# Term paper on planning module i preparing for hmis strategy design and planning

Business, Management



#### 1. 0 EXECUTIVE SUMMARY

THMIS document gives the procedures for use by the emergency room wing of a hospital in planning and carrying out the design of strategies and operational plans for strengthening the health management information system available to emergency room wing in a hospital.

The document is designed to help apply and implement the concepts and principles presented in the Health Metrics Network frameworks and Standards for Country Health information Systems. The document is based upon the guiding principles defined in the HMN frame work for guiding health information system design , planning and implementation by using broad based consensus and stakeholder involvement and gradual and incremental progress towards the achievement of the long term vision.

THMIS document's intended users comprise, at the highest level, the administrators of the hospital, the administrators of the emergency room and the all the stakeholders that will be involved in the process of the development of a new health management information system for the emergency room.

The process of designing and implementing a strengthened emergency room health information system consists of three phases; leadership, coordination and assessment which involves setting up national working groups and guidance committees and carrying out assessments of the current health information systems, setting priorities and planning using the results of the assessment to focus the efforts of the working group on the performance

gaps and problems that appear to deserve priority and then generate appropriate suggestions on the way of improving the implementation.

The document is organized into three sections; module I which deals with preparing for the HMIS design and planning, module II which deals with HMIS strategic planning and module III which gives details on HMIS implementation, costing, monitoring and evaluation.

## 2. 0. PLANNING MODULE I: PREPARING FOR HMIS STRATEGY DESIGN AND PLANNING

#### 2. 1 REVIEW OF HMIS ASSESSMENT RESULTS

The results of the HMIS assessment carried out in 2010/2011 in the emergency room wing of the Nile Hospital indicate that there is an inadequacy of policy and legal framework for supporting health information management system. The emergency room of the hospital lacks the relevant legislation needed to facilitate the development of an efficient and credible statistical system and a data bank within the emergency room of the hospital.

The resource levels in the emergency room of the hospital are inadequate. The human resources and infrastructure such as information system that is necessary for the successful development and implementation of a credible information system in the emergency room are simply inadequate and the investments made in the emergency room wing by the hospital relating to ensuring the timely flow of information in the wing do not reach the required

level needed to adequately address the information needs of the emergency room.

The system of data collection, recording, compilation, reporting, formation of databases and storing, dissemination and utilization of feedback of information in the emergency room was found to be inadequate by the assessment. The assessment cited weaknesses in the capacities and practices, integration and use of BDR and inadequate dissemination of health information system and IDSR due to insufficiency of the funds allocated to the wing and the lack of adequate staff such as systems manager that are essential for the efficient running of a health management information system in the emergency room.

The data validation procedures present in the emergency room of the hospital were found inadequate by the assessment. Data validation procedures were conducted in all the departments within the emergency room. However, when tHMIS data was compared to the data resources centre, mismatches occurred between data in the monthly reports and data in the emergency room's register sheets, data reported to the resource center and data kept in the database. The causes of these mismatches were identified as incompleteness of registers in the emergency room, lack of complete set of recording tools such as tally sheets in the emergency room due to poor archiving practices, incomplete recording of the emergency room information system reports, failure to maintain databases at all levels of the hospital and poor hand writing in the registers. In overall, the assessment concluded that data management in the emergency room was

inadequate and further capacity strengthening was required in all levels of the emergency room wing of the hospital.

# 2. 2 REVIEW HEALTH SYSTEM DEVELOPMENT PRIORITIES AND DEFINE HEALTH INFORMATION SYSTEM PROBLEMS

From the review of the assessment carried out in the emergency room of the hospital, the following priorities have been developed. in attempting to ensure that a new and efficient health management information system is developed for the emergency room wing, the development of an efficient and effective data management procedures both within the emergency wing department and other relevant departments of the hospital. THMIS will serve to eliminate the current problems which are being experienced in the health information system as a result of the inefficiencies of the data management procedures. Training of the existing personnel on the ways and methods of making data management more integral will be prioritized in the process of development of a new health information system within the emergency room of the hospital. Proper rules regarding documentation and access to information will be developed as a matter of priority, and new policies and regulations set up to ensure that the integrity of the data collected by the health information system in the emergency room department is maintained at all times. In tHMIS way, data collected from the emergency room wing will be more accurate and will serve to assist in the smooth running of operations both within the emergency room department and I other departments of the hospital.

Resource allocation to the emergency room department should be made a priority. The investments made in the department in terms of human resources needed for the development of an efficient and credible health information system in the emergency room wing should be boosted. Major financial investments into the components necessary for the development of an efficient health information system within the emergency room wing also need to be made a priority. Prioritizing such investments will enable the resource allocation required to ensure that the hospital develops a credible emergency room health information system in an efficient and timely manner.

The development of credible and secure validation procedures should be made a priority in the process of developing a new efficient health management information system for the emergency room wing of the hospital. The problems currently being experienced as a result of data validation procedures should be eliminated from the system immediately to make way for a more credible method of data validation, thus the need to make tHMIS process a priority in the development of a new health management information system.

# 2. 3 INVENTORY OF ON GOING HEALTH MANAGEMENT INFORMATION SYSTEM STRENGTHENING EFFORTS

The emergency room wing, and the hospital in general is currently carrying out an awareness program for all the stakeholders in the hospital on the importance of having in place a credible health management system. THMIS

is in an effort to make all the stakeholders appreciate the need of an efficient working information system in the emergency room and how such a system will work towards increasing the efficiency of the operations of the emergency room.

The hospital is also currently carrying out a recruitment program for the required manpower needed for smooth planning, development and implementation of a comprehensive health information system for the emergency nit of the hospital. These will go a long way in ensuring that the development of a credible health information system in the hospital proceeds in an efficient and timely manner.

#### 2. 4 MODULE I APPENDICES

Definition of terms

HMN Framework: A document produced by the Health Metrics Network
Secretariat and Technical Advisory Group presenting the basic principles and
steps of HMIS Strategic Planning.

HMIS: Health Information System, meaning a system providing information support to decision making at all levels of the health system. It incorporates information generated by both population-based and institution-based data sources

HMIS: Health Management Information System: term used to describe the institutionbased

data sources.

RHMIS: Routine Health Information System: term used to describe the

institution based data sources.

undertaken and produced in formulating the HMIS Strategy and Plan.
HMIS Assessment: A process involving the response of a "Key Informant Group" to a series of questions about the current functionality and performance of various categories of health information and its use. The assessment is supported with a spreadsheet tool that facilitates the entry and analysis of the responses of the Informant Group in order to determine the average degree

HMIS Strategy Roadmap: A detailed plan of the steps and products to be

# 3. 0 PLANNING MODULE II: HMIS STRATEGIC PLANNING

of performance or difficulty currently being experienced across the

categories and questions in the opinion of the Informant Group.

#### 3. 1 PRIORITY HMIS COMPONENTS AND PROBLEMS

in the development of the health information system for the emergency room of the hospital is being made in the development of the appropriate human resources needed. The human resources component of the health information system is a priority component which forms a critical part of the development process of the new health management information system.

The development of credible data validation procedures is also a critical component of the development of a new HMIS in the emergency room. It is important that new and efficient methods of data validation are adopted to ensure that the integrity of the information gathered from the system is maintained.

Data management procedures in the emergency room also need to be dealt with immediately. The potential destructive and disruptive effects of poor data management procedures call for the treatment of tHMIS component of HMIS development as priority. Having efficient data management procedures within the emergency room will provide a clear avenue for the successful development of other components of the health management information system for the emergency room.

#### 3. 2 THE HMIS VISION

The health management information system of the emergency room has a shared vision with the hospital; the development of a functional HMIS network and a one stop centre of excellence for producing, managing and sharing health and health related information. THMIS vision is tied to the HMIS mission of provide timely and quality health and health related data and information to all stakeholders.

# 3. 3 CURRENT AND PLANNED HMIS STRENGTHENING EFFORTS

The emergency room and the hospital in general are carrying out an awareness creation initiative on the development of the HMIS. THMIS is intended to ensure that all the stakeholders are aware of the potential benefits of successful development and implementation of a HMIS in the emergency room. THMIS will ensure that all the stakeholders render their support to the development of the HMIS in the emergency room and thus reduce the chances of any occurrence of opposition to the development of the system.

The hospital is currently undertaking a recruitment of the human resources needed for the development of the HMIS in the emergency room of the hospital. THMIS is an initiative intended to ensure that human resources appropriate for the development of the information system are in place as the process of the development of the actual health management information system takes off, thus reducing any chances of failure of the HMIS development process.

#### 3. 4 HMIS OBJECTIVES AND INTERVENTIONS

The proposed development of HMIS in the emergency room of the hospital is intended to enhance the coordination, linkages and build partnerships among producers and users of health and health related data and information. THMIS will enable the emergency room develop lasting relationships with all the stakeholders by providing a reliable and credible source of health and health related information to users of such information.

The establishment of regulatory mechanisms for management of health information system and strengthening of the institutional and technical capacity for management and implementation of a quality HMIS and its subsystems is an objective of the health management information system in the emergency room wing of the hospital.

The proposed development and implementation of the health management information system for the emergency room also has an objective of streamlining planning, budgeting and resource allocation and mobilization for HMIS management in the emergency room department while increasing access to information and improving the quality of health care delivery in the emergency room.

The health management information system in the emergency room also has an objective enhancing the appreciation for utilization of health information for planning, better resource mobilization and program implementation for all levels in the hospital and the monitoring and evaluation of the implementation of the HMIS subsystems.

#### 3. 5INTERVENTION IMPLEMENTATION PHASING

The implementation of the health management information system will be in three major phases. The initial phase will involve an audit of the currently existing information framework in the emergency room and carrying out a comprehensive audit of the information needs of the emergency room.

These information needs will be documented and will form the basis for the structure of the information system that will be developed for the emergency room wing.

The second major phase will be the development of a prototype information system for the emergency room based on the information needs audit carried out in the initial phase. THMIS prototype will be used to evaluate whether or not the proposed information system comprehensively meets the needs of the emergency room. It will be the basis on which any necessary refining of the system will be carried out to ensure that the information system developed for the emergency room is credible and can handle all the information needs of the emergency room.

The final phase will involve the development of the actual information system for the emergency room. THMIS will be informed by the initial developments and the adjustments made on the prototype. THMIS final version of the health information system should be able to handle the information needs of the emergency room in a comprehensive manner.

#### 3. 6 MODULE II APPENDICES

Definition of terms

HMN Framework: A document produced by the Health Metrics Network Secretariat and Technical Advisory Group presenting the basic principles and steps of HMIS Strategic Planning.

HMIS: Health Information System, meaning a system providing information support to decision making at all levels of the health system. It incorporates information generated by both population-based and institution-based data sources

HMIS: Health Management Information System: term used to describe the institutionbased

data sources.

RHMIS: Routine Health Information System: term used to describe the institution based data sources.

HMIS Strategy Roadmap: A detailed plan of the steps and products to be undertaken and produced in formulating the HMIS Strategy and Plan.

HMIS Assessment: A process involving the response of a "Key Informant Group" to a series of

questions about the current functionality and performance of various

categories of health information and its use. The assessment is supported with a spreadsheet tool that facilitates the entry and analysis of the responses of the Informant Group in order to determine the average degree of performance or difficulty currently being experienced across the categories and questions in the opinion of the Informant Group.

## 4. 0 PLANNING MODULE III: DETAILED HMIS PLANNING AND COSTING

#### 4. 1 HMIS STRATEGY COSTING

The costing process of the HMIS will be based on a budget which will be prepared before the actual implementation of the health management system is carried out. The budget will form a framework on which the whole process will be benchmarked. The budget will also be crucial in developing a method of monitoring costs since any deviations by the actual costs from the budgeted costs will have to be explained. In tHMIS manner, the costs of carrying out the process of setting up the information system for the emergency room will be kept under control while at the same time maintaining the integrity of the health management system developed.

## **4. 2 HMIS STRATEGY MONITORING AND EVALUATION**

The monitoring of the HMIS strategy will be accomplished through regular technical support supervision on all aspects of the HMIS implementation at all levels. Data Quality Audits (DQA) will be carried out at points of data collection, collation and analysis by technical staff of the respective departments. THMIS will be included in the strategic plan.

Meetings to report and review progress will be conducted. Each stakeholder will be responsible for producing and sharing relevant reports and information on a regular basis as agreed upon by the HMIS Steering Committee. These reports should be accessible upon request of the various stakeholders. A mid-term and final evaluation exercise will also be conducted to assess the extent to which the objectives will have been achieved.

Periodic revision to the strategic plan will be carried out to ensure that any changes in the external environment are integrated into the plan. Evaluation of the progress of the actual implementation of the project will be carried out against a timeline set out by the plan. THMIS will assist in keeping the costs of implementing the project in check. It will also keep the project implementation on track and avoid any crippling delays in the implementation process.

#### 4. 3 THE HMIS STRATEGIC PLAN DOCUMENT

STRATEGY 1: INTER-DEPARTMENTAL COLLABORATION FOR MANAGEMENT OF HEALTH-RELATED INFORMATION

Collaboration between different sectors involved in production and utilization of health data will strengthen coordination, linkages and formation of partnerships on HMIS. Duplication of processes, leading to inefficient utilization of resources, disjointed mobilization of funds, will be overcome through well coordinated efforts of all HMIS stakeholders. Under this HMIS strategy, interventions to be implemented will comprise of:

• Draft institutional arrangements for setting up HMIS unit (one-stop centre

for data management).

- Set up partnerships for HMIS implementation and funding at national and district levels
- Set up and update HMIS web-page for all sub-systems to feed into and be able to obtain data
- Set up web-based linkages for production and accessing health information between the

HMIS sub-systems (including the private sector and research institutions)

#### STRATEGY 2: ADVOCATE AND RAISE AWARENESS FOR HMIS

The main purpose of advocacy and raising awareness will be to influence legislation, policies, strategies and legal frameworks to promote health data management especially utilization for priority setting, resource allocation and focused implementation of services at all levels. Interventions that will be implemented under tHMIS strategy will include:

- Awareness and advocacy campaigns for HMIS, and on data use for priority setting
- Set up rewarding system for good performance on HMIS
- Provide feedback at all levels

STRATEGY 3: BUILD CAPACITY FOR COLLECTION, ANALYSIS, DISSEMINATION AND UTILIZATION OF HEALTH AND HEALTH RELATED DATA.

To have a well functioning quality HMIS, capacity for data management will be built in the various HMIS subsystems in order to ensure the availability of skilled human resource, and appropriately equipped service delivery points.

THMIS strategy has the following key interventions:

- Review pre-service and in-service curricula on data management
- Conduct supervision on HMIS
- Develop/ review/ print/ distribute guidelines, standard operating procedures, SCD & ICD-10, data management tools (including HMIS, mapping)
- Procure/ distribute and maintain data management equipment, software (including registers, etc).

Set up storage facilities for HMIS

- Facilitate staff recruitment
- Set up staff retention schemes
- Set up rewarding system for good performance on HMIS

#### STRATEGY 4: SCALE UP IMPLEMENTATION OF DATA MANAGEMENT SYSTEMS

The already existing systems will be expanded to cover more geographical areas in order to increase the database and sources. Where all sections are covered, issues of quality, completeness and timeliness will be emphasized. Key interventions under tHMIS strategy will include:

- Develop/ review/ print/distribute evidence-based HMIS policy (including ICT policy), strategies & standards for data management
- Set up and update databases for HMIS sub-systems
- Support implementation of surveys (community- of facility-based)
- Conduct and document assessment and research findings
- Develop and implement monitoring plans
- Monitor and evaluate HMIS sub-systems

STRATEGY 5: IMPLEMENT HMIS WITHIN THE LEGO-REGULATORY FRAMEWORKS

 Review and strengthen existing legislation, regulation and administrative procedures related to management of health data.

STRATEGY 6: MOBILIZATION OF RESOURCES FOR IMPLEMENTATION OF HMIS

In order to secure funding for HMIS, resource mobilization mechanisms will form part and parcel of the HMIS implementation. The Hospital board will need to commit funds to support HMIS implementation at all levels.

Interventions to support thmis strategy will be as follows:

- Raise resources for HMIS implementation including ICT
- Conduct joint planning for HMIS
- Review and enforce use of guidelines for resource allocation
- Determine priorities for planning/ implementation based on HMIS

#### 4. 4 MODULE III APPENDICES

Definition of terms

HMN Framework: A document produced by the Health Metrics Network

Secretariat and Technical Advisory Group presenting the basic principles and
steps of HMIS Strategic Planning.

HMIS: Health Information System, meaning a system providing information support to decision making at all levels of the health system. It incorporates information generated by both population-based and institution-based data sources

HMIS: Health Management Information System: term used to describe the

institutionbased

data sources.

RHMIS: Routine Health Information System: term used to describe the institution based data sources.

HMIS Strategy Roadmap: A detailed plan of the steps and products to be undertaken and produced in formulating the HMIS Strategy and Plan.

#### References

Armoni, A. (2000). Health care information systems: challenges of the new millennium. Idea Group Inc.

Austin, C. J. & Boxerman S. B. (2003). Infromation Systems for Healthcare Management. (6th Ed.). New York, NY: Health Administration Press.

Galliers, R. & Leidner, D. (2003). Strategic information management. London: Butterworth- Heinemann.

Galliers, R. (2009). Strategic information management. New York, NY: Routledge.

Kissinger, K. & Borchardt, S. (1996). Information Systems for Integrated Health Systems. Hoboken, NJ: John Wiley and Sons.

Smith, J. (2000). Health Management Information Systems: A handbook for Decision Makers. London: Open University Press.

Tan, J. K. & Payton F. C. (2009). Adaptive Health Management Information Systems: Concepts, cases and practical applications. (3rd Ed.). Boston, MA: Jones and Bartlett Publishers.