience was shared with partners at district level who supported the institutionalization of this innovation to improve community/facility collaboration.

### Background

The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and USAID, through the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, are supporting the Government of Botswana (GoB) to strengthen the community health system response to HIV/AIDS. ASSIST Botswana is working closely with other partners, including the global USAID Advancing Partners and Communities (APC) Project under a joint PEPFAR Botswana strategy toward achieving epidemic control in Botswana by 2018. Through dialogue with government, ASSIST was able to identify shared interests around quality and align its project design with GoB plans for decentralization and stronger roles of communities. Working with district officials and community leaders, ASSIST oriented community groups on the formation of community improvement teams (CITs). They also invited health facility staff and other service providers operating in the community. CITs were supported in the step-by-step application of rapid change (Plan-Do-Study-Act, PDSA) cycles, and in monitoring progress on selected basic indicators. ASSIST Community Improvement Coordinators provide the teams with bimonthly coaching, with remote support as needed, to undertake focused improvement work and to assist in data management for the monitoring of relevant indicators.

Palla Road village in Mahalapye Sub-District is one of a growing number of communities where ASSIST has been invited to work with existing community mechanisms. With a small population of only around 500, the village was identified by district officials as a community in urgent need of improved care and system support. The local facility is a health post with 2 nurses and 1 health education assistant (HEA). One nurse and the HEA became founding members of the 18-member CIT, alongside other members representing various village committees, social and other groups. The team chose the name *Pusetso*, (Setswana for *restoration*). Beginning in January 2016, the *Pusetso* CIT started exploring the



### AUGUST 2016

This case study was authored by Kesaobaka Dikgole and Cecil Haverkamp of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the support of the American people through USAID's Bureau for Global Health, Office of Health Systems. The community improvement work in Botswana is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T.H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

potential roles of community structures in improving the linkage, retention and adherence of HIV patients to treatment.

After jointly analyzing the broader problems the village faced, the CIT felt strongly about the need to ensure the well-being of sick community members, and committed to the challenge of getting lost to follow-up (LTFU) patients back to care, focusing on utilizing the role and resources of the community to help the facility personnel to find and reconnect with patients.

### **Improvement Strategy**

The ASSIST team supported the Palla Road community improvement team with hands-on facilitation, beginning with an in-depth analysis of problems faced by the community. The CIT paid special attention to identifying gaps and barriers to existing health services in the community, including but not limited to HIV testing, linkage, and retention. *Pusetso* was formed as a microcosm of the broader community, representing both formal and informal structures existing in the village. The enthusiasm and willingness of community members to be actively involved in improving services, combined with the resources of facility staff and other service providers, opened up new opportunities to capitalize on the community's local knowledge and networks. ASSIST's facilitation focused on guiding the team to focus their deliberations on finding simple but effective change ideas to experiment with and improve patient-centred processes across community and facility platforms.

From the beginning of their analysis, CIT members recognized that confidentiality and disclosure of HIV status were tricky and very sensitive issues requiring creative 'work-arounds' to maintain and reinforce the trust of patients. They explored reasons for why people stopped seeking services and treatment and how many members in their community might be affected. Following lively discussions, the team agreed that in order to preserve confidentiality, they would source only overall numbers of LTFU (rather than names) from the facility, and only for the purpose of monitoring progress and effect of the change ideas.

The facility nurse, a *Pusetso* team member, provided baseline numbers, updated the team weekly, and with the team's secretary plotted the graph on the basis of facility data (see photo). Even though facility follow-up of patients should be routine, it typically is not a priority because of facility workload and other challenges at the facility. On the basis of its dedicated problem analysis, the CIT developed a change idea with 2 elements that would represent a promising innovation within existing MOH guidelines.

### **Developing a change idea**

At the center of the CIT idea to reconnect with lost patients was the recognition that actual patient follow-up needed to remain in the hands of formal health facility staff, specifically the HEA as the public service cadre meant to strengthen the link between communities and facilities. As HEAs are subject to regular transfer policies, however, they often lack in-depth knowledge of the communities they serve. *Pusetso's* idea therefore was to support the HEA in her mandate by providing general geographic guidance to Palla Road's wards and areas that allowed her to locate and connect with patients. This approach thus provided sufficient local knowledge of the community, while preserving existing public service guidelines and avoiding sensitive implications around confidentiality. Alongside these elements of a novel joint approach, the rest of the team organized groups to embark on health education messaging in the community to prevent future LTFU, including by encouraging communication with the facility. Messages included the importance of adhering to treatment, reporting family deaths, and informing the facility when moving away from the village or transferring to a different facility. These messages, in the eyes of the CIT, would help ensure that facility records could be kept up-to-date in future, and thus maintain confirmed numbers of LTFU. The messages were delivered at different community venues, including football and netball sporting grounds, *shebeens* (home-based bars



*Pusetso* members presenting the final outcomes of the LTFU improvement change idea at the Palla Road *Kgotla*.  
Photo credit: Kabo Thankane, URC.

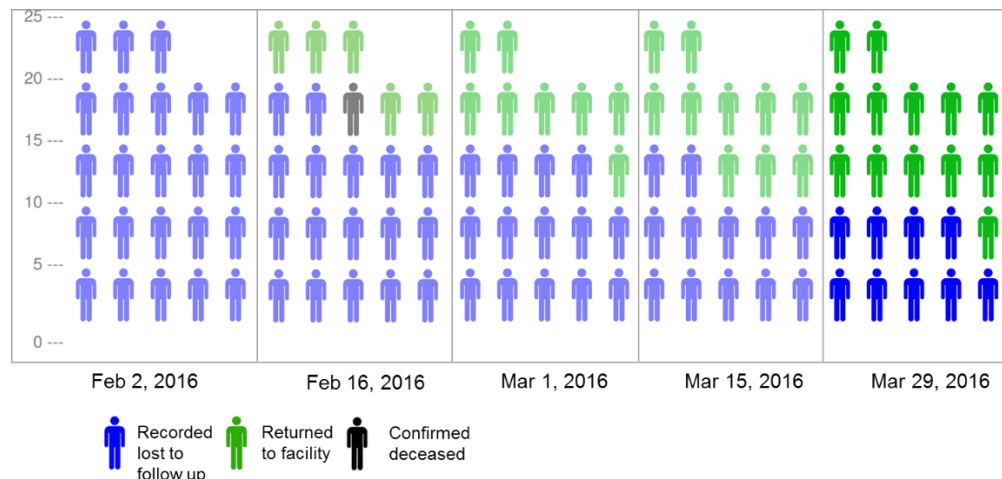


and 'drinking holes'), the health facility, and central *Kgotla* (community assembly) meetings. In addition, CIT members took these messages to their own committee and club meetings.

### Results

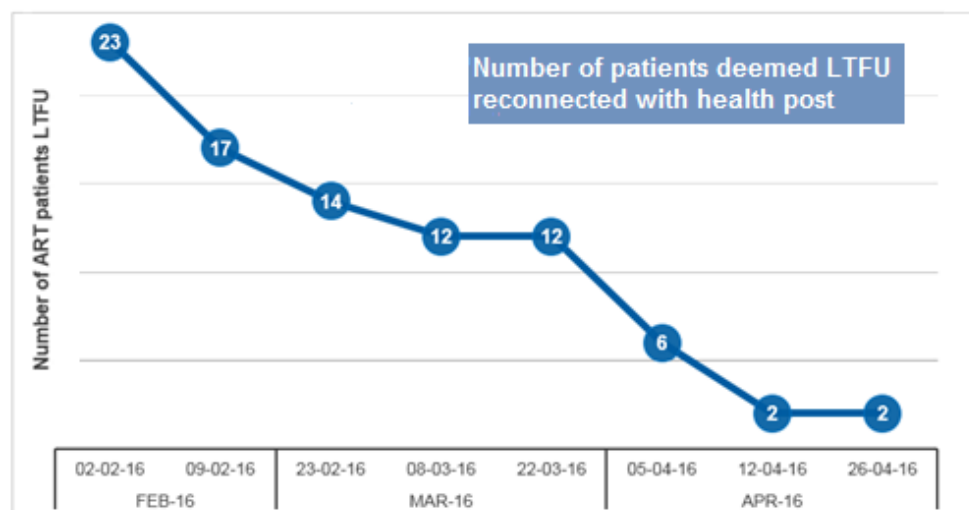
When the CIT began reviewing health facility data in February, the facility staff identified a total of 23 patients who were considered 'lost' at that time (a significant number for a village with a total population of 500). At their next meeting two weeks later, the location and status of six of these 23 LTFU patients was confirmed: one had died, the other five had returned to care. By March 29, two months into the Team's joint efforts with the facility staff, the number of patients returned to care had increased to 13 (see **Figure 1**), representing a reduction of 60%.

**Figure 1: Reduction of LTFU patients at Palla Road, February 2, 2016 – March 29, 2016**



This already reflected a significant achievement for the CIT's primary objective to return patients to care. Another month later (by the end of April) during which the CIT did not conduct dedicated support or community messaging, facility personnel confirmed that all of the 23 patients originally deemed as LTFU had been traced by and engaged with the facility, either directly or with next of kin for those deceased or unavailable. Of these, two cases had been located in remote areas but required more efforts to be returned to care (see **Figure 2**). This clarification of status regarding all patients in question represented an important secondary objective of the community. This development was welcomed by facility staff, allowing them to focus on the remaining actual two cases of 'lost' patients as well as on the prevention of new LTFUs.

**Figure 2: Reduction of patients with unclear status deemed LTFU, February 2, 2016–April 26, 2016**



The experience of Palla Road has shown that innovation in how facilities relate to and collaborate with the community is possible, practical, and potentially very powerful. In fact, just as members of the CIT subsequently expressed a sense of excitement and increased motivation, facility staff also reported to have intensified their efforts to improve follow-up to other patients, with HIV and other conditions.

### **Key Factors of Success**

From the perspective of the ASSIST team that supported the community improvement team in Palla Road on the ground, a number of important factors contributed to the positive outcomes.

- *Pusetso* is a dedicated team of community volunteers, led by a *Kgosi* (chief) who from the beginning bought into the idea of improving the collaboration with the health facility for better health services and outcomes, and invited ASSIST to help apply simple QI methods to do so.
- Community members were visibly thrilled by the bottom-up approach to local problem-solving and expressed their conviction that this had been missing in the past. This is reflected in their unwavering support, but also in the jostling for seats on the *Pusetso* team.
- Local health facility staff welcomed the new improvement initiative endorsed by the village leadership, and recognized the opportunities presented by a functioning, well-organized platform to help address some of the most pressing problems around community health. This was in contrast to common experiences by facility managers that community platforms where they exist were often limited in their capacity or entirely dysfunctional.
- Facility staff recognized that the CIT engagement was genuinely coming from within the community and driven by the village leadership, which legitimized joint efforts to collaborate on taking services to the people, rather than waiting for them to show up at the facility.
- ASSIST's community engagement model was designed for 'best fit' in the relevant local context with a respect for existing traditional structures, local gatekeepers and timelines. As a result of this approach and focused consultations of the project, CITs feel genuinely accountable to their own community and the *Kgosi* – rather than to an outside project.

The example of Palla Road seems to illustrate the potential of applied improvement work in Botswana: communities and facilities alike are not only eager and ready to collaborate around patient care based on existing structures; given the right tools, they can actually work together in a focused way to improve services and patient outcomes, in HIV but also with a view to other chronic conditions.

### **Limitations**

All communities are different, and while principles are valid across contexts, the details of collaborative models need to be adapted locally. What works in a small village like Palla Road might not apply to or work in a larger peri-urban and inner-city context. Understanding and operating within different contexts therefore requires communities to be in the lead in any adaptation and the generation of change ideas. Providing outside support and start-up facilitation to existing community platforms depends on dedicated, reliable support and frequent consultations.

While the intention and expectation of the project is that community improvement teams will gradually need less outside facilitation as they become more familiar and proficient with improvement methodology, there is also a possibility that this would not be the case. To be effective, PDSA cycles are meant to be rapid and focused and they depend on reliable service numbers and progress data. Often this information is difficult to obtain for a number of reasons, including misunderstandings but also active resistance. In addition, backlog and poor management practices often require considerable investments of time and effort to review and clean data for the purpose of improvement work.

### **Next Steps**

The *Pusetso* team concluded the testing of their prioritized change ideas to address the loss of Palla Road patients along the HIV treatment cascade. Jointly reviewing the data and progress over three months, the team (including the facility personnel members on the CIT) concluded that these change ideas were successful and encouraging – but also limited in scope. Once a facility such as theirs had managed to address the backlog in ART patient management, the challenge shifted to one of continuous

and systematic follow-up practices and the prevention of new LTFU. In addition to the immediate effects of their effort, the facility begun to reorganize their filing system for better continuous monitoring of all patients, in particular HIV but also other chronic care patients.

Overall, the experience in Palla Road suggests that their model of improved community/facility collaboration around the challenge of LTFU be reviewed, adapted, and institutionalized by others. This was also the conclusion of district officials at the Mahalapye learning session on community improvement that ASSIST organized on 2-3 August 2016 where the *Pusetso* and other CITs presented their improvement work and data. Specifically, senior managers from the District Health Management Team (DHMT) indicated their interest in potentially integrating and scale-up of both the collaborative improvement approaches and the change ideas they generate.

Practical innovations such as this one from Palla Road are important inputs to the development of new models for an improved community-based delivery of differentiated care in Botswana. As part of the dialogue with district officials in Mahalapye, ASSIST was invited to enter a strategic partnership with the DHMT to review and improve district system processes, including to bring local innovations to scale and institutionalize improved community/facility collaboration across the entire district.

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or United States Government.

**USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**  
University Research Co., LLC • 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814 • USA



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

### Increasing male partner participation in PMTCT in Burundi

#### Summary

USAID and PEPFAR, through the USAID ASSIST Project, support Burundi's Ministry of Public Health and the Fight against AIDS (MSPLS) to improve the quality of PMTCT services in Burundi. The project helped form quality improvement (QI) teams in 70 demonstration sites in Northern Burundi and trained the teams and coaches from the district health management teams on QI techniques. Following the analysis of the PMTCT process, teams identified and tested change ideas in their health facilities to improve the participation of pregnant women's male partners in PMTCT. These change ideas led to improvement in the proportion of women enrolled in antenatal care (ANC) and tested for HIV and whose male partners were also tested: there was an increase from 2% in January 2013 to 70% in March 2016.

This case study describes and shares the experience of QI teams in Burundi improving the participation pregnant women's male partners in PMTCT to increase the use of PMTCT services in four northern provinces of the country.

#### Background

In Burundi, the HIV/AIDS epidemic is a growing concern and a major public health challenge. According to the 2010 Demographic and Health Survey (DHS 2010), it is a generalized epidemic with low prevalence, estimated at 1.4% in the general adult population 15-49 years old. Burundi is one of PEPFAR's 22 priority countries for the elimination of mother-to-child transmission of HIV (eMTCT) and is in the process of implementing the National eMTCT Plan with support from implementing partners.

Studies have shown that male partner involvement in the continuum of care for preventing mother-to-child transmission of HIV (PMTCT) promotes spousal communication on HIV infection and sexual risks, use of contraceptives, and use of PMTCT services. In addition, as supportive partners, men can influence the social environment of the family, especially within the extended family, to create an environment that is more conducive to treatment, adherence, consultation, and retention in care both during pregnancy and after childbirth. Thus, the involvement of male partners has been identified as a strategy to improve PMTCT programs under PEPFAR.

In 2012, PEPFAR Burundi requested technical assistance from the USAID Health Care Improvement (HCI) Project, the precursor to the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project to improve the quality of PMTCT services in Burundi. A 2012 baseline assessment of the quality of HIV and AIDS services served as the basis for the design of an improvement program. Among the main quality gaps identified in the assessment was the low participation of pregnant women's male partners in antenatal care (ANC) services and HIV counseling and testing. In fact, only 6% of pregnant women enrolled in ANC and tested for HIV also had a partner who tested for HIV.

#### MAY 2017

This case study was authored by Claude François Niyomwungere, Bede Matituye, and Mayssa el Khazen of University Research Co., LLC (URC) and Julia Holtemeyer of WI-HER, LLC and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

ASSIST studied the reasons male partner involvement was so low and found that stigmatizing community attitudes towards partners who accompany their wives to ANC and factors related to satisfaction with the quality of ANC services were the main barriers inhibiting the involvement of male partners of pregnant women (both HIV negative and HIV positive) enrolled in ANC. These stigmatizing attitudes, for example, were that women in the community believed these partners were under a spell and bewitched by their wives, dominated by their wives, or that the couple was HIV-positive. Men in the community also believed that these partners were bewitched or dominated by their wives and mocked such partners.

To overcome these barriers, ASSIST, with USAID and PEPFAR funding, partnered with the Ministry of Public Health's National AIDS Control Program (PNLS) in Burundi to improve the involvement of male partners in PMTCT care. The involvement of male partners is an issue across health areas (including reproductive health, family planning, ANC, and HIV and AIDS), but since ASSIST started with PMTCT, we decided to start with involving male partners in HIV care for pregnant women.

### **Improvement Strategy and Process for Identifying Best Practices**

Based on the initial assessment carried out in 2012, a set of potentially effective changes (known as a *change package*) was developed to address the issues identified. This change package was validated at a workshop with key players in the fight against HIV and AIDS in Burundi. ASSIST started to work with 70 demonstration health facilities, including health centers and hospitals, in four provinces in the north of the country: Kirundo, Muyinga, Karusi, and Kayanza. The work was organized as an improvement collaborative where all the teams were focused on PMTCT aims.

Provincial orientation workshops on quality improvement (QI) principles were held for providers and managers of HIV and AIDS activities in all four provinces. Coaches selected from the PNLS, the Provincial Health Offices (BPS), and the District Health Offices (BDS) were trained on QI techniques and follow-up to support help site-level teams apply QI methods. This ensured the transfer of skills to local actors. In January 2013, QI teams were set up in the 70 demonstration sites. Coaching visits were conducted monthly by coaches from the BDS, BPS, PNLS, and ASSIST staff to provide strong support for site-level QI teams.

At the site level, each team followed this basic improvement approach:

1. Analyzed the PMTCT process from ANC to follow-up after delivery by using a process diagram (flow chart);
2. Developed change ideas to bridge the quality gap or issue identified by brainstorming or using the initial package of changes developed by experts at the beginning of the collaborative; and
3. Test small-scale change ideas using the Plan-Do-Study-Act (PDSA) cycle and scale-up those that are effective

The work carried out by the QI teams (ideas implemented, results, lessons learned) were then shared and discussed periodically during learning sessions with the other teams, which include representatives of each team and the support team or coaches from BDS, BPS, PNLS/IST, and ASSIST staff. These learning sessions offered the representatives of the different QITs a framework for exchanging experiences on the implementation of the collaborative activities, particularly the change ideas developed and tested, as well as the results obtained.

This first demonstration phase of a QI collaborative resulted not only in improvement in the data, but also a list of changes tested and implemented to increase the level of performance.

### **Results**

During the initial demonstration phase, the 70 sites identified a number of effective changes that could be applied in other health facilities. These change ideas were gathered into a best practices' change package that synthesized the work of multiple QI teams to increase the proportion of pregnant women whose partners are tested for HIV.

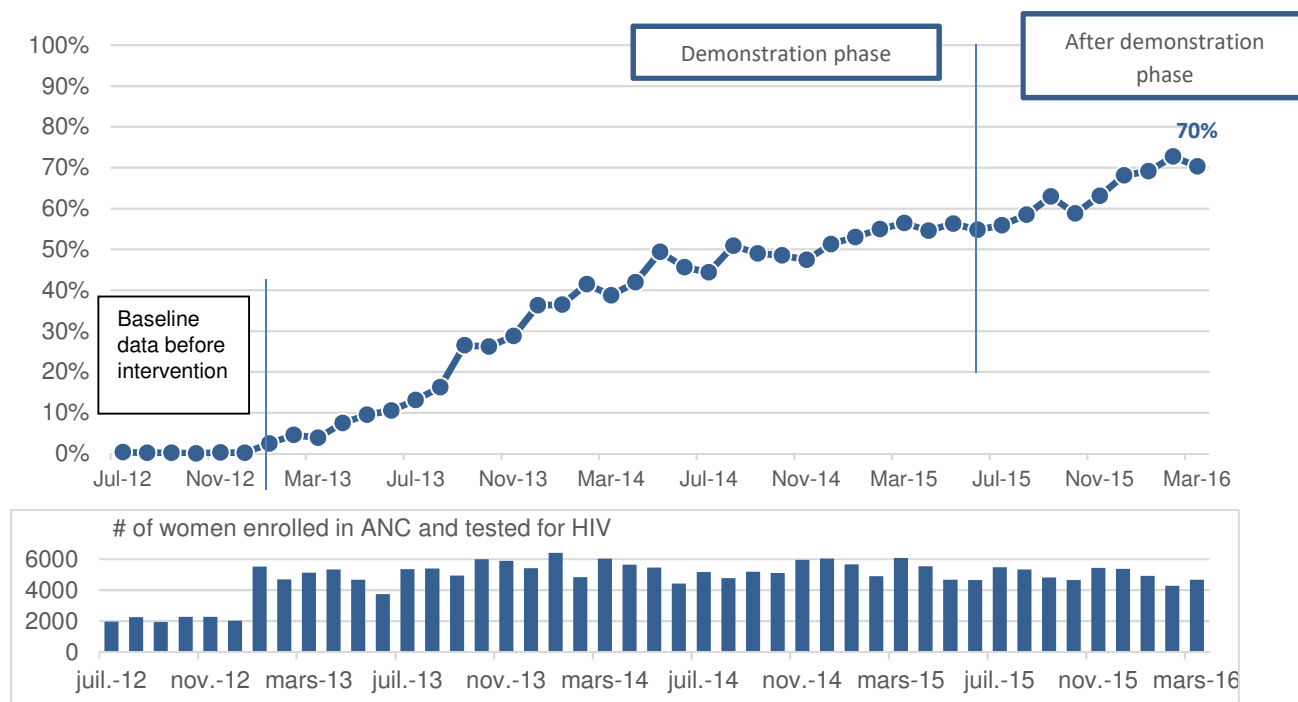
Five key change ideas were identified:

1. Visit each sub-colline in a mixed team (providers, health committee members, community health workers, Collines/Sub-collines and other opinion leaders) to conduct information, education, and communication sessions for men on the importance of accompanying pregnant women to ANC and couples' HIV testing
2. Make announcements and post statements via churches and other gathering venues on the importance of male partners accompanying women to ANC
3. Conduct a weekly health education session on the importance of HIV testing for pregnant women who come for ANC at the health center
4. Give a written invitation to unaccompanied women at ANC to give to their male partners
5. Provide incentives to couples who come to ANC (e.g., ambulance reimbursement, blood glucose test, systematic blood pressure measurement to all partners who come to the health facility, hand soap, notebooks and pens, etc.)

Among these best practices is to "give a written invitation to unaccompanied women at ANC to give to their male partners." This was and should always be done by respecting the confidentiality of the woman's HIV status. After the ANC session and delivery of the HIV test result to the woman, the provider informs the woman about the importance of also testing her partner (e.g., the possibility of serodiscordance). If the woman agrees to assistance in bringing her partner to come for testing, the invitation letter is given to her in a sealed envelope, making sure to explain to the woman the contents of the invitation. It is therefore the woman who decides whether she wishes to give this invitation to her partner, and not the provider.

During the baseline data collection in the 70 demonstration sites, participation of pregnant women's male partners in ANC services and HIV testing and counselling among partners of pregnant women was very low—around zero. After three years of improvement activities, male partner involvement reached 70% in March 2016 (Figure 1).

**Figure 1: % of women enrolled in ANC and tested for HIV whose partners were tested in HIV, 69 demonstration sites, 4 provinces (Kayanza, Kirundo, Karusi, Muyinga), (Jul 2012 – Mar 2016)**



## **Dissemination of Best Practices**

At the end of the demonstration phase, the results and identified best practices were encouraging, and PEPFAR and the Ministry of Health decided they should be scaled up to other sites. The second phase of the collaborative effort consisted of extending this package of "best practice" changes to new health facilities. To do this, a meeting of PMTCT experts was organized to validate the updated change package and adopt a dissemination strategy. The provinces of Bujumbura Mairie, Bujumbura Rural, Gitega, and Ngozi, as well as the original four provinces, were chosen for the scale-up of the phase 1 change package. In total, 309 new sites (103 sites in the former 4 provinces and 206 sites in 4 new provinces) participated in the scale-up phase.

During the implementation phase, the coaches, providers, supervisors, and health officials who had demonstrated mastery, interest, and enthusiasm for QI during the demonstration phase were tasked with being "scale-up supporters", responsible for supporting the coaches in the new scale-up activities.

Currently, following a modification in the geographical area covered by USAID and PEPFAR in Burundi, 234 sites in five provinces (Bujumbura Mairie, Bujumbura Rural, Kayanza, Kirundo, and Ngozi) are implementing QI activities using the updated change package to improve the involvement of pregnant women's male partners in ANC services and HIV testing and counseling.

## **Lessons Learned and Next Steps**

The collaborative effort to improve the quality of PMTCT services improved the involvement of pregnant women's male partners in ANC services and HIV counseling and testing and proved to be a good strategy to improve the PMTCT program. In close collaboration with the Ministry of Health, ASSIST will continue to disseminate this best practice package in other health districts in the five provinces to improve HIV testing among pregnant women attending ANC services and enrollment in antiretroviral treatment for HIV-positive pregnant women. The project is also working to strengthen the links between communities and health facilities. This is being done by strengthening the community health system to improve the performance of the community health worker and delivering quality PMTCT services at the community level. To ensure the sustainability of these QI activities, ASSIST is building the capacity of a pool of coaches to support this work at the national and provincial levels.

Finally, these best practices constitute evidence that can be used in subsequent efforts to improve adherence to HIV treatment and retention in the cascade of PMTCT care and can also be used to promote the participation of men in maternal and child care programs in general.

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or United States Government.



CONGOLESE AND AMERICANS  
IN PARTNERSHIP TO FIGHT HIV/AIDS

**PEPFAR**



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**

*Applying Science to Strengthen  
and Improve Systems*

## **CASE STUDY**

# **Integrating quality improvement in HIV / AIDS care and treatment in the Lualaba Province of the Democratic Republic of Congo to retain PLHIV on antiretroviral therapy**

### **Summary**

In fiscal years 2015-2016, the USAID ASSIST Project funded by PEPFAR provided technical assistance to improve the retention of PLHIV on ART in 10 health facilities in the province of Lualaba. The work was executed in collaboration with two implementing partners: PATH's PROVIC Project and MSH's PROSANI Project. This intervention was guided by the results of a baseline assessment carried out by ASSIST in the care services of PLHIV from July-August 2015. This baseline assessment highlighted quality gaps in PLHIV care, especially retention and adherence to ART. Based on the baseline results, ASSIST's goal is to help improve the retention of PLHIV on ART to ensure that all patients who start antiretroviral therapy adhere to and continue to receive ART.

To achieve its objectives, ASSIST has used the collaborative approach to performance improvement, a process of mutual learning among the 10 sites in the province of Lualaba.

The results show that in November 2015 at the start of the HIV / AIDS collaborative, with a total of 2,358 PLHIV expected in the 10 collaborative sites in the province of Lualaba, only 853 PLHIV were supplied with ARVs: a gap of 1,500 people. With the progressive implementation of change ideas during the intensive phase of the collaborative, in June 2016 with 2,536 PLHIV expected to be on ARVs, 1,566 PLHIV were supplied with ARVs: a gap of 970 cases. Hence, despite the increasing number of PLHIV supported by the sites, the gap of those lost decreased. This case study allowed us to describe the experience of improving the retention of PLHIVs in ART in one province in DRC. However, like many technical assistance projects in developing countries, main challenges remain to sustainability, scaling up of good practices, and institutionalizing quality improvement.

### **Background**

The Democratic Republic of Congo (DRC) is one of the countries most affected by HIV in the region of West and Central Africa. The HIV epidemic in the DRC has a prevalence in the general population of 1.2%.

Antiretroviral treatment (ART) was formally introduced in the DRC in 2002, but the scale up of ART across the country has been accompanied by poor quality of HIV/AIDS care and services, thus compromising its effectiveness.

The Ministry of Public Health, through the National Program for the Fight Against HIV/AIDS and Sexually Transmitted Infections (STIs) has committed in its National Health Development Plan (PNDS 2011-2015, March 2010, sectoral objective of the PNDS Page 69) to improve the quality of services offered in health facilities with the support of partners.

### **JUNE 2017**

This case study was authored by Dr. Maina Boucar, Dr. Zakari Saley, Dr. Teddy Manday, Dr. Fidèle Kanyanga, and Mayssa el Khazen of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



From 2015 to 2016, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by USAID and PEPFAR, provided technical and financial support to the DRC Ministry of Health to improve the quality of the care and treatment of HIV/AIDS in three provinces (Kinshasa, Haut Katanga and Lualaba) in collaboration with two PEPFAR implementing partners: Path's PROVIC Project and Management Sciences for Health's (MSH) PROSANI Project.

## **Introduction**

As an expert in the science of improvement around the world, the ASSIST Project initiates processes of improvement based on data. Thus, from July to August 2015, ASSIST organized a baseline assessment in 39 sites in the three provinces of intervention in DRC to provide relevant data on the quality of HIV/AIDS services.

Analysis of the results of this baseline evaluation revealed quality gaps in some subcomponents of the cascade of care for people living with HIV (PLHIV), in the following three categories:

- 1) Counselling/testing: many screening opportunities were missed in health facilities because HIV counselling/testing is not integrated in all patient services in health facilities;
- 2) Linkage and initial assessment: the biological assessments recommended by the standards are not available or carried out in more than half of the sites surveyed;
- 3) Pre-antiretroviral treatment (ART) follow up: more than half of pre-ART patients missed at least one follow-up visit and pre-ART files were insufficiently filled out and did not allow for a sound decision;
- 4) Follow-up of ART patients: 43.6% of the sites experienced ARV stock-outs in the three months prior to the survey and 35.2% of ART patients were lost to follow-up (i.e. missed at least three consecutive visits), resulting in a low clinical and biological follow-up of ART patients, hence there is low knowledge of the well-being of PLHIVs under ART;
- 5) Partner testing: only 20% of male partners of pregnant women attending antenatal care (ANC) were counselled, tested, and obtained their results;
- 6) Tuberculosis screening: was not routine in more than half of the sites surveyed and isoniazid prophylaxis of HIV + patients, although recommended by national standards, was only applied in one site out of 39.

## **Improvement Objective**

Considering these baseline results, ASSIST initiated discussions with USAID and PEPFAR implementing partners and the government programs (National Program of the Fight against HIV/AIDS and the National Multisectoral Program for the Fight against HIV/AIDS) and developed an improvement plan, based on the conceptual framework for gap analysis in HIV care, with three main objectives to reduce the quality gaps observed in HIV/AIDS care and treatment in the DRC:

1. Improve ART coverage so that all people eligible for ART can receive it;
2. Improve ART retention so that all patients who start antiretroviral therapy adhere to and continue to receive ART;
3. Improve the well-being of PLHIVs so that all ART patients continue to achieve and maintain the best possible health status.

This case study is based on the experience of improving the retention of PLHIV on ART in the 10 health centers of the HIV/AIDS collaborative of the Lualaba Province. In the DRC, retention of PLHIV under ART was a major challenge for the National Program of the Fight against HIV / AIDS (PNLS) as the effectiveness of the ART program depended on it. It was clear that to obtain and maintain a state of well-being, PLHIV must remain and adhere to ART.

The main indicator for monitoring the retention of PLHIV under ART is the retention rate of PLHIVs on ART. The monthly data collected for the calculation of this retention indicator are as follows:

- Cumulative PLHIV on ART;
- PLHIV expected to receive ARVs monthly (does not include deaths and transfers elsewhere);
- PLHIV supplied with ARVs during the month;

- The number of PLHIV on ART absent from 3 consecutive meetings (lost to follow-up).

All these data were disaggregated by sex in the collection database to identify and manage possible gaps between men and women living with HIV.

### **Implementation Activities by the Quality Improvement Team**

To achieve its objectives, ASSIST used the performance improvement collaborative approach, a process of mutual learning between a network of teams to solve a common public health challenge. In this case, it was the retention of PLHIV on ART. In Lualaba province, for example, 10 health facilities were set up in a collaborative network in the two health zones of the province (Dilala and Manika). In the past, it was necessary to orient the system's stakeholders (governmental level, provincial and district level, and USAID and PEFAR implementing partners) to the fundamental concepts of quality improvement and the collaborative approach. After this orientation, the rest of the process consisted of developing the core documents of the collaborative, including: the change package, job aids for the national guidelines for HIV/AIDS case management, and monitoring tools. These basic documents were used to guide the provincial, district and health zone management team (known as system supervisors) in coaching techniques. Pools of external coaches were established at the health zone and provincial health team levels. These coaches then set up quality improvement teams (QITs) in the 10 health facilities with the support of ASSIST technical advisors in the province. Each QIT was comprised of providers involved in the HIV/AIDS care and treatment process, health structures managers (Zones, District, Province), community representatives, and patients. Each QIT was trained in quality improvement (QI) by the coaches and then developed their own plan to improve HIV/AIDS care and treatment according to their own context. Given the resources available in the site, existing opportunities, and local constraints, each QIT included in its improvement plan ideas for change to achieve the improvement objectives.

Below, we summarize the promising changes initiated and tested by QITs to retain PLHIV on ART in the 10 health facilities in the province of Lualaba. These changes, considered effective and replicable in the DRC context, have been documented in a [package of best practices](#) and made available to the Ministry of Health for large-scale improvement of HIV/AIDS care and treatment. Among the ideas tested, those that had a positive impact on retention of PLHIVs under ART include:

- **Active search for patients who do not attend appointments through:**
  - Setting up a follow-up agenda for PLHIV;
  - The list of PLHIV expected during the week including their first and last name, telephone number, their PLHIV code, and their confidant's contact number;
  - The granting of cards with telephone credits to prescribers by the management committee for calls from absent clients to the appointment;
  - Calling clients or their confidants after 48 or 72 hours of absence;
  - Use of community relays (volunteers from the community who work closely with providers to involve and promote community participation in health activities. They represent the link between health facilities and communities) or self-help groups depending on location for home visits after phone calls failed.
- **Reorganization of service to reduce stigma through:**
  - Patient pathway analysis in the team care structure;
  - Identification of stigma points in the care setting;
  - Review of the circuit to integrate benefits for chronic diseases. (Example: PLHIV move to the same location where people with hypertension, diabetes, tuberculosis, etc. go);
  - The avoidance of specific days reserved for PLHIV (discriminatory);
  - Accountability of officers in all positions for respectful care for all patients.
- **Gender integration in performance monitoring through:**
  - Disaggregation of indicator data by sex;
  - Meeting of the QITs to analyze sex-disaggregated data for gender-related gaps and identify socio-cultural and context-specific factors;
  - Use of mentor mothers as links between the health center and women living with HIV (mentor mothers are women living with HIV on ART who work voluntarily with the QIT to mentor patients);

- Supply of ARVs for two to three months for men living with HIV who claim they cannot return within one month (for example, miners and truck drivers) after checking their clinical status, per the national protocol to keep them on ART.

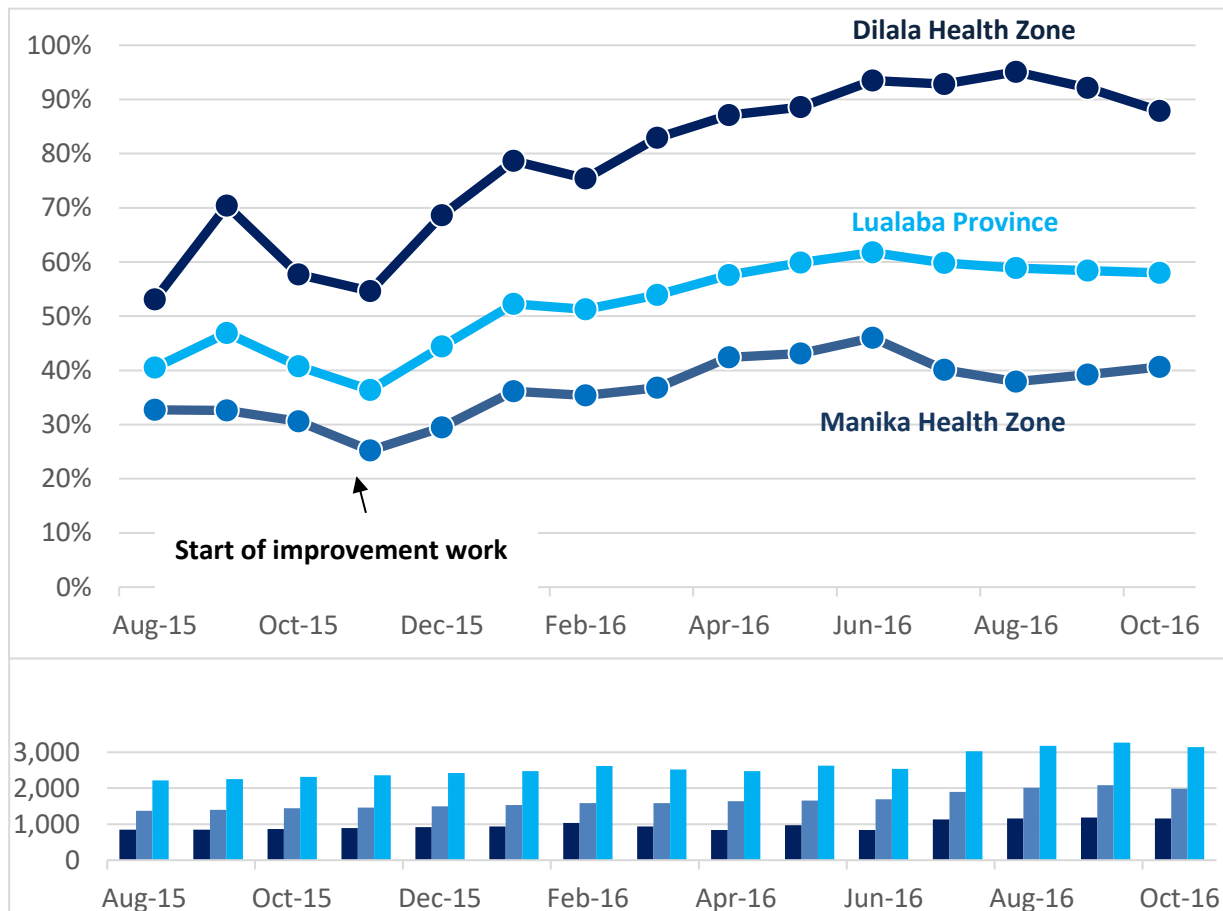
## Results

The different change ideas tested by the QITs to improve the retention of PLHIV on ART resulted in the following:

**Figure 1** shows the retention rate of PLHIV on ART by health zone and for the province of Lualaba. This rate improved with the start-up of HIV/AIDS improvement collaborative activities in November 2015 until June 2016, after which there was a slight decline in performance related to the devolution of ASSIST activities in the DRC.

**Figure 2** shows the gradual reduction of the ART retention gap (difference between PLHIV expected to replenish ARVs and those who did replenish their ARVs) between November 2015 to June 2016 (from 1,500 at the beginning of collaborative to 970 at the devolution of ASSIST activities in the DRC). Thus, we can say that the collaborative in its intensive phase had a positive and progressive effect on the improvement of the retention gap of PLHIV on ART. However, with the announcement of the end of project activities, performance did not follow the same rate of reduction.

**Figure 1: % of PLHIV retained on ART, Lualaba, by Health Zone, 10 sites (Aug 2015 - Sept 2016)**



**Figure 2: Evolution of the retention gap for ART clients, 10 sites, Lualaba Province (Aug 2015–Oct 2016)**

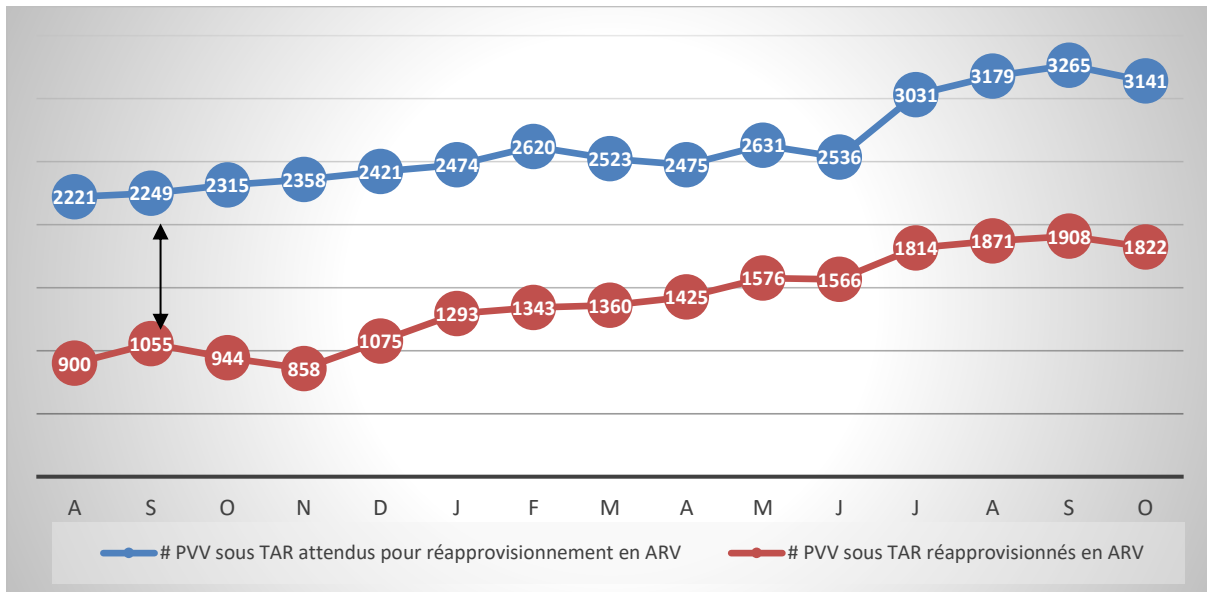
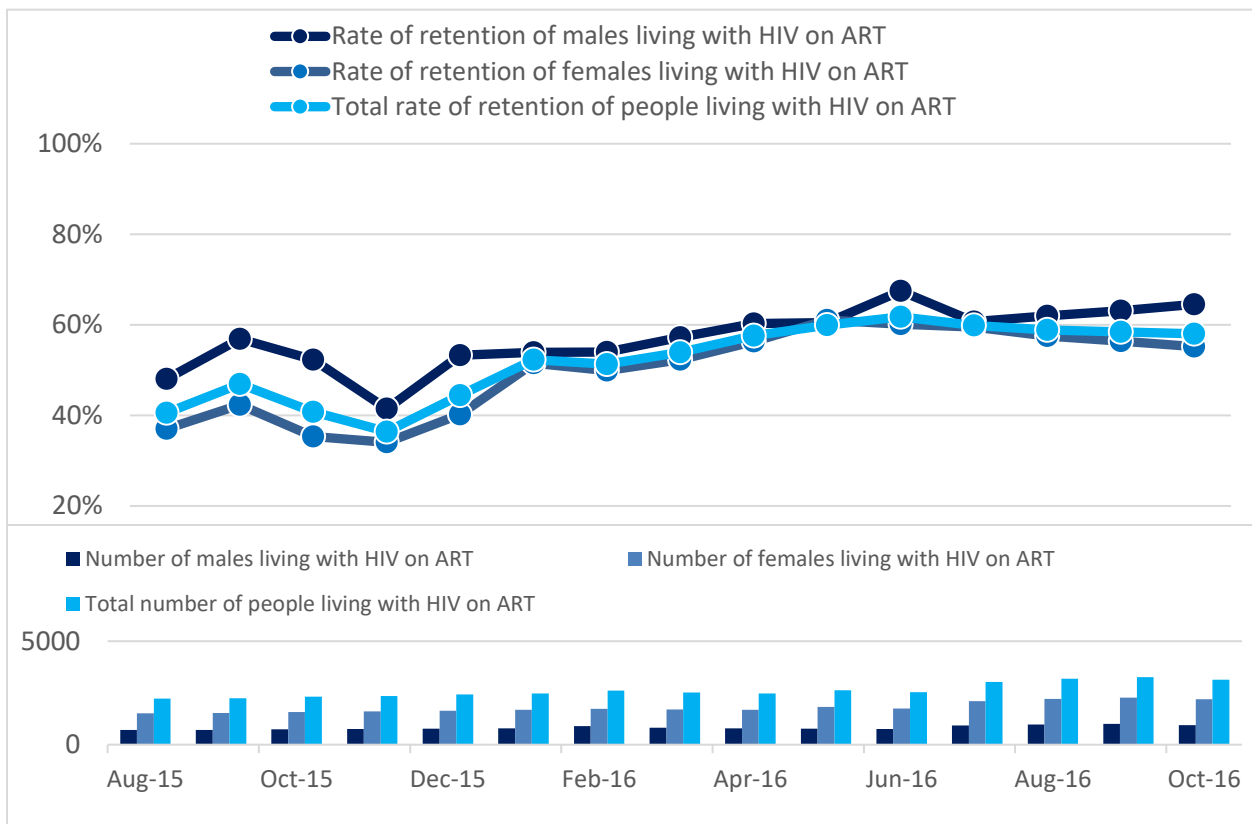


Figure 3 shows the increase in the PLHIV retention rate of male and female patients on ART exposed to the gender-related changes initiated and tested by the QITs at the 10 HIV/AIDS collaborative sites in Lualaba province. It should be noted that this work was facilitated by disaggregating data by sex from the outset of the project. The baseline analysis, also sex-disaggregated, showed that before the collaborative started (November 2015), there were differences in retention to ART by sex.

**Figure 3: Percentage of PLHIV retained on ART by sex, Lualaba, 10 sites (Aug 2015 - Oct 2016)**



The change ideas included the development of an appointment schedule for all PLHIV; Telephone calls to those absent or their confidants after 48 hours or 72 hours of absence; Analysis of sex-disaggregated retention data to identify gaps between female and male PLHIV, and the decision of specific strategies targeting issues affecting female and male PLHIV; Home visits to female PLHIV by mentor mothers; Two to three months of ARVs for PLHIV miners or truck drivers who often do not return monthly for ARVs, to avoid interruption to their ART.

## Next steps

Based on the DRC experience, there are four main areas of learning:

1. ASSIST status as a technical assistance project limited its scope to the needs of the field (training in HIV care, supply of basic inputs, harmonization of data collection with the Ministry of Health);
2. Full collaboration with the central government on the level of provision of care at the provincial and district levels led to the involvement of actors at all levels;
3. Collaboration with the PEPFAR implementing partners, demonstrated through joint planning and coaching visits of the quality improvement teams;
4. Low-cost local strategies used by QITs to retain PLHIV on ART with the effective involvement of the health center management committees and beneficiaries (mentor mothers), are replicable.

As an assistance project, integrating quality improvement in HIV/AIDS care and treatment requires the creation of minimum conditions to promote good adherence to standards. This includes the continuous availability of ARV medicines and appropriate supports and qualified staff, which ASSIST has little or no influence on in healthcare facilities, as they are entirely the responsibility of the PEPFAR implementing partners. Sites experiencing stock outs of ARVs found it very difficult to retain PLHIV on ART.

Also, although ASSIST disaggregated data by sex, gender integration was not taught to QITs or staff at the beginning of the intervention. Only one orientation session on gender integration took place towards the end of the ASSIST activities in the DRC, which would explain a lack of ownership of gender integration in improvement activities, which explains the persistence of gaps between men and women in ART retention, although the indicator improved over time.

We also learned that leadership at all levels of the system and gender integration are critical to the success of quality improvement interventions. The orientation of all actors involved to obtain consensus, the training of pools of coaches by zone of health, the implementation of the QITs in the sites of the collaborative and their responsibility in monitoring the data, and the organization of the learning sessions promoted stakeholder engagement at all levels. However, the process ownership by the system after one year of the HIV/AIDS collaborative seemed to be slow despite the goodwill displayed by the health authorities of the province of Lualaba.

We note that the lack in communication between partners is a factor that halted the implementation of the improvement activities and that it would be very useful to define at the outset of the project a partnership framework between all the players with roles and responsibilities well clarified.

The changes ideas developed, tested, and implemented by QITs to improve the retention of PLHIV on ART certainly had a positive effect, but the main challenge for the Lualaba province remains the sustainability and the scale-up of good practices in the DRC context. It is a very large country with several pockets of insecurity that entirely is dependent on the outside world for the availability of ARVs.

The institutionalization of quality improvement in the health system will be the only guarantee of sustainability, and ASSIST was only able to organize one orientation session for the Ministry of Health. The technical and financial assistance of USAID and PEPFAR through its various partners is more than ever necessary to support the DRC Ministry of Health to continue the process of institutionalizing quality in the system.

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or United States Government.

USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project  
University Research Co., LLC • 5404 Wisconsin Avenue, Suite 800 • Chevy Chase, MD 20815-3594 • USA

## CASE STUDY

# RETENTION IN CARE OF HIV-EXPOSED MOTHER-BABY PAIRS IN KENYA

*With support from the American people and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), Vipingo Health Centre in Kilifi County, Kenya improved retention of mother-baby pairs from 14% to 57% between April and August 2013, while Lutsangani Dispensary retained all seven mother-baby pairs identified through their prevention of mother to child transmission of HIV within the same period. This case study shares the simple steps that improvement teams in the two health facilities used to achieve these results in five months.*

## Background

HIV and AIDS has been a great contributor to morbidity and mortality rates in Kenya for the past 30 years. Paediatric HIV infection through mother-to-child transmission has been a major hindrance to achieving the Millennium Development Goal (MDG) 4 on reducing child mortality. In spite of numerous Prevention of Mother-to-Child Transmission of HIV (PMTCT) programmes, close to 30% of all children born to HIV positive women get infected before, during or after birth<sup>1</sup>.

There is evidence that if effective interventions are put in place in a timely manner, then mother-to-



**Process mapping by one of the pilot sites - Diani Team.** Photo credit Mwaniki Kivwanga

child transmission can be reduced to manageable levels of less than 5% among breastfed infants and less than 2% for infants who are not breastfed<sup>2</sup>. The PMTCT work is anchored on four prongs

of: 1) preventing primary infections among women of reproductive age, 2) preventing unwanted pregnancies among HIV infected women, 3) preventing vertical mother to child transmission

## About USAID ASSIST

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is a five-year project that works with local health systems and existing resources to foster improvements in healthcare, strengthen health systems and advance the frontier of improvement science.

## OCTOBER 2013

This case study was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Mwaniki Kivwanga, Isaac Chome, Faith Mwangi-Powell, Kwale Quality Improvement Coaches and the Kenya PHFS Sub-committee. The improvement activities described are being implemented in Kenya by the Ministry of Health with support from the USAID Applying Science to Strengthen and Improve Systems (ASSIST), and other PEPFAR funded implementing partners. It was produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: Broad Branch Associates; EnCompass LLC; FHI 360; Harvard University School of Public Health; Health Research, Inc.; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; Women Influencing Health Education and Rule of Law, LLC; and the World Health Organization Patient Safety Programme. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

THEORY OF KNOWLEDGE FOR DIANI H/C, LUNGA LUNGA & VANGA

		COUNTER MEASURE/XNKE IDEAS		I	U	T	D
AIM TO IMPROVE QUALITY CARE FOR MOTHER BABY PAIR SURVIVAL AND LABOUR & DELIVERY POST NATAL FROM 75% TO 95% IN THE NEXT 2 YRS.	RCA POOR DOCUMENTATION	* SENSITIZE PRIVATE FACILITIES ON REPORTING & FOLLOW UP THE REPORTS	* COLLEAGUES ON REGISTERED HEALTH WORKERS	3	3	2	1
		* EMBRACE TEAMWORK & COMMITMENT AMONGST HEALTH WORKERS		3	3	2	2
	LUNG WASTING TIME	* PROCESS REORGANIZATION/ INTERGRATION OF SERVICES		3	3	2	1
	DEFaulter/ LOST TO FOLLOW	* CONDUCT DEFAULTER TRAINING THRO' PHDS, LHWs, SUPPORT GROUPS, COAPS, MOTHER MENTOR ETC.		3	3	1	2
		* COUNSELLING CLIENTS ON IMPORTANCE OF GIVING THE RIGHT/ADEQUATE INFORMATION & PROPER DOCUMENTATION.		3	3	3	3
		* IMPROVE IN THE INTERFACILITY LINKAGES BY STANDARDIZING REFERRAL PROCEDURES Eg USE OF SYMBOLS LIKE EB, HEI		3	3	2	2

Tree and matrix diagram by some pilot sites - Diani, Lunga Lunga and Vanga Teams. Photo credit: Mwaniki Kivwanga, URC

(MTCT), and 4) finally offering care and treatment to those who are infected<sup>3</sup>. The Partnership for HIV-Free Survival (PHFS) project mainly focuses on prongs 3 and 4 and hinges its success on a) ensuring that all mother-infant pairs know their HIV status, b) are retained in care, c) are optimally protected with antiretroviral treatment (ARV) and d) offered nutritional assessment, counselling and support regularly.

From July 2013, the Ministry of Health and USAID ASSIST together with other organizations in PHFS, began eliminating mother- to-child transmission of HIV by applying quality improvement (QI) approaches to the PMTCT programme in Kwale County, Kenya.

This case study presents initial results around 1) testing and counselling, 2) retention of mother-baby pairs in care and 3) a model for scale-up of the PHFS initiative in Kenya.

**Context**

Kenya is one of the East Africa countries and one of the 22 developing countries in sub Saharan Africa which account for 80% of the HIV burden. Kenya

has an overall HIV prevalence of 5.6% with the prevalence being higher among women of reproductive age than men of the same age. HIV prevalence among children aged 18 months to 14 years is 0.9%. Over 95% of all pregnant women attend at least one antenatal care (ANC) visit, and more than 92% of them are tested for HIV during their pregnancy<sup>4</sup>. However there are great concerns about quality of care with a high positivity rate of at least 16% during the first testing at 6 weeks, and loss to follow-up for most of the HIV-exposed mother-baby pairs thereafter.

**Methodology**

The aim of PHFS is to reduce mother-to-child transmission of HIV to less than 5% by 2015 by scaling up the application of quality improvement approaches in all PMTCT sites country wide. The project has three main phases. The inception phase that started in March 2013; Phase I that began in July 2013 and focused on root cause analysis and generating a change package with quick results in seventeen pilot sites; and Phase 2 where successful change ideas will be scaled up to over 4000 PMTCT

sites country wide by 2015. Seventeen learning sites were selected from 2 counties, Kwale and Kilifi, in Coast Region of Kenya. Improvement teams were formed between May-August 2013 and trained on quality improvement approaches and techniques in October 2013.

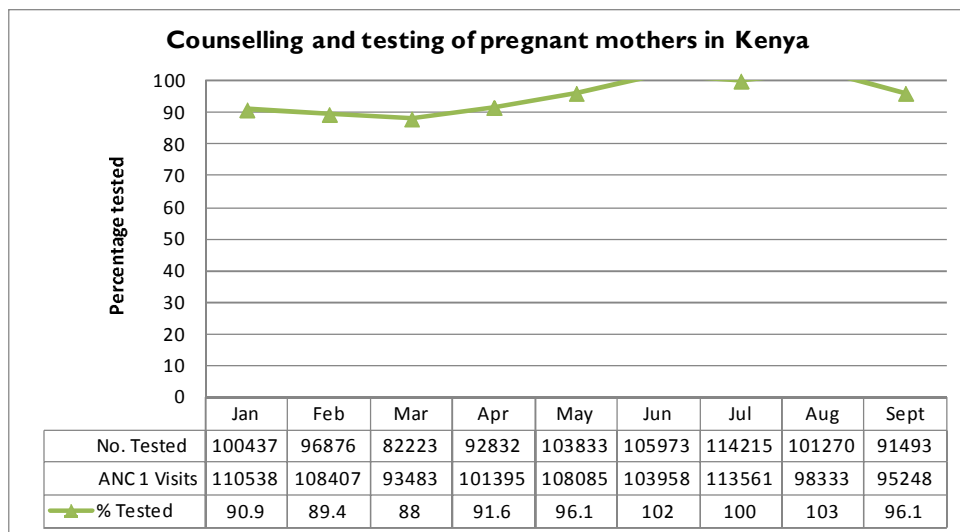
**Implementation**

Each of the 17 pilot sites have improvement teams of 8-13 members drawn from health workers (doctors, clinical officers, nurses, lab technologists, public health officers, support staff) and community representatives (community health workers, traditional birth attendants, religious leaders, public administrators, and people living with HIV and AIDS).

The teams meet regularly to review the retention data and analyze it. Performance gaps are identified and root cause analysis done, countermeasures formulated and prioritized using the tree and matrix diagram. The countermeasures are implemented while continuous measurement takes place. Effective change ideas will form the package that shall be scaled up to all the PMTCT sites in the country.

**Results**

Since January 2013, the coverage for counselling and testing in Kenya has been over 90%, and this is attributed to the integration of HIV testing during ANC clinics as shown in figure 1. Evidence from Vipingo Health Centre and Lutsangani Dispensary in Kilifi and Kwale counties respectively, demonstrates that it is possible to retain mother-baby pairs in care. Between April and August 2013 Vipingo Health Centre



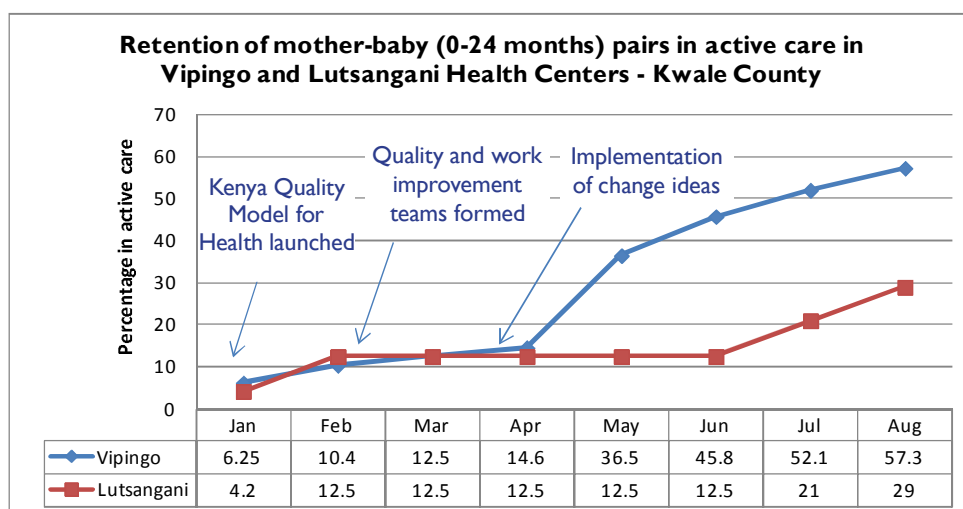
#### Interventions being tested:

- HIV testing integrated into MCH
- Continuous health education at community and health facility levels

**Outcome:** Universal coverage has almost been achieved

**Challenge:** constant supply of HIV testkits

Figure 1: Counselling and testing of pregnant mothers in Kenya, Jan-Sept 2013



#### Interventions being tested:

- File for each mother baby pair
- Integration of Comprehensive care clinic at PMTCT and Maternal Child Health Clinic (MCH)
- Active screening and linking to care at all possible entry points (Out-Patient Department, MCH)
- Active follow-up of missed appointments

Figure 2: Retention of mother-baby pairs in active care, Jan-Aug 2013

rapidly improved the retention of mother-baby pairs from about 10% to 57% as shown in figure 2. Likewise, within the same period, Lutsangani dispensary managed to retain all seven mother-baby pairs identified through their PMTCT services, though this only accounted for about 30% of the estimated number of exposed pairs in their catchment area.

The two sites above have shown that retention can be rapidly achieved by implementing simple site level ideas such as, having a file for each mother-baby pair for easy follow-up, integration of HIV and AIDS and PMTCT services

at MCH clinic, establishing some form of psychosocial support initiatives including mentor mothers, active screening and linking to care of HIV exposed mother baby pairs at every possible entry point (Outpatient clinics, Labour ward, MCH etc), and active follow up of missed clinics through phone calls and community resource persons.

#### Conclusion

Considerable gains have been achieved in counselling and testing for HIV during ANC clinics in Kenya though about 10% of pregnant mothers are not tested mostly because they

do not attend ANC clinics. The partnership will maintain these gains while laying emphasis on retention-in-care of mother-baby pairs which is a key pillar in the achievement of elimination of mother-to-child transmission (eMTCT).

#### Next steps

For eMTCT to be achieved, improvement must happen in all facilities where HIV exposed mother pairs seek care and treatment. A multi level model consisting of a PHFS subcommittee reporting to the eMTCT-technical working group under the Ministry of Health



(MOH) has been constituted to spearhead the PHFS initiative in Kenya (See figure 3).

Some PHFS work has started in six counties within the country. To scale up application of quality improvement (QI) to each of the remaining 41 counties in the country, MOH through the Directorate of Health Standards, Quality Assurance and Regulations, with support

from USAID ASSIST and other stakeholders will establish county departments/focal units to oversee the quality of devolved health services. These county focal QI units will anchor taskforces to oversee improvement in eMTCT. Core QI activities including improvement teams' meetings, coaching, active follow up of HIV-exposed mother-baby pairs will be supported by the regional implementing partners

especially those funded under the USAID APHIA Plus platform. USAID ASSIST will continuously support county and national level QI trainings and learning/sharing forums to drive the process.

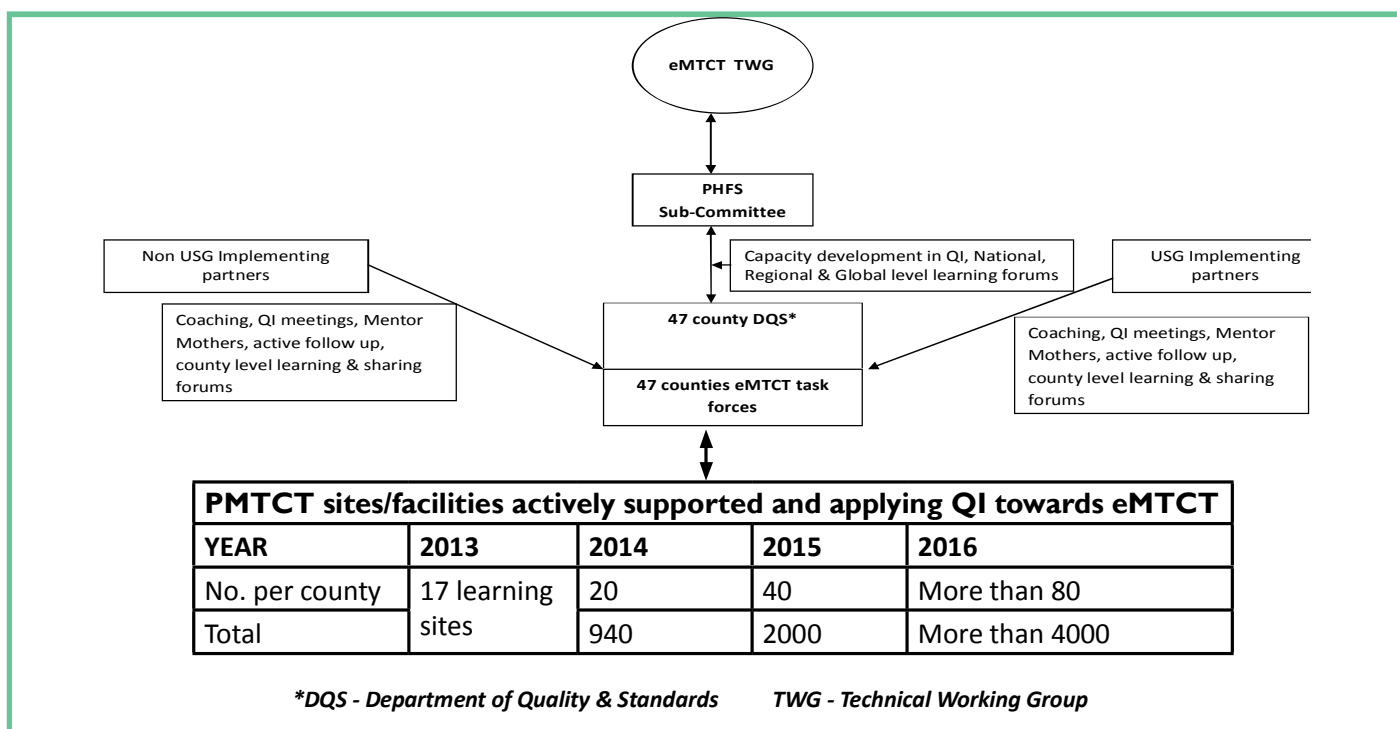


Figure 3: Proposed multi-level scale up model

References

<sup>1</sup>Stringer JSA, et al. (2013) Measuring Coverage in MNCH: Population HIV-Free Survival among Children under Two Years of Age in Four African Countries. PLoS Med 10(5) pp doi:10.1371/journal.pmed.1001424

<sup>2</sup>Renaud Becquet et al (2009) ,Universal Antiretroviral Therapy for Pregnant and Breast-Feeding HIV-1–Infected Women:Towards the Elimination of Mother-to-Child Transmission of HIV-1 in Resource-Limited Settings. Clin Infect Dis. 15;49(12): pp1936-45. doi: 10.1086/648446.

<sup>3</sup>Ministry of Health (2012) National Guidelines for prevention of mother to child transmission of HIV/AIDS in Kenya, 4th Ed. Nairobi:Author

<sup>4</sup>National AIDS and STI Control Programme & Ministry of Health (2013). Kenya AIDS Indicator Survey 2012: Preliminary Report. Nairobi, Kenya: Author



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

### Increasing adult ART uptake under Test and Treat in Lesotho through ART initiation at the village health post level

Globally, Lesotho ranks second in HIV prevalence. Prevalence rates vary among Lesotho's 10 districts and range from 17% in Mokhotlong to 28% in Maseru (LDHS:2014). In June 2016, per the new Universal Test and Treat (UTT) guidelines released by the World Health Organization (WHO), Lesotho became the first African country to implement UTT guidelines. While these guidelines removed all restrictions to antiretroviral therapy (ART) initiation for HIV-affected people, actual ART coverage remained at 41% for adults and 40% for children. Many facilities face a backlog of patients now eligible for treatment, and many patients faced access challenges, in part due to Lesotho's mountainous terrain and incomplete road system. With an ART initiation rate of 47% in September 2016, Tebellong Hospital in Qacha's Nek District faced many of these challenges; with support from the USAID ASSIST Project, a quality improvement (QI) team was formed to understand and address root causes of the low ART initiation rate. After deeper analysis and implementation of QI methodology, the QI team tested a change idea in December 2016: dispatching a nurse-midwife to the remote Qabane Health Post for ART initiations. Data collection and analysis revealed that by March 2017, all eligible patients had been initiated on ART, a success that has been maintained as of August 2017.

#### Background

Lesotho continues to have one of the highest HIV prevalence rates in the world, with an estimated 25% of adults living with HIV. Globally, Lesotho ranks second in the HIV prevalence. Prevalence rates vary among Lesotho's 10 districts and range from 17% in Mokhotlong to 28% in Maseru (LDHS:2014).

In 2004, the Lesotho Ministry of Health initiated provision of ART for people living with HIV. At that point, the CD4 count threshold for antiretroviral therapy (ART) initiation was 200 cells. In the years since, there have been a series of changes in national ART guidelines in an effort to accommodate evidence-based interventions that could curb the pandemic. ART initiation was guided by the clinical status and CD4 count immunological threshold. Patients who tested positive for HIV but who were not yet eligible for treatment were entered on the facility's Pre-ART register and were supposed to be monitored every 3-6 months for CD4 count. From 2004, eligibility criteria have been as follows:

- 200 cells (2004-October 2007)
- 350 cells (November 2007-2013)
- 500 cells (2013-2016 May)
- Treat all (June 2016)

In June 2016, Universal Test and Treat (UTT) guidelines were released by WHO. These guidelines removed all restrictions to ART initiation for HIV-affected people. After their release, Lesotho immediately

#### DECEMBER 2017

This case study was authored by Malebohang Shoeshoe, Suzan Lemphane and Manone Rantekoa of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. If the work is PEPFAR-funded, add this sentence: The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WIHER, LLC. For more information on the work of the project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

transitioned to implementation of the guidelines, removing all limitations on eligibility for treatment, and encouraging ART initiation the same day as diagnosis. Lesotho was the first African country to implement a UTT strategy, to facilitate achievement of the global UNAIDS 90-90-90 targets.

## Problem Analysis

Despite these advances in the provision of ART for HIV-infected individuals, nationally in Lesotho, ART coverage remained at 41% for adults and 40% for children. Some health facilities in the mountainous parts of the country continued to face access challenges, as catchment villages are very remote, and roads and transport are unreliable. The health system also continued to face adaptation challenges, as they must now utilize the new guidelines to:

1. Initiate/manage more patients on ART (overall);
2. Initiate ART more quickly; and
3. Initiate ART for all patients on their Pre-ART register



Mountainous route from Qabang village to Tebellong Hospital. *Photo credit: URC Lesotho.*

These challenges have left facilities with a backlog of patients to be re-tested for HIV and initiated on ART. Many ASSIST-supported quality improvement (QI) facility teams have focused on this new gap in service provision.

Tebellong Hospital, one of the Christian Health Association-administered health facilities in Qacha's Nek District, was among those with a backlog of patients eligible to initiate ART. However, it faced multiple challenges, including insufficient infrastructure to accommodate an influx of patients, as well as inaccessible catchment villages, some of which do not have roads or reliable transport and require health staff to travel by horse to reach them. With the ART initiation rate at 47% at Tebellong Hospital catchment area in September 2016, the ASSIST team helped the facility do a deeper analysis of causes and possible solutions.

## Design of the Improvement Strategy

After conducting a root cause analysis, and using the Pre-ART register to categorize the clients by their villages, the QI team identified that most patients were from Qabane catchment area. The QI team then conducted a brainstorming session to identify why many Qabane community members did not go to Tebellong Hospital for HIV initiation. In the QI meeting, the facility staff mentioned distance and accessibility as one set of challenges. They also noted that some patients – particularly those who tested HIV-positive prior to test and treat implementation – were not aware of the new policy.

### Summary of challenges

- Patients must travel long distances to access health services in Tebellong Hospital.
- ART initiation must be performed by a registered nurse; the nurse is based at Tebellong Hospital.
- Most clients being served at Tebellong Hospital are from the Qabane Village Health Post catchment area.

## Development of Change Ideas

After identifying these gaps, the QI team started introducing changes to improve ART uptake among adults. The team decided to focus on using the existing village health worker system to recall all known HIV-positive clients for ART initiation. In September 2016, the QI team started with a total of 43 clients eligible for ART initiation.

First change idea tested: In October 2016, patients were tracked and re-called through the village health workers. This idea was tested for four weeks.

Looking at their data, the team concluded that this change idea was not yielding desired results: most clients were still not initiated on ART. Data collected indicated that the most frequently cited reason for not going to the facility was the distance from their homes to Tebello Hospital, where ART initiation was done.



Tebello Hospital Quality Improvement Team. *Photo credit: URC Lesotho.*

Second change idea tested: In December 2016, the team discussed the access challenges patients were facing. Most clients are from Qabane Valley; a nursing assistant from the hospital visits Qabane Health Post twice per month for preventive services such as provision of immunizations, but this cadre is not permitted to initiate patients on ART. The QI team agreed to deploy a registered nurse-midwife, who is permitted to initiate ART, to be part of the team that visited Qabane Health Post. Once this change was introduced, all clients on the Pre-ART register and other clients newly eligible were initiated immediately. The graph below shows that by February 2017, the overall number of eligible clients in need of ART initiation had been reduced by 58%. And since March 2017, all eligible clients have been initiated on ART, reaching 100%.

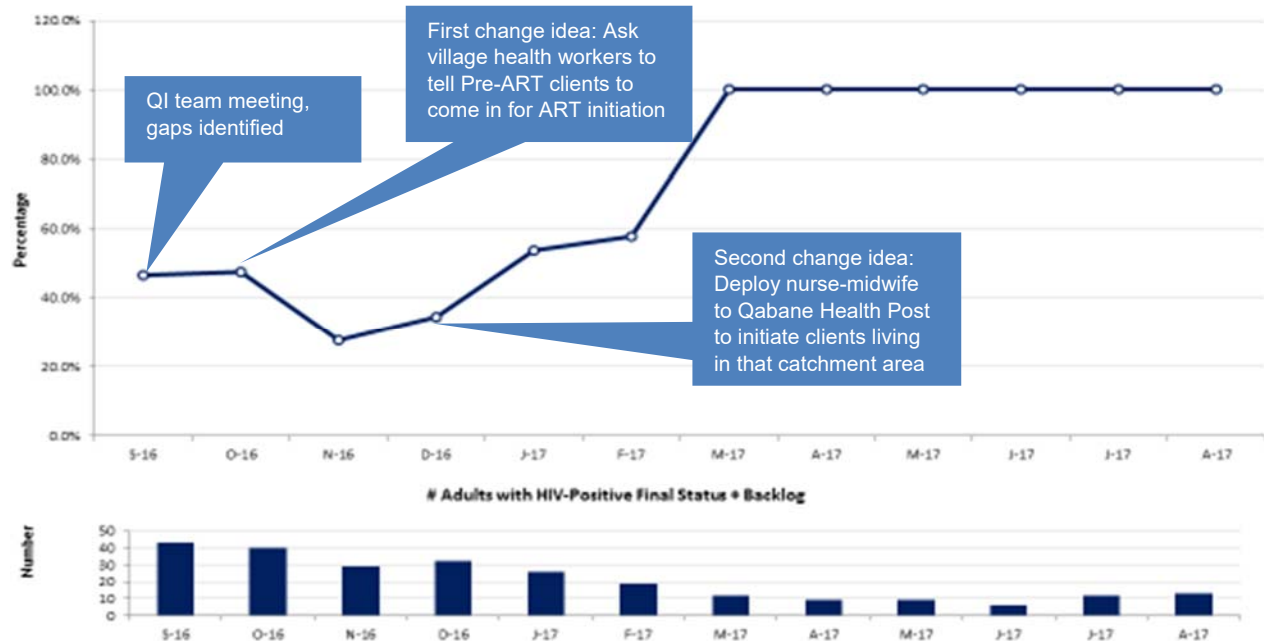
## Results

**Table 1** below shows the number of clients on the Pre-ART register, the number of newly identified clients eligible for ART initiation, and the total number of eligible clients. In September 2016, the total number of eligible clients was 43. After the deployment of a registered Nurse Midwife to Qabane Health Post in December 2017, the total number of eligible but uninitiated clients was reduced by to zero by March 2017. Since that time, the health post has been able to initiate all newly diagnosed patients as well. Figure 1 shows these results in the form of a time series chart

**Table 1. ART initiations, ART eligibility, and percent reduction in total ART backlog at Qabane Health Post, Sept 2016-Dec 2017**

Period	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	June 2017	July 2017	Aug 2017
ART initiations: new clients	20	17	8	11	5	7	1	9	9	6	12	13
ART initiations: Pre-ART register	0	2	0	0	9	4	11	0	0	0	0	0
Total clients eligible for ART	43	40	29	32	26	19	12	9	9	6	12	13
<b>Percent reduction</b>	<b>47</b>	<b>48</b>	<b>28</b>	<b>34</b>	<b>54</b>	<b>58</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Figure 1. Adult ART uptake in Tebelling Hospital, Sept 2016-August 2017**



**Conclusion**

Although the entry point to quality improvement support was HIV services, the implementation of QI in Tebelling Hospital has led to nurses being part of the team that provides integrated services at Qabane Village Health Post. This in turn has led the district as a whole to consider deploying nurses in outreach services to improve access for all clients to integrated services.

HIV-positive clients are initiated on ART services and regular visits will continue to be conducted to reach those who cannot access services at Tebelling Hospital. It is recommended that Qacha’s Nek District Health Management Team consider budgeting for regular deployment of clinicians to Qabane Village Health Post, as many people served by the hospital reside in this area. They might also consider working with government to explore other approaches to improving access for those served by the village health post.

**Way Forward**

The Qabane model – initiation of ART at the village health post level – will be used to inspire other health facilities when they implement quality improvement initiatives.



LESOTHIANS AND AMERICANS  
IN PARTNERSHIP TO FIGHT HIV/AIDS

**PEPFAR**



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

# Improving the retention of mother-baby pairs at Seshote Health Center in Leribe District, Lesotho

### Summary

Seshote Health Center is a small facility in the rural, mountainous area of Leribe District in Lesotho. In August 2016, with support from USAID, Seshote's eight-member quality improvement (QI) team established an improvement aim: to increase retention of mother-baby pairs (MBPs) seen at the facility from 0% in August 2016 to 55% by February 2017. Although mother-to-child transmission accounts for 90% of new HIV infections among children in Sub-Saharan Africa, risks are reduced to below 5% when prevention of mother-to-child transmission interventions are implemented. Three change ideas were tested: 1) create an appointment book dedicated to MBPs; 2) schedule mothers and their babies for appointments on the same day; and 3) track mothers who did not show up for appointments. As of February 2017, retention of MBPs was still low, at 14%. In March 2017, ASSIST staff held a meeting with members of the Seshote QI team, to discuss the team's challenges. After reflecting on their experience, the team recommitted to using quality improvement methods to improve retention of MBPs. With a greater sense of ownership, accountability, and motivation, the Seshote Health Center team was able to improve MBP retention from 39% in April to 69% in August 2017. This improvement contributes to Lesotho's work under the Partnership for HIV-Free Survival. In addition, the Seshote Health Center QI team has implemented structures and processes to sustain their commitment to ongoing improvement.

### Introduction

The Partnership for HIV-Free Survival (PHFS) is a six-country (Kenya, Lesotho, Mozambique, South Africa, Tanzania, and Uganda) initiative, conceived by the World Health Organization (WHO) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to improve prevention of mother-to-child transmission (PMTCT). National Guidelines for Prevention of Mother-to-Child Transmission of HIV were first launched in Lesotho in February 2003. There are currently 206 PMTCT sites nationwide, including 23 adolescent health corners. This reflects an increase in program coverage from 16% in 2006 to 81% in 2010. This was made possible through training of health care providers, adoption of the provider-initiated testing and counselling approach, involvement of implementing partners, and decentralization of PMTCT services to the health center level (National guidelines for PMTCT, 2013). PHFS was established to implement the 2013 WHO Consolidated Guidelines on the use of Antiretroviral Drugs for Treating & Preventing HIV Infection through quality improvement (QI) and collaborative learning methods and thus increase HIV-free survival.

### DECEMBER 2017

This case study was authored by Lerato Hlehlisi and Khotso Mahlalefa of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

Lesotho continues to have one of the highest HIV prevalence rates in the world, with an estimated 25% of adults living with HIV. Prevalence rates vary among Lesotho's ten districts, and range from 17% in Mokhotlong to 28% in Maseru. Seshote Health Center, located in Leribe District, was one of the facilities in Lesotho supported by United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) QI initiatives. Leribe is among the districts most affected by the epidemic with an HIV prevalence rate estimated at 25.4% (DHS, 2014).

QI activities under ASSIST were launched at Seshote in August 2016. Onsite training for facility staff were conducted whereby QI principles, approaches, and concepts were introduced. The center then formed a facility QI team consisting of clinical staff, counselors, and community partners. After identifying service delivery gaps, the team established a QI project to improve retention in care of mother-baby pairs (MBPs) to increase HIV-free survival of babies born to HIV-infected women.

As is the case with the rest of Lesotho, HIV affects women in Leribe at a disproportionately higher rate than men: 31% of women of childbearing age (15-49) are living with HIV compared to 17% of adult men in the same age group. The Seshote Health Center QI team, supported by ASSIST staff, set out to explore approaches for interventions aimed at protecting HIV-exposed infants.

Seshote QI Team Members
Nnakoe Mahao, Nursing Officer
Mamapoka Maleka, HIV Clinical Nurse
Matseliso Kotelo, Trained Nurse Assistant
Matlelima Letsika, Trained Nurse Assistant
Kamohelo Molumo, Record Assistant
Mamosehle Lekhooa, Lay Counsellor
Nini Tlebere, M2M Coordinator
Mapheello Rantho, LENASO focal person

### Problem Analysis

HIV can be transmitted from an HIV-positive mother to her child during pregnancy, childbirth, or breastfeeding. Mother-to-child transmission (MTCT) accounts for 90% of new HIV infections among children in Sub-Saharan Africa but through prevention of mother-to-child transmission (PMTCT) interventions, including antiretroviral therapy (ART) for the mother, nutrition counseling, and cotrimoxazole prophylaxis for the infant, risks are reduced to below 5%. Therefore, it is imperative to retain HIV-positive mothers and their HIV exposed infants (HEIs) in care.

Retention of MBPs is measured as a percentage. The numerator is the number of mother-baby pairs who have come for services during the reporting period, while the denominator is the number of mother-baby pairs who are receiving services in the facility in the last 24 months. Transfer-ins and HIV-positive mothers who have just delivered are added into the numerator; transfer-outs, deaths, and graduated mother-baby pairs (who completed the 24-month follow-up) are subtracted from the denominator. This data is collected monthly from the under-five HEI registers and appointment books.

Before the project began, it was not clear how many HIV-positive mothers that had HEI were receiving services from the facility. Furthermore, mothers were not always coming to the facility for services with their exposed infants. Services were also not well integrated or coordinated, causing mothers to have multiple visits to the facility, some of which were missed. Given these challenges, retention of MBPs could not be properly measured, and their baseline was 0% of MBPs retained in care. The Seshote QI team set as their improvement aim to increase MBP retention at the center from 0% in August 2016 to 55% by February 2017.

### Improvement Strategy

In August 2017, the QI team first started by identifying how many HIV-positive mothers receiving health care services from the facility had infants that were below two years. Initially 36 MBPs were identified. The QI team advocated for the use of an appointment book dedicated specifically to MBPs. In the appointment book, both the mother and her HEI were scheduled for services. This facilitated early identification of missed appointments and enabled nurses to mobilize resources for follow-up.

The second change idea introduced was to schedule appointments for mothers and their babies on the same day. During the combined visits, MBPs were offered packaged health care services including:

- ART refills, viral load testing, and counseling for the mother

- Height assessment, nutritional assessment (using mid-upper arm circumference), immunizations, cotrimoxazole prophylaxis, and HIV testing for the baby
- Weight assessment for both mother and baby

The date for mother and baby's next appointment was then entered in the appointment book and the patient-held booklet (a small booklet where patients' medical records and appointments are documented), as well as clearly communicated to the mother to ensure her understanding of the importance of subsequent visits for both her and her infant.

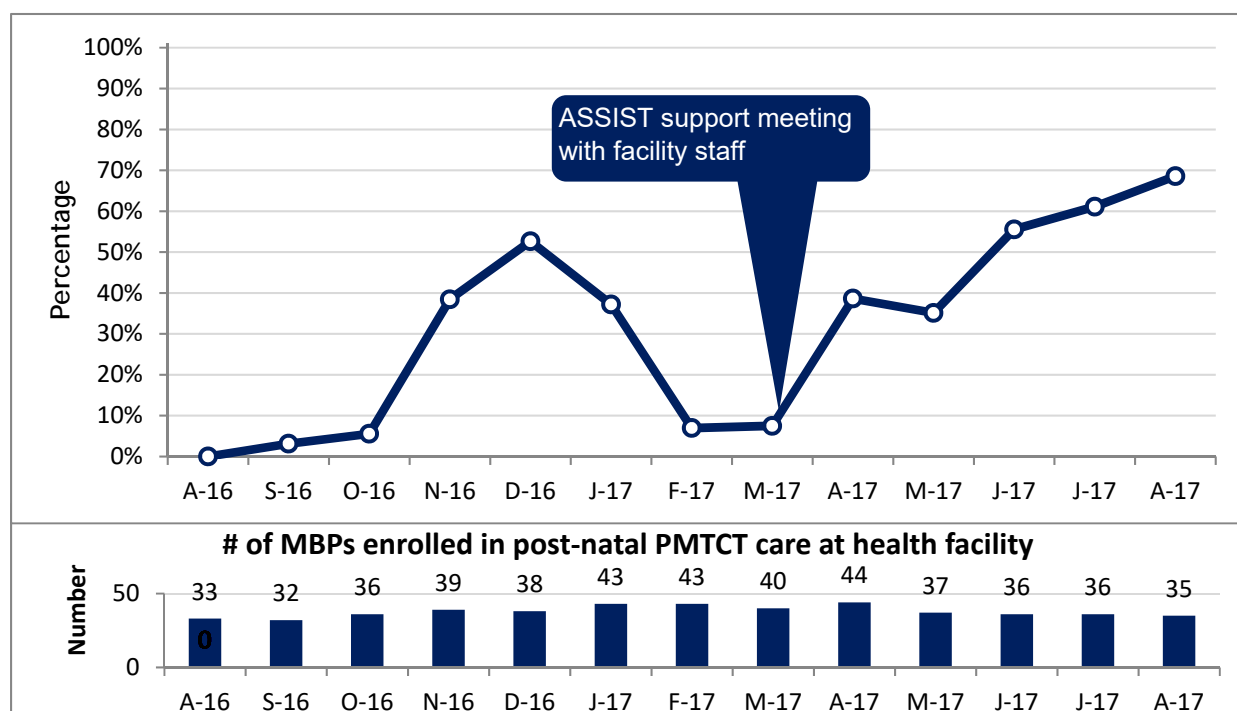
The third change idea introduced was to track mothers who were not showing up, using village health workers (VHW), Mothers-to-Mothers (M2M) groups, and the Lesotho Network of AIDS Services Organization (LENASO), and to consistently provide education to mothers on the importance and benefits of attending same-day appointments with their babies. Even with these efforts in place, no significant improvement was evident.

## Results

Implementation of improvement strategies faced challenges. Initial improvement from August to October 2016 was slow, as both the facility and the clients were still getting used to the new interventions. In December, most of the staff members key to the QI team had gone home for the holidays, so proper tracking and documentation did not take place, as evidenced by 37% retention in January. Following the December holidays, the team struggled to get back on track; motivation was low, and meetings were not consistently held. In February and March 2017, MBP retention was 7% and 8%, respectively.

In March, ASSIST staff held a meeting with facility staff, to support the QI team in engaging with these challenges and getting back on track. During the meeting, the team discussed lack of ownership, collaboration, and motivation by the QI team. Teamwork plays a big part in quality improvement. The ASSIST team helped the facility team reflect on their teamwork and performance; the facility staff were enthusiastic about working together to bring back the team's moral. This meeting, together with ongoing support from ASSIST, has resulted in a steady increase in MBP retention rates, from 39% in April to 69% in August 2017 (see **Figure 1**).

**Figure 1. Retention of MBPs at Seshote Health Center, Aug 2016–Aug 2017**





Following the restarting of improvement work in March, the QI team at Seshote held weekly meetings where progress on the MBP project was discussed. These meetings enabled the team to identify challenges and address them early. The team's ability to analyze their own data, identify and solve challenges kept the team motivated.

The Seshote QI team continued to use the appointment specifically for MBPs and schedule mother and baby appointments together, ensuring that they received the standard package of services at each visit. The team also worked with M2M groups to make sure they informed mothers ahead of time to be sure to attend their clinic sessions together with their babies.

### **Way Forward**

Seshote Health Centre's mother-baby pair retention efforts align with care for HEIs as supported by the National PMTCT guidelines, by ensuring that HEIs are followed up closely, monitored for normal growth, development, and general health, and receive prophylaxis. As PMTCT services are integrated into routine maternal and child health services, the mother and infant are offered services through this department for a period of 24 months. At the end of this period, the mother is discharged to an ART clinic for continuation of services, while the infant's services continued to be offered in the under-five clinic.

The Seshote QI team has identified new change ideas to test:

- Put the identification number of children under two years of age on the front page of their mother's ART card to speed up the process of identification during check-ups and assessments.
- Give patients enough medication to last them at least two days after the next appointment date.

The QI team hopes to receive further training and coaching on data collection, quality service provision, and the development of innovative ideas for sustainability and continued quality improvement.

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or United States Government.



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

### Collaborative approach to improving the quality of voluntary medical male circumcision services in five districts of Lesotho

#### Summary

The United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project provides continuous quality improvement (CQI) technical support to six voluntary medical male circumcision (VMMC) sites in five districts of Lesotho. CQI baseline assessments were conducted at the six sites in September 2016, revealing gaps in VMMC service quality and areas requiring improvement to comply with World Health Organization (WHO) quality standards for VMMC. Subsequent to the baseline assessments, the ASSIST Project has been working with the United States President's Emergency Plan for AIDS Relief (PEPFAR) implementing partner, Jhpiego, and the Lesotho Ministry of Health (MoH) to address the gaps identified and improve the quality of VMMC services. CQI technical support comprises onsite coaching and mentoring, training and CQI reassessments. From September 2016 to March 2017, the six sites managed to improve overall average performance from 79.8% at baseline to 91.3% at reassessment.

This case study outlines quality improvement activities undertaken by the six sites to improve VMMC service quality, particularly relating to leadership and planning, management systems and monitoring and evaluation (M&E).

#### Background

Lesotho adopted voluntary medical male circumcision (VMMC) in 2012 as part of its comprehensive HIV prevention program. Despite HIV awareness efforts, HIV prevalence in Lesotho remains high at 22.7% for Basotho aged 15-49, with a higher prevalence for women aged 15-24 (9.1%) than for men of the same age group (5.1%). *Rola Katiba*, a Sesotho phrase which translates to "take off your hat", is the national slogan and brand used to promote VMMC services in the country. *Rola Katiba* was designed to engage men and women in discussions about VMMC and to increase demand for VMMC services. Free VMMC services are provided in public hospitals and selected private clinics as well as at certain outreach sites associated with health centers across the ten districts of the country. PEPFAR Lesotho is supporting the government of Lesotho to scale up VMMC coverage in five priority districts (with high HIV disease burden and low circumcision rates). The aim is to circumcise 38,737 males aged 15-29 years to attain >80% VMMC saturation in Berea and Maseru districts and 80% VMMC coverage in the remaining priority districts (Leribe, Mafeteng and Mohale's Hoek) by September 2018<sup>1</sup>.

As a PEPFAR implementing partner (IP), Jhpiego has been supporting the Lesotho Ministry of Health (MoH) with scaling up VMMC since 2012, providing the following VMMC package of service at several MoH sites:

- VMMC surgery

<sup>1</sup> <https://www.pepfar.gov/documents/organization/257640.pdf>

#### JUNE 2018

This case study was authored by Polo Lerotholi Nyathie and Carla Visser of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WIHER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

- HIV testing services (HTS) and linkage to care and treatment
- VMMC and HIV risk reduction counseling
- Screening for and treatment of sexually transmitted infections (STIs)
- VMMC post-procedure counseling
- Post-procedure follow-up at 48 hours, seven days and six weeks

### **Improving quality of VMMC services in Lesotho**

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, implemented by University Research Co., LLC (URC) is providing continuous quality improvement (CQI) technical assistance to six VMMC sites in five districts of Lesotho. Five of the sites are under the leadership of MoH and one site is a private clinic. All of these sites are supported by Jhpiego in terms of service delivery.

The six sites underwent CQI baseline assessments in September 2016, assessing overall service performance and compliance with World Health Organization (WHO) quality standards for VMMC. Gaps identified were discussed with the sites to develop quality improvement plans. Subsequently, the sites have been categorized to receive the following levels of CQI support: one site is under intensive support (receiving needs-based monthly mentoring and coaching) two sites are under light support (receiving needs-based technical assistance on a quarterly basis to develop overall program-level improvement plans) and three sites are under collaborative support (receiving technical assistance on an annual basis to develop overall program-level improvement plans). CQI support visits were conducted in December 2016, February-March 2017 and August 2017.

Common challenges experienced by the sites include:

- Planning
  - Lack of operational plans indicating resources and budget needs
- Infrastructure and equipment
  - Shortage of essential equipment in the emergency trolley
  - Inadequate ventilation in surgical rooms
  - Limited working space
- Demand generation
  - Projected client targets not being met
- Client follow-up
  - Low seven-day post-operative follow-up
- Documentation and use of data
  - Lack of adverse event forms and standard practices for documenting adverse events
  - Incomplete client records
  - Data not being used for decision-making

### Improvement activities to address identified gaps

After receiving feedback on CQI baseline assessment findings, Jhpiego worked with USAID ASSIST and the MoH to address and overcome challenges identified.

Quality improvement (QI) teams have been formed at each site and the teams hold regular meetings to discuss VMMC issues. VMMC is also included in the agenda of the meetings held by clinic committees. In addition, the IP is part of the MoH primary health care (PHC) meetings held every quarter and provides regular updates on the VMMC program.

During mentoring and coaching visits conducted by USAID ASSIST, all sites were supported to apply QI methodology. Site staff have been trained on applying the cause-effect approach (fishbone analysis) to address identified challenges and to use documentation journals to document quality improvement efforts. Sites have also developed action plan matrices with assigned responsibilities and timelines for expected completion of interventions.

The MoH VMMC Coordinator collaborates with the Jhpiego and facility managers to oversee the planning, management and execution of VMMC efforts. Sites also receive the following support from District Health Management Teams (DHMTs):

- In an effort to improve demand generation, DHMTs provided sites with catchment area maps and estimated population sizes
- Infrastructure improvement
- Supply of drugs and commodities

VMMC providers at the six sites were trained in CQI training by USAID ASSIST in September 2016 and received a data management training led by Jhpiego in October 2016.

The support of USAID ASSIST, Jhpiego, and MoH has resulted in sites achieving the following:

#### *Planning*

- The QI teams have developed demand creation plans that are included in site operational plans to improve demand for services.

#### *Demand generation*

- Mobilizers have been recruited to increase demand for VMMC services. “Hot spot” areas identified for recruiting clients include sports clubs, taxi ranks/bus stations and community gatherings arranged by local chiefs. Occasions such as harvest or ploughing periods are also targeted for demand creation campaigns.
- VMMC outreach campaigns targeting “herd boys” aged 15-49 years have been scheduled by the sites. Herd boys are boys or men who take care of livestock such as cattle, goats and sheep as an occupation. For most of the year, herd boys roam with their livestock and have limited access to health care services. Through the outreach campaigns, herd boys receive VMMC services including HTS and linkage to care, VMMC post-operative care, HIV risk reduction counseling and STI screening in rural areas where they work.

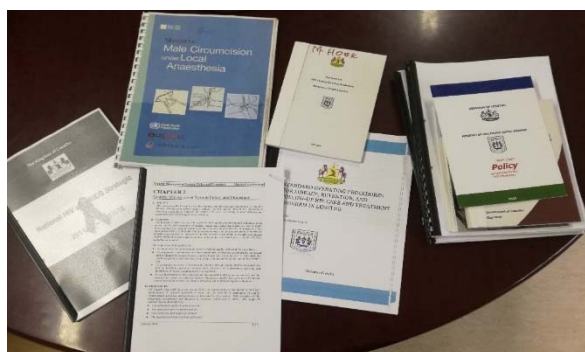
#### *Client follow-up*

Some of the sites are addressing low seven-day post-operative follow-up by implementing tested changes such as:

- Phone call reminders to clients about scheduled follow-up appointments.
- Issuing of appointment cards to clients including those referred to health centers.
- Physical tracking of clients by mobilizers.
- Reinforcing messages and handing out IEC materials to clients about the importance of follow-ups.
- Provision of transport reimbursement to clients.

#### *Documentation and use of data*

- Collection of data on all important indicators on a monthly basis, using the monthly data summary tool. Sites are successfully collecting data on:



- Number of males circumcised by age group
  - VMMC clients counseled and tested for HIV
  - Number of clients linked to HIV care and treatment
  - Number of clients circumcised returning for follow up visits within six weeks of MMC procedure
  - Number of circumcised clients who experience adverse events
- Use of a standardized adverse event (AE) form: The AE form has been developed and it is used alongside the client record to document AEs. The form is in use at all six sites.
  - Expansion of the quality assessment tool used by sites during site level evaluations to include leadership and planning and management systems to regularly measure and monitor site improvement on the service standards.
  - A monthly summary reporting book, filled in by site teams has been developed by MoH and IP to improve data analysis and reporting on VMMC.

#### Collaborating with an implementing partner

Since inception of VMMC in 2012, Jhpiego and the MoH have collaborated closely to scale up the program. The two parties have maintained constant interaction and communication, including regular meetings to discuss VMMC program progress, challenges and achievements. MoH has a dedicated VMMC focal person who actively works with Jhpiego to ensure smooth running of services at the six supported sites.

When ASSIST joined in to support MoH and Jhpiego with CQI, establishing a working relationship and attaining buy-in was achieved through approaching MoH management at national headquarters. The objectives of ASSIST CQI support to the VMMC program were discussed and the relationship established was fruitful as MoH and Jhpiego enthusiastically adopted CQI. Feedback sessions/presentations post VMMC CQI assessments to MoH management at national level were highly valued, as management is able to engage ASSIST and Jhpiego in discussions related to VMMC progress and way forward is mapped and agreed upon by all stakeholders. The joint effort has led to successful implementation of CQI methodologies in VMMC and significant improvement in VMMC service provision.

Where sites were lacking necessary supplies and equipment, Jhpiego promptly responded to requests. Examples include development and distribution of IEC materials and procurement of containers for human tissue disposal for all sites.

#### **Results and Lessons Learned**

Introduction of CQI in VMMC in Lesotho has led to noticeable improvements in service quality of the supported sites. The formation of QI teams in the six sites has led to Facility Managers of some of the sites joining the teams and participating in QI meetings. Some of the QI teams have started using the data collected to inform progress in service performance and some sites have assigned rotational responsibilities to QI members to regularly verify client records as a way of improving consistent and thorough completion of records.

The dashboards below show results of the CQI baseline in and the reassessment in March 2017. Notably, all of the sites have improved greatly, from an overall average performance of 79.8% at baseline to 91.3% at reassessment. Initially, most of the sites scored below 49% for leadership and planning with an average of 40.4%, requiring immediate intervention for this quality standard. Most of the sites scored between 50-79% for management systems and monitoring and evaluation (M&E), needing improvement as well. The rest of the quality standards had scores ranging from 50-79% and >80% with the exception of one site categorized red under infection prevention and control. Although for some quality standards, sites met expectation, CQI support is needed for improvement and maintaining good efforts. Reassessment results show most of the sites improving their scores, moving from red to yellow/green and from yellow to green, particularly leadership and planning, management systems and M&E.

Figure 1. CQI baseline and reassessment results at six sites, Sept 2016 and March 2017

Site	Baseline assessment (September, 2016)										Reassessment (March, 2017)									
	Leadership and Planning	Management systems	Monitoring and Evaluation	Group education and IEC	Individual counseling and HIV testing	Infrastructure, equipment and environment	Circumcision surgical procedure	Circumcision prepex procedure	Infection prevention and control	Average	Leadership and Planning	Management systems	Monitoring and Evaluation	Group education and IEC	Individual counseling and HIV testing	Infrastructure, equipment and environment	Circumcision surgical procedure	Infection prevention and control	Average	
Site 1	49.1	67.4	74.7	93.8	78.6	72.7	85.6	88.5	57.2	74.2	55.6	87.7	80.0	97.2	95.3	92.6	89.7	87.5	85.7	
Site 2	23.3	76.9	63.3	98.1	82.5	91.7	97.0	96.2	96.7	80.6	72.2	91.4	80.0	100.0	95.0	92.6	93.6	90.7	89.4	
Site 3	50.7	77.2	82.9	100.0	91.4	89.4	91.0		82.4	83.1	96.3	91.9	93.8	83.3	91.2	97.2	89.7	98.8	92.8	
Site 4	36.7	79.4	67.1	68.0	84.3	96.1	84.3	98.1	90.3	78.3	96.3	93.6	88.0	100.0	86.1	95.7	78.4	100.0	92.3	
Site 5	54.9	80.9	77.5	98.1	89.3	92.4	90.6	93.6	92.8	85.6	96.3	96.3	99.6	100.0	98.7	100.0	97.4	95.9	98.0	
Site 6	27.5	73.7	62.1	91.7	58.9	90.0	93.3	90.0	95.4	75.8	96.3	94.4	96.7	86.7	66.6	94.1	83.5	98.1	89.6	
Average	40.4	75.9	71.3	91.6	80.8	88.7	90.3	93.3	85.8	79.8	85.5	92.6	89.7	94.5	88.8	95.4	88.7	95.2	91.3	

Key 1	≥85%	70-84%	<70%
	Good	Fair	Poor
Surgical procedure and infection prevention			

Key 2	≥80%	50-79%	<50%
	Good	Fair	Poor
Other quality standards			

**Benefits of continuous quality improvement**

- Introduction of CQI in VMMC has strengthened the relationship between MoH and the IP. There is frequent communication to discuss VMMC issues and support is provided where needed. CQI has helped sites recognize the importance of MoH involvement in sustaining the program.
- CQI has enabled QI teams to be independent and competent to develop strategies that work for them.
- Service delivery has remarkably improved. The use of CQI tools has aided in developing means to reducing AEs and increasing post-operative follow-ups.
- VMMC program has been recognized by facility managers as one of the best performing programs because of service quality.
- Sites have gained an understanding of the importance of analyzing data to inform progress and decision making.

**Next steps**

The QI teams in the six sites are committed to continue implementing activities in their sites to address challenges they are faced with and to achieve improvement objectives. The IP is working with the teams to revise site plans to include operational budgets specific to the sites. The QI teams also plan to document good practices to inform program progress and for shared learning platforms.

Additional recommendations for sites and partners as they continue implementing CQI in VMMC and complying with WHO quality standards, it is recommended that:

- Development of a referral protocol or standard operating procedures to guide sites on the referral of clients to HIV treatment, care and support services.
- Emergency trolley at all the sites to be fully equipped as per WHO standards.
- Sites consistently follow policies on human tissue disposal.
- Sites that have initiated quarterly assessments to monitor VMMC progress to continue to do so and share best practices.
- The DHMT strengthen supervisory support at the site level.
- QI teams make use of e-learning platforms, for example the VMMC Online Training Hub, to refresh skills and expand knowledge on CQI and VMMC.
- VMMC integration with other health care programs be strengthened at the sites.



*3. Quality improvement team meetings at two sites.*

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or United States Government.



**USAID**  
FROM THE AMERICAN PEOPLE

USAID ASSIST Project  
Applying Science to Strengthen  
and Improve Systems

## CASE STUDY

### A community-led approach to improve early childhood development (ECD) and nutrition in Blantyre District, Malawi using quality improvement methods

With support from the United States Agency for International Development, a community in the Blantyre District of Malawi managed to increase the number of children aged 3-6 years old attending community based childcare centers (CBCCs) from 589 to 1,120 (a 90.2% increase). While doing this they identified that 217 (19.4%) of the children in the CBCC were malnourished. By working with existing structures in the government, community and local support agencies managed to improve the nutritional status of 178 children (82%).

#### Background

In 2012, the USAID Health Care Improvement Project (HCI) and the Ministry of Gender, Children and Social Welfare trained staff from the District Social Welfare Office (DSWO), Tikondane Community Based Organization (CBO) and Save the Children's Capacity for Support for Early Childhood Development and Psychosocial Support (C-SEP) in the draft Malawi Service Standards for quality improvement for orphans and vulnerable children (OVC) and in quality improvement methodology. After the coaches' training, the DSWO and the CBO Director agreed to organize a meeting and invite all OVC service providers in Traditional Authority Lundu, which comprises a set of villages in the northern part of Blantyre District.

The meeting was well attended by various stakeholders in the area which included traditional leaders, community members, and government staff from the ministries of health, gender, agriculture, home affairs and education. During the meeting, it was agreed to formulate a group to spearhead the piloting of the OVC standards in the area. Fourteen representatives of these stakeholders were selected to form a quality improvement team that would meet monthly to discuss piloting of the OVC minimum standards. The quality improvement team prioritized working on improving early childhood development (ECD) services for children in the area using the standards and quality improvement methods.

#### Lundu quality improvement team

##### *Community membership*

1. Area Development Chairman
2. Village Development Committee Secretary
3. Early childhood center caregiver
4. Early childhood center caregiver
5. CBO Director
6. CBO committee representative
7. CBO Committee representative

##### *Government membership*

8. Health Surveillance Assistant (HSA)
9. Primary school headmaster
10. Child Protection Officer
11. Police officer in charge
12. Assistant Social Welfare Officer
13. Agriculture extension worker

##### *Other membership*

14. Capacity for Support for Early Childhood Development and psychosocial support (C-SEP) under Save the Children

#### **JUNE 2013**

This Case Study was authored by Tiwonge Moyo of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: Broad Branch Associates; EnCompass LLC; FHI 360; Harvard University School of Public Health; Health Research, Inc.; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; Women Influencing Health Education and Rule of Law, LLC; and the World Health Organization Patient Safety Programme. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



After reviewing the standards with the community and reviewing baseline data, the quality improvement team realized that a key issue was that only 589 of the 1,313 vulnerable children between the ages of three and six that they were supporting were enrolled in community based childcare centers (CBCC).

After receiving classroom and on-site support from HCI, the Blantyre team used quality improvement techniques to address the problem. This involved gathering data to make decisions about what to change to improve CBCC attendance, making changes to the CBCC system, and using data to see if the changes they were making led to improvements in the children's lives.



**Figure 1: The Lundu Traditional Authority Quality Improvement Team, Photo by Tiwonge Moyo, URC**

### **Improving ECD services**

After meeting with the community, caregivers, and children, the team realized that the main issues keeping children from attending the CBCC were distance and that caregivers and children did not see the value in going to CBCC. The team decided to make changes that would make it easier and more attractive to attend CBCC.

#### *Making it easier to attend CBCC:*

The quality improvement team worked with the community and Save the Children to increase the number of CBCC from six to 14. Initially most of the new CBCCs were formed under trees but over time, communities have built bricks and have lobbied for Save the Children to provide plastic sheets for roofing. By setting up new CBCCs in areas that did not have them, more children are able to access their services.

#### *Making CBCC more attractive for children and parents:*

The quality improvement team has worked with the Ministries of Gender, Children and Social Welfare; Health; Education; and Agriculture as well as Save the Children and other donors to improve the services provided at the CBCC. Save the Children has trained an additional 49 volunteer caregivers to work at the CBCCs and provided toys for the children to play with. The Ministry of Health has assigned community health workers to visit 11 of the 14 CBCCs and provide routine health services for children under-five while the Ministry of Agriculture has assigned agriculture extension workers to help the CBCCs form gardens. The Ministry of Gender, Children and Social Welfare is providing support to the ECD caregivers by mentoring them in ECD topics and has also lobbied for another donor to provide additional funds.

These and other changes (see Table 1) have led to an additional 531 children attending CBCC.

### **Improving children's outcomes**

While increasing access and utilization of CBCCs is an improvement, it does not necessarily lead to better outcomes for children. The quality improvement team is also making changes to make sure that

children benefit from going to the CBCC. One key strategy taken by the quality improvement team in Lundu is to address health and nutrition issues at the CBCC. The team realized that having Health

**Table 1: Before and After Comparison of Service Provision**

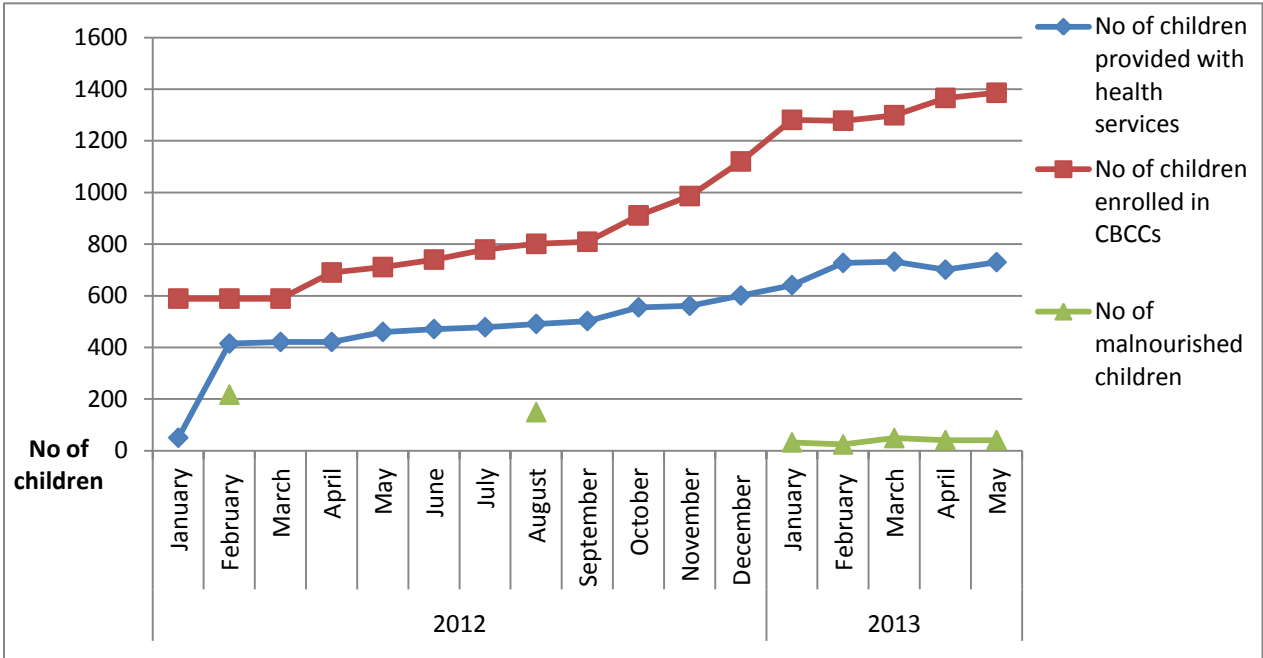
Recommended actions in ECD service area	How ECD services were provided before the standards	How ECD services are now provided in Lundu
1. Mobilize community for ECD	Tikondane CBO was not conducting any mobilization activities for ECD, were working with very few caregivers and with minimal involvement of the community.	-The quality improvement team mobilized communities to support ECD interventions in 14 villages in Lundu
2. Establish/ support community-based ECD centers	Tikondane CBO was not supporting ECD centers after establishing them. The area had a limited number of trained ECD caregivers in the centers. As a result they were unable to conduct ECD activities properly and very few children were enrolled in the ECD centers.	-The quality improvement team facilitated the establishment of 14 CBCCs to reduce the distance children travelled to ECD centers -The quality improvement team raised communities' awareness to support the ECD centers and spearheaded the formation of parent's committees to manage ECD centers. -Quality improvement team support untrained ECD caregivers by linking them to other organizations to be trained. -The ECD centers have integrated other program activities such as health (immunizations, growth monitoring assessment for malnutrition, vitamin supplementation and screening for minor ailments) and agriculture services to help improve the wellbeing of children in the centers.
3. Identification of children in need of ECD services	Tikondane CBO was not involved in identifying any children eligible for ECD in the surrounding communities.	-As a quality improvement team they started holding regular monthly meetings with communities to send all children that were eligible for enrolment to ECD centers. They identified 724 children in the communities that were not attending ECD centers in the area
4. Monitor enrolment, attendance and progress and provide support as needed	The ECD centers were not monitored in terms of the enrolment, attendance and progress of children in these centers. The ECD caregivers received limited support from the surrounding organizations.	-The quality improvement team started monitoring ECD centers operations by visiting each supported ECD centers two times a month to look at data being collected at the ECD center which includes information on enrolment, attendance and drop outs. The quality improvement team and the CBO committee members are involved in the monitoring and supporting ECD centers.
5. Provide parents and guardians with parenting skills	The ECD caregivers only dealt with children in the ECD centers and parents were not involved in ECD center activities	-The quality improvement team encourages parents to escort children to ECD centers for safety of children. -The quality improvement team now encourages participation of parents in ECD activities to help in the mobilization of resources for the ECD centers. Such resources include making locally available play materials and sourcing cooking utensils in the community. -Parents help to maintain the ECD centers hygiene.
6. Ease transition to primary school	The ECD caregivers were not focusing on transition activities of children to primary schools as a step in ECD care	-Organize a day for children to visit the nearest primary school for children to prepare for the transition to primary schools.
7. Adhere to ethical practices	This was not strictly considered among caregivers	-They established by-laws with communities to restrain any potential offenders to be caregivers at the ECD centers. Communities were told that if the newly appointed ECD caregivers had abused children somewhere they should not be caregivers. Some members of the ECD parents'

		committee were selected to receive any claims from the community on potential abusers.
--	--	--

Surveillance Assistants attend the CBCC each month to provide growth monitoring and basic health services to children would be an efficient and effective strategy for addressing the health needs of children. Because it also made the work of the Health Surveillance Assistants easier, this was a popular idea for all stakeholders. Before this approach was started, the Health Surveillance Assistants carried out growth monitoring for about 50 children per month. In February 2012, when they started going to the CBCCs, the Health Surveillance Assistants were able to assess and document the growth of 415 children and identified 217 children who were either underweight, stunted or had poor Mid Upper-Arm Circumference (MUAC).

The quality improvement team used these data to lobby the Red Cross to provide fortified porridge to the children that had been identified as needing nutrition support. All of the 217 children received the fortified porridge; 178 were cured, 32 are still malnourished and receiving food supplements, and seven died. Figure 2 shows the number of children served since the Health Surveillance Assistants began providing services at the CBCCs.

**Figure 2: Increase in Children Accessing Services at CBCCs in Lundu**



**Conclusion**

The use of standards and quality improvement methods has allowed this community to develop strategies to address complex problems affecting its children. They have been able to identify their own priorities by using evidence and developing their own solutions. When possible, they have used their own resources to implement solutions and linked with various stakeholders for support. In addition, they now have better data, improving their ability to advocate for themselves and receive help from external groups to solve their priority problems.



**USAID**  
FROM THE AMERICAN PEOPLE



## CASE STUDY

# Improving access to quality education in Nakanyanja Primary School in Mkata area in Mangochi District, Malawi

With support from the United States Agency for International Development (USAID), a team of government extension workers and community members from five villages in Mangochi District used quality improvement methods to mobilise community members in the Mkata area to use local resources to improve access to education. The communities managed to access financial resources from the Local Development Fund (LDF) to build a teacher's house and renovate a school block at Nakanyanja primary school. They also successfully advocated for an increase the number of teachers at this primary school to raise the quality of educational opportunity for their children.

### Background

In 2009, the Government of Malawi developed, with support from the United States Agency for International Development (USAID) Health Care Improvement Project (HCI), draft national standards to guide services for orphans and vulnerable children (OVC) in Malawi. Later that year, HCI facilitated training in Mangochi District on quality improvement for District Social Welfare Officers and community members in Mkata providing OVC services. After the training in quality improvement and the OVC standards, the Namwera AIDS Coordinating Committee (NACC) non-governmental organisation (NGO) in Mkata formed quality improvement teams under three community based-organisations (CBOs) in the area -- Nancholi, Chingwenya, and Mkata. One of the teams was established in Group Village Head Mkata.

The quality improvement team in Mkata area is under the NGO NACC, which is geographically located in the Southeastern part of Mangochi District in Namwera area. This local NGO provides support to vulnerable children in traditional authorities (TA) Jalasi and Bwananyambi. The organisation started in 1996 with the aim of conducting community sensitisation on the HIV and AIDS epidemic. Over the years, their mandate has increased to include mitigating the impact of HIV and AIDS in the surrounding villages in the Namwera area and neighbouring districts.

The NACC quality improvement team facilitated Child Status Index (CSI) assessments of 2,790 children to identify the priority needs of children in the two TAs. The team discovered that the majority of children had poor CSI scores in the education service area. The quality improvement team wanted to find out why this was the case.

Further brainstorming and analysis using the OVC standards and quality improvement techniques led the team to discover that education was a major problem among children because there were numerous factors limited access to education services, such as long distances to primary schools, inadequate numbers of teachers, various abuses affecting school-going children, and the poor condition of classroom blocks.

### **DECEMBER 2013**

This case study was authored by Tiwonge Moyo of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and Women Influencing Health Education and Rule of Law, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

The Mkata quality improvement team, with support from NACC, conducted a situational analysis in the education service area and discovered that most children in the surrounding five villages were being served by Nakanyanja Primary School. The multi-sectoral team discovered that the school had only two teachers to teach classes from Standard One to Standard Eight. As a result, some classes were not adequately taught because the two teachers had to move from one class to another while other classes were waiting. In Standard One, there were 400 children enrolled in the class and only one teacher. For the teacher to be able to handle the very large class, the students were divided into two classes -- one class was taught outside under the tree, and the other in the classroom. These classes were being exchanged every day.

The team also discovered that there was a school block that was in a poor state; it had no roof because heavy winds had blown it off, which was not conducive for learning. The team also found out that the school was not an approved centre for the Standard Eight examination which caused children to travel more than 10-15 km away to write exams in another primary school that was the only nearby examination centre in the catchment area. This resulted in children, when they passed their examinations, being selected to secondary schools that were even further away from the five villages. This prompted children to drop out. Additionally, the primary school-going children were vulnerable to abuse in the surrounding villages due to the long distances they had to travel.

### **Improving education services**

After the findings of the assessment were analysed, the quality improvement team in Mkata organised a community meeting to disseminate the results of the situational analysis to local leaders, community members, and various stakeholders from 16 surrounding villages. They discovered that 3,535 children were of school-going age in the area. However only 2,398 children were enrolled in school -- 1,129 were not enrolled in school for various reasons. The results of the assessment were shared with local leaders by village. The local leaders were told the numbers of children not enrolled in school in their villages. For the villages that had good enrolment figures, they were publicly cheered and celebrated, while those that had poor results were notified of the situation. Most local leaders were not happy with the results of education in their villages. An informal competition was introduced among local leaders. Following this meeting, community leaders in the area agreed on by-laws to encourage parents and children to enrol in school.

Some of the by-laws included the following:

1. If adolescent children are not enrolled in school and are skipping classes, parents are fined a goat by the Village Head and children are to be fined two chickens;
2. If business people are showing videos in the community and they are found entertaining children of school-going ages during school hours, they should be fined a goat paid to the village head;
3. Any boys reported and investigated that they have impregnated school-going girls should be suspended from school;
4. Cultural initiation ceremonies for children should be closed a week before schools' opening to prevent them interfering with the school calendar. Any local leader condoning such cultural ceremonies would be fined by the TA and possibly be removed as a local leader.

### **The quality improvement team's role in improving education**

The quality improvement team in Mkata linked with the Village Development Committee (VDC) to access some support from the Local Development Funds (LDF) to first build a house for the primary school teachers. Having a house for the teachers would help them negotiate with the District Education Manager (DEM) on relocating additional primary school teachers for the school. A teacher's

#### **Mkata Quality Improvement Team Members**

- Chairperson of the Village Development Committee
- Representative of the Community Rights Committee
- Primary School Headmaster
- Representative of the Forest Department
- CBO Director
- Local Police Officer

house was built with funding from LDF amounting to approximately MK2.8 Million for cement, iron sheets, and wood for roofing. The community contributed 228,000 bricks which they used to build two teachers' houses. In 2013, the team, in collaboration with the VDC, facilitated the construction of an additional teacher's house where the surrounding villages contributed 158,000 bricks for the house.

The quality improvement team in Mkata also shared the situational assessment results with the Primary Education Advisor of the area who later advocated for an increase in the number of teachers in Nakanyanja Primary School. Between 2010 and 2012, the DEM's Office in Mangochi reallocated eight teachers to Nakanyanja Primary School. Currently there are 10 teachers at the school.

To address child abuse cases in the area, the quality improvement team linked with a businessman in Lilongwe who is originally from Mkata who agreed to donate his house in the village to be used as a Police Unit for the surrounding villages because there were a lot of child abuse cases in the area. The quality improvement team then linked with the Police Unit at the Mangochi District Offices who reallocated four police officers to the area to provide child protection services in collaboration with the Community Victim Support Unit (CVSU). NACC, with funding from the Firelight Foundation, oriented the police officers in child rights and recommended actions from the OVC standards for them to properly manage the identified child abuse cases. The quality improvement teams also identified a need for a functional health facility to be linked to the CVSU to handle abuse cases.

The team acknowledged that there was already Iba Heath Centre but it did not have a Medical Assistant. Realising the need for the medical personnel to provide services to abused children, they linked with the District Health Officer (DHO) to support the facility with a Medical Assistant to work in collaboration with the CVSU in the area. The DHO provided a Medical Officer for the area.

### **Conclusion**

The effort of the multi-sectoral team to identify the needs of children in the five surrounding villages and brainstorm how to resolve them using the existing resources was key to the team's ability to achieve their results.

The community quality improvement team learned that when they are talking about quality education it involves them looking at the current services being offered to children. For example, children learning under trees and having only two teachers for multiple classes is not quality.

The community also revealed that at first, when they were providing care and support to children, they could not see other service areas as part of their work. They were only focusing on the activities which they were funded for, instead of looking at comprehensive, integrated support for children. For example, if children were being abused in school they would only provide scholastic materials and education, not addressing the child protection issues saying it was not part of their mandate to provide child protection services to abused children in schools. Using the quality improvement approach, the team has realised the need to look at integrated care for vulnerable children and the importance of linking with other stakeholders in the area that provide other services such as the CVSI and a health



**Figure 1 Nakanyanja Primary School. Photo credit: Harry Satumba**



**Figure 2 Nakanyanja Primary school headmaster's newly built house. Photo credit: Tiwonge Moyo, URC**

facility so that children receive comprehensive support. The quality improvement approach has led the team to link with crucial stakeholders that further support children in various needs such as the CVSU, CBOs, PEA, VDC, local leaders, and primary schools.

The quality improvement team also learned the importance of using data, in this case CSI data, to determine needs and set priorities. Previously most community development activities were not based on documented evidence of the real situation or needs of vulnerable children.

### **Next steps**

After these achievements, the quality improvement team is planning to improve performance at the school, especially for Standard Eight pupils selected to Form One. The quality improvement team has observed that the performance of the school in terms of selection of pupils to secondary school is very poor. The quality improvement team, in collaboration with the Primary Education Advisor, has proposed to organise a meeting with various stakeholders and reshuffle the School Management Committee to ensure that the new team is able to help the school address some of the challenges and gaps contributing to the poor selection of children in the school. The quality improvement team also wants to encourage a culture of reading among students, for which Mkata CBO plans to establish a community library to encourage children to read and provide them access to various books and newsletters.



**USAID**  
FROM THE AMERICAN PEOPLE



## CASE STUDY

# Improving household food security in Mwanganya area through community involvement in Karonga District, Malawi

With support from the United States Agency for International Development (USAID), a group of community members agreed to improve their household food security situation during the hunger months with support from a multi-sectoral team of stakeholders. The community members from Mwanganya village in Group Village Mwandambo in Karonga District were assisted by community-based government extension workers and community members to try some actions recommended in the national OVC standards to enhance their household food security and nutrition. Using the quality improvement methods, communities in Mwanganya village mobilised themselves to establish grain banks to improve food availability at the household level during the hunger months.

### **Background**

In 2009, the Government of Malawi developed draft national orphans and vulnerable children (OVC) standards with assistance from the USAID Health Care Improvement Project (HCI), to guide delivery of services for vulnerable children in Malawi. In 2011 a team of three representatives from Catholic Relief Services (CRS), Lusubilo community-based organisation (CBO), and the District Social Welfare Office were trained in OVC standards and quality improvement approaches.

After the training, the Lusubilo CBO coaches agreed to start pilot testing the OVC standards in Mwanganya area through Mwanganya CBO which is geographically located 25km away from the town centre. Mwanganya CBO was established in 2001 to support vulnerable children in four villages in two Group Village Heads: Mwandwanga and Kalambo in Paramount Chief Kyungu area. The three trained coaches facilitated establishment of the multi-sectoral team of government extension workers, volunteers, and CBO executive committee members.

### **Identifying gaps in services**

In 2011, the QI team conducted a random assessment on 30 vulnerable children in the area using the Child Status Index (CSI) tool. The random selection was done in the Mwanganya CBO OVC register. After the assessment, the quality improvement team, with support from Lusubilo CBO, analysed the results and decided to disseminate what they found in the communities. The quality improvement team brainstormed some of the possible solutions to resolve the identified problems using the OVC standards as a guide. The lowest CSI scores for the children revealed that most of the children interviewed had poor scores on the food security and nutrition domain, as shown in Figure 1.

### **Members of Mwanganya quality improvement team**

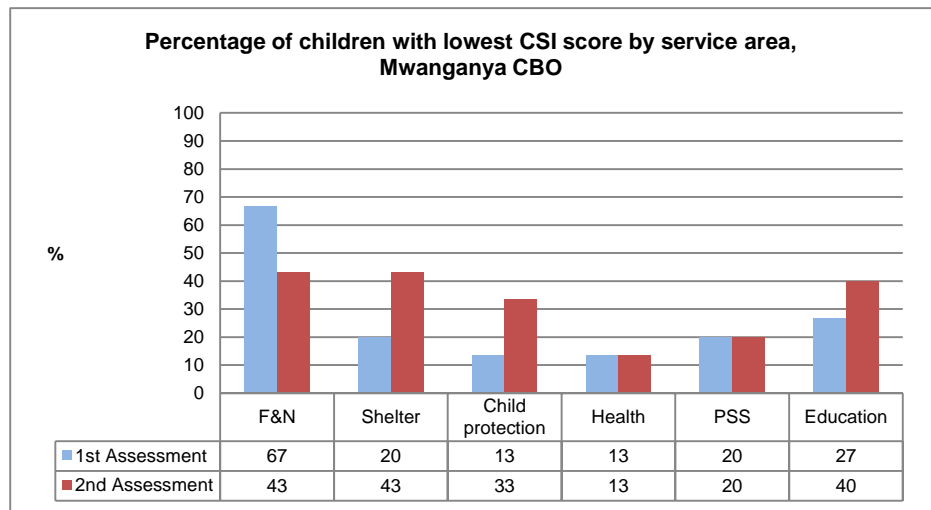
- Primary School Headmaster
- Child Protection Worker
- Agriculture extension worker
- Forestry Officer
- Health Surveillance Officer
- CBO executive committee members
- Volunteers from the community

### **DECEMBER 2013**

This case study was authored by Tiwonge Moyo of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and Women Influencing Health Education and Rule of Law, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



The quality improvement team disseminated the results on CSI assessment findings to Mwanganya Village involving local leaders, government stakeholders, CBOs, and surrounding community members. The coaches used the OVC national standards to suggest options on possible food and nutrition interventions that could be tested to improve food security at the household level.



The quality improvement team wanted to identify the underlying causes of the food shortage during the hunger months so that they could help communities develop sustainable ideas to resolve these complex problems.

### **Challenges contributing to food insecurity in Mwanganya area**

The quality improvement team brainstormed some of the underlying causes of food insecurity in the area. The team discovered that there were various community practices that led to food insecurity in the area which included the following:

1. Most families were harvesting once only in a year. This was a problem because they heavily relied on a single harvest throughout the year, making them prone to food insecurity.
2. Storage of harvested maize at the household level was also a challenge because of space and poor quality of chemicals used to preserve the maize throughout the year.
3. Limited access to agriculture inputs, such as fertiliser, influenced the quantities of maize harvested, especially by vulnerable households.
4. Barter exchanges of maize and plastic products with business people. The guardians observed that when people harvested their crops, business people would visit villages conducting barter exchange of maize with plastic products such as plates, cups and water buckets. Unfortunately, due to peer pressure most households were tempted to exchange some of their maize with these products. Usually the business people exploited the villagers. As a result of these issues, every year during the months of October – March, most households are food insecure, which leads to rampant malnutrition cases among children in the area. The food insecurity at the household level also affects school attendance of children in primary schools in the area.

### **Interventions tested and results achieved**

After analysing the underlying challenges and possible solutions to the problem, the multi-sectoral quality improvement team agreed to conduct community meetings in Mwanganya area with various stakeholders to share some of the recommended actions in the OVC standards to improve food security at the household level.

After the meetings some of the guardians mobilised themselves in four groups to immediately start trying to improve their food security during the lean months. The guardians started storing the maize as



**Figure 2 A grain bank member storing the group's maize in the interim while waiting for the completion of the grain bank**

a group and developed some rules on how to access the maize during the hunger months. The group agreed to only get 20kg of maize every two weeks per family until the hunger period is over. In the 2013 harvesting season, a total of 45 bags of maize each weighing 90kg was preserved with chemicals and stored in one of the grain bank member's house while waiting for the finalisation of the grain bank seen in Figure 3. A total of 85 vulnerable households are currently participating in the grain banks to improve household food security in this area.

Lusubilo CBO noticed the motivation among the community members and identified funding within their budgets to support the groups to build brick-made grain silos to protect the maize from adverse weather conditions, as shown in Figure 3. The guardians identified the builders among themselves, and they contributed the sand and chemicals used to treat the maize for preservation.

The quality improvement team also identified and linked 98 vulnerable households to local leaders to get them listed as beneficiaries of the government's Fertiliser Inputs Subsidy Program (FISP) for the next growing season to improve their crop productivity.

The quality improvement team, through the CBO members and volunteers, conducted discussions with vulnerable guardians on the need to diversify their diets and harvest more than once during the year, making use of the available wetlands in the area. Guardians were encouraged to identify small gardens to grow vegetables during the year to diversify their diet at the household level. As a result,

the number of households that had identified and started growing garden vegetables increased from 12 to 34 households from February to September 2013. Guardians started growing irrigated maize to complement the food security at the household level and generate some household income through sales of the additional green crops.



**Figure 3 Some of the guardians that established a grain bank in Mwanganya area**

### **Conclusion**

Using evidence to address real community challenges is key to resolving some of the problems in the community. The multi-sectoral team work helped the villagers to understand their problems better due to the inclusion of government extension workers who were available to explain some of the possible recommended actions to be tested in the communities.

It is possible for committed communities to brainstorm causes of some of the challenges they face and develop and implement sustainable solutions themselves.



**USAID**  
FROM THE AMERICAN PEOPLE



## CASE STUDY

# Integrating nutrition services in HIV and TB care in Karonga and Balaka Districts of Malawi

With support from the United States Agency for International Development (USAID), health workers in Karonga and Balaka districts are reaching people with HIV and TB with a critical new service— nutrition assessment, counseling and support. By introducing three simple changes – 1) conducting nutrition assessment during registration before the client sees a health worker, 2) teaching clerks, assistants and other staff to help take arm circumference measurement, and 3) creating new data forms to track nutritional assessment – Karonga Hospital increased nutritional assessment from only 4% of clients visiting the HIV clinic to 98% in nine months.

### Background

Nutrition and HIV are related in different, complex ways. Nutrition affects the wellbeing of people living with HIV. Poor nutrition worsens the effects of HIV by further weakening the immune system, which can lead to a more rapid progression of the disease. Food and nutritional intake affect adherence to antiretroviral drugs (ARVs) as well as their effectiveness. Food insecurity and inadequate knowledge of good nutrition impedes HIV patients' ability to manage their disease, particularly in resource-constrained settings like Malawi. HIV, for its part, interferes with the body's ability to access, handle, prepare, eat, and digest nutrients, thus increasing the risk of malnutrition.

In Malawi, the Ministry of Health (MOH) established the Nutrition Care, Support and Treatment (NCST) programme in 2005 to provide support for the people living with HIV. Over time, the NCST programme became inactive and lacked support. There was no data on the number of people requiring Ready to Use Therapeutic Food (RUTF). Because of this, it was hard for the Nutrition Department to quantify RUTF needs or to request a budget to purchase the RUTF. Because RUTF supplies were inconsistent, health workers were not assessing the nutritional status of their patients.

In March 2013, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project began working with the MOH to improve nutrition assessment, counselling and support in HIV care in eight health facilities in Karonga and Balaka districts. The aim was to integrate nutrition care as a routine service within the HIV and TB services.

### Karonga District Hospital

Karonga District Hospital is one of the eight facilities that are working to improve integration of nutrition services into HIV and TB care. The hospital serves a population of 55,675 people and also serves as a referral facility for all of the other 18 facilities in the district. The hospital provides many services for people living with HIV and also has a NCST programme. Since the hospital began participating in the improvement work with ASSIST in March 2013, nutrition assessment has been provided as a routine service for all HIV-positive clients. It took a multi-disciplinary team of health workers at the hospital to make three major changes to how they did their work, in order to institute assessment as a routine service.

### DECEMBER 2013

This case study was authored by Linley Hauya of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and Women Influencing Health Education and Rule of Law, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

These include:

1. Changing the point of assessment. They started conducting nutrition assessment during registration, before the client was referred to see the clinician or nurse. Unlike before March 2013, when assessment was done after medical examination by the clinician.
2. Task-shifting. They assigned and trained Health Surveillance Assistants and nontraditional staff such as clerks and hospital servants/maids to take anthropometric measurements to assist with assessing clients.
3. Created data collection forms and registers. Before March 2013, routine assessments were not being done and there was no data on such. Only clients who were very sick and were admitted in the nutrition treatment program had their nutrition status assessed and documented. The team at the hospital decided to create a form where they would document client's information on assessment. They also improvised a register to keep the client details in service point where the form was not necessary. In this way, data was organized and it was easy to know how many clients were being assessed.

In January 2013, the hospital provided assessment to 35 (4%) of the 1,035 clients visiting the HIV clinic, but by October 2013, after making those changes, the hospital was providing assessment to 1,737 (98%) of the 1,781 clients visiting the HIV clinic.

### A patient's story

In March 2013, Raphael visited Karonga District Hospital where he got tested and was found to be HIV-positive. He was enrolled in the HIV care clinic where he started receiving co-trimoxazole and nutrition counselling. In April 2013, he got very sick and severely malnourished such that he had difficulties to walk by himself. His wife and relatives took him to the hospital to receive medical treatment. When they arrived at the hospital, he underwent a routine nutrition assessment which found that his nutrition status was very severe. His weight was 40.8Kg and he had a Body Mass Index (BMI) of 13.3. A normal person has a BMI of 18 and above. He then went through a series of medical examinations and was admitted into the ward for treatment and close monitoring.

The clinician at the hospital recommended that Raphael's nutrition status should first be stabilized before the hospital could initiate him on anti-retroviral drugs (ARVs). Raphael then began receiving RUTF to treat his malnutrition. During the time he was in the ward, he ate the recommended six sachets of RUTF per day. His weight began to improve. After one month his weight was 48kg, and his BMI had increased to 15. Three months later, he was discharged from the nutrition program. On the day he was discharged, his weight was 60kg and his BMI had increased to 18.9. During this time he and his wife were receiving counselling on good nutrition practices so they could maintain their health at home. Raphael was weighed and received a supply of RUTF every



Figure 1 Raphael with a health worker

*"I have benefited a lot from nutrition services provided at this facility. I am HIV- positive and on TB treatment, I had a very poor appetite and could not eat anything. As a result I lost a lot of weight and got malnourished. The hospital personnel started giving me Chiponde (RUTF). They also gave me and my wife a lot of counseling on good nutrition. This has helped me to improve my nutrition status and to look healthy as I am today. I thank the hospital staff and my wife for encouraging me to take the RUTF and keep eating other nutritious foods because that has improved my life." - Raphael*

fortnight. After his nutrition status was stabilised and he was healthy and normal, he was then initiated on ARVs.

### **Results**

The MOH, with support from the USAID ASSIST Project, continues to support the eight facilities to ensure that they improve integration of nutrition services into HIV and TB care in the two districts. From the time the health facilities started using quality improvement methods to improve nutrition services there has been a great improvement in the number of clients assessed. In January 2013, seven of the eight health facilities were only assessing 106 (2%) of the 5,238 clients visiting the HIV clinics, but by August 2013, they were providing assessments to 6,508 (87%) of the 7,493 clients visiting the HIV clinics. The eighth facility was already providing routine nutrition assessment to all clients; they decided to focus their improvement efforts on improving referral of malnourished clients to the nutrition clinic.

### **Next steps**

Through the quality improvement methods the teams are now able to read through their data and identify other areas for improvement. The teams have currently noted from a review of their data that defaulting from nutrition treatment is a problem for the NCST programme. Teams are next planning to develop aims to reduce defaulting of malnourished clients.

## CASE STUDY

# Improving educational performance of children in Chilore Primary school using quality improvement approaches in Mangochi District, Malawi

A team of community volunteers and government extension workers, with support from USAID, from 16 villages in Namwera, Mangochi District used quality improvement (QI) methods to mobilise four primary schools and their 16 surrounding communities to improve the performance of vulnerable children in the four primary schools. In December 2013, the community QI team assessed the wellbeing of a sample of 132 vulnerable children. The Child Status Index (CSI) assessment revealed that 70% of the poor scores were on education performance, food insecurity, and shelter conditions. As a result, Chingwenya Community QI team prioritized improving education performance in four primary schools in their catchment area. Through root cause analysis, they found numerous challenges faced by vulnerable children ranging from poor performance, frequent absenteeism of learners, limited numbers of teachers, poor infrastructure, lack of school teaching, lack of learning materials, and cultural practices and norms that affected education calendars. The QI team developed and tested a number of changes to improve school attendance and performance in the four schools. From December 2013 to August 2016, the QI team gathered primary school sex-disaggregated performance data. All four targeted schools have demonstrated improvements in termly pass rates of children. One of the schools, Chilore Primary School, has demonstrated sustained improvements across the nine academic terms. The school observed achievements from 42% in term one (December 2013) to 81% in term nine (August 2016). Not only did the team achieve improvements in the pass rate, but also managed to close the gender difference in performance of boys and girls.

## Background

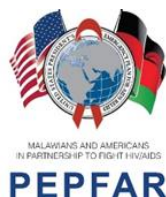
In 2013, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project began providing support to a community improvement team of 18 members. In December 2013, a total of five representatives from Chingwenya community-based organization (CBO) and government extension workers from the catchment area were trained in quality improvement (QI) methods to kick-start implementation of Malawi's newly endorsed "Minimum Service Standards for Quality Improvement for Vulnerable Children Programs." The five representatives from Chingwenya CBO were trained in QI and use of orphans and vulnerable children (OVC) minimum standards for three days. Chingwenya CBO went back and mobilized other extension workers in the surrounding villages to work together.

CSI SCORES	4	3	2	1
1. Food security	71	59	28	18
2. Nutrition and growth	71	49	11	01
3. Shelter	52	43	23	14
4. Care	61	24	03	02
5. Abuse and exploitation	103	27	02	02
6. Legal protection	96	17	05	10
7. Wellness	84	56	04	01
8. Health care services	93	19	05	02
9. Emotional health	47	66	16	03
10. Social behavior	104	24	04	01
11. Education performance	10	29	72	21
12. Education and work	52	46	17	12

PRIORITISED PROBLEMS
1. Education performance
2. Food security
3. Shelter
4. Care
5. Education and work
6. Legal protection
7. Emotional health
8. Health care services
9. Nutrition and growth
10. Wellness
11. Social behavior
12. Abuse & exploitation

Summary tables developed by teams after tallying CSI. Photo credit: Tiwonge Moyo, URC



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
Applying Science to Strengthen and Improve Systems

OCTOBER 2017

This case study was authored by Tiwonge Moyo of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T.H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com)

## Identifying gaps in service areas

After the QI training in January 2014, Chingwenya CBO organized a meeting for all relevant service providers in Group Village Head Namwera in Traditional Authority Jalasi in Mangochi District. During the first meeting, an agreement was made to establish a multi-sectoral community team to spearhead improvement in wellbeing of vulnerable children in the area. A total of 18 representatives from various stakeholders were selected to form the team that would meet regularly to facilitate improvement work in the area. Using the knowledge acquired in QI, the team embarked on collecting baseline information using the Child Status Index (CSI) tool. The team randomly selected 25% (132, 76 boys and 56 girls) of the vulnerable children registered with the CBO. The CSI assessment was done to identify priority areas that needed urgent attention among vulnerable children in sixteen villages of Chingwenya catchment area. The vulnerable children were randomly selected and assessed on six domain areas of the CSI tool:

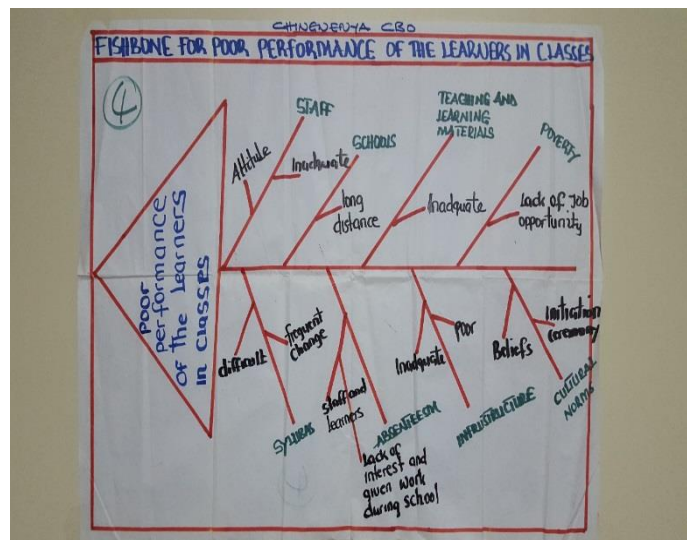
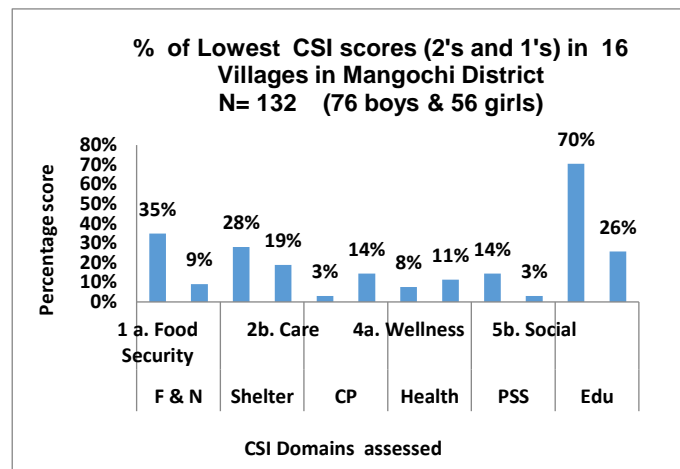
- **Nutrition:** Food security and Nutrition and growth
- **Shelter and Care:** Shelter and care by adult
- **Protection:** Abuse and exploitation and legal protection
- **Health:** Wellness and health care services
- **Psychosocial:** Emotional health and social behavior
- **Education:** Performance and attendance

ASSIST supported the QI team to analyse the CSI data in **Figure 1**. The Ministry of Gender, Children, Disability, and Social Welfare (MOGCDSW), with support from ASSIST, mentored Chingwenya QI team to conduct analysis of their CSI data using simple tally sheets. From this simple data analysis, the team identified education performance, food insecurity, and poor shelter conditions among vulnerable households as some of the areas that needed immediate attention. The team was enthusiastic to address all the identified areas. However, when they started working on the three areas, it was clear that they were overwhelmed with the amount of information they were required to work with.

## Brainstorming root causes of poor education performance in four primary schools

ASSIST helped the team to focus on improving one service area at a time. As a result, the team decided to first focus on improving education performance among children in schools in their catchment area. In their catchment area, the team identified Chilore, Chingwenya, Masongola and Msanga Primary schools to work with.

**Figure 1: Child Status Index assessments results for Chingwenya vulnerable children**



A fishbone diagram used to brainstorm underlying cases of poor education performance in four schools by the Chingwenya community improvement team. Photo credit: Tiwonge Moyo, URC.

After summarising the CSI data, the team started to brainstorm the underlying root causes of poor educational performance among vulnerable children in the catchment area. The team identified teachers' attitude towards children; distance to schools; absenteeism of both children and teachers; inadequate teaching and learning materials; poverty; poor infrastructure; cultural factors; and attitudes of learners and guardians towards education as some of the contributing factors affecting academic performance of children in the four schools. The team used a fishbone diagram to analyse and understand the root causes of the problems they faced in education services in the area. The improvement team proposed some changes to test and monitor the effects on educational performance in the four primary schools over a period of time. Chingwenya QI team worked with school management committees in the four primary schools. The QI team tested several possible changes to improve the performance of children in the schools.

### **Change ideas tested at Chingwenya, Chilore, Masongola, and Nsanga Primary Schools**

The QI team started with orienting the School Management Committees, guardians, influential leaders, and teachers on the proposed improvement activities in the four schools. The QI team decided to intensify community meetings in the 16 surrounding villages where they talked directly to parents and guardians on the importance of school and helping children with their school work and scholastic materials. Parents were also told the importance of allowing girl children to have time for studies and not leaving young siblings with girls during farming season, particularly during exam periods.



*Chingwenya community QI Team. Photo credit: Tiwonge Moyo, URC*

The QI team, in collaboration with school management, proactively identified local role models to encourage children to attend classes regularly and remain in school so that they aspire to complete their education emulating the good examples of the local role models. Primary school female teachers were therefore selected to encourage girls on a monthly basis in an effort to improve their performance, daily attendance of classes and interest towards school.

The schools also emphasized the importance of monitoring daily attendance and performance of girl children in collaboration with community mother groups. The mother groups' volunteers were selected and oriented on their new role of supporting teachers to track children who were consistently absent from school in the four targeted primary schools. The volunteer mothers were also oriented by the school teachers on their role of counselling vulnerable guardians and children on the economic benefits of education, importance of providing time for children to study at home and advising them on harmful cultural norms that sometimes interfere with the good academic performance of children.

Msanga Primary School even went as far as lobbying to the Primary Education Advisor (PEA) and the District Education Manager to increase the number of teachers after realizing that one of the challenges of poor performance of the school was the number of teachers in the school. The District Education Manager identified additional teachers for Msanga Primary School due to the data which the school presented showing the number of pupils at the school versus the number of teachers. The QI team also reported that the PEA also started to publicize the improvement efforts in the four primary schools in the whole zone and cluster area for other schools to emulate what these four schools were doing to improve the wellbeing of vulnerable children.

The QI team also worked with the Parent Teachers Associations and School Management Committees to remind them on their roles in overseeing and supporting the school to have quality standards of education. During these meetings, the school-based committees were also shown the



academic performance of children in end of term examinations results to appreciate the performance of children as well as challenges the teachers faced to improve the performance of learners in the schools.

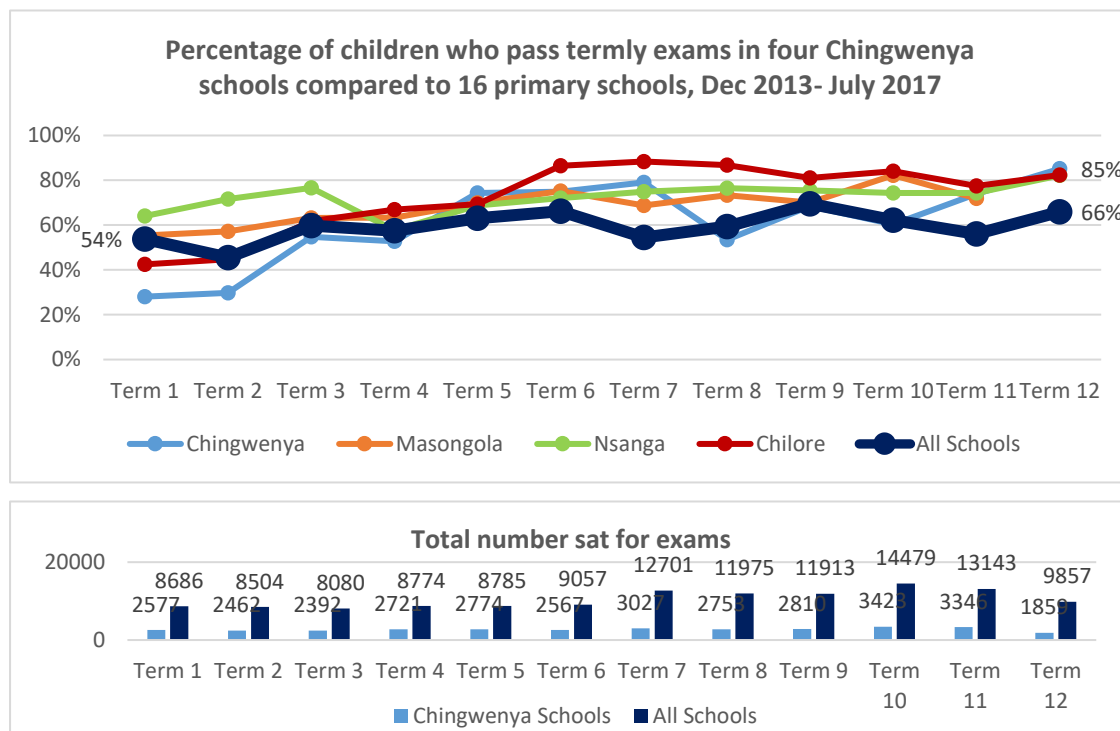
**Results**

The Chingwenya QI team’s targeted four primary schools and they observed improvements in end of term pass rates of children in the four primary schools as shown in **Figure 2** below. The four schools observed improvements from an average pass rate of 47.3% in term 1 in 2013 to 83% in Term 12 in 2017. If the schools are compared with the average of the 16 primary schools being supported by ASSIST, the four primary schools are doing well in most of the terms by being above the average of the 16 primary schools. Noticeably, Chilore Primary School is one of the four primary schools that has shown sustained improvements across the years. When ASSIST started working with Chilore Primary School, the school’s performance was below the average of the rest of the schools: 42% compared to 54%, the average of all the schools. In the July 2017 term, Chilore’s pass rate was 82% as shown in the run chart below in **Figure 2** below.



*Chingwenya community QI team visited during a field coaching visit by USAID Malawi staff & the Director of Child Development in MOGCDSW, May 2017. Photo credit: Tiwonge Moyo, URC*

**Figure 2: Percentage of children who pass termly exams in the four schools compared to the average pass rate of 16 other schools (Dec 2013-July 2017)**



**Improving education performance in Chilore Primary School**

Chilore Primary School has tested a number of changes to improve performance, but changes that the school and the team confirmed that have led to good improvements are those that focused on individual children themselves compared to generic changes focusing on the school. The school, with support from the QI team, introduced changes such as weekly assessments and one-hour revision

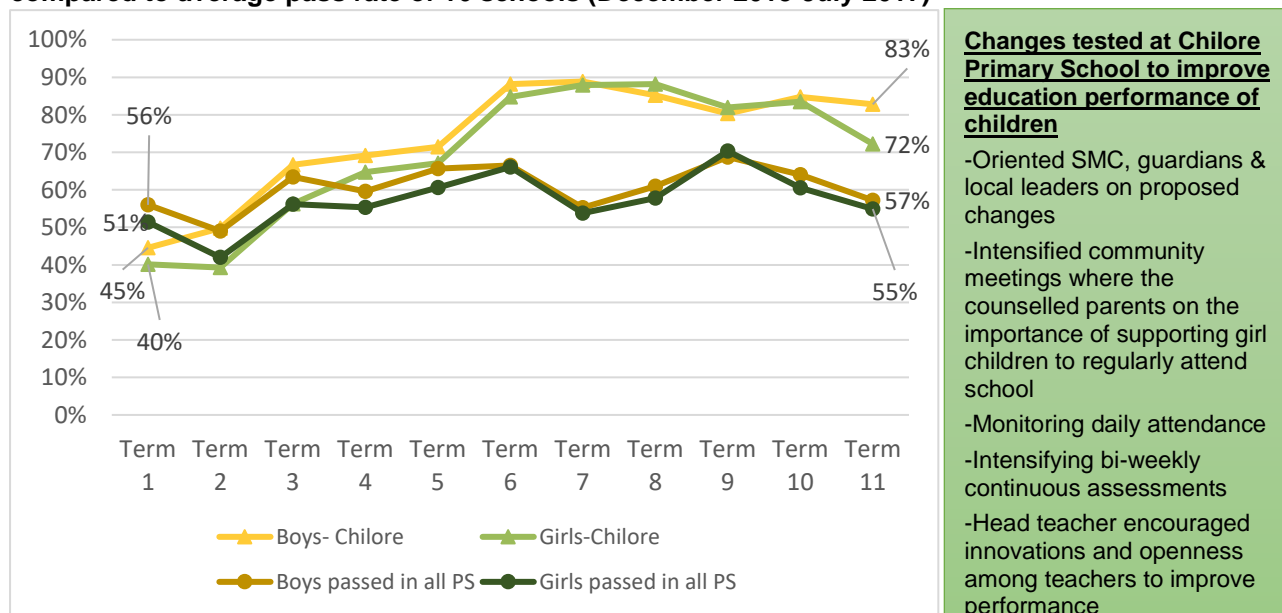
classes before resuming morning classes for standards 6 and 7. The teachers paid more attention to the girls' performance and encouraged them to improve their grades. Other changes tested included:

- Encouraging a group of volunteer mothers to follow-up children not regularly attending school and having face to face discussions with the children and their parents on the importance of education and the need to regularly attend school. They also provided space and time to adolescent girls to study and prepare for exams instead of doing household chores.
- Bi-weekly continuous assessments of children and revisions to ensure children understand the content before the exams. This change was reported by the school as being very effective for the school to improve the performance of children.
- The Primary Head Teacher also encouraged openness and teamwork among the teachers to propose solutions on how to improve the performance of children by working together as a team during the term. The Headmaster and the Deputy Head intensively supervised the work of teachers and provided feedback on weak areas for teachers to improve. This also motivated the teachers to strive to plan their lessons well and put effort in ensuring children understood the content.
- The Primary Head Teacher also introduced recognition of teachers that recorded good results in the school following continuous and end of term results.

The QI team helped the school to disaggregate the education performance data by sex, particularly starting from term two, revealing gender gaps in pass rates. The QI team was trained in gender integration in term two and they started to implement how to analyse and disaggregate data by sex and began testing the changes that would result in improvement for both boys and girls in the school. Chilore Primary School managed to narrow the gap in education performance between boys and girls to pass rates of 80% for boys and 82% for girls in term nine (December 2016) as shown in **Figure 3**.

Chilore Primary School was recognised by other schools and the PEA in the zone as a model for other schools to emulate. During the year, Chilore Primary School was visited by more than three schools that wanted to learn how they improved the performance of the school.

**Figure 3: Percentage of boys and girls who passed exams, Chilore primary school, term 1-12 compared to average pass rate of 16 schools (December 2013-July 2017)**



### Lessons learned

When the primary schools start doing improvement work, they are excited to do a lot of things at once because there are numerous challenges in the schools. This sometimes makes it challenging to

isolate the changes that were effective. Teams need to keep track of the changes tested and note the ones that bring positive or negative results in children's education performance.

Community involvement through multi-sectoral teams support the primary schools to deal directly with issues which schools alone sometimes cannot address. Since the teams involve traditional leadership and development structures it becomes easier to disseminate specific messages to the communities rather than schools on their own calling for community meetings. Through this collaboration, we have also seen that stakeholders are able to help the schools identify other support available in the communities and the district level at large. The collaborative working approach of schools, social workers, and communities helps communities appreciate the challenges that children and teachers in primary schools are facing and try to brainstorm alternative solutions to the challenges by involving all stakeholders in the catchment area.

Enthusiasm and commitment to improvement leadership is key, particularly in improving education standards of quality at all levels, starting with the QI team and the primary schools.

There are some terms where there are seasonal variations in pass rates of schools due to absenteeism in classes, participation, and focus during rainy season. In schools where class blocks are inadequate, there are disturbances in lessons because several classes either squeeze in one class or are dismissed early to avoid being caught up in torrential rains. This is done because the other classes learn under trees and it becomes chaotic for children when it starts to rain. Most parents also advise children not to attend classes during the rainy season for fear of being trapped on the other side of big rivers due to flood waters. In some villages, communities are exploring of ways of mobilising resources to establish junior primary schools (Standard 1-4/5) in villages that are cut off from accessing school due to crossing rivers for young children between the ages of 6-10 years.



*Chilore Primary school and some of the primary school teachers. Photo credit: Linley Hauya, URC.*

## CASE STUDY

# Improving household food security and economic status of vulnerable households in Mangochi District

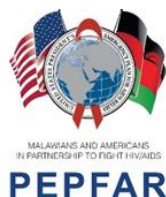
With support from United States Agency for International Development (USAID), a multi-sectoral quality improvement (QI) team of extension workers and community members in Mangochi District, Malawi targeted a total of 587 vulnerable households to be linked to household economic strengthening activities. The QI team mobilized various stakeholders in Mpeya area to work together to reach vulnerable families in the catchment area with various services to improve their wellbeing. The CBO targeted 21 villages in four Group Village Heads in the district. In March 2014, Mpeya QI team conducted assessments on 25% of registered vulnerable children in selected communities. They identified food insecurity among vulnerable households as their priority problem. The QI team conducted root cause analyses on food insecurity among vulnerable households and discovered numerous root causes to the challenges. The QI team tested a number of possible solutions to improve household food security and diversity. Over the years, the QI team has recorded improvements in families being able to use modern methods of farming from 0% (April-June 2015) to 64% (July-September 2017). Similarly, vulnerable families involved in livestock production went from 13% (April-June 2015) to 64% (July-September 2017). The Mpeya team also recorded outstanding improvements (8% to 76%) in improving the number of vulnerable beneficiaries establishing kitchen gardens to help vulnerable beneficiaries diversify their diets.

## Background

In 2014, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project scaled up its quality improvement support to new communities in two districts of Balaka and Mangochi in Malawi. Learning from experiences from five existing communities, ASSIST added another five teams to improve access to social services using quality improvement (QI) methods. Mpeya Community Based Organisation (CBO) was one of the five new teams that was selected to be supported in the two districts. Mpeya CBO was established in 2005 and the CBO's catchment area targets a total of 21 villages in four Group Village Heads in Traditional Authority Chilipa. The CBO operates in Nikisi Village and is supporting a total of 1,843 OVC and 3,235 vulnerable beneficiaries in the area. To begin this work, the Ministry of Gender Children, Disability and Social Welfare (MOGCDSW) supported by ASSIST facilitated a three-day QI training for the new teams in Balaka District. A total of five representatives from Mpeya CBO were trained in QI on 3-6<sup>th</sup> March 2015. After the training, the Mpeya QI team met various stakeholders in the 21 surrounding villages and invited them to a meeting to agree to work together to improve lives of vulnerable families. The team invited government extension workers

### **Figure 1: Mpeya QI team composition**

1. CBO Director
2. Agriculture extension Officer
3. CBO Members-7
4. Health Surveillance Assistant
5. Child Protection Worker
6. HTC Counsellor
7. Village Headman
8. Area Development Committee representative
9. Village Development Committee representative
10. Volunteer mother mentor
11. Early Childhood Development Cluster mentor



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen and Improve Systems*

NOVEMBER 2017

This case study was authored by Tiwonge Moyo of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T.H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit

[www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com)

based in the communities such as the Agriculture Extension Worker, Health Surveillance Assistant, primary school headmasters, and HIV Testing Services Counsellors as well as other stakeholders supporting vulnerable children (i.e. mothers' group representatives, village heads, People Living with HIV [PLHIV] support group members, home based care volunteers, and Early Childhood Development caregivers). The CBO briefed the group on what they learned from the QI training sessions and the agreed next steps. After the meeting, a multi-sectoral QI team was selected and formed and they agreed to work together with Mpeya CBO to improve social services in the area on 13<sup>th</sup> March 2015. The QI team was formed with 13 members. The team agreed to conduct random systematic assessments of registered vulnerable children in their targeted communities to identify priority issues among vulnerable families.

CHILD STATUS INDEX CSI SCORES			CHILD STATUS INDEX CSI SCORES (%)		
DOMAINS	SCORES		DOMAINS	SCORES	
1a Food Security	2	28.57%	1a Food Security	2+1	118.80%
1b Nutrition & Growth	35	48.18%	1b Care	2+1	100.68%
2a Share	14	39.66%	2a Share	2+1	95.64%
2b Care	22	26.79%	2b Performance	2+1	88.59%
3a Abuse & Exploitation	63	56.20%	3a Nutrition & Growth	2+1	65.44%
3b Legal Protection	66	47.26%	3b Care (HEALTH)	2+1	50.34%
4a Wellness	38	63.28%	4a Wellness	2+1	47.32%
4b Health Care Services	58	40.35%	4b Emotional Health	2+1	40.27%
5a Emotional Health	49	59.31%	5a Legal Protection	2+1	35.24%
5b Social Behaviour	90	38.16%	5b Abuse & Exploitation	2+1	29.20%
6a Performance	23	37.37%	6a Social Behaviour	2+1	20.14%
6b Education & Work	24	27.13%			

Mpeya Child status index summary tally sheet. Photo by Linley Hauya, ASSIST Malawi

### Identifying gaps in social services

Before implementing any activity to improve the wellbeing of vulnerable households, the QI team wanted to understand the root causes of the persistent food insecurity challenges among vulnerable households in the area. They conducted a problem analysis using a fishbone diagram as shown in **Figure 1**.

The team discovered that there were numerous underlying challenges that were resulting in food insecurity among vulnerable households such as the following:

- Limited agricultural farming inputs and materials that contribute to persistent annual food shortages
- Limited agriculture produce preservation knowledge among farmers which results in poor storage of harvested agricultural produce
- Attitudes of farmers towards agricultural production
- Non-adherence to best agricultural practices
- Limited agricultural extension services in the area
- Climate changes resulting in erratic rainfall patterns in the area
- Cultural practices in the community such as commemorating lives of those that died a few years ago, celebrating successful journeys for those about to embark on long journeys (migrating to South Africa), and cultural initiation ceremonies. In all these cultural activities, a lot of food is prepared and wasted in the communities. Some families also exchange a lot of food crops for plastic basins, pots, and clothing. These cultural practices have been observed to contribute towards food shortages because while a family may have harvested enough, due to these practices they have food shortages later in the year.

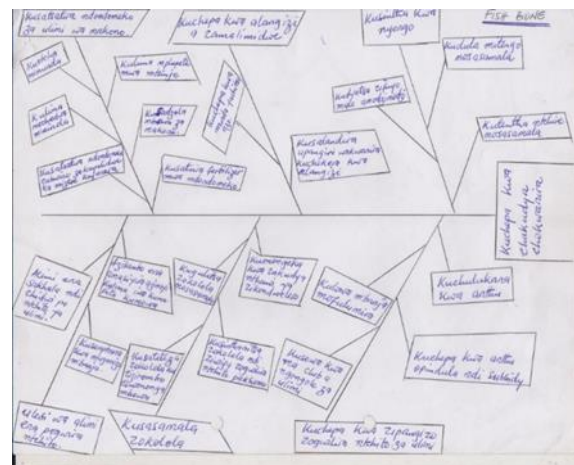


Figure 1: Mpeya fishbone diagram on food insecurity and economic wellbeing of vulnerable households. Photo by Linley Hauya, ASSIST Malawi

After the team had a thorough understanding of the extent of the food insecurity problems in their communities the team proposed to test some evidence-based changes to improve food security in the

vulnerable households. The Mpeya team first decided to target only a few vulnerable families with food security and economic strengthening interventions. The team targeted 119 vulnerable households in the catchment area.

The team developed a specific improvement aim which was 'to improve food security and economic wellbeing of vulnerable households registered in the program from 13% to 80% by intensifying community involvement in eight Village Agricultural Centres within 12 months.

Mpeya QI team outlined a number of possible changes to test to improve household food insecurity in the targeted 119 vulnerable households.

### **Changes tested**

The first activity which Mpeya QI team planned to do was to sensitize all vulnerable households in post-harvest handling since the time they started their improvement work was close to the harvesting season. They wanted all of the targeted vulnerable households to be aware of how to preserve their harvested agricultural produce to lengthen the period the households have food available during the whole year.

The QI team, with the support of the area Agricultural Extension Officer, proposed to mentor vulnerable households to establish and utilize three existing wetland areas along river banks in the Chilipa area. A total of 258 (44%) vulnerable families out of 587 were encouraged to participate in the wetland farming of cash crops to boost their household incomes and food availability throughout the year to support their vulnerable children with basic needs at the household level.

As of September 2017, Mpeya QI team encouraged a total of 311 (54%) out of the 587 vulnerable households to rear small livestock at the household level such as chickens, pigs, rabbits, and goats to help groups of vulnerable families boost their economic wellbeing as well as improve their food security during lean periods of the year.

To boost the economic status of the vulnerable families, the QI team, through the support of the agricultural extension workers, sensitized vulnerable households to participate in Village Savings and Loans Associations (VSLA) in the communities. Mpeya team facilitated formation of six VSL groups in the area and encouraged 240 (41%) vulnerable families to participate in the VSLA schemes in their targeted communities.

Mpeya QI team also linked vulnerable elderly guardians to other NGOs like CORDAID to benefit from goat pass on schemes, Save our Orphans Ministries to receive blankets for vulnerable children and social cash transfers from government cash transfer program. A total of 53% of vulnerable households were linked to these various organizations' supporting vulnerable populations.

Mpeya QI team, through their volunteers, encouraged vulnerable households to diversify their dietary intake by having kitchen gardens with various vegetables in their backyards to encourage their intake of nutritious meals, particularly for young children at the household level. This was done because it was noted that some vulnerable households tend to have children that are malnourished due to food shortages, lack of nutritional diversity, and the way they prepared meals at home. As of September 2017, 446 (76%) vulnerable families were encouraged and counselled on the importance of having a backyard kitchen garden as a household particularly for families with HIV positive family members as well as young children.

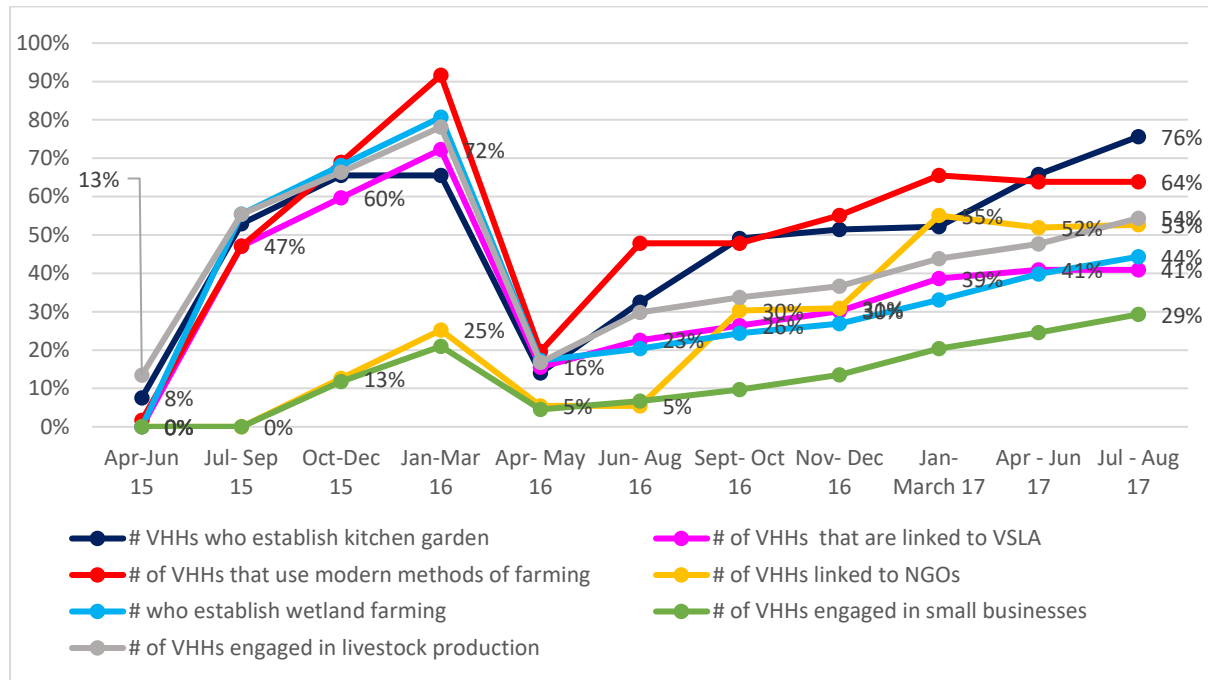
### **Results**

Between April 2015 and August 2017, Mpeya CBO achieved the following:

- Percentage of vulnerable households engaged in livestock production increased from 13% to 54%;
- Percentage of vulnerable households who had kitchen gardens increased from 8% to 76%;
- Percentage of vulnerable households who use modern methods of farming increased from 2% to 64%;
- Percentage of vulnerable households who had established wetland farming increased from 0 to 44%;

- Percentage of vulnerable households who are linked to and joined VSLA increased from 0 to 64%;
- Percentage of vulnerable households who are linked to and supported by NGOs increased from 0 to 53%;
- Percentage of vulnerable households who are engaged in small business increased from 0 to 29% (**Figure 2**).

**Figure 2: Percentage of vulnerable households linked to food security and household economic strengthening interventions in Mpeya CBO catchment area (Apr 2015-Aug 2017)**



Some of the changes that were tested were seen to have low uptake among vulnerable families such as starting small scale businesses which was heavily reliant on vulnerable families identifying some start-up capital. As a result, the QI team was encouraged by ASSIST to focus on promoting changes that the vulnerable guardians preferred.

**A story of self-reliance: One beneficiary’s story**

One of the beneficiaries of Mpeya QI team, Patuma Welesoni greatly commended the work the QI team does in the area.

Mrs Patuma Welesoni is a mother of six children. During a household field visit with the Ministry of Gender at her household she reported that she is now self-reliant after being taught and linked to over five interventions by Mpeya CBO and QI team. Usually in Malawi in September, most vulnerable families lack adequate food, particularly maize, the main staple food. This is not the case for Mrs Welesoni who still had enough maize in her silo to take her through the next growing season of 2017. She attributed this to Mpeya CBO who linked her to the area Agricultural Extension Worker and taught her the importance of participating in various social economic interventions such as wetland farming, kitchen gardens, VSLA, and livestock production. In 2013, the family was given a goat as part of a revolving goat pass on scheme by the CBO. She has benefited from this intervention since she is able to pay school fees for her secondary school child.

Mpeya CBO, through the support of ASSIST, has mentored her on the importance of joining a VSLA to boost their socio-economic status as a family. She is part of one of the Mpeya supported VSLAs and she expects to get proceeds from the VSLA to use to maintain her household before the rainy season.

Mrs. Welesoni was also referred by the QI team to join a PLHIV support group in the community to help her psychosocial wellbeing with her family while they interact with other support group members.

She said she is happy to be part of the support group and is even a chairlady. She reported that she has benefited a lot by interacting with other support group members in the village instead of facing daily depression. She is now healthy and can participate in any of the food security and economic strengthening activities which the QI team promotes in the area.

She also proudly commends the CBO's guidance through the Agriculture Extension Worker who taught her how to make compost manure to use in her garden. She attributes the high yield she had in 2016 to the compost manure and the modern methods of farming she applied to improve her crop productivity. Amazingly, she reported that before 2016 she has farmed in the same piece of land but always had persistent low yields but now she recommends the manure to other vulnerable guardians because she managed to fill up her silo with a good harvest in the 2016/2017 growing season. She appreciates the technical support rendered to her by Mpeya CBO.

Mrs. Welesoni also happily appreciates the support the CBO provided by linking her to a Health Surveillance Assistant for the area who assessed her last born child and found her to be moderately malnourished. Immediately she was linked to Chilipa Health Centre to enroll her into a Nutrition Rehabilitation Unit program. She happily reports that the child is now healthy and well recovered due to the support the CBO provided.

In addition, she has also planted a kitchen garden in her backyard to have access to fresh vegetables close to her house to help diversify their household dietary intake. Her five children are now at Nikisi Primary School regularly attending and thriving with good health. Her household is one of the 587 vulnerable households targeted by Mpeya QI team with various interventions in Traditional Authority Chilipa in Mangochi District.

### Lessons

The multi-sectoral QI team at the community level has brought services closer to vulnerable families to access technical knowledge and expertise on how to improve their wellbeing. Vulnerable families are comprehensively supported based on their specific needs rather than having packages of services which sometimes are not priority problems at the vulnerable household level.



The QI approach encourages vulnerable families to be self-reliant and figure out which interventions they want to participate in to improve their wellbeing as a family so that they do not rely on handouts which rarely come by in the communities now.

### Recommendations

CBOs should prioritize the use of QI approaches to improve how they ensure access and utilization of social services in the communities because it is a sustainable way of improving the vulnerable households' wellbeing and the CBO processes at the community level. Community structures should promote working with various existing government structures and other various stakeholders to provide sustainable comprehensive services for vulnerable families.

*Mpeya Agriculture Extension Worker presenting on HES activities during a QI coaching field visit in 2016, Photo by Tiwonge Moyo, ASSIST Malawi*

### Next steps

Following the successes of Mpeya QI team, the team has increased their targeted communities to target more vulnerable households with household economic strengthening interventions. The QI team has started sharing their experiences and lessons with other new CBOs from other new districts to spread their evidence based lessons in using QI methods to improve social services.





*Field exchange visit by 12 new teams to Mpeya CBO in Chilipa, Mangochi District. Photo by Tiwonge Chimbandule, ASSIST Malawi.*

## CASE STUDY

# Community contributions to eliminating mother-to-child transmission at Licilo Health Center, Mozambique

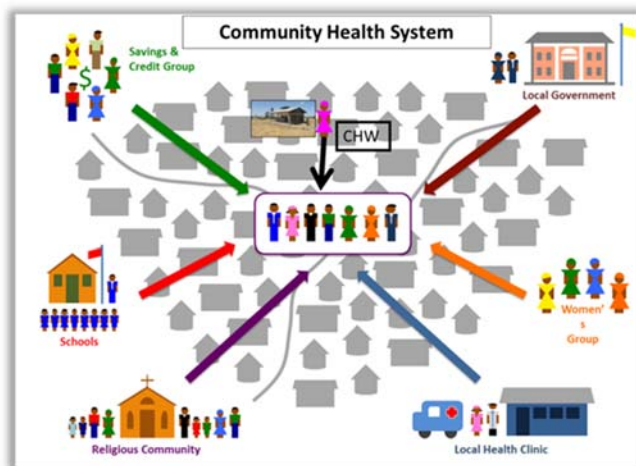
The goal of the Partnership for HIV-Free Survival (PHFS) community demonstration project was to contribute to EMTCT through increased community awareness, improved community-facility linkages, and increased access to services for pregnant women. The project engaged existing community groups to provide health messaging on the importance of antenatal care (ANC), identify pregnant women, refer them to care, and follow up with those who did not go. Amongst the 15 *bairros* in the catchment area of Licilo Health Center, 95 community groups identified 896 women between March 2014 and February 2015. There was an increase in the median number of women coming for ANC from 32 per month in the six months prior to the intervention to 45 per month between March 2014 and February 2015. They also increased the percentage of women coming to ANC earlier in their pregnancy.

## Background

Beginning in late 2013, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project began to provide technical support for community-level improvement of elimination of mother-to-child transmission (EMTCT) services to the Ministry of Health (MOH) of Mozambique as part of the PEPFAR-funded Partnership for HIV-Free Survival (PHFS). The project took place in Bilene District in Gaza Province, which was chosen as a priority due to its high rates of HIV prevalence and low coverage of PMTCT. USAID ASSIST and the MOH together chose Bilene District in Gaza Province and the three health centers within the district based on low coverage of antenatal care (ANC), postnatal care (PNC), and PMTCT services, and high prevalence of HIV, which in Gaza was as high as 29.9% for women and 16.8% for men according to a 2009 prevalence survey (INSIDA 2009). The activities focused around three health centers in Licilo, Chissano, and Incaia and their associated catchment areas, which included 15, 11, and 13 *bairros* (communities) respectively.

The goal of the PHFS community demonstration project was to contribute to EMTCT through increased community awareness, improved community-facility linkages, and increased access to services for pregnant women. The demonstration project employed the Community Health System Strengthening model (see **Figure 1**) to improve the quality of PHFS services at the community level. In the Community Health

**Figure 1: The Community Health Systems Strengthening Model**



## MAY 2015

This case study was authored by Kim Stover of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The PHFS community system work in Mozambique was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WIHER LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

System Strengthening model, the improvement intervention is managed by representatives from local community groups, such as religious groups, agricultural groups, 'savings and credit' groups, representatives from the facilities, and delegates from the local government, who all come together to serve as the community improvement team for the purposes of identifying local health gaps and developing and testing strategies to overcome those gaps. The community improvement team applies improvement principles to strengthen the performance of the community health system by identifying and strengthening the processes by which participating groups and structures function and interact with each other to provide integrated, seamless care. When all elements of the community health system are harmonized and functioning well and coordinated with the efforts of community health workers, health services become more accessible to community members, and accurate information exchange between health facilities and households occurs more rapidly and effectively.

## Organizing a community system

Following a situational analysis, ASSIST conducted an initial training in February 2014 on improvement and the community health system strengthening model for coaches and selected community members in Gaza Province. Representatives from the 15 *bairros* (communities) in the catchment area of Licilo Health Center and the maternal and child health nurse were part of this training. Trained *bairro* representatives then met with *bairro* leaders to explain the goals of the activity, the importance of getting pregnant women into ANC early and what was needed from the leader and community. They asked the leaders to help them identify existing community groups which met at least twice per month and had a minimum of 10 to 15 members.

An orientation was given to each community group to invite them to participate in helping to spread health messages and identify pregnant women. The key messages that they were expected to provide were around why women should go to the health center early to avoid transmission of HIV from mother to child through early testing and treatment. Community groups were asked to set aside time, approximately 30 minutes, in their regular agenda to discuss health-related issues. The community groups that were interested in participating included groups such as church groups, leadership groups, well groups, Mozambican Women's Association, savings and loans groups, and *activistas* (community health workers). In addition, they decided to use an existing political structure where there was a leader of every 50 households.

Not all community groups were eager to participate at first. A pastor told a story that at first, the traditional healers were unwilling to participate. He kept visiting them and explaining the importance of the work to care for pregnant women and eventually they began to participate.



Licilo community team members look at a data register showing numbers of pregnant women identified by the community team. Photo credit: Kim Stover, URC.

Each group sent a representative to a *bairro*-level improvement team called the *Bairro* Committee. The *Bairro* Committee was responsible for collecting data from all of the community groups, passing on critical health messages, and brainstorming ways to support and encourage pregnant women to seek antenatal care at the health center. Given the workload of the nurse, she was unable to visit all of the 15 *bairros* regularly. Therefore, a Health Committee was created which met at the Licilo Health Center once per month. The Health Committee was responsible for bringing data from the *bairros*, receiving data from the health center, and discussing challenges and possible solutions to supporting women.

## Improving care for pregnant women

Every participating community group began to spend some time during each meeting discussing the importance of ANC for pregnant women. **Figure 2** outlines reasons why women were reluctant to seek care. While the goal of this activity was to get pregnant women tested for HIV and on treatment if HIV-positive, the community groups rarely discussed HIV openly. Due to strong fear of learning HIV status, the community groups focused on other reasons for seeking ANC, such as being tested for anemia and general infections, to receive bed nets, and to learn about the food to eat.

Each community group member was responsible for identifying pregnant women in their households and networks. When a pregnant woman was found or self-identified in a group, her name was recorded by the community group and passed on to the *Bairro* Committee. The *Bairro* Committee representative would bring the list of names to the Health Committee meeting at the health center. The nurse and the Health Committee members would compare the list of names to the ANC register to determine who had been to their first ANC visit and who had not yet been. The Health Committee would share experiences and challenges from the different *bairros* and discuss possible solutions to try to bring women into care. Health Committee members would share the names of previously-identified women who had not been to ANC with the *bairro* committees, who would determine strategies to encourage women to go.

The Health Committee realized that one group of women who were not going for their ANC visit all belonged to the same religious sect. *Bairro* Committee members went to the leaders of that sect and told them the importance of pregnant women receiving early ANC. The religious leaders then used time following their service to encourage pregnant women to go to ANC as soon as possible. The women from this sect began to go for ANC following this intervention.

Around Licilo Health Center, many of the husbands of pregnant women were working in South African mines. While their husbands were away, they were often not allowed or were afraid to make decisions about going for care, being tested for HIV, and starting on treatment. The *Bairro* Committees determined that the most effective strategy was to target specific messages to mothers-in-law who could convince their sons to let the wives go for ANC services. This was done both on a one-on-one basis but also in more general community meetings and gatherings.

One of the biggest challenges that arose was the ability of the health center to keep up with the increased demand for services. The nurse did her best to see everyone that came, but she was the only health care worker providing ANC services. When she was away from her post, it meant that women were either turned away or seen by someone who was not well trained in maternal care.

### Figure 2: Reasons for reluctance of pregnant women to seek care\*

- Fear of learning their HIV status and potential negative consequences such as being turned out by their husbands.
- Husbands are in South Africa working in the mines and women need their permission before seeking care.
- Long lines and waiting time at the facility.
- Long distance to the facility.
- Did not go for previous children and everything was OK.
- Poor treatment in health facilities
- Lack of understanding of the importance of early ANC.

\*According to interviews with community group members.

### Artist Group in Action

One very large and active community group was a singing and drama group. This group created songs and skits around the importance of early ANC for pregnant women which they would perform at market days and other gatherings. As they sang and taught about the importance of identifying yourself and connecting with the health facility, one of the members would roam the audience looking for pregnant women and encouraging them to seek care.

## Results

Amongst the 15 *bairros* in the catchment area of Licilo Health Center, 95 community groups identified 896 women between March 2014 and February 2015. They increased the percent of identified pregnant women receiving first ANC in the same month from 36% in March 2014 to 97% in February 2015.

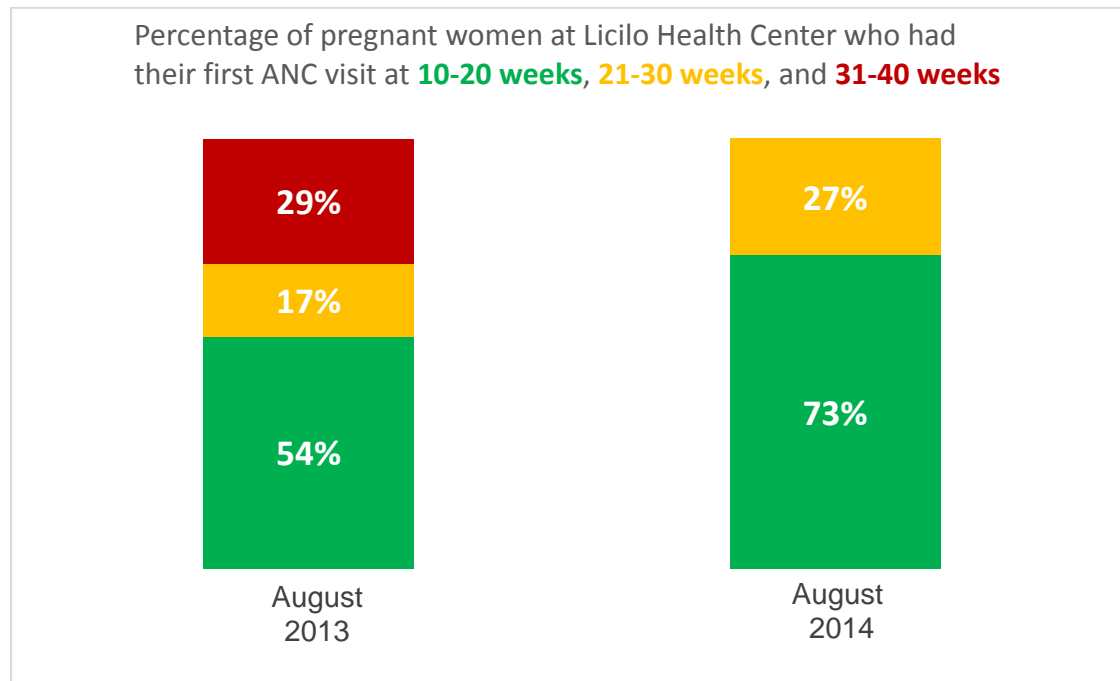
There was an increase in the median number of women coming for ANC from 32 per month in the six months prior to the intervention to 45 per month between March 2014 and February 2015. There was an increase in the percentage of women coming to ANC earlier in their pregnancy (**Figure 3**).

The Licilo Health Center nurse reported that no HIV-exposed infants had tested positive for HIV between September 2014 and March 2015.

*“With this program, there was a great change here. There is a population of 17,580 and before I was the only responsible for pregnant women. I found this program helpful because it makes my work easier when these groups spread messages. I find [the community system] important for my work here. If [a woman] comes from a group that is already sensitized, she is prepared for the visit and that gives me more time for other patients.”*

-- Licilo Health Center Nurse

**Figure 3: Percentage of pregnant women at Licilo Health Center receiving ANC by gestational age**



The experience of the PHFS community demonstration project in Gaza, Mozambique has shown that the community health systems strengthening model can be applied successfully to improve care for pregnant women, increase links between health facilities and communities, and support the work of facility and community health workers.



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

# The Impact of Continuous Quality Improvement on Voluntary Medical Male Circumcision Services Offered in a Public Health Facility in Gauteng Province, South Africa

### Summary

The City of Johannesburg has a high burden of HIV and is a priority VMMC scale-up district for the US President's Emergency Plan for AIDS Relief (PEPFAR). Zola Community Health Center (CHC) has been offering PEPFAR-funded VMMC services since November 2010 and began receiving technical assistance from the USAID ASSIST Project in 2014, to establish a quality improvement (QI) team, as well as periodic continuous quality improvement (CQI) assessments and on-site coaching to apply CQI methodology to identify quality gaps and design, implement, and monitor interventions to address them. In August 2014, ASSIST conducted a CQI baseline assessment to gauge Zola CHC's compliance with Department of Health (DoH) and World Health Organization (WHO) VMMC quality standards and to identify strengths and areas requiring improvement in VMMC service provision. The baseline assessment revealed challenges relating mainly to leadership and planning, VMMC surgical procedure, and infection prevention and control. At baseline, the average score across service quality standards was 67%. Since the establishment of a QI team and the adoption of CQI, adverse events were still observed at Zola CHC, but robust adverse events management and client follow-up systems have been put into place, which have ensured improved documentation, communication with clients, and better management of complications and emergencies. By the fourth reassessment conducted in February 2017, the average score across service quality standards had improved from 67% to 96%.

### Background

Since October 2013, the USAID ASSIST Project has been providing continuous quality improvement technical assistance to voluntary medical male circumcision sites in South Africa to improve service quality and client safety. At its core, quality improvement at health facility level is a team-driven process, as no single individual in an organization can realistically acknowledge and effectively address all dimensions of a challenge. Team members can work in partnership to identify quality gaps and design, implement, and monitor interventions.

Zola Community Health Center is a provincial primary health care facility located in the City of Johannesburg in Gauteng Province, South Africa. The center is a referral point for clinics in the area and provides comprehensive health care services including:

- HIV testing services
- HIV and TB-related treatment, care, and support
- Nutrition
- Maternal and child health
- Voluntary medical male circumcision

The City of Johannesburg has a high burden of HIV (with an HIV prevalence of 11.1% in 2012) and is a priority VMMC scale-up district for PEPFAR. Zola CHC has been offering PEPFAR-funded VMMC services since November 2010 and started receiving CQI technical assistance, on-site coaching, and

### JUNE 2018

This case study was authored by Carla Visser and David Themba Massina of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

periodic assessments from the USAID ASSIST Project in 2014. The primary goals of CQI support were to enhance client safety and ensure service quality.

### **Assessment of quality of VMMC services**

In August 2014, ASSIST conducted a CQI baseline assessment to gauge Zola CHC's compliance with Department of Health and World Health Organization VMMC quality standards, and to identify strengths and areas requiring improvement in VMMC service provision. The baseline assessment revealed challenges relating mainly to leadership and planning, VMMC surgical procedure; and infection prevention and control (IPC). Following the baseline assessment, the facility received regular CQI mentoring and coaching support to address gaps in service quality through developing and implementing quality improvement activities. At baseline, the average score across service quality standards was 67%; by the fourth reassessment conducted in February 2017, the average score had improved to 96%.



The application of functional and proactive quality improvement teams can enable facilities to prevent and manage medical complications and improve patient-centered outcomes. Zola CHC has been very receptive of CQI, allocating team members to actively serve on its VMMC quality improvement team. The quality improvement team applied CQI methodology to identify quality gaps and design, implement and monitor interventions on an ongoing basis.

### **Strengths and Challenges**

Strengths identified during the CQI baseline assessment conducted at Zola CHC included:

- The facility had a catchment area map available, and staff had good knowledge of the population size
- Staff roles and responsibilities were clearly defined
- Although a patient flow algorithm was not available, good patient flow was observed
- Clients received printed materials relating to VMMC facts and wound care in local languages
- The facility had adequate records of informed client consent for undergoing VMMC
- Waste management was adequate

In addition to these strengths, the facility's VMMC Unit Manager welcomed the CQI assessment and engaged with assessment findings with the goal of improving service quality.

Challenges identified during the CQI baseline assessment included:

- Limited familiarity with VMMC strategy and unavailability of copies of some VMMC service delivery guidelines
- Incomplete physical examinations conducted pre-procedure, post-procedure, and at follow-up
- Emergency trolley lacked critical equipment, e.g., defibrillator, pulse oximeter
- Incorrect storage and limited stock of some required medications and personal protective equipment
- Inconsistent implementation of IPC policies and varying knowledge of IPC techniques among VMMC team members

- Failure to reinforce wound care, personal hygiene, and consistent condom use in post-procedure follow-up with clients

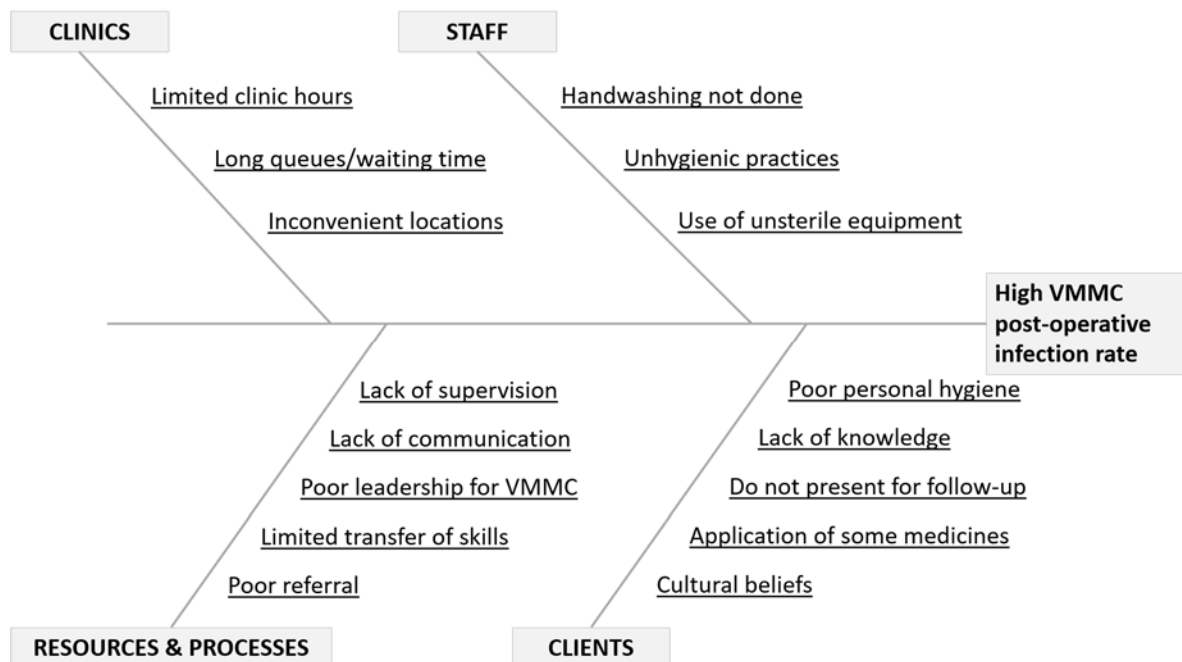
In addition to the service quality standards assessed, the need was identified for reducing VMMC adverse event rates and increasing the percentage of clients presenting for post-procedure follow-up review. Following the baseline assessment, the ASSIST advisor who coached Zola CHC helped the facility staff to develop an action plan matrix to identify and prioritize actions aimed at addressing quality gaps.

### Implementation of quality improvement

A quality improvement team comprising Zola CHC VMMC unit staff was established to collectively develop and implement change ideas and track progress on improvement aims. The team held regular meetings to plan and review interventions and assign responsibilities. Facility management showed commitment to improvement efforts by attending quality improvement meetings and engaging with QI team members to monitor progress and potential challenges.

The quality improvement team employed various CQI methods and tools to analyze problems and plan interventions. **Figure 1** shows an example of a fishbone diagram they used to identify potential causes of post-operative infection.

**Figure 1. Zola CHC’s fishbone diagram used to identify possible causes of a problem**



Through mentorship and coaching, USAID ASSIST supported Zola CHC’s quality improvement team to design changes to test to reduce adverse events and increase client follow-up rates. Zola CHC adopted the use of HIV treatment referral, VMMC follow-up, and adverse event registers. Changes tested included:

- Introduction of standard operating procedures (SOPs) for managing adverse events
- Introduction of SOPs for IPC, e.g., monthly theater scrub down; thorough disinfection of surgical beds between procedures
- Placing phone calls to clients to remind them of their follow-up reviews
- Issuing clients with appointment cards for follow-up and reinforcing reasons for return
- Reinforcing personal hygiene and wound care messages (including demonstration of washing techniques)
- In-service training for VMMC staff on adverse events and IPC

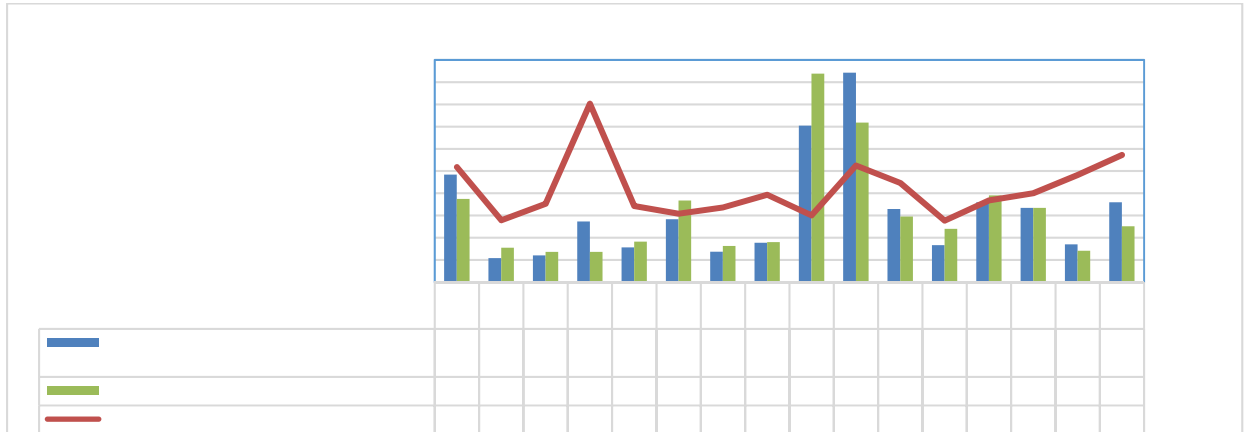


The improvement team also set aims to periodically review VMMC data to monitor progress and inform decisions.

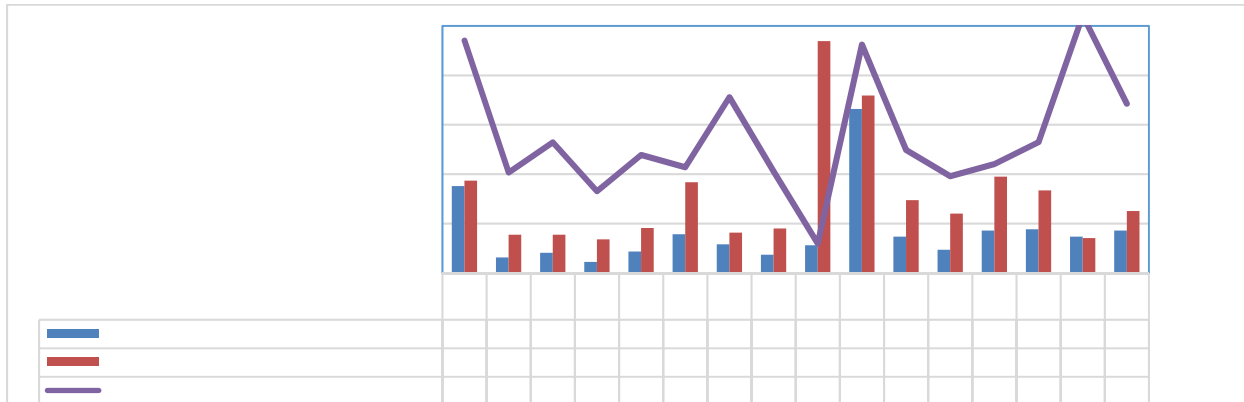
## Results

Since the establishment of a quality improvement team and the adoption of CQI, adverse events were still observed at Zola CHC, but robust adverse events management and client follow-up systems have been put into place, which have ensured improved documentation, communication with clients and better management of complications and emergencies. **Figure 2** below shows the 48-hour follow-up rate at Zola CHC; **Figure 3** shows the 7-day follow-up rate at Zola CHC.

**Figure 2. 48-hour follow-up rate at Zola CHC, Oct 2015 to Jan 2017**



**Figure 3. 7-day follow-up rate at Zola CHC, Oct 2015 to Jan 2017**



Functional CQI teams are invaluable in ensuring a holistic approach to problem solving and can achieve:

- Continuous buy-in of all VMMC team members and the rest of the unit staff
- A more complete working knowledge of the processes involved in patient-centered care
- Greater acceptance and higher implementation rate of interventions aimed at improving service quality
- Better clinical outcomes



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen and Improve Systems*

## CASE STUDY

# Improving Linkages between Health Facilities and Communities in Muheza, Tanzania

In the Muheza Region of Tanzania, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project applied the Community Health System Strengthening (CHSS) model to improve linkages between health facilities and communities in order to increase HIV testing and retention in care. Working in five communities, community teams were created from existing community groups to work with the local home-based care (HBC) volunteer. Teams in each of the communities relayed information from the facility to the community through their community groups and vice-versa. Over the course of seven months, they were able to trace 39 of 44 patients who were lost to follow-up; of these, 23 went back to treatment, five had moved to a different health facility, 11 had died, and five were still unaccounted for. This case study describes the process undertaken and perspectives of the community members and health facility personnel who were involved.

### Background

In early 2014, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, with support from the President’s Emergency Plan for AIDS Relief (PEPFAR), began the Community Linkages activity in five villages of the Muheza District of the Tanga Region in Tanzania, building on existing work to increase retention in the HIV continuum of care. The Community Linkages component was added by employing the Community Health System Strengthening (CHSS) model to increase linkages between health facilities and communities. Prior to the introduction of this model, government home-based care (HBC) volunteers who live in the communities were the only link between the facility and the community.

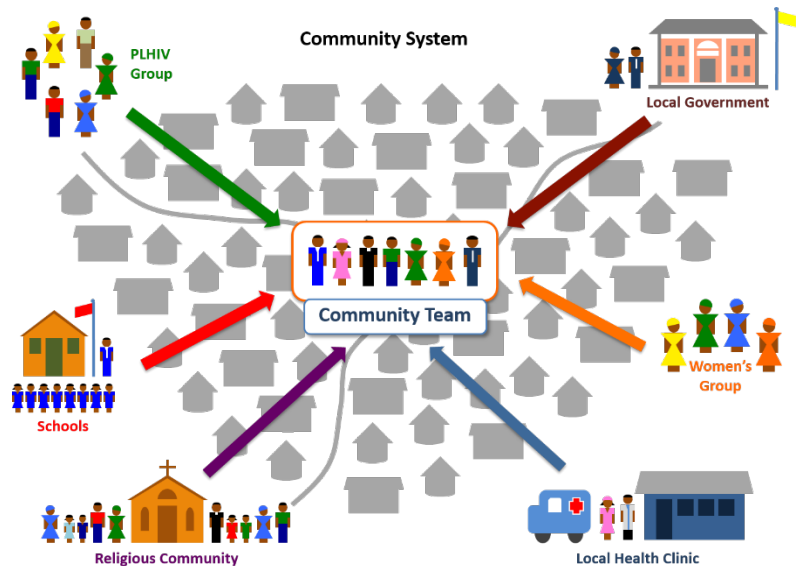


Figure 1: The Community Health System Strengthening model

HBC providers in Tanzania offer education on testing and treatment of HIV, support people living with HIV, and share information about the community’s health with the facility. At the district level, there is an HBC Coordinator who supports the HBC volunteers and typically interacts with HBC volunteers when they come to health facilities. The HBC volunteers are responsible for covering 20-25 households in their community as well as relaying information to and from the health facility. Yet the HBC volunteers

### JANUARY 2015

This case study was authored by Ram Shrestha and Kate Fatta of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID’s Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC’s global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

reported that they often felt overwhelmed and that they could not reach all of the households with the information they were supposed to be providing. Health facilities' only interaction with communities was through the HBC volunteers. To get patients to come back to treatment, the facilities had tried calling them on the phone, but it had not worked. The CHSS model brings together formal and informal pre-existing structures and networks to create an integrated care system. Most communities in low-resource settings possess their own informal support and social welfare systems where community members make decisions and work together to improve the health of community members and the general welfare of the community. This system may consist of formal community groups, such as village government, schools, religious groups, agricultural groups, 'savings and credit' groups, etc. In the CHSS model, the improvement work is managed by representatives from each community group, representatives from the facilities, and delegates from the local government, who all come together to serve as the community improvement team for the purposes of identifying local gaps in health care and developing and testing strategies to overcome those gaps. This team applies improvement principles to strengthen the performance of the community health system by identifying and strengthening the processes by which participating groups and structures function and interact with each other to provide integrated, seamless care.

When all elements of the community health system are harmonized and functioning well and coordinated with the efforts of community health workers, including community-based care providers, health services become more accessible to community members, and accurate information exchange between health facilities and households occurs more rapidly and effectively.

### **Implementing the CHSS model in Muheza**

ASSIST identified the groups and committees that were active in five communities in Muheza District. ASSIST then identified the existing group in each community that had the most representation from all community groups and engaged that group to serve as the community team. When needed, members were added to ensure full representation from all community committees in this community team. Each team also included the local HBC volunteer. Group members were invited to trainings held by ASSIST in which they discussed HIV content, including adherence to treatment, educating others, advantages and disadvantages of HIV testing, etc., and looked at ways to improve support for HIV care in the community.

ASSIST also trained coaches at the district and health facility to support the community teams. While the focus of the activity was on improving retention of patients in care, the community teams first looked at improving HIV testing in their communities as a way to familiarize themselves with the process and obtain some early success before addressing retention.

During their first community team meetings in January 2014, the HBC volunteer and community team members discussed low levels of HIV testing uptake. According to facility data brought to the meetings by the HBC volunteers, just 106 people went for testing in January (42 men and 64 women, shown in Figure 2). The main reason given for this low number was that the HBC providers assigned in each village were not able to reach all households to sensitize people to go to the health facility for an HIV test.

When the community team members approached other members of the groups they are part of, they asked their group members to talk to their families about things such as HIV testing uptake and the importance of staying on ART treatment. Group members then talked to their family members, urging them to go for HIV testing, highlighting the importance of knowing their status for their own health and for the health of the family and community.

### **Increasing HIV testing**

After the community group members spoke to their family members about the importance of getting tested for HIV, 319 people went for testing in February (122 men and 147 women). Not only did the number of people tested for HIV increase, but the number of male partners who came for testing HIV also increased. A few of the communities had such interest in HIV testing that they requested the facility

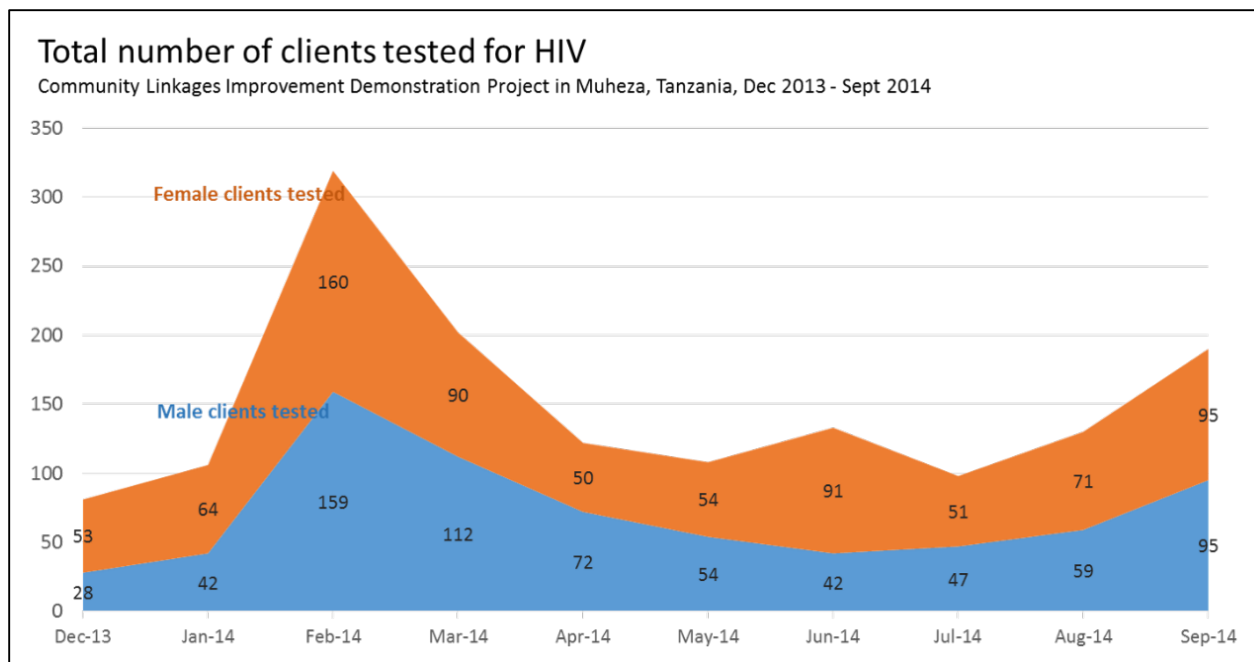


Figure 2: HIV testing in five communities, Muheza District, Tanzania

provide testing in the village itself in February, making it even easier to access and causing even higher uptake. In June 2014, the number of individuals being tested was 133 as the community teams continued to share messages on HIV testing and re-testing.

The HBC volunteers also noticed improved understanding of HIV and health in the communities. They noted that before this work, pregnant women and people who were feeling ill were the most likely to go for HIV testing, but they saw an increase in both men and women going regardless of their current health status. A representative from the Matumaini B PLHIV group in Enzi noted that more people being tested were returning to the facility to receive their results than before; that stigma was reducing; and people understood better that they could live well with HIV.

#### **Reducing loss to follow-up**

To address retention of HIV-positive patients in treatment, the HBC volunteer would receive data from the facility on the number of patients lost to follow-up that month. Using the same approach as for HIV testing, the HBC volunteer would work with the community team to spread messages to their respective networks and families on the importance of adhering to antiretroviral therapy and remaining in care.

At the start of March 2014, according to facility data, 31 patients were lost-to-follow-up. Between March and September an additional 13 were lost. By the end of September, 23 of these 44 patients were on treatment again. Of the remaining, five had moved to a different health facility, 11 had died, and five were still unaccounted for (see Figure 3).

At the community level, the community teams feel proud of what they are doing. They said that when they see people going to test for HIV, they feel that they are having a positive impact on the health of their families and community. The HBC volunteers have felt relieved through this collaboration. They are no longer working in isolation and instead have a whole community network to work with through their participation in the community team. According to one

*"It was difficult for HBC volunteers to track the clients who are lost to follow up because they are few and the villages are big, it was not easy for them to reach everyone... we are thankful because the community groups have been very helpful.*

- Health Care Provider, Mkuzi Health Center

## Getting Lost-To-Follow-Up (LTFU) Patients Back in Care

Community Linkages Improvement Demonstration Project in Muheza, Tanzania, March-May 2014

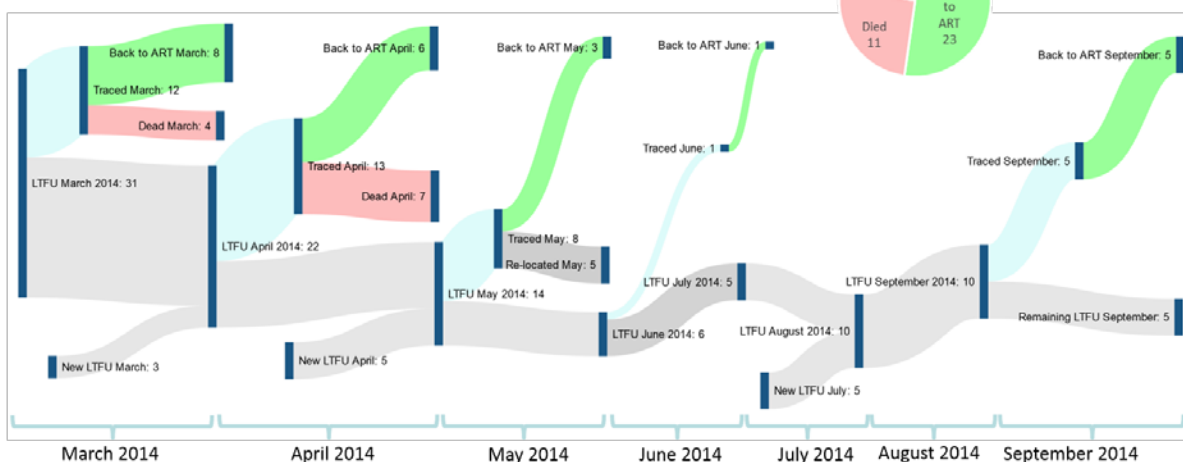


Figure 3: Reduction of loss to follow-up in five communities, Muheza District, Tanzania

HBC volunteer, “Information doesn’t stop now, it flows. The community used to be far from the facility, now it is close.”

The facility providers noticed the same improvements, saying that they see coordination and community involvement that was not there before. They have seen increases in service utilization and achievements they were unable to obtain on their own. One facility nurse said that information spreads easily because “the team touches everywhere.”

The District HBC Coordinator commented that now she knows when the community teams meet, so she joins them, while before she only went to the facilities and talked primarily to just the health staff. She sees motivation in the communities that she had not seen before. She added that she “used to hear about community participation and engagement, but this is the real way they can be involved in the health of their communities.”

### **Conclusion**

The application of the CHSS model in the five communities in Muheza District demonstrated its utility in increasing uptake of HIV testing and, more importantly, reduction in loss to follow-up and improved retention in HIV care. It is a promising approach to strengthen linkages between health facilities and the communities they serve. Opportunities to implement the CHSS model in new communities in Tanzania are currently being explored.



MINISTRY OF HEALTH



USAID ASSIST Project  
Applying Science to Strengthen  
and Improve Systems

## CASE STUDY

### Implementing the Partnership for HIV-Free Survival (PHFS) Initiative in Uganda: Retention of Mother-Baby Pairs in Kisoro District Hospital

With support from the United States Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), Kisoro District Hospital in Uganda is finding ways to increase the retention of HIV-positive mothers and their newborns in care. In only one month, the Kisoro PHFS improvement team raised the coverage of mother-baby pairs from under 1% of expected client load to 26%. The team also has made great strides in the quality of its records—a critical requirement for providing quality care for chronic conditions like HIV—improving the completion of all information on client ART cards from 2% of cards to 51% in the same period. This case study emphasizes the simple steps that Kisoro Hospital's quality improvement (QI) team took to make these changes without additional resources and in a short time period.

#### Introduction

Kisoro Hospital, located in South Western Uganda, is one of the 22 health facilities implementing the PHFS initiative. PHFS is a six-country partnership geared towards the elimination of mother-to-child transmission of HIV by strengthening and accelerating uptake of Option B+, nutrition counseling, and support for mothers and their babies. Kisoro Hospital was chosen by the Ministry of Health of Uganda to participate in PHFS because it is a high-volume facility providing care to approximately 250 patients a day in the HIV clinic; it is also one of the only three ART centers in Kisoro District. It has been providing Option B+ since the end of March 2013. The site is being supported by the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project to support health workers to strengthen nutrition assessment, counseling, and support (NACS).

#### Problem Analysis

Retention of mother and baby pairs in care at health facilities is a major challenge in the provision of quality HIV services. To understand the magnitude of the problem in Kisoro, we carried out a baseline assessment in May 2013. The review team, composed of the site QI team leader, government district coaches, regional coach, and a USAID ASSIST Project coach, checked the accuracy and completeness of the exposed infants' clinical charts and the early infant diagnosis (EID) register and calculated the retention gap.

The assessment revealed two main gaps; first, retention in care was poor. Only 1 of 226 mother-baby pairs who should have come to the clinic in April 2013 actually came. It was also clear that the clinic was not putting in place simple systems to make it easier for mothers and babies to remain in care. For example, mothers and babies were often given different appointment dates in the same month.

#### **JULY 2013**

This case study was authored by Tamara Nyombi, Angella Kigonya, Esther Karamagi Nkolo, Nigel Livesley, and Humphrey Megere of University Research Co., LLC (URC). We would like to acknowledge the contribution by Birungi Anshilla and Joseph Nturo of Kisoro Hospital. It was produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: Broad Branch Associates; EnCompass LLC; FHI 360; Harvard University School of Public Health; Health Research, Inc.; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; Women Influencing Health Education and Rule of Law, LLC; and the World Health Organization Patient Safety Programme. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

Second, data about retention was very weak. For example, only 3 (2.5%) of 118 exposed infant clinical charts were filled in correctly. Data from different tools were not consistent. These problems meant that the clinic had no clear way of measuring retention.

### **The Approach**

In May 2013, the QI coaches held a meeting with the facility QI team to discuss the findings of the assessment and to share the data with the team. The facility QI team then carried out a problem analysis to determine the root causes of low retention rates and poor data quality. The QI team proposed some changes that they would test to improve the two focus areas. Some of the changes included: giving all services to the mother-baby pair in the Post Natal Care (PNC) clinic for women who have delivered to return for review and family planning services. Another change proposed was finding exposed infants in the Young Child Clinic (YCC), a clinic where children receive immunisation, growth monitoring, and promotion services, and in the Anti-Retroviral Therapy (ART) clinic and physically escorting them to the PNC. The QI coaches also shared some change ideas that we thought might work, including: giving same appointment dates and services for the mother and the baby and keeping the mother and baby's care cards in the same file to enable easy retrieval and recording.

### **The Results: June 2013**

A subsequent coaching visit was carried out to Kisoro hospital in June 2013. The purpose of the visit was to follow up on the site's action plan and provide additional support in improving care. During this visit, the facility QI team shared some of the changes they had tested as well as their data on retention. Between May 14th and June 10<sup>th</sup>, the team had managed to locate a large number of mother-baby pairs in care, bringing their number from 1 (0.4%) to 59 (26%). Of these 59, 30 were mothers who were still on Option A (AZT at pregnancy and babies on Nevirapine). These 30 were transitioned to Option B+ and their babies, if eligible, were put on Co-trimoxazole. Another 24 mother-baby pairs were in care at the hospital, but seen in different clinics, and because the mothers' ART number was not recorded on the babies' EID card, health workers couldn't tell what type of care they had received. These 24 mother-baby pairs can be attributed to an improvement in documentation. Five mother-baby pairs were still within the 18 month timeframe, but had stopped breastfeeding; they were enrolled into the program so the baby would receive the final PCR test and for the mother to continue on ART.

Data quality has also improved. In just one month, the percentage of infants' clinical cards having all parameters completely and correctly filled out increased from 2.5% to 50.8%.

### **What the Kisoro team did to achieve these results**

#### *Improving retention of mother-baby pairs:*

- Because the ART clinic was congested, the Kisoro team decided that from now on, any newly diagnosed or identified mothers and babies will be seen in the PNC clinic ( mother-baby pairs who were on ART prior to introduction of Option B+ will continue to access their care in the ART clinic).
- The PNC clinic routinely provides care to 20-30 clients a day. With these new changes, the clinic is currently seeing two to three additional new clients a day and has been able to absorb these numbers into their daily routine and structure. The four full-time staff available at the clinic are working on how they will handle the extra workload when the numbers increase.
- The team started giving same appointment dates for the mother and baby; and they are seen by the same person in one area (ART clinic for old clients and the PNC clinic for newly identified and enrolled clients).

#### **Data tools for recording retention in Kisoro:**

##### **Exposed Infant Clinical Chart:**

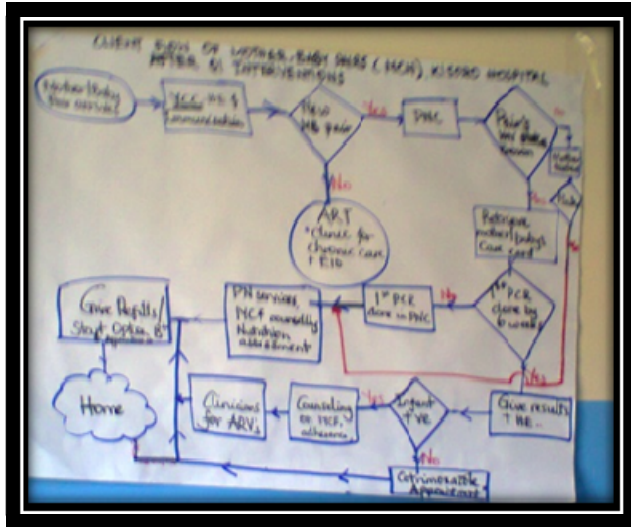
contains the infant's bio-data, information on the mother, testing, linkage to care and treatment and all services provided to the infant at each clinical visit.

##### **Early Infant Diagnosis register:**

The EID register contains all information on care provided to an exposed infant from enrolment to discharge.

**Clinic appointment book:** This book is used to record all the clients who have been given appointments.

- The hospital team informed mothers through health education sessions and Family Support Group (FSG) days that they would be receiving care together with their babies in the same clinic on the same day.
- To find clients lost in care and newly exposed babies, all staff who work in these clinics have been sensitised and are aware that exposed infants and their mothers must be physically escorted to PNC.
- To make clinic visits more convenient for the clients, ART is dispensed in the PNC instead of sending mothers to the pharmacy.



#### Improving data on retention:

#### **New flow of mother-baby pairs in the postnatal clinic**

- The team assigned a team member the role of filling out the mother and baby cards and registers as soon as the service is provided.
- The baby's card is now being kept in the mother's clinic file.
- PNC and ART departments keep the same registers and dispensing logs and, at the end of the week, the in-charges from both Maternal and Child Health (MCH) and ART departments come together to tally and review their registers to ensure that they have matching data.

#### Improving early infant diagnosis and HIV testing after mothers have stopped breastfeeding:

- To increase the number of exposed babies who get their first DNA-PCR test, staff in the PNC clinic are doing the test in the clinic rather than sending the babies to the laboratory. Staff received on-the-job training from the laboratory technician on how to do this.
- When mothers come for immunisation services in YCC, the staff member who does health education makes an announcement for all the mothers who have stopped breastfeeding to see her; the baby's card is checked for the mother's PMTCT code and if they are eligible, the second or final rapid test is done that very day.

The changes made to date have helped standardise post-natal care in the clinic. They ensure that babies and mothers coming to the clinic receive care in one place and that this care is as efficient and convenient as possible at delivering the services required.

#### **Kisoro's recommendations for starting to work on retention:**

- Measurement of work: The Kisoro hospital improvement team recommends that facilities should measure the number of mother-baby pairs they have in care to ensure that they understand their performance in relation to HIV free survival. In Kisoro, measurement of retention was achieved by using the EID register to find out how many infants are in care and checking the ART card to see whether the mothers of these infants are receiving ART. The mother-baby pair is considered "retained in care" if the baby is in EID care and the mother is in ART.
- The hospital recommends giving the mother and baby pair all services they need to receive that month on the same day. Kisoro hospital received five mothers on one day for the babies' first PCR test, and during the health education session, the health worker informed these mothers that they would receive drug refills, nutrition assessment, immunisation, and post natal review of the mother,

*"The following week, we received about 19 mothers who came with their babies, expecting to receive care for themselves and their babies on the same day."*

-- Joseph, QI Team Leader, Kisoro Hospital



TB screening, and any other service that the mother or baby required for that month. These mothers expressed their appreciation because this meant that they did not have to come back to the clinic several times for different services in the same month.

### **Next steps for Kisoro Hospital**

The first phase of improvement work was targeted to addressing clients who were within the facility, but were not being seen in a coordinated way; the hospital has put in place all the changes mentioned above to address this.

The next phase of improvement work is to find mother-baby pairs who are not coming to the facility for any services.

The hospital plans to start implementing the following changes to find these clients:

- Making phone calls to mothers who have not yet transferred to option B+ and asking them to return to the hospital. Another USAID-funded project, STAR SW, managed by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), will provide cell phone airtime for this activity.
- Having staff assigned to look for specific mother-baby pairs in the community either through phone calls or home visits

### **ABOUT THE PARTNERSHIP FOR HIV-FREE SURVIVAL**

The Ministry of Health, with support from the United States Agency for International Development partners -- USAID Applying Science to Strengthen and Improve Systems (ASSIST), Food and Nutrition Technical Assistance (FANTA), Strengthening Partnerships, Results and Innovations in Nutrition (SPRING), and U.S. Centers for Disease Control partner (The AIDS Support Organisation, TASO) -- is implementing the Partnership for HIV-Free Survival (PHFS) Initiative in 22 phase 1 health facilities in six districts in Uganda.

Using quality improvement (QI) methods, the PHFS supports existing country-specific elimination of mother-to-child transmission protocols and the ongoing nutrition assessment counseling and support activities to achieve four essential steps of postnatal mother-infant care that result in excellent nutritional and HIV care for both the HIV-exposed and non-exposed infants over the first 24 months of life. The partnership is being implemented in Kenya, Lesotho, Mozambique, South Africa, Tanzania, and Uganda.



**USAID**  
FROM THE AMERICAN PEOPLE

USAID ASSIST Project  
Applying Science to Strengthen  
and Improve Systems

## CASE STUDY

### Improving income-generating activities for vulnerable children and families at Agape Nyakibare Civil Society Organization

Income-generating activities and education are priority services for families of vulnerable children, and community savings groups are often proposed as a key intervention to facilitate them. Managing loans to ensure repayment and replenishment of funds is critical for the sustainability of such interventions. In Western Uganda, Agape Nyakibare Civil Society Organization (CSO) introduced changes to improve loan repayment from 38% to 90% in the Tukore Hamwe-Nyakibare community and spread these ideas to six other communities. Agape Nyakibare is one of many CSOs in Uganda providing essential services to vulnerable children and families with support from the United States Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

#### Introduction

Agape Nyakibare is a civil society organisation (CSO) located in Rukungiri District of Uganda that is receiving support from the Inter-Religious Council of Uganda (IRCU). It provides services to approximately 1,300 orphans and vulnerable children in 547 households in Nyakajeme, Buyanja, and Bwambara sub-counties and Rukungiri Municipality. Among the services provided to vulnerable children and their households are economic strengthening activities that focus on building households' ability to meet their short- and long-term needs.

#### The Agape Nyakibare quality improvement team

1. Tumusiime Baptist - Programme manager
2. Tumuramyie Assumpta - M&E officer
3. Kabayo Augustine - Social worker

Selected vulnerable children are provided apprenticeship training for different skills including tailoring, mechanics, and hair dressing. Apprenticeship training is provided for children who cannot continue with formal education for one reason or another. It is considered an alternative to provide skills to youth aged 14 – 23 years. The child is enrolled after discussion with the family and after it is determined that the child cannot be supported to go back to formal education. Some of the children are from child-headed families, and as they are the only bread winners in the household, they need these skills to help them to support their families. At the end of the trainings, start-up kits are provided to support the youth to start their income-generating activities (IGAs). At the household level, adult caregivers are trained in business entrepreneurship skills and supported to form Savings and Loans groups for the purpose of funding income-generating activities and generating start-up capital. Poultry, commercial crop farming, piggery and trading are some of the IGAs the households are involved in.

#### Supporting CSOs to Improve Care Delivery

With PEPFAR funding, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is working in collaboration with the Ministry of Gender, Labour and Social Development (MGLSD), orphans and vulnerable children (OVC) implementing partners, and CSOs to support the application of

JANUARY 2014

This case study was authored by Juliana Nabwire and Harriet Komujuni of University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID). It was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID. The USAID ASSIST Project's support for improving the quality of vulnerable children's services in Uganda is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

quality improvement approaches to services for vulnerable children at the service delivery level and support the national level to coordinate and institutionalize these efforts.

ASSIST led a training on quality improvement in Western Uganda in June 2013, with the aim of orienting CSOs to the approach of using data to identify gaps and testing ideas to improve the process of service provision. The training had 43 participants from seven CSOs; Agape Nyakibare was represented at the training by three staff, including two technical program officers and a monitoring and evaluation officer.

The trainers used baseline data on 13 indicators on services for vulnerable children, collected during the six months prior, to identify areas in which services were below expected levels of performance. Teams were guided in how to use a prioritization matrix tool to select at least two focus service areas for their improvement efforts.

### **Agape Nyakibare's Analysis of Gaps with Savings and Loan Groups**

According to Agape Nyakibare's May 2013 data, 396 out of the 547 (72%) supported households were members of one of the seven saving groups the CSO had formed (each with membership ranging from 42 to 93 households). Of these, 276 (70%) were attending the monthly group meetings, and 253 (64%) were depositing monthly savings with their groups. Each group has its own constitution which stipulates the operational guidelines for the group, including the amount of money to be saved, frequency of saving, loaning and loan repayment. The CSO improvement team received reports from the groups about the failure of members to pay back loans as one of the major challenges affecting their functionality. Because loans were not repaid, the groups' funds were not adequate for other members to borrow and invest in their IGAs.

One group, Tukore Hamwe – Nyakibare, was selected as a case to start the work on improving loan repayments. The group has 93 registered member households and conducts monthly meetings, with an average of 52 members attending regularly. During the monthly meetings, each member is expected to save 1,000 Uganda shillings. At Tukore Hamwe – Nyakibare, eligible members can receive a loan of maximum of 100,000 Uganda shillings (roughly US \$40), which is payable in three months, with a 10% interest. Repayment of the loan is expected within three months from the disbursement date.

In June 2013, the CSO officers started with a data review exercise and found that the register used by the group was only showing members who attended the meeting and those that save, but did not show a schedule for loan repayment. They requested data on loan repayment and noted that the group treasurer did not know those expected to pay back the loans. A review of the group's records showed that 15 members had defaulted by going over the specified three months to complete their payments.

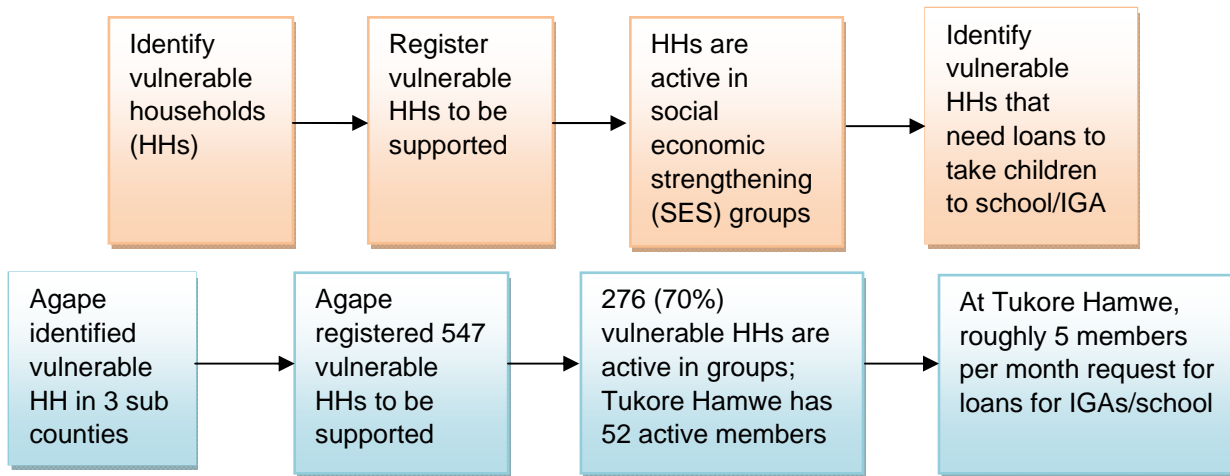
#### **A Caregiver's Experience**

A widow with four school-age children had challenges with her children starting school on time and regularly attending due to lack of school fees. She shared her experience: *"I borrowed money from my group and used it to grow tomatoes. I used the money earned from the tomatoes to repay the loan and buy chicken layers as my new business. I am doing well and now able to take my children to school on the first day."*

### **Changes Tested**

Agape Nyakibare prioritized economic strengthening and food security as focus areas to start improvement work. Following the training, a joint on-site coaching session was held in July 2013 by the MGLSD officials, IRCU staff, and district quality improvement coaches supported by ASSIST staff. The session was focused on following up with those who had received training and had developed improvement aims and plans to improve the focal areas they were going to work on. Under the economic strengthening focus area, a flow chart was used to elaborate the different processes and the steps that need to be followed for the scheme to yield the results it was set out to achieve. These included: members saving regularly, obtaining loans, repaying loans on time, and increasing the group funds (as shown in Figure 1 below).

**Figure 1: Flow chart to show the processes for social economic strengthening at Agape Nyakibare**



Tukore Hamwe – Nyakibare’s group data easily showed the number of members who had failed to repay their loans on schedule but did not, however, show those who were expected to pay within a percentage of members expected to pay specified timeframe. The team was not able to quantify the percentage of members expected to pay who failed to make payments each month. The team was advised to create a column in the register where they would record the due date for repayment against each member’s name. This would show the managers of the group how many members were expected to make loan repayments each month.

The team also modified the group registers to include columns to track members who had borrowed money, when they are expected to repay the loan, and those that had paid on the due date. Data from the months prior was also reviewed and updated at every monthly meeting. The data compilation exercise provided reliable information on the status of households involved in group activities, showing both progress made and remaining challenges.

ASSIST has continued to work with the MGLSD, district, sub-county and IRCU quality improvement coaches to conduct monthly coaching visits to build the capacity of CSO teams to use data to make improvement in the selected areas.

**Results**

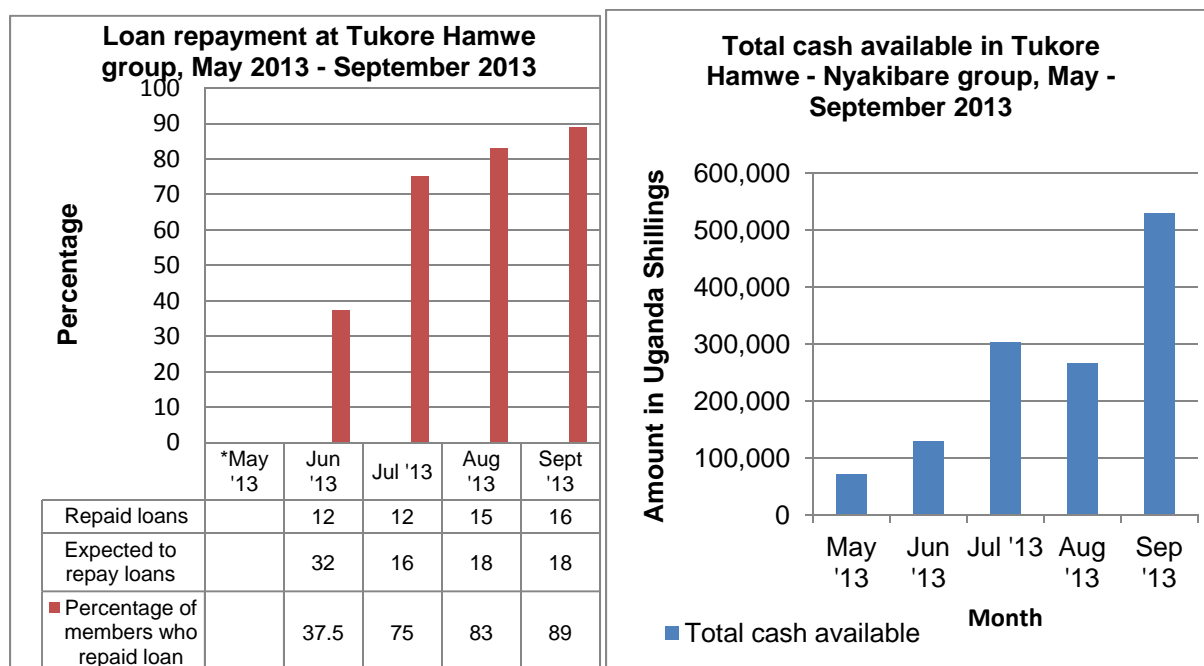
In July, five members applied for loans, but only three received them because the pool of funds was low due to unpaid loans. When changes were made to improve loan repayment, more funds became available to be loaned out to members; all five members who applied for loans in September received the money.

Loan payment improved with an increase in the percentage of group members who repaid their loans on schedule from 38% in June 2013 to 89% in September 2013. This improvement is mainly attributed to the support provided to the CSOs through joint coaching visits. This support includes guidance on improved data collection and management and follow-up of group members in the community to reduce default rates on loans disbursed. In August 2013, the Agape CSO team spread the use of modified registers and the other changes to all seven savings groups. Data collected from six of the groups shows the number of group members who defaulted on loan repayment was only 17.5% (10/57) in September (see Figure 2).

**One Community Loan Group’s Experience**

After the improvement effort, the percentage of members of Tukore Hamwe group who failed to repay their loans decreased from 62.5% in June 2013 to 11.1% in August 2013. There was an increase in the amount of funds available for group members to borrow, from 71, 000 Ushs in May 2013 to 530,000 Ushs in September 2013. These funds enabled member households to fund IGAs to manage the needs of vulnerable children.

**Figure 2: Increase in percentage of loans repaid and cash available at Tukore Hamwe group**



### Changes that Improved Loan Repayment

The ideas that the community groups implemented included:

- Introduced an attendance register and monthly meeting attendance was made mandatory for all members. Members who missed meetings or payment dates were fined.
- The group resolved that they will publically name those expected to pay that month during their monthly meetings.
- A loan committee was formed to assess eligibility of members for loans and actively follow-up with members to ensure loans were used with the desired intent. Members have to complete a loan application form with guarantors as a sign of commitment.
- Members who had ongoing loans were not allowed to obtain another loan until they have fully retired the previous one.
- A group member who resides near a defaulter who does not attend the monthly meeting was assigned the responsibility to follow up with the defaulter. Their assignment was to remind the member to make the payment and also to find out the reasons for none payment so that the group would devise means to support their member.

Agape Nyakibare also opened up files for each group at their offices where they keep group-based data to track participation of each supported household. When households visit the CSO office, the files are reviewed to check if a care giver is actively participating in group activities, including loan repayment, and is informed of risk of losing support for their children due to non-participation.

### Conclusion

The Agape Nyakibare team was happy with the results and plans to continue monitoring this indicator across the groups until all loans are repaid. The team will focus on monitoring regular school attendance for the children of the members of the social economic groups to ensure that the benefits include the children's welfare. Data from August 2013 showed that 22 out of the 91 (25%) children were irregularly attending school due to involvement in domestic work. Group members were asked to follow up with identified households and report in the subsequent meetings. In the September 2013 learning session convened by ASSIST, Agape Nyakibare shared their experience and tools with another nine CSOs.



**USAID ASSIST Project**  
Applying Science to Strengthen  
and Improve Systems

**Inter-Religious Council of Uganda**  
Religions for Peace



## CASE STUDY

# A Fast Turn-around for Mengo Hospital: Improving the Quality of Safe Male Circumcision Services

In December 2012, an external quality audit of the Safe Male Circumcision (SMC) program at Mengo Hospital in Kampala, Uganda, found multiple gaps in compliance with Ministry of Health (MoH) quality standards and recommended that SMC services be temporarily suspended until the issues of concern could be resolved. This case study describes how the hospital's SMC quality improvement (QI) team took quick action to address the performance gaps with support from coaches from the Inter-religious Council of Uganda (IRCU) and the USAID ASSIST Project. Mengo Hospital was able to increase compliance with MoH quality standards in critical areas like surgical procedure and infection prevention from 64% and 69%, respectively, to 100% in less than five months. The SMC improvement work in Mengo Hospital is supported by the United States Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

### Background

Uganda is among the 13 sub-Saharan countries implementing Safe Male Circumcision (SMC) services to prevent HIV infection. Uganda aims to circumcise 80% of males aged 15 to 49 years between 2011 and 2015. The number of circumcisions required to reach this target in Uganda is over 4 million, posing a huge challenge for the health system to rapidly scale up this service.

In 2010, the Uganda Ministry of Health adopted the National Safe Male Circumcision Policy, which emphasizes SMC as part of the national comprehensive HIV prevention strategy. The policy recommends voluntary SMC for all men and makes the service available through the public health system.

Mengo Hospital is a private-not-for profit hospital based in Kampala that is supported by PEPFAR through implementing partner Inter-Religious Council of Uganda. The hospital began offering SMC one day a week beginning in August 2010.

**Mengo Hospital QI Team Members**  
*Namulema Edith, Nanyanga Irene, Nabukenya Susan, Tendo Margrate, Nabakooza Agali, Nbulime Pheobe, Mumbere Asifiwe, Obbo Paul, Nakimwero Rashida, Namara Rebeca, Nakimera Sylvia, Nabakooza Deborah, Nairuba Dorothy.*

In early December 2012, as part of a global safety and quality assurance effort to support countries implementing SMC, PEPFAR conducted an External Quality Assessment (EQA) at Mengo Hospital. The EQA revealed multiple gaps in performance and quality of SMC services offered at the facility. As a result of these gaps identified, the PEPFAR EQA team recommended that SMC services at the hospital be suspended until the issues were solved.

### Taking Steps to Improve SMC Care

To support facilities like Mengo Hospital to address these quality gaps, USAID asked the Applying Science to Strengthen and Improve Systems (USAID ASSIST) Project to provide technical support to the

FEBRUARY 2014

This case study was authored by John Byabagambi, Angella Kigonya, Esther Karamagi and Humphrey Megere of University Research Co., LLC (URC), Edith Namulema of Mengo Hospital, and Albert Twinomugisha of IRCU. We would like to acknowledge the contribution by IRCU and the Mengo Hospital SMC quality improvement team. It was produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

MoH and implementing partners to improve quality and safety of HIV prevention, treatment and care in Uganda, including SMC services. In partnership with the MoH and IRCU, USAID ASSIST began working with Mengo Hospital to mobilize a quality improvement team to look in more depth at the hospital's care process and identify actions to allow the site to resume SMC services.

Coaches from the MoH, USAID ASSIST, and IRCU visited Mengo Hospital in late December 2012 to help the hospital mobilize an SMC quality improvement team and develop a quality improvement action plan. In January 2013, an onsite orientation to quality improvement was conducted to build capacity of the hospital QI team to identify and bridge the gaps. Coaches from ASSIST and IRCU worked with the team to conduct an in-depth baseline assessment of how the hospital fared on a series of indicators measuring seven areas of service quality.

From the baseline findings, the hospital QI team decided to first work on these two gaps:

- 1) The hospital did not have enough reusable surgical kits. The hospital had 25 kits but was seeing an average of 50 clients per service day. Moreover, some of the kits were incomplete, missing basic items such as stitch scissors and needle holders.
- 2) Lack of guidelines for how to manage emergencies in surgery and lack of basic supplies like 50% dextrose.

Based on the MoH guidelines, the team developed instructions on emergency procedures and posted them in the operating room for easy reference. With the need clearly identified, IRCU agreed to support the hospital with more SMC kits and to replenish the missing items for existing kits. The team developed a detailed action plan that highlighted the specific person responsible for carrying out a task and the date by which this should be done.

The Mengo Hospital team continued to get monthly onsite coaching visits from the USAID ASSIST and IRCU staff to support the ongoing SMC improvement work. In May 2013 the Mengo Hospital QI team attended a more detailed, three-day training in quality improvement where they further improved their skills in SMC work and had the opportunity to talk with teams from other facilities that were also trying to improve SMC services.

USAID ASSIST and IRCU coaches conducted a coaching visit to the hospital in mid-May to review progress made and provide on-going support. The team continued to make changes to improve SMC care, including:

- Segregation of clients during group education according to the age group: Clients aged 16 years and above were separated from the 12-15 year olds and given age-appropriate information.
- A written HIV testing consent form for SMC clients was developed and adopted at all counseling sessions. Later, the national MoH consent form was introduced to the site.

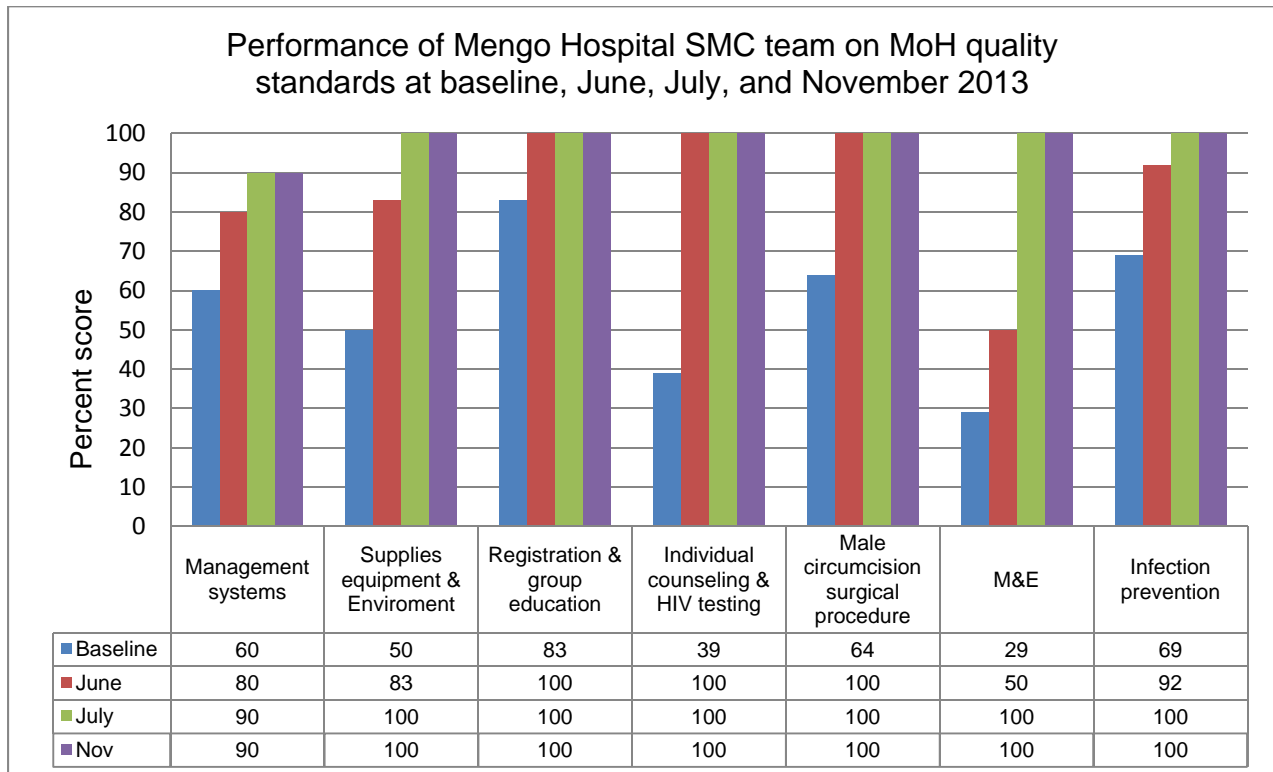
### **EQA Results**

The evaluation team recommended that SMC service delivery should stop temporarily mainly because the hospital was putting children below 10 years under sedation. The EQA report noted: *“Attention to safety (emergency supplies, equipment and training) and adherence to the minimum package for SMC for HIV prevention (syndromic management of STIs, opt-out for HIV testing prior to surgery) are required immediately before service delivery is re-started.”*

The HIV Counselling Program Manager at Mengo noted, *“The counsellor offering individual counselling admitted to hurriedly going through the post test counselling messages and was mainly focusing on HIV test results. She was not recapping the advantages/ benefits of SMC to the client because she was worried about the long waiting time for the whole SMC exercise. After the QI training, the counsellor was able to develop and use a checklist to guide her during the post test counselling session; she noted that there were a lot of issues that are not clear to the SMC clients during the group health education which she had to address in the individual session. She has also learnt that sometimes she may forget some key talking points and that’s why it’s important to stick to the checklist, however experienced she may be.”*

- The circumcision clients' form was modified to capture clients' weight, blood pressure (pre and post operation), intra-operation events, and post-operation follow-up.
- Installed curtains in the operation rooms to improve privacy during the procedure.
- Prepared the emergency tray and invited the hospital anaestheologist to conduct a continuing medical education (CME) session on emergency preparedness.
- Created a post-operative room to offer the immediate post-operative care.
- Instituted in place the proper documentation tools for data capture.

The QI team conducted repeat assessments of their own compliance with MoH guidelines in June, July, and November and found they had improved dramatically in all seven areas of the standards, as seen in the figure below.



### How the Mengo SMC QI team achieved improvement

The QI team reported that the monthly onsite coaching and participation in quarterly learning sessions organized by USAID ASSIST were important to keep them focused and to expose them to ideas from other teams on how to improve SMC services. The creation of specific action plans that noted who was responsible to carrying out each action was useful in that it allowed for each and every task to be completed.

Team members acknowledged that at first, quality improvement was a new concept to most of them.

#### A new perspective on guidelines

*"I never used to look at the penis to check for oozing and proper strapping of the penis onto the abdomen after circumcision and as a result, the numbers of patients with bleeding and hematomas returning in the immediate post operative period was high yet some of this could be handled before the client leaves the clinic. Through QI mentorship we have learnt that it's important to follow all the guidelines because they help to prevent problems."*

**-- Post Operative Nurse, Mengo Hospital**



### **The Implementing Partner Perspective**

*“It gives IRCU great joy to see the success Mengo Hospital has registered in providing quality SMC services despite the gaps and challenges identified at the baseline assessment. The continuous QI mentorship, support and training that was conducted by ASSIST and involving IRCU at all stages has been an excellent learning experience that enabled us to internalise and adopt the QI approaches even beyond Mengo Hospital. Each site is quite unique but once the principles of QI are followed, it can create a positive change as demonstrated at Mengo Hospital. The mentorship and support has been continuous and allowed the actual implementors suggest and test solutions to see their results. The involvement of top leadership of both the Implementing Partner and the site as demonstrated by both IRCU and Mengo Hospital has been invaluable. Great thanks to USAID for the funds provided to facilitate the process and the USAID ASSIST Project for the QI technical support provided to IRCU. With the lessons learnt IRCU will continue to support Mengo Hospital and all other sites to improve the quality of services being provided to the clients.”*

**-- Clinical Services Specialist, IRCU**

Previously, the team was mainly paying attention to getting high numbers circumcised with less attention to quality of services provided. But with the concerted action, the team realized that safety and quality of SMC services could be improved within a short period of time. At the same time, the team recognized that some of the gaps they identified needed external support in order for them to be addressed.

Initially the facility QI team took the assessment to be a fault-finding exercise. However, the MoH, IRCU, and ASSIST coaches persisted in convincing them otherwise and to recognize that using data for improvement should never discourage them.

ASSIST staff noted that creating buy-in and support from the hospital leadership was also key to the success of the QI approach as demonstrated by Mengo hospital leadership team.

The active engagement of IRCU, the USAID implementing partner assigned to support Mengo Hospital, also contributed importantly to the improvement seen at Mengo. IRCU's support and facilitation encouraged the team to act on their QI plans.

### **About USAID ASSIST Technical Support in Safe Male Circumcision**

USAID ASSIST was asked by USAID to provide technical support to Uganda MoH and implementing partners to improve quality and safety of SMC services in 29 fixed sites and 1 mobile van in 27 districts, working with 10 partners: Strengthening TB and HIV&AIDS Responses in East Central Uganda (STAR- EC), Strengthening TB and HIV&AIDS Responses in Eastern Uganda (STAR E), Strengthening TB and HIV&AIDS Responses in Southwestern Uganda (STAR SW), Northern Uganda Health Integration to Enhance Services (NUHITES), Strengthening Uganda's Systems for Treating AIDS Nationally (SUSTAIN), Inter Religious Council of Uganda (IRCU), RTI/ Uganda People's Defense Forces, Health Initiatives in the Private Sector (HIPS), Makerere University Walter Reed Project (MURWP), Supporting Public Sector workplaces to Expand Action and Responses against HIV/AIDS (SPEAR).

USAID ASSIST is providing phased support, starting with intensive support to the 30 sites involving direct activities with these sites and their partners to understand what needs to change to see measurable improvement in the quality of SMC services. Concurrently, light support is provided to the rest of the partner sites to guide duplication of activities at the 30 intensive sites. In April 2014, USAID ASSIST will scale up intense support to 50 sites (adding 20 new sites), and in May 2014, USAID ASSIST will support the MoH and partners to spread the SMC improvement lessons learnt at the first 30 sites to an additional 150 sites.



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID ASSIST Project**  
Applying Science to Strengthen  
and Improve Systems

## CASE STUDY

### Improving retention of children in HIV treatment in Uganda

With support from the United States Agency for International Development (USAID) Applying Science to Strengthen and Improve Systems (ASSIST) Project, a team of health care workers from 47 health facilities and one hospital in 40 districts (48 sites) in Uganda used quality improvement methods to improve retention of HIV-positive children under age 14 on antiretroviral therapy (ART). Dramatic improvements were noted, from 30% of children under age 14 retained on ART in March 2013 before the start of intervention activities to 94% by end of January 2014.

#### Background

Currently 7.3 percent of Uganda's population is living with HIV (Government of Uganda, 2012). Approximately 2.5 million people are infected with HIV in Uganda, including more than 900 children who become infected every year.

Good quality of care is one of the key elements of the right to health. The Ministry of Health (MoH) in Uganda emphasizes quality and patient safety to ensure efficient and effective utilization of resources at all levels of health care. HIV care is no exception to this intention, and in the last decade the Government of Uganda has rapidly scaled up HIV care services to HIV-infected clients at lower level health facilities (levels III and IV) in collaboration with health development partners. However, imbalances in access to equitable services for certain client categories, as for example children, still exist.

In order to contribute to minimizing this inequity, in 2013 the USAID ASSIST Project worked with nine in-country USAID implementing partners (IPs) in 48 HIV treatment centers located in 40 districts in Uganda to improve HIV care and treatment for both adults and children. The work involved a structured improvement approach, called collaborative improvement, where sites worked independently to test out changes in the HIV care and treatment changes and then come together periodically to share results and to learn from each other about which changes were successful and which ones were not. The aim of the improvement collaborative is to ensure access to the entire cascade of HIV care services for both children and adults ranging from client identification through enrollment into care, initiation on ART, retention on ART, and retention in care for those that are not ART-eligible, to improve clinical outcomes for clients in care and treatment across the continuum of response.

#### Interventions

Together with district-based implementing partners, USAID ASSIST identified 48 HIV care centers across Uganda with noticeable challenges in implementing comprehensive HIV care. Following the selection of these facilities, the USAID ASSIST team conducted training in quality improvement for health workers from the selected facilities, and ASSIST, IP staff, together with health unit staff conducted a baseline assessment of the facilities on a common set of indicators to measure HIV performance and service provision gaps in quality of care processes. Gaps in services provision that were noted through the baseline survey included: low uptake of HIV counseling and testing; poor linkages of those testing positive, including HIV-infected babies, into HIV care; poor linkages of HIV/TB co-infected patients to ART; and poor TB treatment completion and cure rates.

MARCH 2014

This case study was produced for review by the United States Agency for International Development (USAID) and authored by Humphrey Megere and Silvia Holschneider of University Research Co., LLC (URC). The case study was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID. The USAID ASSIST Project's support for improving HIV care in Uganda is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

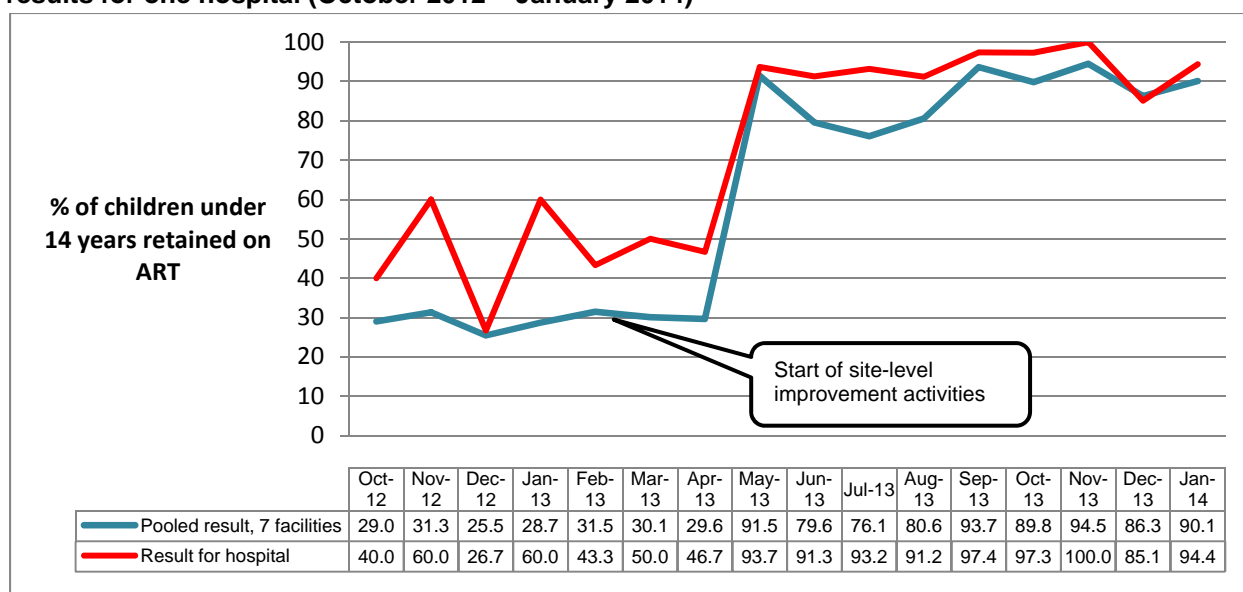
Seven health facilities (six health centers and one hospital) had gaps with retaining children on ART and chose to initiate improvement efforts towards improving children’s retention on ART by working on improving clinic appointment keeping for all children under age 14. To support sites in addressing these gaps, ASSIST, district MOH staff, and implementing partners provided monthly on-site coaching to the quality improvement teams.

Motivated by the support received through the coaching visits, facility-level teams tested several changes towards improving appointment keeping. Initially all facilities assigned a specific staff member to track the health facility’s performance on clinic appointment keeping for children. After this, they introduced other changes. The changes that were noted to be successful included: Pairing mother-baby HIV clinic cards; community follow-up of children missing clinic appointments by expert patients; synchronizing children’s clinic appointment dates with those of their HIV-infected parents or guardians; and engaging the TB DOTS officers to offer home visits and follow-up of children with missed appointments and treatment adherence issues.

## Results

Dramatic improvements were noted at the seven facilities that chose to work on improving retention of children on ART, from 30% of children under age 14 retained on ART in March 2013 just before the start of intervention activities to 94% by end of January 2014 (Figure 1). All children who tested HIV-positive are enrolled in ART, irrespective of their CD4 cell count.

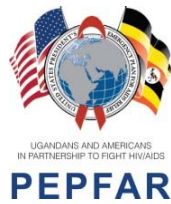
**Figure 1: Percentage of children under 14 years retained on ART, Pooled results for 7 facilities vs. results for one hospital (October 2012 – January 2014)**



In addition, other benefits resulted from the improvement interventions at the participating HIV care centers among which were: improvement in clinic data management and HIV client flow at the clinics; shortened client clinic time and improved clients’ satisfaction; reduction in providers’ fatigue and improved providers’ morale since they were able to complete their clinic tasks in a more timely fashion.

## Lessons Learned

Implementing simple interventions, often at minimal cost, at HIV care centers can result in improvements in patient care processes that are capable of making significant contributions to improve retention in care for HIV clients, especially children. ASSIST is now working to spread what we have learned about improving children’s retention in care to other facilities in Uganda with similar gaps in retention of children on ART.



## CASE STUDY

### The role of improvement teams in managing male circumcision-related adverse events: The experience of the mobile van clinic in Uganda

Since January 2013, the USAID ASSIST Safe Male Circumcision (SMC) team working with Ministry of Health (MoH), district health authorities and implementing partners has been supporting 30 health facilities across Uganda in quality improvement (QI) activities. The support was in form of QI training, supporting sites in QI team formation, monthly coaching and mentorship on national SMC quality standards, performance indicators, quarterly site assessments and quarterly meetings for all teams to share experiences and challenges of implementing improvement activities. This case study demonstrates the importance of quality improvement teams in identifying, investigating and dealing with moderate to severe adverse events secondary to safe male circumcision.

#### Introduction

Today, quality improvement is seen as a science of identifying and closing gaps between expected and actual performance. It hinges on four principles: providing client-centred care, focusing on systems and processes, using own data to guide in decision making, and working as a team. Though all are very important, the latter plays a pivotal role in the success of improvement projects. Improvement teams regularly identify gaps in their care delivery systems and processes, come up with new ideas (changes) for testing, implement those changes, and document the results to identify what changes of the changes being tested worked, needs to be modified or discarded.

After the Ministry of Health taking up SMC as an HIV combination prevention strategy, it developed quality standards which must be adhered to by all partners across Uganda for better service delivery and acceptable clinical outcomes one of which was keep SMC related adverse events within the least minimal levels.

#### Mobile van improvement team members

Masaba Peter (*team leader*)  
Nanyonga Joselyn  
Kizindo Clement  
Kikooba Jim

#### Understanding adverse events

Adverse events are expected or un-expected side effects that may occur during, immediately after, and days or months post SMC procedure. Most of them take a mild form but may need further attention when they progress to moderate and severe forms. According to the MoH's adverse events grading scale, the most common adverse events from SMC include pain, excessive bleeding, swelling, anaesthesia-related events, excessive skin removal, infection, and damage to the penis. The Uganda MoH, World Health Organization (WHO), and Joint United Nations Programme on HIV/AIDS (UNAIDS) advise that moderate to severe adverse events should be limited to an average range of 0-2% of all circumcision procedures. If

#### JUNE 2014

This case study was produced for review by the United States Agency for International Development (USAID) and authored by Ssensamba Jude Thaddeus, John Byabagambi, Angella Kigonya, Esther Nkolo-Karamagi, and Humphrey Megere of University Research Co., LLC (URC). The authors acknowledge the contribution of Nanteza Barbra of the Ministry of Health Uganda and of Jacqueline Calnan, Mercy Mayebo, Rhobbinah Ssempebwa, and Emmanuel Njuehmeli of USAID for providing technical guidance through the conception and implementation of this work and the hard work of the mobile van improvement team members. The case study was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID. The USAID ASSIST Project's support for improving the quality of safe male circumcision services in Uganda is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The mobile van unit is managed by the Makerere University Walter Reed Project with PEPFAR funding through the Department of Defense. USAID ASSIST is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

not handled well, adverse events can scare away probable clients for SMC, lead to poor cosmetic outcomes, anatomical abnormalities, and in the worst case, death. Documentation of all adverse events is very important if they are to be kept in check and stimulate action when they occur.

### **Start-up of improvement activities**

The mobile van is a state-of-the-art clinic operating in Kayunga [home station], Mukono, Buikwe and Buvuma districts providing mobile SMC services supported by the Makerere University Walter Reed Project (MUWRP) with PEPFAR funding through the Department of Defense. The site was first visited by USAID ASSIST in March 2013 for a baseline assessment, and though the site met most of the national SMC quality standards, they had no quality improvement systems in place. That is, they had no improvement team, improvement team meetings were not being held, and available data were not being used to monitor the quality of SMC care provided. This meant that the site had no means to identify, investigate, and deal with any quality flaws, like the rising number of adverse events that was noted.

A USAID ASSIST improvement coach, together with MUWRP and district health representatives, worked with the site to build their skills and capacity to identify quality gaps and come up with aims for improvement of SMC care in the mobile van through:

- Formation of a quality improvement team
- Training the team in quality improvement
- Mentoring the team to start analyzing available data for on service quality through tracking performance indicators and filling in the documentation journal
- Monthly coaching and mentorship visits to handle any quality issues and support the site to define action plans to address issues and gaps

### **Identifying the “adverse events” problem**

To identify quality gaps, improvement teams review and discuss their data, study quality performance trends, and go on to investigate the likely causes of the problems using known improvement methods and tools. “After the quality improvement training, we held a meeting and agreed to start tracking all performance indicators using the documentation journal [a QI tool used to detect changes in performance] and with this, one important aspect that stood out was the adverse events. Before using the documentation journal, we didn’t know that the number of moderate to severe adverse events was on the rise and in a special age group. But after filling it in for some time, we realised that this was happening. At one time it peaked at 5.47%, which was alarming,” reported Masaba Peter, SMC improvement team leader at the mobile van clinic.

### **Problem analysis**

Team members met to discuss the likely causes of the rise in the number of adverse events. Root cause analysis ruled out the issue of infection prevention being the cause. As they brainstormed, the following issues were noted:

- Most of the clients with adverse events were children between the ages of 13 and 15 years.

#### **“We thought everything was Okay”**

*“We thought we were doing well in all aspects of SMC but when USAID ASSIST came and explained the need and functions of a quality improvement (QI) team, it’s when I realised that we were missing out something.”*

--Masaba Peter, SMC team leader  
mobile van clinic (Makerere University Walter Reed Project)

#### **A new perspective on tracking data**

*“I really want to thank USAID ASSIST because we really did not think this was a challenge until we started tracking the data. This is not only helping us in dealing with adverse events but also with other indicators like follow up and partner involvement.”*

-- Abiriga Idi, SMC counsellor

- One of the counsellors noted that when the guardians for most children came, they would just consent for their children to undergo circumcision and they go back home, leaving the children alone at the van without listening to post-operative instructions.
- The nature of adverse events that were presenting showed a relationship with poor comprehension of post-operative instructions as most of them came back with infection secondary to not keeping the wound dry.

### Dealing with the problem: Testing changes

To address this issue, the team made several changes. First, before any group education session, the team would start by explaining the importance of parents/guardians keeping around when their children are circumcised. Challenges of children comprehending the post-operative instructions would also be discussed. The team agreed not to circumcise any children whose guardians would not wait for their children. Though this was a challenge, it paid off in the long run.

Next, information given during post-operation instructions was repackaged so that it could be easier for the children to remember. For example, more demonstrations than talking were done. Finally, team members agreed to meet weekly to review data on adverse events.

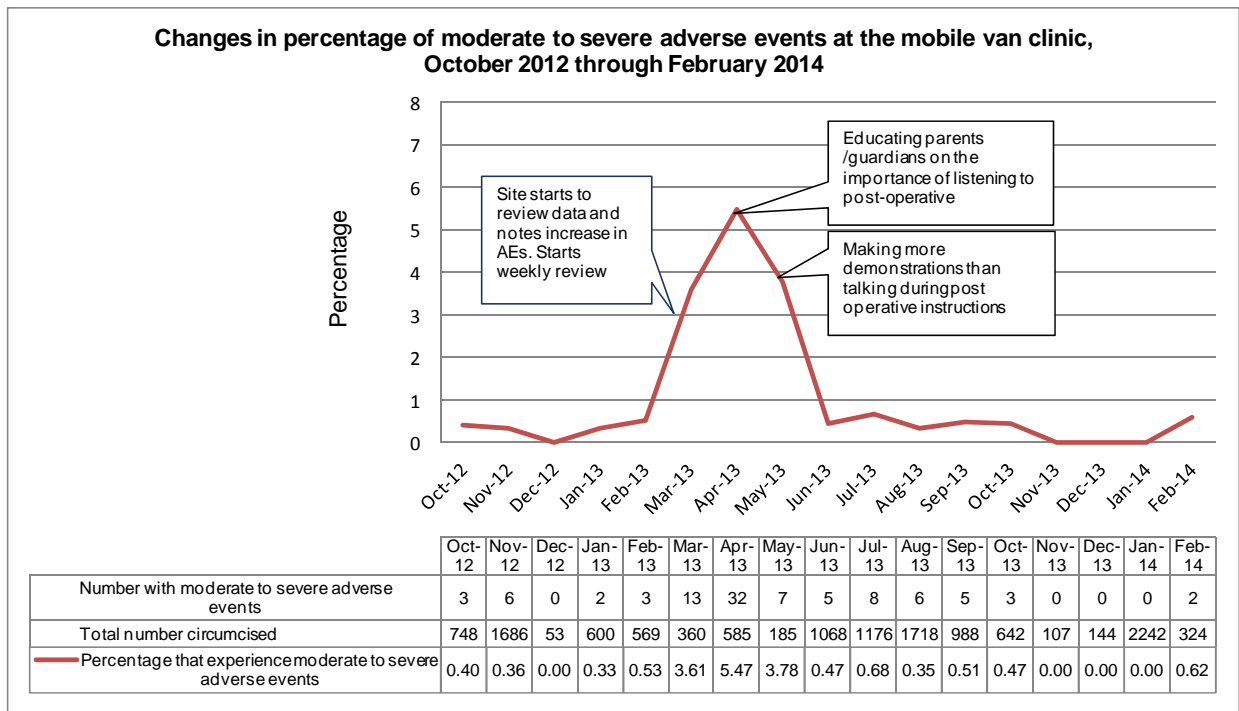
**The way forward**

*"I cannot say that right now we are there, I know that quality improvement is a continuous process so we shall continue to test these changes and other new innovations. I know USAID ASSIST will be with us."*

--Masaba Peter, SMC team leader, mobile van clinic

### Results

With continuous implementation and testing of the above changes, adverse events were reduced from the peak of 5.47% in April 2013 to 0.62% in February 2014 which is within manageable levels. The graph below shows the changes the team tested and their impact on the number of adverse events seen at the facility.



## Conclusion

The experience of the mobile van clinic demonstrates that a fully constituted and functional improvement team is one that meets to identify quality gaps, innovates ideas (changes) for testing, collects data to track performance, and meets regularly to discuss findings from improvement activities. All these play an important role in maintaining good quality care. With orientation to improvement methods and modest coaching support, this team was able to identify and deal with its quality challenge (adverse events) and will be able to handle any new challenges that come up going forward.



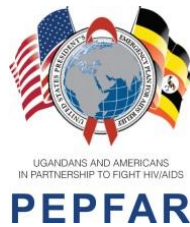
*The mobile van clinic setup during an outreach in Baale sub county in January 2014. Photo by Ssensamba Jude T, URC.*

USAID ASSIST will continue to support the site through monthly coaching visits, mentorships, and technical support and review meetings (learning sessions) to help them achieve their improvement objectives. USAID ASSIST will also scale up the learnt best practices to other health facilities where SMC quality improvement is still a challenge.

### **About USAID ASSIST Technical Support in Safe Male Circumcision**

USAID ASSIST was asked by USAID to provide technical support to Uganda MoH and implementing partners to improve quality and safety of SMC services in 29 fixed sites and 1 mobile van in 27 districts, working with 10 partners: Strengthening TB and HIV&AIDS Responses in East Central Uganda (STAR- EC), Strengthening TB and HIV&AIDS Responses in Eastern Uganda (STAR E), Strengthening TB and HIV&AIDS Responses in Southwestern Uganda (STAR SW), Northern Uganda Health Integration to Improve Services (NUHITES), Strengthening Uganda's Systems for Treating AIDS Nationally (SUSTAIN), Inter Religious Council of Uganda (IRCU), RTI, Health Initiatives in the Private Sector (HIPS), Makerere University Walter Reed Project (MURWP), Uganda People's Defense Forces, Supporting Public Sector workplaces to Expand Action and Responses against HIV/AIDS (SPEAR).

USAID ASSIST is providing phased support, starting with intensive support to the 30 sites involving direct activities with these sites and their partners to understand what needs to change to see measurable improvement in the quality of SMC services. Concurrently, light support is provided to the rest of the partner sites to guide duplication of activities at the 30 intensive sites. In 2014, USAID ASSIST will scale up intense support to 20 new sites and support the MoH and partners to spread the SMC improvement lessons learnt at the first 30 sites to an additional 150 sites.



## CASE STUDY

### Safe male circumcision: Improving client follow-up at Gulu Regional Referral Hospital, Uganda

Gulu Regional Referral Hospital provides safe male circumcision (SMC) services as a part of its comprehensive strategy for HIV prevention. Post-operative clients are offered care on return to the facility. However, clinicians were not aware of standard follow-up guidelines for post-operative care and informed clients to return only for complications or adverse events. As a result, clients did not have information on post-operative follow-up. This case study illustrates the need for facility-based improvement in standardized documentation of client forms and registers to increase and improve post-operative client follow-up.

#### Introduction

Gulu Regional Referral Hospital (GRRH) serves as a centre for referral of health care services for five districts in Northern Uganda. It offers both specialized and general health care services, including provision of SMC as a comprehensive strategy for HIV prevention. The facility is one of the 30 selected health facilities participating in an SMC collaborative improvement activity support by USAID ASSIST. GRRH is supported by the USAID Strengthening Uganda's Systems for Treating AIDS Nationally (SUSTAIN) Project. The site has been offering SMC for HIV prevention for the last three years, initially with the support of the Northern Uganda Malaria, AIDS and Tuberculosis (NUMAT) Project but since March 2013, with support from SUSTAIN.

#### Problem Analysis

Post-operative client follow-up is the care offered to clients up on return to the health facility after circumcision. It entails clinical review of the client to assess the healing of the wound, treatment of any identified complications, reinforcement of post-operative instructions and HIV preventive strategies, provision of condoms, and provision of HIV counselling and testing for those not yet tested. Post-operative follow-up has proved to be a huge challenge in the implementation of SMC in GRRH and across Uganda. Initially, post-operative follow-up care was not being conducted at the facility, and for the very few clients who returned after the procedure, no clear care was offered to them.

Baseline assessment conducted in March 2013 by ASSIST, SUSTAIN, and the Gulu District Health Office showed client follow-up post-operatively to be at 0% at both 48 hours and after 7 days. The assessment established that the team at GRRH was conducting SMC with no clear information on post-operative

#### JUNE 2014

This case study was produced by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Anna Lawino of URC with input from John Byabagambi and Angella Kigonya of URC, Sidhartha Deka of Johns Hopkins University Center for Communication Programs, Rhobbinah Ssempebwa of USAID Kampala, Emmanuel Njuehmeli of USAID Washington, and Roselyn Oyella of Gulu Regional Referral Hospital. We would like to acknowledge the contribution of Jacqueline Calnan and Mercy Mayebo of USAID Uganda for providing technical guidance through the conception and implementation of this work. We would like to acknowledge the contribution by SUSTAIN, Benson Tumwesigye of the Ministry of Health Uganda and the quality improvement team of Gulu Regional Referral Hospital. The case study was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID. The USAID ASSIST Project's support for improving the quality of safe male circumcision services in Uganda is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



follow-up; the clinicians were not aware of the standard follow-up guidelines and were informing clients to return for follow-up only if they had complications/adverse events.

As a result, clients did not receive clear information on post-operative follow-up. Documentation was very poor, with the facility lacking standard SMC data tools; improvised tools were not correctly or consistently filled out to capture whether any clients returned for follow-up. The SMC clinic was opened only during the time of surgical procedure and hence any clients who later returned for follow-up were left unattended or had to go to the general out-patient department for review, where data on SMC follow-up was not captured. Clients who were circumcised at the outreach sites were not followed up since after the outreach, the health facility staff returned to their main facility.

### Improvement Approach

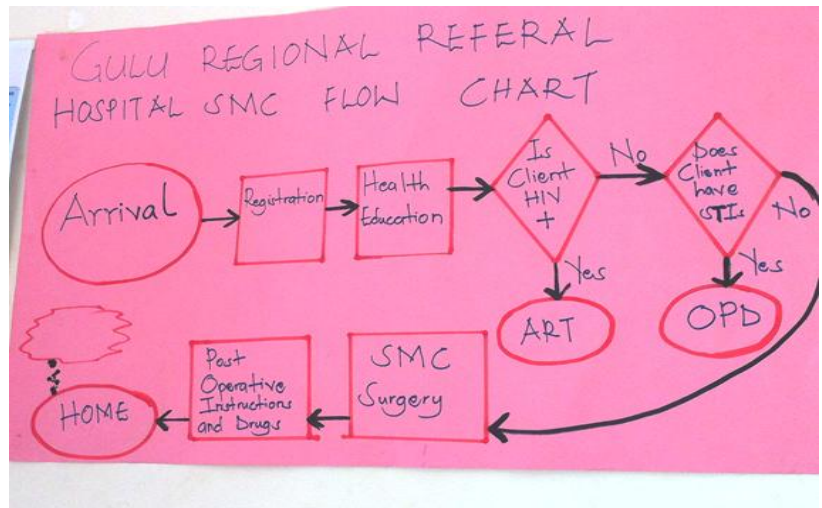
In April 2013, with the support of the ASSIST coach, the staff of the SMC clinic at GRRH formed a quality improvement (QI) team comprised of focal members in the SMC team of GRRH. The team collected and analysed data for client follow-up post-operatively, identified gaps in follow-up, and proposed changes to address the gaps.

GRRH QI Team Members	
1.	Oyella Roselyn
2.	Bulega David
3.	Adong Lilly
4.	Kusaasira Hope
5.	Draru Margret
6.	Lanyero Joan

The data tools used to establish the root cause included the improvised SMC register, client forms, and a flow chart of patient flow in the clinic (Figure 1). The team determined that the root cause of the problem was:

- i) The improvised tools did not capture all data on follow-up visits;
- ii) Incorrect information was being given to clients on follow-up (the staff were informing the clients to return for follow-up *only* if they had complications or adverse events)
- iii) Poor documentation of client follow-up.

The team identified changes they could make with support from SUSTAIN and ASSIST that could address the above problems: i) acquisition of standardized MOH data tools for SMC to capture all data required on follow-up, ii) orientation of staff on the correct use of the data tools, iii) consistent provision of correct information on follow-up to clients, including the importance of returning for post-operative follow-up, iv) giving the national package of care to clients who return for follow-up; v) giving appointment dates to clients for follow-up, vi) assigning one person to update the client records, and vii) having staffs at the lower health units conduct follow-up at the sites of outreach activities.



**Figure 1: The SMC client flow chart developed by the team helped map out the SMC activities for the clinic and clients.**

### Results

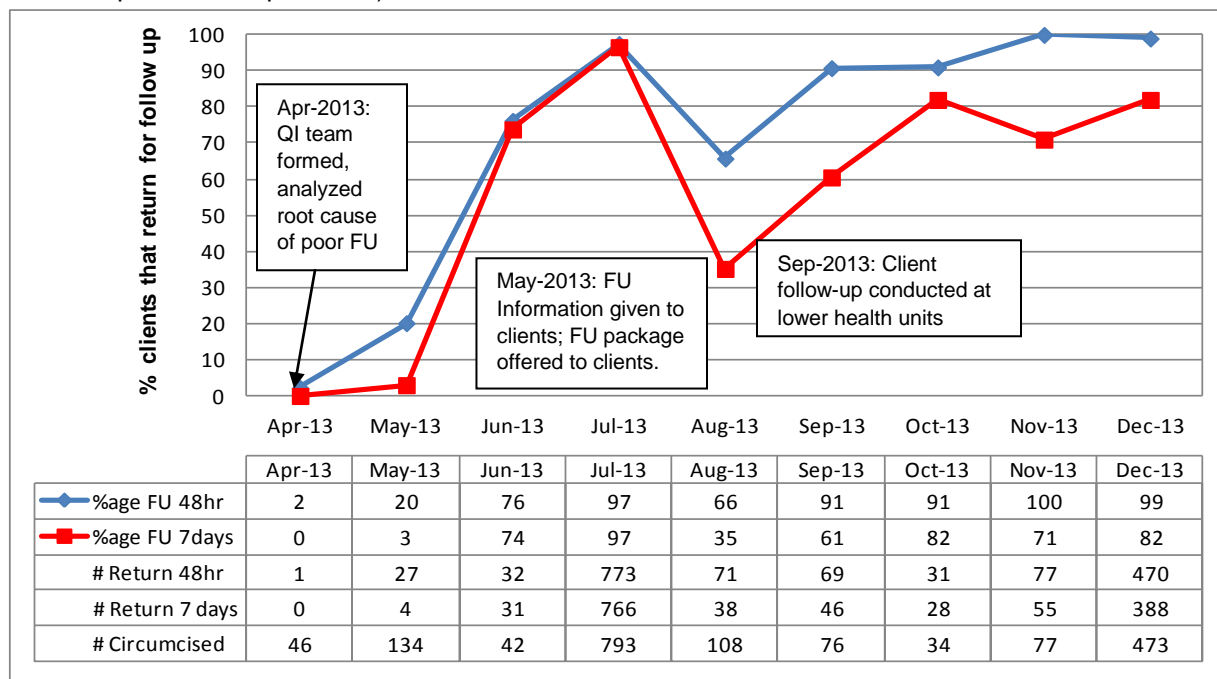
Assessment of the site's performance in December 2013 revealed marked improvement in client follow-up. Initially, only 2% of the circumcised clients returned for post-operative follow-up at 48 hours and 0% returned for 7 days follow-up in April 2013. By December 2013, 99% of circumcised clients were returning for 48-hour follow-up, and 82% of clients were returning for follow-up at 7 days (see Figure 2).

Client follow-up has generally improved with the client forms and registers being correctly and consistently used.

## What Changes Did the GRRH Team Test to Achieve the Results?

### Improving post-operative client follow-up at 48 hours and 7 days

- Capacity building:** The team at GRRH had sessions of medical education which involved monthly mentorship by an external coach from ASSIST and internal orientation of all the other staffs by the QI team to ensure that all staffs had knowledge of the standard post-operative guidelines of follow-up at 48 hours, 7 days, and 6 weeks. Initially, staff were not aware of these guidelines and were not giving clients correct information on client follow-up (clients were being told to come back only if they had complications or problems).



**Figure 2: Percentage of clients that return for follow-up after 48 hours and 7 days post-circumcision at Gulu Regional Referral Hospital, April 2013-December 2013**

**Provision of the national package of follow-up care to clients who came for follow-up:** The package of care offered to clients on follow-up visits was agreed on by the team with the guidance of the ASSIST coach. The standard package included: removal of the bandage dressing, assessment of the wound, health education counselling on wound care and HIV prevention strategies, distribution of condoms, and HIV testing for clients who have not yet had a test before. This follow-up package is the national standard package to be offered to all clients who return for follow-up. These services are provided by the staff in the SMC clinic.

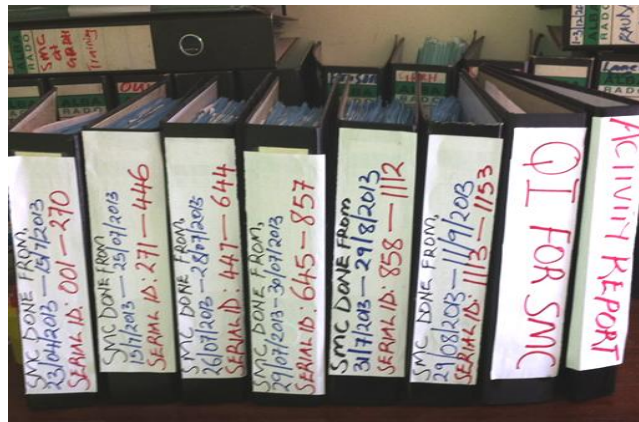
- Consistent information on follow-up:** Information on client follow-up was passed on to clients at all stages of care (that is, during the group education for SMC, individual counseling, and post-operative health education) to ensure that the clients get the right information and that they do not forget.

### Improving data on client follow-up post-operatively

- Standard MOH SMC data tools were requisitioned for and provided by the implementing partner SUSTAIN:** The QI team then held a session to brief all clinic staff on the correct use of the tools.
- The national client cards having client identification numbers were issued to all clients after circumcision, clearly indicating the appointment dates for follow-up:** The identification numbers on the client forms are the same numbers that the staff at the clinic manually put on the client cards. Staff were instructed to note the appointment dates for the client to return for follow-up on the client

card. This client card is issued to the client to take home; it helps to remind the client on the dates to return for follow-up. The cards are also used for tracing the client forms at the facility when the clients return for follow-up. The identification number on this card helps to quicken the tracing process of the client form, which is used to note the clinical assessment of the client. The client forms were used to capture the client's clinical assessment on the day of follow-up; this information was also used for updating the SMC register.

- **One individual was assigned the responsibility of updating the register using the client forms:**  
This task is rotational for each SMC clinic day to ensure that all staffs have competence in updating the register.
- **To make the retrieval process of the client forms easy, the team obtained box files for keeping the client forms:**  
These were serialized with the client identification numbers and the dates of circumcision (see Figure 3). A client coming for follow-up carried along the client card with the identification number which is used for retrieval of the client forms.



**Figure 3: SMC client forms filed according to identification number and date of circumcision for easy retrieval during post-operative visits**

The above changes have greatly improved the organization of work at the SMC clinic and facilitated the clinic's ability to monitor client treatment outcomes, detect potential problems to prevent adverse events before they occur, and enable prompt and proper management for those complications that did occur.

### Lessons Learned from the GRRH Team's Experience

- Formation of QI teams is vital in creating any improvement at a health facility. It offers the basis for identification of the gaps in a system and making the recommended changes. This team routinely reviewed SMC data tools at the facility to ensure quality in the work.
- Capacity building of staff on the standard guidelines for post-operative follow-up at 48 hours, 7 days, and 6 weeks ensured that the health facility's staffs have the right competencies to offer quality care.
- Provision of consistent and correct information on follow-up to clients and standardizing the package of care offered to clients on follow-up visits improved client return for post-operative follow-up since it offered the clients a reason to come back.
- Use of standardized MOH SMC data tools and regular review of records improves the quality of client records and hence, quality of care.
- Enlisting staff at lower level health facilities to also conduct client follow-up after outreach activities proved to be feasible and helped increase follow-up coverage.

### Next Steps for GRRH

The health facility aims to address the challenge of post-operative follow-up at the outreach/camp sites which are often conducted far away from the health facility. The tested change of having staffs of the lower health units conduct follow-up after the outreach activities makes it difficult to document data on follow-up at these sites, since the client forms and registers are returned to the health facility after the outreach. A proposed change to address this challenge is to allocate a register at the health facility close to the site of the outreach for registration of the clients who come for post-operative care at this facility. GRRH staff will routinely come and pick up the register to update the main SMC register at the hospital.

## CASE STUDY

### Increasing viral load monitoring of people living with HIV on ART in Northern Uganda in line with the 90-90-90 global targets

In Northern Uganda, the USAID ASSIST Project has supported Ministry of Health (MOH) sites to increase the percentage of people living with HIV (PLHIV) on antiretroviral therapy receiving viral load monitoring, reaching 73% of PLHIV on treatment and targeted for viral load testing between July and December 2015, with 90.2% of the valid results showing an improvement in viral suppression rates from 88.4% (August 2015) to 92.4% (December 2015). This was achieved through training sessions for 467 health workers from 50 health facilities in 15 districts on the new MOH viral load policy guidelines and monthly quality improvement support.

#### Background

Since 2014, UNAIDS has set a goal to eliminate the AIDS epidemic by 2020 through a three-pronged approach known as 90-90-90. UNAIDS has recommended scale-up of viral load monitoring to achieve the third prong, where 90% of all people on antiretroviral therapy (ART) should achieve durable viral suppression. Research has shown viral load monitoring to be a more effective means of HIV treatment assessment and management compared to CD4 testing and clinical monitoring.

Viral load testing was adopted by the Uganda Ministry of Health (MOH) in its revised HIV treatment guidelines that were rolled out nationally in 2014. Despite adoption of these guidelines, 42,905 PLHIV active on ART in Northern Uganda were still receiving treatment response monitoring using CD4 testing and clinical monitoring as of June 2015. In pursuit of meeting the 90-90-90 targets, USAID ASSIST, in collaboration with the MOH and Central Public Health Laboratories (CPHL), initiated viral load monitoring roll-out in July 2015 at 127 ART sites in Northern Uganda.

#### Steps Taken to Increase Viral Load Monitoring of PLHIV on ART

**Trained health workers to conduct quality viral load (VL) testing:** Two-week training sessions were conducted by CPHL staff for 467 health workers from HIV, PMTCT, and laboratory departments from 127 ART sites in the catchment of three hospitals. The trainings focused on improving facility staff skills on viral load sample collection for testing and transportation to CPHL through the sample/results referral system or hub system. Lab hubs are CPHL-equipped laboratories at higher volume health facilities that serve lower level health facilities by processing their samples and returning their CD4 results, Gene Xpert TB results, CBC, and

**Figure 1: Changes introduced to increase VL testing at selected sites in Northern Uganda**

1. Orient staff, not previously trained, to collect & package VL samples
2. Assign someone to identify eligible clients for VL testing and generate a list which is checked upon testing
3. Open up a VL eligibility register using a counter or an exercise book
4. Have the triaged nurse send all eligible clients for VL sample taking before being seen by clinician or dispenser
5. Inform clients about their VL due dates during their clinic visits
6. Assign staff to transfer VL results into client cards

#### JUNE 2016

This case study was authored by Esther A. Ochola, Judith Aloyo, and Mirwais Rahimzai of University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID). It was prepared under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people and with funding from the U. S. President's Emergency Plan for AIDS Relief (PEPFAR). The authors acknowledge the work of the quality improvement teams at the 127 ART health facilities that ASSIST supports and the contributions of implementing partners, Strengthening Decentralization for Sustainability Project, Strengthening Uganda's Systems for Treating AIDS Nationally Project, and the Uganda Catholic Medical Bureau. We thank staff at the MOH's Central Public Health Laboratories (CPHL) and Jacqueline Calnan of USAID for reviewing the case study. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or send an e-mail to [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

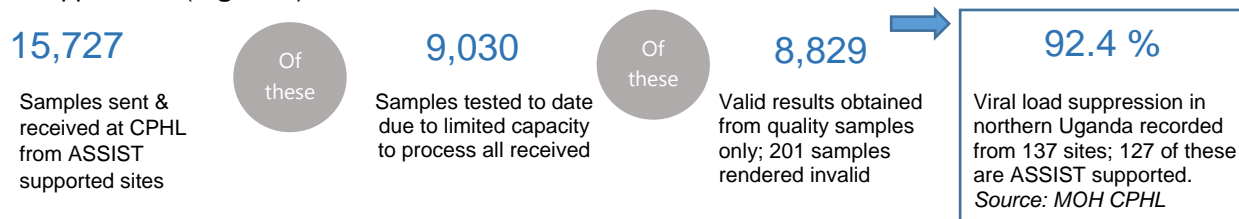
clinical chemistry results. The hubs send on DBS EID samples, TB sputum samples for culture and sensitivity, and viral load samples through the mailing system to the CPHL for processing. Each hub has a number of trained motorcycle riders who pick up samples from lower health facilities. During training sessions, starter VL testing kits and relevant documentation were also distributed to facility staff. ASSIST staff conducted immediate follow-up coaching to ensure that VL testing was being rolled out by the trained teams.

**Applied quality improvement (QI) methods to scale up VL testing:** On-site coaching for 50 high-volume ART sites was conducted within a month of training, and 77 low-volume sites were reached two months later. Coaching aimed to assess progress of VL testing in each site and encouraged sites experiencing slow roll-out to start working on their improvement aims. Changes introduced by sites to increase VL testing are listed in **Figure 1**.

**Strengthening laboratory support for VL testing:** Targeted coaching was conducted at 11 hubs on a monthly basis to ensure that progress toward timely sample collection and results delivery is sustained. Through the assistance of district technical officers, ASSIST tracked the use of VL test kits and dispatch forms to incentivize timely monthly ordering. ASSIST also distributed the supplied collection materials to the ART sites to avoid stock-outs that would otherwise interrupt testing.

## Results

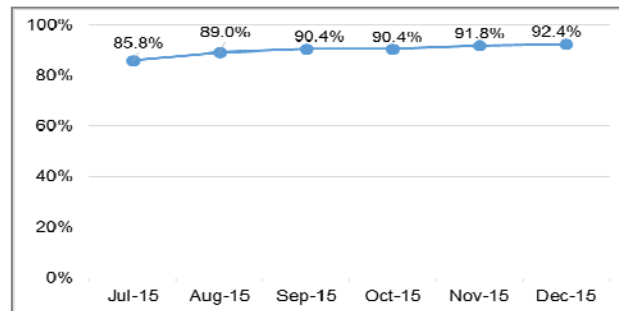
As a result of specific QI efforts, the percentage of ART clients receiving viral load testing improved from 0% in July 2015 to 37% in October 2015 at 30 of the 50 high-volume sites. This improvement was maintained such that 15,923 of a targeted 21,653 PLHIV on treatment at 127 ASSIST-supported ART sites and 13 other non-supported sites in the region received a VL test. Of those who got a VL test recording, 92.4% maintained VL suppression (**Figure 2**).



## Challenges

There have been some setbacks as a result of interruptions in transportation of samples through the hub system mainly due to lack of fuel, test kit stock-outs, and CPHL's limited capacity. However, QI teams are dedicated to the continued implementation of their tested changes in order to achieve 100% access to VL testing. District coaches identified from the 50 intense support sites are now spreading improvement efforts to 82 low-volume sites.

**Figure 2: VL suppression rates, July-December 2015**



## Conclusion

The health facilities in Northern Uganda have been able to implement and scale up VL testing among PLHIV through applying a quality improvement approach with a focus on improving accessibility to the VL test and using the results for clinical decision-making. This performance has shown that achieving and sustaining the third prong of the 90-90-90 strategy in limited-resource settings is very possible.

This study is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.

### USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

**PEPFAR**

## CASE STUDY

# The role of Village Child Protection Committees to support vulnerable children with social services: A story from Katuba Village, Uganda

### Summary

In Katuba village, a village child protection committee was formed to support vulnerable children in the community (mainly those affected and infected with HIV) to access social services. The village child protection committee and the Community Development Officer supported the identification of vulnerable children with HIV and linked them to care. Their caregivers formed a village savings and loan association through which they saved and started up an income-generating activity which has enabled them to support their children to stay in school and maintain income at the household level.

### Introduction

HIV and AIDS is still endemic in Uganda. The two rounds of AIDS Indicator Survey show that HIV prevalence in the general population increased from 6.4% in 2004 to 7.4% in 2012. In Mukono District, the HIV prevalence rate is 7.3%, with HIV rates as high as 22% in areas around Lake Victoria.

In April 2013, USAID ASSIST and the Ministry of Gender, Labour and Social Development (MGLSD) selected Katuba Village in Mukono District as one of the 79 villages across four districts that would serve as demonstration sites to improve access to services for vulnerable children through the formation and actions of village child protection committees (VCPCs), made up of resourceful persons who work together to ensure protection and wellbeing of vulnerable children in their communities.

The communities implemented various activities including:

- Identifying HIV-positive vulnerable children in the community and linking them to care
- Supporting HIV-positive caregivers to start up group income-generating activities to raise funds to meet their children's needs
- Formalizing caregivers' group activities through registration at the sub-county level in order to access additional support from community-based organizations and implementing partners.

### Achievements of the Katuba VCPC

**5** HIV-positive children were identified in the community and linked to care and treatment

**30** vulnerable children stayed in school with scholastic materials and other needs

**10** children received scholarships to cater for their education

**88%** of vulnerable children in the village were linked to social services

### Formation of the Katuba Village Child Protection Committee

The Community Development Officer (CDO) and parish chief worked with the Katuba village local council to organize the existing community resource persons who include: Village Health Team (VHT) members, religious leaders, and local council officials in charge of children affairs who were organized into one representative committee that would be responsible for children affairs in the village. The CDO oriented

### JUNE 2016

This case study was authored by Esther Nassali, Juliana Nabwire, Esther Karamagi, and Mirwais Rahimzai of University Research Co., LLC (URC) and Nsangi Immaculate of Mukono district local government. It was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people and with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The authors would like to acknowledge Ms. Jane Nabawanuka from Kaluba Village savings and loans association for sharing her story and Ms. Jacqueline Calnan of USAID for reviewing the case study as well as Sustainable Comprehensive Response for Vulnerable Children and their Families (SCORE), Uganda Private Health Support (UPHS) program, and Mukono district local government community development department. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or send an e-mail to [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

the newly selected VCPC members on their roles. The committee held its first meeting in October 2014 and now holds bi-weekly meetings at the local vice chairman's residence.

## **Improving Support of Vulnerable Children Living with HIV**

The Katuba VCPC worked with their sub-county CDO to first analyze the issues facing vulnerable children in their village. The committee found out that many of the vulnerable children came from homes affected by HIV and AIDS, experienced high levels of poverty with unemployed caregivers, and were exposed to sexual abuse. Identified HIV-positive children were linked to HIV care, and those who are already accessing HIV care were provided with psychosocial support to enable them to adhere well to treatment.

Other challenges included school drop-out rates and irregular school attendance because caregivers were not able to pay the school administrative charges along with lunch and scholastic materials. The children whose caregivers were employed in horticulture farms were often left unsupervised and therefore exposed to sexual abuse. Local leaders in the village felt that the situation was complex, especially with little to no action taken when cases of abuse and neglect were reported.

## **Changes Tested by the Katuba VCPC**

### **1. Formation of the Village Savings and Loan Association group**

In April 2014, the VCPC supported and empowered caregivers to form a village savings and loan association group (VSLA). Twelve out of 30 caregivers registered were able to form a saving group. The caregivers selected one of their homes where they meet on a weekly basis, selected leadership, and agreed to save a minimum of 1,000 UG Shillings on a weekly basis. The caregivers set out major goals for their group, such as setting up a joint economic strengthening project and providing interest-free loans to buy scholastic materials for children of school-going age. The 12 caregivers in the VSLA started saving in April 2014 with each individual contributing 3,000 UG Shillings. By the end of the first month, the group had accumulated 120,000 UG Shillings. By February 2015, seven registered caregivers were able to access interest-free loans from the VSLA group. As a result, thirty vulnerable children, whose caregivers were registered in the VSLA, were kept in school with scholastic materials and funds for lunch, uniforms, and administrative costs.

### **2. Identification of HIV-positive children**

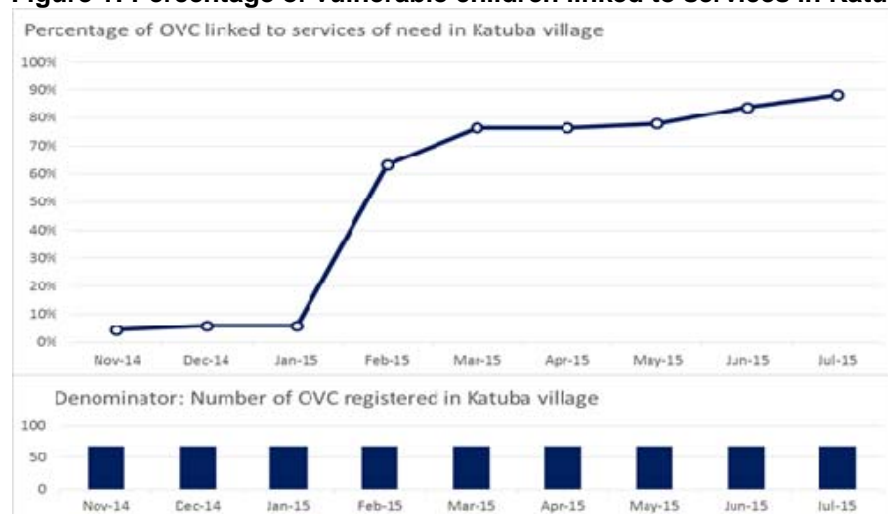
The Katuba VCPC members identified five HIV-positive children living in two households after they had lost their parents to HIV. The children were enrolled into HIV care at a health facility. The VCPC members engaged relatives to take them up after the death of their parents. The VCPC followed up with the children on a biweekly basis to ensure that they keep their appointment dates and adhere to their treatment.

In addition, the VCPC successfully advocated for further support of vulnerable children from the sub-county and community-based organizations. Ten children received scholarships, seven children received textbooks, and the committee also provided psychosocial support to children infected and affected by HIV. By July 2015, the VCPC had been successful in linking 60 registered vulnerable children to services such as scholarship opportunities and psychosocial support counselling, among others. Children's regular school attendance also improved from 52% (30/57) previously reported at the baseline to 100% (57/57).

## **Results**

As a result of the efforts of VLSA, thirty vulnerable children whose caregivers are registered in the village saving group were able to access scholastic materials, regularly attend school and have at least three meals a day. In addition, another 25 children, whose caregivers were not registered in the VLSA, were also able to benefit and accessed services through advocacy for vulnerable children with community-based organizations. Five HIV-positive children were identified and enrolled into HIV care. In total by July 2015, 88% (60/68) vulnerable children had accessed critical services such as scholastic materials, education scholarships, and psychosocial support counselling, and all were regularly attending school (see **Figure 1**).

**Figure 1: Percentage of vulnerable children linked to services in Katuba Village**



### Way Forward

The Katuba VCPC intends to continue identifying more HIV-positive vulnerable children in the community and enroll them at the health facility for care and treatment. Basing on their successful experience, the Katuba VCPC has made a one-year plan to include more community members to constitute a group of at least 30 members who will be provided with a minimum of two birds to start up an individual poultry farm. It is expected that within that period, caregivers would have acquired skills of caring for the birds and capital will have accumulated to buy more birds. The caregivers will produce and market their poultry products as a group, with each farm contributing and sharing the proceeds thereafter.

#### Experience from one beneficiary:

“I am hopeful life will be much better now that I can afford to pay for my sick child’s medical needs.”

Asked about her experience joining the Katuba village savings group, this 48-year-old mother was widowed due to HIV since 2008 and struggled to provide for the basic needs of her six children. To provide for her children’s education, food, and medical care; she set up a small roadside stall next to her home, where she sells fresh vegetables. As a member of the VSLA, she got a loan of 100,000 UG Shillings to increase the stock of products at her stall to earn more money. With increased earnings, she has been able to pay for her children’s needs, including taking one of them to the national referral hospital for HIV care and cardiac specialist services.

### Conclusion

The Katuba VCPC’s adoption of quality improvement approaches led to the successful identification and linkage of five HIV-positive children to care and treatment and improved the support of vulnerable children in the village, not only in terms of economic empowerment of their households but also in retaining 40 vulnerable children in school. The Katuba improvement model can be sustainably scaled to communities struggling to care for orphans and vulnerable children in other parts of the country.

This study is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.

### USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project

University Research Co., LLC  
Uganda: Plot 40 Ntinda II Road, Kampala  
USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



**USAID APPLYING SCIENCE TO STRENGTHEN  
AND IMPROVE SYSTEMS PROJECT**

University Research Co., LLC  
7200 Wisconsin Avenue, Suite 600  
Bethesda, MD 20814

Tel: (301) 654-8338

Fax: (301) 941-8427

[www.usaidassist.org](http://www.usaidassist.org)



MINISTRY OF HEALTH



## CASE STUDY

# Improving Utilisation of GeneXpert Testing at Five Lab Hubs in Northern Uganda

The GeneXpert test is a molecular test that detects Tuberculosis (TB) bacteria DNA as well as some genetic mutations associated with TB treatment resistance. The test uses samples like cerebrospinal fluid and pleural fluid and gives results in less than two hours. Since January 2016, the USAID Applying Science to Strengthen and Improve Systems project (ASSIST) has supported five district laboratory hubs in northern Uganda that have GeneXpert machines to increase the TB case notification rate by increasing the number of samples processed using the GeneXpert machine. In only one month, the facilities raised the number of GeneXpert samples processed from a total of 91 samples to 164 samples through testing changes including assigning a focal person to oversee GeneXpert utilization by placing sputum containers at the HIV clinic. The laboratory team greatly improved the quality of records management by improving the accuracy and completeness of all information in laboratory TB register. Weekly reporting to the national TB reference laboratory on the GeneXpert tests done at each facility also improved. This case study emphasizes the simple steps that facility quality improvement (QI) teams took to make these changes without additional resources and in a short time period.

## Introduction

Tuberculosis (TB) continues to be a major public health problem, with 8 million cases and up to 1.5 million deaths each year (Global TB report, 2015). To reduce the burden of TB disease, case detection and treatment gaps should be addressed to interrupt transmission chains and therefore reduce individual morbidity. Sputum smear microscopy, the most widely used test for diagnosing TB, has a sensitivity of only 50% of active cases. This contributes to a delay in diagnosis which results in continued transmission. Sputum smears with chest X-ray (CXR), where available, are the tests routinely applied for TB diagnosis, however their inaccessibility and cost make it prohibitive for rural settings like northern Uganda. Case notification for TB in the 16 districts in northern Uganda is at 134/100,000 (Annual Health Sector Report) compared to the national target of 161/100,000. It is crucial to implement

### **Data tools for recording TB activities:**

**Lab TB register:** contains the patient bio-data

**Unit TB register:** This register contains all information of patients on care provided to TB patients

**Presumptive TB register:** This book is used to record all the presumptive TB cases and those screened and found to be having signs and symptoms of TB.

## **DECEMBER 2016**

This case study was authored by Joseph Nturo, Isabel Kyobutungi, Esther Ochora, Pamela Donggo, Judith Aloyo, Alex Muhereza, and Julian Nabwire of University Research Co., LLC (URC). We would like to acknowledge the contribution by Francis Okello (Apac Hospital Hub), Olga Icaka (Amolatar HCIV Hub) Patrick Otto (Anaka Hospital Hub) Oketta Charles Ayoio (Madioppe HCIV Hub) and Sanon Opoka (Kitgum Hospital). It was produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; Health Research, Inc.; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; Women Influencing Health Education and Rule of Law, LLC; and the World Health Organization Patient Safety Programme. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

improved diagnostics in this region in order to attain timely case detection and management of TB; and to reduce mortality, transmission, and prevalence of the disease.

## **Background**

ASSIST began working to improve GeneXpert services at 5 laboratory hubs in the Northern Uganda region in April 2016, (Kitgum Hospital, Anaka Hospital, Apac Hospital, Amolatar HC IV, and Madi-opei HC IV) with an aim of increasing the number of GeneXpert samples processed at each of the five health facilities. In April 2016, at the five hubs, the TB case notification rate was at 6.7% in comparison with the MOH expected notification rate of 32.2% from all hubs. This low percentage was a result of low utilization of the GeneXpert machines.

## **Methods for Improvement**

Scaling-up the use of GeneXpert does not explicitly mean increasing the number of machines procured and installed in the region; optimization of the current resources is necessary. It is more important to first make sure the current machines are being used up to their optimal capacity. In March 2016, ASSIST together with MOH teams conducted a GeneXpert utilization assessment in the Northern region, this revealed the following gaps:

### **Changes tested by facility teams to improve GeneXpert utilisation and documentation**

1. Adding sputum samples on a list of samples to be transported by hub riders.
2. Assigned a focal person to oversee GeneXpert utilisation.
3. Facility Mentorship was done to staff on GeneXpert utilisation
4. Timely ordering of cartridges for the gene x-pert machine to ensure continuity of GeneXpert testing services
5. Weekly phone check ins with the laboratory teams to monitor progress towards agreed action plans especially weekly reporting

1. All five GeneXpert machines can run up to 16 samples per day however weekly data showed that on average 25 samples were run per week (five samples per day), a total of only 91 samples had been processed using GeneXpert machines.
2. Facilities lacked systems to make it easy for patients to access the test; lab teams tasked patients to only provide early morning samples instead of spot samples.
3. Data about samples processed in the different registers was inconsistent which meant that the facility had no clear way of measuring samples processed by the GeneXpert data.
4. Interruption of operations due to electricity outages.
5. GeneXpert cartridge stock-outs in the region.
6. No standard systems in place to monitor stocks, distribution and consumption of GeneXpert cartridges at facility level.

In order to optimize the use of the machines, development of facility based plans were made against the national TB and MDR-TB case detection targets.

In April 2016, ASSIST regional laboratory coaches carried out a mentorship to discuss the findings of the assessment and to share the data with the facility teams. The facility QI teams then carried



*An ASSIST supported GeneXpert hands-on mentorship at Amolatar HC IV. Photo by Nturo Joseph, Laboratory technical officer, URC*

out a problem analysis to determine the root causes of low numbers of samples processed by the GeneXpert machine and poor data quality. The QI team proposed and tested the following changes to improve the two focus areas.

**The most effective change and how it was done**

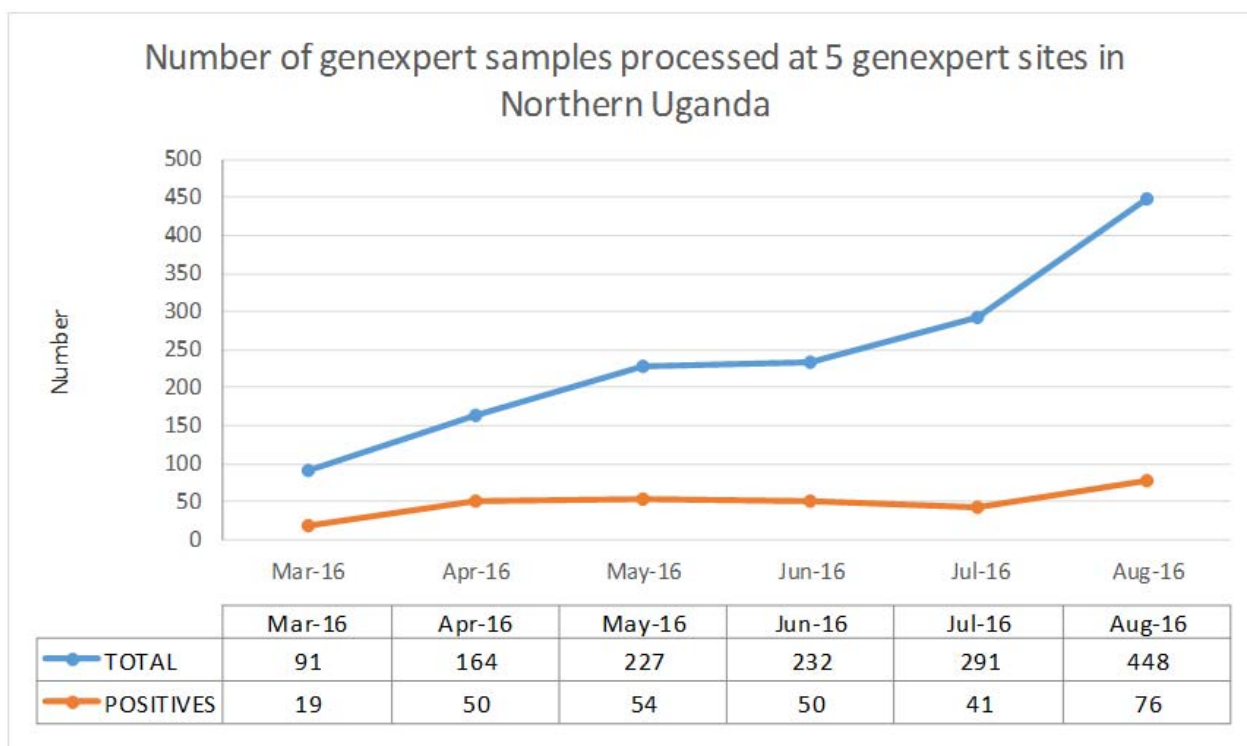
Of the changes tested, timely ordering of cartridges for the GeneXpert machine to ensure continuity of GeneXpert testing services was the most effective change at all five laboratory hubs and health facilities. They conducted it through the following steps: a focal person was assigned at each hub to do regular stock taking and physical counts of available cartridges; contact details were also provided to the staff on a focal person from the national TB and leprosy program for quick contact and action on cartridge stock outs; ASSIST conducted mentorship of the teams in logistics management; ordering and receiving GeneXpert supplies; and did weekly phone check ins with the health facility staff to monitor stocks until their ordering system stabilised.

**Results**

Following the implementation of these changes between April 1st and 30<sup>th</sup> July 2016, the teams managed to increase the number of samples processed from 164 to 291. The number of positives identified also increased from 19 to 50 in one month. From March 2016 to August 2016, the five sites increased the number of patients tested from 91 to 448. During the same time frame, the number of positives identified increased from 19 to 76 (**Figure 1**).

To improve on weekly GeneXpert data reporting, phone calls were made to focal persons to remind them on reporting GeneXpert data. Reporting subsequently increased at all 5 reporting sites. From 0% (March 2016) to 100% (May 2016). TB case notification within the hubs also improved from 6.7% in April 2016 to 10% in August 2016 (within 4 months).

**Figure 1: Number of GeneXpert samples processed and number of TB-positive patients identified, five sites (March 2016-August 2016)**



### **Lessons learned**

- Increasing number of GeneXpert samples run increases the Case Notification Rate (CNR) (Positives).
- Contacting the GeneXpert focal person at National TB Reference Laboratory (NTRL) reduces stock out of cartridges.
- GeneXpert mentorship at Amolatar HC IV including sputum samples on the list of samples to be transported increased number of samples processed at the GeneXpert sites.

### **Next Steps**

All laboratory hubs will be installing GeneXpert alerts to avoid data discrepancies and ease monitoring of GeneXpert utilisation. GeneXpert referral forms will be distributed to all supported health facilities in the region. To guide health workers in the region in identifying presumptive TB patients, collecting sputum samples, and referring them for GeneXpert testing, GeneXpert testing algorithms will be distributed.

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

**USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



## CASE STUDY

### Systematic approach to improving six-week post voluntary medical male circumcision follow-up at Moroto Regional Referral Hospital in Uganda

Moroto Regional Referral Hospital (RRH) located in Uganda's Karamoja Region had been struggling to improve the post-circumcision follow-up rate beyond seven days (six weeks) for some time. This would enable the circumcision team determine the final health status of their client and provide timely intervention when needed. During the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project's joint coaching and mentorship with SUSTAIN the Moroto RRH voluntary medical male circumcision (VMMC) quality improvement (QI) team was supported to systematically analyse the root causes and come up with various possible solutions to improve the six-week post-operative follow-up until the idea of making phone calls to remind clients was adopted and facilitated by SUSTAIN. The phone calls were mainly to remind clients to come for follow-up, however for those who could not come to the site, their wound healing status was obtained and action taken accordingly. Through these calls, two clients were identified with complications and managed in time when they would otherwise have been missed. The proportion of clients whose six-week post-operative follow-up status is known increased from as low as 0% in July 2015 to 100% in March 2016 and has been maintained above 80% for the last six months.

#### Introduction

Karamoja Region is a priority area for scale-up of voluntary medical male circumcision (VMMC) and other HIV prevention interventions in Uganda because of the rapidly increasing HIV prevalence from 3.5% (UAIS 2006) in 2006 to 5.3% and highest syphilis prevalence compared to other ethnic groups (UAIS 2011). Moroto Regional Referral Hospital (RRH) is a Government referral hospital in the region serving seven districts of Karamoja region and supported by USAID-funded Strengthening Uganda's Systems for Treating AIDS Nationally (SUSTAIN) project to implement HIV care, treatment, and prevention programs including VMMC. The USAID

#### VMMC QI team members

Niyigena Susan – Nursing officer  
Angolere Mary – Anaesthetic officer  
Okwir Moses – Medical officer  
Atim Choudri – Medical officer  
Buyi Alex – senior orthopaedic officer  
Afayoa Keneth – Orthopaedic officer  
Matovu Joseph - Orthopaedic officer  
Lochoro Flavio -Medical officer  
Keem Jackson - Anaesthetic officer  
Odaka Paul - Nursing officer  
Acio Catherine – Nursing officer  
William Oola - Theatre attendant

#### December 2016

This case study was authored by Albert Twinomugisha, John Byabagambi, Anna Lawino, Tamara Nsubuga-Nyombi, Angella Kigonya, Esther Karamagi, and Mirwais Rahimzai of University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID). It was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible through the generous support of the American people through USAID and with funding support from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). We would like to acknowledge contribution from Sheila Kyobutungi and Jacqueline Calnan of USAID Uganda, and Emmanuel Njeuhmeli of USAID Washington. The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WIHER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write to [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com)

Applying Science to strengthen and Improve Systems (ASSIST) project has been working jointly with SUSTAIN at Moroto RRH to improve the quality of circumcision services being offered.

### **Problem Statement**

In order to ensure that the clients who receive VMMC for HIV prevention are safe and healing properly, the Ministry of Health (MOH) recommends three VMMC post-operative follow-up visits: within 48 hours, beyond 48 hours but within seven days, and beyond seven days commonly known as “six-weeks post-operative follow-up.” These follow-up visits or reviews enable the health care providers ensure that the clients are healing well, identify and manage any possible adverse events before they worsen and become more complicated if at all.

The VMMC quality improvement (QI) team at Moroto RRH has for a long time been reporting very low proportions of VMMC clients that return for the six-week post-operative follow-up, even as low as 0% in many months. The QI team supported by ASSIST, analysed this problem and tried out various changes or strategies to resolve this gap. The journey has not been quite smooth but yielded results as explained below.

### **Implementation of the QI Work**

During the baseline assessment that was done in 2014, a number of issues for improvement were identified across various indicators including low 48-hour post-operative follow-up, low seven-day post-operative follow-up, not all circumcised clients had fully signed consent, and very low six-week post-operative follow-up, practically zero. The QI team was supported to prioritize and together they agreed to first address the more pressing gaps, like improving 48-hour follow-up, the proportion of clients with properly signed consent, and seven-day post-operative follow-up.

After achieving satisfactory results in previous QI indicators, the QI team decided to start a QI project to improve the proportion of clients reviewed six-weeks post-operatively. The problem analysis done during brainstorming identified that there was not much emphasis of the six-week post-operative follow-up visit during client health education. The emphasis of six-week post-operative follow-up was done on the day of circumcision during client education but this did not yield the desired results.

The QI team then decided to change this and decided to emphasize the six-week post-operative follow-up visits to the clients who were coming for the 48-hour and seven-day post-operative review since more clients were turning up for these visits. Despite these two changes, the team still did not see improvements. During one of the coaching visits with ASSIST and SUSTAIN, the QI meeting discussions prompted the team to get some client feedback to find out why they were not coming for the six-week post-operative review. This was done to help understand and choose the best solution and a few clients who had phone numbers registered were

*“At Moroto RRH initially we were conducting VMMC with no clear data, no proper post-operative follow-up, pre and post-operative care was inadequate all because of lack of knowledge on the standards and quality improvement process. ASSIST together with SUSTAIN during the joint coaching visits enabled us to see our gaps in the quality standards and quality improvement indicators including 48-hour follow-up, seven-day follow-up and six-week post-operative follow-up. As a team we managed to improve most areas except for the six-week post-operative follow-up that remained very poor usually 0% for over one year despite emphasizing the need for the follow-up at all contacts with the clients. We decided to introduce a focal person to track these clients but there was no phone and airtime. First attempted to use our phones but this was not sustainable. On expressing this need, SUSTAIN provided us with a phone and airtime (phone credit) to use to call and remind the clients about the six-week post-operative visit. When we started calling, a good number of clients came back for the review and for those who could not come to the facility, we were able to get clear information about their post-operative status and advise accordingly. This was all documented in the follow-up counter book and later used to update the SMC reaster.” – SMC QI Focal Person*

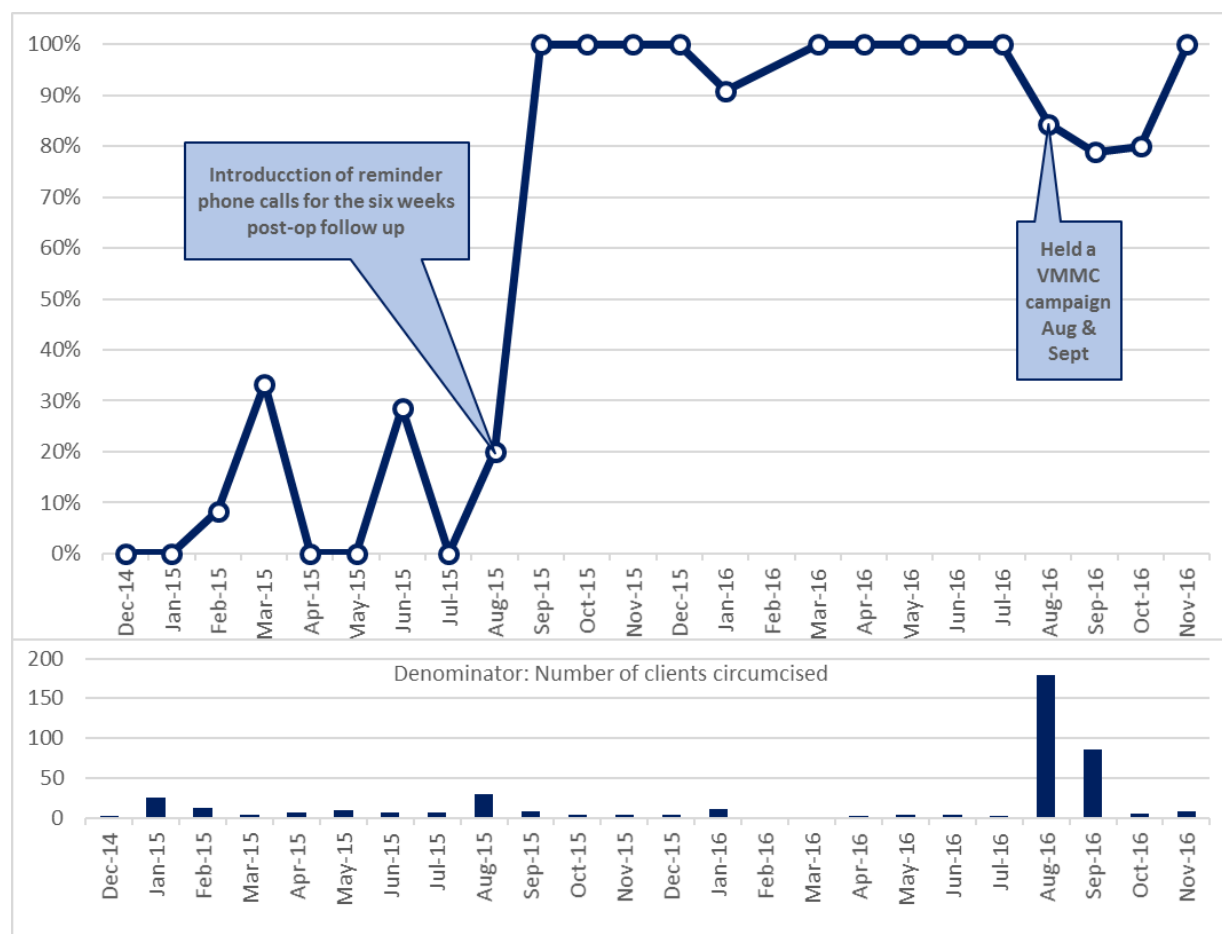
called. Without considering any statistical methodologies and significance issues, the common reasons mentioned were: forgetting, distance too far to come back for follow-up, seeing no need to come since healed well, and students returning to school.

This triggered the team to adopt the use of phone call reminders with the primary reason to remind clients of their six-week post-operative follow-up. But, if a client said they cannot come due to one reason or another, the health care worker would probe to find out about the status of the VMMC wound and clearly document the feedback in an improvised phone follow-up section/column of the group education register and later update the Safe Male Circumcision (SMC) tools.

### Results

The proportion of VMMC clients who came back for the six-week post-operative review or who at least had their six-week post-operative status or condition documented greatly improved and has been maintained above 80% for the last six months even during the VMMC campaign held in August and September 2016, as shown in **Figure 1**. This has also enabled the QI team to identify two clients who reported complaints (infection and some insufficient skin removal) to be treated in time; cases which would have otherwise been missed or could have developed in more serious adverse events.

**Figure 1: Proportion of circumcised clients who return for six-week post-operative review, Moroto RRH (December 2014-Nov 2016)**





## Changes that led to improvement

The use of phone calls primarily to remind circumcised clients to come for the six-week post-operative review. Those who could not come for review at the facility were assessed during the phone call. The health worker would find out the status of the circumcision wound and wellbeing of the patient and document it.

The QI team identified a focal person to be responsible for calling the clients, the source of the airtime to make phone calls, when the phone calls were going to be done (every Tuesday), where the documentation was going to be done, how and when to update the SMC MOH data tools and collected data on routine basis. This enabled the QI team to be able to track the performance and this demonstrated that phone call reminders can be used for six-week post-operative follow-up but requires setting up clear systems and process to ensure the activity runs on smoothly with proper documentation. For clients without phones, the team emphasized the need to get phone numbers of next of kin or any other person through whom can get in touch with the client.

## Conclusion

The use of phone calls to remind clients about their six-week post-operative follow-up appointments has been adopted by the Moroto RRH SMC team to improve the return rates for the second dose of Tetanus Toxoid vaccine before circumcision and occasionally for the few clients who miss their seven-day post-operative follow-up visits. Notably, high volume sites have to put in place systems to ensure the phone call reminders are routinely done and properly documented otherwise they could be prone to misuse and poor outputs. The joint coaching visits by ASSIST and implementing partners like SUSTAIN greatly facilitates timely feedback enabling faster action and support by the implementing partner hence they are highly recommended.

### Implementing partner's perspective

ASSIST has been able to provide consistent support and mentorship which made the site teams see that QI is important, improved commitment, and has allowed the team to transform the quality of services despite limited resources.

The joint site mentorship and coaching with ASSIST has enabled us to get timely feedback and be able to support the site teams better like the provision of facilitation for client follow-up for this QI project to improve six-week follow-up.

Telephone calls, though not considered as good as physical client follow-up, are a good and affordable way of checking on the well-being of the clients we serve. They can be used to check on a client, remind and encourage clients to return to health facilities for scheduled visits just like the Moroto RRH QI team did.

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

## USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road • Kampala

USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

# Addressing the Therapeutic Feeding Gap for PLHIV with Nutrition and Self-Management Support: A Case of Aboke Health Center IV

### Summary

Poor nutrition remains a key challenge for people living with HIV (PLHIV), especially those on antiretroviral therapy (ART). This case study highlights how health workers at Aboke HCIV, a site that has not received ready-to-use therapeutic food from the medical supply chain, leveraged self-management support (SMS) and nutrition counselling to support PLHIV diagnosed with malnutrition. Changes focused on instituting and streamlining systems and processes around patient flow, assessing nutritional status at each clinic visit, improving documentation, and providing patient-level support to those enrolled into SMS. This case study provides key information for rural health units on how they can improve identification and support for malnourished PLHIV using available local resources.

### Introduction

Poor nutrition remains a key challenge for people living with HIV (PLHIV) and is a known driver for poor engagement, adherence, and retention (EAR) amongst PLHIV (Ivers et al 2009). HIV is highly associated with a higher risk of malnutrition due to a rise in body nutrient demands thence rapid progress to AIDS (AIDS map 2005). Such factors, coupled with poor health facility organisation to identify and support PLHIV with malnutrition, remain a key obstacle to achieving the third of the 90-90-90 goals (UNAIDS 2016) – 90% of PLHIV on ART remain virally suppressed – based on the fact that good nutrition is key for immune reconstitution and efficacy of antiretroviral drugs, while high viral load is strongly associated with malnutrition (Duggal et al 2012).

In northern Uganda, a region prone to chronic malnutrition, PLHIV on ART face many obstacles. During health education sessions, it is common to hear comments like, “*how can I swallow those pills when I have nothing in my stomach,*” “*I would not come for my appointment visit because I was weak; I had no food for 2 days,*” and “*my priority is having something in the garden before I think of coming for pills.*”

To close these gaps, the HIV EAR initiative under the USAID Applying Science to Strengthen and Improve Systems project (ASSIST) employed a quality improvement (QI) approach to support Aboke Health Center (HC) IV to leverage self-management and nutrition support to improve the nutrition status of patients attending their ART clinic.

### About Uganda’s HIV EAR initiative

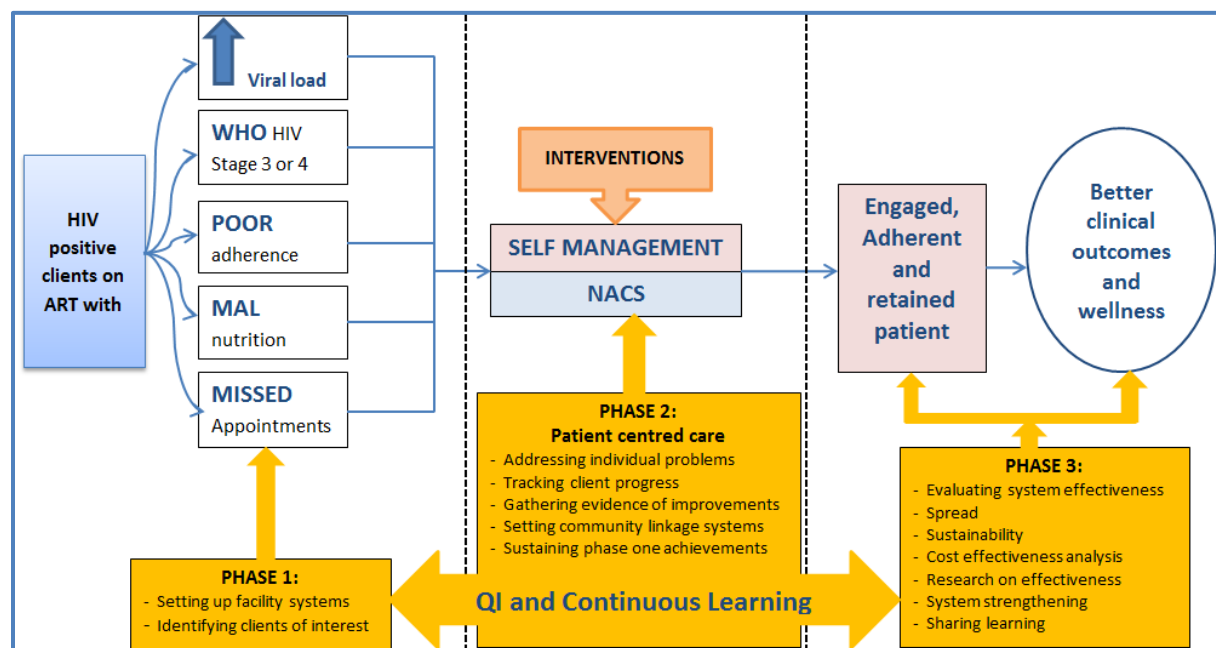
In July 2015, ASSIST Uganda received core funding to employ a quality improvement approach to assess the role of self-management support (SMS) and nutrition counselling in improving engagement, adherence and retention of PLHIV. This initiative is implemented at five intervention and five control sites in northern

### JANUARY 2017

This case study was authored by Ssensamba Jude Thaddeus, Tamara Nsubuga Nyombi, Esther Karamagi, and Amy Stern of University Research Co., LLC (URC). The authors acknowledge the contribution of the Aboke HCIV HIV clinic staff towards the development of this document. This case study was prepared by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, made possible by the generous support of the American people through USAID and with funding support from by the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC’s global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

Uganda, targeting PLHIV on ART with high viral load, malnutrition, WHO stage 3 or 4 of HIV, poor adherence, poor retention, and/or missed HIV clinic appointments (**Figure 1**). At intervention sites health workers were trained in nutrition assessment, counselling, and support (NACS), and SMS. Anthropometric equipment was supplied, facility-level system changes were made to accommodate SMS into clinic flows, and changes in clinic standard operating procedures and data management were instituted. Monthly coaching visits and periodic learning sessions were conducted.

**Figure 1: Uganda’s HIV EAR framework**



### Introducing HIV EAR work at Aboke HCIV

Aboke HC is a level-four facility located in Kole District, in the Lango sub-region of Uganda. It is one of the five USAID ASSIST-supported EAR sites. It offers outpatient and inpatient health services, and has an ART clinic that provides care to approximately 6,018 PLHIV. The ART clinic is headed by a nursing officer who is supported by a nurse and four non-medical community linkage facilitators. The clinic is open on Monday, Tuesday, and Friday. Prior to introducing improvement work, in September 2015, a baseline assessment was conducted at the Aboke HIV clinic. One of the areas of interest was nutrition, and key parameters assessed were knowledge and skill in nutritional assessment, counselling and support, presence of nutrition assessment equipment, presence of therapeutic and supplementary food (TSF), data on patients with malnutrition, and nutrition tools.

- The Aboke HIV EAR team**
1. Jennifer Omara (team leader)
  2. Isaac Apita (team member)
  3. Ojok Bonny (team member)
  4. Acam Doris (team member)
  5. Omara Joe (team member)
  6. Owidi Oscar (team member)

Key findings showed that the whole ART team had never been trained in NACS and SMS. The site had no height boards, mid-upper arm circumference (MUAC) tapes, body mass index (BMI) wheels, or baby weighing scale. One inaccurate weighing scale was in place; TSF was available, but exclusively for children under 5 years of age; the clinic had no nutrition register, guide for classification of malnutrition or tool for recording assessment results. Generally, patient assessment and counselling for malnutrition was not done

consistently for all patients at each clinic visit. After this assessment of NACS services, a debrief was held and key findings were shared with the site team.

### **1. Resolving key system gaps through:**

#### *i) Training in NACS and SMS*

In September 2015, four staff from Aboke HCIV had NACS training with a focus on improving their skills in nutrition assessment, categorization and providing counselling to malnourished PLHIV. Another two-day SMS training followed, during which health workers were empowered to identify and enrol patients for SMS (see **Figure 1** above), manage their HIV-related symptoms and provide support.



*Health workers from Aboke HCIV during a practical session on height measurement. Photo by Jude Ssensamba (URC)*

#### *ii) Provision of anthropometric equipment*

ASSIST worked closely with the Food and Nutrition Technical Assistance Project III (FANTA), which procured anthropometric equipment that was supplied to Aboke HCIV. The equipment included: electronic adult and infant weighing scales, stadiometers, height meters, body mass index (BMI) wheels, and MUAC tapes. This equipment helped Aboke HCIV staff to start conducting nutrition assessment.

### **2. Integrating HIV EAR into routine HIV care**

Integrating nutrition and SMS into HIV care requires changes in system organisation, health worker roles, data collection and entry processes, and patient flow. Staff at Aboke HCIV tested undertook the following system changes:

#### *i) Improving assessment of nutritional status*

To improve patient nutritional assessment, a care point where every patient had to be assessed before seeing a clinician was introduced. A health worker and linkage facilitators were assigned to this care point each day. Over time, it was noted that the majority of patients were assessed, but their results were only recorded into patient books that they carried home. This made it hard for staff to follow-up malnourished patients since they had no records retained in the clinic for reference. During one meeting, the team agreed to improvise by creating columns in the HIV ART dispensing log to record patient anthropometric measurements.

#### *ii) Closing the human resource for health gap*

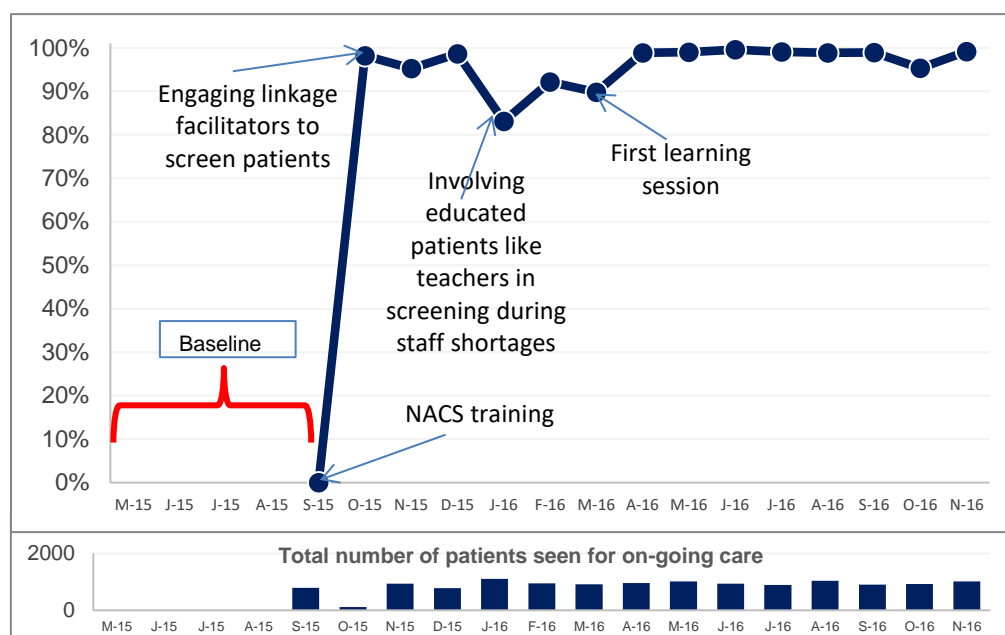
To close the severe staff shortage gap, the facility team mentored willing patients, such as police officers, high school students and teachers who, with consent, assessed their fellow patient nutritional status. This, combined with engaging linkage facilitators in assessment, led to an increase in the number of patients assessed, as shown in **Figure 2**. To ensure that patients received the right diagnosis, those categorized with moderate or severe acute malnutrition by volunteer patients or linkage facilitators would be re-assessed by the clinician.

### **3. Supporting patients identified with malnutrition**

Even though Aboke HCIV had no TSF for treatment of adults with acute malnutrition, the team instituted systems to support PLHIV diagnosed with malnutrition. All clinicians were mentored on how to identify, categorise, and refer patients with malnutrition to a newly introduced SMS counselling care point. The staff rotation was changed, and a health worker or trained linkage facilitator was assigned to the counselling care point each day. The health workers/linkage facilitators would then use the SMS progress form to discuss with the patient the likely factors contributing to their challenges, and thereafter support them to develop improvement goals.

The counselling sessions involved analysing problems and supporting patients to take the lead in solving their malnutrition problems. Through discussions and exploring practically available alternatives like available local food options and how to prepare and store them; how to get support from family members, especially for elderly patients; sustainable small projects like rearing chicken as a source of eggs for protein; and referral to community support organisations. These practical solutions motivate the patients to deal with their problems. The session ends with patients developing SMS goals and plans of action, and agreeing on a follow-up date.

**Figure 2: Percentage of patients screened for nutritional status at Aboke HCIV (May 2015 – Nov 2016)**



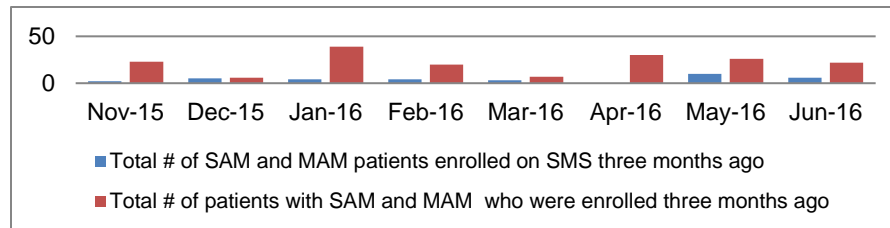
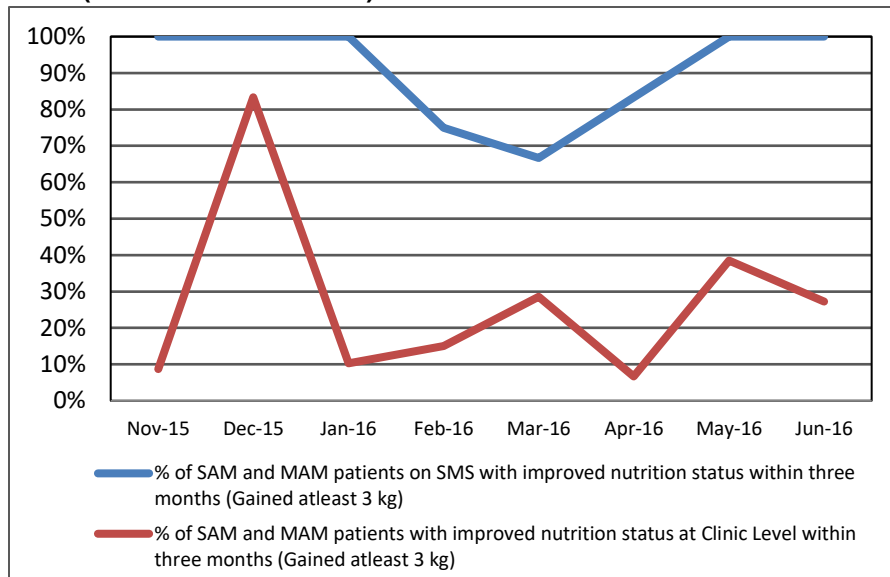
To assess the impact of nutrition and SMS, the site tracked the proportion of patients who improved within three months of initiation on SMS. This was measured as weight gain of three kilograms. Patients who failed to return were followed up by linkage facilitators. During the course of the initiative, there were a demonstrable number of patients with moderate and severe malnutrition who, due to health worker shortage, were not enrolled in SMS. These provided the comparative group of patients where malnourished patients enrolled into SMS had better clinical outcomes compared to those not enrolled as shown in **Figure 3**.

***“Patients with malnutrition are getting better even though we do not have therapeutic feeds; this SMS thing works,”***  
 Isaac – HIV EAR team member  
 Aboke HCIV

**Results**

Since initiating SMS, Aboke HCIV has seen a decline in the proportion of patients categorised with acute malnutrition. For example, in January 2016, Aboke HCIV recorded 39 patients with moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). This has progressively reduced to 7 patients that were recorded in November 2016. This reduction is further attributed to health education sessions that were reintroduced at Aboke HCIV. The health talks always include SMS topics like good diet and nutrition. Many patients are now empowered and have knowledge on how to eat well and take care of their nutrition needs. This is one of the goals of SMS: a patient able to take the lead of their own health.

**Figure 3: Comparing weight gain among SAM and MAM patients at clinic and SMS level at Aboke HCIV (Nov 2015 – June 2016)**



- Tested changes for SMS patients**
- SMS counselling on food options
  - More time allocated to patients with MAM or SAM who are on SMS
  - Duty roster changed to have health worker dedicated to SMS
  - Engaging linkage facilitators into SMS counselling
  - Patients counselled to engage family members to provide them with food support

## Conclusion

This case study demonstrates that it is possible for resource-poor countries that lack therapeutic and supplementary food to improve the nutritional status of malnourished HIV-positive patients by adopting the SMS/NACS model. Implementing this model calls for some changes in system flow, leveraging local innovations like using fellow patients, and creating columns in already existing registers to record key nutrition status information. Specifically, the SMS/NACS model offers patients an opportunity to explore locally available food options and how they can be best used, seek support from relatives and family members, and provides a gateway for follow-up where progress can be assessed.

## References

- AIDSmap (2005): HIV and malnutrition [Online] Available from: <http://www.aidsmap.com/HIV-and-malnutrition/page/1445213/> [Accessed 18/01/2017]
- Duggal et al (2012): HIV and Malnutrition: Effects on Immune System [Online] Available from: <https://www.hindawi.com/journals/jir/2012/784740/> [Accessed 20/01/2017]
- Ivers et al (2009): HIV/AIDS, Under-nutrition, and Food Insecurity [Online] Available from: <http://cid.oxfordjournals.org/content/49/7/1096.full> [Accessed 18/01/2017]
- UNAIDS (2016): Global gains made towards the 90–90–90 targets [Online] Available from: [http://www.unaids.org/en/resources/presscentre/featurestories/2016/july/20160717\\_90-90-90](http://www.unaids.org/en/resources/presscentre/featurestories/2016/july/20160717_90-90-90) [Accessed 18/01/2017]

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

**USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 5404 Wisconsin Avenue, Suite 800 • Chevy Chase, MD 20815-3594 USA



## CASE STUDY

# Improving identification of new HIV positive children and adults: the role of community structures

The USAID Applying Science to Strengthen and Improve Systems project (ASSIST), in collaboration with orphans and vulnerable children (OVC) implementing partner, Uganda Private Health Support Program (UPHS), set out to improve case finding of HIV-infected children and their caregivers using a quality improvement (QI) approach in the central region of Uganda. Stigma and discrimination associated with HIV positive results are known challenges to accessing HIV counseling and testing services (UNAIDS 2015). There is an opportunity of using community based organizations that have structures in some communities to address the challenges. ASSIST, UPHS and Fishing Community Health Initiative therefore considered strengthening the capacity of community structures to identify more positives in the community with the help of the new HIV positive case-finding criteria tool to identify HIV positive suspects and refer them for HIV testing and ensure enrolment for children who are not in HIV care. The use of the criteria has improved identification of new HIV positive individuals over a period of 14 months, in 18 communities a total of 144/200 HIV positives have been identified, most of whom were children 0-14 (80) and (64) were individuals 15 and older. Children and direct beneficiaries 15 and older with known HIV status improved to 80% (806/1000) and 81% (621/762) respectively. Of the HIV positives, 100% (128/128) of children and 98% (368/374) of beneficiaries 15 and older are enrolled in HIV care.

## Background

UNAIDS has set an ambitious goal to help end the AIDS epidemic by ensuring that 90% of all people living with HIV know their HIV status; 90% of all people with diagnosed HIV infection receive sustained antiretroviral therapy (ART); and 90% of all people receiving ART have viral suppression by 2020 (UNAIDS 2014). To achieve this goal, there is need to ensure that HIV counselling and testing (HCT) services are available to those who need them so that they can know their status and get linked to care and treatment services. Initiatives such as provider-initiated HIV testing and counselling (PITC) at high yield points have resulted in significant improvements in finding new HIV positive individuals (WHO, 2012). Although community outreach services have been used to reach those who have been missed by the health care system, still not all have been reached.

## JANUARY 2017

This case study was authored by Esther Nassali, Juliana Nabwire, Esther Karamagi and Mirwais Rahimzai of University Research Co., LLC (URC) and Sserwadda Abdullah of Fishing Community Health Initiative (FICHI). We would like to acknowledge community QI team members of FICHI CSO supporting OVC work. We acknowledge the USG implementing partners Uganda Private Health Support (UPHS) program. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



Therefore, improved case finding of HIV-infected infants, children, adolescents and adults through community initiatives to reach those who may have been previously missed by the health care system provides an opportunity to increase coverage and reduce mortality rates due to HIV/AIDS especially among children.

The USAID Applying Science to Strengthen and Improve Systems project (ASSIST), in collaboration with orphans and vulnerable children (OVC) implementing partner, Uganda Private Health Support Program (UPHS), set out to improve case finding of HIV-infected children and their caregivers using a quality improvement (QI) approach in the central region of Uganda.

### **Understanding the problem**

A Fishing Community Health Initiative (FICHI) located at the landing site in Bukakata Sub-County, Masaka District with a high HIV prevalence shared baseline results that showed that 67% (404/603) of the supported vulnerable children aged 0-14 years and 77% (350/450) direct beneficiaries aged 15 and above had a known HIV status. Of the HIV positives, 78% and 79% respectively were enrolled in HIV care. Efforts to support all children and their caregivers to access HCT services at the FICHI Civil Society Organisation (CSO) and other local CSOs yielded a few more HIV positive individuals. A very small number of children and their caregivers were attending outreach events to get tested.

Stigma and discrimination associated with HIV positive results are known challenges to accessing HCT services (UNAIDS 2015). There is an opportunity of using community based organizations (CBOs) that have structures in some communities to address the challenges. The team (ASSIST, UPHS and FICHI) therefore considered strengthening the capacity of community structures to identify more positives in the community. Village health teams (VHTs) were mobilized, oriented on community QI approaches, organised into functional QI teams, and were provided with referral forms and registers to improve documentation. Members of the community QI teams allocated each other communities to work in and monthly follow up would be done.

### **Functionalising three parish improvement teams**

Initially, VHTs were involved in other activities supported by the FICHI CSO such as provision of malaria treatment to children in the community and less on HIV work. The CSO organized and trained both VHTs and para-social workers to form QI teams at the parish level. The role of the improvement team was to work on improving identification of HIV positive persons in the community using a case finding tool, referring them for HCT, follow-up, and linkage to care for those who are HIV positive.

Parish QI teams formed with representation of 5-6 members including, for example, a VHT member and/or a para-social worker, local leader, retired teacher, community members, or other relevant community members in each village. These teams began meeting at the parish office with support from the CSO at least once a month to share progress and make calls to update the field officer/social worker on new positives identified and enrolled in care. The CSO provides each member with a referral book and case management book which are reviewed monthly. The field officers/social worker also identify households they need to make follow up visits with.

#### **Beneficiaries' perspectives**

*"I lost my first husband to HIV/AIDS and I was left with 3 children. I got married to another man, however I could not continue taking my ARVs because I feared to lose my marriage."*

*"My children could constantly fall sick, had skin diseases but could not take them for treatment because there was no one to support me."*

*"Through the constant home visits made by the VHT, I was counseled on the benefits of starting my medication again and testing my children for HIV."*

*"Testing was done at my home and my 3 children tested HIV positive. We have all been enrolled into HIV care and our health has improved. My children were enrolled at FICHI and are getting nutrition and continuous psychosocial support."*

## Using the HIV positive case-finding criteria

ASSIST, through addressing the 90-90-90 strategy, realised there was a need to support FICHI CSO and parish improvement teams to identify new HIV positives. Through the monthly coaching visits, ASSIST coaches worked with the teams to develop the HIV positive case-finding criteria to be able to identify HIV positive suspects and refer them for HIV testing and ensure enrolment for children who are not in HIV care. The criteria are comprised of three main aspects: (i) identification of chronically/malnourished sick children; (ii) children living in households with a caregiver known to be HIV positive; and (iii) children who have lost parent(s) to HIV/AIDS. While the tool focuses on identifying children, adults found in the household are also encouraged to receive HCT.

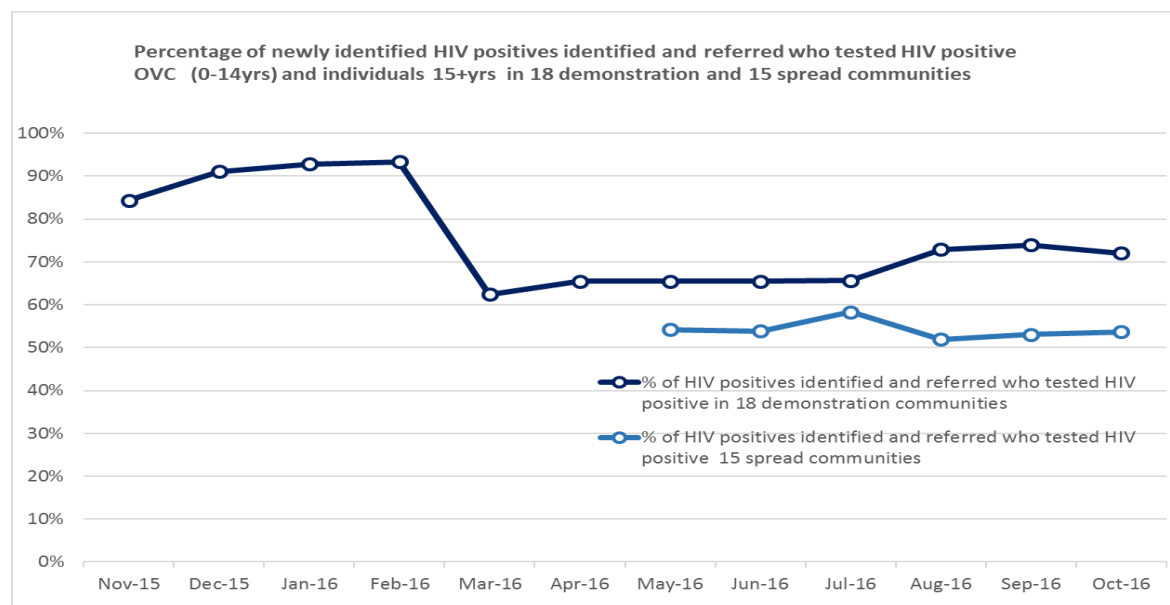
The VHTs were assigned to work in their villages to generate a list of households that fit the criteria, make home visits, seek verbal consent, and administer the tool. During the home visit, the VHT provided information on benefits of HCT and early enrolment into HIV care. Children who met the criteria and caregivers who accept to be referred to HCT were provided a referral note to the health centre of choice and the VHTs followed up to get feedback if services were received. Those who tested HIV positive were followed up to ensure they were enrolled into HIV care.

For a period of three months, the criteria tool was tested in two communities at FICHI then spread to 16 communities in the next nine months. By October 2016, it had been spread to 15 more communities by three CSOs.

## Results

The use of the criteria has improved identification of new HIV positive individuals over a period of 14 months. At FICHI CSO, through 18 communities, a total of 144/200 HIV positives have been identified, most of whom were children 0-14 yrs (80) and (64) were individuals 15 and older. Spread of use of the HIV positive case finding tool to four CSOs (KIMOSI, Karera, Bantwana and Caring hands) in 20 communities yielded 202/304 HIV positive individuals (52 children 0-14 years and 130 individuals 15yrs and older) in 7 months.

**Figure 1: Percentage of newly identified HIV positive children(0-14yrs) and individuals 15+yrs identified and referred in 18 demonstration and 15 spread communities (November 2015- October 2016 and May 2016- October 2016)**



## Lessons learned

Use of the three criteria in identification by the community teams has been helpful in case finding of HIV infected children and adults (however, it has been more effective among children). In this case, we believe the tool has been very successful because it is administered by people who know their community. The criteria were used in 10 communities with a known high HIV prevalence and five other communities with relatively lower prevalence and the results show that it is effective for both kinds of communities.

In some communities, referrals have not been effective because of long distances to the health facilities to access HCT services. Such identified individuals would benefit from home based testing and counselling services.

## Conclusion

To ensure that 90% of all people living with HIV know their HIV status, we need to have more creative ways with which to reach the populations. Providing existing community structures with a case finding criteria is one creative way that has showed promising results of identifying those HIV positive individuals who had not been reached by the health system. The community structures not only support identification of people who are HIV positive but also provide follow up services to ensure linkage to care and support services. ASSIST intends to scale-up the use of the criteria to at least 20 more communities and evaluate the results to be able to inform HIV community programs.

### VHT perspective

Community HCT services are available in the community by HIV service providers such as TASO, Medical Research Centre (MRC) but the caregivers fear to test because of stigma associated with HIV positive results. However, door to door home visits to provide counseling on benefits of HCT for the identified children and caregivers using a case identification tool helped us to find those who did not know their HIV status. We have helped them to get to know their HIV status and start medication at the health facilities.

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

### USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 5404 Wisconsin Avenue, Suite 800 • Chevy Chase, MD 20815



## CASE STUDY

# Improving retention of clients on antiretroviral therapy through expert patients: Involving people living with HIV in Alebtong District, Northern Uganda

### Summary

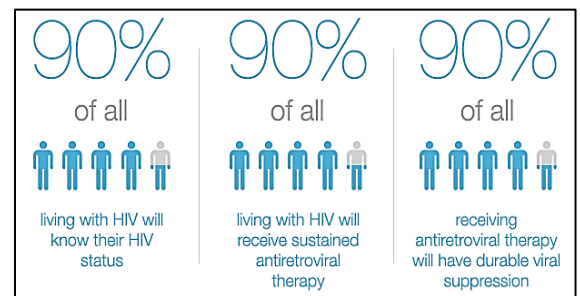
The World Health Organization’s (WHO) Integrated Approach to HIV Prevention, Care, and Treatment (IMAI) recommends adoption of People living with HIV (PLHIV) as community health workers (CHWs) to track patients who have not appeared at the clinic for at least three months (lost to follow-up [LTFU]) through contact tracing (home visits). Since February 2015, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project has supported 137 health facilities in 15 northern Uganda districts to implement strategies to engage CHWs to ensure retention of HIV positive clients who are lost to follow up using a quality improvement (QI) approach. ASSIST, in collaboration with the district and health facilities in Alebtong District initiated a QI project to track and re-activate care for PLHIV who had not been seen in the clinic for at least three months at five antiretroviral therapy (ART) centers. A baseline assessment conducted in January 2016 found only 88% (2591/ 2921) ever enrolled clients were active in care. Facility QI teams came up with an improvement aim to return 100% of the LTFU clients within 3 months and tested changes like: reviewing the ART registers and generating lists of LTFU clients; and assigning each lost client to be followed up by community linkage facilitators (CLF) who reside in the same or nearby village. Results received in April-June 2016 showed that of the 330 LTFU clients, 262 (79%) had been found alive and not on treatment and were brought back to care, 54 (19%) had self-transferred, and 12 (4%) had died. Involving expert clients to track LTFU from their own villages can help to bridge gaps related to retention rates and clients without additional human and financial resources.

### Background

In 2014, the Joint United Nations Program on HIV/AIDS (UNAIDS) set goals to eliminate the HIV/AIDS epidemic by the year 2020 through a three-pronged approach known as the 90-90-90 strategy (Figure 1). In line with the second prong, 90% of all people identified as HIV positive must be enrolled and sustained on antiretroviral therapy (ART).

Community Linkage Facilitators (CLFs, previously referred to as HIV Expert Clients) in Uganda are HIV positive stable clients on ART that support other Positively living clients achieve better treatment outcomes through supporting them on adherence counselling, tracking lost to follow up and promote disclosure of HIV status among clients. In Alebtong District, CLFs voluntarily support ART clinics with above functions and are actively involved in clinic processes.

Figure 1: UNAIDS’ 90-90-90 strategy

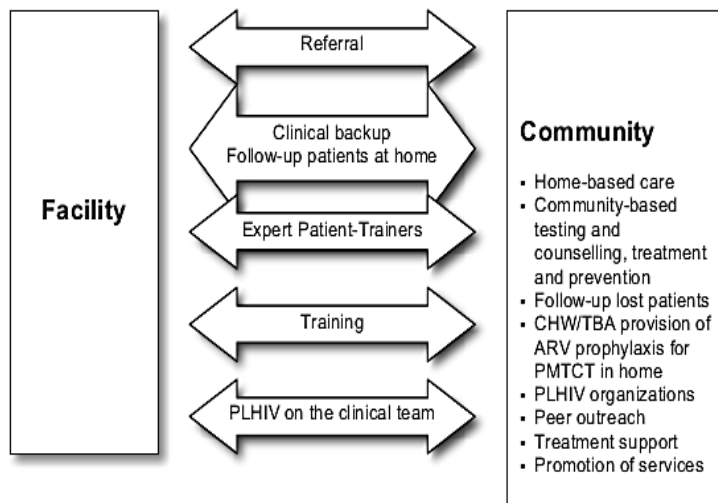


### JANUARY 2017

This case study was authored by Alphonse Kwiseera, Pamela Donggo, Judith Aloyo, Esther Karamagi, and Mirwais Rahimzai of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID’s Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR). We would like to thank the Alebtong district health office and health workforce for taking lead of the implementation process. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC’s global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

The World Health Organization's (WHO) Integrated Approach to HIV Prevention, Care, and Treatment (IMAI) recommends adoption of People living with HIV (PLHIV) as community health workers (CHWs) to track patients who have not come to the clinic for at least 3 months (lost to follow-up [LTFU]) through contact tracing (home visits) as one of the strategies to sustain ART patients on treatment (Figure 2). The Ministry of Health (MOH) in Uganda and its implementing partners including the USAID Applying Science to Strengthen and Improve Systems (ASSIST) project have adopted both strategies to reduce HIV in the entire country.

**Figure 2: Scaling up pediatric HIV prevention, care and treatment using IMAI tools <sup>2</sup>**

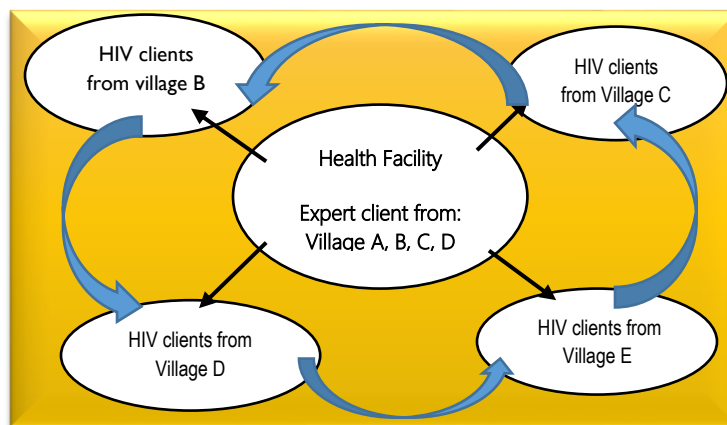


In pursuit of the 90-90-90 goals, Alebtong District, an ASSIST-supported district in northern Uganda, prioritized improving care and treatment for people living with HIV/AIDS in their HIV/AIDS strategic plan for 2015/16 with a focus on ensuring that all patients enrolled on ART are retained at five ART sites; Alebtong Health Center (HC) IV, Apala HCIII, Alo mission HCIII, Amugo HCIII, and Abako HCIII. This improvement goal was set following an ASSIST-supported baseline assessment conducted in December 2015 at these facilities that indicated a 12% gap (303/2921) of enrolled clients who were lost to follow up (LTFU) and only 88% (2591) of clients were still active in HIV care.

**Improvement process used in Alebtong District**

CLF were identified as a success factor for achieving this improvement aim. CLFs are mostly HIV positive expert clients that voluntarily offer their time to ensuring newly identified and already existing HIV positive patients are linked and retained in care. They also perform certain assigned roles in the ART clinic including health education and counselling on positive living. Previously linkage facilitators used to follow up lost to follow up clients randomly without considering their home areas and how easy it was to access them. This would hinder tracking efforts of lost to follow up and linkage facilitators could travel long distances to trace for the clients.

**Figure 3: Process used for PLHIV facility to community linkage at five health facilities in Alebtong District**



At the five health facilities, health workers were allocating CLFs to the newly identified or lost to follow up clients based on when the client was tested and which CLF was at the health facility at that time. CLFs are allocated to work with these new clients because they have successfully managed the HIV disease themselves and have supported individuals and families overcome stigma and live positively in their communities. They also maintain confidentiality of the clients' status.

The health workers and CLFs did the following:

1. Generated lists of clients LTFU and their addresses from the Pre-ART and ART registers at each of the five implementing health facilities.
2. Assigned each CLF to HIV clients who come from their areas of residence to facilitate easy access to the clients without incurring additional costs of transport.

Teams tested the additional facility and community level changes described below.

**Changes tested to ensure follow up of all lost clients**

**Facility Changes**

- Providing files with forms and referral forms to CLFs to record names of clients lost to follow up.
- CLFs together with ART clinic staff identifying clients who are lost to follow up from the ART registers.

**Community Changes**

- Creating a community tracker form (Figure 4) and CLFs using it to document feedback to the facility of LTFU client status. CLF and clinicians updated patient follow up status in the client records weekly.
- Assigned each CLF to HIV clients who come from their areas of residence to facilitate easy access to the clients without requiring additional facilitation in terms of transport fees.

**Figure 4: A copy of the community tracker forms used during follow up visits by CLFs**

**ALEBTONG DISTRICT COMMUNITY - HEALTH FACILITY LINKAGES FORM**  
 Health facility: APANA HEALTH CENTRE III Village: BONGOMONG  
 Name and telephone No of linkage facilitator: 0972877888 Date: 11-01-2016  
 Note: please use codes to indicate sex, ART status and reason for linkage

Name of patient	Last appointment date	CLINIC ID	SEX	AGE	Type of patient: ART(1), Mother-baby(2), Pre-ART(3), TB(4)	Physical address or village and contacts	Reason for linkage: Lost to follow up(1), Missed appointment(2)	Follow up Outcomes
		576	M	42	1	ABONSONONG	2	CAME ✓
		574	F	4	1	ABONSONONG	2	CAME ✓
		573	M	2	1	ABONSONONG	2	CAME ✓
		526	F	22	2	AWE AMELA	3	DIED
		1111	F	18	3	OMASONG	2	CAME ✓
		889	F	21	2	ATWORA	2	CAME ✓
		566	F	24	2	PUR BER	2	CAME ✓
		525	F	32	2	TESBONG	2	CAME ✓
		926	F	22	2	AWE AMELA	2	DIED
		827	M	42	1	BRYANG	2	CAME ✓
		965	F	36	1	KOKRAMKOR	2	CAME ✓
		856	F	50	2	PUR BER	2	CAME ✓
		822	F	22	1	BRYANG	3	SELF TRANS F
		552	F	42	1	BRYANG	2	CAME ✓
		525	M	9	1	ODWAR	3	SELF TRANS F
		855	F	19	1	APRUSWENG	2	SELF TRANS F
		969	F	20	2	BRYANG	2	CAME ✓
		817	F	32	1	BRYANG	2	NOT FOUND AT VILLAGE

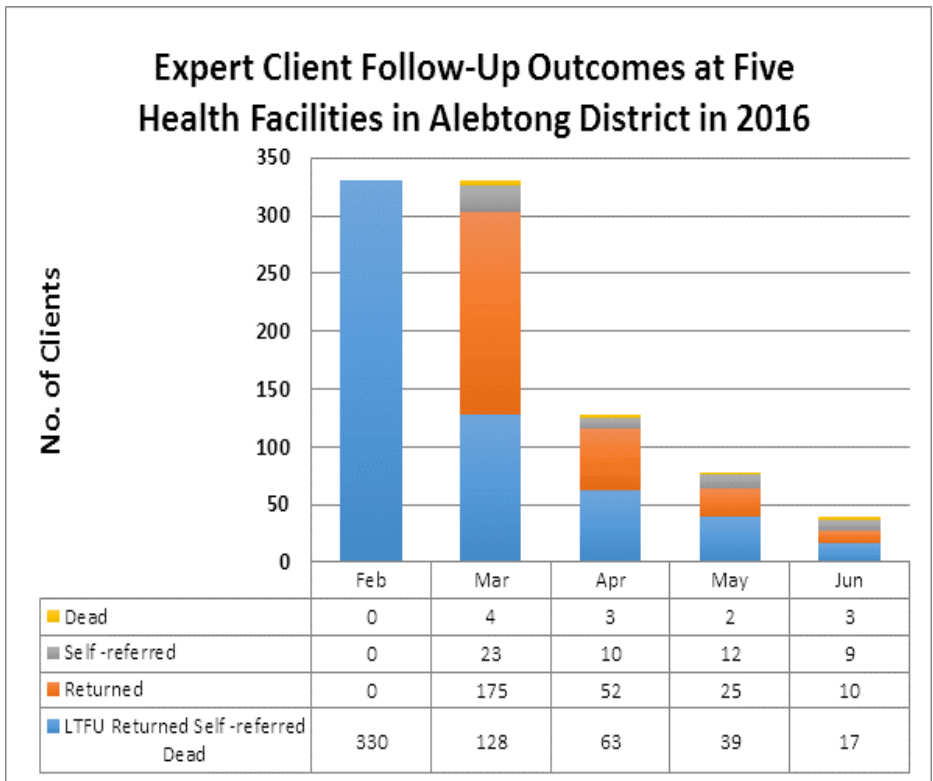
**Role distribution on the ART clinics' teams in the QI project**

Technical ART clinic staff	CLFs	ASSIST and District
<ul style="list-style-type: none"> <li>• Identification of LTFU from ART register</li> <li>• Updating of appropriate tools as per the outcomes</li> <li>• Reviewed progress per month</li> <li>• Updated the ART register as per the follow up outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Generated a list of LTFU</li> <li>• Conducting door to door tracing of clients</li> <li>• Updated community trackers forms and made follow-up outcomes on a monthly basis</li> </ul>	<ul style="list-style-type: none"> <li>• Technical guidance to the facility teams, linkage facilitators and district HIV department</li> <li>• Documentation of the process</li> </ul>

**Results**

In January 2016, 330 clients were identified as LTFU. Results of June 2016 showed that 262 (79%) were found alive but not on treatment and were brought back to care; 54 (19%) had self-transferred to other facilities; and 12 (4%) had died. As a result, the number of non-active patients on ART reduced from 330 for the entire district in the January – March 2016 period to 14 in the April – June 2016 period which reduced the LTFU gap to 0.06% (Figure 5).

**Figure 5: Reductions in LTFU, five facilities in Alebtong District (February 2016 – June 2016)**



**Lessons Learned**

1. The QI approaches lessen the tasks of follow up through assigning CLFs to track LTFU clients that are within their locality.
2. CLFs are also motivated as they could conduct the follow-up within their own means without requiring additional funds for transport because clients are near them.
3. Returning clients back into care ensures that they are retained and adhere better to HIV care and treatment which contributes to their viral load suppression, and as results shown indicate that the 2nd and 3rd 90 of the UNAIDS strategy can be attained.

**Conclusion**

Using the quality improvement approaches to engage CLFs to support tracking lost clients has greatly helped to improve retention rates of clients on ART in Alebtong. It is an innovation that can be implemented in other facilities and districts to improve retention in care.

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

**USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



## CASE STUDY

# Improving Access to Viral Load Monitoring through Viral Load Camps

To ensure viral load suppression is being monitored for people living with HIV, the USAID Applying Science to Strengthen and Improve Systems project (ASSIST) is working with the district health offices in northern Uganda to increase access to viral load monitoring with a focus on the backlog of patients. Conducting viral load camps was one of the innovations taken up by ASSIST to improve access to viral load monitoring in northern Uganda to reduce on the backlog of clients with missing viral load test results. To prepare for the camps, viral load eligible patients were clustered by villages and resources were mobilized. At the camps, the health workers at the camp venue took the lead in conducting the camp and they were supported by the District Lab Focal Persons and district HIV focal person from the district health office. District-based ASSIST staff also provided additional support to the team. In a few instances where the anticipated load was high, health workers were mobilized from neighbouring facilities to provide extra help. There was an increase in clients accessing viral load testing during the intervention period. A total of 5,664 patients received viral load testing in 11 weeks during the intervention.

### Introduction

UNAIDS' 90-90-90 strategy is targeting 90% of all people living with HIV knowing their HIV status; 90% of all people with diagnosed HIV infection receiving sustained antiretroviral therapy (ART); and 90% of all people receiving antiretroviral therapy attaining viral suppression. In order to contribute to the viral suppression target ("third 90"), Uganda adopted Viral load (VL) for monitoring clients on ART in 2014. Despite this, there has been insufficient access to VL monitoring in several parts of the country, including northern Uganda.

### Objective

The USAID Applying Science to Strengthen and Improve Systems project (ASSIST) is working with the district health offices in northern Uganda to increase access to VL monitoring with a focus on clearing the VL backlog between October and December 2016.

### Intervention

Conducting VL camps was one of the innovations taken up by ASSIST to improve access to VL monitoring in northern Uganda to reduce on the backlog of clients with missing VL test results.

### **FEBRUARY 2017**

This case study was authored by Herbert Kisamba, Juliet Tumwikirize, Beatrice Aber, and Esther Karamagi of University Research Co., LLC (URC). It was produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The USAID ASSIST Project work is supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; Health Research, Inc.; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

### **Key Steps in VL Camp preparations**

1. Review of records at ART & Mother-baby care points to ascertain eligible clients
2. Generate a list of eligible clients and attach a sticker on their files for easy identification
3. Assign linkages facilitators to trace the patients in the community
4. Mobilize necessary camp logistics based on the expected patients coming for the camp



**Preparation:** Assessment was done at all ART sites to ascertain the number of eligible clients for VL at ART and mother-baby care point (MBCP) clinics that have not had the testing. Patient details including name, age, sex, and ART number were captured and their files traced. The files had stickers attached to them for easy identification. Patients on the lists of eligible clients at each site were clustered according to residential address (villages/parishes). Based on numbers of VL eligible clients, districts prioritized facilities for the camps. In some districts, however, all sites were considered so as to clear the VL backlog at all the ART sites in the district.

Dates for running the camps were set through support and guidance of the District Health Officer's (DHO) office. The clients were mobilized to come to the camp venues on the set days.

Having clustered VL eligible patients according to the villages they come from, linkage facilitators and village health teams (VHTs) were assigned to trace them from the community and mobilize them for the camp.

Mobilization was mainly done through physical visits to their homes and persuading them to come to the facility on the designated camp days.

ASSIST worked with the District Lab Focal Persons (DLFP) and Central Public Health Laboratories (CPHL) to mobilize the required logistics (VL testing kits and request forms) for the camp. Quantification of the camp logistical requirements was guided by the anticipated need as per the generated lists of eligible clients expected at each camp site. The DLFP mobilized what they could within the district and where it was not sufficient Central Public Laboratory was contacted to boost the supply.

**The Viral Load Camp:** The camps were facility-based and were conducted between October and December 2016 with each selected facility holding one camp. Health facilities were selected based on the numbers of clients due for VL testing but in some districts all the ART facilities conducted VL camps. The decision on the venue for the camp was by the district under the leadership of the DLFP and/or HIV focal person with participation of ASSIST staff.

The health workers at the camp venue took the lead in conducting the camp and they were supported by the DLFP and district HIV focal person from the district health office. District-based ASSIST staff also provided additional support to the team. In a few instances where the anticipated load was high, health workers were mobilized from neighbouring facilities to provide extra help.

The linkage facilitators at the camp venue and some VHT members took part in registration, retrieving of files, and helping clients find directions to service points.

**Client flow:** On arrival to the camp venue, the client was received at the waiting area, registered and their names were confirmed on the VL eligibility list earlier compiled. Clients files were retrieved, sample collected, and after sample collection the patients' particulars were updated in the VL register.

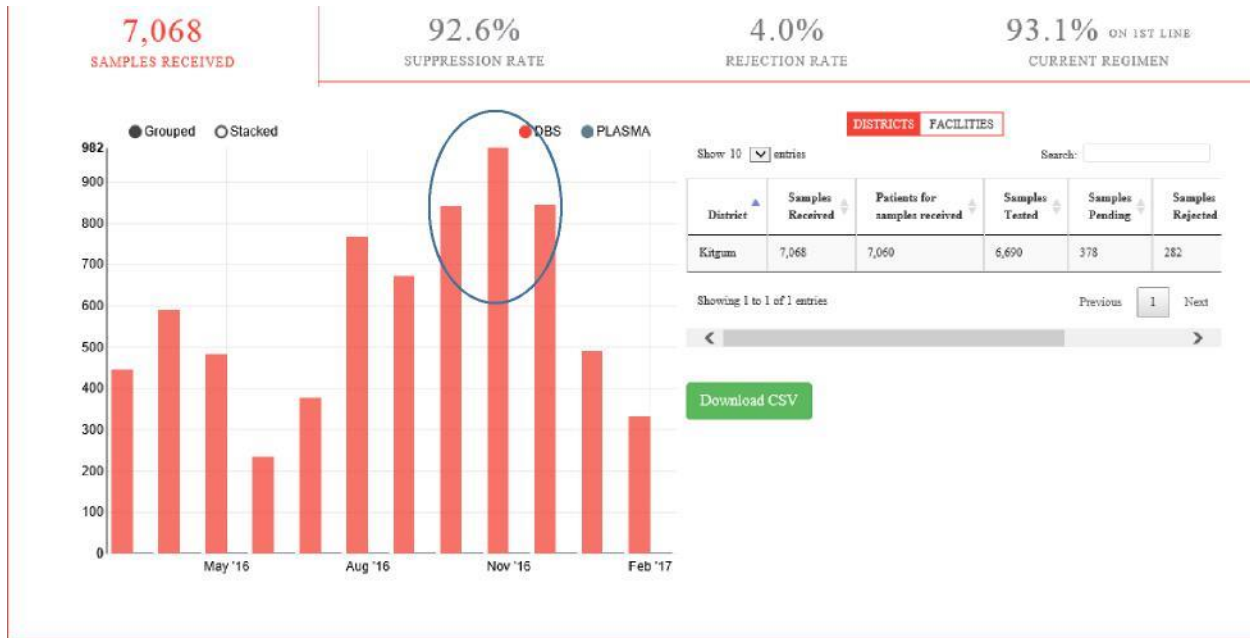
## **Results**

There was an increase in clients accessing viral load testing during the intervention period. A total of 5,664 patients received viral load testing in 11 weeks during the intervention. As shown in **Figure 1** below in one of the districts the number of samples received at CPHL significantly increased between October and December 2016.

### **During the VL campaign emphasis was on:**

1. Ensuring the necessary human resources are available
2. Clear role allocation to all participating staff
3. Clear client flow to minimize patient mix-up and delays
4. Documentation of all the necessary patient details in the register

**Figure 1: Increase in the number of samples received by CPHL from Kitgum District (March 2016-February 2017)**



Other than the camps no other change is known to have occurred during the intervention period that could have contributed to the change in access to viral load testing.

### **Challenges**

It was difficult to get to some eligible clients as they had changed their registered addresses and they did not have telephones. In some cases, clients failed to turn up on the camp days despite having been reached with the message leading to low turn up for some camps. In some districts the rejection rates increased during the camps possibly due to the high client numbers handled during the camps.

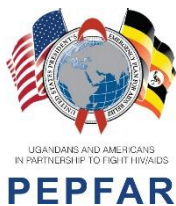
**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

**USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814



## CASE STUDY

# Addressing the 3<sup>rd</sup> 90 Gap through Integrated Health Delivery Camps in 4 Health Facilities in Nwoya District, Uganda

In 2014, the Joint UN Program on HIV/AIDS set ambitious goals to eliminate the HIV/AIDS epidemic by 2020 through the 90-90-90 three-pronged approach. The Uganda Ministry of Health together with implementing partners, including USAID ASSIST, adopted the approach. Nwoya, one of the 16 districts in Uganda under ASSIST support, prioritized the 3<sup>rd</sup> 90 target – viral load (VL) suppression for 90% of ART patients. A baseline assessment in May 2016 indicated that VL suppression was at 89% and yet only 41% of the eligible clients had received VL. To initially close the VL backlog, the following changes in June and July 2016 were implemented: client chart color coding, client flow reorganization, and VL sample collection during both clinic and non-clinic days. However, these interventions increased VL access from only 41% to 57%, leaving a backlog of 1,202 tests. The District Quality Improvement Team proposed an integrated health camp approach to completely clear the backlog. With support from ASSIST, integrated camps were organized at the facility level and the following changes tested: client file audits, eligible patient list generation, linkage facilitator and peer-to-peer mobilization, and HIV testing and nutrition assessment at the camps. During the camps, 41% of the VL eligible clients were reached and samples collected. To completely clear the VL backlog, health facilities adopted the camp model and continued the mobilization of VL eligible clients. By September 2016, 92% of the eligible clients had received a VL test reducing the backlog to 113, which was later cleared by October 2016.

## **Background**

USAID Applying Science to Strengthen and Improve Systems project (ASSIST) is implementing the approach in Nwoya district in northern Uganda (it is one of the 16 districts under ASSIST support).

Nwoya district has a total population of 128,094. Its aggregated HIV prevalence rate is 4.2% (however, the differentiated prevalence rate by sub-county is 6.2% for Purongo, 4.6% Kochgoma, 4.3% Anaka town council, and Alero at 3.2%). Nwoya has four accredited and functional ART sites (Anaka Hospital, Purongo HC III, Kochgoma HC III, and Alero HC IIIs). There are 5,679 people estimated to be living with HIV and in May 2016, 4,472 (79%) had been diagnosed of whom 3,056 (54%) are on Antiretroviral therapy (ART) with only 1,142 having accessed a VL. In a prior assessment done by ASSIST in May 2016, it was observed that VL suppression was 89% with access at 41% (1,142 of 2,804 eligible) implying that there was a backlog of 1,662 patients who are yet to have a VL test.

In June 2016, USAID ASSIST organized a quarterly performance review for all districts under their support during which the district based performance for the 90-90-90 targets was reviewed. The District Quality Improvement Team (DQIT) members appreciated their gaps in regard to the 90-90-90 targets and

## **JULY 2017**

This case study was authored by Gilbert E Sangadi, A Muhereza, Judith Aloyo, Esther Karamagi and Mirwais Rahimzai of University Research Co.LLC (URC), it was prepared by the USAID Applying Science to strengthen and improve systems (ASSIST) project, made possible by the generous support of the American people through funding from PEPFAR. We would like to acknowledge the District Health Officer, District Quality Improvement Team, all the quality improvement teams at the 4 ART health facilities that ASSIST supports in Nwoya District, staff at the MOH's Central Public Health Laboratories (CPHL) and Jacqueline Calnan for reviewing the case study. We do acknowledge the USG implementing partners SDS. The USAID ASSIST Project is managed by University Research Co., LLC (URC) under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Institute for Healthcare Improvement; Initiatives Inc.; Johns Hopkins University Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com). For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or send an e-mail to [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

prioritized VL access as a proxy to improve the third 90. In this case study, VL access is defined as the proportion of eligible clients (those on ART for 6 months or more) who have had a VL test done. VL access is considered as a proxy to suppression because it is practically, logically, and scientifically incorrect to measure suppression without having a significant number of patients doing a VL test.

### **Implementation**

**Phase 1 of Improvement:** Over the next two months (June-July 2016) with support from ASSIST, several interventions were put in place, as displayed in **Box 1**. These interventions yielded a 57% improvement of patients accessing a VL (1,602 of the 2,804 active eligible clients), however, there still remained a gap of 678 clients who had to be reached to clear the backlog.

**Phase 2 of Improvement:** Having not achieved their target, the DQIT (*composed of all District Health Team departmental heads, and chaired by the District Health Officer- DHO with representation of the clients and ASSIST*) held a brainstorming session during its monthly review meeting regarding the reasons for backlog persistence despite the interventions, displayed in **Box 2**. The DQIT identified several challenges and proposed the use of integrated health camp targeting HIV patients who had not accessed a VL test. The camp was scheduled for August 2016 and would run concurrently for 5 days in all of the 4 ART sites. In addition, it would provide a comprehensive package that included rapid

#### **Box 1: Phase 1 Changes Tested**

1. Tagging of charts and files of eligible patients with colored stickers so that they can easily be identified as soon as they arrived in triage.
2. Reorganizing clinic flow so as to ensure VL sample collection is done first before seeing the clinician or nurse counselor for a refill.
3. Shifting tasks for staff to ensure that sample collection and routine clinic activities involving laboratory and nurse staffs continue.
4. Setting up non-clinic appointments for VL testing, sample collection, and bleeding in the ART during non-clinic days.
5. Updating all of the VL tests performed in the data capture using HIV care card tools.

#### **Box 2: Reasons for Persistence of VL Backlog**

1. Representation for some clients.
2. Poor clinic process that could not readily identify the eligibility for the VL tests.
3. Knowledge gap for some staff who could not easily collect samples and fill out appropriate documentation.

nutrition assessment by Mid Upper Arm Circumference (MUAC), Tuberculosis (TB) screening, CD4 testing (cluster of differentiation4- an indicator of immune system, a strong predictor of HIV progression and marker for response to ART) and HIV Counseling and Testing (HCT) for children and partners for People Living with HIV (PLHIV) and the general population.

During the camp, the integrated camp team, whose composition is displayed in **Box 3** below, accomplished the following:

- Profiled patients who were active on ART and clients who were eligible, and created a list of those who had not received a VL test clearly detailing patient addresses.
- Tagged client charts using stickers so as help health workers be able to retrieve charts with ease, and also to act as reminders during triage and after the camp.
- Assigned linkage facilitators to particular parishes where they moved from door to door informing clients of the camp and what services would be provided (ASSIST provided some transport facilitation to enable them to reach most clients, including the distant ones).
- Requested family members who did not know their HIV status to visit the facility during the camps for other health services.
- Conducted peer-to-peer mobilization, including at the ART clinics, to reinforce the drive for those clients who were not reached by the linkage facilitators.

- Utilized mentors provided by ASSIST to build the capacity of health workers on sample collection and records management, while also providing a comprehensive package that included rapid nutrition assessment by MUAC, TB screening, CD4 testing, and HCT for children and partners for PLHIV and the general population.
- Provided technical support on data management through mentorships with the aim of ensuring that all efforts are documented using the facility Health Management Information System(HMIS) tools to communicate to the national electronic health information management system DHIS 2 (district health information software 2)

**Box 3: Camp Team Composition**

- USAID ASSIST regional mentors for HIV Continuum of response (CoR) and laboratory.
- Facility staff from the ART clinic, laboratory, and ANC (including midwives, clinical officers, and nurses).
- Linkage facilitators (fellow PLHIV in the different clinics who have received a formal training in basic counselling, communication, and interpersonal skills).

**Results**

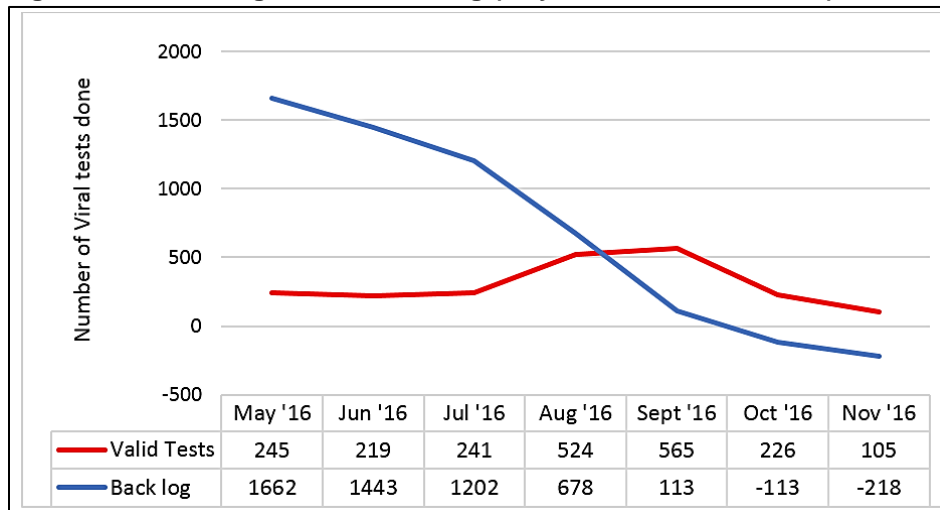
During the camp, 497/1,202 (41%) of the eligible clients were reached and had viral samples collected. 589 patients were tested for HIV, 14 of which were identified as new HIV positive clients. 20 CD4 tests were done for the 14 new HIV positive patients and the 6 pre-ART clients. A congregate assessment for TB was done using the ICF (intensified case finding) guide, and 64 presumed cases were identified and tested using GeneXpert; of this, 2 TB positive cases were identified and linked to care. These results are displayed in **Table 1** above. The community mobilization and mentorship was responsible for sustained results for the months of August and September 2016.

**Table 1: Results from the Camp**

Service Offered	Total	Positives
Viral Samples Collected	497	
HIV Testing	589	14
TB Genexpert Testing	64	2
Syphilis Screening - RPR	165	10
Nutrition Assessment	633	9 (SAM 3, 6 MAM)
CD4	20	

**Figure 1** below indicates that the backlog from May 2016 was cleared by October 2016; the negative values indicate current timely VL tests being done for the eligible patients as part of the routine clinical processes.

**Figure 1: VL tests against the backlog (May 2016-November 2016)**



**Table 2** below illustrates that VL access had from 41% in May 2016 to 92% by the end of September 2016 for all of the eligible (clients on ART for more six months) (2,691 of 2,928).

### **Discussion and Lessons Learned**

In the case of Nwoya district, while routine interventions in ART clinics geared at increasing VL testing access yielded results, they were only effective in clearing the backlog in small increments and would require a longer time to clear the entire deficit. Given this, the health camp provided a booster opportunity for:

- Reaching the most eligible clients through community mobilization by linkage facilitators and returning them to the health facility for samples to be collected.
- Providing mentorship so as to build the skills of health workers on patient and VL sample handling; this improved the routine provision of VL sample testing services by increasing the number of trained clinic staff whilst reducing the sample rejection rates.
- Integrating other services in the camp, like the TB assessment, nutrition assessment, and the HTS, STI, and CD4 tests, which were accessed by the large number of non-HIV patients who came to the facilities following the community camp mobilization drives.

To clear out the high VL testing backlogs, and improve routine VL access and HIV/TB services at the facility level, integrated camps, as in this case, resulted in a tremendous boost.

### **Challenges**

It was difficult to mobilize for VL alone for reasons of patient confidentiality. As such, ASSIST and facility teams integrated other services and did blanket mobilization, informing specific clients independently.

**Table 2: Improvements in Viral Load Access from May to September 2016**

<b>Baseline - May</b>	
Active on ART (Jan- March 2016)	3056
New on ART (Oct-Dec 2015)	142
New on ART (Jan-March 2016)	110
Active on ART for More than 6 Months	2804
clients tested	1142
% Access	41%
<b>Follow up - September</b>	
Active on ART (July- Sept 2016)	3242
New on ART (April- June 2016)	140
New on ART (July- Sept 2016)	174
Active on ART for More than 6 Months	2928
clients tested with Valid results	2691
% Access	92%
<b>Source DHIS 2 and VLCPHL Dashboard</b>	

**DISCLAIMER: This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of University Research Co., LLC and do not necessarily reflect the views of USAID or the United States Government.**

### **USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project**

University Research Co., LLC

Uganda: Plot 40 Ntinda II Road, Kampala

USA: 5404 Wisconsin Avenue, Suite 800, Chevy Chase, MD 20815



## CASE STUDY

### Going beyond formation of QI Teams: Evidence based intervention gains AGYW get when community QI teams are functional

#### What was the problem?

The disintegration of society and decline in economic activities following 20 years of insurgency in northern Uganda exposed Adolescent Girls and Young Women (AGYW) to every day risk factors that are widely documented in literature for HIV transmission. As a result, northern Uganda has HIV prevalence of 9.1% among women aged 15-49 with prevalence rates being even higher among young women because of gender-based violence, cross generational sex and early marriage, transactional sex, multiple sexual partnerships, poverty, illiteracy and drug abuse. Coupled with their own biological susceptibility, AGYW have an increased risk of HIV infections. The limited AGYW-specific interventions meant a missed opportunity to address the AGYW related challenges that increase their vulnerability while enabling risky behaviors to thrive and further transmission to occur.



AGYW group receives maize seed for planting in their group farm from the QIT members

#### What is the intervention?

The PEPFAR-funded quality improvement (QI) project, USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project established a community-based QI model of addressing HIV risk among AGYW comprising of setting up and making functional community QI teams (QITs) to: (1) build skills of AGYW to stop risky behavior and to influence safer sex practices with their partners; (2) mobilize community resources to support AGYW and their partners to stop risky behavior; and (3) link AGYW, their partners, and their communities to HIV prevention services and commodities. The model of QITs was premised on the understanding that targeting individual-level behaviors without addressing the larger contextual and structural landscape within which the AGYW live would give rise to recycling of risky behaviors and render HIV prevention efforts in vain and that QITs are a means to address the diverse contextual needs of the AGYW in order to ensure that layered services offered to them had an enabling environment for their effectiveness. The AGYW nominated members of the community with whom they would work to address HIV risk factors within their communities. The selected members included; church leaders, parents/caregivers, elders, local/cultural leaders, community health workers among others and the peer leader. The nominated community QI team members were invited for a meeting, requested to

#### DECEMBER 2018

This case study was authored by Esther Karamagi, Simon Sensalire and Juliana Nabwire of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).



provide time to voluntarily participate in community activities, oriented on their roles, and supported to select a leader. Subsequent meetings were used to exploring reasons for increased risk of HIV in the community with perspectives of the both the AGYW and the other community members, making plans and follow up on their implementation.

### **What is the outcome?**

The engagement with the AGYW in the different communities, showed that social-economic factors influence risky behaviours; for example, among the out of school AGYW, limited economic potential exposes them to HIV risk when they engage in transactional sex to provide for basic needs. Furthermore, similar factors influenced whether a young girl continued with their education –a known social vaccine for HIV. The QITs prioritized areas for improvement: 1) increasing AGYW linked to social economic empowerment activities; 2) increasing AGYW participating in income generating activities; and 3) increasing AGYW and male partners with a known HIV status.

### ***The role of the community in addressing HIV risk factors***

The community QI teams planned and implemented activities aimed at improving service delivery among the beneficiaries. The QI teams mobilized AGYW and their sexual partners for health camps to increase uptake of health services as well as created awareness on DREAMS in community members to garner support from parents/caregivers for peers to regularly participate in the activities. In some communities, male gender champions were identified to create positive attitude and change among parents/caregivers towards supporting AGYW. Other examples of the QI team are described in the table below.

<b>Roles of the community</b>	<b>Examples of how it has been played</b>
<b>Support the AGYW to access resources to support them get economically empowered</b>	<ul style="list-style-type: none"> <li>○ With the support of the QI teams, members of the community provided rent free land to AGYW to cultivate to earn money for the VSLA groups to increase available funds for loans.</li> <li>○ QI teams have mobilized resources such as money from the community to support the AGYW to start income generating activities.</li> </ul>
<b>Improve and support the engagement of AGYW in HIV prevention activities</b>	<ul style="list-style-type: none"> <li>○ The QI team meets the groups of AGYW to discuss their challenges and progress.</li> <li>○ Follow up with AGYW through home visits to discuss reasons for drop out and benefits they will get when they return to groups.</li> <li>○ Document the AGYW who have left the community.</li> </ul>
<b>Support mobilization of male sexual partners to take up HTS and other health services</b>	<ul style="list-style-type: none"> <li>○ QI team mobilized male partners through home visits to test for HIV.</li> <li>○ Men have been engaged to support their female partners to take contraceptive methods of choice.</li> </ul>

We assessed how community QITs function and the gains AGYW get from them in northern Uganda through in-depth interviews with 32 members of 8 QITs, observing QIT meetings and reviewing QIT documentation journals and work plans covering a period of one year. The findings were validated using routine data on QIT work using run charts. The quotations included in the text best represented the range of ideas voiced around the gains.

### **AGYW and their partners receive risk prevention services**

Seventeen out of 32 respondents mentioned that because of benefits from peer groups such as income generating activities and social and sexual behavior change of their AGYW, parents were motivated to support the activities of QITs and peer groups. According to half of the respondents, underlying parents support is the fact that QITs are composed of persons well known and respected in the community.

***QITs have attracted the involvement of parents in the affairs of AGYW***

### **QITs have addressed gender-based violence mostly perpetuated by men**

At least half of the respondents mentioned about addressing gender-based violence. All instances of gender-based violence reported by QITs were perpetuated by male partners on their victims and were mostly caused by a man going out with other women or demanding AGYW proceeds from sale of her agricultural products by force to meet expenses for the second partner. Respondents mentioned that, they have visited the men and engaged both partners into a mutual discussion where instances of violence were reported. In all cases, the intervention restored harmony among both parties. In many instances, the violence ended once the male partner dropped the secondary partner. All violence related cases were reported for young women who were married and living with partners.

***QITs have addressed gender-based violence***

### **Other voices from the community on the QI team's work**

Sarah a parish coordinator who has supported both communities with and without a QI team, describes the benefits of having a community improvement team.

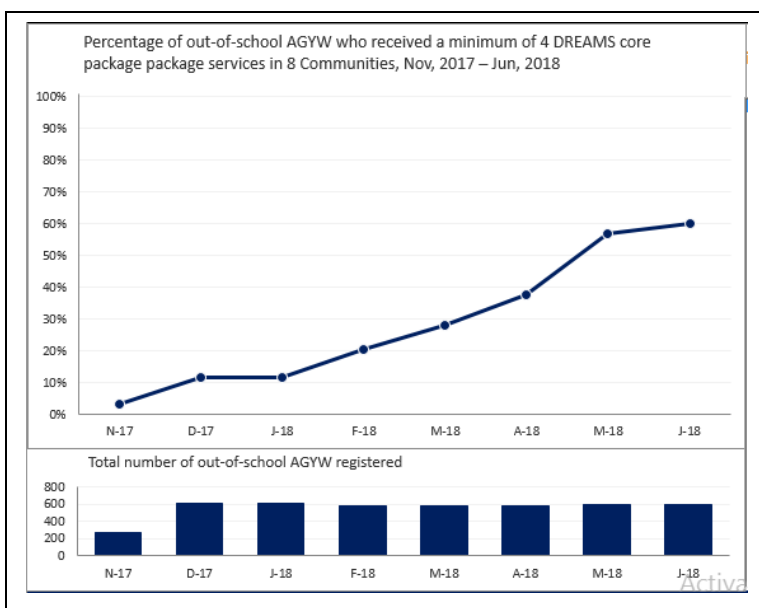
*"The community members' specifically cultural leaders and religious leaders*

*have been involved in mobilising the community and speaking about behaviour change. They have reached out to the parents and encouraged them to get involved in supporting their girls. On our QI team, we have a businessman who has provided ideas on profitable ventures the girls can get involved in to earn money."*

Alex a male sexual partner reported that his household has benefitted from DREAMS through the economic activities implemented.

*"Since my wife started to participate in the village savings and loans association (VSLA), she is able to take care of the needs of the household, I am therefore saving more money for other activities because my wife helps provide."*

Sophia a health assistant who coordinates DREAMS activities at the sub-county level explained that, communities with QI teams have better mobilisation and community ownership.



*“The QI teams have supported the AGYW to access resources, through linkage to government services. Members of the QI team have advocated for them to be prioritised to get resources such as seeds.”*

Gloria a peer leader in the community reports, that the QI team helped to get parents to get actively involved in supporting them to stay HIV negative.

*“When the community team came together, decisions were made about stopping over night discos, mobilising men to get tested and ensuring that the parents allowed AGYW to participate in group activities.”*



**Members of the community QI team meeting with a coach at Awelobutorio, Oyam district photo by Juliana Nabwire**

Lilian a DREAMS beneficiary explained that, she was stuck on what to do until the QI team gave her capital to start her small food business.

*“The QI team gave me a life line when they provided capital for me to start my own business. I have the ideas but did not have the money to start. I got 10,000 Ug shillings and started to sell Nyori (local mix of beans and maize). They supported me through visitation and advise. I Have saved 70,000= in one month and plan to expand my business through baking”*

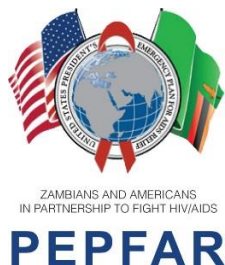
### **Scalability**

We learned that; 1) the QI teams can be able to contextualize their implementation of the program to ensure that it addresses their priority needs and 2) community engagement provides opportunity to build local capacity to address challenges as well as a platform to advance sustainability efforts.

The function of the QITs rely on goodwill of the community members and strong leadership of the team since it is voluntary work. These criteria lead to members likely to continue to devote time and energy to QI work because they share a strong sense of community and a shared identity; for example in some of the communities, they have identified eligible AGYW who were not enrolled on the program and registered them.

The inclusive community of stakeholders keeps improvement activities going since the various stakeholders tap into their various networks to communicate their activities and mobilize communities and AGYW for example; religious leaders and local council

QITs have an understanding of the larger context of risk behaviors in their communities and therefore when guided they can develop their menu of activities from a landscape analysis of risk behaviors in the community. This implies that QIT activities can be scaled beyond the current communities to support address the risk of HIV/AIDS through adaptation of the tools.



**USAID**  
FROM THE AMERICAN PEOPLE

**USAID**  
**ASSIST PROJECT**  
*Applying Science to Strengthen  
and Improve Systems*

## CASE STUDY

### **Integrating Nutrition Services in HIV and TB Care in Mindolo I Clinic in Kitwe, Zambia**

With support from the United States Agency for International Development (USAID) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), health care workers in Kitwe District are improving the quality of nutrition assessment, counseling, and support (NACS). NACS services were not being implemented as part of the daily clinic process, despite health workers being trained in NACS and receiving the necessary tools and job aids. As part of assistance to the Ministry of Health, the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project trained the health workers in selected site in Kitwe in quality improvement (QI) and provided coaching and mentoring support.

Mindolo I Clinic began improvement activities after other sites and only received a QI orientation rather than the formal QI training. By introducing three simple interventions – 1) introducing a daily HIV/TB attendance book to determine the number of clients seen on a particular day; 2) having volunteers assess nutrition status during registration before the client sees a health worker; and 3) developing new data collection tools to track nutrition assessment and categorization – Mindolo I Clinic increased nutrition assessment and categorization of clients visiting the HIV clinic from 0% to 100% in ten months.

## **Background**

ASSIST is supporting the Ministry of Health in Zambia to deliver high quality NACS services, to get all HIV-infected patients assessed and categorized for malnutrition and referred to services that provide therapeutic or supplementary foods, to ultimately manage and reduce malnutrition among people living with HIV/AIDS (PLHIV). ASSIST's work in Zambia is being conducted in collaboration with two other USAID centrally funded projects in the country: Livelihoods and Food Security Technical Assistance II Project (LIFT II) and Food and Nutrition Technical Assistance III Project (FANTA III).

ASSIST started this work in 2014 in eight sites in Kitwe District. Mindolo I Clinic is one of the eight Kitwe sites currently integrating nutrition services into existing HIV services. Mindolo I serves a population of 17,227 and offers outpatient, maternal and child health, TB, and HIV services. Mindolo I began improvement activities in March 2015. Before the introduction of NACS, all HIV clients were assessed for their vitals including nutrition status to monitor the patients' conditions and for drug dosing in the case of children. The patients' Body Mass Index was calculated electronically when the data entry clerk would update the patient's record at the end of the day. This meant that almost all patients did not know their nutrition status while at the clinic and that the clinical team missed an opportunity to identify these patients and manage them accordingly. Prior to this work, a baseline was done which revealed that nutrition assessment and categorization was not a part of the clinic activity in the HIV department.

## **MARCH 2016**

This case study was authored by Robert Musopole of University Research Co., LLC (URC) and produced by the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The work described was supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The USAID ASSIST Project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit [www.usaidassist.org](http://www.usaidassist.org) or write [assist-info@urc-chs.com](mailto:assist-info@urc-chs.com).

## How improvement activities started at the Mindolo I Clinic

To integrate nutrition assessment and categorization as a routine service to improve the clinic process in Mindolo I Clinic, ASSIST supported the facility to form a multi-disciplinary improvement team which consisted of health workers and volunteers. In February 2015, ASSIST organized a QI orientation meeting with the team during which the QI principles and processes were introduced and discussed. The team identified the following challenges in the provision of NACS services for HIV clients:

### Mindolo QI Team Members

Winfridah Mulenga  
Patrick Bwalya  
Alice Mwanza  
Queen Lutunda  
Annie Chashi  
Langford Mulundu  
Audely Mwaba

- Incomplete or no nutrition information in the patients' records in the HIV clinic. Nutrition information was not recorded in the patient files, although all the patients had their weight checked and recorded as one of the vital signs for patient monitoring.
- No nutrition data collection tools were available, which meant that there was no nutrition information, and the health care providers were not able to identify and track the progress of malnourished clients.
- Nutrition activities were only limited to children in the under-five clinic.
- Zambia as a nation had no nutrition program for adolescents and adults before the advent of NACS.

First, the team identified the assessment point and chose to focus on the HIV and maternal and child health departments. They made an action plan for the aim of assessing and categorizing 80% of HIV-infected clients for their nutrition status. With support from ASSIST, LIFT II, and FANTA III, the team came up with new data collection tools: the NACS daily attendance book which was used to capture the nutrition assessment and categorization information, the monthly NACS report, and the nutrition interim register. In essence, the daily attendance book would capture all patients with malnutrition and track their progress.

The team initially started assessing and categorizing clients only during patients' scheduled clinical and pharmacy appointments. They compiled a report at the end of March 2015. However, it was difficult to ascertain the exact number of clients who were seen, especially those who came for drug pick-up. Other care supporters like spouses, brothers, etc. would usually pick up drugs on behalf of the patients. When determining the number of clients who came for drug pick-up, everyone was documented in the pharmacy register as a client, even though they might have not been the actual patient.

In April 2015, the QI team deliberated and proposed the introduction of the daily attendance book as a way to capture the total number of clients seen on a particular day. The QI team wanted an accurate count of clients who visited the clinic in order to calculate the proportion of clients who were assessed and categorized for nutrition status. The attendance book would include columns such as: date, name of client, service (e.g., clinical or

Photo of the Mindolo daily attendance book. Photo by Robert Musopole, URC.

pharmacy) and whether it was the actual patient or a treatment supporter.

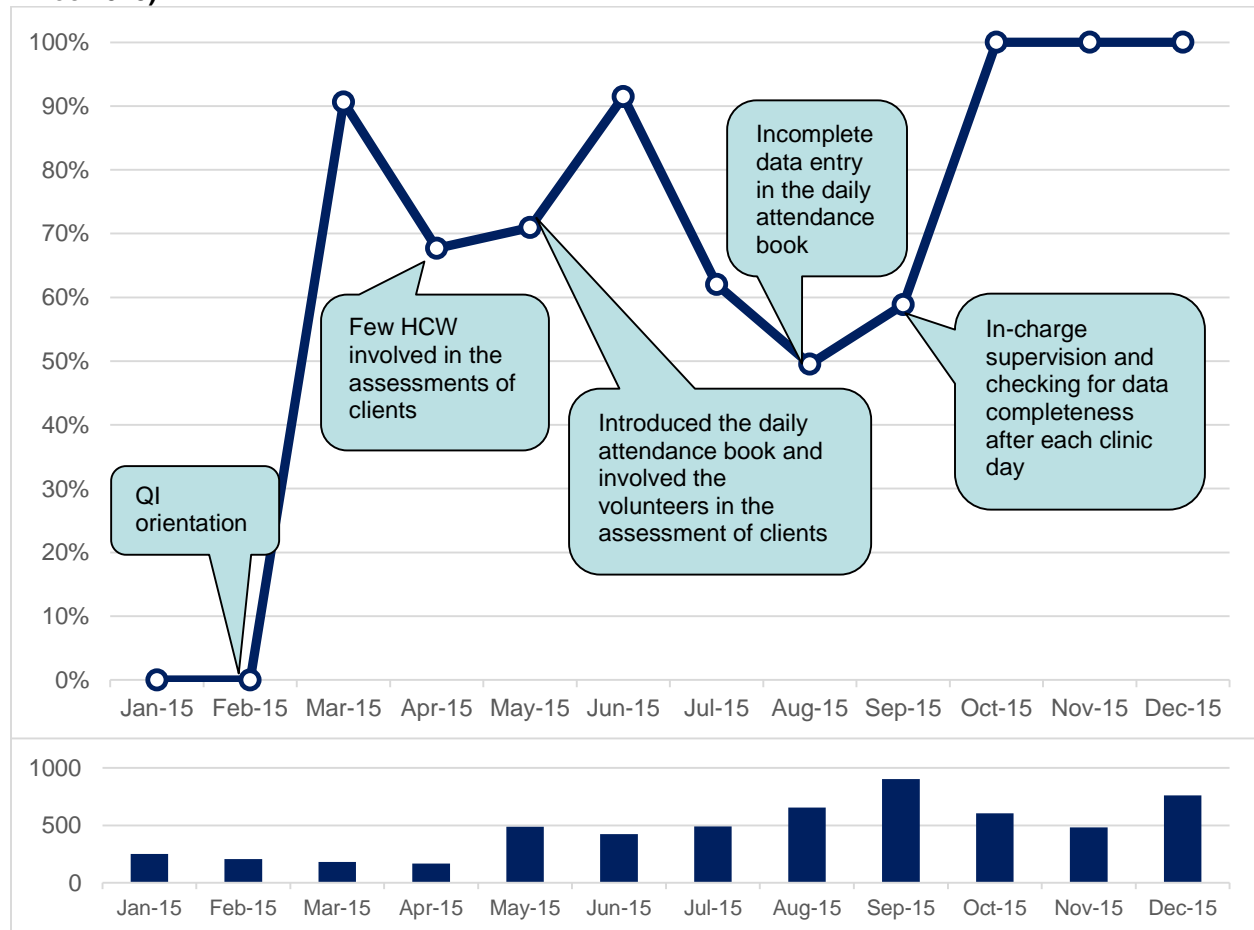
Next, in May 2015, the daily attendance book was tested and implemented. Mindolo I health care workers then oriented and assigned volunteers to assist in the assessment and categorization of clients. In September 2015, the team further introduced supervision and checking of data entry completeness in the NACS daily attendance book and register after each clinic day.

## Results

As shown in **Figure 1**, in January 2015, Mindolo I Clinic did not assess any (0%) of the 252 clients visiting the HIV clinics, but by December 2015, they were providing assessments and categorization to 100% of the 762 clients visiting the HIV clinics.

After the QI orientation meeting, the health care workers consistently began assessing and categorizing patients through April. However, the true number of clients seen could not be determined. In April, the QI team came up with the idea of introducing the daily attendance register and tested it to see whether at the end of the day the facility could determine the number of clients seen. When the test proved successful and the facility staff was able to determine the number of clients seen, the tool was implemented. During this same period, volunteers were also involved in the assessment of clients. The number of clients assessed decreased because some of the information was not completed in the NACS daily attendance book. To mitigate this, the QI team decided that the supervisor would review the daily attendance book to check data entry completeness. That is when the number of clients assessed went back up and became sustainable.

**Figure 1: Percentage of patients assessed and categorized at Mindolo I Clinic, Kitwe District (Jan – Dec 2015)**



## **Next steps**

Mindolo I was the first clinic to introduce the daily attendance book to record all patients who visit the clinic. Through learning sessions and coaching visits, other clinics noticed that Mindolo's approach seemed to be more effective, so other sites decided to test it. They have now switched to adopt the daily attendance book following the success it showed both in the Mindolo I Clinic and their own clinics. Mindolo I is now expanding their NACS work, having incorporated self-management support counselling to improve engagement, adherence, and retention (EAR) of HIV clients.

The MOH, with support from the USAID ASSIST Project, continues to support Mindolo I and the other seven sites in Kitwe to ensure that they continue to strengthen the integration of nutrition services into HIV and TB care. Since the health facilities started using QI methods to improve nutrition services, there has been a great improvement in the number of clients assessed and categorized for nutritional status.

This case study was made possible by the support of the American people through USAID. The contents of this case study are the sole responsibility of URC and do not necessarily reflect the views of USAID or the United States Government.







**USAID APPLYING SCIENCE TO STRENGTHEN  
AND IMPROVE SYSTEMS PROJECT**

University Research Co., LLC  
5404 Wisconsin Avenue, Suite 800  
Chevy Chase, MD 20815

Tel: (301) 654-8338

Fax: (301) 941-8427

[www.usaidassist.org](http://www.usaidassist.org)