ROUTINE DATA QUALITY ASSESSMENT TOOL (RDQA)

GUIDELINES FOR IMPLEMENTATION

DRAFT

July 30, 2008

DRAFT

The Global Fund to Fight Aids, Tuberculosis and Malaria,
Office of the Global AIDS Coordinator, PEPFAR, USAID, WHO, UNAIDS,
MEASURE Evaluation

Acknowledgments

This tool was developed with input from a number of people from various organizations. Those most directly involved in development of the tool included Ronald Tran Ba Huy of The Global Fund to Fight AIDS, Tuberculosis and Malaria, David Boone, Karen Hardee, and Silvia Alayon from MEASURE Evaluation, Cyril Pervilhac and Yves Souteyrand from the World Health Organization, and Annie La Tour from the Office of the Global AIDS Coordinator.

This tool benefited from feedback on the DQA for Auditing from a number of participants in workshops and meetings held in Nigeria, Ghana, Senegal, South Africa, Vietnam, Switzerland and the U.S.

For more information, please contact:

David Boone
MEASURE Evaluation/JSI
DBoone@jsi.com

Ronald Tran Ba Huy
The Global Fund
Ronald.Tranbahuy@Theglobalfund.org

Cyril Pervilhac
WHO
pervilhacc@who.int

Annie La Tour
OGAC
LaTourAM@state.gov

DRAFT

Contents

1 - BACKGROUND 1
2 - CONCEPTUAL FRAMEWORK 2
3 - OBJECTIVES 2
4 - USES 3
5 - METHODOLOGY 3
6 - OUTPUTS 6
7 - IMPLEMENTATION STEPS FOR THE RDQA 9
8 - ETHICAL CONSIDERATIONS 10
9 - Annex 1 – The Link Between the Reporting System and Data Quality 11
10 - Annex 2: Instructions for sampling sites using 2-stage cluster sampling 17

DRAFT

1 - BACKGROUND

National Programs and donor-funded projects are working towards achieving ambitious goals related to the fight against diseases such as Acquired Immunodeficiency Syndrome (AIDS), Tuberculosis (TB) and Malaria. Measuring the success and improving the management of these initiatives is predicated on strong Monitoring and Evaluation (M&E) systems that produce quality data related to program implementation.

In the spirit of the *"Three Ones",* the *"Stop TB Strategy"* and the *"RBM Global Strategic Plan"*, a number of multilateral and bilateral organizations have collaborated to jointly develop a Data Quality Assessment (DQA) Tool. The objective of this harmonized initiative is to provide a common approach for assessing and improving overall data quality. A single tool helps to ensure that standards are harmonized and allows for joint implementation between partners and with National Programs.

The DQA Tool focuses exclusively on *(1)* verifying the quality of reported data, and *(2)* assessing the underlying data management and reporting systems for standard program-level output indicators. The DQA Tool is not intended to assess the entire M&E system of a country's response to HIV/AIDS, Tuberculosis or Malaria. In the context of HIV/AIDS, the DQA relates to component 10 (i.e. Supportive supervision and data auditing) of the *"Organizing Framework for a Functional National HIV M&E System".*

Two versions of the DQA Tool have been developed: *(1)* The Data Quality Assessment Tool for Auditing provides guidelines to be used by an external audit team to assess a Program/project's ability to report quality data; and *(2)* The Routine Data Quality Assessment Tool is a simplified version of the DQA for auditing, allows Programs and projects to assess the quality of their data and strengthen their data management and reporting systems.

Distinctions between DQA and RDQA

The DQA is designed for use by external audit teams while the RDQA is designed for a more flexible use, notably by Programs and projects

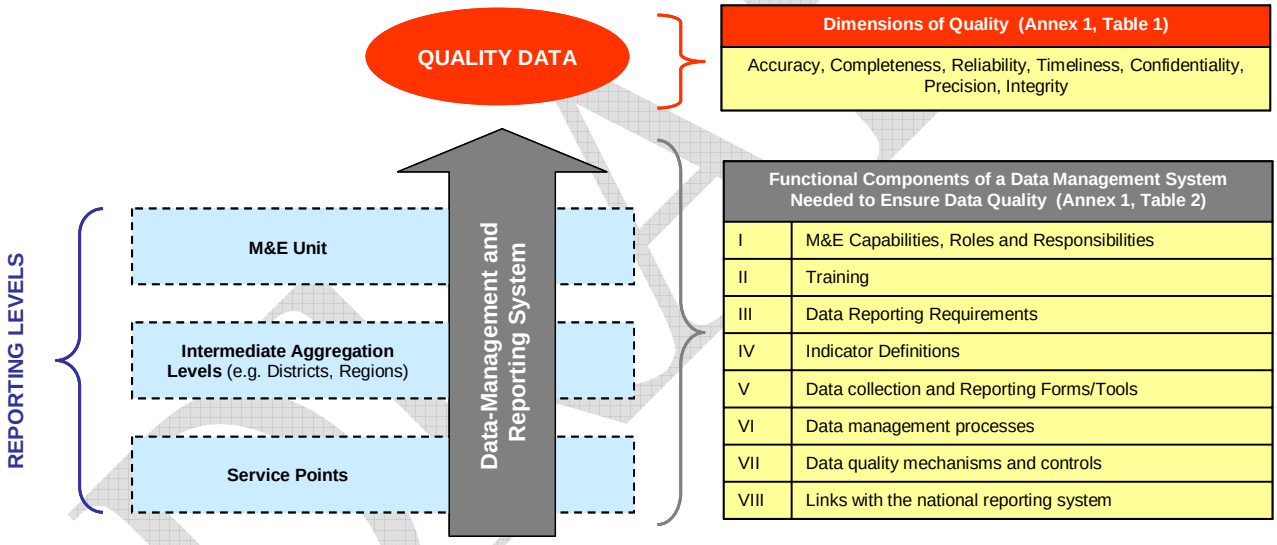
DQA	RDQA
- Assessment by funding agency - Standard approach to implementation - Conducted by external audit team - Limited input into recommendations by programs	- Self-assessment by program - Flexible use by programs for monitoring and supervision or to prepare for an external audit - Program makes and implements own action plan

DRAFT

2 - CONCEPTUAL FRAMEWORK

The conceptual framework for the DQA and RDQA is illustrated in the Figure 1 (below). Generally, the quality of reported data is dependent on the underlying data management and reporting systems; stronger systems should produce better quality data. In other words, for good quality data to be produced by and flow through a data-management system, key functional components need to be in place at all levels of the system - the points of service delivery, the intermediate level(s) where the data are aggregated (e.g. districts, regions) and the M&E unit at the highest level to which data are reported. The DQA and RDQA tools are therefore designed to (1) verify the quality of the data, (2) assess the system that produces that data, and (3) develop action plans to improve both.

Figure 1. Conceptual Framework for the RDQA: Data Management and Reporting Systems, Functional Areas and Data Quality



3 - OBJECTIVES

The objectives of the RDQA Tool are to:

- **VERIFY** rapidly 1) the quality of reported data for key indicators at selected sites; and 2) the ability of data-management systems to collect, manage and report quality data.
- **IMPLEMENT corrective** measures with action plans for strengthening the data management and reporting system and improving data quality.
- **MONITOR** capacity improvements and performance of the data management and reporting system to produce quality data.

DRAFT

4 - USES

The RDQA is designed to be flexible in use and can serve multiple purposes. Some potential uses of the tool are listed below, though it is most effective when used routinely.

- *Routine data quality checks as part of on-going supervision:* For example, routine data quality checks can be included in already planned supervision visits at the service delivery sites.

- *Initial and follow-up assessments of data management and reporting systems*: For example, repeated assessments (e.g., biannually or annually) of a system's ability to collect and report quality data at all levels can be used to identify gaps and monitor necessary improvements.

- *Strengthening program staff's capacity in data management and reporting*: For example, M&E staff can be trained on the RDQA and be sensitized to the need to strengthen the key functional areas linked to data management and reporting in order to produce quality data.

- *Preparation for a formal data quality audit:* The RDQA tool can help identify data quality issues and areas of weakness in the data management and reporting system that would need to be strengthened to increase readiness for a formal data quality audit.

- *External assessment by partners of the quality of data*: Such use of the RDQA for external assessments could be more frequent, more streamlined and less resource intensive than comprehensive data quality audits that use the DQA version for auditing.

The potential users of the RDQA include program managers, supervisors and M&E staff at National and sub-national levels, as well as donors and other stakeholders.

5 - METHODOLOGY

The RDQA Tool includes 10 sub-components, or sheets, corresponding to pages in a Microsoft Excel spreadsheet (described below).

Worksheets in the RDQA MS Excel File

Sheet 1- Header: to select the number of service sites and intermediate aggregation level sites to be included in the RDQA.

Sheet 2- Instructions: to inform users how to use the Excel spreadsheet.

Sheet 3- Information: to record the country, program/project, indicator reviewed, reporting period reviewed, and the assessment team.

Sheet 4- Service Delivery Point: to record results of the assessment on data verifications, systems assessment and cross-checks at the service delivery level and to record recommendations for the service site and a dashboard of results of the data verification and systems assessment for the service site (more detail provided below).

DRAFT

Sheet 5- Intermediate Aggregation Site: to record results of the assessment on data verifications and systems assessment at the intermediate aggregation level site and to record recommendations for the intermediate aggregation level site and a dashboard of results of the data verification and systems assessment for the intermediate aggregation level site.

Sheet 6- M&E Unit: to record results of the assessment on data verifications and systems assessment at the M&E Unit, to record follow up recommendations and an action plan based on the RDQA, and to show a dashboard of results of the data verification and systems assessment for the M&E Unit.

Sheet 7- Global Dashboard: to present in graphic form aggregated results from all levels of the assessment (more detail provided below).

Sheet 8- RDQA Final Action Plan: to consolidate recommendations from each level into an overall action plan based on the RDQA (more detail provided below). .

Sheet 9- Dimensions of Data Quality: a reference page to map the functional areas assessed in the systems assessment part of the RDQA with components of data quality.

Sheet 10- Feedback Form: For users of the RDQA to provide feedback to the developers of the RDQA tool.

The three main "data collection" sheets of the RDQA Tool are the service delivery site, intermediate aggregation site and M&E Unit sheets. Each of these sheets contains two parts for data collection:

Part 1: Data Verifications

Part 2: Systems Assessment

1. Data verifications: Part 1 of the RDQA Tool enables a quantitative comparison of recounted to reported data and a review of the timeliness, completeness and availability of reports. The purpose of this part of the RDQA is to assess if 1) service delivery and intermediate aggregation sites are collecting and reporting data accurately, completely and on time, and 2) whether the data agrees with reported results from other data sources.

At the service delivery level, Part 1, Data Verification of the RQDA Excel protocol has three sub-parts, shown in Figure 2:

1. Documentation Review
2. Recounting Reported Results
3. **Cross-check reported results with other data sources**

Figure 2- Part 1: Data Verifications

A - Documentation Review:

	Review availability and completeness of all indicator source documents for the selected reporting period.	***(Yes- completely, partly, no- not at all)***	***Reviewer Comments***
1	Review available source documents for the reporting period being verified. Is there any indication that source documents are missing?		

DRAFT

	If yes, determine how this might have affected reported numbers.		
2	Are all available source documents complete?		
	If no, determine how this might have affected reported numbers.		
3	Review the dates on the source documents. Do all dates fall within the reporting period?		
	If no, determine how this might have affected reported numbers.		
B - Recounting reported Results:			
	Recount results from source documents, compare the verified numbers to the site reported numbers and explain discrepancies (if any).		
4	Recount the number of people, cases or events recorded during the reporting period by reviewing the *source documents*. **[A]**		
5	Copy the number of people, cases or events reported by the site during the reporting period from the site *summary report*. **[B]**		
6	**Calculate the ratio of recounted to reported numbers. [A/B]**	-	
7	What are the reasons for the discrepancy (if any) observed (i.e., data entry errors, arithmetic errors, missing source documents, other)?		
C - Cross-check reported results with other data sources:			
Cross-checks can be performed by examining separate inventory records documenting the quantities of treatment drugs, test-kits or ITNs purchased and delivered during the reporting period to see if these numbers corroborate the reported results. Other cross-checks could include, for example, randomly selecting 20 patient cards and verifying if these patients were recorded in the unit, laboratory or pharmacy registers. To the extent relevant, the cross-checks should be performed in both directions (for example, from Patient Treatment Cards to the Register and from Register to Patient Treatment Cards).			
8	List the documents used for performing the cross-checks.		
9	Describe the cross-checks performed?		
10	What are the reasons for the discrepancy (if any) observed?		

The sheets for intermediate aggregation level sites and the M&E unit are found in the MS Excel spreadsheet.

2. Data management and reporting system assessment: Part 2 of the RDQA Tool enables qualitative assessment of the relative strengths and weaknesses of functional areas of a data management and reporting system. Figure 3 (Annex 2) lists the questions posed for the systems assessment, the levels to which the questions pertain, and the components of data quality addressed by each question. The purpose of assessing the data management and reporting system is to identify potential threats to data quality posed by the design and implementation of data management and reporting systems. The seven functional areas of a data management and reporting system are as follows:

1. M&E Capabilities, Roles and Responsibilities
2. Training
3. Indicator Definitions
4. Data Reporting Requirements
5. Data Collection and Reporting Forms and Tools
6. Data Management Processes and Data Quality Controls
7. Links with National Reporting System

(See Annex 1 for more detail on the link between a data management and reporting system and the components of data quality.)

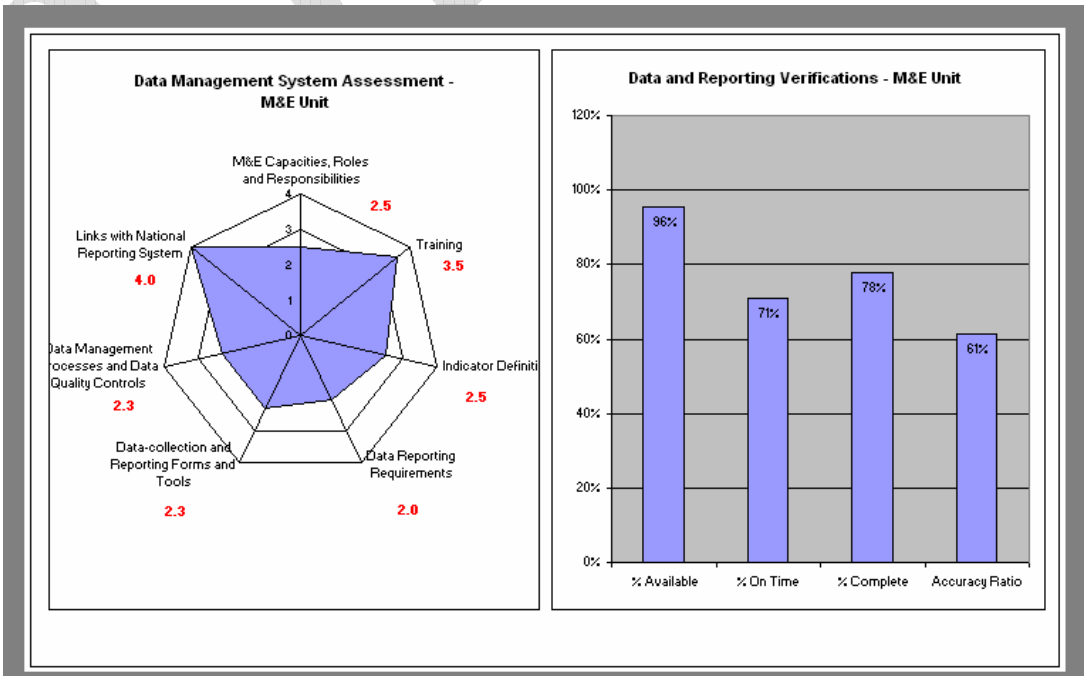
While it is recommended that both parts of the RDQA Tool – data verification and system assessment – be used to fully assess data quality, and depending on the assessment objectives, one or both of these protocols can be applied and adapted to local contexts. Parts 1 and 2 of the RDQA Tool can be implemented at any or all levels of the data management and reporting system: M&E Unit; Intermediate Aggregation Levels; and/or Service Delivery Points. However, the data verification aspect of the tool is vital and should be conducted regularly. The system assessment protocol, which verifies the presence and adequacy of program inputs, could be applied less often.

6 - OUTPUTS

1) Graphic display of assessment results

The RDQA exits in Microsoft Excel format. The checklists can be printed and completed by hand or, alternately, responses can be entered directly into the spreadsheets on a computer. When completed electronically, a number of dashboards produce graphics of summary statistics for each site or level of the reporting system and a "global" dashboard that aggregates the results from all levels and sites included in the assessment (Figure 4).

Figure 4 – Dashboard of Summary Statistics at the M&E Unit [When using the MS Excel file]



DRAFT

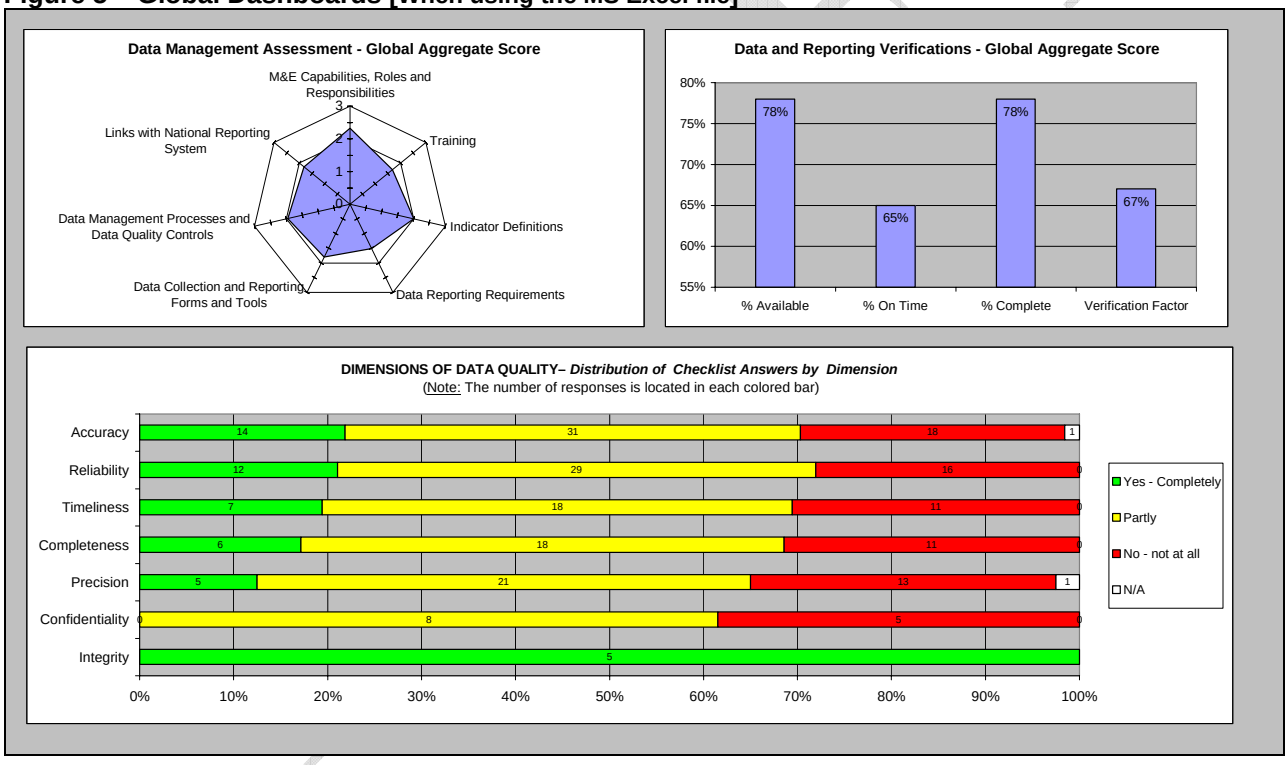
The dashboard displays two graphs for each site visited:

- The spider-graph on the left displays qualitative data generated from the assessment of the data management and reporting system and can be used to prioritize areas for improvement.
- The bar-chart on the right shows the quantitative data generated from the data verifications; these can be used to plan for data quality improvement.

Decisions on where to invest resources for system strengthening should be based on the relative strengths and weakness of the different functional areas of the reporting system identified via the RDQA, as well as consideration of practicality and feasibility.

A "Global" summary dashboard is produced to show the aggregate results from the data verification and data management system assessment. In addition, a dashboard is produced to show findings from the systems assessment by the components of data quality. The Global dashboards are shown in Figure 5.

Figure 5 – Global Dashboards [When using the MS Excel file]



2) Action Plans for System Strengthening

The RDQA Tool provides templates for recommendations for service delivery sites and intermediate aggregation level sites included in the assessment. Figure 6 shows the recommendations template for service delivery sites. The same template is used at the intermediate aggregation level. A similar template is used at the M&E Unit, with directions to

summarize key issues that the Program should follow up at various levels of the system (e.g. issues found at site level and/or at intermediate aggregation site level).

Figure 6- Template for Recommendations for the Service Site (in MS Excel RDQA file)			
	Based on the findings of the systems' review and data verification at the service site, please describe any challenges to data quality identified and recommended strengthening measures, with an estimate of the length of time the improvement measure could take. These will be discussed with the Program.		
	Description of Action Point	**Person Responsible**	**Time Line**
1			
2			
3			
4			

The final output of the RDQA is an action plan for improving data quality which describes the identified strengthening measures, the staff responsible, the timeline for completion, resources required and follow-up. The template for the action plan is shown in Figure 7.

Figure 7- RDQA Final Action Plan				
Country:				
Program/project				
Date of RDQA:				
Date of Proposed Follow-up				
Description of Action Point	**Person Responsible**	**Time Line**	**Technical assistance needs**	**Follow-up date and comments**

Add rows as needed				

7 - IMPLEMENTATION STEPS FOR THE RDQA

Typically, the implementation of the RDQA can be sub-divided in six steps:

1. Determine purpose of the RDQA (see sections on objectives uses above).

2. Select levels and sites to be included (depending on the purpose and resources available). Once the purpose has been determined, the second step in the RDQA is to decide what levels of the data management and reporting system will be included in the assessment - service sites, intermediate aggregation levels, and/or central M&E unit. The levels should be determined once the appropriate reporting levels have been identified and "mapped" (e.g., there are 100 sites providing the services in 10 districts. Reports from sites are sent to districts, which then send aggregated reports to the M&E Unit). In some cases, the data flow will include more than one intermediate level (e.g. regions, provinces or states or multiple levels of program organizations).

It is not necessary to visit all the reporting sites in a given Program to determine the quality of the data. Random sampling techniques can be utilized to select a representative group of sites whose data quality is indicative of data quality for the whole program. Depending on the volume of service of the program (e.g. number of people treated with ART), the number of service delivery sites and the quality of the data, as few as a dozen sites can be assessed to obtain a reasonable estimate of data quality for the program. Please see Annex 2 for instructions on how to sample sites using 2-stage cluster sampling.

Precise measures of data accuracy are difficult to obtain for an entire program using these methods. "Reasonable estimates" of data accuracy are generally sufficient for the purposes of strengthening data quality, capacity building or preparing for external auditing. For a more rigorous sampling methodology leading to more precise estimates of data quality please see the Data Quality Audit Tool and Guidelines on the MEASURE Evaluation website[1]

3. Identify indicators, data sources and reporting period. The RDQA is designed to assess the quality of data and underlying systems related to indicators that are reported to programs or donors to measure success in program areas related to specific diseases during specific reporting periods.

For each program area, a number of indicators are measured through various data sources. For example, for *tuberculosis,* in the **program area** *Treatment*, the international community has agreed to the harmonized ***indicator:*** *Number of new smear positive TB cases that successfully complete treatment.* The **data source** for this indicator is *facility-based* and the **source documents** are the *district TB register* along with the *facility register* and *patient treatment cards*. As another example related to *AIDS*, under the U.S. President's Initiative for *AIDS*

[1] http://www.cpc.unc.edu/MEASURE (DQA Tool link here)

DRAFT

Relief (PEPFAR), a **program area** is *Orphans and Vulnerable Children,* and an **indicator** is: *Number of OVC served by OVC programs (disaggregated by male, female, primary direct and supplemental direct).* The **data source** for this indicator will be at community-based organizations that serve OVC and the **source documents** will be *client records (intake forms, daily logs, registers, etc).*

When planning the RDQA, it is important to determine the data sources for the indicator(s) selected, and to determine the time period for assessing the reported data. For example, if data are reported every six months, the reporting period for the RDQA could be January-June, 2007. Using a specified reporting period gives a reference from which to compare the "recounted" data.

4. Conduct site visits. Sites should be notified prior to the visit for the data quality assessment. This notification is important in order for appropriate staff to be available to answer the questions in the checklist and to facilitate the data verification by providing access to relevant source documents. During the site visits, the relevant sections of the appropriate checklists in the Excel file are completed (e.g. the service site checklist at service sites, etc). These checklists are completed during or immediately following interviews of relevant staff and reviews of site documentation.

5. Review outputs and findings. The outputs from the RDQA described above should be reviewed for each site visited. Site-specific summary findings in the form of recommendations are noted at each site visited.

6. Develop a system strengthening plan, including follow-up actions. Given the findings and recommendations for each site, an overall action plan is developed (see template above).

8 - ETHICAL CONSIDERATIONS

Data quality assessments must be conducted with the utmost adherence to the ethical standards of the country. Though assessment personnel may require access to personal information (e.g. medical records), this should not be shared with non-assessment staff or disclosed in any way during the conduct of the assessment.

DRAFT

9 - Annex 1 – The Link Between the Reporting System and Data Quality

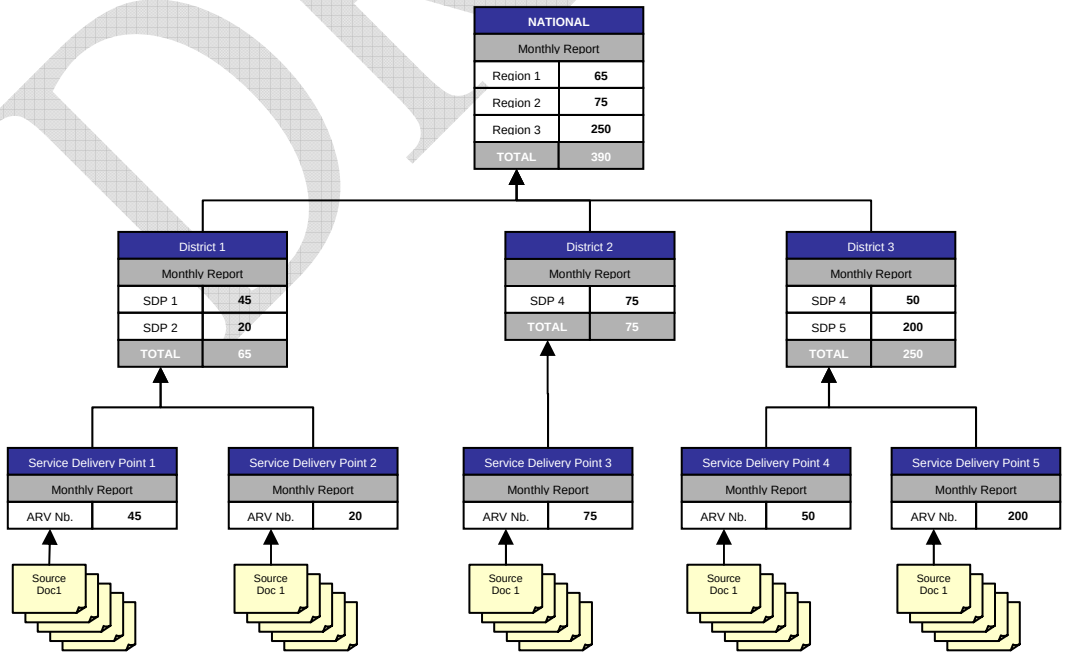
The RDQA has been developed based on a multidimensional concept of **data flows through a Program/project data management and reporting system** that operates at three (or more) levels and the **seven dimensions of data quality** that can pose challenges at each level of the system. Furthermore, the RDQA identifies **seven functional areas** that should be assessed to strengthen the data management and reporting system and improve the quality of data the system produces.

A- Levels of the Data Management and Reporting System

Data collected, aggregated and reported to measure indicators flow through a data management and reporting system that begins with the recording of an encounter between a client and a program staff member, a commodity distributed, or a person trained. Data are collected on source documents (e.g. patient records, client intake sheets, registers, training registers, commodity distribution logs, etc.) Through the data management and reporting system, the data from source documents are aggregated and sent to a higher level (e.g. a district, a partner or principal recipient or a sub-partner or a sub-recipient) for further aggregation before being sent to the next level, culminating in aggregation at the highest level of a program (e.g. the M&E Unit of a National Program, the Principle Recipient of a Global Fund grant, or the SI Unit of a USG program). The data from countries is frequently sent to international offices for global aggregation to show progress in meeting goals related to health initiatives.

Figure 1 illustrates this data flow of data through the data management and reporting system that includes service sites, districts and national M&E Unit. Each country and program/project may have a different data flow. Challenges to data quality can occur at each of these levels.

Figure 1. Illustration of Data Flow



DRAFT

B- Data Quality Dimensions

The RDQA is grounded in the components of data quality, namely, that Programs/projects need accurate and reliable data that are complete, timely, precise, credible and maintained under conditions of confidentiality, when appropriate (see Table 1).

Annex 1 - Table 1. Data Quality Dimensions

Dimensions of data quality	Operational Definition
Main dimensions of data quality	
Accuracy	Also known as validity. Accurate data are considered correct: the data measure what they are intended to measure. Accurate data minimize error (e.g., recording or interviewer bias, transcription error, sampling error) to a point of being negligible.
Reliability	The data generated by a program's information system are based on protocols and procedures that do not change according to who is using them and when or how often they are used. The data are reliable because they are measured and collected consistently.
Sub dimensions of data quality	
Precision	This means that the data have sufficient detail. For example, an indicator requires the number of individuals who received HIV counseling & testing and received their test results by sex of the individual. An information system lacks precision if it is not designed to record the sex of the individual who received counseling and testing.
Completeness	Completeness means that an information system from which the results are derived is appropriately inclusive: it represents the *complete* list of eligible persons or units and not just a fraction of the list.
Timeliness	Data are timely when they are up-to-date (current), and when the information is available on time. Timeliness is affected by: (1) the rate at which the program's information system is updated; (2) the rate of change of actual program activities; and (3) when the information is actually used or required.
Integrity	Data have integrity when the system used to generate them are protected from deliberate bias or manipulation for political or personal reasons.
Confidentiality	Confidentiality means that clients are assured that their data will be maintained according to national and/or international standards for data. This means that personal data are not disclosed inappropriately, and that data in hard copy and electronic form are treated with appropriate levels of security (e.g. kept in locked cabinets and in password protected files.

DRAFT

C- Functional Areas to Strengthen Data Management and Reporting and Data Quality

To address data quality challenges throughout the data management and reporting system, it is important to focus on the key functional areas that programs/projects. Table 2 shows these functional areas and related questions to be answered in determining the strength of the data management and reporting system.

Annex 1 - Table 2. Data Management Functional Area and Key Questions to Address Data Quality				
Functional Areas		**Questions**		**Dimension of Data Quality**
I	M&E Capabilities, Roles and Responsibilities	1	Are key M&E and data-management staff identified with clearly assigned responsibilities?	Accuracy, Reliability
II	Training	2	Have the majority of key M&E and data-management staff received the required training?	Accuracy, Reliability
III	Indicator Definitions	3	Are there operational indicator definitions meeting relevant standards that are systematically followed by all service points?	Accuracy, Reliability
IV	Data Reporting Requirements	4	Has the Program/project clearly documented (in writing) what is reported to who, and how and when reporting is required?	Accuracy, Reliability, Timeliness, Completeness
V	Data Collection and Reporting Forms and Tools	5	Are there standard data-collection and reporting forms that are systematically used?	Accuracy, Reliability
		6	Are data recorded with sufficient precision/detail to measure relevant indicators?	Accuracy, Precision
		7	Are data maintained in accordance with international or national confidentiality guidelines?	Confidentiality
		8	Are source documents kept and made available in accordance with a written policy?	Ability to assess Accuracy, Precision, Reliability, Timeliness, and Integrity, and Confidentiality
VI	Data Management Processes and Data Quality Controls	9	Does clear documentation of collection, aggregation and manipulation steps exist?	Accuracy, Reliability
		10	Are data quality challenges identified and are mechanisms in place for addressing them?	Accuracy, Reliability
		11	Are there clearly defined and followed procedures to identify and reconcile discrepancies in reports?	Accuracy, Reliability
		12	Are there clearly defined and followed procedures to periodically verify source data?	Ability to assess Accuracy, Precision, Reliability, Timeliness, and Integrity, and Confidentiality
VII	Links with National Reporting System	13	Does the data collection and reporting system of the Program/project link to the National Reporting System?	To avoid parallel systems and undue multiple reporting burden on staff in order to increase data quality.

DRAFT

Answers to these 13 questions can help highlight threats to data quality and the related aspects of the data management and reporting system that require attention. For example, if data accuracy is an issue, the RDQA can help assess if reporting entities are using the same indicator definitions, if they are collecting the same data elements, on the same forms, using the same instructions. The RDQA can help assess if roles and responsibilities are clear (e.g. all staff know what data they are collecting and reporting, when, to who and how) and if staff have received relevant training.

D- System Assessment Questions and Links to Dimensions of Data Quality

Table 3 lists all the questions posed in the RDQA System Assessment component and for each question, the level at which the question is asked as well as the dimensions of data quality addressed. This table is helpful for interpreting the graphic "Dimensions of Data Quality" on the Global Dashboard of the RDQA.

Annex 1 - Table 3. System Assessment Questions and Links to Dimensions of Data Quality

Functional Area	Level			Dimension of Data Quality						
	M&E Unit	Aggregation Levels	Service Points	Accuracy	Reliability	Timeliness	Completeness	Precision	Confidentiality	Integrity
I - M&E Capacities, Roles and Responsibilities										
There is a documented organizational structure/chart that clearly identifies positions that have data management responsibilities at the M&E Unit. (to specify which Unit: e.g. MoH, NAP, GF, World Bank)	✓			•	•	•				
All staff positions dedicated to M&E and data management systems are filled.	✓			•	•	•				
A senior staff member (e.g., the Program Manager) is responsible for reviewing the aggregated numbers prior to the submission/release of reports from the M&E Unit.	✓			•	•		•	•		
There are designated staff responsible for reviewing the quality of data (i.e., accuracy, completeness, timeliness and confidentiality) received from sub-reporting levels (e.g., regions, districts, service points).	✓	✓		•	•	•	•	•	•	
There are designated staff responsible for reviewing aggregated numbers prior to submission to the next level (e.g., to the central M&E Unit).		✓	✓	•	•					
The responsibility for recording the delivery of services on source documents is clearly assigned to the relevant staff.			✓	•	•					
II – Training										
There is a training plan which includes staff involved in data-collection and reporting at all levels in the reporting process.	✓			•	•	•	•		•	

Annex 1 - Table 3. System Assessment Questions and Links to Dimensions of Data Quality										
All relevant staff have received training on the data management processes and tools.	✓	✓	✓	•	•	•	•	•	•	
III - Indictor Definitions										
The M&E Unit has documented and shared the definition of the indicator(s) with all relevant levels of the reporting system (e.g., regions, districts, service points).	✓			•	•					
There is a description of the services that are related to each indicator measured by the Program/project.	✓			•	•					
IV - Data Reporting Requirements										
The M&E Unit has provided written guidelines to all reporting entities (e.g., regions, districts, service points) on reporting requirements and deadlines.	✓	✓	✓	•	•	•	•			
V - Data-collection and Reporting Forms and Tools										
If multiple organizations are implementing activities under the Program/project, they all use the same reporting forms and report according to the same reporting timelines.	✓			•	•					
The M&E Unit has identified a standard source document (e.g., medical record, client intake form, register, etc.) to be used by all service delivery points to record service delivery.	✓			•	•					
The M&E Unit has identified standard reporting forms/tools to be used by all reporting levels / the forms/tools are consistently used by all levels.	✓	✓	✓	•	•					
Clear instructions have been provided by the M&E Unit on how to complete the data collection and reporting forms/tools.	✓	✓	✓	•	•					
The data collected by the M&E system has sufficient precision to measure the indicator(s) (i.e., relevant data are collected by sex, age, etc. if the indicator specifies disaggregation by these characteristics).	✓		✓					•		
There is a written policy that states for how long source documents and reporting forms need to be retained.	✓			•	•	•	•	•		•
All source documents and reporting forms relevant for measuring the indicator(s) are available for auditing purposes (including dated print-outs in case of computerized system).	✓	✓	✓	•	•	•	•	•		•
VI - Data Management Processes and Data Quality Controls										
The M&E Unit has clearly documented data aggregation, analysis and/or manipulation steps performed at each level of the reporting system.	✓			•	•	•	•	•		
Feedback is systematically provided to all sub-reporting levels on the quality of their reporting (i.e., accuracy, completeness and timeliness).	✓	✓		•	•	•	•	•		
[If applicable] There are quality controls in place for when data from paper-based forms are entered into a computer (e.g., double entry, post-data entry verification, etc).	✓	✓	✓	•	•	•	•	•		•

Annex 1 - Table 3. System Assessment Questions and Links to Dimensions of Data Quality											
[If applicable] There is a written back-up procedure for when data entry or data processing is computerized.	✓	✓	✓	•	•	•	•	•		•
If yes, the latest date of back-up is appropriate given the frequency of update of the computerized system (e.g., back-ups are weekly or monthly).	✓	✓	✓	•	•	•	•	•		•
Relevant personal data are maintained according to national or international confidentiality guidelines.	✓	✓	✓						•	
The recording and reporting system avoids double counting people within and across Service Delivery Points (e.g., a person receiving the same service twice in a reporting period, a person registered as receiving the same service in two different locations, etc).	✓	✓	✓	•	•					
The reporting system enables the identification and recording of a "drop out", a person "lost to follow-up" and a person who died.	✓	✓	✓	•	•					
There is a written procedure to address late, incomplete, inaccurate and missing reports; including following-up with sub-reporting levels on data quality issues.	✓	✓		•	•	•	•	•		•
If data discrepancies have been uncovered in reports from sub-reporting levels, the M&E Unit (e.g., districts or regions) has documented how these inconsistencies have been resolved.	✓	✓		•	•	•	•	•		•
The M&E Unit can demonstrate that regular supervisory site visits have taken place and that data quality has been reviewed.	✓			•	•	•	•	•	•	•
VII - Links with National Reporting System										
When applicable, the data are reported through a single channel of the national reporting system.	✓	✓	✓							
The system records information about where the service is delivered (i.e. region, district, ward, etc.)	✓	✓	✓					•		
….if yes, place names are recorded using standarized naming conventions.	✓	✓	✓					•		

10 - Annex 2: Instructions for sampling sites using 2-stage cluster sampling

1. *Determine the number of clusters and sites.* The Assessment Team should work with the relevant stakeholders (NACA, MoH, SI Team, CCM etc.) to determine the number of clusters and sites within clusters. The appropriate number of sites and clusters depends on the objectives of the assessment; precise estimates of data quality require a large number of clusters and sites. Often it isn't necessary to have a statistically robust estimate of accuracy. That is, it is sufficient to have a reasonable estimate of the accuracy of reporting to direct system strengthening measures and build capacity. A reasonable estimate requires far fewer sites and is more practical in terms of resources. Generally, 12 sites sampled from within 4 clusters (3 sites each) is sufficient to gain an understanding of the quality of the data and the corrective measures required.

2. *More than one intermediate level.* In the event there is more than one Intermediate Aggregation Level (i.e. the data flows from district to region before going to national level) a three-stage cluster sample should be drawn. That is, two regions should be sampled and then two districts sampled from each region (4 total districts).

3. *No intermediate level.* If the data is reported directly from service delivery point to the national level (i.e. no Intermediate Aggregation Sites) the site selection will be conducted as above (cluster sampling with the district as the primary sampling unit) but the data will not be reviewed for the intermediate level and results from service delivery sites will be aggregated to derive the national total.

4. *Prepare the sampling frame.* The first step in the selection of clusters for the assessment will be to prepare a sampling frame, or a listing of all districts (or clusters) where the activity is being conducted (e.g. districts with ART treatment sites). The methodology calls for selecting clusters proportionate to size, i.e. the volume of service. Often it is helpful to expand the sampling frame so that each cluster is listed proportionate to the size of the program in the cluster. For example, if a given cluster is responsible for 15% of the clients served, that cluster should comprise 15% of the elements in the sampling frame. See the *Illustrative Example Sampling Strategy D* (Annex 4, Table 3) from the Data Quality Audit Guidelines[1] for more details. Be careful not to order the sampling frame in a way that will bias the selection of the clusters. Ordering the clusters can introduce *periodicity*; e.g. every 3rd district is rural. Ordering alphabetically is generally a harmless way of ordering the clusters.

5. *Calculate the sampling interval.* The sampling interval is obtained by dividing the number of elements in the sampling frame by the number of elements to be sampled. Using a random number table or similar method, randomly choose a starting point on the sampling frame. This is the first sampled district. Then proceed through the sampling frame selecting districts which coincide with multiples of the sample interval. The starting number + sampling interval = 2nd cluster. The starting number + 2(sampling interval) = 3rd cluster etc.

6. *Stratify Service Delivery Points.* Order the service delivery points within each of the sampled districts by volume of service, i.e. the value of the indicator for the reporting period being assessed. Divide the list into strata according to the number of sites to be selected. If possible, select an equal number of sites from each strata. For example, if you are selecting three sites, create three strata (small, medium and large). If selecting two sites, create two strata. For six sites create three strata and select two sites per stratum and so

DRAFT

on. Divide the range (subtract the smallest value from the largest) by the number of strata to establish the cut points of the strata. If the sites are not equally distributed among the strata use your judgment to assign sites to strata.

7. *Select Service Delivery Points.* For a large number of sites per district you can use a random number table and select sites systematically as above. For a small number of sites, simple random sampling can be used to select sites within clusters.

8. *Select 'back up' sites.* If possible, select a back up site for each stratum. Use this site only if you are unable to visit the originally selected sites due to security concerns or other factors. Start over with a fresh sampling frame to select this site (excluding the sites already selected). Do not replace sites based on convenience. The replacement of sites should be discussed with the funding organization and other relevant stakeholders if possible.

9. *Know your sampling methodology.* The sites are intended to be selected for the assessment as randomly (and equitably) as possible while benefiting from the convenience and economy associated with cluster sampling. You may be asked to explain why a given site has been selected. Be prepared to describe the sampling methods and explain the equitable selection of sites.

DRAFT