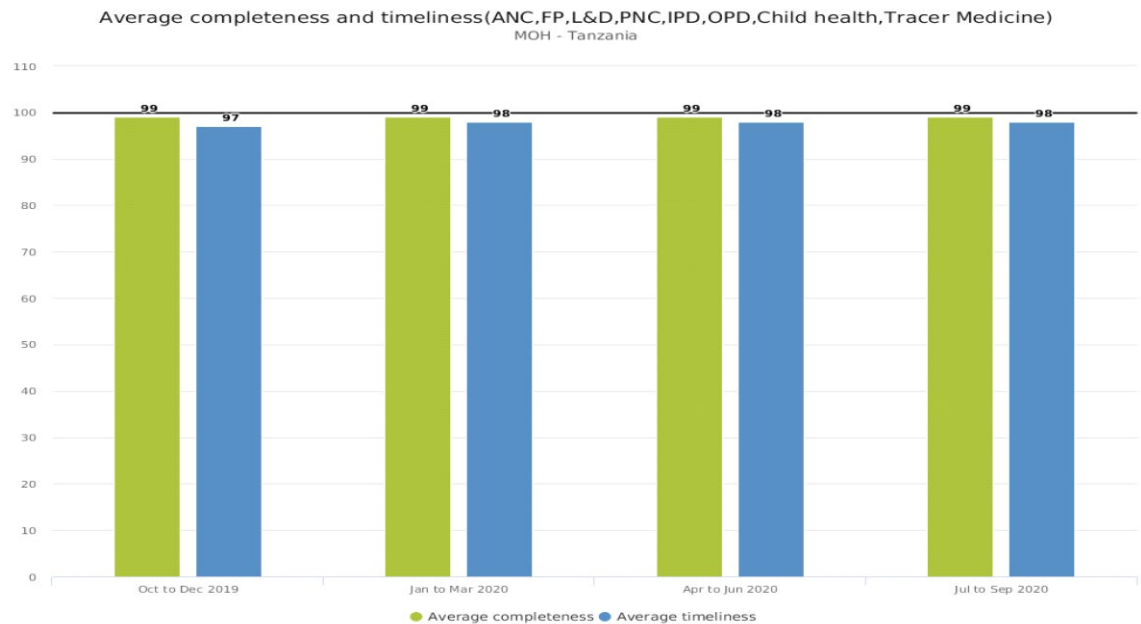# UNITED REPUBLIC OF TANZANIA

## MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT, GENDER, ELDERLY AND CHILDREN (MOHCDGEC)

## Health Data Collaborative (HDC) Implementation Report



Average completeness and timeliness(ANC,FP,L&D,PNC,IPD,OPD,Child health,Tracer Medicine)
MOH - Tanzania

## December, 2020

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## 6. 1.0 Foreword

Tanzania has been in front-line to implement Heath Data Collaborative (HDC) by aligning international funding  and implementing partners  to support country health data initiatives.

Since the launch of HDC in September, 2017 the Government of Tanzania has developed strategies, guidelines and Protocols in order to bring all health data partners under one umbrella to support strengthening  of routine data in order to deliver reliable and high quality data. Among key documents that has been made available for use including the Health Information System Guidelines 2018, Monitoring and Evaluation Strategic Framework (M&E SF). eHealth strategy  and Tanzania Digital Health Investment Road Map.

There has been availability of financial support from our  reputable partners globally as well as good collaboration  from our implementing partners including the Non Government Organizations (NGOs), Private Sector, Faith Based Organizations (FBOs), Research institutions and private researchers, Universities and Civil Service Organizations (CSOs).  On the other hand Tanzania through Health Data Collaborative (HDC) has been in good collaboration with international technical assistance who support Tanzania health data initiatives.  There has been high support from the Government through providing good working environment, commitment of Ministry high leaders, program managers who demand data on daily bases. Further more health staff are committed with higher adherence to learn and follow guidance provided from the high levels.

Despite the fact of all these support and initiatives yet the country is working hard to transform data from manual paper based to electronic Medical Records (eMR). There are number of challenges that the government is addressing including availability of electricity especially in rural health facility, reliable of internet connectivity, choice of appropriate software among mushrooming software, client identification codes to avoid double counting or lost follow-up due to client change  in health facility. Procurement of computer, computer accessories and Local Area Networking (LAN), ICT knowledge to manage databases among health staff. The Government of Tanzania is inviting the global partners to join hand on support of the country. The door is open to Technical Assistance, Financial support and implementing partners as well as research institutions.

## 2.0 Introduction

### 2.1 Back ground of HDC and why Tanzania Decided to join HDC

The Government of Tanzania is committed to improve quality of health data for evidence-based decision making and to strengthen capacity to track progress towards the health-related Sustainable Development Goals. The country has taken major significant progress towards improving availability, access, analysis and use of health data, it recognizes the need for more coordinated and collaborative efforts of all stakeholders to unleash the full potential of its health information system. This aimed to reduce fragmentation and duplication of efforts, improve the efficiency of investments and build confidence in the national health data system.

### 2.2 Tanzania Historical process and Governance Structures of the THDC

The Government launched the Tanzania Health Data Collaborative in Dar es Salaam on the 11th September 2017. As a Global initiative to harmonize health resources for effective and efficient use for high impact. This is a collaboration of Government of Tanzania, represented by Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) and the President's Office Regional Administration and Local Government (PORALG); Health Sector Stakeholders; and Global Partners.

### 2.3 Documents to support implementation of Health Data collaborative (HDC).

Key Documents to support implementation of Health Data collaborative (HDC) Including. Tanzania Development Vision 2025. Health Policy 2007, Health Sector Strategic Plan 2015-2020, Health Information System Guidelines 2018, Monitoring and Evaluation Strategic Framework (M&E SF) 2020-2025. eHealth strategy 2018- 2024. Tanzania Digital Health Investment Road Map 2017-2023, Tanzania Health Data Collaborative Launch Communiqué.

## 3.0 Priorities of the Tanzania Health Data Collaborative

### 3.1 Addressing fragmentation of M&E and data systems:

Currently the health system experiences multiple data collection tools which are in use across programs, tools are not coordinated which create repetition on data collection at facility level. As a result, heath workers are overburdened with data collection responsibility. On the other hand, there are over 160 software scatted across the country which are not harmonized and do not share data. Most of software are standalone operated in one facility (hospital, Health Centre or Dispensary) others are program based e.g. HIV/AIDS use CTC2 and CTC, logistics management (eLMIS), Immunization (TIMR/VIMS), Laboratory services (LMIS), while planning and reporting (Plan Rep). To address this priority the government is implementing eMR to replace paper work in the health Sector.

### 3.2 Alignment of indicators and data collection processes:

There are multiple data collection tools and over 600 list of indicators across the Health Sector.

Indicators are program based to save government interest but there are multiple sets of indicators deployed to save Funding Partners for international comparison. Due to high demand of indicators some tools are improvised to cutter need for external needs. The government will work to harmonize indicator definitions, source of data, numerator and denominator and reporting interval.

### 3.3 Alignment of health facility assessments and surveys e.g. SARA, SPA, SDI, and Health Facility Star Rating Assessments (BRN&SafeCare):

Number of health facility assessment and surveys are conducted, most of these studies are designed to meet international requirement on periodicity and content for comparison purpose. The government use study findings specifically to track outcome and impact indicators. Therefore, there is a need to harmonize these studies to come up with a research schedule across the Health Sector.

### 3.4 Joint and aligned investment in digital health information systems

The county is working to introduce use of electronic system in the health provisions. To enhance the government, need to have digital health investment plan that will align funding and implementing partners across the Sector. The government is working to overcome challenges facing facilities including internet connectivity, electricity and selection of appropriate ICT solutions and capacity to manage systems

### 3.5 Strengthening capacity for analysis and use of data:

There are rampant data in the health sector collected at each facility, but data use is limited. In some cases, decision is not data based. On the other hand, capacity on data analysis at lower level is a challenge on the other hand massive data analysis and triangulation is a challenge in the health system. Dissemination is limited and data communication to decision maker are challenges, therefore the government is working to strengthen Data Dissemination and Use

### 4.0.0 Progress made on implementation of HDC up to December 2020

### 4.1.0 What has been done to address fragmentation of M&E and data systems:

### 4.1.1 The role of ICT and M&E Technical Working Group on overseeing data mining harmonization process

To date Tanzania has over 170 fragmented electronic systems operating as standalone at health facility (Hospital, Health Centre or Dispensary) or operate in few facilities. There are eMR systems which operate countrywide but are program specific such as TIMR/VIMS for immunization, CTC2& CTC3 for HIV/AIDS, electronic Logistic Management System (eLMIS), Laboratory Management Information System (eLMIS), Planning and reporting (PlanRep), etc.

The ICT and M&E Technical Working group has documented the ICT investment roadmap 2017-2023, set minimum criterions for software acceptance and minimum requirement and cost for

investment at each level of health facility (hospital, health and dispensary). On the other hand, enterprise architecture has been documented to guide digital health implementation. The ICT is developing the Health Information Mediator (HIM) which will save as the central repository for alignment of all health software. As of now the Afya- Care and GoT-HOMIS has been approved for scale up country wide. All these initiatives are guided by the electronic Government Agency (eGA)

### 4.1.2 The role of ICT and M&E Technical Working Group on overseeing data analysis dissemination and use

The Government has launched the Health Information Guidelines 2018, the purpose of the document is to bring all Health Stakeholders to implement one health information system across the health sector. The guideline stipulates among others on data ownership, data sharing, data security, data dissemination and publication, the role and responsibility of each stakeholders and roles at different levels of the Health Sector.

The Monitoring and Evaluation Strategic Framework (M&E SF 2020 -2025) has been endorsed for use, the document align the government data initiatives, funding partners and Implementing partners to support One M&E Plan. The document stipulates how various sources of data such as routine, periodic demographic surveys, Health facility assessment, surveillance's, CRVS and managerial data will be operated. The document stipulate key interventions to be undertaken under several work packages and data initiatives mile stones, Furthermore, the document guide on data analysis, dissemination and use.

### 4.1.3 Increased data alignment, collaboration and coordination within the Government, Development and Implementing Partners

The District Health Information Software (DHIS2) has been agreed and is operating as the national outlet of all health indicators. There are over 50 health interventions, over 600 indicators and 3,000 data elements which can be displayed by facility, council, regional or nation. Data display is done by program specific using the predetermined template to assist managers to access data without need for high level of computer knowledge.

DHIS2 is the web-based platform which use to capture summary data collected from hard copy registers. Data entry is done at council levels or to same facilities with computer, electricity and internet. DHIS2 has data entry screen and data display. Currently, there is an embordered DHIS2 dash board which give quick reaction to supervisors upon data entry error or un expected program performance. There are customized pivot table report, standard report and GIS reports also embedded in. To access these features one need password. However, the free display of data without need for password has been made available through the DHIS2 web portal and Score cards, these futures are available worldwide through Google or search *"Tanzania HMIS"* these futures allow stakeholders to access semi processed data

As of Early 2020, WHO supported Tanzania to develop Cross Cutting Dashboard. The dashboard has been customized to give optimal set of indicators for managers to view at one instar where all health programs can be seen. On the other hand, WHO has provided technical assistance to Tanzania to customize WHO data quality validation into Tanzania data environment. The first orientation of the data quality validation was conducted to 25 reginal and Council HMIS Focal persons. The results of this training were beyond expectation, participants recommend positively and requested the ministry for national rollout training countrywide to health data managers.

The plan to link DHIS2 with the Health Information Mediator (HIM) is ongoing. As the country is rolling out eMR therefor patient records will be aggregated into HIM as a data warehouse where DHIS2 will mine required data to display indicators.

### 4.2.0  Alignment of indicators and data collection processes:
### 4.2.1 The Health Sector Indicators Alignment with the Global indicators and the process of formulation of new proposed HSSP V indicators
Tanzania Health Sector indicators are aligned with the Global Health Indicators such as the Sustainable Development Goals (HDC). At National level the Health Sector Strategic Plan IV (2015 -2020) stipulate high level Health Sector indicators which track the health status (mortality, fertility, and nutrition status), water and sanitation, and behaviour indicators. It tracks system   strengthen, input, process, output and outcome indicators. Currently the Sector has conducted Mid Term Review of the (HSSP IV- 2015 -20) and found good progress to attain the SDGs indicators. Currently the Sector is developing the HSSP for the implementation period of 2020 t0 2024.

### 4.2.2 Coordination of Health Indicators Across the Health Sector
The Health Sector has developed a comprehensive list of 600 indicators that are in use at central and sub nation to assess planning, implementation and results of international as well as outcome and impact indicators. Each indicator is assigned with an indicator definition, Numerator, Denominator, frequency of production and source of data.

### 4.2.3 Discuss how routine health indicators has been customized into DHIS2 data base
The Ministry of Health Selected Key Health indicators from national list of indicators and customized them into DHIS2, where they are used for routine reporting of progress made in delivering of health services across the Health Sector. Through analysis these indicators are being used in developing various reports such as the Annual Health Sector Performance Profile, Statistical Tables and Figures, Pocket book and Vital Statistics Report. Which has been produced on annual bases.

### 4.2.4 Discuss data collection process in the Health Sector, data follow from facility to National level
Health Information System Guidelines states that institution-based data for most health facilities

and all communities is collected on paper, summarized, and transmitted to the councils. Council Health Management Teams (CHMTs) enter the data into DHIS, oversee the quality of data and provide supportive supervision to the facilities. Regional Health Management Teams (RHMTs) provide oversight and technical support to councils. Regional Referral Hospitals (RRH) receive supervision and technical support from the MoHCDGEC. At the national level, the MoHCDGEC is responsible for setting data collection procedures, including any changes to data collection tools, and for ensuring the quality of data collected through MTUHA.

All data submitted by health workers at the community level shall be checked and verified by the facility in-charge before submission to the next level, where electronic data entry technology is available the facility in-charge shall accountable for data quality checks to ensure timeliness, completeness, consistency and accuracy before submission to the next level.

### 4.2.5  Discuss on Community data (Book 3) and CRVS
Before 2017, book number 3 was missing some basic information on the activities of health events that occur and affect the community. So, the book was revised and added to that information. Book number 3 collected information that was recorded once a year through book number 10, in view of the amount of monthly reports, the book has been updated while focusing on reporting monthly, quarterly and annual reports.

The Ministry of Health in collaboration with other Ministries and partners has continued with efforts to integrate Verbal Autopsy (VA) into national Civil Registration and Vital Statistics Systems (CRVA). Efforts to institutionalize verbal autopsy have been undertaken by integrating VA training materials into existing curricula for staff with additional responsibilities for VA, this will help to maintain high standards of VA as implementation is scaled up.

The verbal autopsy pre-test was implemented in ten wards across three regions (Pwani, Tanga, and Morogoro) starting in May 2017 to now. Results from the pre-test implementation of VA in these wards confirmed the technical feasibility for further implementation. After these successful pre-test results a demonstration scale implementation was conducted in Iringa region starting in November 2018.

Therefore, from the successful results the Ministry of Health has developed a national verbal autopsy implementation plan to provide a road map for scaling up Verbal Autopsy to other regions through a national representative sample. This will ensure the routine reporting of verbal autopsy data into HMIS system.

### 4.2.6  Discuss on annual review of HMIS indicators.
Annual review of HMIS tools is conducted by harmonizing indicators and data collection tools so as to integrate paper tools (including all disease programs, WASH). There are also efforts to reduce duplicate data reported over time to minimize the impact on health staff shortage. Update of Tanzania ICD-10 codes list, guidelines for causes of deaths has been done. Development of

comprehensive guidelines and training materials to train health workers on ICD-10, data quality assessment and other programs has been implemented.

## 4.3. 0 Alignment of health facility assessments and surveys e.g. SARA, SPA, SDI, and Health Facility Star Rating Assessments:

### 4.3.1 Existing plan to conduct Health Surveys

The National Bureau Statistics (NBS) maintains a Tanzania   Statistics Master Plan (TSMP). The Health Sector is responsible on health-related surveys such as Population-based Health Surveys, Health Facility Assessment and House Hold Surveys   to provide information on service coverage, equity, and population health outcomes.

### 4.3.2 Status of surveys for the year 2018 to 2020

Over the last 10 years, Tanzania has completed a range of surveys that provide data to inform health monitoring and evaluation. As of year, 2018 to 2020 Tanzania has conducted several surveys such as; -

| No. | Survey Title | Year | Status |
|-----|--------------|------|--------|
| 1 | Service Availability and Redness Assessment (SARA) | 2020 | On going |
| 2 | Tanzania Demographic Health Survey (TDHS) | 2020 | On going |
| 3 | School Malaria Parasitological and Nutritional Survey (SMPNS) | 2019 | Report in place |
| 4. | Service Delivery Points (Family Planning) | 2020 | On going |
| 5. | House Hold Survey (HHS) | 2018 | Report in place |
| 6. | Malt- dimensional Poverty Index | 2019 | Report in Place |
| 7. | Verbal and Social Autopsy Study on Child Mortality | 2018 | Report in place |
| 8 | Global Adult Tobacco Survey (GATS), | 2019 | Report in Place |
| 9. | Analytical Report of the Health Sector Strategic Plan (HSSP IV 2015- 2020) | 2019 | Report in place |
| 10. | Poverty Status Report (PSR) Annual report on Poverty Elevation and SDGs | 2019 | Report in Place |
| 11 | STEP Survey | 2020 | On going |
| 12 | National Health Account | 2020 | On going |
| 13 | TB drug resistance survey | 2018 | Report in Place |
| 14 | TB patient costs survey catastrophic cost | 2019 | Report in Place |

| 15 | HIV/AIDS drug resistance for Adults and Children | 2020 | On going |
|----|--------------------------------------------------|------|----------|
| 16 | HIV and Syphilis prevalence rate among Antenatal care mothers | 2020 | On going |

### 4.3.3  Harmonization of Research and Surveys across the Health Sector

Tanzania Health Surveys lack harmonization and fail to benefit from synergy this could partly be due to a lack of flexibility among programs and supporting partners whose priority is to conform to multi-country specifications rather than local integration. As of now the National Institute for Medical Research (NIMR) which is mandated to coordinate all scientific health evidences, medical researches and biomedical trials working with other institutions including Ifakara Health Institute (IHI), Health Universities that conduct medical trials has developed the National Health Research Agenda 2019 to 2024 to set health research priorities across the Health Sector. NIMR has Research Ethics Committee (REC) – also called an Institutional Review Board (IRB) chaired by the Chief Medical Officer.

The Monitoring and Evaluation (M&E) Section under the Policy and Planning Department is mandated to coordinate all Operation health research, Demographic and health surveys, Health facility assessment, Health surveillance and Sentinel sites. The M&E work with health programs to plans, conduct situational analysis/need assessment, midterm, end of term, outcome and impact evaluation of health sector and health programs.

The ministry through NIMR and M&E Section is responsible to align all partners conducting health researches and surveys, funding partners, track budget allocations for health research ad surveys, track research findings and conduct forums for transforming research findings to action so as to ensure research findings benefit Tanzanian and support on decision making and policy formulation.

Tanzania is working to harmonize all surveys though development of the National Health Survey Agenda in line with the National Health Research Agenda under support of HDC to align funding partners across the Health Sector.

### 4.4.0 Joint and aligned investment in digital health information systems

### 4.4.1 Explain Health Information Mediator (HIM) Plan

Scatted and uncoordinated multiple digital solutions is a challenge in the Sector to accumulate all data sources in order to generate required indicators.  Assessment conducted of recent expressed that most digital solutions are not web based as they are stand alone.  The Ministry has introduced Health Information Mediator (HIM) to function as a central data depository where all system are required to push data to HIM. Software which are not web base will be installed by API solution for connectivity.

### 4.4.2 Opportunities available to support ICT infrastructure roll out

According to the World Bank Head Quarters on 1st July 2020 Tanzania moved to Lower Middle-income status, these provide good environment for digital health roll out. Over 80% of household in Tanzania has one or more handsets, over 80% of villages today are connected to Tanzania electricity grid. Over 30 percent of the population use internet. The government has connected all councils with national fiber cable. The National data centre and the eGA spearhead all ICT endeavors. On the other hand, Tanzania has good environment to work with funding, implementing and Technical Assistance to assist road-map for Digital health strategy.

### 4.4.3 Explain mail stones on digital health initiatives including initiatives in place to rollout eMR, explain the rollout plan

Tanzania has a roadmap where five stages have been identified. Currently is at stage two of implementations as shown on the figure bellow.



As of now the road map for eHealth strategy 2018- 2024 is in place investment is in place, the enterprise architecture and Health Information Mediator (HIM) is in place. The digital health plan with costed is available to stimulate health facilities, councils and programs to invest on implementation of digital health on the other hand the documents has been shared to health stakeholders to support the government on roll out.

### 4.4.4 Initiative to integrate data eMR data from National, Specialized, Zonal Referral and Regional hospitals to DHIS2

The implementation of eMR in the big hospitals such as National hospital, specialized hospitals

and Zonal hospitals started early. The situation analysis conducted depicted that stand-alone software are used in those facilities which are not connected to web base. Therefore, the ICT unit in the Ministry working with partners is putting in place to ensure interoperability and data linkage to the Health Information Mediator (HIM)

### 4.4.5 Challenges facing Digital Health Initiatives plan
The main challenges facing Digital health investment are existing of parallel and uncoordinated initiatives and mostly are program centered, lack of national rollout plan, unreliable network in facilities as the national fiber cable is still not connected, some facilities have no power supply. Shortage of staff to manage ICT at health facility level and challenge of unique patient identifier in order to avoid the existing double recording and dropout due to patient change of health facility

## 4.5.0 Strengthening capacity for analysis and use of data:

### 4.5.1 National Data Quality Assessment (DQA) guidelines
The Ministry has developed Data Quality Assessment (DQA) guidelines to guide data management at facility, council, regional and national levels. The National DQA has performance indicators and system assessment indicators. The Global Fund under RSS supported training to regional, councils and health facility Staff. DQA is conducted in routinely in health facilities. Initially in year 2016 the first national DQA data verification was conducted by the Internal Auditor General (AIG) the result was 45% data quality level from routine data. Efforts were put in place by year 2019 result was 84%

### 4.5.2 Discuss on management of data at facility level including the facility in charge data quality check book
To support data quality in year 2018, the facility data quality check book was introduced where head of departments and service delivery point manage it on daily bases. The facility in charge has responsibility to validate on weekly bases and rank performance. During CHMT, RHMT of National supportive supervision routes the facility data quality check book is validated where human error are collected and system issues are forwarded to the higher level for solution.

### 4.5.3 Discuss on capacity building conducted to regional and council staff on data analysis and use
Data Analysis, Dissemination and Use (DDU) is one of the key components towards data quality attainment. The Ministry has oriented regional and council staff on data analysis from DHIS2 and other software.

### 4.5.4 Data review at regions and councils
The misty has stimulated forms for data review and is conducted on quarterly, Semiannual and Annual at regional and council levels. Data review working session at council levels attended by members of Council Health Management Teams (CHMTs), Facility in charges and implementing partners to discuss data and make common plan. Each council is located by the regional mentor

which also attend the meeting. At regional level the data review is attended by the members of Regional Health Management Teams (CHMT), Representative from CHMTs and implementing partners

### 4.4.5 Discussion on the annual National, Region, District and Facility health performance profile publication

To enhance data use and consistence of data the health sector has introduces national, regional and council annual health profile. This is a report to be available on the website with all key indicators that will enable one to know the profile of the area. Regional and council staff has been oriented on development

### 4.5.5 Discussion on supportive supervision conducted and on job training on data management

Currently supportive supervision is conducted in parallel by interventions. There is existing integrated supportive supervision which is conducted in collaboration with partners. The government is working to harmonize all supervisions in order to track process and management efficient use of resources

### 4.6.0 Dissemination and access:

### 4.6.1 Explain how DHIS2 has perpetuated health managers and health staff to use health data

Collected data from the field through research and survey or routine data systems are not well disseminated. Use of paper based discourages one to perform analysis. Introduction of DHIS2 which currently comprise over 46 health programs has motivated health staff at councils, region and national level to retrieve data for analysis as well as health staff in facilities hose use DHIS2.

### 4.6.2 Facility assessment, population and Health Surveys.

Reports generated from facility assessment and health survey are disseminated at a wide range of stakeholders. These reports are produced periodically and use to assess milestones on outcome and impact. These reports are key in policy formulation and for international comparison while routine

### 4.6.3 Describe cross-cutting dashboard

Tanzania working under Technical assistance from WHO and the support of Global Fund has introduced a cross cutting dashboard. The dashboard is intended to program managers and decision makers who can assess data summarized in a list of indicators without need of high level of computer knowledge. The country is looking to disseminate up to the council level for effective and efficient use of data.

### 4.6.4 Describe how Tanzania health data is accessed on the web portal and Score cards

Accessing DHIS2 data need credentials. The ministry has developed web portal and score card to facilitate accessibility of data without need of credentials. The web portal portrays emerge of a

DHIS2 dashboard with data validated while a dashboard has roll data entered by health staff. On the other hand, Score card is a ready made template to give quick reflection on health performance across councils or regions or across health interventions. More specific score card is for politicians and high-level government officials. It display in colors where green imply target achieved, orange imply on progress and red color imply more efforts are required.

### 4.6.5 Describe different analytical features available on DHIS2 including the Pivot table, Geo-codes map, Tables, graft and percentage

Among key futures in DHIS2 are Pivot tables, Geo-codes, Tables Graph and percentage. Pivot table display screen template that assist one to retrieve data element or indicator in a well customized set (indicator, geographical location, time margin etc). Standard report is a ready made template which one can select to display in percentage, graph or percentage while DHIS2 also display results in geo-codes. The Ministry has web site [www.moh.go.tz](www.moh.go.tz)  where DHIS2 data linked or it can have accessed through Google link: HMIS

### 4.6.6 Discuss on the Tanzania health digital library

The Ministry is developing the Tanzania health digital library which will facilitate availability and display of health reports and information at one link.


## 5.0 Conclusion and way forward

Tanzania has good collaboration with international community where partners are supporting through technical assistance and financial support. Since the launch of Health Data Collaborative in September, 2017 much has been implement and achieved some set goals. As the way forward, the Government is putting more emphasis on use of electronic Medical Record (eMR) in all health facilities, improving data quality and building capacity on data analysis, generation, desalination and use.   The country acknowledge financial and Technical support globally supporting data initiatives. Tanzania is  further inviting  globally partners for tireless support to the national initiatives.