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*Applying Science to Strengthen  
and Improve Systems*

## USAID ASSIST Project

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# Research and Evaluation Report FY16

**Cooperative Agreement Number:**

AID-OAA-A-12-00101

**Performance Period:**

October 1, 2015 – September 30, 2016

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**DECEMBER 2016**

This annual research and evaluation report was prepared by University Research Co., LLC for review by the United States Agency for International Development (USAID). The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project is made possible by the generous support of the American people through USAID.



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**DISCLAIMER**

This country report was authored by University Research Co., LLC (URC). The views expressed do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

## **Acknowledgements**

This annual research and evaluation report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, which is 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 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 (ASSIST) Project. 2016. Research and Evaluation Report FY16: Published by the USAID ASSIST Project. Bethesda, MD: University Research Co., LLC (URC).

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## Acronyms

AIDS	Acquired immunodeficiency syndrome
AIMGAPS	Assuring Infants and Mothers Get All PMTCT Services
ART	Antiretroviral therapy
ARV	Antiretroviral
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CEA	Cost-effectiveness analysis
DRC	Democratic Republic of Congo
E3	USAID Economic Growth, Education, and Environment Bureau
FY	Fiscal year
HCI	USAID Health Care Improvement Project
HIV	Human immunodeficiency virus
HSPH	Harvard T. H. Chan School of Public Health
IP	Implementing partner
IRB	Institutional review board
LAC	Latin America and the Caribbean
MNCH	Maternal, newborn, and child health
MOH	Ministry of Health
OVC	Orphans and vulnerable children
PLHIV	Persons living with HIV

PCIHS	People-centered integrated health services
PEPFAR	United States President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother-to-child transmission (of HIV)
Q	Quarter
QI	Quality improvement
R&E	Research and evaluation
SMATS	Screening in maternity to ascertain TB status
SMaCKM	Safe male circumcision knowledge management
TA	Technical assistance
TB	Tuberculosis
TMI	Team maturity Index
URC	University Research Co., LLC
USAID	United States Agency for International Development
VMMC	Voluntary medical male circumcision
WHO	World Health Organization

# 1 Introduction

The USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, through its research and evaluation (R&E) component, provides technical assistance and guidance on country-led research and synthesizes learning across country- and centrally funded projects on several improvement topics, including the validity of improvement indicator data, sustainability and institutionalization, spread, and economic analysis.

The ASSIST R&E agenda falls under three main categories to address two questions and one broad theme: How can ASSIST improve the way that improvement activities are implemented in the settings in which it works? What is the capacity that countries have to continue to improve health care independent of ASSIST? The major theme is improving the rigor of program evaluation and research conducted in the field of health care improvement. Many R&E activities reported here cover more than one of these broad areas.

In fiscal year (FY) 2016, the R&E unit has continued to finalize several key studies currently underway and launch new studies, especially on the topic of institutionalization and sustainability of quality improvement beyond the period of external technical assistance. There continues to be a major focus on completing ASSIST's mandates for the use of control groups, economic analysis of improvement, and data validation.

In FY16, the R&E unit supported 39 studies in 15 countries (Burundi, Cote d'Ivoire, Democratic Republic of Congo, Ecuador, Honduras, India, Kenya, Lesotho, Malawi, Mali, South Africa, Swaziland, Tanzania, Uganda, and Ukraine). In addition, the team supported four multi-country studies: 1) experiences from the Partnerships in Community Child Protection in Africa; 2) a multi-country study in Latin America and the Caribbean (LAC) evaluating a web-based improvement collaborative to prevent neonatal infections in hospitals; 3) supporting community providers through a community health system approach in Ethiopia and Tanzania; and 4) a survey of how medical schools in Africa incorporate improvement methods in their curricula. The R&E team also provided technical assistance to Botswana, Burundi, Democratic Republic of Congo (DRC), and Lesotho on validation of their improvement indicators. Data collection from control groups was planned or conducted in Burundi, DRC, Kenya, Tanzania, and Uganda.

The unit is working to disseminate knowledge generated by these studies through web-published reports, peer-reviewed journal articles, and presentations at relevant international meetings to encourage wider adoption of improvements methods.

## 2 Program Overview

What are we trying to accomplish?	At what scale?
<b>1. Validation of 25% of improvement indicators</b>	
<ul style="list-style-type: none"> <li>Demonstrate that data reported by ASSIST are accurate, reliable and relevant</li> </ul>	No less than 25% of total number of country-reported indicators with completed validity assessment
<b>2. Collecting data from control groups for 10% of indicators</b>	
<ul style="list-style-type: none"> <li>Demonstrate the attributable impact of ASSIST interventions on improvement indicators</li> </ul>	Comparison reports on no less than 10% of country-reported indicators
<b>3. Evaluating design of improvement activities for lower- and middle-income countries</b>	
<ul style="list-style-type: none"> <li>Advance learning in improvement science in low- and middle-income countries</li> </ul>	Every ASSIST country program

What are we trying to accomplish?	At what scale?
<b>4. Evaluation of methods and approaches for effective design and implementation of scale-up</b>	
<ul style="list-style-type: none"> <li>Advance global knowledge on scale-up of improvement interventions</li> </ul>	Selected ASSIST country programs with scale-up activities
<b>5. Economic analysis of improvement activities</b>	
<ul style="list-style-type: none"> <li>Advance global learning on comparative advantage and economic efficiency of QI activities</li> </ul>	At least one economic analysis (may be basic cost report to full cost-effectiveness analysis) for every ASSIST country with an improvement program
<b>6. Sustaining improvements and institutionalizing the capacity to continuously improve</b>	
<ul style="list-style-type: none"> <li>Contribute to global learning on sustaining and institutionalizing improvement methods to ensure sustainability beyond the life of the project</li> </ul>	At least two studies on sustainability and institutionalization of improvement after direct involvement of the project has ceased
<b>7. Generating learning from multi-country studies</b>	
<ul style="list-style-type: none"> <li>Advance knowledge on improvement interventions and how they work in different settings</li> </ul>	At least one study that either combines or compares and contrasts improvement interventions and their effect in more than one country
<b>8. Capacity building for research and support to country programs</b>	
<ul style="list-style-type: none"> <li>Build research and data management capacity of ASSIST staff</li> </ul>	Every ASSIST country program
<b>9. Disseminate knowledge gained through ASSIST R&amp;E activities</b>	
<ul style="list-style-type: none"> <li>Contribute to the quality improvement and global health fields</li> </ul>	Globally available

**Table 1** provides an overview of the ASSIST R&E program and lists the 39 studies in 15 countries that the project supported in FY16. Four are multi-country studies. These 39 research studies include those finalized in FY16 and others that are in planning stages or are underway. The list does not include ASSIST studies that were completed in years prior to FY16. The R&E unit is utilizing, to the degree possible, the most rigorous methods of experimental and observational science to measure the effects of the improvement activities of the USAID ASSIST Project and explain how and why these effects occur. In terms of the three major questions and themes of the R&E agenda, all of the studies listed seek to determine ways that ASSIST can improve the way health care improvement is conducted in low- and middle-income countries. Studies that also examine institutionalization and country capacity for scale-up include studies 6, 16, 29, and 39.

**Table 1: ASSIST research and evaluation studies in FY16**

	Country	Study	Research Area	Status	Program Area
1	Burundi	Factors associated with the involvement of male partners in maternal and child health services in Burundi	Improving care	Completed	HIV
2	Burundi	Evaluation of an improvement collaborative for prevention of mother-to-child transmission (PMTCT) services in Burundi (including data validation)	R&E mandates	Data collection	HIV



	Country	Study	Research Area	Status	Program Area
3	Cote d'Ivoire	Evaluation of an improvement collaborative for antiretroviral therapy (ART) and PMTCT services in Cote d'Ivoire (including data validation)	R&E mandates	Protocol drafted, awaiting mission approval	HIV
4	DRC	Baseline evaluation of the quality of HIV services in the Democratic Republic of Congo (DRC)	Design of improvement activities	Analysis and writing	HIV
5	DRC	Validation, control group and economic analysis	R&E mandates	Protocol developed	HIV
6	Ecuador/ Honduras	Ecuador and Honduras institutionalization study	Institutionalization	Planning	MNCH
7	India	Female community health worker familial and social factors that contribute to job engagement	Improving care	2 manuscripts published; 2 others being revised for submission	MNCH
8	India	Cost-effectiveness of RMNCH in India	CEA / improving care	Data analysis underway	MNCH
9	India	Validation of MNCH facility data	Validation	Completed	MNCH
10	India	Understanding how QI teams function and the support of USAID ASSIST: An exploratory qualitative study from India	Improving care	Data collection complete; Analysis and writing underway	MNCH
11	Kenya	Validation of QI Team Maturity Index data collected by ASSIST coaches and implementing partner coaches	Validation	Submitted for final review for ASSIST publication	HIV
12	Lesotho	Assessment of validity and reliability of the Partnership for HIV-Free Survival Initiative indicators in Lesotho: A mixed-methods study	Validation	Protocol completed. Data collection planned for July 2016	MNCH
13	Malawi	Evaluating household economic strengthening activities for vulnerable children and families in Malawi	Improving care	End-line data collection completed May 2016; analysis and writing underway	OVC
14	Malawi	Data validation	Validation	Completed	OVC

	Country	Study	Research Area	Status	Program Area
15	Mali	Evaluation of a people-centered and integrated health services (PCIHS) intervention in Mali	Design of improvement activities/ R&E mandates	Protocol revised. Data collection planned 1 <sup>st</sup> quarter, FY17	MNCH
16	Mali	Assessing institutionalization of quality improvement Mali: A prospective study	Institutionalization	Planning; ongoing discussion with Regional and Mali team to finalize study design and scope	MNCH
17	Mali	Validation of improvement indicators in Mali	R&E mandates	Report writing	MNCH
18	South Africa	Effectiveness and efficiency of voluntary medical male circumcision (VMMC) improvement	CEA	On hold due to data availability	HIV
19	Swaziland	Validation of new diagnostic technologies for pediatric TB cases	Improving care	Manuscripts prepared / submitted	TB
20	Swaziland	Injection safety, waste management practices and related stigma and discrimination in Swaziland: A national assessment, exploratory study, and evaluation	Improving care	Draft report with OHA for review	HIV
21	Swaziland	Screening in maternity to ascertain TB status (SMATS) study in Swaziland	Improving care	Under review – BMC journal, Final reports being drafted	HIV / TB
22	Tanzania	Factors influencing loss to follow-up among people living with HIV (PLHIV) in Morogoro, Tanzania: The experience from patients who returned to care	Improving care	Finalizing report	HIV
23	Tanzania	A qualitative evaluation of “Assuring Infants and Mothers Get All PMTCT Services” (AIMGAPS)	Design of improvement activities	In review	HIV
24	Tanzania	Data validation	Validation	Completed	HIV
25	Tanzania	Evaluating the effect of improvement approaches for PMTCT	Improving care	Draft protocol	HIV

	Country	Study	Research Area	Status	Program Area
26	Uganda	The effectiveness and efficiency of applying the chronic care model to clients with HIV in Uganda: A non-randomized controlled evaluation	Design of improvement activities	Completed	HIV
27	Uganda	Improving the quality of safe male circumcision in Uganda: An evaluation and qualitative exploration	Improving care	Manuscript submitted to AJAR in September 2016	HIV
28	Uganda	Integration of family planning into HIV care: A cost-effectiveness analysis	Design of improvement activities	Planning	HIV
29	Uganda	The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda	Design and implementation of scale-up	Analysis and writing	HIV
30	Uganda	Cost-effectiveness of safe male circumcision knowledge management (SMaCKM) interventions	Design of improvement activities	Analysis and writing underway	HIV
31	Uganda	Assessing the cost-effectiveness of supporting savings groups to improve OVC access to services in Uganda	Design of improvement activities	Concept notes with Uganda mission for review and approval	OVC
32	Uganda	Data validation of ART improvement data	Data validation	Analysis and writing	HIV
33	Uganda	Integrating tetanus vaccination into VMMC: Exploring the acceptability, feasibility and cost in Uganda	Design of improvement activities	Analysis and writing underway	HIV
34	Ukraine	Improving alcohol and tobacco control during pregnancy in Ukraine	Design of improvement activities	Completed	MNCH
35	Ukraine	Validation of Brief Physician Intervention implementation data	Data validation	Report drafted, under review for ASSIST publication	MNCH
36	Multi-Country Africa	Building partnership: Experiences from the Partnerships in Community Child Protection in Africa	Design of improvement activities	Writing	OVC
37	Multi-country LAC	Evaluation of a web-based Latin American and Caribbean (LAC) improvement collaborative to prevent neonatal infections in hospitals	Design of improvement activities	Analysis and writing	MNCH

	Country	Study	Research Area	Status	Program Area
38	Multi-Country	Supporting close-to-community providers through a community health system approach: Case examples from Ethiopia and Tanzania	Design of improvement activities	Completed	Community Health
39	Multi-Country	Survey of improvement methods inclusion in curriculum of medical schools	Institutionalization	Manuscript in review	N/A

### 3 Key Activities, Accomplishments, and Results

#### **Activity 1. Validation of 25% of improvement indicators**

##### **BACKGROUND**

Improving health and welfare systems is a data-driven process. Its success is contingent on the accuracy and validity of the data used for decision-making. The R&E team is working to ensure the information collected during improvement activities is as accurate and useful as possible in each setting in which ASSIST works. The USAID ASSIST Project is mandated to validate 25% of the total number of country-reported improvement indicators. To do so, we are engaged in several research activities that investigate the validity of data collected in the project. Information derived from these studies is directly used to inform improvement activities to facilitate good decision-making among those implementing system changes in ASSIST-supported activities. Appropriate validation methods vary, depending on indicator types and the validity questions surrounding them. **Table 2** describes some of the approaches to validation that ASSIST has developed for implementation in various countries. The R&E team has also provided significant technical assistance to country teams to develop improvement indicators.

**Table 2: Approaches to validation of improvement indicators**

Validity question	Possible collection methods	Example
Do data recorded in patient charts/facility or community registers accurately reflect what happened in patient encounters?	Direct observations; mystery patients; exit interviews	Direct observation by experts of deliveries is compared to patient records to determine the agreement in records of compliance with active management of third stage of labor
Do data recorded in improvement reports accurately reflect what is recorded in patient charts/facility or community registers?	Chart/register audits	Expert chart reviewers audit ART medical records to determine their agreement with what the improvement teams recorded for patient compliance from the same records
Does a positive score in the indicator mean that the actual outcome is positive for the patient?	Direct observations; exit interviews	Interviews with patients on their experience with care can be compared with the indicators of "patient-centered care" to determine if there is consistency in results

##### **KEY ACCOMPLISHMENTS AND RESULTS**

- **Developed protocol and tools, pre-tested tools, and conducted validation of data collection for “Evaluation of an improvement collaborative for prevention of mother-to-child transmission (PMTCT) of HIV services in Burundi”** (Sept 2016) This study seeks to understand: 1. Are the improvement data reported by ASSIST in Burundi accurate? 2. Do ASSIST sites have better results

in terms of quality improvement indicators that non-ASSIST sites? 3. What is the cost-effectiveness of the ASSIST improvement approach compared to business-as-usual?

- **Protocol developed for validation data in DRC** (Sept 2016). The objective of this evaluation is to determine: 1. Whether the data reported by ASSIST-supported sites implementing the collaborative improvement approach are of good quality; 2. Identify areas for improvement in data quality. Medical records will be reviewed and indicators calculated for the months of August 2016 to October 2016. The indicator thus calculated will be compared with the indicator as reported by the health center and ASSIST. Data collection will begin in quarter (Q)1 FY17.
- **Harvard T.H. Chan School of Public Health (HSPH) Fellow travelled to Botswana and Lesotho to conduct data validation studies** (Aug 2016). Data will be analyzed in Q1 FY17. A study of the costs of community-level improvement in Botswana was designed, data were collected, and analysis begun. Data analysis will be completed in FY17. The study of data validation in Lesotho is underway.
- **Completed a report on “Validation of orphans and vulnerable children (OVC) Quality Improvement Team Functionality in Kenya”** and submitted it for internal review (Mar 2016). This study examines the comparability of data collected on quality improvement (QI) team functionality by both ASSIST coaches and coaches from the implementing partners (IPs) using the Team Maturity Index (TMI). It showed that the TMI had utility for implementing partners and guided their activities in supporting community improvement teams, but there tended to be an overestimation of performance of the community QI teams by the IP coaches compared to the assessment by the ASSIST coaches.
- **Drafted validation report on the Ukraine Brief Physician Intervention implementation** (June 2016). ASSIST began working in Ukraine in 2014 as a continuation of similar work conducted through the USAID Health Care Improvement Project (HCI) in 2013 to implement a non-communicable diseases pilot activity in Poltava Oblast. The overall goal of this activity was to demonstrate the feasibility of use in Ukraine of an evidence-based, structured counseling protocol called the “Brief Physician Intervention” to assist pregnant women to quit smoking and stop drinking alcohol. This validation is currently under review for ASSIST publication.
- **Report writing for Mali data validation activities.** This evaluation seeks to: 1) Assess whether providers have a good understanding of the definition of the improvement indicators they collect; and 2) Determine whether the data reported by sites is consistent with the data in the ASSIST database. This evaluation was independently initiated, designed, and implemented by the Mali ASSIST team. The R&E team is providing support to the Mali team to use the data collected to develop a report that would meet the validation mandate for ASSIST in Mali.

## **Activity 2. Collecting data from control groups for 10% of indicators**

### **BACKGROUND**

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Given the dynamic settings in which ASSIST is often operating, the case for attributing changes in outcomes or processes of care delivery is difficult to establish without a valid comparison group. The R&E team works to include controls (non-ASSIST intervention groups) into all activities when it is feasible.

There are three main approaches ASSIST is using or planning to use with regard to inclusion of control groups:

1. **Identifying similar facilities, community health areas, or systems** that are not exposed to the ASSIST intervention and measuring the same indicators at these sites. This may involve sending trained data collectors to control sites to ensure the accuracy of the data gathered from these control sites where the capacity for record-keeping and data collection may be low.
2. **Stepped-wedge designs:** If a staggered start to the intervention is planned, a stepped-wedge design may be used, where data collected during the non-intervention period from sites that are starting in a later phase serve as the controls for sites that are starting in the first phase of intervention. This

avoids the potential problem of collecting data from sites at which there is no plan to intervene, as in method 1 above.

3. **Cross-over designs:** In country programs where there is implementation of two or more components, a cross-over design can be used whereby one group of sites implements one component while a second group of sites implements the other component. Indicators for both components are measured in both sets of sites, and each act as the other's control. For example, if one set of sites is implementing the chronic care model to antiretroviral therapy (ART) patients, while another set of sites is working on integration of PMTCT services, the chronic care sites act as the control sites for the PMTCT evaluation, and the PMTCT sites act as the control for the chronic care sites. At some point in time, the interventions switch, and further comparisons can be conducted at that time.

## KEY ACCOMPLISHMENTS AND RESULTS

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- **Edward Broughton travelled to Kenya and Tanzania to develop methods for the country teams to conduct studies of data validation work using control groups** (Feb 2016). Data on HIV service outcomes were collected from routinely reported national reporting sources for this purpose in FY16. The studies will be completed in FY17.
- **Evaluation of an improvement collaborative for PMTCT services in Burundi (control group data). The protocol for the study was finalized** (March 2016). Beginning in Sept 2016, began conducting control group data collection. ASSIST and its predecessor project, HCI, have been working with the Ministry of Health (MOH) in Burundi since 2012 to improve the quality of PMTCT services. This study seeks to meet the ASSIST mandates for data validation, control groups, and economic analysis using a formal study design. In order to anticipate an increase in the project indicators in Burundi, we aim to validate 30% of current project indicators and obtain control groups data for 15% of the indicators. Findings will inform the implementation of corrective measures to address any data quality and project performance issues revealed by the study. The research questions for this study are: 1) Are the improvement data reported by ASSIST Burundi accurate? 2) Do ASSIST-supported sites have better results in terms of quality improvement indicators than non-supported sites? and 3) What is the cost-effectiveness of the ASSIST improvement approach compared to business-as-usual?
- **Analysis and writing on the Safe Male Circumcision Knowledge Management (SMaCKM) study in Uganda:** ASSIST is working in Uganda to spread the improvement of safe medical circumcision using knowledge management methods. This study, which is being conducted in 15 sites, is using a three-armed comparison, with sites randomly assigned to one of the following arms: 1) Provision of written materials, 2) Provision of written materials with an in-person handover meeting, 3) Provision of written materials with an in-person handover meeting and three follow-up coaching visits from ASSIST staff. End-line data collection was conducted in Q2, FY16. Data underwent preliminary analysis in Q4, FY16 and will be completed and written up in Q1, FY17. Findings from the qualitative data were:
  - Written materials were viewed as essential resources that could be referenced regularly; however, there were suggestions for improving them by making them less bulky and presenting information in alternative ways.
  - Learning from experienced sites was a valuable aspect of the handover meeting.
  - The practical and individualized nature of coaching visits was highly valued by those who received them.
  - Concerns were raised about how information on new standards and practices, such as tetanus toxoid vaccination, would be disseminated.
  - Participation in all three arms was viewed as positively impacting the quality of VMMC services and professional development.

- **Protocol developed for control group comparison in DRC** (Sept 2016). The objective of this evaluation is to determine whether the improvement of HIV care and treatment process indicators is greater in ASSIST-supported sites than non-supported sites between August 2015 and May 2016. Two indicators (10% of indicators) patients. Data collection will take place in Q1, FY17.
- **Conducted and completed end-line data collection for the study evaluating household economic strengthening activities for vulnerable families in Malawi** (March - May 2016). Data analysis and report writing are underway and will continue in FY17. In an effort to improve the wellbeing of vulnerable children and their households, USAID ASSIST helped establish community QI teams in 191 communities in Balaka and Mangochi districts. Community QI teams comprise a diverse group of key community members who work together to identify challenges, analyze processes, test changes, and use data to determine whether to abandon, modify, or implement tested solutions. The QI teams implemented four interventions: improving household economy and food security; improving performance of learners in primary school; promoting access to and utilization of health services; and increasing awareness, identification, and support for any kind of abuse toward vulnerable children. We conducted a pre-post controlled evaluation design to collect data on household respondents' perception and awareness of OVC services in their communities. Key findings include:
  - Reports of children going 24 hours without eating in the previous four weeks increased in the intervention sites, but declined in the control sites as per adult respondents. However, the inverse was observed among child respondents, who were over age 10. When disaggregating the data by sex, there was no significant difference in food security among male and female children.
  - Documentation of vaccination history was high at baseline in both intervention and control sites and improved only slightly. Intervention sites at baseline had consistently higher levels of reported vaccination than control sites. Thus, the gains in vaccination observed in the intervention sites was smaller as there was less room for improvement, compared to the control sites; however, all improvement observed was significant. Rotavirus vaccination was lower at baseline in both intervention and control sites compared to other vaccinations.
  - There was significant improvement in the intervention villages in school enrollment, but when controlling for age, the difference was not significant (+7% p=0.079). No improvement was observed in the control villages. More adult respondents in both arms felt that the quality of education was good and safe at end-line compared to baseline, but improvement was not significant.
  - Children who were reported to have experienced child labor or psychological, physical, or sexual abuse were relatively rare, so changes observed were not significant. Improvements were observed in all of these forms of abuse in both intervention and control sites with the exception of sexual abuse in intervention sites, which increased from 0.3% to 0.9%. Adults interviewed in all sites demonstrated an improvement in awareness of legal assistance options available to respond to neglect, sexual abuse, and property grabbing, though these improvements were only significant for sexual abuse and property grabbing.

### **Activity 3. Evaluating design of improvement activities for low- and middle-income countries**

#### **BACKGROUND**

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ASSIST is constantly seeking to improve the way it provides technical assistance to facilitate better performance in health service delivery. Rigorous quantitative and qualitative evaluation of the design of improvement interventions is key to this process. To achieve the goal of strengthening the evidence base for improvement methods, the R&E unit has supported evaluations of improvement interventions to generate both quantitative and qualitative information of the effectiveness of specific program designs.



## KEY ACCOMPLISHMENTS AND RESULTS

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- **A new study entitled “Understanding how QI teams function and the support of USAID ASSIST: An exploratory qualitative study from India” was conceived of, designed, and received institutional review board (IRB) approval (Q4).** Using one QI team and their coach as the case study, we will explore their initial QI experiences, including the support received/provided by their coach. Support has been provided through different mediums (WhatsApp, telephone, and in-person), so particular attention will be paid to experiences with and perceptions of these three mechanisms. The research questions are: 1) How does a new facility start and carry out their first improvement activity? 2) How do coaches support a facility in their first improvement activity and what means of communication is viewed as the most helpful? Data collection will be conducted in October 2016, and we anticipate finalizing the write-up in December 2016.
- **The protocol and data collection tools for the “Evaluation of a people-centered integrated health services (PCIHS) intervention in Mali” was developed and revised to include quality of care indicators and more detailed satisfaction questions (Q1-Q4).** This study will determine whether the WHO PCIHS approach significantly improves the quality of maternal and child health (MNCH) services compared to quality improvement activities alone. Baseline data collection is planned for FY17 Q1.
- **Conducted and completed end-line data collection for study evaluating household economic strengthening activities for vulnerable families in Malawi (March - May 2016).** Data analysis and report writing are underway and will continue in FY17. See Activity 2 above for more details.

### **Activity 4. Evaluation of methods and approaches for effective design and implementation of scale-up**

#### **BACKGROUND**

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Increasing the reach of improvement activities to involve a higher proportion of service delivery units is one of the goals of ASSIST. The R&E unit seeks to build the evidence base to determine the most effective and efficient ways to do this by supporting evaluations of scale-up to generate both quantitative and qualitative information on the effectiveness of specific scale-up designs.

#### **KEY ACCOMPLISHMENTS AND RESULTS**

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- **Analysis and writing is ongoing for the study examining factors influencing loss to follow-up among, people with living with HIV/AIDS in Morogoro, Tanzania.** As ASSIST is in the process of scaling up improvement activities for HIV patients in Morogoro, we need to understand why patients are lost to follow-up so that the improvement intervention package can be further enhanced. This cross-sectional study used a combination of qualitative and quantitative approaches to explore factors that lead to treatment discontinuation from the perspectives of people living with HIV, HIV/AIDS group representatives, home-based care providers, care and treatment clinic staff, and managers.
- **Prepared a manuscript for the *Study on the effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda* (Q2).** The manuscript underwent USAID review (Q3). Additional analysis is currently underway. ASSIST worked in 22 facilities across six districts of Uganda to improve retention of mother-baby pairs in care, to attain universal breastfeeding and improved nutrition of mother-baby pairs, and ensure that HIV-exposed infants are protected through ART. In 2014, ASSIST began spreading the best practices identified in this demonstration phase to an additional 87 facilities across the country. Currently, services for HIV-positive women and their babies tend to be provided at ART clinics and post-natal clinics, requiring mothers to attend both clinics. In an effort to improve retention of mother-baby pairs in care, there has been a movement toward merging service delivery so mother-baby pairs can receive care at the same time or strengthening the linkages between post-natal and ART services to ensure mothers and their babies receive the necessary services. The objective of this study is to evaluate these different



modes of service delivery among the 87 spread facilities with particular attention to infant feeding and retention into care of mother-baby pairs. The specific research questions for this study are:

- How do mothers experience and perceive care across the different modes of service delivery (i.e., services provided in ART clinics, post-natal clinics, or clinics where the services are merged)?
- How effective are the different modes of service delivery compared to the current mode of service delivery in terms of initiation on ART if indicated, receiving routine health services, and retention in care?
- What is the incremental efficiency of the new modes of service delivery compared to the current mode of service delivery in terms of initiation on ART if indicated, receiving routine health services, and retention in care?
- **Finalized “Improving voluntary medical male circumcision standards adherence and post-procedure follow-up in Uganda: A mixed methods study.”** Submitted manuscript to the *African Journal of AIDS Research* (Sept 2016). Key findings include:
  - The completeness and quality of clinical documentation was poor at baseline, but significantly improved at end-line. We observed significant improvements in management systems; supplies, equipment, and environment; and monitoring and evaluation. Due to the volume of missing data, results were less clear for registration, group education, and information, education and communication; individual counselling and HIV testing; and infection prevention. Significant improvements were also observed in follow-up rates at 48 hours, 7 days, and 6 weeks.
  - Interviews revealed the importance of peers, including female partners, in deciding to get circumcised and in seeking follow-up care. Among the men who did not return for follow-up services, most reported they had no problems and did not see it as necessary. For those who did have mild or moderate adverse events, follow-up care was often sought at a facility closer to the patient’s home, rather than the circumcising facility. However, information systems were not able to capture this.
- **Completed data collection and analysis for the *Screening in maternity to ascertain TB status (SMATS) study in Swaziland* (Q2-Q4).** Submitted the protocol for the study to *BMC Infectious Diseases* (Q2).

## **Activity 5. Economic analysis of improvement activities**

### **BACKGROUND**

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The economic efficiency of improvement activities often determines whether or not they will be implemented more widely and sustained beyond the period of assistance by the USAID ASSIST Project. The R&E team is actively working to get some economic analysis into at least one of all the ASSIST country activities. It is also developing greater in-country capacity to perform economic evaluations and the ability to identify and collect appropriate financial data to facilitate these evaluations.

### **KEY ACCOMPLISHMENTS AND RESULTS**

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- **Data were collected for economic analysis in Burundi (Sept 2016) and a protocol for economic analysis for DRC was developed (Sept 2016).** The costs of implementing the improvement activities will be computed from ASSIST project management documents. All expenses directly related to the implementation of the improvement activities will be included. Analysis will be conducted in FY17 for Burundi, and data will be collected in Q1, FY17 for DRC.
- **The HSPH Fellow conducted data collection and began analysis on the resulting data sets from Botswana (Aug – Sept 2016).** This will be completed in FY17 Q1. See description above under Activity 1 for details.

- **Cost-effectiveness component of the SMaCKM study in Uganda.** Conducted analysis and first draft of the results section for the SMACKM cost-effectiveness analysis (Q4). See description above under Activity 4 for details.
- **Capacity development and planning for cost data collection was conducted in Kenya and Tanzania. A basic cost analysis was conducted in Malawi (Q1-Q2).**
- **The SMATS study for TB screening had a cost component; data have been collected (Q1-Q3), and preliminary analysis has been completed (Q4).**
- **A perspectives paper entitled “Why Economic Analysis of Health System Improvement Interventions Matters” was authored, submitted by Edward Broughton and Lani Marquez on the issues with conducting economic analysis on improvement activities in the *Frontiers in Public Health* journal.** The paper was published on October 11, 2016. This paper discusses the lack of actionable evidence available to guide policy-makers in resource allocation and argues for rigorous economic evaluation of health system improvement interventions.

### **Activity 6. Sustaining improvements and institutionalizing the capacity to continuously improve**

#### **BACKGROUND**

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ASSIST is planning a study on institutionalization of improvement in Mali. This prospective study will examine the institutionalization of improvement in Mali over time. Facilitators and barriers to improvement will also be examined.

A study is also planned on the development of the quality improvement division within the MOH of Ecuador and Honduras. In Ecuador, although the activities that led to the development of this unit occurred under the predecessor HCI Project, generating learning from its genesis and the project’s involvement in it is critical for ASSIST. In Honduras, there has been no USAID-supported health care improvement activity in the last three years, and it is of interest to determine what activities are ongoing in this area independent of this support.

#### **KEY ACCOMPLISHMENTS**

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- **A concept note was developed to examine the institutionalization of a health care improvement infrastructure that occurred in Honduras and Ecuador since the end of USAID-funded activities in 2013.** A literature review was also conducted in Q4 by the Harvard T.H. Chan School of Public Health.

### **Activity 7. Generating learning from multi-country studies**

#### **BACKGROUND**

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ASSIST seeks to leverage the fact that it is working on the same or similar goals concurrently in several countries, sometimes with similar methods. Learning how improvement works or not in different settings can add significantly to the body of knowledge of health systems strengthening. The studies listed below are two examples of such a multi-country approach.

#### **KEY ACCOMPLISHMENTS AND RESULTS**

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- **The multi-country study of “Survey of improvement methods inclusion in curriculum of medical schools” in sub-Saharan African medical schools was completed in Q4 and is awaiting final approval before submission for publication in a peer-reviewed journal in Q1, FY17.** Due to the limited response rate for the sample of medical schools, the manuscript will be submitted as a pilot study. The study examined the following questions: Do medical schools in Sub-Saharan Africa teach about quality of care/health care improvement? What is the capacity of medical schools to teach about quality of care/health care improvement? How do medical schools teach about quality of care/health care improvement? and What are the macro health system policies in place (at the school or country level) to promote teaching of quality of care/health care improvement?

- **Analysis and writing for evaluation of a web-based Latin American improvement collaborative to prevent neonatal infections in hospitals is underway.** ASSIST applied its years of global experience to increase the implementation of evidence-based practices in the LAC region's hospitals to reduce the incidence of the nearly one million annual newborn infections using proven quality improvement methods and tools. A multi-hospital, multi-country improvement collaborative was organized and implemented via internet-based applications, minimizing program costs and increasing the efficiency of the QI approach to reach multiple multi-national MNCH service delivery points. The LAC Region Internet-Based Improvement Collaborative to Reduce the Incidence of Non-NICU Hospital Newborn Infections project (RedINFECC Network) was implemented with support from ASSIST and the Maternal and Child Survival Program, in collaboration with the Neonatal Alliance for Latin America and the Caribbean. The virtual collaborative leveraged database support from the Avedis Donabedian Foundation, Barcelona, Spain. While internet use has grown impressively in recent years in the LAC Region, its use for the purpose of improving health care is virtually non-existent. The RedINFECC Collaborative Network is the first-ever experience in this direction in the MNCH area in the region. An evaluation of the project is imperative to obtain knowledge about the strategy's implementation, costs, the degree of participation, and the effectiveness of the improvement activities to improve processes of care and reduce newborn infections. Interviews were conducted with representatives from 18 improvement teams, and a group discussion was held with the coaches who supported them during the collaborative in November 2015. This knowledge will be important to ASSIST, and other programs and organizations in LAC, Africa, Asia, and the Middle East and beyond to strengthen health systems globally for improved outcomes. The potential for reduced costs and expanded reach with using the internet for improvement activities is significant.

## **Activity 8. Capacity building for research and support to country programs**

### **BACKGROUND**

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Developing the capacity of country teams to perform all parts of the research process is a goal of the project. To this end, the ASSIST R&E unit works collaboratively with project staff in country and encourages them to take the lead where appropriate. The R&E unit also provides mentorship with the ultimate goal of enabling country teams to generate and execute protocols and publish findings of rigorous research independently. Further, Edward Broughton has been working in collaboration with USAID technical experts from the Economic Development, Education, and Environment (E3) Division of USAID on designing courses on cost-effectiveness analysis in health programs for delivery in other settings, aimed primarily at US Government staff.

### **KEY ACCOMPLISHMENTS AND RESULTS**

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- **The R&E team has provided support for analyzing and developing manuscripts for publication for the Partnership for HIV-Free Survival work in Kenya (Q4).**
- **In FY16, Edward Broughton worked in collaboration with USAID technical experts from the E3 Division of USAID on designing courses on cost-effectiveness analysis in health programs. Two cost-effectiveness analysis (CEA) trainings were delivered:** A week-long training was delivered by Dr. Broughton in conjunction with the E3 Bureau in Maputo, Mozambique (Nov 16 - 20, 2016). A week-long training was also delivered by Dr. Broughton in conjunction with the E3 Bureau in Pretoria, South Africa (Jan 25-29, 2016). Another CEA course is also planned and prepared for delivery in October 2016 in Crystal City, VA.
- **Simon Hildebeitel travelled to Uganda in February 2016 to review project indicator databases and worked on improvements in data management and dashboards with the ASSIST Uganda team.** He also conducted two training sessions on improving data presentations.

## **Activity 9. Disseminate knowledge gained through ASSIST R&E activities**

### **BACKGROUND**

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ASSIST disseminates insights from research and evaluation activities through peer-reviewed publications, conference presentations, and project research reports posted to the ASSIST knowledge portal at: [usaidassist.org](http://usaidassist.org).

## KEY ACCOMPLISHMENTS AND RESULTS

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- A manuscript entitled “Improving voluntary medical male circumcision standards adherence and post-procedure follow-up in Uganda: A mixed methods study” was submitted to the *African Journal of AIDS Research* in September 2016.
- A manuscript titled “Why economic analysis of health system improvement interventions matters” was written and submitted to the *Frontiers in Public Health* in September 2016 and was accepted for publication in October 2016.
- The manuscript titled “Cost-effectiveness of implementing the chronic care model for HIV care in Uganda” that was submitted to the *International Journal of Quality in Health Care* was accepted for publication in September 2016.
- The manuscript “Strengthening pharmaceutical human resources and improving medicine availability and use in Uganda” was been submitted to *Global Health: Science and Practice*, passed initial screening, and was sent for peer review in September 2016.
- Article published (March 2016) in *Frontiers in Public Health*: Sarin E, Lunsford SS, Sooden A, Rai S, Livesley N. 2016. “Incentives of Accredited Social Health Activists workers in two districts in India: Lessons from a qualitative study.”
- A manuscript was submitted in May 2016 to *Frontiers in Public Health* for the improvement activity conducted in Cotopaxi, Ecuador. It was accepted for publication in October 2016.
- Proposals were submitted in February 2016 for oral presentations at the November 2016 Health Systems Research Global Symposium for presentations on Indonesia HAPIE results, on health care improvement methods, and on the results of safe male circumcision studies in Uganda. The Uganda SMaCKM results were presented as a poster VMMC mixed methods study results were presented as an e-poster.
- A poster on the Tanzania health worker engagement study was presented at the International AIDS Society conference in July 2016 in Durban, South Africa.
- Two conference presentation proposals were accepted for presentation at the International Society for Quality in Health Care conference in Tokyo in October on the study of the relationship between improvement and accreditation and the implementation of the universal health coverage system in Indonesia.
- The protocol for the SMATS study for screening during pregnancy was submitted February 2016 to *BMC Infectious Diseases* and is currently under review.
- Findings from the DRC baseline assessment were shared with key national-level stakeholders, including the Mission, Ministry of Health, and implementing partners.

## 4 Directions for FY17

In FY17, the R&E unit will continue to finalize several key studies and other activities currently underway to synthesize learning, especially on data validity, the use of control groups, economic analysis of health care improvement interventions, and institutionalization and sustainability of quality. The unit will submit several of these studies for publication in peer-reviewed journals.

ASSIST staff will participate in international meetings and produce knowledge dissemination products through FY17. It is important to spread the valuable information learned from implementing and evaluating improvement activities throughout the project and improvement activities beyond the project. One specific presentation of learning from cost-effectiveness analysis of improvement activities across ASSIST-supported countries will be presented at the BMJ International Forum on Quality and Safety in Health Care in April 2017.

There will be another cost-effectiveness analysis training session planned for USAID staff provided it can be scheduled with the E3 Bureau. There have been five trainings so far. They are designed to develop the capacity of USAID staff to understand economic analysis of health and health system interventions so

that USAID will be able to demand more of such analyses in activities that USAID supports and use the results for evidence-based decision-making.

There will be a greater emphasis on studies on the institutionalization of improvement methods into health systems in the coming year. One study is underway for Ecuador and Honduras.

Further involvement of ASSIST partners in research studies is planned. It is expected that HSPH will provide one or more “fellows” to travel to selected countries to perform validation of improvement activity and collect data from comparison sites. They will also help develop the capacity of the ASSIST team in designing validation activities and analyzing the data, as appropriate.





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

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