Strategic Action Plan for Strengthening Health Information 2017-2021

Ministry of Health and Sports
Republic of the Union of Myanmar

March 2017

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LIST OF ABBREVIATIONS

ATM	AIDS, Tuberculosis, Malaria
ART	Anti-Retroviral Therapy
BHS	Basic Health Staff
CHWs	Community Health Workers
COBIT	Control Objectives for Information and Related Technologies
CommCare	Open source mobile platform designed for data collection, client management, decision support and behavioral change communication
CSO	Central Statistical Organization
DHIS2	District Health Information Software Version 2
DMR	Department of Medical Research
DMS	Department of Medical Services
DPH	Department of Public Health
DQA	Data Quality Assessment
eHealth	Electronic health (full definition in the document below)
GF	Global Fund
GIS	Geographical Information System
GPS	Global Positioning System
HIS	Health Information System
HMIS	Health Management Information System
HR	Human Resources
HSS	Health System Strengthening
ICD	International Statistical Classification of Diseases
ICT	Information and Communication Technology
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITU	International Telecommunication Union
IV	intra-venous
LMIS	Logistics Management Information System
MCH	Maternal and Child Health
MCIT	Ministry of Communication and Information Technology
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation

MDR TB	Multi-drug Resistant Tuberculosis
mHealth	Mobile Health (a practice of medicine and public health supported by mobile device)
MoHS	Ministry of Health and Sports
mSupply	Pharmaceutical supply chain software
MPI / CR	Master Patient Index / Client Registry
NAP	National AIDS Programme
NGO	Non-Governmental Organization
NHP	National Health Plan
NMCP	National Malaria Control Programme
Open MRS	Open Medical Records System
PHC	Primary Health Care
RAT	Rapid Assessment Tool
RHCS	Reproductive Health Commodity Security
RHLMIS	Reproductive Health Logistic Management Information System
RMNCH	Reproductive, Maternal, Newborn and Child Health
SDGs	Sustainable Development Goals
SOP	Standard Operating Procedure
STD	Sexually Transmitted Diseases
TA	Technical Assistance
TB	Tuberculosis
TCP	Transmission Control Protocol
ToT	Training of Trainers
TWG	Technical Working Group
UNAIDS	Joint United Nations Programme in HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
USAID	U.S. Agency for International Development
USD	US Dollar
WBG	World Bank Group
WHO	World Health Organization

FOREWORD

Dynamic, robust, responsive and efficient health information system (HIS) is a basic prerequisite for effective functioning of the health care delivery system. It can be equated to the nervous system of the human body. The human body cannot function properly unless the nervous system transmits appropriate electrical impulses through the medium of different chemicals and enzymes in the human body. Likewise, proper and systematic functioning of HIS requires good linkages and coordination of its components, starting from data collection forms, data gatherers at the peripheral level of the health system to strategic decision makers of the Ministry of Health and Sports.

If HIS is not generating timely, valid and reliable data / information (either underestimated or overestimated data), we will not know the real health situation or actual performance of the health care delivery system. We may be formulating strategies and developing health programmes or project based on weak or speculated data / information. This could result in unnecessary wastage of resources in the implementation of programmes and projects.

Having efficient HIS *per se* is not sufficient unless data sets are appropriately transformed into information by the competent staff and due consideration be given and action taken by concerned programme managers. In other words, generated information must be utilized for decision making in technical, administrative, logistics and management aspects of health programmes at different levels of the health care delivery system. This data culture must be inculcated to the extent possible among all public health professionals (from epidemiologists to basic health service staff) working at all levels of the health care delivery system.

Formulating the new Strategic Action Plan for Strengthening Health Information System in Myanmar is a very timely activity. Proper monitoring of our National Health Plan 2017-2021 would require strengthening of our national health information system. It is a crucial prerequisite for monitoring national and subnational achievements towards achieving the Universal Health Coverage and Sustainable Development Goals. I believe that this Strategic Action Plan, which is based on multiple discussions with all partners and like-minded organizations in the health domain, would help in harmonizing all our efforts for improving the health of Myanmar people.

MH
24.7.17

Dr. Myint Htwe
Minister of Health and Sports
Republic of the Union of Myanmar

Acknowledgment

The development of this Strategic Action Plan for Strengthening Health Information in Myanmar, 2017-2021 was led by a team of dedicated staff at the Ministry of Health and Sports (MoHS), from the Department of Public Health and other Department as well as Regions/States. Further, the document was formulated in consultation and collaboration with major stakeholders and the contribution of these partners is gratefully acknowledged, especially WHO for technical assistance and 3MDG for funding support. This is also a very timely effort that captures key priority areas, objectives, activities and monitoring indicators in an Action Plan that is committed to strengthening Myanmar's health information in the next five years.

EXECUTIVE SUMMARY

The Strategic Action Plan for Strengthening Health Information System (HIS) 2017-2021 is the second strategic plan for Health Information System in Myanmar. The previous strategic plan (2011-2015) was based on comprehensive assessment of health information system according to guidelines provided by the Health Metrics Network. Due to latest developments related to requirements expected from the national health information system (a new National Health Plan and its monitoring, a national HIS eHealth assessment workshop in August 2015, a regional follow-up of the Roadmap for Health Measurement and Accountability, monitoring of unfinished MDG achievements and focusing on sustainable development goals measurements while the first HIS strategic plan expired in 2015) there was a need to look at the further strengthening of HIS in Myanmar, and to draft a new Strategic Action Plan 2017-2021, in respond to the national and international commitments. This new HIS strategic plan has been developed under the guidance of H.E. the Minister of Health and Sports, with participation of senior representatives from various Departments under the Ministry of Health and Sports, senior officials from State/Regional Health Departments, representatives from Central Statistical Organization and UN Agencies and Non-Governmental Organizations.

The assessment of current health information system and a consequent strategic planning exercise was conducted in July 2016, led by the Ministry of Health and Sports and technically supported by the World Health Organization. A WHO / USAID / Measure Evaluation assessment tool was used to assess strengths and weaknesses of the current HIS and to outline strategic directions for the next five-years period.

The vision of the new Strategic Action Plan for Strengthening HIS in Myanmar 2017- 2021 is "*A strong health information system for a strong health system*". The mission statement of HIS in Myanmar also developed during the strategic planning exercise is "*Generating and making accessible comprehensive, integrated and timely health information for decision making at different levels of health system*". The goal of the HIS in Myanmar formulated during the assessment is " *To provide complete, valid, reliable and timely health information for making right decisions at the right time to ensure an equitable, effective, efficient and responsive health system*". Twelve priority strategic areas have been identified and agreed upon, as follows:

Strategic Area 1. **Public Health Information**

Strategic Area 2. **Hospital Information**

Strategic Area 3. **Private sector information**

Strategic Area 4. **Vertical Reporting System**

Strategic Area 5. **Human Resource Management Information**

Strategic Area 6. **Logistic Management Information**

Strategic Area 7. **Financial Management Information**

Strategic Area 8. **Epidemiological Surveillance Information**

Strategic Area 9. **Civil Registration and Vital Statistics**

Strategic Area 10. **Population-based Surveys and Health Research Findings**

Strategic Area 11. **Utilization of Health Information**

Strategic Area 12. **Advanced IT Development**.

Strategic objectives provide realistic targets that measure the accomplishment of each strategic area. To help monitor progress over time, strategic objectives also include key measures of success and indicate a target date. Achievements in these strategic areas and objectives will require input by all partners and agencies from both health and non-health sectors. The strategic objectives outline broad activity areas which are described in detail activities in this Strategic Action plan.

In each strategic area, few realistic outcomes expected to be achieved after the five-year period are listed. In a detailed implementation plan, costing of each activity, funding sources and current gaps in funding are indicated. A tool for monitoring of indicators, with core objectives, indicators, baselines, targets, sources of information and responsible entities for monitoring is available in the document.

The first pre-condition is to set-up a strong Division of Health Information either under the Permanent Secretary of MoHS or under the Minister's office. This Division would monitor and assure the timeliness, completeness and the quality of the strategic plan implementation in an accountable and transparent way. The Division of Health Information in a new set-up would have an utmost importance for coordination of all MoHS Departments' and stakeholders' activities in the country's health information, for harmonization of their activities, prioritization of the data collection and data sources related to the National Health Plan and dissemination of the core data to users, particularly to the decision and policy-makers.

The Strategic Action Plan should be considered as the document in evolution, and some flexibility and possible modification of activities overtime is expected.

I. INTRODUCTION

The first national health plan drafted for the period 1978-1982 amalgamated the foundation of health information system in Myanmar, with health facilities as the main source of the health data[1]. In 1995, an integrated health management information system was set-up, bringing a concept of minimal essential data-set.

The National Health Committee, as a multi-sectoral policy-making body, has been giving the guidance and has had the responsibility of coordination among health and health related sectors for health information management. Central Statistical Organization has the responsibility for generating, analysis and dissemination of statistics for the country according to central statistical authority act of 1952. According to the act, there are regulations and procedures for collection, analysis and dissemination of data related to vital events and notifying diseases and social insurance.

A new data set collected by health sector was reviewed and revised in 2005 and 2012. It included mainly data on health services. Data on infrastructure, manpower and voluntary contribution are also collected through routine public health information system. Hospital information is collected on monthly basis from all public hospitals. Central Epidemiological Unit under Department of Health takes care on disease surveillance system. Health research are undertaken by Department of Medical Research as well as by other departments based on their areas of interest.

A new National Health Policy (NHP) 2016/2017-2020/2021is being drafted,andits monitoring would require strengthening health information at national and sub-national levels. At the same time, Measurement and Accountability for Results in Health: A Common Agenda for the Post-2015 Era's Roadmap (WHO / WB / USAID) outlines smart investment that countries can adopt to strengthen basic measurement systems and to align partners and donors around common priorities. In Myanmar, various health programmes have been using their specific information systems, some of them by piloting IT software. Partners in health have also used their data collection and own monitoring and evaluation systems. There was a need to take a strategic approach and make a new strategic framework and action plan for strengthening health information in Myanmar, with consensus and harmonization of all partners, which would be aligned to the NHP, to its M & E framework and to monitoring of progress towards achieving sustainable development goals (SDGs).

II. HIS ASSESSMENT AND DEVELOPMENT OF A NEW STRATEGIC PLAN

In August 2015, a *HIS strengthening national workshop* was organized in Myanmar, to review current achievements and planned investment in HIS and discuss good practices to scale and sustain an effective HIS. It resulted in recommendations based on key components of HIS. It concluded that a detailed, costed HIS strategy and action plan would be essential to scaling-up and sustaining HIS in Myanmar.

One of thirteen priorities of *the 100 Days Plan* of Department of Public Health of the Ministry of Health and Sports, 2016, was "To strengthen the Health Management Information System and integrate with all vertical programmes and surveillance systems."

During 5 to 6 July 2016, *the national HIS assessment workshop* was held, to assess current status of health information system (HIS) in Myanmar, to identify strengths, weaknesses and gaps,

[1] Ministry of Health: Five-Year Strategic Plan (2011-2015) Health Information System Myanmar. Dept. of Health Planning.

enabling to draft an outline of the HIS strategy for the next five-year period, 2017-2021. His Excellency, the Minister of Health and Sports, Dr. MyintHtwe, opened the workshop and made an opening motivating speech. He emphasized the fact that if HIS is not generated timely, with data/information either underestimated or overestimated, we will not know the real health situation or actual performance of the health care delivery system. Therefore, the formulation of strategies and developing health programmes or projects would be based on weak data. H.E. the Minister stated that the proper and systematic functioning of HIS requires good linkages and coordination of its components, starting from data collection forms, data gatherers at the peripheral level of the health system to strategic decision makers of the Ministry of Health. He expressed his full support to further strengthening HIS in Myanmar.

Agenda, method, expected outcomes and detailed results of the assessment are in Annexes.

Conclusions

The outcomes - common understanding of HIS, its strengths, weakness and gaps, identifying priority areas for improvement, developing consensus on priority weaknesses, providing basis for the strategic plan, helping build consensus and supporting the plan implementation, and informing the HIS Strategy, were achieved. During the next two days after this assessment, the outcomes helped to formulate the HIS strategy out-line and HIS strategic framework for 2017-2021, as a foundation of the detailed HIS Strategic Plan for the next five-year period.

During the following strategic planning workshop, 12 strategic priority areas for strengthening HIS in Myanmar during the next five-years period were agreed upon, and some key activities with an urgency scale identified. The vision and mission statements were formulated, as well as the goal of the Strategy and guiding principles for the strategy formulation.

III. KEY CHALLENGES IN STRENGTHENING HIS IN MYANMAR

Although progress was made during 2011-2015 in improving the components of HIS, key overarching challenges in HIS in Myanmar remain for MoHS to be addressed during 2017-2021. Summary of crucial challenges is as follows:

- HIS organization set-up at the central level, particularly availability of an appropriate HIS staff and distribution of roles and responsibilities;
- limited analytical skills among data producers to support policy makers; capacity building in HIS – pre-service & post-graduate;
- inadequate HIS legislation / regulation; lack of written health information policy which would include data security, confidentiality, dissemination and use of data for decision-making;
- medical records keeping system not standardized;
- weak IT infrastructure and networking;
- insufficient supervision, monitoring and feedback;
- low awareness on importance of health information and record keeping;
- low utilization of health information for evidence-based decision making;
- HIS is under-resourced – investment scarce. Lack of understanding of benefits.

The most important challenge is to establish sufficient political will and leadership, institutional capacity, multi-sectoral engagement and supportive policy / regulatory environment and good governance. Successful implementation of the strategic action plan and its key activities would support enhancing the capacity of health system to collect, analyze, disseminate and utilize information for decision making. The first pre-condition is to set-up a strong Division of Health Information either under the Permanent Secretary of MoHS or under the Minister's office. This Division would monitor and assure the timeliness, completeness and the quality ofthe strategic plan implementation in an accountable and transparent way. The Division of Health Information in a new set-up would have an utmost importance for coordination of all MoHS Departments' and stakeholders' activities in the country's health information, for harmonization of their activities, prioritization of the data collection and data sources related to the National Health Plan and dissemination of the core data to users, particularly to the decision and policy-makers.[2]In the detailed strategic action and implementation of activities' plan, a new organizational set-up has already been indicated and used.

IV. STAKEHOLDERS' PARTICIPATION IN THE NATIONAL HIS

Health information system strengthening requires the active involvement of many stakeholders who have roles and responsibilities in different areas of health statistics. A major constraint to health information system strengthening is the absence of consensus on the relative strengths, usefulness and feasibility of different data collection approaches required to generate the array of health indicators needed by programme managers and decision-makers.[3]

There are multiple partners and agencies who have been involved in development, monitoring, assessment, using various communication tools and utilization of health information system in Myanmar. We may summarize their contribution to the national HIS according to their activities as follows:

Population-based surveys, health facility surveys:USAID, 3MDGs, WHO, UNFPA

Planning / Training in HMIS management: WHO, UNICEF, UNFPA

Civil Registration and Vital Statistics:UNICEF, World Bank, Bloomberg Data for Health Initiative

Monitoring and Evaluation of health programmes: UNFPA, WB, Gov. of Japan, UNAIDS, 3MDGs

DHIS2 implementation / HMIS incorporation: UNOPS,My-NORTH, JSI, PACT Myanmar,3MDGs

Logistic Management Information System: UNFPA, Procurement and Supply Management (PSM – USAID), UNOPS

Open Medical Records Systems: UNOPS, UNICEF

Human Resources Information System: UNFPA, WHO

[2] See Annex 4., proposed organizational set-up of the Division of HIS, MoHS, Myanmar
[3] Health Metrics Framework: Strengthening Country Health Information Systems: Assessment and Monitoring Tool. 10 May 2006, WHO Geneva.

Community public health reporting / maternal death surveillance: UNFPA, UNOPS, WB

eRegistration of immunization: UNICEF (CommCare)

Disease surveillance: JICA, WHO, GAVI HSS, 3MDGs

Geographic Information System: ADB

The crucial issue here to coordinate partners' involvement is to align their activities with the national priorities in health and to avoid duplication.

V. HIS STRENGTHENING AND eHEALTH – TOOLS, SITUATION ANALYSIS AND PERSPECTIVES

Heath Information System is a broad system of policies, legislation, governance, human, financial and technology resources, health indicators, data sources, data management processes, information products and the effective dissemination and use of information. According to WHO's definition, eHealth is "the use of information and communication technologies for improving the flow of information through electronic means, to support the delivery of health services and the management of health systems".

In the draft National Health Plan, electronic health recording and reporting is indicated as one of strategic approaches for strengthening the health information system. Therefore, activities for strengthening priority strategic areas of the health information supported by eHealth tools have been included within this Strategic Action Plan.

Currently, there is neither IT architecture nor plans for IT within MoHS, as well as no IT Team to manage such artifacts or documentation. With the introduction of IT sub-systems within the Myanmar health environment, the need to manage the IT architecture and standards quickly arises. For example, there does not seem to be an authoritative facility/product library that can be referenced by various systems. As a result, different systems use different libraries creating semantic (naming convention) confusion and potentially creating data integration (interoperability) issues down the road. In spite of the fact that MoHS is not in a position to develop and manage some of the more complex instruments and artifacts of IT management (e.g. COBIT/ITIL/Enterprise Architecture), it should begin to implement authoritative data sources and reference data sets to align the multiple stakeholder efforts[4].

In summary, the following recommendations have been considered and included to the strategy regarding the IT support of the health information system in Myanmar: (i) focus MoHS energy on maturing its internal IT skills and IT management competencies, due to the fact that implementing advanced information systems without the requisite internal skill sets would undoubtedly lead to wasted financial resources;(ii) develop an IT governance structure; (iii) conduct a detailed review of existing IT systems within institutional donors and partner NGOs and develop an information system roadmap for ownership, maintenance, and partner alignment; (iv) work with MCIT to conduct a review of the legal environment and potential impediments to further MIS reforms; (v) nurture relationships with the Myanmar Technology Community to accelerate the reforms and reduce the risk of exploitation by external non-Myanmar vendors.

[4] Ministry of Health and Sports, Republic of the Union of Myanmar / Supply Chain Management System (USAID): Management Information Systems Strategy. Draft. By Eric Okimoto, August 2016.

The national eHealth environment is made up of the following ***seven components*** or building blocks (*NationaleHealth Strategy Toolkit, WHO / ITU, 2012*), which have been considered in drafting detailed Strategic Action Plan for Strengthening HIS in Myanmar.

Leadership, governance and multi-sector engagement. The enhanced health information system department / divisionat the MoHSwould direct and coordinate eHealth support, promote awareness and engage stakeholders.It would support delivery of expected benefits from eHealth support. This component is mainly addressed in Strategic Area 1. andis also indicated in some strategic objectives and activities in other priority areas.

Strategy and investment. There have been many stakeholders with available funds for the eHealth support. The priorities in this Strategic Plan are carefully selected, planned and aligned with financing. This would include harmonization of priorities with funding, and identification of funding for medium term.

Legislation, policy and compliance. National Health Information Policy would be drafted (Strategic Area 1.), and an eHealth support plan, as a part of the Policy, has already been drafted, initially for priority communicable diseases (Strategic Area 4.). It would be important to follow legislation related to IT rolling-out, particularly other ministries' involvement and standardization.

Workforce. eHealth support to the national health information system would require strengthening knowledge and skills of human resources, particularly in using the IT advances, and also in the IT internal expertise related to eHealth implementation network and its maintenance, at national and sub-national levels. (Strategic Area 12.) Training of health workers in using the eHealth tools has been incorporated into some other strategic areas. The enhanced national level Division of HIS would be able to facilitate all these activities.

Standards and interoperability. This component has been addressed in the Strategic Plan (Strategic Areas 1., 2., 3., 4., 12.) and standards for interoperability will be applied in introduction and rolling-out of the eHealth tools. Currently, the eHealth tools coordinated by the MoHS, in configuration, piloted or rolled-out (e.g. DHIS2, Open MRS, Master Patient Index and Client Registry) have been based on Open Health Information Exchange (Open HIE) philosophy; any further eHealth tools would follow the standards and interoperability rules.

Infrastructure. Collaboration and compatibility with the national IT structure / institutes and following the government's IT policies in an electronic information exchange would create a foundation for crossing geographical and health-sector boundaries in the information exchange. The plans for physical infrastructure, core services and applications are the part of this Strategic Action plan.

Services and applications. The Strategic Area 11. addresses the content, dissemination and utilization of information for decision-making, for various users: general public, service providers in different levels, academicians, private sector, etc. Providing tangible means for exchange and information management including an appropriate content would be an important key activity in this strategic area.

VI. VISION, MISSION AND GOAL OF HEALTH INFORMATION SYSTEM IN MYANMAR

VISION

A strong Health Information System for a strong health system

MISSION

Generating and making accessible comprehensive, integrated and timely health information for decision making at different levels of health system

GOAL

To provide complete, valid, reliable and timely health information for making right decisions at the right time to ensure an equitable, effective, efficient and responsive health system

VII. GUIDING PRINCIPLES[5]

The proper and systematic functioning of HIS requires good linkages and coordination of its components, starting from data collection forms, data gatherers at the peripheral level of the health system to strategic decision makers of the Ministry of Health.

Strategies which would lead to strengthening HIS in the next five-years period should be

- doable,
- quick win strategies,
- based on existing situation,
- prioritized,
- scalable and planned in a step-by-step manner,
- responsive, and
- efficient.

[5]MyintHtwe, Dr.: Quick Assessment of Health Information System. The Bulletin of Preventive and Social Medicine Society, Vol. 1, Number 1. September 2014

VIII. OVERVIEW OF THE STRATEGIC ACTION PLAN 2017 - 2021

Strategic Areas and Objectives

Strategic Area 1. Public Health Information

Strategic Objectives: 1. HIS organizational set-up with adequate number of skilled staff.

2. HIS Development and Working Committees operationalized.
3. Essential indicators in line with Sustainable Development Goals (SDGs) related to Health identified.
4. Guidelines and Standard Operating procedures for data managementavailable.
5. Data collection from private sector and NGOs in place.
6. Electronic reporting of aggregated data rolled out.
7. Enhanced skills and knowledge on health information.
8. Introduction of Traditional Medicine information as a part of routine HIS.

Strategic Area 2. Hospital Information

Strategic Objectives: 1. Health Information Policy approved.

2. Quality of health facilities' medical record units at all levels enhanced.
3. Quality hospital information strengthened.
4. Hospital electronic reporting system.
5. The practice of hospital accreditation for both the government and private sector developed.

Strategic Area 3. Private Sector Information

Strategic Objectives: 1. Health Information from the private health facilities included into the national HIS and monitored.

2. A mechanism for data collection from the private sector in place.
3. Interoperability of electronic hospital information system between the private and government sectors.

Strategic Area 4. Vertical Reporting Systems

Strategic Objectives: 1. Alignment of vertical programmes reporting with the national HIS.

2. Client Registry and Master Patient Index used in TB and HIV programmes.
3. Integration of aggregated data of the health programmes into HMIS.

Strategic Area 5. Human Resource Management Information

Strategic Objectives: 1. Central level section on human resource management information in place.

2. Human resource for health national database including public and private sector.
3. A master registry of human resources for health of public and private health care providers/facilities.

Strategic Area 6. Logistic Management Information

Strategic Objectives: 1. Design a complete and integrated MIS for the health supply chain.

2. Initiate a complete and integrated LMIS design (including SOPs, software, hardware, human resource requirements, early warning indicators, standardized and harmonized set of essential logistics data.
3. Compliance with government audit requirements.

Strategic Area 7. Financial Management Information

Strategic Objectives: 1. Central level section on financial information management in place.

2. Human resource capacity for financial information management and use of data.
3. Management of health care financing information (recording, reporting and use) enhanced.

Strategic Area 8. Epidemiological Surveillance Information

Strategic Objectives: 1. Human resource capacity in epidemiological surveillance information at each level of health services.

2. Immediate recording and reporting of mandatory events in place.
3. Reporting of maternal deaths and adverse effects after immunization as well asother crucial epidemiological surveillance data integrated into existing piloting.
4. Rapid communication infrastructure upgraded.
5. National capacity to conduct Burden of Disease study,

Strategic Area 9. Civil Registration and Vital Statistics

Strategic Objectives: 1. Coverage of reporting birth and death information from health facilities and the community increased.

2. Quality of identifying cause of death in health facilities.
3. Electronic recording, ICD-10 coding and reporting causes of death.
4. Quality of identification of cause of death in the community.

Strategic Area 10. Population-based surveys and research findings

Strategic Objectives: 1. Inventory of population-based surveys in the country.

2. Research findings from the research institutions and universities utilized.

3. International standard surveys conducted in regular intervals.

Strategic Area 11. Utilization of Health Information

Strategic Objectives: 1. Core health information disseminated to various users by various methods.

2. Quality of disseminated health information.

3. Culture of using the information at all levels enhanced.

Strategic Area 12. Advanced information technology development.

Strategic Objectives: 1. Data Center in MoHS established.

2. Inter-operable sub-systems in HIS.

3. Internet connectivity to all health facilities

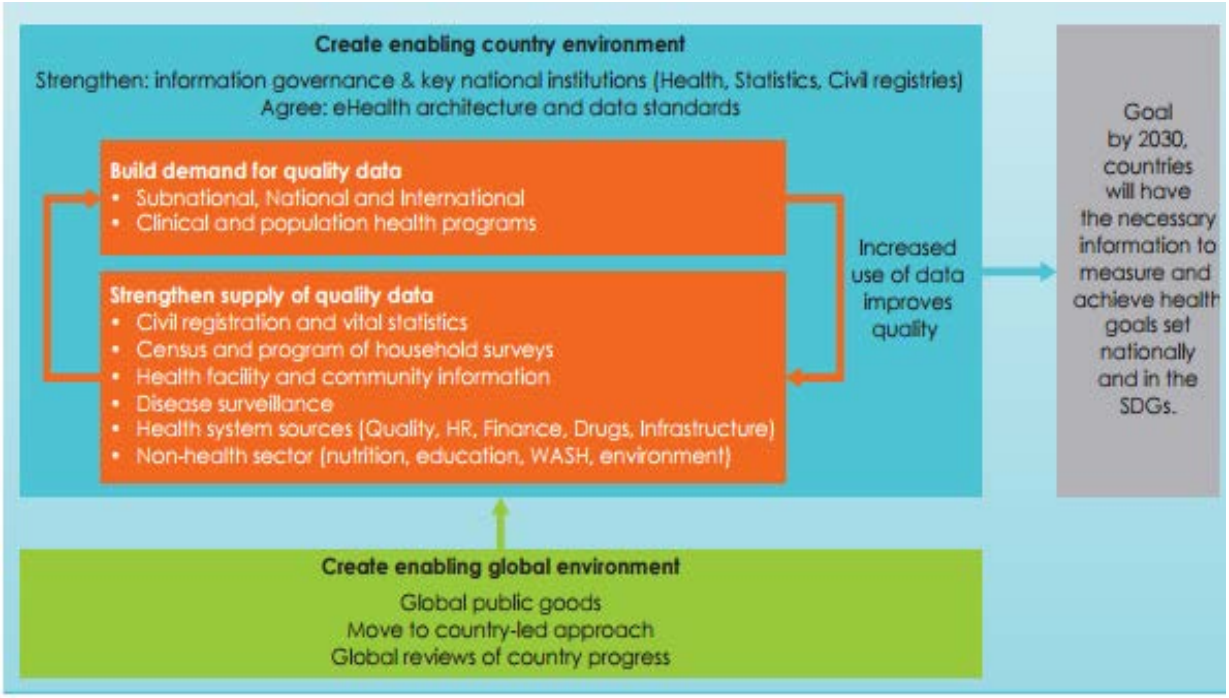
IX. WHAT IS EXPECTED TO ACHIEVE IN 5 YEARS IN EACH HIS STRATEGIC AREA

It is important to indicate here that, taking into consideration a new National Health Plan 2016-2021 and its strategic priorities with an emphasis towards achieving the Universal Health Coverage as a cross-cutting goal for the health sector, the Sustainable Development Agenda makes a credible case for more integrated action. Any approach to national health development that focuses on individual programmes in isolation would risk causing greater fragmentation.[6] Better health information system realizes better health system and would result in better health. There are well-known and continuing disparities in access to health services between the income groups, and between urban and rural households. Disease is always “at the end of the road”, in populations with limited access to quality health services. More disaggregated data are needed to assess equity across multiple dimensions, including by age, sex, geography, household income level. Strengthening health information system that integrates subnational information from various sourcesis essential to prioritize health interventions and to offer essential health services to everyone. The twelve strategic areas for strengthening health information should therefore be understood in an integrated way and would remarkably assist in measures for improving the essential health services coverage and consequently lead to better health outcomes.

[6] World Health Organization Regional Office for South-East Asia: Health in the Sustainable Development Goals. World Health Organization 2016.

Roadmap program logic (see Fig.1.)[7]is based on the recognition that increasing use of data leads to improving its quality, which in turn leads to increasing use. This applies to all levels – whether using data in communities to improve outreach, in facilities to improve quality of services, or at the national level to resolve health system constraints in the workforce and in financing. As more use is made of data from country systems, the quality of data will improve, building international confidence and removing the need for separate, duplicating systems.

Fig.1. Roadmap to improved health measurement reporting and status



1. Public Health Information

This strategic area covers effective governance, with national oversight mechanisms clarifying data requirements for key indicators of national health targets and goals, adequate institutional capacity for data collection, compilation, analysis, data quality assurance and communication and use of results. The main challenges related to this strategic area would be tackled by enhancement in human resources capacities and capabilities, a new organizational set-up of HIS unit at the central level, strengthening institutional capacity, national standards and improved M & E ofnational targets and goals. As some of the ***tangible main outcomes***, it is expected, that

- there will be a strong central level health information unit under the Permanent Secretary of the Ministry of Health and Sports, monitoring key indicators of national health targets and an achievement in SDGs;

[7] World bank Group, USAID, World Health Organization. The Roadmap for Health Measurement and accountability. M A4Health, June 2015. Available at http://www.who.int/hrh/documents/roadmap4health_measurent_account/en/ accessed on 7 July 2016

- there will be an improved and documented institutional capacity (at different level of health services including private sector) to collect, compile, analyze, communicate and disseminate data for its use;
- a mechanism of data quality assurance will be set-up and practiced; and
- national standards (enterprise architecture) allowing the interoperability of HIS sub-systems and expansion of some innovative eHealth support (e.g. DHIS2, etc.).

2. Hospital Information

Hospitals / health facilities are one of important information sources on morbidity, mortality, and service availability. Quality of hospital records, using ICD-10 in morbidity and mortality coding, capacity and capabilities of medical records' units in health facilities, non-uniformity / standardized medical records, inter-operability and quality assurance mechanism are the main challenges. This strategic area will focus on addressing these challenges, with ***the main outcomes*** as follows:

- standardized recording and reporting systems by using IT;
- timely and reliable health statistics coming from public and private hospitals.

3. Private Sector Information

Reporting from the private health facilitieshas not been routinely monitored in the national health information system. At the central level, there has been a limited structure to focus on the private sector health information and its quality. The private sector laws have not addressed health information and data collection except keeping medical records. **The main outcomes** expected in this strategic area are:

- a mechanism of data collection from the private health facilities and analysis in place;
- hospital information from the private hospitals monitored and feed backed;
- an inter-operability between the private and public sector related to electronic exchange of data.

4. Vertical Reporting Systems

Specific health programmes have been running parallel systems of their reporting with a number of specific programmatic data. However, at the grassroots' level, multipurpose health workers collect and compile all these specific programmatic information and have been overloaded by filling-up the reporting forms. There has been a fragmentation of the various programmes' reporting systems, and also differenteHealth supports are being considered. There is a need to coordinate and make the systemssustainable and inter-operable, with the following ***outcomes***:

- programmes' reporting systems linked to HIS with core indicators reported to the national health information system;
- the software used in various health programmes are inter-operable according to the standards and architecture of the national HIS.

5. Human Resource Management Information

Due to non-availability of standardized human resource for health and health facilities' registries and incomplete HMIS facility records, a real-time information on HRH has been limited. There is a need to strengthen a central level section on human resource information and also to set-up a national database on HRH. The ***expected outcomes*** after the five-year period are:

- full implementation of the national human resource for health management database linked to the national HIS;
- a strong central level section on human resource management information.

6. Logistic Management Information

Ideally, drugs and logistics uses electronic tracking systems on logistics including commodities, medicines, equipment, and supplies. Various technical units have been managing their logistics separately, and no standard reporting requirements for each type of health facility in the respective supply chain are available. There is a need to systematize LMIS, with the ***major expected outcomes*** as follows:

- a complete and integrated LMIS system design linked to national HIS;
- aligningsupply chain management practices with government audit requirements.

7. Financial Management Information

Similar to LMIS, human resource capacity for financial information management and managing health care financial information (recording / reporting / use) is not adequate. It is expected that, after a five-yearperiod, there will be

- a new organizational set-up enhancing the central level financial information management, fully resourced and equipped;
- recording, reporting and use of financial information enhanced and linked to other health data.

8. Epidemiological Surveillance Information

Core surveillance and response capacities have standardized case definitions, regular updating of responsibilities for notification and investigation, active participation of communities and health workers and a supportive laboratory infrastructure. Early warning functions of the health system including rapid communication infrastructure are crucial components of IHR implementation. Sufficient capacity of human resources and streamlining of reporting systems by incorporating unusual events would be required during the next 5-years period, with the **expected outcomes**of

- human resource capacity in epidemiological surveillance information from all levels enhanced and documented;
- unusual events and immediate reporting requirements integrated into routine HIS and into piloting software.

9. Civil Registration and Vital Statistics

A leading standard in this crucial sub-system of the national health information covers registration of births, deaths and other vital events recording occurrence and characteristics to produce fertility and mortality statistics. The five-year strategic action plan addresses coordination mechanism between health and non-health sectors in increasing the coverage of birth and death reporting, quality of medical certification of cause of death, and the community cause of death information. The **expectedoutcomes** are as follows:

- a systematic lay-reporting of the community birth and deaths in collaboration with the village tract health committee initiated;
- quality of medical certification of cause of death from health facilities increased and documented;
- verbal autopsy institutionalized in a representative sample of the population.

10. Population-based Surveys and Research Findings

Population-based surveys and research findings are important sources of health data to the national health information system, useful for triangulation purposes and for monitoring a trend in outcomes and health impact indicators. Ideally, a multi-year programme of national health surveys identifies priorities, periodicity and scope of data. Currently, there is neither inventory of the population-based health surveys nor a multi-year programme of the national health surveys. Also, a formal mechanism of sharing and dissemination of research findings is not in place. After addressing these issues during the five-year action plan, the following **outcomes** are expected:

- a mechanism of regular dissemination of the survey results and maintaining the inventory of population-based health surveys in Myanmar;
- a multi-year programme of national health surveys;
- annual meetings of researchers and service providers on research findings and prioritization of health research activities;
- a mechanism of monitoring achievements towards the sustainable development goals.

11. Utilization of Health Information

With limited use of reported and analyzed data, the health information would not fulfill its purpose-evidence based decision making. Currently, research data are not formally included into information systems, policy briefs capacity is limited, no active collaboration with media is introduced,and the core health information is not available in an appropriate format to diverse target audiences.Culture of using data for decision-making is not sufficient. In this important component of the health information system in Myanmar, the **following outcomes** should be achieved within the next five-years period:

- a target audience including policy makers receive periodic briefs / regular reports in a useful form tailored to the users' need;
- timeliness and completeness of Annual Health Statistics Report enhanced and useful for decision-making;
- Standard Operating procedure for data dissemination and use available;
- annual reviews of health sector performance at the regional / state level and the national level conducted.

12. Advanced Information Technology Development

Incorporatinginformation and communication technologyas one of the priorities for health system development has been recognized by the government[8]. This would require strategic and integrated action at the national level, to make the best use of existing capacity while providing a solid foundation for investment and innovation. Establishing the main directions as well as planning the detailed steps that are needed would be crucial to achieving longer-term goals such as universal access to care, health sector efficiency, reform or more fundamental transformation[9]. At the end of the five-years strategic plan,

- a fully funded data center with a national IT team should be in place;
- overall framework for IT development in health would be available;
- eHealth tools piloted and, where appropriate, expanded, interoperable and used for strengthening the national health information system and quality of health care.

Detail action and implementation plan with costing is available under Chapters XI. And XII.

X. MONITORING, REVIEWS AND EVALUATION OF THE STRATEGIC ACTION PLAN

Monitoring, reviews and evaluation of the Strategic Action plan will be conducted as follows:

(i) Monitoring responsibilities would be assigned to the national health information system unit, National HIS Development Committee and HIS Technical Working Group; templates for monitoring by using core objectives, indicators and milestones would be used (Tab.3. and 4.).

(ii) Annual health sector performance reviewswould be used for the review of implementation of the Strategic Plan. The progress could be measured by assessing achievements in Key Measures of Success for each strategic objective (in detail template of all planned activities), and from achievement in indicators listed under Core objectives.

(iii) Mid-term review would be conducted in the third year (during 2019) in a form of a national HIS assessment workshop.

(iv) Final evaluation of the Strategic Action plan will be conducted at the end of the five-year period, by using, for possible comparison, the similar assessment tool as for preparation of this Strategic Plan.

[8]Ministry of Health and Sports: National Health Plan 2016-2020, draft, work in progress. Republic of the Union of Myanmar, 2016.

[9] World Health Organization / International Telecommunication Union: National eHealth Strategy Toolkit. WHO & ITU, 2012. Available at https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-E_HEALTH.05-2012-PDF-E.pdf accessed on 15 July 2016.

Table 3. Monitoring Indicators of the Strategic Action Plan

Goal: To provide complete, valid, reliable and timely health information for making right decisions at the right time to ensure an equitable, effective, efficient and responsive health system

Core objectives

1. **HIS organizational set-up with core capacities at national level**

Indicators

- ***HIS national level unit fully staffed and functioning***
  Baseline: HIS unit under Dep. DG Public Health, one HIS National Manager.
  Target:HIS Division under the Minister's Office or the Office of Permanent Secretary[10]
  Expected date of achievement:31December 2017
  Source of information: Office of Permanent Secretary, MoHS
  Responsible entity for monitoring:National HIS Development Committee
- ***Electronic Public Health Information System using DHIS2 platform nation-wide***
  Baseline: 30 townships (as of 1 October 2016)
  Target: 330 townships
  Expected date of achievement: 31 December 2017
  Source of information:Division of HIS, MoHS
  Responsible entity for monitoring:National HIS Technical Working Group
- ***Health Information Policy approved***
  Baseline: no HIS Policy
  Target: draft HIS Policy
  Expected date of achievement: 30 September 2017
  Source of Information: Office of Permanent Secretary, MoHS
  Responsible entity for monitoring:National HIS Development Committee
- ***Data quality assurance regularized***
  Baseline:2013-14 DQA methodology by DMR
  Target: annual DQA in a representative sample of townships
  Expected date of achievement: 31 December 2018 and annually
  Source of information: DMR
  Responsible entity for monitoring:Division of HIS, MoHS
- ***National HIS Development Committee and National HIS Technical Working Group revitalized***
  Baseline: Committees established, but not active
  Target: Committees regularly meeting, with an updated membership and Terms of Reference
  Expected date of achievement:31 September 2017
  Source of Information:Office of Permanent Secretary, MoHS
  Responsible entity for monitoring:Division of HIS, MoHS, as a secretariat of the Committee and HIS Technical Working Group

[10] Annex 4. Proposed organizational set-up of the HIS at the Ministry of Health and Sports

2. Quality hospital information

Indicators

- ***Recruitment and assignment procedures for medical record officers and technicians***
  Baseline: no standard procedures available
  Target: standard procedures drafted and implemented
  Expected date of achievement:31 December 2018
  Source of information: DMS
  Responsible entity for monitoring:Division of HIS, MoHS
- ***Health Information from the private health facilities included into the national HIS***
  Baseline:Data from the private health facilities fragmented and not systematized for analysis
  Target:private sector law reviewed and revised
  Expected date of achievement: 31 December 2018
  Source of information: DMS
  Responsible entity for monitoring:Office of the Permanent Secretary, MoHS and National HIS Technical Working Group
- ***Open Medical Record System standardized in public hospitals***
  Baseline: Open MRS functioning in 6 public hospitals for HIV data
  Target: Open MRS rolled out in secondary and tertiary hospitals
  Expected date of achievement: 31 December 2018
  Source of information: DMS / Division of HIS, MoHS
  Responsible entity for monitoring: Office of Permanent Secretary, MoHS

3. Alignment of vertical reporting systems with the national HIS

Indicators

- ***Data integrated through DHIS2 platform and used for analysis and feedback***
  Baseline: DHIS2 used for tabulation of aggregated data at national level from 30 townships for PMTCT
  Target: DHIS2 rolled out to all townships and used for HMIS data analysis at Regional / State levels
  Expected date of achievement: 30 June 2019
  Source of information:Regional / State Directors
  Responsible entity for monitoring:Division of HIS, MoHS
- ***Master Patient Index / Client Registry used and expanded***
  Baseline: Master Patient Index in development
  Target: piloting of Master Patient Index a reporting results
  Expected date of achievement:piloting31 December 2017; expansion according to the pilot. results
  Source of information:Disease Control; M & E system of HIV / TB / Malaria
  Responsible entity for monitoring:Division of HIS, MoHS

4. Administrative data enhanced and linked to the national HIS

Indicators

- ***National human resource database set-up and up-to-date***
  Baseline: no HR database in place and used
  Target: HR national database set-up and systematized
  Expected date of achievement: 31 December 2017
  Source of information: Division of HIS, MoHS
  Responsible entity for monitoring:National HIS Technical Working Group
- ***Coverage of real-time, electronic reporting of stock supplies***
  Baseline: no systematized real-time electronic reporting of stock supplies
  Target: national level stock supplies reported and monitored
  Expected date of achievement: 30 June 2019
  Source of information: Office of Permanent Secretary, MoHS
  Responsible entity for monitoring: National HIS Technical Working Group

- ***National level human resources, financial management and logistics management organizational set-up enhanced***
  Baseline: no structure at national level HR, FM and LM
  Target: strong administrative data management sub-divisions at the Division of HIS, MoHS established
  Expected date of achievement:31 August 2018
  Source of information:Office of Permanent Secretary, MoHS
  Responsible entity for monitoring:National HIS Technical Working Group

5. Disease outbreak surveillance and response capacity compliant with IHR

Indicators

- ***Cascade training on epidemic prone disease surveillance introduced***
  Baseline:not systematized training at the township level
  Target:Training conducted in all Regions / States
  Expected date of achievement: 30 June 2020
  Source of information:Central Epidemiological Unit
  Responsible entity for monitoring:Division of HIS, MoHS
- ***3-weeks FETP systematized***
  Baseline:no FETP regularly conducted
  Target:two batches of FETP training conducted annually
  Expected date of achievement: 31 December 2017
  Source of information:Central Epidemiological Unit
  Responsible entity for monitoring:Division of HIS, MoHS

6. Universal registration of births, deaths, including reporting cause of death

Indicators

- ***Birth registration coverage***
  Baseline:three out of ten children under five not registered
  Target: 90 percent of births registered
  Expected date of achievement: 31 December 2021
  Source of information: Central Statistical Office
  Responsible entity for monitoring: Division of HIS, MoHS, and UNICEF
- ***Death registration coverage***
  Baseline:60 percent
  Target: 90 percent of deaths registered
  Expected date of achievement: 31 December 2021
  Source of information: Central Statistical Office (CSO)
  Responsible entity for monitoring: HIS Technical Working Group
- ***Cause of death coverage and quality***
  Baseline: 75 percent of *registered deaths* have usable COD information[11]
  Target:90 percent of deaths occurring in hospital facilities are medically certified and have a useful information on COD
  Expected date of achievement: 31 December 2021
  Source of information: CSO
  Responsible entity for monitoring:Division of HIS, MoHS

7. Population-based health surveys results' and research findings' dissemination systematized and used

Indicators

- ***Inventory of population-based health surveys available and regularly updated***
  Baseline:no official inventory of the surveys available and updated
  Target: inventory of the health surveys maintained at MoHS in collaboration with CSO and regularly updated

[11] The University of Melbourne, Bloomberg Philanthropies – Data for Health Initiatives: Myanmar CRVS Country Overview, 2016. CRVS-info@unimelb.edu.au, sbo@dataforhealth.org

Expected date of achievement: 31 December 2018
Source of information:Division of HIS, MoHS
Responsible entity for monitoring:HIS Technical Working Group

- ***Plans and preparations for population-based health surveys available and transparent***
  Baseline: no systematized transparent plans for health surveys
  Target:the heath surveys plans of all partners available at MoHS in collaboration with DMR and CSO
  Expected date of achievement: 31 December 2018
  Source of information:all major partners in health in the country / CSO
  Responsible entity for monitoring:Division of HIS, MoHS
- ***Research findings disseminated and operational research prioritized***
  Baseline: dissemination of research findings not regular and prioritization of implementation research not systematized
  Target: annual dissemination of research findings, both at the meetings of researchers with policy makers and by available dissemination tools, and prioritization of the operational research plans
  Expected date of achievement:30 June 2018
  Source of information: DMR, Office of Permanent Secretary
  Responsible entity for monitoring:Division of HIS, MoHS

8. Data from national health information system used at all levels to improve health, inform decision-making, and strengthen accountability

Indicators

- ***Annual Reviews of Health System Performance at the regional / state and national levels conducted***
  Baseline: Community Health Care Reviews conducted
  Target: Annual Reviews of Health System Performance at the regional / state level and at the national level conducted in a standard format of the data presentation
  Expected date of achievement: 31 December 2018
  Source of information: Office of the Permanent Secretary
  Responsible entity for monitoring: HIS Technical Working Group
- ***A format of disaggregated data presentation for all levels of health service providers***
  Baseline: the format for data presentation not available
  Target:a format for data presentation for sub-district / township / district / region or state / national levels
  Expected date of achievement: 31 December 2018
  Source of information:Division of HIS, MoHS
  Responsible entity for monitoring: HIS Technical Working Group
- ***Using data from the HIS to monitor achievements in health-related SDGs***
  Baseline: monitoring health related SDGs to systematically start
  Target: National Health Plan M&E Framework
  Expected date of achievement: 31 March 2017
  Source of information:Division of HIS, MoHS
  Responsible entity for monitoring: Annual Review of Health System Performance / Division of HIS, MoHS

9. A roadmap for IT in health, for ownership, maintenance, and partner alignment

Indicators

- ***A detailed review of existing IT systems within institutional donors and partner NGOs***
  Baseline:a comprehensive review / situation analysis of existing IT software and hardware available currently at the health sector and its inter-operability not yet conducted
  Target: a situation analysis conducted and report available

Expected date of achievement: 31 March 2018
Source of information: WHO
Responsible entity for monitoring:Division of HIS, MoHS / WHO

- ***Data Center at MoHS***
  Baseline: no data center set-up
  Target: a full-fledged Data Center established
  Expected date of achievement: 31 December 2021
  Source of information:Division of HIS, MoHS
  Responsible entity for monitoring: Office of Permanent Secretary
- ***National architecture and eHealth standards defined and agreed***
  Baseline: no standards and national HIS/eHealth architecture
  Target:standards for eHealth tools in HIS formulated
  Expected date of achievement: 30 December 2017
  Source of information:Division of HIS, MoHS
  Responsible entity for monitoring: Office of Permanent Secretary

Table 4.Selected milestones for monitoring achievements of core objectives

CORE OBJECTIVE	2017	2018	2019	2020	2021
1.HIS organizational set-up with core capacities at national level	HIS national level unit fully staffed and functioning				
	Health Information Policy approved				
	Electronic Public Health Information System using DHIS2 platform nation-wide	Data quality assurance regularized			
2. Hospital Information		Health Information from the private health facilities included into the national HIS			
				Open Medical Record System standardized in public hospitals	
3.Alignment of vertical reporting systems with the national HIS		Data integrated through DHIS2 platform and used for analysis and feedback			

CORE OBJECTIVE	2017	2018	2019	2020	2021
3.Alignment of vertical reporting systems with the national HIS			Master Patient Index / Client Registry used and expanded		
4.Administrative data enhanced and linked to the national HIS		National human resource database set-up and up-to-date			
			Coverage of real-time, electronic reporting of stock supplies		
5.Disease outbreak surveillance and response capacity compliant with IHR		3-weeks FETP systematized			
			Cascade training on epidemic prone disease surveillance introduced		
6.Universal registration of births, deaths, including reporting cause of death					Death registration coverage
					Cause of death coverage and quality
7.Population-based health surveys results' and research findings' dissemination systematized and used			Inventory of population-based health surveys available and regularly updated		
			Research findings disseminated and operational research prioritized		
8.Data from national health information system used at all levels to improve health, inform decision-making, and strengthen accountability		Using data from the HIS to monitor achievements in health-related SDGs			

CORE OBJECTIVE	2017	2018	2019	2020	2021
8.Data from national health information system used at all levels to improve health, inform decision-making, and strengthen accountability		Annual Reviews of Health System Performance at the regional / state and national levels conducted			
9.A roadmap for IT in health, for ownership, maintenance, and partner alignment				Well Functioning GIS Lab established	Data Center at MoHS
	National architecture and eHealth standards defined and agreed				

XI. Detailed Action Plan

Table A. Detailed Work Plan

STRATEGIC ACTION AND IMPLEMENTATION PLAN FOR STRENGTHENING HEALTH INFORMATION IN MYANMAR, 2017-2021.

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
1. Public Health Information	**1.1. HIS organizational set-up with adequate number of skilled staff.**	1.1.1. Situation analysis, assessment of human resources for HIS needs.	Division of HIS	National Consultant - 3 weeks, reviewed in 2019	
		1.1.2. Drafting a proposal for the HIS organizational set-up.			
		1.1.3. Training at WHO's HIS Collaborative Centers for HIS MoHS staff and the staff with HIS responsibilities from some regions / states.	Division of HIS	5 perspective HIS staff trained annually in HIS hub - University of Queensland, Brisbane, Australia	Duration 3 months / 5 persons a year, estimated USD 20,000 per person
		1.1.4. Kick-off of the enhanced HIS unit at national level.	Division of HIS	An initial annual estimated amount to support the national level HIS Division, HR	
	1.2. HIS Development and HIS Working Committees operationalized.	1.2.1. Review and revise membership of the Committees according to a new administration	Division of HIS		
		1.2.2. Revise Terms of Reference and conduct regular meetings of the Committees	Division of HIS	Quarterly / 6-monthly meetings. 10 participants, 6 from national level, 4 from Region / State level.	
	1.3. Essential indicators in line with Sustainable Development Goals (SDGs) related to health identified.	1.3.1. National workshop on health SDGs and its adaptation to national context, streamlining data sources.	Division of HIS - Sub-division of Public Health Information	2-days meeting with about 50 participants. (30 from national and 20 from Region / State level).	
		1.3.2. Monitoring completeness and timeliness of the monthly HMIS reports and providing feedback.	Division of HIS - Sub-division of Public Health Information / Regional Health Offices	Monthly monitoring, monthly feedback to Regions / States	
	1.4. Guidelines and standard operating procedure for data management (Data Dictionary) available.	1.4.1. Technical working group meetings to review existing guidelines and data dictionary and propose the revision.	Division of HIS - Sub-division of Public Health Information	Three-day meeting with program managers at national level	
		1.4.2. Workshop to get all programmes consensus on the revision of guidelines and SOPs for data management; Data Dictionary available at all levels	Division of HIS - Sub-division of Public Health Information	National workshop, 2 days meeting with region/ state health directors and representatives from township level and below, 50 participants.	
		1.4.3. Training of revised Data Dictionary for Region/State level and Township level users	Division of HIS - Sub-division of Public Health Information	Training of trainers and Multiplier Training at Region/State Levels	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
1. Public Health Information	**1.5. Data collection from private sector and NGOs in place.**	1.5.1. National Consultant to review existing data sharing mechanism, identify gaps and propose legal / policy framework incl. data sharing policy.	Division of HIS - Sub-division of Public Health Information / DMS	National Consultant, one month	
		1.5.2. Consensus workshop on standard reporting flow and forms from private health facilities and NGOs.	Division of HIS - Sub-division of Public Health Information / DMS	National workshop, 3 days, 50 participants, from public / private sector, MMA, MMC, MNC	
		1.5.3 Annual coordination meeting with private sector (especially with Private Hospital Association)	Division of HIS	2 days, 50 participants from public/ private sector 4000 USD x 5 years = 20,000 USD	
	1.6. Electronic reporting of aggregated data rolled out.	1.6.1 Training of township focal of HMIS from Kachin, Shan (E), Shan (N), Shan (S) and Ayeyarwady on electronic public health information system using DHIS2	Division of HIS - Sub-division of Public Health Information	Laptops 88 x 1000 = 88,000 USD 6000 USD per Region/ State x 5 = 30,000 USD (Kachin-18+ShanE-11+ShanN-21+Shan-S-18+Ayeyar-20=total 88 Tsp) (Rakhine-17 will be supported by-UNICEF/3MDG in 2017)	
		1.6.2 RHC level implementation for DHIS2 in one state(Kayah or Kayin)	Division of HIS - Sub-division of Public Health Information	Laptops 84x 1000 = 84,000 USD 6000 USD per training x 3 times= 30,000 USD One national consultant for 3 months(1*2500*3)	
		1.6.3. Maintenance and sustainability of DHIS2 software and refresher training	Division of HIS - Sub-division of Public Health Information / Disease Control	International Consultant - University of Oslo (USD 20,000 annually), and refresher training (USD 50,000 annually)	
		1.6.4. Procurement of necessary IT equipment to Township Public Health Departments.	Division of HIS - Sub-division of Public Health Information / DPH	Based on the situation analysis and the DHIS2 expansion plan. Estimated cost for 2017 - 300 township PH Dept. with laptop, USD 500 per laptop). Replacement of laptops in 330 townships in 2019	
		1.6.5. Monitoring quality of reporting and supervision to townships.	Division of HIS - Sub-division of Public Health Information / Disease Control / DMS	Supervisory visits from the national level to the regions / states and from the regions / states to the districts / townships	
		1.6.6. Monthly feedback to all reporting units.	Division of HIS - Sub-division of Public Health Information	Transmitted electronically.	
		1.6.7. Development of software for electronic recording / registration and reporting from midwife levels	Division of HIS - Sub-division of Public Health Information / Data Center & Information Technology Development	International Consultant one month	
		1.6.8. Piloting of the software for electronic recording and reporting	Division of HIS - Sub-division of Public Health Information / Data Center & Information Technology Development	In 2018, in 3 townships, cost of training, hardware (tablets) for approx. 40 midwives	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
1. Public Health Information	**1.7. Enhanced skill and knowledge on health information**	1.7.1. Train regional/state and township level medical officers and their staff, to enhance their skills in data management and evidence-based decision-making by using DHIS2.	Division of HIS - Sub-division of Public Health Information		
		1.7.2. HIS training for all categories of health workers, 2018-2021.	Division of HIS - Sub-division of Public Health Information	Estimated annual cost for training 2018-2021 - USD 5000 x 17 Regions / States = 85000)	
		1.7.3. Establish a Bachelor Degree of Health Information Management and Post-graduate Diploma for Health Information Management	Division of HIS - Sub-division of Public Health Information	Series of meetings with universities (University of Public Health, University for Paramedics, DMS, DHR)	
		1.7.4. Capacity building of Lecturer from University of Medical Technology for the specific of Health Information Management (International Standard) for the establishment of a Bachelor Degree of Health Information Management and Post-graduate Diploma for Health Information Management	Division of HIS - Sub-division of Public Health Information Department of Human Resource	International Training	
		1.7.5 Capacity building of Health Information Personal for International Master degree	Division of HIS - Sub-division of Public Health Information	International Training	
	1.8. Introduction of Traditional Medicine information as a part of routine HIS	1.8.1. Meetings of HIS Division with University of Traditional Medicine, clinics and traditional medicine hospitals, to propose data to be collected and data collection mechanism and reporting including ICD coding	Division of HIS - Sub-division of Public Health Information	Series of meetings of HIS Division with University of Traditional Medicine, clinics and traditional medicine hospitals.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
2. Hospital information	**2.1. Health information policy approved.**	2.1.1. International Consultant to draft the National HIS Policy and tools and guidelines for policy implementation.	Division of HIS	International Consultant, one month, also for the Activity 4.1.2.	
		2.1.2. National Workshop to discuss a draft of the National HIS Policy and to get consensus from all stakeholders.	Division of HIS	2-days national workshop, 70 participants, 40 from national level, 30 from regions / states.	
		2.1.3. Finalize and process the National HIS Policy for an approval.	Division of HIS		
		2.1.4. Disseminate the National HIS Policy to all Townships.	Division of HIS / DPH	Printing / disséminations expenses (300 copies/20 pages)	
		2.1.5. Based on the National HIS Policy; develop guidelines and tools that include privacy, confidentiality, accessibility and security.	Division of HIS, legal dpt.	Local Consultant 2 persons x 2500 USD x 3 months (working with international consultant) 3-days workshop to review and develop guidelines and tools for the National HIS Policy implementation. 50 participants	
	2.2. Quality of health facilities' medical records units at all levels enhanced including Expand use of ICD-10 for disease classification in hospitals.	2.2.1. Draft recruitment and assignment procedures for medical record officers and technicians.	Division of HIS / DMS		
		2.2.2. Draft a training curriculum for MRO and MR technicians.	Division of HIS / PH University	National Consultant 3 weeks	
		2.2.3. Introduce a certificate course for MRT and a diploma course for MRO in para-medical science universities.	Division of HIS / DMS / PH University	To be determined with University of Public Health. USD 30,000 estimated for each year	
		2.2.4 Conduct training of hospital staff on ICD-10.	Division of HIS	Two batches with 30 participants / year at the national level	
		2.2.5 Supervision and monitoring of quality of medical records documentation and ICD -10 coding.	Division of HIS / DMR	From national and Region / State levels. Quarterly supervisory visits	
		2.2.6 Review routine data from health facilities and community-based programmes taking into consideration their needs for policy makers, feasibility (in relation to IT) and long-term sustainability.	DMS / Division of HIS / DPH	One-day technical working group meeting	
	2.3.Hospital electronic reporting system.	2.3.1 Customization for development of electronic hospital information system using open source software; Hospital electronic reporting system of core aggregated data to respective region / state and to national levels	Division of HIS	1. One National consultant 2. Customization 10 persons x 30 working days 3. Training for pilot testing in 10 Hospitals (10 laptops will be purchased)	
		2.3.2Field monitoring of pilot implementation, review for expand to other hospital and dissemination		Supervision and One day Dissemination workshop (45 persons)	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
2. Hospital information	**2.3.Hospital electronic reporting system.**	2.3.3 Roll-out of electronic hospital information system		Training on electronic hospital information system (2 focal from each hospital) at region/state	
		2.3.4. Introduce Open MRS in public hospitals.	DMS / Division of HIS	Customization of Open MRS - series of meetings in 2018 and piloting in 2019	
		2.3.5. Expand client registry (CR) and master patient index (MPI) with unique health identifier (ID).	DMS / DPH / Division of HIS	Present ATM experience with the project to hospital managers and MoHS (one-day debriefing session). 30 participants	
		2.3.6. Plan IT hardware and internet accessibility for hospital information system.	Division of HIS / Central IT unit	see also SA 12.	
	2.4. The practice of hospital accreditation for both the government and private sector developed.	2.4.1. Create hospital accreditation checklist with incorporation of mandatory reporting of core hospital information data.	DMS	National Consultant - 2-weeks, and meeting at the national level	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
3. Private Sector Information	3.1. Health information from the private health facilities included into the national HIS and monitored.	3.1.1. An ad-hoc internal technical group meeting to discuss and propose the appropriate MoHS structure.	DMS / Division of HIS	One day meeting at the MoHS, with 7 participants.	
		3.1.2. Draft the proposal and process within the MoHS administration.	DMS / Division of HIS	The proposal finalized by the rapporteur of the MoHS internal meeting and processed.	
	3.2. A mechanism for data collection from the private sector in place.	3.2.1. Review and propose revision of the private sector laws related to health information.	DMS	National Consultant - one month.	
		3.2.2. Sharing data and create linkages on the private health facilities' information between HIS and DoMS of the MoHS.	Division of HIS / DMS	Joint one-day meeting between HIS and DMS (15 participants)	
		3.2.3. Monitor completeness and timeliness of the private health sector reporting.	Division of HIS / DMS	2018-2021, sample of hospitals from each Region / State	
		3.2.4. Consensus workshop with MMA on involvement of the private sector in the national health information system.	DMS / Division of HIS	One day workshop	
	3.3. Interoperability of electronic hospital information system between the private and government sectors.	3.3.1. Workshop on hospital medical record systems and data sharing.	Division of HIS / DMS	Two-days workshop, annual reviews	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
4. Vertical reporting systems	4.1. Alignment of the vertical reporting systems with the national HIS.	4.1.1. Consultative meeting of national health programme managers and agencies on alignment of vertical programme with the national health information system.	Division of HIS	2-days meeting with about 50 participants	
		4.1.2. Finalize HIS architecture	Division of HIS	International Consultancy - one month	
	4.2. Client Registry (CR) and Master Patient Index (MPI) used in TB and HIV programmes.	4.2.1. Procurement of servers and software.	Disease Control		
		4.2.2. User requirements validation workshop.	Disease Control		
		4.2.3. Development of health ID management policy.	Disease Control	Consultative meeting.	
		4.2.4. Acquire / install MEDIC CR instance.	Disease Control		
		4.2.5. Testing and implementing MPI.	Disease Control		
		4.2.6. Development of user guide and training.	Disease Control		
		4.2.7. MPI Launch Workshop	Disease Control	Piloting in 2017, expansion in 2018-2019-2020	
	4.3. Integration of aggregated data of the health programmes into HMIS.	4.3.1. Training of health workers on data collection, analysis and feedback, incl. use of DHIS2.	Division of HIS / University of Oslo	Gradual expansion of the DHIS2 use	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
5. Human Resource Management Information	5.1. Central level section on human resource management information in place.	5.1.1. Review capacities of MoHS on human resource management.	Division of HIS - Sub-division of human resource management information	National Consultant - one month. International Consultant - one month.	
		5.1.2. Draft Terms of Reference and job description for the proposed human resource information system section.			
		5.1.3. Draft a proposal for creating a new human resource management section.			
		5.1.4. Assess and propose options for a central HR database.			
		5.1.5. Study tour for the staff of the central HRH management unit	Division of HIS - Sub-division of human resource management information	Study tour to Thailand - USD 5200/person for two weeks, 3 persons	
		5.1.6. Official setting up of the HRH information system section	Division of HIS - Sub-division of human resource management information	A half-day function at MoHS	
	5.2. Human resource for health national database including public and private sector.	5.2.1. National consultative meeting on the human resource for health management.	Division of HIS - Sub-division of human resource management information	Two days meeting, 30 participants, International Consultant	
		5.2.2. Identification of HR and IT requirements assuring its interoperability and compatibility with the national HIS.	Division of HIS - Sub-division of human resource management information	International Consultant as per SO 5.1.	
		5.2.3. Providing equipment for the human resources for health database.	Division of HIS - Sub-division of human resource management information	Hardware, software, operating / maintenance cost	
		5.2.4. Respective staff trained in using the electronic HR information system.	Division of HIS - Sub-division of human resource management information	International Consultant as per 5.1. and 5.2.2. In-house training - data entry.	
		5.2.5. HRH database kicked-off and maintained.	Division of HIS - Sub-division of human resource management information	Project cost: Project staff; other staff; office space; office equipment, local transport, other travel	
		5.2.6. A regular feedback system for policy makers on updates in human resources for health set-up.	Division of HIS - Sub-division of human resource management information		
	5.3. A master human resources for health registry of public and private health care providers / facilities.	5.3.1. National workshop of public and private health sector on human resources for health management information system.	Division of HIS - Sub-division of human resource management information	Two days' workshop, 50 participants	
		5.3.2Dissemination of the agreed HRH reporting system to health facilities.	Division of HIS - Sub-division of human resource management information	Electronically and on paper.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
6. Logistic Management Information	6.1. Design a complete and integrated MIS system for the heath supply chain.	6.1.1. Develop framework for capturing, compiling and analysing logistics data	Division of HIS - Sub-division of Logistic Management Information / PSM	International Consultant	Timing, costing and activities of this Strategic Area are currently based on the Supply Chain management plan. Timing and costing may be adjusted to a proposed new organizational structure of the Division of Health Information System in place and to an updated MoHS / PSM USAID logistic management information plan.
	6.2. Initiate a complete and integrated LMIS system design (including SOPs, software, hardware, human resource requirements, early warning Indicators, standardized and harmonized set of essential logistics data)	6.2.1. Develop standardised reporting requirements for each health facility type at the respective level in the health supply chain			
		6.2.2. Complete an integrated LMIS system design			
		6.2.3. Draft standard operating procedure for managing logistics.			
		6.2.4. Develop LMIS software requirements through an extensive analysis of requirements and needs across all health supply chain levels, focused on one web-based electronic software for all drugs and medical equipment.	Division of HIS - Sub-division of Logistic Management Information / PSM		
		6.2.5. Implementation of LMIS	Division of HIS - Sub-division of Logistic Management Information / PSM		
		6.2.6. Training of existing staff at all levels to efficiently operate LMIS			
		6.2.7. Propose a setting-up a new unit to provide oversight and leadership in implementing an integrated LMIS			
		6.2.8. Coordinate all technical inputs and assistance from stakeholders in the sector			
	6.3. Compliance with government audit requirements	6.3.1. Conduct a review of government audit requirements and make recommendations that will align with supply chain management best practices in the health sector			

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
7. Financial Management Information	7.1. Central level section on financial information management in place.	7.1.1. Drafting and processing a proposal for organizational set-up.	Division of HIS - Sub-division of Financial Management Information	National Consultant - 3 weeks. (see also 1.1.1. and 1.1.2)	Timing and costing to be coordinated with Strategic Area 1. - Organizational set-up of the Division of Health Information System.
		7.1.2. Drafting Terms of Reference and job descriptions for the new organizational set-up.		National Consultant - two weeks	
		7.1.3. Recruit suitable personnel for the new section.		A full time staff according to requirements.	
		7.1.4. Two days orientation of the new selected staff.		In-house training	
		7.1.5. Study tour abroad to observe financial management for health systems.		Study tour (two weeks regional, 2 persons)	
	7.2. Human resource capacity for financial information management and use of data.	7.2.1. Drafting a training module on financial information management.	Division of HIS - Sub-division of Financial Management Information	National Consultant, one month	
		7.2.2. Conduct a central level training by piloting the module.		One-day training - 20 participants	
		7.2.3. Training of the State/Region health managers on financial information management and use of data.		Two days training the central level.	
	7.3. Management of health care financing information (recording and reporting and use) enhanced.	7.3.1. Identification of software developer, defining content and identifying source of funding.	Division of HIS - Sub-division of Financial Management Information	International Consultant one month	
		7.3.2. Develop software for management of health care financing (both recording and reporting).			
		7.3.3. Generate Standard Operating Procedures for financial management.			
		7.3.4. Training the appropriate staff on Standard Operating Procedures for health financing management.			
	7.4. IT equipment and enabled working environment for financial management information.	7.4.1. Draft situation analysis and propose necessary IT equipment and costs.	Division of HIS - Data Center & Information Technology Development	As per 7.3	
		7.4.2. Purchase the IT hardware for central and some peripheral levels.		Coordinate with SO 12.1.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
8. Epidemiological Surveillance Information	8.1. Human resource capacity in epidemiological surveillance information in each level of health services.	8.1.1. FETP training conducted	Central Epidemiological Unit	FETP training conducted	
		8.1.2. Conduct training for BHS at township level.		Conduct training for BHS at township level.	
		8.1.3. Electronic reporting from SCDU teams from Regions / States to CEU		Training for Regions / States Team	
		8.1.4. Setting-up a CDC at the national level		Setting-up a CDC	
	8.2. Immediate recording and reporting of mandatory events in place.	8.2.1. Technical assistance to adjust / add necessary data to existing DHIS2	Central Epidemiological Unit	International Consultant one month	
		8.2.2. Piloting and expansion of the epidemiological surveillance reporting by using DHIS2		Training in Pilot site	
		8.2.3. Training of regional/ state / township medical officers in using the software.		End-user Training	
		8.2.4. Explore connectivity and gradually expand the reporting sites.		End-user Training	
	8.3. Reporting of maternal deaths and adverse effects after immunization, as well as other crucial epidemiological surveillance data, integrated into existing pilotings.	8.3.1. TA International Consultant (DHIS2)	Central Epidemiological Unit	International Consultant one month	
		8.3.2. Workshop on core data identification and incorporation into DHIS2.		Workshop	
		8.3.3. Training of the staff in piloting districts.		Training	
	8.4.Rapid communication infrastructure upgraded.	8.4.1. IT equipments / tablets available in the emergency prone areas.	Central Epidemiological Unit	IT equipments / tablets available	
	8.5. National capacity to conduct Burden of Diseases Study.	8.5.1. Data collection for training exercise	Central Epidemiological Unit	Training	
		8.5.2. Training course on National BoD.		Training course on National BoD.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
9. Civil Registration and Vital Statistics	9.1. Coverage of reporting birth and death information from health facilities and the community increased.	9.1.1. Two days workshop jointly attended by MoHS and the Central Statistics Office on the community vital events coverage.	DPH / Division of HIS	Two days workshop, 50 participants, at national level, 20 central level, 30 peripheral level	
		9.1.2. Piloting a system of collaboration between health sector and the village leaders on the birth and death registration from the community.	DPH / Division of HIS	Training of selected township health staff and the village officials and piloting the system of reporting.	
		9.1.3. Drafting the simple guidelines on increasing the birth and death reporting from the community and disseminate to all townships.	Division ofHIS / CSO	National Consultant 2 weeks	
		9.1.4. Analyze completeness, timeliness and the quality of HMIS routine reporting from health facilities in context of birth and death reporting and feedback to States / Regions.	Division of HIS / CSO	National Consultant 3 weeks	
		9.1.5. Draft a proposal on a linkage of the unique health identifier since birth with health care services and interoperability of the electronic systems.	DPH / Disease Control / Division of HIS	National Consultant one month	
	9.2. Quality of identifying cause of death (COD) in health facilities.	9.2.1. A national level training of trainers from all Regions / States on medical certification of cause of deaths (MCCD) and the training expansion to the regions / states.	Division ofHIS / CSO	International Consultant one month, two batches by 20 participants in 2017 at central level, four batches annually at the regional / state levels	
		9.2.2. Conduct training of the secondary and tertiary hospitals' / medical colleges doctors on the COD certification in all regions / states of the country.	Division of HIS / DMS	See also 9.2.1.	
		9.2.3. Situation analysis on CRVS with focus on mortality statistics, including the private health sector.	HIS / CSO / DMS	in 2020; International Consultant one month	
		9.2.4. Include knowledge on COD certification during the licensing process of the medical doctors.	MMA / Division of HIS - subdivision on human resource information	One day meeting at central level with private sector - 20 participants	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
9.Civil Registration and Vital Statistics	9.3. Electronic recording, ICD-10 coding and reporting causes of deaths.	9.3.1. A working group meeting on getting consensus on a system of COD recording & reporting and selection of piloting hospitals.	Division ofHIS / CSO / DMS	One day technical meeting at national level - 15 participants	
		9.3.2. Piloting the COD recording and reporting system in central level hospitals.	Division of HIS / DMS	3 hospitals, Hardware requirements, 6 months piloting, data analysis, national consultant 2 weeks	
		9.3.3. Gradually expand the COD recording and reporting system to all regions / states.		2020 - 3-5 township hospitals in each region / state, expanded in 2021	
	9.4. Quality of identifying COD in the community.	9.4.1. Analyze quality of verbal autopsy currently implemented.	Division ofHIS / CSO	Report on results of piloting, 3 townships	
		9.4.2. Gradually expanding the VA for community deaths through midwife (MWs) interventions; determine the national representative sample size for verbal autopsy; develop business plan and process.	Division of HIS / CSO	Estimates for training of MWs, cost of tablets (approx. USD 100 per 1 tablet), central level (CSO / HIS) training and hardware. International Consultant - one month in 2017 (University of Melbourne). See also Strategic Area 1. for MW software development for PH information.	
		9.4.3. Institutionalize national representative cause of death by verbal autopsy mechanism.	Division ofHIS / CSO	One day meeting of all partners, 50 participants	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
10. Population-based surveys & research findings	10.1. Inventory of population-based surveys in the country.	10.1.1. Consensus meeting of all partners in health on application of research and survey results in management of health care system.	Division of HIS - Subdivision of analysis, dissemination and utilization of data	Two-days meeting with 50 participants	
		10.1.2. Implement setting-up inventory of the health surveys at the Ministry of Health and Sports and a mechanism of updating by the survey results and research studies.	Division of HIS - Subdivision of analysis, dissemination and utilization of data		
	10.2. Research findings from the research institutions and universities utilized.	10.2.1. Workshop on integration of research findings into regular health information system reports.	DMR / Division of HIS	Two days national level workshop, 30 participants. Annually	
		10.2.2. Annual meetings of researchers with programme managers on research findings, their utilization and identification / prioritization of areas for operational / implementation research.	Division of HIS - Subdivision of analysis, dissemination and utilization of data	Two days national level workshop, 50 participants. Once a year.	
	10.3. International standard surveys conducted in regular intervals.	10.3.1. Plan and conduct DHS, health facility survey and other health surveys.	Division of HIS - Subdivision of analysis, dissemination and utilization of data		
		10.3.2. Dissemination of population-based surveys results.	Division of HIS - Subdivision of analysis, dissemination and utilization of data	Annual dissemination / publication. National Consultant 3 weeks.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
11. Utilization of Health Information	11.1. Core health information disseminated to various users by various methods.	11.1.1. Technical workshop on defining dissemination policy and methods.		One day technical meeting at central level.	
		11.1.2. Finalize health information dissemination policy and submit for an approval.	Division of HIS - Subdivision of analysis, dissemination and utilization of data		
		11.1.3. Develop Standard Operating Procedure for data dissemination and use		Technical working group meeting - one day, dissemination costs	
		11.1.4. Regular meetings of data producers and data users.		Once a year, 50 participants, all Regions / States, central level; agencies	
		11.1.5. Establish the GIS Lab as the reference for the management, use and sharing of the master lists and geospatial data across all the programs		Training of trainers and multiplier training	
		11.1.6. Produce information briefs (monthly) for policy makers.		Develop briefs and printing cost	
		11.1.7. Produce timely Annual Health Statistics report, by third quarter in the following year.		Availability on-line. Hard copies to each Region / State, MoHS Depts., agencies	
		11.1.8. Training on Health Equity Analysis Toolkit (HEAT) and Monitoring the health-related SDGs		Training Workshop, Two-days at national level, 30 participants	
	11.2. Quality of disseminated health information.	11.2.1. Monitoring accuracy, completeness and timeliness of the reports from health facilities, on monthly basis, feedback; as well as Data Quality Assessment through the data flow from client level to administrative level.		Questionnaires Development, Fieldwork and Report Writing	
		11.2.2. Consensus meeting of MoHS, national statistical office and major partners (e.g. PH institute, universities) on data exchange and quality assurance.		One day meeting at national level, 50 participants	
		11.2.3. Reports on health facility data quality issued regularly, including analysis and limitations, and corrective actions.		Development of data quality score card at facility level	
		11.2.4. Annual comprehensive assessment of data quality from facility reporting - Data Quality Review (before health sector reviews), includes analysis of completeness, timeliness, accuracy, consistency over time, etc.		National Consultant, one month annually Development of data quality score card **at national level**	
	11.3. Culture of using the information at all levels enhanced.	11.3.1. Technical working group sessions to produce samples of data presentation for all levels of health services.		A one-day workshop - 30 participants	
		11.3.2. Annual Reviews of Health Sector Performance.		In all Regions / States and at National level.	
		11.3.3. Mid-Term Reviews of the Strategic Action Plan 2017-2021, in 2019, and its Evaluation in 2021.		2days Assessment in 2019 and 2021 at central level, participation of all regions and the central level departments.	

SA*	Strategic Objective	Activity	Responsible Unit	Budget Assumption	Potential source of funding
12. Advanced Information Technology Development	12.1. Data Center in MoHS established.	12.1.1. Situation analysis and drafting a proposal for setting-up a fully funded manager and a team, incl. maintenance and sustainability. Resource and hire a core IT Team comprised of the following individuals: IT Program Manager/M&E/Reporting, Business Analyst/ Architect/Data Officer, Network Engineer/Security Officer, Customer Services Manager/Training Officer, Administrative Officer, Procurement/Contracts/Vendor Management.	Division of HIS - Data Center & IT Development	International Consultant, one month. National Consultant one month	
		12.1.2. Draft an overall framework and plan for ICT, equipment and training in use of ICT for routine health information system, at all levels.			
		12.1.3. Draft eHealth policy.			
		12.1.4. Setting-up a fully equipped Data Center	Division of HIS - Data Center & IT Development	International Consultant one month, equipment & working environment (Buying of server, Installation of server, Annual fee for maintenance of server to MPT data center)	
		12.1.5 Installation of server for backup of DHIS2 data in public health information, DHIS2 functionality and set-up of DHIS2 for hospital information	Division of HIS	One international consultant for DHIS2 (for Installation of server for backup of DHIS2 data in public health information and set-up of DHIS2 for hospital information, support for back-end database management, Training on how to manage back-end database by remote Access, GIS facility layer in DHIS2 according to RHC/SC master health facility list for the readiness of RHC/SC level implementation in DHIS2, External dashboard for dissemination of data with advanced technology)	
	12.2. Interoperable sub-systems in HIS.	12.2.1. Conduct a detailed review of existing IT systems in health sector and develop standards and a road map in architecture while maintaining the interoperability.	Division of HIS - Data Center & IT Development	National / International Consultants - one month	
	12.3. Internet connectivity to all health facilities.	Joint meeting with all parties responsible for internet connectivity in the country.	Division of HIS - Data Center & IT Development	A half-day meeting	

*** Strategic Area**

Table B. Budgetary requirements

STRATEGIC ACTION AND IMPLEMENTATION PLAN FOR STRENGTHENING HEALTH INFORMATION IN MYANMAR, 2017-2021

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
1. Public Health Information	1.1. HIS organizational set-up with adequate number of skilled staff.	1.1.1. Situation analysis, assessment of human resources for HIS needs.			2,500			2,500									2,500			2,500
		1.1.2. Drafting a proposal for the HIS organizational set-up.																		
		1.1.3. Training at WHO's HIS Collaborative Centers for HIS MoHS staff and the staff with HIS responsibilities from some regions / states.	100,000		100,000		100,000	300,000							100,000	0	100,000	0	100,000	300,000
		1.1.4. Kick-off of the enhanced HIS unit at national level.	238,000	119,000	84,000	84,000	-	525,000	238,000	119,000	84,000	84,000	-	525,000	0	0	0	0	0	0
	1.2. HIS Development and HIS Working Committees operationalized.	1.2.1. Review and revise membership of the Committees according to a new administration																		
		1.2.2. Revise Terms of Reference and conduct regular meetings of the Committees	2,000	2,000	2,000	2,000	2,000	10,000	2,000	2,000	2,000	2,000	2,000	10,000	0	0	0	0	0	0
	1.3. Essential indicators in line with Sustainable Development Goals (SDGs) related to health identified.	1.3.1. National workshop on health SDGs and its adaptation to national context, streamlining data sources.	-	25,000	-	-	-	25,000	-	25,000	-	-	-	25,000	0	0	0	0	0	0

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
1. Public Health Information		1.3.2. Monitoring completeness and timeliness of the monthly HMIS reports and providing feedback.																		
	1.4. Guidelines and standard operating procedure for data management (Data Dictionary) available.	1.4.1. Technical working group meetings to review existing guidelines and data dictionary and propose the revision.		7,400				7,400		7,400				7,400	0	0	0	0	0	0
		1.4.2. Workshop to get all programmes consensus on the revision of guidelines and SOPs for data management; Data Dictionary available at all levels.	-	8,200	123,200	-	-	131,400	-	8,200	123,200	-	-	131,400	0	0	0	0	0	0
		1.4.3. Training of revised Data Dictionary for Region/State level and Township level users				20,000	70,000	90,000							0	0	0	20,000	70,000	90,000
	1.5. Data collection from private sector and NGOs in place.	1.5.1. National Consultant to review existing data sharing mechanism, identify gaps and propose legal / policy framework incl. data sharing policy.		3,084				3,084							0	3,084	0	0	0	3,084
		1.5.2. Consensus workshop on standard reporting flow and forms from private health facilities and NGOs.		9,000				9,000							0	9,000	0	0	0	9,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
1. Public Health Information		1.5.3 Annual coordination meeting with private sector (especially with Private Hospital Association)	-	4,000	4,000	4,000	4,000	16,000	-	4,000	4,000	4,000	4,000	16,000	0	0	0	0	0	0
	1.6. Electronic reporting of aggregated data rolled out.	1.6.1 Training of township focal of HMIS from Kachin, Shan (E), Shan (N), Shan (S) and Ayeyarwady on electronic public health information system using DHIS2	118,000	-	-	-	-	118,000	118,000	-	-	-	-	118,000	0	0	0	0	0	0
		1.6.2 RHC level implementation for DHIS2 in one state(Kayah or Kayin)	-	114,000	-	-	-	114,000	-	114,000	-	-	-	114,000	0	0	0	0	0	0
		1.6.3. Maintenance and sustainability of DHIS2 software and refresher training		70,000	70,000	70,000	70,000	280,000								70,000	70,000	70,000	70,000	280,000
		1.6.4. Procurement of necessary IT equipment to Township Public Health Departments.	150,000		165,000			315,000							150,000		165,000			315,000
		1.6.5. Monitoring quality of reporting and supervision to townships.	27,800	70,000	70,000	70,000	70,000	307,800	27,800	37,400	37,400	37,400	37,400	177,400		32,600	32,600	32,600	32,600	130,400
		1.6.6. Monthly feedback to all reporting units.																		
		1.6.7. Development of software for electronic recording / registration and reporting from midwife levels	40,000					40,000	20,000					20,000	20,000	0	0	0	0	20,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
1. Public Health Information		1.6.8. Piloting of the software for electronic recording and reporting		8,000	8,000	8,000	9,000	33,000		8,000	8,000	8,000	9,000	33,000	0	0	0	0	0	0
	1.7. Enhanced skill and knowledge on health information	1.7.1. Train regional/state and township level medical officers and their staff, to enhance their skills in data management and evidence-based decision-making by using DHIS2.	-	15,000	35,000	35,000	-	85,000		15,000	35,000	35,000		85,000	0	0	0	0	0	0
		1.7.2. HIS training for all categories of health workers, 2018-2021.		85,000	85,000	85,000	85,000	340,000								85,000	85,000	85,000	85,000	340,000
		1.7.3. Establish a Bachelor Degree of Health Information Management and Post-graduate Diploma for Health Information Management		20,000	20,000			40,000	-	10,000	-	-	-	10,000		10,000	20,000			30,000
		1.7.4. Capacity building of Lecturer from University of Medical Technology	30,000	30,000	30,000	30,000	30,000	150,000							30,000	30,000	30,000	30,000	30,000	150,000
		1.7.5 Capacity building of Health Information Personal for International Master degree	50,000	50,000	50,000	50,000	50,000	250,000							50,000	50,000	50,000	50,000	50,000	250,000
	1.8. Introduction of Traditional Medicine information as a part of routine HIS	1.8.1. Meetings of HIS Division with University of Traditional Medicine, clinics and traditional medicine hospitals, to propose data to be collected and data collection mechanism and reporting including ICD coding		20,000				20,000							0	20,000	0	0	0	20,000
	Sub Total		**755,800**	**659,684**	**848,700**	**458,000**	**490,000**	**3,212,184**	**405,800**	**350,000**	**293,600**	**170,400**	**52,400**	**1,272,200**	**350,000**	**309,684**	**555,100**	**287,600**	**437,600**	**1,939,984**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
2. Hospital information	2.1. Health information policy approved.	2.1.1. International Consultant to draft the National HIS Policy and tools and guidelines for policy implementation.	20,000					20,000							20,000					20,000
		2.1.2. National Workshop to discuss a draft of the National HIS Policy and to get consensus from all stakeholders.(Printing and Distribution of HIS strategic plan at the workshop)	74,000					74,000	74,000	-	-	-	-	74,000	0	0	0	0	0	0
		2.1.3. Finalize and process the National HIS Policy for an approval.																		
		2.1.4. Disseminate the National HIS Policy to all Townships.	30,000					30,000	16,750	-	-	-	-	16,750	13,250					13,250
		2.1.5. Based on the National HIS Policy, develop guidelines and tools that include privacy, confidentiality, accessibility and security.	19,000					19,000	19,000	-	-	-	-	19,000	0	0	0	0	0	0
	2.2. Quality of health facilities' medical records units at all levels enhancedincl uding Expand use of ICD-10 for disease classification in hospitals.	2.2.1. Draft recruitment and assignment procedures for medical record officers and technicians.																		
		2.2.2. Draft a training curriculum for MRO and MR technicians.		2,500				2,500								2,500				2,500

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
2. Hospital information		2.2.3. Introduce a certificate course for MRT and a diploma course for MRO in para-medical science universities.		30,000	30,000	30,000	30,000	120,000								30,000	30,000	30,000	30,000	120,000
		2.2.4 Conduct training of hospital staff on ICD-10.	18,750	30,000	30,000	30,000	30,000	138,750	18,750	18,750	18,750	18,750	18,750	93,750	-	11,250	11,250	11,250	11,250	45,000
		2.2.5 Supervision and monitoring of quality of medical records documentation and ICD -10 coding.		80,000	80,000	80,000	80,000	320,000								80,000	80,000	80,000	80,000	320,000
		2.2.6 Review routine data from health facilities and community-based programmes taking into consideration their needs for policy makers, feasibility (in relation to IT) and long-term sustainability.		2,000				2,000								2,000				2,000
	2.3. Hospital electronic reporting system.	2.3.1 Customization for development of electronic hospital information system using open source software; Hospital electronic reporting system of core aggregated data to respective region / state and to national levels	43,000	20,000				63,000	43,000	-	-	-	-	43,000	-	20,000				20,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 201-2021	2017	2018	2019	2020	2021	Total 2017-2021
2. Hospital information		2.3.2Field monitoring of pilot implementation, review for expand to other hospital and dissemination		8,000				8,000		8,000	-	-	-	8,000						
		2.3.3 Roll-out of electronic hospital information system		30,000	100,000	100,000	100,000	330,000	-	10,000	10,000	10,000	10,000	40,000		20,000	90,000	90,000	90,000	290,000
		2.3.4. Introduce Open MRS in public hospitals.		15,000	20,000	20,000	20,000	75,000								15,000	20,000	20,000	20,000	75,000
		2.3.5. Expand client registry (CR) and master patient index (MPI) with unique health identifier (ID).			4,000	4,000	4,000	12,000									4,000	4,000	4,000	12,000
		2.3.6. Plan IT hardware and internet accessibility for hospital information system.			20,000	20,000	20,000	60,000									20,000	20,000	20,000	60,000
	2.4. The practice of hospital accreditation for both the government and private sector developed.	2.4.1. Create hospital accreditation checklist with incorporation of mandatory reporting of core hospital information data.		6,500				6,500								6,500				6,500
	Sub Total		**204,750**	**224,000**	**284,000**	**284,000**	**284,000**	**1,280,750**	**171,500**	**36,750**	**28,750**	**28,750**	**28,750**	**294,500**	**33,250**	**187,250**	**255,250**	**255,250**	**255,250**	**986,250**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
3. Private Sector Information	3.1. Health information from the private health facilities included into the national HIS and monitored.	3.1.1. An ad-hoc internal technical group meeting to discuss and propose the appropriate MoHS structure.	1,000					1,000							1,000					1,000
		3.1.2. Draft the proposal and process within the MoHS administration.																		
	3.2. A mechanism for data collection from the private sector in place.	3.2.1. Review and propose revision of the private sector laws related to health information.		3,084				3,084								3,084				3,084
		3.2.2. Sharing data and create linkages on the private health facilities' information between HIS and DoMS of the MoHS.		2,000				2,000								2,000				2,000
		3.2.3. Monitor completeness and timeliness of the private health sector reporting.		5,000	5,000	5,000	5,000	20,000								5,000	5,000	5,000	5,000	20,000
		3.2.4. Consensus workshop with MMA on involvement of the private sector in the national health information system.		5,000				5,000								5,000				5,000
	3.3. Interoperability of electronic hospital information system between the private and government sectors.	3.3.1. Workshop on hospital medical record systems and data sharing.		7,000	7,000	7,000	7,000	28,000								7,000	7,000	7,000	7,000	28,000
	Sub Total		**1,000**	**22,084**	**12,000**	**12,000**	**12,000**	**59,084**							**1,000**	**22,084**	**12,000**	**12,000**	**12,000**	**59,084**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
4. Vertical reporting systems	4.1. Alignment of the vertical reporting systems with the national HIS.	4.1.1. Consultative meeting of national health programme managers and agencies on alignment of vertical programme with the national health information system.		7,000				7,000								7,000				7,000
		4.1.2. Finalize HIS architecture		20,000				20,000								20,000				20,000
	4.2. Client Registry (CR) and Master Patient Index (MPI) used in TB and HIV programmes.	4.2.1. Procurement of servers and software.																		
		4.2.2. User requirements validation workshop.																		
		4.2.3. Development of health ID management policy.																		
		4.2.4. Acquire / install MEDIC CR instance.	10,000					10,000							10,000					10,000
		4.2.5. Testing and implementing MPI.	15,000					15,000							15,000					15,000
		4.2.6. Development of user guide and training.	10,000	10,000	10,000	10,000	10,000	50,000							10,000	10,000	10,000	10,000	10,000	50,000
		4.2.7. MPI Launch Workshop	10,000					10,000							10,000					10,000
	4.3. Integration of aggregated data of the health programmes into HMIS.	4.3.1. Training of health workers on data collection, analysis and feedback, incl. use of DHIS2.		10,000	10,000	10,000	10,000	40,000								10,000	10,000	10,000	10,000	40,000
	Sub Total		**45,000**	**47,000**	**20,000**	**20,000**	**20,000**	**152,000**	**0**	**0**	**0**	**0**	**0**	**0**	**45,000**	**47,000**	**20,000**	**20,000**	**20,000**	**152,000**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
5. Human Resource Management Information	5.1. Central level section on human resource management information in place.	5.1.1. Review capacities of MoHS on human resource management.	22,000					22,000							22,000					22,000
		5.1.2. Draft Terms of Reference and job description for the proposed human resource information system section.																		
		5.1.3. Draft a proposal for creating a new human resource management section.																		
		5.1.4. Assess and propose options for a central HR database.																		
		5.1.5. Study tour for the staff of the central HRH management unit	15,600					15,600							15,600					15,600
		5.1.6. Official setting up of the HRH information system section																		
	5.2. Human resource for health national database including public and private sector.	5.2.1. National consultative meeting on the human resource for health management.	7,000					7,000							7,000					7,000
		5.2.2. Identification of HR and IT requirements assuring its interoperability and compatibility with the national HIS.																		
		5.2.3. Providing equipment for the human resources for health database.	200,000					200,000							200,000					200,000
		5.2.4. Respective staff trained in using the electronic HR information system.	75,000					75,000							75,000					75,000
		5.2.5. HRH database kicked-off and maintained.	329,900					329,900							329,900					329,900
		5.2.6. A regular feedback system for policy makers on updates in human resources for health set-up.																		
	5.3. A master human resources for health registry of public and private health care providers / facilities.	5.3.1. National workshop of public and private health sector on human resources for health management information system.	7,000					7,000							7,000					7,000
		5.3.2. Dissemination of the agreed HRH reporting system to health facilities.																		
	Sub Total		**656,500**					**656,500**							**656,500**					**656,500**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
6. Logistic Management Information	6.1. Design a complete and integrated MIS system for the heath supply chain.	6.1.1. Develop framework for capturing, compiling and analysing logistics data	19,940					19,940	19,940					19,940						
	6.2. Initiate a complete and integrated LMIS system design (including SOPs, software, hardware, human resource requirements, early warning Indicators, standardised and harmonised set of essential logistics data)	6.2.1. Develop standardised reporting requirements for each health facility type at the respective level in the health supply chain	124,602	39,200				163,802							124,602	39,200				163,802
		6.2.2. Complete an integrated LMIS system design	328,680	575,350	414,280	445,960	477,640	2,241,910							328,680	575,350	414,280	445,960	477,640	2,241,910
		6.2.3. Draft standard operating procedure for managing logistics.																		
		6.2.4. Develop LMIS software requirements through an extensive analysis of requirements and needs across all health supply chain levels, focused on one web-based electronic software for all drugs and medical equipment.	22,440					22,440							22,440					22,440
		6.2.5. Implementation of LMIS	120,000					120,000	80,000					80,000	40,000					40,000
		6.2.6. Training of existing staff at all levels to efficiently operate LMIS	62,175	62,175	22,795	14,245	14,245	175,635	18,934					18,934	43,241	62,175	22,795	14,245	14,245	156,701

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
6. Logistic Management Information		6.2.7. Propose a setting-up a new unit to provide oversight and leadership in implementing an integrated LMIS	5,000	5,000				10,000							5,000	5,000				10,000
		6.2.8. Coordinate all technical inputs and assistance from stakeholders in the sector	5,000	5,000				10,000							5,000	5,000				10,000
	6.3. Compliance with government audit requirements	6.3.1. Conduct a review of government audit requirements and make recommendations that will align with supply chain management best practices in the health sector	10,000					10,000							10,000					10,000
	Sub Total		**697,837**	**686,725**	**437,075**	**460,205**	**491,885**	**2,773,727**	**118,874**	**0**	**0**	**0**	**0**	**118,874**	**578,963**	**686,725**	**437,075**	**460,205**	**491,885**	**2,654,853**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
7. Financial Management Information	7.1. Central level section on financial information management in place.	7.1.1. Drafting and processing a proposal for organizational set-up.																		
		7.1.2. Drafting Terms of Reference and job descriptions for the new organizational set-up.		1,500				1,500								1,500				1,500
		7.1.3. Recruit a suitable personnel for the new section.		20,000				20,000								20,000				20,000
		7.1.4. Two days orientation of the new selected staff.																		
		7.1.5. Study tour abroad to observe financial management for health systems.		10,000				10,000								10,000				10,000
	7.2. Human resource capacity for financial information management and use of data.	7.2.1. Drafting a training module on financial information management.		3,084				3,084								3,084				3,084
		7.2.2. Conduct a central level training by piloting the module.		3,000				3,000								3,000				3,000
		7.2.3. Training of the State/Region health managers on financial information management and use of data.		7,000				7,000								7,000				7,000
	7.3. Management of health care financing information (recording and reporting and use) enhanced.	7.3.1. Identification of software developer, defining content and identifying source of funding.		19,000				19,000								19,000				19,000
		7.3.2. Develop a software for management of health care financing (both recording and reporting).			19,000			19,000									19,000			19,000
		7.3.3. Generate Standard Operating Procedures for financial management.			5,000			5,000									5,000			5,000
		7.3.4. Training the appropriate staff on Standard Operating Procedures for health financing management.			15,000	15,000	15,000	45,000									15,000	15,000	15,000	45,000
	7.4. IT equipment and enabled working environment for financial management information.	7.4.1. Draft situation analysis and propose necessary IT equipment and costs.						0												0
		7.4.2. Purchase the IT hardware for central and some peripheral levels.			20,000	20,000	20,000	60,000									20,000	20,000	20,000	60,000
	Sub Total		**0**	**63,584**	**59,000**	**35,000**	**35,000**	**192,584**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**63,584**	**59,000**	**35,000**	**35,000**	**192,584**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
8. Epidemiological Surveillance Information	8.1. Human resource capacity in epidemiological surveillance information in each level of health services.	8.1.1. FETP training conducted	30,000	30,000	100,000	30,000	30,000	220,000							30,000	30,000	100,000	30,000	30,000	220,000
		8.1.2. Conduct training for BHS at township level.		60,000	60,000			120,000								60,000	60,000			120,000
		8.1.3. Electronic reporting from SCDU teams from Regions / States to CEU	150,000					150,000							150,000					150,000
		8.1.4. Setting-up a CDC at the national level		250,000	250,000	250,000	250,000	100,0000								250,000	250,000	250,000	250,000	1,000,000
	8.2. Immediate recording and reporting of mandatory events in place.	8.2.1. Technical assistance to adjust / add necessary data to existing DHIS2																		
		8.2.2. Piloting and expansion of the epidemiological surveillance reporting by using DHIS2		15,000				15,000								15,000				15,000
		8.2.3. Training of regional/ state / township medical officers in using the software.			10,000	10,000	10,000	30,000									10,000	10,000	10,000	30,000
		8.2.4. Explore connectivity and gradually expand the reporting sites.			5,000	5,000	5,000	15,000									5,000	5,000	5,000	15,000
	8.3. Reporting of maternal deaths and adverse effects after immunization, as well as other crucial epidemiological surveillance data, integrated into existing pilotings.	8.3.1. TA International Consultant (DHIS2)		5,0000				5,0000								50,000				50,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
8. Epidemiological Surveillance Information		8.3.2. Workshop on core data identification and incorporation into DHIS2.		5,000				5,000								5,000				5,000
		8.3.3. Training of the staff in piloting districts.																		
	8.4.Rapid communication infrastructure upgraded.	8.4.1. IT appliancies / tablets available in the emergency prone areas.		50,000		50,000		100,000								50,000		50,000		100,000
	8.5. National capacity to conduct Burden of Diseases Study.	8.5.1. Data collection for training exercise			5,000			5,000									5,000			5,000
		8.5.2. Training course on National BoD.			80,000			80,000									80,000			80,000
	Sub Total		**180,000**	**460,000**	**510,000**	**345,000**	**295,000**	**1,790,000**	**0**	**0**	**0**	**0**	**0**	**0**	**180,000**	**460,000**	**510,000**	**345,000**	**295,000**	**1,790,000**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
9. Civil Registration and Vital Statistics	9.1. Coverage of reporting birth and death information from health facilities and the community increased.	9.1.1. Two days workshop jointly attended by MoHS and the Central Statistics Office on the community vital events coverage.		7,000				7,000								7,000				7,000
		9.1.2. Piloting a system of collaboration between health sector and the village leaders on the birth and death registration from the community.		20,000				20,000								20,000				20,000
		9.1.3. Drafting the simple guidelines on increasing the birth and death reporting from the community and disseminate to all townships.		2,000				2,000								2,000				2,000
		9.1.4. Analyze completeness, timeliness and the quality of HMIS routine reporting from health facilities in context of birth and death reporting and feedback to States / Regions.			5,000			5,000									5,000			5,000
		9.1.5. Draft a proposal on a linkage of the unique health identifier since birth with health care services and interoperability of the electronic systems.					3,084	3,084											3,084	3,084
	9.2. Quality of identifying cause of death (COD) in health facilities.	9.2.1. A national level training of trainers from all Regions / States on medical certification of cause of deaths (MCCD) and the training expansion to the regions / states.		40,000	20,000	20,000	20,000	100,000								40,000	20,000	20,000	20,000	100,000
		9.2.2. Conduct training of the secondary and tertiary hospitals' / medical colleges doctors on the COD certification in all regions / states of the country.		20,000	20,000	20,000	20,000	80,000								20,000	20,000	20,000	20,000	80,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
9. Civil Registration and Vital Statistics		9.2.3. Situation analysis on CRVS wit focus on mortality statistics, including the private health sector.				20,000		20,000										20,000		20,000
		9.2.4. Include knowledge on COD certification during the licensing process of the medical doctors.		5,000				5,000								5,000				5,000
	9.3. Electronic recording, ICD-10 coding and reporting causes of deaths.	9.3.1. A working group meeting on getting consensus on a system of COD recording & reporting and selection of piloting hospitals.		3,000				3,000								3,000				3,000
		9.3.2. Piloting the COD recording and reporting system in central level hospitals.			50,000			50,000									50,000			50,000
		9.3.3. Gradually expand the COD recording and reporting system to all regions / states.				30,000	30,000	60,000										30,000	30,000	60,000
	9.4. Quality of identifying COD in the community.	9.4.1. Analyze quality of verbal autopsy currently implemented.	50,000					50,000							50,000					50,000
		9.4.2. Gradually expanding the VA for community deaths through midwife (MWs) interventions; determine the national representative sample size for verbal autopsy; develop business plan and process.	100,000	200,000	500,000	800,000	900,000	2,500,000							100,000	200,000	500,000	800,000	900,000	2,500,000
		9.4.3. Institutionalize national representative cause of death by verbal autopsy mechanism.					10,000	10,000											10,000	10,000
	Sub Total		**150,000**	**297,000**	**595,000**	**890,000**	**983,084**	**2,915,084**	**0**	**0**	**0**	**0**	**0**	**0**	**150,000**	**297,000**	**595,000**	**890,000**	**983,084**	**2,915,084**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
10. Population-based surveys & research findings	10.1. Inventory of population-based surveys in the country.	10.1.1. Consensus meeting of all partners in health on application of research and survey results in management of health care system.		10,000				10,000								10,000				10,000
		10.1.2. Implement setting-up inventory of the health surveys at the Ministry of Health and Sports and a mechanism of updating by the survey results and research studies.		5,000	5,000	5,000	5,000	20,000								5,000	5,000	5,000	5,000	20,000
	10.2. Research findings from the research institutions and universities utilized.	10.2.1. Workshop on integration of research findings into regular health information system reports.		5,000	5,000	5,000	5,000	20,000								5,000	5,000	5,000	5,000	20,000
		10.2.2. Annual meetings of researchers with programme managers on research findings, their utilization and identification / prioritization of areas for operational / implementation research.		10,000	10,000	10,000	10,000	40,000								10,000	10,000	10,000	10,000	40,000
	10.3. International standard surveys conducted in regular intervals.	10.3.1. Plan and conduct DHS, health facility survey and other health surveys.			200,000	900,000		1,100,000									200,000	900,000		1,100,000
		10.3.2. Dissemination of population-based surveys results.		10,000	10,000	10,000	10,000	40,000								10,000	10,000	10,000	10,000	40,000
Sub-Total			**0**	**40,000**	**230,000**	**930,000**	**30,000**	**1,230,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,000**	**230,000**	**930,000**	**30,000**	**1,230,000**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
11. Utilization of Health Information	11.1. Core health information disseminated to various users by various methods.	11.1.1. Technical workshop on defining dissemination policy and methods.		1,500				1,500								1,500				1,500
		11.1.2. Finalize health information dissemination policy and submit for an approval.		5,000				5,000								5,000				5,000
		11.1.3. Develop Standard Operating Procedure for data dissemination and use		10,000				10,000								10,000				10,000
		11.1.4. Regular meetings of data producers and data users.		20,000	20,000	20,000	20,000	80,000								20,000	20,000	20,000	20,000	80,000
		11.1.5. Development of GIS Lab to support the use of geospatial data and technologies across the MoHS		10,000	10,000	10,000	10,000	40,000								10,000	10,000	10,000	10,000	40,000
		11.1.6. Produce information briefs (monthly) for policy makers.		5,000	5,000	5,000	5,000	20,000								5,000	5,000	5,000	5,000	20,000
		11.1.7. Produce timely Annual Health Statistics report, by July in the following year.	3,000	20,000	20,000	20,000	20,000	83,000	3,000	3,000	3,000	3,000	3,000	15,000		17,000	17,000	17,000	17,000	68,000
		11.1.8. Training on Health Equity Analysis Toolkit (HEAT) and Monitoring the health-related SDGs		10,000				10,000								10,000				10,000
	11.2. Quality of disseminated health information.	11.2.1. Monitoring accuracy, completeness and timeliness of the reports from health facilities, on monthly basis, feedback; as well as Data Quality Assessment through the data flow from client level to administrative level	-	20,000	-	20,000	-	40,000	-	20,000	-	20,000	-	40,000						
		11.2.2. Consensus meeting of MoHS, national statistical office and major partners (e.g. PH institute, universities) on data exchange and quality assurance.		20,000				20,000								20,000				20,000

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
		11.2.3. Reports on health facility data quality issued regularly, including analysis and limitations, and corrective actions.		3,000	3,000	3,000	3,000	12,000								3,000	3,000	3,000	3,000	12,000
		11.2.4. Annual comprehensive assessment of data quality from facility reporting - Data Quality Review (before health sector reviews), includes analysis of completeness, timeliness, accuracy,, consistency over time, etc.	10,000		10,000		10,000	30,000	10,000	-	10,000	-	10,000	30,000						
11. Utilization of Health Information	11.3. Culture of using the information at all levels enhanced.	11.3.1. Technical working group sessions to produce samples of data presentation for all levels of health services.		3,000				3,000	-	3,000	-	-	-	3,000						
		11.3.2. Annual Reviews of Health Sector Performance.	58,000	58,000	58,000	58,000	58,000	290,000	58,000	58,000	58,000	58,000	58,000	290,000						
		11.3.3. Mid-Term Reviews of the Strategic Action Plan 2017-2021, in 2019, and its Evaluation in 2021.			15,000		15,000	30,000			15,000		15,000	30,000						
	Sub Total		**71,000**	**185,500**	**141,000**	**136,000**	**141,000**	**674,500**	**71,000**	**84,000**	**86,000**	**81,000**	**86,000**	**408,000**	**0**	**101,500**	**55,000**	**55,000**	**55,000**	**266,500**

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
12. Advanced Information Technology Development	12.1. Data Center in MoHS established.	12.1.1. Situation analysis and drafting a proposal for setting-up a fully funded manager and a team, incl. maintenance and sustainability. Resource and hire a core IT Team comprised of the following individuals: IT Program Manager/M&E/Reporting, Business Analyst/ Architect/Data Officer, Network Engineer/Security Officer, Customer Services Manager/Training Officer, Administrative Officer (Procurement/Contracts/Vendor Management.		20,000				20,000								20,000				20,000
		12.1.2. Draft an overall framework and plan for ICT, equipment and training in use of ICT for routine health information system, at all levels. 12.1.3. Draft eHealth policy.		3,084				3,084								3,084				3,084

SA*	Strategic Objective	Activity	FINANCIAL RESOURCE REQUIREMENTS / TIMETABLE						FINANCIAL RESOURCES AVAILABLE						FUNDING GAP					
			2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021	2017	2018	2019	2020	2021	Total 2017-2021
12. Advanced Information Technology Development		12.1.4. Setting-up a fully equipped Data Center	25,000			200,000		225,000	25,000					25,000				200,000		200,000
		12.1.5 Installation of server for backup of DHIS2 data in public health information, DHIS2 functionality and set-up of DHIS2 for hospital information	36,000	16,000	16,000	16,000	16,000	100,000	36,000	16,000	16,000	16,000	16,000	100,000						
	12.2. Interoperable sub-systems in HIS.	12.2.1. Conduct a detailed review of existing IT systems in health sector and develop standards and a road map in architecture while maintaining the interoperability.	30,000					30,000							30,000					30,000
	12.3. Internet connectivity to all health facilities.	12.2.2Joint meeting with all parties responsible for internet connectivity in the country.		3,000	3,000	3,000	3,000	12,000								3,000	3,000	3,000	3,000	12,000
Sub Total			**91,000**	**42,084**	**19,000**	**219,000**	**19,000**	**390,084**	**61,000**	**16,000**	**16,000**	**16,000**	**16,000**	**125,000**	**30,000**	**26,084**	**3,000**	**203,000**	**3,000**	**265,084**
Grand Total			**2,852,887**	**2,727,661**	**3,155,775**	**3,789,205**	**2800,969**	**15,326,497**	**828,174**	**486,750**	**424,350**	**296,150**	**183,150**	**2,218,574**	**2,024,713**	**2,240,911**	**2,731,425**	**3,493,055**	**2,617,819**	**13107,923**

*** Strategic Area**

XII. Cost estimate summary by strategic area.

(Table A) Financial requirements / availability / gaps.

STRATEGIC AREA	2017			2018			2019			2020			2021			TOTAL 2017-2021		
	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP
1. Public Health Information	755800	54%	46%	659684	53%	47%	848700	35%	65%	458000	37%	63%	490000	11%	89%	3212184	40%	**60%**
2. Hospital Information	204,750	84%	16%	224,000	16%	84%	284,000	10%	90%	284,000	10%	90%	284,000	10%	90%	1,280,750	23%	**77%**
3. Private Sector Information	1,000	0%	100%	22,084	0%	100%	12,000	0%	100%	12,000	0%	100%	12,000	0%	100%	59,084	0%	**100%**
4. Vertical Reporting Systems	45000	0%	0%	47000	0%	100%	20000	0%	100%	20000	0%	100%	20000	0%	100%	152000	0%	**100%**
5. Human Resource Management Information	656,500	0%	100%	0	0%	0%	0	0%	0%	0	0%	0%	0	0%	0%	656,500	0%	**100%**
6. Logistic Management Information	697837	17%	83%	686725	0%	100%	437075	0%	100%	460205	0%	100%	491885	0%	100%	2773727	4%	**96%**
7. Financial Management Information	0	0%	0%	63584	0%	100%	59000	0%	100%	35000	0%	100%	35000	0%	100%	192584	0%	**100%**

STRATEGIC AREA	2017			2018			2019			2020			2021			TOTAL 2017-2021		
	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP	COST ($)	% AVAIL-ABLE	% GAP
8. Epidemiological Surveillance Information	180,000	0%	100%	460,000	0%	100%	510,000	0%	100%	345,000	0%	100%	295,000	0%	100%	1,790,000	0%	100%
9. Civil Registration and Vital Statistics	150,000	0%	100%	297,000	0%	100%	595,000	0%	100%	890,000	0%	100%	983,084	0%	100%	2,915,084	0%	100%
10. Population-based Surveys & Research Findings	0	0%	0%	40000	0%	100%	230000	0%	100%	930000	0%	100%	30000	0%	100%	1230000	0%	100%
11. Utilization of Health Information	71000	100%	0%	185500	45%	55%	141000	61%	39%	136000	60%	40%	141000	61%	39%	674500	60%	40%
12. Advanced Information Technology Development	91000	67%	33%	42084	38%	62%	19000	84%	16%	219000	7%	93%	19000	84%	16%	390084	32%	68%
Total	2852887	29%	**71%**	2727661	**18%**	**82%**	3155775	**13%**	**87%**	3789205	**8%**	**92%**	2800969	**7%**	**93%**	15326497	**14%**	**86%**

Table – B

Strategic Action and Implementation Plan for Strengthening Health Information in Myanmar, 2017-2021, financial requirements and gaps.						
Strategic Area	**Budget requirements - COST**					
	2017	**2018**	**2019**	**2020**	**2021**	**TOTAL COST 2017-2021 (US$)**
1. Public Health Information	755,800	659,684	848,700	458,000	490,000	3,212,184
2. Hospital Information	204,750	224,000	284,000	284,000	284,000	1,280,750
3. Private Sector Information	1,000	22,084	12,000	12,000	12,000	59,084
4. Vertical Reporting Systems	45,000	47,000	20,000	20,000	20,000	152,000
5. Human Resource Management Information	656,500	0	0	0	0	656,500
6. Logistic Management Information	697,837	686,725	437,075	460,205	491,885	2,773,727
7. Financial Management Information	0	63,584	59,000	35,000	35,000	192,584
8. Epidemiological Surveillance Information	180,000	460,000	510,000	345,000	295,000	1,790,000
9. Civil Registration and Vital Statistics	150,000	297,000	595,000	890,000	983,084	2,915,084
10. Population-based Surveys & Research Findings	0	40,000	230,000	930,000	30,000	1,230,000
11. Utilization of Health Information	71,000	185,500	141,000	136,000	141,000	674,500
12. Advanced Information Technology Development	91,000	42,084	19,000	219,000	19,000	390,084
Total	2,852,887	2,727,661	3,155,775	3,789,205	2,800,969	15,326,497

Strategic Area	Uncovered cost – GAP						
	2017	2018	2019	2020	2021	TOTAL GAP 2017-2021 (US$)	Funding gap (as % of need)
1. Public Health Information	350,000	309,684	555,100	287,600	437,600	1,939,984	60%
2. Hospital Information	33,250	187,250	255,250	255,250	255,250	986,250	77%
3. Private Sector Information	1,000	22,084	12,000	12,000	12,000	59,084	100%
4. Vertical Reporting Systems	45,000	47,000	20,000	20,000	20,000	152,000	100%
5. Human Resource Management Information	656,500	0	0	0	0	656,500	100%
6. Logistic Management Information	578,963	686,725	437,075	460,205	491,885	2,654,853	96%
7. Financial Management Information	0	63,584	59,000	35,000	35,000	192,584	100%
8. Epidemiological Surveillance Information	180,000	460,000	510,000	345,000	295,000	1,790,000	100%
9. Civil Registration and Vital Statistics	150,000	297,000	595,000	890,000	983,084	2,915,084	100%
10. Population-based Surveys & Research Findings	0	40,000	230,000	930,000	30,000	1,230,000	100%
11. Utilization of Health Information	0	101,500	55,000	55,000	55,000	266,500	40%
12. Advanced Information Technology Development	30,000	26,084	3,000	203,000	3,000	265,084	68%

ANNEXES

Annex 1.Assessment of health information system in Myanmar

Expected outcomes of the Assessment were as follows:

- give stakeholders an understanding of their HIS,
- identify strengths and weaknesses,
- identify priority areas for improvement,
- develop consensus on priority weaknesses,
- provide a basis for the strategic plan,
- help build consensus and support for implementing the plan,
- qualitatively assess existing HIS and inform the HIS strategy.

A rapid assessment tool (RAT), developed by WHO and USAID / MEASURE Evaluation, wasused for the assessment. It consists of 160 health information system standards, distributed to four domains of HIS, i.e. Management and Governance, Data and Decision Support Needs, Data Collection and Processing, and Data Analysis, Dissemination & Use. 105 participants (included all major stakeholders from health and non-health sectors) attended a two-day workshop. After the plenary presentations and discussions, the participants were divided to four groups. Each group reviewed and discussed all the standards and agreed / reached consensus to what extend the standards are met for the country's health information, by scoring system (0=no answer/not applicable; 1=not present, needs to be developed; 2=needs a lot of strengthening; 3=needs some strengthening; 4=already present, no action needed). An excel-based tool with data-entry module and automated dashboards for analysis and use of findings were implemented during the assessment.

II.2. Results of the Assessment

The group presentations were made, emphasizing the crucial weaknesses and gaps in HIS found during the Assessment, distributed by the domains, and summarized as follows:

- *Management and Governance*. –
  - Legal and policy framework specific for HIS not available.
  - Financial and human resources planning mechanism for HIS not in place at all levels of health care system.
  - The updated National Statistical Law submitted to the Parliament does not include legislation and regulation for health information.
  - HIS policies and guidelines not updated. A single comprehensive policy and guidelines not available.
  - Accountability of all stakeholders in the HIS strategies not clearly expressed.
  - Availability of SOPs at all levels, indicating data collection and processing, data analysis, dissemination, use and quality assurance.
  - Political commitment present but capacities and distribution of roles and responsibilities not sufficient.
  - HIS unit at the national level to be organizationally strengthened.
  - Feedback and supervisory mechanisms are not systematic and standardized.
  - National HR Plan developed but not completed (costing) and no implementation, should include carrier / capacity development plan. No training database available.
  - HIS staffing including for IT support and budget to be assessed.
  - HIS training team not available; should be formed with dedicated staff and a systematic training programme.

- *Data & Decision Support Needs.*
  - Cause of deaths certification and mortality reporting from health facilities not regularly conducted and reviewed.
  - Quality of cause of death identification and mortality coding at the health facilities not satisfactory.

- Interoperability of health facility-based information system with HIS limited.
- End users and the community should more participate in designing the information systems.
- Training and capacity development plan for Basic Health Staff (BHS) not available.

- *Data Collection & Processing*.
  - Minimum essential data-set to be selected.
  - Data Quality Assurance not regularly conducted.
  - No standardized data collection system for individual patients, confidentiality of individual data not assured.
  - No policy support for information and communication technology (ICT).
  - No framework and resources for ICT including maintenance.
  - Use of m-health and eHealth at all levels for data collection should be maximized, particularly for data collection in remote and isolated areas.
  - Networking and coordination / data sharing between different vertical programmes limited.

- *Data analysis, dissemination and use*.
  - Data from private sector, NGOs and CSO not integrated to HIS.
  - Research data not formally included into information systems.
  - Policy briefs capacity limited.
  - No active collaboration with media.
  - Make available the core health information to diverse target audiences.
  - Culture of using data for decision-making not sufficient.

A graphic presentation of results of the groups' scoring of all 160 standards is presented below in Figures 1.-5. From the Fig.1., it is clear that all the domains would require further attention in the strategy formulation; however, particularly the domain of ***Management & Governance*** (in *Policy and Planning*: legal, regulatory, planning, coordination, guidelines / policies; *Management*: leadership, feedback, supervision, assessment and their use, master facility list; *Human resources and capacities for healthinformation workforce*: planning, standards and coordination) and the domain of ***Data Collection &Processing*** (*Collection and management of individual client data*: standard forms, training, SOPs, guidelines, data storage, reproduction, electronic data collection, confidentiality; *Collection,management and reporting of aggregated facility data*: SOPs, data flow, guidelines, training, ICT, data quality, data dis-aggregation, data transfer, feedback, data storage, data repository; *Data qualityassurance*: planning, standards, roles & responsibilities, training, supervision, data quality checks, links to health sector planning, collaboration, reports, and *ICT*: ICT framework, ICT resources, ICT use, interoperability, training) would require a lot of strengthening and carefully planned realistic activities for the next 5-year period.

At the sub-domain level, the sub-domains of *Human resources and capacities for health information, ICT* and *Information dissemination* would require more attention (Figures 2., 4. and 5.).

Fig. 1.

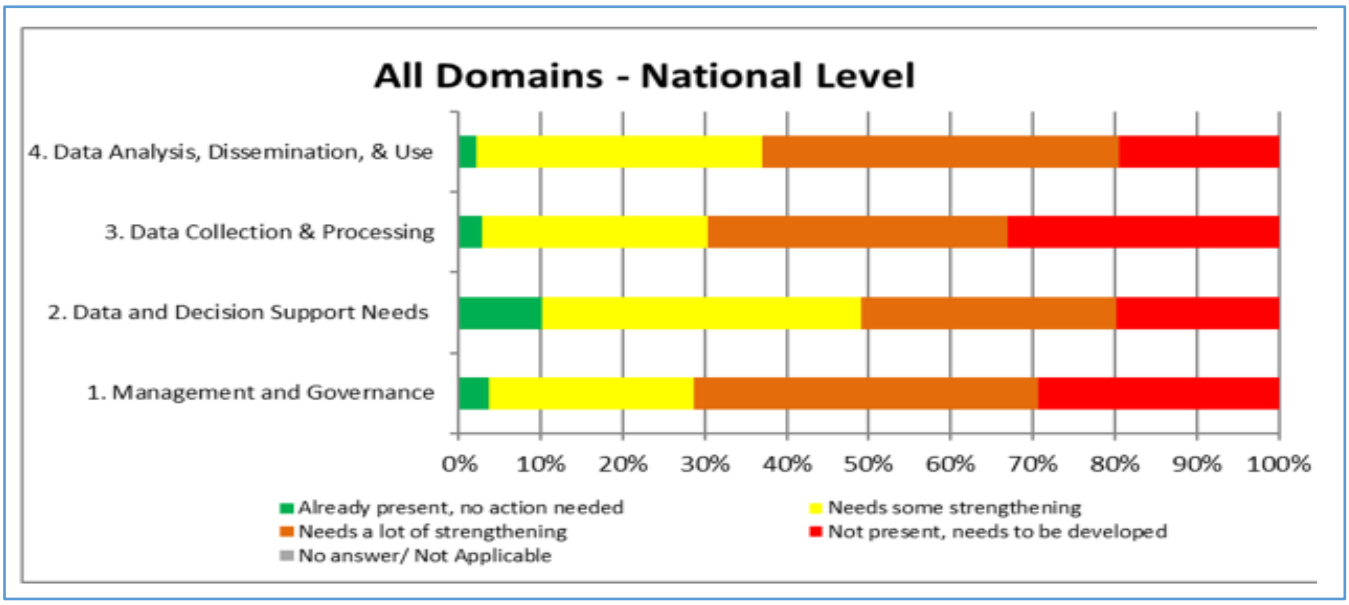

All Domains - National Level
4. Data Analysis, Dissemination, & Use
3. Data Collection & Processing
2. Data and Decision Support Needs
1. Management and Governance
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Already present, no action needed
Needs some strengthening
Needs a lot of strengthening
Not present, needs to be developed
No answer/ Not Applicable

Fig.2.

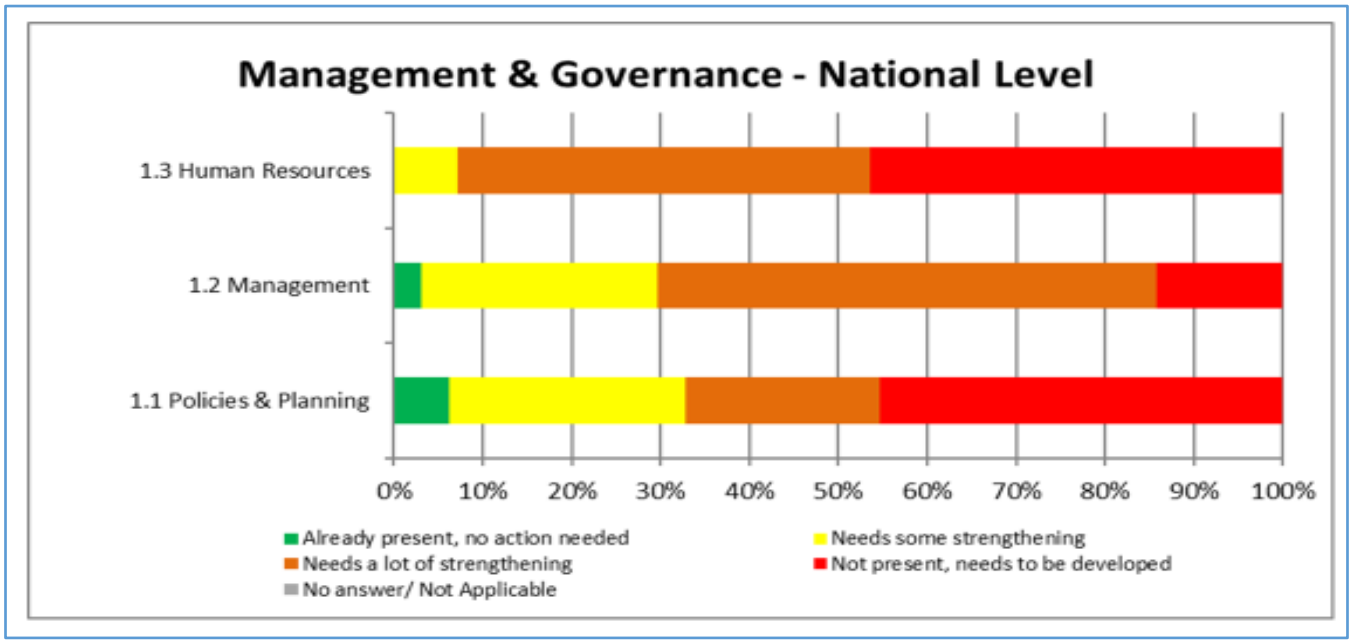

Management & Governance - National Level
1.3 Human Resources
1.2 Management
1.1 Policies & Planning
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Already present, no action needed
Needs some strengthening
Needs a lot of strengthening
Not present, needs to be developed
No answer/ Not Applicable

Fig.3.

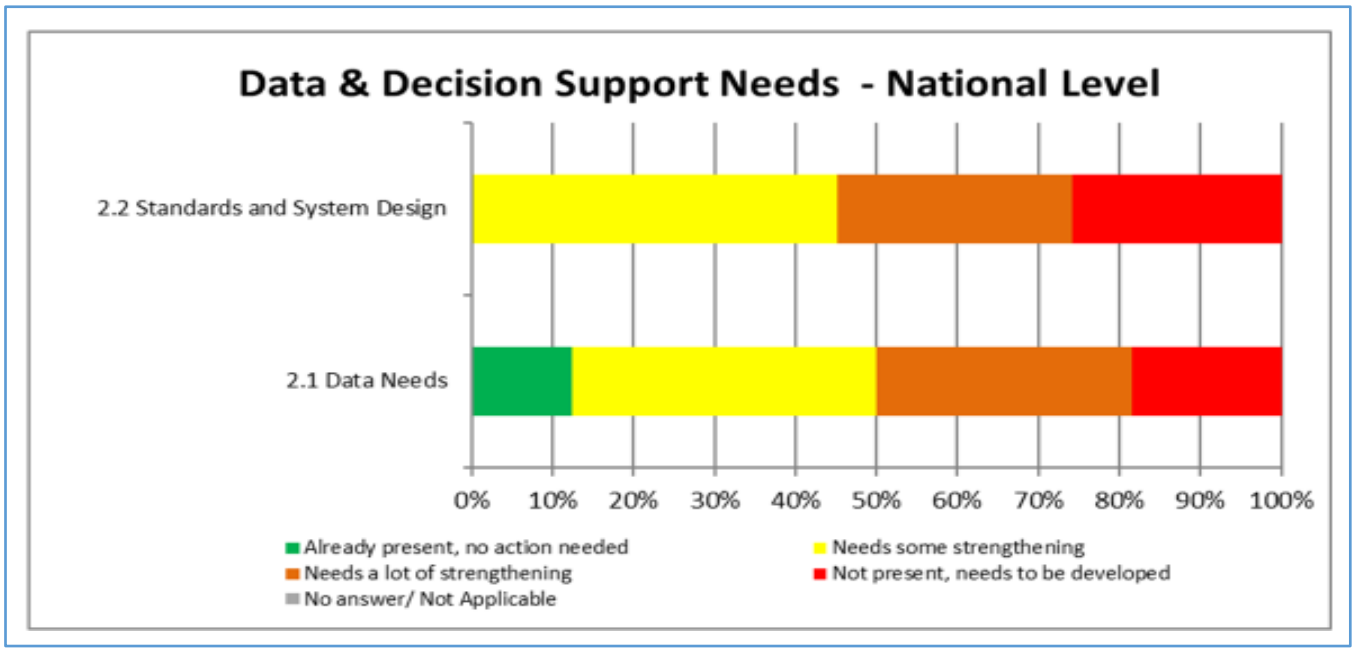

Data & Decision Support Needs - National Level
2.2 Standards and System Design
2.1 Data Needs
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Already present, no action needed
Needs some strengthening
Needs a lot of strengthening
Not present, needs to be developed
No answer/ Not Applicable

Fig.4.

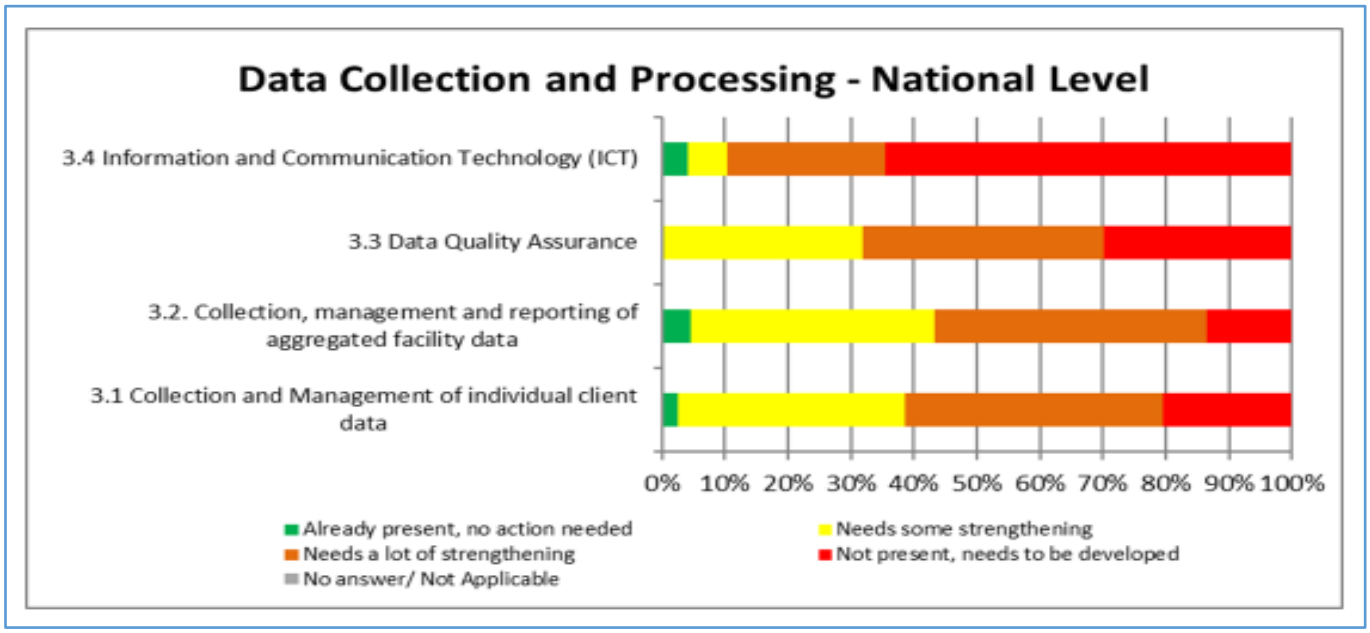
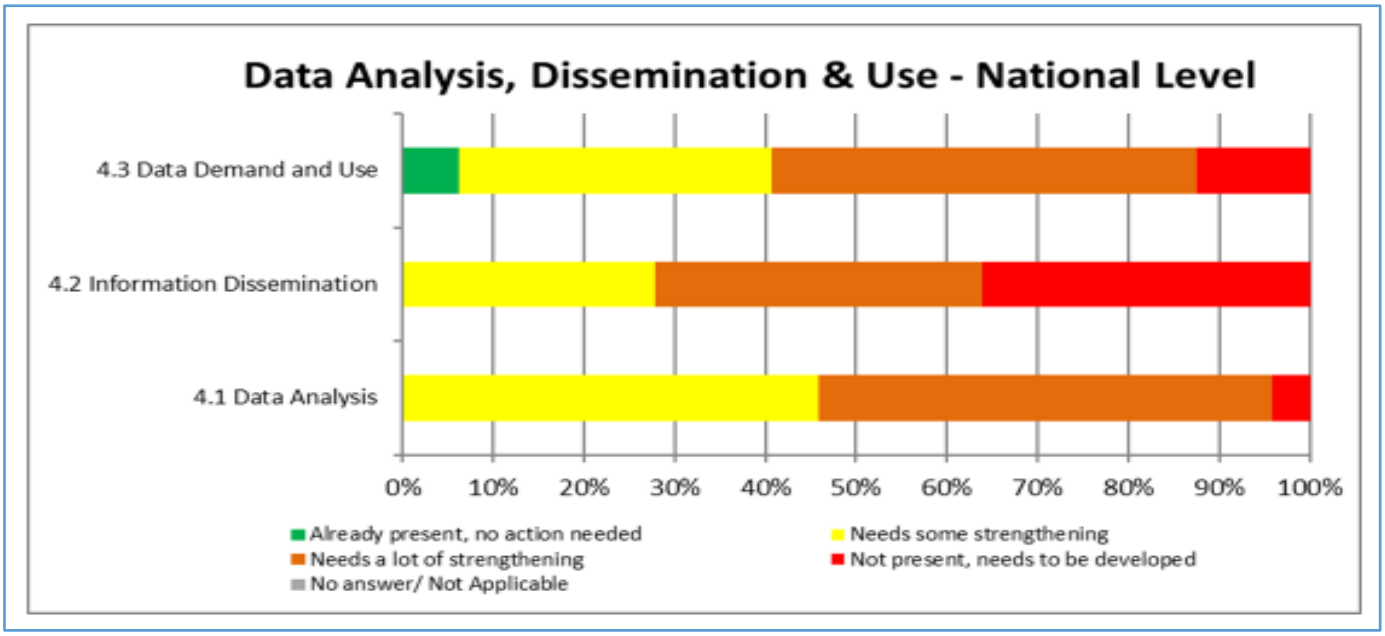

Data Collection and Processing - National Level
3.4 Information and Communication Technology (ICT)
3.3 Data Quality Assurance
3.2. Collection, management and reporting of aggregated facility data
3.1 Collection and Management of individual client data
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Already present, no action needed
Needs some strengthening
Needs a lot of strengthening
Not present, needs to be developed
No answer/ Not Applicable

Fig.5.



Discussion

Rapid Assessment Tool (RAT) is a step towards a comprehensive HIS vision.

The main purpose of using the RAT was to give all stakeholders an understanding of their HIS, and help bring consensus of all stakeholders on identification of gaps in the HIS and their support for implementing a strategic action plan. The RAT is a tool only, with its standards, thatare internationally acceptable, to further define feasible actions to address the gaps and weaknesses.

While some participants expressed their concerns with the assessment tool (e.g. some standards seemed to be complicated and required more time to understand; too many standards; too many assumptions were needed to score; some standards are vague and open to different interpretation), general consensus was that the assessment tool is a very comprehensive one and helped the participants to look at all important perspectives of the national HIS. And – the main purpose – to bring together all major stakeholders and get consensus on gaps and further joint action – was fulfilled.

Annex 2.Agenda of the Assessment and Strategic Workshops

Workshop on Health Information System Assessment and Strategic Plan
Golden Land Hotel, Naypyitaw
5-8 July 2016

Time	Activities	Resource Person
Day 1: Health Information System Assessment		
08:30 – 09:00	Registration	
Opening		
09:00 – 09:30	Opening Ceremony	Union Minister (MoHS)
9:30– 10:00	*Coffee Break*	
Technical Session		**Chair : Daw Aye Aye Sein DyDG (DoPH)**
10:00-10:30	Introduction of participants	All participants
10:30 – 11:15	Objectives of the Workshop HIS in Myanmar: situation, needs and challenges	Dr. ThetThet Mu Director, HMIS
11:15 - 11:45	International experience with strengthening HIS : lessons learnt	Mr. Mark Landry Regional Advisor, SEARO
11:45 – 12:00	Discussion/ Questions and Answers	Facilitator: Session chair from MOHS
12:00 – 13:00	*Lunch Break*	
13:00 – 13:30	Introduction to the HIS assessment process and tool	Dr. Anton Fric
13:30 – 15:30	Group Work: (1) Management and Governance; (2) Data and Decision Support Needs; (3) Data Collection and Processing; and (4) Data Analysis, Dissemination and Use.	Group facilitators: 1. Dr. Phone Myint 2. Dr. Anton Fric 3. Mr. Mark Landry 4. Mr Steven Uggowitzer
15:30 - 15:45	*Coffee Break*	
15:45 – 17:00	Continuation of Group Work	
Day 2: Health Information System Assessment. Chair Daw Aye Aye Sein		
09:00 – 10:30	Continuation of Group Work	
10:30 – 11:00	*Coffee Break*	
11:00 – 12:30	Continuation of Group Work (preparation of presentations)	
12:30 – 13:30	*Lunch Break*	
13:30 – 15:30	Group Work Presentation and Discussion	Group rapporteurs Facilitator: Dr. Anton Fric
15:30 – 16:00	*Coffee break*	
16:00 – 16:30	Recommendations for HIS Strategy	Dr Phone Myint

Day 3: HIS Strategic Plan Workshop. Chair: Daw Aye Aye Sein		
09:00- 09:30	Recap of assessment and other recommendations for an HIS strategy for Myanmar	DrThetThet Mu
09:30-10:00	Developing an HIS Strategy for Myanmar: points for considerations - Establishing the Vision; - Outlining process and outputs; and - M&E and governance issues	Dr. Phone Myint
10:00 – 10:30	Overview of the workshop structure and process as well as expected outcomes Questions and clarifications	DrThetThet Mu
10:30 -11:00	*Coffee Break*	
11:00 – 12:30	Group work	Five Groups, Group facilitators: 1. Dr. Phone Myint 2. Dr. Anton Fric 3. Mr. Mark Landry 4. Mr Steven Uggowitzer 5. Dr. ThetThet Mu
12:30-13:30	*Lunch Break*	
13:30 – 15:00	Group Work contd.	All
15:00 – 15:30	*Coffee Break*	
15:30 – 17:00	Group work contd.	All
Day 4: HIS Strategic Plan Workshop. Chair: Daw Aye Aye Sein		
09:00 – 10:00	Group Work (presentation preparation)	All
10:30- 11:00	*Coffee Break*	
11:00-12:30	Group Work presentation	Group rapporteurs Facilitator: Mr Mark Landry
12:30 – 13:30	Lunch	
13:30- 15:30	Outline of HIS Strategy for Myanmar	Dr. Phone Myint
15:30- 15:45	*Coffee Break*	
15:45 – 16:30	Summary and closing	Daw Aye Aye Sein

Annex 3.

RISK ANALYSIS FOR IMPLEMENTATION OF THE STRATEGIC ACTION PLAN

Risk	Level	Mitigation	Effect
1.Key stakeholders and agencies not engaging in the national health information system development and implementation	Mid	The Strategic Action Plan is developed in an inclusive manner with key partners in health providing core guidance on engagement bystakeholders at the country and staff. Call a stakeholders' coordination meeting (HSS) and discuss.	High
2.Ministry of Health and Central Statistical Office receive insufficient national support to develop core components of the country's HIS and to implement key activities	High	Reviews of achievements towards meeting health-related SDGs reported to the President's Office and to the Ministry of Planning and Finance. Monitor National Health Plan 2016-2021	High
3.There are not adequate plans to build core capacities of staff for data compilation, analysis, interpretation and application for decision-making	Mid	Needs assessment that informs investments including the human resource development costs	Mid
4.Implementation of number of activities could lead to limited ability to monitor progress towards achieving targets of the National Health Plan	Mid	M&E teams of different programmes harmonize their monitoring and align to the comprehensive national HIS process and NHP M&E framework	High
5.Investments in ICT are fragmented and not coordinated, leading to multiple systems that cannot be integrated and inter-operable	High	An approach to ICT investment for HIS and cross-sectoral linking of systems must be preceded by high-level governance mechanism, eHealth standards and detailed review of implementation management arrangements	Mid
6.Increases in quality and availability of data not seen or used by decision-makers	Mid	Strengthening HIS to be accompanied by a national communication strategy	Mid

Annex 4.

Proposed organizational set-up of the HIS at the Ministry of Health and Sports