



**USAID**  
FROM THE AMERICAN PEOPLE

## PUBLIC SECTOR SYSTEMS STRENGTHENING (PS3)

# Results-Based Financing in Tanzania: Generation, Availability, Quality, Management, and Use of Data

## OVERVIEW AND REFERENCE DOCUMENT

**October 2016**

This publication was produced for review by the United States Agency for International Development. It was prepared by the Public Sector Systems Strengthening (PS3) Activity located in Dar es Salaam, Tanzania, under Contract AID-621-C-15-00003 with USAID/Tanzania.

## **The USAID/Tanzania Public Sector Systems Strengthening Activity (PS3)**

USAID/Tanzania Public Sector Systems Strengthening Activity (PS3) overarching goal is to support the Government of Tanzania to strengthen the public system to promote the delivery, quality, and use of services, particularly for underserved populations. Led by Abt Associates, PS3 is implemented in partnership with Benjamin William Mkapa HIV/AIDS Foundation, Broad Branch Associates, IntraHealth International, Local Government Training Institute, Tanzania Mentors Association, and University of Dar es Salaam and Urban Institute.

**October 2016**

**Contract No:AID-621-C-15-00003**

**Recommended Citation:** Public Sector Systems Strengthening Activity. October 2016 Results-Based Financing in Tanzania: Generation, Availability, Quality, Management, and Use of Data Overview and Reference Document. Bethesda, MD: USAID/Tanzania Public Sector Systems Strengthening Activity, Abt Associates.

---

## **DISCLAIMER**

The contents of this report are the sole responsibility of PS3 Activity and do not necessarily reflect the views of USAID or the United States Government.

# CONTENTS

---

- CONTENTS.....i**
- Acronyms .....iii**
- Purpose of this document..... 4**
- How are RBF-related data generated and housed in the National Health Data Warehouse?..... 4**
- What RBF-related data are not currently stored in the National Health Data Warehouse?..... 7**
- What is DHIS2 in Tanzania? ..... 7**
- How is DHIS2 currently managed?.....11**
- What are common issues with RBF data?.....12**
- How do stakeholders use “standard reporting” in DHIS2 to monitor the RBF system? .....12**
- Can RBF system managers do advanced analytics on RBF data?.....13**
- Annexes .....14**



# ACRONYMS

---

CAG	Controller Auditor General
CHMT	Council Health Management Team
DHIS2	District Health Information System 2
HMIS	Health Management Information System
HRHIS	Human Resources for Health Information System
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MSD	Medical Stores Department
PORALG	President's Office - Regional Administration and Local Government
PS3	Public Sector System Strengthening Project
RBF	Results Based Financing
RHMT	Regional Health Management Team
UDSM	University of Dar es Salaam
USAID	United States Agency for International Development

# PURPOSE OF THIS DOCUMENT

---

The demand for strategic information for evidence-based decision making in Tanzania is growing. The Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) and the President's Office of Regional and Local Government (PORALG) are leading the analysis of Results-Based Financing (RBF)-related data to better manage and use the RBF system for health services. In order to best manage the performance of RBF initiatives, timely, complete, and accurate data on agreed-upon performance indicators are required. Without such data, an RBF system runs the risk of having a government pay for results that have not been achieved, of unintentionally demotivating health professionals who may feel the system is unfair, or of masking the true issues behind health system performance.

Recently the USAID-sponsored Public Sector System Strengthening Project (PS3) carried out a rapid assessment of RBF data as part of its activities to strengthen RBF implementation in Tanzania. The assessment examined and identified gaps in documentation of topics related to the generation, availability, quality, management and use of RBF data.

The purpose of this document is to serve as a reference for stakeholders and those interested in the RBF system in Tanzania. It is considered a living document that will benefit from regular updates as additional information becomes available. It is intended to inform policy briefs or formal reports for wider dissemination among the Government of Tanzania and other stakeholders. The intended audience of this report is PS3 staff, the Government of Tanzania, USAID, and other implementing partners who are interested in better understanding RBF data management and use.

## HOW ARE RBF-RELATED DATA GENERATED AND HOUSED IN THE NATIONAL HEALTH DATA WAREHOUSE?

---

Most RBF-related data are housed in the [National Health Data Warehouse](#), which is powered by DHIS2 software.<sup>1</sup> Table I lists each type of RBF data housed in the Data Warehouse, and details the origin of and the person/team responsible for generating these data.

---

<sup>1</sup> DHIS2 is the software that hosts Tanzania's Health Management Information System (HMIS). The terms DHIS and HMIS are used somewhat interchangeably in Tanzania. The Government of Tanzania has a [National Health Data Warehouse](#) and a separate [HMIS web portal](#), both powered by DHIS2 software. The former hosts data entry, data management, data analysis, and data visualization functions and requires credentials to access. The latter hosts a public-facing dashboard. Most of the RBF system data are housed in the National Health Data Warehouse. Most of the RBF system data entry, data management, data analysis and data visualization functions are performed using the DHIS2 software.

Table I: RBF Data Housed in the National Health Data Warehouse

Data Description in DHIS2	Data Origin	Responsible for Generating
Unverified quantities of services provided by facilities	Monthly, manual entry	District
Verified quantities of RBF-incentivized services provided by facilities	Quarterly, manual entry	Region
Quality assessment disaggregated scores	Manual entry on a quarterly basis	Region
Quality assessment aggregate score	Calculated automatically in DHIS2	N/A
CHMT management indicator scores	Manual entry on a quarterly basis	Region
RHMT and RAS management indicator scores	Manual entry on a quarterly basis	National RBF team
RBF available budget	Manual entry on a quarterly basis	National RBF team
RBF payments earned by facilities	Calculated automatically in DHIS2	National RBF team notifies HMIS team at MOH to initiate calculations
RBF incentives earned by administrative entities	Calculated automatically in DHIS2	National RBF team notifies HMIS team at MOH to initiate calculations

Table I shows how some RBF system data are entered manually into the Data Warehouse, while other RBF system data housed in the Data Warehouse are generated by formulas that University of Dar es Salaam DHIS2 developers pre-built in DHIS2.

Facilities report RBF-data routinely using HMIS tools (e.g. registers, tally sheets, summary forms). Note, to capture the five RBF quantity indicators not included in routine HMIS tools, DHIS2 developers at University of Dar es Salaam developed a separate monthly data capture form (see Annex B). The HMIS summary forms are delivered from all facilities to the Community Health Management Team (CHMT) by the 7th day of the following month. The CHMT is then responsible for entering the data directly into DHIS2 before the 15th day of each month.

Data verification teams assembled by the region verify RBF quantity indicators quarterly before RBF payment is authorized. The data verification team downloads a summary form populated in DHIS2 and uses it to verify quantity indicators. At each facility, the verification team reviews registers to confirm the quantity of services delivered and conducts a quality assessment. For the quality assessment, the verification team assigns a score to each dimension. There are 18 dimensions in the dispensary/health center assessment and 26 dimensions in the hospital assessment.

After the health facility data are verified and the assessment of quality indicators performed, staff from the Regional Secretariat, with the support of the Regional Health Management Team (RHMT), enter the verified quantity indicators and the scores obtained by each facility for each quality dimension (see Annex C and Annex D) in DHIS2. Updates are made only to quantity indicators that changed after data verification. Note that the score for each quality dimension is what is entered into DHIS2, not the most disaggregated information about the facility's performance on that quality dimension. Box I provides an illustrative example of this point.

CHMTs are assessed on a quarterly basis as well. A verification team comprised of members of the RHMT and NHIF staff gives scores for CHMT management indicators; a data entry clerk for the RHMT

then enters the disaggregated scores into DHIS2 (see Annex E). The National RBF team gives scores for RHMT and Regional Secretariat management indicators. A member of the National RBF team enters those scores into DHIS2 (see Annex F and Annex G).

Following the verification and entry of both quantity and quality data into the DHIS2, the national RBF team notifies the MOH HMIS team to initiate payment calculations. The DHIS2 has the capacity to perform automated calculations using pre-programmed formulas which calculates the RBF incentives earned by facilities and management entities.

**Table 2: Illustrative example of facility-level quality data stored in DHIS2**

<p>One of the 18 quality dimensions in the dispensary/health center assessment is Immunization. The verification team provides <u>one score</u> to the facility on immunization using the following guidance:</p>		
<b>Checklist elements and verification method</b>	<b>Criteria</b>	
<p>Quality of vaccination services as guided by national vaccine management guideline and availability of functional cold chain maintenance of vaccines:</p> <p>1) A functional refrigerator, with temperature (In or/and outside Thermometer) indicating between +2C and +8C, 2) Two LP gas cylinders, 1 connected to refrigerator and 1 full as a spare, (if the facility has electricity an alternative (gas cylinder or generator) should be available, 3) Two Vaccine carriers, 4) temperature filled up to date and for last 3 months, 5) One Functional thermometer, located in the refrigerator</p>	<p>Maximum points: 5</p> <p>If the fridge is functional: Start scoring 1 point per available element</p> <p>If fridge not available or not functional: No need of checking other items</p>	<p>Possible maximum points for the dimension:  7</p>
<p>All vaccines available as per guideline: BCG, 2) Polio, 3) Measles, 4) Pentavalent, 5) Rotavirus</p> <p>6) Pneumococcal Vaccine (PCV 13), 7) Tetanus Toxoid, 8) Diluent</p>	<p>If all vaccines &amp; Diluent available = 1</p> <p>Even one missing= 0/1</p>	
<p>Availability of seats or benches to allow every woman and child to seat</p>	<p>If yes = 1 If no= 0/1</p>	
<p>Say the facility has: a functional refrigerator at the correct temperature, two LP gas cylinders, one vaccine carriers, no data on temperature for the last 3 months, a functional thermometer, rotavirus vaccine missing, and available seats or benches, then the facility would score 4 out of 7 for this dimension. DHIS2 shows that the facility scored 4 out of 7 on this dimension.</p>		



# WHAT RBF-RELATED DATA ARE NOT CURRENTLY STORED IN THE NATIONAL HEALTH DATA WAREHOUSE?

---

The Data Warehouse currently does not store RBF-related data for the Medical Stores Department and Strategic Business Units.

The Data Warehouse also does not store certain implementation-related data—for example, on whether and when RBF incentives have actually been paid to facilities, health workers, and management entities. Thus, data from the Warehouse cannot be used to inform the RBF disbursement-linked indicator that payments to RBF recipients were made in a timely manner.

Data on the availability of drugs and commodities at health facilities are stored in a separate system called the Logistics Management Information System (eLMIS),<sup>2</sup> which means these data are also not stored in the Warehouse. While these data are not directly related to the RBF system, if combined with RBF data they could help identify whether supply chain performance is having an effect on facilities' performance under the RBF system. The same principle applies to information about human resources for health at health facilities, the data for which are housed in the Human Resources for Health Information System and not in the National Health Data Warehouse.<sup>3</sup>

## WHAT IS DHIS2 IN TANZANIA?

---

District Health Information System version 2 ([DHIS2](#)) is free and open source software developed by [The Health Information Systems Programme \(HISP\)](#), a global south-south-north collaborative network aiming at better health care in low- and middle-income countries (LMICs) through the combination of research on and implementation of health information systems.<sup>4</sup> The University of Oslo

---

<sup>2</sup> The eLMIS and EPICOR systems are linked together. They provide inventory management in relation to the financial management.

<sup>3</sup> HRHIS is a system that manages human resource information for health for both private and public facilities. It is software for collection, collation, storage of human resource for health information. The title *Human Resource for Health Information System* refers to an open-source software solution for HRH information management developed by the Department of Computer Science, University of Dar es Salaam for the Ministry of Health and Social Welfare (Tanzania), and funded by the Japan International Cooperation Agency (JICA) and other development partners. The system supports the capture of data linked to any level in the organizational hierarchy and is customizable at both the input and output sides.

<sup>4</sup> The first version DHIS 1.X was a Microsoft Office application which was distributed freely to users. Tanzania piloted DHIS 1.3 in Kibaha and Bagamoyo around 2003-2005. Zanzibar has been using DHIS 1.4 since the year 2005. In 2005, based on the various comments and feedback from the field level use, the University of Oslo initiated the process of developing the second version of DHIS.

is a leading member of the network and hosts the core development of DHIS2 software and provides implementation support. Its use is not limited to district-level information; in fact, it is most often used to host national health information systems (NHIS). It is a tool for collection, validation, analysis, and presentation of aggregate and transactional data, tailored (but not limited) to integrated health information management activities. With DHIS2, one can capture data on any type of device, including desktops, laptops, tablets, smartphones, and feature phones. Most solutions work offline, enabling improved reach in locations with poor connectivity. DHIS2 provides a wide range of solutions based on HTML5, SMS and Java. It is the preferred HMIS in 30 countries, including Tanzania.

### *A short history of Tanzania's HMIS:*

The new version of DHIS (i.e. DHIS2) was developed based on the data warehousing principles and modular structure that allows users to work with the functionalities they need and leave the rest. DHIS2 is an independent platform: it can be installed and run in any operating system and it can run on both on-line (with the internet) and offline (without the internet) modes. It is also a Multilanguage enabled and integrated with various other applications such as Geographic Information Systems (GIS), Mobile Technologies, and Microsoft Excel. The University Dar es Salaam Department of Computer Science and Engineering manages DHIS2 for the Government of Tanzania.

In 2009, the MOHCDGEC (called the Ministry of Health and Social Welfare until 2016) expressed concern that the existing HMIS had serious problems and was insufficient to support its data management needs. As a result, the MOHSW committed to avail resources for updating and improving the HMIS in its Health Sector Strategic Plan 2009-2015. After making this commitment, the government and several partners established and implemented the Monitoring and Evaluation Strengthening Initiative (M&E SI) Strategic Plan 2010-2015.

Over the five years they implemented this strategy, the MOHCDGEC and its partners realized many achievements and new opportunities, but also encountered a number of challenges with the HMIS data collection and reporting tools. Before they were revised, HMIS data collection tools contained too many data elements while failing to produce sufficient data to inform health system planning. They contained gaps – for example, not including indicators on emerging treatment regimens (e.g. new vaccines). They were also duplicative of each other. As a result, health workers faced an immense workload to report on services, while health planners were still left without the strategic information they needed.

In order to address these challenges, the MOHCDGEC and its partners initially revised eleven HMIS books and piloted them in Pwani Region for six months in 2011. This piloting entailed training the Pwani Health Facilities to understand the reporting requirements of the books, and learn how to record data, provide feedback, and submit reports using the tools. After providing, training health facility workers, implementers customized the DHIS2 software so that it included these updated tools and would capture data directly into the software. After that, council staff were trained on how to capture the data into DHIS2 for every revised tool.

The pilot confirmed if the tools could be customized into the HMIS, and if the users could have enough knowledge, skills, and confidence to report using the revised tools. Thus, once this pilot in Pwani was completed, with staff trained, systems customized, and data captured, the MOHCDGEC then rolled out the same procedure in another five regions and subsequently to the rest of the country. In January 2012, the MOHCDGEC also initiated reviews of the other tools not yet revised, a process that lasted through 2014 (Table 6).

**Table 3: Timeline For Revising Health Facility HMIS Reporting Tools**

<b>HMIS (MTUHA) book</b>	<b>Year book was revised</b>
Book No. 1: HMIS Guideline	2011
Book No. 2: Facility data Book	2013
Book No. 3: Community Book	2013
Book No. 4: Ledger Book (tracer medicine)	2012
Book No. 5: Out-patient Register	2011
Book No. 6: Antenatal Care Register	2011
Book No. 7: Child Register	2011
Book No. 8: Family Planning Register	2011
Book No. 9: Diarrhea Treatment Corner	2011
Book No.10: Annual facility Report Book	2013
Book No.11: Dental Register	2013
Book No.12: Labor & Delivery Register	2011
Book No.13: Post Natal Register	2011
Book No.14: In-patient Department Register	2011
Book No.15: Health Sector Personnel (HRHIS)	
Book No 16: Eye care register	2013
Laboratory register	2014
Dispensing register	2014

The review of the other, major HMIS tools kicked off with a large meeting of health system stakeholders at the Bank of Tanzania. After agreeing on the need for the review, the stakeholders identified and agreed on which data elements should be retained, removed, or added in each tool. Subsequently, the stakeholders agreed on the formatting and layout of the tools in order to accommodate enough space for recording data into the tools.

Towards the end of 2012, the MOHCDGEC convened another large stakeholder meeting to undertake the same review process for another set of HMIS tools, namely: Human Resources for Health (HRH); death register; ICD 10 coding, and; tracer medicines. Later on in the year 2013-14, some additional tools, including books 2, 3, 10, 11, laboratory and dispensing tools, were also reviewed and updated.

The initial revision and update of HMIS tools in 2012 was followed by the reviewing of the training guide in May 2013. The training guide provides an overview of the tools reviewed and explains how they should be used. This guide was integrated into the pre-service training institutions for health workers in December 2013. Since then, HMIS training has been rolled out in the pre-service training for all health workers in the country.

Currently, the new revised HMIS tools capture not only emerging issues, but also all the necessary data elements and information required for evidence-based decision making in the health system. Health workers find the tools to be not only comprehensive but also user friendly and less time consuming for reporting data, compared to the old tools.

MOHCDGEC does not plan any major overhaul of the revised books for the next five years. MOHCDGEC is still obtaining feedback and recommendations from the data recorders; this feedback will be used to update the HMIS reporting tools in the future.

In summary, HMIS tools were revised; the revised HMIS tools were printed, distributed and rolled out for use countrywide; health officials were trained to fill the tools and capture data into DHIS2; vertical program data were integrated into HMIS; DHIS2 software was customized and used for HMIS reporting; reports and information products were generated using data from DHIS2; District Health Profiles were created and generated from the DHIS2.

Following the training of health workers on how to fill the paper-based forms, additional training on DHIS2 software operations was provided to the district and regional staff. District officials who received this DHIS2 training included the health secretaries, data clerks, and HMIS focal persons. The DHIS2 training focused on key indicators and data elements, organization units, data sets, data entry, data aggregation, data entry forms in the system, data visualization, production of reports, data use and integration with vertical programs in terms of system and tools.

After the training, the average reporting rate at the health facilities increased from 50% in 2013 to 87% rate by December 2014 in all regions of Tanzania mainland. Health workers also expressed appreciation that the new tools reduced their reporting workload. In the future, MOHCDGEC intends for the district and regional HMIS staff to continue to supervise and mentor the health workers on HMIS reporting while on the job. Likewise, the internal help desk for DHIS2 reporting<sup>5</sup> will continue to support the districts and regions in managing DHIS2 operations.

By 2013, the DHIS2 software had been customized to accept data from all the revised HMIS tools, and all data for 2014 were available in DHIS2 by 2015. Daily technical support was provided to assist DHIS2 users when they encountered challenges with the data processes. In addition, the Local Government Authorities (LGAs) and MOHCDGEC staff were also engaged in supportive supervision to assure quality of data and mentor the users of DHIS2.

There were other strategic information initiatives which were implemented through the DHIS2 platform to promote data availability, data quality, and data use. From 2011 to 2013, DHIS2 accommodated the additional tools, and captured and generated information related to: death registry; tracer medicines; District Health Profile (DHP); Reproductive, Maternal, Newborn and Child Health scorecard, and; the payment scorecard for the Payment for Performance (P4P) initiative implemented in Pwani.

In 2014, based on feedback from the health facilities and councils, a revised version of DHIS2 was developed. By 2015 it was planned that the four staff members who were trained on DHIS2 at the districts would be part of the national DHIS2 technical team to assist users if they face problems. This technical team would be composed of people from MOHCDGEC/HMIS, University of Dar es Salaam lead, Ifakara Health Institute, Clinton Health Access Initiative, Measure Evaluation, and one focal person from Kibaha District Council.

---

<sup>5</sup> The internal help desk for DHIS2 reporting is built within the DHIS2 system and a team of experts are there to support. There is a team of DHIS2 champions who are working to resolve and answer all queries/questions from the district staff. This includes some District TOT teams, UDSM staff, ICT team and some DP team members well trained on DHIS2. The help desk answers general DHIS2 reporting questions, but does not provide deeper RBF support at this time.

# HOW IS DHIS2 CURRENTLY MANAGED?

---

Fragmentation of data, duplication of reporting by the vertical programs, the lack of a central data source, the absence of technical support for the HMIS, and low levels of data use were some of the main challenges faced by the HMIS before the M&E SI was introduced. In 2007, the UDSM, MOHSW, and University of Oslo created an MOU which committed the partners to:

- Support MOHSW to come up with unified tool and integrate vertical programs into the HMIS;
- Develop an open source system which could handle all requests from HMIS and vertical programs while disseminating information to other stakeholders,
- Provide support for the technical operations for the Health Information System.

The terms of this MOU were developed through a systematic sequence of activities. The MOHSW and stakeholders first harmonized indicators and data elements between the data collected by HMIS and vertical programs. For each HMIS tool that was revised, DHIS2 software was configured and customized to capture and report data from the revised tools to be entered by the district staff. In order to facilitate reporting, trainers were trained and they further trained health facilities in reporting on the paper-based tools and then trained the councils and MOHSW staff to enter and manage information through the DHIS2.

Annex A presents the recently revised MOU between UDSM - Department of Computer Science and Engineering (University of Dar es Salaam) and MOHSW on DHIS2 implementation. To date, UDSM have little remaining funds from the Global Fund to support the DHIS2 implementation, but have not yet received current tranche for this.

Ongoing DHIS2 maintenance is the shared responsibility of UDSM and the ICT unit of the MOHSW. PS3 is currently aware of the following ongoing maintenance needs:

1. Ensure the list of RBF facilities (facilities that are eligible to participate in the RBF program) is up to date
2. Perform user access management
3. Create new reports that display RBF system data according to requirements of RBF system managers (National RBF team, RBF Steering Committee, LGAs, etc.)
4. Create new data visualizations according to requirements of RBF system managers (National RBF team, RBF Steering Committee, LGAs, etc.)

Using or developing any additional functionalities in DHIS2 requires consultations with MOHSW (ICT and HMIS units) and UDSM since they have a joint MOU on the DHIS2 implementation and maintenance.



# WHAT ARE COMMON ISSUES WITH RBF DATA?

---

Early experiences with the RBF program show that there are issues with inaccuracy and inconsistency of data entered manually into the DHIS2 system from the HMIS books. During RBF verification, verification teams identified large differences between the quantity of services recorded in facility registers versus the monthly totals for those services that had been entered in DHIS2. It is not clear whether data errors are largely introduced by facility staff when tallying up monthly totals for RBF-incentivized services from registers, or whether data errors are introduced when a data entry clerk at the district manually enters facility totals into DHIS2. Under the RBF incentive calculation, facilities are assessed penalties on RBF indicators with error rates larger than 10%. Facilities with high error rates receive smaller positive incentive payments. More investigation is necessary to better understand the causes of these data errors and identify ways to address them.

# HOW DO STAKEHOLDERS USE “STANDARD REPORTING” IN DHIS2 TO MONITOR THE RBF SYSTEM?

---

People with access to the “Reports” and “Dashboard” functions in DHIS2 can use these functions to view some RBF data. The RBF data displayed in these reports and the dashboard is updated immediately once the underlying data change or RBF data for a new calendar year quarter become available. However, the reporting fields are static in that the user cannot select for him/herself which RBF data fields should be included in a report. Under the dashboard, pre-made charts show the most up-to-date RBF data, but the user cannot customize the charts. Only a trained DHIS2 developer, such as someone from UDSM, can develop and customize charts for the dashboard.

There is a “Data Visualization” function under DHIS2 which allows users with access to this function some ability to customize charts and displays of RBF data. These users can also download and create charts in Microsoft Excel or other off-the-shelf data analysis software to prepare more powerful data visualization.

It is not clear how different stakeholders use DHIS2 to view RBF data. RHMTs, CHMTs could be good candidates for using DHIS2 standing report features to view RBF data retroactively and use them to improve program management. However, at this time PS3 is not aware of the extent to which these LGAs have access to these DHIS2 features or use them. This is an area for further exploration.

# CAN RBF SYSTEM MANAGERS DO ADVANCED ANALYTICS ON RBF DATA?

---

The DHIS2 software has inbuilt capability for generating charts, tables and maps which is done using pivot tables, a data visualizer, and GIS modules. Data pulled up through the pivot table function in the software can be exported to Microsoft Excel for advanced analytics.

However, PS3 found that extracting a single dataset for the universe of RBF-related data from the National Health Data Warehouse is difficult. Different types of RBF data are housed in different tables within the warehouse and cannot always be combined at the facility level with a unique facility identifier to create a “flat file.” For example, payment data for a given facility cannot be extracted on the same line of data as the quantity indicators and quality indicators for that same facility. While an analyst could undertake extensive manual manipulation to combine these different types of data on the same record for an individual facility, the inability to do this on a macro level for thousands of facilities is a large weakness of the system. PS3 is aware that there is an ongoing effort by the Government of Tanzania and its partners to merge unique identifier information for facilities from the [Health Facility Registry](#) with the National Health Data Warehouse, which would hopefully alleviate this problem. However, this process is still ongoing.

# ANNEXES

---

**Annex A: Memorandum of Understanding between MOHSW and the Department of Computer Science and Engineering at UDSM**

**Annex B: Non-HMIS Indicators Data Entry Form**

**Annex C: Quantity Verification Data Entry Form**

**Annex D: HC and Dispensary Quality Assessment Data Entry Form**

**Annex E: CHMT Assessment Data Entry Form**

**Annex F: RHMT Assessment Data Entry Form**



# Annex A: Memorandum of Understanding between MOHSW and the Department of Computer Science and Engineering at UDSM

## MEMORANDUM OF UNDERSTANDING

BETWEEN

THE MINISTRY OF HEALTH AND SOCIAL WELFARE (MOHSW) TANZANIA

AND

THE DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (DoCSE) - THE UNIVERSITY OF DAR ES SALAAM

DATED THIS ..... DAY OF .....2015

### Memorandum of Understanding for Strengthening and Sustaining the Health Information System (HIS)

This Memorandum of Understanding is made on this ..... day of ..... 2015 between **the Ministry of Health and Social Welfare of P. O. Box 9083 Dar es Salaam**, hereinafter referred to as **MOHSW** and the **Department of Computer Science and Engineering (University of Dar es Salaam) of P. O. Box 33335, Dar es Salaam**, hereinafter referred to as **DoCSE**

**WHEREAS** the MOHSW and the DoCSE have over the past 8 years been working under the framework from the previous MoU signed between the two parties in 2007.

**WHEREAS** the MOHSW and the DoCSE have successfully collaborated to set-up the National Health Management Information System using District Health Information System (DHIS2), the National Human Resource for Health Information System (HRHIS) and the Electronic Integrated Diseases Surveillance and Response System (eIDSR) which are operational and used at all levels of health care system countrywide.

**WHEREAS** the DoCSE has continued to play a key role in technical support to the MOHSW that involves the software development and implementation, indicators management, HIS design, User training and support, Server maintenance and hardening, and Data analysis, since the first MOU was signed between the two parties in 2007.

**WHEREAS** the majority of vertical health programmes operating in the country have their data co-existing in the set-up software and they are all using the same software to manage their data coming from across the country,

**WHEREAS** the DoCSE, in collaboration with the MOHSW, has been facilitating liaison of data from heterogeneous sources of data, like the National Bureau of Statistics and other sources, to swiftly communicate with the set-up software,

**AND WHEREAS** the parties are desirous of continuing to cooperate in the said services so as to continue to strengthen and sustain the HIS in Tanzania at the acceptable standard; the parties accept this memorandum under the following terms and conditions which were discussed jointly and agreed upon by both parties that;

#### **I. Agreements to Negotiate in Good Faith**

The parties hereby agree to negotiate in good faith and to finalise the terms of definitive agreements in order to reach the objectives described above. Neither party shall be liable to the other for any failure to finalise the terms of the definitive agreements. Any payment between the two parties will depend on the agreed activities and the availability of funds to facilitate the work

## **2. A Joint Technical Committee**

To facilitate the undertakings contemplated in this Memorandum, MOHSW and DoCSE shall continue to work as a Joint Technical Committee (established in the first MOU) to work out the details of the works related with this deed at a time and location, mutually acceptable to the parties.

## **3. Modality of Cooperation**

Beyond the administrative procedures, the parties inclusive of their staff shall assist the work of cooperating experts by providing a good working climate and cooperation.

## **4. The Responsibilities of the Parties**

The parties shall prepare terms of reference (referred to as TOR) which shall clearly stipulate the responsibilities of the parties inclusive of the Joint Technical Committee to this Memorandum. The terms of reference developed shall form a part and parcel of this deed and shall be annexed as annex "A"

## **5. Confidentiality**

- a) The DoCSE shall not, without the consent of MOHSW, divulge any matter concerning the HIS which comes to his knowledge in the course of or incidental to him during and after the contractual period except so far as may be necessary and proper for the conduct of the MOHSW business. The DoCSE pledges himself to absolute secrecy on all such matters.
- b) DoCSE shall hand over to the MOHSW at once on the termination of this contract without restriction, exception or reservation of all documents and equipment which are held by him acquired directly or indirectly during the contractual period in its widest sense
- c) In the event of non-observance or contravention by the employee of paragraph (a) and (b) above; both parties shall be personally liable for any damage one may suffer or have suffered as a result of the other non-observance or contravention of the said provisions.

## **6. Copyrights**

All rights over the documents, notes, papers, records or other publications of whatsoever nature in any material produced under the provisions or in the execution of this memorandum are protected by the copyrights laws of Tanzania and shall be vested jointly to the ICT and Monitoring and Evaluation sections of the MOHSW and the DOCSE.

## **7. Reporting Requirements**

The Joint Technical Committee shall be required to furnish a report to the parties on monthly basis and annual basis. The report among other things shall provide the details of the activities done, success and problems encountered and how they were solved with ostentation examples. That DoCSE will advise the MOHSW on the best and cost effective means of solving the unsolved problems. The parties may provide requirements as to the contents of the report and shall be compiled thereof.

## **8. Communication and Designated Officers**

8.1 All communication between the parties about this contract shall be forwarded to the herein mentioned address for the attention of both the Assistant Director, Monitoring and Evaluation Section (in case of HIS related issues)– MOHSW or the Head of ICT-MOHSW (in case of ICT related issues) and the Head of DoCSE.

8.2 The Ministry of Health and Social Welfare has designated the following responsible officers who is authorised to take action of the substance or content of this contract

## **9. Officer in-charge of the assignment**

*Designation:* Chief Medical Officer (CMO)

The officer in charge of the assignment has nominated the following officers who will have the day to day responsibility to facilitate the timely delivery of various outcomes of the assignment

### **9.1 Implementation Officers** for the Ministry of Health and Social Welfare

*Designation:* Assistant Director, Monitoring and Evaluation Section (in case of HIS related issues)

&

*Designation:* Head of ICT, ICT Section (in case of ICT related issues)

### **9.2 Implementation Officer** for the University of Dar es Salaam

*Designation:* Head, Department of Computer Science and Engineering

## **10. Duration of the Memorandum**

The Memorandum shall last for a period of five (5) years from the commencement date, and may be subject to two (2) years interim review and or renewal upon successful completion of the term of the Memorandum

**11. Commencement Date of the Memorandum**

This Memorandum shall come into force at such date as the parties will sign it unless otherwise expressly stated by the parties at such time of signing this Memorandum.

**12. Termination of Contract**

That the Memorandum shall be terminated where there is fundamental breach of terms and conditions of these presents. That either party to the Memorandum may terminate it after serving the other party three (3) months' notice stipulating the reasons thereof and the terms of termination negotiated.

**13. Dispute Settlement**

The parties to the Memorandum of Understanding agree that whenever a dispute arises in respect of any term and condition of or as to the Memorandum, the dispute shall be solved amicably by the parties and where the parties fail to solve the dispute amicably shall be referred to reconciliation or mediation then to the arbitration and that litigation will act as a last resort.

**14. Applicable Laws**

This Memorandum shall be governed by Tanzania Laws

**IN WITNESS WHEREOF**, both parties have agreed to all the terms and conditions of this Memorandum of Understanding and hereby set their hands respectively against the dates hereinafter indicated to execute these presents

**Signed and Delivered for the Ministry of Health and Social Welfare**

Name: Dr. Donan Mmbando

Designation: Permanent Secretary

Signature: .....

Date.....

**Signed and Delivered** for the **University of Dar es Salaam**

Name: Prof. Rwekaza S. Mukandala

Designation: Vice Chancellor

Signature: .....

Date: .....

# Annex B: Non-HMIS Indicators Data Entry Form

## Taarifa ya Mwezi ya Viashirio ambavyo havipo kwenye HMIS

Jina la Kituo: ..... Wilaya: ..... Mkoa: ..... Mwezi: ..... Mwaka: .....

Na	Kiashirio	Idadi	Jumla (2a+2b)
	OPD		
1	Idadi ya wateja wenye kipato kidogo waliotambuliwa kwa utaratibu wa TASAF waliopata huduma za afya za wagonjwa wa nje	6	
	<b>Uchunguzi wa kifua kikuu</b>		
2	Idadi ya wateja waliohiswiwa kuwa na maambukizi ya ugonjwa wa kifua kikuu na kupewa rufaa kwa vipimo zaidi	12	
	<b>Viashirio vya jamii</b>		
3a	Idadi ya vifo vya akina mama wajawazito/wazazi vilivyotokea katika jamii na vikatolewa taarifa kituoni na wahudumu wa afya wa jamii au wakunga wa jadi ndani ya masaa 24 tokea kilipotokea		
3b	Idadi ya vifo vya watoto wachanga (ndani ya siku saba za kuzaliwa) vilivyotokea katika jamii na vikatolewa taarifa kituoni na wahudumu wa afya wa jamii au wakunga wa jadi ndani ya masaa 24 tokea kilipotokea		0
4	Idadi ya akina mama wajawazito waliosindikizwa kituoni na mkunga wa jadi au mhudumu wa afya wa jamii kwa ajili ya kujifungua kituoni.	15	
5	Idadi ya kaya zilizotembelewa na wahudumu wa afya	150	

Note, because the form is longer than a computer screen, this figure only presents a partial view of the data entry form.

## Annex C: Quantity Verification Data Entry Form

Quarterly Health Centre/Dispensary Data Verification Form

SN	Indicator	APR		MAY		JUN		Total Declared (Rep.#)	Total Verified (Ver.#)	Difference	%Error	Unit Fee (Tsh)	Quarterly Provisional Total Amount	Loss Due to 10% & Above Error	Actual Quantity Amount
		Rep.#1	Ver.#1	Rep.#2	Ver.#2	Rep.#3	Ver.#3	(Rep.#1 +Rep.#2 +Rep.#3)	(Ver.#1 +Ver.#2 +Ver.#3)	(Rep.#- Ver.#)	%(Rep.#- Ver.#) / Rep.#				
1	OPD: Number of new Outpatient consultations	322		317		360		999	0	999	100.0	415	0	0.00	0
2	OPD: Number of poor individuals (from TASAF register) who received outpatient care	0		0		0		0	0	0	0	1240	0	0	0
3	ANC: Number of first antenatal visits, with gestation age < 12 weeks	12		16		13		41	0	41	100.0	8290	0	0.00	0
4	ANC: Number of pregnant women attending ANC at: least 4 times during pregnancy	12		9		15		36	0	36	100.0	6210	0	0.00	0
5	ANC/MALARIA: Number of pregnant women receiving two doses of intermittent presumptive Therapy of Malaria (IPT2)	40		46		40		126	0	126	100.0	1240	0	0.00	0
6	PMTCT/HIV: Number of HIV positive pregnant women receiving ARVs	0		0		0		0	0	0	0	3310	0	0	0
7	LABOR/DELIVERY: Number of institutional deliveries	5		6		14		25	0	25	100.0	20720	0	0.00	0



## Annex D: HC and Dispensary Quality Assessment Data Entry Form

Note, because the form is longer than a computer screen, this figure only presents a partial view of the data entry form.

Summary of Quarterly Quality Activities/ Areas Assessment Results of the Facility

N	Dimension	Possible Maximum	Obtained Points	%	Observations
1	Hygiene and sanitation	<input type="text" value="9"/>	<input type="text" value="9"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
2	Privacy	<input type="text" value="4"/>	<input type="text" value="4"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
3	Water supply	<input type="text" value="4"/>	<input type="text" value="4"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
4	Waste management	<input type="text" value="6"/>	<input type="text" value="6"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
5	ANC	<input type="text" value="13"/>	<input type="text" value="13"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
6	Labour ward	<input type="text" value="13"/>	<input type="text" value="13"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
7	Post-natal care	<input type="text" value="9"/>	<input type="text" value="9"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
8	Maternity death audits	<input type="text" value="10"/>	<input type="text" value="10"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
9	Perinatal death audits	<input type="text" value="10"/>	<input type="text" value="10"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>
10	Family planning	<input type="text" value="17"/>	<input type="text" value="16"/> <input type="button" value="Select..."/>	<input type="text" value="94.1"/>	<input type="text"/>
11	Immunization	<input type="text" value="7"/>	<input type="text" value="7"/> <input type="button" value="Select..."/>	<input type="text" value="100"/>	<input type="text"/>

## Annex E: CHMT Assessment Data Entry Form

Note, because the form is longer than a computer screen, this figure only presents a partial view of the data entry form.

Summary of the CHMT RBF Quarterly assessment Results of the District

N	ASSESSED ACTIVITIES	Available Points	Attribute Points	%	Observations
1	100% of facilities Monthly HMIS reports timely and completely entered into DHIS-2	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
2	Average (mean) number of tracer medicines available in RBF facilities	<input type="text" value="20"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
3	Council Progress Reports for all HF's produced submitted to PMORALG and MOHSW on time	<input type="text" value="5"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
4	Health Facilities with qualified staff	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
5	100% of HF's have received comprehensive supportive supervision visit at least once per quarter	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
6	CHF enrolment rate increase in the council	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
7	Compiled quarterly financial report of all HF's enrolled in RBF	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
8	Planned preventive maintenance conducted quarterly as budgeted in CCHP [For facilities enrolled in RBF]	<input type="text" value="15"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
9	Health Facilities Maternal deaths Audit by CHMT	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
10	Health Facilities perinatal deaths Audit by CHMT	<input type="text" value="10"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>

## Annex F: RHMT Assessment Data Entry Form

Note, because the form is longer than a computer screen, this figure only presents a partial view of the data entry form.

Summary of the RHMT RBF Quarterly Assessment

N	Assessment Activities	Available Points	Attributed Points	%	Observations
1	Spearhead the verification process of the RBF in the region	10	<input type="text"/> Sele... ▼	0	<input type="text"/>
2	RBF data management and Quarterly HF's RBF data timely entered in the database	20	<input type="text"/> Sele... ▼	0	<input type="text"/>
3	Participation in R-RBFC quarterly meetings	15	<input type="text"/> Sele... ▼	0	<input type="text"/>
4	Management of motivation Agreements	10	<input type="text"/> Sele... ▼	0	<input type="text"/>
5	Timely submission of regional quarterly report	5	<input type="text"/> Sele... ▼	0	<input type="text"/>
6	Quarterly report assessment results.	10	<input type="text"/> Sele... ▼	0	<input type="text"/>
7	Regional Management Supportive Supervision for CHMT (RMSS-H) implementation rate	10	<input type="text"/> Sele... ▼	0	<input type="text"/>
8	Regional Management Supportive Supervision for Regional Referral Hospital Management Team (RHMS-H) implementation rate	10	<input type="text"/> Sele... ▼	0	<input type="text"/>

# Annex G: RAS Assessment Data Entry Form

## Summary of Regional RBF Quartely Assessment

ASSESSMENT OF REGIONAL SECRETARIAT OFFICE QUARTELY

REGION:

N	ASSESSED ACTIVITIES	Available Points	Attributed Points	%	Observations
1	Timely and Completeness of data entry	<input type="text" value="50"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
2	Timery R-RBFC Quartely Meetings	<input type="text" value="25"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
3	Timely transmission of approved Quartely Consolidated Invoice to the NHIF	<input type="text" value="25"/>	<input type="text"/> Sele... ▼	<input type="text" value="0"/>	<input type="text"/>
<b>TOTAL</b>			<input type="text" value="0"/>	<input type="text"/>	

|

# RESULTS-BASED FINANCING IN TANZANIA: GENERATION, AVAILABILITY, QUALITY, MANAGEMENT, AND USE OF DATA

## OVERVIEW AND REFERENCE DOCUMENT