FEDERAL MINISTRY OF HEALTH

Department of Health Planning Research & Statistics

National Standard Operating Procedure for the Collection and Management of Integrated Routine Health Data in Nigeria

Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CBOs	Community Based Organisations
CMP	Change Management Procedure
CSU	Community Service Unit
DHIS	District Health Information System
DHIS2	District Health Information System (software), Version 2
DPRS	Department of Planning, Research and Statistics
DQA	Data Quality assessment
FMoH	Federal Ministry of Health
HCT	HIV Counselling and Testing
HDCC	Health Data Consultative Committee
HDGC	Health Data Governance Council
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMH	Honourable Minister of Heath
IDSR	Integrated Disease Surveillance and Response
IHDMT	Integrated Health Data Management Team
IP	Implementing Partner
LGA	Local Government Area
M&E	Monitoring and Evaluation
MNCH	Maternal, Neonatal and Child Health
MSF	Monthly Summary Form
NACA	National Agency for the Control of AIDS
NAFDAC	National Agency for Food and Drug Administration and Control
NBS	National Bureau of Statistics
NCH	National Council of Health
NGO	Non-Governmental Organisation
NHFL	National Health Facility List
NHIS	National Health Insurance Scheme
NSHDP	National Strategic Health Development Plan
NPC	National Planning Commission
NPHCDA	National Primary Healthcare Development Agency
NPI	National provider Identifier
NPopC	National Population Commission
PHC	Primary Health Care
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
RHIS	Routine Health Information Systems
RQDA	Routine Quality Data Assessment
SACA	State Agency for the Control of AIDS
SDP	Service Delivery Point
SMoH	State Ministry of Health

SOP	Standard Operating Procedure
SPHCDA	State Primary Healthcare Development Agency
TB	Tuberculosis
WHO	World Health Organisation

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FOREWORD

The analysis of the strengths, weaknesses opportunities and threats (SWOT) of the health information system in the country revealed that it is uncoordinated; verticalised and with insufficient human and financial resources. The overall effect of these gaps is an unreliable data collection system for all disease/program areas. In response to these challenges a Health Information System (HIS) policy that tackles challenges associated with poor health data identified over decades in the country was developed. The new HIS Policy addresses the gaps and creates a pedestal for cross institution collaboration and foster leadership and governance of the HIS.

The 2014 HIS policy takes a paradigm shift from a national health management information system (NHMIS) policy to national health information system (NHIS) policy that interconnects a web of data sources and needs which span multiple institutions. A Standard Operating Procedure (SOP) for the implementation of the NHMIS therefore became imperative.

The SOP is expected to guide the instutionalisation of continuous capacity strengthening of information producers and users to exploit their full potentials in enhancing quality of information, efficient and effective use of resources. The SOP also provides guidance on roles and responsibilities of all stakeholders operating within the health system. Furthermore this document describes data management procedures, information flow pathway and timelines at every stage of the data collection and reporting cycle.

It is my hope that all stakeholders in the health sector will abide with guidance provided in this document in order to strengthen the HIS at all levels of health administration.

Finally I wish to acknowledge contributions of all stakeholders to the development of this document.

L. N. Awute
Permanent Secretary
Federal Ministry of Health

Background

The 56th session of the National Council on Health (NCH) passed a resolution to use a single instance of the DHIS2 for health data reporting in the country. The National instance of the DHIS2 domiciled at the Federal Ministry of Health (dhis2nigeria.org.ng) currently serves as the reporting platform for National Health Management Information System dataset. The version 2013 of this dataset was harmonised to capture different programme and thematic areas for primary health care services in the country. However, other national datasets exist that also capture additional data from various levels of service delivery – primary health facilities, secondary and tertiary health care facilities. Some of these datasets are been reported electronically via separate DHIS2 databases to government agencies or development partners, while some are still based on paper systems or Microsoft excel templates. The mandate of the Department of Planning Research and Statistics (DPRS) of the Federal Ministry of Health (FMoH) is to coordinate and implement the setup/migration of these additional national datasets to the national DHIS2 instance. This migration will ensure that there is a single data warehouse for routine health data in country administered by the Federal Ministry of Health and accessible to all relevant government agencies as well as development partners.

Current National Datasets

The national datasets for routine health data include:

1. NHMIS Monthly Summary (All health facilities in the country)
2. IDSR (All health facilities in the country)
3. ART Monthly Summary (ART designated health facilities)
4. PMTCT Monthly Summary (PMTCT designated health facilities)
5. HCT Monthly Summary (HCT designated health facilities)
6. Vaccine Management Dataset (All health facilities in the country)
7. Secondary/Tertiary Facility Monthly Summary (Secondary and tertiary health facilities)
8. Community-based NHMIS Dataset (All CBOs and NGOs working in health sectors at community level)

Introduction to the Standard Operating Procedure

Nigeria's three-tiered health system involves a large network of actors, including government agencies, non-governmental organisations, and international development partners. Due to the desire of the various actors to have their health information needs met, the country's huge Health Information System (HIS) has before now been fragmented along the various disease programme lines, therefore making centralised reporting system dysfunctional and resulting in several challenges, including dearth of credible routine health data. Thus, there is the dire need to improve the national HIS to ensure better performance, maintain a monitoring and evaluation system that responds optimally to the National Strategic Health Development plan (NHSDP), and respond appropriately to global reporting requirements. In that regard, the Federal Ministry of Health (FMoH) in collaboration with other actors decided to apply best practices for managing routine health data, including the development of this standard operating procedure.

The Department of Planning Research and Statistics (DPRS) of FMoH is responsible for coordinating the process of maintaining a structured and integrated system of collecting, aggregating, reporting and managing routine health data at different organisational levels in Nigeria – from community-level as well as from public and private health facilities. Data from the community and these health institutions pass through the same organised structure, and at every stage of the structure the integrity of data needs to be assessed and addressed. This SOP applies to data housed in Nigeria's primary databases called the National DHIS2 Instance which is housed at FMoH. The District Health Information System (DHIS) platform is collecting aggregated routine data, and by extension will have capacity to also receive routine health statistics in aggregated format from electronic medical records system.

Each state and LGA has a team of monitoring and evaluation (M&E) specialists drawn from the various disease and health programme areas to form Integrated Health Data Management Team (IHDMT), responsible for the process of monitoring, ensuring supportive supervisions and data quality management in collaboration with implementing partners working at sub-national levels.

At the country-level, FMoH/DPRS, National Agency for the Control of AIDS (NACA), National Primary HealthCare Development Agency (NPHCDA) and other actors provide technical supervision to the teams at the lower levels. This document describes data management procedures, timelines and responsibilities at every stage of the data collection and reporting cycle.

Health Data Management Teams

Service delivery data and other data are expected to be entered at the facility and as such, the facility takes responsibility for the quality of data that is entered into the DHIS platform. However, in facilities where there are health programme implementing partners (IP), the IP is expected to support the facility to ensure that optimum quality data is entered into the DHIS platform. The Health Data Management Team shall consist of all program M&E /data collection Officers including Integrated Disease Surveillance Response (IDSR) Officers at the LGA and State level.

The Local Government with the support of the State Health Data Management team shall conduct integrated and regular monitoring, mentoring, supervision and data audit in health facility to ensure that optimum quality data are generated from health facilities. The State Health Data Team shall provide supervisory and Technical support to the Local Government Area (LGA) Health Department.

The smooth running of the National server as well as the management of the database is crucial to the running of the National Instance. The Federal Ministry of Health will remain the overarching database administrator. However, some level of database administration will also be decentralised at national, state and LGA levels. This means that sub-national database administrators will exist at national, state and LGA levels. For optimal coordination and control, standards and convention guide will be developed for use in ensuring the integrity of the metadata structure. Roles and Responsibilities are summarised in Table 1.

Table 1: Responsibilities of Various Actors in the Health Management Information System

	Administration			Data Production and Use	
	Server Management	**Full Database Administration**	**[1]Partial Database Administration**	**Data Entry**	**View and extract Data/Reports**
FMOH (DPRS)	Yes	Yes	Yes	No	Yes
-FMoH Programmes *(NASCP, NMEP, NTBCLP, FAMILY HEALTH, EPID, FDS)* -FMoH agencies (*NPHCDA, NHIS*) -Other Agencies (NACA)	No	No	Yes	No	Yes
SMoH(DPRS)	No	No	Yes	No	Yes
-SMOH programmes (*SMOSASCP, SMEP, STBCLP, FAMILY HEALTH, EPID, DFDS*) –SMoH agencies (*SPHCDA, SACA*)	No	No	No	No	Yes
LGA (IHDMT)	No	No	No	Yes	Yes
Health Facility	No	No	No	Yes	Yes
Development Partners	No	No	No	No	Yes

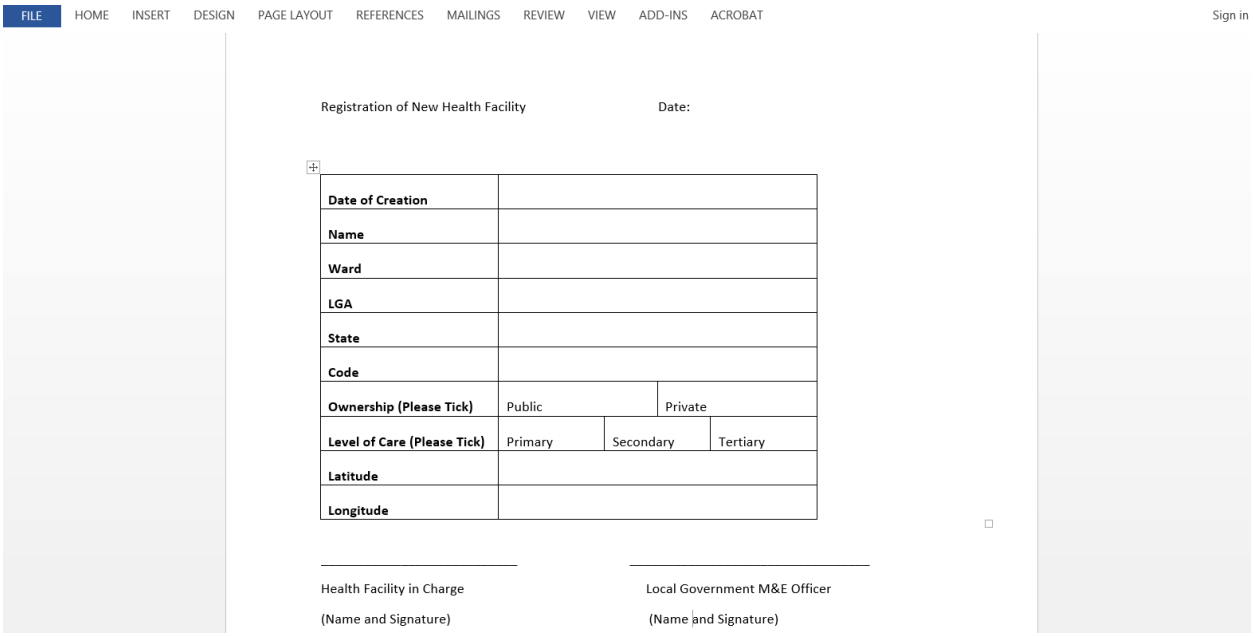
Data collection process

[*] Partial DBA: Specific database roles will be devolved to resident focal database administrators in the relevant agencies and states. These will include: User Management (Addition and Deletion of users), and Organization Unit Maintenance (Creation of New Health Facilities).

Health Facility List Update

At the beginning of every month and when the need arises, each LGA IHDMT submits the list of new health facilities that is not yet on the National DHIS platform to the LGA M&E/HMIS Officer who is the Head of IHDMT using the template agreed for registering , creating or updating Organisation/Units on the National DHIS2 platform. This list must include information on the names, ownership, location, programme areas, and partner support (where applicable) as well as other attributes stipulated. The information is provided by the programme manager or the IHDMT members who identified the unit. State IHDMT team is informed of these changes to the facility lists and codes are assigned to the new facilities and configured on the DHIS2; new facilities are then allocated.

Figure 1: Format for Registration of New Health Facilities



FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW ADD-INS ACROBAT Sign in

Registration of New Health Facility Date:

Date of Creation			
Name			
Ward			
LGA			
State			
Code			
Ownership (Please Tick)	Public	Private	
Level of Care (Please Tick)	Primary	Secondary	Tertiary
Latitude			
Longitude			

Health Facility in Charge
(Name and Signature)

Local Government M&E Officer
(Name and Signature)

Preparing Monthly Data Submissions

Compilation of Paper-based Monthly Summary Forms

At the end of each month, aggregate data from different programme service areas (e.g. ART, Immunisation, MNCH, TB) are summarised from the programme registers and other tools from all health facilities into monthly summary forms (MSFs). While focal persons for service delivery point or thematic areas (e.g. pharmacy, laboratory, DOT, PMTCT) are responsible for the correct maintenance of the data collection tools (cards, form, worksheets and registers) for generating monthly summaries, each facility M&E focal person/records officer is responsible for ensuring that all monthly summaries are ready, validated and submitted in a timely manner.

Compilation of DQA reports

Data quality assessment (DQA) forms reports are typically filled in during data quality assessment visits to each facility every quarter and the summary report is filled at community service units (CSU), health facility (HF) and LGA level for reference and follow up action purpose. The DQA checklist has three parts:

a) Data availability

b) Data consistency

c) Data validity

Once in a quarter, the full checklist needs to be administered at each facility for each programme area, while part (c) only is administered monthly.

Submission of Monthly Data

Paper-based Monthly Summary Forms

Collating reports for facilities and CSU (Paper-based method)

Health facilities are expected to start the collation of their monthly summaries on the last day of the month and should have their summary ready within the 1st three (3) days of the following month. A copy of this summary must be submitted to the LGA IHDM team within the 1st five (5)

days of the following month. In each LGA, a monthly Integrated Health Programme M&E meeting is convened by the LGA M&E/HMIS Officer – (who is the head of the IHDM team in the LGA) within the first week of each month for the purpose of: a) holding a data/performance review; b) capacity building in areas with data quality issues and poor understanding and c) where the need arises collecting all MSFs from all the SDP and health facilities.

Copies of the MSFs are kept in duplicate and distributed as follows;

I. Original copy submitted to the LGA IHDMT
II. Duplicate copy kept at the medical records office in the facility

Validation exercises are undertaken prior to and during this meeting to ensure that the data submitted on MSF is an accurate reflection of services delivered and activities undertaken. Where the structure of the M&E meeting does not allow participation by facility M&E focal person or the meeting does not take place for any reason, it will be the responsibility of the LGA IHDMT members to pick up the MSFs from the facilities or service delivery points (SDPs) they have been mapped to support on routine supportive supervision.

Collating reports for facilities and CSU (Electronic-based method)

For those CSUs, PHCs, public and private health facilities within the LGAs that are empowered to use mobile java-enabled phone technology or internet-ready computers to upload their data, data transmission will be by electronic systems but all the paper-trail will be kept safe as described above in the paper-based method basically for easy follow up during data validation and DQA by the LGA IHDMT members.

Entry into the DHIS

The DHIS contains a list of all public and private health facilities in Nigeria, and data is entered according to geographical location of the ward, Local Government Area (LGA) and state. Data is captured directly onto the national DHIS2 platform.

Data entry templates have been customised for each programme service area and correspond in layout with monthly summary forms to reduce the potential for data entry errors and improve data quality. At the LGA level, the IHDM Team, under the leadership of the LGA M&E/HMIS officers, are responsible for data entry while the LGA M&E Office is the data entry hub.

Figure 2: Format for data entry for health services

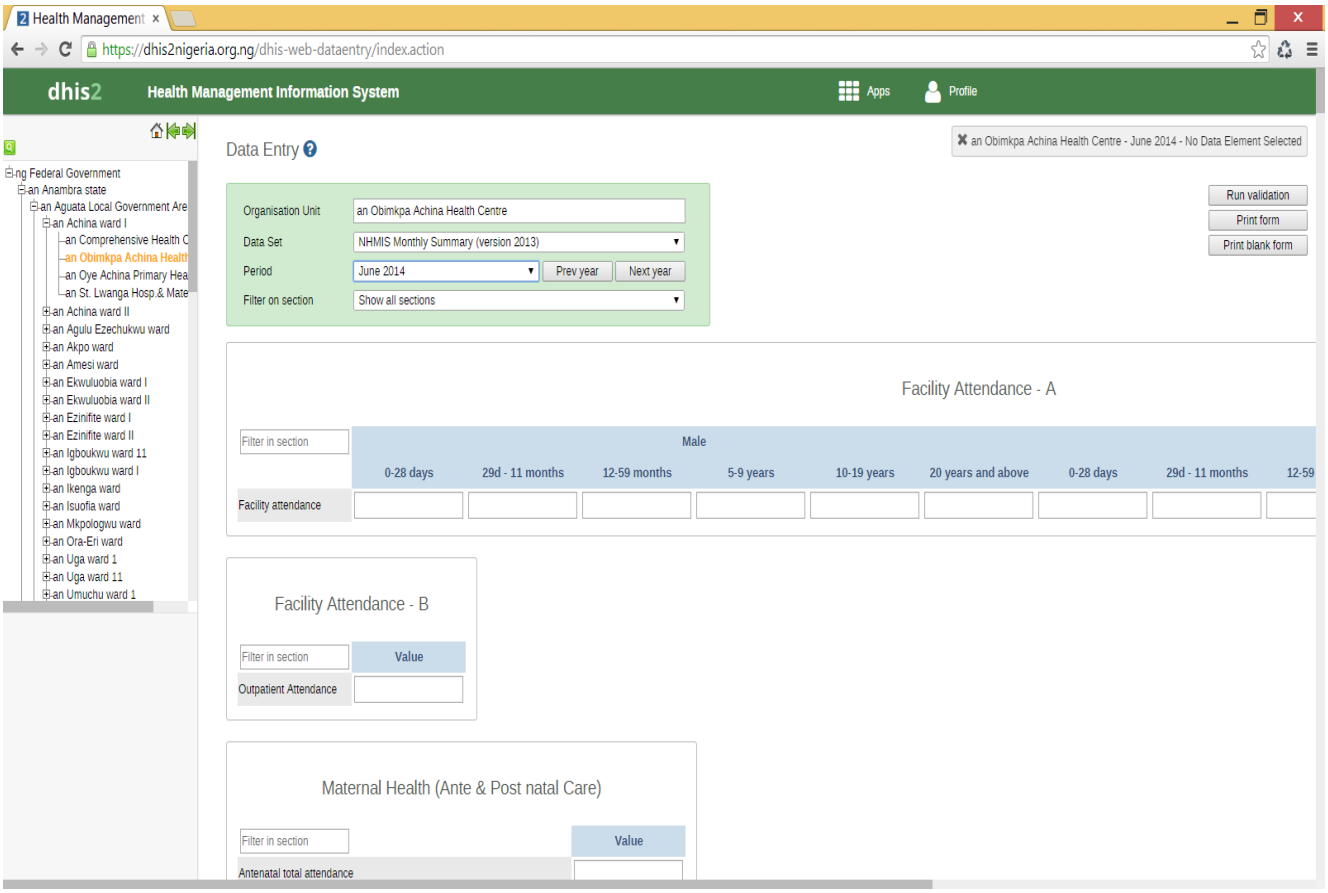


Figure 3: Data flow and M&E structure

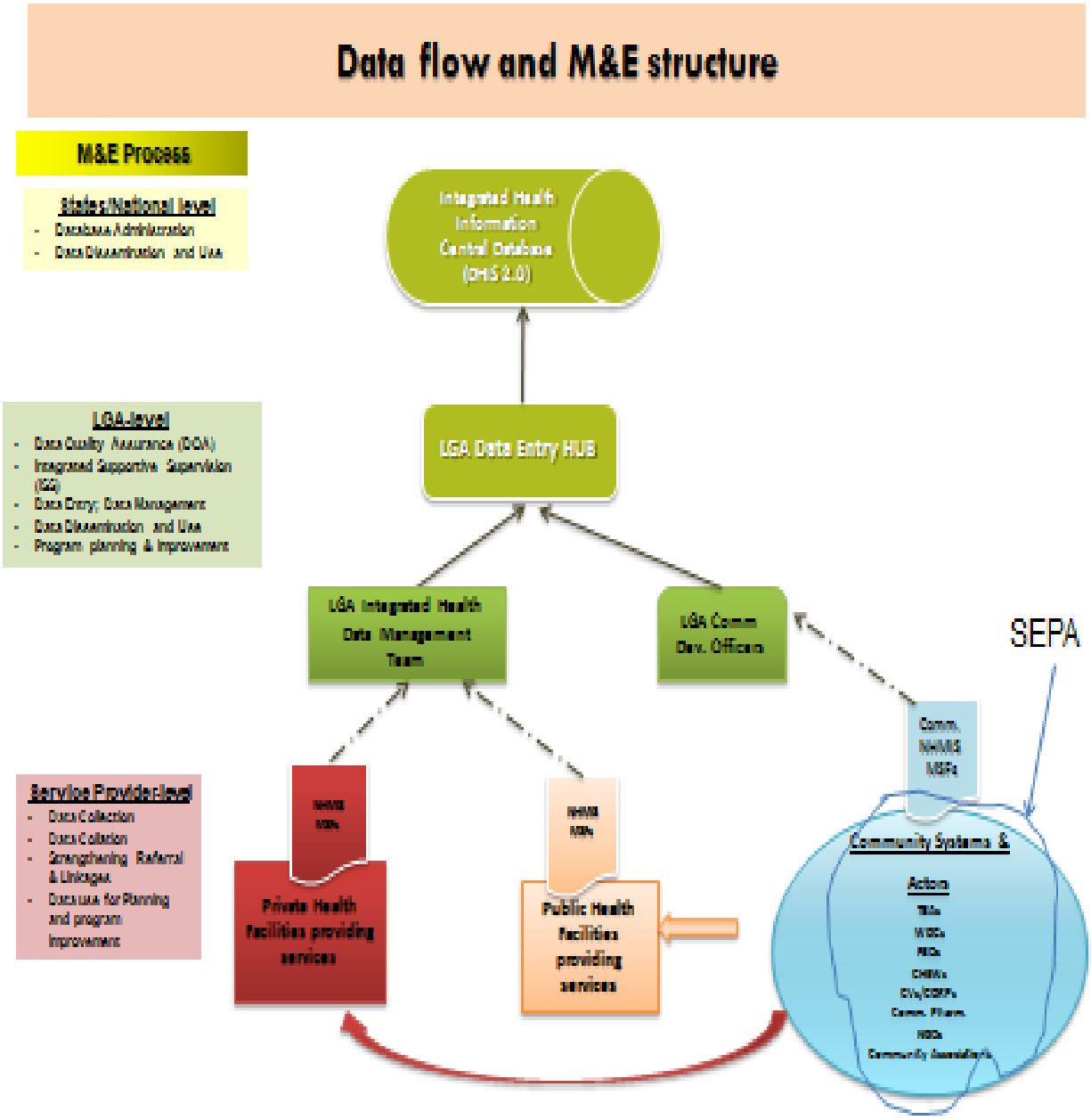
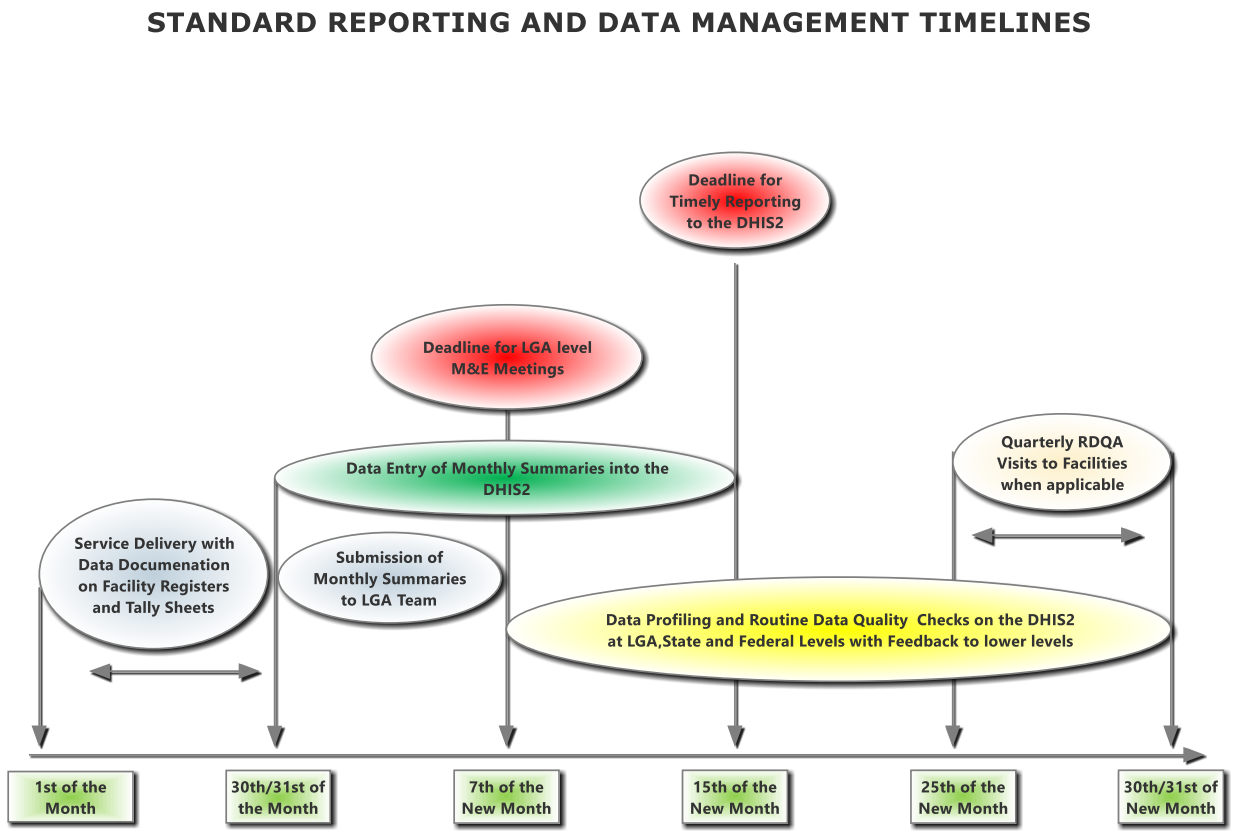


Figure 4: Standard reporting and management timelines



LGA-level Data Review and approval process

While the LGA IHDMT may assign data entry to data entry clerks, and facilities when relevant can capture data directly to the DHIS2, the team shall be responsible for reviewing the data for accuracy and usefulness. This involves carefully examining the data entered into the database using the data quality modules on the DHIS2 as well as reporting modules, paying great attention to gaps, outliers and validation rule violations so that prompt feedbacks can be provided to the data producers. LGA M&E and HMIS Officer, on monthly basis, will be responsible for liaising with all IHDMT members to ascertain the quality of the data approved for entry into DHIS.

State-level Data Review and approval process

The state officer shall be responsible for validating the LGA submissions for compliance with reporting rates and quality of data on the National DHIS2 platform. The state IHDMT members and the various programme managers at this level are responsible for reviewing the data for accuracy and usefulness. The State team will provide higher level data quality checks on the data elements captured from the health facilities and ensure that indicators are of high quality.

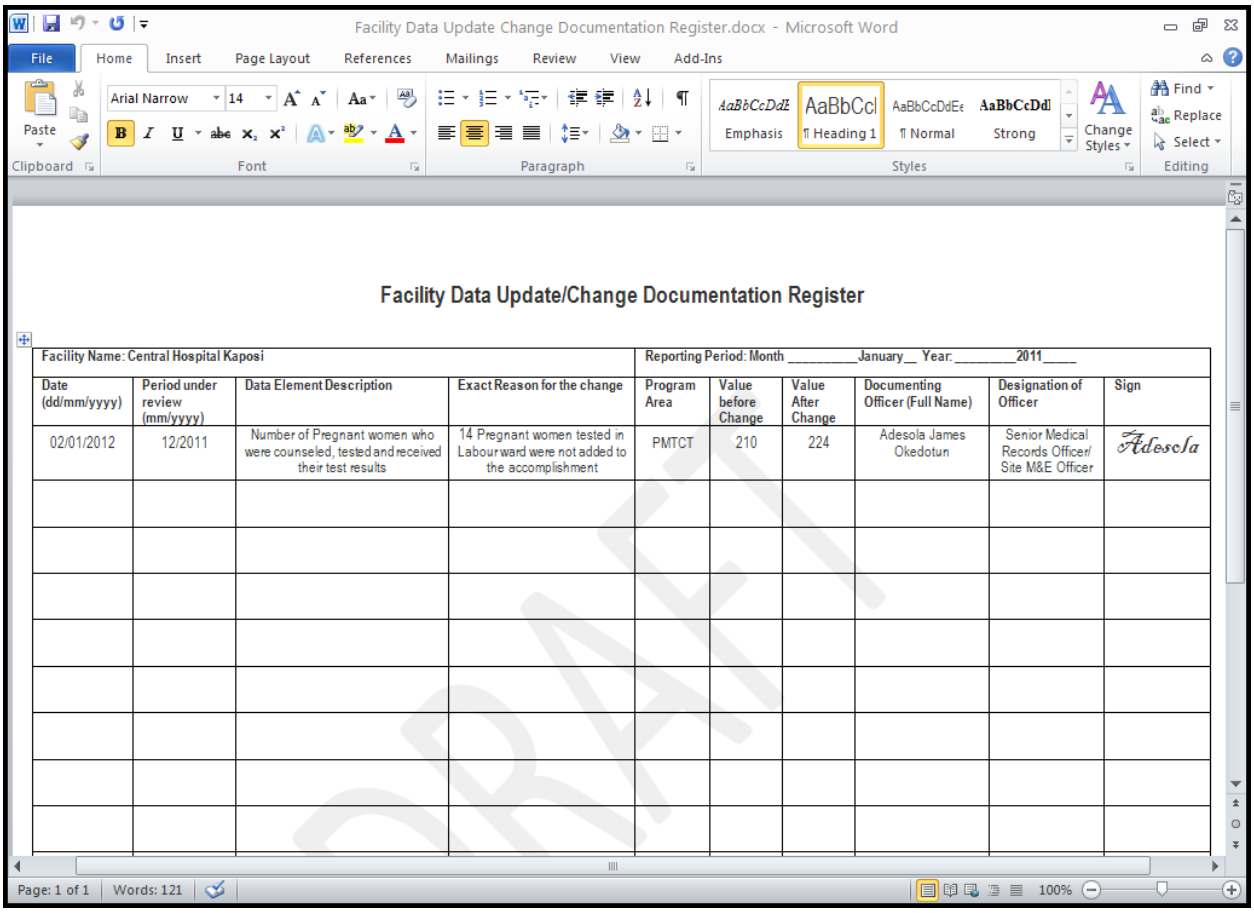
Change Management Procedure (CMP) File or Register

Monthly data validation and re-validation exercise and Routine data quality assessments (RDQA) as well as data quality checks in the DHIS would sometimes unearth incorrect tallies between the registers and monthly summary forms and questionable data. These errors, once noticed, need to be corrected on site (at the health facility). Procedure for correction involves:

- Generating a new MSF for the programme area and period in question by the service focal person. The reason for change in data must be clearly written at the back page of the MSF which is submitted to the M&E focal person. The new MSF is dated same day the corrections/changes were made.
- The changes are entered into the facility data update/change documentation register by the M&E focal person and signed off by the originator before filing the MSF. The new MSF should be filed side by side the previous one.
- The M&E focal person submits the new MSF to the LGA IHDMT member supporting that CSU or facility

- M&E focal persons together with LGA IHDMT members have the responsibility of ensuring these changes are made in the DHIS. The change in the DHIS is done only after the corrections have been made and documented on the paper forms.
- Information contained in the CMP registers is very important for keeping an audit trail of changes to data.

Figure 5: Format for Facility data update/change documentation register



Facility Data Update Change Documentation Register.docx - Microsoft Word

Facility Data Update/Change Documentation Register

Facility Name: Central Hospital Kaposi				Reporting Period: Month _____January__ Year:_____2011____					
Date (dd/mm/yyyy)	Period under review (mm/yyyy)	Data Element Description	Exact Reason for the change	Program Area	Value before Change	Value After Change	Documenting Officer (Full Name)	Designation of Officer	Sign
02/01/2012	12/2011	Number of Pregnant women who were counseled, tested and received their test results	14 Pregnant women tested in Labour ward were not added to the accomplishment	PMTCT	210	224	Adesola James Okedotun	Senior Medical Records Officer/ Site M&E Officer	Adesola

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Data Locking

In order to ensure the integrity of data contained in the national database and to improve reliability, data locking feature of the DHIS will be enabled. The data locking feature is a functionality that allows the closure of the database to changes on the data entry screen after a certain period of time.

Data will be locked on the database for a period beyond three (3) dataset periods, which means data editing (entry, deletion, or correction) will not be possible for the period beyond 3 months with reference to the current reporting month (for monthly data) and the same applies to datasets collected daily, quarterly, six-monthly or annually.

Data Processing, Publishing and Reports Generation

Data Processing and publishing

Aggregated Data

While the bulk of the responsibility of ensuring data quality lies at lower levels of data administration (health facility, LGA and state), FMoH will also ensure that appropriate quality checks are applied to the aggregated data generated from health facilities and service delivery points. Feedback will be given to states on identified gaps and irregularities for onward dissemination to LGAs and health facilities, and to Ward Development Committees in cases of community data. The data on the national DHIS2 instance is available on the public domain and various users at different levels will be able to access aggregated data and indicators as authorised by the Federal Ministry of Health. Standard reporting templates tailored to national indicators will be used to populate periodic information. These templates will include dashboards, pivot tables, charts, maps and standard reports.

Development partners and institutions will be responsible for ensuring that they have the skills and capacity to interact with the national DHIS2 database for retrieval of indicators related to their programmes; FMoH will ensure that the appropriate authorities and privileges to do this are enabled (See Table 1).

Reports Generation and Feedback Mechanism

The scope and content of these reports are based on predefined indicators by each programme manager. The reports are prepared as summaries or as entered into the DHIS by facility. A snap

shot of pivot tables used in generating reports are archived by the user for future references including data audit purposes. Feedback mechanisms need to be in place at all levels (national and sub-national) to promote participatory data cleaning and data updating to reflect the realties at the data collection points.

Specific Roles and Responsibilities

CSUs/Facility M&E focal persons

The M&E focal persons are trained medical records staff, nurses, clinicians, lab technicians and other trained health workers. They are stationed at the facilities to support and provide services to patients and ensure that activities are properly documented. Their responsibilities include:

- Reading and extracting patients' records from folders into service delivery point registers
- Ensuring that changes to records on the registers are properly authenticated and documented
- Supporting service providers to capture summary data from service registers
- Undertaking advocacy to other focal persons in their facilities to ensure the correct and consistent use of data collection tools

Further responsibilities in ensuring data quality assurance include:

- Review of the linkage between patient encounter data and summary data on registers for accuracy
- Aggregation of data from registers and other recording tools into monthly summary forms.
- Validatation of the summary data prepared by other focal persons against registers.
- Participation in validation exercises at monthly M&E meetings using their own data
- Participation in validation exercises during routine DQA visits by subnational and national level officers

LGA IHDMT members

- Ensuring availability of data collection and reporting tools in all HFs and CSU
- Providing support to facility M&E focal persons to ensure the completeness of registers and other source documents forming part of the national HMIS data collection system
- Ensuring the completeness and accuracy of data transferred from registers and other source documents into monthly summary forms for each programme area
- Capturing data from the MSF onto DHIS
- Ensuring that all data is ready and submitted on time as part of the monthly reporting cycle
- Ensuring that all copies of duly signed monthly summary forms from facilities are properly filed by facility and month
- Correctly filling the Change Management Procedure (CMP) file (which serves as a record of the value changed before and after) of the affected month on the database
- Uses Performance Indicator results & charts to support service quality improvement in the facility
- Apply data quality checks on the DHIS2 – Validation Rule Analysis, Min – Max Analysis and Standard Deviation Analysis on captured data to detect possible abnormalities in the data.
- Reviewing the data from facilities using pivot tables and other reporting modules of the DHIS after data has been entered.
- Disseminating relevant information from the DHIS to LGA programme officers and development partners

Further responsibilities in ensuring data quality assurance include:

- Providing on-the-job mentoring to facility M&E focal persons and health care providers in the correct use of routine data collection and reporting tools
- Conducting DQA visits to each facility every quarter, using the standard DQA tools
- Ensuring that updates to database from DQA visits are entered into the DHIS

- Ensuring adequate documentation for audit purposes in the form of files and folders at the LGA office and that information in these files and folders matches what is kept in the facilities.

IP M&E Technical Officers

- Support the above activities of M&E officers and facility M&E focal persons with respect to maintaining good data management practices
- Support LGA IHDMT to enter data from the MSF onto the National DHIS platform
- Support generation of information products like charts and PowerPoint presentations (progress report) for monthly M&E meetings at the LGA/state office
- Support dissemination of data analysis products to officer-in-charge of facilities and those involved in the data management process to stimulate performance and data improvements
- Bringing data management or performance-related issues that they are unable to resolve to the attention of programme managers at LGA and state level. If problems are not resolved at this level, they should notify the DPRS, FMOH

LGAs and State Programme Coordinators

- Supporting the M&E teams to maintain the completeness and quality of data in their zones
- Referring to the provisions with respect to data management in sub agreements when bringing persistent data management problems to the attention of facility managers, and if necessary, LGA health Dept./state ministry of health officials
- Ensuring that complete datasets are submitted to the next level in a timely manner
- Reviewing and endorsing key performance
- Seeking technical assistance from the IHDMT when required

HMIS Officers at SMoH

- Ensure that reports disseminated are an accurate reflection of what is contained in the database

- To screen data submissions from LGA for missing facilities, missing data elements and unlikely trends
- Carry out spot checks to ensure data contained in the database is an accurate reflection of what's collected from the facilities.
- Undertake DQA visits when visiting LGA offices, including monitoring compliance to this SOP
- Support all other DQA activities and procedures outlined above, including the provision of technical assistance when necessary

FMoH Database Officer

- Supervising and ensuring tasks carried out by database officers are done correctly
- Work with State HMIS officers to ensure that the database facility list is up to date with eligible reporting units
- Provide feedback to State HMIS offices on gap and outlier analysis carried out by technical officers at the Federal level
- Ensure that adequate backups are done as stipulated in the HIS Strategic plan
- Ensuring that pivot tables posted on the FMoH website are identical to those on the DHIS server
- Ensuring that pivot tables accurately represent the data sent from the State and there is no duplication in facilities, data elements or aggregations
- To provide TA to other departments, the federal government of Nigeria and other agencies in the use of the DHIS when directed

HMIS Officers at FMoH

- Ensure that reports disseminated are an accurate reflection of what is contained in the database
- Screen data submissions from State for missing facilities, missing data elements and unlikely trends

- Carry out spot checks to ensure data contained in the database is an accurate reflection of what has been collected from the facilities.
- Undertake DQA visits when visiting state offices, including monitoring compliance to this SOP
- Support all other DQA activities and procedures outlined above, including the provision of technical assistance when necessary
- Coordinate DQA activities in collaboration with NBS and other stakeholders