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RESEARCH AND EVALUATION REPORT

The Validity of Self-assessment Data in a Ugandan Quality Improvement Program

JUNE 2011

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DISCLAIMER

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ART	Antiretroviral Therapy
ARV	Antiretroviral
CI	Confidence interval
DQV	Data quality validation
HC	Health center
HCI	USAID Health Care Improvement Project
HIV	Human immunodeficiency virus
JCRC	Joint Clinical Research Center
MoH	Ministry of Health
NGO	Non-governmental organization
PMTCT	Prevention of mother-to-child transmission
QAP	Quality Assurance Project
QI	Quality improvement
QoC	Quality of Care Initiative
QSI	Quality of system index
TB	Tuberculosis
URC	University Research Co., LLC
USAID	United States Agency for International Development
VF	Verification factor

EXECUTIVE SUMMARY

This paper summarizes an assessment conducted by the United States Agency for International Development (USAID) Health Care Improvement Project (HCI) of the validity of data used by facilities participating in HCI-supported improvement collaboratives in Uganda. HCI provides technical assistance to 113 health facilities in Uganda to improve quality of care in HIV services. From these facilities, quality improvement (QI) teams take part in improvement collaboratives, which organize QI activities beyond the scale of individual teams of health care providers, mobilizing multiple teams to identify changes that lead to better outcomes and facilitating sharing of ideas and learning across facilities. With many facilities involved, a collaborative can simultaneously test a variety of changes, identify the most effective ones, and efficiently spread them across all participating facilities.

Because QI teams rely on the data they collect to identify effective changes and make decisions on how to improve quality of care, the validity of data is vitally important to the collaborative's QI efforts. In addition to assessing data validity for several key project indicators, this report gives recommendations to help facilities and Uganda's Ministry of Health (MoH) to improve data collection and use.

This assessment was conducted in 34 of the 113 HCI-supported health facilities, which were selected by probability-proportional-to-size sampling. The data validation was designed as a descriptive cross sectional study using qualitative and quantitative methods to examine each facility's performance in recording and analyzing four mandatory indicators. The field data collection team used a checklist to assess the quality of the facility's data management system and a data verification tool to tally and record data verified from source documents through recounting.

Using a quality of system index (QSI), which is a quantitative measure of the overall quality of a data management system, calculated as an aggregated mean score of all available quality indicators, facilities scored 75% for using the recommended MoH data capture tools, 67% on indicator knowledge and use, 57% for data compilation and reporting, and 55% for data validation and quality assurance. While use of data at the local level is one of the key principles of effective quality improvement, facilities scored only 41% on data interpretation and utilization.

Despite these problems, the data collected proved to be fairly accurate. Data accuracy was measured by verification factor, the ratio of verified counts to the reported counts. For the three indicators analyzed, the verification factor ranged from 86% to 95%, indicating that sites slightly over-estimated their performance on the indicators they were working to improve. Causes of the inaccuracy were identified as double counting, counting ineligible patients, poor record keeping, incorrect data compilation procedures, and staff rotation and lack of teamwork. Further, problems were identified with reporting data in a timely manner.

Overall, the data quality assessment showed that systems for management of HIV service data and reporting QI indicators at the health facilities were partially developed, providing data which could be effectively used for improvement purposes, although significant gaps remained for improvement. To overcome these gaps, we recommend that more staff be trained on the essential components of data management and that a clear set of formal and written guidelines for data management be issued to all facilities. To improve supervision, we recommend that facilities be given constructive and immediate feedback from the national or regional level on their data reports. Lastly, we recommend that new policies be adopted to alleviate the impact of staff rotation on facility-level teamwork and to encourage more frequent data tallying.

I. INTRODUCTION

Since 2005, Uganda's Ministry of Health (MoH) has implemented the HIV/AIDS Quality of Care Initiative (QoC). The effort is supported by several implementing partners of the United States Agency for International Development (USAID) including the USAID Health Care Improvement Project (HCI) and previously, the Quality Assurance Project. The initiative has adopted the improvement collaborative model to work with facilities and other stakeholders to improve the quality of comprehensive HIV/AIDS care delivered to both adults and children.

HCI currently provides ongoing technical assistance to improve quality of care in 113 health facilities, including referral hospitals, district hospitals, and health centers III and IV. These sites are participating in six improvement collaboratives, each of which addresses a specific area of care: 1) coverage of eligible patients with antiretroviral therapy (ART), 2) patient retention in care, 3) patient outcomes, 4) laboratory services, 5) medical records and data management, and 6) nutritional interventions for HIV-infected patients.

HCI helps health workers conduct regular monitoring of quality of care in health facilities based on predetermined quality improvement (QI) indicators. Working in QI teams, health workers use clinical data to monitor health worker performance, tailor the intervention to specific needs, and support decision making. Because health workers use these data for decision making, their validity is vitally important to the success of the program. This report is the first systematic effort to validate and improve the quality of self-assessed data collected and reported by QI teams supported by the project.

A. Objective of the Data Quality Validation

The purpose of this validation exercise was to examine the data management system used in HIV clinics, identify potential problems in collecting and compiling data, and develop simple strategies to improve data quality.

The specific objectives of the study were to:

- (1) Assess the completeness and accuracy of data and data sources,
- (2) Evaluate the knowledge of QI teams on the four mandatory indicators and what they measure,
- (3) Examine the methods and frequency of collection data,
- (4) Identify data quality challenges and recommend actions for improvement, and
- (5) Develop a standard operating procedure for data management at the health facility level.

II. APPROACH AND MOBILIZATION

A. Selection of Sites

An optimal sample size based on 30% of the 113 HCI-supported facilities was computed. This represented a total of 34 health facilities. A master list of all health facilities by sub-region, district, and facility level constituted a sampling frame for the selection. Health facilities were grouped by regions and probability-proportional-to-size sampling was done in each sub-region. A health sub-region with more health facilities was represented with more facilities in the sample and vice-versa. Similarly, selection of facility type within the individual sub-region was proportional to the number of facilities of that type (hospital, health center IV, and health center III) in the sub-region. Figure 1 shows shaded in green the districts in which health facilities were selected for the validation.

used to assess the functionality of the data management system at the health facilities. The systems quality components assessed were:

1. Knowledge and use of indicators,
2. Data recording,
3. Data compilation/aggregation and reporting,
4. Data validation and quality assurance,
5. Use of this information for decision making.

Each quality component assessed was scored based on a rating scale ranging from 0 to 3. The scores represented the levels of system functionality² according to the quality indicators under each quality component in the checklist. Quality indicators are specific and measurable elements (key questions) that were used to characterize the quality of data or process within the different quality components.

A score of 0 was assigned where the assessment was ‘not applicable’; a score of 1 was assigned when the systems component assessed was ‘not functional’; a score of 2 for a systems component that was ‘partially functional’; and a score of 3 when the particular component was ‘fully functional’.

The *data verification tool* was used to tally and record data verified from source documents through recounting. The verification process involved reviewing documentation, recounting of reported results, and cross-checking reported results with source documents. The recounted data were compared with data reported to HCI, and an accuracy ratio was derived. The purposes of this verification were:

1. To assess whether the QI sites are collecting and reporting data accurately and completely,
2. To assess the extent to which data are over reported or under reported.

The two tools are included as Appendix A and Appendix B to this report.

D. Mandatory Indicators Monitored at the Facility Level

Table 1 summarizes the coverage of the mandatory indicators being monitored in the surveyed health facilities. During the assessment, the data quality reviewers identified that the QI indicators on tuberculosis (TB) assessment and ART adherence were being monitored and reported by almost all the participating health centers, while the indicator on infant diagnosis was monitored in only about 15% of the sites. Approximately 65% of the sites monitored the indicator on ART patient outcomes.

Table 1: Coverage of mandatory indicators in health facilities

Indicator category	Indicators being monitored by different sites	Number (%) of sites monitoring the indicator
TB assessment	% of HIV+ patients seen in the clinic who are in general care and/or receiving ART who are assessed for active TB at every visit	31 (91.1%)
ART adherence	% of patients on ART who are adherent to antiretroviral medicines	32 (94.1%)
Clinical improvement	% of patients on ART for the past six months who have shown clinical improvement	22 (64.7%)
Infant diagnosis	% of children born to HIV+ mothers in PMTCT who were ever tested for HIV	5 (14.7%)

² System functionality denotes the existence and use of processes that are important for data management and meets a certain degree of acceptable specification.

III. FINDINGS: QUALITY OF DATA MANAGEMENT AND REPORTING SYSTEMS

A. Overall Quality of System Components

The quality of system index³ (QSI) is a quantitative measure of the overall quality of a data management system calculated as an aggregated mean score of all available quality indicators. Evaluators assigned scores⁴ for the quality indicators under each of the five quality components. The numerical value of the score was intended to be compared across quality components as a means of prioritizing improvement activities.

The index was computed in a two-stage process:

- (1) First a mean score for the quality component was obtained from the individual scores of the quality indicators in each health facility.
- (2) Second, the overall QSI was obtained as the proportion of the total scores of the quality components (1 above) in all health facilities divided by the sum of maximum quality component mean scores (desired) that should be obtained in all health facilities.

The QSI presented in Table 2 illustrates the extent to which the processes, skills, and practices of data management used in the health facilities as measured based on the quality indicators are rated compared to the maximum and desired standard / specifications of system quality across the five quality components. Results show the QSI obtained for each quality component assessed.

Table 2: Performance for the quality components assessed

	Quality Components	Quality of system index
1	Indicator knowledge and use	67%
2	Data recording and tools	75%
3	Data compilation and reporting	57%
4	Data validation and quality assurance	55%
5	Data interpretation and utilization	41%

1. Knowledge and use of mandatory QI indicators

The assessment evaluated the teams' understanding of indicator definitions, the numerator and denominator and how to measure them. The validation established that knowledge of the meaning of indicators was partially satisfactory. Although the teams scored a moderately high 67% according to the QSI, knowledge and use was usually limited to two or three site QI team members. Of the 34 sites visited, 32% of the site QI teams had full knowledge of the meaning of the mandatory indicators, and 53% had partial knowledge.

2. Data recording and use of data capture tools

We found that a moderately high 75% of the sites visited were using the recommended MoH data capture tools. The remaining sites were using tools mandated by their service delivery non-governmental organization (NGO) partners.

³ Jones, N and Lewis D. (eds., with Aitken A, Hörngren J, Zilhão MJ). 2003. Handbook on improving quality by analysis of process variables. Final Report. Eurostat.

⁴ The scores were pre-coded as 3 for "Yes, completely," 2 for "Partly", 1 for "No, not at all", and 0 for not applicable.

3. Data compilation and reporting

Data compilation and reporting was rated at 57%, implying that there was a substantial gap between the current and desired quality standards for data aggregation and reporting practices in most health facilities. To support quality improvement and maintain uniform standards, the QI teams were assessed on whether there were instructions and guidelines on data management in existence. A QI indicator reference handbook, which is necessary for quick reference, was found available at all health facilities visited. QI teams reported that they utilized the indicator reference for defining indicators, identifying data sources, and interpreting and determining numerators and denominators. However, there were no documented instructions for aggregating and analyzing QI data from source records or compiling QI reports. Although HCI has made available guidelines for sampling patient files in order to estimate clinic performance on the QI indicators, the guidelines are not sufficiently detailed.

4. Quality assurance and data validation processes

This quality component scored a low rating (55%) due to lack of internal data reviews. The QI teams are not equipped with guiding instructions on how to perform quality assurance and data validation so as to minimize errors.

5. Data interpretation and utilization

Results showed that the weakest quality component in the QI data management systems was data interpretation and utilization, with a QSI score of 41%. Interpretation and utilization were measured by assessing: (i) evidence of feedback given on the quality of reports, (ii) identification of priority actions based on reports, and (iii) accuracy of data interpretation. The results demonstrate the extent to which QI data are understood and translated into appropriate interventions. Teams reported that two or three members had attended the learning sessions organized by HCI. However, team also reported that additional learning had been acquired from visiting coaches. It was evident that most of the members had learned handling HIV data and had acquired substantial experience on the job. Still, there remained significant room for improvement in this area.

B. Verification Factor

Data accuracy was measured by the verification factor⁵ (VF) which is the ratio of verified counts at the selected health facilities to the reported counts by the health facilities extrapolated to the national level. A high VF reflects a well-organized system for recording data, easily retrievable source documents, good understanding of the tools and indicators, sufficient quality assurance, and consistency in reporting. Table 3 below presents the verification factors for the three QI indicators assessed and lists issues that undermine data accuracy. Data on infant diagnosis were not analyzed because only five facilities (15%) were tracking this indicator. The VF ranged from 86% to 95%, indicating that sites slightly over-estimate their performance on the indicators they are working to improve.

⁵ Measure Evaluation. 2008. Data Quality Audit Tool: Guidelines for Implementation. Available at: <http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/data-quality-assurance-tools/dqa-auditing-tool-implentation-guidelines.pdf>.

Table 3: Verification factors for the QI indicators

Indicator	Verification Factor	Accuracy Issues
TB assessment indicator: % of HIV+ patients seen in the clinic who are in general care and/or receiving ART who are assessed for active TB at every visit	0.95 (CI = 0.92-0.98)	(a) Patients who were represented by treatment supporter were counted as being assessed for TB. (b) Double counting of patients due to multiple visits in a month
ART adherence indicator: % of patients on ART who are adherent to ARV medicines	0.86 (CI =0.84- 0.88)	(a) Non ART patients reported for ART adherence (b) Patients missing visits were reported adhering (c) Wrong methods for calculating adherence
Clinical improvement indicator: % of patients on ART for the past six months who have shown clinical improvement	0.93 ¹ (CI = 0.91-0.95)	(a) Don't know procedure of compiling this indicator (b) Patients lost to follow-up and patients who had died were included in these counts (c) Problems with identifying the right cohort for the reporting period (d) Misrecording of the monthly incremental count of duration on ART

C. Causes of Inaccuracies and Errors at the Facility Level

The main causes of errors that may have negatively affected the overall verification factor can be broadly classified as:

(1) Double counting

The assessment team discovered over-reported data at many health facilities. Twenty-two of the 30 health centers assessed over-reported on the ART adherence indicator, while two thirds over-reported on the TB assessment indicator. Over-reporting was caused by extracting data from patient daily attendance registers or drug dispensing logs, which contain multiple records of a single patient depending on the number of clinic visits each month.

(2) Counting ineligible patients

Patients that are represented by treatment supporters or a relative are often recorded as assessed for active TB or ART adherence even though proper assessment is not possible. Similarly, patients who took ARV for more than one month were recorded as adhering for all the months they were away. In some source documents, HIV+ clients ineligible for ART were recorded as adhering to ART despite their ineligibility.

(3) Poor recording of information

The current recording of client information bore errors due to misrecording or missing information. Client information on date of review, follow-up dates, TB assessment, and ART adherence was often misrecorded and/or missing.

(4) Wrong procedures of data compilation

The sampling guide provided did not help the QI teams to identify and compile accurate results. Additional procedural information was needed to reinforce the sampling guide. At the time of the assessment, computing the infant diagnosis indicator involved patients outside the cohort due for assessment on clinical improvement. The procedure wrongly included patients that were lost to follow-up, dead, or those missing a clinic visit in the six months.

(5) Staff rotation and lack of team work

Often health workers are rotated within different clinics once or twice every year, meaning that in some cases the team members who were trained or experienced were replaced by a new and inexperienced team member. These replacements can directly apply to one or several staff members at a time. There were cases of lack of teamwork noted and observed in HIV clinics, partly because of role conflict or abandoned responsibility. In one facility, conflict was attributed to perceived financial gains (in the form of allowances) by active team members.

(6) Reporting timeliness

According to MoH guidelines, reports are considered timely when they are current and available by the 28th day of the month following the reporting period month. At the time of the assessment (June 2009) the report due date for April QI reports had expired. The proportion of facilities assessed that had submitted their QI reports for April 2009 on time was 32%. This represents poor response to timely reporting. There is currently no formal procedure for soliciting QI reports from health facilities. Reports are obtained during learning sessions or when coaches visit facilities.

Most of the reports reviewed were not up to date; the time lag between the last report compiled and the month prior to the visit ranged from two months for clinics that participated in the May 2009 learning session to 12 months in facilities that had already graduated. It was apparent that timeliness in data collection is directly motivated by participation in learning sessions.

D. Limitations

Due to the amount of time needed to visit all 34 facilities in the study, there were variations in the reporting period included in the study from one facility to another. Instead of selecting a single month to use for data verification as a standard across all health facilities, the selected months were determined based on the most recent QI report compiled at each facility.

While we can generalize to other HCI-supported sites, we cannot generalize to non-HCI supported sites because health workers who responded have had access to quality improvement training and materials and hence are likely to be more knowledgeable than those who were never trained.

There were noted challenges in the use of the new 2009 version of the patient HIV care and ART cards among the QI team members. At the time of the assessment, the QI teams had not been oriented on the use of the new tool, hence many are learning on job while others preferred the older version. There were various versions of the MoH HIV care and ART cards being used simultaneously in different HIV clinics. These included the 2003, the 2006, and the recent 2009 versions of the HIV care and ART cards.

In clinics where NGO partners such as the Inter-Religious Council of Uganda, the Infectious Disease Institute, and Catholic Relief Services had a strong presence, modified tools were being used to capture the same information on HIV care. In health facilities where the Joint Clinical Research Center (JCRC) had a presence, the MoH tools and JCRC tools were being used concurrently. Fortunately, the JCRC and MoH tools have the same content and differ only in color.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The data quality assessment showed that the systems for management of HIV service data and reporting QI indicators at the health facilities are partially developed and generally functioning, providing data which can be effectively used for improvement purposes, but which can also be strengthened. The procedures for compilation of data from source documents and reporting were not based on sufficiently documented guidance.

The assessment also showed that the quality of the data used to report on the mandatory QI indicators was slightly inflated. Most health facilities over-reported data for their monthly QI indicator reports due to factors such as double counting and incorrectly counting patients who should not have been counted. Further, there were errors noted in recording client information, data compilation, and interpretation of reported summaries. Facilities also had problems due to staff rotation and a lack of teamwork and with reporting data in a timely manner.

There are active QI teams at the facilities with two to three members trained at learning sessions. However, especially among those who had not attended learning sessions, the majority of the QI team members demonstrated poor skills and understanding of the definition, interpretation, and compilation procedure of the QI indicators. Detailed guidelines or instructions for reference to assist teams in data aggregation, compilation, quality assurance, and interpretation are lacking.

B. Recommendations

1. National and Project Level Recommendations

- (1) Conduct intensive regional training of at least four QI team members on all the essential components of data management, namely: QI indicator definition and interpretation, use of data tools, recording data, file storage and retrieval, data compilation and analysis, data validation, sampling methods for source documents, and reporting. These trainings will help build a critical mass of skilled QI team members in a health facility. Visiting coaches should be oriented in all aspects of data management to enable them to provide technical assistance for data quality improvement.
- (2) Prepare and disseminate a set of formal and written guidelines on: (i) recording of patient data in the registers and HIV care card, (ii) filing and retrieval of patient files, (iii) data compilation procedure and reporting, and (iv) data interpretation and action planning.
- (3) Procure and equip health facilities with appropriate storage facilities and materials that have enough capacity to handle the increasing volume of patient files, e.g., file cabinets, file folders, identification labels, etc.
- (4) Perform routine and detailed analysis of QI reports submitted and provide constructive and immediate feedback in the form of written summaries. Conduct monthly monitoring of QI reports submitted for completeness and timeliness.
- (5) Provide technical assistance to the MoH to monitor stock levels and improve the supply systems for critical materials for data collection, HIV reporting, and guidelines.

2. Recommendations for Health Facilities

- (1) In health centers where rotation of health workers is practiced, the responsibility for QI data compilation, storage, and reporting should be assigned to the appropriate permanent member of staff. Alternatively, the responsibility for compilation, storage, and reporting should be included in the hand-over procedures as the health workers rotate.

- (2) Health facilities should adopt a system of: (a) tallying and summarizing QI data at the end of the clinic day or week to minimize the accumulation of files at the end of the month, and (b) assigning or sharing the responsibility of compiling QI data amongst QI team members.
- (3) Health facilities should conduct internal data quality verification semi-annually, with technical supervision from HCI coaches. The purpose of the review should be to identify quality gaps and recommend interventions for data quality improvement.

APPENDIX A: CHECKLIST FOR ASSESSING THE QUALITY OF THE DATA MANAGEMENT SYSTEM

USAID HEALTH CARE IMPROVEMENT PROJECT Health Facility Data Quality Validation

SYSTEM QUALITY ASSESSMENT TOOLS

A. General information

Health facility Name:		
Date site visited		
DQV Team:	Name	Title

B. Record of Quality Improvement (QI) team members interviewed

	Name	Title	Role in Data	Telephone contact
1				
2				
3				
4				
5				
6				
7				
8				

CHECKLIST TO ASSESS QUALITY OF DATA MANAGEMENT SYSTEM

This checklist should be completed during the group discussion with the QI site teams, at health facility. The criteria is a guide for interview and discussion, notes of issues discussed should be recorded in the space provided.

Data quality assessment question		Issues and recommendations	SCORE [2] Yes - completely [1] Partially [0] No – Not at all [na] Not applicable
I. Indicator knowledge and use			
1.11	<p>Does the team collect and report data on all 4 mandatory indicators and any additional QI indicators recommended by HCI?</p> <p><i>What quality improvement indicators are monitored by the QI team at this facility?</i></p>	Indicator 1:	
		Indicator 2:	
		Indicator 3:	
		Indicator 4:	
1.12	<p>Does the QI team know the indicator definition, the definition of numerator and denominator? (Probe for definitions of key terms in the indicator).</p> <p><i>What does this indicator mean to you? And what does it measure?</i></p>	Indicator 1:	
		Indicator 2:	
		Indicator 3:	
		Indicator 4:	

1.13	<p>Does the QI team know the interpretation of the indicator and do they attribute the changes in quality of services to change in the indicator data.</p> <p><i>What is the interpretation for this indicator(s) in monitoring quality improvement at your facility?</i></p>	<p>Indicator 1:</p> <p>Indicator 2:</p> <p>Indicator 3:</p> <p>Indicator 4:</p>	
1.14	<p>Has the QI team possess training or experience needed for QI data recording, analysis, and quality control and reporting?</p> <p><i>What competencies (skills and experience) has this team got to enable you record, compile and report on QI data better?</i></p>	QI team skilled or experienced in handling data	
1.15	<p>Does the QI team have available and utilize the guidelines or instructions for data management?</p> <p><i>What guidelines or instructions do you have and use when:</i></p> <ul style="list-style-type: none"> • Recording data in the client tools, • Selecting client files for analysis, • Compiling reports on QI indicators. 	Instructions for data management available	
2. Data recording and data tools			
2.11	<p>Does the QI team use the MoH standard data capture tools/register for HIV care, ART and PMTCT in each clinic? (i.e. Pre ART register, Art register, HIV care/ ART card, ANC/PMTCT register)</p> <p><i>What tools are you using to record data for patients on HIV care, ART, and PMTCT?</i></p> <p><i>If the tools are different from MOH tools, how do they record data used for CI indicator?</i></p>	Data capture tools used	

2.12	<p>Does the QI team completely safeguard client file from miss-recording and manipulation due late recording?</p> <p><i>When are client files completed in the chain of service provision at the facility.</i></p> <p><i>What safeguards are there to protect client files from miss recording and manipulation?</i></p>	Safeguards from miss recording and manipulation	
2.13	<p>Refer to the 4 QI indicators one by one. Does the QI team member know where the relevant client information is recorded on the tools?</p> <p><i>For each QI indicator, what is the tool from which the data for this QI indicator is extracted and where on the tools is the data recorded?</i></p>	Know relevant tools for the indicators and the data	
2.14	<p>Review at least 5 client records. Is the information filled in completely (no missing) and consistently as required for all tools\registers?</p> <p><i>How does incomplete or missing client information arise?</i></p>	Complete and accurate client records filled in	
2.15	<p>Does the QI team have clear method of archiving and retrieval of client files?</p> <p><i>How do you organize client files in storage? How does this arrangement enable retrieval and recovery of missing client files?</i></p>	Archiving and retrieval of client files	
3. Data compilation and reporting			
3.12	<p>Does the QI team use the same method to identify source documents from the universe of HIV client records collected during the month?</p> <p><i>How do you select the client files you use for analyzing and compiling the monthly QI reports?</i></p>	Consistency of the sampling procedure	
3.13	<p>Does the QI team use a standard reporting format for the QI indicators consistently from time to time?</p> <p><i>What reporting formats do you use to compile QI reports and what level of detail does this format allow?</i></p>	Use of a standard reporting format	

3.14	<p>Does the QI team compile a report that is inclusive of all the information from all other reporting or service delivery levels e.g. community outreach, peripheral or lower level clinics attached to the facility?</p> <p><i>In addition to this facility, What are the other HIV clinics or outreaches that provide data for HIV clients which is included in the QI reports and how complete are these reports?</i></p>	Report complete and inclusive of all service levels	
3.15	<p>Does the QI team assign the responsibility for supervision of data compilation, and reporting to individual members?</p> <p><i>How is the responsibility of support supervision exercised in to ensure quality QI data and reports?</i></p>	Responsibility of supervision	
3.11	<p>Ask the QI team to demonstrate a procedure for analysis and compilation of data. Does the QI team follow a standard procedure for summarizing client's data (daily, weekly or monthly)?</p> <p><i>How does this procedure ensure that no client information or file is missed in the summary?</i></p>	Procedure for data compilation	
4. Data validation and quality assurance			
4.11	<p>Has the QI team conducted any internal data quality review of the source documents or data and noted specific inconsistencies e.g. double counting or under/over reporting?</p> <p><i>What procedures do you practice as the QI team to minimize inconsistencies to ensure client's data is accurate and of good quality?</i></p> <p><i>What inconsistencies have been identified and how they have been resolved? (Provide evidence of action take).</i></p>	Conducted internal data quality review	
4.12	<p>Does the QI team have available adequate paper trail for data auditing purposes? (Are the source document available, summary forms, and past reports)</p> <p><i>Are they complete and any indication that they adequately cover the data for the reporting period?</i></p>	Availability of paper trail	

4.13	<p>Does the QI team consider the data and reports to be accurate and valid enough to represent what the indicator(s) measures?</p> <p><i>In terms of accuracy, how do you rate the client data which is used in reporting on the QI indicators?</i></p> <p><i>What are the sources of the potential data in-accuracy that may exist?</i></p> <p><i>How can data accuracy be improved?</i></p>	Indicator data and reports accurate enough	
4.14	<p>At all levels at which data are aggregated. Does the QI team provide support to other reporting levels (clinics, community outreach, or lower health centers) to systematically verify for completeness and obvious mistakes?</p> <p><i>What are some common mistakes and how frequent is the support given?</i></p>	Provision of supervisory support to other reporting levels	
5. Data interpretation and utilization			
5.11	<p>Does the QI team present any evidence that the feedback given on the content and quality of reports both from QI coaches has been utilized?</p> <p><i>What actions were taken in response to the feedback provided? What additional support is required to improve report quality?</i></p>	Evidence of feedback given on reporting quality	
5.12	<p>Has the QI team identified training needs and resource needs for data management at each level?</p> <p><i>How have these gaps affected the quality of data and reports?</i></p>	Identification of training and resource needs for data management	
5.14	<p>Present a copy of the previous report. Does the QI team interpret results and attach meaning to it rightly?</p> <p><i>What does the result of this QI indicator mean to quality improvement at this facility?</i></p> <p><i>Based on the results presented is this satisfactory or does it call for improvement?</i></p> <p><i>What improvement?</i></p>	Accuracy of interpretation of data and reports	

ANALYSIS OF STRENGTH AND WEAKNESSES

This section should be carefully completed based on the findings of the assessment; it will serve as a basis for de-briefing and feedback at the facility.

Please summarize the strength and weaknesses of the QI team and the data system

	Strength	Weakness	Suggestions for improvement

APPENDIX B: DATA VERIFICATION TOOL

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Health Facility Data Quality Validation

DATA VERIFICATION TOOLS

INSTRUCTION: This tool should be complete for each mandatory indicator and the related data analyzed at the health facility.

A. General information

Health facility Name:		
Visit Date		
DQV Team:	Name	Title

B. List of source document used to perform verification

Indicator verified		Type of document verified		Number of documents verified	Reporting period verified
1	% of HIV+ patients seen in the clinic who are in general care and/or receiving ART who are assessed for active TB at every visit	1			
		2			
		3			
2	% of patients on ART who are adherent to ARV medicines	1			
		2			
		3			

3	% of patients on ART for the past six months who have shown clinical improvement	1			
		2			
		3			
4	% of children born to HIV+ mothers in PMTCT who were ever tested for HIV	1			
		2			
		3			

C. DATA VERIFICATION

Complete these tables with data obtained from the monthly reports submitted to HCI and data re-compiled from the source document

1. Referral and follow up of patients:

Indicator: % of HIV+ patients seen in the clinic who are in general care and/or receiving ART who are assessed for active TB at every visit

Table 1: Verification table for data on TB assessment

	TB assessment		
	Denominator	Numerator	Reasons for discrepancy
	HIV+ patients enrolled for general care and/or receiving ART	Number HIV+ who are assessed for active TB	
[A] Data compiled from primary records			
[B] Data reported and submitted to HCI			
Accuracy Ratio [C]=[A/B]			

2. ART Adherence

Indicator: % of patients on ART who are adherent to ARV medicines

Table 2: Verification table for data on ART Adherence

	ART Adherence		
	Denominator	Numerator	Reasons for discrepancy
	Number of patients enrolled for ART	Number of HIV+ reported to take > 95% of ARV Pills	
[A] Data compiled from primary records			
[B] Data reported and submitted to HCI			
Accuracy Ratio [C]=[A/B]			

3. Referral and follow up of patients:

Indicator: % of patients on ART for the past six months who have shown clinical improvement

Table 3: Verification table for data on Patients showing clinical improvement

	Patients showing clinical improvement		
	Denominator	Numerator	Reasons for discrepancy
	Number of patients on ART for the past six months	Number of patients reported clinically improved	
[A] Data compiled from primary records			
[B] Data reported and submitted to HCI			
Accuracy Ratio [C]=[A/B]			

4. Pediatric HIV care:

Indicator: 27a. % of children born to HIV+ mothers in PMTCT who were ever tested for HIV

Table 4: Verification table for data children born to HIV+ mothers and tested for HIV

	Children tested for HIV		
	Denominator	Numerator	Reasons for discrepancy
	Number of children born to HIV+ mothers in the clinic	Number of children born to HIV+ mothers and taken HIV test	
[A] Data compiled from primary records			
[B] Data reported and submitted to HCI			
Accuracy Ratio [C]=[A/B]			

TALLY SHEET FOR SOURCE DOCUMENT DATA

INDICATOR	NUMERATOR	DENOMINATOR
% of HIV+ patients seen in the clinic who are in general care and/or receiving ART who are assessed for active TB at every visit		
% of patients on ART who are adherent to ARV medicines		
% of patients on ART for the past six months who have shown clinical improvement		
% of children born to HIV+ mothers in PMTCT who were ever tested for HIV		

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