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Strengthening the community response to HIV in Botswana: A cost estimate of the USAID ASSIST community-based improvement intervention

Summary

Through the United States Agency for International Development (USAID), the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) supported the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project in Botswana to use a community-based quality improvement approach to improve linkage and return "lost patients" to HIV care and treatment. In October 2015, ASSIST began working with Botswana government partners and community authorities to support the formation of 28 community-based improvement teams (CITs). This report summarizes preliminary findings and provides cost estimates of the ASSIST activities during the start-up phase (October 2015–September 2016). ASSIST's activities included: 1) Consultation with district and community leadership, facilities, and community-based service providers; 2) Orientation and support for CITs formation with existing community committees, groups, and networks as per village leadership; 3) Level 1 coaching to help train new CITs; 4) Bi-monthly coaching visits to CITs; and 5) A learning session that provided the space for CITs to gather and share best practices and lessons learned from the implementation of their improvement activities. All cost information for ASSIST activities in the first year were estimated using data retrieved from the project's financial records and did not include the project's headquarters operating costs.

The estimated overall cost of introducing a community-based quality improvement approach during the first year was USD \$240,000 (BWP 2,631,290). At this cost, the project established not only functioning collaborative mechanisms but also conducive environments with relevant local government and other stakeholders to proceed from consultation to mobilization to the routine application of quality improvement methods to improve community HIV service delivery across six different geographical districts of Botswana. Based on the experience with this first phase, the USAID ASSIST Project continued the work to mobilize existing community networks and resources to test simple but locally appropriate changes in how community members living with HIV can be identified, enrolled, and retained in antiretroviral therapy (ART) through October 2017, when the project closed in Botswana.

Background

Against the background of Government of Botswana's expansion of ART under its *Treat All* strategy launched in June 2016, ASSIST was asked to support expansion of the availability of quality HIV services through the active involvement of communities. ASSIST introduced community-based improvement work in the local context focusing on addressing acute gaps and barriers to linkage, retention, and life-long adherence to ART, in close partnership with government facilities and other PEPFAR partners. By working through existing community structures and providers, ASSIST contributed to the sustainable achievement of the 90-90-90 targets by strengthening linkage to care for people who test positive for HIV and addressing gaps in patient tracking for improved retention, adherence and ultimately suppression of HIV.

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This short report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Jafet Arrieta, Cecil Haverkamp, Kesaobaka Dikgole, and Edward Broughton. The community HIV work described and costing analysis were carried out under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, which is funded by the American people through USAID's Bureau for Global Health, Office of Health Systems. The project is managed by URC under the terms of Cooperative Agreement Number AID-OAA-A-12-00101. URC's global partners for USAID ASSIST include: EnCompass LLC; FHI 360; Harvard T. H. Chan School of Public Health; HEALTHQUAL International; Initiatives Inc.; Institute for Healthcare Improvement; Johns Hopkins Center for Communication Programs; and WI-HER, LLC. For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org or write assist-info@urcchs.com.

ASSIST began working closely with government partners at the central and district levels in October 2015. At the request of traditional leaders, the ASSIST team supported formation of dedicated community-based improvement teams closely linked to existing mandated committees in villages or wards. Focusing its efforts on hands-on coaching of these CITs, ASSIST facilitated application of quality improvement (QI) to generate local solutions to gaps and barriers around service delivery processes. Experiences and practices from individual community teams were then shared with other communities, district governments, and implementing partners to inform wider discussions on district and nation-wide efforts to scale up and improve HIV service delivery.

This short report outlines the activities implemented by the project in its first 12 months (October 2015 to September 2016) and provides an estimation of their costs. Understanding the costs of this intervention is critical to assess the feasibility and sustainability of scaling-up community-based QI support to other regions of Botswana or similar settings and to guide decision-making by the Botswana Ministry of Health (MOH), PEPFAR, and other implementing partners.

Overview of the USAID ASSIST Project's approach in Botswana

ASSIST's interventions in Botswana initially consisted of the formation of community-based teams of local volunteers and committee members, drawn from existing community governance structures and groups. These teams were actively coached in the application of improvement methods, including plan-do-study-act (PDSA) cycles, to undertake thorough analyses of existing service gaps and obstacles at the community level. The initial emphasis on HIV identification, linkage, and retention was followed by development of appropriate local solutions called change ideas.

During the first year of the project's implementation, CITs prioritized improvements of HIV awareness and identification, retention of ART patients, and recovery of patients lost to follow-up. Most teams specifically prioritized the following two improvement aims:

- 1) Increase the number of HIV-infected individuals who know their status
- 2) Increase the percentage of people living with HIV deemed lost-to-follow-up by the health facility whose status (defaulted, transferred, died) is known

ASSIST activities during the start-up phase of the project (not including consultations with central government), involved the following activities:

- 1) **Consultation** with district and community leadership, facilities, and community-based service providers
- 2) **Orientation and support for team formation** with existing community committees, groups and networks as per village leadership
- 3) **Level 1 coaching** for new teams comprised of representatives from across community groups
- 4) **Bi-monthly coaching visits** to community QI teams to support testing of change ideas
- 5) In addition, **learning sessions** represent important opportunities for spreading and integrating innovations within and across districts. During year one, the ASSIST team undertook a first learning session in Mahalapye District.

Activities and associated costs for conducting them are detailed below:

- 1) **Consultation:** This consisted of meetings with various authorities at the district, sub-district, and community levels with the purpose of engaging with mandated offices and coordination mechanisms to present and discuss district and community needs and priorities around HIV and health care. It was also to receive guidance on entry points for ASSIST support. The consultations identified relevant factors of contextual fit and generated support for collaborative engagement in the districts and communities before the formation and introduction of local improvement teams.

Expenses involved in consultation activities included those for ASSIST's improvement coaches, including labor, travel and incidental costs. These were higher for Mahalapye and Goodhope, sub-districts further away from Gaborone.

- 2) **Orientation and support to team formation:** After consulting and reaching agreement with local leaders, ASSIST provided orientation to several existing community committees, groups, and informal networks identified by the leadership. Orientation consisted usually of a full-day interactive program during which the ASSIST team introduced the basic concepts underlying quality improvement approaches – emphasizing local ownership and collaborative problem solving. It also facilitated an initial problem analysis to help establish a local community improvement team.

Expenses involved in orientation and support to team formation included those routinely associated with group work facilitation (refreshments for participants and basic supplies such as flipchart papers, markers, pens, notebooks, name badges, etc.). They also included costs associated with the ASSIST coaching and technical support, such as labor, travel, and incidentals.

- 3) **Level 1 coaching:** Following the orientation and formation of local community teams, ASSIST provided more focused coaching and insights into improvement methods and practical aspects of effective team functioning. Teams typically consisted of 10 to 15 volunteer community members, in addition to service provider staff, who committed to meeting twice a month for up to two hours for each coaching session. Composition of CITs was determined by community leaders, explicitly linking its accountability to the local Development Committee mandated under Botswana law and established governance. Also included in CITs were representatives from local service providers, such as staff from the respective government health facility and from existing community-based non-governmental organizations. Freshly formed CITs (28 across 6 districts by September 2016) typically received a full day of initial coaching, based on local needs and circumstances, covering basic QI concepts and processes of the approach as a foundation for their work. As part of this initial coaching, ASSIST also facilitated a more thorough analysis of the most acute and important local gaps and barriers to quality HIV and related health services.

Expenses for Level 1 coaching included costs for group work facilitation (refreshments for all participants, basic supplies such as flipchart papers, markers, pens, notebooks, name badges, etc.), and costs associated with ASSIST coaching and technical support, including labor, travel and incidentals expenses.

- 4) **Coaching visits:** These represented the core routine support provided by ASSIST to community teams. The visits were based on a regular two-week fixed schedule, consisting of active facilitation and coaching of CITs in their step-by-step efforts to define initial improvement aims and priorities; develop change ideas; ensure facility and provider involvement; and set up a local monitoring approach through community platforms. To account for the volunteer nature of team mandates, these visits were conducted twice a month for a maximum of two hours per visit. Once aims and priorities were defined, and change ideas developed, ASSIST provided additional support to test and continuously monitor and evaluate change ideas. This included working with facility staff and other providers to establish baselines and collect other data.

Expenses for coaching visits included labor, travel costs, and incidental expenses for ASSIST coaches, and CIT incidentals to cover transportation and phone costs for team leaders and members to organize and convene their meetings. Reimbursement of BWP25 (approximately US\$2.30) for each session was determined as appropriate.

- 5) **Learning sessions:** District-level coaching visits were two-day interactive sessions for cross-team collaboration and learning that brought together all teams working in one district to discuss their ideas and experiences so that all could learn and benefit from best practices. The sessions consisted of plenary workshop-like sessions involving community and district leaders and other stakeholders

involved in service coordination or delivery.

Expenses incurred for a learning session included those associated with larger-scale meetings including venue rental, refreshments for all participants, and supplies. For this initial cost review during year 1 of implementation, only one learning session was included (conducted in Mahalapye district in August 2016). Furthermore, this learning session was attended by one ASSIST headquarters advisor whose travel and labor costs were also included.

Geographic focus

ASSIST's focus of operations in its first year was seven PEPFAR-identified priority districts with high HIV burden (**Figure 1**). During this first year, ASSIST established a total of 28 CITs in these seven districts: Gaborone (4), Goodhope (5), Kanye (4), Kgatleng (1), Kweneng East (6), Mahalapye (6), and Moshupa (2).

ASSIST activities by quarter of USAID fiscal year 2016 (FY16)

FY16 Quarter 1: October – December 2015

ASSIST built the foundation for introducing QI at the community level by ensuring a shared understanding of the role of the project with the Ministry of Health, the Ministry of Local Government and Rural Development, and other PEPFAR implementing partners. During this first implementation period, in addition to setting up, recruiting, and training ASSIST field staff, the project conducted a total of 10 consultations.

FY16 Quarter 2: January – March 2016

Based on agreements with central and district level government offices, the ASSIST team increased its presence in the communities and conducted 12 consultations followed by nine orientations and level one coaching activities in the first nine operational CITs. In this quarter, 31 coaching visits were conducted.

FY16 Quarter 3: April – June 2016

ASSIST scaled up team formation and increased coaching visits with the previously formed teams. Fifteen orientation sessions and level one coaching activities were conducted with the next batch of 15 CITs. A total of 105 coaching visits were conducted during the quarter.

FY16 Quarter: July – September 2016

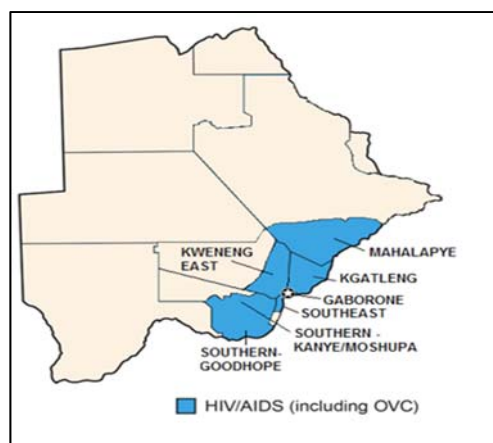
ASSIST consolidated coaching and technical support to teams, adding one more CIT while continuing with coaching visits for previously formed teams. In addition to two level one coaching sessions, the ASSIST team conducted 88 coaching visits.

Analysis of various activity categories and their associated costs

As a project with relatively modest scope that did not involve delivery of any services but was limited to community-based facilitation, the ASSIST model was unique and innovative in Botswana. In order to respond to questions about its effectiveness achieving intended objectives, the project decided early on to collect internal data, including the costs of implementation. The end of the first year of implementation (FY16) represented the first opportunity to review costing data collected.

All cost information for ASSIST activities in the first year were estimated using data retrieved from the project's financial records. Costs included expenditures for the activities listed above which are categorized

Figure 1: USAID ASSIST priority “scale-up” districts under PEPFAR Botswana



by type of activity and expenditure. They do not include administrative costs associated with running the project head office in Gaborone or technical support and training provided by ASSIST from headquarters (with the exception of the direct support for the one learning session). Similarly, they do not include the costs incurred by other PEPFAR partners involved in community-directed improvement activities. As such, they are the marginal cost of the improvement intervention.

Table 1 shows a summary of costs by activity category, number of participants per activity, total cost per category and average activity cost. According to this, the average cost of each individual activity is estimated at USD \$543.65 (BWP 5,915) per consultation; USD \$2,579.71 (BWP28,067) per orientation session; USD \$1,725.14 (BWP 18,769) per level 1 coaching session; USD \$423.62 (BWP 4,609.02) for each routine coaching visit; and \$10,051.01 (BWP 109,355) for the one learning session. A total of around 4,800 people participated in activities at district and community levels during this period.

Activity category	Number of activities	Total number of participants	Total cost per activity category	Average activity category cost
Consultation	24	135	\$13,047.72	\$543.65
Orientation	27	1,201	\$69,652.19	\$2,579.71
Level 1 coaching	27	464	\$46,578.66	\$1,725.14
Coaching visits	242	3,000*	\$102,516.91	\$423.62
Learning sessions	1	70**	\$10,051.01	\$10,051.01
Total	321	4,800	\$241,846.50	

* rounded estimates as per records
 ** participants covered by ASSIST

The total cost of ASSIST's project implementation at community level during FY16 (Oct 2015-Sep 2016) amounted to around USD\$240,000 (USD\$241,846.50, or approximately BWP2,631,290 according to ASSIST records).

Table 2 shows the costs by district. **Figure 2** shows the distribution of total costs by district. **Figure 3** shows the distribution of total costs by the five activity categories.

Location	Activity					Total per district
	Consultation	Orientation	Level 1 Coaching	Coaching visits	Learning sessions	
GABORONE	USD 2,255.40	USD 14,037.75	USD 9,537.75	USD 10,897.86	USD 0.00	USD 36,728.77
GOODHOPE	USD 0.00	USD 14,339.71	USD 10,100.74	USD 9,548.36	USD 0.00	USD 33,988.81
KANYE	USD 1,649.65	USD 8,498.28	USD 4,899.01	USD 13,297.33	USD 0.00	USD 28,344.26
KWENENG	USD 3,894.29	USD 14,618.57	USD 9,427.39	USD 26,853.86	USD 0.00	USD 54,794.11
MAHALAPYE	USD 3,071.04	USD 11,356.97	USD 8,217.27	USD 31,600.59	USD 10,051.01	USD 64,296.87
MOSHUPA	USD 1,133.10	USD 4,459.04	USD 2,723.75	USD 6,600.28	USD 0.00	USD 14,916.17
KGATLENG	USD 1,044.25	USD 2,341.88	USD 1,672.76	USD 3,718.62	USD 0.00	USD 8,777.50
TOTALS	USD 13,047.72	USD 69,652.19	USD 46,578.66	USD 102,516.91	USD 10,051.01	USD 241,846.50

The expenses incurred and recorded were categorized by type of expense, and included: group work expenses; ASSIST labor cost (which was further sub-categorized into coaching labor cost and support staff labor cost; ASSIST travel cost; CIT incidentals (which include transport and communication reimbursements for volunteer members); and broader ASSIST travel costs for learning sessions. **Figure 4** shows the distribution of total CIT costs by expense category. The expense categories were defined as: Group work, ASSIST labor for coaching, ASSIST support staff labor, ASSIST travel, CIT incidentals, and ASSIST travel for the learning session.

Figure 2. Distribution of costs by district

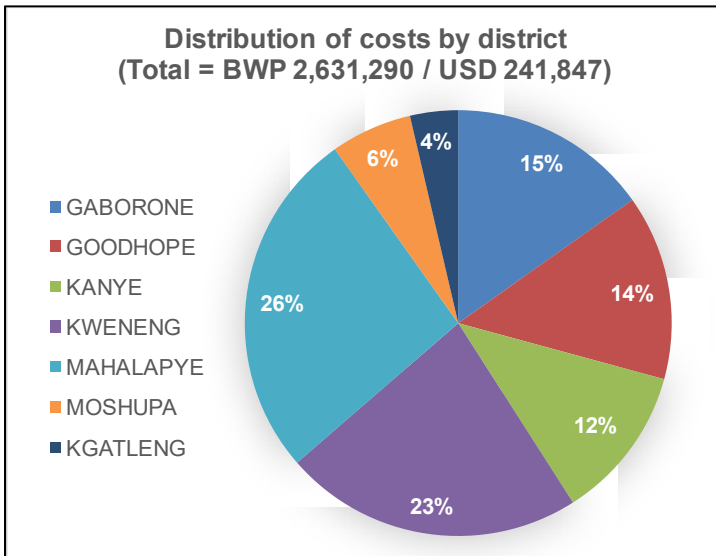


Figure 3. Distribution of costs by activity

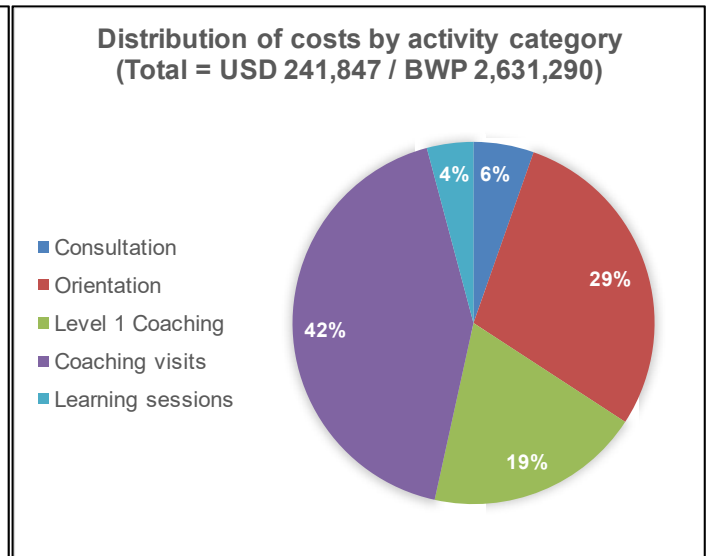


Figure 4. Distribution of costs by expense category

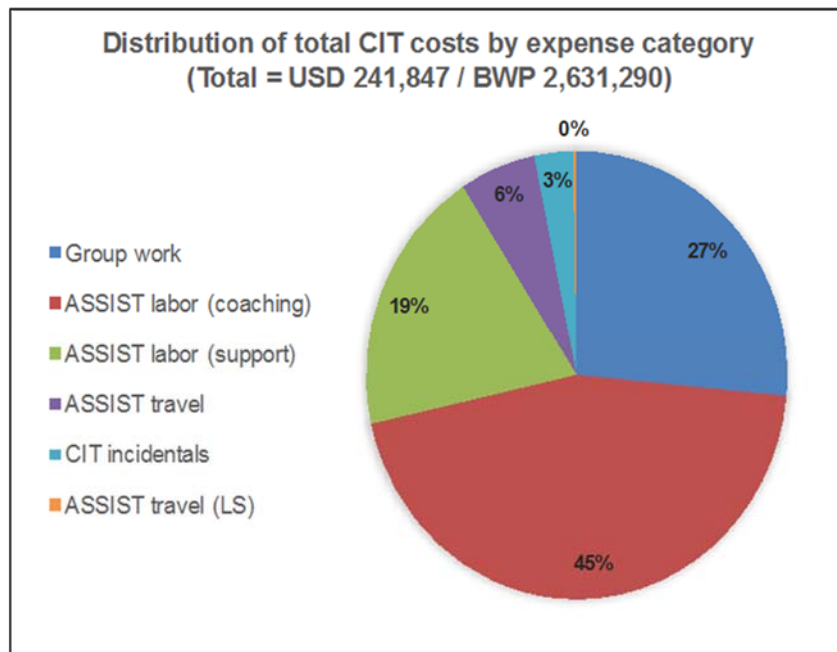


Table 3 shows the distribution of costs by expense category for each of the five major activity types.

Table 3. Distribution of costs by expense categories for each type of activity implemented by ASSIST

Activity	% of total cost attributed to each expense category						Total cost (BWP)
	Group work	ASSIST labor (coaching)	ASSIST labor (support)	ASSIST travel	CIT incidentals	ASSIST travel (learning session)	
Consultation		63%	25%	12%			141,959
Orientation	57%	27%	13%	3%			757,816
Level 1 coaching	34%	42%	19%	5%			506,776
Coaching visits		60%	26%	7%	7%		1,115,384
Learning session	79%	11%		4%		6%	109,355

Discussion

This analysis was developed to provide insights into the various costs associated with the project's first year in starting up and introducing community-based improvement work in Botswana. Based on generally sound activity-based costing, the result is not inclusive but meant to give a first indication of costs while also helping the project to improve on the applied costing method at later stages. The costs reported here cover the particularly intense period of initial preparations to get community-based QI started and thus are not representative of the general costs for supporting already formed community QI teams or scaling up the work. For example, initial costs to form the teams involved one-off workshops in order to orient the teams at the beginning.

Based on this preliminary estimation, the most expensive stand-alone activity category to date was the learning session (**Table 1**). This was expected given not only that the one learning session convened in the first year of ASSIST activity was a two-day activity, but also because it has the single largest number of participants (100-150). Unlike other activities, the learning session also includes the costs of lodging ASSIST staff.

The second most expensive activity category was that of community orientation – another large one-off activity involving a range of meeting-related expenses that need to be sourced externally. Orientation activities during year one had on average 44 participants but were conducted only once in each community at the beginning of ASSIST's engagement. The distribution of costs by district (**Figure 2**) are by and large proportional to the number of teams, with Mahalapye and Kweneng East being the most expensive with each encompassing six CITs.

Finally, the distribution of total implementation costs by expense category indicates that ASSIST labor costs make up for most of the expenses – regardless of activity, except for orientations. Coaching and support labor costs make up for around 88% during consultation, 40% of orientation activities, 61% of level 1 coaching, and (not surprisingly), around 86% of the costs associated with routine coaching visits.

Overall, given the nature of improvement work and its emphasis on facilitating collaborative work of communities and service partners, the relative high share of labor costs to facilitate and coach CITs is expected. In the broader context of health care costs, particularly the costs of ART – and failed treatment due to lack of effective retention – the costs associated with CITs are relatively low and may be seen as complementary players at community level for improving patient-centered delivery of services. More valuable information could be gathered from cost data at subsequent stages of spreading and scaling up QI to more communities.

The information provided here is useful for the MOH to estimate what it would cost to scale up a similar intervention to other communities not part of this project. This activity is supported through PEPFAR funding through the USAID Botswana office. It is expected that at some time in the future, the MOH will take over financial support of all service delivery for people with HIV in Botswana. It is imperative that the Botswana government plan for a time when donor assistance will not be available to address the HIV epidemic. Estimating the relative efficiency of ASSIST's work with CITs would provide the MOH with useful information to allow comparison between this and other interventions to achieve high-quality HIV service provision.

Limitations

This cost analysis has several limitations, primarily by not including indirect administrative costs of running the project headquarters office and by assuming consistent staff assignment and involvement under the ASSIST labor costs over time. Furthermore, ASSIST's implementation of the community HIV activities in Botswana was not a linear process but rather occurred in waves. As a result, implementation of QI methods in some communities was further advanced than in others at the time cut-off for this analysis, 30 September 2016. It is therefore not possible to project precisely the cost of scaling up implementation to entire districts or to other districts with similar characteristics at this time. A further analysis of implementation costs would be needed once all teams had been formed and were implementing comparable improvement activities.

Conclusion

We estimate that the overall cost of introducing community-based quality improvement approaches across six districts during the first year amounted to around USD \$240,000 (BWP 2,631,290). At this cost, the project established not only functioning collaborative mechanisms but also conducive environments with relevant local government and other stakeholders to proceed from consultation to mobilization to the routine application of QI across 28 communities. These activities began to address acute gaps in HIV services provision in the targeted communities. While it is too early to make assumptions about clear attributions in improved service uptake, quality and health outcomes, or about the sustainability of the processes and institutions that were supported, understanding the costs associated with the first phase of introducing and implementing community-based improvement work provides the Botswana MOH with an estimate of the cost of implementing a similar intervention without support from PEPFAR or USAID.

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