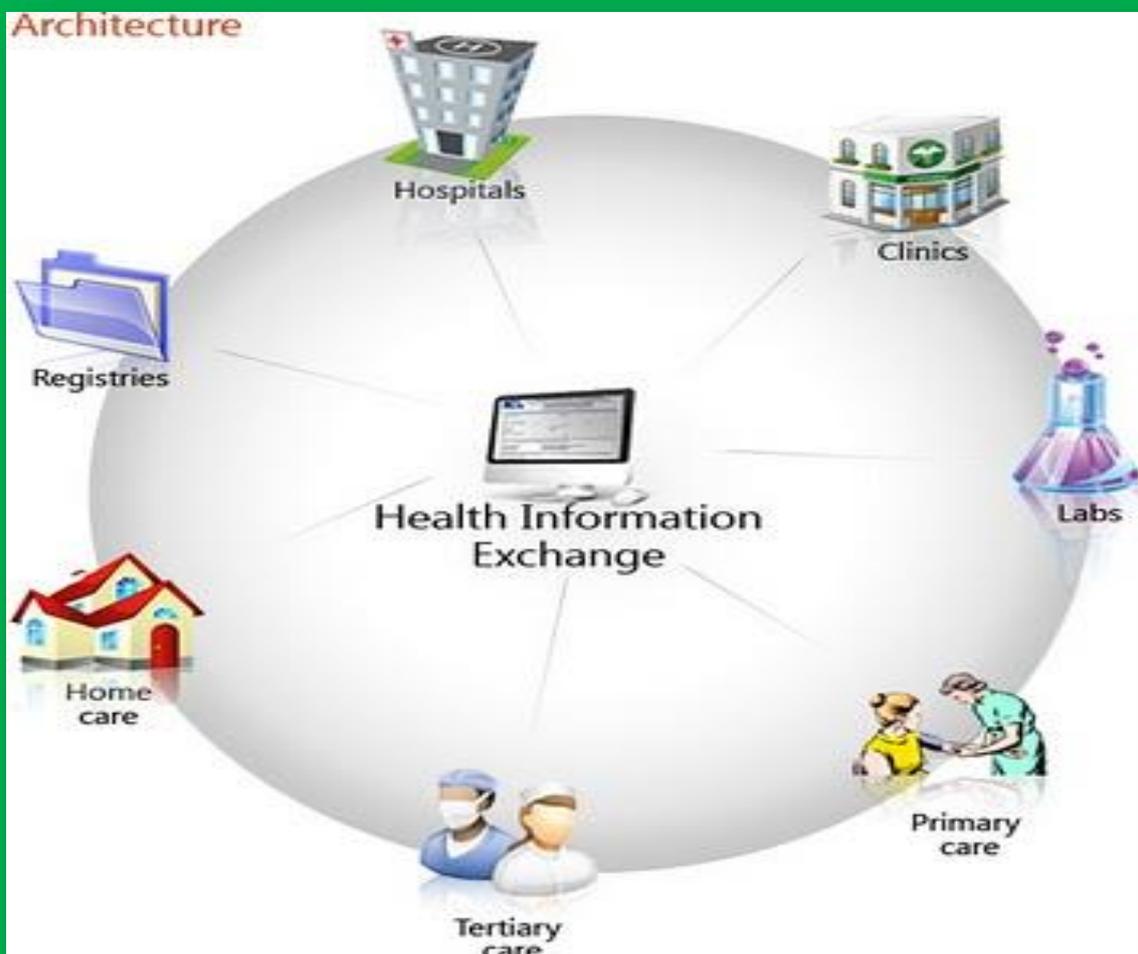




NATIONAL HEALTH INFORMATION SYSTEM STRATEGIC PLAN 2014 - 2018



Federal Ministry of Health

**Department of Health Planning, Research and Statistics
(DPRS)**

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CSO	Civil Society Organisation
DHIS	District Health Information System
DHS	Demographic and Health Survey
DPRS	Department of Planning, Research and Statistics
EMR	Electronic Medical Records
FMoH	Federal Ministry of Health
HDCC	Health Data Consultative Committee
HDGC	Health Data Governance Council
HIS	Health Information Systems
HMH	Honourable Minister of Health
HMN	Health Metrics Network
HMO	Health Maintenance Organisation
HRIS	Human Resource Information System
IP	Implementing Partner
IR	Intermediate Result
LGA	Local Government Area
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Ratio
NACA	National Agency for the Control of AIDS
NAFDAC	National Agency for Food and Drug Administration and Control
NAHeDA	National Health Data Archives
NBS	National Bureau of Statistics
NCH	National Council of Health
NHFL	National Health Facility List
NHIS	National Health Insurance Scheme
NHMIS	National Health Management Information System
NMIRS	National Minimum Indicator Reference Sheet
NNRIMS	Nigerian National Response Information Management System
NPC	National Planning Commission
NPHCDA	National Primary Healthcare Development Agency
NPI	National provider Identifier
NPopC	National Population Commission
PRISM	Performance of Routine Information System Management
RHIS	Routine Health Information Systems
SACA	State Agency for the Control of AIDS
SLA	Service Level Agreement
SMoH	State Ministry of Health
SOP	Standard Operating Procedure
SPHCDA	State Primary Healthcare Development Agency
TWG	Technical Working Group
WHO	World Health Organisation

Foreword

The National Health Information System Strategic Plan is a product of multi-stakeholders engagements. It is an indication that The Federal Ministry of health and stakeholders in the health sector desire reliable health information for planning, monitoring, evaluation and for accountability purposes.

In order to develop evidence based strategic plan for health information system in Nigeria, an assessment (Strength, Weakness, Opportunity and Threat - SWOT) of the health information system was conducted. The report of the SWOT analysis was used to develop the National Health Information Strategic Plan.

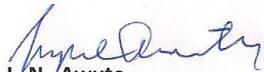
The key factor that will ensure the survival of any nationally oriented information system is the institutionalization of the Health Data Governance Council Chaired at the national level by the Honourable Minister of health. This Council and its replica at the State level serves as the clearing house for health data.

As part of the Government effort to further improve health data Governance in the country the national Health Act (NHA), National Health Information Policy has made necessary provision for the strengthening of the health information system.

To operationalize an integrated and sustainable HIS, for policy formulation, management, planning, resource allocation, implementation, monitoring and evaluation of health and health related services for improved health care delivery system at all levels in Nigeria, the Department of Planning, Research and Statistics (DPRS) of the Federal Ministry of Health (FMoH) with support from stakeholders developed strategic interventions and sets of activities contained in this document.

I wish to use this opportunity to encourage all stakeholders in the health sector to key into the strategies and activities prescribed in this document in order for the country to have a health information system that ensures evidence-based decision making for improved health status of Nigerians.

The contributions from stakeholders at various stages of development of this document are duly acknowledged.



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INTRODUCTION

Health information system has been described as one of the building blocks of the health system. Realizing the importance of reliable data in decision making especially in the health sector, the Federal Ministry of Health (FMoH) put in place a medical statistics system in the 1960s, which over the years evolved into the National Health Management Information System (NHMIS). However, due to a prolonged period of underinvestment in the health system, the NHMIS remained weak and has been unable to fulfill its mandate. This situation compromises the ability of decision makers to adequately use evidence in the allocation of resources and in the assessment of interventions. The situation also gave room for the proliferation of the health information system which, though has produced some results for projects, has not adequately addressed Nigeria's needs.

The Health Information System (HIS) in Nigeria has evolved in a haphazard and fragmented way due to institutional weaknesses, disease-focused demands driven by heavily funded donor projects and international reporting obligations towards specific diseases like HIV/AIDs, Malaria and Tuberculosis. These uncoordinated and project-specific demands have significantly compromised the health information system.

SITUATIONAL ANALYSIS

An assessment of the Routine Health Information System (RHIS) carried out in six states – Delta, Imo, Kebbi, Niger, Oyo and Taraba – using the Performance for Routine Information System Management (PRISM) tools [3] revealed significant gaps in the RHIS [4–9]. Furthermore, the report of the assessment emphasises that more efforts are needed especially at the health facility and LGA levels to harness the benefits of the District Health Information System version 2.

The result of a SWOT analysis carried out by stakeholders, based on the report of the RHIS assessment report, indicated the following:

Strengths

- Successful harmonisation of various programme data collection tools; and,
- Availability of previous versions of HMIS policy, which serves as a guide for renewed policy direction and drive.

Weaknesses

- The present policy focuses on routine health service data only;
- No level of government was able to meet the minimum requirement for HIS in terms of human resources, infrastructure and funding;
- The roles and responsibilities of all stakeholders in the NHMIS were not clearly defined in the policy'
- Non availability of data reporting tools; and,
- Lack of adherence to Standard Operating Procedures (SOPs).

Opportunities

- Stakeholders' consensus to strengthen the HIS;
- Existence of funds within vertical programmes that can be leveraged upon to strengthen the HIS; and,
- Availability of a National Strategic Health Development Plan and an M&E Framework which provides overall policy guidance for HIS

Threats

- Lack of sense of ownership of data (production and usage);
- No guidelines for coordinating activities of all stakeholders in HIS; and
- Data quality assurance not reflected in the previous policy.

As a result of the findings, it was unanimously agreed that an overhaul of the entire system is necessary and that the policy needs to be revised to address existing situations and other challenges as well as respond appropriately to the emerging scenario in terms of technological advancement. As against the situation with the previous policy, which did not address the health information system as an enterprise but rather focused on the routine health information system, strengthening the health information system as a whole was recognized

as being paramount. In this respect, a review of the policy becomes critical to address the gaps and weaknesses identified during the assessment and subsequent stakeholders review. Realising that health data does not reside in one ministry, department or agency, the new policy provides a framework for inter-sectoral integration and addresses the health information system as an enterprise governed by a council chaired by the Honourable Minister for Health (HMH).

In order to harness the benefits of the health information system, the Federal Ministry of Health produced a directory of health facilities in Nigeria. In the latest version produced in 2011, which replaced the first (2000) version, FMOH assigned a National Provider Identifier (NPI) to each health facility to enhance the information system. The NPI shall be used to identify a health facility whenever this facility is referred to in the information system.

The key factor that will ensure the survival of any nationally oriented information system is the system's ability to keep the nationally approved essential dataset(s) under control. To operationalize this, the Department of Planning, Research and Statistics (DPRS) of the Federal Ministry of Health (FMOH) has harmonised all data collection and reporting tools for the different programmes being implemented in the country by June 2013. Subsequent to this, a pronouncement by the National Council on Health (NCH) and a policy that gives direction and responsibility on modification to the approved national dataset set the pace. All stakeholders in the health sector are mandated to report these datasets into the national database. The 56th session of the National Council on Health approved the use of a **single, integrated** but **decentralized** national routine health database hosted at FMOH/DPRS on DHIS platform and a harmonised NHMIS (version 2013) tools for data collection and reporting for routine data management by all Programs and Implementing Partners.

The new health information system drive brings together all the necessary Ministries, Departments and Agencies of the government in the country to address the issue as an enterprise and chart a path for progress. These different government institutions and their relationship with the national health information system are highlighted below.

This chapter also outlines the Health Metrics Network framework [2] that was used in developing the national health information system policy and this strategic framework.

MINISTRIES, DEPARTMENTS AND AGENCIES INVOLVED IN THE HEALTH INFORMATION SYSTEM STRATEGY

A. Federal Level

I. Federal Ministry of Health:

The Federal Ministry of Health (FMoH) has the mandate to formulate and implement policies and programmes and to undertake necessary action to deliver effective, efficient, quality and affordable health services in partnership with other stakeholders so as to promote improved health status of Nigerians to serve as the engine for the pursuit of accelerated economic growth and sustained development.

The major health data generating departments of the FMoH are Departments of Family Health, Public Health and Health Planning, Research & Statistics. While these departments have specific programme monitoring and evaluation (M&E) system, these systems are a subset of the National Health Management Information System. The Department of Health Planning, Research and Statistics has the statutory responsibility to coordinate public health data and information. It also oversees the collection of routine health data related to the Ministry and health sector as well as coordinates the National Health Management Information System.

II. Parastatals of the Federal Ministry of Health

There are four Agencies under the FMoH; National Primary Health Care Development Agency (NPHCDA), National Agency for Food and Drugs Administration (NAFDAC), National Health Insurance Scheme (NHIS), National Institute for Pharmaceutical Research & Development (NIPRD). Federal Teaching Hospitals and Specialty Hospitals as well as Health Regulatory Agencies are parastatals of the FMoH. The agencies and parastatals generate various types of health-related data.

National Primary Healthcare Development Agency (NPHCDA): The mission of NPHCDA is “To provide leadership that supports the promotion and implementation

of high quality and sustainable primary health care for all through resource mobilisation, partnership, collaboration, development of community based systems and functional infrastructure”. PHCs account for about 30,098 (88%) of health facilities in the country of which 22,850 (72%) of them are government owned [10]. Between 2011 and 2014, the agency has been involved in an aggressive drive to get many of the PHC facilities, which have been moribund, up and working. To this extent, the agency has been undertaking various programmes aimed at improving the number and quality of staff and services at PHC facilities. These include the Midwife Service Scheme (MSS), National Programme for Immunisation (NPI) among others. NPHCDA requires data to monitor the effect of its interventions and to also report to its partners; the data collection tools developed for this purpose have been incorporated into the National HIS tools. Collaboration has been established with the NPHCDA in order to understand the agency’s programme data requirement and respond to it appropriately through the new HIS platform on DHIS. Going forward, NPHCDA will work with PHCs under its purview to ensure that data collection forms are completed and forwarded to the LGA office routinely to be entered into the national HIS platform.

National Food and Drug Administration and Control (NAFDAC): The mission of NAFDAC is “To safeguard public health by ensuring that only the right quality drugs, food and other regulated products are manufactured, imported, exported, advertised, distributed, sold and used.” NAFDAC has made good progress in controlling fake medicines in the country over the years. Tracking the adverse reactions to drugs will require reportage of these actions from the health facilities. Using a single platform to record these from the health facilities will be a major positive step in the right direction. The DPRS will work with NAFDAC to incorporate all necessary data elements needed to support NAFDAC to achieve its mission.

National Health Insurance Scheme (NHIS): The objectives of NHIS include: “To ensure that every Nigerian has access to good health care services; to protect families from the financial hardship of huge medical bills; and to ensure equitable distribution of health care costs among different income groups.” Working with Health Maintenance Organizations

(HMOs), NHIS partners with private and public health institutions to reach many Nigerians with health insurance across the country. NHIS will be a major stakeholder in seeing that the goals of the National Health Information System are met.

III. National Planning Commission:

The National Planning Commission (NPC) was originally established by Decree No 12 of 1992 and later amended by Act 71 of 1993. The Commission has the mandate to determine and advise the Government of the Federation on matters relating to national development and overall management of the national economy. It is responsible for planning activities in the country and is the first port of call for development partners who intend working in Nigeria. In this regard, NPC holds a critical position with regards to the realisation of the goals of the health information system in the country. Establishing effective collaboration and working relationship with the Commission will ensure that its staff are abreast of the developments in FMOH and are able to plan and set priorities for the country in a more effective way.

IV. The National Bureau of Statistics:

The National Bureau of Statistics (NBS) is an agency of the National Planning Commission and is responsible for coordinating the Nigerian statistical system. The Agency plays the lead role in ensuring that a compendium of concepts, definitions and methodologies of statistical terms is published and distributed to MDAs. NBS ensures ownership of statistics by government at all levels. In producing needed statistics for the country, the Bureau employs a wide range of data sources which include censuses and surveys as well as administrative data/records which include routine health utilization records. The agency collects various socio-economic indicators that are significant in determining the wealth of the population and the ability of the people to pay for services and provide the food they need. Poor nutrition is a major contributor to morbidity and mortalities in children and knowledge of the wealth of people in an area can be critical to an intervention.

In the new HIS Policy, working with the NBS to develop communication linkages that will facilitate knowledge sharing on various country socio-economic indicators and results of

surveys coordinated by the Bureau such as the Multiple Indicator Cluster Survey (MICS) will go a long way in harnessing the vast resources that abound within the different government agencies. The FMoH will also work with the NBS to entrench health indicators from the Ministry in the routine statistics reported by the Bureau.

V. The National Population Commission

The National Population Commission (NPopC) was established by Act No 23 of 1989 as an independent and autonomous body to conduct regular censuses in Nigeria. This was followed by the 'births, deaths, and related issues (compulsory) registration' amendment decree No. 69 of 1992 which makes it mandatory for all births, deaths, marriages and migrations to be registered by NPopC in accordance with the laws of the federation. These decrees are reinforced further by section 24 of the Third Schedule of the 1999 Constitution of the Federal Republic.

The functions of the Commission, among others, include to: undertake the enumeration of the population of Nigeria periodically, through censuses, sample surveys and studies; establish and maintain machinery for continuous and universal registration of births and deaths, throughout the federation; prepare and maintain a national framework, including locality list and house-numbering, for the delineation exercise for census and sample surveys in each Local Government Area in Nigeria; research and monitor the National Population Policy and set up a national information data bank; provide information and data on population for purposes of facilitating national planning and economic development; and, advise the president on population issues. Every five years, NPopC conducts the Demographic and Health Surveys (DHS) in Nigeria in addition to its other activities.

The National Population Commission is a major player in health information systems in Nigeria as it registers births, deaths and marriages in the country. These are important events that can guide investment in health services and the social sector. Indicators generated from these events are pointers to the health and well-being of the population. For example, maternal mortality ratio (MMR) is one of the indicators that can be provided by the data from NPopC.

VI. The National Agency for the Control of AIDS:

The National Agency for the Control of AIDS (NACA) is an agency under the presidency. Its mandate is to coordinate the broad spectrum of the national response against HIV and AIDS. NACA collaborates with various stakeholders involved in the fight against AIDS in Nigeria; provides leadership and oversees policies, programmes and projects directed at addressing HIV and AIDS; and, monitors the trends in the epidemic. However, despite the significant effort and the progress achieved thereby, there has been little progress made in the collection of routine data for programme monitoring having to rely mostly on intermittent surveys which come at a significant cost. The Strategic Knowledge Management (SKM) unit of NACA and the DPRS of the FMOH has been working together to fashion out a plan for the smooth transition from the HIV focused information system to a more robust all-encompassing health information system for reporting HIV indicators in the country.

VII. Military Medical Corp:

The military make a unique population in Nigeria and their inclusion in the health information system strategy will make them aware of their responsibilities to reporting their routine data for national benefit.

B. State level

I. State Ministry of Health (SMoH):

The Ministry of Health in the 36 states and the Federal Capital Territory (FCT) Health secretariat will be the second line implementers of the HIS policy.

II. State Agencies:

At the 36 states of the federation, the above listed agencies have structures within the states similar to the federal structure and these will be the second line implementers of the HIS policy. These include:

- State Primary Healthcare Development Agency (SPHCDA)
- State Agency for the Control of AIDS (SACA)
- State Planning Commission

- State Population Commission
- State Ministry of Finance/Budget
- State Ministry of Local Government
- State Hospitals Management Board

C. Local Government Level

I. Local Government Area Department of Health:

The department of public health in the 774 LGAs of the federation will be the first level implementers of the HIS policy. They will be expected to coordinate health facilities within their LGA to submit the National HIS forms on regular basis and within the stipulated days and upload the data into the national HIS platform. In addition, they will be responsible for the printing and distribution of the requisite HIS forms to the health facilities within their jurisdiction. They will coordinate the registration and allocation of a national provider identifier (NPI) to any new facility within their jurisdiction; the relevant LGA officials will work with the State database administrator to get this accomplished. In addition, the department through its HIS/M&E focal person will maintain an up-to-date list of health facilities within its jurisdiction.

II. Local Government Area Finance Department:

The Finance Department of the LGA will also be involved in planning at the LGA, and the health department will need to work closely with the Finance Department in this respect.

VISION, MISSION, GOAL AND OBJECTIVES OF THE HEALTH INFORMATION SYSTEM

Vision

Health Information System (HIS) that ensures evidence-based decision making for improved health status of Nigerians

Mission

To produce timely, reliable and accurate data that will inform policy making, evidence based decision and resource allocation for health care at the LGA, state and federal Levels.

Goal

To institutionalise an integrated and sustainable HIS for policy formulation, management, planning, resource allocation, implementation, monitoring and evaluation of health and health related services for improved health care delivery system at all levels in Nigeria.

Objectives

1. To Improve Data Governance

- 1.1. Strengthen HIS governance institutional structures and multi-sectoral data stakeholders for better coordination at federal, state and LGA levels
- 1.2. Improve political commitment and leadership responsibilities to functional HIS at all levels for evidence-based decision making.
- 1.3. Support improved resource allocation and release, management and accountability at all levels within the national, state and LGA health information systems

2. To Improve Data Architecture, Indicators and Sources

- 2.1. Maintain and update a set of indicators with data elements that track the objectives of the National/ State Strategic Health Development Plans.

- 2.2. Ensure application of the enterprise architecture to foster interoperability and data integration.
- 2.3. Build sustainable partnerships and linkages between health and health-related constituencies.
- 2.4. Maintain and regularly update a data warehouse and repository accessible at all levels.

3. To Improve Data Management, Dissemination and Use

- 3.1. Ensure availability of quality data emanating from relevant sources
- 3.2. Enhance free flow of data and information within the three tiers of governance and appropriate feedback mechanism
- 3.3. Promote the culture of data demand and use for planning and decision making.

4. To Improve Data Security

- 4.1. Provide physical and logical protection to stored data and archives that guarantees integrity, confidentiality and easy access to health information
- 4.2. Develop processes for backup and auto archiving of server
- 4.3. Undertake intermittent and regular audit of the server
- 4.4. Create a disaster recovery plan

5. To Monitor and Evaluate Health Information System Performance

- 5.1. Strengthen the health information system for improved performance based on international best practices
- 5.2. Develop the capacity of staff to carry out HIS performance appraisal
- 5.3. Formalize cross-programme leverage of resources.

THE STRATEGY

In addressing the challenge of having a robust health information system that drives decision making in Nigeria, the FMOH, in developing the new HIS policy, has adopted a multipronged and holistic approach that aims to address the interest of different stakeholders. This approach viewed the country health sector as an enterprise with the national health information system structured to respond to the need of all stakeholders. To address the objectives of the HIS policy, a series of activities and interventions have been lined up to be executed over the next 5 years. These are described in below.

1. **OBJECTIVE 1: TO IMPROVE DATA GOVERNANCE IN NIGERIA:**

Data governance is one of the most challenging aspects that the Nigerian health information system has faced over the years. The influx of donors and the need to monitor their different programmes has contributed significantly to the fragmentation of the health information system and the development of parallel pathways to fulfil each donor requirement. Addressing this challenge demands that the gate keepers (National Planning Commission) be well informed about FMOH's activities to strengthen the health information system and also the national spectrum of indicators within which any new development partner must function. Clearly defined technical pathways and approval processes for the introduction of new indicators into the Nigerian health system by any new partner would be established, including the submission of written application that must receive appropriate approval before programmes are rolled out and data collection commences. In addition, the NPC will work with the FMOH to allocate any new implementing partner (IP) the geographical locations to work in based on needs as informed by current evidence of health problem burden, concentration of existing partners, and other relevant scientific and rigorously-defined criteria. This objective addresses the gaps of governance and control of the health information system by putting in place a structure that addresses the present challenges.

1.1. ***Strengthen HIS governance institutional structures and multi-sectoral data stakeholders' interactions for better coordination at Federal, State and LGA levels:***

The new HIS policy pronounces the creation of a data governance structure which includes the establishment of a National Health Data Governance Council (HDGC) that

will provide the leadership and general oversight for all health data related issues in the country. This Council will be supported technically by the National Health Data Consultative Committee (HDCC). Each state is also expected to create a State Health Data Governance Council with similar mandates. The State Council, in addition, will have advisory role to the National HDGC and solicit state specific interests for consideration on the HIS platform. Furthermore, the State Health Data Consultative Committees shall be established and have similar mandates as the National HDCC, providing technical support to the state HDGC.

Members of the National HDGC as listed in the National HIS Policy 2014 are; the Honourable Minister for Health (HMH), Chief Executive Officers/ heads of NPHCDA, NACA, NAFDAC, NHIS, NPC, NPopC, the heads of the various departments in the FMOH, Chair of the Development Partners Group and the World Health Organization. For the State HDGC, the membership consists of the Chief Executive Officers/heads of SPHCDA, SACA, Ministry of Local Government, NPopC at the state level, State Planning Commission, State Population Commission, State Ministry of Finance/ Budget Office, LGA Chairmen and the various departments in the SMOH. The National HDGC will be chaired by the HMH while the State HDGC will be chaired by the Honourable Commissioner for Health (HCH). Members of the National HDCC include relevant FMOH programme officers, heads/representatives of selected health-related agencies, representatives of bilateral and multilateral agencies, the NBS and the HIS platform administrators. At the state level, members of the HDCC include relevant SMOH programme officers, representatives of bilateral and multilateral agencies, Hospital Management Board, SPHCDA, State Statistical Agency, SACA, representative of private health providers.

Activities that will be used to achieve this intermediate result include:

- 1.1.1. Develop terms of reference for the HDGC and revise that of the HDCC
- 1.1.2. Disseminate the roles and responsibilities for the HDGC and HDCC to all stakeholders

1.1.3. Establish cross-institutional relationships that foster sharing of data and knowledge between the different members of the HDGC and HDCC.

1.1.4. Work with NPopC to develop a process for providing annual population figures disaggregated by State, LGA and Ward by the first month of each year to the FMoH and SMoH to encourage evidence-informed planning.

1.2. ***Improved political commitment and leadership responsibilities to functional HIS at all levels for evidence-based decision making:*** As a follow-up step to the development of the terms of reference for the HDGC, the Council will establish its presence by holding a widely publicised inaugural council meeting where the goals of the council will be discussed. The HDCC will also hold its meeting and develop a plan for supporting the HDGC.

Activities for accomplishing this intermediate result (IR) are;

1.2.1. Hold inaugural HDGC meeting and regular semi-annual meetings thereafter

1.2.2. Hold quarterly HDCC meetings and feed the HDGC with relevant meeting outputs for consideration at its future meetings

1.2.2.1. Establish HDCC Technical Working Groups (TWGs). TWGs will be created within the HDCC amongst the constituting organisations to provide technical support to the HDCC. The TWGs will be responsible to the Chair of the HDCC and will be created based on technical needs. The composition of the TWGs will be reviewed every 2 years and appointment into the TWGs will be based on the technical expertise available within the HDCC.

1.3. ***Support improved resource allocation and release, management and accountability at all levels within the national, state and LGA health information systems:*** A major challenge that the HIS has faced over the years is poor resource allocation within the public sector, coupled with poor budgetary release and poor accountability. On the other hand, international development organisations often allocate significant resources to monitoring and evaluation, which are not accurately tracked and are utilised in parallel to government initiatives, with the result that several HIS “silos”

are created within the health system. Even within the FMoH, these 'silos' tend to abound with different levels of successes reported on different programs. Pooling and harnessing the resources available have the potentials to advance the achievements of the goals of the HIS and the country. The HDGC will be responsible for developing a mechanism for pooling resources across the different government agencies and partners, which will be used for financing the National HIS. In addition, the HDGC will track the amount of money allocated to HIS and the amount released for each year. Challenges regarding the non-release of funds will be identified and addressed and a process for improving the release of funds will be instituted based on findings from such reviews. The HDGC will also carry out advocacy to the legislature for improved financing of HIS and incorporation of findings from the HIS into decision-making in the country. The National HDCC will on its part be responsible for advocacy to the states on the role of the state HDGC and how they can contribute to the national HIS as a functional unit. The state level HDGC and HDCC will be responsible for providing similar relationship to the LGA chairmen and LGA health management teams and the ward development committees in collaboration with the LGAs.

Relevant activities in respect of this intermediate result include:

- 1.3.1. Develop a mechanism for pooling resources from members/ institutions of the HDGC
- 1.3.2. Advocate to the legislature, states, LGAs and other stakeholders for strengthening resource allocation to health information systems strengthening
- 1.3.3. Develop a performance plan for monitoring the budget allocated and released by the FMoH for HIS activities

2. OBJECTIVE 2: TO IMPROVE THE DATA ARCHITECTURE, INDICATORS AND DATA SOURCES:

For the success of the HIS, several considerations need to be made which will include the maintenance of the architecture. The HDGC will be the keepers of the integrity of the National HIS architecture. A process for requesting for the inclusion of new indicators shall be established with the HDGC as the approval granting authority. Routine review of the

national indicator list shall be done on a biannual basis and the findings of this review and an updated indicator list presented to the HDGC for approval. This will provide the basis for the introduction of new indicators and removal of indicators that are found irrelevant. Furthermore, the HDGC will ensure that best practices are adhered to in the deployment of different applications for managing different components of health data in the country.

2.1. *Maintain and update a set of indicators with data elements that track the objectives of the National/State Strategic Health Development Plans:* A list of indicators is necessary to let all stakeholders know what parameters the nation currently tracks as well as the indications for, and the meaning of each of them. This will help to clarify interpretation and promote common understanding and usage. In addition, the criteria and process for inclusion of any new indicator will be clearly outlined in the indicator document so that any new partner interested in working within the country can understand the process.

The activities necessary in this respect are:

- 2.1.1. Develop a compendium of all health indicators for the country
- 2.1.2. Develop an indicator reference sheet for each indicator
- 2.1.3. Develop and disseminate information on the process for the addition of any new indicator into the national HIS and the removal of an existing indicator .
- 2.1.4. Hold biannual review of the indicator definition and present to HDGC for approval any new indicator request or modifications to the indicator list

2.2. *Ensure application of the enterprise architecture to foster interoperability and data integration:* In order to achieve the benefits of information systems as the country continues to adopt and deploy different classes of applications for the management of its health and allied information, it is necessary to ensure that best practices are adopted and adhered to. This will involve the incorporation of standards – both local and international – into the design of these systems. Planning for and adhering to the plans will be critical in ensuring that the focus on an enterprise architecture are met. As a baseline, the National Health Facility List with its National Provider Identifiers

(NPI) developed by the DPRS will serve as the standard for uniquely identifying health facilities in the country. It will be pertinent that all new health facilities in the country be issued a unique National Provider Identifiers (NPI)¹. DPRS will work with other departments/divisions within the FMOH to ensure that the enterprise architectural goals are maintained.

2.2.1. Develop processes for updating and disseminating the National Health Facility

List: The National Health Facility List was compiled between 2011 and 2013 during which unique NPIs following a national coding convention was used to allot identifiers to them. However, there are gaps in terms of lack of formalised processes for updating the NHFL and the non-availability of the developed codes on the national HIS platform. Though new facilities are being imputed into the national electronic platform on DHIS, NPIs following the coding convention are not being generated for them. It will be pertinent to ensure that the NPIs developed are validated and errors identified and corrected before being entered into the national platform. Additionally, local government offices will be encouraged to maintain a paper register of all the health facilities within their jurisdiction along with the NPIs issued to them. Processes for the creation of new NPIs will also be properly documented and made available to each LGA administrative officer. The following activities shall be undertaken:

2.2.1.1. Enter the NPIs into the National HIS platform

2.2.1.2. Develop the processes for updating NHFL on paper and the electronic platform

2.2.1.3. Work with the National Health Insurance Scheme (NHIS) to adopt the NHFL into its system: Firstly, the NHIS will be introduced to the National Health Facility List (NHFL) and the DPRS will work with the agency to ensure that all health facilities they work with have been assigned a National Provider Identifier (NPI). In addition, the agency will be encouraged to incorporate and adopt the codes from the NHFL so that in future there can

¹ Additional information on the National Health Facility Indicator (NHFL) can be found in the NHFL directory and standard operating procedures for updating the national health facility list.

be an integration of the different information systems. Furthermore, the NHIS will be encouraged to include in its contract the necessity by partner health facilities to complete the National HIS forms on a monthly basis, failure of which can lead to consequences. This parameter will be proposed to be included in the evaluation criteria during the recertification of health facilities after every contracting period. Health financing data are not readily available in the country today; collaboration with NHIS will contribute towards addressing this challenge. Among others, the amount of money paid to each health facility by the agency will be an important input into the National Health Accounts.

2.2.2. Develop unique identifiers for pharmacies and laboratories: Stand-alone institutions like laboratories and pharmacies also provide significant health data and planning for their eventual integration in the national HIS needs to be envisioned at this stage. The following activities shall be undertaken:

2.2.2.1. Identify the agencies that register these institutions

2.2.2.2. Evaluate any unique identification system in place and its applicability for the information system

2.2.2.3. Plan for the inclusion of these institutions in the national HIS infrastructure

2.2.2.4. Develop tools that will aid routine collation and submission of data into the HIS infrastructure from these institutions

2.2.3. Adopt standards according to best practices: It is envisioned that the National HIS will be rolled out in phases. The eventual composition will incorporate human resources for health (HRH) component, logistics application, health financing component and possible links with electronic medical records that allow for the automatic aggregation of indicators for health facilities. As such, strict adherence to national and international standards will be entrenched in the deployment of the system. This will facilitate the scalability of the system when an additional component materialises. The availability of open source applications that can cater for different components of the national health information system will be explored. Furthermore, it will be necessary to work with the hospital services

department of the FMOH to develop/adopt standards that will be used to certify nationally approved electronic medical records systems.

2.2.3.1. Liaise with the HRH unit of the FMOH on developing a HRH information system

2.2.3.2. Collect requirements for a health financing application.

2.2.3.3. Collect requirements for the Logistics Management Information System

2.2.3.4. Develop standards for the development of Electronic Medical Records in the country.

2.3. ***Build sustainable partnerships and linkages between health and health related constituencies:*** Partnerships and collaborations are the hallmark of health systems strengthening and building sustainable, dependable and reliable relationships are important. This activity will provide regular updates on the progress of the HIS unit.

2.3.1. Maintain a communication list for regularly sharing information about the HIS

2.3.2. Produce quarterly/semi-annual briefs on progress made in HIS and share publications and/ or reports electronically.

2.4. ***To maintain and regularly update a data warehouse and repository accessible at all levels:*** For the integrity of a health information system deployed electronically to be preserved, several processes must be put in place to ensure that data is secured and protected. This will include hosting the enterprise server at a location that can be readily accessed and audited to be adhering to appropriate and agreed best practices. Since the deployment of the DHIS version 2 (DHIS2) as the platform for the transmission of routine health data in the country, the server has been hosted outside the country and poses a challenge to auditing and ensuring that the data is properly secured. This activity will develop and execute plans for the creation of a national HIS server on the galaxy backbone. Planning for the relocation of the database will be a major part of this HIS strategic plan. Cost of hosting the database on the Galaxy backbone will be factored in as well as the download and upload privileges granted to the FMOH server. Service level agreements (SLA) will be drawn up with the Galaxy

ISP as well as with the platform administrators. The SLA will include the level of security that Galaxy will provide for the system and the archiving process that it will employ to ensure minimal loss of data in case of an incident.

2.4.1. Formally engage database administrator and sign contractual obligations for a period of 3 – 5 years.

2.4.2. Relocate the national server unto the galaxy backbone

2.4.3. Develop processes and standards for administering the national HIS server

3. OBJECTIVE 3: TO IMPROVE DATA MANAGEMENT, DISSEMINATION AND USE:

Developing plans for data management, dissemination and use is a first step in driving evidence based decision making. The availability of the data does not ensure that there is a pathway for its analysis and subsequent use in the generation of policies and allocation of resources. Putting in place a system that incorporates these processes into the health information system will drive this action. Decision support tools will be embedded in the national health information system designed to show basic outputs in charts and tables. Already, some of the basic reports in DHIS2 are visible using the pivot table and pivot chart functions but these need to be further improved upon. As other components of the HIS are developed, decision support tools will continually be embedded in them.

3.1. ***Ensure availability of quality data emanating from relevant sources:*** Knowledge about the data collection tools and their availability at health facilities is necessary to ensure that the goal of this intermediate result (IR) is met. States and LGAs shall be responsible for making sure that routine HIS tools are available locally and in health facilities. The FMoH shall make available specifications of these tools and the size of paper to be used in the production of these tools. The State HDGC and HDCC will work to mobilize resources and finance the printing and distribution of the HIS tools within each state. Advocacy to ensure that the state recognises its responsibilities will be championed by the National HDCC. Following the availability and collection of the routine data, multilevel data quality assessment (DQA) audits will be institutionalised. Processes will also be developed to ensure that surveys conducted within the country and other surveillance activities not currently routinely captured within the National

Health Information System are connected and and/or reported to the FMOH. DPRS will propose to the National Institutional Review Board (IRB) to entrench in its processes, the compulsory requirement for all health-focused national surveys to submit their data as well as the data analysis codes to the FMOH within a stipulated timeframe upon completion of the survey. This is necessary to guide against spurious reportage of survey results and the need to verify and take ownership of the results. It will also be necessary to ensure that the DPRS of the FMOH be carried along in planning any survey to be conducted in the country. Furthermore, the DPRS must sign off on any national health report that is being produced in the country.

- 3.1.1. Disseminate widely the 2013 version of the harmonised data collection tools and the national indicator definition/ reference sheets
- 3.1.2. Develop processes and institutional relationships to ensure survey data are archived with the relevant department in the FMOH
- 3.1.3. Ensure that surveillance data are incorporated in the national health information system.

3.2. Enhance free flow of data and information within the three tiers of governance and appropriate feedback mechanism: As a measure of providing technical support in the migration to an electronic platform and continuous improvement of the system, training programmes will be designed to continue to update the state and LGA level database administrators on any new addition to the platform. Electronic media will be continuously developed for which participants from federal, states and LGAs can continuously access when interacting with the DHIS database and other sub-systems as they are developed. Furthermore, the DPRS will establish a contact center which relevant officers can contact whenever they are faced with challenges. These centers will be equipped to provide live walk-throughs for their contacts. The following strategic activities shall be conducted in that regard:

- 3.2.1. Train state HMIS and/or M&E Officers on new developments in the HIS
- 3.2.2. Develop electronic media for continuously training HMIS officers and other HIS users
- 3.2.3. Establish a contact center for solving problems with the HIS.

3.3. **Promote the culture of data demand and use for planning and decision making:**

SMoH across all states will be supported to develop state specific plans for the implementation of the National HIS policy. The plans will be directed at developing and improving the state HDGC and HDCC respectively. Terms of reference of these governance groups will be adapted to the state level. States will develop processes for implementing the DQA guidelines provided for national HIS monitoring. In addition, advocacy will occupy the center stage in driving the funding at all levels. Guidelines and responsibilities for the printing of data collection tools for each LGA will also be created under this activity. The Health Data Producers and Users (HDPU) meeting will serve as a platform for disseminating information obtained from the HIS. In addition, this platform will be used as an avenue for showcasing the efforts made by the different states. The HDPU will be organized annually. A scorecard will be developed to determine the level of performance of the states. All states will be made aware of the criteria utilized in assessing this scorecard. Efforts will be made to incentivize this performance appraisal in order to drive competitiveness

3.3.1. Work with the States to develop their HIS plan and drive the effort at that level

3.3.2. Develop decision support tools and report templates based on LGA and State needs.

4. **OBJECTIVE 4: TO IMPROVE DATA SECURITY:**

As part of requirements of safeguarding the security of data the FMoH will ensure that all efforts are made to secure the data on its server through the physical and logical protection of the server. In addition processes for backing up and archiving of the system will be addressed.

4.1. **Provide physical and logical protection to stored data and archives that guarantees integrity, confidentiality and easy access to health information:** All security software running on the national server must be licensed and updated on a daily basis. The domain which will host the National HIS infrastructure must run a Secure Sockets Layer (SSL) level encryption for which access will be controlled by the DPRS. Appropriate antivirus and other logical protection software will be installed and

periodically updated. A firewall server will be used to shield the database server from outside intrusion.

4.1.1. Secure a server space on the galaxy network

4.1.2. Procure, install and utilise up-to-date antivirus and antimalware on the server.

4.2. **Develop processes for backup and auto archiving of server:** In order to ensure the success of the national HIS server, backup will be done onsite and offsite. A mirror of the production site will be created in a safe and easily accessible alternate location. Frequency of the onsite backup processes will be daily. Monthly offsite backup on physical hardware will be done in a safely identified location possibly within the DPRS of the FMOH. Processes for maintaining the backup system shall be reviewed periodically to assess how best it meets with local and international standards.

4.2.1. Develop SOPs for backup.

4.3. **Undertake intermittent audit of the server:** Periodic audit of the server will be instituted and findings will be reviewed with the DPRS for immediate action. The DPRS will coordinate an audit of the national server by an experienced technical team. The team will conduct an audit of the server looking at (but not limited) to the following server performance at least twice within a calendar year, with report containing actionable recommendations submitted to DPRS/FMOH:

- Average server online availability over the period in review (Uptime, Response time and Failures)
- SSL Status and online threats review
- RAM performance and Disk Space
- Patching and Server Maintenance Protocols
- Logging Protocols
- Authentication and Access control
- Backups and Restore Protocols

4.4. **Create a disaster recovery plan:** In the case of a force majeure that potentially shuts or destroys the server, the DPRS will put in place a mechanism that ensures an

alternate server is activated and running within 24 hours. This plan will be developed and kept at the Federal Ministry of Health. Annually, a dry run will be done to simulate the steps outlined in the disaster recovery plan to ensure that plans are both feasible and realistic.

5. OBJECTIVE 5: TO MONITOR AND EVALUATE HEALTH INFORMATION SYSTEM PERFORMANCE:

In order to continue to foster an improvement of the health information system, it is necessary to monitor if the policy is being implemented as planned and also to develop a plan to ensure that the health information system is providing the data needed for evidence-based action. As such, a robust monitoring and evaluation plan will be developed to continue to guide the implementation of this plan and to also provide a basis for policy research and planning for the next strategic plan. This will incorporate the adaptation of various tools like the Performance for Routine Information and Management (PRISM) and the Rapid Data Quality Assessment (RDQA) tools in the performance appraisal process for routine health information system (RHIS) performance measurement.

As earlier stated, constructive competitiveness will be encouraged at federal, state and LGA levels. Emphasis will be made on strengthening the three tiers of government to carry out their supervisory and regulatory role. This will improve the efficient use of the limited resources and incorporate the routineness of the DQA exercise. Erstwhile process of DQA being a national level activity only will be strongly discouraged. Additionally, cross-programme leverage of resources will be encouraged and strengthened through formalisation of this process.

The current national DQA process necessitates that federal level quality auditors routinely visit health facilities to verify data submitted upwards. This process is unduly burdensome and inefficient. It is necessary to note that should each level of the government carry out its supervisory responsibility to the immediate level it oversees, the federal DQA exercise will predominantly be to verify that the states are carrying out their responsibilities. Efforts will be directed at strengthening the linkages at the LGA and states to ensure that each level of the government is alive to its responsibility. The National HDCC and the State HDCC will work

together to achieve this goal. Guidelines for routine DQA will be drawn centrally and shared with the states for fine-tuning and adapting to their system.

5.1. To strengthen the health information system for improved performance based on international best practices.

5.1.1. Develop a plan to monitor the performance of the health information system

5.1.2. Conduct the routine performance appraisal of the health information system.

5.2. Train the officers to carry out HIS performance appraisal: Train the states and subsequently provide support to the states to train the LGA Monitoring and Evaluation officers on tools for performance measurement.

5.3. Formalise cross-programme leverage of resources: This will be to formalise the process of LGA level team collaboration for a wider reach and impact. The different programmes will be brought together to work as a team and increase the coverage of health facility supervision through this strategy. This activity will, in addition, help programme level staff to improve their knowledge.

NATIONAL HEALTH INFORMATION SYSTEM FIVE YEAR IMPLEMENTATION PLAN (2014 – 2018)

Activities/ Tasks	Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
Objective 1	To Improve Data Governance								
IR 1.1	Strengthen HIS governance institutional structures and multi-sectoral data stakeholders for better coordination at Federal, State and LGAs								
IR 1.1.1	Develop terms of reference for the HDGC and modify that of the HDCC	Terms of reference for HDGC and HDCC	FMoH, NACA, NPC, NPopC,	2m					
IR 1.1.2	Disseminate the roles and responsibilities for the HDGC and HDCC to all stakeholders	Meeting report	FMoH, NACA, NPC, NPopC,	2.5m					
IR 1.1.3	Establish cross institutional relationships that foster sharing of data and knowledge between the different members of the HDGC and HDCC	Relationships and successes recorded	FMoH, NACA, NPC, NPopC,					Activity of HDCC to ensure this met; hence costed within HDCC	
IR 1.2	Improve political commitment and leadership responsibilities to functional HIS at all levels for evidence-based decision making.								
IR 1.2.1	Hold inaugural HDGC meeting and establish semi-annual meetings thereafter	Meeting report	FMoH	3.5m	2m	2m	2m	2m	Inaugural meeting will be widely publicized

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
									and ensure of parties are available for the inaugural meeting	
IR 1.2.2	Hold quarterly HDCC meetings and prepare for the HDGC meeting	Minutes of meeting	FMoH (DPRS)	4m	4m	4m	4m	4m	HDCC must precede the HDGC meeting	
IR 1.3	Support improved resource allocation and release, management and accountability at all levels within the National, State and Local Government Area Council health information systems									
IR 1.3.1	Develop a mechanism for pooling resources from members/ institutions of the HDGC	Minutes of HDGC meeting	FMoH, NACA, NHIS, NPC, NPopC						Activity of HDGC to ensure this is met; hence costed within the HDGC	
IR 1.3.2	Advocate to the legislature, states, LGAs and other stakeholders for strengthening resource allocation to health information systems strengthening	Advocacy Reports	FMoH, SMoH, LGA DPH, Partners, NPC	5m	5m	5m	5m	5m		

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
IR 1.3.3	Develop a performance plan for monitoring the budget allocated and released by the FMOH for HIS activities	Performance plan							M&E unit of the FMOH will come up with annual performance of budget releases for HIS activities	
Objective 2	To Improve Data Architecture, Indicators and Sources									
IR 2.1	Maintain and update minimum set of indicators with data elements that track the objectives of the National/ State strategic health development plans.									
IR 2.1.1	Develop a compendium of all health indicators for the country	Compendium developed	FMOH							
IR 2.1.2	Develop indicator reference sheet for each indicator	Compiled indicator reference sheets	FMOH and implementing partners	1m						
IR 2.1.3	Develop and disseminate a process for the addition of any new indicator into the national HIS.	Meeting report	FMOH	0.75m						

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
IR 2.1.4	Hold biennial review of the indicator definition and present to HDGC for approval any new indicator request or modifications to the indicator list	Review report, Approved indicator list.	FMoH						Activity of HDCC to ensure this met; hence costed within HDCC	
IR 2.2	Ensure application of the enterprise architecture to foster interoperability and data integration.									
IR 2.2.1	Develop processes for updating and disseminating the national master health facility list	Developed processes	FMoH & HISP		1.6m	1.6m	1.6m	1.6m		
IR 2.2.2	Develop unique identifiers for pharmacies and laboratories	Unique identifiers adopted/ developed	FMoH		2m	2m				
IR 2.2.3	Adopt standards according to best practices	Standards adopted/ developed	FMoH & HISP		2m					
IR 2.3	Build sustainable partnerships and linkages between health and health related agencies.									
IR2.3.1	Maintain a communication list for regularly sharing news about the HIS	Communication list	FMoH (DPRS) DPs						Electronic maintained	

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
IR2.3.2	Produce quarterly/ semi-annual briefs on progress made in HIS and share publications and/ or reports	Briefs	FMoH (DPRS)						Briefs will be electronically disseminated	
IR 2.4	Maintain and regularly update a data warehouse and repository accessible at all levels.									
IR 2.4.1	Formally engage database administrators (HISP Nigeria)	Signed contract	FMoH							
IR 2.4.2	Relocate the national server unto the galaxy backbone	Database relocated	FMoH, HISP, Galaxy backbone administrators							
IR 2.4.3	Develop processes and standards for administering the national HIS server	SOPs developed	FMoH, HISP, Galaxy backbone administrators							
Objective 3	To Improve Data Management, Dissemination and Use									
IR 3.1	Ensure availability of quality data emanating from relevant sources									
IR 3.1.1	Disseminate widely the 2013 version of the harmonized data collection tools and the national indicator	Meetings, Unified templates and description of paper for printing	FMoH						Upload tools and IRS on appropriate website that easily	

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
	definition/ reference sheets								accessible to all	
IR 3.1.2	Develop processes and institutional relationships to ensure survey data are archived with the relevant department in the FMOH	Processes developed, Surveys archived within the FMOH			1m	1m				
IR 3.1.3	Ensure that surveillance data are incorporated in the national health information system	Surveillance data formally linked to the HIS			2m	2m				
IR 3.2	Enhance free flow of data and information within the three tiers of governance and appropriate feedback mechanism									
IR 3.2.1	Train State HMIS and M&E Officers on the administration of the DHIS	Training Report	FMOH and HISP						FMOH will provide technical support to	
IR 3.2.2	Develop electronic media for continuously training HMIS officers and other HIS users	Electronic media	FMOH							
IR 3.2.3	Establish a contact center for solving problems with the HIS	Contact center functioning	FMOH							

Activities/ Tasks	Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
IR 3.3	Promote the culture of data demand and use for planning and decision making.								
IR 3.3.1	Work with the States to develop their HIS plan and drive the effort at that level	State Plans developed		5m					
IR 3.3.2	Develop decision support tools and report templates based on LGA and State needs	Decision support tools embedded in the HIS	FMoH, HISP	1m					
Objective 4	To improve data security								
IR 4.1	Provide physical and logical protection to stored data and archives that guarantees integrity, confidentiality and easy access to health information								
IR 4.1.1	Secure a server space on the galaxy network	Space secured	FMoH	2m	2m	2m	2m	2m	
IR 4.1.2	Procure, install and utilize up-to-date antivirus and antimalware on the server	Antivirus installed	FMoH, HISP, Galaxy backbone administrators	0.2m	0.2m	0.2m	0.2m	0.2m	Costs will included domain security
IR 4.2	Develop processes for backup and auto archiving of server								
IR 4.2.1	Develop SOPs	SOPs developed		0.5m					

Activities/ Tasks		Means of Verification	Stakeholder/ Institution	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Critical Assumption	Comment
	Development of backup & auto archiving server	Offsite Backup & Auto Archiving server in place		0.4m	0.4m	0.4m	0.4m	0.4m		Costs of offsite backup
IR 4.3	Undertake intermittent audit of the server		FMoH,HISP,TECHNICAL TEAM	250K	250K	250K	250K	250K		
	Server audit									
IR 4.4	Create a disaster recovery plan		FMoH	500k	200k	200k	200k	200k		
	Development & dry on of disaster recovery plan									
Objective 5	To Monitor and Evaluate Health Information System Performance									
IR 5.1	To strengthen the health information system for improved performance based on international best practices	Data Quality tools adopted/ developed, DQA reports at different tiers of the government	FMoH							
IR 5.2	Train the officers to carry out HIS performance appraisal	Training report	FMoH							
IR 5.3	Formalize cross program leverage of resources	Program staff testimonials	FMoH							

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