Improving Quality of HIV Services in Rwanda: The Elizabeth Glaser Pediatric AIDS Foundation Experience

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ELIZABETH GLASER PEDIATRIC AIDS FOUNDATION

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COVER PHOTO: JAMES PURSEY

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ALAC	Agent de Liaison des Activités Communautaires (Community Liaison)
ART	Antiretroviral Therapy
ARV	Antiretroviral
CD4	Cellular Receptor for HIV
CoC	Continuum of Care
DBS	Dried Blood Spot
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
GLASER	Global AIDS System for Evaluation and Reporting
HIV	Human Immunodeficiency Virus
IHDPC	Institute of HIV/AIDS, Disease Prevention and Control
LTFU	Lost to Follow-Up
M&E	Monitoring and Evaluation
MoH	Ministry of Health
PDSA	Plan-Do-Study-Act
PEPFAR	President's Emergency Plan for AIDS Relief
PMTCT	Prevention of Mother-to-Child Transmission of HIV
POFIS	Point Focal pour I'intégration des Services (service integration focal point)
QI	Quality Improvement
QMC	Quality Management Committee
QoC	Quality of Care
RBC	Rwanda Biomedical Center
SMART	Specific, Measurable, Achievable, Reliable, and Timely
TRAC	Treatment and Research AIDS Center
USAID	United States Agency for International Development
WHO	World Health Organization

BACKGROUND

Despite a recent decline in HIV prevalence, HIV/AIDS remains a global public health, social, and economic problem, most heavily affecting sub-Saharan Africa.[1] Major strides have been made in research and program implementation, demonstrating that antiretroviral therapy (ART) can prevent new HIV infections, improve the quality of life of people infected with HIV, and reduce mortality related to HIV. An estimated 8 million people are now receiving HIV care and treatment in low- and middle-income countries.[2] The number of new HIV infections continues to fall, and more people than ever are starting treatment.

Today, the vision of a world with zero new HIV infections, zero discrimination, and zero AIDS-related deaths has captured the imagination of diverse partners, stakeholders, and people living with and affected by HIV. To reach these goals and bring about the end of AIDS, there is a need not only to increase access to prevention, care, and treatment services, but also to ensure delivery of quality services, including early treatment of opportunistic infections, use of ART, and optimal clinical and biological follow-up.

The government of Rwanda and its partners have started to implement priority interventions such as enhanced prevention, increased access to early and optimal care and treatment, and plans to eliminate vertical transmission of HIV. The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) works closely with the Ministry of Health (MoH) in the provision of HIV prevention, care, and treatment services.

EGPAF's support of HIV clinical services in Rwanda began in 2000, with technical and financial support to the Treatment and Research AIDS Center (TRAC), today known as the Rwanda Biomedical Center (RBC)/ Institute of HIV/AIDS, Disease Prevention and Control (IHDPC) for the scaling up of prevention of mother-to-child transmission of HIV (PMTCT) services in Rwanda. In 2004, through the United States Agency for International Development (USAID) global Call to Action program, EGPAF's support expanded to include a comprehensive package of HIV clinical services, including PMTCT, HIV-exposed infant and young child feeding, and HIV and AIDS care and treatment for children and families living with HIV. In June 2007, EGPAF was awarded a Cooperative Agreement by USAID to implement the USAID / President's Emergency Plan for AIDS Relief (PEFPAR) HIV Clinical Services Program. This enabled EGPAF to significantly expand its efforts to support the government of Rwanda in meeting its goal of making universal access to HIV prevention, care, treatment, and support a reality. Under the HIV Clinical Services Program, EGPAF is the lead PEPFAR clinical partner in the Eastern Province of Rwanda.

From 2007 to March 2012, EGPAF-Rwanda was supporting HIV clinical services in 48 government health facilities in five districts in the Eastern Province and two districts in Kigali City. More than 200,000 pregnant women accessed PMTCT services, and more than 30,000 clients were enrolled in HIV care, treatment, and support programs at EGPAF-supported sites, of whom approximately 1,900 were children under the age of 15. Nearly 15,000 individuals were started on ART, including more than 1,000 children under the age of 15.

As demand for HIV prevention, care, and treatment services increases, so does the need to ensure the quality of service provision. HIV care and treatment have evolved from the provision of emergency lifesaving drugs to the provision of chronic care in contexts where there are limited resources and a limited history of chronic care provision.

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1 Joint United Nations Program on HIV/AIDS (UNAIDS). *UNAIDS Report on the Global AIDS Epidemic*. Geneva, Switzerland: UNAIDS; 2012.

2 Joint United Nations Program on HIV/AIDS (UNAIDS). *World AIDS Day Report. How to Get to Zero: Faster, Smarter, Better.* Geneva, Switzerland: UNAIDS; 2011.

It is in this respect that, in conjunction with its ongoing technical and financial support to improve HIV clinical services, EGPAF-Rwanda instituted a range of quality improvement (QI) activities. These activities aimed to establish a QI program that would enable service providers to utilize routinely collected program data to assess quality of care (QoC) and implement improvement projects to address the gaps identified, taking into account suggestions provided by clients and other key stakeholders.[3]

It is important to note that during the HIV Clinical Services Program, EGPAF implemented a continuum of care (CoC) model that it had developed in 2006 and that calls for sites to enroll identified HIV-positive patients in care and to transfer them to ART sites only when they become eligible for treatment. Prior to the model, patients were transferred to ART sites for care services, even before they were eligible for ART. In doing so, many patients were lost as ART sites were further from their homes. Under the new CoC model, even non-ART sites supported by EGPAF could provide basic care services for HIV-positive persons, including clinical staging, CD4 monitoring, management of HIV-related illnesses and opportunistic infections, counseling on positive living and prevention for positives, family testing, nutrition counseling, and pain management. Patients could receive pre-ART care services close to home at their regular site, and only transfer to an ART site when they became eligible for treatment. Based on positive feedback from an assessment conducted in 2007, the model was expanded to all EGPAF-supported sites in 2008 and 2009. As part of the CoC model, EGPAF defined and established two staff positions at each site: the community liaison (agent de liaison des activités communautaires, or ALAC) and the service integration focal point (point focal pour l'intégration des services, or POFIS) to ensure that all patients who were identified as HIV-positive were enrolled in the care program and received all the care services they needed, including referral to ART sites once they become eligible for treatment. The ALAC was also responsible for community outreach and home visits for defaulting patients. EGPAF developed tools to implement the program, including individual patient records based on the World Health Organization (WHO) pre-ART files.

GOAL

The overall purpose of the QI project is to improve the quality of prevention, care, and treatment services at the facility and district hospital level, with the ultimate goal of better health outcomes for patients.

APPROACH

Since EGPAF began providing support in Rwanda, several QI activities have been implemented, including the provision of technical training* for health care providers, community health workers, and people living with HIV. EGPAF organized mentorship sessions according to the site needs and conducted evaluative and formative supervision on a quarterly basis in collaboration with district hospital supervisors. In addition, EGPAF supported Rwanda's performance-based financing system (pay based upon performance), which reinforces staff motivation, contributes to operating costs, builds local capacity, and supports other QI initiatives such as the revitalization of quality committees at the site level and the implementation of plan-do-study-act (PDSA) cycles at facilities. Beginning in July 2011, EGPAF focused its QI efforts on implementing the national QI strategic plan,[4] aligned with the national policy and incorporating the plan-do-study-act (PDSA) approach.[5]

*This training includes but is not limited to PMTCT, voluntary counseling and testing, ART, task shifting, CoC, infant and young child feeding, nutrition, emergency obstetric and neonatal care, family planning, Integrated Management of Childhood Illnesses, data quality, and financial management.

3 Elizabeth Glaser Pediatric AIDS Foundation. Quality Management Strategic Plan, (2012).

4 Ministry of Health (MoH). *National Strategy for Quality Management in Rwanda*. Kigali, Rwanda: MoH; 2007.

5 MoH. *National Policy for Quality of Healthcare in Rwanda.* Kigali, Rwanda: MoH; 2007.

Training

In close collaboration with the MoH, in May 2011, EGPAF prepared and delivered a QI skill-building workshop for EGPAF technical and monitoring and evaluation (M&E) teams and a program officer from the RBC/IHDPC's HIV division. The workshop focused on building basic QI skills in performance measurement, development of QI indicators, problem analysis, models for quality improvement, planning and implementing improvement projects, and M&E.

Following this workshop, a training module for care providers was developed in collaboration with the MoH and the RBC/IHDPC's HIV division. Over the next several months, EGPAF conducted a formative workshop for managers, care providers from different services, support staff, and community representatives. The training session focused on customer care, QI in health care, performance measurement, data analysis, root causes analysis, the PDSA model, preparing QI work plans, implementing QI projects, and QI monitoring mechanisms. Overall, 278 participants were trained from March 2011 to January 2012 (see Table 1).

TABLE 1. NUMBER OF PARTICIPANTS TRAINED IN QI

INSTITUTION	TRAINEES
EGPAF	20
RBC/IHDPC HIV division	1
10 health centers	257
Total	278

Selection of Pilot Sites

During the skill-building workshop for EGPAF and RBC/IHDPC teams, participants selected and defined 10 SMART (specific, measurable, achievable, reliable, and timely) quality indicators for PMTCT and care and treatment, based on national priorities. Participants then analyzed routine M&E data reported in EGPAF's electronic database, the Global AIDS System for Evaluation and Reporting (GLASER), for the preceding quarter and identified 10 pilot sites for QI intervention. These pilot sites were those with the lowest performance levels in HIV services based on the data in the GLASER database.

Establishment of QI Structure and Regulation Mechanisms

A Quality Management Committee (QMC) was established at EGPAF that included technical, financial, and M&E team members. Its role was to support the implementation of activities, including customer services, training of site staff and local QMCs on quality management principles (data management, QI, customer care), and ensuring the sustainability of initiatives through capacity building and encouraging health care providers to take ownership of and accountability for improving the quality of health care.

At the pilot health facilities, the team supported the establishment or revitalization of facility-level QMCs and included community representatives in addition to managers and health care providers. Community representatives included community health workers and people living with HIV. The roles and responsibilities of these QMCs included discussing monthly quality issues, reviewing progress, and identifying key actions to be implemented using PDSA cycles for continuous QI.

In addition, a framework for continuous QI in clinical services, customer care, and data documentation was developed (including active involvement of hospital supervisors, reinforcement of staff exchange meetings, discussion of complicated cases and deaths, use of suggestion boxes, regular chart reviews, and data use for QI).

Standardization of QI Tools and Procedures

The EGPAF technical team developed a QI work plan that included the development of a country-specific QI protocol and data collection instruments. The Rwanda National Ethics Committee, an independent ethical review, determined that the activity was not research and granted nonresearch determination.

Ten indicators were selected to measure QoC in HIV services. These indicators were compiled in a data collection tool, which was subsequently tested at a sample of 10 sites. This tool is an Excel-based tool (see Annex 1) that enables facility staff to measure the quality of patient care provision. It measures QoC in adult, pediatric, and PMTCT services and provides an in-depth analysis of system issues and strengths.

QoC indicators include the following:

- percentage of HIV-positive pregnant women receiving ART
- percentage of HIV-positive pregnant women initiated on antiretroviral (ARV) prophylaxis*
- percentage of HIV-exposed infants with dried blood spot (DBS) test performed at four to eight weeks of age
- percentage of HIV-exposed infants with positive HIV status at 18 months
- percentage of new HIV-positive clients enrolled in pre-ART care
- percentage of clients lost to follow-up (LTFU) in pre-ART care (not seen in the last three months)
- percentage of eligible HIV-positive children who receive ART
- percentage of HIV-positive children who remain active and received ARV with no interruption over 12 months on treatment
- percentage of HIV-positive adult clients who remain active and received ARV with no interruption over 12 months on treatment
- percentage of patients enrolled in care (pre-ART and ART) with CD4 count done within the past six months

Performance Measurement

Selected QoC indicators were measured at baseline and six months later for all patients. Data were retrieved from patient monitoring tools, such as registers, medical files, and pharmacy files. Baseline data were extracted by selecting the third quarter of 2011 as the starting point of the review period. With EGPAF support, staff from the pilot sites collected and analyzed their respective data and identified areas of low performance. Reassessments were and continue to be performed every six months to assess the performance trends and to adapt interventions in accordance with the PDSA principles.

The results presented below are drawn from two consecutive measurements of QoC indicators (see Table 2). The main gaps identified are as follows:

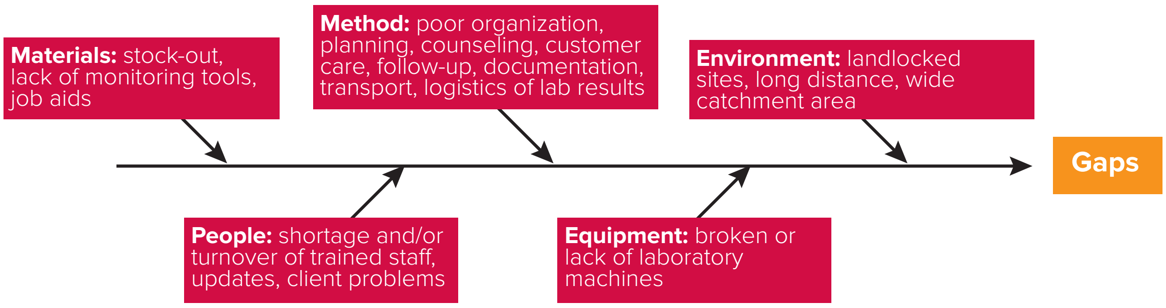
- Low enrollment rate in care
- Insufficient ARV uptake in PMTCT and care and treatment units
- Poor adherence
- High number of clients lost to follow-up
- Poor CD4 monitoring

*Following the introduction of the new national HIV guidelines in March 2012, which state that all HIV-positive pregnant women should start lifelong ART regardless of clinical stage or CD4 count, the two first indicators were merged into a new indicator labeled “percentage of pregnant women receiving ART.” This brought the number of indicators down to nine.

Root Cause Analysis

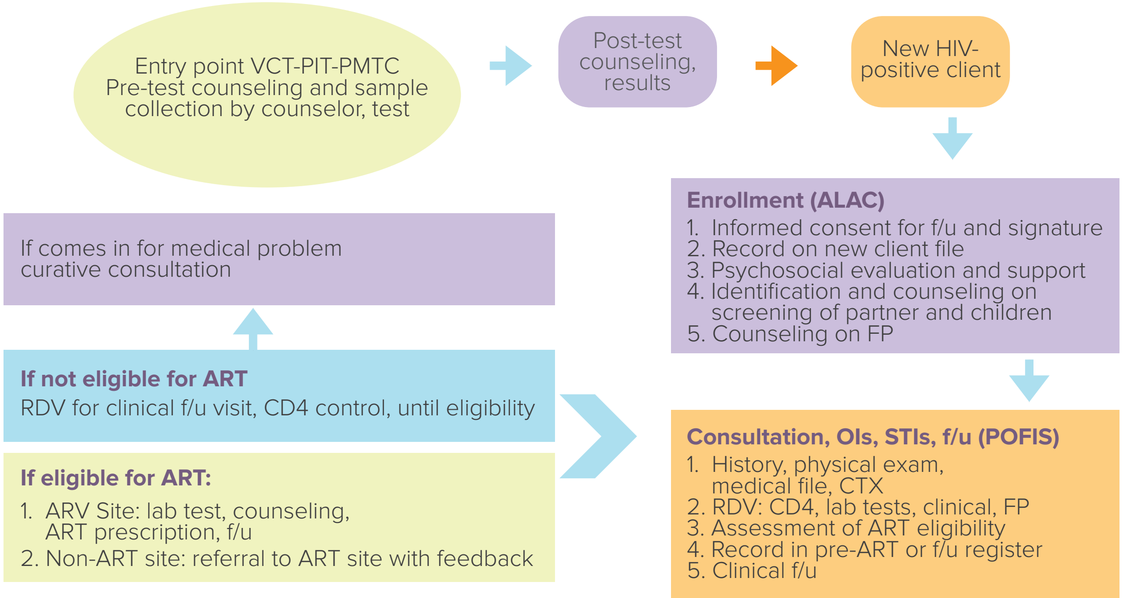
Using a fishbone or Ishikawa diagram (a tool used to determine the root cause of problems), providers identified the root causes of problems that resulted in poor quality (Figure 1). Several different causes were mentioned by the 10 sites, but the most common were insufficiency and/or high turnover of trained staff, laboratory machines unavailable or not functioning, stock-outs of drugs or laboratory reagents, suboptimal documentation, poor customer care, poor counseling, insufficient follow-up with patients missing appointments, and lack of specific training.

FIGURE 1. ROOT CAUSE ANALYSIS USING A FISHBONE DIAGRAM



Another technique used to analyze the root causes of observed gaps was the flowchart method. For that purpose, the client flow in HIV services was scrutinized (Figure 2). It revealed some challenges hindering the provision of quality care, including overworked staff or staffing shortages, suboptimal linkages between services (poor interservice collaboration), complex patient flow, poor service integration, lack of training in task shifting, staff negligence, and multiple appointments required.

FIGURE 2. ROOT CAUSE ANALYSIS USING FLOWCHART METHOD (CLIENT FLOW IN HIV SERVICES)

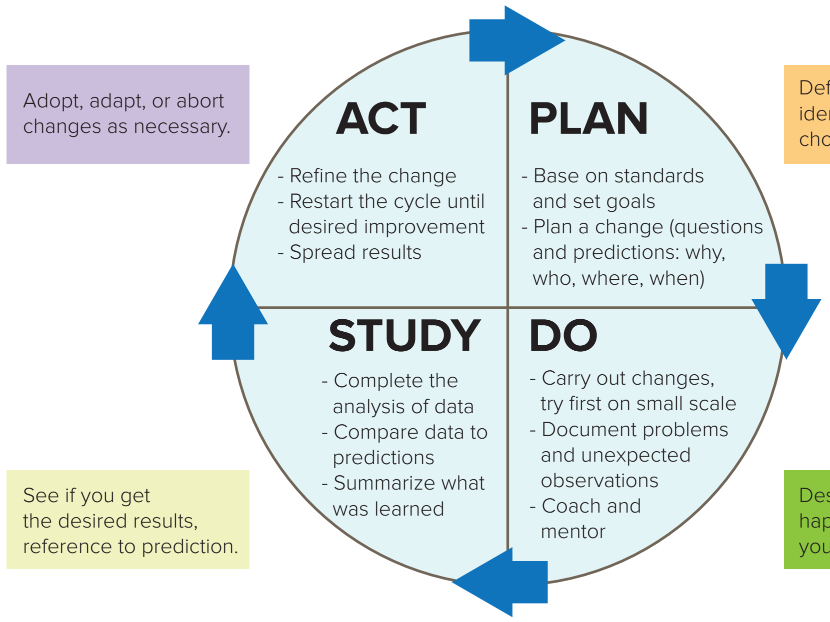


ALAC = community liaison; ART = antiretroviral therapy; ARV = antiretroviral; CTX = cotrimoxazole; FP = family planning; f/u = follow-up; OI = opportunistic infection; PIT = provider-initiated testing; PMTCT = prevention of mother-to-child transmission of HIV; POFIS = service integration focal point; RDV = rendezvous (appointment); STI = sexually transmitted infection; VCT = voluntary counseling and testing

Implementation of QI Projects Using PDSA Cycles

Using the collected data, the site-level QMCs assessed their facilities' baseline performance, identified low-performance areas for PMTCT and HIV care and treatment for both children and adults, discussed root causes of observed weaknesses, and established performance targets and corrective strategies. The QMCs implemented PDSA improvement cycles (Figure 3) through interventions expected to improve QoC and service delivery. Providers developed plans for change, tested the change, implemented the change, and remeasured to determine whether improvement had occurred and to identify how to adapt interventions accordingly.

FIGURE 3. PDSA IMPROVEMENT CYCLE



Care providers and community representatives proposed some corrective strategies. They included the following:

- Strengthening the CoC program to retain patients in care by strengthening counseling services, actively implementing follow-up of late patients
- Promoting consumer and community involvement in QI endeavors by ensuring that consumers were represented on facility quality committees
- Enhancing laboratory capacity and transportation of blood samples and results
- Improving documentation and data management at the site level by providing on-site mentoring in documentation
- Building local capacity through continuous training on customer service, data management, updates on protocols and guidelines, increasing the number of staff trained for HIV services, and expanding task shifting
- Supporting and monitoring launched QI projects to ensure adequate implementation of PDSA cycles and oversee the performance trend as part of PDSA
- Organizing regular chart reviews to ensure compliance with national guidelines and improved documentation
- Conducting customer satisfaction surveys

These actions were implemented as appropriate for individual facilities and situations. Following are some actions undertaken to improve retention of patients in care at all levels of the health system:

- Community level: Sensitization of the population through various meetings, involvement of community health workers in both sensitization and follow-up of consenting patients, creation of support groups, and promotion of associations of people living with HIV

- Health-facility level: Reinforcement of counseling, improvement of customer care, and strengthening and scaling up of the CoC program, which facilitates access to care and allows active follow-up of defaulters through the use of diaries, phone calls, and early home visits
- Central level: Strong and effective political commitment to support all the components of HIV prevention, care, and treatment; increasing the number of health facilities across the country so as to reduce the distance between clients' homes and facilities; ensuring the active participation of various clinical partners funding different interventions and providing required technical support

Customer satisfaction surveys were not performed due to limited time and ethical considerations.

Follow-Up Mechanisms

After identifying gaps between actual and desired performance, targets were established as performance contracts for the following 12 months. To monitor performance trends and ensure that national protocols were applied, the site-level QMC, district hospital staff, and EGPAF technical staff conducted quarterly follow-up visits, and biannual assessments were planned as part of PDSA cycles.

Peer Learning Sessions Through a Collaborative Approach

Peer learning sessions were organized after the reassessment of QoC performance. These learning sessions consisted of bringing together providers from various health facilities to discuss common problems and identify ways to overcome their respective weaknesses. Through interactive discussions, they reviewed their strengths and weaknesses, strategized in a group, and learned from each other. In the future, such exchanges will take place through field visits aimed to facilitate peer learning and/or mentorship between providers.

IMPACT OF QI INTERVENTIONS

Improvement in QoC

Nine QoC indicators were measured at baseline and again six months after the implementation of improvement projects. Overall, improvements in QoC indicators were observed with a reduction in the numbers of LTFU pre-ART and an increase in the numbers of new HIV-positive patients enrolled in care. Due to the limited number of sites implementing QI interventions (10), and limited number of observations, we were unable to determine the statistical significance of the improvements in the indicators. However, by looking at the data we can see the improvement from the baseline to six months later in nearly all indicators (see Table 2.)

TABLE 2. COMPARISON OF QOC INDICATORS AT BASELINE AND SIX MONTHS AFTER IMPLEMENTATION

QOC INDICATORS	BASELINE (%)	REASSESSMENT (%)
Pregnant women receiving ART	84.5 (93/110)	89.8 (88/98)
Exposed infants with DBS at 6 weeks	81.4 (83/102)	91.8 (89/97)
Exposed infants found HIV+	5.5 (7/128)	1.5 (2/131)
New HIV+ enrolled in care	57.8 (63/109)	82.2 (88/107)
LTFU in pre-ART care	20.8 (84/403)	5.4 (22/408)
Eligible children received ART	89.7 (26/29)	89.7 (26/29)
Children active & on ART over 12 months	78.3 (18/23)	92.9 (26/28)
Adults active & on ART over 12 months	73.1 (49/67)	81.1 (56/69)
CD4 up-to-date	81.7 (576/705)	82.0 (578/705)

Some sites showed greater improvements than others (see Annex 2). Reasons that prevented some sites from reaching their performance targets included high turnover of trained staff in PMTCT units, stock-outs of reagents for CD4 and other lab tests, and other infrastructural problems.

Reduction of Reporting Errors

All EGPAF-supported sites routinely submit data reports to the national level and provide EGPAF with a copy of the monthly report for HIV clinical services. The EGPAF technical team collaborates with those sites to check and/or correct any errors before the M&E team enters the collected information in both the national and GLASER databases.

After the launch of the QI projects, the M&E team observed improved reporting in the 10 sites that had implemented QI projects. Providers were more comfortable with collecting data, comparing indicators, and correcting errors.

Improvement of Documentation

In health facilities that implemented QI projects, improvement in documentation of data and services provided was observed during supportive supervision visits. Providers received refresher training on how to document in client monitoring tools such as registers, medical files, pharmacy files, and the electronic database, which from anecdotal reports improved their understanding of the indicators and the importance of good documentation and reduced discrepancies in data reporting.

Satisfaction of Key Actors

Staff members at sites implementing QI projects were enthused to learn about and implement QI techniques. According to the discussions held with providers six months after implementation, the staff members seemed to be motivated to implement and take ownership of QI activities.

Following are quotes from a few health care providers regarding the QI initiatives:

> "EGPAF showed us how to manage our data, to deal with our weaknesses, to plan and implement quality improvement interventions."
>
> "Before EGPAF initiated QI interventions in our health center, we were not aware of how much we were violating the national protocol. We appreciated that simple application of guidelines contributed greatly to improving most of our low-performance areas."
>
> "Now we know how to measure our performance level, to handle our mistakes, and to overcome our weaknesses."
>
> "We are proud to have understood and owned QI techniques; our staff became more accountable and strives to continuously improve the quality of services they deliver (…) we pledge to sustain QI activities."

In addition, community representatives were very excited to provide input on the improvement of service delivery at their health facilities. One person living with HIV shared the following:

> "You cannot imagine how valued I feel when I get invited to participate in the monthly QMC meetings."

CHALLENGES

Dedicated Staff and Limited Time

EGPAF-Rwanda began implementing QI initiatives in 2008. However, it was only a few years after implementation that the team identified the need for a dedicated staff person to lead the QI interventions. A dedicated QI staff member was hired relatively late in the program, and only 10 health centers were coached to implement QI interventions due to time constraints. It would have been beneficial to the program and to the country if all sites could have benefited from QI support.

Sustainability

QI structures were set up in 10 health centers. However, their optimal functioning requires not only the stakeholders' commitment, which has been achieved, but also funding, which remains a challenge for some sites. Funds are needed to facilitate monthly QMC meetings, to cover transportation costs for community representatives, and to allow peer learning visits.

Furthermore, QI interventions at pilot sites are in the very beginning stage and still need support and mentorship for at least the coming three to six months. It is recommended that the USAID Rwanda Family Health Project continue to build capacity at sites and support continuous QI mechanisms at the facility and district levels.

CONCLUSION

With EGPAF support, through QMCs and other activities at sites, health care providers took ownership of QI initiatives and became more accountable for the quality of services they deliver. However, achieving the sustainability of these QI initiatives will require continued support for existing QI initiatives and the reinforcement of community involvement. There is also a need to scale up and harmonize QI interventions throughout the country.

Acknowledgments

Rwanda Ministry of Health

Rwanda Biomedical Center / Institute of HIV/AIDS, Disease Prevention and Control

Mayors of districts, health workers, community representatives

United States Agency for International Development, for its financial support

ANNEX 1. DATA COLLECTION TOOL

MEASUREMENT (M)	M0	M6	M12	M18	M24	M30
Review date						
Sex	Male					
	Female					
Age	≤ 2 years					
	2–5 years					
	5–14 years					
	≥ 15 years					
# reviewed files						
QOC HIV INDICATORS						
Pregnant women receiving ART	N					
	D					
	%					
Exposed infants with DBS at 6 weeks	N					
	D					
	%					
Exposed infants found HIV+	N					
	D					
	%					
New HIV+ enrolled in care	N					
	D					
	%					
LTFU in pre-ART care	N					
	D					
	%					
Children eligible received ART	N					
	D					
	%					
Children active & on ART over 12 months	N					
	D					
	%					
Adults active & on ART over 12 months	N					
	D					
	%					
CD4 up-to-date	N					
	D					
	%					

ANNEX 2. PERFORMANCE MEASUREMENTS IN 10 EGPAF-SUPPORTED SITES

HEALTH CENTER 1			
Indicators	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	82.4	86.7	≥90.0
Exposed infants with DBS at 6 weeks	81.8	100.0	10.0
Exposed infants found HIV+	6.7	12.5	≤2.0
New HIV+ enrolled in care	56.3	86.7	≥70.0
LTFU in pre-ART care	12.0	0.0	≤5.0
Eligible children received ART	100.0	80.0	100.0
Children active & on ART over 12 months	10.0	100.0	100.0
Adults active & on ART over 12 months	85.7	8.9	≥90.0
CD4 up-to-date	85.9	90.6	≥95.0

HEALTH CENTER 2			
Indicators	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	100.0	100.0	100.0
Exposed infants with DBS at 6 weeks	100.0	100.0	100.0
Exposed infants found HIV+	14.3	0.0	≤2.0
New HIV+ enrolled incare	66.7	100.0	≥90.0
LTFU in pre-ART care	6.0	0.0	≤2.0
Eligible children received ART	100.0	100.0	100.0
Children active & on ART over 12 months	100.0	75.0	100.0
Adults active & on ART over 12 months	85.7	86.7	≥92.0
CD4 up-to-date	78.8	95.3	≥90.0

HEALTH CENTER 3			
Indicators (%)	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	85.7	80.0	≥95.0
Exposed infants with DBS at 6 weeks	82.4	76.5	≥90.0
Exposed infants found HIV+	6.7	0.0	≤2.0
New HIV+ enrolled in care	66.0	57.1	≥80.0
LTFU in pre-ART care	12.0	10.0	≤5.0
Eligible children received ART	88.9	75.0	≥85.0
Children active & on ART over 12 months	33.3	100.0	≥85.0
Adults active & on ART over 12 months	63.6	80.0	100.0
CD4 up-to-date	58.8	70.6	≥95.0

HEALTH CENTER 4			
Indicators (%)	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	81.3	68.8	100.0
Exposed infants with DB at 6 weeks	80.0	75.0	100.0
Exposed infants found HIV+	5.0	0.0	≤2.0
New HIV+ enrolled in care	100.0	75.0	100.0
LTFU in pre-ART care	8.0	4.0	0
Eligible children received ART	50.0	100.0	100.0
Children active & on ART over 12 months	83.3	85.7	100.0
Adults active & on ART over 12 months	80.0	100.0	100.0
CD4 up-to-date	97.6	83.5	100.0

HEALTH CENTER 5			
Indicators (%)	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	85.7	100.0	100.0
Exposed infants with DBS at 6 weeks	100.0	100.0	100.0
Exposed infants found HIV+	0.0	0.0	≤2.0
New HIV+ enrolled in care	57.1	62.5	≥95.0
LTFU in pre-ART care	16.0	10.0	≤5.0
Eligible children received ART	100.0	100.0	100.0
Children active & on ART over 12 months	50.0	100.0	≥90.0
Adults active & on ART over 12 months	66.7	50.0	≥90.0
CD4 up-to-date	78.8	67.5	100.0

HEALTH CENTER 6			
Indicators	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	100.0	66.7	100.0
Exposed infants with DBS at 6 weeks	66.7	100.0	100.0
Exposed infants found HIV+	0.0	0.0	≤1.0
New HIV+ enrolled in care	33.3	71.4	≥90.0
LTFU in pre-ART care	5.1	0.0	≤30.0
Eligible children received ART	*	*	*
Children active & on ART over 12 months	*	*	*
Adults active & on ART over 12 months	*	*	*
CD4 up-to-date	78.0	70.0	≥95.0

HEALTH CENTER 7			
Indicators (%)	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	78.6	100.0	100.0
Exposed infants with DBS at 6 weeks	87.5	100.0	≥98.0
Exposed infants found HIV+	5.6	0.0	≤2.0
New HIV+ enrolled in care	6.3	81.3	100.0
LTFU in pre-ART care	38.0	8.0	≤15.0
Eligible children received ART		100.0	100.0
Children active & on ART over 12 months	66.7	100.0	100.0
Adults active & on ART over 12 months	50	81.8	100.0
CD4 up-to-date	92.9	80.0	100.0

HEALTH CENTER 8			
Indicators	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	62.5	100.0	100.0
Exposed infants with DBS at 6 weeks	55.6	100.0	100.0
Exposed infants found HIV+		0.0	0
New HIV+ enrolled in care	70.0	100.0	≥95.0
LTFU in pre-ART care	66.7	20.0	≤10.0
Eligible children received ART	*	*	*
Children active & on ART over 12 months	*	*	*
Adults active & on ART over 12 months	*	*	*
CD4 up-to-date	77.1	80.0	≥98.0

HEALTH CENTER 9			
Indicators (%)	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	100.0	100.0	100.0
Exposed infants with DBS at 6 weeks	100.0	100.0	100.0
Exposed infants found HIV+	0.0	0.0	≤1.0
New HIV+ enrolled in care	100.0	100.0	100.0
LTFU in pre-ART care	6.7	5.6	≤1.0
Eligible children received ART	*	*	*
Children active & on ART over 12 months	*	*	*
Adults active & on ART over 12 months	*	*	*
CD4 up-to-date	62.9	85.7	≥85.0

HEALTH CENTER 10			
Indicators	Baseline (%)	Reassessment (%)	Target (%)
Pregnant women receiving ART	81.8	100.0	100.0
Exposed infants with DBS at 6 weeks	75.0	100.0	100.0
Exposed infants found HIV+	11.1	0.0	≤2.0
New HIV+ enrolled in care	50.0	87.5	≥80.0
LTFU in pre-ART care	14.3	2.9	≤6.0
Eligible children received ART	100.0	100.0	100.0
Children active & on ART over 12 months	100.0	100.0	100.0
Adults active & on ART over 12 months	88.9	80.0	100.0
CD4 up-to-date	91.3	92.5	100.0

Note: Targets were set by care providers and were intended to be reached within one year.

* ARV services not available at this voluntary counseling and testing / PMTCT stand-alone site.

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