GUIDELINE FOR HMIS ZANZIBAR

(Draft/June 2014)

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1 CHAPTER 1- INTRODUCTION

1.1 Context of HMIS

HMIS Unit established in 2001 as the integration of three departments of Statistic, Research and Epidemiology Units. HMIS was strengthened in 2004 under health sector reform strategy with great financial and technical support from DANIDA. In attaining modern HMIS, Ivo de Carneri foundation (IDCF) played a critical role in building human capacity by organizing short and long course training on data management (collection, analysis and interpretation) of health information. Furthermore, IDCF supplied necessary equipment for smooth running of HMIS routine activities.

HMIS is a useful source for Local, National and International indicators. This information is a basic management tool and a key input for the improvement of the health status in the country. The HMIS primary objective is to provide reliable, relevant, up-to-date, adequate, timely, and reasonably complete information on health needs, delivery of services, availability and use of resources, and effectiveness of services for health managers at the facility, districts, zones and national level.

The facility level HMIS is a paper-based information system that uses a combination of forms, procedures and analytical tools to convert into routine anonymous data (i.e. data that has no names attached) into useful management information that Ministry at all level can use.

The HMIS is computerized (uses computers) from the level of Districts, but their outputs should be available to facilities. This support function is outlined at the end of each chapter of this guideline.

1.1.1   The Zanzibar health system

A Zanzibar health system is formed by public and private sector. Public sector is formed by1st and 2nd line Primary Health Care Units in both urban and rural areas. In addition, there are cottage hospitals and district hospitals. Mnazi Mmoja Hospital is a major referral point for the islands. There are two additional specialized hospitals Kidongo Chekundu Psychiatric Hospital and wembeladu maternity home.

Zanzibar health Management system is formed in ten health administrative districts under Districts Health Management Team (DHMT) leadership.

1.1.2 *Health Management Information System (HMIS) Position:*

Health Information System is one among the six Health system strengthening building blocks; others are service delivery, health workforce, medical product and technology, health financing, leadership and governance. Health information is key tool for monitoring and evaluating the progress and impact of the health status to deliver comprehensive, equitable and quality health services to Zanzibar population Zanzibar. ZHMIS is designed to be an integrated and comprehensive system of the management of routine and non-routine data from all related sources.

It should be noted that, ZHMIS is only board responsible for routine data collection and also the reliable and sole source of health information in the MoH. As a **basic concept, t**he ZHMIS can be described by the key words ROUTINE, DECENTRALISED, INTEGRATED, SELECTION AND FUNCTIONAL, which can be defined as:

Routine: Collection and processing of HMIS data is continuous and reporting is at specified periods during the year. It is responsibility of Research Unit to organize Research and surveys.

Decentralized: It should be emphasized that, for the HMIS to work the ownership and use of data should be the fundamental mandate of the data generating and compilation level. Data should NEVER be seen to belong to the district level. The health facility and district levels and health programs should understand their data, how to use and store them and that the higher levels will only receive copies of summarized information. If this concept is well understood by all, it is more likely that data outputs will be accurate and timely.

Integrated: Having numerous data tools floating around in HF's leads to increased burden of work for health staff. Therefore, integration of data generating tools to avoid duplication is a necessary component of the HMIS. Furthermore, to avoid parallelism, MoH should have one standardized database that will collect routine health data.

Selection: Data generation is a very expensive duty. As such, it is necessary to select data items to be collected depending on use rather than needs. The HMIS will need to be convincing on keeping the data collection at a sustainable minimum.

Functional: The amount of information collected should be based on the need to identify problems very early on and to respond quickly.

1.2 Who is this guideline

This guideline intended to help different actors within and outside the Ministry of health Zanzibar (MOH). Since HMIS is a cross-cutting in the Ministry, thus, different stakeholders will be affected by this guideline. Among the stakeholders intended for this guidelines are the minimum of the following: Ministry officials, Health program Managers, Health projects and researchers, HMIS focal Personnel, Development Partners, HIS Sub-systems, Officials from HIS units in other ministries will use this guideline and other governments' ministry officials, Every health worker who collects routine data.

1.3 What is the HMIS

The HMIS is a process of converting routine data already collected at the facility into useful population-based information that answers basic questions about the health of the people served. The HMIS has four main components, each of which needs to be functional for the health system to succeed:-

Health	Disease detection and cure, Preventive and health promotion activities
Management	Planning, Monitoring and Evaluation, Human Resources, Equipment and assets
Information	Collection, Processing, Analysis, Presentation, Interpretation and Use
System	Processes, Protocols, Procedures and Job Descriptions

The information collected should primarily used for practical management of Primary Health Care Unit (PHCU), Hospitals services and all other health sectors to Assess Individual Health Needs and Manage Care, Access Health Status, Plan Health Services and Measure Performance and Results. These are more elaborated below:-

1.3.1 Assess Individual Health Needs and Manage Care

The primary purpose of establishing a health system and its support systems, including HMIS, is to provide appropriate health services to an individual. Therefore, the information that HMIS captures must be adequate to assist health professionals in clinical decision making and in providing quality care.

1.3.2 Access Health Status

The assessment of population health and of the factors that influence health requires the availability and analysis of a diverse range of information from within and outside the health sector, including the following:

- Trends and patterns in the demographic profile of populations and subgroups
- Trends in the determinants of health in populations and subgroups
- Trends in morbidity and mortality of populations, subgroups, and ecological and development regions
- Trends in the use of services by populations, subgroups, and ecological and development regions
- Effectiveness of health promotion, protection, and intervention initiatives.

There is plenty of information on morbidity, health inequalities, health status, and health determinants of the population and its subgroups. It is generally possible to see the interplay between health status, health determinants, service utilization, and the effectiveness of services on influencing the health of populations at the country and health facility levels if you have such information. Without this information, it would be virtually impossible to determine health priorities, support the evidence-based approach for target resources through the service planning and implementation processes, conduct health impact assessments, narrow inequalities in health, or demonstrate improvements in health in line with national targets.

1.3.3 Plan Health Services

A primary goal of HMIS is to provide equitable information that best meets the population's priority needs. To achieve this goal, emphasis is placed on the need to strengthen information accountability that results into availability of reliable, timely, and well-defined information which are key management process in Planning Health Services.

1.3.4 Measure Performance and Results

Information collected measure performance and result of health programs, monitoring and evaluation of health sector at National and International indicators (Health Sector Program Support (HSPS), the Zanzibar Poverty Reduction Program (MKUZA) and the Millennium Development Goals (MDGs)).

1.4 Policy Statement:

To strengthen management within the health care system

Objective:

- To establish and implement health management information and evaluation system.
- Establishment and implementation of effective health management Information and evaluation system

1.5 Mission of HMIS

HMIS is to be contributing to the improvement of health outcomes and client satisfaction by supporting knowledge-based decision making at all levels of health sector capitalizing upon appropriate information technology.

1.6 Vision of HMIS

Health Management Information System (HMIS) will be a main source of the most reliable health information with sector wide integrated network, and will continuously support an information-based management process. HMIS will develop into a well-established and standardized professional management Sector, in order to capture quality and up to date health information on the whole spectrum of health care services provided to people

1.7 The Focus of the HMIS

Given the wide-ranging definition of HMIS, the broad focus includes the following:-

- To improve the structure, organization and management of ZHMIS,
- To improve the quality and content of health data and information,
- To enhance automating data registration by applying information technology (IT) infrastructure,
- To publish and disseminate the monthly, quarterly, semiannual and annually statistical reports of population, morbidity and mortality rates,
- To conform with millennium Development Goals and other fundamental policy documents on population health,
- To pursued Health training institutes to include HMIS training in their curriculum
- To assist health professionals in clinical decision making and to provide quality care
- To support the planning, monitoring and evaluation of health services, including human resource management, planning, and resource allocation

- To support the development and implementation of policies and the allocation and use of resources
- To promote, protect and restore the health of public, individuals, special needs groups, and the general population on:-
  - Health status and health determinants
  - Health resources and physical assets
  - Pharmaceutical and health care products.

1.8 The overall scope and objectives of the Zanzibar HMIS

- Develop an efficient HMIS for data collection, management and use which includes and integrates various types of data from different sources including
  - Routine data and indicators from all services, facilities and levels of the health sector as well as from all vertical health programs
  - Semi-permanent data on all health facilities such as service availability, state of maintenance, equipment and staffing
  - Information on human resources
  - Vital statistics
  - Census data and data from relevant surveys such as health and demographic surveys
- To streamline, standardize and improve the data, indicator sets and data collection forms
  - The focus is on "need to know" information rather than "nice to know" information – the aim is therefore to achieve high quality data on the essential indicators rather than poorer quality on "everything"
- To promote information accessibility and sharing to all stake holders as well as to the general public through:
  - DHIS2 which is web based data base for collecting routine health data.
  - Web portal for specific feedback to stakeholders as well as to inform the general public
  - Standardized and customized reports for all levels
  - HMIS bulletin and other publication for general dissemination
- Develop an information culture where information is used and promoted at all levels of the health services for
  - Decision making and services delivery
  - Management, planning and monitoring
  - Performance based management
  - Resource allocation based on data
- Develop human resources so as to fulfill the above goals, including to develop a scheme for continuous training and education of staff

- Exploit the enabling technologies in the collection, processing, analysis, and dissemination of health information.

1.9   What can a HMIS tell us?

The HMIS should answer the classical epidemiological questions "***Who, What, When, Where, Why*** and ***How***" about the health status of the people. This simple process of "epidemiologic thinking" uses a set of indicators that relates the health service activities (numerator) to the population served (denominator).

1.9.1   Who gets sick?

Information about who gets sick is collected on a set of data collection tools, client cards, registers, tally sheets and data input forms. These are disaggregated into age and gender.

Age and gender

The HMIS deals with aggregated, anonymous data; no individuals are identified in the reports. It uses age group and gender information (where appropriate) to ensure that specific target groups are given necessary services. Most preventable illnesses and deaths occur in children under FIVE years, so at a facility the HMIS emphasises the under-five activities as well as pregnant women and high risk groups (youth, women in fertile age etc.).

Coverage of health services

Other important aspect of the HMIS is answering epidemiologic question "***who***" is to emphasis on the people ***who*** need special follow up, particularly those ***who*** do **not** come to services.

"Coverage" is an important concept of PHC and emphasises the need to reach everyone in need of a service. Facilities need to focus on clients **not** reached and plan to serve them through outreach services.

Preventive services	Immunisation, ANC, Insecticide treated nets, growth monitoring, nutrition supplementation, Family Planning
Promotion	Health Promotion, IE&C, Behaviour Change
Curative care	Chronic conditions - HIV/AIDS, TB, Diabetes, Asthma, Hypertension, Sexually transmitted infection (STI) contacts

1.9.2   "What"?

HMIS responds to "What" question by collecting data based on diagnosis or condition which are diseases of local public health importance. Furthermore,

"what" are also focuses on Health program requirements, the Health Sector Strategic Plan (HSSP), MKUZA and the Millennium Development Goals (MDGs).

1.9.3 "Where" do clients come from?

Many illnesses, such as cholera or typhoid, start in a local area and spread from there. Early action, based on knowledge of where patients live, can be a powerful tool to control outbreaks of disease. However, the HMIS data is based upon facility information, so that all information is related to the geographical catchment area of the facility. In addition, the facility register has more detailed information about whether clients come from within the catchment area or from outside.

Maps

Taking advantage of existing well informed Geographical Information System (GIS) shape file plus local knowledge and personal observation allows you to put health data onto that illustrate the catchment area of your facility by hand-drawn on digital sketched maps.

1.9.4 "When" do people get sick?

HMIS data are collected in frequency of weekly, monthly, quarterly and yearly. This frequency enable the portraying the trend of diseases at different period (i.e. months of the year and in different years). Furthermore, to understand seasonal pre-occurrence of the diseases enable planning and preparation of appropriate medicines and equipment supply, and predicting appropriate preventive actions.

For **example, House spraying should take place** *before* **the rainy season to prevent malaria (diagram from malaria)**

1.9.5 "Why" and "how" do they get sick?

The current structure of HMIS cannot directly answer the epidemiological questions "Why" and "How" people get sick. The HMIS provides information to enable researchers to focus on the most important conditions within a given population and to conduct special inquiry into the causes (environment, poverty, behaviours, etc). In this way, HMIS acts as a focusing "lens", asking relevant questions that support the development of local health systems research capacity in each facility.

For example: The Health program will use routine HMIS data as the basis for six-monthly, in-depth investigation into Service delivery, Equipment, Drugs and

staffing levels.

1.10 Guiding Principles

- HMIS will be founded on the demands of principal information users,
- HMIS will conform to policies and developmental priorities of the country, region and the world,
- HMIS will conform to Millennium Development Goals and other fundamental policy documents on population health,
- Human resource development will be an HMIS driving force,
- HMIS will be fully standardized,
- Information generation process will be cost-effective,
- The development of HMIS will rely upon ICT advances and
- Equity will be ensured in HMIS development in both urban and rural settings.

1.11 Motivation

Health Information is one of the six building blocks of any health systems others are service delivery, health workforce, medicines, financing and governance. Therefore, modern HMIS is one very important unit in ministry of health as source of timely and reliable health information. Information plays a central role in supporting strategic goals and in underpinning the principles of the National Health Policy and Plan. In this guideline, Stakeholders from different departments developed the rules and directions on how HMIS will organize and conducted its activities in a clear manner.

2 HMIS SYSTEM ARCHITECTURE

2.1 Organization (Organogram) structure of HMIS

Within HMIS, every stakeholder at different levels has specific functions. Therefore, stakeholder Each stakeholders and each requires information to conduct his/her daily functions in efficient manner.
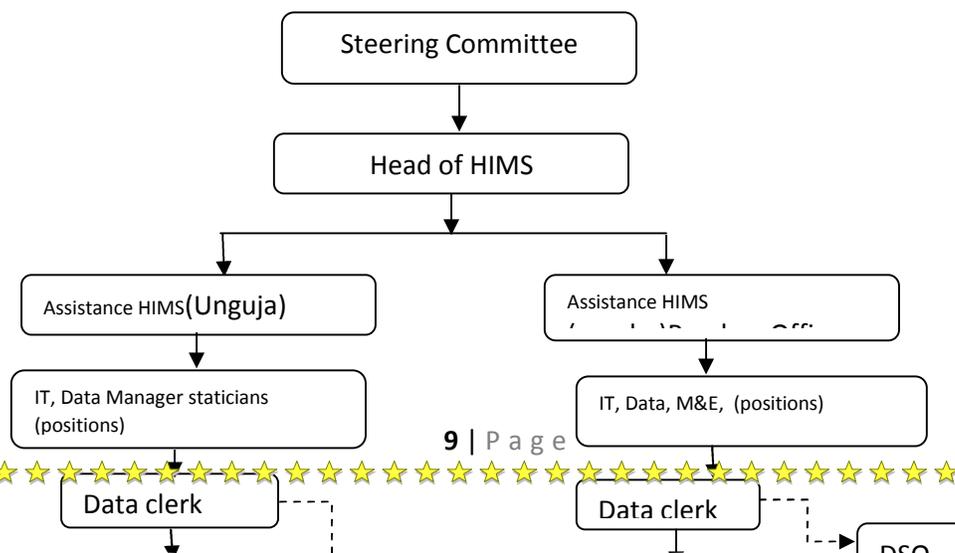
2.2 HMIS Human Resource Requirements (Staffing and Job Description)

2.2.1 Staffing and Training Needs

HMIS should conduct periodic formal assessments to identify new position, staffing and training needs based on demand. The findings of the assessment shall be used for developing responsibilities, capacity building and carrier development purposes. The number and the skills of staff must match with the system requirements as closely as possible. HMIS shall propose to MoH opportunities for advancement for retaining skilled and experienced HMIS staff.

Developing the capacity of the health information system to deliver on the actions requires a significant and sustained investment in human resources. At the minimum, a team with the following qualifications is required:

- Health Informatics
- Demography/statistics/Biostatistics
- Public Health/epidemiology
- Information technology
- Monitoring and Evaluation

Position	Cadre	Number required	Educational requirement
Head Unit	Epidemiologist/ Statistician/ Demographer/Health Informatics/ M&E/ Health Researcher / Public Health/	1	Masters / Degree level with more than 5 year experience at least in the following:- Methodology of HMIS development and operations, health applications, health statistics, health informatics, medical records management, and health survey
Assistant Heads (Pemba and Unguja)	Epidemiologist/ Statistician/ Demographer/ Health Informatics/ M&E/ Health Researcher / Public Health/	2	Degree level or its equivalent, with more than 2year experience related to Health Information.

IT Systems administrators (1 Unguja + 1 Pemba)	IT professional	2	Degree/diploma in IT(or equivalent)
Web and e-content	IT professional	1	Degree/diploma in IT or equivalent
Office Administrator	Administrative Officer	1	Diploma/ Degree Administration
M& E officer – Unguja and	Epidemiologist/ Public Health /	2	Diploma / Degree Epidemiology, Public Health / Environment officer,
Data Manager / Information office (Unguja and	IT Technologist / Public Health / M& E, statistics, records management	2	Diploma / Degree in related field
Senior Data Analyst (Information	Demographer / Statistician/ Biostatistics/Public	1	Degree/ Masters in Demography, Statistics, public health, epidemiology or Biostatistics
Data Clerk	Data clerk	2	Certificate in Basics of Computer

2.3   Data Requirements: /**Information management**

HMIS as health information repository for the MoH Zanzibar has mandate to manage all health information and health related information from other sub-systems within the MoH.

The following are routine "HMIS Data" sub-systems:

- Public health management information system
- Financial management information system
- Supportive service management information system
- Hospital service management information system
- Rapid /needs assessments
- Human resource information
- Physical assets and logistics and supply chain
- Survey, surveillance data and research

However there are some additional health related data collected from other sources outside the MOH (Vital registration, census and national survey). This information is coordinated by HIS but HMIS will gain access.

- **Census** – which provide cross-sectional data that serve as a denominator to most epidemiological measures (e.g. population totals, spatial, age, and sex distributions, etc.).
- **Vital Registration** events, that provides information on fertility, mortality, etc.
- Information on the use of health and medical facilities by patients and similar routine morbidity statistics.
- Ad hoc studies that address particular problems; e.g. the demographic and health surveys.

The combination of these different data sources provides a sense in summary measures used by epidemiologists; e.g. the incidence and prevalence rates.

Coordination: For the smooth running of HMIS, both internal and external coordination is necessary. Coordination and integration is invited from epidemiology (Integrated Disease Surveillance Response -IDSR) and research institutions. Strong coordination is also invited from the basic institutions governing the information system i.e. Office of the Chief Government Statistician (OCGS), to this end is necessitated in two ways:

- The fact that OCGS is responsible for the collection of basic household based demographic and related health surveys, the information of whose are inputs to HMIS that would greatly supplement the PHIS.
- Under Statistics Act No. 9 of 1999, Sect. 6(1) Item (v), Chief Statistician (i.e. head of the Chief Government Statistician Office) is responsible 'to coordinate the activities of various statistical units within different institutions'.

2.4   Core and Common Indicators

The guidelines will manage information pertaining to indicators that have been agreed in different international, regional and national and sectoral strategies. These include MDGs, Abuja declaration, Accra accord, vision 2020, MKUZA, Zanzibar health sector strategic plan III.The MDGs have internationally agreed indicators (48) and target, however this guideline will concentrate only to indicators that are directly linked to health. While MKUZA and health sector strategic plan, indicators are collected routinely. Most of the indicators can be measured at facility level, while others can only be measured at district and other levels. Some of the common indicators cover areas such as:-

1. Reproductive and child health
2. Morbidity and mortality
3. Human resource information
4. Financial information
5. Logistics and supply
6. Assets and infrastructures

3 HMIS DATA FLOW, COLLECTING DATA, REPORTING AND FEEDBACK

3.1 Data Sources

The HMIS unit obtains its data from primary sources (routine data) and secondary sources (Tanzania Population and Housing Census-TPHC, National Surveys and other health related surveys). Routine data predominantly come from health facilities (Public, Private and NGOs), Vital registration are obtained from Civil Registrar Office, while Census and Surveys data are obtained from The Office of Chief Government Statistician and health programs, in addition the community data are coming through health facilities. Other data obtained from Human Resources (IHRS), Central Medical Store (LMIS), IFMS and Physical Asset Management Information System (PAMIS) as subset of HMIS data.

3.2 Information flow
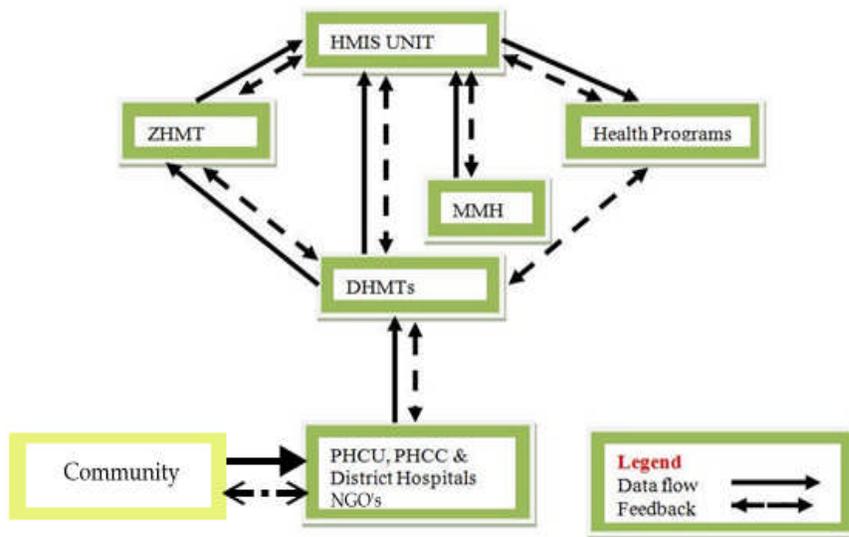
3.3 Monthly summary Data submission

Improve Timeliness: the expected report must reach in the expected time/date. Compilation of the reports and reporting at all levels basing on the deadline set. For the report deadlines refer to table below.

S/N	Source Level	Destination Level	Deadline	Responsible body/person
Operational Data				

1	PHCU	District	5th of the next month	
2	District	DHIS2	15th of the next month	
3	Wards & Clinics	Hospital Medical record	5TH of the next month	
4	Hospital Medical record	DHIS2	15th of the next month	

3.4 Data collection

HMIS unit is responsible body in data collection within the MoH, all collected data have to go through HMIS channels and meta-data should be clearly defined and well understood.

3.4.1 What to be collected?

Data generation and collection: Data collected should reflect Local, National and International agreed indicators that focus on "data for action" rather than just a collection. Data to be included in the data collection tools will be determined by program needs and be approved by HMIS unit and respective program. This strict control measure, common understanding between systems and well-coordinated mechanisms are necessary to ensure there is a standardized data collection system to avoid duplications and wastage of resources.

3.4.2 Data Collection Tools

Registers, Tally sheet and Patient cards are basic tools used to capture daily information at level of Health Facility. Furthermore, HMIS summary forms will be filled information extracted from those tools.

3.4.2.1.1 Registers

Registers are records which include individual health details and demographic information of client. Usually, health facilities have different registers including Antenatal, Delivery Register, Immunisation Register, TB, HIV, FP, HBC, MTC, OPD, PMTCT, STI, Postnatal, cPAC, YFS.

3.4.2.1.1 Tally sheets

Tally sheets are used to collect data by means of strokes which simplifying counting (tallying) and summarising the identical data for client's diagnosis and condition.

3.4.2.1.2 Patient record file/cards

Cards and inpatient files record the details of the interaction between patient and health service provider. These documents contain key follow up details of diagnosis and treatment of all visits.

3.5   Meta- Data dictionary and Indicators definition

In order to ensure common understanding and comparability between different facilities, districts, and zones, it is essential to standardise definitions of both data elements and indicators. These definitions **should be** contained in the HMIS **data dictionary**.

For example: Partial list of data definitions

Data Field	Definitions
OPD headcount under 5 years	All individual patients not yet reached five years (60 months) of age attending the facility during the period.
DOTS visit	Directly Observed Treatment Supervised visit by a diagnosed tuberculosis patient to receive medication.
First antenatal visit	A first visit by a pregnant woman to a health facility for the primary purpose of receiving antenatal care.
Repeat antenatal visit	Any antenatal visit other than a first antenatal visit.

3.6   PROCESSING DATA

3.6.1   Data Compilation /Collating

This is gathering data from various sources and putting them together into one point. In large facilities like hospitals collation starts from individual departments e.g. laboratories, wards, clinics etc. Collation (also known as aggregation) is the gathering of data from various sources and putting it together into comprehensive and representative report for the facility. At the health facility data are collated from different departments and stored through filing the paper reports. At the district, zone and national level data are collated and stored using the DHIS2 database.

3.6.1.1.1 Health facilities

Health facility gather reports from different sources, Check for quality, sign and submit to the district.

3.6.1.1.2 Hospitals wards, special clinics and theatres.

Clinics, wards and departments of hospitals are regarded as a complete health entity. In this case, data are aggregated from different registers and summarised into monthly summary forms. The forms are submitted to the medical record unit where data are entered into the centralised HMIS system.

3.6.1.1.3 Mobile clinics and community health activities

All data collected from mobile health services and community health events will be submitted to the nearby health facilities for being incorporated into the summary forms. Community-based health care takes place at two levels. On the one hand, outreach services from the health facility will continue to take place, and will be strengthened. These include both service provision (e.g. immunization, home-based care) and health promotion activities (e.g. health education, assessment of water sources). Community-based Directly Observed Treatment for tuberculosis is planned in areas more remote from health facilities, while community-based management of mental illness is also a priority.

3.6.1.1.4 Community health Data

Shehia Health Committee is expected to play an increased role during the ZHSRSP III period. The principal responsibility of these committees is to serve as the link between the health facility, as entry point to the formal health system. Shehia Health Custodian Committee, thereby enabling community input to overall socio-economic development within the locality. It is also envisaged that strengthening of the human resource capacity at the health facility level will enable closer contact with the community, resulting in better capture of community-based information on vital statistics (e.g. births, deaths) which will in turn provide input for community discussion on particular local challenges to health and possible solutions.

3.7   Data Quality

Quality data contains the following basic properties. These include completeness, correctness, consistence, current and timeliness.

Correctness	The data should be correct from all source
Completeness	• All data elements in data collection form should be completely filled and • All datasets should be submitted and entered into DHIS 2.0
Consistency	The data collected should be within the normal range
Current	Up-to-date available for all user on reasonable time.

- Validation and Quality checks.
- Data needs to be cleaned before it is useful to local managers. The goal of cleaning data is to ensure that data errors are minimal, and we have good quality data.
- Visual scanning (eyeballing)
- The most effective way to ensure data quality is to look at the data, look first across each line and then from top to bottom, it is important to look for missing data values, obvious fluctuations, inconsistencies between linked data elements and for mathematical errors.
- DHIS2 computerized quality checks for maximum and minimum values and validation rules (refer to the DHIS2 user manual).

What to do when you find errors:
- Find the cause of that error through going back to the person who collected the data, point out the problem and get the collector to appreciate the need for accuracy.
- Correct the error through going back to the source register, tally sheet or any data collection tool used and get the correct number.

Reporting
- The reports have to be standardized for each health facility according to the health service provided. It is the responsibility of the facility manager to check the report and provide the quality data to the concerned level.

4 ANALYSING INFORMATION (Indicators, Target Population for program)

Data should be analyzed at the point where it was collected. Data can be analyzed basing on the following:

- Analyzing trends of disease cases and deaths over time
- Correlation: link between related data. For example, linking measles data (measles vaccines at the age of nine months) from EPI to Vitamin A data (given at the same age) from the Nutrition unit. It is expected that the number of children receiving measles vaccine to tally with the number of children receiving vitamin A at that particular age.

4.1 Indicators

Indicators are the tools that facility staff uses to analyse raw data into useful information and to enable comparison between different facilities or different sized unit. Data is made into information in the form of indicators, which relate the data to standardised populations.

> Indicators are "variables that help to measure changes, directly or indirectly" (WHO 1981).

Targets: a number of objectives which are measured by indicators showing the intended level of accomplishment (i.e. when and to what degree)

Assessment: this is a comparison of actual activity against plans made and targets set. For example . of all the children under one year, how many were immunized?

4.1.1 Calculating indicators

All health workers are required to know how to calculate routine indicators. Indicators are usually made up of a numerator (top number) that is divided by a denominator (bottom number).

Example of numerators and denominators

| Numerators	are the things we count: numbers of clients, infants immunised, new cases of TB, number of doctors, etc.
Denominators	are the group with which the things we count are compared: total population, all births in a year, number

	of adults or numbers of clinics, number of beds etc.

	Numerator	
Indicator =	———————	X 100 = ...%
	Denominator	

4.1.2 Key performance indicators

All health facilities, Hospitals, District, Zone and programs should calculate key performance indicators according to their levels to monitor and evaluate their performance in contribution to programme based indicators. MKUZA and MDGs are national and international Indicators that are monitored at national level.

Figure XX Monitoring and evaluation Hierarchy
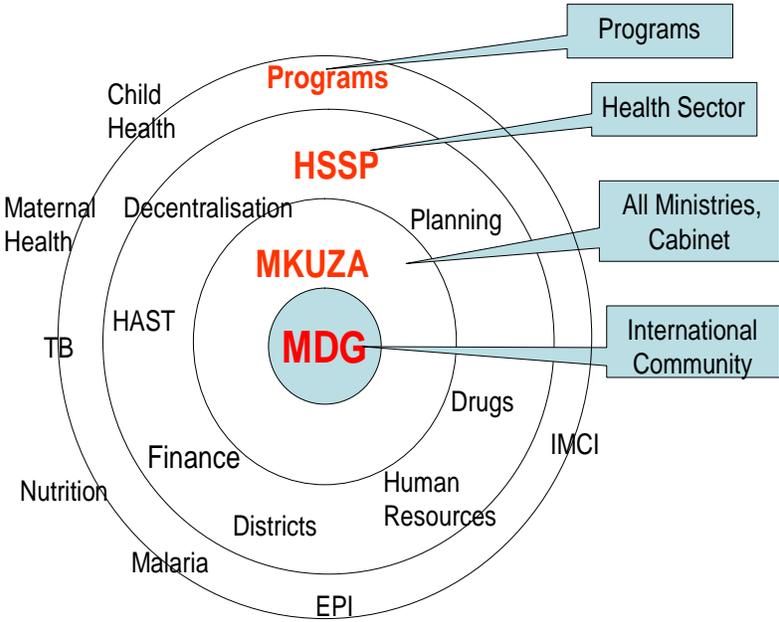
4.1.3 Target Population for Programs

To calculate indicators, information on the population served or affected by different illnesses is needed. Each health program has a different target group for which it provides services, divided according to age groups, sex and certain risk factors. The table xxx illustrate the target group for different programs.

Table xxx: Target population for priority programs

Target population	Program	Age	Percentage
Total population			100%

* Pregnant women	ANC and delivery	15-45	+/- 4%
* Children	Immunisation	<1 year	+/- 4%
* Children	Growth monitoring	0-59 month	15.6%
School age children	Health education	5 - 15	+/- 25%
Youth	HIV education	15-24	+/- 20%
Fertile Women /WRA	Family planning	15-49	+/- 23%
Males	Urethral discharge	>15 years	+/- 30%

NB for the purposes of the HMIS, ANC, delivery and children under 1 year are considered to be the same number, though this is not strictly accurate (women have spontaneous abortions, children die at birth and in the first year)

4.2   Feedback (Peer, Bidirectional (Down to the Top and Top to Bottom)

"Be creative and identify what is interesting for each program"

4.2.1 The right to feedback

Feedback is right to all partners who take part in data management. This has to be bidirectional between:

- Community and health facility
- Health facility, Hospital and District
- District, Zone, Health program and HMIS
- HMIS and Central level
- HMIS and other information system within MoH
- HMIS and other external health related information system

4.2.2 Feedback approaches

4.2.2.1.1 Verbal feedback

Verbally, ad hoc information should be shared within the HMIS information cycle. The feedback including results of self-assessment, daily activities, etc should be shared with co-health workers at staff meetings, during supervision, survey, community feedback to health committees and others health-related sectors.

4.2.2.1.2   Written feedback

4.2.3 Data presentation

The analyzed data need to be displayed in the form that can be readily seen, understood and discussed at all health services gathering and community meetings. For example with DHIS2 information can be presented in the form of Tables, Graphs, Maps and score cards.

The district should provide you with at least:

- **Tables** of monthly data which you have sent up, without any analysis or comment, are produced automatically by the HMIS software and should be sent back to each facility monthly.
- **Program reports** each month containing selected indicators and raw data on different programs such as maternal health, child health, communicable diseases, and management issues.
- **Comparisons** by facility of service coverage, facility workload, disease incidence, cure rates, etc.
- **Graphs** comparing facilities, showing district trends, identifying facilities with particular achievements or problems.
- Written quarterly report and Annual Health bulletin.

Software support to facilities for Feedback

A well-functioning DHIS2 makes feedback easier by giving appropriate information to specific target audiences

- Tables showing indicators and raw data by program
- Graphs comparing performance of different facilities or programs
- Maps, showing performance of programs, facilities and shehias

Determine Data coverage: the expected number of reports must be met. At the health facility data coverage can be determined by establishing a system of checking the completeness of reporting. While at District and National level this can be done easily by using DHIS2 system. DHIS2 can help in knowing which facilities have reported and which have not through the use of its outstanding report functionality.

5 Health Information Dissemination and Use

The collected and analyzed information has to be disseminated and used. Data collected but not disseminated in time for use is resource wastage. The information may be used for further analytical work, policy and advocacy, planning and priority setting and resource allocation for implementation for action

5.1 Dissemination and Sharing of Information

HMIS should foster evidence-based decision making by ensuring the transparency, availability and user-friendliness of health information by:

- Expanding health information dissemination channels;
- Establishing a permanent channel for acquiring international evidence on healthcare Services;
- Establishing and regularly updating web pages of HMIS;
- Improving the capacity of health information specialists in data analysis;
- Improving the content of HMIS feedback;
- Developing and implementing a comprehensive advocacy and training program on HMIS and evidence-based decision-making for policy and decision-makers;
- Develop health information bulletin and other publications.
- Developing and implementing annual plan for on-going internal monitoring of HMIS
- Conducting training on the accessibility and use of information.
- Re-calculation methods of health indicators

5.1.1 Standard format for dissemination and sharing of information

HMIS should use standard format for dissemination and sharing of information such as annual health bulletin, semi-annual health journals, districts and hospital profiles, data tabulations, country health profiles and health information through HMIS web portals.

5.1.1.1.1 Annual Health Bulletin

Annual Health Bulletin is a series of publication produced by HMIS annually, and recommended to be released on June of the next year. The bulletin contains the analyzed information collected from public and private health facilities. It includes comprehensive routine health data and information which address local and universal key indicators.

5.1.1.1.2 Health journals

Health journalsshould be coordinated by HMIS in collaboration with other stakeholders aimed to provide quick overview on health events and performance.

5.1.1.1.3   Health profiles

Provide overview of the health performance, priorities and challenges facing health programs, hospitals, districts or country. The profiles should be used as an entry point for comprehensive health plan.

5.1.1.1.4   Data tabulation

Data tabulation should be provided on request basis. This will merely include tittles, tables and values of data; therefore, it is up to requester to analyze those data by him/her self.

5.1.1.1.5   Sharing Information Electronically

5.1.1.1.5.1 Health information through HMIS web portal

With recent advances in telecommunications, however, information dissemination is changing rapidly. Much health information is now accessible through the MOH website. Therefore, web-portal will be used to publish health information (in bulletins, technical studies, applied research findings, and monthly, quarterly, or annual statistical reports) remains the dominant means of information dissemination.

5.1.1.1.5.2 Routine HMIS database

Health programs will access routine raw data and indicators through HMIS electronic web-based database. Every eligible person will have user name and password as a security key to log in to the system. Furthermore, to avoid the infringement of the confidentiality and privacy, thus every user must be assigned to appropriate user roles to maintain security.

5.2 Health Information Use

HMIS has to make sure that health information are available for planning, decision making, management and support other health service delivery at all level. Health data and information lack value unless they are used to inform decision.

Interventions that increase local demand for information and facilitate its use enhance evidence based decision making. Therefore, MoH Information are collected through HMIS for use among different stakeholders include MoH, Development partners, NGOs, Researchers, Private sectors, Academic and Learning institutions, Government ministries, and Communities
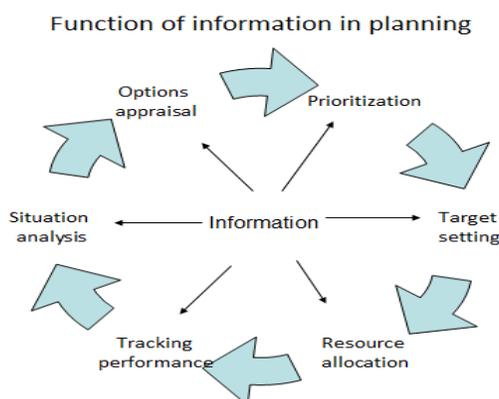
5.2.1   Use of Information for planning

Planning supported by information is derived from appropriate needs as identified by Local, National and International agencies. Such needs include information that reflects the present and projected population structure, local determinants of health,

health status, health inequalities, deprivation, remoteness, priority needs, and the quality of service provision. Therefore, the

available Information should facilitate on Setting target, Resource allocation, Tracking Performance, Situation analysis, Option appraisal and Prioritization of health sector response.

Function of information in planning

5.2.2 Use of information for decision making

Data should effectively be used for decision making especial on planning and policy formulation in health sector response. The value of information should be understood by all stake holders and this will lead to evidence-based decisions. This will be more effective and appropriate use of scarce resources and better execution of work priorities.

A basic assumption is that managers and users must have the required expertise to interpret and use this information in resource management. Therefore, HMIS should foster a closer link between management processes and information, so that the information can more effectively influence the decision-making process.

5.2.3 Promoting of data use culture

There is a need to encourage a culture of information use for decision making at all level, in order to achieve this HMIS will conduct the following activity at all level.

- Improve the Awareness of Data Users: Data users will receive short focused training courses to help them to understand the data sources and limitations, to interpret data presented in tabulated form, and to use information for decision-making.
- Data use workshop District –National level(at least once a year)
- Data use workshop at district-Facility level (at least once a year)
- Support District and hospital comprehensive plan
- Support and facilitate data use workshop organized by health program

5.3   OPERALIZATION OF THE GUIDELINES (to be placed near MONITORING AND EVALUATION chapter)

5.4   Steering committee (HMIS no need of steering committee)

The committee will meet regularly every six months or a need arises. The committee can invite representatives from any unit/department depending on agenda to be discussed.

Members

The committee will be made up of the following members:-

1. Director general (Chairman)
2. Director of planning and policy
3. Director of MMH
4. Director of preventive and health education
5. Ministry of health coordinator (Pemba)
6. HIS coordinator
7. Head of HMIS
8. Head of Epidemiology Unit
9. Head of Research division
10. Head Monitoring and evaluation division

Responsibilities

1. To approve the annual health bulletin and publications related to HMIS.
2. To approve/govern types of data to be collected
3. To provide policy directives regarding HMIS
4. To oversee data sharing and security.
5. To approve new local and international indicators to be addressed by HMIS.
6. To guide the implementations of this guidelines
7. To approve definitions of indicators
8. To monitor and improve the performance of HMIS.
9. Prepare and Update an HMIS Organizational Chart

# 6 USE OF TECHNOLOGY AND INNOVATION

6.1 Technology

Information technology (IT) is a tool that facilitates health information collection, analysis, dissemination, and use. It includes hardware and software for the support of health information. IT offers many ways to improve the quality of health care information and hence lead to reasonable planning and decision making.

6.1.1 HMIS Web Portal

A web portal is a specially-designed Web page which brings information together from diverse sources in a uniform way. Usually, each information source gets its dedicated area on the page for displaying information. HMIS will have a repository that includes all health related information from different systems.

6.1.2 Data warehouse

HMIS will have the data warehouse that will contain all health information from within and outside the ministry of health. Information from outside the ministry will be available through HIS repository. Figure below demonstrates the proposed warehouse.
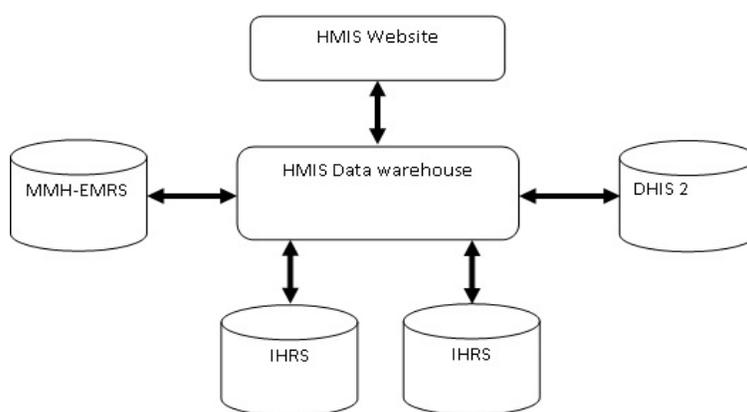
Note: Since the sub-systems are in the web-based technology, the hosting of the systems should be taking into consideration. HMIS will adopt the existing government guideline that the entire government ministries should host their websites at e-Government data Centre.

6.1.3 Software Applications

Open Source Software and proprietary software are two main type of software technology. Its prefer HMIS to engage on OSS, though proprietary is not ignored at some circumstances. Among the software that has been adopted by HMIS are: DHIS 2, EMRS, IHIRS and Maintenance software (E-HCEU).

The DHIS 2 solution developed using java framework together with MySQL or Postgress database. DHIS 2 has built in Geographic Information System (GIS) provides online data based on Geographical dispersion.

E-MRS which is also a Free Open Source Software developed using java framework and MySQL database in additional with hibernate library will be adopted as Zanzibar hospital medical record system.

IRIS is also Free Open Source Software developed using java framework and MySQL database for tracking staffs information.

- Enhancing information technology infrastructure by automating data registration, Collection, transfer, analysis and reporting at all levels of health sector:
- Expanding and regularly updating health databases, and improving their use;
- Improving computer skills of health workers.
- Developing a regulation on creating and updating health databases
- Developing and regularly updating web pages of health organizations
- Regularly assessing the compliance of the content of Ministry of Health web pages with health information service regulations
- Installing into the hospital information software and testing converters for the conversion of laboratory test results into the International Metric System

6.1.4 Hardware Platforms

Hardware requirements should at the latest technology and their specifications will depend on suggestion provided by ICT Units of the Ministry.

6.1.5 Operating Systems

HMIS insists on the use of open source solution. Using open source based solution, Operating Systems will be responsive and evolve to effectively balance and deliver the desired level of service to an application and end user. The HMIS will use a Linux operating system at National level with MYSQL database server in its servers and network terminals, and all computers used at Zones, Districts, programs and Health centres will use at least Linux and latest Window. This will enable the displaying of real estate, interoperability, compatibility, power consumption and security posture. As advances in capabilities such as integrating voice, video and Web 2.0 collaboration tools into mobile devices, significant benefits can be achieved in the delivery of health care services.

6.2 Interoperability

Interoperability describes the extent to which systems and devices can make possible exchanging, interpreting, and sharing of data. For two or more systems to be interoperable, they must be able to exchange data and subsequently present that data such that it can be understood by a user.

Interoperability becomes a quality of increasing importance for information technology products, the hardware, software, LAN, and telecommunication system used by HMIS and source-specific databases to be user-friendly.

✓ HMIS users will be able to access required information in the predefined required format through simple menu-driven procedures.
✓ HMIS should only include the implementation of any software or hardware systems with business processes which are needed to support anyone in the healthcare field, including healthcare providers.
✓ Standardization is a key to understand interoperability, thus all technology should be in the standard set by HMIS.

6.2.1 Integration

HMIS will utilize the opportunities of homogeneous systems adopted within the HMIS to integrate them to solve technical and administrative challenges faced healthcare systems.

6.3 E-Health

e-Healthis a relatively recent term for healthcare practice supported by electronic processes and communication. As an emerging form of enabling technology, HMIS will develop a Web-based e-Health portals provide patients easier accesses to their healthcare information and services. Some forms of e-health are: Electronic health records, e-Prescribing, Telemedicine, Consumer health informatics, Health knowledge management, Virtual healthcare teams, m-Health, Medical research using Grids and Healthcare Information Systems.

HMIS should adopt e-health systems will conform to the following:

✓ HMIs should design and implement such an e-Health portal which can integrate many backend medical services.
✓ e-Health tools from widespread acceptance is the concern about privacy issues regarding patient records.
✓ E-Health systems should be in a low cost, easily accessible.

6.4 M-Health

m-Health is one aspect of eHealth that is pushing the limits of how to acquire, transport, store, process, and secure the raw and processed data to deliver meaningful results. mHealth offers the ability of remote individuals to participate in the health care value matrix, which may not have been possible in the past.

The use of mobile devices in collecting community and clinical health data, delivery of healthcare information to practitioners and patients, real-time monitoring of patient vital signs, and direct provision of care, HMIS should provides a variety of options to improve care quality and the efficiency of the increasingly mobile health community by providing easy access to information virtually anywhere, anytime to give the right

people real-time access to relevant applications, content, and services that facilitate collaboration and enhance community. The mHealth technology that will be adopted should:

- ✓ Deliver the security framework needed to achieve compliance with government regulations.
- ✓ Provide Technologies relates to the Operating Systems that orchestrate mobile device hardware while maintaining confidentiality, integrity and availability.
- ✓ Exploit lower cost multipurpose mobile devices such as tablets pcs, smart phones and normal mobile phones.

6.5   Geographic Information Systems (GIS)

Health information is another focus area that has made increasing use of Geographical Information System (GIS) techniques. GIS is a powerful visual tool to assess and plan. It is very useful in tracking and monitoring health in terms of geographical variations in the types and magnitude of problems, equity in distribution of health services across the country, and service utilization. Health data analyst should take advantage of those shape file in relation to health matters.

GIS have data needed to derive catchment boundaries (shehia) of each public health facility in the country; The GIS in health should be used to present different thematic maps, specifically information on:

- Distribution health facility ownership (Public and private), type(PHCU, PHCU+, PHCC and Hospitals)
- Health facilities meeting accreditation standards, in general and physical equipment and human resource standards, in particular
- Key services including emergency obstetrics care (EmOC), voluntary counselling and testing, anti-retrovirals, and child survival
- Distribution of eradicable diseases
- Major medical equipments, vehicles, and ambulances
- Endemic areas
- Major populations, Health facilities, shehias, District and Zone served by key service coverage indicators
- Places where outreach activities occur such as EPI, RCH, Mosquito Spraying,
- Other health actors such as Community Owned Resource Persons (CORPs) and NGOs.
- Roads, rivers, paths and transport routes, also Mountains and natural barriers

HMIS should adopt the GIS software that will:

- ✓ Deliver the security framework needed to achieve compliance with government regulations.

- ✓ Provide Technologies related to the available Operating Systems that maintaining confidentiality, integrity and availability.
- ✓ Exploit lower cost GIS applications (example Open source GIS).

The MoH through HMIS has already developed a GIS database for health. SMOLE project under the Ministry responsible for Land will periodically update the GIS shape file, HMIS will link health information on GIS shape files and share to relevant stakeholders for their understanding of existing situation and for deciding a future course of actions. Spatial data will be updated annually, and attribute data will be updated quarterly or at other times, as and when available

6.6 E-Security

The introduction of e-Health and extramural applications in the personal healthcare domain has raised serious concerns about security and privacy of health data.

6.6.1 Confidentiality

Privacy is becoming an increasing concern in domains that deal with sensitive information such as healthcare, which cannot absorb the costs of security abuses in the system. Therefore, in addition to legal means, it is very important to provide and enforce privacy and security in healthcare by technological means. The key to preserving confidentiality is making sure that only authorized individuals have access to information. The process of controlling access (limiting who can see what) begins with authorizing users. In a physician practice, where administrator identifies the users, determines what level of information is needed and assigns usernames and passwords. Basic standards for passwords include requiring that they be changed at set intervals, setting a minimum number of characters, and prohibiting the reuse of passwords.

HMIS will take a two-tier approach to authentication, adding a biometrics identifier scan, such as palm, finger, retina, or face recognition.

6.6.2 System Failure

HMIS in cooperation with ICT unit will take serious measure to make sure that there is a backup for the system they run. This will ensure the availability of information when systems fail.

7 DATA QUALITY

The quality of health data collected should be satisfactory. Therefore, improvement and adherence to the achievement is always required. The achievement is a result should be attained from several measures taken by HMIS unit, which may include:

- Close follow up, feedback and collaboration between HMIS blocks.
- Outstanding collaboration with health programmes in routine data quality assurance (DQA).
- Conducting Data use workshop, data cleaning and routine data quality check.
- Utilization of Validation Rules functionality in DHIS2 database which automatically assist in detecting data errors.
- Increases accessibility and uses of HMIS system through online system for data sharing and accelerating feedback from different users.
- Building capacity for HMIS staffs, through local and international for short and long course, specifically, on Monitoring and Evaluation, and data management.
- Motivation for health facilities and DHMTs which performed well in data quality category including best DHIS users, timely submission and completeness of report and correctness of data.

7.1 Data quality Assessment (DQA) and Data Audit.

The DQA initiative is using a systematic and participative performance improvement approach to monitor and improve the quality of services available at health facilities. DQA and data audit should be given a special priority

Based on continuous self-assessment at facility level, there will be 6 monthly assessments of health facilities to identify performance gaps. Facilities should prepare for the DQA visits by getting all graphs up to date, analyse them to identify problems that they feel are important and discuss these with the district team.

The services available at health facilities are compared with the expectations of these services, as defined by the national standards of care and community preferences. Performance gaps are identified when the observed services fail to meet these expectations. District level will work with facilities to analyse results, monitor and improve service quality and feed into the annual planning cycle of the comprehensive district health plans

8 RESPONSIBILITIES OF HMIS AT DIFFERENT LEVEL

Qualifications and job description – for all levels in staffing section

LEVEL	RESPONSIBILITIES	STAFFING

National - HMIS UNIT
 	
The HMIS unit is responsible for all aspects of the running, maintenance and further development of the HMIS in Zanzibar. It is therefore crucial that the HMIS unit is adequately staffed and capacitated.
	Generally; more of the technical support of DHIS2, Internet and computers are being decentralised to zone and district in a "referral system" of technical problems; each level should manage a certain level of problems before asking the next level for support.
	
	The HMIS unit manage and supervises all HMIS activities in Zanzibar, including making sure that:
	
	The National DHIS data warehouse is updated every month and that all required monthly, quarterly and annual reports are provided on time and
	
	Available on the web and as well as in text format
	
	Available on Paper reports and pivot tables
	
	All reports are submitted on time and received from the district level
	
	Keep track of the missing reports and data
	
	Working closely with the zones and help them being able to track and retrieve missing reports and data from the districts
	
	At all levels: All aspects of the HMIS (data collection, collation, analysis, use and reporting) as well as the DHIS, computers and Internet are working well
	
	For data management and reporting
	
	   the responsibility of supervising the districts is being decentralised to the
	
	     zone
	
	   b. Supervision of HMIS at facility
		The following positions are required:
		
		1. **Head of the unit.** Responsible for the HMIS in Zanzibar
		
		2. **DHIS2 database manager** (fulltime commitment). This responsibility include database maintenance, keeping track of the monthly reporting from districts and facilities transfer of data to the vertical programs, production of reports, support the district and programs etc.
		
		3. **Epidemiologist**, responsible for epidemiological analysis and use of information. This person is the important link to the vertical programs and other stakeholders.
		
		4. **Statistician** (OCGS to be consulted by the Head HMIS), responsible for statistical analysis and linking to the OCGS and office of the Registrar General.
		
		5. **IT engineer** responsible for technical support to districts, zones and hospitals and operating the network and web-site. Two staff to be responsible for overall flow of information, keeping track of data reporting; making sure all facilities and districts are reporting on time and that back-log /missing reports are being reported, support on

	level
	
	      is decentralised to the districts
	
	  c. Tools for data registration, collection and reporting are in place in districts with sufficient stock.
	
	d. Despite the planned decentralisation; it is the responsibility of the HMIS unit that all levels and units get their support on time.
	
	Capacity development and training of each level is planned for annually – to be in each level.
	
	All health programs are included and supported by the HMIS by:
	
	Receiving their program data from the HMIS reporting and DHIS electronically every month. (an explanation on data reporting… facility.. forms)
	
	Support in analysing the data using the DHIS database installed in their respective stations.
	
	To streamline, update and revise data and indicator sets and manuals periodically on need basis in collaboration with health programs and other stakeholders, thereby data are made more effective following the general guideline that "less of better quality" is better than "more of poorer quality ;
	
	Feedback reports and dissemination of information – general.
	The HMIS shall ensure awareness and determine the training needed for stakeholders to access and use its tools for accessing and using the delivered information.
	
	Monthly; feedback report to zones including the pinpointing of missing reports, errors, particular issues showed by the data –as well as good work!
	
	Helping the zones giving feedback to
		problems and making sure reporting forms are distributed.

	districts	
	Feedback and dissemination to everybody by updating the standard monthly web-report by the end of each month (to be elaborated, on types of feedback)	
	Quarterly report –the quarterly HMIS bulletin; comparing problems and achievements in districts, focusing on key indicators and including graphs, tables and text.	
	Supporting zones making similar reports to the districts	
	Updating the quarterly report template on the web Annual report/bulletin obtained through compilation of comprehensive quarterly reports available on web and on paper.	
	Support zones, districts and hospitals in compiling their own annual reports.	
	HMIS information is used in the management, planning, monitoring and evaluation processes in all health programs and levels of the health services	
Health Programmes The health programs all have a contribution to the HMIS. The data collection for the identified disease specific health program interventions are organised through the HMIS. When new and revised information needs arise in the health programs, eventual changes in forms and procedures will be carried out through negotiations between the HMIS unit and the	Each health program accesses their routine HMIS data electronically from the HMIS system. The HMIS unit is responsible for maintaining the DHIS2 database and each health program support and ensures data have required quality. In cases where the health programs have their own better database application procedures to export DHIS data to their software application will be established.	One person in each program is appointed "Information officer" and is responsible for the liaison, collaboration and coordination with the HMIS unit as well as for the management, dissemination and use of information within the health program.

health program within the overall HMIS framework. This is done in order to streamline and standardise data collection and management and prevent overlapping and inconsistent data collection.		

Zonal level
 	
Description
 	
The ZHMT/ZHMIS (Head, HMIS to be consulted) are responsible for the HMIS in the districts in their zone as well as for the zone level HMIS.
	Zones are overall responsible for the district HMIS their zone as well as for the zone HMIS itself. To undertake this overall responsibility, the following tasks shall be implemented:
	
	1. Supporting and supervising the collection and timely reporting of the data from all the DHMTs situated in its administrative area
	2. Ensure the quality, completeness, correctness, and consistency of data from the DHMTs under its administrative area.
	3. Sending feedback to the DHMTs based on the reports received.
	  a. Monthly facility feedback report every month, once the data is captured in the DHIS2, the facilities get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table).
	  b. Monthly district report; every month a brief standard district report is disseminated at the district level; including essential data and indicators as well as missing reports from the facility
	  c. Quarterly report; comparing problems and achievements in the health facilities in the district, focusing on key indicators and including graphs, tables and text.
	  d. Annual report; Complete and comprehensive extension of quarterly report
		1. In **Unguja and Pemba zones** one person(qualifications and job description – for all levels) is appointed Information Officer and head of the Zone
		
		HMIS Team and is responsible for all aspects of the HMIS in the zone.
		
		2. This person is member of the Zone Health Management Team and/or Zonal Health Management Information System.
		3. The Zone HMIS team includes two additional staffs that will receive training and take part in the supervision of districts, maintaining the database, analyse and disseminate information.
		4. One person in the team (the most capable, not necessarily the head of the HMIS team) is responsible for the DHIS and is trained accordingly. One backup person is selected who also receive training and take actively part in the Zone DHIS database management.

	4. Essential indicators produced through the data analysis tools to be graphed on walls/notice boards. 5. In case of disease outbreaks and/or epidemics the ZHMT/ZHMIS shall report to the National HMIS unit immediately using any means of communication available. 6. Analyse data obtained for use in the zone to facilitate zone and district planning process. 7. Ensure that tools for data registration, collection and reporting are in place in all districts with sufficient stock. 8. More generally; make sure the district HMIS teams are continuously being capacitated, trained and supported so that they are able to efficiently run the HMIS activities in the district. *8.1.1*	
Districts Description The HMIS activities in the district are carried out by the District Health Management Team (DHMT). The district is the focal point/level of the HMIS responsible for the HMIS in the DHMTs as well as for the HMIS at the district level and for the reporting to the zonal and national level.	The **Districts** are responsible for the HMIS in the health facilities in their districts as well as for the district HMIS itself. 1. Supporting and supervising the collection and timely reporting of the data from all the health facilities and community(shehia) situated in its administrative area 2. Ensure the quality, completeness, correctness, and consistency of data from the health facilities under its administrative area. 3. The DHIS tool to be used for checking data reporting on each form for each district is used continuously so as to be able to track and retrieve missing reports 4. Data quality is controlled by assessing the data both manually by "eyeballing" (look carefully through the data, compare previous months) and by using the DHIS tools for quality control (average min-max	There will be at least three (3) responsible staff in the district level as narrated below: In each district one person is appointed Information Officer and head of the District HMIS Team and is responsible for all aspects of the HMIS in the district. This person is a member of the District Health Management Team. The district HMIS team includes two additional staff that will receive training and take part in the supervision of districts, maintaining the database, analyse and disseminate information. One person in the team (the most capable, not necessarily the head of the HMIS team) is

	values and evaluation rules)	responsible for the DHIS and is trained accordingly. One backup person is selected who also receive training and take actively part in the DHIS database management
	5. Keying into the computer data from the reports submitted by the health facilities.	
	6. Reporting to zonal and National HMIS unit electronically by e-mail.	
	7. Sending feedback to the health facilities based on the reports received.	
	8. Monthly facility feedback report; every month, once the data is captured in the DHIS, the facilities get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table).	
	9. Monthly district report; every month a brief standard district report is disseminated at the district level; including essential data and indicators as well as missing reports from the facility.	
	10. Quarterly report; comparing problems and achievements in the health facilities in the district, focusing on key indicators and including graphs, tables and text.	
	11. Annual report; Complete and comprehensive extension of quarterly report	
	12. Essential indicators to be graphed on walls/notice boards.	
	13. In case of disease outbreaks and/or epidemics the DHMT shall report to the ZMO immediately using any means of communication available.	
	14. Analyse data obtained for use in the district to facilitate district and facility planning process.	
	15. The monthly, quarterly and annual reports are presented for the District Management Team and for other stakeholders in the district (programs, other government structures, shahia, community) in meetings and through other venues	
	16. Tools for data registration,	

	collection and reporting are in place in all health facilities with sufficient stock. 17. HMIS information is used in health education sessions and for advocacy more generally 18. Capacity building and training at facility and district levels – including the district HMIS team are carried out and planned for on an ongoing basis.	
Primary Health Care Facility(public and private) Herein the health facility refers to both first and second line PHCUs. Description Much of the HMIS primary health care data have the PHCUs as their sole source. The data for the Zanzibar HMIS are registered, collected, collated and reported from over one hundred and sixty (160+) PHCUs while each serving its defined population. The quality, timeliness, accuracy and relevance of the HMIS information depend entirely on the registration, collection and collation in the facility level. It is therefore the basic level of HMIS. Most data from the health facility are of operational nature	Being the primary data generation level, the health facility has the following responsibilities: Collect data for the health services the facility offers. Filter and collate data with respect to the report forms submitted to the facility by the District Health Management Team (DHMT). Ensuring the reports reach the DHMT in due dates. Analyze data obtained for use in the facility. Essential indicators to be graphed on walls. In case of disease outbreaks and/or epidemics the facility shall report to the DMO immediately using any means of communication available.	In each health facility one person is designated Information Officer and head of the Health Facility HMIS Team and is responsible for all aspects of the HMIS in the facility. In the PHCUs' this person will typically also be responsible for other program tasks.
Mnazi Mmoja Hospitals	Supporting and supervising the collection and timely reporting of the	There will be a minimum of five (5) persons

Description	data from all the wards and clinics.	One person appointed
In the Zanzibar HMIS, all data from all health facilities (hospitals, cottage hospitals and PHCUs) are included and integrated. However the Hospital data; all inpatients, maternity and OPD data, have previously tended to fall outside the general information system. The hospital HMIS is based on reports from the wards and clinics including the OPD clinic. While the reports from the OPD clinics feed into the general Zanzibar District HMIS, other clinics and inpatient wards feed into the hospital sub-section part of the Zanzibar HMIS.	Ensure the quality, completeness, correctness, and consistency of data from the wards and clinics. The DHIS tool to be used for checking data reporting on each form for each ward and clinic is used continuously so as to be able to track and retrieve missing reports. Data quality is controlled by assessing the data both manually by "eyeballing" (look carefully through the data, compare previous months) and by using the DHIS tools for quality control (average min-max values and evaluation rules) Keying into the computer data from the reports submitted by wards and clinics. Reporting Reporting shall be done to the National HMIS unit electronically by e-mail. This is to make sure that the HMIS unit has all the health data. Reporting shall also be done to the Department of Curatives, as customary, for the departments planning and management. Sending feedback to the wards and clinics based on the reports received. Monthly feedback report; every month, once the data is captured in the DHIS, the clinics and wards get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table). Monthly hospital report; every month a brief standard hospital report is disseminated to the hospital management; including essential data and indicators as well as missing reports from wards and clinics.	Information Officer and head of the hospital HMIS Team and is responsible for all aspects of the HMIS in the hospital. Two additional staffs, who will receive training and take part in the supervision of wards and clinics, maintaining the database, analyse and disseminate information. One person capable, to be responsible for the DHIS and is trained accordingly. One backup person is selected who also receive training and take actively part in the DHIS database management

	Quarterly report; comparing problems and achievements in the wards and clinics, focusing on the comparable elements for key indicators and including graphs, tables and text. Annual report; Complete and comprehensive extension of quarterly report Essential indicators to be graphed on walls/notice boards. In case of disease outbreaks and/or epidemics the hospital shall report to both HMIS Unit and the Department of Curatives immediately using any means of communication available. Ensuring Capacity building and training for wards and clinics are carried out and planned for on an ongoing basis.	
District Hospital	The Districts hospital is responsible for the information system affairs and is therefore responsible for the following: Supporting and supervising the collection and timely reporting of the data from all the wards and clinics it has. Ensure the quality, completeness, correctness, and consistency of data from the wards and clinics. The DHIS tool to be used for checking data reporting on each form for each district hospital is used continuously so as to be able to track and retrieve missing reports Data quality is controlled by assessing the data both manually by "eyeballing" (look carefully through the data, compare previous months) and by using the DHIS tools for quality control (average min-max values and	There will be a minimum of five (5) persons One person appointed Information Officer and head of the district hospital HMIS Team and is responsible for all aspects of the HMIS in the hospital. Two additional staffs, who will receive training and take part in the supervision of wards and clinics, maintaining the database, analyse and disseminate information. One person capable, to be responsible for the DHIS and is trained accordingly. One backup person is selected who also receive training and take actively part in the DHIS database management

	evaluation rules)	
	Keying into the computer data from the reports submitted by clinics and wards.	
	Reporting to the DHMT either manually or electronically by e-mail.	
	Sending feedback to the wards and clinics based on the reports received.	
	Monthly feedback report; every month, once the data is captured in the DHIS, the wards and clinics get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table).	
	Monthly report; every month a brief standard district hospital report is disseminated at the district level; including essential data and indicators as well as missing reports from the facility.	
	Quarterly report; comparing problems and achievements in wards and clinics hospital, focusing on key indicators and including graphs, tables and text.	
	Annual report; Complete and comprehensive extension of quarterly report	
	Essential indicators to be graphed on walls/notice boards.	
	In case of disease outbreaks and/or epidemics the district hospital shall report to the both DMO and ZMO immediately using any means of communication available.	
	Analyze data obtained for use in the district hospital to facilitate district and facility planning process.	
	The monthly, quarterly and annual reports are presented for the District hospital management and for other stakeholders in the district (programs, other government structures, shahia,	

	community) in meetings and through other venues	
	Tools for data registration, collection and reporting are in place in all wards and clinics with sufficient stock.	
	HMIS information is used in health education sessions and for advocacy more generally	
	Capacity building and training to the wards' and clinics' for both personnel and institutional are carried out and planned for on an ongoing basis.	

<u>Staffing</u>

Health Programmes:
Each health program receives their routine HMIS data electronically from the HMIS unit every month. They have their own DHIS2 database which will then be updated every month and including all "their" data and indicators. The HMIS unit is responsible for maintaining the DHIS2 database in each health program and support and trains them so that they can use the DHIS2 database application to its potential. In cases where the health programs have their own better database application procedures to export DHIS2 data to their software application will be established.

<u>Zonal level</u>
Description:

The ZHMT/ZHMIS are responsible for the HMIS in the districts in their zone as well as for the zone level HMIS.

Responsibilities:

- Zones are overall responsible for the district HMIS their zone as well as for the zone HMIS itself. To undertake this overall responsibility, the following tasks shall be implemented:
- Supporting and supervising the collection and timely reporting of the data from all the DHMTs situated in its administrative area ensure the quality, completeness, correctness, and consistency of data from the DHMTs under its administrative area.

- **Sending feedback to the DHMTs based on the reports received:** Monthly facility feedback report; every month, once the data is captured in the DHIS, the facilities get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table). Monthly district report; every month a brief standard district report is disseminated at the district level; including essential data and indicators as well as missing reports from the facility Quarterly report; comparing problems and achievements in the health facilities in the district, focusing on key indicators and including graphs, tables and text. Annual report; Complete and comprehensive extension of quarterly report. Essential indicators produced through the data analysis tools to be graphed on walls/notice boards.
- In case of disease outbreaks and/or epidemics the ZHMT/ZHMIS shall report to the National HMIS unit immediately using any means of communication available.
- Analyze data obtained for use in the zone to facilitate zone and district planning process.
- Ensure that tools for data registration, collection and reporting are in place in all districts with sufficient stock. More generally; make sure the district HMIS teams are continuously being capacitated, trained and supported so that they are able to efficiently run the HMIS activities in the district.

Staffing

- In Unguja and Pemba zones one person (with qualifications) is appointed Information Officer and head of the Zone HMIS Team and is responsible for all aspects of the HMIS in the zone. This person is member of the Zone Health Management Team and/or Zonal Health Management Information System.
- The Zone HMIS team includes two additional staffs that will receive training and take part in the supervision of districts, maintaining the database, analyze and disseminate information.
- One person in the team (the most capable, not necessarily the head of the HMIS team) is responsible for the DHIS and is trained accordingly.
- One backup person is selected who also receive training and take actively part in the Zone DHIS database management.

❖ *Districts*

8.1.1.1.1 Description

The HMIS activities in the district are carried out by the District Health Management Team (DHMT). The district is the focal point/level of the HMIS responsible for the HMIS in the DHMTs as well as for the HMIS at the district level and for the reporting to the zonal and national level.

8.1.1.1.2 Responsibilities

The Districts are responsible for the HMIS in the health facilities in their districts as well as for the district HMIS itself.

- Supporting and supervising the collection and timely reporting of the data from all the health facilities and community (shehia) situated in its administrative area
- Ensure the quality, completeness, correctness, and consistency of data from the health facilities under its administrative area.
- The DHIS tool to be used for checking data reporting on each form for each district is used continuously so as to be able to track and retrieve missing reports.
- Data quality is controlled by assessing the data both manually by "eyeballing" (look carefully through the data, compare previous months) and by using the DHIS tools for quality control (average min-max values and evaluation rules).
- Keying into the computer data from the reports submitted by the health facilities.
- Reporting to zonal and National HMIS unit electronically by e-mail.
- Sending feedback to the health facilities based on the reports received.
- Monthly facility feedback report; every month, once the data is captured in the DHIS, the facilities get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table).
- Monthly district report; every month a brief standard district report is disseminated at the district level; including essential data and indicators as well as missing reports from the facility.
- Quarterly report; comparing problems and achievements in the health facilities in the district, focusing on key indicators and including graphs, tables and text.
- Annual report; Complete and comprehensive extension of quarterly report
- Essential indicators to be graphed on walls/notice boards.
- In case of disease outbreaks and/or epidemics the DHMT shall report to the ZMO immediately using any means of communication available.
- Analyze data obtained for use in the district to facilitate district and facility planning process.
- The monthly, quarterly and annual reports are presented for the District Management Team and for other stakeholders in the district (programs, other government structures, shehia, and community) in meetings and through other venues.
- Tools for data registration, collection and reporting are in place in all health facilities with sufficient stock.

HMIS information is used in health education sessions and for advocacy more generally Capacity building and training at facility and district levels –including the district HMIS team are carried out and planned for on an ongoing basis.

Staffing

There will be at least three (3) responsible staff in the district level as narrated below

- In each district one person is appointed Information Officer and head of the District HMIS Team and is responsible for all aspects of the HMIS in the district. This person is a member of the District Health Management Team.
- The district HMIS team includes two additional staff that will receive training and take part in the supervision of districts, maintaining the database, analyse and disseminate information.

- One person in the team (the most capable, not necessarily the head of the HMIS team) is responsible for the DHIS and is trained accordingly. One backup person is selected who also receive training and take actively part in the DHIS database management.

❖ **Primary Health Care Facility (public and private)**

Herein the health facility refers to both first and second line PHCUs.

Description

Much of the HMIS primary health care data have the PHCUs as their sole source. The data for the Zanzibar HMIS are registered, collected, collated and reported from over one hundred and sixty (160+) PHCUs while each serving its defined population. The quality, timeliness, accuracy and relevance of the HMIS information depend entirely on the registration, collection and collation in the facility level. It is therefore the basic level of HMIS. Most data from the health facility are of operational nature.

Responsibilities:

- Being the primary data generation level, the health facility has the following responsibilities:
- Collect data for the health services the facility offers.
- Filter and collate data with respect to the report forms submitted to the facility by the District Health Management Team (DHMT).
- Ensuring the reports reach the DHMT in due dates.
- Analyze data obtained for use in the facility.
- Essential indicators to be graphed on walls.
- In case of disease outbreaks and/or epidemics the facility shall report to the DMO immediately using any means of communication available.

Staffing

In each health facility one person is designated Information Officer and head of the Health Facility HMIS Team and is responsible for all aspects of the HMIS in the facility. In the PHCUs' this person will typically also be responsible for other program tasks.

8.1.1.1.3   *Description*

In the Zanzibar HMIS, all data from all health facilities (hospitals, cottage hospitals and PHCUs) are included and integrated. However the Hospital data; all inpatients, maternity and OPD data, have previously tended to fall outside the general information system. The hospital HMIS is based on reports from the wards and clinics including the OPD clinic. While the reports from the OPD clinics feed into the general Zanzibar District HMIS, other clinics and inpatient wards feed into the hospital sub-section part of the Zanzibar HMIS.

Responsibilities

- Supporting and supervising the collection and timely reporting of the data from all the wards and clinics.
- Ensure the quality, completeness, correctness, and consistency of data from the wards and clinics.
- The DHIS tool to be used for checking data reporting on each form for each ward and clinic is used continuously so as to be able to track and retrieve missing reports.
- Data quality is controlled by assessing the data both manually by "eyeballing" (look carefully through the data, compare previous months) and by using the DHIS tools for quality control (average min-max values and evaluation rules)
- Keying into the computer data from the reports submitted by wards and clinics.

Reporting

- Reporting shall be done to the National HMIS unit electronically by e-mail. This is to make sure that the HMIS unit has all the health data.
- Reporting shall also be done to the Department of Curatives, as customary, for the departments planning and management.
- Sending feedback to the wards and clinics based on the reports received.
- Monthly feedback report; every month, once the data is captured in the DHIS, the clinics and wards get a routine feedback report consisting of the essential data reported for the last month and for the previous months the same year (table).
- Monthly hospital report; every month a brief standard hospital report is disseminated to the hospital management; including essential data and indicators as well as missing reports from wards and clinics.
- Quarterly report; comparing problems and achievements in the wards and clinics, focusing on the comparable elements for key indicators and including graphs, tables and text.
- Annual report; Complete and comprehensive extension of quarterly report
- Essential indicators to be graphed on walls/notice boards.
- In case of disease outbreaks and/or epidemics the hospital shall report to both HMIS Unit and the Department of Curatives immediately using any means of communication available.
- Ensuring Capacity building and training for wards and clinics are carried out and planned for on an ongoing basis.