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USAID
ASSIST PROJECT
Applying Science to Strengthen and Improve Systems

USAID ASSIST Project

Research and Evaluation Report FY15

Cooperative Agreement Number:
AID-OAA-A-12-00101

Performance Period:
October 1, 2014 – September 30, 2015

DECEMBER 2015

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

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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 University School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER LLC.

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

Recommended citation

USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. 2015. Research and Evaluation Report FY15: Published by the USAID ASSIST Project. Bethesda, MD: University Research Co., LLC (URC).

Table of Contents

List of Tables i
Acronyms i

1 INTRODUCTION 1

2 PROGRAM OVERVIEW 1

3 KEY ACTIVITIES, ACCOMPLISHMENTS, AND RESULTS 5

Activity 1. Validation of 25% of improvement indicators 5
Activity 2. Collecting data from control groups for 10% of indicators 7
Activity 3. Evaluating design of improvement activities for lower- and middle-income countries 8
Activity 4. Evaluation of methods and approaches for effective design and implementation of scale-up 14
Activity 5. Economic analysis of improvement activities 15
Activity 6. Sustaining improvements and institutionalizing the capacity to continuously improve 17
Activity 7. Generating learning from multi-country studies 17
Activity 8. Capacity building for research and support to country programs 18
Activity 9. Disseminate knowledge gained through ASSIST R&E activities 19

4 DIRECTIONS FOR FY16 20

List of Tables

Table 1: ASSIST research and evaluation studies in FY15 2
Table 2: Approaches to validation of improvement indicators 5

Acronyms

AIDS	Acquired immunodeficiency syndrome
AIMGAPS	Assuring Infants and Mothers Get All PMTCT Services
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
ASHA	Accredited Social Health Activists
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
BPI	Brief physician intervention
CHC	Community health center
CHSS	Community Health Systems Strengthening
CHW	Community health worker
DRC	Democratic Republic of Congo
DQA	Data quality assessment
E3	USAID Economic Growth, Education, and Environment Bureau
HCI	USAID Health Care Improvement Project
HES	Household economic strengthening
HIV	Human immunodeficiency virus
HSPH	Harvard School of Public Health

IP	Implementing partner
IRB	Institutional review board
KM	Knowledge management
LAC	Latin America and the Caribbean
LTFU	Lost-to-follow-up
MCSP	Maternal and Child Survival Program
MMC	Medical male circumcision
MNCH	Maternal, newborn and child health
MOH	Ministry of Health
MVC	Most vulnerable children
NACS	Nutritional assessment, counselling and support
OVC	Orphans and vulnerable children
PLHIV	Persons living with HIV
PCIHS	People-centered and integrated health services
PEPFAR	United States President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother-to-child transmission of HIV
QI	Quality improvement
R&E	Research and evaluation
SMART	Screening in maternity to ascertain TB status
SMaCKM	Safe male circumcision knowledge management
SMC	Safe male circumcision
TA	Technical assistance
TB	Tuberculosis
TFI	Team functionality index
URC	University Research Co., LLC
USAID	United States Agency for International Development
VSL	Village savings and loan
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. One question is, How can ASSIST improve the way that improvement activities are implemented in the settings in which it works? The second is, 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 FY15, the project's R&E unit supported country-led research programs in 12 countries (Burundi, Cote d'Ivoire, the Democratic Republic of Congo, India, Kenya, Malawi, Mali, South Africa, Swaziland, Tanzania, Uganda, and Ukraine) as well as four multi-country studies. 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

Activities	What are we trying to accomplish?	At what scale?
1. Validation of 25% of improvement indicators	Demonstrate that data reported by the ASSIST project are accurate, reliable and relevant	No less than 25% of total number of country reported indicators with completed validity assessment
2. Collecting data from control groups for 10% of indicators	Demonstrate the attributable impact of ASSIST interventions on improvement indicators	Comparison reports on no less than 10% of country-reported indicators
3. Evaluating design of improvement activities for lower- and middle-income countries	Advance learning in improvement science in low and middle income countries	Every ASSIST country program
4. Evaluation of methods and approaches for effective design and implementation of scale-up	Advance global knowledge on scale up of improvement interventions	Selected ASSIST country programs with scale up activities
5. Economic analysis of improvement activities	Advance global learning on comparative advantage and economic efficiency of quality improvement (QI) activities	At least one economic analysis (may be basic cost report to full cost-effectiveness analysis) for every ASSIST country with an improvement program
6. Sustaining improvements and institutionalizing the capacity to continuously improve	Contribute to global learning on sustaining and institutionalizing improvement methods to	At least two studies on sustainability and institutionalization of improvement after direct involvement of the project has ceased

Activities	What are we trying to accomplish?	At what scale?
	ensure sustainability beyond the life of the project	
7. Generating learning from multi-country studies	Advance knowledge on improvement intervention and how they work in different settings	At least one study that either combines or compares and contrasts improvement interventions and their effects in more than one country
8. Capacity building for research and support to country programs	Build research and data management capacity of USAID ASSIST staff	Every ASSIST country program
9. Disseminate knowledge gained through ASSIST R&E activities	Contribute to the quality improvement and global health fields	Globally available

Table 1 provides an overview of the ASSIST R&E program and lists the 34 studies that the project supported in FY15. 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 5, 13, 18, 25, 26, and 34.

Table 1: ASSIST research and evaluation studies in FY15

	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	Design of improvement activities	Completed	HIV
2	Burundi	Evaluation of an improvement collaborative for PMTCT services in Burundi	Data validation Control groups Design of improvement activities Economic analysis	Protocol drafted	HIV
3	Cote d'Ivoire	Evaluation of an improvement collaborative for ART and PMTCT services in Cote d'Ivoire	Data validation Control groups Design of improvement activities Economic analysis	Protocol drafted	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	Assessing institutionalization of quality improvement in DRC: A prospective study	Institutionalization	Planning	HIV

	Country	Study	Research Area	Status	Program Area
6	India	Female community health worker (CHW) familial and social factors that contribute to job engagement	Design of improvement activities	4 manuscripts have been prepared and submitted for publication	MNCH
7	India	Cost-effectiveness of RMNCH in India	Economic analysis Design of improvement activities	Planning	MNCH
8	India	Validation of MNCH facility data	Data validation	Completed	MNCH
9	Kenya	Validation of QI team maturity index data collected by ASSIST coaches and implementing partner coaches	Data validation	Analysis and writing	HIV
10	Malawi	Evaluating household economic strengthening activities for vulnerable families in Malawi	Design of improvement activities	Baseline data collected	OVC
11	Malawi	Data validation	Data validation	Under review	OVC
12	Mali	Evaluation of a people-centered and integrated health services intervention in Mali	Design of improvement activities Control groups	Protocol drafted	MNCH
13	Mali	Assessing institutionalization of quality improvement Mali: A prospective study	Institutionalization	Planning	MNCH
14	Mali	Validation of improvement indicators in Mali	Data validation	Planning	MNCH
15	South Africa	Effectiveness and efficiency of VMMC improvement	Economic analysis	Data collection underway	HIV
16	Swaziland	Validation of new diagnostic technologies for pediatric TB cases	Design of improvement activities	Manuscripts prepared / submitted	TB
17	Swaziland	Injection safety, waste management practices and related stigma and discrimination in Swaziland: A national assessment, exploratory study, and evaluation	Design of improvement activities	Preparing for end line data collection	HIV
18	Swaziland	Screening in maternity to ascertain TB status (SMART) study in Swaziland	Scale-up	Institutional Review Board (IRB) submission / response	HIV and TB
19	Tanzania	Factors influencing loss to follow-up among PLHIV in Morogoro, Tanzania: The experience from patients who returned to care	Design of improvement activities	Analysis and writing	HIV

	Country	Study	Research Area	Status	Program Area
20	Tanzania	A qualitative evaluation of "Assuring Infants and Mothers Get All PMTCT Services" (AIMGAPS)	Design of improvement activities	In review	HIV
21	Tanzania	Data validation	Validation	Analysis and Writing	HIV
22	Uganda	The effectiveness and efficiency of applying the chronic care model to clients with HIV in Uganda: A non-randomized controlled evaluation	Control groups Design of improvement activities Economic analysis	Manuscripts prepared and in review.	HIV
23	Uganda	Improving the quality of safe male circumcision in Uganda: An evaluation and qualitative exploration	Design of improvement activities	Manuscript prepared and in review	HIV
24	Uganda	Integration of family planning into HIV care: A cost-effectiveness analysis	Design of improvement activities	Planning	HIV
25	Uganda	The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda	Economic analysis Scale-up	Analysis and writing	HIV
26	Uganda	Cost-effectiveness of safe male circumcision knowledge management intervention	Economic analysis Scale-up	End line data collection underway	HIV
27	Uganda	Assessing the cost-effectiveness of supporting savings groups to improve OVC access to services in Uganda	Design of improvement activities Economic analysis	Preparing for data collection	OVC
28	Uganda	Data validation of ART improvement data	Data validation	Analysis and writing	HIV
29	Uganda	Integrating tetanus vaccination into VMMC: exploring the acceptability, feasibility and cost in Uganda	Design of improvement activities Economic analysis	Study on hold	HIV
30	Ukraine	Improving alcohol and tobacco control during pregnancy in Ukraine	Design of improvement activities	Report completed	MNCH
31	Multi-Country Africa	Building partnership: Experiences from the Partnerships in Community Child Protection in Africa	Design of improvement activities	Writing	OVC
32	Multi-country (Latin America)	Evaluation of a web-based Latin American (LAC) improvement collaborative to prevent neonatal infections in hospitals	Design of improvement activities	Program implementation and data collection ongoing	MNCH
33	Multi-Country	Supporting close-to-community providers through a community	Design of improvement activities	Completed	Community health

	Country	Study	Research Area	Status	Program Area
		health system approach: Case examples from Ethiopia and Tanzania			
34	Multi-Country	Survey of improvement methods inclusion in curriculum of medical schools	Institutionalization	Data collection	N/A

3 Key Activities, Accomplishments, and Results

Activity 1. Validation of 25% of improvement indicators

BACKGROUND

The USAID ASSIST Project is mandated to validate 25% of the total number of country-reported improvement indicators. 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 antiretroviral therapy (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 a protocol for data validation in Burundi** (Mar 2015).
- **Developed a protocol for data validation in Cote d'Ivoire** (Mar 2015).
- **Completed study on maternal, newborn, and child health (MNCH) data validity in maternity facilities in India** (July 2015). This assessment of the validity of data used to inform improvement interventions completes the ASSIST mandate. We compared direct observations (observed data) to data recorded in individual patient records (medical record data) and aggregated data used by improvement teams to track performance (self-assessment data) that comes from patient records and other facility data sources. We examined how well recorded and self-assessment data compare to observations of patient encounters. The research was conducted at one district hospital and 19 community health centers (CHC) in three states during day and night shifts. Observations during

deliveries and medical record data from one day later were collected. We examined sensitivity, specificity, and the proportion of discordant results between observed and medical record data.

- Compliance with care standards was 81% for oxytocin administration, 92% for drying and wrapping, 98% for cord care, 89% for vitamin-K administration, 64% for breastfeeding; and 22-35% for maternal assessment at 30 and 60 minutes. Self-assessment data showed generally higher compliance than observed data, but were more accurate than medical record data, which showed compliance up to 66% lower than observed. Sensitivity ranged from 35-100% and specificity from 8-100%.
- Overall, self-assessment data over-estimated performance but to less than 10% compared to observations. This accuracy is generally sufficient to guide improvement efforts but clinicians should still be encouraged to improve data quality. This study has been submitted for consideration by a peer-review journal for publication.

- **Completed data analysis of the quality improvement team performance data collected in Kenya** (Q4). Activities continued in Kenya on validation of data collected from the QI team maturity index by both the ASSIST coaches and the coaches from the implementing partners (IPs). The team functionality index (TFI) is a written tool used by the ASSIST Project and based on the "team maturity index" developed by the Institute for Healthcare Improvement. It was originally designed to track the progress of the performance of QI teams operating in the service areas to give guidance to the QI coaches as to what they should be encouraging the QI teams to progress to as a next stage in their development, up to the point where they are independently working to improve service quality without outside technical assistance and achieving success in those endeavors.
  - In the Kenya, ASSIST QI coaches have the task of improving the quality of OVC services delivered by working through IPs. In this situation, the TFI was introduced to the IP QI coaches by the ASSIST QI coaches as a way to track the performance of the community QI teams and give them a guide as to what activities they should be encouraging in those teams as progressive steps in their competence with improvement methods. In this way, the tool could be used to improve service delivery performance of community QI teams and check how well the IP QI coaches were taking on their responsibilities of providing support at the community QI team level.
  - This exercise examines TFI scores given by the IP QI coaches on the performance of the community QI teams and compares the scores given by the ASSIST QI coaches when they assessed the performance of those same community QI teams. The question we set out to answer from this exercise is "What is the degree of agreement between the TFI scores for the community QI team given by the ASSIST QI coaches and the IP QI coaches?" Answering that gives some indication of the usefulness of the TFI as a tool to use in these circumstances. The research is of great importance to USAID ASSIST because there are many settings in which the project is asked to improve the quality of service delivery by working through implementing partners rather than directly with the service providers. The TFI may be a useful tool in these and possibly other circumstances and it would be useful to know if it should be used more widely, adapted or not used. Data have been collected for this exercise, and the final report is expected in Q2, FY16.

- **Two graduate students from the Harvard School of Public Health (HSPH) were engaged by ASSIST as "Fellows" to support data validation studies and analysis of data collected from control groups.** One travelled to Malawi and the other to Tanzania to do this in August, 2015, and they both completed the data collection and analysis part of their assignment.
  - In **Malawi,** the validation exercise was for data collected and reported for the orphans and vulnerable children (OVC) program. The goal of this exercise was to answer four questions:
    - Is there a difference between reported records kept by community-based organizations and available school records?

- What is the process followed by QI teams in coming up with the reported figures and what do these figures represent? For example, we were interested in finding out whether standards for passing an exam were similar across all schools.
- Is there a difference between QI processes and quality of data collected and maintained across all teams?
- Is there a difference between education performance in schools that ASSIST supports and control facilities that do not get this support?

  - We found that all QI teams prioritized educational performance as their most important indicator and initially concentrated their efforts on this area. More recently the teams began tracking the effects of QI activities on household economic strengthening and plan to track the effects of these activities on population health in the future. These findings on educational performance highlight four main points. First, most data collected from the schools and QI teams was similar to what has previously been submitted to the Malawi ASSIST team. Second, there was variation in the definitions of what some of the indicators collected mean, most especially the criteria used by schools to classify students that have passed a class. We also found variability in the quality of records, which in turn influenced the ability of teams to use these data for quality improvement. Lastly, with the exception of one control school, all schools that are supported by ASSIST perform better on some indicators than those that are not supported.
  - In **Tanzania,** the focus was on validating health indicator data used to inform quality improvement activities in the region of Morogoro, Tanzania at local health centers (Saba Saba Health Center, Kingolwira Health Center, and Morogoro Regional Hospital). The indicators measured maternal health, pediatric HIV care, and services targeting most vulnerable children (MVC) in these public health facilities. The fellows ensured that the data collected on these indicators was accurate and indicative of the actual work being completed in the facilities, as well as accurately reflected the health status of the patients in the health centers. The data were provided by district and local health officers and the local URC-ASSIST country office in Tanzania.

- **Began analysis of data validation for ART clinics in Uganda** (Feb 2015).

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

BACKGROUND

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 control sites 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 acts as the other's control. For example, if one set of sites is implementing the chronic care model to ART patients, while another set of sites is working on integration of prevention of mother-to-child transmission (PMTCT) of HIV 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

- **Developed a protocol for collecting data from control groups in Burundi** (Q2).
- **Developed a protocol for collecting data from control groups in Cote d'Ivoire** (Q2).
- **Collected data from non-intervention sites on indicators of quality of RMNCH care in India** (Q3). These data were analyzed in Q4. A manuscript is in development for submission to a peer-reviewed journal.
- **Reports from the two HSPH Fellows on control groups in Malawi and Tanzania were drafted in Q4, and the final reports will be available in Q1, FY16.**
- **Completed analysis and write-up of the results of the controlled study on the chronic care model collaborative in Uganda** (Q3). The results were described in a manuscript to be submitted for peer-reviewed publication following approval by USAID funding offices. This study also has a cost-effectiveness analysis component.

Activity 3. Evaluating design of improvement activities for lower- and middle-income countries

BACKGROUND

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

- **Factors associated with the involvement of male partners in maternal and child health services in Burundi**. Increasing male participation has been identified as a potentially critical strategy to enhance PMTCT uptake in PEPFAR countries. A baseline assessment conducted by the USAID Health Care Improvement Project (HCI) in 2012 revealed low HIV testing among male partners of pregnant women in Burundi, with only 6% of pregnant women tested for HIV during antenatal care (ANC) reporting that that their partners had also been tested. ASSIST was asked to provide support for the implementation of an improvement collaborative focused on improving the quality of PMTCT services in four provinces in Burundi. This study sought to enhance the quality improvement intervention package by identifying factors that promote or inhibit male involvement in antenatal care. Findings will inform the development of a package of best practices to promote male involvement and male testing. Specifically, the study aimed to: 1) Identify factors that facilitate or hinder male partners accompanying pregnant women to their ANC visit; 2) Determine the factors that facilitate or hinder voluntary HIV testing among partners of pregnant women enrolled in ANC; and 3) Determine the factors that facilitate or impede the sharing of HIV status within couples.
    - **Study completed** (Q3). ***Results***: This study has shown that over 80% of partners of pregnant women have ever accompanied their wives to their ANC sites. At the community level, there are stigmatizing attitudes towards partners accompanying their wives to ANC visits. Women in the community believe that these partners are bewitched, dominated by their spouse or that the couple is HIV-positive. Men in the community also believe that these partners have been bewitched or dominated by their wives and make fun of these partners. Partners who have never accompanied their wife to ANC visits report that it is mainly because they were busy or absent, did not know that it was necessary or that the woman had not asked him to accompany her. Almost all partners said they would accompany their wives to ANC visits if their religious or community leader asked them to do so.
    - ***Perception of ANC services:*** The majority of women interviewed had a positive perception of the services received during their ANC visits and reported being satisfied or very satisfied with the care received and having a good or excellent relations with service providers (92%). The majority believed that there is enough room for women in the examination room (76%) but less so for partners (57%). Overall, partners had a positive perception of the quality of care from health

centers. However, there were significant differences in perceptions between those who accompanied their wives and those who never accompanied their wives with perceptions being more positive among partners who have accompanied their spouse to ANC visits. For instance, 94% of partners who accompanied their spouse to ANC visits believed that partners are well received at facilities versus 81% of those who have never accompanied their spouse ($p < 0.001$). In addition, all partners did not come at the request of health center staff – only 73% of partners who accompanied their spouse reported that staff had asked them to accompany their wives. For those who had never accompanied their wives, it was 24%.

- ***Partners' HIV testing and HIV status sharing***: Overall, 94% of men interviewed reported that they had already been tested for HIV and 65% were tested recently (during their spouse's current pregnancy). Multivariate logistic regressions revealed that partners' levels of education was the only factor independently associated with HIV testing during a spouse's pregnancy. When confounding factors are adjusted, partners who had a secondary education were 3.9 times as likely to get tested during their spouse's pregnancy than those who had no education (OR = 3.9; 95% CI: 1.2-13.1). Sharing the result was very high among women as among men (96% and 98%, respectively).
- ***Conclusion/recommendations:*** This study identified a number of factors that represent barriers to the involvement of male partners ANC services. Facility-level factors include lack of satisfaction with the quality of ANC services and community-level factors include stigmatizing attitudes towards partners accompanying their wives to ANC visits. Study findings can inform the development of culturally appropriate strategies to address these barriers and improve the participation of men in maternal and child care and PMTCT in Burundi. These strategies include: 1) Incorporate a community component into PMTCT programs involving religious leaders and other key community stakeholders to combat stigmatizing attitudes and encourage greater involvement of male partners; 2) Reinforce community health system programs by ensuring that community health workers with clearly defined roles establish links between the community; 3) Use a quality improvement approach to address quality gaps reported by patients and their partners; 4) Provide information on HIV counselling, testing and PMTCT to men who receive health care unrelated to HIV; and 5) Train and provide ongoing support to health care providers and community health workers on gender issues related to PMTCT.

- **Evaluation of an improvement collaborative for PMTCT services in Burundi (including data validation and control groups)**. ASSIST and its predecessor HCI have been working with the Ministry of Health Burundi since 2012 to improve the quality of care and services for people living with HIV/AIDS (PMTCT, ARV treatment and OVC 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 sites have better results in terms of quality improvement indicators that non-ASSIST sites? and 3) What is the cost-effectiveness of the ASSIST improvement approach compared to business-as-usual?
  - **Drafted protocol** (Q2).

- **Evaluation of an improvement collaborative for ART and PMTCT services in Cote d'Ivoire (including data validation and control groups).** In Cote d'Ivoire, with technical support from ASSIST and funding from PEPFAR, six implementing partners support the Ministry of Health and the Fight against AIDS in the implementation of activities to improvement the quality of ART and 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 during the life of the project in Cote d'Ivoire, 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-supported implementing partners in Cote d'Ivoire accurate? 2) Do implementing partners' sites supported by ASSIST have better results in terms of quality improvement indicators that implementing partners' sites not supported by ASSIST? and 3) What is the cost of the ASSIST improvement approach in Cote d'Ivoire?

  - **Drafted protocol** (Q2).

- **Baseline assessment of HIV services in the Democratic Republic of Congo**. ASSIST is supporting the Ministry of Health (MOH) of the DRC to improve nutrition services for HIV clients through the integration of nutritional assessment, counselling, and support (NACS) into HIV care and treatment, in coordination with other implementing partners. The baseline assessment was designed to identify the strengths and weaknesses of HIV/AIDS services in DRC with a focus on PMTCT, retention in care, and adherence to therapy. Data were collected sex-disaggregated in order to identify gaps between men and women, boys and girls, and tailor improvement work to close such gaps. Findings will be used to introduce the improvement approach in the 39 facilities selected by PEPFAR. More specifically, the results will be used to: 1) Determine the level of quality of care before the implementation of the improvement approach; 2) Refine the improvement objectives; and 3) Raise awareness among various stakeholders (including the MOH, IPs, and providers) regarding quality gaps in the current health care system, and motivate their participation in the next phases of the improvement work. The research objectives for this study are: 1) Describe the quality of HIV services provided to people living with HIV/AIDS (adults, children, pregnant and breastfeeding women); 2) Determine the level of appointment keeping among patients; 3) Assess sites' capacity to monitor patients' adherence to ARV treatment; and 4) Estimate the level of patients' adherence to ARV treatment.
  - **Data collection completed** (Q4). The report will be written and finalized in FY16.

- **Evaluating household economic strengthening activities for vulnerable families in Malawi.** The improvement goal for this activity is to increase the proportion of vulnerable children accessing essential services. The aim is to increase the percent of vulnerable families involved in household economic strengthening (HES) activities who are linked to essential services. Thus, the evaluation question is: Does accessing households with vulnerable children through HES activities increase the linkages with essential services? The intervention will employ quality improvement methods to engage households in HES activities such as village savings and loan (VSL), livestock production, kitchen gardens, etc. QI teams will counsel the vulnerable households on the benefits of participating or engaging in HES activities. When interested or convinced vulnerable households will initiate any of the HES activities recommended by the QI team members. A pre-post non-randomized controlled design will be used to evaluate the effectiveness of changes implemented to increase the proportion of children in households involved in HES activities who are linked to services that are deemed necessary.
  - **Baseline data have been collected** (Q3). End line data collection is expected in Q1-2, FY16.

- **Evaluation of a people-centered and integrated health services (PCIHS) intervention in Mali**. The World Health Organization (WHO) is promoting patient-centered care as a key pillar to strengthen quality of care. ASSIST in partnership with the MOH and Public Hygiene, the Ministry of Solidarity, Humanitarian Action and Reconstruction of the North, and the Ministry of Women, Children and Family will use the strategies developed by WHO combined with a quality improvement methodology to test the implementation of this approach in two districts in the Kayes Region. This study seeks to use a stepped wedge design to evaluate the effectiveness of this approach. The research objectives for this study are: 1) Assess the impact of the PCIHS approach combined with a quality improvement intervention on the quality of maternal and neonatal health care; 2) Describe the

impact of the quality improvement methodology on the implementation of PCIHS; and 3) Identify factors that facilitate or hinder the implementation PCIHS.

  - **Drafted study protocol** (Q4).

- **Validation of new diagnostic technologies for pediatric tuberculosis (TB) in Swaziland**. There is no easy-to-use and accurate diagnostic test for TB in children, and there are difficulties in obtaining bacteriological specimen from non-sputum expectorating children. This study compared two methods of recovery of sputum from children (mucus extractors and gastric lavage) as diagnostic aids for TB among children. The latter is more invasive while the former requires specialized equipment. The study also compared three diagnostic technologies against the gold standard of TB sputum culture to determine clinical validity and utility of the tests among children in Swaziland (GeneXpert, Blood mycobacteria TB culture, and urine lipoarabinomannan). Clinical validity refers to the extent or degree to which a test accurately predicts the risk of an outcome, the accuracy with which a test identifies or predicts a patient's clinical status, accuracy of detection the clinical disease as well the ability of the test to separate patients with different outcomes into separate risk classes (discrimination). Clinical utility refers to the likelihood of a test to improve patient outcomes. Given that the study compared the results from various methods of analysis of biological samples from children, the statistical analysis was focused on sensitivity and specificity compared to the gold standard microscopy with sputum cultures.
  - **The study was completed and one manuscript was submitted for consideration in a peer-review publication.** It was rejected, and currently the manuscript is being edited for submission to a different journal for consideration.

- **Injection safety, waste management practices and related stigma and discrimination in Swaziland: A national assessment, exploratory study, and evaluation**. In 2013, the USAID ASSIST Project submitted an ethics application for a study entitled "Injection Safety, Waste Management Practices and Related Stigma and Discrimination in Swaziland: A national assessment, exploratory study, and evaluation". In preparing for end line data collection (September/October 2015), it was decided to expand the scope of the research to qualitative explore health worker engagement and motivation and to collect data on patient-level outcomes during the intervention period. There is ample evidence indicating that health worker engagement and motivation are associated with supportive supervision, sufficient human resources to manage the workload, professional development opportunities, financial and non-financial incentives, passion for the work, and the wider health system and socio-cultural context. There is also evidence indicating variations in motivation based on health worker sex, cadre, tenure, and training. Little research has been done on the relationship between facility-based environments that support safe injection practices and health worker engagement or motivation. We proposed exploring the theory that by improving injection safety and waste management practices, including aspects associated with stigma and discrimination, health worker engagement would be improved which, in turn, would contribute to improved patient outcomes. The research questions for this study are: 1) What type of injection safety and waste management practices and policies exist within facilities in Swaziland? 2) What type of stigma and/or discrimination do health care providers feel or express related to HIV care and treatment and other blood-borne pathogens? 3) How do improvement activities around injection safety effect HIV-related stigma and discrimination? 4) How do health workers involved in injection safety/waste management improvement activities perceive their level of engagement and motivation in their work compared to health workers not involved in improvement activities? and 5) How have patient-level indicators changed in USAID ASSIST-supported sites, compared to sites where no USAID ASSIST-supported improvement activities have taken place?
  - **Began end line data collection** (Q4).

- **Study to examine individual and facility-level determinants of loss to follow-up from ART services in health facilities in the Morogoro Region of Tanzania and understand factors that**

may promote return to care among clients who are lost to follow-up. Persons living with HIV (PLHIV) who miss three or more consecutive clinic appointments are labelled as lost to follow-up (LTFU). The ensuing lack of adherence to ART can lead to high morbidity and mortality rates and treatment resistance. It is therefore important to determine factors that lead to LTFU so that targeted interventions can be developed and implemented to improve retention. The overall objective of the study is to explore individual- and facility-level determinants of loss to follow-up from ART services in health facilities in the Morogoro Region and understand factors that may promote return to care among clients who are lost to follow-up. The study aimed to determine:

1) The percentage of ART clients who are LTFU in health facilities providing HIV services in Morogoro Region.
2) Facility-level factors that promote or hinder LTFU among ART patients in health facilities providing HIV services in Morogoro Region
3) Individual-level factors that promote or hinder LTFU among ART patients in health facilities providing HIV services in Morogoro Region
4) Gender-related factors contributing to LTFU among ART patients
5) Factors that promote return to care among LTFU patients

- This cross-sectional study used a combination of qualitative and quantitative methodologies such as structured and semi-structured in-depth interviews and focus group discussions to explore factors that lead to treatment discontinuation from the perspectives of clients, PLHIV, group representatives, home-based care providers, Care and Treatment Clinics (CTC) health providers and managers. All 40 health facilities that have CTC services from the six Morogoro districts were selected. Semi-structured interviews were conducted with 344 clients with a history of LTFU and 344 clients with no history of LTFU. Six focus group discussions were conducted with representatives from PLHIV groups to obtain information on common factors that influence LTFU from ART services and recurring themes from their experiences receiving CTC services. In-depth interviews were conducted with 40 home-based care providers and 40 health care workers and managers to collect information on factors that promote on inhibit loss to follow up through their experience locating LTFU clients and providing home services to PLHIV. In-depth interviews were conducted for selected clients of ART to obtain their perspective on retention factors for HIV services.
- **Data collection completed** (Q4). The report will be written and finalized in FY16.

- **A qualitative evaluation of "Assuring Infants and Mothers Get All PMTCT Services" (AIMGAPS) in Tanzania.** Along the continuum of care for preventing the mother to child transmission of HIV in Tanzania, women often miss opportunities to enroll in care or drop out, or are lost to follow-up Facility-based approaches to improving uptake and retention are limited in their reach and sustainability. The Community Health Systems Strengthening (CHSS) model, which we applied in three facility catchment areas in Iringa, Tanzania, brings representatives from existing formal and informal community groups onto a community improvement team to raise awareness, identify problems in coverage and retention, and implement solutions. This retrospective qualitative evaluation examined application of the CHSS model from the perspective of community improvement team members, facility-based providers, and patients. Semi-structured interviews were conducted with 17 providers and 53 patients; we also conducted three focus group discussions with community improvement team members. Thematic analysis was applied. Community improvement teams functioned as a means through which information was disseminated to the larger community, changing the communities' perceptions of accessing services to eliminate vertical transmission of HIV. Providers at facilities recognized the value of the community improvement teams because of their unique access to and relationship with the community. Team members were able to directly interact with pregnant women and their male partners, encouraging them to utilize services. The CHSS model can effectively link communities with their facilities while motivating community

members to enroll and be retained into care. This model which draws upon existing systems within a community could be applied to services beyond PMTCT and health.

  - **Revising the manuscript as per the request of the Office of HIV & AIDS** (Q4).

- **The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda**. In Uganda, under the Partnership for HIV-Free Survival, ASSIST has been working to improve retention of mother-baby pairs. A pre-post evaluation was designed to capture the effectiveness of the improvement efforts in meeting this objective. The study also included a midline qualitative component to understand the client experience of the new service delivery approaches and gather feedback on how to further improve the quality of care.
  - **All data have been collected, and analysis is underway** (Q4).

- **Improving the quality of safe male circumcision in Uganda: An evaluation and qualitative exploration.** Voluntary medical male circumcision (VMMC) has been demonstrated to reduce the transmission of HIV by 60%. Scaling-up VMMC services requires that they be of high quality, socially accepted, and effective. We evaluated an intervention aimed at improving VMMC standards adherence and patient follow-up rates in nine facilities in Uganda. We also qualitatively explored why some men return for follow-up care and others do not. 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 counseling and HIV testing; and infection prevention. Significant improvements were also observed in follow-up rates at 48 hours and 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 patients' home, rather than the circumcising facility. However, information systems were not able to capture this. Applying improvement approaches to VMMC services can promote improved standards adherence and follow-up rates and should be integrated into scale-up plans.
  - **Study completed** (Q3). Manuscript submitted to OHA for review in Q3 FY15.

- **Integrating tetanus immunization in VMMC in Uganda**. In August, the USAID Mission and Ministry of Health expressed interest in ASSIST support for a rapid study to evaluate alternative schedules for administering tetanus vaccination to VMMC clients. ASSIST drafted a protocol in September 2015. Subsequently, the study has been put on hold.

- **Improving alcohol and tobacco control during pregnancy in Ukraine**. ASSIST began working in Ukraine in 2014 as a continuation of similar work conducted through 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" (BPI) to assist pregnant women quit smoking and stop drinking alcohol. Data were collected at two antenatal visits (first visit and follow up) for separate cohorts of women before and after the intervention to determine whether standard of care counselling (pre-) or the BPI counselling (post-) were more effective at leading women to cease (or reduce) alcohol and tobacco use. This study used urine-cotinine tests to verify women's claims of smoking status.
  - **Finalized and submitted report on the study to USAID Ukraine** (Q4). The ASSIST Project plans to write a manuscript version of the study for publication in FY16.

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

BACKGROUND

To achieve the goal of strengthening the evidence base for scale-up methods, the R&E unit has supported evaluations of scale-up to generate both quantitative and qualitative information of the effectiveness of specific scale-up designs.

KEY ACCOMPLISHMENTS AND RESULTS

- **Screening in maternity to ascertain TB status (SMART) study in Swaziland.** Globally, there is need to improve TB screening among both pregnant and lactating women, and to identify algorithms with high case detection to ensure rapid diagnosis and timely treatment initiation. We have designed a study to evaluate the sensitivity and specificity of the current TB screening tool for pregnant and lactating women (both HIV infected and not) and assess hypothetical enhanced screening algorithms, including additional symptoms and clinical/laboratory procedures and tests. In so doing, it is hoped that an optimum and cost-effective screening algorithm for pregnant and lactating women can be identified. This cross-sectional analytical study design will collect data to assess current screening practices in the selected facilities. In Swaziland, it is anticipated that this study will allow for identification of the optimal screening tool for pregnant and lactating women. This, in turn, will help to improve maternal and child health outcomes in the country.
    - **The study was approved by the Swaziland authorities (Q4) and data began in Q4, 2015 and will continue until Q2, FY16**. A final report is expected Q3, 2016.
    - **A protocol manuscript was developed and it is planned that this will be submitted to a peer-reviewed journal if it is approved by USAID.**

- **Study on the effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda**. ASSIST works 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 ARVs. In 2014, ASSIST Uganda 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 and 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:

    1) 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)?
    2) 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?
    3) 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?

    - **Completed midline data collection** (Q2).
    - **Completed end line data collection** (Q3).

- **Cost-effectiveness of a safe male circumcision knowledge management (SMaCKM) intervention in Uganda**. ASSIST is working in Uganda to spread the improvement of safe medical circumcision in Uganda using knowledge management (KM) methods—SMaCKM. This study, which is being conducted in 15 sites in partnership with Johns Hopkins Center for Communication Programs, is using a three-armed comparison, with sites randomly assigned to one of the following arms: 1) Simple handover of written materials; 2) Handover of written materials with an in-person handover meeting; or 3) Handover of written materials with an in-person handover meeting and three follow-up coaching visits from ASSIST staff. Using direct observation of circumcision provision, this study will seek to answer:
    1) What is change in the quality of service delivered?
    2) Which knowledge management method is more effective in improving care?
    3) What is the cost-effectiveness of different KM methods?
    4) How were the KM methods implemented in the field?
    5) What KM methods do health care providers prefer?

    Data collection by observations of delivery of care included: pre- and post-operation interaction with patient, the handover meeting, and coaching visits.
    - **All baseline quantitative data collection was completed, entered and cleaned into the database** (Q3).
    - **Qualitative data from observations of the handover meeting and coaching visits were collected** (Q2 and Q4).
    - **Implementation of the improvement intervention continued with the handover meeting** (Q2) **and coaching visits conducted for sites receiving them** (Q3 and Q4).
    - **Preparation for end line quantitative data collection was completed,** and the actual collection began in Q1, FY16.

Activity 5. Economic analysis of improvement activities

BACKGROUND

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. It is mandated in the cooperative agreement that some reporting on cost be conducted in each country in which improvement activities are taking place under the project.

KEY ACCOMPLISHMENTS AND RESULTS

- **The cost-effectiveness of improving medical male circumcision in South Africa.** There are concerns that the quality of medical male circumcision (MMC) services provided through PEPFAR-supported programs in South Africa are deficient, and as a consequence, uptake of the procedure may be diminished. The USAID ASSIST Project has been engaged to improve the quality of circumcision services in 89 USAID sites and 44 U.S. Centers for Disease Control and Prevention sites that are coordinated by several national implementation organizations. The ASSIST MMC improvement program is being implemented the following way:
    - June – October 2014: Baseline evaluation of quality performance at sites using WHO MMC Assessment tool with trained data collection teams.
    - November 2014: ASSIST provided feedback to implementing partners on the performance seen at the sites they manage based on the evaluation. Individual sites were divided into intensive, light and collaborative support sites based of their pre-intervention performance.
    - January – December 2015: “Intensive” sites receive monthly technical assistance (TA) to improve MMC service delivery from ASSIST advisors, “Light” sites receive quarterly TA and “Collaborative” sites receive one visit from ASSIST for TA.
    - January 2016: An end line evaluation of performance after the improvement intervention had been completed will be conducted.

The object of this study is to determine the cost-effectiveness of the improvement intervention in terms of changes in the risk of adverse events from the circumcision procedure and process of care measures.

- **A protocol was developed** (Q3). Implementation of the program is well underway but there have been difficulties collecting data on costs. We are exploring alternatives to see if these can be addressed to allow the study to proceed.

- **Assessing the cost-effectiveness of supporting savings groups to improve OVC access to services in Uganda.** In Uganda, the national level child protection system provides legal and statutory guidance, but does not have the resources to provide effective services at the community level. Individual communities can set by-laws that apply only to that community. This provides an opportunity for communities to adapt national-level laws to their own context as long as they do not conflict with those national laws. Informal structures, such as the village child protection committees, are in a position to respond to the needs of children and families in their communities, but do not have the resources or support to effectively meet those needs. It has been suggested that referrals to the formal child protection system are only done in the cases of sexual abuse. Other situations where child wellbeing may be an issue tend to be resolved within the community. Community-level structures need to be empowered and strengthened to be able to address the depth and breadth of child protection issues.

  Improved linkages between the formal national system and informal local system may contribute to increased access to services and thus improved outcomes for children and their families. We are proposing using the community-driven participatory action research approach to direct efforts to improve community level child protection structures and their linkages with the formal child protection system in Uganda.

  - **Preparing for baseline data collection** (Q4).

- **The effectiveness and efficiency of applying the ART framework using the chronic care model to clients with HIV in Uganda: A non-randomized controlled evaluation**. ASSIST is implementing a follow-on to the chronic care improvement intervention implemented by HCI in Buikwe from October 2010 to October 2012. Under ASSIST, the chronic care model was spread to two neighboring districts, Mityana and Nakaseke in Central Uganda. This is a controlled (pre/post-intervention or interrupted time-series) study using quantitative and qualitative data from a random sample of clients receiving HIV services at any one of the sites participating in the study. The research question is what is the incremental cost-effectiveness of implementing the chronic care model compared to business-as-usual?

  - **The initial part of the study was completed in August 2015** and is under review by USAID before being submitted for consideration by a peer-reviewed publication.

- **Dr. Broughton travelled to Swaziland and presented to the Swaziland ASSIST team and others in the Mbabane office on how to perform a cost-effectiveness analysis on improvement activities** (Q1). This was part of capacity development for the team to facilitate the studies ongoing in the country that include economic analysis. The same was done in Q2 in South Africa with the ASSIST team there as well as guests from the South African MOH.

- **Dr. Broughton presented at the USAID Learning Annex a week-long course on performing economic analysis on health system interventions**. There were 24 participants from the USAID Health Office and the training was conducted jointly with the Bureau of Economic Growth, Education and the Environment (E3). Further courses will be conducted in FY16.

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

KEY ACCOMPLISHMENTS

- **Assessing institutionalization of quality improvement in the Democratic Republic of Congo: A prospective study**. ASSIST has been supporting the MOH in DRC since FY14 to improve nutrition services for HIV clients through the integration of nutritional assessment, counselling and support (NACS) into HIV care and treatment, in coordination with other implementing partners. In FY15, ASSIST conducted a baseline assessment to determine the quality of HIV services in order to design and implement an improvement intervention focused on improvement retention in care and adherence in the 39 sites selected by PEPFAR. As a new ASSIST country, DRC provides a unique opportunity to monitor institutionalization from the start the project, document activities conducted to promote institutionalization as well as barriers to and facilitators of institutionalization over time. The research questions for this study are: 1) What is the level of institutionalization of quality improvement at the national, regional, district, and facility level in DRC over time? 2) What are the perceived barriers and facilitators to the institutionalization of quality improvement at various levels of the system?
    - **Baseline assessment completed** (Q4).
- **Assessing institutionalization of quality improvement in Mali: A prospective study.** ASSIST is working in Mali to improve evidence-based maternal and newborn care and postpartum family planning services at facility and community levels in six target districts in the Kayes Region and to improve delivery of evidence-based interventions to reduce anemia among pregnant women and infants at facility and community levels in the Bougouni District of the Sikasso Region. Most of ASSIST work in Mali has focused on the district and facility levels. This study aims to determine whether there are signs of institutionalization of quality improvement at all levels of the systems and whether these proxies of institutionalization increase over time. This study will also document activities conducted to promote institutionalization at all levels of the system. The research questions for this study are: 1) What is the level of institutionalization of quality improvement at the national, regional, district, and facility level in Mali over time? and 2) What are the perceived barriers and facilitators to the institutionalization of quality improvement at various levels of the system?
    - **A protocol has been developed** and is undergoing ethical review (Q4).

Activity 7. Generating learning from multi-country studies

KEY ACCOMPLISHMENTS AND RESULTS

- **A multi-country case study, "Supporting close-to-community providers through a community health system approach: Case examples from Ethiopia and Tanzania" was accepted for publication in the journal *Human Resources for Health* and was published on March 28, 2015 (Q2).** See Activity 9 for more details.
- **Evaluation of a web-based Latin American improvement collaborative to prevent neonatal infections in hospitals.** ASSIST intends to use its years of global experience to increase the implementation of evidence-based practices in the Latin America and the Caribbean (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 has been entirely organized and will be completely 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 virtual improvement collaborative to reduce the incidence of non-neonatial intensive care unit hospital newborn infections (RedINFECC Network) is being implemented with the support of the American people through the USAID projects, ASSIST and the Maternal and Child Survival Program (MCSP). The RedINFECC Collaborative Network is being implemented in collaboration from the Newborn Alliance for Latin

America and the Caribbean, MCSP, and 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. 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 for the patients we are trying to serve. The potential for reduced costs and expanded reach with using the internet for improvement activities is significant.
  - **Data are currently being collected,** and the study is progressing as expected (Q4).

- **Multi-country survey of medical schools for content on improvement methods in five countries (Uganda, Tanzania, Botswana, Burundi and South Africa).** ASSIST plans to establish collaboration among universities in a PEPFAR priority country to develop, test, and implement curricula to build basic improvement competencies. To prepare for this activity, it is of interest to know what improvement competencies are covered in pre-service education curricula, how they are taught, over what period and when, and how student learning is assessed. Such information would enable comparison among countries and identification of curricula models and methods currently in use. ASSIST R&E, in partnership with HSPH, is conducting a quantitative, descriptive study of this kind of pre-service education in medical schools in private and public educational institutions in sub-Saharan African countries. The study seeks to answer the questions: 1) what, if any, improvement competencies are covered in the pre-service curricula?; 2) Is there a course (or more than one) that focuses is on building competency in improving health care delivery and safety?; and 3) if there is no such course, are such competencies taught in another part of the pre-service education program (part of an internship) and what is its nature?
  - **Data collection is underway** and is expected to be completed Q2, FY16.

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

BACKGROUND

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.

KEY ACCOMPLISHMENTS AND RESULTS

- **Dr. Sarah Lunsford conducted a virtual training on data collection for the Malawi HES evaluation** (Q2).
- **ASSIST organized a francophone webinar on data quality** (Q2). The Burundi team shared their experience using a newly developed data quality assessment (DQA) tool. This newly developed tool is used to monitor the equality of data collected and reported by quality improvement teams. During the webinar, Dr. Astou Coly also gave a presentation on the R&E mandates that each country needs to meet. The webinar was attended by Burundi, Cote d'Ivoire, Niger and Mali country teams.
- **During a trip to India, Simon Hiltebeitel led a discussion with the ASSIST India staff on data presentation and visualization** (Q2). Mr. Hiltebeitel also worked with ASSIST India research staff to address several data management challenges.
- **Conducted a remote two-day training to DRC team (Resident Advisor and four technical advisors) on data collectors training** (Q4).

- **Provided on-going support to DRC team for the development of data collection tools and data entry masks** (Q4).

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

KEY ACCOMPLISHMENTS AND RESULTS

- **Prepared and submitted a paper entitled "Supporting close-to-community providers through a community health system approach: Case examples from Ethiopia and Tanzania" (Q2) to *Human Resources for Health*, which was accepted and published on March 28, 2015** (http://www.human-resources-health.com/content/13/1/12/abstract)
  - This paper includes two cases studies, one from Ethiopia and the other from Tanzania. They examine the Community Health System Strengthening (CHSS) model, an improvement approach that draws on existing formal and informal networks within a community, such as lending, religious, and youth groups, to support close-to-community providers, such as community health volunteers and health extension workers. The model brings together representatives from existing community networks, close-to-community providers, and health facility staff into a community team who identify gaps in services, test solutions, and monitor results. Team members from the community support close-to-community providers by disseminating health messages and referring community members to services.
  - In the Ethiopia case, the CHSS model was applied to support 18 communities to increase HIV testing among pregnant women, increased utilization of antenatal care services, and improved sanitation. By working together in a team, community groups became better informed about the available services and more comfortable making referrals. They were also able to spread health messages. As a result, more pregnant women registered for antenatal care and were tested for HIV during implementation, health extension workers conducted more postnatal visits, and more households had functioning latrines.
  - In the Tanzania case, the model was applied to five communities who worked on improving HIV testing and retention. Community members spread messages about HIV testing and helped identify people who had dropped out of treatment, referring them to home-based care volunteers. The program observed increased HIV testing and a reduction of patients lost to follow-up.

- **Prepared and submitted a paper entitled "Incentives of ASHA workers in two districts in India: Learnings from a qualitative study" to *BMC Health Services Research* (March 25, 2015)** (Q2).
  - This study examined the role incentives play in motivating CHWs in India. Accredited Social Health Activists (ASHAs) are female CHWs in India who provide a range of services, including reproductive, maternal, neonatal, child, and adolescent health. ASSIST conducted qualitative interviews with 49 ASHAs and one member of each ASHA's family to explore the role of family, community, and health system in supporting ASHAs in their work. The results from the thematic analysis of the interviews were that incentives were empowering, as a source of household income inspiring a sense of self confidence, but were also a source of distress for ASHAs and their families as incentive rates are low and payments irregular and often incomplete. Further, ASHAs dedicate their own time and resources to perform their duties, and incentives are not well aligned with the effort required and out-of-pocket costs ASHAs incur. As a result, sometimes ASHAs prioritize and promote those services that yield higher incentives, not those that are the most appropriate for their clients. ASHAs and their families maintain hope that their positions will eventually result in a regular salary, which contributes to retention.
  - The study recommends that the incentive scheme be revised to better reflect out-of-pocket costs and the time and effort ASHAs require to complete tasks, improving communication to ASHAs about incentives and responsibilities, and improving the system of payment to ASHAs to make it more timely and complete.

- **Submitted a study on data validation to a peer-review journal (*Maternal and Child Health*) in India for publication** (Q4).

4 Directions for FY16

All studies listed above that are ongoing at the end of FY15 will be completed by the end of FY16 or their data collection will be completed. It is expected that several of these studies will be submitted for publication in peer-reviewed journals. This is particularly the case with the SMaCKM Study, the chronic care model study from Uganda, and the LAC Virtual Collaborative Study.

As noted above, there are at least three more cost-effectiveness analysis training sessions planned for USAID staff. One will be in South Africa, one in Mozambique and one under discussion for Jordan. These will be conducted in conjunction with USAID's Economic Growth, Education, and Environment (E3) Bureau. The trainings are designed to develop the capacity of the USAID staff to understand economic analysis of health and health system interventions so that they will be able to demand them of more of the 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 already planned for Ecuador, and others are under discussion.

Further involvement of ASSIST partners in research studies is planned. It is expected that HSPH will provide two 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 country 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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