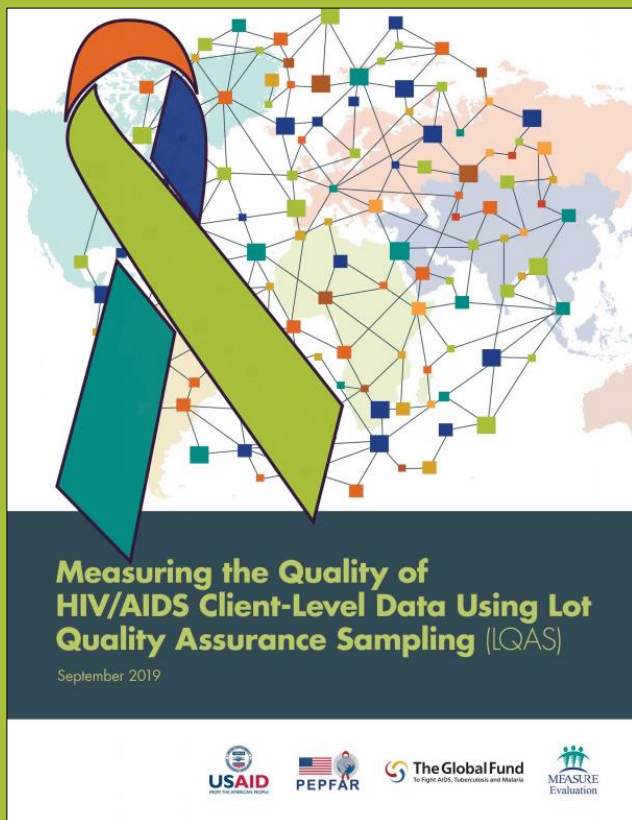


LQAS Triage System

Measuring the Quality of HIV/AIDS Client-Level Data Using Lot Quality Assurance Sampling (LQAS)

MEASURE Evaluation
September 2019



Context

- Good quality data is essential for effective planning, monitoring, and evaluation.
- Most of data quality tools focus on aggregate data.
- Errors are more difficult to uncover in the aggregate data.
- Reviewing source documents is time-consuming and labor-intensive.



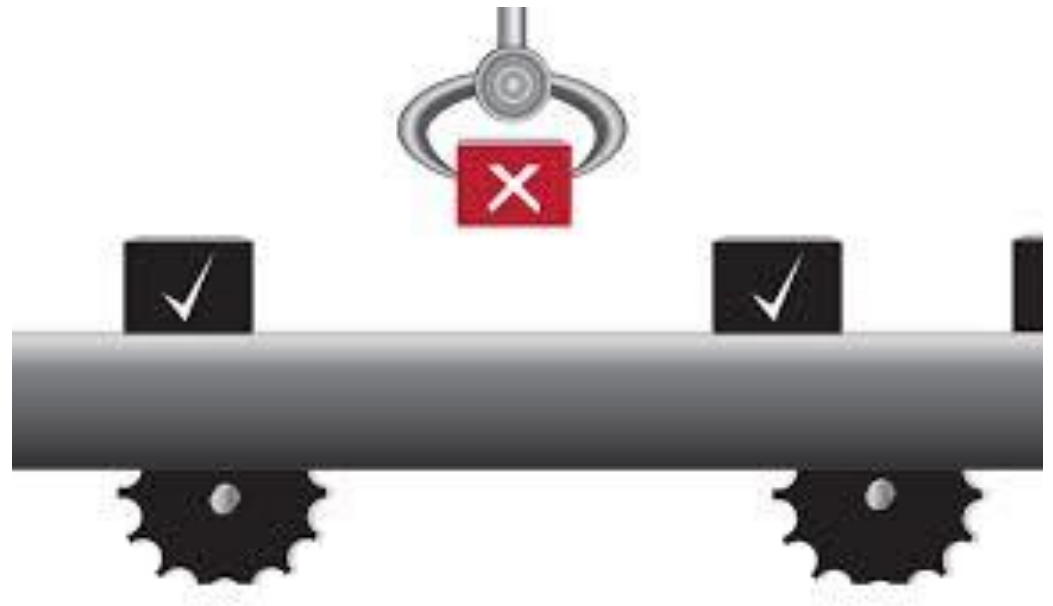
LQAS Triage System

- The LQAS Triage System is a shortcut
- “Triage” definition: “assignment of degrees of urgency”
- Identify the worst of the worst in order to prioritize resources for corrective measures
- Works best as part of already scheduled supervision visits.



LQAS Triage System

- LQAS uses “classification” rather than estimating parameters
- based on a pre-defined standard for quality
- Groups of records, constitute the ‘lot’
- lots not meeting the standard targeted for more extensive reviews
- Those meeting the standard are left until the next round of supervision.



LQAS Triage System

Review tracer data elements for groups of records for certain criteria, e.g.:

- Completeness: the value is recorded when it should be
- Consistency: values are present and consistent across data sources
- Outcomes: check whether or not a record has a given status



Principles of LQAS

- LQAS uses systematic random sampling to select a pre-determined number of individual records from a collection
- Records are evaluated according to specific criteria
- Each record is assigned a status of pass or fail according to the established criteria.
- If the number of 'passes' are $>$ or $=$ 'decision rule' the lot passes



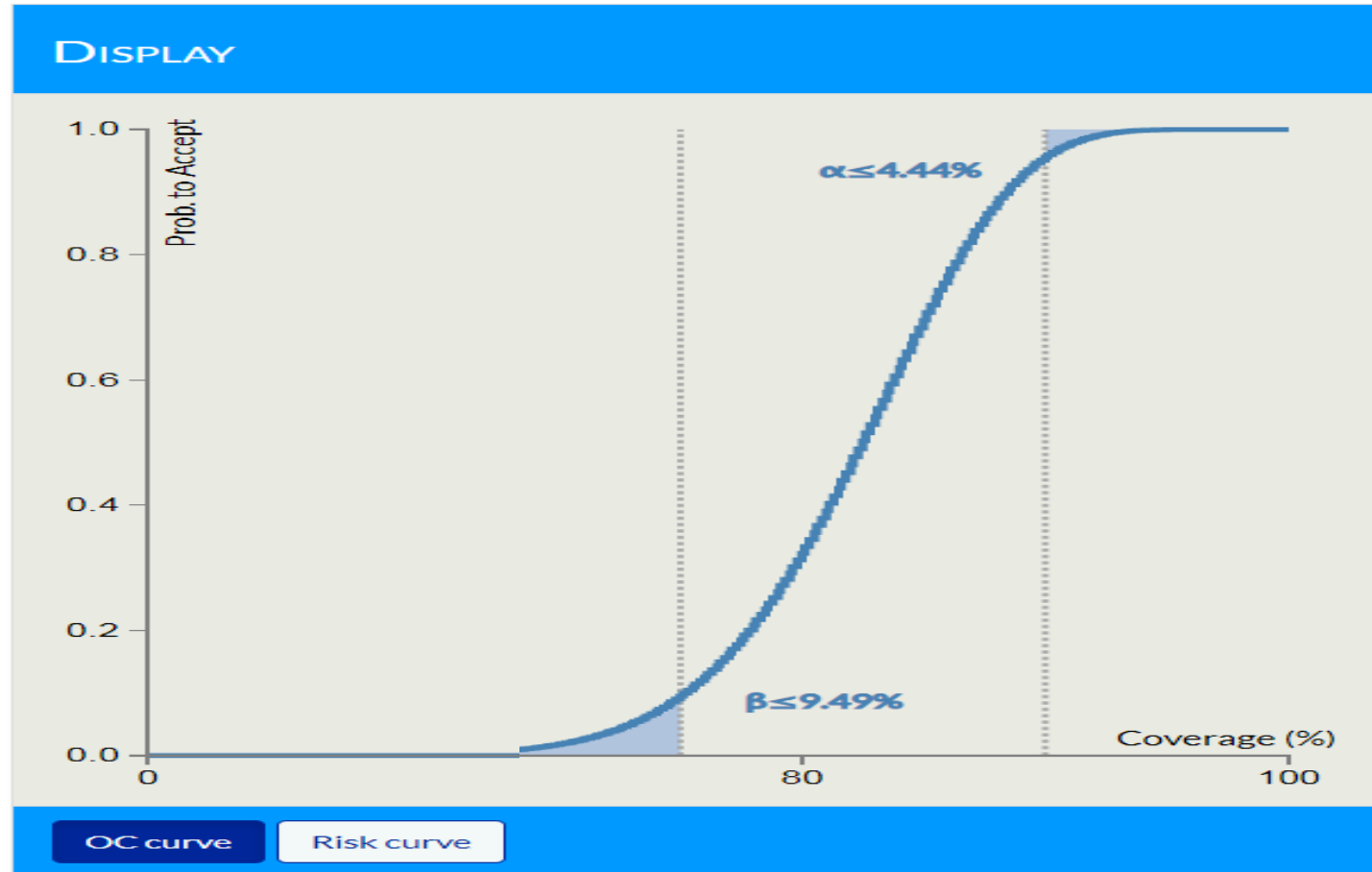
Principles of LQAS

- The sample size and decision rule are determined by;
 - The size of the population from which the sampling units are selected
 - P_U : Benchmark for quality established equal to or above which data quality is deemed acceptable.
 - P_L : Benchmark for quality below which service quality is deemed very unacceptable.
 - α (consumer) error: The risk/probability of misclassifying a lot with unacceptable data quality as acceptable.
 - β (provider) error: The risk/probability of misclassifying a lot with acceptable data quality as unacceptable.
- The sample size and decision rule are derived from the hypergeometric distribution.

Principles of LQAS

Quality thresholds

- PU = estimate of the actual value of the parameter (determined from experience)
- PL = the value below which the program would be forced to react
- Width of the range impacts on sample size



*OC Curve for PU = 0.9, PL = 0.75, α error < 0.05, β < 0.1, population size = 600

Principles of LQAS

Provider vs. consumer risk

- How much sampling error is acceptable?
- α (consumer) error: The risk/probability of misclassifying a lot with unacceptable data quality as acceptable.
- β (provider) error: The risk/probability of misclassifying a lot with acceptable data quality as unacceptable.
- the consumer is the beneficiary of service delivery, or client.
- The provider is the entity providing services, usually the government.

Principles of LQAS

Sample size calculation

- Sample sizes and their associated decision rules can be determined with the use of a sample size calculator available on the internet.
- For example: <http://lqas.spectraanalytics.com/>



LQAS Sampling Plan Calculator

MODEL PARAMETERS

Model Type

☐ Binomial

☒ Hypergeometric

☐ Fix sample size:

50

☐ Fix decision rule:

13

Generate sampling values and curves

Population size:

600

Lower threshold:

0.75

Upper threshold:

0.9

Maximum tolerable β error:

0.1

Maximum tolerable α error:

0.05

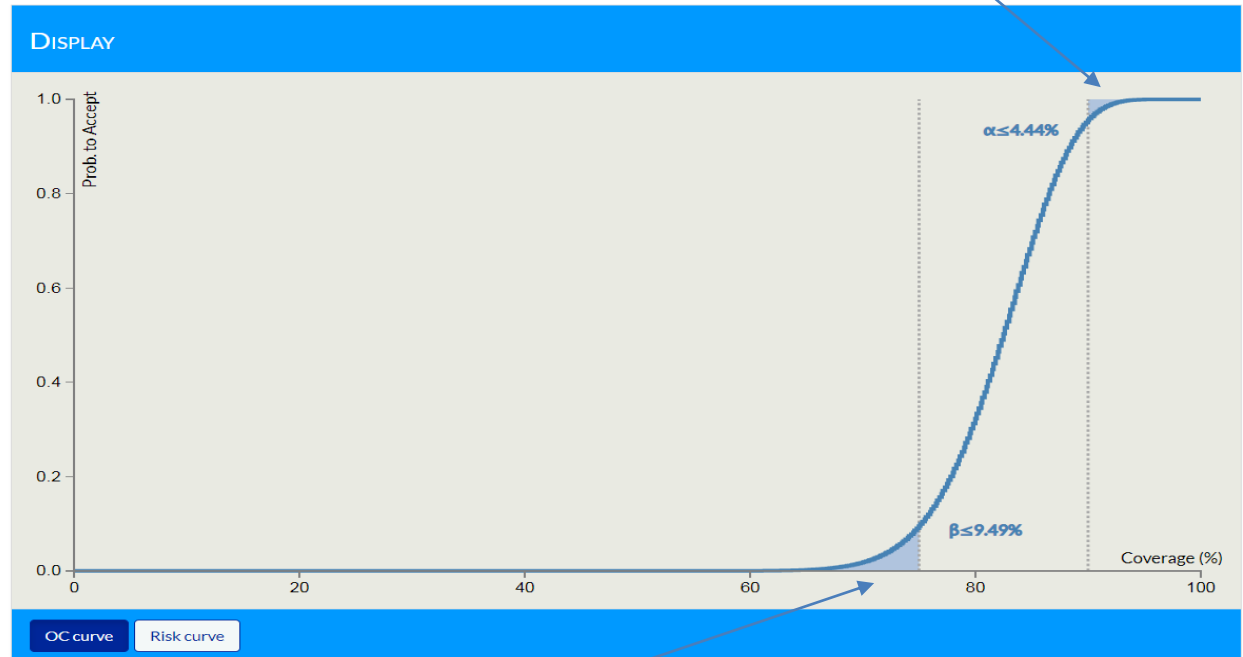
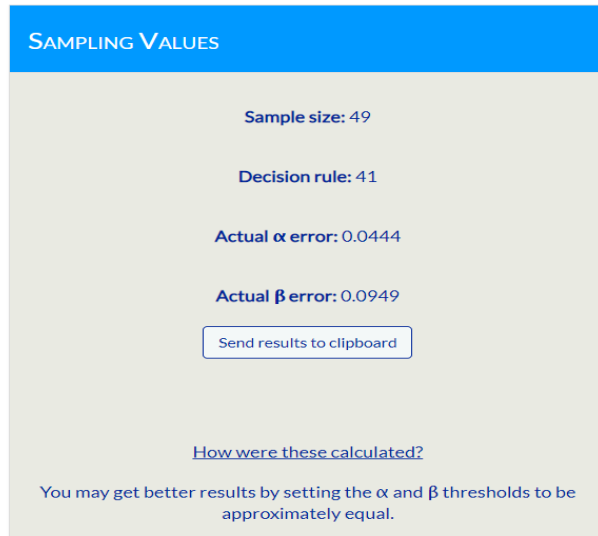
Presets

Presets

Principles of LQAS

Outputs

- The sample size, decision rule, and precise α and β errors
- OC Curve - plots the probability of accepting a lot against the value of the parameter in the population (e.g. coverage)



Consumer Risk

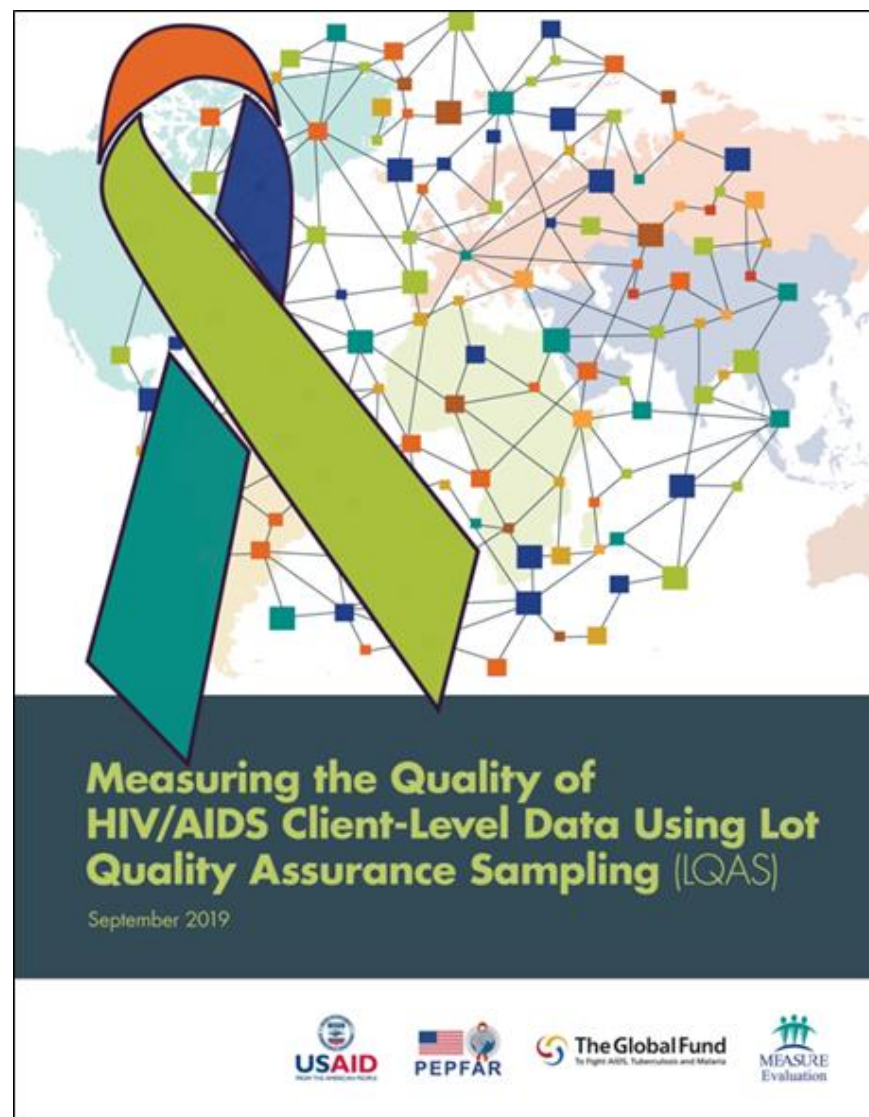
Provider Risk

Measuring quality of HIV data

Guidelines and tool for a standardized approach to data quality checks using LQAS:

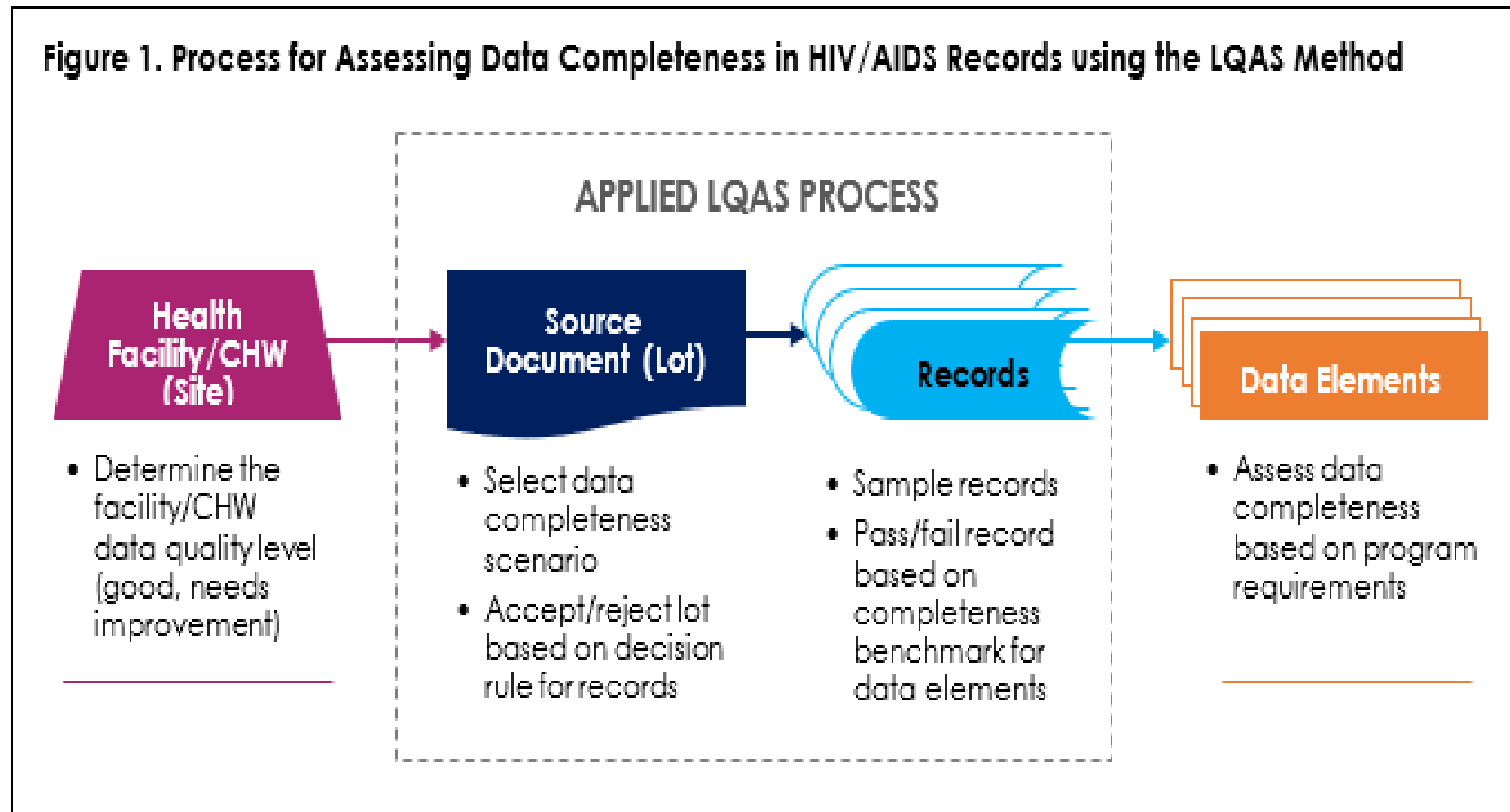
“Measuring the Quality of HIV/AIDS Client-Level Data Using Lot Quality Assurance Sampling”

www.measureevaluation.org/resources/publications/ms-19-176



Conducting a Data Completeness / Consistency Assessment

Figure 1. Process for Assessing Data Completeness in HIV/AIDS Records using the LQAS Method



Conducting a Data Completeness / Consistency Assessment

Before visiting health facilities

Step 1

- Select the health program (e.g., HIV/AIDS, ART).
- Several factors should be considered when selecting health programs, such as:
 - How problematic a health program is in terms of its data quality
 - The level of investment in a health program
 - The complexity of the data
 - Data management capacity and practices of health facility staff

Conducting a Data Completeness / Consistency Assessment

Step 2 - Determine the source document(s) and data elements to be assessed.

NO	NAME	ADDRESS	AGE	Gender	Weight	Ht	Temp	Pulse	Respir	Blood Pressure	Stool	Urine	Notes
56	Mariatu Marbury	3 cantonment Rd	24yrs	1	0	53	142						Tabs strong Cellulose + 100 Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
57	Mariatu Marbury	5 Cantment Rd	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
58	Sadara Jacob	6 Kingham Rd	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
59	Arthelia Telles	1 Congo Bridge Rd	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
60	Kadiatu Ganteh	36 Red Pump	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
61	Mariatu Brink	36 Red Pump	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
62	Mary Cole	Leister Road	16yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
63	Kaffie Kuruak	36 Red Pump	24yrs	2	1	56	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
64	Abonui Sedey	56 Charles St	16yrs	4	3	60	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
65	Prebecca Sunda	Block 4 Row 21	24yrs	1	0	53	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
66	Amiratu Baryue	02 Congo Valley	32yrs	5	6	110	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
67	Yandi Thiorika	36 Congo Valley	24yrs	4	3	60	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
68	Gloria W. Harris	46 Macdonald	24yrs	1	0	62	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date
69	Isatu Condeh	50 Preetown Rd	32yrs	3	1	58	142						Tabs Anesth 100 + 100 Tabs Carcinoma 100 + 100 Tabs H3 sorted + each Tabs Calcium to date

Conducting a Data Completeness / Consistency Assessment

Step 3 – Define the assessment period.

- Determine the period for which the data completeness assessment will be performed
- If supervisory visits occur frequently, start the assessment period from the date of the last supervisory visit and end on the date of the upcoming site visit.
- If supervisory visits are irregular or infrequent, pick a recent period of time (e.g., the last quarter).
- Consider the volume of patients (and the data) over the period

Conducting a Data Completeness / Consistency Assessment

Step 4 – Determine the sample size and decision rule to apply to the records within a lot.

- Select the quality thresholds. The method presupposes two scenarios:
 - 1) Facilities with suspected good completeness / consistency of data:
 - $P_U = 95\%$; $P_L = 85\%$
 - 2) Facilities with poor or average completeness / consistency of data:
 - $P_U = 90\%$; $P_L = 75\%$
- Select your own depending on the needs of your program
- Use an online sample size calculator
- Each facility will have a different sample size and decision rule depending on the client volume.

Conducting a Data Completeness / Consistency Assessment

Step 5 – Determine the data elements to be assessed within a record.

1) Date of last ART

6) Date medically eligible for ART

2) Regimen at last ART

7) ART start date

3) Date of last viral load test

8) Client functional status at six months

4) Result of last viral load test

9) Adherence to treatment regimens

5) Clinical stage at diagnosis

10) Client treatment status (i.e., alive and on treatment or not)

Conducting a Data Completeness / Consistency Assessment

During the site visit:

- **Step 6** –Determine the total number of records from which the sample will be drawn
- Count the total number of records within the identified period (e.g., the last quarter, the last 12 months).



Conducting a Data Completeness / Consistency Assessment

During the site visit:

- **Step 7** – Sample the records:
 - Obtain the source document(s) that contains the data elements that were chosen in Step 2.
 - Use systematic random sampling to select the records



Conducting a Data Completeness / Consistency Assessment

During the site visit:

- **Step 8** – Assess the completeness and consistency of the data elements.
- Completeness – check to see the value has been recorded
- Consistency – check to see whether the value match between the two data sources
- Outcomes – check that the criteria is met
- Record findings directly in the Excel tool or on the standardized data collection form

Conducting a Data Completeness / Consistency Assessment

Data analysis:

- **Step 9** – Summarize the results of the assessment.
 - If the number of complete or consistent records meets or exceeds the decision rule, the lot passes and the facility data quality meets the standard.
 - If this is conducted routinely at all facilities, eventually all poor quality lots will be found.
 - Develop a data quality remediation plan for facilities that fail the test.

Lot Quality Assurance Sampling Triage System

Using the LQAS Data Collection and Analysis Tool

MEASURE Evaluation
September 2019



LQAS Triage System Data Collection and Analysis Tool

- MS Excel-based tool to facilitate data collection and analysis
- The tool consists of the following elements:
 - LQAS sample size table
 - Facility Info tab to record pertinent data on health facilities to be assessed on this round of supervision
 - Parameters tab to configure the tool for a particular analysis, that is, particular data sources and data elements
 - Analysis page to summarize findings for completeness and consistency
 - Up to 40 health facility pages to record data for up to five data elements from up to three data sources
 - Printable versions of the data collection form for doing data collection on hard copy



LQAS Triage System
 Data Collection and Analysis Tool
 A tool to measure the data quality in routine health information system source documents

LQAS Triage System Data Collection and Analysis Tool – Facility Info tab

- The facility Info page records important information on each facility in the sample of facilities to be assessed on a given assessment or round of supervision, including:
- Reporting period of review (for example, Quarter 1, 2019)
- Quality thresholds (2 choices, 85%-95% = good quality, 75%-90% = needs improvement)
- Number of facilities to be reviewed (select from the drop-down list and the facility pages will be revealed)
- Facility name
- Geographic identifiers (region and district)
- Facility size (patient volume)
- LQAS sample size
- Decision rule
- Date of the assessment at the facility

*filled
automatically
after entering the
facility size*

LQAS Triage System USAID / MEASURE Evaluation

Period of review: Q1 2019
Quality thresholds: 85%-95%
Number of facilities for review: 40

Facility Name	Region	District	Facility Size (Patient Volume)	LQAS Sample Size	Decision Rule	Date of Assessment
1 HINGOZI			719	750	67	61
2 H BUYE			302	300	58	53
3 H KIREMBA			489	500	66	60
4 H CANKUZO			379	375	66	60
5 H MURORE			101	100	46	42
6 H BUTEJI			110	100	46	42
7 SWAA RUYIGI			383	375	66	60
8 H KINYINYA			246	250	58	53
9 NLE ESPERIENCE BUYENDI			476	475	67	61
10 CDS CHUK			224	225	56	51
11 NLE ESPE KANYOSHA			119	125	46	42
12 INTIA			307	300	58	53
13 H Mutavi			257	250	58	53
14 H KIBUYE			358	350	58	53
15 CDS KIGUTU			456	450	67	61
16 H MATANA			225	225	56	51
17 H KIGANDA			171	175	54	51
18 H MURAMVYA			399	400	66	60
19 CDS Marambo			161	150	49	45
20 CDS Gasura			235	250	58	53
21 H Mukamba			586	600	67	61
22 ANSS Krundo			1069	1100	68	62
23 H Nyaraga-Loc			261	275	63	59
24 ANSS MAKAMBA			616	600	67	61
25 CDS RUZO			338	350	58	53
26 H MUYINGA			874	900	67	61
27 H KIBUMBU			517	550	67	61
28 H FOTA			119	125	46	42
29 H RUTANA			268	275	63	59
30 H GHIORI			230	225	56	51
31 H KAYANZA			911	900	67	61
32 H MUSEHA			239	250	58	53
33 CDS MARAMVYA			152	150	49	45
34 H Rumonge			592	600	67	61
35 ANSS GITEGA			1174	1200	68	62
36 H MUTOTI			257	250	58	53
37 H BUREGA			402	400	66	60
38 H GHANGA			283	300	58	53
39 H CIBITOKE			524	550	67	61
40 Kabezi						

LQAS Triage System Data Collection and Analysis Tool – Parameters Tab

- Configure the tool for a particular assessment using the Parameters tab.
- Select up to five data elements from up to three data sources.
- Use the drop-down lists to select the program area.
- Use the drop-down lists to select the data sources.
- Use user-defined values by selecting “other (specify)” from the list.
- Use the drop-down lists to select data elements.
- indicate the data element format in the cell provided.
- If a date format, indicate the number of days difference between dates whereby a comparison will yield a “match.”

LQAS Triage System Data Collection and Analysis Tool – Parameters Tab

Configure Comparisons: Enter program area, data sources, and data elements.

For Date
Fields: How
close a
match?
(number of
days)

Health Program:

Data Elements:

Health Program:

HIV_AIDS

Data Element 1:

Date of last ART

Data Type

Date

30

Data Element 2:

Regimen at last ART

Text

Data Sources:

Data Source 1:

Electronic medical record

Data Element 3:

Date of last viral load test

Date

30

Data Source 2:

Paper-based medical record

Data Element 4:

Viral load test done and suppressed

Text

Data Source 3:

Paper-based register

Data Element 5:

Current on ART

Text

Summary Findings from Data Consistency Check with LQAS Triage System Tool

				Date of last ART			Regimen at last ART			Date of last viral load test			Viral load test done and suppressed			Current on ART		
	Active on Treatment (DHIS 2)	LQAS Sample Size	Decision Rule	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register
H NGOZI	750	67	61	yes	yes	yes	yes	yes	yes	no	no	no	yes	no	no	yes	yes	yes
H BUYE	300	58	53	yes	yes	yes	yes	yes	yes	yes	-	-	yes	-	-	yes	yes	yes
H KIREMBA	500	66	60	yes	yes	yes	yes	yes	yes	yes	-	-	yes	-	-	yes	yes	yes
H CANKUZO	375	66	60	no	yes	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
H MURORE	100	46	42	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
H BUTEZI	100	46	42	no	no	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
SWAA RUYIGI	375	66	60	no	no	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
H KINYINYA	250	58	53	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
NLLE ESPERENCE BUYEI	475	67	61	no	yes	no	yes	yes	yes	no	-	-	yes	-	-	yes	yes	yes
CDS CHUK	225	56	51	yes	yes	no	yes	yes	yes	yes	-	-	yes	-	-	yes	yes	yes
NLLE ESPE KANYOSHA	125	46	42	no	no	yes	yes	yes	yes	no	yes	-	no	-	-	yes	yes	yes
H NTITA	300	58	53	-	-	yes	-	-	yes	-	-	no	-	-	-	-	-	-
H Mutoyi	250	58	53	-	-	yes	-	-	no	-	-	-	-	-	-	-	-	-
H KIBUYE	350	58	53	-	yes	-	yes	yes	yes	no	-	-	-	-	-	yes	yes	yes
CDS KIGUTU	450	67	61	-	yes	-	no	yes	no	-	-	-	no	-	-	-	yes	-
H MATANA	225	56	51	yes	no	no	yes	yes	yes	-	-	-	-	-	-	yes	yes	yes
H KIGANDA	175	56	51	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
H MURAMVYA	400	66	60	no	no	no	yes	no	no	-	-	-	no	-	-	no	no	no
CDS Marembo	150	49	45	no	no	no	yes	yes	yes	-	-	-	no	-	-	no	yes	no
CDS Gasura	250	58	53	-	-	yes	-	-	yes	-	-	-	-	-	-	-	-	-
H Mukenke	600	67	61	no	no	no	yes	yes	yes	no	-	-	no	-	-	yes	yes	yes
ANSS Kirundo	1100	68	62	no	no	no	yes	yes	yes	no	-	-	no	-	-	yes	yes	yes
H Nyanza-Lac	275	65	59	no	no	yes	yes	yes	yes	-	-	-	-	-	-	yes	yes	yes
ANSS MAKAMBA	600	67	61	no	no	yes	no	no	yes	no	no	no	no	no	no	yes	yes	yes
CDS RUZO	350	58	53	no	no	no	no	no	no	-	-	-	-	-	-	no	no	no
H MUYINGA	900	67	61	no	-	-	no	-	-	no	-	-	no	-	-	no	-	-
H KIBUMBU	550	67	61	no	yes	no	no	yes	no	no	-	-	no	-	-	yes	-	-
H FOTA	125	46	42	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
H RUTANA	275	65	59	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
H GIHOFI	225	56	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H KAYANZA	900	67	61	no	no	no	yes	yes	yes	no	-	-	-	-	-	yes	yes	yes
H MUSEMA	250	58	53	no	no	no	yes	yes	yes	no	no	no	no	no	no	yes	yes	yes
CDS MARAMVYA	150	49	45	-	-	no	-	-	yes	-	-	-	-	-	-	-	-	-
H Rumonge	600	67	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANSS GITEGA	1200	68	62	-	yes	-	-	no	-	-	-	-	-	-	-	-	yes	-
H MUTOYI	250	58	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H BUHIGA	400	66	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H GIHANGA	300	58	53	-	-	no	-	-	yes	-	-	-	-	-	-	-	-	yes
H CIBITOKI	550	67	61	no	yes	no	yes	yes	yes	-	-	-	-	-	-	yes	yes	yes
Kabezi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of facilities meeting the standard:				8	14	15	22	23	26	3	0	0	5	0	0	22	24	24
Number of facilities not meeting the standard:				19	15	16	7	6	7	19	11	12	19	11	11	6	4	4
Number of facilities where comparison not done:				13	11	9	11	11	7	18	29	28	16	29	29	12	12	23
Total:				40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
% of facilities meeting standard*:				30%	48%	48%	76%	79%	79%	14%	0%	0%	21%	0%	0%	79%	86%	84%
% of facilities not meeting the standard*:				70%	52%	52%	24%	21%	21%	86%	100%	100%	79%	100%	100%	21%	14%	16%
% not done				33%	28%	23%	28%	28%	18%	45%	73%	70%	40%	73%	73%	30%	30%	23%

* Of valid comparisons

LQAS Triage System Data Collection and Analysis Tool – Facility Tabs

Health Facility Data Collection Tabs

- Health facility identifiers auto-populated in a table at the top of each page.
- For each sampled record, record the client number, name, date of birth, and gender.
- The column headings are auto populated once the assessment parameters are entered into the parameters tab.
- Enter data for up to three data sources.

Health facility name:	H NGOZI	Region:		District:	719	Health program:	HIV_AIDS	Return to Analysis page
Facility size (client volume):	750	Sample size:	67	Decision rule:	61	Date of assessment:		
Period of review:	Q1 2019							

ACTUAL SAMPLE SIZE = 68					Electronic medical record					
	Client Number	Client Name	Date of Birth	Sex	Date of last ART	Regimen at last ART	Date of last viral load test	Viral load test done and suppressed	Current on ART	Comments
1	003367		15-Jul-75	F	20-03-19	TDF/3TC/EFV	15-06-18	ind	Active	
2	003318		15-Jul-85	F	07-03-19	TDF/3TC/EFV			Active	
3	003304		01-Jan-10	F	30-03-19	ABC/3TC+EFV	07-06-18	det	Active	
4	003279		15-Jun-77	F	20-03-19	TDF/3TC/EFV	20-06-18	ind	Active	
5	003274		15-Aug-87	F	22-03-19	TDF/3TC/EFV	14-09-18	ind	Active	
6	003213		15-Jul-80	F	10-03-19	TDF/3TC/EFV	14-03-19	ind	Active	

LQAS Triage System Data Collection and Analysis Tool – Facility Tabs

Health Facility Data Collection Tabs

- Once the data are entered into the appropriate fields data elements are compared in the grid to the right.
- The values by data source are grouped and the degree of matching indicated.

Concordance between data sources for 'Date of last ART'						Concordance between data sources for 'Regimen at last ART'						Concordance between data sources for 'Date of last viral load test'						Concordance between data sources for 'Viral load test done and suppressed'						Concordance between data sources for 'Current on ART'						
Electronic medical record	Paper-based medical record	Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record	Paper-based medical record	Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record	Paper-based medical record	Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record	Paper-based medical record	Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	Electronic medical record	Paper-based medical record	Paper-based register	Electronic medical record / Paper-based medical record	Electronic medical record / Paper-based register	Paper-based medical record / Paper-based register	
20-03-19	20-03-19	20-03-19	0	0	0	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1	15-06-18	15-06-18	15-06-18	0	0	0	ind	ind	ind	1	1	1	Active	Active	Active	1	1	1	
07-03-19	07-03-19	26-02-19	0	11	11	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1								Active	Active	Active	1	1	1						
30-03-19	30-03-19	30-03-19	0	0	0	ABC/3TC+EFV	F/3TC+EFV	F/3TC+EFV	1	1	1	07-06-18	07-09-18	07-06-18	90	0	90	det	det	det	1	1	1	Active	Active	Active	1	1	1	
20-03-19	20-03-19	20-03-19	0	0	0	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1	20-06-18	20-06-18	20-06-18	0	0	0	ind	ind	ind	1	1	1	Active	Active	Active	1	1	1	
22-03-19	29-03-19	22-03-19	7	0	7	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1	14-09-18	14-09-18	14-09-18	0	0	0	ind	ind	ind	1	1	1	Active	Active	Active	1	1	1	
10-03-19	10-03-19	09-03-19	0	1	1	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1	14-03-19	14-03-19	14-03-19	0	0	0	ind	ind	ind	1	1	1	Active	Active	Active	1	1	1	
25-03-19	25-03-19	25-03-19	0	0	0	TDF/3TC/EFV	F/3TC/EFV	F/3TC/EFV	1	1	1	16-04-18	22-02-18	16-04-18	54	0	54	ind	ind	ind	1	1	1	Active	Active	Active	1	1	1	

LQAS Triage System Data Collection and Analysis Tool – Facility Tabs

Health Facility Data Collection Tabs

- The completeness and consistency of data elements is summarized for each data element at the bottom of the page.
- Summary data presented include:
 - Number of matches
 - The effective denominator
 - % matching
 - Number of missing values
 - % complete

Number of Matches:	68	67	67
Denominator:	68	68	68
% Match:	100%	99%	99%
Number missing:	0	0	0
% Complete:	100%	100%	100%

Number of Matches:	68	68	68
Denominator:	68	68	68
% Match:	100%	100%	100%
Number missing:	0	0	0
% Complete:	100%	100%	100%

Number of Matches:	57	9	7
Denominator:	68	68	68
% Match:	84%	13%	10%
Number missing:	2	1	59
% Complete:	97%	99%	13%

Number of Matches:	65	9	9
Denominator:	68	68	68
% Match:	96%	13%	13%
Number missing:	2	1	59
% Complete:	97%	99%	13%

Number of Matches:	68	68	68
Denominator:	68	68	68
% Match:	100%	100%	100%
Number missing:	0	0	0
% Complete:	100%	100%	100%

LQAS Triage System Data Collection and Analysis Tool – Best Practices

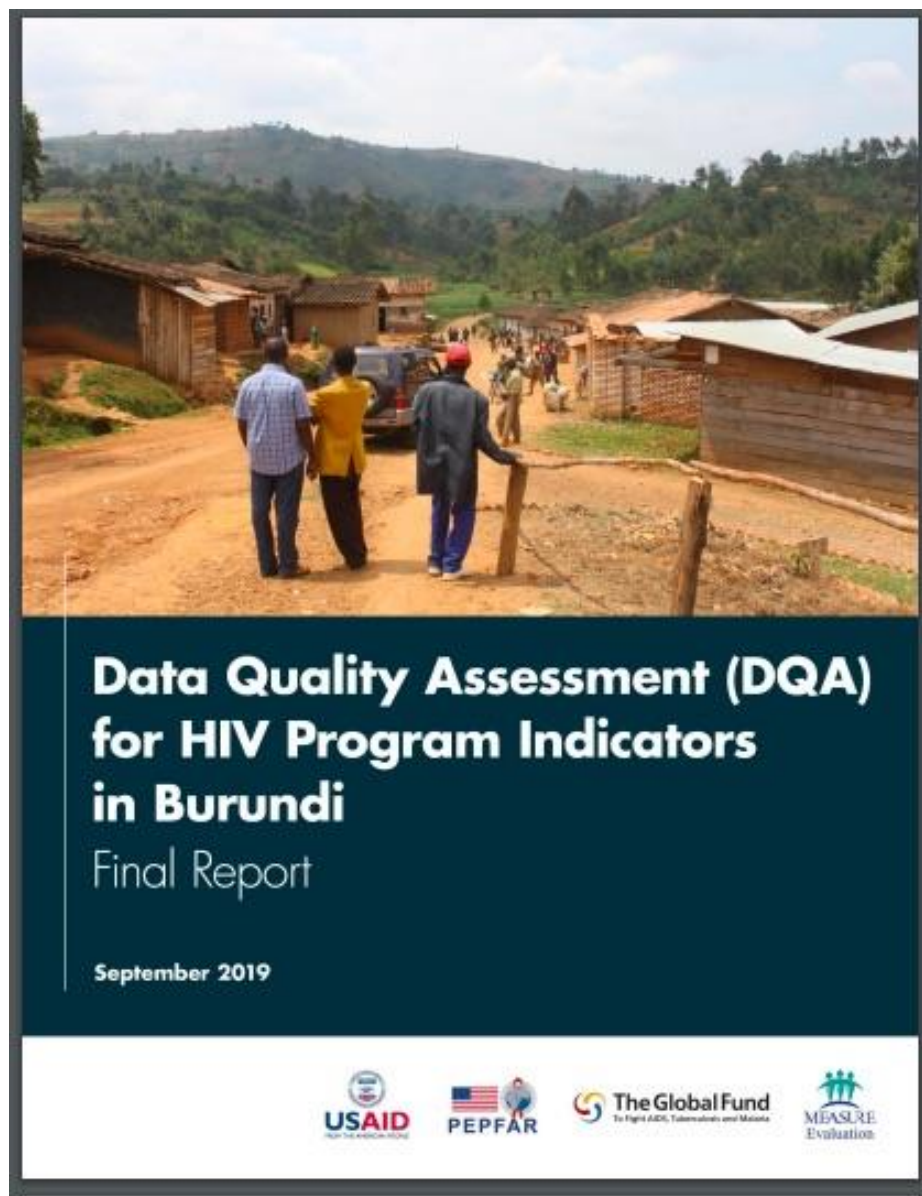
Best practices for effective implementation

- Standard data collection forms located in the tool (Print for paper data collection)
- Standardize the coding conventions prior to the assessment so that results are consistent across teams.
- If you are conducting a larger data quality assessment concurrently, ensure that the sampled records are kept apart from the larger recount to avoid double-counting
- Try to avoid being at the facility during clinic hours so that all the records will be available (be mindful to avoid disrupting patient care)
- If an electronic data source exists (e.g. EMR) export a line list of patients with relevant data elements to facilitate the assessment
- Paste only 'values' in the Excel tool (not formatting and formulas)

Burundi Test of LQAS Triage System

DQA of HIV/AIDS
program indicators

- Current on ART
- New on ART
- Viral load test done and suppressed
- May/June 2019
- 140 sites (80% of current on ART)
- Cross checks between data sources



Results – Data Element Completeness

Data Element	Data Source	% Data Element Compl. (Avg. across Sites)	# Facilities with 0% Compl.	% Facilities with 0% Compl.	Avg. Compl. Data Sources across Data Elements	Avg. Compl. Data Elements across Data Sources
Date of last ART	SIDA Info	77%	10	23%	63%	84%
	Medical record	89%	4	9%	70%	
	Register	87%	5	11%	51%	
Regimen at last ART	SIDA Info	81%	8	18%		87%
	Medical record	92%	3	7%		
	Register	87%	5	11%		
Date of last VL	SIDA Info	47%	11	25%		38%
	Medical record	51%	6	14%		
	Register	16%	26	59%		
Last VL result	SIDA Info	48%	11	25%		37%
	Medical record	48%	7	16%		
	Register	15%	26	59%		

Results – Concordance across data sources

		# Facilities Standard Met	# Facilities Standard Not Met	# Facilities Comparison Not Done	Total	% Facilities Meeting Standard	% Facilities Not Meeting Standard	% Facilities Comparison Not Done	Average for Data Element	Average for Specific Comparison
Date of Last ART	Medical record/register	18	18	8	44	50%	50%	18%	50%	46%
	Register/EMR	18	13	13	44	58%	42%	30%		47%
	Medical record/EMR	12	17	15	44	41%	59%	34%		48%
Regimen Last ART	Medical record/register	33	5	6	44	87%	13%	14%	86%	
	Register/EMR	28	5	11	44	85%	15%	25%		
	Medical Record / EMR	28	5	11	44	85%	15%	25%		
Date of Last VL	Medical record/register	0	12	32	44	0%	100%	73%	4%	
	Register/EMR	0	10	34	44	0%	100%	77%		
	Medical record/EMR	2	17	25	44	11%	89%	57%		
Result of Last VL	Medical record/register	0	11	33	44	0%	100%	75%	4%	
	Register/EMR	0	11	33	44	0%	100%	75%		
	Medical record/EMR	3	20	21	44	13%	87%	48%		
Status on Treatment	Medical record/register	33	3	8	44	92%	8%	18%	92%	
	Register/EMR	30	2	12	44	94%	6%	27%		
	Medical record/EMR	29	3	12	44	91%	9%	27%		

Agreement between sample and exhaustive review

Results	Number of facilities	Percent
Active on Treatment		
Standard met (sample proportion $\geq 95\%$)	40	91%
Standard not met (sample proportion $< 95\%$)	4	9%
True facility proportion $\geq 95\%$	31	72%
True facility proportion $< 95\%$	12	28%
Sample and true facility proportion $\geq 95\%$	30	70%
Sample and true facility proportion $< 95\%$	3	7%
Sample proportion $\geq 95\%$ and true facility proportion $< 95\%$	9	21%
Sample proportion $< 95\%$ and true facility proportion $\geq 95\%$	1	2%
Concordant	33	77%
Discordant	10	23%
Viral Load Test Conducted and Viral Load Suppressed		
Standard met (sample proportion $\geq 95\%$)	1	7%
Standard not met (sample proportion $< 95\%$)	13	93%
True facility proportion $\geq 95\%$	4	29%
True facility proportion $< 95\%$	10	71%
Sample and true facility proportion $\geq 95\%$	1	7%
Sample and true facility proportion $< 95\%$	10	71%
Sample proportion $\geq 95\%$ and true facility proportion $< 95\%$	0	0%
Sample proportion $< 95\%$ and true facility proportion $\geq 95\%$	3	22%
Concordant	11	78%
Discordant	3	22%

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