An Assessment of the Actionable Drivers of HIV Outcomes:

A Study of the COVida Case Management System in Three Provinces in Mozambique

Boys on a seawall with a ball in Mozambique (photo: Abdullah Harun İlhan, courtesy of Flickr).

Introduction

In Mozambique, more than a million children are HIV-positive or otherwise vulnerable because of the virus. In response to this crisis, the United States Agency for International Development (USAID) and the United States President's Emergency Plan for AIDS Relief (PEPFAR) fund programs that serve orphans and vulnerable children (OVC) affected by HIV. These programs employ case workers who provide services to OVC and their families to reduce their vulnerability to HIV, such as linking OVC to HIV testing services and HIV-positive children and adults to HIV care. PEPFAR seeks to understand how case management can be improved to increase knowledge of HIV status and encourage retention on antiretroviral therapy.

COVida is a USAID-funded OVC program in Mozambique that supports roughly 300,000 OVC and caregivers per year to access high-quality comprehensive services nationally. The USAID- and PEPFAR-funded MEASURE Evaluation project conducted a study of COVida in 2019 to learn more about the features of the program's case management system, with a view to making recommendations on how to improve the system's effectiveness and efficiency and—ultimately—beneficiary outcomes. The study also estimated the costs of conducting casework and identified the cost drivers of case management. It produced evidence-informed, actionable recommendations for programs in Mozambique on how to shift their program implementation strategies and, ultimately, their resources to optimally balance quality and cost.

Methods

Qualitative comparative analysis (QCA) was used to identify the combinations of modifiable case management attributes that led to improved knowledge of HIV status.

Data were collected for 70 randomly selected case workers, called activistas, across six community-based organizations (CBOs) located in three provinces in Mozambique: Maputo, Gaza, and Nampula. A survey questionnaire was administered to randomly selected *activistas* (N=70), their *activista chefes* (i.e., managers) (N=18), and supervisors (N=12), and project documentation was collected. Surveys and interview transcripts were qualitatively coded to identify common themes related to case management. Data on HIV status of the beneficiaries of the sampled activistas were provided by COVida.

Eleven modifiable attributes, called conditions in QCA, were hypothesized as the most important factors that influence case management effectiveness:

- Caseload
- Challenges recruiting and retaining activistas
- Complexity
- How cases are assigned
- Level of supportive supervision
- Out-of-pocket costs
- The quality of care team meetings
- Supervision ratio
- Time spent per case
- Training
- Work experience

Criteria for these 11 conditions were defined in order to determine consistently to what extent a condition was present (a value of 1) or absent (a value of 0) for each activista. Based on these criteria, values were assigned to all activistas for the conditions and outcomes, and the values were then summarized using a tool called a truth table. The truth table was analyzed using fs/QCA software to identify

the simplified combinations of conditions that led to the three outcomes. Results were determined based on how consistently, or regularly, a given combination of conditions (called a pathway) had resulted in the outcome.

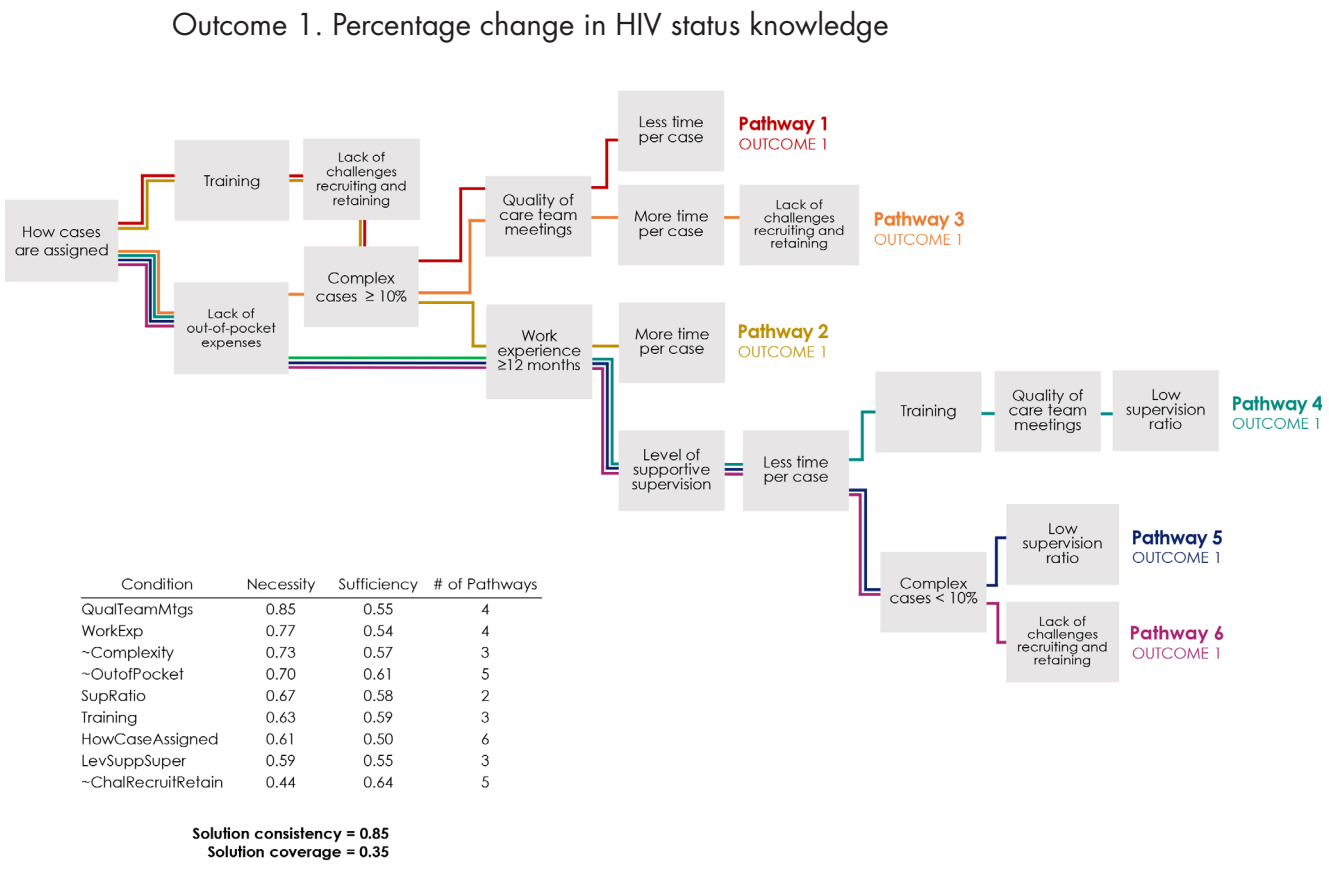
Retrospective cost and program data on budgets, work plans, expenditure summaries, financial accounts, and time sheets were collected from multiple sources to calculate and analyze the costs of providing case management services to OVC through the COVida project. We collected costing data from the central level for overall project expenditures, as well as from budgets and monthly expenditure reports for each of the six CBOs. In addition, we conducted interviews with staff at the central level (N=2) and at each CBO (N=12) to contextualize the costing data. Interview responses were used to support the analysis of expenditure data and informed how we assigned costs to categories. The expenditures were analyzed using activity-based costing, in which costs are assigned to activities.

Findings

Qualitative Comparative Analysis

For the outcome "percentage change in HIV status knowledge," six pathways led to a positive outcome (i.e., a high percentage change) (Figure 1). How cases are assigned was present in all six pathways, which means that every instance of a high percentage change in HIV status knowledge was partially explained by an activista's CBO having a formal process to assign cases that considered complexity, caseload, experience, skills, and proximity. For activistas with more complex cases, training, the quality of care-team meetings, and/or work experience were vital for them to have the tools to address challenges. Most activistas lacked out-of-pocket expenses, which was key for them to be able to dedicate more time and energy to their beneficiaries. Activistas who spent less time per case had high levels of support that prepared them well for case

Figure 1. Final pathways to Outcome 1*



Condition	Necessity	Sufficiency	# of Pathways
QualTeamMtgs	0.85	0.55	4
WorkExp	0.77	0.54	4
~Complexity	0.73	0.57	3
~OutofPocket	0.70	0.61	5
SupRatio	0.67	0.58	2
Training	0.63	0.59	3
HowCaseAssigned	0.61	0.50	6
LevSuppSuper	0.59	0.55	3
~ChalRecruitRetain	0.44	0.64	5

Solution consistency = 0.85
Solution coverage = 0.35

*Note: Solution presented is the intermediate solution obtained using fs/QCA software (Ragin et al., 2017)

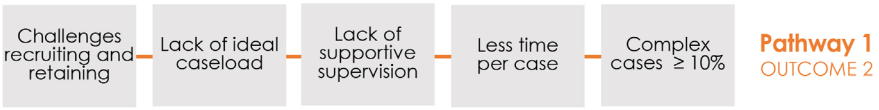
management: work experience, supportive supervision, supervision ratio, training, and/or quality of the care team meetings.

For the outcome "percentage of beneficiaries with HIV status unknown," only one pathway consistently led to the outcome (i.e., a high percentage with HIV status unknown) (Figure 2). All activistas described by this pathway were part of CBOs that struggled to recruit and retain activistas, primarily because of low salaries, low motivation, and insufficient activista skills or training. These activistas had too many cases and a high proportion of complex cases; therefore, they were unable to spend much time with each household, which made it difficult to address the needs of their beneficiaries. Finally, activistas lacked direct, one-on-one, and regular support. Their meetings with their managers typically were only to correct paperwork, with no discussion of complex cases, goal setting, resource access, or other issues.

Children preparing food in Mozambique (photo: International Federation of Red Cross and Red Crescent Societies, courtesy of Flickr).

Figure 2. Final pathway to Outcome 2*

Outcome 2. Percentage of beneficiaries with HIV status unknown



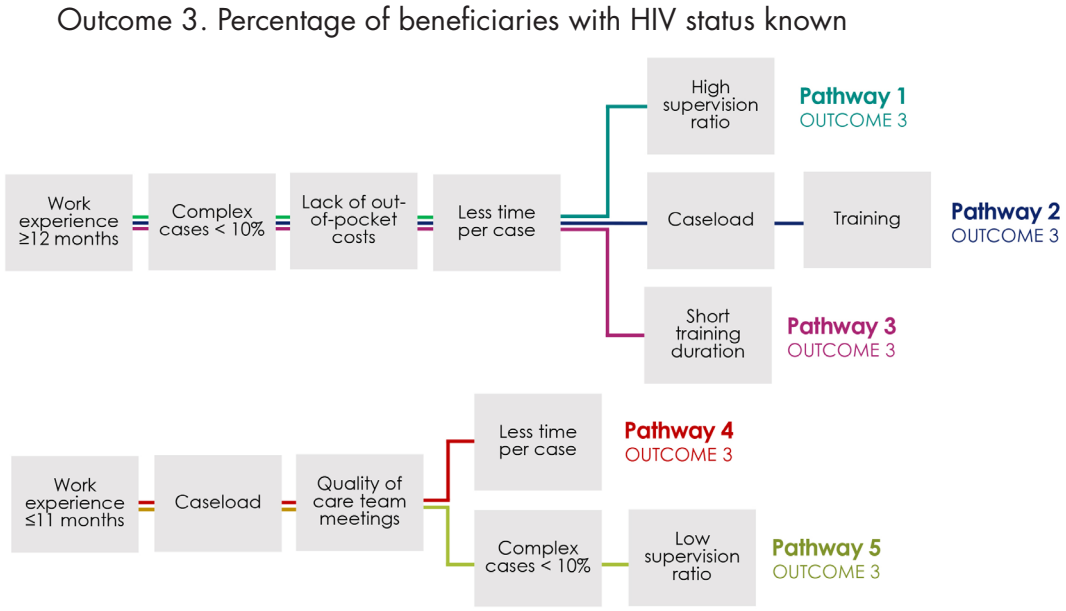
Condition	Necessity	Sufficiency	# of Pathways
ChalRecruitRetain	0.85	0.52	1
~Caseload	0.77	0.53	1
~LevSuppSuper	0.45	0.41	1
~TimeCase	0.44	0.44	1
Complexity	0.42	0.53	1

Solution consistency = 0.80
Solution coverage = 0.09

*Note: Solution presented is the intermediate solution obtained using fs/QCA software (Ragin. et al., 2017)

For the outcome "percentage of beneficiaries with HIV status known" (i.e., a high percentage with HIV status known), five pathways were identified (Figure 3). When activistas had work experience, they worked efficiently and had a lower risk of becoming burned out, allowing them to provide more effective case management services to beneficiaries. When an activista lacked work experience, it was important that the activista had a caseload that was near the ideal caseload (i.e., N=50, based on activista chefe and supervisor responses) and that the activista attended weekly care team meetings that were comprehensive and addressed care issues beyond paperwork. Activistas also had minimal challenges, since lack of out-of-pocket costs and lack of complexity meant that activistas had the resources to complete their work and did not have many cases that required extended amounts of their time. Last, most activistas with high percentages of beneficiaries with HIV status known managed approximately 50 cases and underwent significant training (i.e., > 10 days); these conditions contributed to activistas' preparedness and energy for effective case management.

Figure 3. Final pathways to Outcome 3*



Condition	Necessity	Sufficiency	# of Pathways
QualTeamMtgs	0.85	0.63	2
WorkExp	0.83	0.65	3
~Complexity	0.77	0.68	3
SupRatio	0.73	0.72	1
~OutofPocket	0.69	0.68	3
Training	0.66	0.71	1
LevSuppSuper	0.60	0.64	3
Caseload	0.57	0.80	3
~Training	0.56	0.81	1
~SupRatio	0.52	0.84	1
~TimeCase	0.52	0.82	4
~WorkExp	0.26	0.73	2

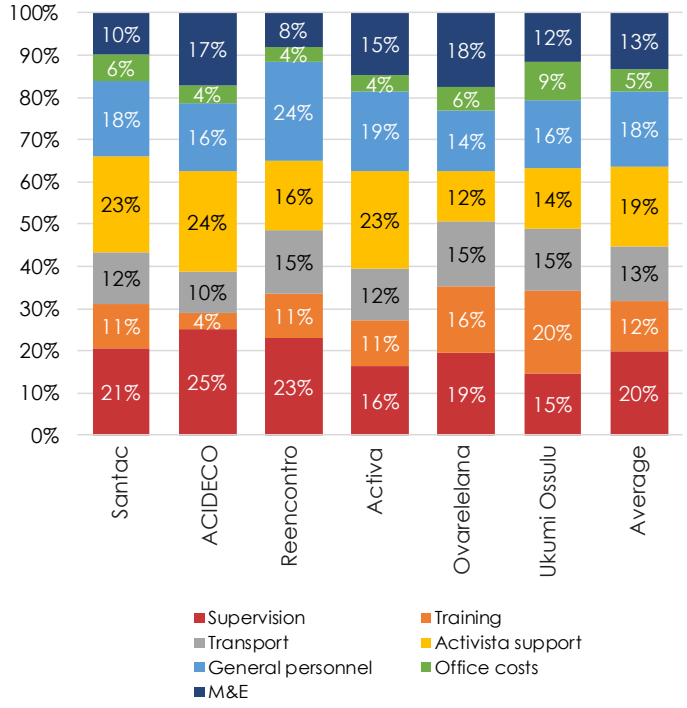
Solution consistency = 0.87
Solution coverage = 0.42

*Note: Solution presented is the intermediate solution obtained using fs/QCA software (Ragin, et al., 2017)

Costing Analysis

From our costing analysis, we found that the organization of the CBOs was very similar, as prescribed by headquarters. The proportion of expenditures attributable to case management was consistent across CBOs. The breakdown of costs to cost drivers was also mostly consistent across CBOs, with the largest costs made up of staffing, supervision, and activista subsidies (on average 20 percent for each of the three categories), while office costs were low (on average 5 percent) (Figure 4). More remote CBOs that work in areas with lower population density incurred additional training costs, because additional travel expenditures for activistas and trainers were required. Case management cost per beneficiary between enrollment and graduation was on average US$4.67 and appeared to vary more by CBO location than by number of beneficiaries served.

Figure 4. Cost breakdown by category and community-based organization



Young children collect water from a water point in Guíja district, Mozambique (photo: Aurélie Marrier d'Unienville/IFRC).

Conclusions and Recommendations

The results of this study highlight the importance of the following factors for HIV testing outcomes: activista experience and training; activista support through high-quality care team meetings, one-on-one supervision, and low supervision ratios; appropriate caseload allocation (i.e., not overworking activistas by assigning too many cases or complex cases); and provision of resources, such as transportation and airtime.

Based on our findings, to improve HIV testing outcomes, we recommend the following actions for CBOs of the COVida project:

- Implement a formal process to assign cases that considers case complexity and proximity as well as activista caseload, experience, and skills. Activistas should not be assigned more than 50 cases, and no more than 10 percent should be complex cases that require extended amounts of time. This will reduce the number of activistas who overwork and burn out.
- Provide activistas with at least two types of external support, such as high-quality care team meetings on a weekly basis, in which direct managers meet with activistas to assist with challenges and hold activistas accountable to case management plans.
- Hire experienced activistas and provide all activistas with regular follow-up trainings so that they have the tools to address challenging cases and complicated issues. As PEPFAR/OVC programming evolves to focus increasingly on supporting HIV-positive children, programs will need to ensure that activistas and their supervisors are well-trained to meet the programs' pediatric retention and adherence goals.
- Provide activista chefes, supervisors, and relevant CBO staff with ongoing supportive supervision and mentorship training. Ensure low supervision ratios, so that managers are available and not overworked.
- Expand both nonmonetary and monetary incentives offered to activistas, such as providing awards, certificates, and thank you letters; increasing stipends; implementing bonuses; and reimbursing activistas for work-related expenses to incentivize activistas to stay in their positions longer and increase their satisfaction and motivation.

Reference

Ragin, C. C., Patros, T., Strand, S. I., & Rubinson, C. (2017). *User's guide to fuzzy-set/qualitative comparative analysis.* Irvine, CA, USA: University of California, Irvine. Retrieved from http://www.socsci.uci.edu/~cragin/fsQCA/download/fsQCAManual.pdf.

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