Data Quality Review (DQR) Toolkit

Overview of the Data Quality Review (DQR) Framework and Methodology

https://www.who.int/healthinfo/tools_data_analysis/en/









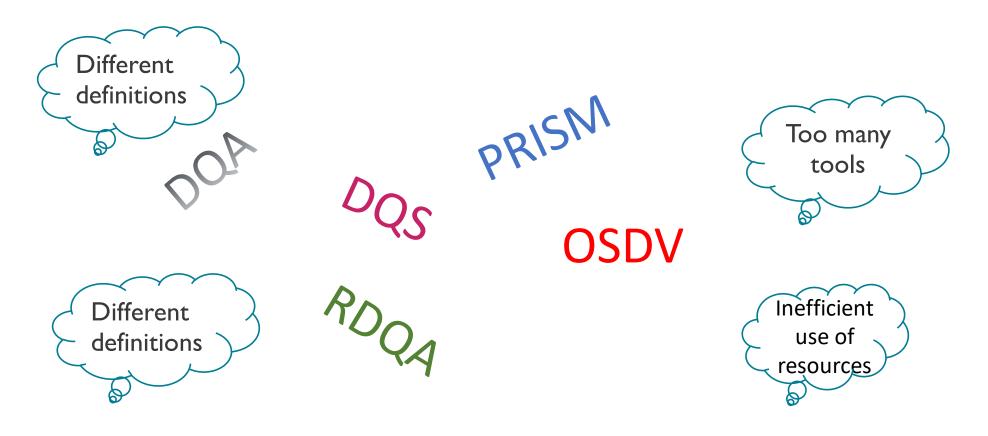
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Quality of health facility data – why do we care?

- High-quality data provide evidence to providers and managers to optimize healthcare coverage, quality, and services.
- High-quality data help:
 - Form an accurate picture of health needs, programs, and services in specific areas
 - Inform appropriate planning and decision making at every level of the health system (including district and below)
 - Inform effective and efficient allocation of resources
 - Support ongoing monitoring, by identifying best practices and areas where support and corrective measures are needed

How did we measure quality of data?

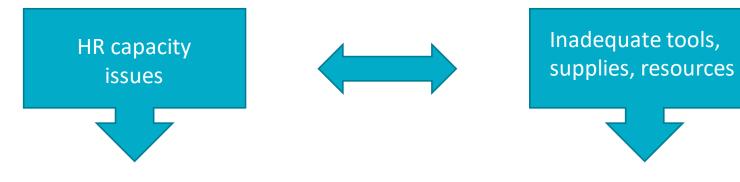


-Confusion in measurement of DQ

-Lack of country ownership of results

-Little improvement in quality of datas

Why do we have poor quality of data?



-Lack of adequately trained staff resulting in:

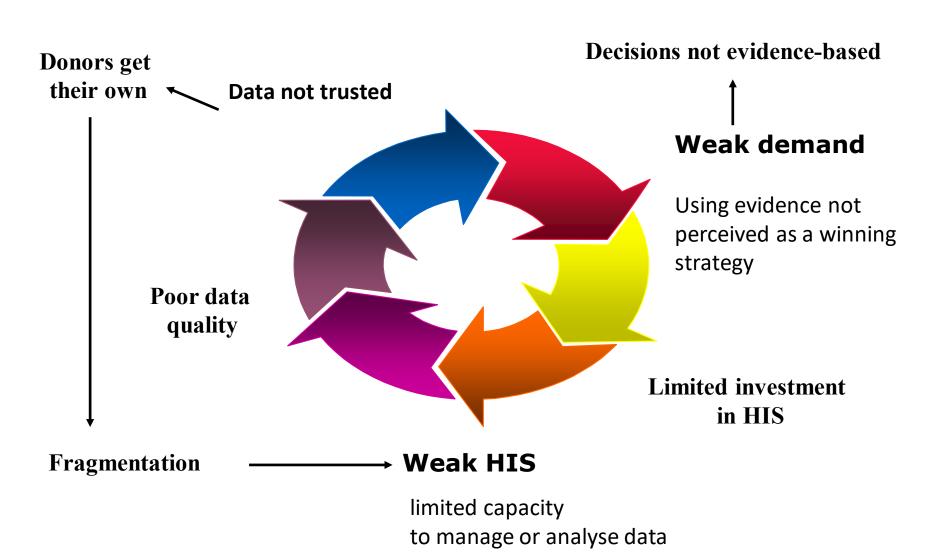
- Recording errors
- Compiling errors
- Reporting errors

-Lack of guidelines to fill out main data sources

-Un-standardized source documents and reporting forms

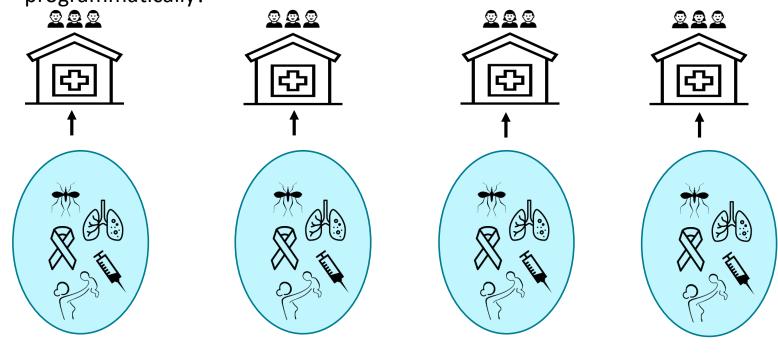


A vicious cycle



How can we address these issues?

When the **same** health personnel treat different diseases, can HR capacity issues on recording and reporting data be addressed programmatically?



Overview of DQR

NO!



What is needed?

A harmonized approach to:

- -measuring data quality
- -improving data quality



What does a harmonized approach look like?

Routine & regular review and feedback

(e.g. monthly) of data quality – desk review of data quality and system of supervision and feedback

Annual independent cross-cutting review and feedback

examining quality of health facility data for annual health sector planning & program monitoring

Periodic
independent in-depth
review and feedback

focus on single disease/program area; conducted periodically (e.g. every 3 years)



What is the approach called and what does it do?

- Data Quality Review (DQR) is a framework and methodology that builds on the earlier program-specific data quality tools and methods by:
 - Providing a **common language** (standard metrics) for the measurement of data quality;
 - Proposing a harmonized approach to measuring and improving data quality that addresses the systemic nature of data quality problems;
 - Including tools that can be adapted by users



What are the resources included with the harmonized approach?

Approach

DOR DATA QUALITY

DQR Framework

Desk review

DQR Implementation guide

Data Quality Review (DQR implementation Guide

Routine and regular reviews

WHO tool in MS Excel Supervisory checklists



Annual, independent cross-cutting review

Desk review



WHO app

WHO tool in MS Excel DV/SA



CSPro application

Overview of DQR

Periodic, independent indepth review

Adapted DQR, or programme-specific tools used (not covered here)

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DQ tools overview – What? Who? When? How much?















Analysis of the quality of reported HMIS data from all facilities

- CompletenessConsistency
- Outliers

National: HMIS and health program managers

District: Data and program managers

Facility: Facility in-charge reviews facility data in HMIS if access to electronic data is available at facility level **National:** Monthly, annually in advance of the health sector review

District: Monthly Facility: Monthly

Technical: Medium; must conduct desk review, interpret results, and translate findings to improvement plan

Financial: Low

Time: Low/High depening on use of DHIS-2 app or

Excel tool



Independent, holistic health facility and district assessment of data quality

- Accuracy
- Readiness to produce quality data

National: MoH with HMIS TWG oversight

National: Biannually or annually

Technical: Medium; must implememnt survey, analyze results, and translate findings to improvement plan

Financial: High; requires new data collection

Time: High; field work can take substantial time



Rapid assessment of data quality during supervisory visits to health facilities

- at facility level, used as a self-assessment tool
- at national level, used to review supervisor checlist data across districts
- Completeness
- Consistency
- Accuracy
- Readiness to produce quality data

National: HMIS and/or health program managers **District:** District health

managers

Facility: Facility in-charge or data manager

National: Biannually or annually

District: Aligned with supervision schedule

Facility: Monthly

Technical: Medium; must complete checklist, enter data in excel, interpret results

Financial: Low; should be incorporated into existing supervision activities

Time: Low

DATA QUALITY IMPROVEMENT PROCESS

DQR is a continual process coordinated by a multi-stakeholder technical working group (e.g. HMIS TWG) that uses information gained from the DQA tools to develop, cost, and implement data quality improvement plans.

DQ tools use cases - by levels of health system







National level



Desk Review

Technical: Medium; must conduct desk review, interpret results, and translate findings to improvement plan

Financial: Low

Time: Low/High depening on use of DHIS-2 app or Excel tool

Who? Facility in-charge reviews facility data in HMIS if access to electronic data is available at facility level

What? Analysis of the quality of reported HMIS data from all facilities in the district

Why? Identify data gaps, inconsistencies, and outliers

When? Monthly

Who? Data and program managers

What? Analysis of the quality of reported HMIS data from all facilities

Why? Identify data gaps, inconsistencies, and outliers

When? Monthly, annually

Who? HMIS and health program managers



Technical: Medium; must implememnt survey, analyze results, and translate findings to improvement plan

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What? Participate in national DV/SA and data quality improvement process

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What? Independent, holistic health facility and district assessment of data quality

Why? Assess accuracy of data and readiness to produce quality

When? Annually/Biannually Who? MoH with HMIS TWG oversight



Technical: Medium: must complete checklist, enter data in excel, interpret results

Financial: Low; should be incorporated into existing supervision activities

Time: Low

What? Rapid self-assessment of source document data quality

Why? Ensure completeness and consistency of source document

When? Monthly

Who? Facility in-charge or data manager

What? Rapid assessment of data quality during supervisory visits

Why? Ensure completeness and consistency of source document and monthly report data

When? Aligned with supervision schedule

Who? District health managers

What? National level review of supervisory visit data from district level DOR checklists

Why? Identify systematic problems for quality improvement

When? Biannually or annually

Who? HMIS and/or health program managers

Overview of DQR

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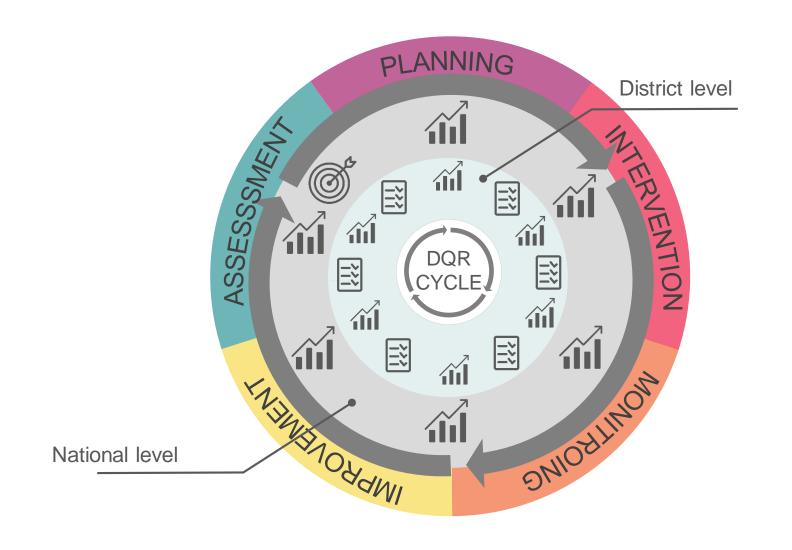
Using results for data management system strengthening

We've conducted a DQR ... Now what?

- Results should point to weaknesses in data management
- A Data Quality Improvement Plan should be developed wherein interventions are outlined to address identified data quality problems.
- The timing of the assessment and improvement plan should coincide with country health system planning cycles so interventions can be prioritized and funded.
- A unit within the MOH (e.g. HMISTWG) should be tasked with monitoring and ensuring implementation.













Desk Review Supe

Data Verification & Systems Assessment



Link to country planning mechanisms

Link to planning

- The results of the Health Facility Data Verification and System Assessment (DV/SA) should be available for use during the annual heath sector planning events.
- Ideally, the DV/SA was scheduled far enough in advance that the results are validated and compiled into a report for use at the planning event. But not too far in advance that the findings are no longer relevant.
- If the report is ready with findings and recommendations highlighted (e.g. executive summary) the issues uncovered during the assessment are more likely to receive consideration (and funding!) and then be addressed in the current budgetary cycle.



Data Quality Improvement Plan

- Based on the results of the data DQR (data verification, system assessment, desk review) the Data Quality (or HMIS) Technical Working Group (TWG) should lead the development of a Data Quality Improvement Plan (DQIP), an action plan for system strengthening, ensuring the involvement of relevant stakeholders.
- The DQIP should map out interventions designed to address problems found during the assessment and improve the quality of data.
- The plan should identify responsible agencies with appropriate staff to implement the plan, the timeline, and resources required to ensure completion.



Data Quality Improvement Plan

- If sufficient funding is not available within the current budget, the TWG should conduct advocacy among the donor community to raise the necessary funding.
- Interventions to improve the quality of data should be prioritized so that those with the highest likelihood of success, and those making the greatest impact on overall data quality, should be implemented first.
- Interventions should have a basis in reality. Budgets should be realistic. Responsible agencies/personnel should be available and willing to take on the interventions (and should buy-in to the strategy).
- \bullet Timelines should be doable. The DQIP should not be a wish list! $_{\it 9}$

EXAMPLE

DQIP – Example I

Data quality	Evidence of	Remedial	Scope	Timeline	Responsible	Resources	
finding	finding	measures					
	(interpretation)						
Domain: Indicator definitions and reporting guidelines							
Lack of understanding of indicator compilation techniques at health-facility level for PMTCT/HCT - Pregnant women are not disaggregated from HCT results	Systematic over- counting of HCT indicator values in some districts (as revealed by data verification)	Improved supervision and mentoring in affected districts Emphasis on indicator compilation during pre-service and in-service training -Ensure that printed copies of indicator definitions and compilation procedures are available in health facilities	Regions 2, 7, 10	One year (2015), then re-evaluate	-District health information officers or their designates (whoever is conducting supervision at the facility) -Pre-service, inservice curriculum design team (HMIS unit at national level)	District health information budgets -HMIS training budget (2015 allocation) -MOH nurse training (2015 budget) Global Fund Round 9 HSS grant	

EXAMPLE

DQIP – Example 2

Data quality finding	Evidence of finding (interpretation)	Remedial measures	Scope	Timeline	Responsible	Resources
Domain: Data maintenance and confidentiality						
Source documents are not available for data verification	A significant proportion of service delivery for malaria could not be verified because of the non-availability of source documents -poor record-keeping/archiving of reported results	-Districts should work with affected health facilities to develop sound storage areas (closet or cabinet with locking mechanism in a cool, dry place) -shelves should be built using locally-available materials	Identified health facilities in Region 2 (districts 4 and 6) and Region 9 (districts 27 and 34).	2015, then reevaluate	District health management teams; facility in charge; Regional Health Authority (facilities management unit)	2015 Facilities Management Budget - Global Fund Round 9 HSS grant



Implementation of DQR – Progress, opportunities and gaps

	Progress & opportunities	Gaps & constraints
Routine supervision	 Guidance for routine DQA well developed 	 High quality supervision/ DQA difficult to sustain
Desk review	 Guidance and tools (Excel & DHIS2) well developed DHIS2-based tools automate aspects of desk review Training materials developed for routine use of DQ tools district level Capacity building through online videos and tutorials 	 Only a few countries conduct formal annual desk reviews and data cleaning exercises Implementation research needed to document routine use of DQ tools at district level
Data verification	 Guidance and tools (model questionnaire, CS Pro files) well developed 	 DV/SA surveys are infrequent in many countries
DQIP	 Guidance, including model SOPs, well developed With routine use of DQ tools, DQR can become DQA (data quality assurance) 	 Many DQR's, but fewer DQIP's Implementation research need to document that DQA can be practical (not burdensome), effective (measurably improves DQ) and sustainable over several years.

Benefit and risks for Global Fund

Benefit

- Efficient use of resources in supporting a harmonized approach rather than uncoordinated single program data quality reviews
- Will achieve data quality improvement in focus programme areas -- HIV, TB, and malaria while supporting the RSSH agenda
- Critical for measuring investment risk

Risk

- Need to ensure the results are translated into improvement
- Need to institutionalize the process of data quality review and improvement what is the best way?

