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

USAID ASSIST Project

Research and Evaluation Report FY20

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DISCLAIMER

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

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For more information on the work of the USAID ASSIST Project, please visit <https://www.urchs.com/assist>.

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Acronyms

ANC	Antenatal care
AOR	Agreement Officer's Representative
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CEA	Cost-effectiveness analysis
CSO	Civil society organization
DEC	Development Experience Clearinghouse
ECHO	Extension for Community Healthcare Outcomes
FTF	Face-to-face
FY	Fiscal year
HIV	Human immunodeficiency virus
LAC	Latin America and the Caribbean
MNCH	Maternal, newborn, and child health
MOH	Ministry of Health
OHT	Online health training
PMTCT	Prevention of mother-to-child transmission (of HIV)
Q	Quarter
QI	Quality improvement
R&E	Research and evaluation
RMNCH	Reproductive, maternal, newborn, and child health
URC	University Research Co., LLC
USAID	United States Agency for International Development
VMMC	Voluntary medical male circumcision
WHO	World Health Organization

1 Introduction

The research and evaluation (R&E) unit of the USAID ASSIST Project provided technical assistance and guidance on country-led research and synthesized learning across country- and centrally funded activities. Topics addressed by these studies included the validity of improvement indicator data, sustainability and institutionalization, and economic analysis. The R&E unit worked closely with the ASSIST knowledge management team to disseminate knowledge generated by these studies through web-published reports, peer-reviewed journal articles, and presentations at relevant international meetings to encourage wider application of improvement methods and their rigorous, objective evaluation.

In FY20, the R&E team has focused on completing studies in Latin American and Caribbean countries where ASSIST worked to address Zika infection. In addition, the team finalized reports in countries where ASSIST has phased out its operations. The R&E unit also completed multi-country synthesis reports on data validation, use of comparison groups, and use of cost-effectiveness analysis.

2 Program Overview

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 the design of improvement activities for low-and middle-income countries	
Advance learning in improvement science in low and middle-income countries	Every ASSIST country program

As listed in **Table 1**, the project completed 18 research studies in 14 countries in FY20; six studies were multi-country studies. The final reports for three studies are still under review by the ASSIST Agreement Officer’s Representative (AOR).

Table 1: ASSIST research and evaluation studies (FY20)

	Country	Study	Research Area	Status	Program Area
1	Dominican Republic	Assessing the quality of USAID ASSIST Zika program data in the Dominican Republic	R&E mandates	Completed	Zika
2	Dominican Republic	Evaluation of the Region-Led Expansion of Zika Prevention, Care, and Support Best Practices in the Dominican Republic	Evaluation	Completed	Zika
3	Ecuador	Comparing the effectiveness and cost-effectiveness of on-line versus in-person training for strengthening the Zika response in Ecuador	Evaluation	Completed	Zika
4	Honduras	Application of quality improvement approaches in strengthening health system resilience for Zika emergency preparedness, response, and health care: Honduras case study	Improving care	Completed	Zika
5	Jamaica	Barriers and facilitators to head circumference and neurodevelopmental surveillance in well-child clinics in Jamaica	Improving care	Completed	Maternal, Newborn, and Child Health (MNCH)
6	Jamaica	Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO Evaluation	Evaluation	Completed	Zika
7	Kenya	Evaluation of a point-of-care HIV testing improvement intervention in Kenya	Evaluation	Completed	HIV
8	Malawi	Improving the Quality of Services for Vulnerable Children and Families in Malawi	Improving care	Completed	Orphans and Vulnerable Children
9	Mali	A comparison of improvements in anemia indicators in ASSIST and non-ASSIST sites in Mali	Control group	Submitted 06/10/20 for AOR review and approval	MNCH

	Country	Study	Research Area	Status	Program Area
10	Peru	Using a quality improvement approach to strengthen clinical Zika services: head circumference measurement and provider perceptions in Peru	Evaluation	Completed	Zika
11	Uganda	Analysis of ASSIST program activities for improving the quality of services for PMTCT, 90-90-90 targets, and malaria in Uganda	Evaluation	Completed	HIV and malaria
12	Uganda	ASSIST technical assistance to CSOs for VMMC improvement activities in Uganda: The case of TASO Gulu	Evaluation	Completed	HIV
13	Multi-country	Assessing changes in knowledge and factors influencing behavior related to Zika prevention among women receiving antenatal care in Latin America	Evaluation	Submitted 01/17/20 for AOR review and approval	Zika
14	Multi-country	Case Study: rapid multi-country, parallel process multi-tasking for project startup	Evaluation	Completed	Zika
15	Multi-country	Latin America and Caribbean Zika Extension for Community Healthcare Outcomes (ECHO) evaluation	Evaluation	Completed	Zika
16	Multi-country	Cost-effectiveness analysis in quality improvement: A review of studies under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project	CEA synthesis	Completed	All
17	Multi-country	Data validation in quality improvement: A review of validation exercises under the USAID ASSIST Project	Validation synthesis	Completed	All
18	Multi-country	Use of comparison groups in quality improvement: A review of analyses under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project	Comparison group synthesis	Submitted 06/11/20 for AOR review and approval	All

3 Accomplishments and Results

Activity 1. Validation of 25% of improvement indicators

OVERVIEW

Improving health and welfare systems is a data-driven process, and its success is contingent on the accuracy and validity of the data used for decision-making. The ASSIST R&E team worked to measure the accuracy of the information collected during improvement activities. In FY20, we were engaged in one research activity that investigated the validity of data collected as part of the project's Zika activities. Information derived from these studies was used to inform improvement activities to facilitate good decision-making among those implementing system changes in ASSIST-supported activities. The R&E team developed a report synthesizing validation exercises conducted by ASSIST.

ACCOMPLISHMENTS AND RESULTS

- **Assessing the quality of USAID ASSIST Zika program data in the Dominican Republic** [Study 1 in **Table 1**]. The objectives of this study were to: 1) assess the validity of three quality improvement indicators reported by ASSIST-supported quality improvement (QI) teams; 2) determine whether data quality changed over time; and 3) understand the perceptions and practices of quality improvement teams about how data had been collected, what factors have facilitated or inhibited data collection, and possible ways to improve data collection, analysis, and dissemination. This validation exercise included a quantitative component which consisted of a retrospective chart review and a qualitative component consisting of key informant interviews. Quantitative data were collected for a baseline and end line period. While ASSIST-supported facilities achieved substantial improvements in performance across the three indicators reviewed, the validation exercise found that the indicator values reported by the QI teams were higher than those validated by the external reviewers. There was no clear improvement in the accuracy of the data over time. That many interview respondents could not articulate how indicators were calculated may be one cause of the inaccuracies. Active engagement of the clinical and non-clinical staff around the data is needed to elevate the understanding and use of data. Recommendations include strengthening complete and accurate documentation of clinical encounters, strengthening the capacity of QI teams to correctly calculate and interpret indicators during coaching visits, conducting regular data quality assessments as part of coaching visits, and providing more guidance to QI teams about the strategic use of data. The report was approved by the AOR on 12/03/2019, published on the ASSIST website, and submitted to the USAID Development Experience Clearinghouse (DEC).
- **Data validation in quality improvement: A review of validation exercises under the USAID ASSIST Project** [Study 17 in **Table 1**]. This report synthesizes findings from validation exercises conducted by the USAID ASSIST Project. ASSIST validation reports were reviewed for the following information: validation methodology; key findings; and corrective action recommended or taken to address data quality issues identified in the validation exercises. Record review and interviews with quality improvement team members were the most commonly used methodologies for validating indicators. Overall, validation findings showed that facilities tended to overreport performance. There were not notable changes in data quality over time. Causes of discrepancies between reported and re-calculated indicators included difficulties with sampling, indicator definitions, and extracting

data from correct sources. Recommendations to improve data quality focused on ensuring QI teams had registers and other tools to accurately capture data and received ongoing support to enhance understanding of indicator definitions, data sources and collection, analyses, and interpretation. The report was submitted for AOR approval on 02/28/2020. The AOR team provided comments on 4/28/20, and ASSIST submitted a revised version on 4/29/20. The report was approved by the AOR on 5/5/20.

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

OVERVIEW

The default position for the R&E unit was to include controls (non-ASSIST intervention groups) or valid comparison groups unless there were practical reasons precluding it, such as not having permission from the Ministry of Health to collect data in sites not benefitting from the improvement intervention, not having appropriate control groups, or issues related to the timing of implementation. This is to strengthen the case for attributability of the improvements seen to the actual intervention being implemented. In FY20, the R&E team developed a report synthesizing findings from ASSIST studies using comparison groups.

KEY ACCOMPLISHMENTS AND RESULTS

- **Use of comparison groups in quality improvement: A review of analyses under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project** [Study 18 in **Table 1**]. This report synthesizes findings from comparison group exercises conducted by the USAID ASSIST Project. ASSIST comparison groups reports were reviewed for the following information: methodology, content area and key findings. A total of 63 indicators were compared for anemia, HIV, maternal, newborn, and child health (MNCH) and orphans and vulnerable children programs. Follow-up time varied from five to fourteen months across studies. Findings showed that improvements were greater in ASSIST sites compared to non-ASSIST sites for more than half the indicators (38 out of 63 indicators). All country analyses reported improvements in at least one indicator. Overall, indicators with high baseline values showed less improvement over time. The main limitation of these comparison analyses is that country reports did not include specific information to assess the extent to which comparison sites were similar to intervention sites. Reports also failed to describe contextual factors that may have had an impact on performance. The heterogeneity in methodological approaches and follow-up time also limited our ability to compare findings across studies. The report was submitted for AOR approval on 6/10/2020.
- **A comparison of improvements in anemia indicators in ASSIST and non-ASSIST sites in Mali** [Study 9 in **Table 1**]. This short report compares the performance of 12 anemia indicators in sites supported by ASSIST to those in sites not supported by the project. The goal was to assess whether improvements in anemia prevention and management among women and children were greater in ASSIST-supported health facilities compared to non-ASSIST-supported health facilities. A historical “control” group was used to compare changes in anemia indicators during the first six months of the intervention in the first phase of the project (October 2012-March 2012) to the six months preceding the implementation of the intervention in extension sites (July 2015-December 2015). Findings indicate that improvements in performance over the six-month period appeared greater or slightly greater

in ASSIST-supported sites for eight out of 12 indicators. While this analysis optimizing the use of existing data suggests that the interventions of the USAID ASSIST Project were associated with higher improvement in anemia-related care and services in the Sikasso Region of Mali, it suffers from a few limitations, including a short follow-up period and the possibility that factors other than the intervention may have accounted for differences in performance over time. The report was submitted for AOR approval on 06/10/2020.

Activity 3. Evaluation of methods and approaches for effective design and implementation of scale-up

OVERVIEW

Increasing the reach of improvement activities to involve a higher proportion of service delivery units was one of the goals of ASSIST. ASSIST R&E studies sought to build the evidence base to determine the most effective and efficient ways to do this. In FY20, the project completed several evaluation studies for its Zika and non-Zika activities.

KEY ACCOMPLISHMENTS AND RESULTS

- **Evaluation of the Region-Led Expansion of Zika Prevention, Care, and Support Best Practices in the Dominican Republic** [Study 2 in **Table 1**]. The objectives of this study were to: 1) Document the scale-up process as implemented in the regions; 2) Assess the short-term results achieved through the scale-up (evidence of adoption of practices as of May 2019); and 3) Document the experience and perceptions of key actors in the scale-up process. This comparison mixed methods retrospective study was conducted in two regions in the Dominican Republic: one region which had participated in the first wave (Region I) and one region which had not (Region VIII). Comparison hospitals were selected from hospitals which had received ASSIST support under the first wave. Data for three indicators were gathered from scale-up and first-wave comparison hospitals. Monthly data were captured for the entire first-wave and scale-up periods. The research team was not able to collect cost data on scale-up expenditures at the regional and district levels. As this was a retrospective study, data collection relied upon extracting information from existing data. The regional financial management systems did not track staff time and other costs specifically for the scale-up activities, making it impossible to discern the regional costs associated with this activity. Findings showed that for head circumference measurement, two scale-up hospitals reached 100% and two hospitals remained at 0%, with an aggregate of 50% following five months of support. First-wave hospitals achieved similar improvement over the course of 14 months; the first five months of improvement work in first-wave sites yielded no improvement. Measuring head circumference was viewed by interview respondents as the easiest change to implement, followed by distributing condoms for prevention. Providing psychosocial support was viewed as more challenging. Recommendations as a result of this study include: clearly communicating expectations at the start of the scale-up process, ongoing supervision to ensure sustained gains, and coupling hospital-based activities with activities at lower-level facilities as well as community-based efforts. The report was approved by the AOR on 11/30/2019 and published on the ASSIST website.
- **Comparing the effectiveness and cost-effectiveness of on-line versus in-person training for strengthening the Zika response in Ecuador** [Study 3 in **Table 1**]. The objectives of this study were to: 1) Compare clinical Zika-related knowledge between

providers trained online versus providers trained face-to-face; 2) Compare satisfaction with the trainings between providers receiving online training and those receiving in-person face-to-face training; and 3) Calculate and compare the total costs and incremental cost-effectiveness of the two training approaches. The sample included data from 513 providers trained using online health training (OHT) who worked in one of the 21 health facilities implementing a facility-level Zika quality improvement (QI) program and 83 providers who were trained face-to-face (FTF) and worked in similar health facilities not currently receiving support from ASSIST. Provider Zika knowledge and satisfaction with each training modality were assessed via surveys at three points: 1) Prior to the training; 2) Immediately following training; and 3) Eight to 12 weeks after completing the training. Findings showed that while providers trained OHT and those trained FTF increased their scores, the percentage of providers who correctly answered knowledge items was higher in the OHT group. Modeling results show that providers trained with OHT increased their scores for each module with a significant increase for Module 1 (an average increase of 12 percentage points) and Module 5 (an average increase of 17 percentage points). From post-test to follow-up, the percentage of providers who correctly answered knowledge items increased dramatically in the FTF group while decreasing slightly in the OHT group. Scores on Module 5 were the lowest or nearly lowest. While a decrease in knowledge several months following training is not surprising, the significant increase for FTF participants was unexpected. The FTF group had higher overall satisfaction with the training and higher perceived effectiveness of Zika training in the identification and prevention of Zika than the OHT providers. While both OHT and FTF providers reported that the training content was updated, accurate, and clear, providers in the OHT group noted that some tutors were not viewed as readily available. While the overall cost of the OHT training course was higher than the FTF course, the average cost per provider completing training was much lower for OHT; this finding, combined with evidence of equivalent or greater effectiveness for OHT, suggests that OHT offered better value for money in this context. Recommendations included using electronic data collection to gather feedback from providers to ensure legible data, reducing the components of the training or increasing the amount of time allowed for each module, ensuring providers can easily access all material in Spanish to enable full understanding of the training content, and ensuring all providers have in-person opportunities to discuss new knowledge. Implementing these recommendations could improve engagement with training while maximizing efficiency. The report was approved for publication on 12/3/2020, published on the ASSIST website, and submitted to the USAID DEC.

- **Barriers and facilitators to head circumference and neurodevelopmental surveillance in well-child clinics in Jamaica** [Study 5 in **Table 1**]. The objective of this study was to identify facility-level barriers and facilitators to the assessment and interpretation of head circumference measurements and neurodevelopmental surveillance in Jamaican well-child clinics to inform Ministry of Health and Wellness (MOHW)-led and partner-supported strategies for strengthening services in the context of Zika in Jamaica. Two data collection methods were used: 1) in-depth interviews with health workers, facility leaders/managers, and parents/caregivers attending well-child visits; and 2) direct observations of service delivery (well-child visits) processes. Observations and interviews were conducted in eight ASSIST-supported primary health care centers with well-child clinics. Qualitative interviews revealed that Zika-focused trainings and job aids appear to have resulted in well-informed staff, revised growth charts, and improvements in practices compared to before the intervention. Even with the positive developments, there was still room to address

remaining barriers and ensure positive change is sustained. Barriers included the epidemiology of the Zika virus and limited public understanding and knowledge of it, staff attitudes and perceptions that conducting all aspects of visits are not practical, and actual delivery challenges due to space and time constraints compounded by inefficiencies in clinic processes. Recommendations included use of pre- and post-clinic processes or staff forums to review and refine clinical processes, conducting well-child clinic protocol refreshers, ensuring sufficient paper forms and guides are available and user friendly, finding opportunities to demonstrate milestone assessment and child stimulation during visits, using innovative ways to convey information about issues such as Zika and child growth and development, and reinforcing the need for respectful interactions between clients and providers. The study report was approved by the AOR on 12/5/2020, published on the ASSIST website, and submitted to the USAID DEC.

- **Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO Evaluation** [Study 6 in **Table 1**]. This study was conducted in collaboration with ASSIST's partner, the American Academy of Pediatrics. The objective of this study was to assess participation, participant experience, learner self-reported changes in knowledge and self-efficacy, and program impacts at the individual client and larger systems levels following participating in the ECHO program, following the Project ECHO® (Extension for Community Healthcare Outcomes) model. The Jamaica ECHO program was focused on developing health professionals' competence in neurodevelopmental surveillance (NDS). Project ECHO is an evidence-based telemonitoring program that brings together, through video technology, health care professionals and multidisciplinary specialists to create communities of learners around specific topics of interest and need. Data were collected through a post-session survey, a post-program survey, and focus group discussions. Evaluation results highlighted the positive impacts and outcomes of the Jamaica NDS ECHO. In each evaluation component, participants reported high satisfaction with the Jamaica NDS ECHO as well as the ECHO model and demonstrated self-reported gains in knowledge and efficacy regarding key aspects of neurodevelopmental surveillance, including early intervention and referral. Participants spoke with confidence about their ability to train others to more appropriately assess, intervene, and refer children regarding neurodevelopmental concerns. The study report was approved by the AOR on 12/05/2020, published on the ASSIST website, and submitted to the USAID DEC.
- **Application of quality improvement approaches in strengthening health system resilience for Zika emergency preparedness, response, and health care: Honduras case study** [Study 4 in **Table 1**]. This case study sought to gain an operational understanding of quality improvement interventions implemented in the context of the Zika outbreak and their role in improving preparedness and response capacities of health facilities and regional and national level authorities in Honduras. The report for this case study was developed by a World Health Organization consultant. A revised report addressing comments from USAID on the initial draft was submitted to the AOR on 4/09/2020. The study report was approved by the AOR on 5/12/2020, published on the ASSIST website, and submitted to the USAID DEC.
- **Evaluation of a point-of-care HIV testing improvement intervention in Kenya** [Study 7 in **Table 1**]. This study evaluated the effectiveness and efficiency of an intervention to improve the processes of point-of-care HIV rapid testing in participating facilities in western Kenya. This was a prospective pre-/post-intervention, quantitative evaluation using primary

data collection from five intervention facilities and five comparable facilities undergoing no improvement intervention. We collected data from direct observations of service delivery on a sample of 455 testing and counseling procedures in intervention sites and 276 testing and counseling procedures in control sites. Baseline performance in intervention and control sites was high. However, when considered together, there was no statistically significant difference in the improvement seen in the quality indicators for testing procedure and management indicators between the intervention and control groups. When the results were considered for individual intervention facilities, for the counseling overall indicator, the two smallest facilities improved the least, while for the testing variables, two of the larger facilities improved the least, though it is notable that they started at the highest initial level of compliance among the intervention facilities. The two smallest clinics also improved the least for the data management indicators. The cost-effectiveness of this intervention was US\$10 per additional patient provided counseling to full compliance to standards, compared the business-as-usual scenario, assuming the effects lasted two years without attenuation. The intervention was not shown to be cost-effective in improving testing indicators in this evaluation. The intervention appeared to improve counseling indicators but not testing or data management indicators in this setting. The cost-effectiveness of improving the counseling indicators is comparable to other HIV testing interventions reported from the same setting. The report was approved by the AOR on 3/5/2020, published on the ASSIST website, and submitted to the USAID DEC.

- **Improving the Quality of Services for Vulnerable Children and Families in Malawi** [Study 8 in **Table 1**]. This study used previously collected data to examine the contributions of ASSIST-supported improvement efforts to improved household economic strengthening and food security, improved primary school education performance among vulnerable children, increased access to and utilization of health services, and increased awareness, identification of and action on abuse toward vulnerable children in Balaka and Mangochi districts in Malawi. The evaluation examined household survey respondents' perceptions of and participation in these services. Results of the intervention appear positive but inconsistent. There were improvements in the intervention households compared to the control households in school enrollment (+9% $p=0.035$) and percentage of children enrolled in school who advanced one standard or form from previous year (+10% $p=0.097$). Children age 10 years and older reported a decrease in going 24 hours without eating at any time in the last four weeks. However, adults in intervention households reported that the percentage of all children going 24 hours without eating at any time in the last four weeks worsened in intervention households compared to controls. This conflicting information may be due to respondents' misinterpreting the question or adults not being aware of services provided in schools. Respondent bias may also have factored in if adults expected support if they presented a dire situation with regard to food security. Intervention households were significantly more likely than controls to have exposure to relief programs at end line compared to baseline (+22% $p < 0.001$) but significantly less likely to have exposure to village savings programs (-10% $p=0.025$) and earning food or cash for work projects (-13% $p=0.002$). Given the complex landscape in which this study was conducted, making it impossible to have adequate control sites, we are unable to determine attribution. However, it is clear that USAID ASSIST contributed to improvements observed in intervention sites, even as other activities were ongoing in both the intervention and control sites. This conclusion is based on the direct linkage between the interventions promoted by community QI teams and the areas where intervention households showed improvement, such as

increasing school enrollment and increasing the proportion of children who advanced in grade from the previous year. This study report was approved by the AOR on 5/12/20, published on the ASSIST website, and submitted to the USAID DEC.

- **Using a quality improvement approach to strengthen clinical Zika services: head circumference measurement and provider perceptions in Peru** [Study 10 in **Table 1**]. The initial objectives of this study were to : 1) determine whether ASSIST’s training and QI approach was associated with an increase in the percentage of Zika counseling elements delivered during antenatal care (ANC) consultations compared to training alone; 2) identify how client retention of key Zika prevention messages differed between facilities implementing training + QI and those utilizing training alone; 3) determine if training + QI increased the percentage of newborns who received head circumference measurement and documentation compared to pre-intervention; 4) determine whether training + QI increased the correct interpretation of head circumference measurements compared to pre-intervention; 5) determine the incremental cost and cost-effectiveness of training + QI to increase the percentage of Zika counseling elements delivered during ANC consultations compared to training alone; and 6) identify providers’ perceptions of the benefits of a QI approach for improving clinical Zika care and understand the facilitators and barriers to the successful implementation of QI to support Zika care according to QI leaders, team members, and providers. The report was submitted to the Peru Mission on 9/10/2019. A revised version addressing the Missions’ comments was submitted on 1/17/2020. The Mission informed ASSIST that it was not satisfied with the revised report. ASSIST requested the opportunity to resubmit a revised report omitting the objectives and sections the Peru Mission objected to due to study design limitations (Objectives 1, 2, 5). A revised version with these changes was submitted to the Mission on 3/27/2020 and approved on 5/12/2020. The report was published on the ASSIST website and submitted to the USAID DEC.
- **Analysis of ASSIST program activities for improving the quality of services for prevention of mother-to-child transmission of HIV (PMTCT), 90-90-90 targets, and malaria in Uganda** [Study 11 in **Table 1**]. This report described a secondary analysis of routine program data abstracted from facility records by quality improvement teams over the intervention period to assess improvements in key indicators. We analyzed indicator data for ASSIST-supported PMTCT, 90-90-90, and malaria improvement programs. This analysis showed improvements in the cascade for viral load suppression despite remaining gaps in HIV testing and treatment initiation. More male partners were identified and followed up for HIV testing services following the implementation of the quality improvement intervention. For the malaria program, there was an increase in the number of suspected malaria cases at the outpatient department who had complete and accurate records, in the number of patients who were treated for malaria and had a positive malaria test, and in the number of patients who were prescribed and given Artemisinin Combination Therapy. Although findings suggested that QI interventions can have a great impact on interventions for PMTCT, 90-90-90, and malaria, evaluations using a prospective design and a comparison group should be encouraged as they would establish stronger evidence for the effect of programs on key indicators. The report was approved by the AOR on 3/5/2020, published on the ASSIST website, and submitted to the USAID DEC.
- **ASSIST technical assistance to civil society organizations for voluntary medical male circumcision (VMMC) improvement activities in Uganda: The case of The AIDS Support Organization (TASO) Gulu** [Study 12 in **Table 1**]. This short report describes the

support ASSIST provided to the civil society organization (CSO) TASO Gulu in Uganda. Following the implementation of quality improvement activities, the CSO registered improvements in data quality, including seven-day post circumcision patient follow-up, documentation of consent, and Tetanus Toxoid administration as well as in compliance with Safe Male Circumcision quality standards like infection control, monitoring and evaluation, surgical procedure, group education, management system, supplies, equipment, and environment, and individual/couple counseling. The short report was approved by the AOR on 1/30/2020, published on the ASSIST website, and submitted to the USAID DEC.

- **Assessing changes in knowledge and factors influencing behavior related to Zika prevention among women receiving antenatal care in Latin America** [Study 13 in **Table 1**]. The objectives of this study were to: 1) Determine whether the ASSIST Zika QI intervention was associated with a change in women's knowledge of Zika prevention behaviors in four ASSIST-supported countries (Dominican Republic, Guatemala, Nicaragua, and Paraguay); 2) Understand through a qualitative component of the study carried out only in Guatemala, antenatal care clients' perspectives on which aspects of the intervention most influenced women's desire/non-desire and ability/inability to practice Zika prevention behaviors and to understand the perspectives of facility-based staff on which aspects of the intervention facilitated their ability to effectively counsel women on Zika prevention during antenatal care visits. The report was submitted to the AOR on 1/17/2020.
- **Case study: Rapid multi-country, parallel process multi-tasking for project startup** [Study 14 in **Table 1**]. The objectives of the case study were to: 1) Document in detail the "Rapid Multi-Country, Parallel Process Multi-Tasking Project Startup" activities and strategies employed by the ASSIST short-term technical assistance activity in four countries of the Eastern and Southern Caribbean (Antigua and Barbuda, Dominica, St. Kitts and Nevis, and St. Vincent and the Grenadines); 2) Describe the enablers, challenges, and constraints faced in startup of the Zika response project in the four countries, including the local and regional contexts; and 3) Identify lessons learned from the start-up in the four countries. Remote in-depth interviews were conducted with persons involved in the startup using semi-structured interview guides and data retrieved from the review of project documents. Findings showed that using the rapid multi-country parallel process multi-tasking project startup approach, the USAID ASSIST Project successfully implemented the startup for complex short-term technical assistance in four countries in less than four months, from mid-May to early September 2018. Milestones included achieving buy-in from stakeholders, co-developing the technical scope and materials, and rapid execution of critical operational functions. Dedicated project teams, country leadership, and local champions were essential to overcoming the main challenges, which included a short timeframe, lack of in-country offices, and country-level factors such as a shortage of health care workers and a weak health infrastructure. We concluded that the approach employed was a feasible and resource-efficient mechanism of interest to implementers, donors, and low- and middle-income countries facing temporal and financial limitations to rapidly addressing public health priorities. The manuscript was approved by the AOR on 2/29/2020, submitted to the online platform *F1000Research* on 3/10/2020, and published on 4/9/20.
- **Latin America and Caribbean Zika Extension for Community Healthcare Outcomes (ECHO) evaluation** [Study 15 in **Table 1**]. This evaluation was conducted in collaboration with the American Association of Pediatrics. The objective of this evaluation was to assess LAC Zika ECHO participants' self-reported competencies and skills, satisfaction with the

LAC Zika ECHO program, and changes in practice following participation in the program. Participants reported improved knowledge and self-efficacy in key aspects of care including screening for Zika and comorbidities faced by infants and children potentially exposed to Zika as well as high satisfaction with the ASSIST LAC Zika ECHO program. Participants also reported sharing knowledge with coworkers and serving as local resources regarding care of infants and children with confirmed or suspected Zika exposure. Focus group participants described improved outcomes in terms of patient care and provision of services as well as practice- and system-level changes. Participants' feedback regarding the program include the desire for the program to continue and expand to include other health topics. Specific suggestions include continuing patient case presentations and/or presenting updates on cases previously presented and incorporating the Zika ECHO program into undergraduate and post-graduate student curricula. Many participants noted the lack of specialists in different localities and the potential ECHO offers to create and strengthen health teams. Overall, the ASSIST LAC Zika ECHO evaluation revealed positive outcomes for ECHO participants, their patients, and the health system in which they care for children, youth, and families. ECHO participants have become an asset that should be leveraged for future knowledge sharing in the LAC region. The report was submitted to the AOR on 01/13/2020. AOR provided feedback on 05/28/2020. A revised version addressed the AOR's feedback was submitted on 06/12/2020 and approved by the AOR on 6/26/20. The report was published on the ASSIST website and submitted to the USAID DEC.

- **Cost-effectiveness analysis in quality improvement: A review of studies under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project** [Study 16 in **Table 1**]. This report synthesized findings and lessons generated from cost-effectiveness analyses (CEAs) conducted by ASSIST. CEA reports were examined for the following information: CEA methodology, key findings, key recommendations, and conclusions as a result of the CEA. Seven CEAs conducted in five countries were included in the synthesis report (Ecuador, Kenya, Pakistan, Uganda, and Tanzania). CEAs were conducted for both QI activities carried out by ASSIST as well as by improvement programs implemented by other partners, encompassing immunization; HIV; maternal, newborn, and child health (MNCH); medical male circumcision, and Zika prevention and treatment. Overall, CEAs revealed that improvement programs provide good value for money compared to the status quo. However, findings were more mixed for the ASSIST MNCH and HIV improvement activities in Uganda, the immunization program in Pakistan, and the point-of-care testing intervention in Kenya. The main limitation of these CEAs was the lack of long-term health outcome measures such as deaths, disability, secondary infections, and or disability-adjusted life years (DALYs) averted. This limits the ability to compare results from ASSIST CEAs to the CEAs of other interventions. The report was submitted to the AOR on 3/26/2020. The report was approved by the AOR on 05/29/2020, published on the ASSIST website, and submitted to the USAID DEC.

**USAID APPLYING SCIENCE TO STRENGTHEN
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