Data Quality Review (DQR) Desk Review Tools and Methods Workshop

Session 1

Overview of the Data Quality Review (DQR) Methodology

World Health Organization

The Global Fund

JSI

USAID
FROM THE AMERICAN PEOPLE

MEASURE Evaluation

Learning Objective

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Overview of DQR

Learning Objectives: familiarize workshop participants with the DQR Framework and the different metrics used to evaluate data quality within the four domains.

- Understand the different methods employed in the DQR (facility survey, desk review)
- Know the different data quality domains
- Know the different adaptations of the standard method (e.g. in-depth assessment)
- Learn about requirements of implementing the desk review
- Appreciate the importance of using the results for action

Why is health facility data important?

- For many indicators it is the only **continuous/frequent** source of data
- It is most often the only data source that is available at the **subnational** level **--** important for equity;
- For many key indicators, it is the **sole** source of data. For example, PMTCT, ART, TB treatment outcomes, TB notification, confirmed malaria cases, causes of death, etc.

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Quality of health facility data – why do we care?

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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?

Different definitions

PRISM

Too many tools

DQA

DQS

OSDV

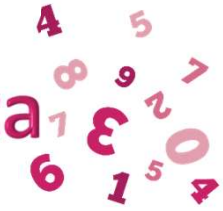
RDQA

Inefficient use of resources

-Confusion in measurement of DQ

-Lack of country ownership of results

-Little improvement in quality of data



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Why do we have poor quality of data?

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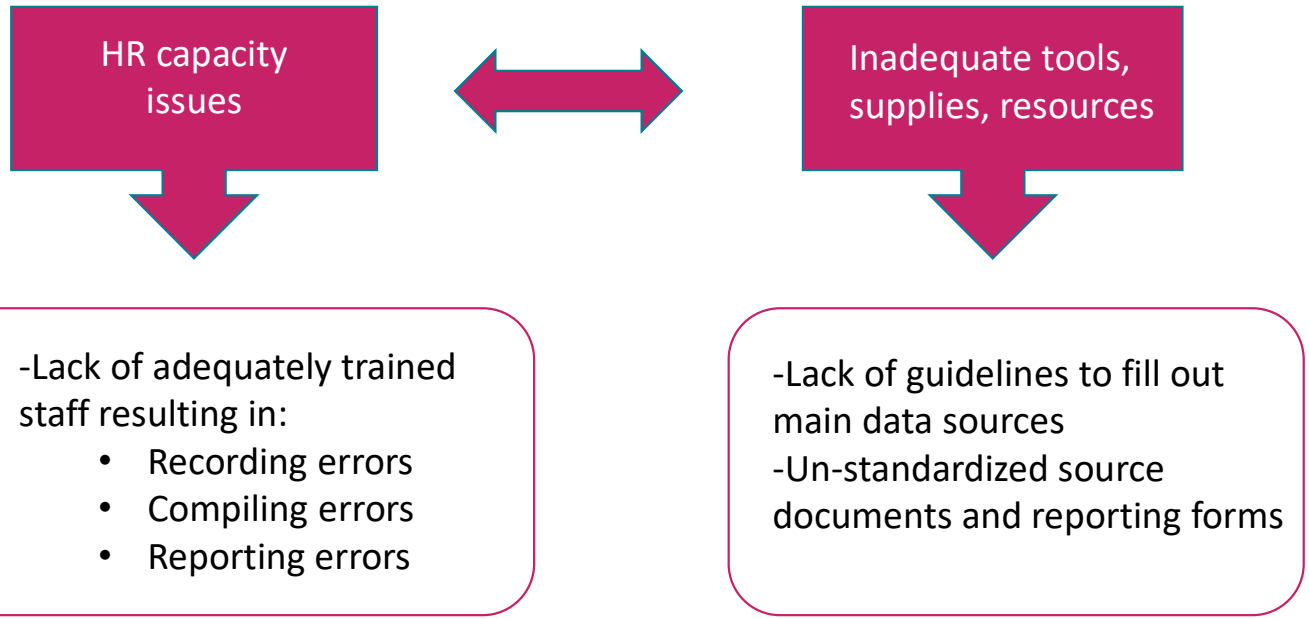
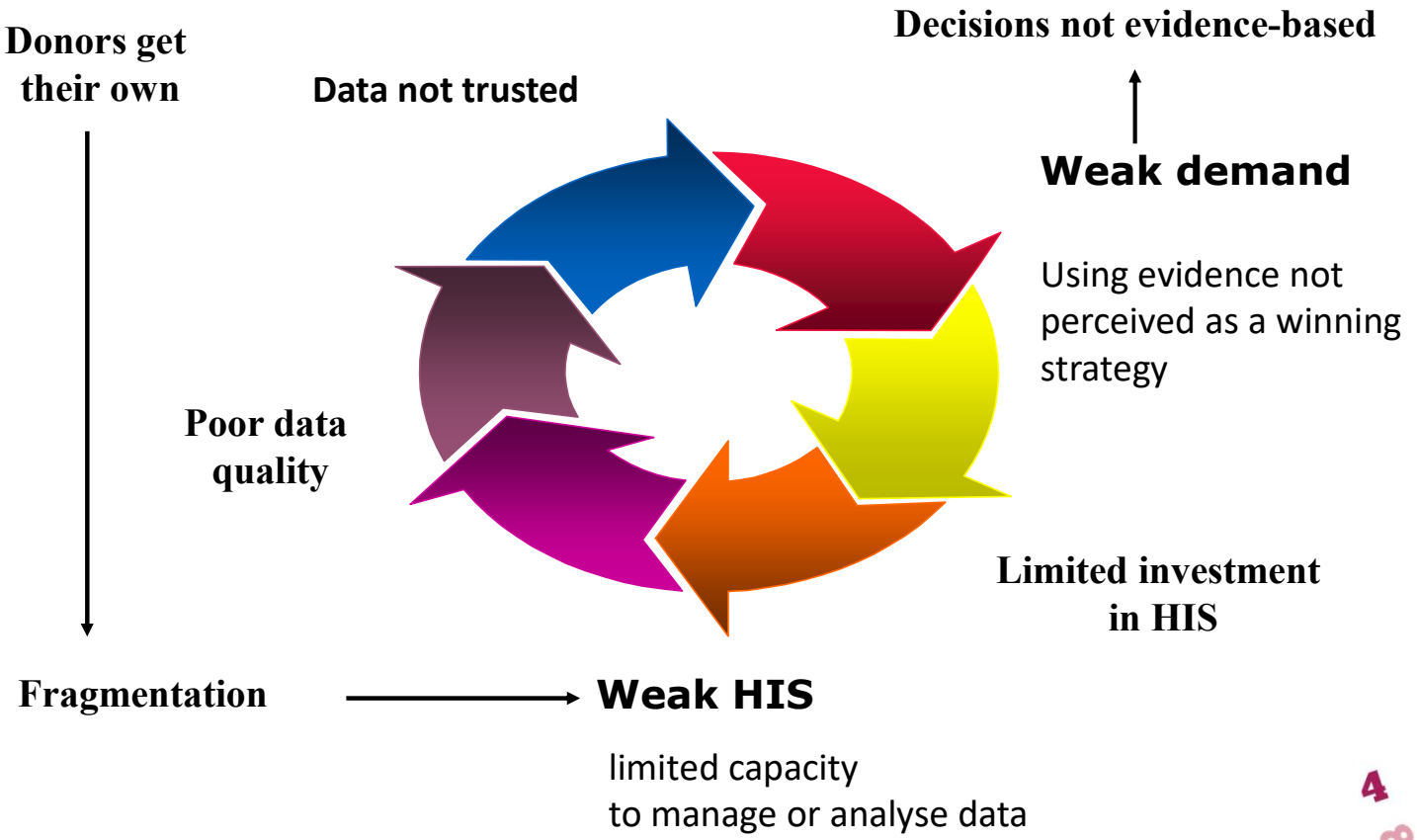


Poor data quality – a vicious cycle



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How can we address these issues?

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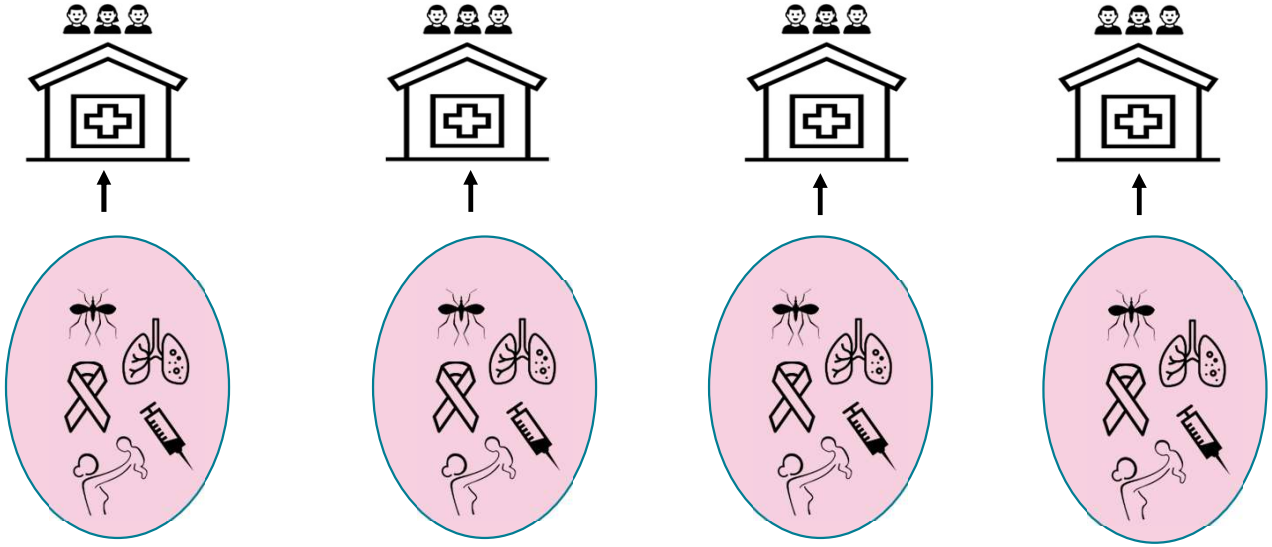
When the **same** health personnel treat different diseases, can HR capacity issues on recording and reporting data be addressed programmatically?



NO!

What is needed?

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A harmonized approach to:
-measuring data quality
-improving data quality

What does a harmonized approach look like?

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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?

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- 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?

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Approach	Guidance, tools and resources
	DQR Framework  *DQR Implementation guide* 
Routine and regular reviews	*Desk review*  WHO app dhis2 *Supervisory checklists* 
Annual, independent cross-cutting review	*Desk review*  WHO app dhis2 WHO tool in MS Excel *DV/SA*  CSPro application
Periodic, independent in-depth review	Adapted DQR, or programme-specific tools used (not covered here)

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

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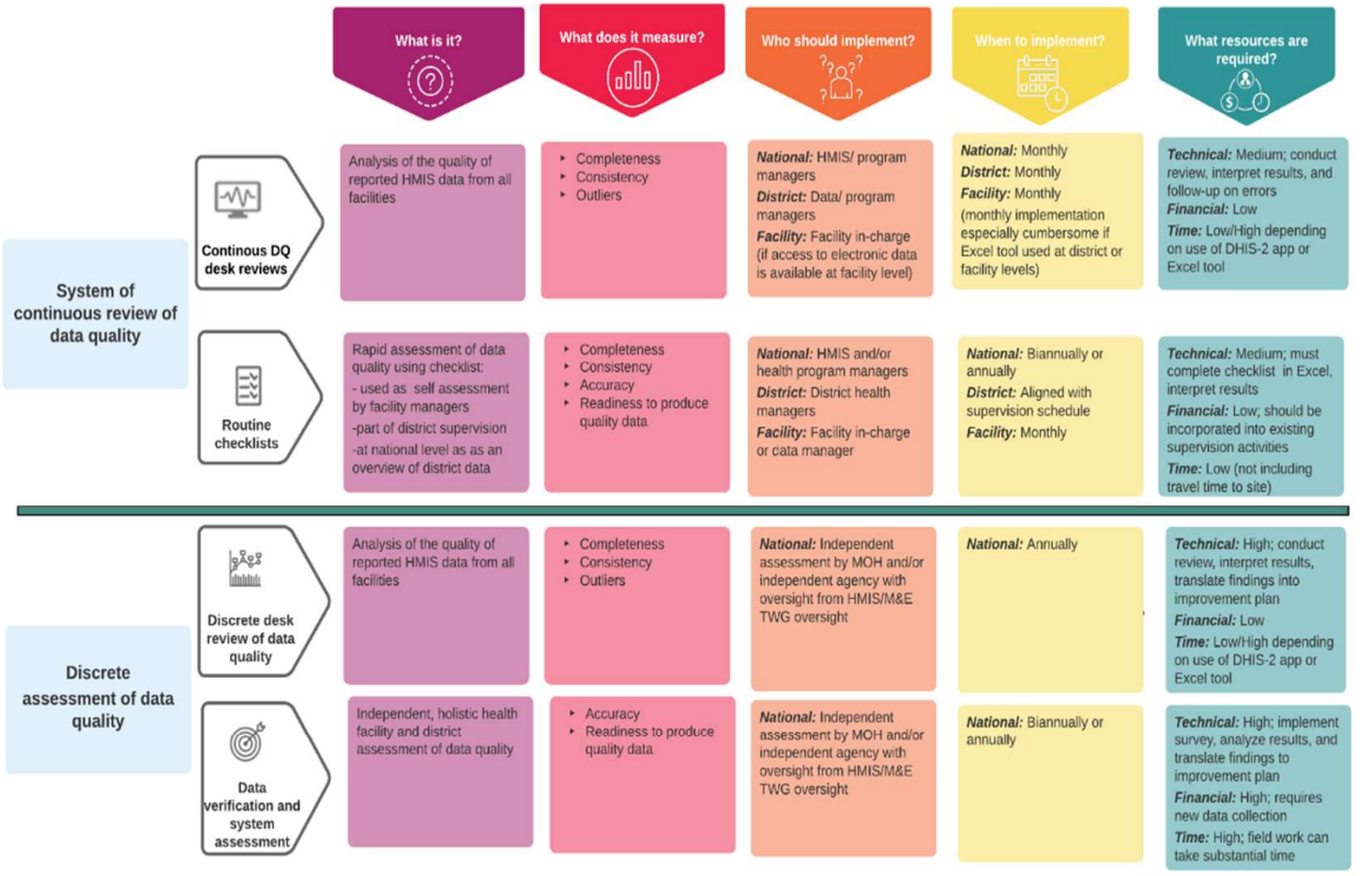

Skill levels:
Low = Results are presented for easy interpretation. Does not require programming, data management or analysis and synthesis skills; **Medium** = requiring progrramming/data management skills abut minimal critical thinking and synthesis skills; **High** = Requires programming and data management skills as well high level of critical thinking and synthesis skills

DQ tools use cases - by levels of health system

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Annual data quality review cycle

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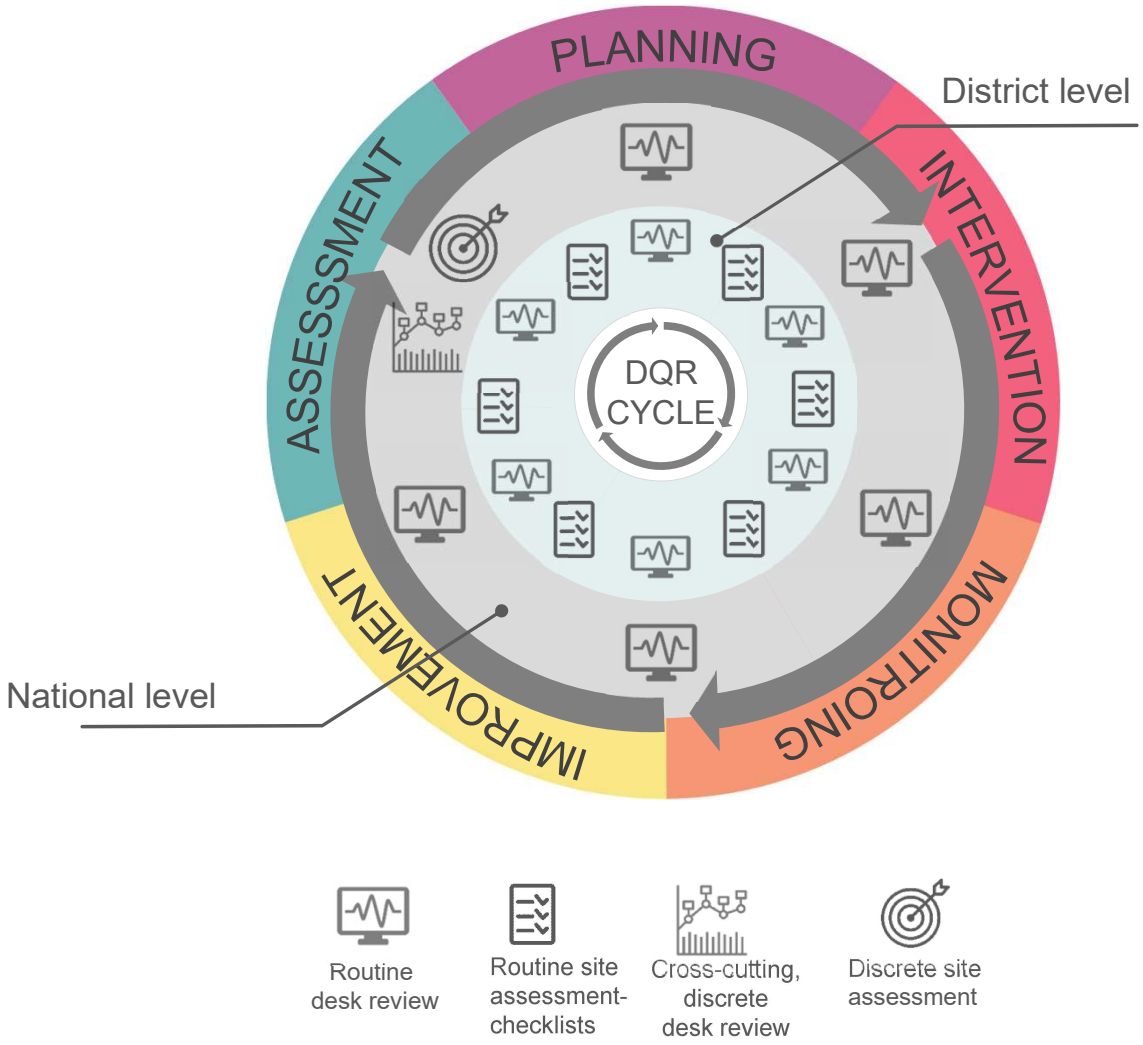

Using results for data management system strengthening

- We've conducted an independent 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. HMIS TWG) should be tasked with monitoring and ensuring implementation.

Assessment → *Planning* → *Intervention* → *Monitoring* → *Improvement*

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Link to country planning mechanisms

Link to planning

- The results of the independent desk review of data quality and site assessment of data quality: data verification and system assessment (DV/SA) (at facility and district levels) should be combined to produce a single report to be used before heath sector planning events.
- Ideally, the DV/SA is 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 (1)

Data Quality Improvement Plan

- Based on the results of the independent ~~data~~ DQR (data verification, system assessment, desk review) the Data Quality (~~or~~ HMIS/M&E) 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 (2)

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).
- Timelines should be doable. The DQIP should not be a wish list!

Data Quality Improvement Plan

EXAMPLE

DQIP – Example 1

Data quality finding	Evidence of finding (interpretation)	Remedial measures	Scope	Timeline	Responsible	Resources
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, in-service 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

Data Quality Improvement Plan

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 re-evaluate	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.

DQR Desk Review

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DQR Desk Review

Objectives of desk review of health facility data

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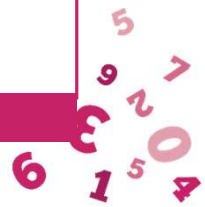
Aggregate reported data is examined for data quality sing recommended set of program indicators and standardized data quality metrics. The objectives of the desk review are:

- To institutionalize an efficient and low-resource method of checking data quality;
- To identify weaknesses in the data management system;
- To monitor data quality performance over time.

Assessment Levels	
National	Subnational
• Assessment of each selected indicator aggregated to the national level	• Performance of subnational units (e.g., districts or provinces/regions) for the selected indicators



Desk review types

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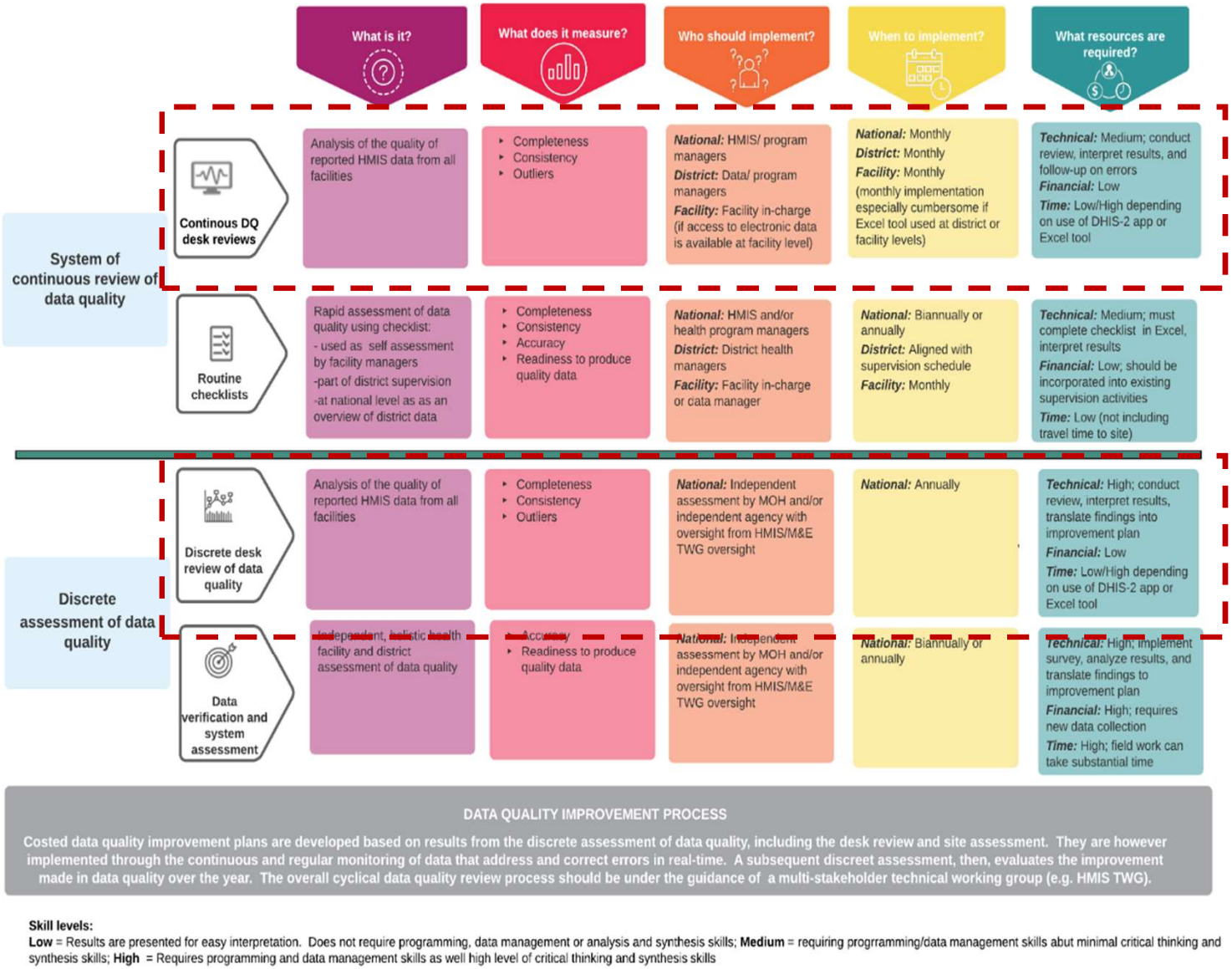

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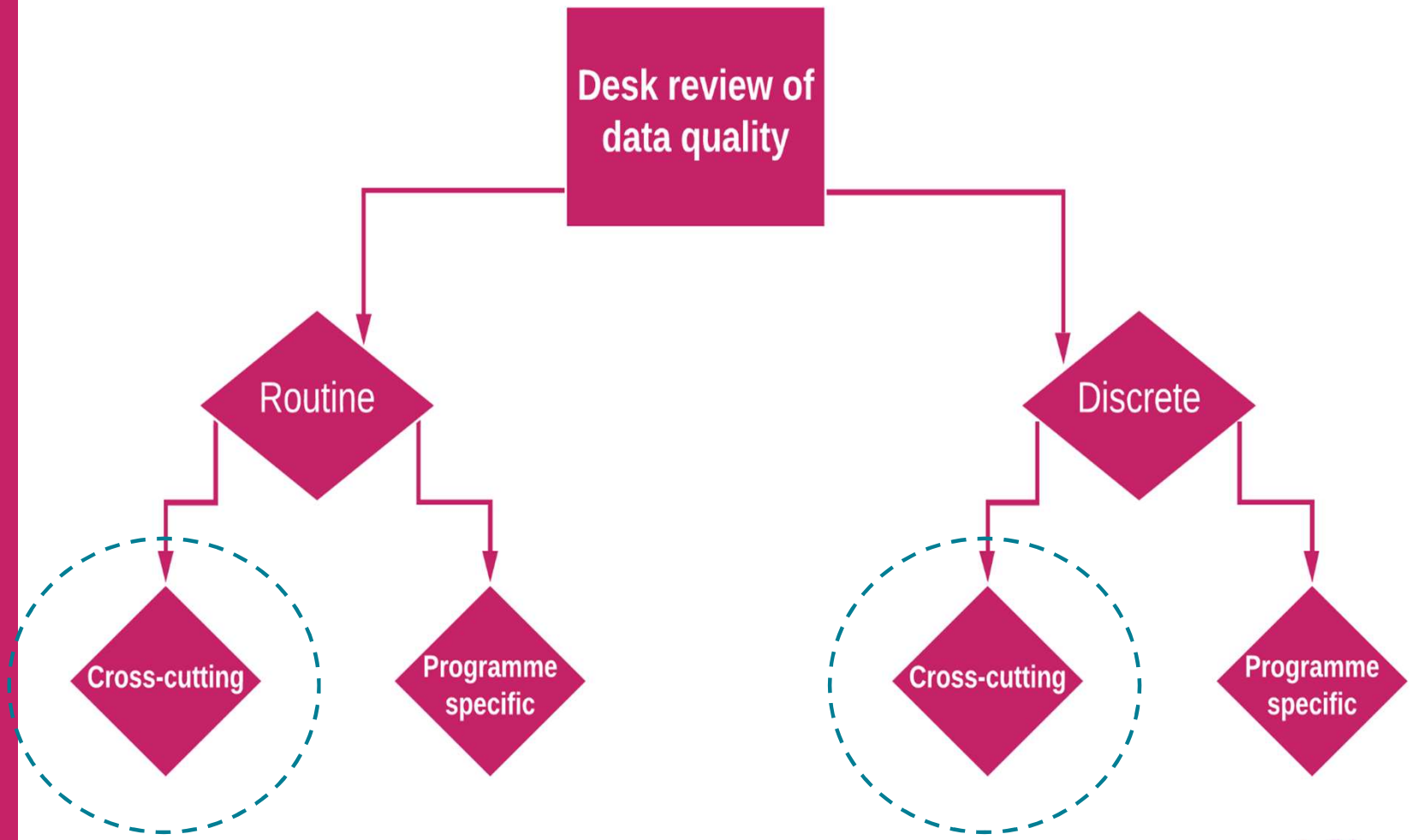

Recommended list of program indicators for cross-cutting discrete desk review – adapted to country needs

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Program Area	Indicator Name	Full Indicator
Maternal Health	Antenatal care 1st visit (ANC1)	Number (%) of pregnant women who attended at least once during their pregnancy
Immunization	DTP3/Penta3	Number (%) of children < 1 year receiving three doses of DTP/Penta vaccine
HIV/AIDS	New on ART	Number of people living with HIV who initiate ART
TB	Notified cases of all forms of TB	Number (%) of all forms of TB cases (i.e. bacteriologically confirmed plus clinically diagnosed) reported to the national health authority in the past year (new and relapse)
Malaria	Confirmed malaria cases	Number (%) of all suspected malaria cases that were confirmed by microscopy or RDT

Dimensions of data quality

1) Completeness & timeliness of data

2) Internal consistency of reported data

3) External comparisons/cross-checks (with other data sources, e.g. surveys)

4) External consistency of population data – review denominator data used to measure performance indicators

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DQR Dimension 1 -

SESSION 1

Overview of DQR

Completeness and Timeliness of Reporting

Focus

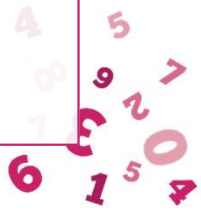
- Measure extent to which data reported through the M&E system are available and adequate for planning, monitoring, and evaluation

Completeness

- Assessed by measuring whether all entities that are supposed to report actually do
- Includes health facility level, subnational level, and data elements within submitted reports

Timeliness

- Assessed by measuring whether the entities that submitted reports did so before a pre-defined deadline



DQR Dimension 2

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Internal Consistency of Reported Data

Focus

- Examine the plausibility of reported results for selected program indicators based on the history of reporting for those indicators

Process

- Presence of extreme values (outliers)
- Trends are evaluated to determine whether reported values are extreme relative to other values reported during the year or across several years
- Assess program indicators which have a predictable relationship to determine whether the expected relationship exists between those two indicators
- Assess the reporting accuracy for selected indicators through the review of source documents in health facilities (data verification)

DQR
Dimension 3

External comparison/cross-checks (with other data sources)

Focus

- Assess the level of agreement between two sources of data measuring the same health indicator

Sources of Data

- HMIS or program specific information system
- Periodic population-based survey
- Other data sources, e.g., pharmacy records

DQR Dimension 4

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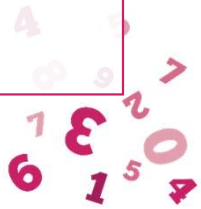
Consistency of Population Data

Focus

- Determine the adequacy of the population data used in the calculation of health indicators

Process

- Compare estimates from the National Statistics Office to estimates used by programs or estimates of UNPD
- Compare estimates of related denominators (e.g. pregnancies vs births vs infants)
- Review the consistency over time



Planning stages for discrete DQR – desk review and DV/SA

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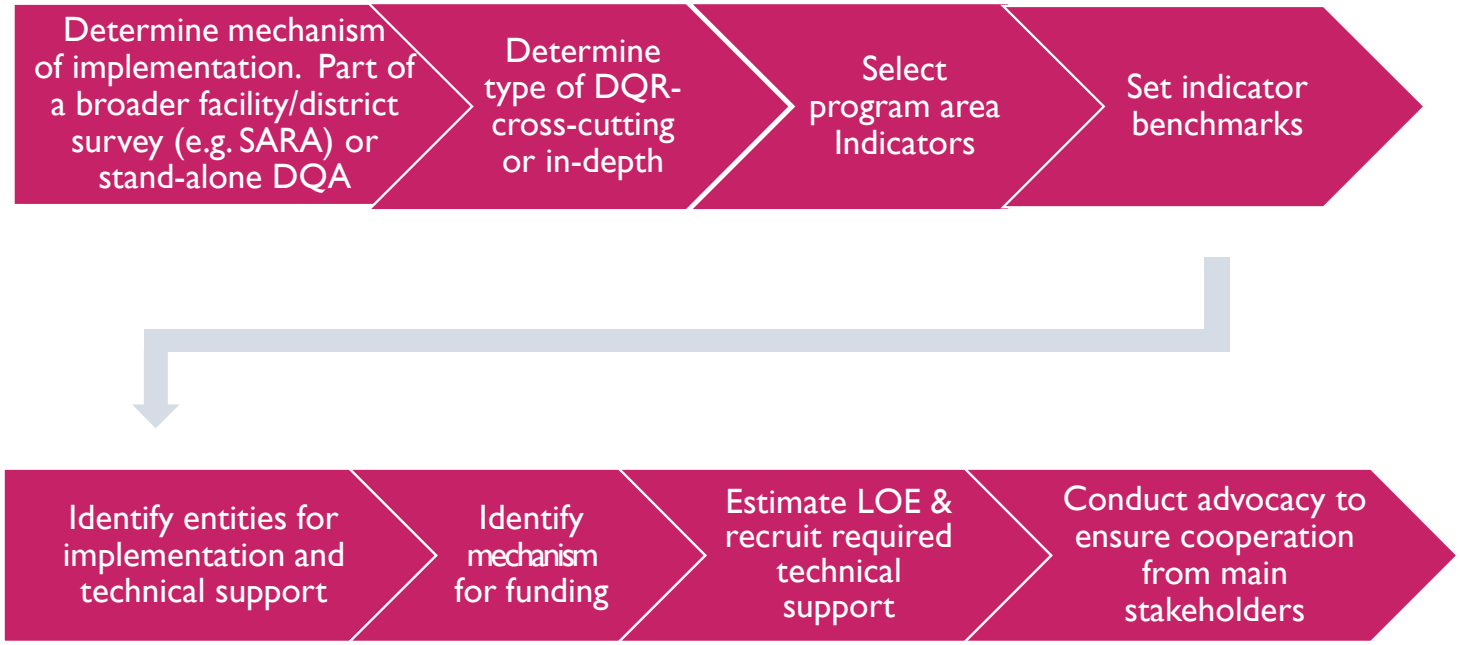

Desk review implement-tation

- Select indicators and tools
  - WHO data quality (DQ) app in DHIS2
  - Excel based tool
- Gathering data for selected indicators from either HMIS or program information system or both
- Data managers from the disease programs of selected indicators should be involved in the data gathering, analysis, and interpretation
- A timeframe of about 1-2 weeks for data gathering (unless using the WHO DQ app in DHIS2 app) and 1-2 weeks for analysis and interpretation

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Data Requirements

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Data Requirements

Data from subnational administrative area for the most recent reporting year and annual aggregated data for the last three reporting years are required for the selected indicators	For each primary indicator selected a secondary indicator from the same program area should also be selected to evaluate the internal consistency	Information on submitted reports and when they were received are required to evaluate completeness and timeliness of reporting	Denominator data for calculating rates, and the most recent population-based survey results (e.g., MICS, DHS and Immunization Coverage)

Discussion Questions

- Why does data quality matter?
- What are potential advantages of a holistic approach to data quality assurance and how can this be achieved?
- What metrics are evaluated on the DQR Desk Review?
- Can you site some examples of data quality problems that can be found on the Desk Review?