

Strengthening the Care Continuum Project in Ghana: Midterm Assessment

This document is part of a series that describes how routine data were used in research and evaluations of health programs and projects. Data for Impact (D4I) has compiled these examples from its own work and the work of others found through a literature review—and consultation with the original authors—to compare ways routine data can be appropriate for evaluations and to shed light on its benefits and shortcomings for evaluation.

A companion guidance document compiling these lessons is available at the [D4I website](#). This suite of materials may be useful for others contemplating using available and routine data in their own work.

For more information about this evaluation visit [Strengthening the Care Continuum \(CC\) MEASURE Evaluation](#), funded by the United States Agency for International Development (USAID), conducted the evaluation of this five-year (2016–2021) project in Ghana.

Program Description

Strengthening the Care Continuum (CC) worked in 11 districts in Ghana, focusing on four key populations (KPs) at risk for HIV: men who have sex with men, female sex workers, people who inject drugs, and transgender people.

The project's purpose is to implement innovative and effective approaches for HIV prevention and treatment for these KPs, in collaboration with the Government of Ghana, local implementing partners (IPs), the Global Fund to Fight AIDS, Tuberculosis and Malaria, civil society, and other stakeholders. The project also seeks to build the capacity of Ghanaian stakeholders at the community, district, and national levels to lead and scale up evidence-based practices for HIV prevention and treatment.

Previous projects addressing the needs of KPs focused on the direct provision of HIV services, peer education, mobile outreach, and drop-in centers—all of which are established approaches for reaching and meeting KP needs. The CC project adopted and added to these core approaches. In particular, it was charged with ensuring that services were gender-sensitive and included assistance for survivors of gender-based violence.

The project established a healthy living mobile technology platform (HLP) to engage KPs at risk for acquiring HIV, and for those who were HIV-positive and enrolled in care. For the latter, the project adopted a case management (CM)¹ approach for service provision to improve adherence to antiretroviral therapy (ART) of those on treatment.

USAID/Ghana requested that MEASURE Evaluation conduct a midterm evaluation of progress toward project objectives and assess the cost of various service delivery approaches. The results would help the project make needed adjustments and inform overall progress toward HIV epidemic control.

¹ CM is the assignment of a lay adherence counselor to escort a client to the clinic for ART; to follow up with the client by phone and through face-to-face meetings or other means; to encourage the client to continue on ART; to answer questions; and to provide support. The case manager does not provide clinical services.

Methods

The assessment used a mixed-methods approach to answer the evaluation questions. Quantitative interviews and focus group discussions (FGDs) with beneficiaries and key informant interviews and FGDs with service providers and others involved in CC project implementation were conducted. Project workplans, reports, training material, monitoring and evaluation plans, and program expenditure data provided by the prime IPs and sub-partners were also reviewed. Routine program data were extracted and analyzed. The denominator data came from routine data sources on clients served—specifically, the CM database of clients, Excel files tracking information for HLP clients, and health management information system data for core services. Expenditure data were obtained from various IPs; these data were collected from the outset, with future evaluations in mind. These methods provided data that could answer evaluation questions that were in addition to the question listed below that routine data were sufficient to address.

Rationale for the Use of Routine Data

The evaluators deemed that ART clinical records were the most reliable source of information on clinical care for their aim of assessing improvements in ART adherence using a CM approach. Moreover, a tracking database was established by the CC project as part of the programmatic effort to better follow-up and support HIV-positive enrollees in CM. This database was a crucial component because it was the only data that identified all CM enrollees in a single source. Assessing cost per beneficiary for core services—CM and enrollees in the HLP—were also important evaluation objectives.

Evaluation Questions

The questions that routine data could address in this assessment were the following:

1. What CC project models for KPs were implemented to increase access to and retention in the HIV services cascade?
2. What percentage of KPs were successfully followed up at three months and at six months? What were the clinical profiles of the clients?
3. What were the operating costs per beneficiary of the CC project's HIV intervention models for KPs?

Data Description and Data Management

Data Collection

To address the first evaluation question, treatment cascades for clients were created. The primary data sources for the cascades and for the retention estimates (the second evaluation question) were the project's CM database and patient records stored at the ART facilities. The CM database contained information on all HIV-positive clients enrolled in the CC project, as follows: (1) the date of enrollment; (2) the assigned case manager; (3) dates of ART clinic visits; (4) dates of contact with the case manager; and (5) the outcome of that contact (able to reach or not able to reach); and (6) self-reported clinical outcomes. The ART facility records had information on when treatment was initiated, the most recent treatment date, eligibility for viral load testing, and the results, if a viral load test was conducted.

All consenting enrollees identified through the CM database were included in the analysis, and their CM data were linked to their clinical file at the ART facilities. Data collectors obtained lists of CM clients sorted by the main ART clinics at which they received care. Data collectors went to the facilities and examined the client files to abstract the clinical information of interest.

For the cost analysis, the CM database served as the denominator data source for total clients served. The costs per client served were estimated as total costs divided by the denominator. Other program data sources and management information system data provided the denominators for cost calculations for the core services and for the HLP clients.

The IPs provided expenditure data as part of their reporting to the prime partner using a costing template designed for this purpose (see description below). The prime partner used its own costing template to capture its costs, separate from the service delivery costs.

Assessment of the Usability and the Quality of the Data

The study extracted 1,503 cases in the original CM database, matched with the corresponding ART files. The number of cases was reduced to 1,389 because of duplicates in the CM database and implausible data in the ART files (e.g., date of the last treatment was before the date of the first treatment). Detecting and removing duplicate entries improved the quality

of the data, although it is possible that the removal of instances of implausible data may have created some bias if these cases were systematically different from other cases; however, this seems unlikely. The clinical data abstraction from the ART files was more problematic because there was information missing from these records. The biggest issue was the low retention rates of clients on ART for six or more consecutive months—the period at which a client is eligible for a viral load test. This meant that the viral load was missing from the client folders for many of the KPs.

For the cost data, the main challenge arose during the evaluation design and initial data collection phase. The ideal data collection tool for the evaluators to capture highly disaggregated data posed difficulties for finance staff at the IP community service organizations (CSOs) to complete because not all expenditure data could be easily broken down into discrete categories. For example, at the start of cost reporting, costs by type of service were not broken down or differentiated between start-up costs and maintenance costs. Getting basic cost data disaggregated in a usable form took some negotiation, even after the tool was approved. However, in the end, the data were obtained, and no other major issues emerged.

Data Captured in Electronic Registers

The data in the ART clinic records were recorded on paper. The CC project had considered assisting in the set-up of an electronic records system at the facilities but decided not to move forward because of concerns that the means to assure data quality of the new system would be insufficient.

All routinely collected data from the CC project itself were captured electronically through the CM database and in Excel files that stored the HLP data (e.g., names and mobile phone numbers). One issue with the HLP data was that the project added a web-based system to the existing phone-based system and, during this transition, a lot of old and unusable contact data were retained. The evaluators therefore spent time “scrubbing” non-active HLP client data.

The cost data template was specifically designed with the prime partner from the outset. The template was an Excel file with five tabs for collecting cost information in the following categories: core services, referral chain management, cross-cutting expenses, capital expenses, and personnel. Seventeen Excel files were gathered from the 16 IP CSOs and the CC

project headquarters. They were consolidated in one database for the analysis.

Data Availability

The availability of data for this evaluation was not a major issue. However, it was noted that the number of enrollees in CM and the HLP, in particular, were fewer than expected. Although it was planned to evaluate the numbers of enrollees and how well the project was ramping up, the timing of the assessment may not have coincided with the true mid-point of client enrollment by the project. This means that some costs—for example, the training of volunteers—would necessarily precede the number of clients eventually served, affecting the estimates of the cost per KP reached by the project’s various activities. The actual cost per KP served when an activity was fully implemented at scale may therefore be lower.

Data Accuracy

The accuracy of the ART data was not formally assessed. Only services received were documented and it was not possible to distinguish between missing information on services delivered and instances when a service was actually not delivered. Therefore, the evaluation team assumed that missing information meant that a service was not received. This may not have always been the case.

As mentioned above, the CM data had some duplication and the HLP files needed cleaning to remove many outdated cases. Once the “true” client list was identified, the information was largely complete and presumed accurate, although, again, this was not formally assessed.

Missing Data

Missing data in the CM database and the ART files were treated as null, or as not having occurred. For example, if the viral load count was not entered in the client file for a person eligible for viral load testing, it was assumed that the client had not had a viral load test. This case would be included in the denominator for the cascade calculation, but not in the numerator for the number of viral load tests performed. If a viral load test had been done but was not recorded, it is possible that the treatment cascade calculations underestimated service delivery.

Some information was missing from the cost data—staff salaries, for example. In such instances, the evaluators followed consistent procedures for estimating the missing data, such as

using the average salary for a person in the same position at other CSOs.

Data Analysis Methods Used

To calculate the treatment cascade, all HIV-positive cases in the CM database between October 1, 2017 and September 30, 2018 were extracted. An individual was considered HIV positive if his or her case was in the CM database. As described above, all duplicate cases were removed and the data were then linked with the ART facility patient files. The treatment cascade was calculated based on descriptive analyses of treatment and viral load suppression, and the time frames from one step in the cascade to the next. Using the dataset, three cohorts were created based on the date of treatment initiation. Retention in treatment at three, six, and nine months was calculated for cohort 1; retention at three and six months for cohort 2; and retention at three months for cohort 3. Rather than calculating individual retention rates, this cohort approach was used to mimic facility-level reporting, because facilities report retention data quarterly, or every three months.

The cost per recipient in the CM, ART, and HLP programs was assessed for program years 2 and 3. (Year 1 was excluded because the service delivery models had not yet been implemented and all costs were start-up costs.) Program activities were defined and then all costs incurred to complete them were listed. Costs shared between or among programs were identified and allocated, as appropriate. For example, staff time was allocated at different levels to different programs. Costs were classified as either investment costs or maintenance costs. Examples of investment costs were annualized capital costs, training costs, and building rents. Maintenance costs included staff salaries, associated administrative costs, and specific program costs. These data were gathered from the 17 Excel files collected from the IP CSOs and CC project headquarters. The costs incurred by the prime partner were allocated proportionally across the models. Once total costs for each program were compiled, they were divided by the number of KP recipients of each program to create an estimate of the cost per beneficiary.

Limitations in Using Routine Data for Evaluation

The limitations of routine data use encountered were

associated with the quality of the data in the ART files. As noted above, if an instance of service delivery information was not captured, it was not possible to know whether the service had not been delivered or whether it had not been recorded. Other potential issues with the data capture could not be assessed easily, except for those files containing implausible data, which were removed from the analysis. These instances did not represent a sizable proportion of the CM clients.

The evaluation would have benefitted from a more detailed breakdown of cost data but, given the inability of the CSOs to further refine the information, this was not possible and posed only a modest limitation. Last, if slightly more time had been allowed for HLP enrollment to ramp up, a more complete picture of the cost per beneficiary would have been possible.

What Worked Well

The cost data templates submitted by the IP CSOs were largely complete and few estimates of missing data were needed, largely due to efforts at the outset to get feedback on what level of data the CSOs could reasonably capture. The evaluators did a good job balancing the core information needs with what could plausibly and accurately be collected. The CM database also functioned well to help identify clients and their ART records so that the treatment cascades and program retention could be calculated.

Conclusion

Using routine programmatic data sources provided a plausible way to determine the treatment cascade, once the CM data were linked to the ART records. In general, these records were usable and did not contain obvious errors that would raise red flags to question their validity. Some data were missing, but this limitation still allowed for a reasonable and accurate assessment of the quality of care. The capturing and calculation of the costs of implementing the various program models provided solid estimates of the cost per beneficiary. The mid-point assessment achieved its goal of providing an understanding of program progress and where the project needed to focus more attention. Routine data in this evaluation were an invaluable part of the effort to understand the CC project's contributions to date.

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