



Documenting Health Data Quality Practices within USAID- Supported Implementing Partners and Health Facilities Receiving MEASURE Evaluation—Tanzania’s Technical Assistance

August 2018



Documenting Health Data Quality Practices within USAID- Supported Implementing Partners and Health Facilities Receiving MEASURE Evaluation—Tanzania’s Technical Assistance

August 2018

MEASURE Evaluation
University of North Carolina at Chapel Hill
123 W. Franklin Street, Suite 330
Chapel Hill, NC 27516 USA
Phone: +1 919-445-9350 | measure@unc.edu
www.measureevaluation.org

This research has been supported by the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID) under the terms of MEASURE Evaluation-Tanzania associate award AID-621-LA-14-00001. MEASURE Evaluation-Tanzania is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership with ICF International; John Snow, Inc.; Management Sciences for Health; Palladium; and Tulane University. Views expressed are not necessarily those of PEPFAR, USAID, or the United States government. TR-18-283

ISBN: 978-1-64232-064-0



ACKNOWLEDGEMENTS

MEASURE Evaluation–Tanzania, an associate award of the leader project MEASURE Evaluation, thanks the United States Agency for International Development (which funds both MEASURE Evaluation and MEASURE Evaluation–Tanzania) for its support of this work and report.

We express our sincere appreciation for the support received from the following groups who made this study possible by permitting their technical staff to respond to in-depth interviews that informed this report:

1. President’s Office–Regional Administration and Local Government (PO-RALG)
2. United States Agency for International Development (USAID)-supported implementing partners: Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), Deloitte Consulting Limited (DCL), Baylor College of Medicine Children’s Foundation–Tanzania, and Selian Lutheran Hospital
3. Regional medical officers (RMO) for Iringa, Dodoma, Mwanza, Mtwara, and Arusha Regions
4. District medical officers (DMOs) for the Iringa Municipal Council (MC), Dodoma District Council (DC), Mtwara MC, and Arusha City Council (CC)
5. Regional referral hospitals of Iringa, Dodoma, Mtwara, and Arusha
6. Ipogolo Health Center in the Iringa MC
7. Kikombo Health Center in the Dodoma DC
8. Mikindani Health Center and Likombe Health Center in the Mtwara MC
9. Selian Lutheran Hospital and Arusha Lutheran Medical Center in Arusha
10. Themis Health Center in Arusha

This study was designed by MEASURE Evaluation–Tanzania under the technical leadership of Dr. Willis Odek, Ms. Zaddy Kibao, and Mr. Kusekwa Sono. The data collection and report writing for this study was conducted by Dr. Charles M. Matiko, an independent consultant from FXBT Health. Dr Matiko was supported by Ms. Donata Didas during qualitative data collection, translation, and analysis. Mr. Beatus Kibiti of MEASURE Evaluation–Tanzania assisted with the extraction of data from the district health information system 2 (DHIS 2) database, while Dr. Rugola Mtandu of FXBT Health conducted analysis of the DHIS 2 data. Dr. Odek and Ms. Kibao reviewed the draft and final reports.

We thank MEASURE Evaluation’s knowledge management team for editorial and production services.

Cover photo: © 2016 Riccardo Gangale/VectorWorks, Courtesy of Photoshare

CONTENTS

Acknowledgements	5
Abbreviations	8
Executive Summary	10
Background	10
Methods	10
Findings.....	10
<i>Facilitators of and Barriers to Data Quality</i>	10
<i>Metrics for Measuring Effects of Data Quality Strengthening Interventions</i>	11
Introduction	13
Purpose of the Study.....	14
Objectives of the Study	14
Research Questions.....	14
Methods	15
Study Design, Respondent Selection, and Data Collection	15
Qualitative Data Entry, Data Management, Quality Assurance, and Analysis	15
Secondary Data Extraction and Analysis.....	16
<i>DHIS 2 Data Analysis</i>	16
<i>Review of Project Documents and DQA Reports</i>	16
Ethical Considerations.....	16
Limitations.....	16
Findings	18
Overview of DQA Activities Conducted by MEval-TZ	18
<i>Reported DQAs Conducted from 2013 to March 2018</i>	18
<i>Examples of IPs That Prepared and Implemented Action Plans Following DQAs</i>	19
<i>Participation in Me&E Capacity Building Activities after DQA Rounds</i>	21
Drivers of the Effectiveness of DQAs in Strengthening Data Quality	22
<i>Factors That Facilitate Implementation of Post-DQA Action Plans</i>	22
<i>Factors That Facilitate Maintenance of or Improvements in Data Quality</i>	23
Barriers to the Effectiveness of DQAs in Strengthening Data Quality.....	24
Barriers to Implementation of Post-DQA Action Plans.....	24
<i>Factors That Compromise or Undermine Data Quality</i>	25
<i>Addressing Factors That Compromise or Undermine Data Quality</i>	27
<i>Threats to Data Quality and How MEval-TZ's Interventions Helped IPs Address Them</i>	27
Contribution of MEval-TZs DQAs in Strengthening Health Information Systems in Target Districts.....	27

<i>Practical Skills Gained from Capacity Building Activities Conducted by MEASURE Evaluation</i>	28
<i>Effects of M&E System Strengthening Activities Conducted by MEASURE Evaluation at the Subnational Level</i>	29
Successes.....	30
<i>MEval-TZs Contribution to Sustaining Enabling Factors for Data Quality</i>	31
<i>Opportunities for Future Improvement</i>	32
Analysis from DHIS 2.....	32
<i>Data Quality Indicators</i>	32
<i>Health Outcome Indicators</i>	35
Conclusions	39
Recommendations.....	39
References	41
Appendix 1. Analysis of Data Quality and Selected Health Outcome Indicators in MEASURE Evaluation-Supported District Councils	42
Appendix 2. List of Respondents Interviewed for this Documentation	46
Appendix 3. Categorization of MEASURE Evaluation-Supported Districts and Control Districts	47
Appendix 4. Ethical Clearance Certificate	49
Appendix 5. Data Collection Tools	50

ABBREVIATIONS

ALMC	Arusha Lutheran Medical Center
ANC	antenatal care
CC	city council
CHMT	council health management team
C&T	care and treatment
CTC	care and treatment clinic
DACC	district AIDS control coordinator
DBS	dried blood spot
DC	district council
DCL	Deloitte Consulting Ltd.
DDU	data demand and use
DHIS 2	district health information system 2
DMO	district medical officer
DQA	data quality assessment
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
FBO	faith-based organization
HC	health center
HCW	health care worker
HBC	home-based care
HF	health facility
HIS	health information system(s)
HMIS	health management information system(s)
HTC	HIV testing and counseling
IP	implementing partner
IRL	intermediate reporting level
ICT	information communication technology
JSI	John Snow, Inc.
KII	key informant interview
M&E	monitoring and evaluation
MC	municipal council
MEval-TZ	MEASURE Evaluation–Tanzania
MESST	M&E system strengthening tool
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children

MSH	Management Sciences for Health
MVC	most vulnerable children
NACP	National AIDS Control Programme
NIMR	National Institute for Medical Research
PMTCT	prevention of mother-to-child transmission of HIV
PO-RALG	President's Office-Regional Administration and Local Government
RACC	regional AIDS control coordinator
RHMT	regional health management team
RMO	regional medical officer
SDP	service delivery point
SOP	standard operating procedure
USAID	U.S. Agency for International Development
VCT	voluntary counseling and testing

EXECUTIVE SUMMARY

Background

Since 2008, the United States Agency for International Development (USAID) has tasked MEASURE Evaluation–Tanzania (MEval-TZ)—an associate award of the leader project MEASURE Evaluation, based at the University of North Carolina, Chapel Hill, NC, USA—with conducting annual data quality assessments (DQAs) within selected HIV testing, care, and treatment programs. MEval-TZ conducted the study reported here to learn how the activities we implemented have changed health information systems (HIS). The aim of this study was to document drivers of and barriers to the effectiveness of DQA activities to strengthen data quality. The study also sought to help us understand of the contribution of the DQAs to the strengthening of HIS in the target regions/districts. As part of its learning agenda, MEval-TZ needed to identify data and metrics that could be used to assess the effects of the monitoring and evaluation (M&E) system strengthening activities conducted by the project, primarily at the subnational level. Furthermore, the study aimed to identify recommendations for improvement of data quality in Tanzania and globally.

Methods

This was a cross-sectional, mixed-methods study. The study involved semistructured key informant in-depth interviews (KIIs) on data quality facilitators and barriers with 19 respondents from six regions selected based on the breadth and intensity of DQAs and M&E systems strengthening interventions that we supported in Dar es Salaam, Mtwara, Arusha, Iringa, Dodoma, Mwanza. The key informants were staff from the Tanzanian headquarters of four implementing partners (IPs) (i.e., EGPAF, Deloitte Consulting Limited, Selian Lutheran Hospital, Baylor College of Medicine Children’s Foundation–Tanzania); four IP intermediate reporting levels (IRLs), which could be regional, zonal, or field offices; and 10 health facilities within the selected regions. Qualitative data were complemented by a desk analysis of aggregate quantitative data reported in the district health information system 2 (DHIS 2) since 2013 for 43 district councils reached by MEval-TZ’s interventions and 45 district councils that had not benefited directly from the project’s activities. The analysis focused on DHIS 2-based data quality indicators (i.e., timeliness, completeness, accuracy) and selected health outcomes. The data collection took place in March 2018.

Findings

Facilitators of and Barriers to Data Quality

The findings of this study showed that most DQAs reported by respondents were conducted by MEval-TZ; some were conducted by the National AIDS Control Programme (NACP), council health management teams (CHMTs), and IPs. Most of the respondents (i.e., seven of eight service delivery points, seven of eight IRLs, and three of four IPs) said they have an action plan from the last DQA. Key issues covered in the action plans and linked to DQAs included improving documentation in the care and treatment clinic (CTC) database to ensure the accuracy of data on clients being served; developing data management standard operating procedures, including data cleaning; increasing the number of M&E staff; documenting dried blood spots taken for confirmatory HIV testing (for HIV-exposed children) at 18 months of age; reducing double counting; addressing inconsistencies between data in the registers and in the DHIS 2 database; conducting mentoring and coaching on data quality for health facility staff; conducting monthly data verification to ensure data quality before entry into the DHIS 2; conducting internal DQAs; performing data quality verification; and tracking clients who are lost to follow-up.

According to respondents in Mwanza, Arusha, and Mtwara, the DQAs conducted by MEASURE Evaluation were often followed by M&E capacity building activities. These activities included training M&E officers and data clerks on key M&E concepts and data quality checks, as well as administering supportive supervision visits. The M&E officers and data clerks reported that they received training on how to conduct internal DQAs, the importance of DQAs, how to develop M&E plans, data management, and how to use the DHIS 2. Trained M&E focal persons and data clerks in Arusha, Mtwara, and Dar es Salaam reported using the skills gained from the training in verifying, cleaning, documenting, and reporting data; conducting internal DQAs; using the DHIS 2; and developing M&E plans.

Factors mentioned by respondents as facilitators of implementation of their action plans following DQA rounds included staff commitment; frequent supportive supervision; training of M&E staff, health care workers, and data clerks; participation in regular data review meetings; team work and cooperation; favorable attitudes/value for data quality; communication of the action plans to responsible staff for implementation; and DQA being one of the activities for measuring staff performance (i.e., good DQA results are directly connected to staff performance).

Key factors that facilitate maintenance of or improvements in data quality included improved capacity in data management; commitment of staff and regional/council health management teams to get quality data; determination to achieve high performance in service provision; good communication, team work, and regular cross-checking, supportive supervision, and mentorship; the need for the ability to know the current health status based on data collected and analyzed; the need for evidence based on analysis of actual data to inform decisions at all levels; confidence and availability of resources (i.e., human resources and funds); and provision of feedback to the health facilities on data quality.

Factors identified as hindering implementation of action plans developed following each DQA round included poor documentation or lack of registers for recording patients' information; competing priorities with a tight time frame; shortage of human resources and infrequent follow up; and short project life span, as some projects were assessed toward the end of their funding period.

Factors that compromise or undermine data quality included poor paper-based filing systems; different staff filling out source documents and preparing reports, while most have not received proper training for these tasks; limited understanding of indicator definitions among service providers at some sites; lack of comprehensive supportive supervision from the IRLs that support health facilities; lack of commitment and unfavorable attitudes among some staff; recording of wrong information; unreported shifting of clients to other CTCs; challenges merging CTC2 data to the national database; poor documentation of clients lost to follow-up; infrequent follow-up of clients; lack of training for health care workers and other new staff; double counting; shortage of staff; multiple reporting deadlines; and poor management of data flow from health facilities to the district level.

Metrics for Measuring Effects of Data Quality Strengthening Interventions

A secondary analysis was conducted to determine the extent to which routine data reported through the DHIS 2 may be used to quantify the effects of MEval-TZ's data quality improvement interventions. This analysis compared data quality and selected health outcome indicators for district councils covered by MEval-TZ with those for non-MEval-TZ district councils for 2013 to 2017. Data quality indicators (i.e., reporting rates and reporting timeliness) were analyzed for antenatal care (ANC) and prevention of mother-to-child HIV transmission (PMTCT) data. Three health outcomes were selected for the analysis because they represented core health services provided at all levels of the health care system: 1) proportion of ANC clients coming for their first visit before 12 weeks gestation, 2) percentage of HIV-exposed children who received HIV confirmatory test at 18 months of age, and 3) proportion of laboratory-confirmed malaria cases among all ANC visits.

For the data quality, the study showed that both ANC and PMTCT indicator reporting rates improved significantly in both MEval-TZ-supported district councils and non-MEval-TZ district councils, from an average of 65 percent in 2013 to above 95 percent from 2015 onwards. As to the timeliness of reporting, the data showed that whereas improvements occurred in ANC data reporting timeliness in both MEval-TZ and non-MEval-TZ districts, the changes were higher in the former than the latter (61 and 30 percentage point increase from 2013 to 2015 in MEval-TZ and non-MEval-TZ districts, respectively). The timeliness of PMTCT data reporting was similar for both MEASURE and non-MEval-TZ districts, increasing from around 30 percent in 2013 to 100 percent in 2015. The non-MEval-TZ-supported districts had consistently better ANC reporting timeliness than the MEval-TZ-supported districts. This suggests effectiveness of the selection criteria for DQA districts, which included poor quality of data reported to USAID.

For the health outcomes, the data indicated that the percentage of ANC clients coming for their first visit before 12 weeks gestation declined in both MEval-TZ-supported district councils and non-MEval-TZ district councils, even though the latter still performed better. The percentage of HIV-exposed children who received HIV confirmatory testing at 18 months of age changed almost uniformly between MEval-TZ and non-MEval-TZ districts. For the third health outcome on percentage of laboratory-confirmed malaria cases among all ANC clients, MEval-TZ-supported district councils showed a decreasing trend, in contrast to the non-MEval-TZ district councils. Even though the comparison districts were randomly selected, they tended to be from regions with higher prevalence of malaria. Improvements in malaria case reporting may reflect the ongoing malaria control interventions in those regions, as well as the comparative malaria burden.

The findings on both data quality and health outcomes point to the difficulty of using DHIS 2 data to quantify the effects of MEval-TZ's health information system strengthening interventions. The government's efforts since 2013 to roll out the DHIS may have contributed to the changes observed in data quality indicators, while health outcome changes may have resulted from factors beyond MEval-TZ's influence.

INTRODUCTION

MEASURE Evaluation is a global project funded by the United States Agency for International Development (USAID) to support health information system (HIS) strengthening. The project's associate award MEASURE Evaluation–Tanzania has been operational since 2008, with Palladium as the lead implementing partner (IP).

From the beginning, USAID tasked MEval-TZ with conducting annual data quality assessments (DQAs) within selected HIV testing, care, and treatment programs. In collaboration with the assessed programs, we used the findings of the DQAs to develop and implement customized monitoring and evaluation (M&E) capacity strengthening interventions, such as M&E training, mentoring, coaching, and supportive supervision to address the gaps identified. Trained IPs cascaded the M&E system improvement interventions, either through regional health management teams (RHMTs) and council health management teams (CHMTs) or directly to health facility staff (MEval-TZ, 2018).

We conducted DQAs with the following objectives (MEval-TZ, 2017):

1. To identify strengths and areas of improvement in data collection, aggregation, and reporting at all levels, from SDPs to the M&E units of IPs.
2. To improve the M&E capacity of the IPs and health facilities to collect and report quality data and use the same in programmatic decision making.
3. To strengthen the capacity of IPs' M&E staff to carry out internal DQAs.

There were two types of assessments:

1. Full DQAs, conducted when an IP was being assessed for the first time.
2. Mini DQAs, which were follow-up assessments to a previous full DQA

We conducted the DQAs at three levels:

1. M&E unit—This is usually the national headquarters of an IP where data are aggregated and finalized prior to submission to USAID or other stakeholders. A DQA was done at this level first.
2. Intermediate reporting level (IRL)—This is usually the regional, zonal, or district offices of an IP where data collected from supported health facilities and other service delivery sites are aggregated before they are sent to the national headquarters. This level was assessed after the M&E unit level.
3. Service delivery point (SDP)—This is usually the health facility (or a village for community-based programs) at which data on service provision are collected and collated for the first time. For the health facility, data are captured in different registers, then aggregated at the end of the month in the facility's monthly report.

The quantitative part of the DQA consisted of data verification and documentation review, and the qualitative part applied a data management system assessment. Data verification was done by comparing data reported to USAID with data available in source documents at the SDP, IRL, and M&E unit for any given indicator (MEval-TZ, 2014–2017).

The M&E system strengthening tool (MESST) was applied at the M&E unit only. MESST was used to assess the M&E plan in five functional areas: (1) program strategy and M&E plan; (2) goals and objectives of the program/project; (3) M&E indicators in the program/project; (4) data use, dissemination, and transparency; and (5) M&E budget. MESST includes three checklists that programs or projects can use to assess (1) their M&E plan; (2) the capabilities of the M&E unit to manage data on program

implementation; and (3) data collection and reporting systems on program areas, including the ability to report valid, high-quality data (MEval-TZ, 2014–2017).

Purpose of the Study

We conducted this study to help us understand how the project's activities in Tanzania might have changed the country's HIS. The aim of the study was to document drivers of and barriers to the effectiveness of DQA activities to strengthen data quality. The study also sought to help us understand the contribution of the DQAs to the strengthening of HIS in the target regions/districts. As part of our learning agenda, we needed to identify data and metrics that could be used to assess the effects of our M&E system strengthening activities, primarily at the subnational level. Furthermore, the study aimed to identify recommendations for improvement of data quality in Tanzania and globally.

Objectives of the Study

Specific objectives of the study were:

1. To describe key drivers of the effectiveness of DQA activities to strengthen data quality.
2. To describe key barriers to the effectiveness of DQA activities to strengthen data quality.
3. To gain a better understanding of the contribution of MEval-TZ's DQAs in the strengthening of HIS in the target regions/districts.
4. To assess the effects of the M&E system strengthening activities conducted by MEval-TZ at the subnational level.
5. To identify successes and opportunities for future improvement and recommendations to help inform future data quality interventions in Tanzania and globally.

Research Questions

This study aimed to answer the following research questions:

1. What are the key facilitators¹ of (i.e., factors that facilitate) the effectiveness of DQAs?
2. What are the key barriers¹ to (i.e., factors that hinder) the effectiveness of DQAs?
3. How did the project interventions strengthen facilitators of the effectiveness of DQAs?
4. How did the project interventions reduce barriers to the effectiveness of DQAs?
5. What activity areas or combination of activity areas are most effective for improving quality of data?
6. What are the effects of the M&E system strengthening activities conducted by MEval-TZ at the subnational level?
7. To what extent can the data reported through the district health management system 2 (DHIS 2) be used to measure the contribution of MEval-TZ's DQA activities to HIS strengthening and health outcomes?
8. What were the immediate outputs and intermediate outcomes of the DQAs?
9. What are the key lessons and opportunities for future improvement, to help inform future data-quality interventions in Tanzania and globally?

¹ Facilitators are internal or external factors that increase the likelihood that an intervention will bring about the desired output or outcome. Barriers are internal or external factors that decrease the likelihood that an intervention will bring about its desired output or outcome.

METHODS

Study Design, Respondent Selection, and Data Collection

This was a cross-sectional, mixed-methods study that involved semistructured key informant interviews (KIIs) with USAID-supported IPs and their subnational stakeholders. A second component focused on the quality of and analysis of secondary data on selected health outcomes and data quality indicators that had been reported through the DHIS 2 since 2013, comparing districts where MEval-TZ had conducted DQAs with districts where similar activities were not implemented. Study respondents consisted of government workers, IPs, and health care workers (HCWs) who had been involved in strengthening the quality of routine health information at the subnational level. Five regions were selected for inclusion based on the breadth and intensity of DQAs and M&E systems strengthening interventions supported by MEval-TZ. The data collection took place in March 2018.

Four IPs that continue to implement USAID-funded HIV testing, care, and treatment programs—Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) USAID Boresha Afya, Deloitte Consulting Limited (DCL) USAID Boresha Afya, Baylor College of Medicine Children’s Foundation–Tanzania, and Selian—were selected for primary qualitative data collection. One or two regions supported by these IPs were selected, and one or two health facilities in those regions where DQAs were conducted more than once were selected. For each sampled IP, one of its zonal, regional, or field offices (i.e., IRL) and two SDPs (i.e., health facilities) were selected. The total sample consisted of 4 IPs, 4 IRLs, and 10 health facilities. Semistructured in-depth interviews were administered to one or two key informants at each level to identify changes in their M&E systems and reported data quality (see Appendix 5 for the data collection tools).

A key inclusion criterion for respondents was exposure to DQA activities implemented by MEval-TZ. Anyone not involved with DQA activities implemented by MEval-TZ was not interviewed. A list of respondents interviewed for this documentation is included in Appendix 2.

Qualitative Data Entry, Data Management, Quality Assurance, and Analysis

Notes from each interview were reviewed on the same day to ensure that all points heard during the interview had been captured. Notes taken from each interview were entered into a computer in MS Word on the same day. Audio records from each interview were switched on, listened to while the notes already entered in MS Word were read, and used to complement the notes.

Measures taken to assure data quality included pretesting data collection tools, working with an experienced notetaker who had participated in developing and reviewing the data collection tools, checking all data collection instruments for completeness and possible inaccuracies, and daily review of all notes after each interview. At the end of each KII, the consultant and the notetaker checked that all tools were filled. The consultant simultaneously transcribed and translated data to minimize chances for errors.

The consultant methodically organized field notes, audio recordings, and interview transcripts. Key themes and recurring issues were identified and further analyzed. Data were synthesized and interpreted according to these themes. Triangulation was performed using data in program reports and DQA reports to help validate the accuracy of the findings.

Secondary Data Extraction and Analysis

DHIS 2 Data Analysis

Qualitative data were complemented by a secondary analysis of aggregate quantitative data reported in the DHIS 2 since 2013 for 43 district councils reached by MEval-TZ's interventions and 45 district councils that had not benefited directly from the project's activities. The analysis was intended to determine the extent to which routine data reported through the DHIS 2 may be used to quantify the effects of MEval-TZ's data quality improvement interventions. The following health outcomes were selected for the analysis because they represented core health services provided at all levels of the healthcare system:

1. Proportion of antenatal care (ANC) clients coming for their first visit before 12 weeks gestation
2. Percentage of HIV-exposed children who received HIV confirmatory testing at 18 months of age
3. Proportion of laboratory confirmed malaria cases among all ANC visits

In addition, data quality indicators (reporting rates and reporting timeliness) were analyzed for MEval-TZ and non-MEval-TZ district councils. The analysis of the data quality indicators was based on ANC and PMTCT data.

The analysis was further stratified by the four types of MEval-TZ interventions that the districts had been exposed to:

1. DQA only (n=12 districts)
2. Data demand and use (DDU) only (n=19 districts)
3. DDU and DQA (n=12 districts)
4. DQA (regardless of whether they also had DDU) (n=24 districts)

DHIS 2 data on the indicators identified above for all 88 district councils were downloaded into offline MS-Excel pivot tables and exported to STATA version 13 for cleaning and analysis. Average proportions for each of the identified indicators were compared between MEval-TZ and non-MEval-TZ district councils for 2013 to 2017.

The list of the districts involved in the analysis is provided in Appendix 3.

Review of Project Documents and DQA Reports

As part of the study, a desk review of key project documents, including annual project work plans and quarterly and annual progress reports, was conducted. In addition, DQA reports were analyzed among a sample of USAID-supported IPs with more than one round of assessment since 2013, to elucidate changes over time in their M&E systems and reported data quality.

Ethical Considerations

The protocol for this assessment was reviewed and approved by the National Institute for Medical Research (NIMR) Ethics Committee, and the approval letter is appended to this report (Appendix 4). All ethical issues related to collecting data were taken into consideration. Issues of confidentiality of information and freedom of participation were respected. Respondents were requested to give verbal informed consent.

Limitations

Respondents may have felt that their professional performance was being assessed, thereby biasing their responses. Prior to the interviews, respondents were assured that the study was not a professional

performance appraisal and that their responses would remain confidential and would not be shared with any of their supervisors.

FINDINGS

Overview of DQA Activities Conducted by MEval-TZ

DQAs conducted by MEval-TZ since 2013 revealed gaps in the IPs' M&E plans; areas needing improvement in the IPs' data management systems; and weaknesses in the areas of report availability, report completeness, and data verification due to the absence of documented procedures to address late, incomplete, inaccurate, and missing reports, especially at the SDP level (MEval-TZ, 2014–2017).

DQAs also found both overreporting and underreporting. Overreporting was mainly due to registers being filled in incorrectly. Underreporting was mainly due to improper preparation of monthly reports, which led to some clients being excluded from the reports. The observed discrepancies were due to missing monthly and quarterly summary reports and registers, double counting, errors in report compilation, and registers not being filled in correctly (MEval-TZ, 2014–2017).

Post-DQA capacity building by MEASURE Evaluation involved one-on-one onsite mentoring (for IP-specific issues) and facilitating organized training workshops (for cross-cutting issues). Development or revision of M&E plans was the main result of such trainings (MEval-TZ, 2014–2017).

Reported DQAs Conducted from 2013 to March 2018

Respondents were asked to state the last time their program's data quality was assessed by MEval-TZ, and the number of times MEval-TZ had conducted DQAs within their program since 2013. Table 1 shows reported DQAs conducted by MEval-TZ, the National AIDS Control Programme (NACP), or the CHMT among the visited IPs and health facilities. The results showed awareness among the IPs and health facilities of the DQAs conducted in the recent past.

Table 1. Reported DQAs conducted from 2013 to March 2018

IP/ IRL/ SDP	2013	2014	2015	2016	2017	2018
EGPAF DSM	N ²	N	N	N	June ³	N
Deloitte DSM	Y ⁴	Y ³	Y	Y	May ³	N
Deloitte USAID-Boresha Afya Iringa	N	Y ³	Y	Y	April ³	N
Iringa Regional Referral Hospital ⁵	Y	Y	Y	Y	Y	Y
Ipogolo HC Iringa	N	N	N	N	April	N
EGPAF IRL Dodoma ⁶	N	N	N	Y	Y	N
Dodoma Regional Referral Hospital	Y	Y	Y	Y	Y	Y
Kikombo HC	Y	Y	Y	Y	Y	N
Baylor Mwanza	N	Y ³	N	Y ³	N	N
EGPAF IRL Arusha	N	N	N	N	March ³	N
Selian Lutheran Hospital Arusha	N	N	N	N	Y ³	N
ALMC	N	N	N	Y ⁷	N	Y ⁸
Mount Meru Hospital ⁹	Y	Y	Y	Y	Y	N
Themis HC ⁹ Arusha	Y	Y	Y	Y	Y	Y
Deloitte-USAID Boresha Afya Mtwara	N	Y ³	N	N	N	N
Likombe HC Mtwara	N	Y ³	N	N	N	Y ¹⁰
Mikindani HC Mtwara	N	Y ³	N	N	N	N
District HGIS Coordinator Mtwara	N	N	N	N	N	N

Table 1 shows that most reported DQAs were conducted by MEval-TZ, while some were conducted by the NACP, the CHMT, and the IPs. One health facility conducted internal DQAs in collaboration with the CHMT. Since MEval-TZ implements DQAs jointly with CHMT members and IPs, some respondents may have not recognized MEval-TZ's role in some of the DQAs they had been involved in.

Examples of IPs That Prepared and Implemented Action Plans Following DQAs

Following each round of DQA, MEval-TZ supports the assessed IPs to develop capacity building plans for addressing identified gaps. Respondents were asked whether they had action plans from the last DQA, the extent to which those action plans had been implemented, facilitating factors and barriers to implementation of the action plans, and how the barriers were addressed.

² N represents that the respondent reported that no DQA was done in that year.

³ DQA was done by MEASURE Evaluation.

⁴ Y represents that the respondent reported that a DQA was done once in that year, but the respondent did not remember the month.

⁵ Respondents at Iringa Regional Referral Hospital and Ipogolo HC recalled that the DQAs were done by the CHMT.

⁶ Respondents in Dodoma recalled that the DQAs were done by the project (TUNAJALI II and thereafter EGPAF). DQA reports indicated that MEASURE Evaluation conducted DQAs at these sites.

⁷ DQA was done by NACP.

⁸ DQA was done by EGPAF.

⁹ Respondents at Mount Meru Hospital and Themis HC recalled that the DQAs were done by the CHMT. In addition, respondents at Themis HC reported quarterly internal DQAs.

¹⁰ DQA was done by Deloitte in collaboration with the CHMT.

Respondents with Action Plans from Last DQA and Extent of their Implementation

Through the DQAs, MEval-TZ helped IPs, IRLs, and selected health facilities develop action plans. The majority of respondents reported that they have been implementing specific recommendations included in the action plans. Respondents¹¹ at seven out of eight SDPs, seven out of eight IRLs, and three out of four IPs said they had an action plan from the last DQA. Key issues covered in the action plans, which were linked to DQAs, included improving documentation in the care and treatment clinic (CTC) database to enhance consistency between clients attended and data entered into the database; developing a data management standard operating procedure (SOP); having a data cleaning SOP; increasing the number of M&E staff; documenting dried blot spots (DBSs) taken for confirmatory HIV testing (for HIV-exposed children) at 18 months of age; reducing double counting; addressing inconsistencies in data in the registers versus data in the DHIS 2 database; conducting mentoring and coaching; conducting monthly data verification to ensure data quality before entering data into the DHIS 2; conducting an internal DQA; performing data quality verification; and tracking clients lost to follow-up.

One IP did not have an action plan from the last DQA because there were issues with the DQA report. The respondent said that they sent the report to USAID but had not yet received feedback. Instead, they had prepared an improvement plan that included capacity building activities.

“We agreed to improve documentation in the CTC database to enhance consistency between clients attended and data entered into the database and we are already doing that... we also decided to properly document clients who are lost to follow-up as per recommended instructions so as to avoid data discrepancies.” (KII respondent at Likombe HC in Mtwara).

“... recommendations included to develop data management SOP to show how long it takes for the files to be entered in the database; to have data cleaning SOP since we were cleaning data without documentation; to recruit M&E manager... we have developed data management SOP already... and we are on process to employ M&E manager.” (KII respondent at Baylor in Mwanza)

“Before DQA, CTC 2 files were not well documented, but after DQA, CTC 2 files are well documented and nowadays we are using CTC 2 cards to provide ART and not CTC1 card.” (KII respondent at ALMC in Arusha)

“We agreed we are going to improve documentation, ensure availability of appropriate tools such as updated guidelines and M&E tools; some health facilities had outdated ones, but now we are trying to make sure that every health facility has the current tools; we have already requested NACP and they have already sent to the regional level; we are supporting printing of tools such as the National HIV Care and Treatment Guidelines.” (KII respondent at EGPAF USAID Boresha Afya in Arusha)

“... HCWs/nurses were not taking DBS for confirmatory HIV test [for HIV-exposed children] at 18 months [of age], following the DQA they are now taking DBS every month and provide reports.....” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

“We agreed to address double counting; there may be a client with two files, especially for those who are HIV-positive; a client may test for HIV while in another region and then when s/he comes back s/he tends to stay silent due to stigma; so we aimed to improve linkages between CTC and HTC to reduce double counting.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

¹¹ The total number of respondents was larger than the actual number of health facilities and IRLs since some respondents, such as Baylor and regional referral hospitals, responded both as an SDP and as an IRL.

“We agreed to address inconsistencies in data in the registers versus data in the DHIS 2 database. We have come to learn that some HCWs are not using tally sheets. So we conduct mentoring and coaching... They implement all actions, especially when we closely follow up and provide mentoring.” (KII respondent at Dodoma Regional Referral Hospital)

Participation in M&E Capacity Building Activities after DQA Rounds

Respondents were asked about their participation in M&E capacity building activities (e.g., training workshops, mentoring and coaching, supportive supervision) conducted by MEval-TZ following any DQA round. According to respondents in Mwanza, Arusha, and Mtwara, the DQAs conducted by MEval-TZ were often followed by M&E capacity building activities, which included training of M&E officers and data clerks on several M&E and data quality skills, as well as administration of supportive supervision visits. The M&E officers and data clerks reported that they received training on how to conduct internal DQAs, the importance of DQAs, how to develop M&E plans, data management, and how to use the DHIS 2.

“Yes, I attended training in Dodoma in 2017, which was organized by MEASURE Evaluation; we were trained on how to develop M&E plan. I also recall to have attended another training in 2013 in Morogoro in which we were trained on how to do DQA, data use, and data analysis....[however] there has been neither mentorship nor coaching that I am aware of.” (KII respondent at Baylor in Mwanza)

“Yes, I attended training in Arusha where I learnt how to perform data analysis, indicators to follow, how to report, and how to prepare graphs from the data. I received supportive supervision from EGPAF and RHMT.” (KII respondent at Mount Meru Hospital in Arusha)

I participated in an M&E training [workshop] organized by MEASURE Evaluation in Njombe when I was working for TUNAJALI II. Practical skills gained include conducting data verification, proper data storage at site level, importance of timely reporting, and good data flow from facility to CHMT. (KII respondent at Deloitte USAID Boresha Afya in Mtwara)

“We gained skills on how to report, how to supervise, and how to use CTC 2 card.” (KII respondent at Selian Lutheran Hospital in Arusha)

Trained M&E focal persons and data clerks in Arusha, Mtwara, and Dar es Salaam reported using the skills gained from the training in data verification, data cleaning, documentation, reporting, conducting internal DQAs, using the DHIS 2, and developing an M&E plan.

“We have improved files arrangement, for example we have separated files of clients who are lost to follow-up, death, and those current on treatment; therefore it is easy to track files after having good arrangement.” (KII respondent at ALMC in Arusha)

“We normally plan for DQA and we have post DQA discussions focusing on improving quality of data... we developed M&E plan from the knowledge we gained from the training by MEASURE Evaluation.” (KII respondent at EGPAF in Dar es Salaam)

“We have improved timely reporting through putting a date stamp on reports submitted from facilities as part of tracking timely reporting... we inform the sites which submitted reports late... Health facilities collaborate with the

CHMT to conduct internal DQA on a quarterly basis, which is followed up with coaching and mentoring sessions.”
(KII respondent at Deloitte USAID Boresha Afya in Mtwara)

Drivers of the Effectiveness of DQAs in Strengthening Data Quality

Objective one for documenting health data quality practices within USAID-supported IPs and health facilities in Tanzania was to describe key drivers of the effectiveness of DQAs in strengthening data quality. Respondents were asked to describe factors that facilitate implementation of the action plans developed following each DQA round, as well as factors that facilitate maintenance or improvements in data quality. The following subsections present respondents' views on these factors.

Factors That Facilitate Implementation of Post-DQA Action Plans

DQA reports (2014-2017) reviewed had the following post-DQA recommendations for IPs and health facilities: develop an M&E plan; ensure proper filing systems; provide all lower reporting levels with all information and comprehensive documentation on indicators; strengthen supportive supervision and provide regular trainings, especially at lower reporting levels; and provide and document systematic feedback to lower levels on the quality of their reporting.

Respondents provided the following factors that they believed facilitated implementation of their action plans following the most recent DQAs:

- Staff commitment

“HCWs at Kimakoua Dispensary in Longido are few, but they are really committed, they have good cooperation, and they are doing well in terms of data quality. Commitment is very high among some of our HCWs, and that is very good.” (KII respondent at Mount Meru Hospital in Arusha)

“To have a team with common goals, who work as a team, who care for and have ownership of their work; we are committed and in case of any challenge we can leave other activities and solve it first; I have never heard of any of our staff who refuses to do a certain activity because there is no money.” (KII respondent at Selian Lutheran Hospital in Arusha)

“Commitment and agreement between me [M&E officer] and HCWs; I can't prepare an action plan without involving them and they are committed to implement.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

- Frequent supportive supervision

“Frequent supportive supervision; support from the council project coordinator helped to address many challenges; and closely collaborating with regional coordinators such as RACC for connecting us to NACP.” (KII respondent at EGPAF USAID Boresha Afya in Arusha)

- Training of M&E staff, HCWs, and data clerks

“Close follow-up and mentoring; the training we received; field experience; the desire to have quality data, since we all feel good when we have quality data.” (KII respondent at Dodoma Regional Referral Hospital)

“Training helped us so much; through training we got motivation and skills to follow all of their suggestions and addressing all of our gaps.” (KII respondent at Baylor in Mwanza)

- Participation in regular data review meetings

“Data review meetings done on a quarterly basis in collaboration with the CHMT have been very useful in enhancing data quality.... Deloitte Mtwara Office has a well-experienced M&E team able to support the

system; support from Deloitte Head Office; support from Mtwara RHMT/CHMTs.” (KII respondent at Deloitte USAID Boresha Afya in Mtwara)

- Team work and cooperation

“... Our data clerks cooperate so well with CTC and pharmacy staff ... they always visit the CTC and the pharmacy to collect all files to ensure completeness of data entered into the database... Here we don't attend a client—even if s/he is a member of staff—if they don't come with a patient file” (KII respondent at ALMC in Arusha)

- Favorable attitudes/value for data quality

“The need to enhance quality of data and make the sites to score higher during data review meetings and to be ready for external DQA.” (A CHMT respondent in Mtwara)

- Communicating the action plans to responsible staff for implementation

- DQA being one of the activities for measuring staff performance (i.e., good DQA results are directly connected to responsible staff performance)

“Nowadays DQA has been internalize, it is part and parcel of our functions and is one of the measures of staff performance.” (KII respondent at Deloitte USAID Boresha Afya in Iringa)

Factors That Facilitate Maintenance of or Improvements in Data Quality

According to the respondents in the field, the following are the key factors that facilitate maintenance of or improvements in data quality:

- Improved capacity in data management among the supported sites. This follows several capacity building activities, such as trainings (i.e., the skills gained), mentorship, and supportive supervision.

“Good supervision, frequent follow-up, and establishing linkage between HTC and CTC have helped us to maintain data quality.” (KII respondent at Kikombo HC in Dodoma)

- Commitment of staff and the RHMT/CHMT to get quality data

“Close and regular follow-up; encouraging health facilities to perform data review: we print their reports from the DHIS 2 and send to them, directing them to review the reports.” (KII respondent at Dodoma Regional Referral Hospital)

“Awareness of staff at facility level; good supervision at council and facility level; partner's supervision at facility level.” (KII respondent at Iringa Regional Referral Hospital)

- Determination to achieve high performance in service provision

“To register clients in the register book and tally on the spot if possible; having frequent mentorship and coaching; to remove paper work since most doctors have bad handwritings, to base more on electronic data.” (KII respondent at Ipogolo Health Center in Iringa)

- Good communication, teamwork, and regular cross-checking, supportive supervision, and mentorship

“Our M&E team, apart from DQAs, has been doing supportive supervision, mentorship, and organizing quarterly data review meetings, which help us to maintain quality of data... Nowadays we are reporting through DHIS 2 and most of the time data are from the health facility to DHIS 2; we have been sitting together with technical team every quarter such as DACCs to review their report before sending to DHIS 2;

we also conduct training and in case of any changes from the Ministry or from NACP we have to share, all training conducted through Me&E budget.” (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam)

“Commitment, good communication, and teamwork; we have directed that treatment supporters should not collect ARVs for CTC clients more than three consecutive times, and it is working.” (KII respondent at ALMC in Arusha)

- The need to be able to know the current health status based on data collected and analyzed
- The need to have evidence based on analysis of actual data, which informs decisions at all levels

“The clinical team owns the data nowadays and they are responsible for their targets; they can come forward and speak compared to the past when data were owned by only Me&E folks; during presentations in case of any human error they can discuss, and we do this every quarter to review PEPFAR indicators and clinic indicators.” (KII respondent at Baylor in Mwanza)

- Confidence and availability of resources (human resources and funds)

“Commitment of RHMT/CHMT to get quality data to inform decisions; supportive supervision and mentoring; capacity building through data review meetings; orientation on how to use DHIS 2; and report writing skills.” (KII respondent at Deloitte USAID Boresha Afya in Mtwara).

- Provision of feedback to the health facilities on data quality

“We are providing feedback to the facility level, both positive and negative; if the feedback is positive, we ask them to maintain; if negative, we help them to improve. The feedback motivates health facility staff to maintain or improve data quality.” (KII respondent at Deloitte USAID Boresha Afya in Iringa).

Barriers to the Effectiveness of DQAs in Strengthening Data Quality

Objective two for documenting health data quality practices within USAID-supported IPs and health facilities in Tanzania was to describe barriers to the effectiveness of DQAs in strengthening data quality. Respondents were asked to identify key barriers to implementation of action plans developed following each DQA round and how they addressed the barriers. Respondents were also requested to mention and describe factors that compromise or undermine data quality, and to describe how MEval-TZ’s interventions helped their program address threats to data quality.

Barriers to Implementation of Post-DQA Action Plans

The following factors were identified as hindering implementation of action plans developed following each DQA round:

- Poor documentation or lack of registers for recording patients’ information

“We did not have TB, STI, and FP registers ... therefore we were having zero data of TB, STI, and FP at our CTC ... we had no data to share during the quarterly review meetings.... but nowadays we have TB, FP, and STI registers which are used to capture these clients...” (KII respondent at ALMC in Arusha)

- Competing priorities with a tight time frame

IPs face shortage of time to implement everything in the plan, so they end up prioritizing. Consequently, some actions developed following DQA rounds may be shelved for a while.

“... competing project implementation priorities within a limited time frame is one of the reasons most action plans can be overlooked, and some activities are out of control.” (KII respondent at EGPAF USAID Boresha Afya in Arusha)

“The issue of developing SOP [one of the action items identified in the action plan developed following a DQA] is a challenge due to competing demands, the project is too ambitious... there are lots of things they want us to do within a very short period of time.” (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam).

“Competing priorities could be a barrier, most FBOs have their own strategy; therefore, small strategies can be overlooked during implementation.” (KII respondent at Selian Lutheran Hospital in Arusha)

- Shortage of human resources and infrequent follow-up

“...Shortage of human resources; infrequent follow-up and lack of commitment and some staff tend to have an unfavorable attitude... We have set up deadlines for implementing the action plans but still there are challenges like inconsistency of data and most actions are not yet implemented due to lack of resources and infrequent follow-up.” (KII respondent at Mount Meru Hospital in Arusha)

“We don’t have enough time allocated for implementing the plans; even us we are not able to reach all districts; shortage of financial resources.” (KII respondent at Dodoma Regional Referral Hospital)

- Short project life span

“Some of the action items were not implemented due to challenge of project life span, for example hiring M&E manager (i.e., we were hesitating to bring in new staff since the project was coming to an end.” (KII respondent at Baylor in Mwanza)

Factors That Compromise or Undermine Data Quality

Factors that compromise or undermine data quality can be grouped as individual and health system factors. DQA reports (2014–2017) have identified most of these factors. In one of the DQA reports, it was noted at the IRL that several reports were mixed up in different files and had to be sorted during the exercise. In addition, several reports were submitted for recounting after the debrief meeting at the IRL, which was also an indication of a poor paper-based filing system. Some IRLs had weak processes for reviewing reports at both the IRL and health facility levels. IRLs did not properly follow up with health facilities in cases where facilities did not submit reports for compilation (MEval-TZ, 2014–2017).

DQA reports (2014–2017) also noted that at the health facilities, different staff fill source documents and prepare reports, and most have not received proper training for these tasks. The DQA reports added that in the absence of well-trained staff, those who fill in the source documents and compile reports do so with so many errors that lead to either over- or underreporting.

The following factors were mentioned by respondents in the field as responsible for undermining data quality:

a) Individual factors

- Limited understanding of indicator definitions among service providers at some sites (KII respondent at Deloitte Boresha Afya in Mtwara). According to DQA reports (2014–2017), most facility staff do not know indicator definitions. The DQA reports also suggested that staff at several SDPs are not well trained, and there is lack of comprehensive supportive supervision from the IRLs that support the facilities.
- Lack of commitment and unfavorable attitudes among some staff

“Most doctors said they are there to treat not to document.” (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam)
- Recording of wrong information

“When someone records wrong information in the hardcopy files, I will record wrong data too in the database if I will not be sensitive, although it can be addressed by regular check of 10 percent of files which are picked randomly every quarter; low knowledge in the use of data; no one to provide feedback in case of wrong data.” (KII respondent at Baylor in Mwanza)

- Unreported shifting of clients to other CTCs
- Challenges merging CTC2 data to the national database
- Poor documentation of clients lost to follow-up

“Poor documentation; when there are many clients lost to follow-up; and also, in case we fail to enter data in CTC2, we can undermine data quality... We have been addressing these by giving no treatment without CTC2 card; discouraging¹² use of treatment supporters; attending one patient at a time; and we encourage our CTC clients to form small groups of patients where they can remind themselves on ART date.” (KII respondent at ALMC in Arusha)

- Infrequent follow-up of clients
- Lack of training for HCWs and other new staff

Lack of training for HCWs and other new staff; lack of knowledge among HCWs; incomplete report; lost to follow-up. We therefore conduct trainings; for example, last week we had a training of data clerks and PMTCT focal persons to address those challenges mentioned, including a review of the data flow plan to reduce chances of double counting.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

- Double counting

b) Health system factors

- Delay in getting viral load results, which affects “enhanced adherence counselling” and “continuum of care”

“Delays in getting viral load results from the regional laboratory... we had to request the RMO to help us... the RMO supported us by pushing regional laboratory folks to send the report to us.” (KII respondent at ALMC in Arusha)

- Shortage of staff

“Shortage of staff in the site since they are the ones doing data entry; multiple reporting, for example the funder may request data according to age group; therefore, we need to extract data from HF.... We address this through capacity building; supportive supervision; we have been conducting monthly cross-checking; We have council project coordinators who oversee project activities at council and health facility level, including ensuring functioning of the Me&E system.” (KII respondent at EGPAF Boresha Afya in Arusha)

- Multiple reporting deadlines

“There are so many deadlines, before submission of the report we need to have time to review our data but time is not enough; therefore, we can compromise or undermine data quality; government system of recording is too much paper work, while there are only a few HCWs... We [therefore] extend working hours; also we are working with district focal persons to push/assist them to submit reports before deadline (we have an

¹² This was meant to ensure that each CTC client who attended ALMC was recorded in the CTC2 database. It appears that some treatment supporters were skipping that step, collecting ARVs for their clients without documenting in the CTC2 cards.

agreement between IP and district focal person). We have frequent visits to do mentorship and coaching to help them to improve.” (KII respondent at Deloitte USAID Boresha Afya in Iringa)

- Poor data flow management from the health facility to district level

“How they report from the health facilities to the district; how they store the report at district level; that is where I still feel it might compromise the quality of data since most regions and the districts we support are not well equipped to handle/ to receive data from all health facilities. I think most people are keeping data individually so the DACC is keeping his/ her own reports and other staff the same.” (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam)

Addressing Factors That Compromise or Undermine Data Quality

Respondents in the field have been playing their part to address factors that compromise or undermine data quality by extending working hours and through training, mentorship, and coaching.

“We extend working hours, also we are working with district focal person; therefore, we can push/ assist them to submit reports before deadline (we have an agreement between IP and district focal person). We have frequent visit to do mentorship and coaching to help them to improve.” (KII respondent at Deloitte USAID Boresha Afya in Iringa)

“We conduct training; last week we had a training of data clerks and PMTCT focal persons to address those challenges mentioned, including a review of the data flow plan to reduce chances of double counting.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

“Our team is skilled to properly manage data at all points of service delivery such as CTC, HTC, and the pharmacy.” (KII respondent at ALMC in Arusha)

Threats to Data Quality and How MEval-TZ's Interventions Helped IPs Address Them

Respondents were asked to describe how MEval-TZ's interventions have helped their programs address threats to data quality. Manual recording of data in the registers was cited as a threat to data quality.

“Manual recording of data in registers remains as a threat to data quality; staff have different handwritings, some are not very committed... Most doctors are recording their diagnosis manually. So, after the DQA we have been more careful in taking data from the registers into the DHIS 2. If some data are not well written in the registers, we take it to the responsible doctor to make corrections or read for us.” (KII respondent at Mount Meru Hospital in Arusha)

Contribution of MEval-TZ's DQAs in Strengthening Health Information Systems in Target Districts

Objective three for documenting health data quality practices within USAID-supported IPs and health facilities in Tanzania was to gain a better understanding of the contribution of MEval-TZ's DQAs in strengthening HIS in the target regions/districts. Having identified gaps in the HIS after a DQA round, MEval-TZ supported IPs and health facilities to develop action plans for addressing the gaps. In addition, MEval-TZ organized and facilitated capacity building activities, including trainings of M&E staff and data clerks, and supportive supervision visits.

Strengthening a HIS involves equipping M&E staff and data clerks with the required knowledge, skills, attitudes, and commitment; budgeting and allocating adequate financial resources; and improving the information communication technology (ICT) infrastructure. According to DQA reports (2014–2017), MEval-TZ provided capacity building (i.e., trainings, mentorship, supportive supervision) to M&E teams

and data clerks. Furthermore, MEval-TZ supported IPs and health facilities to plan and conduct quarterly internal DQAs to improve data quality, in addition to the external DQAs done once per annum.

MEval-TZ helped IPs, IRLs, and targeted health facilities develop their own M&E plans and encouraged them to allocate budgets for implementing the plans. They also created awareness at all levels by developing a feedback sharing system.

Practical Skills Gained from Capacity Building Activities Conducted by MEval-TZ

Respondents reported to have gained the following skills from capacity building activities conducted by MEval-TZ:

1. Transformation into M&E officers

“Training helped me to know the meaning of M&E, components of M&E, and how to do M&E. I was not informed on DQA at facility level and how to analyze data at facility level since it was not my specialization; therefore they have transformed me from an environmentalist to a person skilled in M&E.” (KII respondent at Deloitte USAID Boresha Afya in Iringa)

“It is easy for me to collect data compared to when I started (when I had not attended these trainings); I am so active in my duties and responsibilities; I can collect and evaluate data from all departments and I know the correct and wrong data through DHIS 2 by looking on the color displayed on my desktop.” (KII respondent at Ipogolo Health Center in Iringa)

2. Proper filing and arrangement of patient files in the file room

3. Proper documentation of clients’ information in the files

“Practical skills I gained include conducting data verification, proper data storage at site level, importance of timely reporting, and good data flow from facility to CHMT.” (KII respondent at Deloitte USAID Boresha Afya in Mtwara)

4. Conducting routine internal DQAs. A respondent at EGPAF USAID Boresha Afya said they have been conducting routine internal DQAs for most health facilities supported by the project. He added that there is a copy of the DQA report at every health facility where DQAs are conducted.

“I introduced quarterly DQAs in the work plan. I have introduced DQA to our data clerks in Arusha and they discuss the DQA results during quarterly continuum of care meetings.” (KII respondent at EGPAF USAID Boresha Afya in Dar es Salaam)

5. Development of an M&E plan

“Yes, we have developed our M&E plan; we have increased our M&E team; we have built our capacity; we have been doing our own internal DQA; we have increased the budget for M&E.... We normally plan for DQA and we developed M&E plan from the knowledge we gained from MEASURE Evaluation.” (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam)

6. Monthly report preparation. Data clerks at points of service delivery have attended trainings that equipped them with skills on how to prepare monthly reports.

“Documentation skills, it has been revealed that documentation is not good; therefore they promised to help us to know the primary source of data.” (KII respondent at EGPAF USAID Boresha Afya in Arusha)

“They [MEASURE Evaluation] have helped us to have common understanding on dimensions of data quality.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

“Documentation skills, we have ensured that every department has someone responsible for documentation; I also gained data analysis skills; we nowadays do not send our data anywhere before performing some basic analysis.” (KII respondent at Themu Health Center in Arusha)

“Last month I worked to prepare the data, provided data interpretation and presentation at the quarterly review meeting using DHIS 2 data. I have used these skills to address inconsistencies in data...” (KII respondent at Dodoma Regional Referral Hospital)

7. Using DHIS 2 data to plan and budget

“I am using those skills to enter data in DHIS 2; data help me in planning and budgeting, for example last year there were 80 malaria patients; therefore it was easy for me to know the amount of medicine required due to the increase or decrease in the number of patients.” (KII respondent at Ipogolo Health Center in Iringa)

8. Data analysis skills

“I have gained skills and ability to analyze data from different programs; ability to know indicators of data quality; ability to conduct capacity building at health facility level on data interpretation and how to display data; data verification through simple scanning in the DHIS 2 based on dimensions of data quality.” (KII respondent at Iringa Region Referral Hospital)

“We are using those skills to analyze data to get reports; we have done a lot of presentations and we can detect how far we have achieved against targets; and in case we have poor performance we discuss which strategy can be used.” (KII respondent at Baylor in Mwanza)

Effects of M&E System Strengthening Activities Conducted by MEval-TZ at the Subnational Level

Objective four for documenting health data quality practices within USAID-supported IPs and health facilities in Tanzania was to assess the effects of M&E system strengthening activities conducted by MEval-TZ at the subnational level. Respondents were asked to describe how the DQAs conducted by MEval-TZ have affected their program. Respondents were further asked to give examples of specific changes that they have made in their program as a result of the DQAs. Some of the changes brought about by DQAs included IPs developing or updating their project M&E plans; setting aside a certain percentage of the project budget for M&E and DQA; improving the timeliness of reporting; and conducting routine internal DQAs on their own.

“Staff are able to conduct DQA and we have a DQA culture; we are more sensitive to check the quality of our data before sending report.” (KII respondent at Deloitte USAID Boresha Afya in Iringa)

“We have changed, nowadays we are submitting reports on time; we get feedback, which is different from the past where we were not getting feedback.” (KII respondent at Ipogolo Health Center in Iringa)

“There is improvement in data quality; they helped us to create awareness at all levels since we have been sharing feedbacks with all district councils.” (KII respondent at Iringa Regional Referral Hospital)

According to respondents, the M&E system strengthening activities reduced over- and underreporting since HCWs now review their reports before submission. The amount of data discrepancy decreased, the number of clients lost to follow-up decreased, and health facilities can now draw charts and graphs from the DHIS 2 database and interpret data. Also, M&E officers and data clerks now have a common understanding of data quality indicators as well as awareness of dimensions of quality.

The M&E strengthening activities also helped IPs improve data flow. Furthermore, there is better documentation of clients' information in CTC 2 files, and more IPs are supporting health facilities to conduct routine quarterly internal DQAs. Commonly used DQA tools were developed by MEval-TZ, the

NACP, or the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDEGEC).

“We have been conducting quarterly internal DQA by having representatives from each department such as CTC, HTC, TB unit, and pharmacy.” (KII respondent at ALMC in Arusha)

“... Nowadays there is neither underreporting nor overreporting since HCWs tend to review their reports before submission; HCWs are aware of data use, and during quarterly continuum of care meetings we ask them to attend with their reports so as to show how many were tested and how many have taken ART; at CHMT level they have been attending well-prepared to show (using PowerPoint presentations) whether they have reached their target(s) or not.” (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

“We have managed to reduce data discrepancy across... we are now able to create charts and graphs from DHIS 2 database and interpret, identify the gaps, and plan on how to address them (e.g., a chart showing total CTC clients attended versus those screened for TB.” (KII respondent at Likombe HC in Mtwara)

“... before DQA there was overreporting and underreporting, but after DQA there is no such a thing; there is decrease in number of clients lost to follow-up since we have been documenting well and providing proper counseling; we take time to discuss reports; although we don't have M&E focal person, we hired a data clerk; we have allocated budget for conducting DQA and we have been supporting our data clerk in case of any computer problem such as printer cartilage, flash device, and power cable; also we are using health center budget to purchase registers.” (KII respondent at Kikombo HC in Dodoma)

“There are some changes at our hospital, doctors are now aware of the importance of data and there is significant decrease in data discrepancy... Most government health facilities have got training on how to enter data into the DHIS 2, therefore nowadays they (health facilities) enter the data into the DHIS 2 database instead of waiting for the council to do it on their behalf.” (KII respondent at Mount Meru Hospital in Arusha)

“Nowadays CHMT is helping us to conduct DQA... Our data at different levels (at regional, district, and at HF in DHIS 2) are consistent; our staffs are aware of DQA.” (KII respondent at EGPAF USAID Boresha Afya in Arusha)

“We have quality data and HCWs are now aware of the use and importance of quality data, they are now recording full information of clients in register.” (KII respondent at Mount Meru Hospital in Arusha)

“... we have started using the electronic system (DHIS 2), although staff in the wards are still using paper-based registers; although we allocate some budget, it is still not enough to computerize data management at all health facilities.” (KII respondent at Dodoma Regional Referral Hospital)

“We normally plan for DQA and we have post-DQA discussions focusing on improving quality of data... we developed M&E plan from the knowledge we gained from the training by MEASURE Evaluation.” (KII respondent at EGPAF USAID Boresha Afya in Dar es Salaam)

“Yes, three out of four districts have developed their own data collection tools to fill gaps (Mufindi, Kilolo, and Iringa Municipal); we have increased number of data clerks at council level and there are two data clerks at each health center, who make the total number of 46 new data clerks; all councils except Iringa DC have budget for DQA.” (KII respondent at Iringa Regional Referral Hospital)

“MEASURE Evaluation helped us to improve our data management flow chart. They helped us to know how to document, and when someone visits us, she or he can see what we have done. For example, in data cleaning, we have confidence with our data.” (KII respondent at Baylor in Mwanza)

Successes

Objective five for documenting health data quality practices within USAID-supported IPs and health facilities in Tanzania was to identify successes, opportunities for future improvement, and

recommendations to help inform future data quality interventions in Tanzania and globally. Respondents were asked to describe successes (in their program data quality) that can be attributed to the DQAs and the action plans developed after each DQA round. Respondents mentioned the following as successes from DQAs conducted by MEval-TZ: reports sent on time; reduction in data inconsistency, institutionalization of internal DQAs, development of an SOP for M&E activities, and reduction in the number of clients lost to follow-up.

"We are receiving reports on time." (KII respondent at Mount Meru Hospital in Arusha)

"DQA from MEASURE Evaluation helped us to develop SOP of what we are going to do, for example SOP for assessing reports at health facility; we were not having report tracker to know when the report was submitted, but now we have; MEASURE Evaluation helped us to do internal DQA." (KII respondent at Deloitte USAID Boresha Afya in Dar es Salaam)

"We now use data to make decisions; to know if we achieved our targets, we display each unit's performance on the notes board for everyone to see their performance against set targets." (KII respondent at Baylor in Mwanza)

"Number of clients lost to follow-up has dropped since we have HBC team to trace the clients in the community." (KII respondent at ALMC in Arusha)

"Our data at different levels (at regional, district, and at health facility in DHIS 2) are consistent; our staffs are aware of DQA." (KII respondent at EGPAF USAID Boresha Afya in Arusha)

After capacity building, there is good documentation in some health facilities; there is increase in awareness of indicators in some health facilities; they now know the importance of reporting because PEPFAR provides support for those health facilities which have many patients; therefore when health facilities underreport, they will not receive any support; that has created awareness on importance of recording accurate data. (KII respondent at EGPAF USAID Boresha Afya in Dodoma)

"We have seen some districts doing very well in terms of data quality, and this resulted from the DQAs." (KII respondent at Dodoma Regional Referral Hospital)

MEval-TZ's Contribution to Sustaining Enabling Factors for Data Quality

MEval-TZ's contribution to sustaining enabling factors for data quality was attributed by respondents to the skills gained by HCWs after the DQAs and the trainings they attended.

"We have gained a lot of skills, we are now aware of how to enroll many people, and number of clients tested for HIV has increased." (KII respondent at ALMC in Arusha)

"Through the training conducted to build our staff capacity; conducting monthly cross-checking, we were having complaints during quarterly data collection, but nowadays we are collecting data each month, which helps us to know in case there are incomplete data." (KII respondent at EGPAF USAID Boresha Afya in Arusha)

"I think the training that we received on how to enter data in DHIS 2 has been very helpful..." (KII respondent at Mount Meru Hospital in Arusha)

"DQA helps to show our strengths and weaknesses; the feedback we get helps us to know where to improve." (KII respondent at Selian Lutheran Hospital in Arusha)

"We have reached agreement among staff that if anyone fails to document, s/he must be punished, including deduction of his/her off days." (KII respondent at Themis Health Center in Arusha)

"The DQAs have improved our confidence with our data since we know what to do to maintain data quality." (KII respondent at Kikombo Health Center in Dodoma)

“They helped us to have clean data; it is easy to review reports from the team since they have empowered the Me&E team, for example if people stopped to use ART, my team will follow up to know who they are and why they stopped; nowadays there is a link between Me&E team and clinical team.” (KII respondent at Baylor in Mwanza)

Opportunities for Future Improvement

Respondents in Iringa believed that if MEval-TZ worked with the government of Tanzania, local government authorities, and IPs to support each health facility to have conducive and sustainable ICT infrastructure (including sustainable supply and maintenance of computers, related accessories, and internet connectivity), then data quality would improve significantly.

“I wish to use computer more than register, to have regular refresher training, and experience sharing workshops.”
(KII respondent at Ipogolo Health Center in Iringa)

“We need support to move from manual data collection to electronic data collection at all health facilities. This will help to reduce data loss (due to poor handwriting) and discrepancies.” (KII respondent at Iringa Regional Referral Hospital)

Analysis from DHIS 2

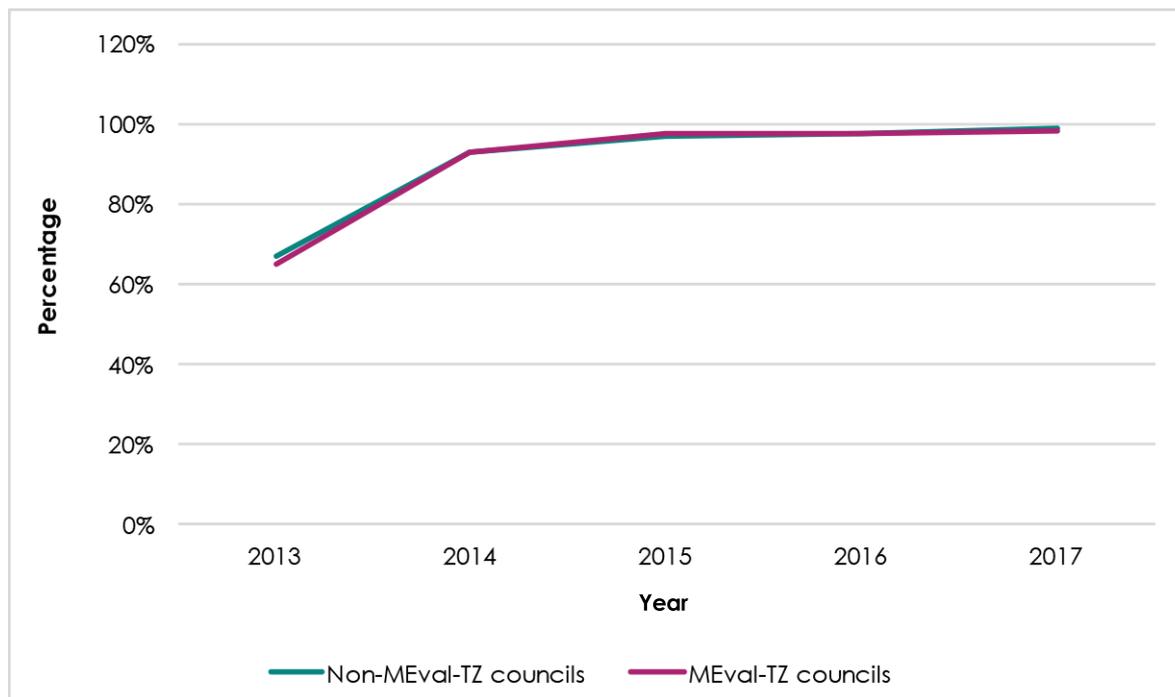
The stratified analysis of all the data quality and health outcome indicators from the DHIS 2 showed no significant differences in the data quality indicators but mixed results for the health outcome indicators among the four categories of MEval-TZ district councils. These results are presented in Appendix 1. Results comparing MEval-TZ district councils that had received DQAs (regardless of whether they had also had DDU) with non-MEval-TZ district councils are presented in the sections that follow.

Data Quality Indicators

Reporting Rate

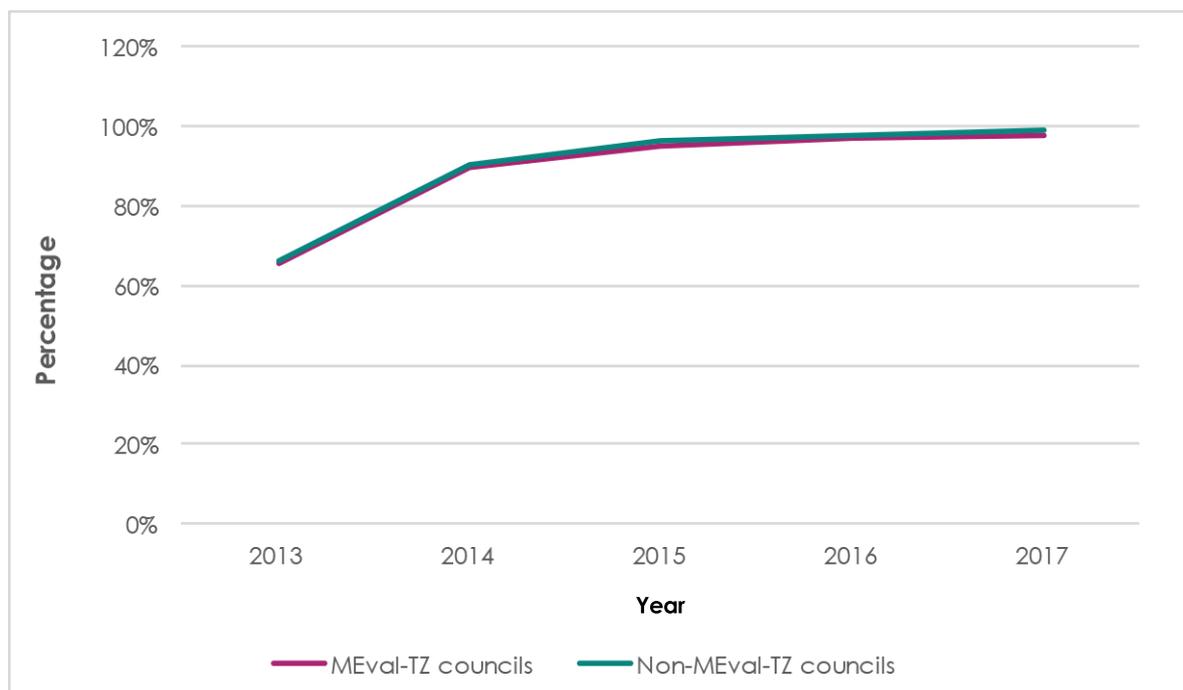
A DHIS 2 reporting rate is calculated as the total number of reports received against the total number of reports expected from health facilities for any given indicator. It gives the proportional reporting rate by all health facilities within a district, within a region, or at the national level. Figure 1 presents reporting rates for the ANC indicator, and Figure 2 presents the same data for the PMTCT indicator for MEval-TZ and non-MEval-TZ district councils from 2013 to 2017.

Figure 1. ANC reporting rates in MEval-TZ- and non-MEval-TZ-supported district councils from 2013 to 2017



ANC reporting rates improved substantially both in MEval-TZ-supported district councils and non-MEval-TZ-supported district councils, from an average of 65 percent in 2013 to above 95 percent in 2015 (just two years), thereafter remaining above 95 percent.

Figure 2. PMTCT reporting rates in MEval-TZ- and non-MEval-TZ-supported district councils from 2013 to 2017

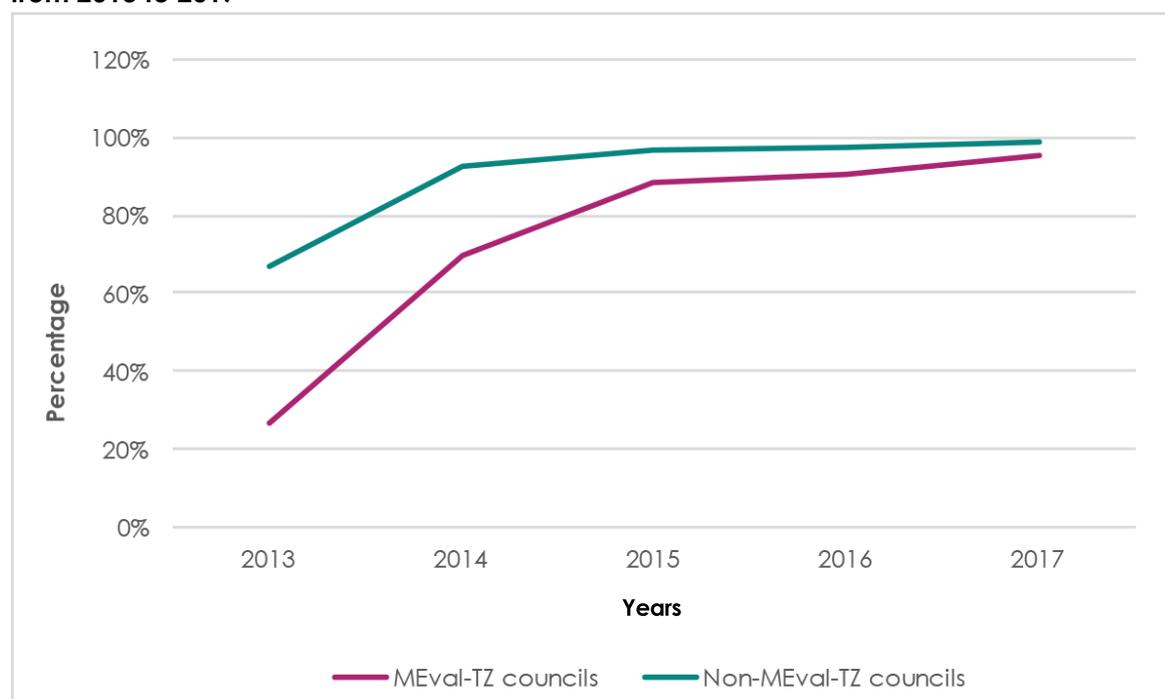


Like the ANC reporting rates, the PMTCT reporting rates improved substantially both in MEval-TZ-supported district councils and non-MEval-TZ district councils, from an average of 65 percent in 2013 to more than 95 percent in 2015 (just two years), thereafter remaining above 95 percent. The similarities in both ANC and PMTC reporting rates between the MEASURE and non-MEASURE district councils could be explained by spillover of knowledge and skills across districts and provision of similar support by other organizations as part of the DHIS rollout since 2013.

Reporting Timeliness

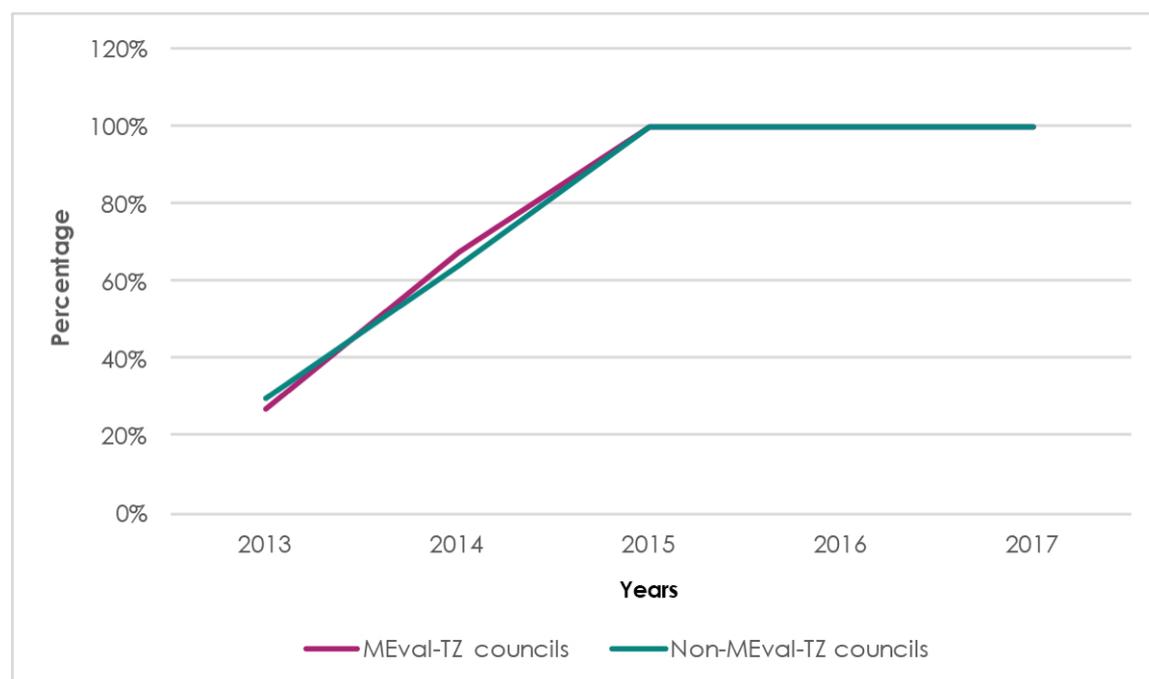
Data are most useful for decision making when provided on a timely basis. The DHIS 2 indicator on timeliness calculates the proportion of reports received by the due date out of all reports submitted from the health facilities for any given indicator. Figures 3 and 4 present reporting timeliness for ANC and PMTCT indicators, respectively, for MEval-TZ and non-MEval-TZ district councils.

Figure 3. ANC reporting timeliness in MEval-TZ- and non-MEval-TZ-supported district councils from 2013 to 2017



Even though changes occurred in the ANC reporting timeliness from 2013 in both MEval-TZ and non-MEval-TZ districts, more marked changes occurred in the latter, rising from just about 25 percent in 2013 to more than 85 percent by 2015. The non-MEval-TZ-supported districts had consistently better ANC reporting timeliness than the MEval-TZ-supported districts. This could suggest effectiveness of the selection criteria for DQA districts, which includes poor quality of data reported to USAID. Toward 2017, there was more convergence in the timeliness of reporting between MEval-TZ and non-MEval-TZ districts, potentially pointing to the success of the MOHCDGEC’s DHIS 2 national rollout program.

Figure 4. PMTCT reporting timeliness in MEval-TZ- and non-MEval-TZ-supported district councils from 2013 to 2017



PMTCT reporting timeliness improved substantially both in MEval-TZ-supported district councils and non-MEval-TZ-supported district councils, from 25 percent and 30 percent, respectively, in 2013 to 100 percent by 2015, thereafter remaining at 100 percent. Unlike the ANC indicator, the PMTCT reporting timeliness improved similarly for MEval-TZ and non-MEval-TZ districts from 2013, attained a perfect status that has been maintained since 2015. A more targeted national PMTCT program with introduction and nationwide rollout of Option B+ in 2013 and emphasis on ensuring all pregnant and lactating women living with HIV are on antiretroviral therapy (ART) may explain this improvement.

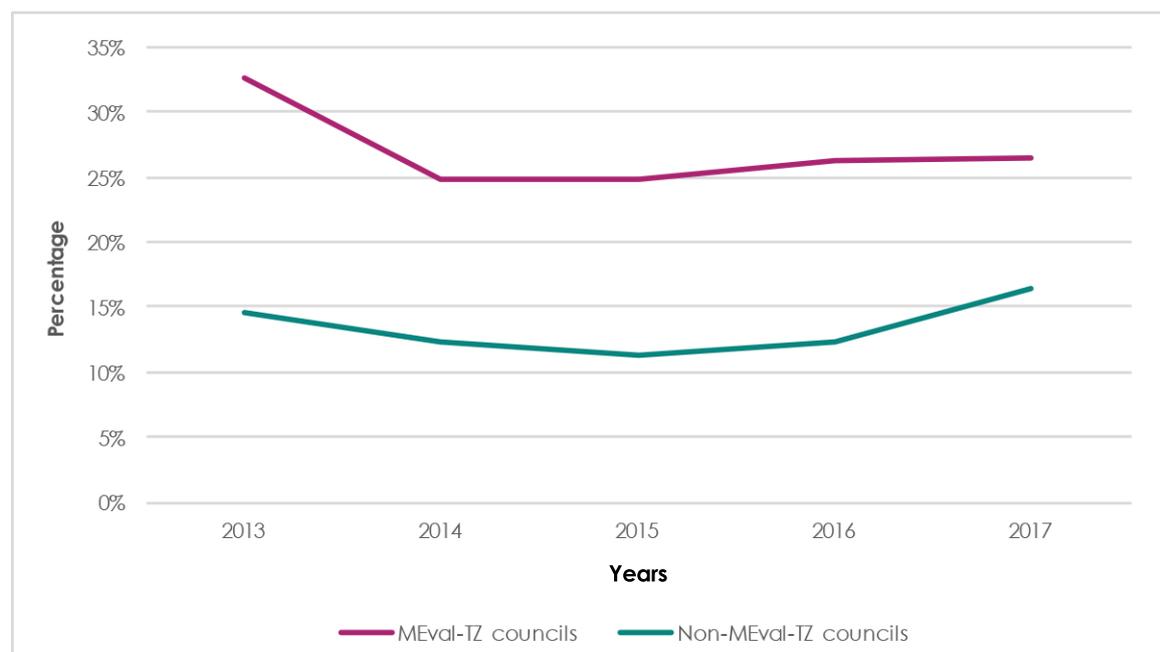
Health Outcome Indicators

This section presents results on selected health outcome indicators since 2013 for MEval-TZ and non-MEval-TZ district councils.

ANC Indicator

Figure 5 shows the proportion of ANC clients who had their first visit before 12 weeks gestation in MEval-TZ and non-MEval-TZ district councils.

Figure 5. Percentage of ANC clients coming for their first visit before 12 weeks gestation in both MEval-TZ-supported district councils and non-MEval-TZ-supported district councils

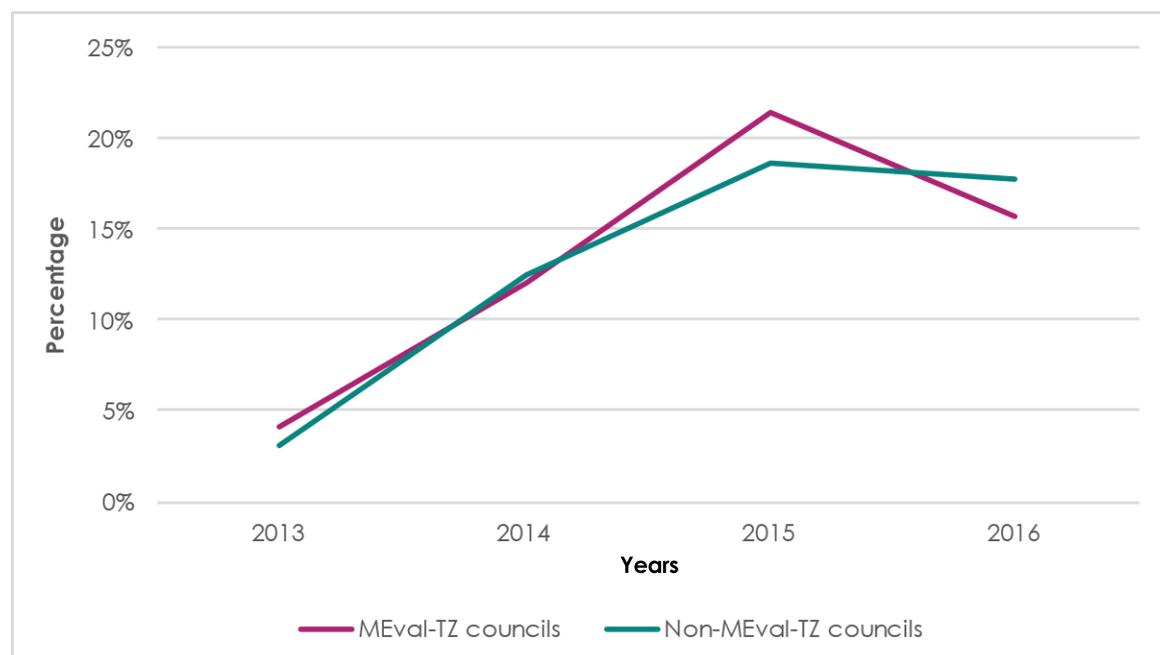


The percent of ANC clients coming for their first visit before 12 weeks gestation declined in MEval-TZ-supported district councils, from 33 percent in 2013 to 25 percent in 2014, and then plateaued around 26 percent to 27 percent from 2015 to 2017. In non-MEval-TZ-supported district councils, a somewhat similar trend was observed, with a slight decline from 15 percent in 2013 to 11 percent in 2015 and then an increase to 16 percent in 2017. This may be explained by factors beyond the scope of MEval-TZ’s interventions.

PMTCT Indicator

Figure 6 shows the proportion of HIV-exposed children who received confirmatory testing at 18 months of age in MEval-TZ and non-MEval-TZ district councils.

Figure 6. Percentage of HIV-exposed children who received HIV confirmatory testing at 18 months of age in MEval-TZ- and non-MEval-TZ-supported district councils

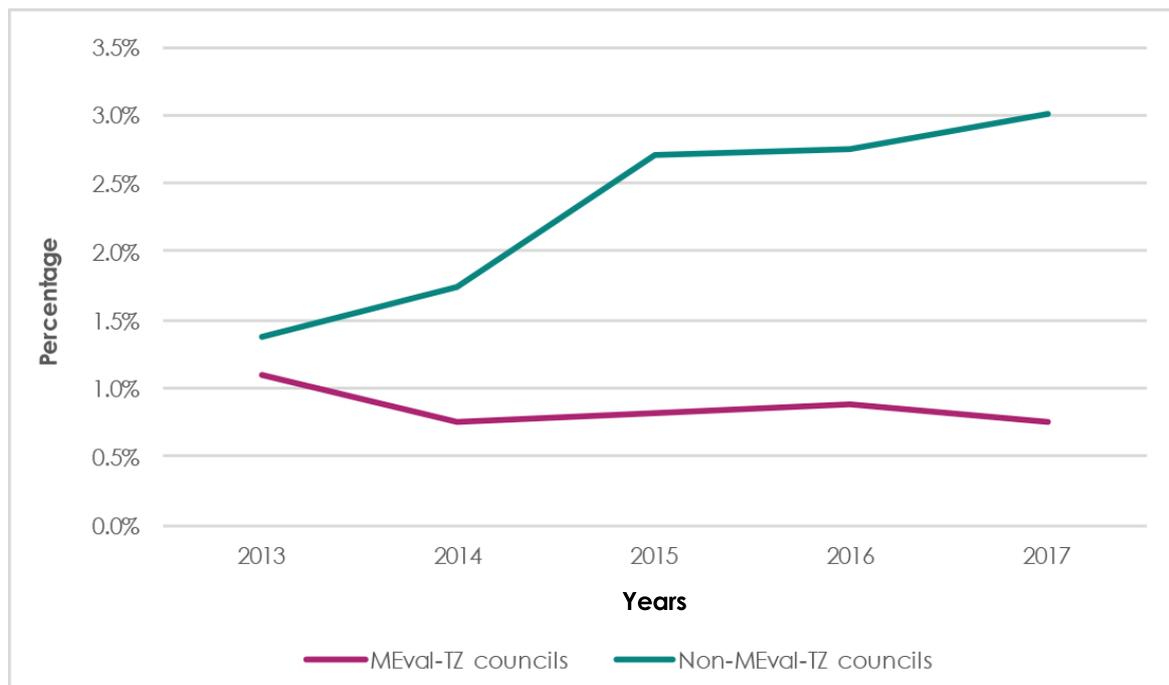


In MEval-TZ-supported district councils, the percentage of HIV-exposed children who received HIV confirmatory testing at 18 months of age increased from 4 percent in 2013 to 22 percent in 2015 and then dropped to 16 percent in 2016. The same trend was observed in non-MEval-TZ-supported district councils, where it increased from 3 percent in 2013 to 19 percent in 2015 and then dropped to 18 percent in 2016.

Malaria Indicator

Figure 7 shows the proportion of laboratory-confirmed malaria cases among all ANC clients in MEval-TZ and non-MEval-TZ district councils.

Figure 7. Percentage of laboratory-confirmed malaria cases among all ANC clients in MEval-TZ-supported district councils and non-MEval-TZ-supported district councils



The percentage of laboratory-confirmed malaria cases among all ANC clients showed a decreasing trend in MEval-TZ-supported district councils but a steadily increasing trend in non-MEval-TZ-supported district councils. Even though the comparison districts were randomly selected, they tended to be from regions with a higher prevalence of malaria (Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDG), Ministry of Health Zanzibar (MOH), National Bureau of Statistics (NBS), Office of Chief Government Statistician (OCGS), & The DHS Program, 2018). Improvements in malaria case reporting may reflect the ongoing malaria control interventions in those regions, as well as the comparative malaria burden.

CONCLUSIONS

MEval-TZ has been conducting DQAs at least once a year for USAID-funded IPs and selected health facilities. The DQAs, which were conducted at the M&E unit, IRL, and SDP levels, concluded with recommendations for action and for the development of action plans that the IPs, IRLs, and health facilities agreed to implement.

Factors that facilitated implementation of post-DQA action plans and recommendations were staff commitment; frequent supportive supervision; training of M&E staff, HCWs, and data clerks; participation in regular data review meetings; cooperation, communication, high team spirit, and favorable attitude; and DQA being one of the activities for measuring staff performance.

Factors identified as hindering implementation of action plans developed following each DQA round were poor documentation or lack of registers for recording patients' information; competing priorities within tight time frames; shortage of human resources, some of whom are not committed; infrequent follow-up; and a short project life span.

Some of the changes that MEval-TZ DQAs brought about were IPs developing or updating their project M&E plans, hiring or assigning an M&E focal person, setting aside a certain percentage of project budgets for M&E and DQAs, and conducting routine internal DQAs on their own.

In addition, the MEval-TZ M&E system strengthening activities resulted in a reduction of overreporting and underreporting, fewer data discrepancies, a decrease in the number of clients lost to follow-up, and a common understanding of data quality indicators as well as awareness of dimensions of quality. The M&E strengthening activities also helped IPs improve data flow. Furthermore, there is now better documentation of clients' information in CTC 2 files, and more IPs are supporting health facilities to conduct routine quarterly internal DQAs. Commonly used DQA tools were developed by MEval-TZ, the NACP, or the MOHCDGEC.

The comparative analysis of trends in data quality and selected health outcomes between MEval-TZ and non-MEval-TZ districts did not show a clear pattern. These findings point to the difficulty of using DHIS 2 data to quantify effects of MEval-TZ's HIS strengthening interventions. The government's efforts in rolling out the DHIS 2 since 2013 may have contributed to the observed changes in data quality indicators, while health outcome changes may have resulted from factors beyond MEval-TZ's influence.

Recommendations

Respondents were asked to recommend or provide suggestions for improving MEval-TZ's support to IPs and health facilities for improved data quality. Following are their recommendations:

1. Continue conducting annual external DQAs for all IPs and supported health facilities, followed by action plans, trainings, mentorships, coaching, supportive supervision, and reassessment. Capacity building activities should not be a one-time intervention but should be repeated annually since some trained staff will move on, leaving new ones who are not trained. The introduction of preservice training would be a long-term approach to address the shortage of staff skilled in M&E and data management.
2. Continue building the capacity of IPs and health facilities to analyze and use data, which will in turn drive the need for quality data.
3. Work with the government of Tanzania, local government authorities, and IPs to support each health facility to have conducive and sustainable ICT infrastructure, including a sustainable supply and maintenance of computers, related accessories, and Internet connectivity.

4. Consider establishing zonal offices in order to extend the reach of MEval's work to all health facilities at the district level.
5. Consider developing online courses on DQA and promoting the same to all IPs and health facilities.
6. Consider expanding DQAs beyond HIV, so that they are also conducted for interventions such as family planning and malaria.

REFERENCES

MEASURE Evaluation–Tanzania. (2014–2017). *2014-2017 data quality assessment reports*. Dar es Salaam, Tanzania: MEASURE Evaluation–Tanzania.

MEASURE Evaluation–Tanzania. (2017). *Overview of data quality assessments*. Dar es Salaam, Tanzania: MEASURE Evaluation–Tanzania.

MEASURE Evaluation–Tanzania. (2018). *Terms of reference for documenting health data quality practices*. Dar es Salaam, Tanzania: MEASURE Evaluation–Tanzania.

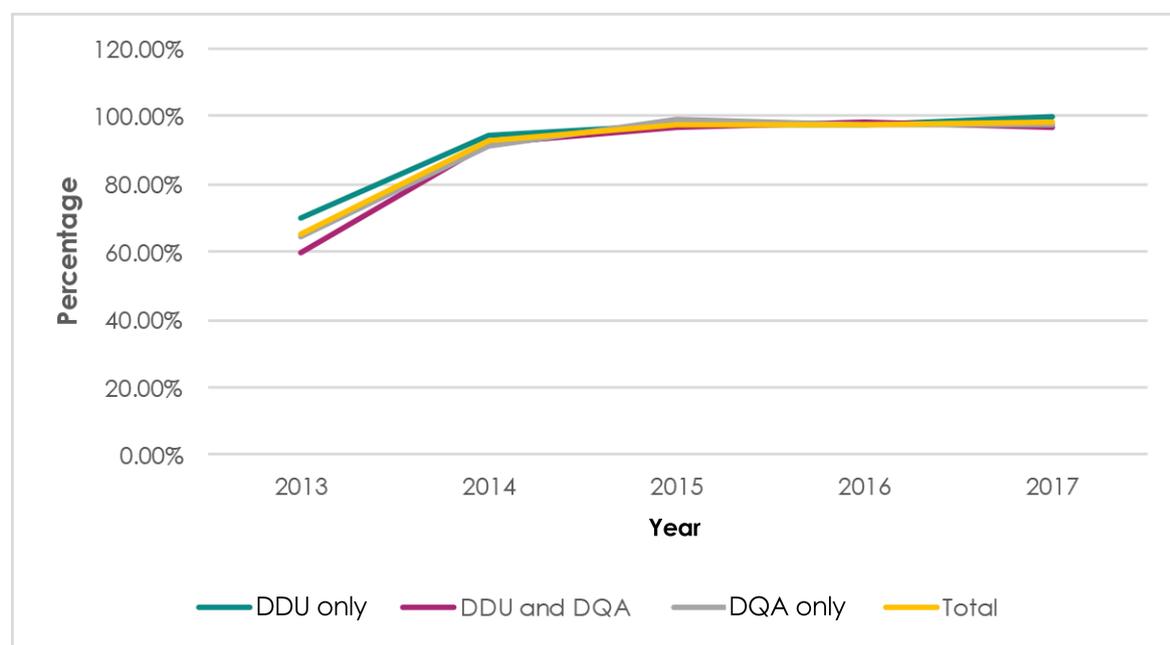
Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDG), Ministry of Health Zanzibar (MOH), National Bureau of Statistics (NBS), Office of Chief Government Statistician (OCGS), & The DHS Program. (2018). *Tanzania malaria indicator survey 2017*. Dar es Salaam, Tanzania, and Rockville, MD, USA: MOHCDG, MOH, NBS, OCGS, & The DHS Program.

APPENDIX 1. ANALYSIS OF DATA QUALITY AND SELECTED HEALTH OUTCOME INDICATORS IN MEVAL-TZ-SUPPORTED DISTRICT COUNCILS

Data Quality Indicators

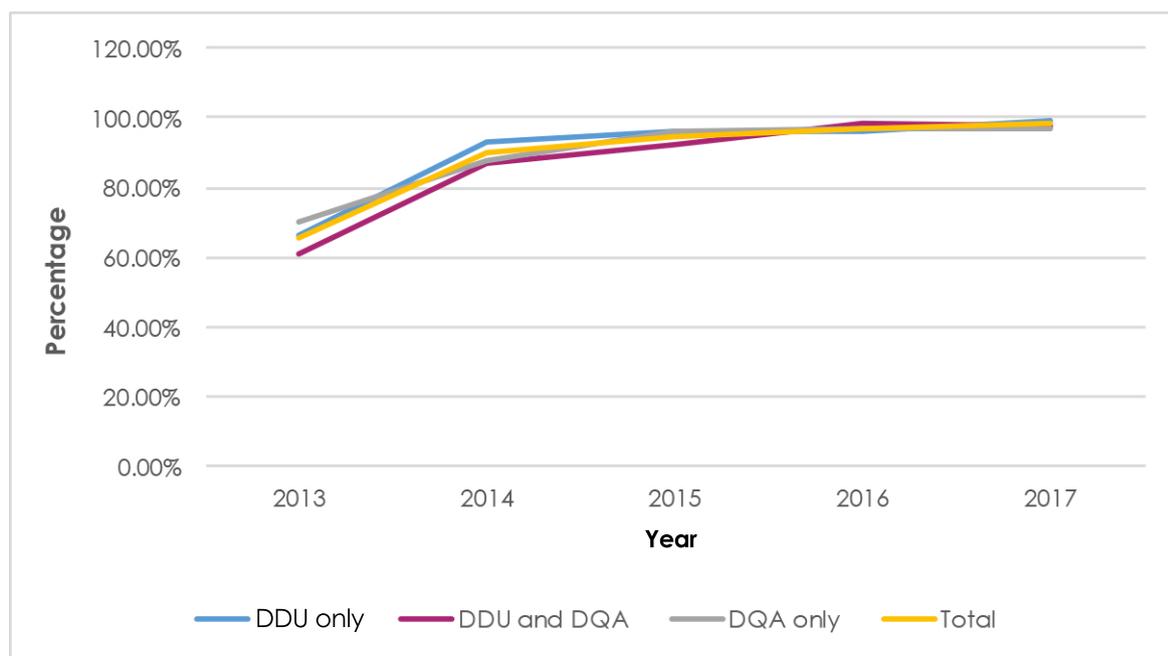
Reporting Rates

Figure 8. ANC reporting rates in MEval-TZ-supported district councils from 2013 to 2017



ANC reporting rates improved significantly among MEval-TZ-supported district councils from between 60 percent and 70 percent in 2013 to above 95 percent in two years (2015) and thereafter maintained above 95 percent. DDU only districts appear to outsmart DQA only districts. Furthermore, DDU only districts show apparently better reporting rates than the DDU & DQA districts. There is need to find out factors responsible to this difference. It would help in the analysis to dig into the contents of DDU interventions.

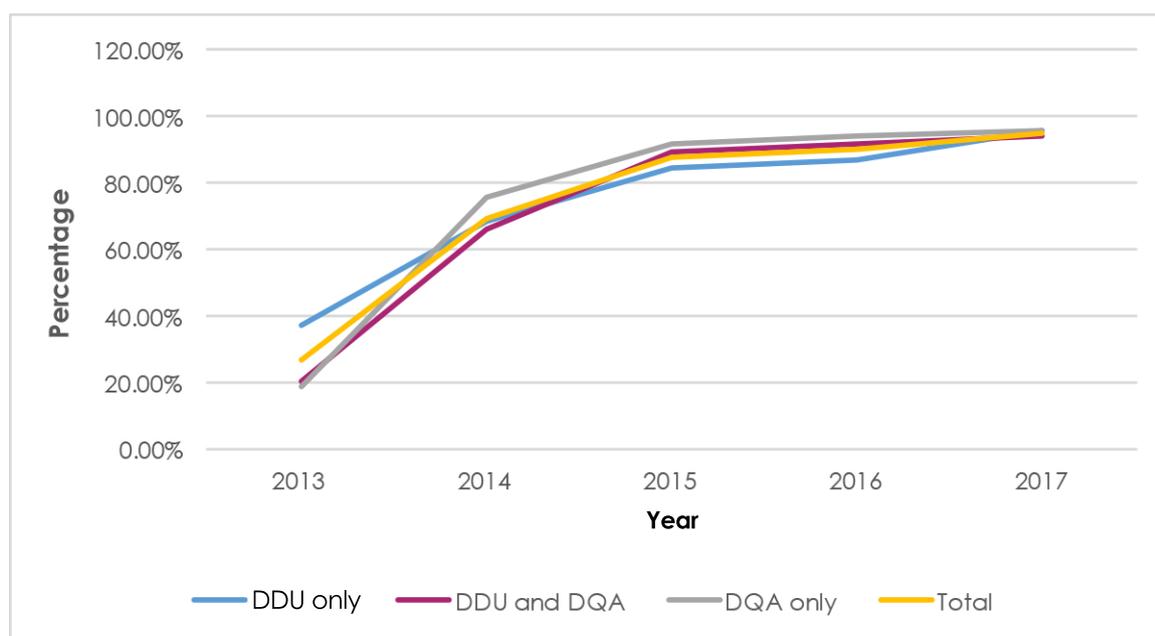
Figure 9. PMTCT reporting rates in MEval-TZ-supported district councils from 2013 to 2017



Just like ANC reporting rates, PMTCT reporting rates also improved significantly among MEval-TZ-supported district councils from between 60 percent and 70 percent in 2013 to above 90 percent in two years (2015) and thereafter maintained above 95 percent.

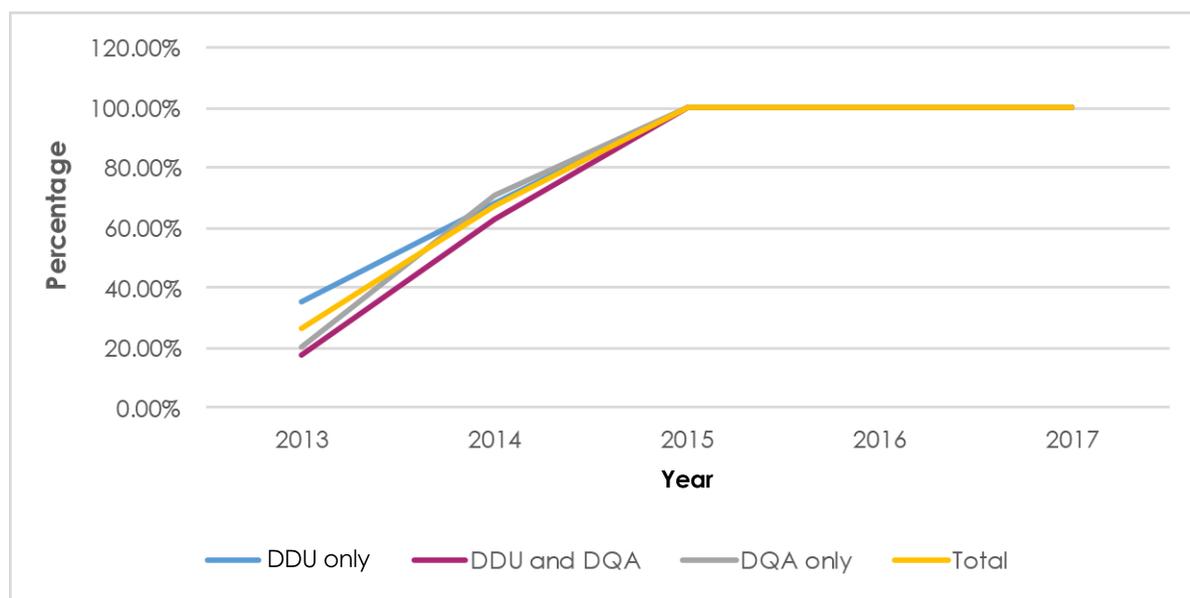
Reporting Timeliness

Figure 10. ANC reporting timeliness in MEval-TZ-supported district councils from 2013 to 2017



Trends show significant improvements in ANC reporting timeliness among MEval-TZ-supported district councils from as low as 20 percent to 40 percent in 2013 to above 85 percent in two years (2015) and thereafter maintained above 90 percent. DQA only districts appear to outsmart DDU only districts. Furthermore, DQA only districts have better reporting timeliness than the DDU & DQA districts. This could be explained by an emphasis on timely reporting during DQAs.

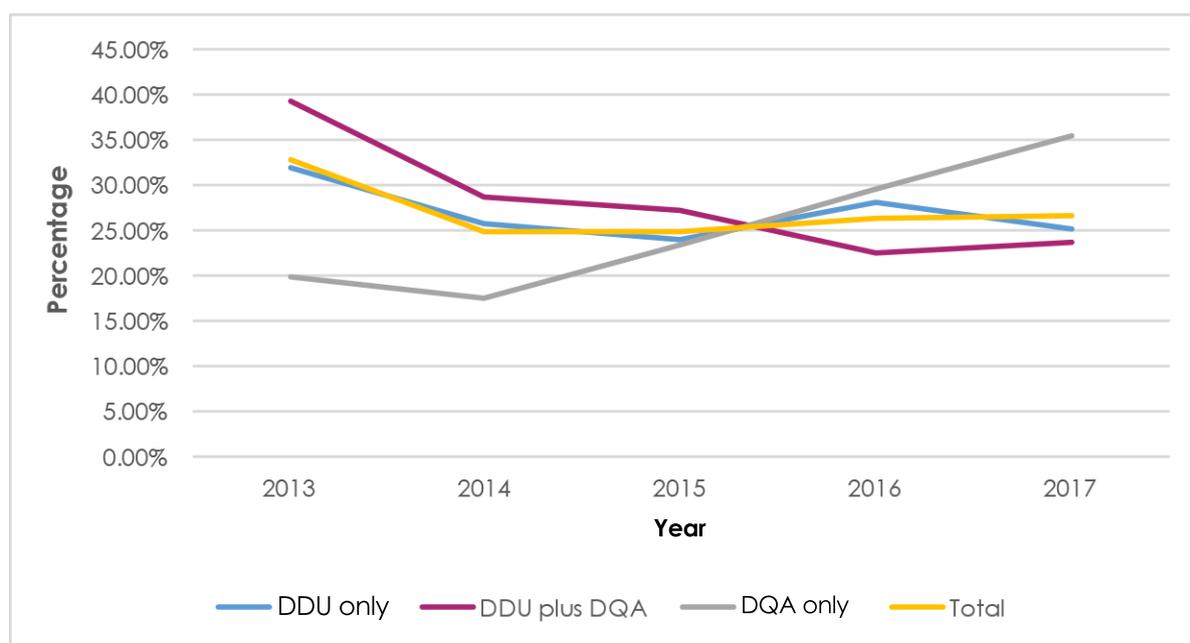
Figure 11. PMTCT reporting timeliness in MEval-TZ-supported district councils from 2013 to 2017



Trends show significant improvements in PMTCT reporting timeliness among MEval-TZ-supported district councils from as low as 20 percent to 40 percent in 2013 to 100 percent in two years (2015) and thereafter maintained at 100 percent.

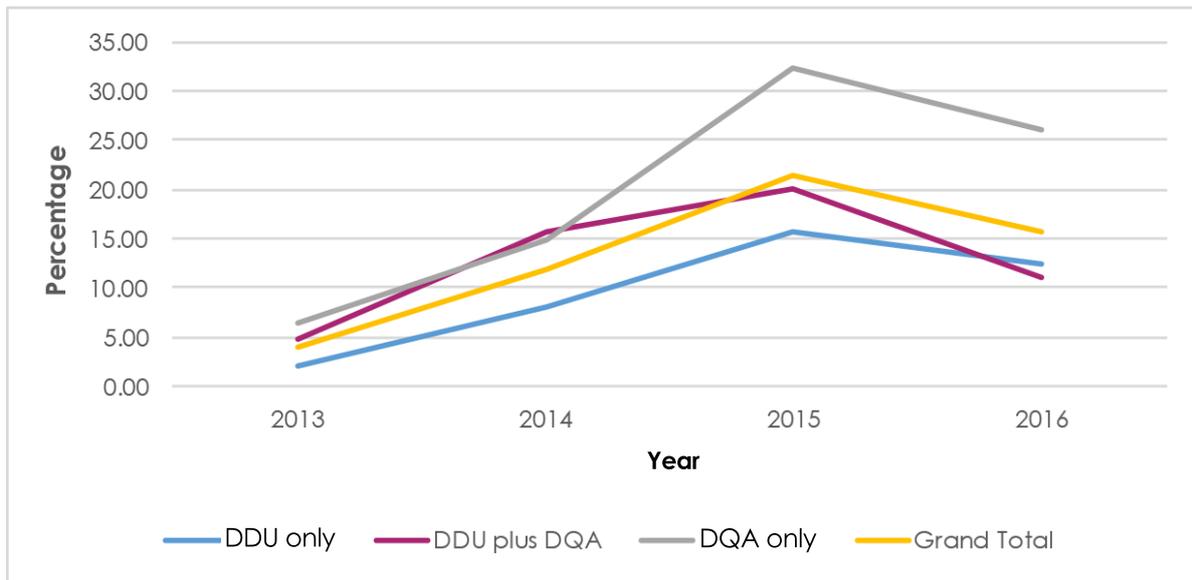
Health Outcome Indicators

Figure 12. Percentage of ANC clients coming for their first visit before 12 weeks gestation in MEval-TZ-supported district councils



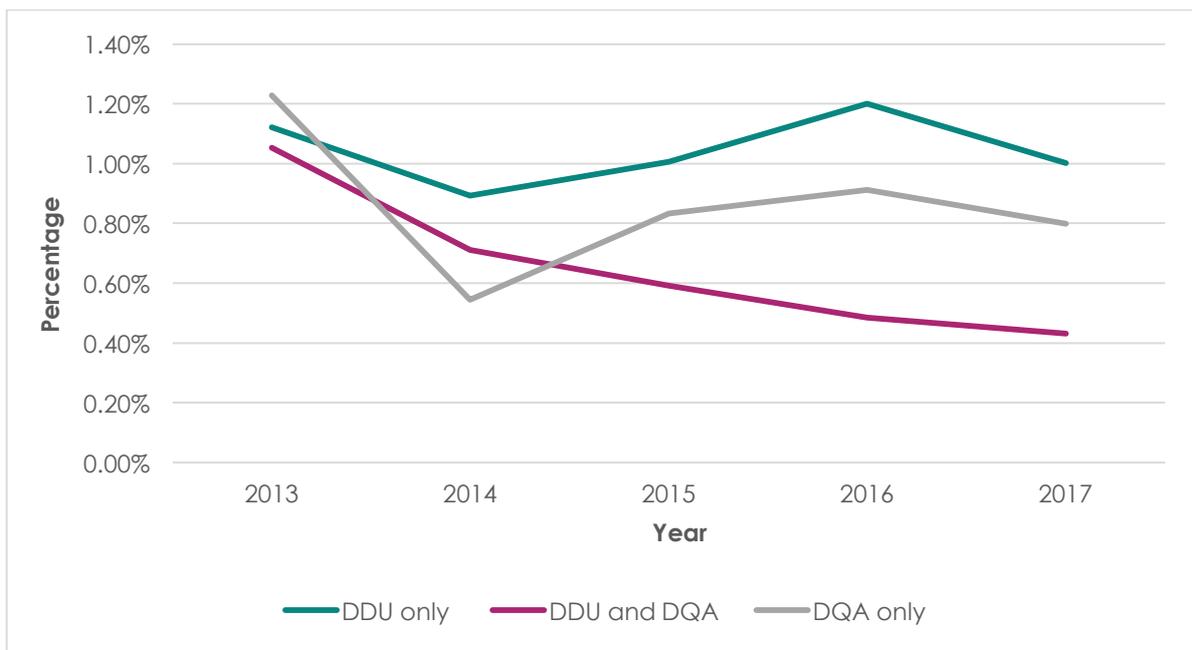
Over the past five years, the percentage of ANC clients coming for their first visit before 12 weeks gestation has been decreasing in MEval-TZ-supported district Councils except for DQA only districts that increased from 20 percent in 2013 to 36 percent in 2017. The decrease may be explained by factors beyond the scope of MEval-TZ interventions.

Figure 13. Percentage of HIV exposed children who received HIV confirmatory test at 18 months of age in MEval-TZ-supported district councils



In all MEval-TZ-supported district Councils there has been an increase in the percent of HIV exposed children who received HIV confirmatory test at 18 months of age from 2013 to 2015 and then a decline in 2016.

Figure 14. Percentage of laboratory confirmed malaria cases among all ANC clients in MEval-TZ-supported district councils



DDU only district Councils appear to have higher percentages of laboratory confirmed malaria cases among all ANC clients over the five years duration. DDU and DQA districts appear to have lowest percentages of laboratory confirmed malaria cases among all ANC clients.

APPENDIX 2. LIST OF RESPONDENTS INTERVIEWED FOR THIS DOCUMENTATION

S/No.	Region	IP/ IRL/ SDP	Respondent Position
1.	DSM	EGPAF (IP)	SI Director
2.	DSM	Deloitte (IP)	M&E Manager
3.	Iringa	Deloitte USAID Boresha Afya (IRL)	M&E Officer
4.	Iringa	Iringa Regional Referral Hospital (IRL)	Regional HIMS Coordinator
5.	Iringa	Ipogolo HC (SDP)	Data Clerk
6.	Dodoma	EGPAF USAID Boresha Afya (IRL)	M&E Manager
7.	Dodoma	Dodoma Regional Referral Hospital (IRL)	Regional HIMS Coordinator
8.	Dodoma	Kikombo HC (SDP)	Data Clerk
9.	Mwanza	Baylor (SDP, IP)	M&E Coordinator & Data Clerk
10.	Mwanza	Bugando Medical Center	Respondent was not available
11.	Arusha	EGPAF USAID Boresha Afya (IRL)	Zonal Manager
12.	Arusha	Mount Meru Hospital (SDP, IRL)	Regional HIMS Coordinator & Data Clerk
13.	Arusha	Themis HC (SDP)	Data Clerk
14.	Arusha	Selian ALMC (SDP)	Data Clerk
15.	Arusha	Selian Lutheran Hospital (SDP, IP)	Program Coordinator & Data Clerk
16.	Mtwara	Deloitte (IRL)	M&E Manager
17.	Mtwara	CHMT-HMIS (IRL)	HIMS Coordinator
18.	Mtwara	Likombe HC (SDP)	HC In-charge & Data Clerk
19.	Mtwara	Mikindani HC (SDP)	Data Clerk

APPENDIX 3. CATEGORIZATION OF MEVAL-TZ-SUPPORTED DISTRICTS AND CONTROL DISTRICTS

DQA-Only Districts

1. Wanging'ombe District Council
2. Ludewa District Council
3. Monduli District Council
4. Meru District Council
5. Makete District Council
6. Igunga District Council
7. Mtwara Municipal Council
8. Kibaha District Council
9. Serengeti District Council
10. Hai District Council
11. Moshi Municipal Council
12. Arusha City Council

All DQA Districts (Regardless of DDU Activities)

1. Mbeya City Council
2. Nyamagana Municipal Council
3. Dodoma Municipal Council
4. Iringa Municipal Council
5. Mufindi District Council
6. Singida District Council
7. Kilolo District Council
8. Iringa District Council
9. Njombe Town Council
10. Rungwe District Council
11. Kinondoni Municipal Council
12. Temeke Municipal Council
13. Wanging'ombe District Council
14. Ludewa District Council
15. Monduli District Council
16. Meru District Council
17. Makete District Council
18. Igunga District Council
19. Mtwara Municipal Council
20. Kibaha District Council
21. Serengeti District Council
22. Hai District Council
23. Moshi Municipal Council
24. Arusha City Council

Randomly Selected Nonproject Districts

1. Bagamoyo District Council
2. Bukoba District Council
3. Bunda District Council
4. Busega District Council
5. Chato District Council
6. Geita District Council
7. Ilemela Municipal Council
8. Kahama Town Council

9. Kaliua District Council
10. Karagwe District Council
11. Kibondo District Council
12. Kigoma Municipal Council
13. Kilosa District Council
14. Kishapu District Council
15. Korogwe Town Council
16. Kwimba District Council
17. Lindi Municipal Council
18. Magu District Council
19. Maswa District Council
20. Mbinga District Council
21. Missenyi District Council
22. Misungwi District Council
23. Mkuranga District Council
24. Momba District Council
25. Moshi District Council
26. Mpanda District Council
27. Msalala District Council
28. Musoma Municipal Council
29. Newala District Council
30. Nkasi District Council
31. Nsimbo District Council
32. Nyasa District Council
33. Nzega District Council
34. Rorya District Council
35. Rufiji District Council
36. Shinyanga District Council
37. Songea District Council
38. Sumbawanga District Council
39. Tabora Municipal Council
40. Tanga District Council
41. Tunduma Town Council
42. Tunduru District Council
43. Ushetu District Council
44. Uvinza District Council
45. Uyui District Council

APPENDIX 4. ETHICAL CLEARANCE CERTIFICATE



THE UNITED REPUBLIC
OF TANZANIA



National Institute for Medical Research
3 Banack Obama Drive
P.O. Box 9653
11101 Dar es Salaam
Tel: 255 22 212100
Fax: 255 22 2131360
E-mail: headquarters@nimr.or.tz

NIMR/HQ/R.8a/Vol. 1X/2513

Jackie Patric
MEASURE Evaluation and Palladium
C/O Anchila Vengisada
P.O. Box 76724
Dar es Salaam

Ministry of Health, Community
Development, Gender, Elderly & Children
6 Samora Machel Avenue
P.O. Box 9083
11178 Dar es Salaam
Tel: 255 22 2120262-7
Fax: 255 22 21109986

18th June 2017

CLEARANCE CERTIFICATE FOR CONDUCTING MEDICAL RESEARCH IN TANZANIA

This is to certify that the research entitled: Documenting lessons learned from the implementation of Data Demand and Use (DDU) interventions in Tanzania (Patric J. *et al*) whose local investigator is Anchila Vengisada of MeICD/GREC has been granted ethical clearance to be conducted in Tanzania.

The Principal Investigator of the study must ensure that the following conditions are fulfilled:

1. Progress report is submitted to the Ministry of Health, Community Development, Gender, Elderly & Children and the National Institute for Medical Research, Regional and District Medical Officers after every six months.
2. Permission to publish the results is obtained from National Institute for Medical Research.
3. Copies of final publications are made available to the Ministry of Health, Community Development, Gender, Elderly & Children and the National Institute for Medical Research.
4. Any researcher, who contravenes or fails to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III Section 10(2).
5. Site: Dar es Salaam

Approval is valid for one year: 18th June 2017 to 17th June 2018.

Name: Prof. Yunus Daud Mgaya


Signature
CHAIRPERSON
MEDICAL RESEARCH
COORDINATING COMMITTEE

Name: Prof. Muhammad Bakari Kamhi


Signature
CHIEF MEDICAL OFFICER
MINISTRY OF HEALTH, COMMUNITY
DEVELOPMENT, GENDER, ELDERLY &
CHILDREN

CC: RMO of Dar es Salaam;
DMO/DED of selected Districts.

APPENDIX 5. DATA COLLECTION TOOLS

DOCUMENTING HEALTH DATA QUALITY PRACTICES WITHIN USAID-SUPPORTED IMPLEMENTING PARTNERS AND HEALTH FACILITIES IN TANZANIA

KII GUIDE FOR NATIONAL LEVEL IP SI DIRECTORS

Date of Interview		
Tool ID Code [Region-IP Name-Facility Name- Respondent Position]		
Time Start/End	Start	End
Respondent Position		
Number of Years in Position		
Respondent Specialization		
Interviewer Name		

1. When was the last time your program had its program data quality assessed by MEASURE Evaluation?
[Probe for month and year]
2. How many times has MEASURE Evaluation conducted data quality assessment (DQA) within your program since 2013? Please specify year(s)
3. Have you (or your M&E officers) participated in any M&E capacity building activity (e.g. training workshop, mentoring and coaching, supportive supervision) conducted by MEASURE Evaluation following any DQA round? If yes, which ones? Please explain
 - a. What have been the most practical skills gained from these capacity building activities? Please explain
 - b. Can you think of a time when you (or your M&E officers) were able to apply the skills in your work? Please explain
4. Following each round of DQA, MEASURE Evaluation develops a capacity building plan and an action plan with each IP assessed.
 - a. Do you have an action plan from your last DQA? [If yes, request to see copy]

- b. What specific recommendations did you have in the plan? Please explain
 - c. To what extent has your program implemented the action plan? Please explain
 - d. What have been the facilitating factors for implementing the plan? Please explain
 - e. What have been the hindrances or barriers to the implementation of the plan? Please explain. How has your program addressed the barriers?
5. How has the DQAs conducted by MEASURE Evaluation impacted your program? Please explain
- a. Are there specific changes that you have made in program as a result of the DQAs? Please explain
[Probe for: a) developed or updated project M&E plan; hired or assigned an M&E focal person; set aside a certain percentage of project budget for M&E and DQA; started conducting routine DQA on our own; etc.]
 - b. If conducting routine DQA, how frequently does it happen in a year (once annually, semi-annually, or quarterly)?
 - i. Which DQA tools are used (MEASURE Evaluation/NACP/MoH)?
 - c. What factors compromise or undermine data quality? Please explain
6. What successes (in your program data quality) can you attribute to the DQAs and the action plans? Please explain
- a. How has MEASURE Evaluation’s interventions helped your program sustain positive or enabling factors for data quality? Please explain
 - b. Based on your experience, what factors facilitate maintenance or improvements in data quality? Please explain
 - c. How has MEASURE Evaluation’s interventions helped your program to address the threats to data quality? Please explain
7. Do you have suggestions or recommendations for improving MEASURE Evaluation’s support to IPs, their regional offices and supported health facilities for improved data quality?

We have come to the end of the interview. Thank you very much for your time and for the responses!

**DOCUMENTING HEALTH DATA QUALITY PRACTICES WITHIN USAID-SUPPORTED
IMPLEMENTING PARTNERS AND HEALTH FACILITIES IN TANZANIA**

KII GUIDE FOR IRL M&E OFFICERS/FOCAL PERSONS

Date of Interview		
Tool ID Code [Region-IP Name-Facility Name- Respondent Position]		
Time Start/End	Start	End
Respondent Position		
Number of Years in Position		
Respondent Specialization		
Interviewer Name		

8. When was the last time your regional office had its program data quality assessed by MEASURE Evaluation? [Probe for month and year]

9. How many times has MEASURE Evaluation conducted data quality assessment (DQA) to your regional office/program since 2013? Please specify year(s)

10. Have you participated in any M&E capacity building activity (e.g. training workshop, mentoring and coaching, supportive supervision) conducted by MEASURE Evaluation following any DQA round? If yes, which ones? Please explain
 - a. What have been the most practical skills gained from these capacity building activities? Please explain

 - b. Can you think of a time when you were able to apply the skills in your work? Please explain

11. Following each round of DQA, MEASURE Evaluation develops a capacity building plan and an action plan with each IP assessed.
 - a. Do you have an action plan from your last DQA? [If yes, request to see copy]

 - b. What specific recommendations did you have in the plan? Please explain

 - c. To what extent has your regional office implemented the action plan? Please explain

- d. What have been the facilitating factors for implementing the plan? Please explain
 - e. What have been the hindrances or barriers to the implementation of the plan? Please explain. How has your office addressed the barriers?
12. How has the DQAs conducted by MEASURE Evaluation impacted your program? Please explain
- a. Are there specific changes that you have made in your regional office/program as a result of the DQAs? Please explain
[Probe for: a) developed or updated project M&E plan; hired or assigned an M&E focal person; set aside a certain percentage of project budget for M&E and DQA; started conducting routine DQA on our own; etc.]
 - b. If conducting routine DQA, how frequently does it happen in a year (once annually, semi-annually, or quarterly)?
 - i. Which DQA tools are used (MEASURE Evaluation/ NACP/MoH)?
 - c. What factors compromise or undermine data quality? Please explain
13. What successes (in your program data quality) can you attribute to the DQAs and the action plans? Please explain
- a. How has MEASURE Evaluation's interventions helped your regional office sustain positive or enabling factors for data quality? Please explain
 - b. Based on your experience, what factors facilitate maintenance or improvements in data quality? Please explain
 - c. How has MEASURE Evaluation's interventions helped your regional office to address the threats to data quality? Please explain
14. Do you have suggestions or recommendations for improving MEASURE Evaluation's support to IPs, their regional offices and supported health facilities for improved data quality?

We have come to the end of the interview. Thank you very much for your time and for the responses!

**DOCUMENTING HEALTH DATA QUALITY PRACTICES WITHIN USAID-SUPPORTED
IMPLEMENTING PARTNERS AND HEALTH FACILITIES IN TANZANIA**

KII GUIDE FOR SDP (HEALTH FACILITY M&E FOCAL PERSONS)

Date of Interview		
Tool ID Code [Region-IP Name-Facility Name- Respondent Position]		
Time Start/End	Start	End
Respondent Position		
Number of Years in Position		
Respondent Specialization		
Interviewer Name		

15. When was the last time this health facility had its data quality assessed by MEASURE Evaluation (or other IP/ CHMT)? [Probe for month and year]
16. How many times has MEASURE Evaluation (or other IP/ CHMT) conducted data quality assessment (DQA) at this health facility since 2013? Please specify year(s)
17. Have you participated in any M&E capacity building activity (e.g. training workshop, mentoring and coaching, supportive supervision) conducted by MEASURE Evaluation (or other IP/ CHMT) following any DQA round? If yes, which ones? Please explain
 - a. What have been the most practical skills gained from these capacity building activities? Please explain
 - b. Can you think of a time when you were able to apply the skills in your work? Please explain
18. Do you have an action plan from your last DQA? [If yes, request to see copy]
 - a. What specific recommendations did you have in the plan? Please explain
 - b. To what extent has this facility implemented the action plan? Please explain
 - c. What have been the facilitating factors for implementing the plan? Please explain
 - d. What have been the hindrances or barriers to implementing the plan? Please explain. How has this facility addressed the barriers?

19. How has the DQAs conducted by MEASURE Evaluation impacted your M&E system? Please explain
- a. Are there specific changes that you have made at this health facility as a result of the DQAs? Please explain
[Probe for: a) developed or updated project M&E plan; hired or assigned an M&E focal person; set aside a certain percentage of project budget for M&E and DQA; started conducting routine DQA on our own; etc.]
 - b. If conducting routine DQA, how frequently does it happen in a year (once annually, semi-annually, or quarterly)?
 - i. Which DQA tools are used (MEASURE Evaluation/ NACP/MoH)?
 - c. What factors compromise or undermine data quality? Please explain
20. What successes (in data quality) can you attribute to the DQAs and the action plans? Please explain
- a. How has MEASURE Evaluation's (or other IP [mention name]/ CHMT) interventions helped this health facility sustain positive or enabling factors for data quality? Please explain
[If applicable, probe for M&E strengthening activities directly done by MEASURE Evaluation, and those done by IP/ CHMT]
 - b. Based on your experience, what factors facilitate maintenance or improvements in data quality? Please explain
 - c. How has MEASURE Evaluation's (or other IP [mention name]/ CHMT) interventions helped this health facility to address the threats to data quality? Please explain
21. Do you have suggestions or recommendations for improving MEASURE Evaluation's support to IPs, regional offices and supported health facilities for improved data quality?

We have come to the end of the interview. Thank you very much for your time and for the responses!

MEASURE Evaluation

University of North Carolina at Chapel Hill
123 W. Franklin Street, Suite 330
Chapel Hill, NC 27516 USA
Phone: +1 919-445-9350 | measure@unc.edu
www.measureevaluation.org

This research has been supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID) under the terms of MEASURE Evaluation-Tanzania associate award AID-621-LA-14-00001. MEASURE Evaluation-Tanzania is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership with ICF International; John Snow, Inc.; Management Sciences for Health; Palladium; and Tulane University. Views expressed are not necessarily those of PEPFAR, USAID, or the United States government. TR-18-283

ISBN: 978-1-64232-064-0

