Assessing and strengthening the quality of VL testing data within HIV programmes and patient monitoring systems –overview of WHO-UNAIDS-PEPFAR-GF Joint tool

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Presentation outline

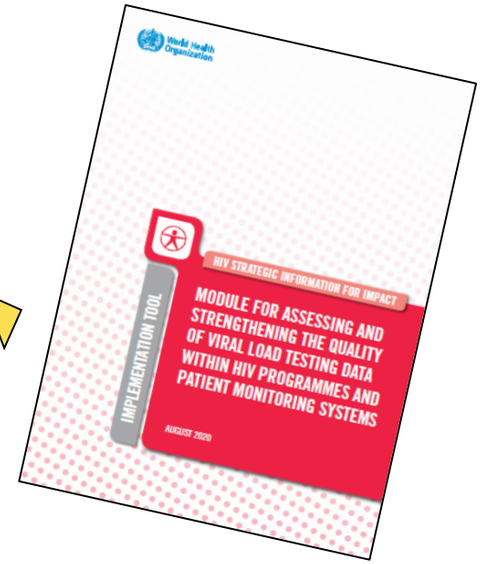
- Introduction into importance of data quality and common VL testing data challenges
- Overview of key recommended approaches for VL testing data quality assurance ***(joint WHO-UNAIDS-PEPFAR-GF module for strengthening VL data testing data quality assurance and patient monitoring systems***)
- Highlight available tools included in the module for country adaptation
- Follow up on DQ assurance activities -examples recommended for long term DQI

Context

- **Growing emphasis on data quality (DQ) & use -** from Ministries of Health and partners to improve patient management, programmatic impact, enable performance monitoring and increase accountability
- **Achieving 95-95-95 targets** - requires collecting and reporting accurate data in real time to understand where gaps in service delivery remain and data use to improve programme implementation
- **Need to strengthen DQ along the entire HIV cascade** -historically DQ improvement (DQI) activities prioritised HIV treatment indicators but strengthening DQ and use along the entire cascade of HIV services is essential for ensuring quality and continuity of HIV care
- **Viral suppression as key outcome of HIV treatment** - ensuring accurate and timely VL data, with the results available for use is critical for enhancing programmatic impact and improved clinical care and outcomes for PLHIV

Context

- **DQA tool developed**: In 2018 WHO-UNAIDS-PEPFAR-Global Fund launched an implementation tool for national data quality assessment (DQA) for HIV treatment and patient monitoring systems
- **Uptake of DQA implementation**: a number of countries implemented national DQAs of HIV treatment data between 2018 and 2019 following release of the DQA tool
- **Sustainability and moving towards long term DQI**: Need for routine DQ assurance activities to enable integration within programmes as part of efforts to strengthen health information systems and long-term DQ improvement strategies identified
- **New DQ module**: In 2020 WHO-UNAIDS-PEPFAR-Global Fund developed a supplement data quality module for **routine** data quality assurance activities to assess and strengthen **viral load testing** data within HIV programmes and HIV patient monitoring systems



Objectives of WHO-UNAIDS-PEPFAR-GF DQ module

- **Enable rapid assessment and verification of the quality and coverage of VL testing data**, including completeness, reliability and accuracy at select facilities and laboratories on a routine basis

- **Assess bottlenecks to improving DQ**, including those linked to the return of test results to facilities and patient records (including EMR and LIMS) to improve care and feed into the development of strategies to reduce VL result turnaround time

- **Address DQ and service flow for both laboratory or referral testing and point-of-care or facility-based testing and potential differences**

Objectives (cont.)

- **Developing and implementing key remedial actions** to address the root causes of identified DQ challenges in VL monitoring and strengthen data systems
- **Ensure the rapid use of VL testing data to improve patient care and programme management,** for example to implement differentiated care for stable patients or support the management of patients with elevated VL and respond to gaps in viral suppression

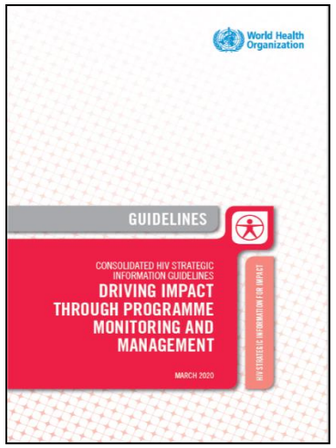
Challenges linked to availability and use of VL testing data assessed by routine data quality assurance activities

Challenges	Response
• ↓ Representativeness of VL testing data as routine VL testing may not be provided at all health facilities or to all populations	• Assess completeness of VL monitoring at health facility and laboratory level and determine VL testing coverage
• Delays in timely transmission, receipt and use of VL testing data	• Identify bottlenecks in reporting and return of VL results to support implementation of remedial actions to improve data flow and ensure use of results for improve patient care
• Inconsistency in data between different data sources (e.g. EMR vs. Laboratory information management system vs. paper laboratory forms)	• Identification and verification of level of concordance in VL test results between data sources to establish the origin of data quality issues
• Lack of disaggregated data on VL coverage & suppression by age, sex, pregnancy status, key population and TB status	• Assess whether country data systems can meet needs for disaggregated information to support identification of gaps in service delivery for specific popultions

Focus on VL suppression and coverage

- **VL suppression and testing coverage** recommended to be given priority for routine DQ assurance activities and should align with MoH indicators
- **Turnaround time of VL results** should also be assessed given importance of timely transmission and receipt of VL results for data completeness and quality of care
- Countries may also consider including other indicators that are of programmatic and clinical priority in accordance with their needs and context.

2020 HIV strategic information guidelines



Indicator	Description
PLHIV who have suppressed VL (WHO 2020 GL code: AV.3)	% of PLHIV on ART (for at least 6 months) who have virological suppression (based on routine VL testing)
Viral load testing coverage (WHO 2020 GL code: AV.6)	% of people on ART (at least 6 months) with viral load test results

Implementation of DQ assurance activities

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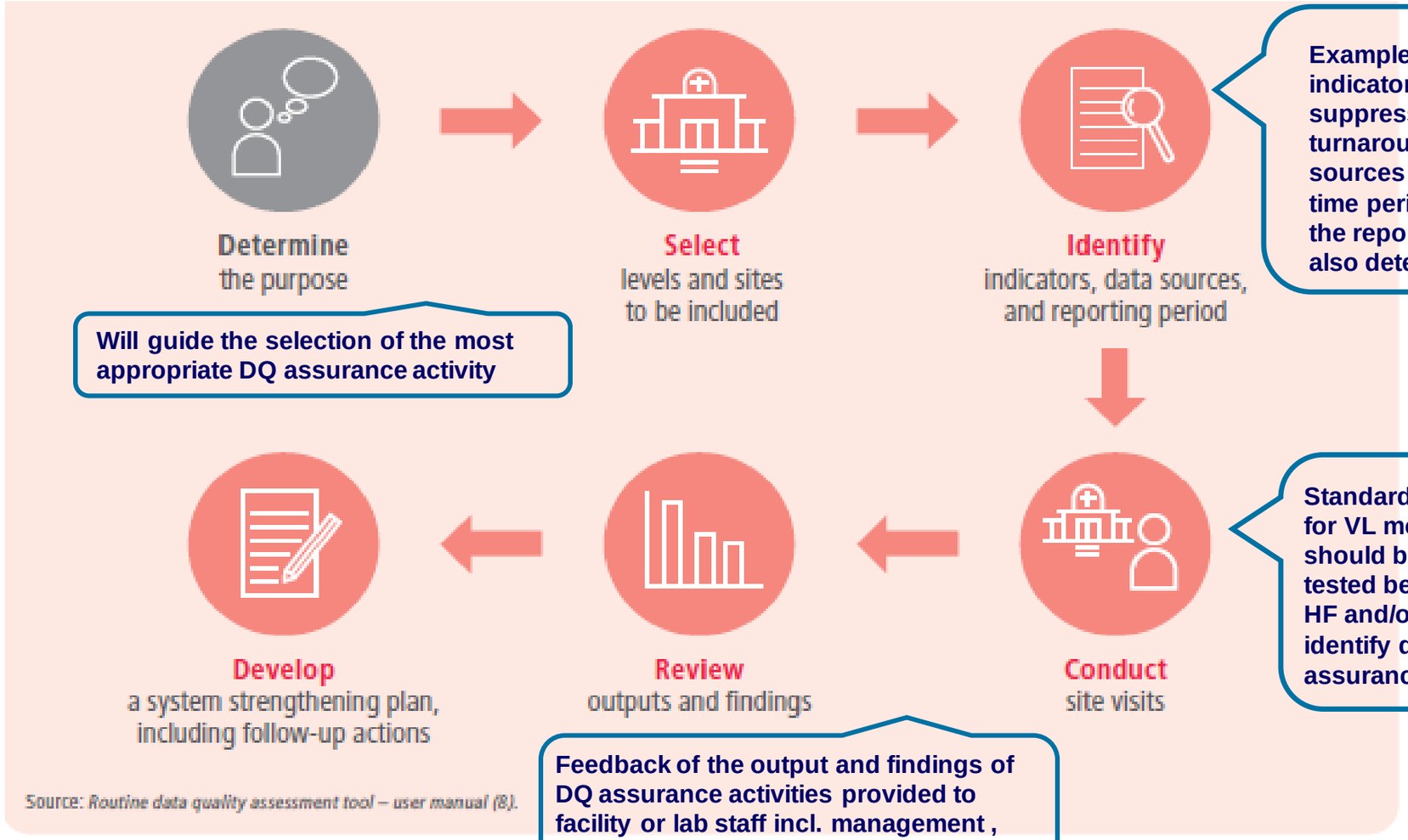
Six key implementation steps



Example of recommended indicators: VL coverage, suppression and test turnaround time. Data sources and elements and time period for assessing the reported data to be also determined

Will guide the selection of the most appropriate DQ assurance activity

Standardized tools developed for VL monitoring indicators should be used and pilot tested before use. Selected HF and/or labs contacted to identify date and time for DQ assurance activity

Feedback of the output and findings of DQ assurance activities provided to facility or lab staff incl. management , as part of the site out-brief

Menu of recommended DQ assurance activities (1)

1. Routine data quality assessment

Description

External assessment conducted by supervisors focusing on:

- **Indicator verification:** recount of VL indicators at the facility or laboratory level and comparison against the numbers reported to the ministry of health routinely and partners if appropriate
- **Data completeness checks**
- **Cross-validation of a sample of facility records across different sources** (paper versus EMR or laboratory result forms and VL databases or LIMS) to determine the consistency of data across data sources
- **Mapping of data and service delivery flow (Annex B)**

Strengths

- ✓ Enables on the spot feedback & mentoring
- ✓ Cross-validation enables DQ issues to be identified that may only be evident in one data source
- ✓ Verified recounts from source documents of no. of eligible PLHIV receiving VL test & verification of the viral suppression indicator enable site-level correction of data
- ✓ Mapping of data & service delivery flow enables data deficiencies or bottlenecks to be identified and corrected within the data workflow, including returning VL results to facilities and patient records
- ✓ Site-specific action plans are a key output of DQA exercises and identify key remedial actions to improve DQ

Limitations

More costly and human resource and time intensive

Implementation considerations

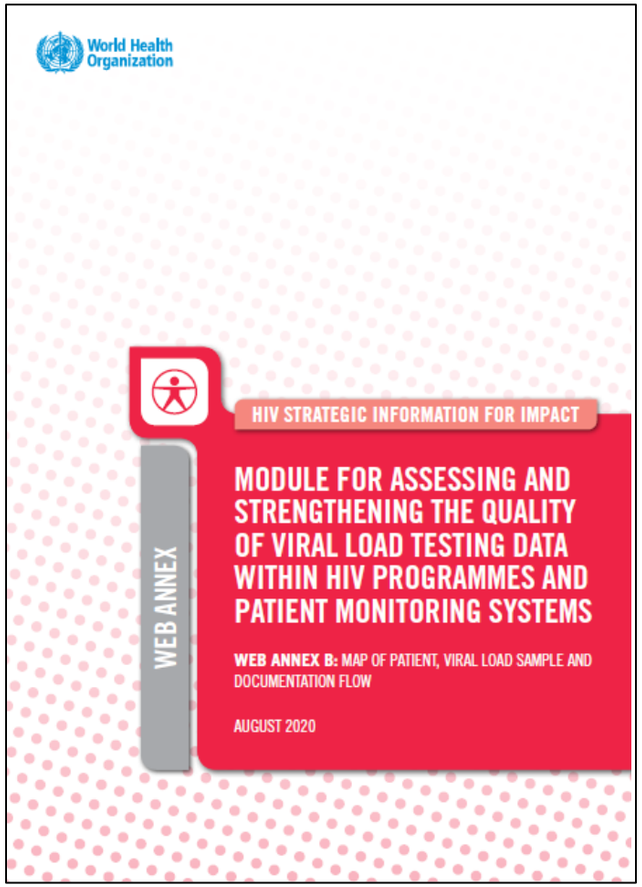
- Routine DQAs do not need to be national & can be done in a selected number of sites
- Quicker to implement than national DQA depending on the number of sites and number of patient files sampled
- Can be implemented more frequently than national DQAs or audits
- **Criteria for selection**: desire or need to verify reported VL indicators either externally or coordinated by ministries of health in collaboration with partners
- **Frequency**: semi-annually or annually

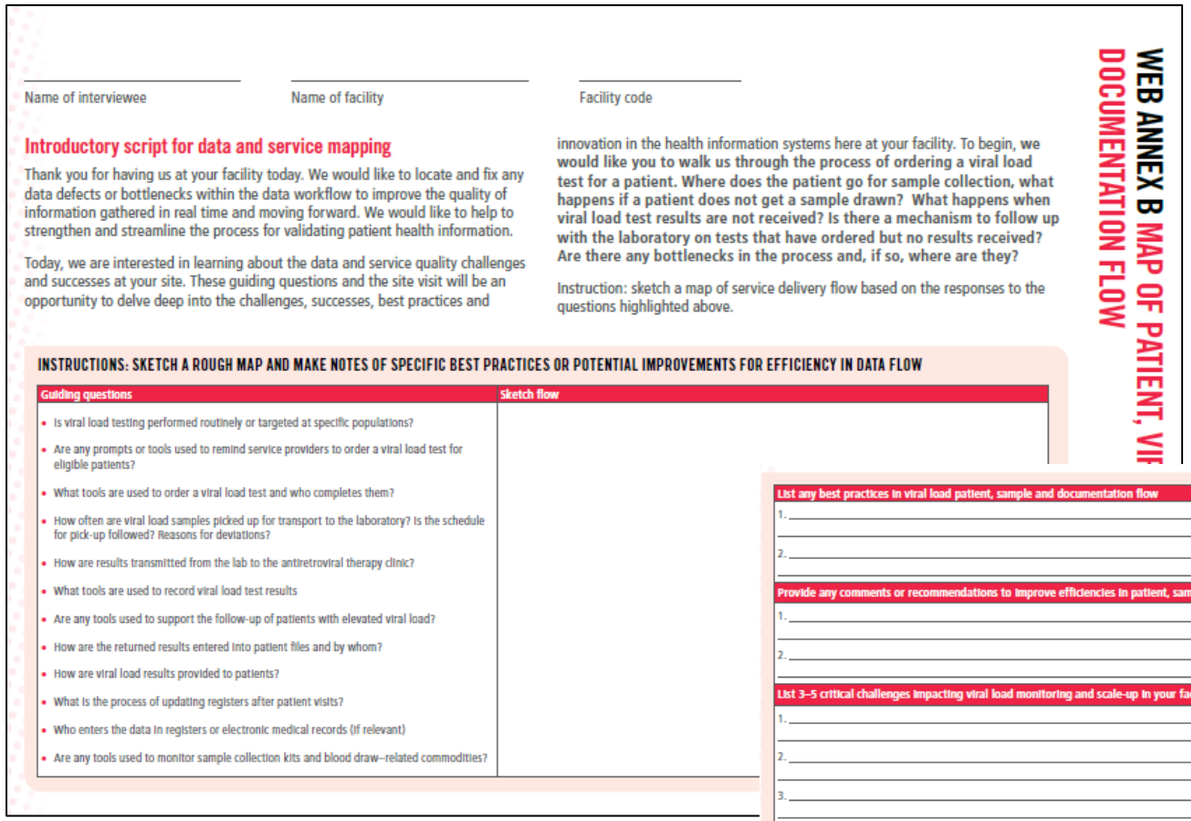
Main activities implemented during a routine DQA

1. Introductory discussions with key staff of the site including facility management and service providers
2. Review and completion of informed consent (see Annex A)
3. Assessment of service delivery and data flow processes for VL testing from the facility to lab and from lab to facility to identify & address data deficiencies or bottlenecks within the data workflow in real time (see Annex B)
4. Completeness checks of VL monitoring data within all or sample of patient files (see Annex C and Annex D)
5. Cross-validation of data elements of sample of patient files with lab forms, LIMS and/or EMR (see Annex C and Annex D)
6. Recount and recreation of viral suppression and coverage indictors (see Annex E)
7. Feedback of findings to facility & lab team & developing a DQI plan for site(s) (see Annexes F and I)
8. On-the-spot mentoring and feedback as required throughout the exercise

Tool available for assessing data flow and bottlenecks

Annex B





Name of interviewee _____ Name of facility _____ Facility code _____

Introductory script for data and service mapping

Thank you for having us at your facility today. We would like to locate and fix any data defects or bottlenecks within the data workflow to improve the quality of information gathered in real time and moving forward. We would like to help to strengthen and streamline the process for validating patient health information.

Today, we are interested in learning about the data and service quality challenges and successes at your site. These guiding questions and the site visit will be an opportunity to delve deep into the challenges, successes, best practices and innovation in the health information systems here at your facility. To begin, we would like you to walk us through the process of ordering a viral load test for a patient. Where does the patient go for sample collection, what happens if a patient does not get a sample drawn? What happens when viral load test results are not received? Is there a mechanism to follow up with the laboratory on tests that have ordered but no results received? Are there any bottlenecks in the process and, if so, where are they?

Instruction: sketch a map of service delivery flow based on the responses to the questions highlighted above.

INSTRUCTIONS: SKETCH A ROUGH MAP AND MAKE NOTES OF SPECIFIC BEST PRACTICES OR POTENTIAL IMPROVEMENTS FOR EFFICIENCY IN DATA FLOW

Guiding questions	Sketch flow
• Is viral load testing performed routinely or targeted at specific populations? • Are any prompts or tools used to remind service providers to order a viral load test for eligible patients? • What tools are used to order a viral load test and who completes them? • How often are viral load samples picked up for transport to the laboratory? Is the schedule for pick-up followed? Reasons for deviations? • How are results transmitted from the lab to the antiretroviral therapy clinic? • What tools are used to record viral load test results • Are any tools used to support the follow-up of patients with elevated viral load? • How are the returned results entered into patient files and by whom? • How are viral load results provided to patients? • What is the process of updating registers after patient visits? • Who enters the data in registers or electronic medical records (if relevant) • Are any tools used to monitor sample collection kits and blood draw–related commodities?	

WEB ANNEX B MAP OF PATIENT, VIR
DOCUMENTATION FLOW

List any best practices in viral load patient, sample and documentation flow

1. _____
2. _____

Provide any comments or recommendations to improve efficiencies in patient, sample and documentation flow

1. _____
2. _____

List 3–5 critical challenges impacting viral load monitoring and scale-up in your facility

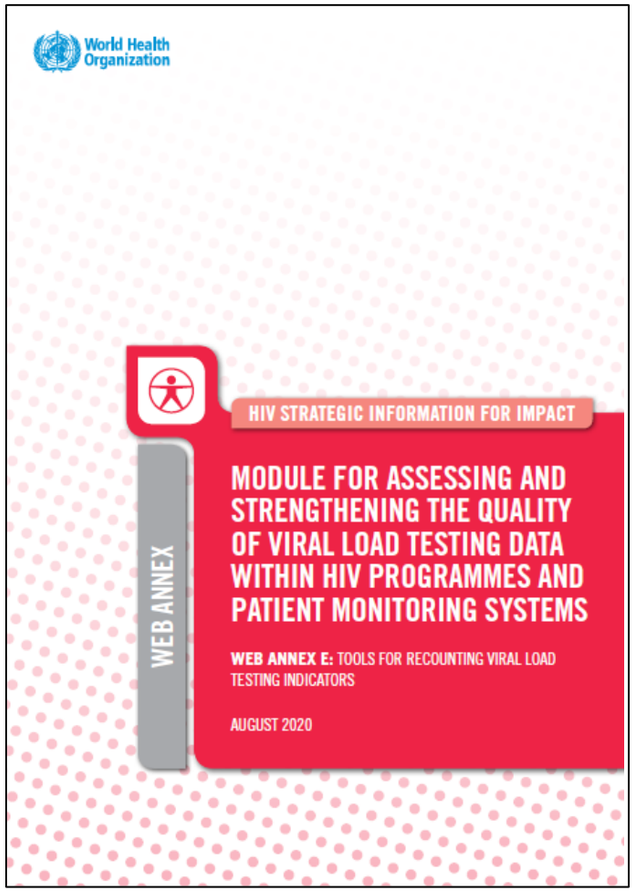
1. _____
2. _____
3. _____
4. _____
5. _____

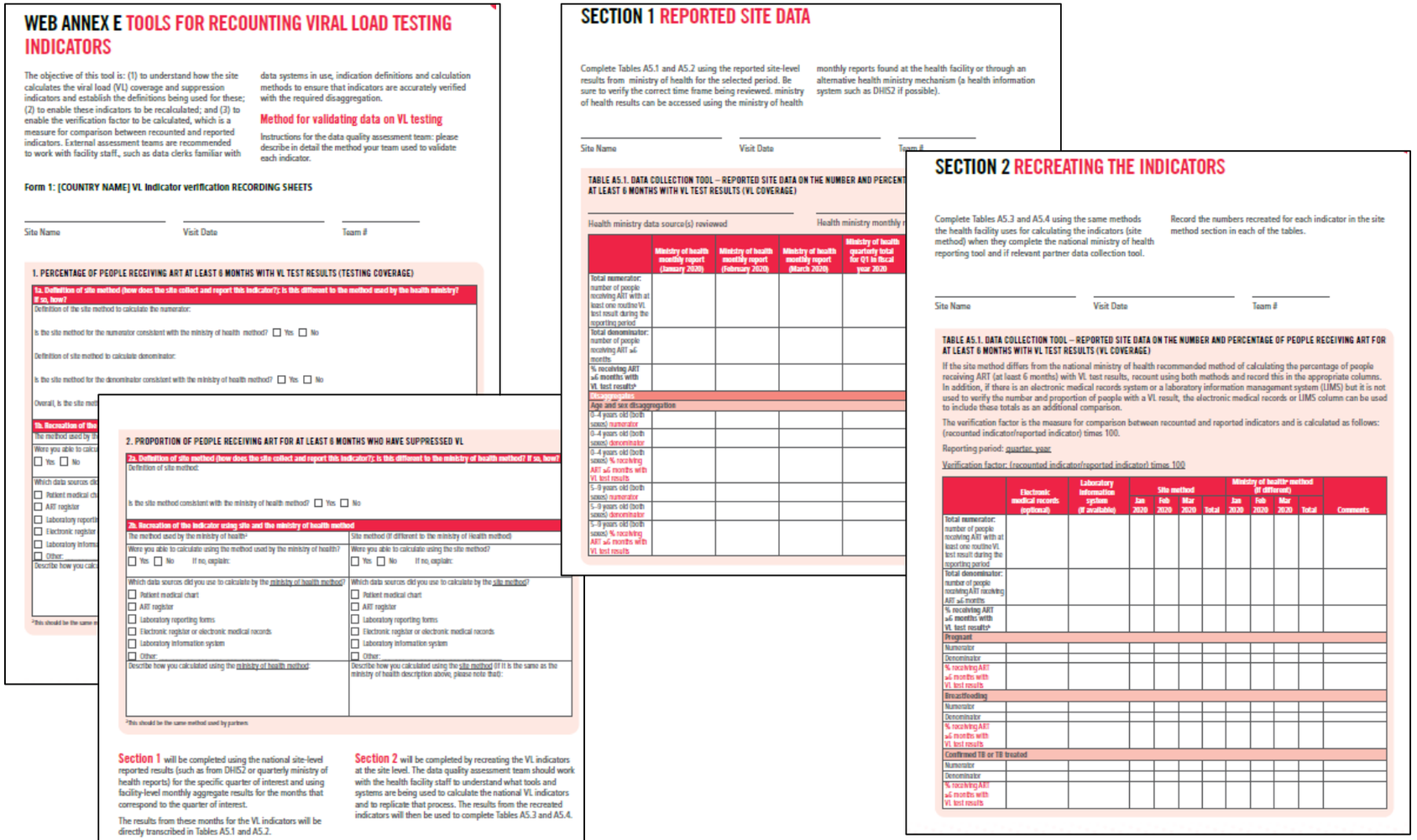
Provide any comments, best practices or recommendations for strengthening viral load monitoring and scale-up that could be applicable to other settings

1. _____
2. _____
3. _____
4. _____
5. _____

Tool available for indicator recount and verification

Annex E





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Menu of recommended DQ assurance activities (2)

2. DQ monitoring via supportive supervision

Description

External assessment conducted at the same time as supportive supervision for programme monitoring focusing on assessing:

- **Data completeness checks**
- **Cross-validation of a sample of facility records across different sources** (paper versus EMR or laboratory result forms and VL databases or LIMS) to determine the consistency of data across data sources
- **Mapping of data and service delivery flow (Annex B)**
- **Assessment of service delivery and quality,** including clinical care and laboratory aspects (Annexes C and D)

Strengths

- ✓ Enables on the spot feedback & mentoring
- ✓ Cross-validation enables DQ issues to be identified that may only be evident in one data source
- ✓ DQ monitoring conducted at the same time as supportive supervision provides a convenient and cost-effective method for integration within programme monitoring activities
- ✓ Can be implemented more frequently than routine DQAs since there is no recount and recreation of indicators and thus quicker to conduct

Limitations

- Usually involves assessing both service delivery and quality as well as DQ and may therefore be less time for conducting more comprehensive DQ checks

Implementation considerations

- **Criteria for selection**: desire or need to conduct joint assessment of DQ and service delivery and quality or use existing supervision activities for DQI
- **Frequency**: semi-annually

DQ monitoring via supportive supervision – tools available

World Health Organization

HIV STRATEGIC INFORMATION FOR IMPACT

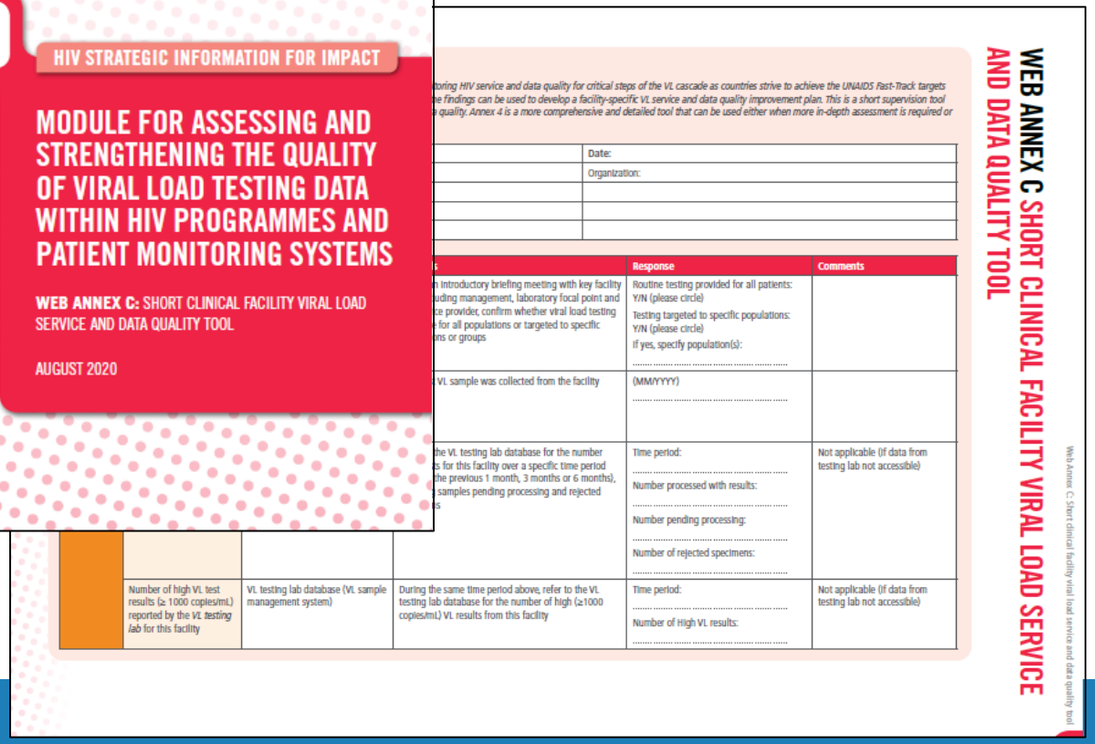
WEB ANNEX

MODULE FOR ASSESSING AND STRENGTHENING THE QUALITY OF VIRAL LOAD TESTING DATA WITHIN HIV PROGRAMMES AND PATIENT MONITORING SYSTEMS

WEB ANNEX C: SHORT CLINICAL FACILITY VIRAL LOAD SERVICE AND DATA QUALITY TOOL

AUGUST 2020

Annex C: Abbreviated tool for joint assessment of service delivery and quality & DQ



WEB ANNEX C SHORT CLINICAL FACILITY VIRAL LOAD SERVICE AND DATA QUALITY TOOL

toring HIV service and data quality for critical steps of the VL cascade as countries strive to achieve the UNAIDS Fast-Track targets he findings can be used to develop a facility-specific VL service and data quality improvement plan. This is a short supervision tool quality. Annex 4 is a more comprehensive and detailed tool that can be used either when more in-depth assessment is required or

Date:

Organization:

			Response	Comments
			Routine testing provided for all patients: Y/N (please circle) Testing targeted to specific populations: Y/N (please circle) If yes, specify population(s):	
			(MM/YYYY)	
			Time period: Number processed with results: Number pending processing: Number of rejected specimens:	Not applicable (if data from testing lab not accessible)
	Number of high VL test results (≥ 1000 copies/mL) reported by the VL testing lab for this facility	VL testing lab database (VL sample management system)	During the same time period above, refer to the VL testing lab database for the number of high (≥1000 copies/mL) VL results from this facility	Time period: Number of High VL results:	Not applicable (if data from testing lab not accessible)

Web Annex C: Short clinical facility viral load service and data quality tool

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HIV STRATEGIC INFORMATION FOR IMPACT

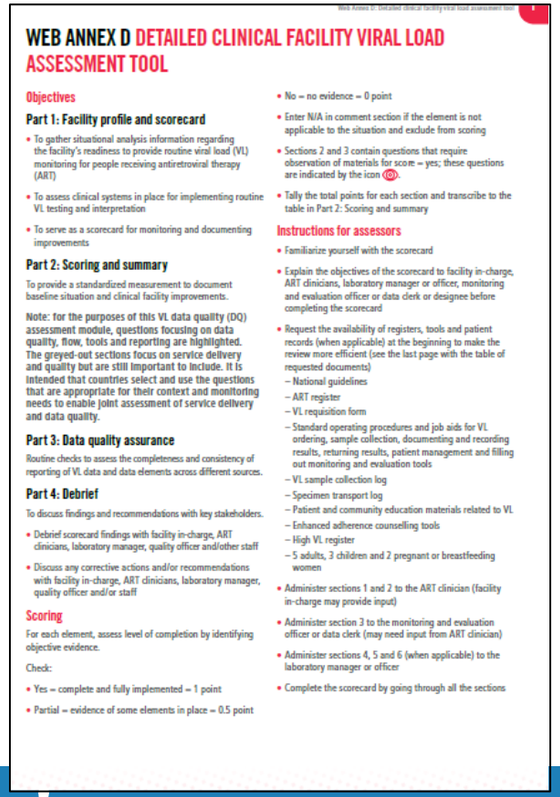
WEB ANNEX

MODULE FOR ASSESSING AND STRENGTHENING THE QUALITY OF VIRAL LOAD TESTING DATA WITHIN HIV PROGRAMMES AND PATIENT MONITORING SYSTEMS

WEB ANNEX D: DETAILED CLINICAL FACILITY VIRAL LOAD ASSESSMENT TOOL

AUGUST 2020

Annex D: Detailed tool for joint assessment of service delivery and quality & DQ



Web Annex D: Detailed clinical facility viral load assessment tool 1

WEB ANNEX D DETAILED CLINICAL FACILITY VIRAL LOAD ASSESSMENT TOOL

Objectives

Part 1: Facility profile and scorecard

- To gather situational analysis information regarding the facility's readiness to provide routine viral load (VL) monitoring for people receiving antiretroviral therapy (ART)
- To assess clinical systems in place for implementing routine VL testing and interpretation
- To serve as a scorecard for monitoring and documenting improvements

Part 2: Scoring and summary

To provide a standardized measurement to document baseline situation and clinical facility improvements.

Note: for the purposes of this VL data quality (DQ) assessment module, questions focusing on data quality, flow, tools and reporting are highlighted. The greyed-out sections focus on service delivery and quality but are still important to include. It is intended that countries select and use the questions that are appropriate for their context and monitoring needs to enable joint assessment of service delivery and data quality.

Part 3: Data quality assurance

Routine checks to assess the completeness and consistency of reporting of VL data and data elements across different sources.

Part 4: Debrief

To discuss findings and recommendations with key stakeholders.

- Debrief scorecard findings with facility in-charge, ART clinicians, laboratory manager, quality officer and/other staff
- Discuss any corrective actions and/or recommendations with facility in-charge, ART clinicians, laboratory manager, quality officer and/or staff

Scoring

For each element, assess level of completion by identifying objective evidence.

Check:

- Yes = complete and fully implemented = 1 point
- Partial = evidence of some elements in place = 0.5 point
- No = no evidence = 0 point
- Enter N/A in comment section if the element is not applicable to the situation and exclude from scoring
- Sections 2 and 3 contain questions that require observation of materials for score = yes; these questions are indicated by the icon
- Tally the total points for each section and transcribe to the table in Part 2: Scoring and summary

Instructions for assessors

- Familiarize yourself with the scorecard
- Explain the objectives of the scorecard to facility in-charge, ART clinicians, laboratory manager or officer, monitoring and evaluation officer or data clerk or designee before completing the scorecard
- Request the availability of registers, tools and patient records (when applicable) at the beginning to make the review more efficient (see the last page with the table of requested documents)
  - National guidelines
  - ART register
  - VL requisition form
  - Standard operating procedures and job aids for VL ordering, sample collection, documenting and recording results, returning results, patient management and filling out monitoring and evaluation tools
  - VL sample collection log
  - Specimen transport log
  - Patient and community education materials related to VL
  - Enhanced adherence counselling tools
  - High VL register
  - 5 adults, 3 children and 2 pregnant or breastfeeding women
- Administer sections 1 and 2 to the ART clinician (facility in-charge may provide input)
- Administer section 3 to the monitoring and evaluation officer or data clerk (may need input from ART clinician)
- Administer sections 4, 5 and 6 (when applicable) to the laboratory manager or officer
- Complete the scorecard by going through all the sections

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Menu of recommended DQ assurance activities (3)

3. DQ monitoring via lot quality assurance sampling

Description

External or conducted by supervisors. Site-level assessment based on LQAS used to assess the completeness and consistency of records and investigate suspected DQ problems

Strengths

- ✓ Selection of sites: **enables the identification and targeting of lots** (collection of records) not meeting predetermined DQ standards, when more extensive DQ assessment and targeted support for DQI is needed, while **acceptable lots can be skipped until the next round of monitoring**
- ✓ **Relatively rapid and inexpensive data collection approach** that enables small sample sizes and more frequent sampling to categorize and set priorities for areas based on their performance on key indicators

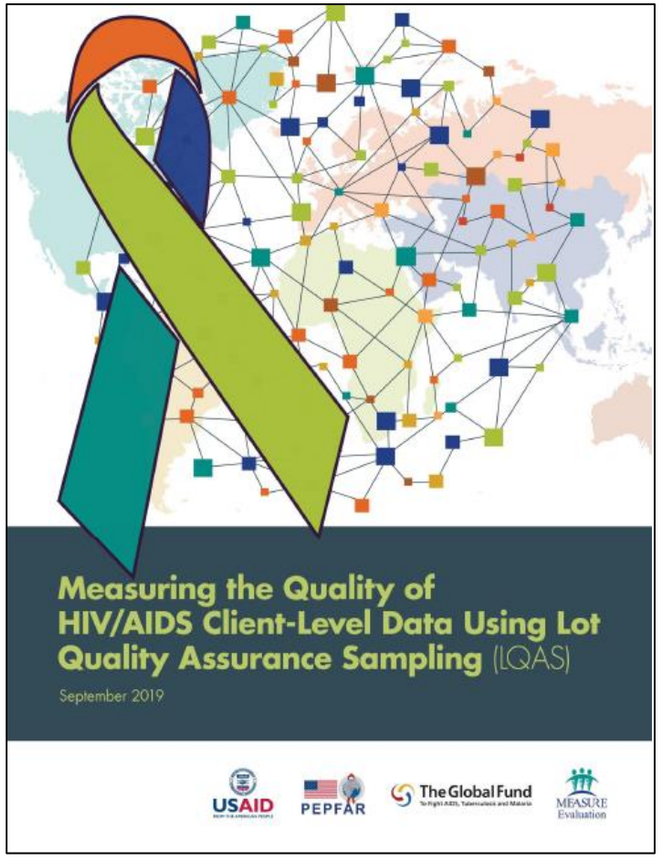
Limitations

- ✓ Sampling & defining the DQ standard for a programme area may be challenging and requires piloting
- ✓ More often applied to ART, and less implementation experience for VL monitoring
- ✓ Assessing concordance can be limited by non-standardized recording of data elements across data sources
- ✓ Focuses on assessing DQ and does not include service delivery and quality

Implementation considerations

- **Criteria for selection**: LQAS is useful for identifying sites where routine DQA could be done with recount of the indicators and more in-depth completeness and cross-validation checks of a sample or all the active patient files
- **Frequency**: quarterly or semi-annually

DQ monitoring via lot quality assurance sampling – tools available



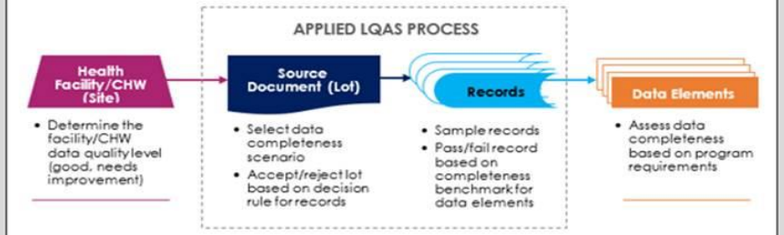
Available at: https://www.measureevaluation.org/resources/publications/ms-19-176

LQAS Triage System: Instructions

The LQAS Triage System is a method for assessing the completeness of data elements in source documents using a sample of client records. Concordance of data elements across data sources can also be assessed. Please see the guidance document "Measuring the Quality of HIV/AIDS Client-Level Data Using Lot Quality Assurance Sampling" for more details and directions, here:

https://www.measureevaluation.org/resources/publications/ms-

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



The tool is generic and can be used with any health program, data source, or data elements. It can accommodate data from up to 40 health facilities at once. If more sites are to be evaluated, multiple copies of the tool can be employed.

Using the Tool

The Excel workbook contains macros to help configure the tool for use. When launching Excel, be sure to click on "Enable content" when prompted.

After selecting health facilities to evaluate for source document data quality, enter the information for each site on the Facility Info tab. The Facility Info tab has three fields that describe all sites, and seven fields specific to each site.

Assessment Information:

- Period for review
- Quality thresholds
- Number of facilities to be reviewed

Health Facility Information:

- Facility name
- Region
- District

Available at: https://www.measureevaluation.org/resources/publications/tl-19-51

World Health Organization

Menu of recommended DQ assurance activities (4)

4. Routine site-level performance review and data review meetings

Description

- Clinical team reviews the completeness of data and tallies the results from registers and compares them to the monthly total in the EMR or alternative documenting source, such as laboratory results forms or LIMS
- The turnaround time for VL test results should also be assessed, given its importance for both data completeness and quality of care

Strengths

- ✓ Enables rapid and frequent review
- ✓ Low cost
- ✓ Supports the rapid implementation of site-level correction of data as needed
- ✓ Enables the facility to develop plans to improve the patient monitoring system
- ✓ Can be integrated into routine performance review and continuous quality improvement activities to improve service delivery

Limitations

- ✓ DQ checks implemented are not as comprehensive as the above activities
- ✓ Typically, since this is implemented by facility staff, the benefit of support, mentoring and engagement of higher levels, such as district-, subnational- and national-level teams or partners is not leveraged

Implementation considerations

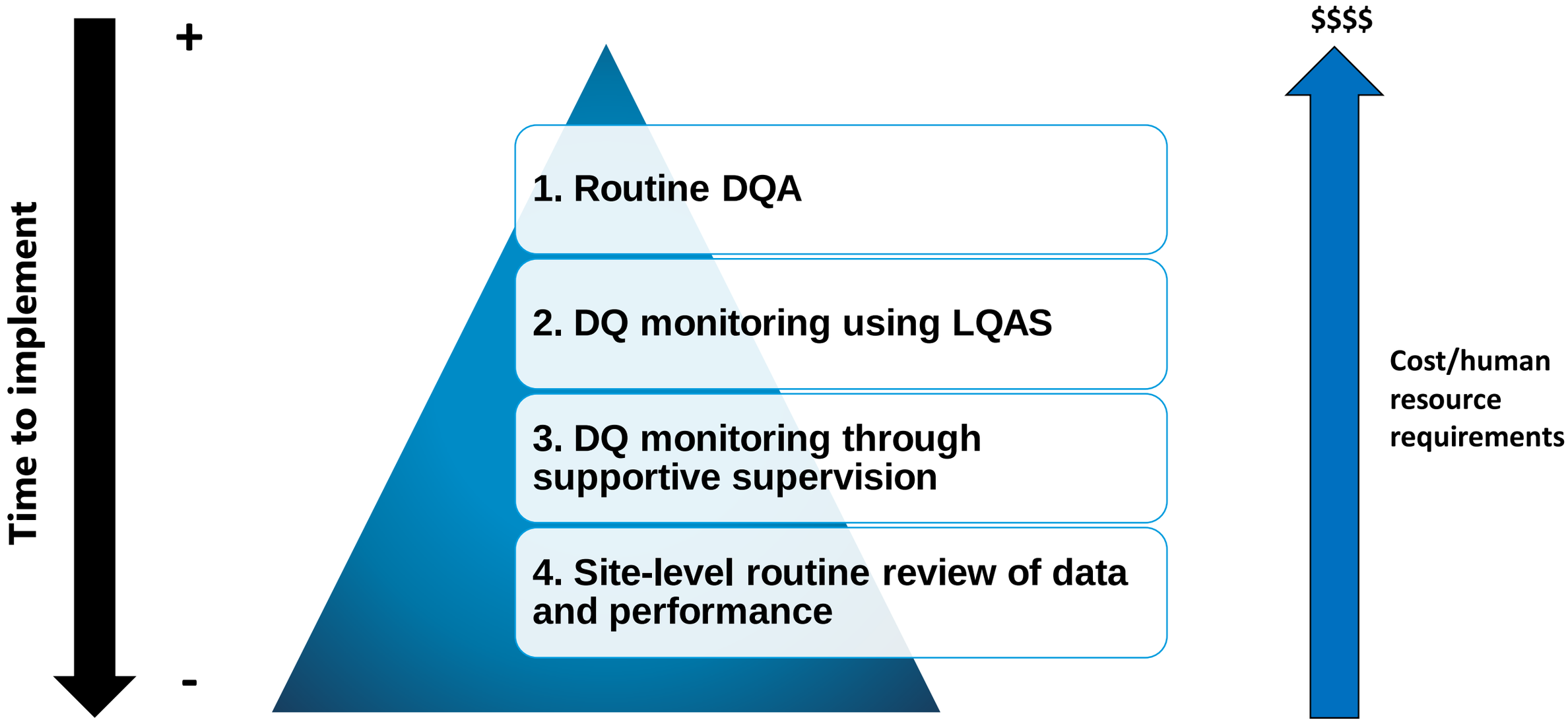
- **Criteria for selection**: ideally implemented in all facilities; however, if not feasible in facilities in which previous routine DQAs or DQ monitoring via supportive supervision or using LQAS have identified DQ challenges
- **Frequency:** monthly

Routine site-level performance review and data review meetings

- Represents low-cost DQ assurance approach facilities can use to check and correct their data at source
- Reviews can be part of broader continuous quality improvement processes
- Implemented by facility and laboratory staff to verify and check reports of VL testing and suppression data before ***monthly*** reporting to MoH
- Turnaround time for VL tests should also be assessed along with completeness of VL testing data and VL suppressed data in registers vs MoH monthly report or alternative source e.g. lab result forms/LIMS database or EMR
- Key indicators for HIV testing and ART should also be tallied and reviewed along with VL indicators so that key services in the HIV cascade can be reviewed together

DATA REVIEW

Resource and time requirements of recommended DQ assurance activities



Data visualization of outputs of DQ assurance activities

- Results of DQ assurance activities should be documented and presented to facility and/or laboratory staff
- When possible, graphical display or dashboard with results preferable and should be presented as part of the site out brief
- A copy of results should be left with facility and laboratory staff for documentation and to motivate and encourage future improvement

Tools available for data visualization of outputs of DQ assurance activities

Annex F

Instructions: enter the recreated and reported VL coverage and suppression indicators in Table A6.1 (complete cells B7–E7) and Table A6.2 (complete cells B15–E15). Based on these entered values, the verification factors will be calculated

Table A6.1. VL coverage indicator

Facility name:				
Facility code:				
	VL coverage, recounted	VL coverage, mininstry of health	VL coverage, DHIS2 data (if applicable)	VL coverage, partner data (if applicable)
VL coverage	80	85	85	87
VF (%)	100	94	94	92

Verification factor (VF) calculated as follows: [recounted indicator/reported indicator] times 100

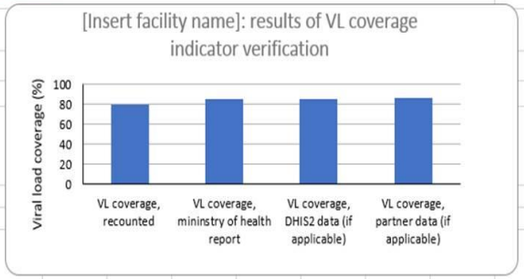
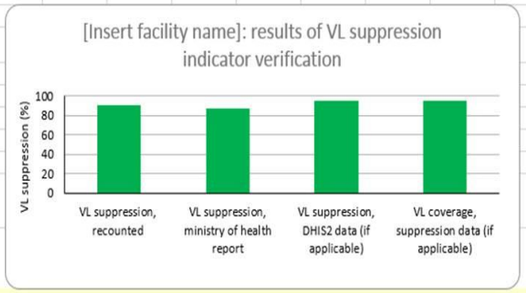


Table A6.2. VL suppression indicator

Facility name:				
Facility code:				
	VL	VL	VL	VL coverage,
VL	90	87	95	95
VF (%)	100	103	95	95

Verification factor calculated as follows: [recounted indicator/reported indicator]*100



Interpretation:

A verification factor above 100% indicates underreporting, while under 100% indicates overreporting of the indicator. 100% indicates full alignment or concordance between the recreated indicator during the routine data quality assessment and the reported indicator to the ministry of health.

Over- and underreporting are calculated as follows: (1 minus recounted/reported) times 100

Routine data quality assessments: summary output tables and graphs of viral load (VL) coverage and suppression indicator verification across all assessed sites

Table A6.3. VL coverage indicator

Site	Recounted	Ministry of	Verification	Over- or	Interpretation
Site 1	88	80	110	-10	Underreporting (−10%)
Site 2	95	90	106	-6	Underreporting (−6%)
Site 3	85	85	100	0	Exactly aligned
Site 4	88	90	98	2	Overreporting (+2%)
Site 5	89	95	94	6	Overreporting (+6%)

Insert row for additional sites as required and update the mock data entered in the table

Over- and underreporting are calculated as follows: (1 minus recounted/reported) times

Table A6.4. VL suppression indicator

Site	Recounted	Ministry of	Verification	Over- og	Interpretation
Site 1	90	80	113	-13	Underreporting (−10%)
Site 2	93	88	106	-6	Underreporting (−6%)
Site 3	78	78	100	0	Exactly aligned
Site 4	88	92	96	4	Overreporting (+4%)
Site 5	89	95	94	6	Overreporting (+6%)

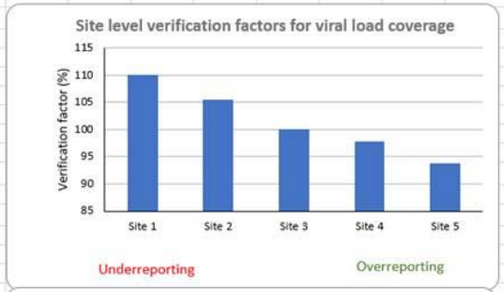
Insert row for additional sites as required and update the mock data entered in the table

Over- and underreporting are calculated as follows: (1 minus recounted/reported) times 100

Interpretation:

A verification factor above 100% indicates underreporting, while under 100% indicates overreporting of the indicator. 100% indicates full alignment or concordance between the recreated indicator during the routine data quality assessment and the reported indicator to the ministry of health.

Over- and underreporting are calculated as follows: (1 minus recounted/reported) times 100



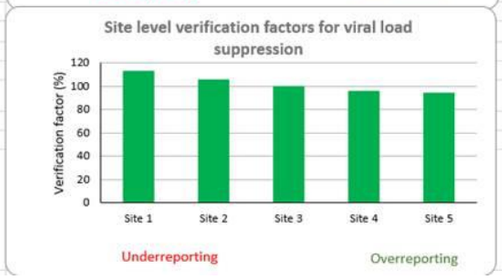
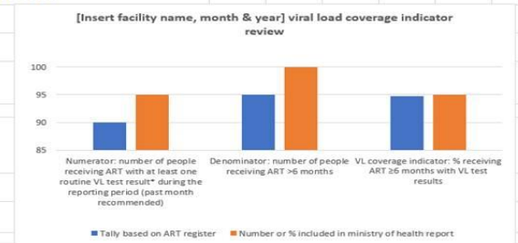
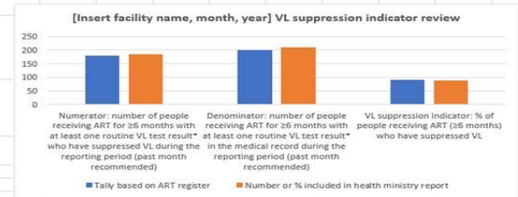


Table A6.7. Output tables for routine site-level data and performance reviews

Instructions: Update the test data included here with facility data on viral load (VL) suppression and coverage as indicated. Routine data reviews are recommended to be implemented on a monthly basis.

Facility name: Month, year:	Cross-validation (health ministry report versus ART register)			Completeness check
Indicator or data element	Tally based on ART register	Number or % included in ministry of health	Difference	Included in ministry of health report
1. VL coverage				
Numerator: number of people receiving ART with at least one routine VL test result* during the reporting period (past month recommended)	90	95	5	
Denominator: number of people receiving ART ≥6 months	95	100	5	
VL coverage indicator: % receiving ART ≥6 months with VL test results	95	95	0	
2. VL suppression				
	Tally based on ART register	Number or % included in health	Difference	Included in health ministry
Numerator: number of people receiving ART for ≥6 months with at least one routine VL test result* who have suppressed VL during the reporting period (past month recommended)	180	185	5	
Denominator: number of people receiving ART for ≥6 months with at least one routine VL test result* in the medical record during the reporting period (past month recommended)	200	210	10	
VL suppression indicator: % of people receiving ART (≥6 months) who have suppressed VL	90.0	88.1	-1.9	
*The latest viral load test result should be used for individuals with more than one VL test result.				
3. VL test turnaround time	Number (*n*) and proportion (%)			
Number of samples collected and sent to the lab				





Facility/laboratory data quality improvement plan

Annex I

SITE-LEVEL DATA QUALITY IMPROVEMENT ACTION PLAN

Based on the findings of the [insert the data quality assurance activity, such as routine data quality assessment, data quality monitoring via supportive supervision or using lot quality assurance sampling or routine site level data review], including the completed assessment tools (such as Annexes 2–5) at the site level, please describe any observed data quality challenges or weaknesses. Discuss with the site stakeholders how to develop proposed actions, requirements to complete the actions, the individuals responsible and the expected timeline for action and follow-up.

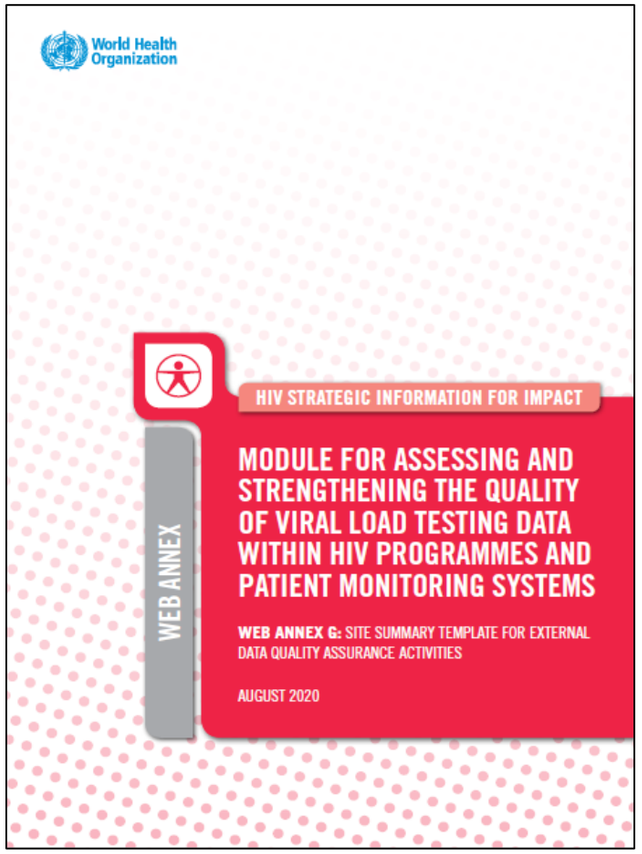
(Note: the specific site management team is expected to revisit the viral load data quality improvement plan to monitor progress and make necessary adjustments)

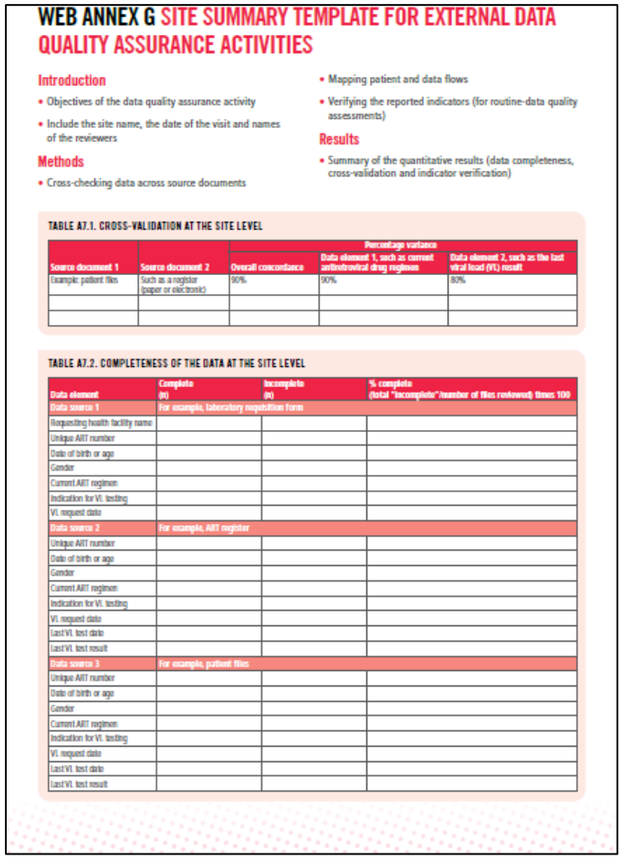
Name of facility	
Date of evaluation	
Date of follow-up	

Identified data quality issues	Potential root causes	Description of proposed remedial action	Requirements to complete action	Responsible individuals	Timeline (by when)	Planned follow-up monitoring visit date to ensure that the intervention is being implemented	Comments

Dissemination of results of DQ assurance activities

MoH to ensure results and documentation of DQ assurance activities reach the appropriate levels (e.g. facility, district, subnational and national), relevant focal points and partners





WEB ANNEX G SITE SUMMARY TEMPLATE FOR EXTERNAL DATA QUALITY ASSURANCE ACTIVITIES

Introduction

- Objectives of the data quality assurance activity
- Include the site name, the date of the visit and names of the reviewers

Methods

- Cross-checking data across source documents
- Mapping patient and data flows
- Verifying the reported indicators (for routine-data quality assessments)

Results

- Summary of the quantitative results (data completeness, cross-validation and indicator verification)

TABLE A7.1. CROSS-VALIDATION AT THE SITE LEVEL

Source document 1	Source document 2	Percentage variance		
		Overall concordance	Data element 1, such as current antiretroviral drug regimen	Data element 2, such as the last viral load (VL) result
Example: patient files	Such as a register (paper or electronic)	90%	90%	80%

TABLE A7.2. COMPLETENESS OF THE DATA AT THE SITE LEVEL

Data element	Complete (a)	Incomplete (b)	% complete (total "incomplete"/number of files reviewed) times 100
Data source 1	For example, laboratory requisition form		
Requesting health facility name			
Unique ART number			
Date of birth or age			
Gender			
Current ART regimen			
Indication for VL testing			
VL request date			
Data source 2	For example, ART register		
Unique ART number			
Date of birth or age			
Gender			
Current ART regimen			
Indication for VL testing			
VL request date			
Last VL test date			
Last VL test result			
Data source 3	For example, patient files		
Unique ART number			
Date of birth or age			
Gender			
Current ART regimen			
Indication for VL testing			
VL request date			
Last VL test date			
Last VL test result			

Template available: Annex G

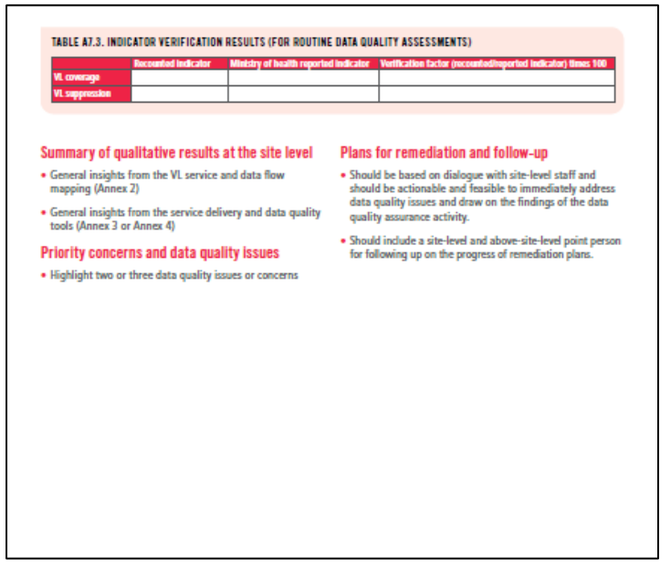


TABLE A7.3. INDICATOR VERIFICATION RESULTS (FOR ROUTINE DATA QUALITY ASSESSMENTS)

	Recounted indicator	Ministry of health reported indicator	Verification factor (recounted/reported indicator) times 100
VL coverage			
VL suppression			

Summary of qualitative results at the site level

- General insights from the VL service and data flow mapping (Annex 2)
- General insights from the service delivery and data quality tools (Annex 3 or Annex 4)

Priority concerns and data quality issues

- Highlight two or three data quality issues or concerns

Plans for remediation and follow-up

- Should be based on dialogue with site-level staff and should be actionable and feasible to immediately address data quality issues and draw on the findings of the data quality assurance activity.
- Should include a site-level and above-site-level point person for following up on the progress of remediation plans.

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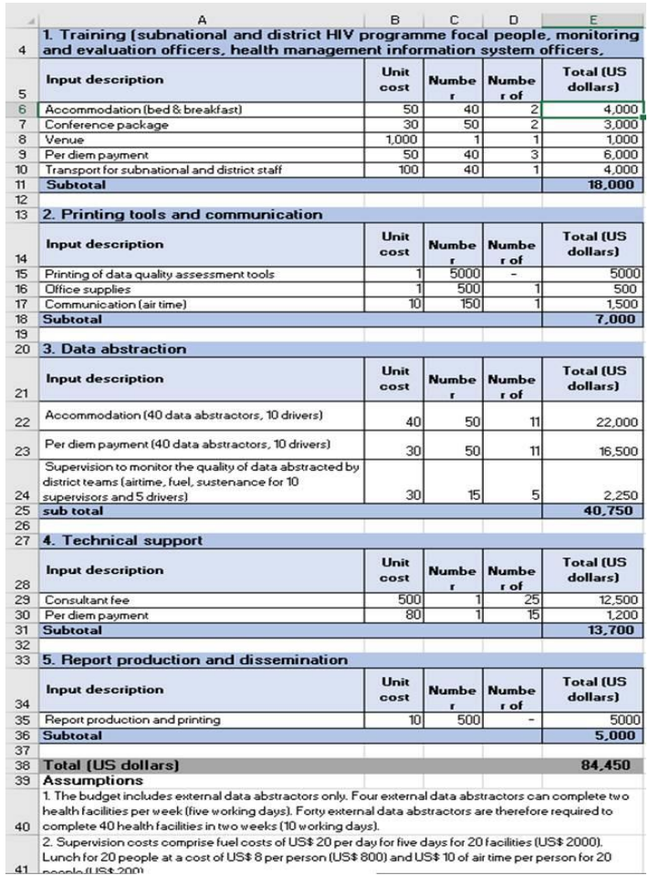
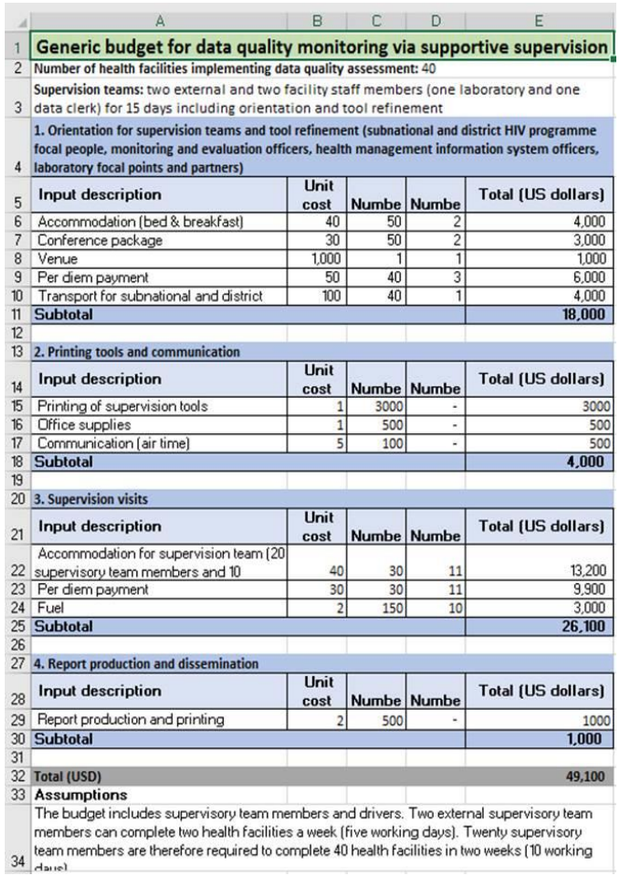
Cost considerations

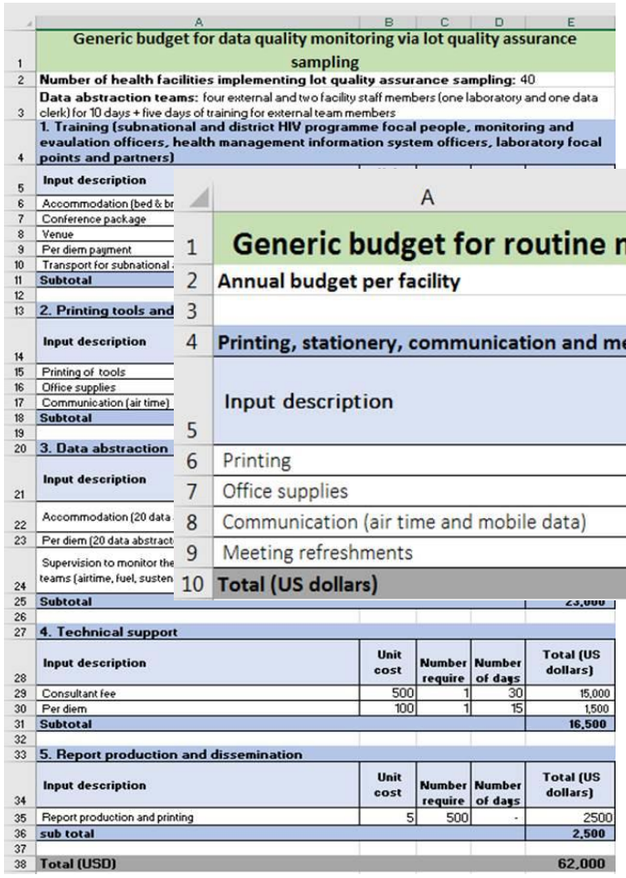
- Indicative generic budgets for the recommended DQ assurance activities available to support country implementation and can be adapted as required.



	A	B	C	D	E
4	**1. Training (subnational and district HIV programme focal people, monitoring and evaluation officers, health management information system officers,**				
5	**Input description**	**Unit cost**	**Numbe r**	**Numbe r of**	**Total (US dollars)**
6	Accommodation (bed & breakfast)	50	40	2	4,000
7	Conference package	30	50	2	3,000
8	Venue	1,000	1	1	1,000
9	Per diem payment	50	40	3	6,000
10	Transport for subnational and district staff	100	40	1	4,000
11	**Subtotal**				**18,000**
12					
13	**2. Printing tools and communication**				
14	**Input description**	**Unit cost**	**Numbe r**	**Numbe r of**	**Total (US dollars)**
15	Printing of data quality assessment tools	1	5000	-	5000
16	Office supplies	1	500	1	500
17	Communication (air time)	10	150	1	1,500
18	**Subtotal**				**7,000**
19					
20	**3. Data abstraction**				
21	**Input description**	**Unit cost**	**Numbe r**	**Numbe r of**	**Total (US dollars)**
22	Accommodation (40 data abstractors, 10 drivers)	40	50	11	22,000
23	Per diem payment (40 data abstractors, 10 drivers)	30	50	11	16,500
24	Supervision to monitor the quality of data abstracted by district teams (airtime, fuel, sustenance for 10 supervisors and 5 drivers)	30	15	5	2,250
25	**sub total**				**40,750**
26					
27	**4. Technical support**				
28	**Input description**	**Unit cost**	**Numbe r**	**Numbe r of**	**Total (US dollars)**
29	Consultant fee	500	1	25	12,500
30	Per diem payment	80	1	15	1,200
31	**Subtotal**				**13,700**
32					
33	**5. Report production and dissemination**				
34	**Input description**	**Unit cost**	**Numbe r**	**Numbe r of**	**Total (US dollars)**
35	Report production and printing	10	500	-	5000
36	**Subtotal**				**5,000**
37					
38	**Total (US dollars)**				**84,450**
39	**Assumptions**				
40	1. The budget includes external data abstractors only. Four external data abstractors can complete two health facilities per week (five working days). Forty external data abstractors are therefore required to complete 40 health facilities in two weeks (10 working days).				
41	2. Supervision costs comprise fuel costs of US$ 20 per day for five days for 20 facilities (US$ 2000). Lunch for 20 people at a cost of US$ 8 per person (US$ 800) and US$ 10 of air time per person for 20 people (US$ 200)				



	A	B	C	D	E
1	**Generic budget for data quality monitoring via supportive supervision**				
2	**Number of health facilities implementing data quality assessment:** 40				
3	**Supervision teams:** two external and two facility staff members (one laboratory and one data clerk) for 15 days including orientation and tool refinement				
4	**1. Orientation for supervision teams and tool refinement (subnational and district HIV programme focal people, monitoring and evaluation officers, health management information system officers, laboratory focal points and partners)**				
5	**Input description**	**Unit cost**	**Numbe**	**Numbe**	**Total (US dollars)**
6	Accommodation (bed & breakfast)	40	50	2	4,000
7	Conference package	30	50	2	3,000
8	Venue	1,000	1	1	1,000
9	Per diem payment	50	40	3	6,000
10	Transport for subnational and district	100	40	1	4,000
11	**Subtotal**				**18,000**
12					
13	**2. Printing tools and communication**				
14	**Input description**	**Unit cost**	**Numbe**	**Numbe**	**Total (US dollars)**
15	Printing of supervision tools	1	3000	-	3000
16	Office supplies	1	500	-	500
17	Communication (air time)	5	100	-	500
18	**Subtotal**				**4,000**
19					
20	**3. Supervision visits**				
21	**Input description**	**Unit cost**	**Numbe**	**Numbe**	**Total (US dollars)**
22	Accommodation for supervision team (20 supervisory team members and 10	40	30	11	13,200
23	Per diem payment	30	30	11	9,900
24	Fuel	2	150	10	3,000
25	**Subtotal**				**26,100**
26					
27	**4. Report production and dissemination**				
28	**Input description**	**Unit cost**	**Numbe**	**Numbe**	**Total (US dollars)**
29	Report production and printing	2	500	-	1000
30	**Subtotal**				**1,000**
31					
32	**Total (USD)**				**49,100**
33	**Assumptions**				
34	The budget includes supervisory team members and drivers. Two external supervisory team members can complete two health facilities a week (five working days). Twenty supervisory team members are therefore required to complete 40 health facilities in two weeks (10 working days)				



	A	B	C	D	E
1	**Generic budget for data quality monitoring via lot quality assurance sampling**				
2	**Number of health facilities implementing lot quality assurance sampling:** 40				
3	**Data abstraction teams:** four external and two facility staff members (one laboratory and one data clerk) for 10 days + five days of training for external team members				
4	**1. Training (subnational and district HIV programme focal people, monitoring and evaluation officers, health management information system officers, laboratory focal points and partners)**				
5	**Input description**				
6	Accommodation (bed & br				
7	Conference package				
8	Venue				
9	Per diem payment				
10	Transport for subnational				
11	**Subtotal**				
12					
13	**2. Printing tools and**				
14	**Input description**				
15	Printing of tools				
16	Office supplies				
17	Communication (air time)				
18	**Subtotal**				
19					
20	**3. Data abstraction**				
21	**Input description**				
22	Accommodation (20 data				
23	Per diem (20 data abstract				
24	Supervision to monitor the teams (airtime, fuel, susten				
25	**Subtotal**				
26					
27	**4. Technical support**				
28	**Input description**	**Unit cost**	**Number require**	**Number of days**	**Total (US dollars)**
29	Consultant fee	500	1	30	15,000
30	Per diem	100	1	15	1,500
31	**Subtotal**				**16,500**
32					
33	**5. Report production and dissemination**				
34	**Input description**	**Unit cost**	**Number require**	**Number of days**	**Total (US dollars)**
35	Report production and printing	5	500	-	2500
36	**sub total**				**2,500**
37					
38	**Total (USD)**				**62,000**

	A	B	C	D	E
1	**Generic budget for routine monthly facility data reviews**				
2	**Annual budget per facility**				
3					
4	**Printing, stationery, communication and meeting refreshments**				
5	Input description	Unit cost	Number required	Number of months	Total (US dollars)
6	Printing	0.5	35	12	210
7	Office supplies	1	35	12	420
8	Communication (air time and mobile data)	10	1	12	120
9	Meeting refreshments	2	10	12	240
10	**Total (US dollars)**				**990**

Annex H

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Following up DQ assurance activities – examples included recommended for long term DQI

Scenario: routine DQA reveals issues (discrepancy 5–10%)

A. Conduct DQ monitoring via SS or LQAS next quarter

Fail	Does not fail
Conduct data review led by MoH/staff not working at HF	Conduct in depth data review supervised by ≥1 staff from another HF
Conduct refresher training for staff on data management & reporting	Conduct refresher training for staff on data management & reporting
Conduct DQ monitoring via SS/LQAS in **10%** of same HFs 1 quarter later	Conduct DQ monitoring via SS/LQAS in **5%** of same HFs 1 quarter later

+

B. Conduct routine DQA 1 year later in HF not reached by previous DQA

DQ = data quality assessment
HF = health facility
SS= supportive supervision
LQAS= lot quality assurance sampling

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Future directions

- DQ assurance and improvement under the context of COVID-19
- Institutionalizing and integrating DQ assurance activities critical for strengthening patient monitoring systems and implementation of long term DQI strategies
- Sequencing and flow of different data quality assurance activities but also drawing on other activities e.g. mentoring, supporting data entry into EMR etc.
- 2022 consolidated HIV Strategic Information Guidelines currently under development – recommendations and guidance on data quality including long term DQI to be developed

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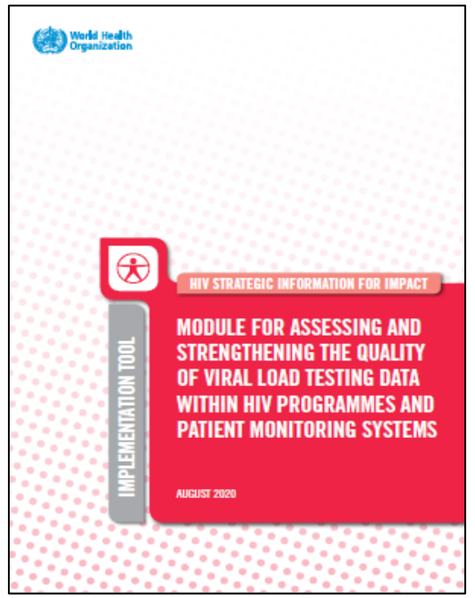
- Ian Wanyeki (UNAIDS)
- Jinku Button Zhao (Global Fund)



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