Photo: Eric Bond, 2019

Improving the Effectiveness and Efficiency of HIV Programs and Services through Program Optimization

Technical Brief January 2021

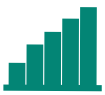
Elizabeth Glaser Pediatric AIDS Foundation
Fighting for an AIDS-free generation

Introduction

Given increased donor demand for greater project implementation efficiency, and in light of the complex and evolving context of the HIV/AIDS epidemic, The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) recognized a need for optimizing programs, activities, and services to maximize their quality (both effectiveness and efficiency) and impact. To do so, EGPAF introduced the Program Optimization Approach (POA), intended to create one holistic and standard approach to attain this maximum level of quality and results. POA is the application of a standardized and continuous approach that uses evidence and improvement science to enhance program design, implementation, quality, and impact.

This program-level initiative emphasizes integrating assessments, evaluations, and data use with a focus on fostering broader program improvement. Core to this process is the collection, analysis, and use of high-quality program data to induce adjustments that improve programs. POA's emphasis on the power of data provides a framework for improving digital and mobile technologies for the collection, management, and visualization of data (Table 1).

Table 1. Web and mobile data collection applications for program optimization

Application Name	Purpose
 POA-PM	The POA-PM application is a web-based project tracking tool that enables POA teams to track information related to POA projects, including meeting notes and outcomes, indicator performance data, and so on. It generates a finalized report based on the information entered into the system.
 QI-PM	The QI-PM application is a mobile and web-based tool that enables EGPAF staff to track site-level quality improvement projects over time. The application allows for offline use and synchronizes to the Azure SQL database when reconnected to an Internet source. A small dashboard is built into the application to assist with project tracking. The QI-PM tool can also be used for tracking indicators related to rapid cycles of learning or other improvement activities at the site level.
 EZQI	The EZQI application is a mobile-based Microsoft Power App that enables EGPAF staff to conduct quality audits in key programmatic areas, such as early infant diagnosis and TB and HIV care and treatment. Once the data are entered, the application generates a performance chart. Areas needing additional support and technical assistance can be easily identified through the performance of each indicator.

The main objectives of POA are as follows:

- To facilitate a standardized process for continuous improvement of program and service implementation [EFFECTIVENESS and EFFICIENCY]
- To generate an evidence base for knowledge dissemination, innovation, resource mobilization, and public policy and advocacy [LEARNING]
- To maximize and measure the impact of programs and services [RESULTS]

POA is an iterative process with five core steps (Figure 1) to be applied to programs (both their operations and their technical aspects), activities, and services implemented or supported by EGPAF at the global, country, or project level. The approach is best implemented as a continuous series of time-bound activity cycles that bring together multiple stakeholders to apply a high level of data triangulation, communication, and rapid information sharing around discrete program and service issues.

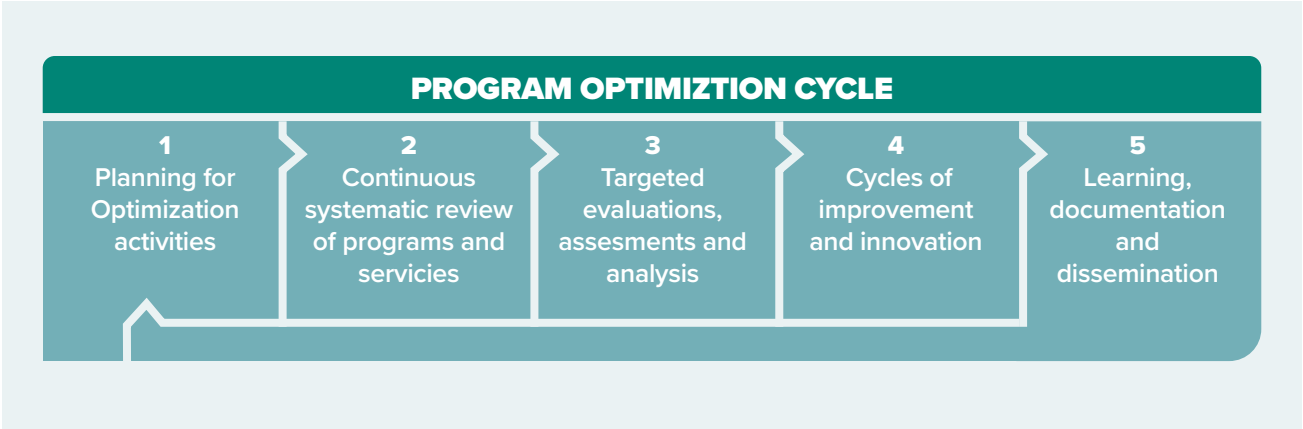


Figure 1. The five core steps of POA

1. **Planning for program optimization.** Priority areas for program optimization are determined through systematic consultation across relevant teams, based on the defined mission, goals, objectives, strategies, challenges, and opportunities of EGPAF, donors, the program, the project, and/or an individual team. Tools such as process mapping, root cause analysis (RCA), prioritization, Gantt charts, and RACI (responsible, accountable, consulted, and informed) matrices are employed. POA-PM is used to plan, track, and report on POA projects globally.
2. **Continuous, systematic review of programs and services.** A systematic process is implemented for continuous review and analysis of the program's design, goals, inputs and outputs, and results relevant to the determined priority areas in order to define deficiencies, gaps, needs, and opportunities for improvement.
3. **Program evaluations, assessments, and research.** Often, additional data and evidence, or new sources of such data and evidence, are required to answer the questions raised during the initial review of progress and performance or during the initial POA planning step. In these instances, if feasible and practical, specific assessments (including quality improvement assessments), evaluations, or research (depending on the type and quality of data or evidence required) are planned and implemented to address the questions.
4. **Program improvement and innovation.** Based upon the data review and analysis, as well as program evaluations, assessments, research, and other relevant publications, reports, or expert input, new and/or improved practices or innovations are proposed, introduced, and tested. The new interventions also undergo continuous review and evaluation, where necessary, to determine the outcomes and impact of the intervention.
5. **Program learning: Documentation and dissemination of findings and promising practices.** New approaches, findings, solutions, and outcomes of POA cycles are documented and disseminated to program and technical staff throughout the organization for use in future program and POA activities, and to consider for broader implementation in other country settings. The documentation begins at the planning phase through use of available tools (see Step 1) and proceeds through data collection, data reviews, evaluations, assessments, solution proposals, implementation of new solutions and innovations, and determination of the outcomes and impact of the new interventions.

Now nearly six years into the implementation of this POA approach, EGPAF has a diverse body of evidence-based practices at the program level. Through the dedicated efforts of hundreds of staff and consistent leadership support, POA has become the flagship approach for improving the way work is implemented at EGPAF. This technical brief highlights some key examples of the approach across countries.

Spotlight Project 1:

Achieving Operational Efficiencies at EGPAF–Kenya: The Case of the Think Act Practice Prudence (TAPP) Initiative

Project Background

EGPAF–Kenya developed principles, known as the "Five Ps," to guide the internal operation and management of projects. These principles are meant to be embodied and practiced by all staff members.

Figure 2. EGPAF–Kenya's Five Ps

Inspired by the Prudence principle, The TAPP (Think Act Practice Prudence) initiative was established in 2017, aiming at cost-efficiency for EGPAF–Kenya. Due to emerging pressure from donors to stretch dollars, the need to manage the risk of budget overspending, and the growing importance of achieving more results with less, TAPP created an opportunity for a more efficient operational approach.

Implementation

A TAPP committee was formed to assess current savings opportunities and design a methodology for prudent financial management and operational decision making. EGPAF office staff (n = 112) were surveyed to find opportunities for cost savings. The TAPP committee issued a report that became a living document referenced by senior management, providing recommendations for more efficient use of funds in areas such as supplies, vehicle management, booking of flights, trainings and meetings, and others. The document provided timely recommendations by operations staff that helped EGPAF respond to budget cuts.


Photo: Eric Bond, 2019

Results

Over the course of 2018, the EGPAF–Kenya team was able to accumulate more than US$750,000 in cost savings across numerous budget areas. As an example of the process for one budget area, Table 2 highlights the specific actions taken in the area of contract negotiations and their projected savings.

Table 2. Potential contract savings through negotiation under TAPP

Target Area	Recommended Action	Projected Savings
Air conditioning service contract (Hotpoint) *Current cost:* 122,125 Kenya shillings (KES) per month	• Renegotiate the rates with Hotpoint; reduce to KES 3,000/month per unit per quarter • Alternatively, identify a technician who can be engaged quarterly • Projected cost: KES 100,000/month	Per month: KES 22,125 Per year: KES 265,500 = US$2,655
Security (guards) *Current cost:* KES 85,812/month	• Renegotiate rate • Look for alternatives to compare the rates • Projected cost: KES 80,000/month	Per month: KES 5,812 Per year: KES 69,744 = US$697
Generator service contract (Gaston) *Current cost:* KES 50,730/month	• Renegotiate the current rate, which is pricey • Obtain new quotations • Projected cost: KES 42,000/month	Per month: KES 8,730 Per year: KES 104,760 = US$1,048
Office cleaning *Current cost:* KES 40,000/month	• Renegotiate all rates, as they are pricey • Obtain new quotations • Projected cost: KES 20,000/month	Per month: KES 20,000 Per year: KES 240,000 = US$2,400

Photo: Eric Bond, 2019

Additionally, the initiative led to the following cost-saving achievements:

- Internalizing Human Resources for Health (HRH) payroll processing instead of outsourcing to a private company
- Implementing virtual meetings, early booking of flights, and carpooling
- Using recycled paper and setting printers to duplex mode by default. This also had another positive effect by reducing our carbon footprint.
- Consolidating vendors for mobile phone airtime and data, which resulted in huge discounts for the organization. This includes converting staff prepaid phone lines to postpaid lines to get more benefits.
- Deliberate negotiations on major contracts, such as insurance brokerage, rent, archiving, and the like.

Discussion

The TAPP initiative was supported by increased internal sharing of financial data, including information on budgets, burn rates, and new project spending rates. Leadership spearheaded the initiative and fostered a sense of commitment and responsibility across staff. Sensitization of staff on TAPP principles was key to the success of the project. A change management strategy was necessary in order for staff to understand the importance of the initiative and how these changes would lead to more financial stability across the team. Staff achievements were also recognized through an online nomination platform and at all-staff retreats, which led to ownership, motivation, and increased innovation.

Photo: Eric Bond, 2019

Spotlight Project 2:

Using POA to Improve Treatment Coverage and Completion in Gaza and Inhambane Provinces, Mozambique

Project Background

EGPAF–Mozambique implements an HIV/TB program in partnership with the Ministry of Health and provincial health directorates in Gaza and Inhambane. Mozambique is among the countries with the highest TB, multidrug-resistant TB, and HIV/TB burdens. Mozambique's HIV prevalence is 13.2% (Gaza 24.4% and Inhambane 14.1%). TB is the leading cause of death in people living with HIV globally, and in Mozambique, TB incidence is 551 cases per 100,000 people. In the Mozambique EGPAF setting, 58% of TB patients also have HIV infection. Isoniazid preventive treatment (IPT) has been championed as a means of decreasing TB rates, especially in people living with HIV. The scale-up of IPT to all such people and their eligible household contacts has been signaled as one of the priorities of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) under its Mozambique Country Operational Plans for 2019 and 2020 (COP19 and COP20).

Performance on the IPT indicator has historically been low nationally, but especially so in Gaza and Inhambane provinces. In the fourth quarter of 2019 (July through September), national IPT coverage was 52% and the completion rate (at least six months of isoniazid therapy) was 39%. For Gaza, IPT coverage was 55% and the completion rate was 15%. For Inhambane, IPT coverage was 52% and the completion rate was 35% (see Table 3). Thus, there was a need to implement POA to reach the following objectives:

- Initiate IPT in 90% of eligible patients in Gaza and Inhambane through September 2020
- Attain a 100% documented completion rate in patients initiated on IPT in Gaza and Inhambane through September 2020

Table 3. IPT performance, PEPFAR-supported provinces versus national, Mozambique

Province	TX_NEW (Q4 FY19)	% screened	% started IPT	% completed IPT
Cabo Delgato	11,578	98	31	25
Maputo City	11,265	97	84	57
Gaza	12,365	82	55	15
Inhambane	9,867	60	52	35
Maputo Province	12,805	99	55	83
Nampula	23,614	76	49	29
Zambezia	81,494	90	48	25
National	**162,988**	**86**	**52**	**39**

Note: The table includes only the population of people living with HIV on antiretroviral treatment (ART) through HIV services. TX_NEW = people newly initiated on ART; % screened = proportion of people on ART screened for TB.

At the program level, an IPT POA project team was composed of representatives of the care and treatment team; the TB team; the community engagement team; the strategic information, evaluation, and research team; the psychosocial support team; and the prevention of mother-to-child transmission (PMTCT)/pediatric team, as well as provincial clinical managers and the technical director. This team elected a lead for the project and created the optimization plan for the IPT indicator. Through an RCA and process mapping exercise, good practices were collected from various sources (EGPAF countries, other implementing partners, published work on IPT scale-up, and an IPT survey) and used as the basis to elaborate an optimization plan. The team used tools such as Gantt charts and RACI matrices to foster successful implementation and monitoring of the project. A monthly discussion forum was established to discuss the performance of the IPT indicator, the implementation of the POA project, and any challenges encountered.

Implementation

The following key changes were implemented under the POA project.

1. Screening and review of available evidence for IPT implementation good practices
2. A survey targeting health facilities' clinical staff to determine their challenges with IPT. This survey was conducted in 17 high-volume health facilities in Gaza and Inhambane (n = 58).
3. Design and implementation of interventions based on good practices, evidence collected, and survey results, including these:
    a. Negotiation with provincial health directorates and health facilities to appoint IPT focal points
    b. Use of electronic lists of IPT initiations to follow up and guarantee end-of-treatment capture
    c. Use of a newly introduced patient filing system (Master Card) to screen for eligible clients and initiate IPT
    d. Design of a new data query to extract monthly IPT data to ensure monthly data tracking (as opposed to traditional tracking every six months)
    e. Adaptation of an infographic from the Aurum Institute to include IPT topics in patient education sessions mediated by "cough officers" (a lay cadre tasked with screening for TB in the health facility at different entry points and also responsible for assisting in sputum collection, linking patients to the laboratory, and linking them to TB care and treatment)
    f. Use of an IPT issue log to monitor any IPT project challenges until resolution

Photo: Eric Bond, 2018

Results

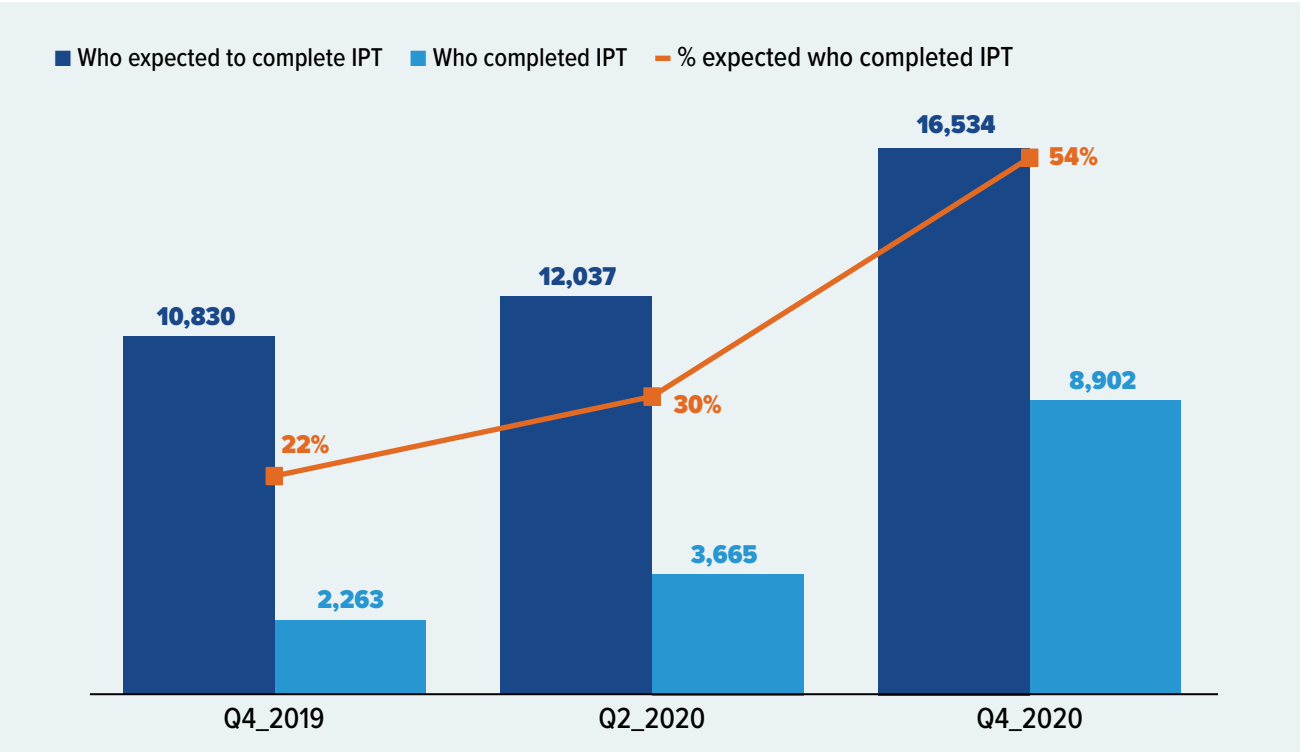


Figure 3. IPT cascade, EGPAF–Mozambique, Gaza and Inhambane provinces, 2019–2020

In Figure 3, Q4 2019 data represent program performance pre-implementation for EGPAF–Mozambique in Gaza and Inhambane provinces during the period of April to September 2019. The POA project started in November 2019, and activities were implemented beginning in December 2019. After four months of implementation, IPT completion increased from 22% to 30%, with an increase in patients initiated on IPT as well as those who completed IPT. This trend was maintained and built upon, as reflected by the Q4 2020 data, representing performance during the period from April to September 2020.

Discussion

There has been an overall positive impact of the implemented interventions (Q4 2020) in comparison with the pre-implementation period (Q4 2019). Although the target has not yet been reached, the team has been able to identify opportunities for further growth and improvement. The Mozambique team continues to implement changes and improvements identified through the POA project to work toward achieving the target for IPT coverage in Gaza and Inhambane.

Spotlight Project 3:

Using a Root Cause Analysis Framework to Understand Missed Appointments in EGPAF–Uganda Programs

Project Background

Losing clients who are on antiretroviral treatment (ART) is one of the biggest challenges for HIV programs and clinics. In 2017, the Uganda Ministry of Health adopted a practice known as differentiated service delivery (DSD) to shift resources to clients who are most at risk of defaulting from treatment, and to enhance programming efficiencies. By the end of March 2017, 267 sites in the EGPAF-led USAID-funded RHITES-SW project (Regional Health Integration to Enhance Services in South-West Uganda), led by EGPAF and funded by the United States Agency for International Development (USAID), achieved average client ART retention rates of 99% and 97% at three and six months, respectively. Despite this initial success, retention on ART decreased to 94% by December 2018, with a related net decrease in the number of clients on ART. The EGPAF–Uganda team sought to define the possible explanations for client visit delays, including the root causes for missed appointments, and use this information to develop interventions to support clients.

Implementation

The POA project was piloted in Ntungamo facilities based on an RCA tool that was developed by EGPAF staff and continuously underwent modifications. EGPAF staff oriented health care workers on the use of the RCA tool. Counselors at facilities interviewed clients and tallied the reasons for missed appointments. These responses were shared on a weekly basis with data clerks, who synthesized the results and produced charts in Excel to highlight the main reasons. Data were also analyzed by age group, sex, and location to understand key trends. The EGPAF–Uganda team planned to make modifications to the tool and process around every four to six weeks, based on the performance and data trends.

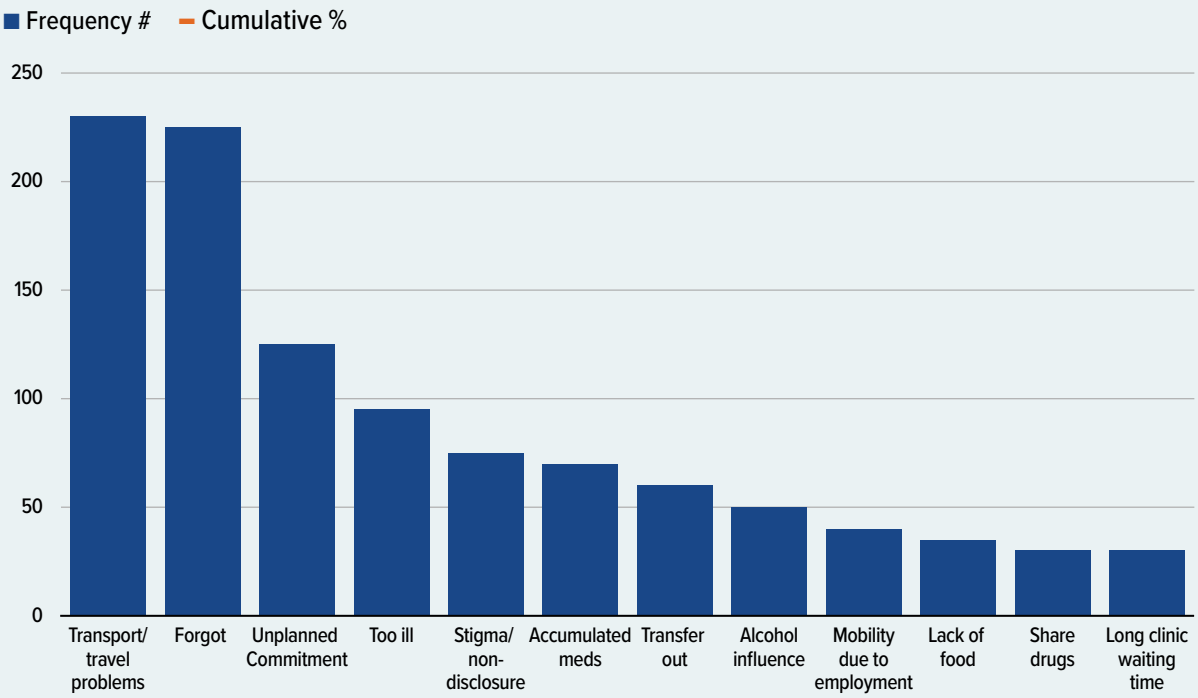
Results

In the RCA conducted in April 2019, 80% of respondents cited key barriers including lack of transportation, forgotten appointments, an unplanned commitment at the time of the scheduled clinic visit, or being too ill at the time of the scheduled appointment.

A follow-up RCA was conducted after three months of implementing optimized services, such as overall decentralized drug distribution, including multimonth drug dispensing; increased heath education sessions; and writing the next appointment date on the drug tin. The follow-up RCA showed changes in the ranking of barriers, with a decline in the number of responses citing lack of transportation and unplanned commitments as reasons for missing appointments. Females 10–19 and 20–29 years old were disproportionately affected by a lack of transportation, while a higher proportion of males 30–39 and 50–59 years old were traveling away from home at the time of their appointment.

To respond to the RCA results, the team increased the number of sites implementing DSD from 86 to 171, with a resultant increase in the number of clients enrolled on multimonth drug dispensing from 38,211 to 73,505 between December 2018 and June 2019.

The net loss in clients on ART at the end of each quarter decreased from 9,908 at the end of December 2018 to 2,959 at the end of June 2019. Retention in care increased from 94% to 98% over the same period.



Note: N = 1,082, 54 sites, April 2019.

Figure 4. Pareto chart of reasons for missed visits in region supported by RHITES-SW

Discussion

The analysis of routine program data on client retention triangulated with data on client perspectives about missed visits provided valuable insights into the root causes of observed patterns of health-seeking behavior of clients on ART. The differences in responses across gender and age categories also provided information for tailoring DSD approaches to different groups of clients. The application of this approach primarily aimed to reduce access and service utilization barriers for clients. Based on the success of the RCA approach, the EGPAF–Uganda team plans to conduct another RCA to explore issues of linkage to treatment services and ART initiation in other regions. The RCA approach has now been scaled up in other countries and shared with other implementing partners.


Photo: Eric Bond, 2018

Spotlight 4:

The Use of POA to Increase Index Testing Coverage in Five Scale-Up Districts in the EGPAF–Lesotho Program

Background

During the period of October to December 2017, the EGPAF–Lesotho team observed that the HIV positivity rate among patients from all the facility entry points and community outreaches was 31%. Having also noted a higher positivity rate among sexual partners and children of index clients, EGPAF–Lesotho planned to scale up index testing coverage from 31% to 50% by December 2018 in an effort to identify more people living with HIV.

Implementation

As part of POA implementation, the EGPAF–Lesotho team developed index testing tools for facility-level staff that were distributed to the five districts targeted for scale-up. Refresher trainings were also conducted for provider-initiated testing and counseling (PITC) officers and counselors, including on-site mentorship for counselors on how to handle partner notification for index testing. In addition, men were mobilized through men's corners, and adolescents through community outreach groups. Partners and children of index clients were referred to outreach sites close to their homes for HIV testing. Index testing data were compiled and analyzed monthly to track performance and identify continued areas for improvement.

Photo: Eric Bond, 2017

Results

The index testing coverage for the five districts increased gradually over the quarter, from 31% to 42%, though the target of 50% was not met. In September 2018, the team discovered the need to review the index tools, and another training on index testing and partner notification was conducted for PITC officers. In the last quarter, coverage remained at 42% due to a change in the age category of children who were tested, from 5 year age bands XX to those younger than 15 years. Index testing coverage per quarter among partners increased from 30% to 40%, while coverage among children younger than 15 remained at 1% consistently through the quarters.

Table 4. Index testing coverage in scale-up districts, January to December 2018

District	Adults and Children on ART	Index Testing Performed	Index Testing Coverage	% Increase from Baseline
Mohaleshoek	15,270	5,989	39%	37%
Maseru	71,019	28,338	40%	36%
Berea	28,380	11,711	41%	38%
Mafeteng	21,435	9,465	44%	115%
Leribe	36,849	16,445	45%	39%
Total	**172,953**	**71,948**	**42%**	**53%**

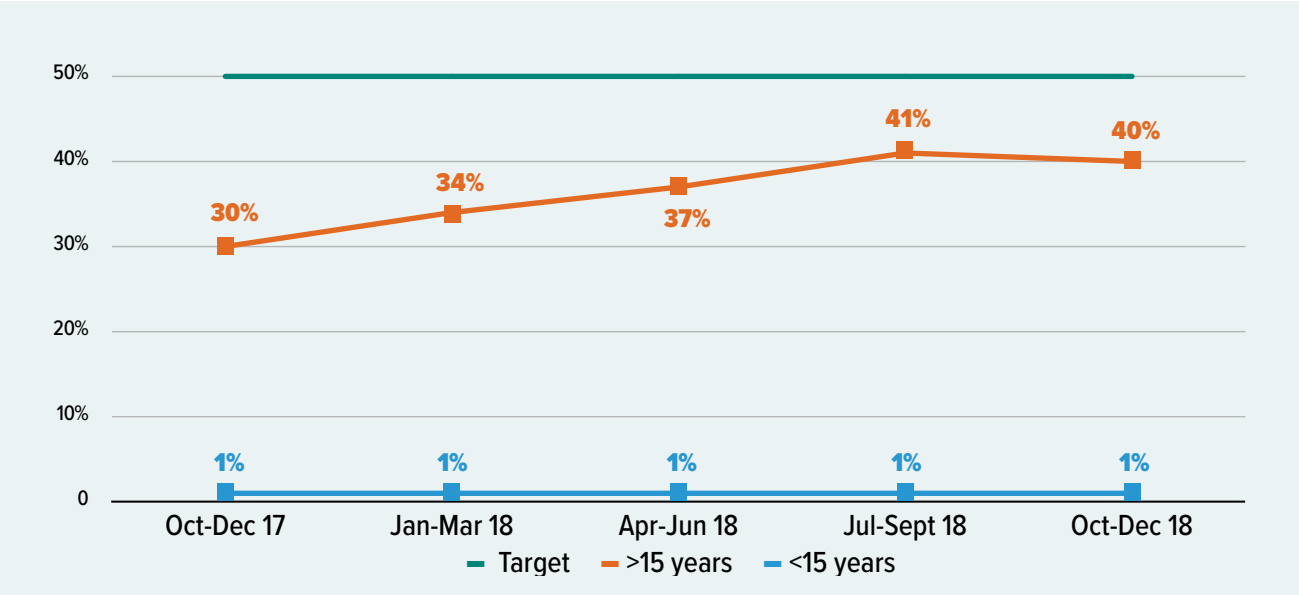


Figure 5. Index testing coverage among adult partners and children younger than 15 years per quarter

Discussion

Regular data reviews facilitated the monitoring of progress and achievements, while also identifying gaps for timely decision making. The combination of index testing in both facility and community settings contributed to an increase in newly identified positive partners (e.g., partners identified through community ART groups). Targeted community mobilization activities by the Lesotho Network of AIDS Services Organizations also contributed to an increase in index testing of adult partners and children of people living with HIV. A set of standard operating procedures contributed to institutionalizing a culture of respect in discussing and contacting sexual partners.

Spotlight 5:

Using a POA Approach to Increase Access to HIV Viral Load Testing at Spoke Sites in Tanzania

Background

EGPAF–Tanzania discovered that there were significant numbers of people living with HIV and on ART but nevertheless with limited access to HIV viral load (HVL) testing services at care and treatment clinics, particularly in the regions supported by EGPAF through the USAID Boresha Afya project. The situation was even more limited for clients getting care and treatment services at spoke sites, which are the sites with no hub services for blood sample collection and separation, and no on-site testing laboratories. To systematically address these challenges, Moshi was identified as one of the districts that was most affected and required special attention in terms of increasing accessibility of HVL testing services to people living with HIV. If the testing situation was not improved, clients with high viral load (VL) would not be detected in a timely manner, leading to worse health outcomes. This POA project selected five facilities in Moshi district to gather more data on the exact facility-level issues and to develop solutions and scale them up to other regions with similar challenges. The overall objective of the project was to increase access to HVL services among people living with HIV on ART at spoke sites from 20% in December 2017 to 60% by June 2018.

Implementation

In working with the facilities to understand the testing access challenges at spoke sites, the EGPAF–Tanzania team identified transportation of samples as a critical issue. The team also worked with providers to flag high VL among their patients. This included file sorting to identify those who were eligible for HVL testing. A local register was used to record these clients, whose files were kept separate from the rest.

The team also initiated sample transportation from spoke sites to enable clients receiving ART refills from these sites to receive HVL testing services. Standard operating procedures were developed for spoke sites' HVL sample collection, and staff were oriented on the processes. Additionally, a spoke site visit matrix was created to track clients, and EGPAF support staff conducted HVL outreach services at spoke sites on refill days. Clients were called to remind them to come in for testing, and some clients were called more than once if they did not show up. Facilities later made the HVL service and sample transportation available every day to capture the remaining eligible clients who had not been tested.

Photo: Eric Bond, 2020

Results

The proportion of clients testing at spoke sites at all five intervention facilities increased from 13% at baseline to 86% after six months of project implementation (Table 5, Figure 6).

Table 5. Increase in HVL testing at five intervention facilities in Tanzania, April–September 2018

Indicator	Baseline	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018
Number of eligible clients who had HVL sample collected	186	195	424	478	360	324	243
Total number of eligible clients	1,459	1,283	1,147	931	648	420	338
% of eligible clients who had HVL sample collected	13%	15%	37%	51%	68%	96%	86%

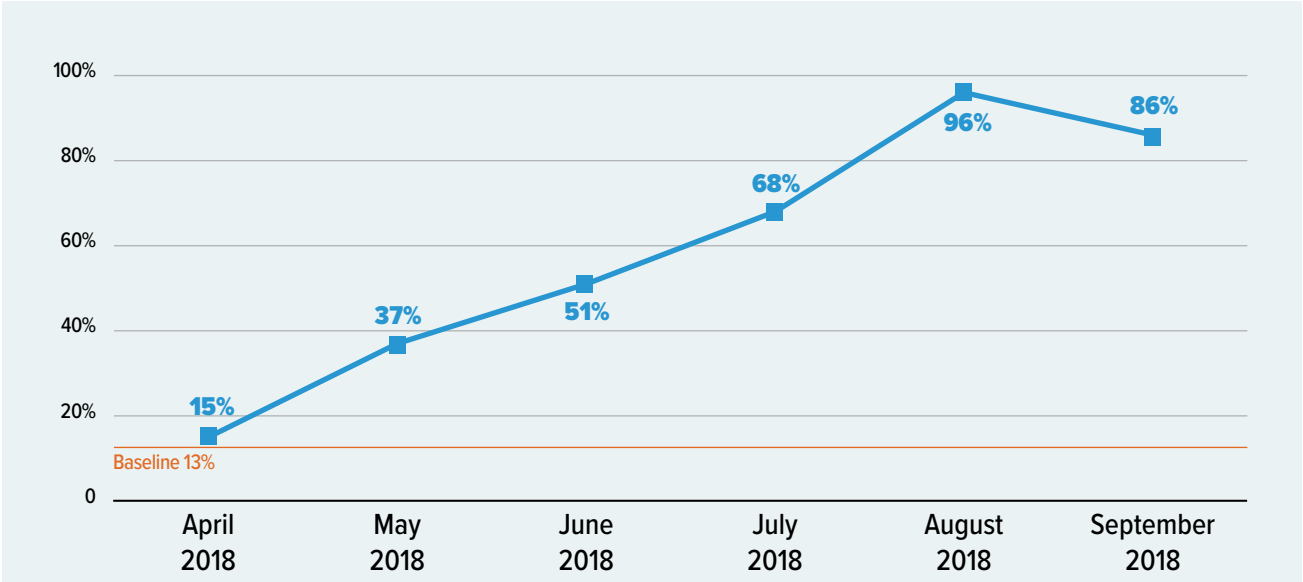


Figure 6. Percentage of eligible clients who had HVL sample collected, five intervention facilities in Tanzania, April–September 2018

Discussion

Through this POA project, the Tanzania team discovered that interventions markedly increased the percentage of eligible clients who had an HVL sample taken at spoke sites.

A key lesson learned from the process is that successful POA implementation (i.e., maximizing the number of eligible clients reached with HVL services) requires regular, frequent follow-up of implementation progress and consultation with the relevant implementing staff on successes and challenges.

The POA team also observed persistent challenges around hard-to-reach clients, clients who refused to visit the facility for testing, and some clients receiving multimonth prescriptions who would not come to the facility as frequently as necessary for HVL testing.

Conclusion and Looking Forward

The five spotlight examples discussed in this technical brief highlight the successes and challenges of implementing service delivery programs that are high in quality and client-centered. POA has provided a continuous learning framework for identifying gaps in performance and designing strategies to address those gaps. As the spotlight examples have shown, targets for project indicators are not always met during the first implementation of a project. However, the intensive learning from the POA initiatives often results in more tailored approaches as the teams develop insights into changes that move programs closer to the performance target.

The POA-PM web application released in early 2020 (described in Table 1) digitizes the POA project tracking process and enables information on projects to be easily shared across the organization. The development and uptake of the POA digital solution enables POA teams to focus on using data to inform decision making and the development of programmatic adaptations. This application is especially important for data collection and project monitoring as the challenges faced through the COVID-19 outbreak have led to a heavier reliance on virtual and remote platforms to perform day-to-day work.

Additionally, EGPAF's program optimization team is looking toward the expansion of more rapid cycles of learning, which accelerate the traditional POA process from a typical timeline of several months to a faster timeline of implementing changes and measuring effects over weeks.

Acknowledgement

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