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USAID
ASSIST PROJECT
Applying Science to Strengthen and Improve Systems

USAID ASSIST Project

Research and Evaluation Report FY14

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

Performance Period:
October 1, 2013 – September 30, 2014

DECEMBER 2014

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

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Acronyms

AIDS	Acquired immunodeficiency syndrome
AIMGAPS	Assuring Infants and Mothers Get All PMTCT Services
AMTSL	Active management of the third stage of labor
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CHW	Community health worker
DQA	Data quality assessment
E3	Economic Growth, Education, and Environment
HCI	USAID Health Care Improvement Project
HIV	Human immunodeficiency virus
HSPH	Harvard School of Public Health
IRB	Institutional Review Board
KM	Knowledge management
MNCH	Maternal, newborn, and child health
MOH	Ministry of Health
OVC	Orphans and vulnerable children
PMTCT	Prevention of mother-to-child transmission of HIV
QI	Quality improvement
R&E	Research and evaluation
SMaCKM	Safe male circumcision knowledge management
SMC	Safe male circumcision
TB	Tuberculosis
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

I. 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 of the R&E activities reported here cover more than one of these broad areas.

In FY14, the project's R&E unit supported country-led research programs in eight countries (Burundi, Kenya, Mali, Nigeria, Swaziland, Tanzania, Uganda, and Ukraine) as well as a multi-country study on orphans and vulnerable children in Africa. The R&E unit also provided technical assistance to India, Uganda, Kenya, and Burundi on validation of their improvement indicators as well as on collecting data from control group from studies in 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.

II. 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

Activities	What are we trying to accomplish?	At what scale?
6. Sustaining improvements and institutionalizing the capacity to continuously improve	Contribute to global learning on sustaining and institutionalizing improvement methods to ensure sustainability beyond the life of the project	At least two studies on sustainability and institutionalization of improvement after direct involvement of the project has ceased
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 18 studies that the project supported in FY14. 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 4, 6, and 18; studies developing methods for improved rigor in program evaluation include studies 6, 10, 13, and 15.

Table 1: ASSIST research and evaluation studies in FY14

	Country	Study	Research Area	Status	Program Area
1	Burundi	Factors associated with not returning to health centers among pregnant women who tested positive for HIV	Improving care	Protocol drafted; study planned for FY15	HIV & AIDS
2	Burundi	Factors associated with HIV testing among male partners of pregnant women	Improving care	Analysis and writing	HIV & AIDS
3	Mali	Impact of anemia community collaborative intervention in Mali	Design of improvement activities	Concept paper developed; study to be conducted in FY15	MNCH
4	Mali	Institutionalization of improvement in Mali	Institutionalization	Planning	MNCH
5	Mali	WHO Safe Birth Checklist implementation study	Design of improvement activities	Concept paper developed; data collection expected to begin in Q1 FY15	MNCH

	Country	Study	Research Area	Status	Program Area
6	Swaziland	Validation of new diagnostic technologies for pediatric TB cases	Improving care	Completed data collection	TB
7	Swaziland	Injection safety and waste management practices and related stigma and discrimination in Swaziland: A national assessment, exploratory study, and evaluation	Improving care	Analysis and writing	HIV & AIDS
8	Tanzania	Factors associated with missed appointments among ART clients in Morogoro Region	Improving care	Data collection delayed until FY15	HIV & AIDS
9	Tanzania	A qualitative evaluation of "Assuring Infants and Mothers Get All PMTCT Services" (AIMGAPS)	Design of improvement activities	Analysis and writing	HIV & AIDS
10	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	Analysis and writing. Ongoing data collection in control sites	HIV & AIDS
11	Uganda	Improving the quality of safe male circumcision in Uganda: An evaluation and qualitative exploration	Improving care	Analysis and writing	HIV & AIDS
12	Uganda	Impact of community-based quality improvement on retention and adherence	Design of improvement activities	Delayed until FY15	HIV & AIDS
13	Uganda	Integration of family planning into HIV care: A cost-effectiveness analysis	Design of improvement activities	Planning	HIV & AIDS
14	Uganda	The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda	Design and implementation of scale-up	Baseline data collection complete	HIV & AIDS
15	Uganda	Safe male circumcision knowledge management (SMaCKM)	Design and implementation of scale-up	Baseline data collection underway	HIV & AIDS
16	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
17	Ukraine	Improving alcohol and tobacco control during pregnancy in Ukraine	Design of improvement activities	Baseline data collected; program underway	MNCH
18	Multi-Country Africa	Building partnership: Experiences from the Partnerships in Community Child Protection in Africa	Design of improvement activities	Writing	OVC

III. Accomplishments and Results

A. 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 (AMTSL)
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

- **Validation of some indicators collected in the Chronic Care Study in Uganda (Q3).** The relationship between CD4 changes and indicators of compliance with appointments and reported adherence to medication protocols is being examined**.**
- **Support for Burundi**. Dr. Astou Coly, Senior Quality Improvement Advisor for R&E, traveled to Burundi to provide technical assistance (Q4), including:
  - Provided support for the development of a data quality assessment (DQA) tool to monitor the quality of data collected at the facility level. The tool is currently being pretested and is expected to be used during coaching visits.
  - Planned data collection to meet the project's R&E mandates in Burundi (validation, use of control group, and economic analyses). A prospective controlled study will be conducted during FY15 to meet all three requirements. Intervention sites will be selected from the new spread sites.
- **Support for Kenya**. Held discussions with the ASSIST Kenya team to develop a data validation protocol using observations compared to medical records (Q4). Discussions are preliminary but it is expected that the Kenya team will undertake this more rigorous and formal validation in the coming period. A specific protocol needs to be developed, with Institutional Review Board (IRB) approval.

B. 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. **Step-wedge designs**: If a staggered start to the intervention is planned, a step-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

- **Conducted baseline data collection in the safe male circumcision knowledge management (KM) study in Uganda (Q4).** The KM products to be used in the dissemination of information of improvement activities are currently being developed and will be ready in the coming quarter. This study is running essentially as per schedule. See Activity 4 below for more details.
- **Data collection for the Uganda chronic care study was completed (Q3) and analysis is underway (Q4)**. This was a controlled study; therefore, the analysis will involve a comparison between performance indicators from intervention and non-intervention sites. Additional ongoing data collection will occur in control sites.
- Conducted analysis of data collected in the Republic of Georgia in the non-communicable diseases care work begun under the HCI Project (Q4). Comparison site data was collected on all of the major indicators of quality of care in this study. Results are expected in the first half of FY15.

C. 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

- **Began data analysis and writing for a study in Burundi** on "Factors associated with HIV testing among male partners of pregnant women" (Q4). Increasing male participation has been identified as a potentially critical strategy to enhance PMTCT uptake in PEPFAR countries. A baseline assessment conducted by 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 has been 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 seeks to enhance the QI intervention package by identifying factors that promote or inhibit HIV testing among male partners of women seeking antenatal care. Findings will inform the development of a package of best practices to promote male testing, which is seen as a proxy for male participation in PMTCT programs.
    - The following research questions are being addressed: 1) What socio-demographic factors are associated with being tested for HIV among partners of women in ANC? 2) What are the

individual and structural factors that are associated with testing among partners of women enrolled in ANC? 3) What are the factors that influence not sharing HIV status among couples?
  - Dr. Astou Coly traveled to Burundi to provide technical assistance. She conducted preliminary analysis for the study. A total of 504 women and 360 men (including 360 couples) were interviewed to assess factors associated with male involvement in maternal and child health services in Burundi. Analysis and study report will be finalized next quarter.

- **Completed baseline analysis of a study on "Injection safety and waste management practices and related stigma and discrimination in Swaziland**: A national assessment, exploratory study, and evaluation" (Q4). While there is substantial literature in the HIV field on stigma and discrimination from the perspective of people living with HIV, there have been fewer studies globally about health worker experiences providing HIV care, the associated stigma, and its impact on their job satisfaction and engagement in their work. Further, there is little research around injection safety and waste management in Swaziland. This study is using both qualitative and quantitative methods to explore existing practices and policies and issues of stigma and discrimination and to identify opportunities for improvement in injection safety. It will also measure the impact of those improvement efforts. A concurrent transformative strategy will be employed in which baseline data on injection safety and waste management practices and the presence and form of any related stigma and discrimination will be collected to inform the design of an improvement intervention.
  - A quantitative assessment of existing injection safety and waste management practices was carried out in 60 health facilities. One-third of facilities had the National Health Care Waste Management Guidelines; Swaziland has no national level guidelines on injection safety yet 22% of facilities were able to produce some guidelines on injection safety. Hand hygiene was poor and glove use was inconsistent. Most (93%) observed injections used single-use reconstitution syringes. Reused needles and syringes were observed in 6% of facilities. Post-exposure prophylaxis kits and counseling and testing were not widely available. Less than half of facilities had systems for reporting needle-stick or sharps injuries and only 35% of facilities documented these injuries. Yet 94% of providers who indicated that this information was not collected felt that doing so would be useful. Two-thirds of providers and waste handlers who received hepatitis B vaccination got all recommended doses. Providers did not touch exposed or uncapped needles and disposed of them without recapping. Used injection equipment was observed lying around in wards to a greater extent than in other departments. Just over one-half of facilities had an incinerator or other disposal method.
  - A qualitative study was conducted to examine whether health care providers in Swaziland who offer injections experience or demonstrate stigmatizing or discriminating behaviour. Semi-structured qualitative interviews were conducted with 18 providers. Respondents perceived of injection safety both in terms of clinical and technical aspects as well as protection of themselves, patients, or both. Injection or sharps injuries were viewed as dangerous and the potential of injury cause stress among respondents even though injury was viewed as inevitable. Injuries were not consistently reported due to self-stigmatization and lack of institutional and supervisory support. Stigma and discrimination both by and of providers who offer injections in a high HIV prevalence setting is perceived to have dissipated as knowledge and awareness of HIV transmission has increased. However, there continue to be acts of discrimination that are rationalized, especially in the context of tuberculosis.

- **Completed data collection for a study of "Increasing diagnosis of childhood TB in Swaziland: Clinical utility and validity sample collection and diagnostic methods among children**" (Q4). 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 is comparing 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 will also compare 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 will compare the results from various methods of analysis of biological samples from children, the statistical analysis will be for sensitivity and specificity compared to the gold standard microscopy with sputum cultures. Data analysis is underway, and the R&E unit will provide technical support to the ASSIST Swaziland team so that they can participate in the data analysis and take a primary role in the write-up of the results.

- **Submitted a concept note for a study "Assessing the cost-effectiveness of supporting savings groups to improve OVC access to services in Uganda**" to the USAID Uganda Mission for approval (Q4). The evidence of the impact of household economic strengthening activities is inconclusive. Studies have found that household wealth is associated with improved outcomes for children in the areas of health, education, and nutrition, while other research suggests that economic strengthening programs may lead to decreased school enrollment, increased child labor, and gender-based violence. ASSIST has been working in 26 communities in Uganda, supporting savings groups to improve household economic status while also promoting children's access to education services.
    - The objective of this activity would be to evaluate this approach in new communities, to answer the following questions: 1) Are savings groups supported with improvement methods more effective in linking vulnerable children with other essential services (e.g., health and nutrition, education, and birth certificates) compared to savings groups which are not supported with improvement methods? 2) What is the incremental cost-effectiveness of supporting savings groups to improve OVC access to other essential services (health and nutrition, education, psychosocial support, social and legal protection, early childhood development) compared to not intervening through supporting savings groups?
    - A non-randomized controlled design could be applied, either a pre/post or interrupted time series approach. We would also collect qualitative information to explore the process of supporting savings groups. Measures may include referral, follow-through on referral, and individual outcomes.
- **ASSIST worked on data analysis and writing for study on "The effectiveness and efficiency of applying the chronic care model to clients with HIV in Uganda: A non-randomized controlled evaluation**" (Q4). 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 study seeks to answer the following research questions:
    1. Are clients exposed to the chronic care model more likely to remain on treatment and maintained in the continuum of care than clients treated with standard care?
    2. Are clients exposed to the chronic care model more likely to remain adherent with their treatment regimen than clients treated with standard care?
    3. Are providers exposed to the improvement intervention more likely to have access and knowledge of the national treatment guidelines than clinicians not exposed to the intervention?
    4. Are client charts more likely to be completed in clinics participating in the improvement intervention than client charts from clinics not exposed to the improvement intervention?
    5. Do clients exposed to the chronic care model demonstrate better outcomes than clients treated with standard care?
    6. Are clients who receive care in intervention clinics more likely to receive care in a timely manner than those receiving care in clinics in which there is no chronic care intervention?
    7. If outcomes are better among clients exposed to the chronic care model compared to those treated with standard care, what is the cost-effectiveness of the chronic care model in this setting?

    - Quantitative data have been collected primarily from client medical records. The sample size is 370 in each of the control and intervention groups, for a total of 740. This study also includes a smaller component focusing on the activation or engagement of clients in the management of their condition. We are following a cohort of clients to assess and document any changes in their

ability to self-manage. A smaller cohort of approximately 50 clients from the intervention and control districts (for a total of 100) were randomly selected to participate. We compared the experiences and perceptions of patients and providers in these three facilities with those in three facilities where there was no intervention. Qualitative interviews were conducted with 96 patients (48 intervention, 48 control) and 21 providers (8 intervention, 13 control) at baseline and 89 patients (48 intervention, 41 control) and 20 providers (12 intervention, 8 control) at endline. Provider interviews also included an assessment of knowledge of enrollment and treatment criteria. Deductive coding and descriptive statistical analysis was performed.

  - Over the course of the intervention, there was an increase in both arms in patients reporting being responsible for their own health. Provider knowledge of treatment initiation guidelines and staging criteria increased over time in the intervention group, but declined in the control group. Filing systems were developed and, in intervention sites, filing responsibilities were shifted to expert patients, freeing staff time for direct clinical care. Both patients and providers viewed these changes as contributing to reduced patient waiting times. Intervention sites also instituted staff arrival times to ensure the clinic started and finished on time and patients were seen promptly; control sites made no such change and patient complaints in this area persisted. While all sites reporting having an improvement team, intervention sites received external support in improvement methods which they felt strengthened the team, a benefit not noted in the control sites. When coupled with support and guidance, the Chronic Care Model can play a role in improving the quality of HIV services.
  - During the last quarter of FY14, ASSIST submitted an amendment to the study protocol to the URC and in-country IRBs for approval. This amendment sought approval to continue the study for an additional year and to document outcomes as the intervention is spread to the control sites. The amendment was approved, allowing ongoing data collection in new sites to be part of the study.

- **Began analysis and writing for "A qualitative evaluation of 'Assuring Infants and Mothers Get All PMTCT Services" (AIMGAPS)'"** after completing data collection in Q3. This study evaluated an activity begun under HCI with the Tanzanian Ministry of Health and Social Welfare and EngenderHealth in the Iringa Region to improve uptake, retention, and quality of PMTCT services. Since implementation, improvements were observed in ARV initiation, enrolment of exposed infants, enrollment of mothers of HIV-exposed infants, and confirmatory tests being given to HIV-exposed infants after cessation of breastfeeding. While indicator data suggested improvements in quality, uptake, and retention in PMTCT services, a qualitative evaluation was conducted to determine:
  - What are clients and providers perceptions of PMTCT services with respect to quality, uptake, and retention?
  - How do clients experience receiving PMTCT services and providers experience delivering these services?
  - What are the perceptions of and experiences with Option B+ from both provider and client perspectives?
  - Are there differences in provider and clients perceptions and experiences between those sites with facility-only support and those with facility and community-level support?
  - 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 the facility 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.

- **ASSIST completed baseline and qualitative data collection and is working to analyze data for a study on "Improving the quality of safe male circumcision in Uganda: An evaluation and qualitative exploration"** (Q3). ASSIST is working with 10 implementing partners to improve the quality of voluntary male circumcision services in 30 facilities in Uganda. The goal is to reduce adverse events resulting from the operation, improve adherence to standards for safe male circumcision, and improve follow-up at 48 hours and at seven days. After the intervention, the 10 implementing partners will then scale up improvements to other facilities that they support.

- ASSIST has worked with the implementing partners to conduct a facility-level assessment of the 30 facilities using the Safe Male Circumcision Quality Standards Tool, an adaptation of the WHO Male Circumcision Services Quality Assessment Toolkit, which measures compliance with 53 minimum standards for SMC for HIV prevention across seven areas: management systems; supplies, equipment and environment; registration, group education, and IEC; individual counselling and HIV testing for male circumcision clients; male circumcision surgical procedure; monitoring and evaluation; and infection prevention.
- This study seeks to both evaluate the interventions implemented and to better understand why some SMC clients return to the facility for follow-up care and others do not. This is a pre/post evaluation with an embedded qualitative study.

D. 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

- **Began data collection the study of Safe Male Circumcision Knowledge Management in Uganda (Q4).** URC received IRB approval for this study from Makerere University in Uganda and from URC's IRB in the third quarter of FY14.
  - ASSIST is working to spread knowledge about how to improve the quality of safe medical circumcision in Uganda using knowledge management methods. This study, which is being conducted in 15 sites in partnership with the Johns Hopkins Center for Communications Programs, will use 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; or 3) Provision of written materials with an in-person handover meeting and follow-up coaching from a District Health Officer or implementing partner.
  - Using direct observation of circumcision provision, this study will seek to answer: What is change in the quality of service delivered? Which knowledge management (KM) approach is more effective in improving care? What is the cost-effectiveness of the different KM approaches? How was KM implemented in the field? What KM approaches do health care providers prefer?
  - Data collection by observations of delivery of care include: pre- and post-op interaction with the patient, the handover meeting, and coaching visits
- **ASSIST completed baseline data collection for a study on "The effectiveness and efficiency of integrated service delivery to HIV-positive mothers and their babies in Uganda"** (Q3). ASSIST works in 22 facilities across six districts of Uganda to improve retention of mother-baby pairs in care, attain universal breastfeeding, improve nutrition of mother-baby pairs, and ensure that HIV-exposed infants are protected through ARVs. 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 and toward 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?

E. 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

- **There are two studies underway which are specifically looking at the cost-effectiveness of improvement activities,** both in Uganda: one looking at the cost-effectiveness of the chronic care model and the other at the cost-effectiveness of KM strategies to improve the quality of safe male circumcision services.
- **Preliminary discussions are underway to develop a study to examine the cost-effectiveness of one of the program implementations conducted by the South African team** (Q4). Dr. Broughton, Director of Research and Evaluation for USAID ASSIST, will travel to South Africa in the coming quarter and a specific research protocol will be developed for implementation on ASSIST improvement activities for male circumcision activities conducted with support from implementing partners.

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

Key Accomplishments

- **Held two web-based meetings including all Chiefs of Party and other field staff**, one of which was focused on sampling and data analysis competencies among staff (September 2014). Dr. Broughton presented the session in which issues of data quality were framed with an evaluation example. Data validation and the use of control groups, as mandated by the ASSIST cooperative agreement, were also discussed.
- **Drafting of new guidance for sampling in improvement project implementation is currently underway (Q4).** Once the guidance is completed, it will be disseminated in the field, and consultations with country staff will be done to determine what roles and responsibilities the country staff will take on when it comes to decisions of sampling and when technical support from headquarters will be required. This will strengthen the ability of ASSIST teams in country to collect the appropriate amount of data and to analyze and understand it to inform improvement work in the future.
- **Assisted in development of policy and strategy document for the Kenya MOH (Q3-4).** While not a research project as such, Dr. Broughton has been assisting the Kenya ASSIST team in developing the SitAn, a situation analysis examining the state of health care improvement activities, policies and practices in Kenya at present, as well as a policy and strategy document for the coming period. The SitAn is completed, and the policy and strategy document development is continuing in FY15. A stakeholder meeting is planned for February 2015 to discuss the findings of the SitAn.

G. Activity 7. Generating learning from multi-country studies

Key Accomplishments

- **ASSIST prepared a concept note for a multi-country study looking at what health care improvement knowledge and competencies** are taught at nursing, medical, and public health schools in sub-Saharan Africa (Q3).

- One objective of the USAID ASSIST Project is to support integration of improvement competencies into pre-service education for health professionals. 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 plans a quantitative, descriptive study of this kind of pre-service education in nursing, medical, and public health schools in private and public educational institutions in sub-Saharan African countries. We envisage a study that answers the questions:
  - What, if any, improvement competencies are covered in the pre-service curricula?
  - Is there a course (or more than one) that focuses is on building competency in improving health care delivery and safety? If so, what is its content?
  - 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?
  - What characteristics of the education provider are associated with whether or not pre-service instruction on quality and safety is provided (e.g., private versus public educational institute, size of the facility, reputation, age, affiliations, country or region in which it is located, cadre trained)?
- ASSIST plans to work with partner organizations to conduct this study.

H. 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 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

- **Working to develop a new strategy to improve critical data analysis competence among country staff (Q4).** A list of monitoring and evaluation competencies has been developed, and we are seeking further input on these from the Chiefs of Party and country teams in terms of how to implement them to ensure that all technical staff have the requisite abilities and what to do to improve the competencies of those who do not have the skills presently. A need has been identified for a systematic approach to identifying the level of competence among country staff, developing competencies when deficits are noted, and maintaining and building on them into the future. Work on this will be ongoing in the coming quarter.
- In Q4, Dr. Coly travelled to Burundi where, among other activities, she discussed other potential studies to be conducted in FY15. The Burundi team is interested in conducting a study to quantify retention in PMTCT programs in Burundi, as very little data are available on this topic. Study design and data collection methods were discussed. The feasibility of this study will be determined by the availability of funds.
- Dr. Edward Broughton continued providing technical support for the situation analysis currently ongoing in Kenya to determine what infrastructure, procedures, and personnel are in place for continuing improvement in the health system (Q3). Data have been collected by the contracted individuals tasked with producing the situation analysis, and data collection has been completed. When the next version of the report is presented, Dr. Broughton will provide further input with the goal of having it answer the fundamental question on the current state of institutionalization of improvement in Kenya at the central and country level. It is anticipated that the situation analysis may lead to a specific study on institutionalization of improvement principles at some point in the future, possible after the next stage of program implementation by ASSIST.

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

Key Accomplishments

- **USAID presentation (Q4).** Dr. Broughton presented on USAID ASSIST Project activities in the area of economic analysis to the Economic Growth, Education, and Environment (E3) Bureau of USAID on September 18, 2014. There will be further involvement of the USAID ASSIST Project in E3 activities including a possible training session in which Dr. Broughton will present on economic analysis of health programs to USAID country teams. Specifics of the involvement and cooperation will be developed in the coming quarter, and Dr Broughton will be involved in training E3 staff from several countries in applying economic evaluation as part of their training program in FY15.
- **Addressing gender issues (Q4).** A gender component has been added to the evaluation of the Brief Physician Intervention study in Ukraine. Some baseline data have been collected for this gender component and further data collection and analysis is expected in the coming quarter.
- **Comparison groups and external validation of indicators (Q4).** Apart from ongoing work in Uganda on the SMaCKM study, finalizing the Chronic Care Study, and completing the Georgia NCD program evaluation with involved control sites, ASSIST has been planning on collecting data in comparison sites in India and Kenya. Specifics on how this will be achieved will be developed in the coming quarter.
- **A correspondence article was submitted and published in the *Lancet Infectious Diseases* in 2014.** The article discussed the work on the improvement intervention for non-communicable diseases in Georgia over the preceding two years, specifically the use of antibiotics in out-patients and hospital settings and how the findings in the Georgia study supported the findings of a research paper in the journal.

IV. Directions for FY15

Several of the studies noted above will be completed in FY15. In addition to these, there are three studies that will be conducted by ASSIST mostly under the auspices of Harvard School of Public Health (HSPH). One is an examination of health care improvement principles and methods in pre-service medical, nursing and public health training. The study will focus on sub-Saharan Africa but may be extended beyond this scope.

Two other studies to be conducted by HSPH are in the health workforce portfolio. One will investigate the validity of the Community Health Worker (CHW) Logic Model using a mixed methods approach in Swaziland and the other will examine harmonization of CHWs into the mainstream health care workforce in three countries, including South Africa and Swaziland.

There will be a continuation of the work on validation of improvement data in all of the ASSIST countries in the coming year. A study on the validity of MNCH data in India and data validation reports from South Africa, Swaziland, and Kenya among others will be completed.

Further development of the skills in research and evaluation among the technical staff in countries engaged with ASSIST will also be a focus in FY15. Country staff will be encouraged to develop manuscripts as principal authors and to submit these for peer-reviewed publication. They will also be encouraged to develop collaborations in these research papers with country staff outside of the USAID ASSIST Project, such as Ministry of Health officials if they contribute substantively to the research output.

A review of published literature on the cost-effectiveness of improvement interventions will be submitted to publication in the first half of 2015. There are plans for a paper for peer review on the methods of economic analysis and how they can be applied to improvement interventions. These and other papers on research and evaluation of improvement activities are an important part of the project's global technical leadership that the R&E ASSIST team contribute to.

USAID APPLYING SCIENCE TO STRENGTHEN AND IMPROVE SYSTEMS PROJECT

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