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MEASURE
Evaluation

Facilitators and Barriers to Data Use

Learning from the MEASURE Evaluation-Tanzania Associate Award

August 2018

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ACKNOWLEDGMENTS

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ABBREVIATIONS

CCHP	comprehensive council health plan
DDU	data demand and use
DHMIS	district health management information system
DHP	district health profile
DMO	district medical officer
HMIS	health management information system
MC	Municipal Council
M&E	monitoring and evaluation
MEval-TZ	MEASURE Evaluation–Tanzania
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
R/CHMT	regional and council health management team
RMNCH	reproductive, maternal, newborn, and child health
USAID	United States Agency for International Development

BACKGROUND

MEASURE Evaluation works to strengthen capacity in developing countries to gather, interpret, and use data to improve health. High-quality data are essential for effective and efficient decision making in health, to promote transparency, and to strengthen the accountability of decision makers. MEASURE Evaluation developed an organizing framework that maps how data use intervention inputs and activities influence the outputs and outcome of regular sustained use of data in program review, planning, and policy (Nutley & Reynolds, 2013). This framework provides a comprehensive and practical strategy for developing interventions to strengthen the demand for and use of data in decision making. The interventions cover eight domains of activities that were identified in the literature and by MEASURE Evaluation's implementation experience as critical to affect the technical, behavioral, and organizational determinants of data-informed decision making. The intervention is tailored to specific country and program contexts, such that all of the intervention areas may not need to be implemented to improve the demand for and use of data.

The domains are (Figure 1):

- Assess and improve the data use context

- Engage data users and data producers

- Improve data quality

- Improve data availability

- Identify information needs

- Build capacity in data use core competencies

- Strengthen the organization's data demand and use (DDU) infrastructure

- Monitor, evaluate, and communicate data demand and use successes

Figure 1. Logic model for strengthening an organization's use of health data in decision making
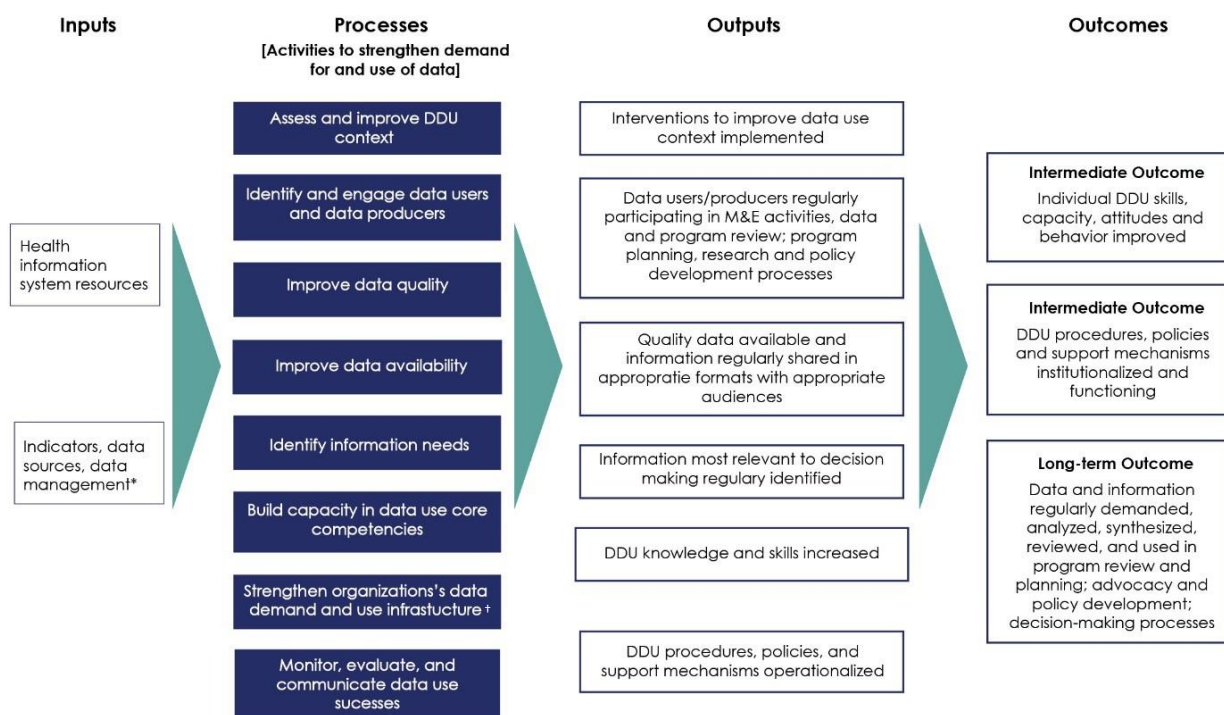
*Defined as processes by the Health Metrics Network

†The data demand and use approach broadly defines an organization as a division of the ministry of health at the national, state, or district levels; a specific program within the ministry; or a nongovernmental organization or program.

Source: Nutley & Reynolds, 2013

This framework has been used to guide the design of interventions to improve data-informed decision making, which were implemented as part of larger health information system and monitoring and evaluation (M&E) strengthening projects in Kenya, South Africa, and Tanzania (the MEASURE Evaluation associate awards). To understand progress made by each associate award in improving data use, MEASURE Evaluation explored the facilitators and barriers contributing to the effectiveness of specific DDU interventions implemented at the *subnational* level in Kenya, South Africa, and Tanzania. MEASURE Evaluation established the following objectives for this learning exercise:

(1) To describe the results of DDU intervention activities.

(2) To understand the factors that contribute to successful data use in country health information systems.

This report presents the results of the Tanzania learning exercise on DDU activities targeted at subnational regional and council health management teams (R/CHMTs). Findings for Kenya and South Africa are presented separately. These reports are meant to be shared with country governments, programs, and donors implementing DDU interventions to sustain a culture of decision making in health programs.

MEASURE Evaluation–Tanzania

MEASURE Evaluation–Tanzania (MEval-TZ) was funded by the United States Agency for International Development (USAID) from 2014–2018 to enhance the evidence base for M&E and research and increase the availability and use of high-quality data to inform community health and social service policy, planning, and decision making. The objectives of the project were the following:

- Improve the use of data for policy, advocacy, and monitoring of health and social service programs and strengthen M&E systems at the national level.

- Improve the use of data for policy, advocacy, and monitoring of health and social service programs and strengthen M&E systems at the subnational level.

- Improve the evidence base by conducting research and building research capacity.

This learning exercise focused on the second objective: to improve data use at the subnational level by building the capacity of R/CHMTs and district social welfare officers. MEval-TZ applied a comprehensive data use intervention adapted to the local context and the specific needs of the project. An initial assessment of the data use context was conducted to inform the adaption of the DDU intervention approach. DDU activities in Tanzania included the implementation of a DDU toolkit focused on identifying needs and assisting stakeholders to gain skills in data analysis, display, interpretation, and communication (MEASURE Evaluation, 2011); improving the use of evidence for decision making; and mentoring in M&E and DDU. Table 1 describes the DDU interventions implemented in Tanzania. The number of dots (1 to 3) represents whether the intervention area was a priority for the project's DDU intervention approach (3=high priority and 1=low priority).

Table 1. DDU activities implemented by MEval-TZ

	Tanzania	Description	Activities implemented by MEval-TZ
Assess and improve the data use context	●●●	Assessing the organizational, technical, and behavioral factors that affect decision making.	Rapid DDU benchmarking tool assessing data use practices and constraints. Self-assessment tools were completed in a workshop format by R/CHMTs.
Identify and engage data users and data producers	●●	Improving the interaction and collaboration between data producers (i.e., those who design and manage information systems) and data users (i.e., those who use data in program improvement and development).	Quarterly program data and performance review meetings with R/CHMTs.
Improve data quality	●●●	Ensuring that data are accurate, complete, and timely.	Annual data quality assessments in a sample of health facilities per district; improving DHIS 2 data quality processes with CHMTs.
Improve data availability	●●	Improving data synthesis and communication such that information is available in easily interpretable formats responding to information needs. Ensuring that data users can access and share data easily outside of regular dissemination processes.	Development of information products, such as district health profiles, and standard key performance indicator reports in the DHIS 2.
Identify information needs	●	Focusing on the practical questions that data users have to effectively run their health programs and their upcoming policy or planning decisions.	Training on *Framework for Linking Data with Action*.
Build capacity in data use core competencies	●●●	Data use core competencies include skills in data analysis, interpretation, synthesis, presentation, and the development of data-informed programmatic recommendations.	Training workshops on DDU concepts and approaches; DHIS 2 Functions and Data Use for Health Information System Strengthening; supportive supervision, mentoring and coaching; and support of R/CHMTs on data analysis and visualization during quarterly data and performance review meetings for council health planning.
Strengthen the organization's DDU infrastructure	●	The rules, processes, values, and systems of an organization that support an individual's ability to use data in decision making.	Data use champions approach to build leadership in DDU and institutionalize informal capacity-building approaches.

Across the three associate awards, few activities were implemented in monitoring, evaluating, and communicating the results of DDU interventions. This learning exercise helps respond to this need.

METHODS

To select two regions for inclusion in Tanzania's DDU learning exercise, a mapping exercise was conducted to identify the geographic regions that had participated in the largest number and variety of DDU activities supported by MEval-TZ. Appendix A presents the results of this mapping. We selected one region in which MEval-TZ had provided technical assistance in DDU only, and another region in which MEval-TZ had supported both DDU and data quality assurance activities. Based on these results, districts in Dodoma and Dar es Salaam were selected for inclusion in this assessment. Dodoma was supported in Years 1 and 2 of the project; however, as the project progressed, the focus regions changed to include Dar es Salaam.

A total of eight interviews with 17 people who had experience with and exposure to MEval-TZ's DDU interventions were conducted, including program and/or M&E staff at the subnational level, and MEval-TZ staff (Appendix B). One-on-one key informant interviews or small group interviews (two to five people) with individuals from the same CHMT were conducted. Each interview was conducted in English by a lead researcher and lasted between 60 and 150 minutes. For all interviews, the researcher used a semi-structured interview guide that was designed to explore stakeholder views on how the DDU interventions were implemented; the expected and unexpected changes seen because of the interventions; and to capture the contextual factors that may have shaped the uptake and impact of the interventions. All interviewees provided verbal informed consent, and the interviews were audio recorded using digital recorders. Audio recordings of the interviews were transcribed and analyzed using NVivo 11. An index code book with a-priori themes was created prior to data collection to identify and categorize responses. Codes were developed based on the questions and themes in the interview guide. Two independent coders initially coded one transcript to test the reliability of the coding scheme; and recommend changes to the coding structure. Subsequently, each interview was coded by one researcher. Both researchers analyzed the data, updated the codebook based on emerging themes, and agreed on salient themes and common patterns.

FINDINGS

The following sections describe the activities implemented by MEval-TZ in each DDU intervention area and the factors that facilitated or hindered the effectiveness of the activities to strengthen demand for and use of data.

Assess and Improve the Data Use Context

Baseline assessments on data use were conducted in Dodoma and Dar es Salaam to identify the barriers and constraints to data use and to guide effective approaches to address the identified barriers. A rapid benchmarking of data use practices was conducted as part of the DHIS 2/DDU training workshops, which were held with R/CHMTs. The district and regional teams self-rated their status in the eight DDU intervention areas using the benchmarking tool, which was based on MEASURE Evaluation's *Rapid Assessment of Data Use Barriers* (MEASURE Evaluation, 2018). Based on the results of the assessments, the teams developed action plans to address their identified gaps and constraints to data use, including proposed activities to overcome the constraints, person(s) responsible, and timelines. The assessments also informed the breadth and scope of DDU interventions implemented by MEval-TZ.

> *The [assessments] have been very informative... we have had an opportunity to know how extensive our trainings should be. It really helped us to know our stakeholders better and we got to know the people to interact with right from the beginning. We also got to know the other support that these people have, and we made sure we maximize the support that they have.* (Key informant, MEval-TZ)

Facilitators

Ownership of DDU initiatives facilitated the implementation of the data use improvement plans. Respondents noted that councils that took ownership of the action plan and used it to engage with other teams or partners were successful in implementing prioritized data use activities. One council used the action plan to communicate results and priorities to other partners in the district, raising resources to fund data use activities. Another council used the action plan to incorporate data use activities into quality improvement plans, working closely with quality improvement teams who oversaw the budget at the council level. Many CHMTs demonstrated progress in implementing the proposed activities in the data use action plans. For example, it was estimated that most councils in Dar es Salaam had implemented between 80 percent and 90 percent of their planned activities.

Barriers

There was limited follow-up on action plans. Respondents stated that they had limited ability to monitor and assess the status of the data use improvement plans developed from the assessments. Some key informants, especially from Dodoma, found it difficult to recall the data use improvement plans and few teams reported back on the implementation of data use improvement activities. This suggests that the action plans were not consistently followed-up and monitored regularly, particularly when MEval-TZ support for DDU activities ended.

The ability to monitor the implementation of the DDU improvement plans is important to capture the benefits of investing in strengthening DDU. Communicating the successes of DDU activities is one of the activity areas in the DDU intervention because it has been linked to generating demand for data and continuing the virtuous cycle of collecting quality data and using it in decision making.

Build Capacity in Data Use Core Competencies

To improve sustainable demand for and use of data, core competencies to demand and use data should exist at all levels of the health system. Competencies include skills in data analysis, interpretation, synthesis, and presentation, and the development of data-informed programmatic recommendations and policies. Both data producers and data users should be targeted for capacity-building activities. MEval-TZ's activities to build capacity in data use core competencies among the R/CHMT members involved:

- DDU capacity-building workshops to introduce DDU concepts (such as the determinants of data use, the context of decision making, data and information flow), build awareness of the importance of using data for decision making, and share experiences and strategies for using data in program planning and implementation. Participants were trained on data use tools, such as the "Seven Steps to Using Health Information" and the "Framework for Linking Data with Action", which bring together data users and data producers to identify programmatic priorities, understand key performance indicators, identify the types of analyses needed to inform regular decisions, conduct basic data analysis and interpretation, and use their findings for decision making (MEASURE Evaluation, 2011).

- *DHIS 2 Functions and Data Use for Health Information System Strengthening*, which is a five-day curriculum developed by the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC), in partnership with MEval-TZ, to build the capacity and skills of R/CHMTs to use advanced functions and features of the DHIS 2 to improve the quality, analysis, and use of routinely collected health management information system (HMIS) data. This training covered such topics as the HMIS in Tanzania; data management, quality, and validation in the DHIS 2; and data use skills (analysis, interpretation, visualization, and information use) using DHIS 2 data (MOHCDGEC, 2017).

- Supportive supervision and mentoring to targeted CHMT members, such as data use champions (discussed below), on such topics as HMIS data quality and use, and monitoring the implementation of data use action plans.

- Support to the R/CHMTs on data analysis and visualization during council health planning (described below).

Training in practical data use core competencies improved job performance. Respondents described how the training sessions enabled them to learn practical skills in analysing, interpreting, visualizing, and communicating data. The training also improved their DHIS 2-related knowledge and skills, including skills on how to generate reports from the DHIS 2, data visualization, and producing pivot tables.

> *One of the practical knowledge we gained is to go into the DHIS system and find what we want. And we are also able to generate some data, and generate reports according to the program, for example, a report on HIV testing. If somebody wants any report they are able to generate one on a monthly or quarterly basis. Thirdly, we are able to verify which facilities brought their reports in time and which facilities submitted their reports late. Previously, I didn't know even how to open the DHIS, but they taught us how to open it, how to enter data, how to validate the data, how to create and use pivot tables, and how to analyze the data. We were also taught how to draw maps like the map of our council.* (District HMIS [DHMIS] focal person, Gairo DC)

Capacity building facilitated the initiation of data use practices, including data feedback and sharing. Building capacity in data use core competencies also helped change data use practices. Prior to the training, respondents noted that they collected data primarily for aggregation and reporting purposes. Respondents reported applying data analysis skills that they learned in the training workshops to their work settings to identify performance gaps and develop action plans.

Before MEASURE [Evaluation–Tanzania], we totally had no information about data analysis and how to visualize data in a graphic way. We were receiving these reports from the health facilities, and we sent them to the regional level, where they would send reports to the ministry. Data analysis was very minimal and we thought we had to collect data only because it was being requested at the regional level...MEASURE [Evaluation–Tanzania] support has strengthened us on how to use our data to identify problems and then make action plans to solve our problems as reflected in our data. (District HIV/AIDS Coordinator, Chamwino)

Following the training, there were instances where trainees took the initiative to ensure that data collected were routinely shared at the facility level. One district-level data producer reported how they used practical skills gained in data analysis to generate and disseminate charts disaggregated at the health facility level so that each facility in their district could understand their performance on HIV enrollment and initiation compared with the district aggregate. Multiple informants noted that the training sessions emphasized the importance of feeding back data to lower levels, especially to the individuals responsible for collecting the data.

The experience of sharing data is one of the items coming from capacity building that has not been done before. So, now we have the skills to share the data and also interpret them because it is possible to be able to analyze the data when the interpretation is difficult. So, from the capacity building done by MEASURE Evaluation [–Tanzania], we now have the skills to interpret data and share it with the people who collected them and even other stakeholders. (CHMT member, Bahi)

Skills gained in data analysis, visualization, and interpretation were used to develop council strategic plans. MEval-TZ regularly supported the regions and councils on data analysis, visualization, and interpretation to develop annual comprehensive council health plans (CCHPs). This bottom-up plan outlines planned health activities based on district-level data and national priorities. Budget allocation (from a "basket fund") is dependent on the councils meeting pre-defined assessment criteria, such as the identification of specific, measurable, accepted, relevant, and time bound (SMART) indicators, the appropriateness of performance targets, and the presentation of updated performance indicators and targets using HMIS data. MEval-TZ built the capacity of CHMTs to analyze and visualize data for situation analyses on current performance, enabling the identification of gaps, development of targets, and proposed budget allocations in their CCHPs. Respondents in Bahi and Dodoma noted that the DDU training workshops had been beneficial through assisting the councils with using data to plan activities and budget them accordingly, and reported that their CCHPs had passed the assessment criteria for data use.

Multiple respondents noted that MEval-TZ's capacity-building activities helped shift attitudes on using data for strategic planning and decision making:

You cannot develop any intervention or any activity without reviewing and analysing data. So, we used data to develop the CCHP. You cannot even set targets without looking at the data. For example, for maternal deaths, you have to compare the rates from the previous year so you may be able to set targets. After analysing the data, you will get to know the top ten diseases and you will now know how to allocate funds according to the top ten diseases you have identified because you will now know the burden of disease. (District Health Secretary, Dodoma)

Facilitators

Applicability and practical learning exercises increased the relevance of the training. Respondents enjoyed the practical sessions that helped individuals learn new skills, with guided support from facilitators. The training materials and curricula were designed to be relevant to the Tanzanian context, with exercises and examples taken from people's day-to-day work. For example, the *DHIS 2 Functions and Data Use* curriculum included step-by-step instructions for using the DHIS 2 data visualizer employing the actual DHIS 2 local instance in Tanzania, and the facilitators were instructed to choose indicators and program areas based on the profile of the trainees for their examples and practice exercises.

Linking capacity building to strategic planning helped ensure the use of DDU skills learned.
Respondents noted that they used the data analysis and visualization skills gained during the training to develop their CCHPs. The council planning process clearly states the valuable role that data play in planning and links the use of data in council planning with budget allocations. One respondent noted that an environment that supports CHMT members by setting aside time to conduct data analysis "can force someone to practice [new skills]." Linking capacity building to the development of the CCHPs helped provide an opportunity for individuals to apply newly learned DDU skills during planning.

Integration with the DHIS 2 training reinforced the value of data use. The DHIS 2 was a newly deployed health information system when the MEval-TZ project started. Capacity building in data use was closely linked with training in the DHIS 2. As one respondent stated: "they trained us on how to navigate in the [DHIS 2] system, how to generate reports, how to analyze data….for example, they taught us how to retrieve the scorecard and to analyze them to identify gaps and set action plans." The *DHIS 2 Functions and Data Use for Health Information System Strengthening* curriculum directly linked the use of the information system (accessing the system, generating reports, creating visualizations) with data use concepts to reinforce the value and use of HMIS data for decision making. As one respondent noted, "people get the knowledge [on DHIS 2 as a tool], but they are also able to use data from the database."

Facilitation of the training workshops using adult learning techniques was effective. Respondents described the design of the training materials, the skilled facilitators, and the interactive training sessions as elements for success. Respondents especially appreciated the way in which the trainers/facilitators used adult learning techniques to impart knowledge through demonstrations, and follow-up mentoring and coaching, when needed. As one respondent stated: "Training materials were awesome. And another thing is that, we are social. The way the trainings were conducted was very interactive and these people could find it easy to interact with us. Also, the knowledge and skills of the team were good and they were very happy that they could most of the time have all in one package."

Individual motivation was a driver to sustain skills gained from the training in DDU. Individual commitment to learning and willingness to engage in capacity-building activities were identified as a facilitating factor. The trainings were provided to specific audiences who were open to learning because the knowledge was needed immediately for their work. As one respondent stated: "The level of effort and interest [are facilitating factors]….you can be capacitated but if you don't have interest, no results will be delivered."

Barriers

High staff attrition and turnover inhibited team capacity in DDU. Respondents reported that many of the CHMT members who were trained had either retired or transferred from their positions. During this time, there was also strong enforcement of regulations in Tanzania such that staff not meeting credential requirements resigned from their posts. Respondents emphasized the need for continuous and ongoing refresher training to ensure that the capacity of new staff is built.

> *Some of the people have the skills to use these information tools and that has helped facilitate their use but the only problem we have is that most of the people who were trained left and many staff we have now are new and they don't even know the system. So, you find that the malaria focal person who was trained is no longer working here...Some of them were fired because they didn't have the relevant qualifications and others were retired. So now the new staff have no skills.* (Key informant, Dodoma)

> *MEASURE [Evaluation–Tanzania] should conduct follow-up trainings. And then maybe they also need to do regular visits and follow up to see the progress of these people who have been trained. Sometimes there is need to do mentoring and coaching for the team members on data analysis. If possible, they should train providers at the health facility level on data collection and analysis.* (Key informant, Chamwino)

Infrastructure challenges inhibited the application of new DDU skills. Some respondents noted that the lack of computers and Internet connectivity affected access to and capacity to use data from the DHIS 2. This led to a loss of interest in data because they were not able to practice the skills immediately after receiving training.

There was lack of follow-up and continuous capacity-building support. Follow-up supervision was cited as a factor that can motivate the continued application of skills because "the next time [MEASURE Evaluation–Tanzania] comes back here you will see that there will be some improvements…as [we] must have something to show them." However, respondents noted that the frequency of follow-up conducted did not meet the required need. Respondents noted that not all CHMT members had the requisite skills in data analysis; this could be because capacity-building activities were targeted to data producers, or due to the staff turnover issues mentioned above.

Improve Data Quality

We did not include specific questions about data quality in this learning exercise because an in-depth investigation of MEval-TZ's capacity building in data quality and data quality assessments is being conducted separately. However, data quality activities were closely linked to the implementation of other DDU activities. For example, the project sent monthly DHIS 2 data validation reports to the CHMTs prior to performance review meetings (discussed below). This allowed the councils to follow up and correct data errors with facilities during supportive supervision visits, ensuring that the data reviewed at these meetings were of good quality. In addition, in the *DHIS 2 Functions and Data Use* training, R/CHMT members were trained on the dimensions of data quality, managing health data quality, and data quality assurance practices in the DHIS 2. Respondents noted that data quality was improved through the process of reviewing and using data during the training workshops, performance review meetings, and mentoring and coaching sessions with the trained teams.

> *When you look at the past, we were just entering data. At the facility they would just enter data without any kind of data quality assessments, but now days we can assess the data and if there is any problem, you will just correct it before entering the data into the system.* (Morogoro key informant)

A separate report describes in more detail the interventions to improve the quality of routine data; it's available here: https://www.measureevaluation.org/resources/publications/tr-18-283.

Improve Data Availability

Data synthesis, communication, and access are necessary to ensure that data users have relevant information available to them in easily understandable formats that take into account their information needs and technical capacities. To improve data availability, MEval-TZ supported the development, orientation, and dissemination of information products.

For selected districts in Dodoma, MEval-TZ supported CHMT members to develop district health profiles (DHPs). The DHP is an annual document describing the status of population health, health systems, and health service delivery for a district across health areas, including maternal, newborn and child health, water, hygiene and sanitation, vaccination, non-communicable disease health services, and HIV/AIDS. To develop the profile, CHMTs were supported to analyze and interpret data from the DHIS 2 and other sources, including surveys and vital statistics records. In some districts, the DHP was used to advocate for resources and during council health planning.

> *We use it when making decisions. You know, the DHP is a summary of all health issues in our district. It shows the shortage of staff and it shows the staff available; it shows the infrastructure, number of health facilities. It summarizes all information about health issues in the district.* (District Health Secretary, Dodoma)

In addition, the project trained individual R/CHMT members to use the DHIS 2 dashboard functionality to customize automated data visualizations to meet the council's priority information needs for program planning and monitoring. The project also supported the dissemination and use of quarterly subnational reproductive, maternal, newborn, and child health (RMNCH) scorecards, which are official tools developed quarterly to track accountability and management in reproductive, maternal, and child health. The scorecard easily communicates priority information and targeted action. As a key informant from MEval-TZ noted, "We use scorecards because we realized that it stimulates something from the councils; they like the colors and it really triggers them to work. [CHMTs] also love the DHIS tool dashboard. It has worked very well because they have been able to upload the dashboard on a regular basis."

Facilitators

Information products tailored to specific information needs increased data use. The project trained R/CHMT members to develop custom information products in the DHIS 2 to meet the needs of individual program coordinators. As one respondent noted: "There is a very good tool which is the DHIS 2 dashboard to help manage programs on the ground…with just a click of a button [we customize the database] so we have specific analyses for the councils." These dashboards use already existing tools (DHIS 2) and can be updated regularly as new data are available, without external support. Specific dashboards were designed with individual users in mind. For example, the project created DHIS 2 files to enable the district medical officer (DMO) (a decision maker at the district level) to populate standard key performance indicator reports for their councils. Developing tailored reports increased the likelihood that these information products meet the specific decision-making needs of their users.

Barriers

Low involvement of subnational stakeholders in the development of information products inhibited their uptake. Some respondents stated that the RMNCH scorecard was a product initiated by the national level, "provided by the Ministry…brought here by the DMO." Respondents at the district level stated that they were not involved in the development of the scorecard, and were not always trained on its contents and how it should be used.

People need to be oriented to the content and use of information products. Although information products can provide concise, simplified visualizations, different audiences may still need to be trained on their content. For the RMNCH scorecard, respondents noted that although the teams understood what specific indicators meant, they would not always understand the implication of these indicators in the context of their programs or how different indicators related to each other. MEval-TZ oriented the teams on the scorecard indicators and how they related to service provision.

Identify and Engage Data Users and Producers

Meaningful interactions between data users and data producers are essential for improving the use of data in decision making. Their interaction facilitates the interpretation of data, conversations about data quality, requests for additional analysis, and clarification of existing data sources. This interaction builds a culture of data use and stimulates further demand for and use of data. Strengthened engagement between data users and data producers fosters a shared understanding and ownership of the data.

Although the R/CHMTs in Tanzania are comprised of both data users and data producers (HMIS focal persons), data producers were not always involved in key decision-making events. Program managers and coordinators, the data users, did not regularly engage with the HMIS data. MEval-TZ brought together data users and data producers for quarterly data and performance review meetings to jointly analyze and interpret data

to identify gaps and link data to program improvement efforts. According to one informant from Temeke Municipal Council (MC), including both data users and producers created "a platform to evaluate performance on different indicators and identify areas we need to improve." Data discussed at these meeting were used to develop action plans to improve program performance and address specific gaps in data quality. Respondents noted that these meetings also provided opportunities to review the implementation of these plans, provide feedback on whether recommendations were acted on, and to hold each other accountable for agreed-upon actions.

Performance review meetings were considered an effective way of bringing together data users and data producers to facilitate a shared understanding of the data collection processes, data quality issues, and indicator definitions. Respondents noted that through the regular review of reporting rate summaries and the DHIS 2 validation rules, data users also had a better understanding of the data quality challenges. CHMT members in Tanzania saw the value in reviewing data as a team to identify both data and program gaps and to develop action plans based on those weaknesses.

Facilitators

Performance review meetings were used to prepare for strategic planning and decision-making opportunities. Performance review meetings were used as opportunities for both program monitoring and program planning. During these meetings, performance in the previous quarters was reviewed such that priority actions identified could be taken up during upcoming planning events. Performance review meetings were scheduled to coincide with key decision-making moments and were used as an opportunity to help R/CHMTs during their pre-planning process for the CCHP development (as discussed above).

> *We have timed these meetings at a time when they were most informative to the councils depending on the need. For example, we timed the review meetings just before the planning preparations process so that the analysis and discussion we have in the performance review meetings can be informative to the upcoming planning sessions for the councils and that has been very helpful.* (Key informant, MEval-TZ)

Dedicate time to review data quality before performance review meetings. As mentioned above, data validation reports were sent to CHMT members to review prior to performance review meetings, allowing time for the councils to follow up and correct data entry errors. This helped ensure that discussions during the performance review meetings were focused on program issues and service delivery, rather than only concentrating on data quality issues. As one respondent from MEval-TZ noted: "Initially, when we started the performance review meetings, people were keen on data quality (in terms of completeness). Now people are more aware in terms of programmatic performance, performance indicators, and in addition to looking at the quality of data, people are also concerned with the quality of services provided through what they see in the data that is being presented."

Increased access to the DHIS 2 improved engagement with data during performance review meetings. The use of the DHIS 2 facilitated access to health information, particularly for performance review meetings. Respondents noted that the ability to access the DHIS tool and the associated dashboards during performance review meetings allowed for simultaneous problem identification and visualization of trends during interpretations and discussion of the data.

Barriers

The length of meetings was not always sufficient. Respondents suggested that more time should be allocated for performance review meetings, which generally lasted between two and three days. This would allow people more time to fully "review and engage with their performance data" and explore ways to address the

performance gaps. Respondents also suggested embedding training and other capacity-building activities in these meetings.

Lack of buy-in and participation from top decision makers can inhibit perceived value. There was inconsistent attendance by higher-level decision makers at the council level (e.g., DMOs). Respondents noted that some of the officials targeted for the meetings rarely attend, and often sent junior representatives in their stead. This can undermine the value placed on DDU by leadership and diminishes the weight attached to decisions reached during such meetings.

> [For some councils}… *most of the time they don't come and they send representatives because of the other issues they have to handle at the council…finding the Coordinators or representatives has been a little bit problematic because they don't have good systems to provide feedback to the rest of the team…. If the management is not good enough, then the leadership will also not be good enough to understand the [proposed data demand and use] activities proposed to them.* (Key informant, MEval-TZ)

Identify Information Needs

This was not a priority DDU activity implemented by MEval-TZ. The "Framework for Linking Data with Action" was used during DDU training sessions to identify planning information needs in preparation for council and regional annual planning processes (discussed above).

Strengthen the Organization's DDU Infrastructure

There are several examples of activities that MEval-TZ implemented to strengthen an organization's DDU infrastructure.

Guidelines for Performance Review

MEval-TZ developed organizational guidelines to govern performance review processes in support of data-informed decision making. The guidelines outlined a uniform approach to conducting performance review meetings to enable analysis and interpretation of performance information, facilitate discussions on how to improve performance, identify priority actions to address areas of interest, and monitor the actions. They also laid out the roles of data users and data producers in performance reviews, and set expectations for the preparation time and tasks that need to be completed prior to a performance review. In addition, MEval-TZ helped institutionalize customized DHIS 2 dashboards to facilitate the analysis of key performance indicators, a key step outlined in the guidance.

The guidelines have helped institutionalize the meetings and were used to build the capacity of regional focal persons and program coordinators to self-organize the meetings for their councils (including the development of agendas and the analysis and presentation of data). This ensured the sustainability of these activities. As a respondent from MEval-TZ stated:

> *In our last meeting, I really had the pleasure to sit down and see somebody else facilitating the meeting. Even the way discussions went; I can say people are better now than before. I really like the way they discuss these indicators in their context… people [used to] tell you like, uh we are seeing "red" in HIV exposed infants and that is very bad but they wouldn't discuss it in relation to other indicators, and procurement and supplies. Now, people have understood these indicators.*

Guidelines for Data Use Champions

To build leadership in DDU at the subnational level, MEval-TZ identified and strengthened the capacity of regional and district-level DDU champions. The goal of the champions initiative was to further train and support responsible leaders with core DDU competencies to work directly with R/CHMTs to implement effective DDU strategies. The champions acted as change agents to spearhead DDU initiatives in their respective regions and strengthened the capacity of their teams through training, supportive supervision, and mentoring. In Tanzania, 38 regional and district-level DDU champions were identified, with one to two champions in each district (including nine in the regions covered in this learning exercise).[1] Guidelines for DDU champions were developed outlining the roles and responsibilities, eligibility criteria, selection process, and monitoring and reporting procedures for the champions initiative.

DDU champions received advanced training and technical assistance in data analysis, presentation, communication, and use. They also received support to organize performance review meetings and develop information products. Champions were instrumental in driving organizational initiatives to improve supports for data quality and use. For example, a DDU champion from Dodoma established an "Information Committee" that met monthly with health facilities to review data and correct any errors before data were entered in the DHIS 2, thereby ensuring the quality of data for program and performance review. The committee was also tasked with ensuring that data collection tools were available and used by health facilities.

Data use champions also helped advocate for dedicated funds for DDU activities during CCHP planning processes. For example, a data use champion from Dodoma MC described advocating for the inclusion of budget allocated to routine data quality assessments in its CCHP. In Temeke, a data use champion was successful in using data communicated in the RMNCH scorecard to advocate for a 20 percent increase in the CCHP budget for reproductive and child health. Respondents discussed how the data use champions actively and enthusiastically promoted and built support for data use by engaging with and supporting health actors at different levels of the health system. They built the capacity of others in data use, especially at the health facility level, through mentoring, coaching, and supportive supervision visits to health facilities focusing on data quality.

> *Being a champion, we appear as front liners and models on data use. So, we are the catalysts and the ones who generate and analyze data and assist others in analysing data and how to interpret it. But we also share the best practices and the data we have analyzed…. If you find colleagues saying they have a problem, your interest will be to study what the data show and thereafter you will be able to assist and offer support. Every problem and solution have to start with data.* (DHMIS focal person, Bahi)

> *My role involves ensuring data quality and we need to verify our data from the registers. Another role is to read and understand all the indicators. Another role is to give supportive supervision to the health facilities to make sure that our health workers know how to collect correct data. On top of that, the other role is to conduct quality assessments with the data and also ensure that we use data in decision making.* (HMIS coordinator, Kindono)

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[1] Data use champions included regional and district HMIS focal persons, AIDS control coordinators, reproductive and child health coordinators, and health secretaries from the R/CHMTs.

Facilitators

Individual personality and attitude were important considerations for an effective DDU champion. DDU champions were perceived by respondents to be "self-driven" and committed to supporting others by sharing data use-related knowledge and skills. Champions also tended to have the ability to motivate others. One was described as "young, energetic, and passionate." These characteristics were crucial to encourage others to use data.

Buy-in from leadership helped support the work of the DDU champions. Champions in Tanzania were selected together with the DMOs, a decision maker in the council. DMOs were able to help identify people with specific skill sets: commitment to data-related issues, exposure to the HMIS, leadership skills, and influence in their council. Buy-in from leadership was also integral to supporting initiatives spearheaded by the data use champion.

Recognition and support motivated data use. Champions were motivated by the recognition they received from their peers and MEval-TZ. With formalized selection criteria, champions felt that their identification as a champion was recognition for the commitment and hard work they had shown. Champions often received additional training and mentoring and took on additional responsibilities for conducting training sessions at lower levels. Data use champions in Tanzania were also invited to join the established MEval-TZ community of practice, which focused on exchanging knowledge to improve the practice of M&E, and participated in an annual data use champions meeting to share experiences and learn from other champions. Select champions were also publicly recognized during these annual meetings.

> *They like to know that the rest of the team recognizes them as data use champions. Also, they receive motivation because of them being data use champions and one of the things they have received is additional training. Now days we hear that data use champions are being sent to conduct training for lower levels. For them to be seen to conduct training, that is another motivation because they see they are being utilized.* (Key informant, MEval-TZ)

Barriers

There was limited ability to support a large number of champions. In Tanzania, participants felt that there was an insufficient number of DDU champions per district, expressing the need to identify and train more champions. However, it may be difficult to provide intensified individual support to a larger pool of champions.

There was a lack of dissemination of organizational guidelines. Many respondents were unaware of or did not mention the use of the guidelines for performance review meetings to support data use in their organizations. This suggests that more communication and dissemination of the guidelines to CHMT members may be necessary.

LESSONS LEARNED AND CONSIDERATIONS

Based on these findings, we present lessons learned for country governments, programs, and donors implementing DDU interventions.

- **Embed training on data use concepts, approaches, and tools with the rollout of and training on new information systems**. It is beneficial to create awareness of the importance of data in program planning and monitoring while simultaneously training users on a new HMIS. Training that focuses only on the use of the system and its features can result in a stagnation in the information cycle after data are collected, entered, and reported. Entrenching DDU approaches and tools, such as the DDU conceptual framework and linking data with action, can help users understand the value of the data they are collecting and their importance to service delivery improvement. The immediate applicability and use of new skills to link data analysis and visualizations to identified information needs emphasize the importance of data from information systems for decision making. This improves the understanding of the DDU cycle, linking data collection and analysis with information availability and information use.

- **Build on organizational commitments to use data for strategic planning.** An organization's DDU infrastructure plays a critical role in supporting data-informed decision making. In Tanzania, CCHPs were assessed based on whether data were used to develop the plans. Linking DDU activities to ensure that R/CHMT members developed a strong data-informed CCHP was seen to be relevant, practical, and immediately ensured the value and applicability of these activities. The fact that the CCHPs were linked to budget allocations (e.g., basket funds) acted as an organizational incentive to promote data use for decision making and motivated people to commit to data use practices. Linking data use capacity-building efforts with the CCHPs also facilitated the sustainability of data use interventions because these activities can be repeated regularly as part of standard government planning processes.

- **Provide ongoing support for capacity building.** Training alone is insufficient to build capacity in data use core competences. Continuous mentoring and follow-up are needed to reinforce skills learned during training and ensure that trainees can apply and hone new skills in their workplaces. Continued engagement with trained teams can also help a project understand the outcomes of those trained and identify further areas for capacity improvement. Given the high level of staff attrition and turnover in some areas in Tanzania, capacity-building efforts also need to build in a sustainable mechanism for ongoing training and orientation on data use core competencies.

- **Dedicate time to review data to understand program performance.** In an emerging health information system, the review of data is often focused on ensuring data quality and identifying issues to strengthen data management. Because of the often significant data quality improvement needs, little time and resources remain to review data to understand program performance. In Tanzania, specific activities were implemented to address and correct data quality issues prior to performance review meetings. This ensured that there was dedicated time to focus on reviewing and interpreting data to understand program performance and to develop data-informed recommendations to improve performance.

- **Enable CHMTs to build the capacity of their teams.** Although not in the remit of the MEval-TZ project, building the capacity of health workers at the facility level in data analysis, interpretation, visualization, and use was identified by respondents as a critical priority. This is increasingly important in Tanzania, where health planning and budgeting have recently been devolved to health facilities under the new health facility budgeting and planning scheme. There will be a need for decision makers at the facility level to be trained in data use core competencies, especially the use of data to identify and prioritize gaps, plan for improvements, and develop data-informed budgets. It will be important to explore other models of capacity building, and to further capacitate R/CHMT staff at the regional and district levels to mentor and train their own teams. The data use champions initiative was one approach to build a culture of data use at lower levels. Building skills in leadership, facilitation methods, coaching,

and mentoring skills of CHMT members could help enable the transfer of data use core competencies to their teams. Involving health facility staff in performance review meetings could also promote data use as a shared responsibility across all levels.

- **A comprehensive, integrated approach to data use is more effective than a single intervention.** Implementing an integrated, comprehensive approach to DDU can accelerate positive outcomes compared with single, isolated interventions. In Tanzania, a set of mutually reinforcing activities addressed multiple DDU intervention areas at the same time. For example, strengthening performance review meetings was a way to engage data users and producers, improve access to and the availability of data, and build capacity in data use tools and approaches. Although respondents did not name one activity that was most critical for strengthening data use, capacity building and performance review meetings were often cited as essential activities. In this context, the phasing of interventions did not appear to impact the outcomes of data use interventions.

- **Support locally-driven ideas for data use initiatives.** MEval-TZ supported data use champions to develop their own solutions to their identified challenges to data use. For example, champions were able to create structures for data quality and advocate for increased funds for data and M&E-related activities. Encouraging locally-driven ideas results in interventions that directly responded to the unique context that data users and data producers faced. As individuals have a larger stake in the success of their initiatives, ownership and commitment to data use activities can also increase.

- **Buy-in from leadership is key to institutionalizing DDU.** Engaging data users across all levels was key to building data demand. This includes not only program coordinators or managers, but senior managers and decision makers, such as the DMO. These stakeholders are critical for motivating their teams to engage in data-informed decision making. In Tanzania, program coordinators often participated in training sessions and committed to improving data use practices, but needed the support of decision makers to carry out data use initiatives. MEval-TZ made efforts to communicate directly with DMOs, especially during performance review meetings, to ensure that they were engaged in the pre-planning and follow-up of activities proposed during the meetings. Future projects can also build the communication and advocacy skills of management teams to advocate with decision makers about the importance of data use activities, such as the development of advocacy objectives and strategies, and the creation of advocacy messages. Strong leadership can facilitate the sustainability of DDU initiatives, especially after donor support ends.

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APPENDIX A. MAPPING OF DATA USE INTERVENTIONS, BY COUNCIL

	Data demand and use interventions		Assess and improve data use	Improve data availability	Build core data use competencies				Strengthen organizational DDU context	Overall
	Region	District			DHIS training conducted	DHIS status review conducted	DDU DHIS2 curriculum conducted	DDU supportive supervision conducted		
DDU only	Bahi DC*	Dodoma		X	X		X	X	X	5
	Chamwino*	Dodoma		X	X		X	X	X	5
	Mpwapwa DC**	Dodoma		X	X		X	X	X	5
	Gairo DC*	Morogoro			X		X	X	X	4
	Kilombero DC	Morogoro			X		X	X	X	4
	Kongwa	Dodoma		X	X		X		X	4
	Morogoro MC	Morogoro			X		X	X	X	4
	Mvomero DC	Morogoro			X		X	X	X	4
	Singida MC	Singida			X	X	X		X	4
	Ulanga DC	Morogoro			X		X	X	X	4
	Iramba	Singida			X	X			X	3
	Manyoni	Singida			X	X			X	3
	Sengerema DC	Mwanza	X				X		X	3
	Chunya DC	Mbeya					X		X	2
	Njombe DC	Njombe				X			X	2

Group	Data demand and use interventions		Assess and improve data use	Improve data availability	Build core data use competencies				Strengthen organizational DDU context	Overall
	Mbarali DC	Mbeya					X		X	2
	Mbeya CC	Mbeya					X		X	2
	Kyela DC	Mbeya					X		X	2
DDU + DQA	Dodoma MC*	Dodoma		X	X		X	X	X	5
	Kinondoni MC*	Dar es Salaam	X				X		X	3
	Temeke MC*	Dar es Salaam	X				X		X	3
	Mufindi DC	Iringa					X	X	X	3
	Njombe TC	Njombe				X	X		X	3
	Nyamagana MC	Mwanza	X				X		X	3
	Singida DC	Singida			X	X			X	3
	Kilolo	Iringa					X		X	2
	Mbeya DC	Mbeya					X		X	2
	Rungwe DC	Mbeya					X		X	2
	Iringa DC	Iringa					XX		X	1
	Iringa MC	Iringa					XX		X	1

*Selected for this activity

**Mpwapwa DC did not have a current DDU champion; replaced with Gairo DC

APPENDIX B. LIST OF RESPONDENTS

Interview	Position	Location	Data user, data producer, or other
1	HMIS focal person	Kinondoni MC	Data producer
	District Reproductive and Child Health Coordinator	Kinondoni MC	Data user
2	HMIS Coordinator	Temeke MC	Data producer
	Assistant Reproductive and Child Health Coordinator	Temeke MC	Data user
	Reproductive and Child Health Coordinator	Temeke MC	Data user
	HMIS Officer	Temeke MC	Data producer
	Assistant District Vaccine Officer	Temeke MC	Data user
3	District Health Secretary (DDU champion)	Dodoma MC	Data user
	Assistant District Health Secretary	Dodoma MC	Data user
4	Regional HMIS focal person	Dodoma MC	Data producer
5	District Medical Officer	Bahi DC	Data user
	District Health Secretary	Bahi DC	Data user
	DHMIS focal person (DDU champion)	Bahi DC	Data producer
	District AIDS Coordinator	Bahi DC	Data user
6	District AIDS Coordinator	Chamwino DC	Data user
7	DHMIS focal person	Gairo DC	Data producer
	District Medical Officer	Gairo DC	Data user
8	Data Use Advisor		Other