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## HEALTH MANAGEMENT INFORMATION SYSTEM AND CHALLENGE ON IMPROVEMENT OF QUALITY OF CARE IN HEALTH CARE INSTITUTIONS

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### Përmbledhje

Sistemi i informacionit të menaxhimit shëndetësor (HMIS) është një instrument që përdoret për të përmirësuar kënaqësinë e pacientëve me shërbimet e kujdesit shëndetësor nëpërmjet matjes së vazhdueshme të dimensioneve të caktuara të aksesit dhe cilësisë së shërbimit shëndetësor. Një HMIS që funksionon mirë është një aktivitet i integruar i mbledhjes, procesit, analizës, raportimit dhe përdorimit të të dhënave shëndetësore për vendimmarrje në një sistem shëndetësor.

HMIS është i lidhur ngushtë me performancën e sistemit shëndetësor dhe ndërhyrjet për forcimin e sistemit shëndetësor, pasi objektet e kujdesit shëndetësor bëhen më intensive në informacion, më shumë menaxherë zbulojnë se praktika e mjekësisë është e lidhur në mënyrë të pandashme me menaxhimin e informacionit të kujdesit shëndetësor. Në vendet në zhvillim si p.sh., është një kohë e ngutshme për të zhvilluar HMIS të fortë dhe të bazuar në kontekst përmes qasjeve inovative.

Objekti i këtij punimi është të ofrojë një drejtim për të mbështetur dhe përmirësuar në mënyrë efektive aktivitetet e kujdesit shëndetësor përmes krijimit dhe menaxhimit të HMIS brenda institucioneve të kujdesit shëndetësor në vendet në zhvillim si vende me disa sfida që lidhen me mungesën e burimeve njerëzore në informacionin e menaxhimit shëndetësor dhe përdorimin e dobët të të dhënave të mbledhura, analiza dhe interpretime të tyre. Në zhvillimin e kësaj qasjeje, ofrohet një fokus i integruar nëpërmjet një kuadri për analizimin e strukturës dhe infrastrukturës së HMIS në institucionet e kujdesit shëndetësor (në veçanti spitalet). Kultura e përdorimit të të dhënave/informacionit punësimit në institucionet e kujdesit shëndetësor dhe sistemin e informacionit shëndetësor lidhet kryesisht për qëllime raportimi dhe më pak studime trajtojnë gjithashtu nevojën për angazhim të liderit për optimizimin e cilësisë më të mirë të informacionit shëndetësor dhe promovimin e përdorimit të sistemit të informacionit shëndetësor dhe të bazuar në dëshmi. për rezultate të plota në sistemin shëndetësor dhe politikën shëndetësore.

**Fjalë çelës:** *HMIS, kujdes shëndetësor, cilësi.*

### Abstract

The health management information system (HMIS) is an instrument used to improve the patient satisfaction with health care services through the continuous measurement of certain dimensions of service health care access and quality. A well-functioning HMIS is an integrated activity of collection, process, analysis, report, and use of health data for decision making in a health system.

HMIS is strongly related to the health system performance and health system strengthening interventions as health care facilities become more information-intensive, more managers find that the practice of

medicine is inseparably knotted with the management of health care information. In developing countries like, it is a pressing time to develop strong and context-based HMIS through innovative approaches.

The object of this paper is to provide a direction to effectively support and enhance the health care activities through setting up and managing HMIS within health care institutions in developing countries as countries with several challenge related to scarcity of human resource in health management information and poor use of the data collected, analysis and interpretations of them. In developing this approach, an integrated focus is provided via a framework for analyzing the structure and infrastructure of HMIS in health care institutions (in particular hospitals). Culture of use of data/information employment in health care facilities and health information system is mainly related for reporting purposes and less studies also address the need for leadership engagement to the optimized of best quality of health information and promoting health information system use and evidence based for complete results in the health system and health policy.

**Key words:** *HMIS, health care, quality.*

## Hyrje

Sistemi i informacionit për menaxhimin shëndetësor (SIMS) është një instrument që përdoret për të përmirësuar kënaqësinë e pacientit me shërbimet e kujdesit shëndetësor duke matur vazhdimisht disa dimensione të aksesit dhe cilësisë së shërbimit shëndetësor.

Një SIMS që funksionon rrjedhshëm është një aktivitet i integruar i mbledhjes, procesit, analizës, raportimit dhe përdorimit të të dhënave shëndetësore për vendimmarrje në një sistem shëndetësor. SIMS është i lidhur ngushtë me performancën e sistemit shëndetësor dhe ndërhyrjeve për forcimin e sistemit shëndetësor, pasi institucionet e kujdesit shëndetësor bëhen më intensive në informacion, e më shumë menaxherë zbulojnë se praktika e mjekësisë është e lidhur në mënyrë të pandashme me menaxhimin e informacionit të kujdesit shëndetësor. Në vendet në zhvillim, është një kohë e ngutshme përmes qasjeve inovative për të zhvilluar SIMS të fortë dhe të bazuar në kontekstin e cdo vendi. Objekti i këtij punimi është të ofrojë një drejtim/orientim për të mbështetur dhe përmirësuar në mënyrë efektive cilësinë e kujdesit shëndetësor përmes krijimit dhe menaxhimit të SIMS brenda institucioneve të kujdesit shëndetësor në vendet në zhvillim si vende me disa sfida që lidhen me mungesën e burimeve njerëzore në informacionin e menaxhimit shëndetësor dhe përdorimin e dobët të të dhënave të mbledhura, analiza dhe interpretime të tyre. Në zhvillimin e kësaj qasjeje, ofrohet një fokus i integruar nëpërmjet një kuadri për analizimin e strukturës dhe infrastrukturës së HMIS në institucionet e kujdesit shëndetësor (në veçanti spitalet). Kultura e deritanishme përdorimit të të dhënave/informacionit në institucionet e kujdesit shëndetësor dhe sistemin e informacionit shëndetësor lidhet kryesisht për qëllime raportimi dhe studime adresojnë gjithashtu nevojën për angazhimin e liderit për optimizimin e cilësive më të mira të informacionit shëndetësor dhe promovimin e përdorimit të sistemit të informacionit shëndetësor për të dhëna të plota dhe evidence bazë në sistemin shëndetësor dhe politikën shëndetësore

Health Management Information System is crucial stone of any health care institutions attempting to manage routine problems as health care providers recognize that a large percentage of their daily activities relates to health care information management. As health care facilities become more information needed, more managers find that the practice of medicine is inseparably knotted with the management of health care information. The health management information system (HMIS) is an instrument used to improve patient satisfaction with health care services by continuous measurement of certain dimensions of service health care access and quality. Health information management system is one of the building blocks of a health system. Quality of care provided can be checked by comparing perceptions of services delivered with the expected standard of such health care service delivered (1, 2).

Health information management system is one of the building blocks of a health system. HMIS

quality improves access and quality of service delivery through evidence-based practice. A well-functioning HMIS is an integrated activity of collection, process, analysis, report, and use of health data for decision making in a health system policies.

The objective of the HMIS is to record information on health service delivery and check the quality of services at different levels of health care. Improving the quality of health services is strongly related to patient assessment as part of the concept of giving importance to patient's views and perceptions. The HMIS setting can be characterized by distributed processing, heterogeneous networks, and advanced user edge (2, 3).

Forecasted benefits of improving the HMIS in health care institutions include enhancing patient satisfaction through improved communication and using of patient's center oriented; improved community awareness about the quality of services and rights to health; and overall better use of services in the health system(1).

HMIS not only creates and procedures health care services ongoing, but also creates and processes information linked with each other through computer systems and available to each health care workspace. These developments mean that health management information system no longer needs to simply deliver information but it has the potential to take on the driving role and manage various functions in the health care setting. Major difficulties with HMIS are that it has not developed from the needs of end users (beneficiaries of the health care services), and lacks of an institutional base to manage the HMIS in the health care service setting. The object of this paper is to provide an approach to effectively support and enhance the health care activities through managing HMIS in health care institutions (3). A primary concern in such efforts is the acknowledgement by managing the structure and infrastructure of HMIS which could help health care managers appreciate and manage information resources efficiently.

## **WHICH IS CURRENT SITUATIONS OF HMIS IN DEVELOPING COUNTRIES?**

A well-functioning health system relies not only on the availability of data, but also on a reliable, truthful, and continuous and on time information. Despite the high demand for quality data at health care levels, evidence shows huge challenges in developing countries, particularly in the primary health care level. Data also shows that, in the health care institutions of developing countries, health specialist are less motivated to use health information at their place of work. Culture of use of data/information employment in health care facilities and health information is mainly related for reporting purposes and less studies also stress the need for leadership commitment to the improvement of optimum quality of health information and promoting health information utilization for sound decisions in the health system (4, 5). Data use should be enhanced and improved through the engagement of the health data specialist in identifications, collections, analysis, and interpretation of health information for decision making through performance reviews and workshops (5). In developing countries, investments and policies focusing on HMIS are relatively new than the developed country settings and policies. Though the health information demand is steady increasing, there is still limited access to the essential health information for decisions. The collected data are of scare and poor quality and cannot satisfy the need of the users (in local and central level). In developing countries like, it is a pressing time to develop strong and context-based HMIS through innovative approaches [6]. As studies show, HMIS is strongly related to the health system performance and health system strengthening interventions. In resource-limited countries, routine HMIS data with other data types can be used in rigorous evaluation of policy interventions [7]. Furthermore, integrated HMIS improves the capacity and performance of primary health care facilities and enhances coordination among all levels of health care [8]. Strong HMIS is also a tool for strengthening a health system at facilities through; cost savings, improved access for health resources, and transforming the society for development. Besides, good HMIS promotes the health service utilization pattern of society and increases client satisfaction which is the aim of HMIS itself (5).

The absence of robust and real HMIS often results in a significant gap between what policy-makers, health professionals and researchers know and what they need to know to improve the health of the population. Data from different sources, including from health facilities, population-based surveys, and civil registration and vital statistics systems, can easily be modified or expanded to meet the informational needs of rehabilitation. The WHO Rehabilitation Programmer is working toward the integration of rehabilitation into these different data sources and their country implementation (2).

### **THE LOOKING FORWARD TO HMIS IN HEALTH CARE CENTER INSTITUTIONS IN THE DEVELOPING COUNTRY**

The investigation of information planning had the crucial effect of creating a vision for managers involved in HCIS: to make more creative use of the information systems, thereby improving their own managerial effectiveness. A HMIS is not just a system, it's a service. Wherever the service is most needed, that is where the HMIS should be. The information planning directed managers to develop the skill of deliberately choosing the approaches: quality, cost, and cross-function. HMIS planning should meet customer needs using the principles of total quality management, which encapsulates four elements: setting standards, appraising conformance to these standards, acting to ensure standards are met, and planning for improvement in standards (9).

The management of quality offered involves a series of steps that ultimately lead to orientation of management and clients. The challenge for HMIS managers is to combine quality of care with income growths. Successful implementation of HMIS recognizes not only the clever employment of managing but also the assumption of cost management. These management actions are projected to reduce risks and to flag the way for catching the benefits. Cost reduction due to labor saved in performing administrative tasks often is a primary motivation for implementing a HMIS. The database managed and controlled by specialists of various sub-units of an organization constitute the information utility. The end-users, through their devices terminals, access the information utility for health care service that is either directly usable or indirectly functional.

Information resource management assumes that the behavior of users and the information utilization by the organization should be consistent with internal organization policies. In control through HMIS, information control is rooted in the infrastructure of the health care service. Information resource management enables a manager a way to distribute, and monitor the use of HMIS resources in the organization. The resources include clinical information systems, health- resources, medical research and basic science research support.

The second element, access control, involves configuration control, authorization management, and auditing activities. In control through the structure of HMIS, i.e., information center or information utility, control is rooted in internal organization's policies, procedures, and precise job descriptions, and incentive patterns. While one contribution of HMIS is to strengthen quality control systems in health care institutions (hospitals), HMIS can create a huge control problem and challenges. With thousands of transactions being processed in a short period of time, an error can spread through an immense number of transactions in minutes. Integrity should be one component of security and accuracy/validity should be one component of integrity (9). In addition, because of the confidentiality of the information contained in the HMIS, security and privacy are major concerns in HMIS. HMIS safety should be differentiate from conventional computer security in that it involves more than the physical and logical security. Management of security, the protection against all risks associated with the organizational, personnel and administrative tasks that are implemented to help secure all the information assets, should be considered as well. The potential risk from end user computing is recognized by the fact that three categories of frequent end user (clerical personnel, functional area personnel, and managers) together account for the majority of computer abuses (9). Health care institutions need a HMIS security plan which should take into account the HMIS

structure, infrastructure, and how resources will be allocated to cover the mix of security precautions that will be used. Privacy policy must be able to prohibit access to the HCIS by unauthorized people and be able to restrict access. User access to the HMIS and the resources must be controlled, typically by a user code and password. Networks are more difficult to secure because of the need to coordinate security among a number of functions, and also because of the complexity of managing HMIS. Each person's access must be controlled according to their need to know. Access to the HMIS should be restricted according to user identification and working station. Two alternative policies can be adopted by health care institutions. They are control and slack environment. In the control environment, all financial and managerial activities are controlled to ensure that HMIS activities are effective and efficient. In the slack environment, sophisticated controls are absent, and instead, motivations to use HMIS in an experimental manner could be developed. The choice of appropriate policy concerning development of HCIS depends on goals and objectives of the specific organization.

In general, HMIS includes four major features: (1) network, (2) coordination, (3) decision, and (4) monitoring (2, 10). Any advances in the information technology could become potent forces leading to changes in the future health care environment: networks for communication within the health care institutions and with the outside world; vast memories for the storage of medical records, data, and literature data bases; and powerful microcomputers for automation and personal computing (10). Many health care systems take advantages of the computer's data acquirement and interactive multimedia capabilities of graphics, sound, animation, and linking to videodisc images

## CONCLUSION

The HMIS plays a universal role in the health care management of the quality of health care service, but we have to guarantee that HMIS elements are implemented and managed effectively to information technology's role as an incentive and support for the health care institutions and for individual doctors. Health care institutions (in particular hospitals) which are in their beginning have to struggle with management issues in HMIS. This paper has examined an institutional approach to effectively support and improve the health care quality through managing HMIS in the health care environment. In developing the perspective, an integrated focus is provided via a framework for analyzing the structure and infrastructure of HMIS in health care institutions (in particular hospitals). Recognition of the structure and infrastructure of HMIS has significant implications for the management of health care environment, and for further research into HMIS implementation. Until the structure and infrastructure change, health care institutions (in particular hospitals) in developing will be slow to adopt the HMIS systems. Future studies aimed at developing online medical databases and decision support systems will have the greatest potential for improving quality of health care institutions (in particular hospitals) in the future.

The lack of robust and effective HMIS often will results in a significant gap between what policy-makers, health professionals and researchers know and what they need to know to improve the quality of health of the population. Data from different sources, including from health facilities, population-based surveys, and civil registration and vital statistics systems, can easily be modified or expanded to meet the informational needs of rehabilitation. The WHO Rehabilitation Programmer is working toward the integration of rehabilitation into these different data sources and their country implementation (2).

Information control cannot be only added on to HMIS; the control mechanism must be integral parts of the system. A systematic approach to information control planning may save the health institutional time, money, and personnel - it may even save the very life of the hospital. A total organizational contingency planning is suggested for hospitals. Driving the need is the implementation of new systems and the greatly expanded use of microcomputers and minicomputers in almost every department, where it is apparent that HMIS must address the issues for corporate-wide information security policy. HCIS should become an integral part of the ongoing management process and should provide controls and policies throughout

the health care organization. This new outlook will lead to more effective solutions in the areas of end user authentication, encryption, contingency planning, security standards, and corporate-wide security policies (1,2,11).

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