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

USAID ASSIST Project

Experience Improving HIV Services

JUNE 2014

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USAID ASSIST Project Experience Improving HIV Services

June 2014

USAID Applying Science to Strengthen and Improve Systems Project
University Research Co., LLC

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For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org or write assist-info@urc-chs.com.

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Acronyms

AIMGAPS	Assuring infants and mothers get all PMTCT services
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CCM	Chronic Care Model
CDC	U.S. Centers for Disease Control and Prevention
CHMT	Council Health Management Team
CHW	Community health worker
CHW AIM	CHW Assessment and Improvement Matrix
FP	Family planning
HBC	Home-based care
HCI	USAID Health Care Improvement Project
HCT	HIV testing and counseling
HEW	Health extension worker
HIV	Human immunodeficiency virus
IST	In-service training
MNCH	Maternal, newborn and child health
M&E	Monitoring and evaluation
MGSLD	Ministry of Gender, Labor and Social Development (Uganda)
MOGCSW	Ministry of Gender, Children, and Social Welfare (Malawi)
MOH	Ministry of Health
MOHSW	Ministry of Health and Social Welfare (Tanzania)
MVC	Most vulnerable children
NACS	Nutrition assessment, counseling and support
OVC	Orphans and vulnerable children
PEPFAR	U.S. President’s Emergency Plan for AIDS Relief
PHFS	Partnership for HIV-Free Survival
PMTCT	Prevention of mother-to-child transmission of HIV
QI	Quality improvement
QIF&S	Quality Improvement Framework and Strategy (Uganda)
RCH	Reproductive and Child Health
RCQHC	Regional Center for Quality in Health Care
RHMT	Regional Health Management Team
SMC	Safe Male Circumcision
TB	Tuberculosis
URC	University Research Co., LLC
USAID	United States Agency for International Department
USG	United States Government
VMMC	Voluntary medical male circumcision

Project Overview

The **USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project** is a five-year cooperative agreement of the Office of Health Systems of the USAID Global Health Bureau designed to improve health care in USAID-assisted countries, strengthen their health systems, and advance the frontier of improvement science—the scientific basis to improving HIV service delivery processes. USAID ASSIST builds on the work of the **USAID Health Care Improvement Project (HCI)**.

USAID ASSIST improves quality and outcomes by enabling host country providers and managers to apply the science of improvement to improve the effectiveness, efficiency, client-centeredness, safety, accessibility, and equity of the health and family services. The project supports health workers and managers to improve compliance with evidence-based guidelines to achieve better patient outcomes and works at all levels of the health system to develop capacity to collect and analyze data on quality of services delivered.

As a health systems strengthening project, USAID ASSIST improves service quality and outcomes by **strengthening national capacity for a sustainable response**, including providing support for national **HIV care improvement strategy development**, strengthening the **productivity and performance of the health workforce**, strengthening **district management** to support quality HIV services, strengthening **community-facility linkages**, and **integrating gender** considerations to improve HIV service delivery.

The project directly supports frontline providers in activities to improve **compliance with clinical standards** for treatment, care and support of adults and children, HIV counseling and testing, prevention of mother-to-child transmission (PMTCT), voluntary medical male circumcision (VMMC), integration of HIV services with tuberculosis (TB), family planning (FP), nutrition, and maternal and child health (MCH) services, support for vulnerable children and families, and blood/injection safety.

The USAID ASSIST **learning agenda** seeks to generate new knowledge to increase the effectiveness and efficiency of applying improvement methods in low- and middle-income countries.

Through an **innovative implementation research** strategy, USAID ASSIST is conducting research on the cost-effectiveness of HIV improvement interventions, validity of improvement indicator data, the scale-up and sustainability of better HIV practices, and the institutionalization of the capacity to continuously improve HIV and other programs (see Figure 1).

The project uses a comprehensive design process to link improvement objectives with larger health system strengthening initiatives and to intentionally plan for **scale-up, sustainability, and institutionalization** of the improvement effort. In this way, approaches to improve HIV services are piloted and then best practices are scaled up to a large

Figure 1. Current USAID ASSIST HIV-related research and evaluation studies

Factors associated with missed appointments among ART clients (Tanzania)

A qualitative evaluation of "Assuring Infants and Mothers Get All PMTCT Services" (Tanzania)

The cost-effectiveness of applying the chronic care model to clients with HIV: A non-randomized controlled evaluation (Uganda)

A quantitative and qualitative evaluation of efforts to improve safe male circumcision (Uganda)

Factors associated with not returning to health centers among pregnant women who tested positive for HIV (Burundi)

The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies (Uganda)

Randomized controlled evaluation of using knowledge management strategies to improve the quality of safe male circumcision care (Uganda)

National assessment of injection safety, waste management practices and related stigma and discrimination (Swaziland)

number of sites, working through local health authorities and implementing partners.

USAID ASSIST country improvement plans are negotiated with, agreed upon, and signed by both USAID and host government counterparts. This agreement reinforces **country ownership of improvement objectives and strategies**. USAID ASSIST also works to build **capacity to continuously improve** through engaging with host country governments at the policy level and through competency development at the **pre- and in-service** levels.

In FY14, USAID ASSIST is providing technical support in Botswana, Burundi, Cambodia, Cote d'Ivoire, Democratic Republic of Congo, Georgia, Haiti, India, Indonesia, Kenya, Lesotho, Malawi, Mali, Mozambique, Nicaragua, Niger, Nigeria, Senegal, South Africa, Swaziland, Tanzania, Uganda, Ukraine, and Zambia. Appendix A provides details on USAID ASSIST PEPFAR-supported programs by country. Appendix B lists key HIV-related publications from the ASSIST and HCI projects.

Key Learning from HIV Improvement Activities

The combined experience of ASSIST and HCI has yielded the following insights about improving the quality of HIV care in USAID-assisted countries:

- **Frontline health workers can be engaged to make measurement improvements in service quality:** Regular health providers delivering facility-based HIV prevention and care can improve quality fairly rapidly with an improvement approach that engages them in analyzing and acting on gaps in compliance with HIV standards. Many changes can be made with existing resources and in a fairly rapid time period once providers are engaged in the improvement process. But frontline health worker engagement requires the support of facility, district, and national program leaders to make improvement a priority. Improvement teams that don't have the support of facility or program leadership often stall in their efforts and become unmotivated.
- **Facility-based teams need support to apply improvement methods:** Orienting facility teams to improvement methods requires more than one-off training; on-site coaching has proven to make the difference for most teams. Deploying coaching teams made up of district health staff, implementing partner staff, and improvement experts from ASSIST has proved to be an effective strategy for building both site-level and district manager capacity to support improvement in HIV service delivery.
- **Measurement and documentation fuels improvement:** Ongoing monitoring and evaluation (M&E) of care processes helps teams understand and analyze barriers to quality care and test change ideas to determine whether these result in better care quality. Documentation of gaps in service delivery has also been used by teams to lobby for higher level support to address issues that are beyond what the improvement team itself can handle.
- **Collaborative improvement facilitates the scale-up of better service delivery practices:** Having multiple teams address the same improvement aim enables many potentially effective changes to be tested at the same time. Learning sessions or other meetings that bring peers together to learn from each other about how to improve care allows for rapid spread of better care practices.
- **South-to-south learning accelerates improvement across countries:** By leveraging improvement knowledge across countries through multi-country initiatives like the Partnership for HIV-Free Survival (PHFS), we have seen faster start-up of improvement work, as countries have benefitted from learning from their peers in other countries. Coordinating improvement efforts through multi-country initiatives also facilitates the synthesis of learning that can benefit other countries. Early in the PHFS work, ASSIST teams from Kenya, Mozambique, Tanzania, and Uganda came together to identify key areas for learning about post-natal PMTCT services to which each country could contribute; through ongoing sharing meetings and conference calls, implementation lessons learned by the first team were documented and systematically shared, enabling more rapid start-up of PHFS activities in the other countries.

- **National level quality strategies need to be linked with action at the point of service delivery:** Policy and strategy development to improve the quality of HIV programming needs to be grounded in actual improvement work by service providers. Policies and strategies made in isolation of actual improvement work do not gain traction nearly as fast as those linked to the work of improvement teams.
- **Application of the Chronic Care Model strengthens HIV services:** The principles of the Chronic Care Model are fundamental to the provision of high-quality, patient-centered HIV services. We found considerably greater impact when relevant components of the chronic care model were applied in coordination at different levels of the health system rather than implementation of partial elements of the Chronic Care Model in isolation.
- **Communities have solutions:** Before the introduction of community-level quality improvement teams to improve programming for orphans and vulnerable children (OVC), most civil society organizations and development partners thought that they had the best solutions to the challenges communities were facing, especially in the domains covered by national OVC service standards, like health and nutrition, economic strengthening, social production, education, etc. The externally determined solutions usually were input-oriented and often times died a natural death as soon as the development partner exited. When representatives from the community participate on improvement teams and sit together to develop solutions, communities are coming up with innovative ways of addressing challenges that require little or minimum financial resources and are based more on the resources readily available within the community. For example, in Kenya, a community team set up multi-story gardens in informal settlements where overcrowding is common. Out of these gardens, caregivers of orphans and vulnerable children are now able to provide nutritious meals to their households and use the monies saved and sometimes earned from selling vegetables to meet other household expenses.
- **The right services, not just good services:** The earlier approach of supplying vulnerable children with what civil society organizations thought was needed tended to address only some of the problems children faced. The quality improvement approach has shifted the focus of OVC programming to identify in a more holistic way what is ailing a child; interventions are then designed to deliver holistic services that meet felt needs of the child and ultimately yield better outcomes. In the words of one OVC improvement team member in Kenya, *“We are now able to provide the right mix of services to our vulnerable children.”*

Experience Improving HIV Services

Treatment, Care and Support

Summary of USAID ASSIST experience: ASSIST is applying improvement methods across the continuum of HIV services, drawing on pioneering HCI work to adapt the WHO-endorsed Chronic Care Model (CCM) to HIV services—addressing all six interlinked system components critical in providing good chronic illness care: 1) clinical information systems optimized to facilitate long-term disease management, 2) delivery systems designed to be efficient and proactive, 3) decision support to help providers exercise sound, evidence-based clinical judgment, 4) self-management support to help patients negotiate the daily challenges and choices involved in providing good self-care, 5) supportive health system leadership, and 6) complementary community resources. HCI employed the CCM to enhance core care and treatment services in two applications: a comprehensive application of the model in one district in Uganda and an initiative in two Tanzanian districts focused on improving patient self-management support. Both efforts yielded encouraging results and prompted the launch of a controlled study, currently underway in Uganda, to measure the impact of CCM implementation. ASSIST’s current program of work in Uganda is using the framework of the Continuum of Response to support the Ministry of Health and USG implementing partners throughout the country to improve service delivery at all levels of the health system with the aim of ensuring that people who are HIV-negative remain negative and that those who are positive and are identified and enrolled into care early, retained in care for the rest of their lives, are

adherent to their ARVs and remain well enough to perform normal daily functions. ASSIST is currently finalizing a comprehensive CCM toolkit that incorporates both Uganda and Tanzania's experiences in implementing CCM interventions to improve the quality of HIV chronic care. A core component of this toolkit is guidance related to using expert patients to support the patient self management and delivery system design components of the CCM.

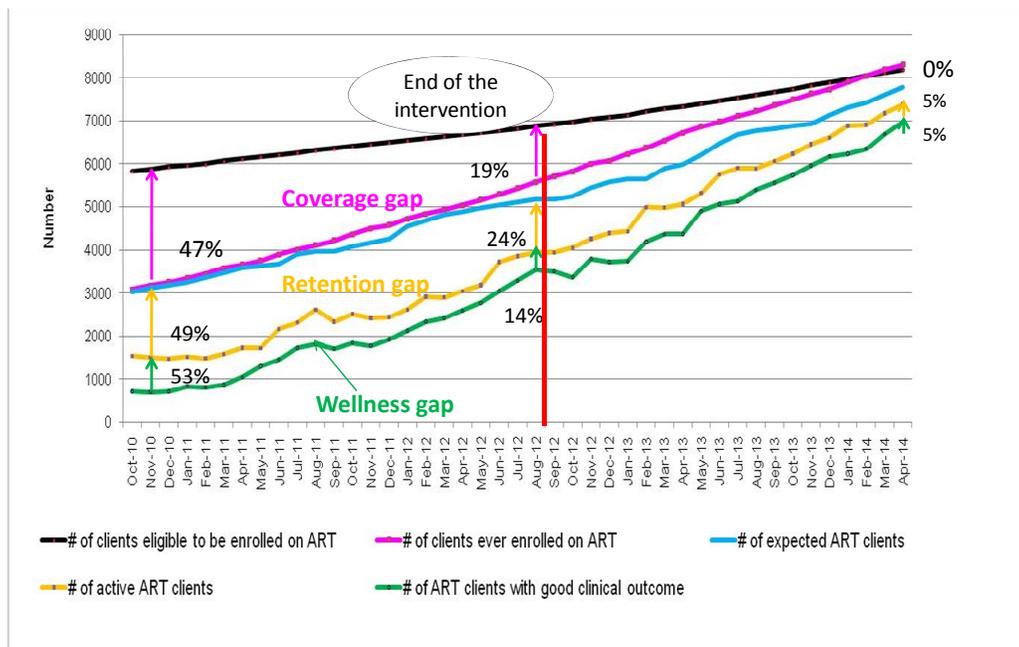
Results in Uganda:

Our approach to improvement of core HIV care and treatment services has been guided by the notion that HIV programs should fundamentally aim to maximize: 1) coverage of people eligible for the services, 2) retention of patients in HIV treatment programs, and 3) good clinical outcomes for those receiving care and treatment. To pursue these aims, we began working with 15 facility-level teams in Uganda in 2010 through HCI to use the CCM to examine and improve their health care delivery systems. Buikwe District was chosen for the collaborative improvement intervention, and officials at the district level of the health system were engaged to participate in and ultimately lead this effort. The facility-level teams in Buikwe were encouraged to examine their systems of care through the lens of the CCM and to consider changes that could improve aspects of care categorized under each CCM component.

The larger and older HIV treatment programs concluded that their systems were relatively strong, so they focused on improving self-management support, the area in which they felt their care systems to be weakest. Improvement teams at smaller, newer sites concluded that improvement was needed in all areas. For example, these teams worked to improve clinical information systems through introduction of longitudinal records and registries, enhance decision support through training as well as guideline procurement and job aids, and achieve more effective and efficient delivery systems design through the introduction of triage processes and task-shifting. Improvements in self-management support at all sites included enhanced counseling, engaging expert patient volunteers, and other measures to help patients establish goals and make progress toward overcoming challenges to achieving those goals.

Data on coverage, retention, and clinical outcome gaps at the five sites in Buikwe that provided comprehensive ART care revealed a significant increase in coverage of persons eligible for ART, with improved patient retention and clinical wellness over the course of the collaborative (Figure 2). Furthermore, achievements in coverage, retention, and wellness were not only sustained but also enhanced over a period of 20 months following the end of the intervention.

Figure 2. Uganda: Coverage, retention, and clinical outcome gap analysis showing improvement at five sites implementing the CCM in Buikwe District (October 2010-April 2014)



Results in Tanzania:

In Tanzania, the CCM was introduced by HCI at 14 sites in two districts in Morogoro Region in 2011. Improvement teams and health system officials examined the CCM and elected to focus on self-management support as the weakest and most critical component of their HIV care delivery systems. Due to human resource constraints, facilities decided to recruit expert patients, called “peer mentors,” to help enhance the quality of self-management support provided to patients. This was an entirely new group of volunteer providers in Morogoro, and considerable reflection and effort went into their selection and introduction into health facility operations. Health workers and expert patients received training in self-management support and decided to provide enhanced group education along with individual counseling to help patients identify challenges, set goals, and work toward achieving those goals. Over time, there were increases in goal setting and action planning, adherence, self-reported confidence to self-manage, appoint-keeping, and clinical outcomes. Although the teams were focused on self-management support, other components of the CCM were also strengthened as a result of self-management support interventions. For example, expert patients assisted in making delivery system design more efficient by taking over simple clinic tasks previously performed by providers. Also, as members of the community, in which many of them also served as home-based care workers and community organization leaders, expert patients greatly assisted in enhancing community linkages and patient access to community resources.

Voluntary Male Medical Circumcision

Summary of USAID ASSIST experience: Since early 2013, USAID ASSIST has supported the MOH and 10 implementing partners in Uganda to improve compliance with national voluntary medical male circumcision (VMMC) standards using a collaborative improvement approach to engage 30 sites in testing changes and sharing results to accelerate learning about process improvements. ASSIST has recently been asked to support improvement of VMMC in South Africa. The scope of work for that assistance is now being discussed.

Results in Uganda:

Uganda adopted VMMC, also called Safe Male Circumcision (SMC), as part of its HIV prevention strategy in 2010. Since then, the Ministry of Health (MOH) has implemented SMC mostly with support from PEPFAR through implementing partners. In 2012, two PEPFAR-led External Quality Assessments evaluated compliance of service delivery sites in Uganda with minimum quality standards for SMC. Serious quality gaps were identified, including lack of standardized forms or registers, lack of documentation of client consent, and use of untrained service providers, among others.

In response, USAID ASSIST supported the MOH and key SMC stakeholders to come to agreement on a uniform quality assessment tool that could be used by all sites and partners to measure performance against SMC standards on an ongoing basis as they introduced changes to improve care. USAID ASSIST supported the MOH to align the WHO VMMC quality standards toolkit to other existing MOH standards, policies, and guidelines. The assessment tool developed encompasses 53 standards, organized into seven areas: 1) Management Systems (10 standards); 2) Supplies, Equipment and Environment (6 standards); 3) Registration and Group Education (4 standards); 4) Individual Counseling and HIV Testing for SMC Clients (6 standards); 5) Male Circumcision Surgical Procedure (10 standards); 6) M&E (4 standards); and 7) Infection Prevention (13 standards).

USAID ASSIST was asked to provide technical support for improving the quality and safety of SMC services and build capacity of MOH staff to continuously improve SMC services. Engaging 29 fixed and 1 mobile service sites spread across 26 districts and 10 implementing partners, USAID ASSIST has supported the 30 sites since early 2013 to form improvement teams to identify barriers in achieving national and international VMMC standards, develop possible solutions (changes) to overcome the

barriers, and carry out improvement plans to test these changes, while collecting performance data to objectively measure whether they had bridged the gap.

To further aid in the interpretation and use of the data, USAID ASSIST created a dashboard to display the results with a simple color-coded scheme: red indicates “poor” performance (<50% compliance with standards), yellow “fair” performance (50%-80% compliance), and green “good” performance (>80% compliance). As shown in Figure 3, at baseline (February-May 2013), fewer than 20% of sites scored in the “good” range (>80%) for supplies and equipment, patient counseling, and surgical procedure. By May 2014, the proportion of sites scoring “good” in these areas rose to 80%, 93%, and 97%, respectively.

Use of a color-coded dashboard to convey quality assessment scores actually motivated site teams to ensure that they worked towards moving away from red (poor) and yellow (fair) to green (good). The effect of the dashboard was to spur a sense of friendly competition among the sites, since all sites wished to be seen as good performers, in the “green”.

Figure 3. Uganda: VMMC program performance dashboard for 30 sites (Baseline in February-May 2013 vs. May 2014)

Legend: ■ >80% - Good ■ 50 - <80% - Fair ■ <50% - Poor Not assessed

Health Facility	Baseline Feb-May 2013							May-14						
	Management systems	Supplies, equipment & environment	Registration group education and IEC	Individual counseling & HIV testing	Male circumcision surgical procedure	Monitoring & evaluation	Infection prevention	Management systems	Supplies, equipment & environment	Registration group education and IEC	Individual counseling & HIV testing	Male circumcision surgical procedure	Monitoring & evaluation	Infection prevention
1	30	50	0			33		70	83	67	100	91	86	91
2	20	33	0			7	92	80	67	80			87	92
3	40	83	0			14	84.6	80	83	75			50	100
4	30	50	0			18	82	80	83	100	100	80	93	85
5	20	33	0			14	80	80	83	83	100	100	100	69
6	10	50				7	70	80	67	83	100	80	86	85
7	40	50	50			75	60	90	67	87	83	80	93	67
8	50	50	25			14	77	90	100	83	100	90	86	85
9	60	50	83	39	64	29	92	90	100	100	82	100	100	100
10	20	50	50			0	33	90	100	100	83	100	92	93
11	33	25	0			0		80	80	67	67	80	77	75
12	25	33	0				70	100	83	100	80	83	100	92
13	60	67	75	83	81	14	80	100	83	67	100	100	86	93
14	70	50	25			50	80	100	83	83	100	100	86	92
15	60	33	25			50	90	90	84	84	100	91	86	100
16	30	67	100			14	58.3	100	100	100	100	100	100	100
17	40	83	75	100	100	14	84.6	80	83	100	100	100	86	92
18	70	67	100	67	100	69	75	100	67	100	100	100	100	80
19	40	50	0			21	100	100	83	83	80	97	100	100
20	60	50	0			21	92	100	83	83	83	85	93	85
21	70	50	0			21	77	90	80	83	94	80	75	76
22	80	83	100			93	100	100	100	100	100	94	86	100
23	70	100	100	100	100	93	100	90	100	100	100	100	86	100
24	70	100	100	100	100	93	100	90	83	100	100	100	86	93
25	60	50	100			46	100	90	100	83	94	91	86	100
26	60	33	50			15	76.92	90	83	100	100	91	93	92
27	40	83	75	100	100	75	100	90	100	100	100	91	93	92
28	20	50			78	15	50	90	75	50	94	87	93	90
29	22	67	67		47	29	85	80	83	83	83	80	50	91
30	40	67				38	84.6	90	67	83	100	91	93	82

HIV Counseling and Testing

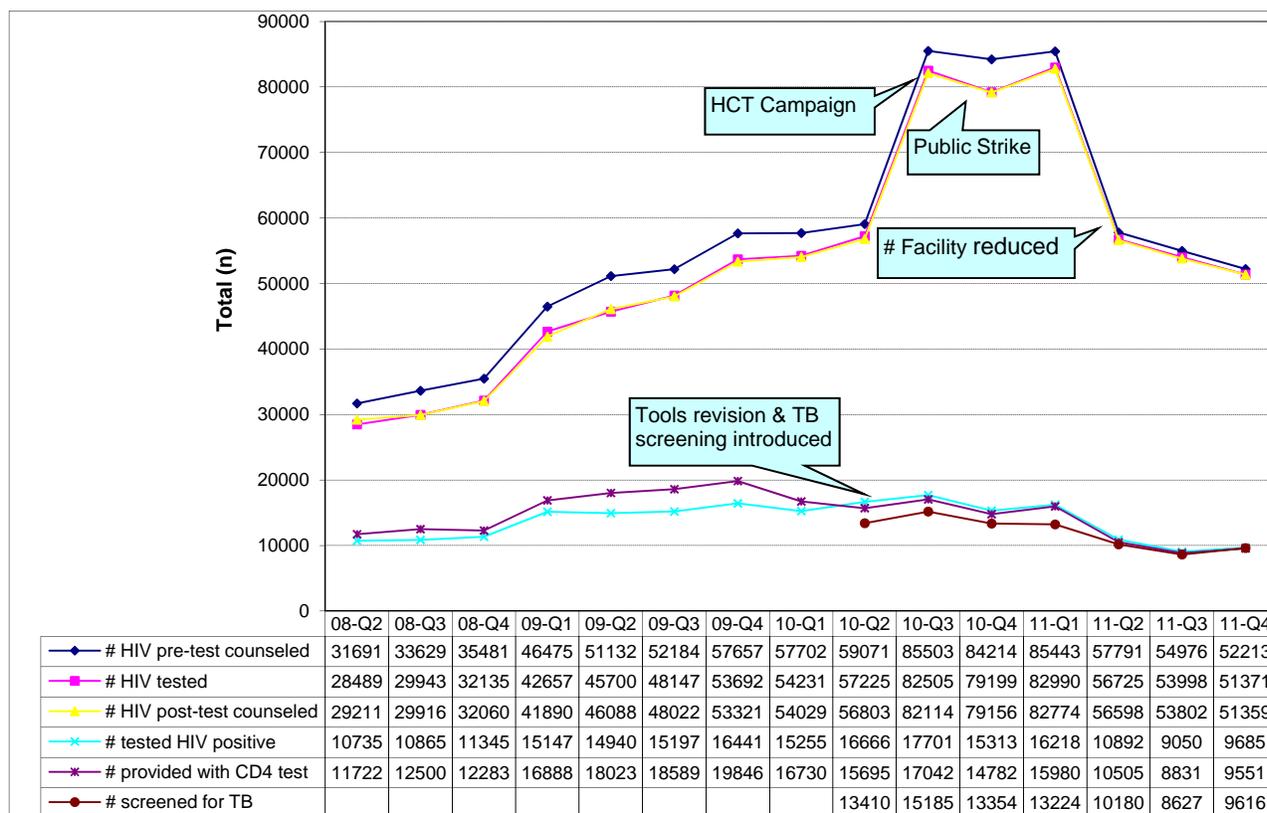
Summary of USAID ASSIST experience: ASSIST’s predecessor, HCI, supported the development of national quality standards for HIV counseling and testing in South Africa and Nicaragua and improvement activities at the facility level in over 250 sites. HCI also supported national HIV testing campaigns in both

countries. The work in South Africa, focusing on the five priority provinces for USAID, made particular gains in integrating tuberculosis screening as part of HIV counseling and testing. The work in Nicaragua, a focused epidemic country, emphasized helping Ministry of Health facilities to promote voluntary counseling and testing to vulnerable populations, including people with sexually transmitted infections, men who have sex with men, and people with TB.

Results in South Africa:

In 2008-2011, HCI supported facilities in five provinces of South Africa to improve their performance in HIV testing and counseling standards, including TB testing and CD4 testing among patients found to be co-infected with both HIV and TB. HCI supported the national HIV testing and counseling (HCT) campaign in all five provinces, facilitating planning committee meetings, developing implementation plans, and liaising with all relevant stakeholders. This ensured that implementation and rapid scale-up of HIV counseling and testing proceeded as smoothly as possible in all supported areas. The supported facilities achieved high levels of coverage of HCT services while at the same time expanding the volume of HCT services provided. By FY11, more than 95% of clients seen were counseled and tested for HIV, approximately 35% of whom were males and 65% were females. HCI also did important work to strengthen compliance with National Department of Health guidelines, leading to the following results, depicted in Figure 4: CD4 testing rates among PMTCT clients improved from 84% (Q2 FY10) to 99% (Q4 FY11); CD4 testing rate among co-infected TB/HIV patients improved from 83% (Q2 FY10) to 95% (Q4 FY11); and, TB screening among HIV infected clients improved from 80% (Q2 FY10) to 96% (Q4 FY11).

Figure 4. South Africa: Number of clients receiving HIV counseling and testing services (FY08 Q2- FY11 Q4)

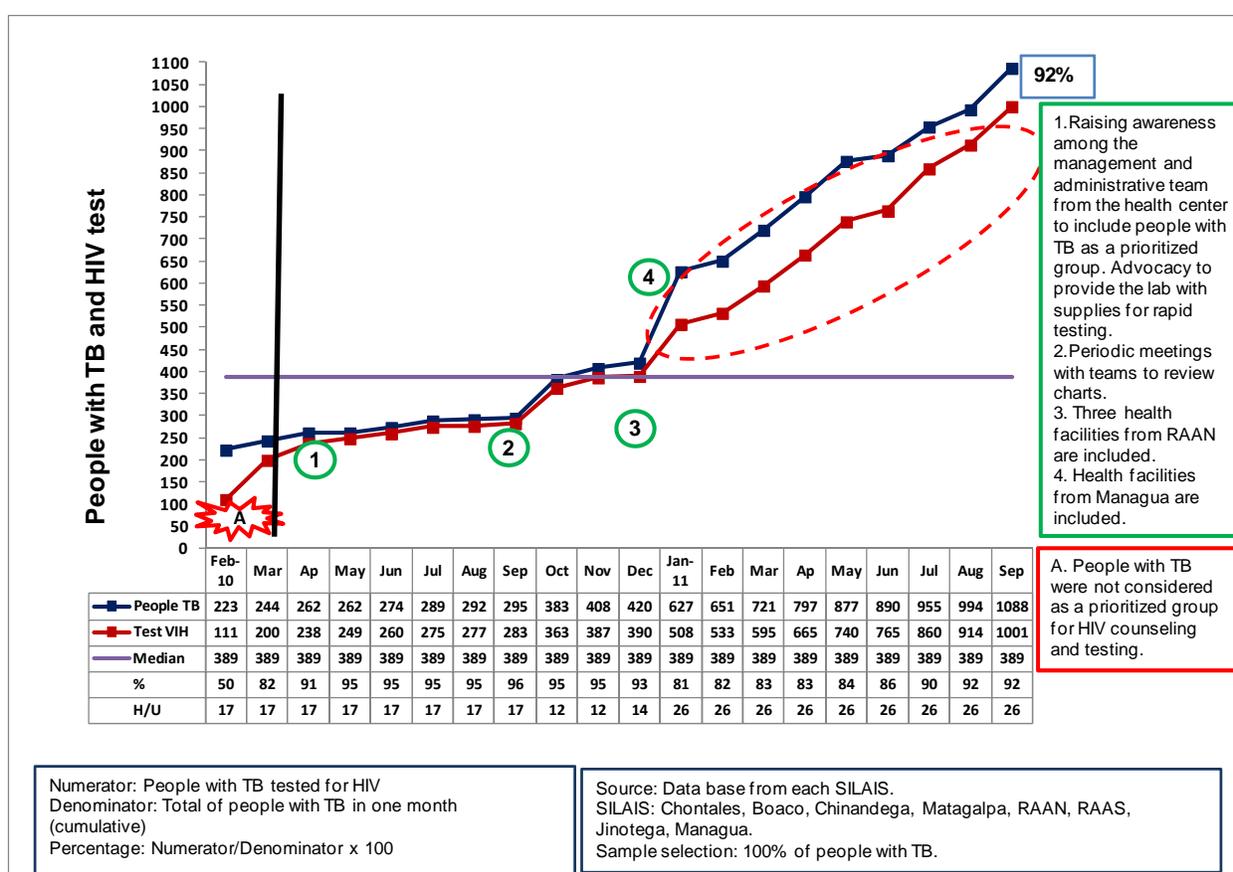


Note: Towards the end of Q2 2011, HCI reduced the number of facilities supported due funding shortfalls. By the end of Q4- 2011, there were 80 facilities HCI supported, down from 163 during Q1 -2011.

Results in Nicaragua:

In Nicaragua, following initial assistance to support the Ministry of Health in mainstreaming HIV counseling and testing services, HCI was requested to focus its technical support in improvement to increase HIV counseling and testing among vulnerable groups (people with sexually transmitted infections, pregnant women, and people with TB) in 26 high-volume health facilities in eight regions. Facility-level improvement teams supported by the project monitored counseling and testing quality indicators and implemented necessary improvements to make HCT services more efficient. By ensuring that pre-test counseling was provided to 100% of adults with TB, offering HIV tests in the same place where patients receive TB care, and facilitating the voluntary, private and confidential character of results and testing, these facilities achieved a marked increase in the percentage of people with TB tested for HIV, from 50% in February 2010 to 92% in September 2011, while at the same time the number of TB patients increased 10-fold (see Figure 5).

Figure 5. Nicaragua: HIV testing in people with TB in health facilities in eight regions (February 2010-September 2011)



Prevention of Mother-to-Child Transmission (PMTCT)

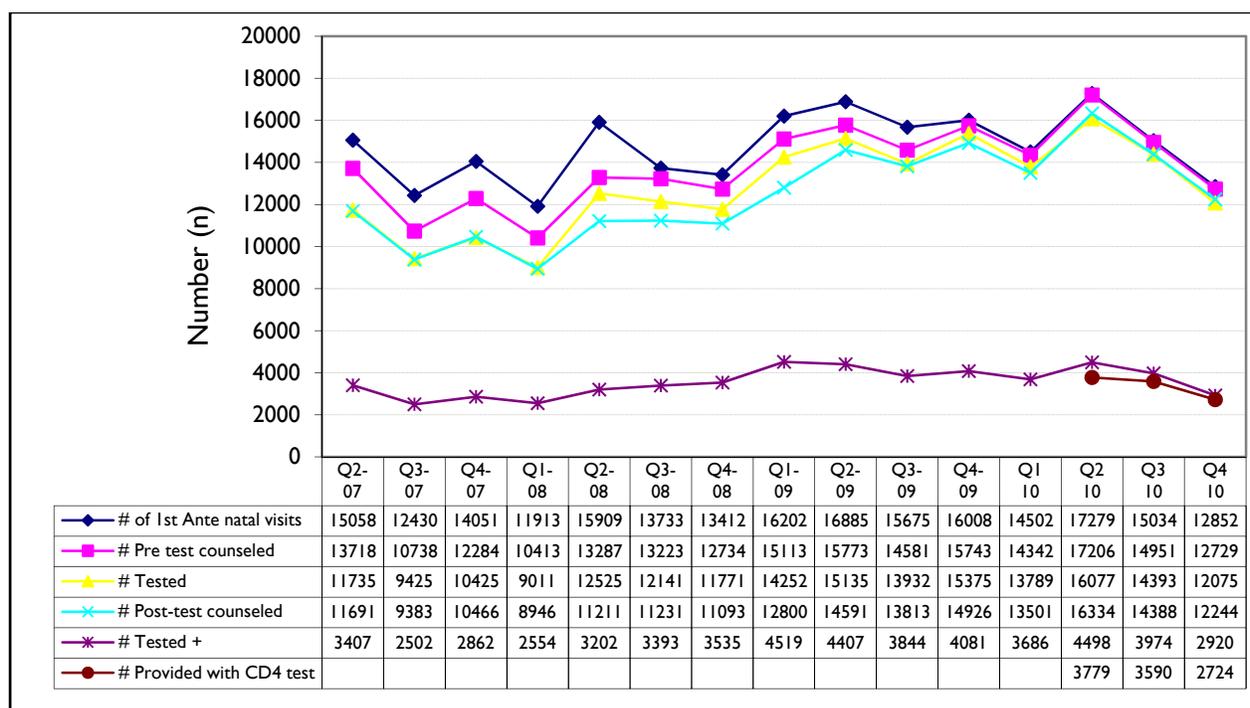
Summary of USAID ASSIST experience: Since evidence-based PMTCT standards were first established many years ago, countries have continued to struggle with assuring that mothers living with HIV and infants exposed to HIV receive the full spectrum of PMTCT services across the prenatal-delivery-postnatal continuum of care. ASSIST and HCI have been at the leading edge of applying improvement methods to increase retention in care of mother-baby pairs through: 1) support for development of national PMTCT policies and guidelines in South Africa, Cote d'Ivoire, Tanzania and Burundi; 2) roll-out of Option B+ in Tanzania and Burundi; 3) development of job aids and health worker guidelines on infant

feeding counseling in the context of PMTCT; and 4) support for facility- and community-based improvement teams in Burundi, Cote d'Ivoire, Ethiopia, Rwanda, South Africa, and Tanzania to increase uptake of HCT among pregnant women and delivery of all PMTCT services to both mothers and infants. ASSIST is currently leading the facility-level implementation of the Partnership for HIV-Free Survival (PHFS) in Kenya, Malawi, Tanzania and Uganda and supporting community-level implementation of PHFS in Mozambique. ASSIST has applied a quality improvement methodology to integrate gender into ANC and PMTCT services, through engaging male partners to attend ANC appointments and to get an HIV test, and to improve uptake and retention of mother-baby pairs. This innovative approach, in which changes to test to engage male partners are identified, implemented, and evaluated, is being carried out in Tanzania, Burundi, and Uganda.

Results in South Africa:

In South Africa, HCI provided support to the Department of Health at the national and provincial levels, providing mentorship and coaching support to district and facility level staff in 214 facilities in Eastern Cape, Limpopo, North West, KwaZulu-Natal, and Mpumalanga provinces. By the end of FY10, HCI-supported facilities had achieved a high level of compliance with national HIV guidelines. Figure 6 shows that counseling and testing uptake among first antenatal clients was more than 95%, and the proportion of HIV-positive ANC clients provided with a CD4 test increased from 84% to 93%. Furthermore, during FY10, HCI was involved with implementation of quality improvement activities as part of the government's accelerated PMTCT plan. In the last quarter of FY10, more than 91% of babies born to HIV-positive mothers were provided with Nevirapine at HCI-supported facilities.

Figure 6. South Africa: Number of antenatal clients receiving HIV counseling and testing services (2nd quarter FY07–4th quarter FY10)



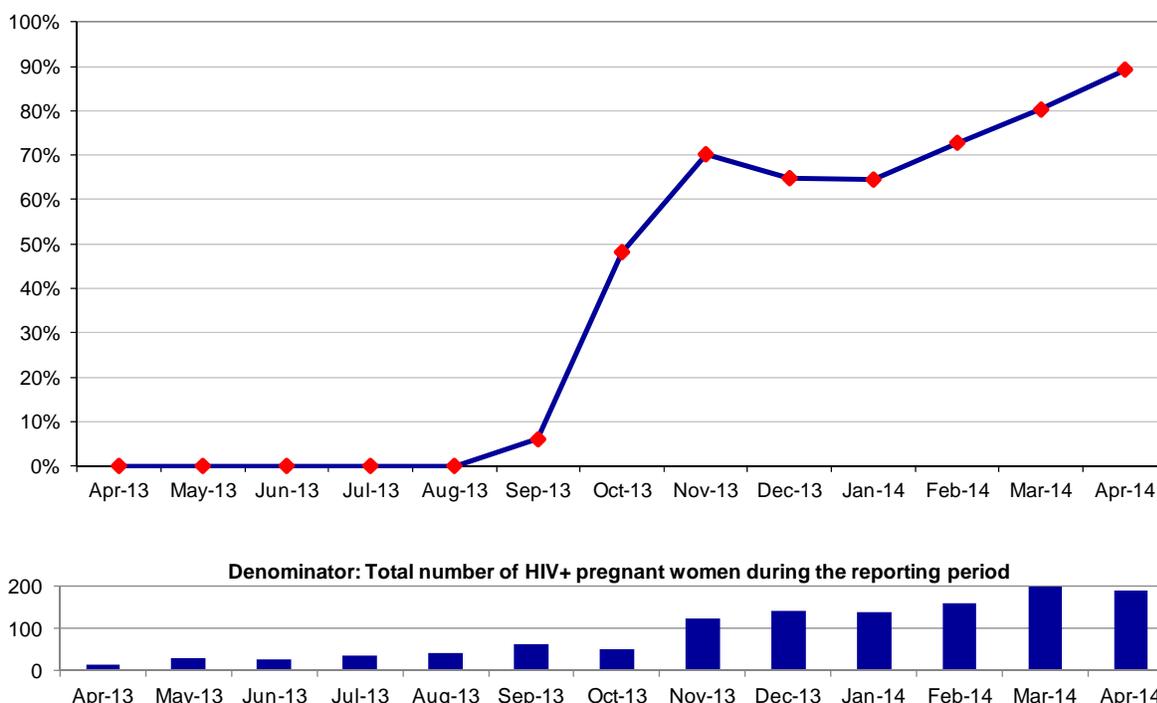
*Decline in number of patients in Q3 of FY10 was due to a reduction in the number of facilities assisted by HCI as a result of the retirement of an HCI coordinator as well as funding shortfalls experienced during Q4.

Results in Tanzania:

Building on HCI assistance to the Ministry of Health and Social Welfare (MOHSW), implementing partners, Regional Health Management Teams (RHMTs), and Council Health Management Teams (CHMTs), ASSIST is supporting RHMTs, CHMTs, and implementing partners in 20 of Tanzania's 25

regions to develop, implement, and scale up PMTCT quality improvement efforts. While these efforts have resulted in increases in coverage of PMTCT services such as early booking of ANC, male partner HIV testing, and screening for TB, and increase in the practice of exclusive breastfeeding, the PMTCT program in Tanzania still faces many challenges. These include: retaining mother-baby pairs in care; postnatal follow-up and testing of HIV-exposed infants; and ART initiation for pregnant and lactating HIV-positive women, in accordance with PMTCT Option B+, which the MOHSW adopted and began implementing in October 2013. Under the Partnership for HIV-Free Survival, ASSIST is supporting 30 sites in three regions of Tanzania (Tabora, Iringa, and Mbeya) to work intensively on testing changes that will deliver optimal ARV and nutrition care for mothers living with HIV and infants exposed to HIV, improve retention of all mother-baby pairs in post-natal care, and improve monitoring of the well-being of HIV-positive mothers. Changes being tested in the 30 sites include: moving ART services from HIV clinics to Reproductive and Child Health (RCH) clinics; counseling mothers on the importance of joint visits at which the mother and baby receive all needed services and on the importance of post-natal visits at 2,7,28 and 42 weeks; keeping infant and mothers' records together; expanding postnatal care clinic days; mother-to-mother support groups to promote regular post-natal care; and enlisting community health workers to track down mother-baby pairs who are lost to follow-up. Figure 7 shows results from 10 of the 30 PHFS sites in Tanzania, which have raised retention in care of mother-baby pairs from 48% in October 2013 to 89% in April 2014.

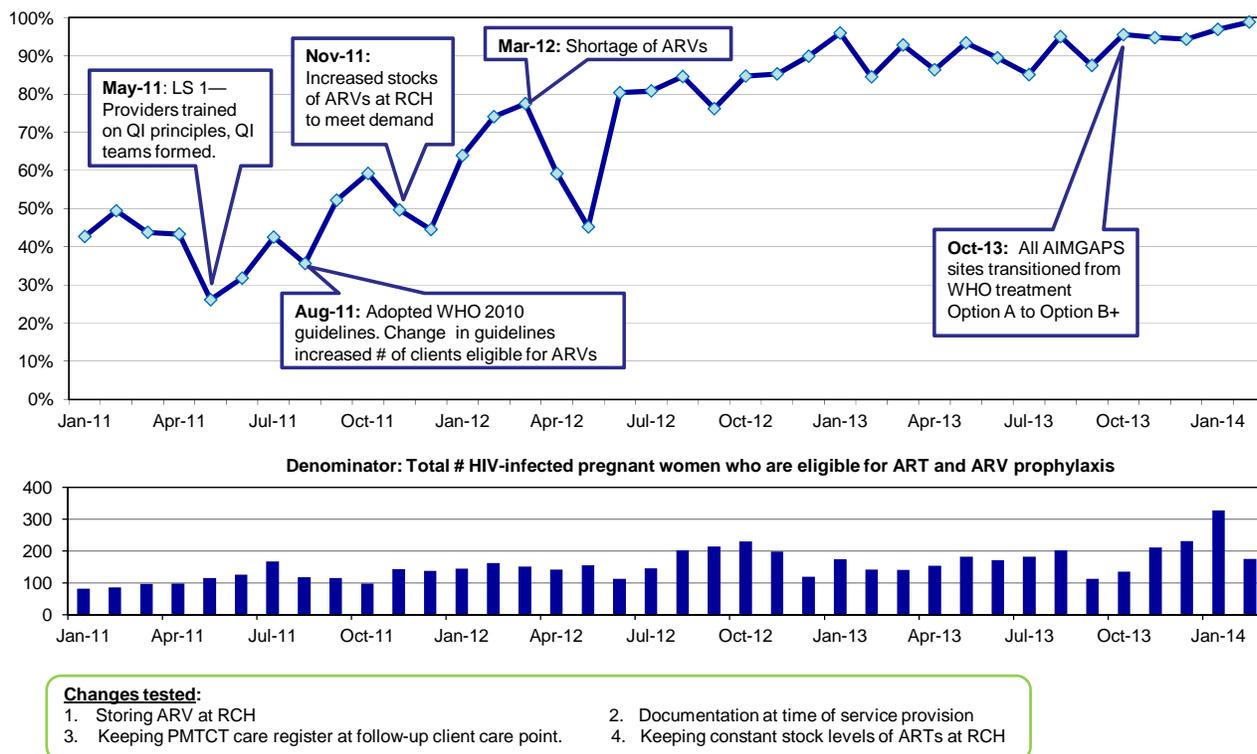
Figure 7. Tanzania: Percentage of HIV-positive mother-baby pairs attending HIV care each month, 10 sites, Tabora-Nzega Region (April 2013-April 2014)



HCI worked with the MOHSW to prototype the WHO PMTCT guidelines in three sites of Njombe Town Council to identify operational challenges and provide solutions to implementing the guidelines. ASSIST has also supported MOHSW and partners in an activity known as AIMGAPS (Assuring Infants and Mothers Get All PMTCT Services) in 11 sites in Iringa Region to increase service uptake retention and quality of PMTCT services. Among the changes tested by these sites were: same-day enrollment to PMTCT care; on-the-job training on documentation in PMTCT registers; CD4 sample collection through RCH services; prioritizing HIV-positive pregnant women for CD4 testing; on-the-job and peer mentoring on dried blood sample collection; daily enrollment of HIV-positive pregnant women to care and treatment

irrespective of HIV clinic day; documentation of ANC number in HIV register for easier identification of pregnant women; and cross-checking of undocumented ANC visits by verification with PMTCT dispensing register and mother's ANC card. While the final evaluation of the AIMGAPS prototype is currently in progress, data reported by the sites in Figure 8 shows steady improvement in the proportion of HIV-positive mothers being initiated on lifelong ART, from 43% in January 2011 to 99% in February 2014.

Figure 8. Tanzania: Percentage of HIV-positive women started on or receiving ART, 11 sites in Iringa Region (January 2011-February 2014)



Results in Uganda:

Since April 2013, ASSIST has worked with other USAID and CDC partners—Food and Nutrition Technical Assistance (FANTA), Strengthening Partnerships, Results and Innovations in Nutrition Globally (SPRING), and the AIDS Support Organisation (TASO)—to support the MOH to implement the PHFS Initiative in 22 health facilities in six districts, using quality improvement methods. Quality improvement teams in all 22 sites have been supported through monthly coaching visits to identify gaps in care, prioritize areas for improvement, develop and test change ideas to address the gaps and implement these changes. To start improvement work, teams initially focused on two key areas: data quality and the retention of mothers and their babies in care. These were the areas with the biggest gaps as initial visits to the sites showed that less than 2.9% of the clinical charts of infants exposed to HIV were completely and accurately filled out, and fewer than 3% of exposed infants had been retained in care the previous three months. To reduce loss to follow-up of HIV-positive mothers and their babies, QI teams tested a number of changes (see Table 1). By February 2014, the 22 sites had all achieved strong gains in retaining mother-baby pairs in care, from 2% of pairs in April 2013 retained in care to over 60% in February 2014.

Because all the sites had made strong gains in retention of mother-baby pairs, ASSIST led a knowledge harvest in February 2014 to gather learning from the 22 teams and ask them to rank the changes based on criteria like strength of evidence and feasibility for scale-up. Table 1 summarizes how the participants

in the harvest meeting evaluated the changes and lists the key changes implemented in order of ranking, beginning with the highest-rated change.

Table 1. Uganda: Rank-ordered changes to improve retention of mother-baby pairs in care

Change to improve retention of mother-baby pairs in care	Evidence from pilot tests	Relative importance	Simplicity (not difficult or complex)	Scalability	Total rating
Mother and baby seen together in the clinic on the same appointment date	5	5	4.8	4.8	19.6
Priority given to MB pairs	4.2	4.6	4.6	4.6	18
Write appointment date on medicine bottle	3.4	4.8	4.6	4.6	17.4
Give mother and baby just enough drugs that will last to the next appointment	3.6	4.6	4.6	4.4	17.2
Pair mothers' and babies' cards together and clinicians/ dispensers remind them of appointments	4	4.5	4.3	4.3	17.1
New clients seen where they are tested	4.25	4.25	3.5	5	17
Provide a special clinic day for mothers and children to be seen	3.4	4.6	4	4	15.6
Give mother and baby the same appointment date only	3.8	5	3.2	3.4	15.4
Expert patients follow up lost mothers and mothers who miss their appointments	4	5	3	3.2	15.2
Asking mothers to come with their babies before services are provided	3.4	3.4	3.6	3.6	14
Use of mentor mothers to trace, counsel and return mother baby pairs to care	3	4.2	3	2.4	12.6
Phone calls	2.8	4.8	2.3	2	11.9
Involving service providers in regular meetings	3	3	2.5	3	11.5
Male involvement in Family Support Groups (FSG)	2.8	4.8	1.6	1.8	11

Support for Vulnerable Children and Families

Summary of USAID ASSIST experience: Since 2008, the Care that Counts Initiative started under HCI has provided technical assistance to ministries and partner organizations at the national, district, and community levels in nine countries to develop minimum care standards for services for vulnerable children in seven domains: health, education, shelter, nutrition, psychosocial support, legal protection, and household economic strengthening. With support from HCI, five countries--Ethiopia, Cote d'Ivoire, Tanzania, Kenya, and Haiti--launched standards of care for vulnerable children and are now scaling up implementation, while the other four countries--Malawi, Mozambique, Nigeria, and Zambia--have been supported by HCI and ASSIST to field test draft standards with community improvement teams. USAID ASSIST is now supporting the Ministry of Gender, Labor and Social Development (MGLSD) in Uganda to apply improvement science to enable the delivery of care in compliance with standards that the MGLSD had already established for care for orphans and vulnerable children (OVC). The project is currently working with the MGLSD and three implementing partners in Uganda to apply modern improvement approaches to improve the quality of services for OVC at the service delivery level and support the national level to coordinate and institutionalize these efforts. In Malawi, USAID ASSIST is supporting the Ministry of Gender to launch and disseminate standards for vulnerable children in one region of the country and is supporting teams in two districts to identify effective changes for implementing the standards that can be rapidly scaled up to other districts.

Results in Kenya:

In response to a 2009 study that revealed that vulnerable children in Kenya received generally uncoordinated services, the Kenyan Government joined with development partners to develop *Minimum Service Standards for Quality Improvement of Vulnerable Children Programs in Kenya* that were launched in 2012. The standards were designed to harmonize interventions by various stakeholders, encourage fair distribution of services, and provide a framework for monitoring and evaluating the impact of the programs serving vulnerable children. Since 2011, HCI and later ASSIST have been helping implementing partners for vulnerable children programs in Kenya to mainstream QI approaches at the point of service delivery through institutionalizing the minimum service standards. From 2011-2013, the projects supported the OVC implementing mechanisms for USAID – AIDS Population Health Integrated Assistance (APHIA) and AMPATH Plus – in 37 of Kenya’s 47 counties to support over 300 community-level QI teams to identify gaps in care related to education, child protection, food security, legal protection, economic strengthening, health, and nutrition and to implement locally feasible solutions. The ASSIST team collated all the change ideas tested by these teams in a guidance document (Change package for Quality Improvement in Orphans and Vulnerable Children Programmes in Kenya, available at: <https://www.usaidassist.org/resources/change-package-quality-improvement-orphans-and-vulnerable-children-programmes-kenya>) and a set of case studies on how specific communities used local resources to improve care (Improving the lives of vulnerable children in Kenya, available at: <https://www.usaidassist.org/resources/improving-lives-vulnerable-children-kenya-experiences-implementing-quality-service>) in September 2013.

Results in Tanzania:

From 2011-2013, HCI supported the Bagamoyo district council and community level most vulnerable children (MVC) committees in a demonstration project to implement MVC standards at the community level. HCI and Bagamoyo council staff developed the capacity of village-level MVC committee members to understand the National MVC QI guideline; how they can plan, analyze, document, and implement changes on agreed indicators, and how to use the Child Status Index to measure children’s wellbeing. Each team prepared their own action plans to facilitate changes in improving the quality of services provided to vulnerable children and households. Some of the actions taken by the supported MVC committees included: MVC committees were able to identify stakeholders and link vulnerable children with various services (e.g., school support); they collaborated with village authorities to mobilize community members to contribute resources (e.g., to process birth certificates, food support, etc.); conducted follow-up to ensure that vulnerable children attend school regularly; and some MVC committee members volunteered to train vulnerable children to sew as a way of generating income. After six months of implementation of the guidelines, the MVC committees were able to show notable improvements in coverage of vulnerable children with key services. From May 2011 to February 2012, access to adequate shelter improved from 43% to 85%; access and use of insecticide-treated nets improved from 15% to 64%; the percentage of children with normal growth as shown on their growth monitoring cards, improved from 62% to 91%; children with birth certificates increased from 6% to 45%.

Integration of HIV services with TB, FP, Nutrition, and Maternal and Child Health

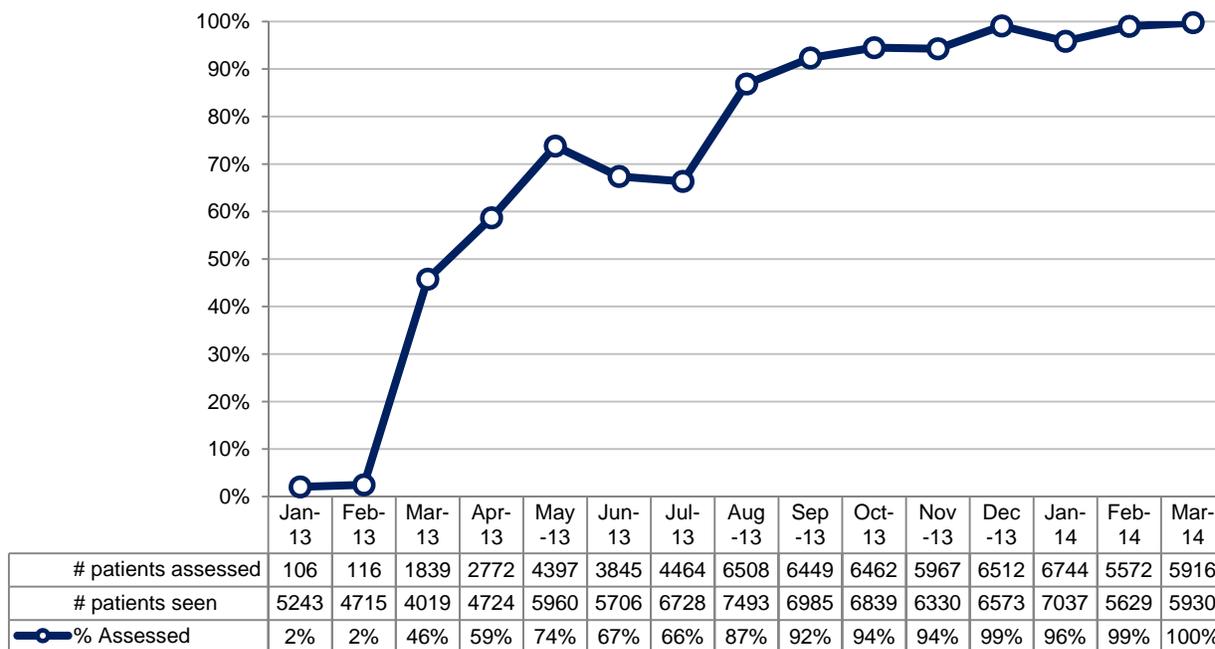
Summary of USAID ASSIST experience: Another major thrust of improvement activities supported by ASSIST and HCI has been to streamline the integration of other vital services for HIV patients into routine care, such as TB screening and diagnosis (South Africa, Uganda, Nicaragua, Tanzania), family planning (Uganda, Nicaragua), nutritional assessment counseling and support (Uganda, Kenya, Malawi), and infant feeding counseling and other maternal and children services. In Tanzania, ASSIST has supported improvement activities that integrated HIV testing and treatment into Reproductive and Child Health services in order to improve retention in care of mothers and exposed infants, reduce waiting time, and reduce loss to follow-up. HCI’s application of the Chronic Care Model in Uganda and Tanzania emphasized integration of CCM into essential primary care services, including the integration of nutrition

and palliative care into routine primary care for people with HIV. Building on successful experiences integrating nutritional support for HIV patients into routine care and treatment in Uganda and Kenya, ASSIST and HCI are currently supporting improvement teams in Malawi and Zambia to scale up nutrition assessment care and support (NACS) for patients with HIV.

Results in Malawi:

In February 2013, the MOH, with support from USAID ASSIST, started working with district coaches and facility-based health care workers from eight facilities in two districts of Malawi to integrate nutrition care for people with HIV and TB. The activity also sought to provide data on the number of malnourished clients to the district and national level and to identify sources of funding to provide ready-to-eat therapeutic food. The teams decided to focus on ensuring that everyone coming to the HIV, PMTCT, and TB clinics was screened for malnutrition. They tested a number of different ways to do this, including shifting point of assessment, using different types of staff to conduct assessments, and expanding the availability of nutrition services. The improvement in the routine assessment of the nutritional status of HIV patients resulted in a large increase in the identification of clients who were malnourished. This was mainly due to a substantial increase in the number of clients whose nutrition status was assessed. In January 2013, only (106) 2% of clients coming to the clinics were being assessed for malnutrition in seven of the eight sites (the eighth site was already assessing 100% of clients). After incorporating the changes to improve nutrition service delivery, the other seven facilities are now assessing 100% of people coming to the clinics, as shown in Figure 9. This means that close to 6000 people each month are now receiving routine nutrition assessment in those sites.

Figure 9. Malawi: Percentage of clients assessed with their nutritional status recorded, 7 sites in Balaka and Karonga districts (January 2013 – March 2014)



Results in Uganda:

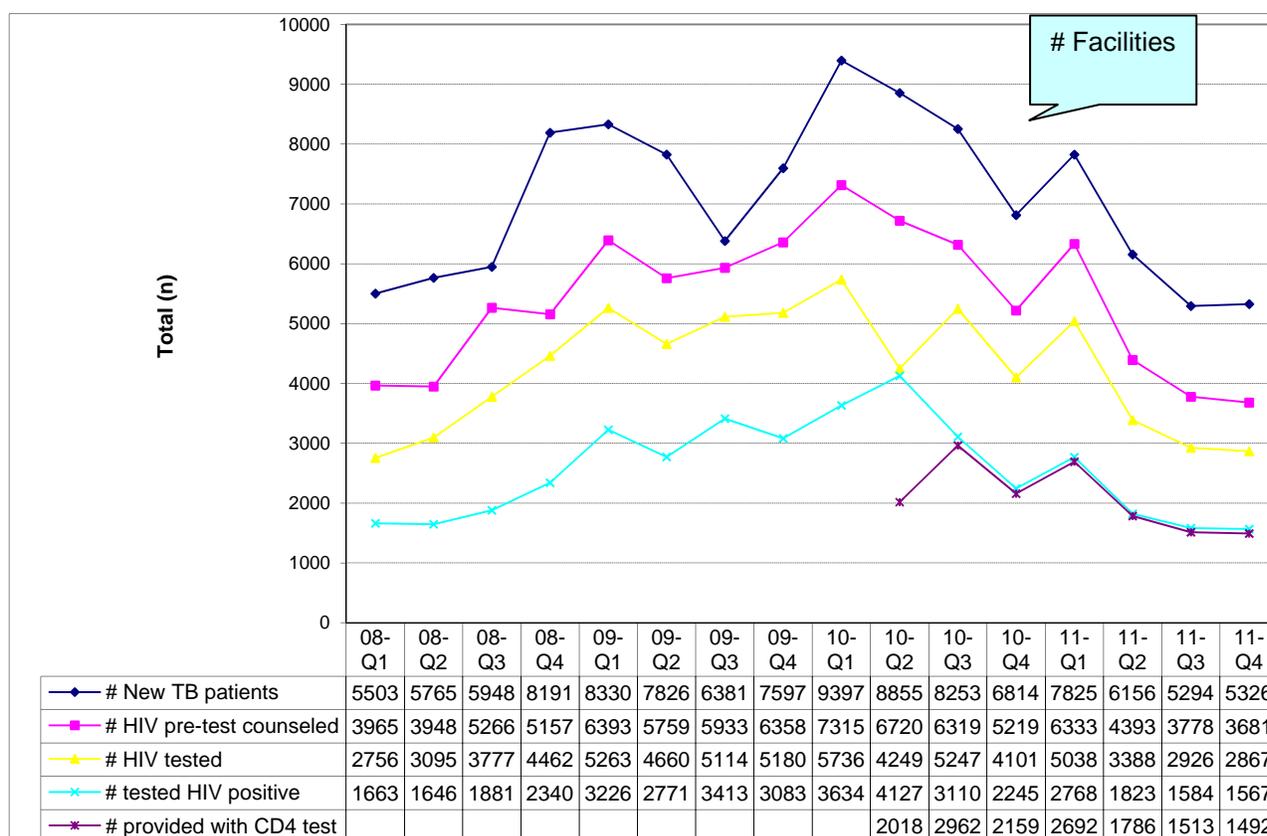
A multi-faceted intervention to improve integration of family planning (FP) services into routine HIV services was introduced in four clinics providing HIV services in Uganda’s Masaka District through: 1) Integrated on-site training of providers and managers focused on FP counseling, methods administration and use of improvement methods; 2) formation of facility-level improvement teams, with monthly coaching visits to help teams build improvement competence; and 3) quarterly meetings among the four clinics and

district officials to share learning and accelerate uptake of best practices. The percentage of HIV-positive clients seen in program facilities counseled for family planning per month increased from 29% in November 2011 to 84% in February 2013; during the same period the percentage of HIV-positive clients who received a modern FP method increased from 16% to 60%.

Results in South Africa:

A focus area of HCI’s direct assistance to facilities in South Africa in FY09-FY10 was increasing TB screening in newly diagnosed HIV-positive patients. By the end of FY10, referrals for TB screening among newly diagnosed HIV-infected individuals in HCI-supported facilities had increased to 87%, up from 45% in Q4 of FY09, after the introduction of a TB screening tool developed by URC’s South Africa TB team. By the last quarter of FY10, almost all HCI-supported facilities had conducted TB risk assessments and were being supported by HCI to develop TB infection control plans. HIV counseling and testing among TB patients remained steady at around 60%, mainly because many TB patients in South Africa already know their HIV status and refuse further testing. Improvement was seen in the proportion of HIV-positive TB patients referred for CD4 count, from 83% in the Q2FY10 to 96% in Q4FY10. Furthermore, about 77% of newly diagnosed TB patients were counseled and tested for HIV (see Figure 10).

Figure 10. South Africa: Number of TB patients received HIV counseling and testing services (FY08-FY11)



Note: Towards the end of Q2 2011, HCI reduced the number of facilities supported due funding shortfalls. By the end of Q4- 2011, there were 80 facilities HCI supported, down from 163 during Q1 -2011.

Results in Kenya:

During FY11 and FY12, HCI supported a nutrition collaborative improvement project in Kenya involving 8 facilities in 4 districts (out of 19) in Nyanza Province. HCI supported facility teams to test changes to

Despite major challenges, the participating sites made significant improvement in safe injection practices. The aggregate compliance with selected criteria for safe injection practices at the facilities improved from 18% at baseline (May 2012) to 54% (October 2012) (see Table 2). Provider compliance with criteria for administering injections safely also improved from 13% in May 2012 to 58% in October 2012.

Table 2. Pakistan: Improvements in injection safety (May 2012 vs. October 2012)

	Baseline May-12 (n=13)	Oct-12 (n=12)
Average compliance with best practices for injection safety and waste management at the facility level (11 criteria)	18%	54%
1. Running water and soap is available for washing hands in the clinic	23%	75%
2. Alcohol-based hand rub is available for cleaning hands in the clinic	15%	42%
3. Gloves are available in the clinic	0%	92%
4. Reminders and/or job aids are posted promoting safe injection practices and waste management	0%	92%
5. Facility has no loose needles, syringes, or sharps left lying inside or outside the facility	46%	33%
6. No multi-dose vials are left with a needle in the diaphragm	46%	42%
7. No cotton swabs are kept wet or soaked in water/alcohol	38%	33%
8. Separate waste containers are available for waste segregation	0%	33%
9. Sharps container is available	8%	67%
10. Sharp waste disposal containers are not more than 3/4 full?	0%	100%
11. Access to an acceptable final waste disposal method (e.g., incinerator)	0%	0%
Average compliance with safe injection practices by providers administering injections (8 criteria)	13%	58%
1. Adequate hand hygiene prior to administering injection	0%	55%
2. Use of a new pair of gloves prior to a venous access injection/IV	0%	9%
3. Use of a clean designated tray, or area to prepare the injection	8%	73%
4. Sterile syringe and needle used [taken from an unopened packet]	31%	73%
5. Patient's skin cleaned adequately before the injection	38%	91%
6. Did the provider discard the needle without recapping?	8%	55%
7. All sharps disposed in a safety box immediately after the injection	8%	64%
8. Adequate hand hygiene after administering injection	8%	45%

Results in Namibia:

USAID ASSIST's predecessor, HCI, provided technical assistance to the Ministry of Health and Social Services of Namibia from 2009-2012 to prevent transmission of blood-borne infectious diseases by reducing unsafe and unnecessary injections. The average number of injections ordered per person per prescription declined from 1.4 before the project began to 0.5 in 2011. To sustain efforts to support continued rational use of medications, HCI supported the 34 existing district-based Therapeutic Committees to champion the cause of promotion of rational use of medication through ongoing work with prescribers to focus on appropriate and inappropriate therapy. In addition, all facilities reported no reuse of syringes or needles and that practices such as preparing injections in a clean designated area and use of a disinfectant on injection and vena-puncture sites, are followed. Rates of needle-stick injuries, injection practices, and prescribing practices all improved. For example, sharps containers that were only seen in 2% of 32 hospitals at baseline were present in 95% of 167 facilities reporting by the project's end.

Experience Strengthening Systems to Build Country Capacity for a Sustainable Response

Strengthening the Productivity and Performance of the Health Workforce

Summary of USAID ASSIST experience: The current shortage of health workers is estimated to be 7.2 million, projected to increase to 12.9 million by 2035. This shortage is widely recognized as a major barrier to the achievement of health and development goals, including PEPFAR goals. Although many studies have enumerated the severe health workforce deficits, few countries are likely to amass the workforce they need in the near future. Improving health care quality with the available workforce has received limited policy and research attention despite the viability and necessity of this strategy and also enables health systems to perform to greater degrees of efficiency and effectiveness with an expanded workforce once they become available.

At the end of FY13, PEPFAR supported over 6.7 million men, women and children on ART, a four-fold increase since 2008. In the context of the health workforce shortage, continued and future efforts to accelerate the scale up of ART and HIV care and optimize HIV care outcomes will necessitate efforts to improve the performance and productivity of the available health workforce.

With PEPFAR's support, ASSIST is working to develop evidence to promote the application of approaches to not only improve the quality of care, but also to strengthen the available health workforce by **improving health worker engagement, performance, and productivity**. ASSIST has found that significant improvements in service delivery can be attained alongside improvements in human resources management and health worker engagement when factors affecting performance are addressed as part of the improvement work. Such an approach enables clinical and non-clinical health workers at all levels of the system to innovate and test practical ways that better utilize existing resources to strengthen the continuum of HIV care, linkages to and retention in care between the community and health system, self-care in the community, medicines availability and use, and clinical outcomes. Fundamental to ASSIST's work is the understanding that health care improvement requires change and that health workers are at the frontline of change efforts. ASSIST is working to equip health workers with necessary competencies to identify quality gaps, analyze root causes of these gaps, brainstorm and test changes and use and analyze data to inform decisions.

ASSIST is partnering with international, regional and national stakeholders to identify core competencies and implement strategies to **integrate improvement competencies into pre-service and in-service training** of health workers. This builds the capacity of health workers to be active change agents—a key precondition to institutionalizing the capability of health systems to identify and address the implementation challenges of scaling up quality HIV care. To maximize the effectiveness, efficiency, and sustainability of human resources for health investments, particularly where evidence and guidance are limited, ASSIST brings together stakeholders in evidence- and expertise-informed processes to develop global guidance and provide country assistance towards **improving health worker in-service training and strengthening community health worker programs**.

Improving health worker engagement, performance and productivity:

ASSIST is using a combination of research and improvement collaboratives to develop evidence to identify and promote the application of interventions to strengthen health worker engagement, performance and productivity at the community, service delivery and management levels. Literature across health and other sectors describe common factors that can affect workforce performance such as unclear roles and tasks, misaligned financial and non-financial incentives, ineffective or inefficient processes of work, lack of feedback, lack of competence to perform processes of work, and an inadequate working environment. Results from HCI's work in Niger, Tanzania, Ethiopia, and Uganda have spurred ASSIST to address factors affecting health worker performance in all improvement efforts.

For example, in the Mtwara Region of Tanzania, 12 health facility teams mapped and reviewed HIV processes of care and analyzed health worker tasks. Based on identified problems, teams reorganized the process of care, shifted tasks, and clarified task expectations which were then reflected in individual job descriptions and work plans. Between July 2010 and February 2012, the proportion of HIV clients assessed for active TB at every visit improved from 35% to 93%; the proportion of HIV-exposed children under 18 months receiving daily cotrimoxazole prophylaxis increased from 13% to 100%; and the proportion of pregnant women who tested positive for HIV and were enrolled in care and treatment increased from 80% to 100%. All 57 health workers also had job descriptions compared to 2 at baseline, and 88% of staff said they were highly motivated compared to 67% at baseline.

Health worker engagement has been found in high income country contexts to be associated with better performance, quality of care and health worker motivation. A landmark study in Tanzania soon to be published by ASSIST indicates that health worker engagement matters in low-resource contexts. Engagement matters, particularly in complex tasks that necessitate multiple processes, multiple actors, and problem solving across multiple levels of care. The study found that health facilities with health workers with below average levels of engagement had three times the proportion of HIV clients that were lost to follow-up (35%). We have learned that greater health worker engagement is associated with better care and are using this knowledge to add weight to our understanding of how applying improvement science is not only an effective and efficient way for a system to continuously improve, but also to better engage its health workers. USAID ASSIST's research has also contributed towards the development of evidence-based tools and methods by which to quantify and study health worker engagement.

Bringing teams of health workers from across the levels of the health system to work together in improvement teams not only allows the system to tap into the deep and varied expertise of the system's inner workings to understand root causes to gaps and identify potential solutions, but also creates space for autonomy and collaboration as it engages health workers to clarify roles and responsibilities, strengthen working relationships and communication, and build systems of peer support.

Improving health worker in-service training effectiveness, efficiency and sustainability

Investments to address the health worker crisis in low- and middle- income countries have been significant, with a large portion of this funding spent on in-service training (IST) to rapidly build health worker competence to provide quality services. Since 2010, PEPFAR alone has invested in over one million IST encounters to increase competence in HIV service delivery. In-service training has gained prominence as a method to rapidly build health worker competencies at scale. However documented challenges such as unnecessary duplication in training and significant service disruptions have raised questions of the effectiveness, efficiency and sustainability of training investments. These challenges and the lack of global overarching guidance provided the impetus for global experts and partners from 26 countries to jointly develop and launch the Global Health Worker In-service Training Improvement Framework under USAID ASSIST. This framework codifies 40 recommendations under the themes of 1) strengthening IST systems, 2) coordination of training, 3) continuum of learning, 4) design and delivery of training, 5) support for learning and 6) evaluation and improvement of training.

The framework has been used in Ethiopia to develop national in-service training strategic frameworks, evaluate in-service training investments in Nigeria, and will be used to help inform efforts to improve in-service training coordination in Swaziland. ASSIST will be publishing a wiki of guidance and resources to accompany each recommendation in the framework to catalyze further IST improvements.

Integrating improvement competencies into pre-service and in-service training:

All health systems have some aspect of dysfunction, inefficiency and ineffectiveness and continuous improvement is a necessary part of day to day work for all health workers. While health worker education and training systems have been doing increasingly better to build specific competencies to practice in their profession, most health professions' education and training systems are not equipping health workers with the competencies to brainstorm, test, study, implement, and spread changes. A key

precondition to the sustainability of past and current investments in health care improvement is the availability of a current and future workforce across the health system that has the competence to lead and participate in improving care. By supporting the integration of improvement competencies into health worker education and training, ASSIST is working with other stakeholders towards transformative health professions education reform to enable health workers to be competent in meeting the HIV care and other priority needs of the populations they serve.

ASSIST is working with the Uganda-based Regional Center for Quality in Health Care (RCQHC) to define basic core improvement competencies that can be integrated into health worker education and training. The competency framework is in the process of being finalized and will be accompanied by guidance for the development of training curricula. In Swaziland amongst other countries, ASSIST is also working to support universities to incorporate improvement competencies into pre-service education. In many countries, ASSIST is working with other partners to develop and harmonize in-service training programs to build improvement competencies. There is currently a dearth of literature and opportunities for shared learning to catalyze efforts to integrate improvement competencies into health worker education and training. Going forward, ASSIST will seek to develop a platform to bring together key stakeholders to share learning, curricula, evaluations, and adult learning methodologies.

Strengthening community health worker programs:

The importance of both community health workers and volunteers (CHWs) and their contribution to health care and health promotion have garnered increasing attention from governments, donors, health systems researchers and planners. CHWs play an essential role in many countries to extend the outreach of health services including HIV services in the community and improve linkages between those that need care and those that can provide it. A recent systematic review of CHWs in HIV care described positive effects on HIV service organization, delivery and cost though highlighted the need for this cadre to be integrated into the wider health system for sustainability¹. Programs that support CHWs have been found in many countries to be weak, poorly coordinated with fragmented attempts at improvement. National stewardship and ownership of CHW programs is critical to sustainability and effectiveness. ASSIST seeks to provide guidance and tools to strengthen program functionality and support the national harmonization of CHW programs.

HCI's Community Health Worker Assessment and Improvement Matrix (CHW AIM) has been used in many countries to assess and improve CHW program functionality, including Benin, Ethiopia, Kenya, Madagascar, Mauritania, Rwanda, and Zambia. In 2013, the Global Health Workforce Alliance published a monitoring and accountability platform for CHW programs developed by ASSIST. This working paper helped inform the process of galvanizing commitments amongst 16 partners towards alignment of efforts towards a common framework for partner action.

Over the next year, ASSIST will be building on these efforts by developing a CHW program harmonization policy guidance paper informed by a multi-country qualitative case study. ASSIST will also be testing the utility of a logic model developed through the USG Evidence Summit for CHW program performance in analyzing CHW program inputs, processes, outputs and outcomes and identifying opportunities for improvement.

A key concern of CHW programs and CHW program investments is the productivity and performance of CHWs. The U.S Government hosted an Evidence Summit in 2012 to learn how best to support CHWs and optimize their performance in which 49 experts reviewed over 400 publications. The final report from the summit concluded that "*Despite many years of empirical inquiry on CHWs, the Summit found that the relationship between support—from both community and formal health systems—and CHW performance*

¹ Mwai, G.W., Muburu, G., Torpey, K., Frost, P., Ford, N., Seeley, J. Role and outcomes of community health workers in HIV care in sub-Saharan Africa: a systematic review. *Journal of the International AIDS Society* 2013;16:18586.

is still not well understood. ASSIST undertakes innovative research and improvement collaborative to contribute towards the evidence base to build greater understanding to inform better CHW programming and support interventions.

Community health workers are frequently unable to provide services to all households due to expanding and unmanageable workloads. Rural communities have their own indigenous structures and systems by which community members share information, make decisions and work together. CHW performance and productivity can be achieved by strengthening the interface between CHWs, the community health systems and formal health systems – leveraging existing systems to disseminate and gather health information, and identify and refer community members that need care. The Health Extension Program is the foundation of the health system in Ethiopia, with one to two mid-level health extension workers (HEWs) staffing each health post per village (Kebele). Working with the Federal Ministry of Health in the Illu and Tole districts of the Oromia Region, the Project supported the establishment of an improvement collaborative to bolster linkages between the informal community system and the formal health system, improve the performance of HEWs and the capacity of community groups to take ownership of health programs. The collaborative focused on HIV testing and preventative health, particularly identifying pregnant women, linking them to antenatal care and referring women to the health facility for HIV testing. Between November 2011 and September 2012, in nine health posts, the number of pregnant women tested for HIV rose from 36 to 191. This approach has now spread to improve CHW performance, linkages to HIV care and reduce loss to follow up in Uganda, Tanzania, Mozambique, and Burundi.

While a number of studies have examined the performance of CHWs and factors that influence their performance, none have concurrently examined the interplay of factors that can affect CHW productivity and performance and the nature of the relationship between them. Under the HCI Project, the Uganda Village Health Team Productivity and Performance study is building a better understanding of what factors contribute towards optimized performance and productivity in order to inform better CHW program planning and implementation. The findings, validated methodology and tools can be used to inform short-term program improvements as well as future investments in CHW programs.

Supporting National HIV Care Improvement Strategy Development

Summary of USAID ASSIST experience: In Tanzania and Uganda, ASSIST has been a key partner to the Ministry of Health for the development of national HIV care improvement strategies. In both Tanzania and Uganda, an initial focus on HIV care quality has been broadened to become a national health sector quality improvement plan and strategy. Similarly, ASSIST is supporting the Ministry of Health of Kenya to implement and roll out its Kenya Quality Model for Health to provide a regulatory and operational framework for improving quality of all health care services, including HIV prevention, care, and treatment.

Results in Tanzania:

In 2008, USAID invited HCI to support the Ministry of Health and Social Welfare (MOHSW) of Tanzania to initiate a countrywide ART/PMTCT improvement program. The quality gap was huge and was complicated by the work in different regions of the country of several USG-supported partners, offering ART/PMTCT services whose performance was defined by the numbers (quantity) in access rather the quality of care they received. Together they launched a Partnership for Quality Improvement (PQI) initiative as a vehicle for organizing all stakeholders and rallying them behind quality improvement for ART/PMTCT. The PQI improvement journey started in Tanga Region in 2008 and continued since then to cover over half of the mainland regions. In 2013, ASSIST supported the MOHSW and other partners to develop a National Quality Improvement Strategy and Framework for the health sector for 2013-2018.

Results in Uganda:

In 2011, HCI supported the MOH of Uganda to develop a national QI Framework and Strategy (QIF&S) that was intended to harmonize and coordinate national QI structures, encourage formation of QI coordination structures at various levels of the health system with specific roles and responsibilities and

interventions, and spread the application of improvement approaches beyond HIV. To help the MOH roll out the QIF&S, ASSIST is currently supporting district-level health authorities and implementing partners to form district- and sub-district level QI committees that lead and coordinate all health sector quality improvement work in Rwenzori region and support facilities to establish their own improvement teams focused on HIV, MNCH, and other services.

Strengthening District Management to Support Improvement of HIV Services

Summary of USAID ASSIST experience: Strengthening district level management and capacity to support quality improvement is increasingly part of ASSIST activities in numerous countries. In Niger, as part of improving the human resources management process, District Health Management Teams (DHMTs) worked with facilities under their supervision to align health goals and objectives from the central level to district and facility levels, defined roles and competencies for clinical staff, developed peer learning and feedback strategies, and designed team-based reward and recognition mechanisms for improved performance. In both Uganda and Tanzania, HCI-supported district health management strengthening activities sought to implement system changes at the district level that would help facility teams to improve their performance and also build the capacity of district managers to support and coach improvement activities at the facility level. The aim of this work is to not only improve the performance of district teams as managers, but also to raise the quality of care in their respective districts' facilities.

Results in Tanzania:

This activity aims to improve the performance of district level management teams so that they may better support the HIV care and services that the facilities within each district are able to provide. It involves district management teams for all six districts of Lindi Region of Tanzania, which includes 192 health facilities. The exercise of creating job descriptions among the district's council health management team through HCI and ASSIST has been helpful in streamlining and rationalizing tasks. The percentage of management team members with clear and rationalized job descriptions increased from 0% in December 2010 to 100% in September 2013. To improve the availability of medicines and supplies in the health facilities, the district management teams focused on the following changes: increasing the percent of on-time supply order submissions by providing refresher training in how to fill the Requesting and Reporting forms; assigning a clerk the responsibility for collecting all the reports and orders; calling the facilities approximately one week in advance of submission date to remind them of the upcoming deadline; and offering support for problems with completing the documents. The percentage of facilities that submitted supply orders increased from 74% in December 2010 to 96% in September 2013. The clarification of responsibilities among the CHMTs helped to improve the processing of supply orders and reports to advance them to the Regional Health Management Team so as to support the timely and efficient supply chain. The percentage of district level reports that were processed and submitted to the region within two weeks of receipt from the facilities moved from 71% in March 2011 to 91% in September 2013.

Another aim of the district management improvement work was to increase staff retention. One of the interventions that proved effective was to design a process for welcoming and orienting new staff that whenever staff arrived, a member of the CHMT had assigned someone to introduce them to the facilities staff, orient them to the facilities processes and procedures, and help them to meet the district officers. In addition, the districts set aside money from the budget to keep an apartment ready with essential necessities provided so new staff could immediately have a place to live. Finally, the districts also set aside a small stipend to allow the new arrivals to have spending money until their payroll status was confirmed, at which time they reimburse the advance from their pay-checks. After implementing these orientation packages the percentage of new staff that was still remaining at the facilities at six months after arriving went from 69% in March 2011 to 97% in September 2013.

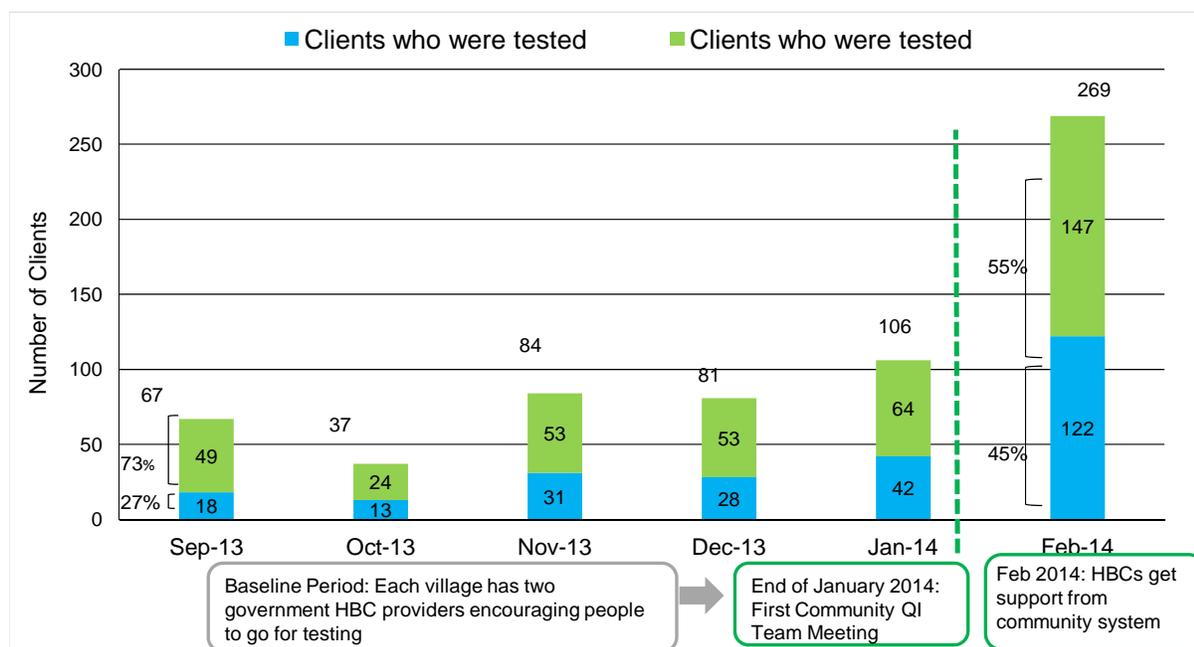
Strengthening Community-Facility Linkages

Summary of USAID ASSIST experience: Communities in low-resource settings possess their own informal community support and social welfare systems where community members make decisions and work together to improve the health of members and the general welfare of the community. This system may consist of existing community groups, such as a village government, schools, religious groups, agricultural groups, 'savings and credit' groups, etc. The project has developed a Community Health System Strengthening Model that brings together formal and informal pre-existing structures and networks to create an integrated care system. Applying this model, the quality improvement intervention is managed by representatives from each community group, health facility representatives, and delegates from the local government, who all come together to serve as the community improvement team that identifies local health gaps and develops and tests 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 model are harmonized and functioning well and coordinated with the efforts of 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. The model has been applied in Burundi, Ethiopia, Tanzania, and Uganda.

Results in Tanzania:

In FY14, USAID ASSIST began the Community Linkages project 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 employing the Community Health System Strengthening model to increase linkages between health facilities and communities. ASSIST worked with groups in the community to form the improvement team and trained coaches at the district and health facility to support the improvement teams. During their first meeting in January 2014, the home-based care (HBC) providers (serving in their role as coaches) discussed the low levels of HIV testing uptake in Mkuzi and Kilulu communities, where just 106 people went for testing in January (see Figure 12 below).

Figure 12. Tanzania: Number of clients tested for HIV, Mkuzi and Kilulu communities, September 2013 – February 2014



The main reason given for this low number is that the two home-based care providers assigned in each village were not able to reach all households to sensitize people to go health facility for a HIV test. Each HBC provider covers 20 – 25 households, making it challenging to reach all houses regularly. The improvement team suggested that each team member go back to their community groups and ask members to talk to their families about getting tested for HIV. Community group members talked to their families and urged them to get tested for their own well-being as well as for the good of the community. After the community group members spoke to their family members about the importance of getting tested for HIV, 269 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 males who came for testing HIV increased significantly. These results suggest that by engaging the existing informal structures in the community, more people can be reached effectively with health messages than by government HBC providers working on their own.

Integrating Gender Considerations in the Improvement of HIV Services

Summary of USAID ASSIST experience: The project builds gender into the improvement process through the identification of gender-related barriers or issues that can affect project outcomes, integrating gender and promoting gender equality in the initial design of the improvement activity, and acknowledging how health systems and outputs can differently affect boys, girls, women, and men. USAID ASSIST also supports interventions to overcome gender barriers and manipulate gender dynamics as a driver rather than an inhibitor of improvement. Gender integration activities in HIV services are currently being supported in Uganda, Tanzania, and Burundi, including increasing male involvement in antenatal HIV testing and PMTCT, increasing female partner involvement in safe male circumcision, and addressing gender-based differences in the needs of vulnerable children.

Results in Uganda:

In Uganda, USAID ASSIST is supporting 30 improvement teams in 26 districts to improve the quality of safe male circumcision services. Steps taken by the ASSIST Uganda team to integrate gender considerations in the SMC program include:

- Presenting gender integration recommendations for the Ministry of Health's SMC Quality Improvement Tool to the National Task force which, in turn, adopted recommendations
- Training facility staff in gender integration in SMC at learning and coaching sessions
- Supporting facility improvement teams to develop talking points and mobilization campaigns to encourage female involvement
- Offering female service packages at SMC service points, including cervical cancer testing, family planning, and antenatal care services
- Conducting research on the effects of female involvement on SMC outcomes.

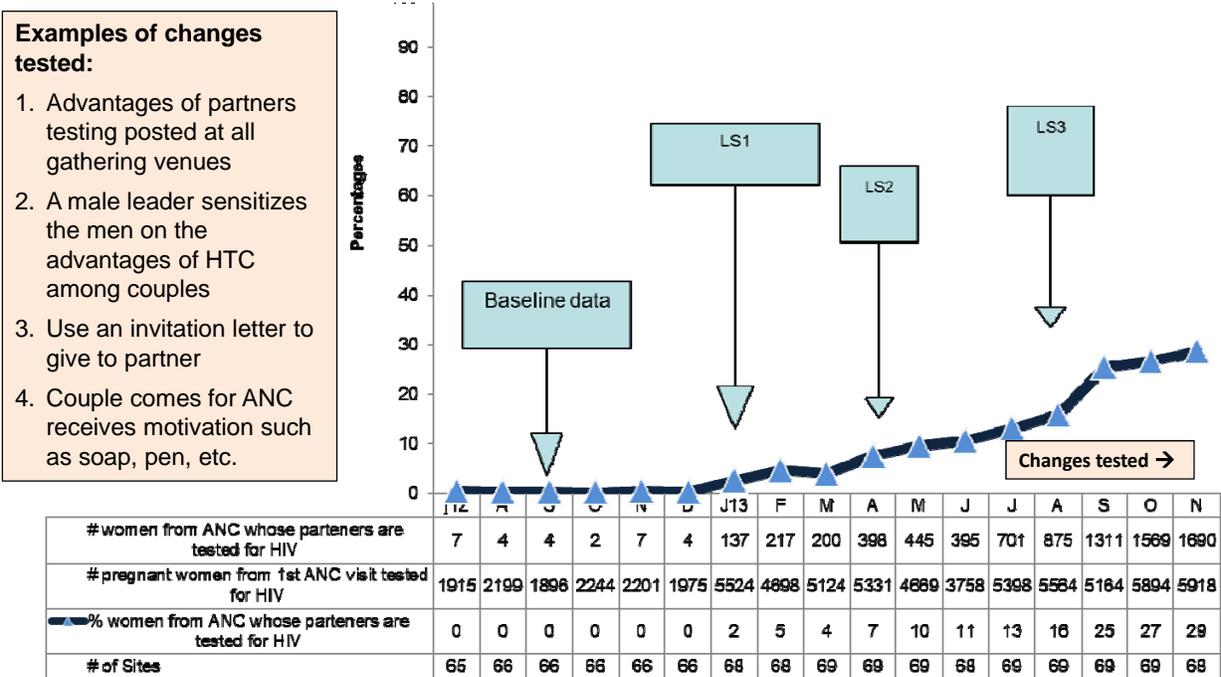
Teams identified engaging female partners to attend educational sessions and clinic visits with SMC clients as a change to test. From January to December 2013, the proportion of clients who attended educational sessions with partners increased from 0 to 23%. During this period, an increase in completion of follow-up visits was documented. Couples who attend SMC visits were offered HIV counseling and testing, and female partners were encouraged to access reproductive and other health services during the visits. By December 2013, two health facilities reported an increase in uptake of other health services (e.g., family planning and immunizations) as a result of engaging female partners.

Results in Burundi:

In Burundi, low levels of male partner participation were noted during program start-up, and high rates of maternal HIV and lack of retention of mother-baby pairs in PMTCT programs led USAID ASSIST to propose a gender integration component to improve outcomes for mother-baby pairs. Changes introduced to engage male partners to attend ANC and PMTCT appointments included sharing the advantages of partner testing at gatherings and venues, a male leader sensitizing men on the advantages

of HCT among couples, and sending invitation letters to male partners. The program saw impressive results, from less than 1% of women attending ANC with partners who were tested for HIV in July 2012, to 29% in November 2013 (see Figure 13). Over the same period, the number of exposed children tested for HIV at 18 months more than doubled.

Figure 13. Burundi: Percentage of women enrolled in ANC whose partners are tested for HIV, 12 districts in 4 provinces (July 2012 – Nov 2013)



Appendix A: Current USAID ASSIST PEPFAR-supported Programs by Country

Country	Technical Area
Botswana	Maternal mortality reduction – PMTCT
Burundi	HIV and AIDS – PMTCT
Cote d'Ivoire	HIV and AIDS – PMTCT, laboratory accreditation, strategic information systems
Democratic Republic of the Congo	Integrating NACS into HIV and AIDS
East Africa Region	Technical assistance to the Regional Centre for Quality of Health Care (RCQHC) to develop a regional Improvement Competency Framework
Haiti	Vulnerable children
Kenya	Vulnerable children, integrated clinical and community services (ART, nutrition, PMTCT), Partnership for HIV-Free Survival (PMTCT)
Lesotho	Partnership for HIV-Free Survival (PMTCT), capacity building for improving all HIV activities, including ANC, MNCH, ART, HCT
Malawi	Vulnerable children, integrating NACS into HIV care
Mali	Injection safety
Mozambique	Vulnerable children, home-based care, PHFS (community component)
Nicaragua	Support universities to prepare medical and nursing students to comply with MOH standards for HIV services
Nigeria	Vulnerable children
South Africa	HIV counseling and testing (ANC and general population), ART initiation and retention, capacity building at national, provincial and district levels in: strategic planning, supervision, program review, training and mentorship, development of clinical skills, and policy development
Swaziland	TB-HIV, injection safety, National Framework for In-Service Training
Tanzania	ART, PMTCT, most vulnerable children, home-based care
Uganda	HIV Continuum of Response, Safe Male Circumcision, PHFS, TB-HIV, maternal and newborn care (Saving Mothers Giving Life), family planning, vulnerable children
Zambia	Integrating NACS into HIV

Appendix B: Key HIV-related Publications from the USAID ASSIST and HCI Projects

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Improving Retention of Mother-Baby Pairs: Tested Changes and Guidance from Uganda. 2014. Available at: <https://www.usaidassist.org/resources/improving-retention-mother-baby-pairs-tested-changes-and-guidance-uganda>.

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<https://www.usaidassist.org/resources/improving-quality-hiv-services-and-health-worker-performance-tandahimba-district-tanzania>.

Changes Tested to Improve Quality of Safe Male Circumcision Services in Uganda. 2013. *Technical Report*. Available at: <http://usaidassist.org/resources/changes-tested-improve-quality-safe-male-circumcision-services-uganda>.

Change Package for Quality Improvement in Orphans and Vulnerable Children Programmes in Kenya. 2013. *Technical Report*. Available at: <http://usaidassist.org/resources/change-package-quality-improvement-orphans-and-vulnerable-children-programmes-kenya>.

Addressing the Needs of Men, Women, Boys and Girls in HIV and ART Services. 2013. *Technical Brief*. Available at: <http://usaidassist.org/resources/addressing-needs-men-women-boys-and-girls-hiv-and-art-services>.

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PMTCT: Addressing the Needs of Women and Their Partners to Improve Services. 2013. *Technical Brief*. Available at: <http://usaidassist.org/resources/pmtct-addressing-needs-women-and-their-partners-improve-services>.

Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit for Improving CHW Programs and Services. 2013. Available at: <https://www.usaidassist.org/resources/community-health-worker-assessment-and-improvement-matrix-chw-aim-toolkit-improving-chw>.

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